

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number: 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0182A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0551A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 46' 53.8~ N	37 ° 45' 19.0~ N
Longitude (NAD 83)	122 ° 30' 18.0~ W	122 ° 27' 10.0~ W
Ground Elevation (m/ft-AMSL)	101.80 / 334.0	254.20 / 834.0
Antenna Structure Registration #		1001289
Path Azimuth (°)	122.409	302.441
Path Length (km / miles)	5.451 / 3.387	

Transmit Antenna

77041A	77041A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2.5-11	VHLP2.5-11
37.5 / 2.10 / 2.60	37.5 / 2.10 / -2.64
19.20 / 63.0	116.43 / 382.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM016	TEM016
DRAGONWAVE INC	DRAGONWAVE INC
11HD40HFC277V02	11HD40HFC277V02
HORIZON DUO	HORIZON DUO
36M7D7W 256 QAM	36M7D7W 256 QAM
1 CH DIG 277000.000	1 CH DIG 277000.000
0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
15.5	15.5
-41.5	-41.5
51.1	51.1
0.0 / 1.9	0.0 / 1.9
128.2	

Transmit Frequencies (MHz)

11225.0000V(1)	11345.0000V(4)	10735.0000V(1)	10855.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0230A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0278A CA

Daly City/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 44' 51.5~ N	37 ° 40' 47.5~ N
Longitude (NAD 83)	122 ° 28' 34.7~ W	122 ° 28' 28.0~ W
Ground Elevation (m/ft-AMSL)	135.20 / 443.6	133.40 / 437.7
Antenna Structure Registration #		
Path Azimuth (°)	178.750	358.751
Path Length (km / miles)	7.525 / 4.676	

Transmit Antenna

77001A	77001A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-11	VHLP2-11
Gain(dBi) / Beamwidth(°) / Tilt(°) 34.4 / 3.40 / 0.27	34.4 / 3.40 / -0.32
Centerline (m / ft - AGL) 9.14 / 30.0	49.99 / 164.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM028	TEM028
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 11HD40HFC212V02	11HD40HFC212V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 34M4D7W 128 QAM	34M4D7W 128 QAM
Loading 1 CH DIG 212000.000	1 CH DIG 212000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 16.0	16.0
Received Level (dBm) -46.2	-46.2
EIRP (dBm) 50.4	50.4
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 131.0	

Transmit Frequencies (MHz)	11505.0000H(8)	11585.0000H(10)	11015.0000H(8)	11095.0000H(10)
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(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0248A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0551A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 43' 33.0~ N	37 ° 45' 19.0~ N
Longitude (NAD 83)	122 ° 24' 4.3~ W	122 ° 27' 10.0~ W
Ground Elevation (m/ft-AMSL)	15.10 / 49.5	254.20 / 834.0
Antenna Structure Registration #		1001289
Path Azimuth (°)	305.724	125.693
Path Length (km / miles)		5.599 / 3.479

Transmit Antenna

77001A	77001A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-11	VHLP2-11
Gain(dBi) / Beamwidth(°) / Tilt(°) 34.4 / 3.40 / 3.37	34.4 / 3.40 / -3.40
Centerline (m / ft - AGL) 24.38 / 80.0	116.43 / 382.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM016	TEM016
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 11HD40HFC277V02	11HD40HFC277V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 36M7D7W 256 QAM	36M7D7W 256 QAM
Loading 1 CH DIG 277000.000	1 CH DIG 277000.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -44.1	-44.1
EIRP (dBm) 49.9	49.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.4	

Transmit Frequencies (MHz)	11265.0000H(2)	11385.0000H(5)	10775.0000H(2)	10895.0000H(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0299A CA
City/County San Bruno/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0554E CA

/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °38' 15.2~ N	37 °41' 14.5~ N
Longitude (NAD 83)	122 °24' 42.3~ W	122 °26' 5.4~ W
Ground Elevation (m/ft-AMSL)	6.30 / 20.7	380.10 / 1247.0
Antenna Structure Registration #		1205149
Path Azimuth (°)	339.781	159.767
Path Length (km / miles)	5.891 / 3.661	

Transmit Antenna

77001A	77001A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-11	VHLP2-11
Gain(dBi) / Beamwidth(°) / Tilt(°) 34.4 / 3.40 / 3.70	34.4 / 3.40 / -3.74
Centerline (m / ft - AGL) 27.74 / 91.0	36.58 / 120.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM016	TEM016
DRAGONWAVE INC	DRAGONWAVE INC
11HD40HFC277V02	11HD40HFC277V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 36M7D7W 256 QAM	36M7D7W 256 QAM
Loading 1 CH DIG 277000.000	1 CH DIG 277000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -46.2	-46.2
EIRP (dBm) 49.1	49.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.8	0.0 / 0.8
Free Space Loss (dB) 128.9	

Transmit Frequencies (MHz)

10735.0000H(1)	10935.0000H(6)	11225.0000H(1)	11425.0000H(6)
11015.0000V(8)	11095.0000V(10)	11505.0000V(8)	11585.0000V(10)

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0460C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0215D CA

/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °15' 11.0~ N	37 °17' 7.0~ N
Longitude (NAD 83)	121 °54' 30.2~ W	121 °51' 28.0~ W
Ground Elevation (m/ft-AMSL)	62.30 / 204.4	131.00 / 429.8
Antenna Structure Registration #		1017275
Path Azimuth (°)	51.443	231.473
Path Length (km / miles)		5.739 / 3.566

Transmit Antenna

77041A	77041A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2.5-11	VHLP2.5-11
Gain(dBi) / Beamwidth(°) / Tilt(°) 37.5 / 2.10 / 0.73	37.5 / 2.10 / -0.77
Centerline (m / ft - AGL) 11.58 / 38.0	18.29 / 60.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM016	TEM016
DRAGONWAVE INC	DRAGONWAVE INC
11HD40HFC277V02	11HD40HFC277V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 36M7D7W 256 QAM	36M7D7W 256 QAM
Loading 1 CH DIG 277000.000	1 CH DIG 277000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -38.1	-38.1
EIRP (dBm) 53.0	53.0
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.6	

Transmit Frequencies (MHz)	10815.0000V(3)	10935.0000V(6)	11305.0000V(3)	11425.0000V(6)
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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147

(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0469A CA
 City/County San Jose/Santa Clara
 Status / License Basis Engineering Proposal / PRIMARY OPERATION
 Call Sign
 Licensee Code CLESP3
 Licensee Name Clearwire Spectrum Holdings III, LL
 Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0215D CA

/Santa Clara
 Engineering Proposal / PRIMARY OPERATION
 CLESP3
 Clearwire Spectrum Holdings III, LL
 FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °13' 11.6~ N	37 °17' 7.0~ N
Longitude (NAD 83)	121 °52' 45.5~ W	121 °51' 28.0~ W
Ground Elevation (m/ft-AMSL)	77.00 / 252.6	131.00 / 429.8
Antenna Structure Registration #		1017275
Path Azimuth (°)	14.738	194.751
Path Length (km / miles)		7.504 / 4.663

Transmit Antenna

71692A	77001A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP4-11A	VHLP2-11
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.50 / 0.43	34.4 / 3.40 / -0.48
Centerline (m / ft - AGL) 12.19 / 40.0	18.29 / 60.0

Receive Antenna

Same As Transmit

Manufacturer
 Model
 Gain (dBi) / Beamwidth (°)
 Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
 Model
 Gain (dBi) / Beamwidth (°)
 Centerline (m / ft - AGL)

Radio Information

TEM028	TEM028
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 11HD40HFC212V02	11HD40HFC212V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 34M4D7W 128 QAM	34M4D7W 128 QAM
Loading 1 CH DIG 212000.000	1 CH DIG 212000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -40.7	-40.7
EIRP (dBm) 55.9	49.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 131.0	

Transmit Frequencies (MHz)	10735.0000V(1)	10855.0000V(4)	11225.0000V(1)	11345.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0554E CA
City/County /San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0291B CA

Pacifica/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 41' 14.5~ N	37 ° 39' 7.8~ N
Longitude (NAD 83)	122 ° 26' 5.4~ W	122 ° 28' 21.8~ W
Ground Elevation (m/ft-AMSL)	380.10 / 1247.0	222.30 / 729.3
Antenna Structure Registration #	1205149	
Path Azimuth (°)	220.567	40.543
Path Length (km / miles)	5.141 / 3.195	

Transmit Antenna

77041A
Manufacturer ANDREW CORPORATION
Model VHLP2.5-11
Gain(dBi) / Beamwidth(°) / Tilt(°) 37.5 / 2.10 / -2.08
Centerline (m / ft - AGL) 36.58 / 120.0

77001A
ANDREW CORPORATION
VHLP2-11
34.4 / 3.40 / 2.05
9.14 / 30.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM016
Manufacturer DRAGONWAVE INC
Model 11HD40HFC277V02
Model Description HORIZON DUO
Emission Designator / Modulation 36M7D7W 256 QAM
Loading 1 CH DIG 277000.000
Stability (%) 0.001
Nominal Coordinated Maximum
Power (dBm) 15.5
Received Level (dBm) -44.1
EIRP (dBm) 51.1
Fixed Loss: Tx / Common (dB) 0.0 / 1.9
Free Space Loss (dB) 127.7

TEM016
DRAGONWAVE INC
11HD40HFC277V02
HORIZON DUO
36M7D7W 256 QAM
1 CH DIG 277000.000
0.001
Nominal Coordinated Maximum
15.5
-44.1
48.0
0.0 / 1.9

Transmit Frequencies (MHz)	11465.0000V(7)	11545.0000V(9)	10975.0000V(7)	11055.0000V(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0099A CA
City/County Cupertino/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0032C CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
WQKU523
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 11.8~ N	37 °23' 13.1~ N
Longitude (NAD 83)	122 °0' 23.7~ W	121 °58' 0.9~ W
Ground Elevation (m/ft-AMSL)	45.70 / 149.9	7.01 / 23.0
Antenna Structure Registration #		
Path Azimuth (°)	32.146	212.170
Path Length (km / miles)	6.602 / 4.102	

Transmit Antenna

77001A	77001A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-11	VHLP2-11
Gain(dBi) / Beamwidth(°) / Tilt(°) 34.4 / 3.40 / -0.02	34.4 / 3.40 / -0.02
Centerline (m / ft - AGL) 18.29 / 60.0	56.69 / 186.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ01	TEMQ01
DRAGONWAVE INC	DRAGONWAVE INC
11HD30HFC107V02	11HD30HFC107V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 27M1D7W 32 QAM	27M1D7W 32 QAM
Loading 1 CH DIG 107000.000	1 CH DIG 107000.000
Stability (%) 0.0001	0.0001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 19.0	19.0
Received Level (dBm) -42.0	-42.0
EIRP (dBm) 53.4	53.4
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.8	

Transmit Frequencies (MHz)	11225.0000V(1)	11305.0000V(3)	10735.0000V(1)	10815.0000V(3)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0276A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0230B CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 49.6~ N	37 °22' 42.5~ N
Longitude (NAD 83)	121 °53' 18.4~ W	121 °49' 48.1~ W
Ground Elevation (m/ft-AMSL)	29.70 / 97.4	62.40 / 204.7
Antenna Structure Registration #		
Path Azimuth (°)	44.138	224.174
Path Length (km / miles)	7.430 / 4.617	

Transmit Antenna

77001A	77001A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-11	VHLP2-11
Gain(dBi) / Beamwidth(°) / Tilt(°) 34.4 / 3.40 / -0.42	34.4 / 3.40 / 0.37
Centerline (m / ft - AGL) 91.44 / 300.0	7.01 / 23.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM098	TEM098
DRAGONWAVE INC	DRAGONWAVE INC
11HD40HFC142V02	11HD40HFC142V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 36M2D7W 32 QAM	36M2D7W 32 QAM
Loading 1 CH DIG 142000.000	1 CH DIG 142000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 19.0	19.0
Received Level (dBm) -43.1	-43.1
EIRP (dBm) 53.4	53.4
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.9	

Transmit Frequencies (MHz)	11265.0000H(2)	11385.0000H(5)	10775.0000H(2)	10895.0000H(5)
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Microwave Path Data Sheet

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COMSEARCH19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0292A CA
City/County Palo Alto/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0131A CA

Los Altos Hills/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 7.5~ N	37 °22' 56.9~ N
Longitude (NAD 83)	122 °8' 49.9~ W	122 °8' 45.9~ W
Ground Elevation (m/ft-AMSL)	853.60 / 2800.5	149.00 / 488.8
Antenna Structure Registration #		
Path Azimuth (°)	0.797	180.798
Path Length (km / miles)	7.073 / 4.395	

Transmit Antenna

Manufacturer	77041A	77041A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2.5-11	VHLP2.5-11
Centerline (m / ft - AGL)	37.5 / 2.10 / -5.78	37.5 / 2.10 / 5.73
	13.72 / 45.0	5.49 / 18.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO16	TEMO16
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	11HD40HFC277V02	11HD40HFC277V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	36M7D7W 256 QAM	36M7D7W 256 QAM
Stability (%)	1 CH DIG 277000.000	1 CH DIG 277000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	15.5	15.5
Received Level (dBm)	-39.9	-39.9
EIRP (dBm)	53.0	53.0
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		130.4

Transmit Frequencies (MHz)	10735.0000V(1)	10815.0000V(3)	11225.0000V(1)	11305.0000V(3)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0006A CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0140A CA

City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 48' 31.5~ N	37 ° 48' 30.2~ N
Longitude (NAD 83)	122 ° 15' 50.2~ W	122 ° 13' 7.7~ W
Ground Elevation (m/ft-AMSL)	4.20 / 13.8	94.30 / 309.4
Antenna Structure Registration #		
Path Azimuth (°)	90.564	270.592
Path Length (km / miles)	3.975 / 2.470	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / 0.09	38.6 / 2.00 / -0.12
	91.44 / 300.0	8.84 / 29.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMU74	TEMU74
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HA50HFC322V01	18HA50HFC322V01
Emission Designator / Modulation	Horizon Duo-Adj Channel	Horizon Duo-Adj Channel
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	14.0	14.0
Received Level (dBm)	-38.7	-38.7
EIRP (dBm)	52.6	52.6
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		129.9

Transmit Frequencies (MHz)	17815.0000V(2)	17865.0000V(3)	19375.0000V(2)	19425.0000V(3)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0008A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0215A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 46' 37.9~ N	37 ° 45' 36.8~ N
Longitude (NAD 83)	122 ° 25' 3.6~ W	122 ° 23' 16.7~ W
Ground Elevation (m/ft-AMSL)	17.90 / 58.7	9.70 / 31.8
Antenna Structure Registration #		
Path Azimuth (°)	125.745	305.764
Path Length (km / miles)	3.224 / 2.003	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -1.70	38.6 / 2.00 / 1.68
	107.37 / 352.3	20.42 / 67.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMR29	TEMR29
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC364V02	18HD50HFC364V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	12.6	12.6
Received Level (dBm)	-38.3	-38.3
EIRP (dBm)	51.2	51.2
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)	128.1	

Transmit Frequencies (MHz)	18015.0000V(6)	18115.0000V(8)	19575.0000V(6)	19675.0000V(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0043A CA
City/County Concord/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0046E CA

Pleasant Hill/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °58' 17.3~ N	37 °57' 40.0~ N
Longitude (NAD 83)	122 °3' 13.9~ W	122 °4' 26.8~ W
Ground Elevation (m/ft-AMSL)	9.70 / 31.8	26.50 / 86.9
Antenna Structure Registration #		
Path Azimuth (°)	237.132	57.119
Path Length (km / miles)	2.119 / 1.317	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -0.09	38.6 / 2.00 / 0.07
	36.58 / 120.0	16.76 / 55.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO17	TEMO17
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50SFC371V02	18HD50SFC371V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	49M2D7W 256 QAM	49M2D7W 256 QAM
Stability (%)	1 CH DIG 371000.000	1 CH DIG 371000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	5.5	5.5
Received Level (dBm)	-41.7	-41.7
EIRP (dBm)	44.1	44.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		124.4

Transmit Frequencies (MHz)	17965.0000H(5)	18065.0000H(7)	19525.0000H(5)	19625.0000H(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0043A CA
City/County Concord/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0064B CA

Pleasant Hill/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °58' 17.3~ N	37 °56' 13.9~ N
Longitude (NAD 83)	122 °3' 13.9~ W	122 °5' 13.6~ W
Ground Elevation (m/ft-AMSL)	9.70 / 31.8	69.20 / 227.0
Antenna Structure Registration #		
Path Azimuth (°)	217.537	37.516
Path Length (km / miles)	4.797 / 2.981	

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / 0.44	38.7 / 2.10 / -0.47
Centerline (m / ft - AGL) 36.58 / 120.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM032	TEM032
DRAGONWAVE INC	DRAGONWAVE INC
18HD50HFC271V02	18HD50HFC271V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M8D7W 128 QAM	47M8D7W 128 QAM
Loading 1 CH DIG 271000.000	1 CH DIG 271000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 17.0	17.0
Received Level (dBm) -37.1	-37.1
EIRP (dBm) 55.7	55.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 131.5	

Transmit Frequencies (MHz)	18015.0000V(6)	18115.0000V(8)	19575.0000V(6)	19675.0000V(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0086A CA
City/County Berkeley/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0093D CA

City/County Berkeley/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °53' 28.3~ N	37 °52' 52.4~ N
Longitude (NAD 83)	122 °16' 51.6~ W	122 °18' 25.5~ W
Ground Elevation (m/ft-AMSL)	56.20 / 184.4	3.80 / 12.5
Antenna Structure Registration #		
Path Azimuth (°)	244.255	64.239
Path Length (km / miles)	2.548 / 1.583	

Transmit Antenna

87012A	87012A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / -1.10	38.7 / 2.10 / 1.08
Centerline (m / ft - AGL) 11.89 / 39.0	15.85 / 52.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM085	TEM085
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 18HD50HFC322V02	18HD50HFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -36.9	-36.9
EIRP (dBm) 52.3	52.3
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 126.0	

Transmit Frequencies (MHz)	17815.0000V(2)	17915.0000V(4)	19375.0000V(2)	19475.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0110A CA
City/County Berkeley/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0093D CA

City/County Berkeley/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °51' 11.2~ N	37 °52' 52.4~ N
Longitude (NAD 83)	122 °17' 20.4~ W	122 °18' 25.5~ W
Ground Elevation (m/ft-AMSL)	12.80 / 42.0	3.80 / 12.5
Antenna Structure Registration #		
Path Azimuth (°)	332.986	152.975
Path Length (km / miles)	3.502 / 2.176	

Transmit Antenna

87012A	87059A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-18	VHLP2.5-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / -0.46	41.0 / 1.50 / 0.44
Centerline (m / ft - AGL) 34.44 / 113.0	15.85 / 52.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM032	TEM032
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 18HD50HFC271V02	18HD50HFC271V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M8D7W 128 QAM	47M8D7W 128 QAM
Loading 1 CH DIG 271000.000	1 CH DIG 271000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -37.4	-37.4
EIRP (dBm) 52.3	54.6
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 128.8	

Transmit Frequencies (MHz)	17965.0000H(5)	18065.0000H(7)	19525.0000H(5)	19625.0000H(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0138C CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0141A CA

City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 48' 41.9~ N	37 ° 48' 24.8~ N
Longitude (NAD 83)	122 ° 15' 54.1~ W	122 ° 18' 22.3~ W
Ground Elevation (m/ft-AMSL)	8.00 / 26.2	3.40 / 11.2
Antenna Structure Registration #		1201091
Path Azimuth (°)	261.738	81.713
Path Length (km / miles)		3.663 / 2.276

Transmit Antenna

Manufacturer	87012A	87012A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2-18	VHLP2-18
Centerline (m / ft - AGL)	38.7 / 2.10 / -0.23	38.7 / 2.10 / 0.20
	39.62 / 130.0	30.48 / 100.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO85	TEMO85
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC322V02	18HD50HFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	17.5	17.5
Received Level (dBm)	-34.3	-34.3
EIRP (dBm)	56.2	56.2
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		129.2

Transmit Frequencies (MHz)	17965.0000H(5)	18065.0000H(7)	19525.0000H(5)	19625.0000H(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0148B CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0137D CA

City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 48' 2.0~ N	37 ° 48' 41.4~ N
Longitude (NAD 83)	122 ° 16' 22.0~ W	122 ° 11' 51.0~ W
Ground Elevation (m/ft-AMSL)	12.00 / 39.4	212.40 / 696.9
Antenna Structure Registration #		
Path Azimuth (°)	79.593	259.639
Path Length (km / miles)	6.740 / 4.188	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / 1.41	38.6 / 2.00 / -1.45
	47.24 / 155.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO90	TEMO90
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC215V02	18HD50HFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	18.5	18.5
Received Level (dBm)	-38.8	-38.8
EIRP (dBm)	57.1	57.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		134.5

Transmit Frequencies (MHz)	17965.0000V(5)	18115.0000V(8)	19525.0000V(5)	19675.0000V(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0182A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0216A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 46' 53.8~ N	37 ° 45' 33.5~ N
Longitude (NAD 83)	122 ° 30' 18.0~ W	122 ° 28' 38.4~ W
Ground Elevation (m/ft-AMSL)	101.80 / 334.0	89.80 / 294.6
Antenna Structure Registration #		
Path Azimuth (°)	135.436	315.453
Path Length (km / miles)	3.474 / 2.159	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -0.27	38.6 / 2.00 / 0.25
	19.20 / 63.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMR29	TEMR29
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC364V02	18HD50HFC364V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	13.2	13.2
Received Level (dBm)	-38.3	-38.3
EIRP (dBm)	51.8	51.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		128.7

Transmit Frequencies (MHz)	19375.0000H(2)	19475.0000H(4)	17815.0000H(2)	17915.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0182A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0236A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 46' 53.8~ N	37 ° 44' 29.6~ N
Longitude (NAD 83)	122 ° 30' 18.0~ W	122 ° 30' 15.6~ W
Ground Elevation (m/ft-AMSL)	101.80 / 334.0	14.80 / 48.6
Antenna Structure Registration #		
Path Azimuth (°)	179.243	359.243
Path Length (km / miles)	4.446 / 2.763	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -1.25	38.6 / 2.00 / 1.22
	19.20 / 63.0	10.06 / 33.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO32	TEMO32
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC271V02	18HD50HFC271V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M8D7W 128 QAM	47M8D7W 128 QAM
Stability (%)	1 CH DIG 271000.000	1 CH DIG 271000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	17.0	17.0
Received Level (dBm)	-36.7	-36.7
EIRP (dBm)	55.6	55.6
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		130.9

Transmit Frequencies (MHz)	19575.0000H(6)	19675.0000H(8)	18015.0000H(6)	18115.0000H(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0203B CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0594A CA

City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 47' 4.1~ N	37 ° 47' 4.6~ N
Longitude (NAD 83)	122 ° 13' 19.6~ W	122 ° 14' 27.2~ W
Ground Elevation (m/ft-AMSL)	26.20 / 86.0	3.90 / 12.8
Antenna Structure Registration #		
Path Azimuth (°)	270.540	90.528
Path Length (km / miles)	1.654 / 1.028	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -1.09	38.6 / 2.00 / 1.08
	22.86 / 75.0	13.72 / 45.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO17	TEMO17
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50SFC371V02	18HD50SFC371V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	49M2D7W 256 QAM	49M2D7W 256 QAM
Stability (%)	1 CH DIG 371000.000	1 CH DIG 371000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	5.5	5.5
Received Level (dBm)	-39.6	-39.6
EIRP (dBm)	44.1	44.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		122.3

Transmit Frequencies (MHz)	19375.0000V(2)	19475.0000V(4)	17815.0000V(2)	17915.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0243A CA
City/County San Leandro/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0263A CA

San Leandro/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 43' 55.3~ N	37 ° 42' 12.3~ N
Longitude (NAD 83)	122 ° 8' 23.4~ W	122 ° 8' 26.6~ W
Ground Elevation (m/ft-AMSL)	28.40 / 93.2	12.80 / 42.0
Antenna Structure Registration #		
Path Azimuth (°)	181.414	1.413
Path Length (km / miles)	3.177 / 1.974	

Transmit Antenna

RB1160	RB1160
RADIO WAVES, INC	RADIO WAVES, INC
HP2-18	HP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.6 / 2.00 / -0.11	38.6 / 2.00 / 0.09
Centerline (m / ft - AGL) 13.72 / 45.0	23.77 / 78.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM085	TEM085
DRAGONWAVE INC	DRAGONWAVE INC
18HD50HFC322V02	18HD50HFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -35.2	-35.2
EIRP (dBm) 54.1	54.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 127.9	

Transmit Frequencies (MHz)	17815.0000V(2)	17915.0000V(4)	19375.0000V(2)	19475.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0281A CA
City/County San Lorenzo/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0585A CA

Castro Valley/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 40' 9.9~ N	37 ° 41' 35.0~ N
Longitude (NAD 83)	122 ° 7' 36.5~ W	122 ° 5' 38.1~ W
Ground Elevation (m/ft-AMSL)	8.60 / 28.2	71.60 / 234.9
Antenna Structure Registration #	1256809	1203986
Path Azimuth (°)	47.865	227.885
Path Length (km / miles)	3.912 / 2.431	

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
38.7 / 2.10 / 0.89	38.7 / 2.10 / -0.91
18.29 / 60.0	16.76 / 55.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM085	TEM085
DRAGONWAVE INC	DRAGONWAVE INC
18HD50HFC322V02	18HD50HFC322V02
HORIZON DUO	HORIZON DUO
45M8D7W 256 QAM	45M8D7W 256 QAM
1 CH DIG 322000.000	1 CH DIG 322000.000
0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
12.0	12.0
-40.4	-40.4
50.7	50.7
0.0 / 0.0	0.0 / 0.0
129.8	

Transmit Frequencies (MHz)

19525.0000V(5)	19625.0000V(7)	17965.0000V(5)	18065.0000V(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0283D CA
City/County South San Francisco/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0298E CA

San Bruno/San Mateo
Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °39' 35.4~ N	37 °38' 20.2~ N
Longitude (NAD 83)	122 °26' 22.2~ W	122 °27' 21.0~ W
Ground Elevation (m/ft-AMSL)	17.50 / 57.4	131.50 / 431.4
Antenna Structure Registration #		
Path Azimuth (°)	211.875	31.865
Path Length (km / miles)	2.730 / 1.696	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft – AGL)	38.6 / 2.00 / 2.64	38.6 / 2.00 / -2.66
	24.38 / 80.0	36.58 / 120.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft – AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft – AGL)

Radio Information

Manufacturer	TEMR29	TEMR29
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC364V02	18HD50HFC364V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	13.0	13.0
Received Level (dBm)	-38.3	-38.3
EIRP (dBm)	51.6	49.7
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB)		126.6

Transmit Frequencies (MHz)	17815.0000V(2)	17915.0000V(4)	19375.0000V(2)	19475.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0302C CA
City/County Hayward/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0004D CA

City/County Hayward/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °37' 18.8~ N	37 °39' 19.3~ N
Longitude (NAD 83)	122 °3' 19.4~ W	122 °3' 25.5~ W
Ground Elevation (m/ft-AMSL)	3.70 / 12.1	153.60 / 503.9
Antenna Structure Registration #		
Path Azimuth (°)	357.695	177.694
Path Length (km / miles)	3.718 / 2.310	

Transmit Antenna

87012A	87012A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / 3.01	38.7 / 2.10 / -3.04
Centerline (m / ft - AGL) 11.58 / 38.0	58.22 / 191.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMU74	TEMU74
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 18HA50HFC322V01	18HA50HFC322V01
Model Description Horizon Duo-Adj Channel	Horizon Duo-Adj Channel
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -36.4	-36.4
EIRP (dBm) 54.2	54.2
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.3	

Transmit Frequencies (MHz)	17765.0000V(1)	17815.0000V(2)	19325.0000V(1)	19375.0000V(2)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0326C CA
City/County Burlingame/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0330E CA

Millbrae/San Mateo
Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °35' 37.9~ N	37 °34' 54.6~ N
Longitude (NAD 83)	122 °21' 54.9~ W	122 °24' 12.3~ W
Ground Elevation (m/ft-AMSL)	2.40 / 7.9	182.90 / 600.1
Antenna Structure Registration #		
Path Azimuth (°)	248.407	68.384
Path Length (km / miles)	3.626 / 2.253	

Transmit Antenna

87059A	87059A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2.5-18	VHLP2.5-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 41.0 / 1.50 / 2.34	41.0 / 1.50 / -2.36
Centerline (m / ft - AGL) 46.94 / 154.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM085	TEM085
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 18HD50HFC322V02	18HD50HFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -35.4	-35.4
EIRP (dBm) 54.6	54.6
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 129.1	

Transmit Frequencies (MHz)	17815.0000V(2)	17915.0000V(4)	19375.0000V(2)	19475.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0341A CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0004D CA

Hayward/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °34' 2.4~ N	37 °39' 19.3~ N
Longitude (NAD 83)	122 °3' 8.3~ W	122 °3' 25.5~ W
Ground Elevation (m/ft-AMSL)	6.00 / 19.7	153.60 / 503.9
Antenna Structure Registration #		
Path Azimuth (°)	357.529	177.526
Path Length (km / miles)	9.779 / 6.077	

Transmit Antenna

Manufacturer	87059A	87059A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2.5-18	VHLP2.5-18
Centerline (m / ft - AGL)	41.0 / 1.50 / 1.10	41.0 / 1.50 / -1.17
	11.58 / 38.0	58.22 / 191.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMU70	TEMU70
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HA50HFC271V01	18HA50HFC271V01
Emission Designator / Modulation	Horizon Duo-Adj Channel	Horizon Duo-Adj Channel
Loading	47M8D7W 128 QAM	47M8D7W 128 QAM
Stability (%)	1 CH DIG 271000.000	1 CH DIG 271000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	15.5	15.5
Received Level (dBm)	-40.2	-40.2
EIRP (dBm)	56.5	56.5
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)	137.7	

Transmit Frequencies (MHz)	17865.0000H(3)	17915.0000H(4)	19425.0000H(3)	19475.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information	CA-SFO0349B CA	CA-SFO0004D CA
City/County	Fremont/Alameda	Hayward/Alameda
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign		
Licensee Code	CLESP3	CLESP3
Licensee Name	Clearwire Spectrum Holdings III, LL	Clearwire Spectrum Holdings III, LL
Radio Service / Station Class	MG -- Microwave Industrial/Business Pool	FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 40.0~ N	37 °39' 19.3~ N
Longitude (NAD 83)	122 °0' 50.4~ W	122 °3' 25.5~ W
Ground Elevation (m/ft-AMSL)	16.10 / 52.8	153.60 / 503.9
Antenna Structure Registration #		
Path Azimuth (°)	340.029	160.002
Path Length (km / miles)	11.131 / 6.916	

Transmit Antenna

Manufacturer	87059A	87059A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2.5-18	VHLP2.5-18
Centerline (m / ft - AGL)	41.0 / 1.50 / 0.91	41.0 / 1.50 / -0.99
	11.28 / 37.0	58.22 / 191.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ59	TEMQ59
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC171V02	18HD50HFC171V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 32 QAM	45M8D7W 32 QAM
Stability (%)	1 CH DIG 171000.000	1 CH DIG 171000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	20.0	20.0
Received Level (dBm)	-36.8	-36.8
EIRP (dBm)	61.0	61.0
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		138.8

Transmit Frequencies (MHz) 17965.0000H(5) 18065.0000H(7) 19525.0000H(5) 19625.0000H(7)

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information	CA-SFO0360C CA	CA-SFO0365A CA
City/County	Newark/Alameda	Newark/Alameda
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign		
Licensee Code	CLESP3	CLESP3
Licensee Name	Clearwire Spectrum Holdings III, LL	Clearwire Spectrum Holdings III, LL
Radio Service / Station Class	MG -- Microwave Industrial/Business Pool	FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 0.9~ N	37 °32' 12.1~ N
Longitude (NAD 83)	122 °3' 8.6~ W	122 °0' 55.1~ W
Ground Elevation (m/ft-AMSL)	5.40 / 17.7	11.50 / 37.7
Antenna Structure Registration #		
Path Azimuth (°)	114.648	294.670
Path Length (km / miles)	3.606 / 2.241	

Transmit Antenna

Manufacturer	87012A	87012A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2-18	VHLP2-18
Centerline (m / ft - AGL)	38.7 / 2.10 / 0.22	38.7 / 2.10 / -0.25
	19.39 / 63.6	28.04 / 92.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMR29	TEMR29
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC364V02	18HD50HFC364V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	13.0	13.0
Received Level (dBm)	-38.6	-38.6
EIRP (dBm)	51.7	51.7
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		129.0

Transmit Frequencies (MHz) 17965.0000V(5) 18065.0000V(7) 19525.0000V(5) 19625.0000V(7)

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0417C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0419C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 20.7~ N	37 °22' 39.9~ N
Longitude (NAD 83)	121 °52' 7.0~ W	121 °52' 52.1~ W
Ground Elevation (m/ft-AMSL)	37.20 / 122.0	23.30 / 76.4
Antenna Structure Registration #		
Path Azimuth (°)	221.418	41.411
Path Length (km / miles)	1.677 / 1.042	

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
38.7 / 2.10 / -1.09	38.7 / 2.10 / 1.08
35.66 / 117.0	17.86 / 58.6

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMR29	TEMR29
DRAGONWAVE INC	DRAGONWAVE INC
18HD50HFC364V02	18HD50HFC364V02
HORIZON DUO	HORIZON DUO
47M1D7W 256 QAM	47M1D7W 256 QAM
1 CH DIG 364000.000	1 CH DIG 364000.000
0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
13.0	13.0
-35.8	-35.8
49.8	49.8
0.0 / 1.9	0.0 / 1.9
122.4	

Transmit Frequencies (MHz)

17965.0000V(5)	18065.0000V(7)	19525.0000V(5)	19625.0000V(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0417C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0220A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 20.7~ N	37 °24' 5.0~ N
Longitude (NAD 83)	121 °52' 7.0~ W	121 °50' 59.8~ W
Ground Elevation (m/ft-AMSL)	37.20 / 122.0	56.70 / 186.0
Antenna Structure Registration #		
Path Azimuth (°)	50.429	230.440
Path Length (km / miles)	2.144 / 1.332	

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
38.7 / 2.10 / -0.03	38.7 / 2.10 / 0.02
35.66 / 117.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ58	TEMQ58
DRAGONWAVE INC	DRAGONWAVE INC
18HD50SFC215V02	18HD50SFC215V02
HORIZON DUO	HORIZON DUO
45M8D7W 64 QAM	45M8D7W 64 QAM
1 CH DIG 215000.000	1 CH DIG 215000.000
0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
8.5	8.5
-42.4	-42.4
45.3	45.3
0.0 / 1.9	0.0 / 1.9
124.5	

Transmit Frequencies (MHz)	17815.0000V(2)	17915.0000V(4)	19375.0000V(2)	19475.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0453D CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0233D CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °16' 34.2~ N	37 °18' 38.2~ N
Longitude (NAD 83)	121 °49' 34.5~ W	121 °48' 38.3~ W
Ground Elevation (m/ft-AMSL)	87.90 / 288.4	46.40 / 152.2
Antenna Structure Registration #		
Path Azimuth (°)	19.901	199.910
Path Length (km / miles)	4.066 / 2.526	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -0.62	38.6 / 2.00 / 0.59
	14.33 / 47.0	12.80 / 42.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ58	TEMQ58
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50SFC215V02	18HD50SFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	8.5	8.5
Received Level (dBm)	-44.4	-44.4
EIRP (dBm)	47.1	47.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		130.1

Transmit Frequencies (MHz)	17815.0000H(2)	17915.0000H(4)	19375.0000H(2)	19475.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0456C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0443D CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °15' 9.6~ N	37 °17' 13.8~ N
Longitude (NAD 83)	121 °53' 48.3~ W	121 °52' 28.3~ W
Ground Elevation (m/ft-AMSL)	63.40 / 208.0	66.00 / 216.5
Antenna Structure Registration #		
Path Azimuth (°)	27.232	207.245
Path Length (km / miles)	4.306 / 2.676	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -0.00	38.6 / 2.00 / -0.03
	18.90 / 62.0	17.22 / 56.5

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO85	TEMO85
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC322V02	18HD50HFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	15.2	15.2
Received Level (dBm)	-38.2	-38.2
EIRP (dBm)	53.8	53.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		130.6

Transmit Frequencies (MHz)	17965.0000V(5)	18065.0000V(7)	19525.0000V(5)	19625.0000V(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0482A CA
City/County Pleasanton/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0601A CA

City/County Pleasanton/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °39' 39.3~ N	37 °38' 58.9~ N
Longitude (NAD 83)	121 °53' 2.2~ W	121 °52' 55.2~ W
Ground Elevation (m/ft-AMSL)	102.50 / 336.3	101.30 / 332.3
Antenna Structure Registration #		
Path Azimuth (°)	172.156	352.157
Path Length (km / miles)	1.257 / 0.781	

Transmit Antenna

87012A	87012A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / -0.39	38.7 / 2.10 / 0.38
Centerline (m / ft - AGL) 22.56 / 74.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM017	TEM017
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 18HD50SFC371V02	18HD50SFC371V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 3.2	3.2
Received Level (dBm) -39.3	-39.3
EIRP (dBm) 41.9	41.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 119.9	

Transmit Frequencies (MHz)

17965.0000V(5)	18015.0000V(6)	19525.0000V(5)	19575.0000V(6)
18065.0000V(7)	18115.0000V(8)	19625.0000V(7)	19675.0000V(8)

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0485D CA
City/County Dublin/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0228B CA

/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 42' 21.2~ N	37 ° 44' 56.3~ N
Longitude (NAD 83)	121 ° 53' 16.2~ W	121 ° 55' 23.3~ W
Ground Elevation (m/ft-AMSL)	106.70 / 350.1	194.90 / 639.4
Antenna Structure Registration #		
Path Azimuth (°)	326.952	146.930
Path Length (km / miles)	5.706 / 3.545	

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
38.7 / 2.10 / 0.77	38.7 / 2.10 / -0.81
19.81 / 65.0	10.06 / 33.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ59	TEMQ59
DRAGONWAVE INC	DRAGONWAVE INC
18HD50HFC171V02	18HD50HFC171V02
HORIZON DUO	HORIZON DUO
45M8D7W 32 QAM	45M8D7W 32 QAM
1 CH DIG 171000.000	1 CH DIG 171000.000
0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
20.0	20.0
-35.6	-35.6
58.7	58.7
0.0 / 0.0	0.0 / 0.0
133.0	

Transmit Frequencies (MHz)

19575.0000V(6)	19675.0000V(8)	18015.0000V(6)	18115.0000V(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0493D CA
City/County San Ramon/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0480D CA

Dublin/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 43' 28.9~ N	37 ° 43' 19.6~ N
Longitude (NAD 83)	121 ° 56' 35.8~ W	121 ° 54' 54.8~ W
Ground Elevation (m/ft-AMSL)	137.40 / 450.8	161.90 / 531.2
Antenna Structure Registration #		
Path Azimuth (°)	96.604	276.621
Path Length (km / miles)	2.490 / 1.547	

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
38.7 / 2.10 / 0.44	38.7 / 2.10 / -0.45
16.15 / 53.0	10.97 / 36.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM017	TEM017
DRAGONWAVE INC	DRAGONWAVE INC
18HD50SFC371V02	18HD50SFC371V02
HORIZON DUO	HORIZON DUO
49M2D7W 256 QAM	49M2D7W 256 QAM
1 CH DIG 371000.000	1 CH DIG 371000.000
0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
5.5	5.5
-42.9	-42.9
44.2	44.2
0.0 / 0.0	0.0 / 0.0
125.8	

Transmit Frequencies (MHz)

19375.0000V(2)	19475.0000V(4)	17815.0000V(2)	17915.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0497D CA
City/County Pleasanton/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0565A CA

/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 40' 36.3~ N	37 ° 44' 20.0~ N
Longitude (NAD 83)	121 ° 53' 49.0~ W	121 ° 59' 42.5~ W
Ground Elevation (m/ft-AMSL)	98.40 / 322.8	562.40 / 1845.1
Antenna Structure Registration #		1222544
Path Azimuth (°)	308.568	128.508
Path Length (km / miles)		11.070 / 6.878

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / 2.43	38.6 / 2.00 / -2.50
	12.19 / 40.0	24.99 / 82.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ64	TEMQ64
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC110V02	18HD50HFC110V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M2D7W 16 QAM	45M2D7W 16 QAM
Stability (%)	1 CH DIG 110000.000	1 CH DIG 110000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	20.5	20.5
Received Level (dBm)	-41.1	-41.1
EIRP (dBm)	59.1	59.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		138.8

Transmit Frequencies (MHz)	19575.0000V(6)	19675.0000V(8)	18015.0000V(6)	18115.0000V(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0499A CA
City/County Pleasanton/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0582A CA

Hayward/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 41' 18.6~ N	37 ° 39' 34.0~ N
Longitude (NAD 83)	121 ° 53' 49.2~ W	121 ° 55' 59.5~ W
Ground Elevation (m/ft-AMSL)	99.70 / 327.1	453.50 / 1487.9
Antenna Structure Registration #		1015996
Path Azimuth (°)	224.727	44.705
Path Length (km / miles)		4.538 / 2.820

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
38.7 / 2.10 / 4.66	38.7 / 2.10 / -4.69
12.80 / 42.0	30.48 / 100.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM085	TEM085
DRAGONWAVE INC	DRAGONWAVE INC
18HD50HFC322V02	18HD50HFC322V02
HORIZON DUO	HORIZON DUO
45M8D7W 256 QAM	45M8D7W 256 QAM
1 CH DIG 322000.000	1 CH DIG 322000.000
0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
15.5	15.5
-38.1	-38.1
54.2	54.2
0.0 / 0.0	0.0 / 0.0
	131.0

Transmit Frequencies (MHz)	17815.0000H(2)	17915.0000H(4)	19375.0000H(2)	19475.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0551A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0245A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 45' 19.0~ N	37 ° 43' 49.6~ N
Longitude (NAD 83)	122 ° 27' 10.0~ W	122 ° 28' 34.3~ W
Ground Elevation (m/ft-AMSL)	254.20 / 834.0	60.00 / 196.9
Antenna Structure Registration #	1001289	
Path Azimuth (°)	216.833	36.819
Path Length (km / miles)	3.443 / 2.140	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -4.85	38.6 / 2.00 / 4.83
	116.43 / 382.0	19.20 / 63.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMR29	TEMR29
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC364V02	18HD50HFC364V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	13.2	13.2
Received Level (dBm)	-38.3	-38.3
EIRP (dBm)	51.8	51.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		128.6

Transmit Frequencies (MHz)	17815.0000H(2)	17915.0000H(4)	19375.0000H(2)	19475.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0551A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0591A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 45' 19.0~ N	37 ° 46' 49.5~ N
Longitude (NAD 83)	122 ° 27' 10.0~ W	122 ° 25' 11.6~ W
Ground Elevation (m/ft-AMSL)	254.20 / 834.0	22.90 / 75.1
Antenna Structure Registration #	1001289	
Path Azimuth (°)	46.073	226.094
Path Length (km / miles)	4.023 / 2.500	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -4.68	38.6 / 2.00 / 4.66
	116.43 / 382.0	19.20 / 63.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMR29	TEMR29
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC364V02	18HD50HFC364V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	14.6	14.6
Received Level (dBm)	-38.2	-38.2
EIRP (dBm)	53.2	53.2
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		130.0

Transmit Frequencies (MHz)	17765.0000H(1)	17865.0000H(3)	19325.0000H(1)	19425.0000H(3)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information	CA-SFO0554E CA	CA-SFO0274A CA
City/County	/San Mateo	Daly City/San Mateo
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign		
Licensee Code	CLESP3	CLESP3
Licensee Name	Clearwire Spectrum Holdings III, LL	Clearwire Spectrum Holdings III, LL
Radio Service / Station Class	MG -- Microwave Industrial/Business Pool	FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 41' 14.5~ N	37 ° 41' 8.5~ N
Longitude (NAD 83)	122 ° 26' 5.4~ W	122 ° 29' 36.3~ W
Ground Elevation (m/ft-AMSL)	380.10 / 1247.0	171.00 / 561.0
Antenna Structure Registration #	1205149	
Path Azimuth (°)	267.968	87.932
Path Length (km / miles)	5.171 / 3.213	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -2.60	38.6 / 2.00 / 2.56
	36.58 / 120.0	12.80 / 42.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO32	TEMO32
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC271V02	18HD50HFC271V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M8D7W 128 QAM	47M8D7W 128 QAM
Stability (%)	1 CH DIG 271000.000	1 CH DIG 271000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	17.0	17.0
Received Level (dBm)	-38.0	-38.0
EIRP (dBm)	55.6	55.6
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		132.2

Transmit Frequencies (MHz) 17815.0000H(2) 17915.0000H(4) 19375.0000H(2) 19475.0000H(4)

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0564A CA
City/County /Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0118A CA

Danville/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °48' 57.0~ N	37 °50' 23.6~ N
Longitude (NAD 83)	122 °3' 44.7~ W	122 °0' 47.0~ W
Ground Elevation (m/ft-AMSL)	613.30 / 2012.1	156.00 / 511.8
Antenna Structure Registration #	1010559	
Path Azimuth (°)	58.418	238.448
Path Length (km / miles)	5.100 / 3.169	

Transmit Antenna

87012A	87012A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / -5.40	38.7 / 2.10 / 5.37
Centerline (m / ft - AGL) 30.48 / 100.0	7.01 / 23.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM090	TEM090
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 18HD50HFC215V02	18HD50HFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 18.5	18.5
Received Level (dBm) -40.0	-40.0
EIRP (dBm) 55.3	55.3
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 132.1	

Transmit Frequencies (MHz)	19525.0000V(5)	19625.0000V(7)	17965.0000V(5)	18065.0000V(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0565A CA
City/County /Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0171A CA

San Ramon/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 44' 20.0~ N	37 ° 47' 15.6~ N
Longitude (NAD 83)	121 ° 59' 42.5~ W	121 ° 56' 8.9~ W
Ground Elevation (m/ft-AMSL)	562.40 / 1845.1	217.10 / 712.3
Antenna Structure Registration #	1222544	
Path Azimuth (°)	43.981	224.018
Path Length (km / miles)	7.526 / 4.677	

Transmit Antenna

87012A	87012A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / -2.71	38.7 / 2.10 / 2.65
Centerline (m / ft - AGL) 30.48 / 100.0	23.47 / 77.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ59	TEMQ59
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 18HD50HFC171V02	18HD50HFC171V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 32 QAM	45M8D7W 32 QAM
Loading 1 CH DIG 171000.000	1 CH DIG 171000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 20.0	20.0
Received Level (dBm) -38.0	-38.0
EIRP (dBm) 58.7	58.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 135.4	

Transmit Frequencies (MHz)	17965.0000V(5)	18065.0000V(7)	19525.0000V(5)	19625.0000V(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0582A CA
City/County Hayward/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0474B CA

City/County Pleasanton/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °39' 34.0~ N	37 °40' 39.3~ N
Longitude (NAD 83)	121 °55' 59.5~ W	121 °51' 30.1~ W
Ground Elevation (m/ft-AMSL)	453.50 / 1487.9	109.80 / 360.2
Antenna Structure Registration #	1015996	
Path Azimuth (°)	73.019	253.065
Path Length (km / miles)	6.902 / 4.289	

Transmit Antenna

Manufacturer	87012A	87012A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2-18	VHLP2-18
Centerline (m / ft - AGL)	38.7 / 2.10 / -2.99	38.7 / 2.10 / 2.95
	30.48 / 100.0	16.15 / 53.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO90	TEMO90
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC215V02	18HD50HFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	18.5	18.5
Received Level (dBm)	-38.8	-38.8
EIRP (dBm)	57.2	57.2
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		134.7

Transmit Frequencies (MHz)	19525.0000V(5)	19625.0000V(7)	17965.0000V(5)	18065.0000V(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0582A CA
City/County Hayward/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0482A CA

City/County Pleasanton/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °39' 34.0~ N	37 °39' 39.3~ N
Longitude (NAD 83)	121 °55' 59.5~ W	121 °53' 2.2~ W
Ground Elevation (m/ft-AMSL)	453.50 / 1487.9	102.50 / 336.3
Antenna Structure Registration #	1015996	
Path Azimuth (°)	87.832	267.862
Path Length (km / miles)	4.349 / 2.702	

Transmit Antenna

Manufacturer	87012A	87012A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2-18	VHLP2-18
Centerline (m / ft - AGL)	38.7 / 2.10 / -4.73	38.7 / 2.10 / 4.70
	30.48 / 100.0	22.56 / 74.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO85	TEMO85
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC322V02	18HD50HFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	13.0	13.0
Received Level (dBm)	-40.3	-40.3
EIRP (dBm)	51.7	51.7
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		130.7

Transmit Frequencies (MHz)	19375.0000V(2)	19475.0000V(4)	17815.0000V(2)	17915.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0582A CA
City/County Hayward/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0495B CA

City/County Pleasanton/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °39' 34.0~ N	37 °40' 42.8~ N
Longitude (NAD 83)	121 °55' 59.5~ W	121 °52' 31.3~ W
Ground Elevation (m/ft-AMSL)	453.50 / 1487.9	104.80 / 343.8
Antenna Structure Registration #	1015996	
Path Azimuth (°)	67.409	247.444
Path Length (km / miles)	5.526 / 3.434	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -3.82	38.6 / 2.00 / 3.79
	30.48 / 100.0	11.58 / 38.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO32	TEMO32
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC271V02	18HD50HFC271V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M8D7W 128 QAM	47M8D7W 128 QAM
Stability (%)	1 CH DIG 271000.000	1 CH DIG 271000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	17.0	17.0
Received Level (dBm)	-38.6	-38.6
EIRP (dBm)	55.6	55.6
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)	132.8	

Transmit Frequencies (MHz)	19575.0000V(6)	19675.0000V(8)	18015.0000V(6)	18115.0000V(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0605B CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0148B CA

City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 48' 15.1~ N	37 ° 48' 2.0~ N
Longitude (NAD 83)	122 ° 13' 45.7~ W	122 ° 16' 22.0~ W
Ground Elevation (m/ft-AMSL)	64.00 / 210.0	12.00 / 39.4
Antenna Structure Registration #		
Path Azimuth (°)	263.983	83.957
Path Length (km / miles)	3.845 / 2.389	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -0.24	38.6 / 2.00 / 0.22
	10.67 / 35.0	47.24 / 155.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMR29	TEMR29
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC364V02	18HD50HFC364V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	14.0	14.0
Received Level (dBm)	-38.4	-38.4
EIRP (dBm)	52.6	52.6
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		129.6

Transmit Frequencies (MHz)	19375.0000H(2)	19475.0000H(4)	17815.0000H(2)	17915.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0031A CA
City/County Milpitas/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQKU521
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0414B CA

/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 22.1~ N	37 °25' 3.1~ N
Longitude (NAD 83)	121 °55' 8.4~ W	121 °51' 5.2~ W
Ground Elevation (m/ft-AMSL)	6.10 / 20.0	99.00 / 324.8
Antenna Structure Registration #		1270998
Path Azimuth (°)	95.574	275.615
Path Length (km / miles)		6.009 / 3.734

Transmit Antenna

87012A	87012A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / 0.56	38.7 / 2.10 / -0.60
Centerline (m / ft - AGL) 40.23 / 132.0	8.23 / 27.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM090	TEM090
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 18HD50HFC215V02	18HD50HFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 18.0	18.0
Received Level (dBm) -38.1	-38.1
EIRP (dBm) 56.7	56.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 133.5	

Transmit Frequencies (MHz)	19575.0000V(6)	19675.0000V(8)	18015.0000V(6)	18115.0000V(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0069B CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0079C CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 10.4~ N	37 °21' 10.7~ N
Longitude (NAD 83)	122 °4' 48.2~ W	122 °3' 47.0~ W
Ground Elevation (m/ft-AMSL)	47.20 / 154.9	57.30 / 188.0
Antenna Structure Registration #		
Path Azimuth (°)	140.703	320.713
Path Length (km / miles)	2.378 / 1.478	

Transmit Antenna

87012A	87012A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / 0.29	38.7 / 2.10 / -0.31
Centerline (m / ft - AGL) 28.07 / 92.1	30.48 / 100.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ58	TEMQ58
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 18HD50SFC215V02	18HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -43.3	-43.3
EIRP (dBm) 45.3	45.3
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 125.4	

Transmit Frequencies (MHz)	17965.0000V(5)	18065.0000V(7)	19525.0000V(5)	19625.0000V(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0151D CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0032C CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
WQKU523
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 42.1~ N	37 °23' 13.1~ N
Longitude (NAD 83)	121 °58' 41.3~ W	121 °58' 0.9~ W
Ground Elevation (m/ft-AMSL)	28.80 / 94.5	7.01 / 23.0
Antenna Structure Registration #		
Path Azimuth (°)	12.051	192.058
Path Length (km / miles)	4.760 / 2.958	

Transmit Antenna

87059A	87059A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2.5-18	VHLP2.5-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 41.0 / 1.50 / 0.25	41.0 / 1.50 / -0.28
Centerline (m / ft - AGL) 13.08 / 42.9	56.69 / 186.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ58	TEMQ58
DRAGONWAVE INC	DRAGONWAVE INC
18HD50SFC215V02	18HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -41.0	-41.0
EIRP (dBm) 49.5	49.5
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 131.5	

Transmit Frequencies (MHz)	19525.0000V(5)	19675.0000V(8)	17965.0000V(5)	18115.0000V(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0166D CA
City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0191D CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 18.7~ N	37 °17' 18.5~ N
Longitude (NAD 83)	121 °56' 5.8~ W	121 °53' 48.6~ W
Ground Elevation (m/ft-AMSL)	59.40 / 194.9	45.30 / 148.6
Antenna Structure Registration #	1204443	
Path Azimuth (°)	90.093	270.116
Path Length (km / miles)	3.379 / 2.100	

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / -1.12	38.7 / 2.10 / 1.10
Centerline (m / ft - AGL) 67.06 / 220.0	15.54 / 51.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ58	TEMQ58
DRAGONWAVE INC	DRAGONWAVE INC
18HD50SFC215V02	18HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -42.6	-42.6
EIRP (dBm) 47.2	47.2
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.5	

Transmit Frequencies (MHz)	17865.0000H(3)	17915.0000H(4)	19425.0000H(3)	19475.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0171C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0002A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °18' 57.4~ N	37 °20' 2.9~ N
Longitude (NAD 83)	121 °55' 52.3~ W	121 °53' 30.3~ W
Ground Elevation (m/ft-AMSL)	43.30 / 142.1	28.20 / 92.5
Antenna Structure Registration #		
Path Azimuth (°)	59.977	240.001
Path Length (km / miles)	4.037 / 2.509	

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / 0.19	38.7 / 2.10 / -0.22
Centerline (m / ft - AGL) 20.73 / 68.0	50.29 / 165.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM085	TEM085
DRAGONWAVE INC	DRAGONWAVE INC
18HD50HFC322V02	18HD50HFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -37.1	-37.1
EIRP (dBm) 54.2	54.2
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.0	

Transmit Frequencies (MHz)	19425.0000V(3)	19475.0000V(4)	17865.0000V(3)	17915.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0276A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0427B CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 49.6~ N	37 °20' 19.7~ N
Longitude (NAD 83)	121 °53' 18.4~ W	121 °50' 30.9~ W
Ground Elevation (m/ft-AMSL)	29.70 / 97.4	33.10 / 108.6
Antenna Structure Registration #		
Path Azimuth (°)	77.303	257.331
Path Length (km / miles)	4.226 / 2.626	

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / -1.03	38.7 / 2.10 / 1.00
Centerline (m / ft - AGL) 91.44 / 300.0	13.11 / 43.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ58	TEMQ58
DRAGONWAVE INC	DRAGONWAVE INC
18HD50SFC215V02	18HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -44.5	-44.5
EIRP (dBm) 47.2	47.2
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.4	

Transmit Frequencies (MHz)	19325.0000V(1)	19425.0000V(3)	17765.0000V(1)	17865.0000V(3)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0276A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0430C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 49.6~ N	37 °19' 4.1~ N
Longitude (NAD 83)	121 °53' 18.4~ W	121 °51' 0.9~ W
Ground Elevation (m/ft-AMSL)	29.70 / 97.4	38.90 / 127.6
Antenna Structure Registration #		
Path Azimuth (°)	112.495	292.519
Path Length (km / miles)	3.664 / 2.277	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -0.94	38.6 / 2.00 / 0.92
	91.44 / 300.0	22.86 / 75.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ58	TEMQ58
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50SFC215V02	18HD50SFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	8.5	8.5
Received Level (dBm)	-43.5	-43.5
EIRP (dBm)	47.1	47.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		129.2

Transmit Frequencies (MHz)	19375.0000V(2)	19475.0000V(4)	17815.0000V(2)	17915.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0276A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0188A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 49.6~ N	37 °18' 26.3~ N
Longitude (NAD 83)	121 °53' 18.4~ W	121 °54' 3.6~ W
Ground Elevation (m/ft-AMSL)	29.70 / 97.4	37.50 / 123.0
Antenna Structure Registration #		
Path Azimuth (°)	203.434	23.427
Path Length (km / miles)	2.799 / 1.739	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft – AGL)	38.6 / 2.00 / -1.36	38.6 / 2.00 / 1.34
	91.44 / 300.0	17.68 / 58.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft – AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft – AGL)

Radio Information

Manufacturer	TEMQ57	TEMQ57
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50SFC322V02	18HD50SFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	7.5	7.5
Received Level (dBm)	-42.1	-42.1
EIRP (dBm)	46.1	46.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		126.8

Transmit Frequencies (MHz)	19525.0000H(5)	19625.0000H(7)	17965.0000H(5)	18065.0000H(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0276A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0202C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 49.6~ N	37 °21' 53.1~ N
Longitude (NAD 83)	121 °53' 18.4~ W	121 °52' 18.6~ W
Ground Elevation (m/ft-AMSL)	29.70 / 97.4	25.50 / 83.7
Antenna Structure Registration #		
Path Azimuth (°)	21.130	201.140
Path Length (km / miles)	4.082 / 2.536	

Transmit Antenna

87059A	87059A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2.5-18	VHLP2.5-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 41.0 / 1.50 / -1.10	41.0 / 1.50 / 1.07
Centerline (m / ft - AGL) 91.44 / 300.0	18.29 / 60.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ57	TEMQ57
DRAGONWAVE INC	DRAGONWAVE INC
18HD50SFC322V02	18HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -39.6	-39.6
EIRP (dBm) 49.5	49.5
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.1	

Transmit Frequencies (MHz)	19375.0000H(2)	19475.0000H(4)	17815.0000H(2)	17915.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0276A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0213C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 49.6~ N	37 °21' 58.0~ N
Longitude (NAD 83)	121 °53' 18.4~ W	121 °51' 43.2~ W
Ground Elevation (m/ft-AMSL)	29.70 / 97.4	29.90 / 98.1
Antenna Structure Registration #		
Path Azimuth (°)	30.614	210.630
Path Length (km / miles)	4.600 / 2.858	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -1.01	38.6 / 2.00 / 0.98
	91.44 / 300.0	11.58 / 38.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO32	TEMO32
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC271V02	18HD50HFC271V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M8D7W 128 QAM	47M8D7W 128 QAM
Stability (%)	1 CH DIG 271000.000	1 CH DIG 271000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	15.5	15.5
Received Level (dBm)	-38.5	-38.5
EIRP (dBm)	54.1	54.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		131.2

Transmit Frequencies (MHz)	19575.0000V(6)	19675.0000V(8)	18015.0000V(6)	18115.0000V(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0283A CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0061A CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 13.0~ N	37 °21' 6.4~ N
Longitude (NAD 83)	122 °2' 23.0~ W	122 °0' 39.1~ W
Ground Elevation (m/ft-AMSL)	38.60 / 126.6	38.30 / 125.7
Antenna Structure Registration #		
Path Azimuth (°)	128.757	308.775
Path Length (km / miles)	3.279 / 2.038	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-18	HP2-18
Centerline (m / ft - AGL)	38.6 / 2.00 / -0.35	38.6 / 2.00 / 0.32
	30.48 / 100.0	11.58 / 38.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO32	TEMO32
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50HFC271V02	18HD50HFC271V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M8D7W 128 QAM	47M8D7W 128 QAM
Stability (%)	1 CH DIG 271000.000	1 CH DIG 271000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	17.0	17.0
Received Level (dBm)	-37.8	-37.8
EIRP (dBm)	53.7	53.7
Fixed Loss: Tx / Common (dB)	0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB)		128.2

Transmit Frequencies (MHz)	19375.0000H(2)	19475.0000H(4)	17815.0000H(2)	17915.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0283A CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0084A CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 13.0~ N	37 °20' 31.6~ N
Longitude (NAD 83)	122 °2' 23.0~ W	122 °1' 32.9~ W
Ground Elevation (m/ft-AMSL)	38.60 / 126.6	54.70 / 179.5
Antenna Structure Registration #		
Path Azimuth (°)	158.471	338.480
Path Length (km / miles)	3.360 / 2.088	

Transmit Antenna

87012A	87012A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18	VHLP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.7 / 2.10 / -0.05	38.7 / 2.10 / 0.03
Centerline (m / ft - AGL) 42.67 / 140.0	24.38 / 80.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM085	TEM085
DRAGONWAVE INC	DRAGONWAVE INC
18HD50HFC322V02	18HD50HFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 12.0	12.0
Received Level (dBm) -39.0	-39.0
EIRP (dBm) 50.7	50.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.4	

Transmit Frequencies (MHz)

19525.0000H(5)	19625.0000H(7)	17965.0000H(5)	18065.0000H(7)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0292A CA
City/County Palo Alto/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0289A CA

Mountain View/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 7.5~ N	37 °24' 14.4~ N
Longitude (NAD 83)	122 °8' 49.9~ W	122 °5' 53.4~ W
Ground Elevation (m/ft-AMSL)	853.60 / 2800.5	15.80 / 51.8
Antenna Structure Registration #		
Path Azimuth (°)	24.643	204.673
Path Length (km / miles)	10.411 / 6.469	

Transmit Antenna

Manufacturer	RB1160	RB1160
Model	RADIO WAVES, INC	RADIO WAVES, INC
	HP2-18	HP2-18
Gain(dBi) / Beamwidth(°) / Tilt(°)	38.6 / 2.00 / -4.64	38.6 / 2.00 / 4.57
Centerline (m / ft - AGL)	13.72 / 45.0	12.19 / 40.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ64	TEMQ64
Model	DRAGONWAVE INC	DRAGONWAVE INC
	18HD50HFC110V02	18HD50HFC110V02
Model Description	HORIZON DUO	HORIZON DUO
Emission Designator / Modulation	45M2D7W 16 QAM	45M2D7W 16 QAM
Loading	1 CH DIG 110000.000	1 CH DIG 110000.000
Stability (%)	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	20.5	20.5
Received Level (dBm)	-40.6	-40.6
EIRP (dBm)	59.1	59.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		138.3

Transmit Frequencies (MHz)	19625.0000H(7)	19675.0000H(8)	18065.0000H(7)	18115.0000H(8)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0005A CA
City/County Walnut Creek/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0089B CA

City/County Walnut Creek/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °53' 52.3~ N	37 °53' 21.3~ N
Longitude (NAD 83)	122 °3' 54.9~ W	122 °3' 21.8~ W
Ground Elevation (m/ft-AMSL)	49.20 / 161.4	48.80 / 160.1
Antenna Structure Registration #		
Path Azimuth (°)	139.761	319.767
Path Length (km / miles)		1.252 / 0.778

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.47	35.1 / 2.70 / 0.46
Centerline (m / ft - AGL) 24.38 / 80.0	14.71 / 48.3

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC371V02	23HD50SFC371V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -45.6	-45.6
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 121.3	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0043A CA
City/County Concord/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0048A CA

City/County Concord/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °58' 17.3~ N	37 °57' 45.8~ N
Longitude (NAD 83)	122 °3' 13.9~ W	122 °3' 5.3~ W
Ground Elevation (m/ft-AMSL)	9.70 / 31.8	11.30 / 37.1
Antenna Structure Registration #		1214892
Path Azimuth (°)	167.803	347.805
Path Length (km / miles)		0.994 / 0.617

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / -1.07	35.3 / 3.00 / 1.06
	36.58 / 120.0	16.46 / 54.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO20	TEMO20
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC371V02	23HD50SFC371V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	49M2D7W 256 QAM	49M2D7W 256 QAM
Stability (%)	1 CH DIG 371000.000	1 CH DIG 371000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	5.5	5.5
Received Level (dBm)	-43.2	-43.2
EIRP (dBm)	40.8	40.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		119.3

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0057A CA
City/County Pleasant Hill/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0043A CA

Concord/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °56' 49.1~ N	37 °58' 17.3~ N
Longitude (NAD 83)	122 °4' 40.9~ W	122 °3' 13.9~ W
Ground Elevation (m/ft-AMSL)	28.90 / 94.8	9.70 / 31.8
Antenna Structure Registration #		
Path Azimuth (°)	37.982	217.997
Path Length (km / miles)	3.450 / 2.144	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.10	35.1 / 2.70 / -0.12
CENTERLINE (m / ft - AGL) 10.82 / 35.5	36.58 / 120.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC215V02	23HD50HFC215V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 64 QAM	45M8D7W 64 QAM
LOADING 1 CH DIG 215000.000	1 CH DIG 215000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 18.5	18.5
Received Level (dBm) -41.4	-41.4
EIRP (dBm) 53.6	53.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.1	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0060A CA
City/County Concord/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0043A CA

City/County Concord/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °56' 41.5~ N	37 °58' 17.3~ N
Longitude (NAD 83)	122 °2' 1.9~ W	122 °3' 13.9~ W
Ground Elevation (m/ft-AMSL)	20.40 / 66.9	9.70 / 31.8
Antenna Structure Registration #		
Path Azimuth (°)	329.251	149.239
Path Length (km / miles)	3.437 / 2.136	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.21	35.1 / 2.70 / -0.23
Centerline (m / ft - AGL) 12.65 / 41.5	36.58 / 120.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC215V02	23HD50HFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 18.5	18.5
Received Level (dBm) -41.4	-41.4
EIRP (dBm) 53.6	53.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.1	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0080A CA
City/County Walnut Creek/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0005A CA

City/County Walnut Creek/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °54' 2.9~ N	37 °53' 52.3~ N
Longitude (NAD 83)	122 °2' 34.4~ W	122 °3' 54.9~ W
Ground Elevation (m/ft-AMSL)	119.60 / 392.4	49.20 / 161.4
Antenna Structure Registration #		
Path Azimuth (°)	260.572	80.558
Path Length (km / miles)	1.994 / 1.239	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -1.47	35.3 / 3.00 / 1.46
Centerline (m / ft - AGL) 4.93 / 16.2	24.38 / 80.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC322V02	23HD50HFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 11.0	11.0
Received Level (dBm) -43.7	-43.7
EIRP (dBm) 46.3	46.3
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 125.3	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information	CA-SFO0114A CA	CA-SFO0006A CA
City/County	Oakland/Alameda	Oakland/Alameda
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign		
Licensee Code	CLESP3	CLESP3
Licensee Name	Clearwire Spectrum Holdings III, LL	Clearwire Spectrum Holdings III, LL
Radio Service / Station Class	MG -- Microwave Industrial/Business Pool	FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 50' 43.4~ N	37 ° 48' 31.5~ N
Longitude (NAD 83)	122 ° 15' 8.5~ W	122 ° 15' 50.2~ W
Ground Elevation (m/ft-AMSL)	55.10 / 180.8	4.20 / 13.8
Antenna Structure Registration #		
Path Azimuth (°)	194.081	14.074
Path Length (km / miles)	4.193 / 2.605	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / 0.34	35.3 / 3.00 / -0.37
	14.63 / 48.0	91.44 / 300.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ49	TEMQ49
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC171V02	23HD50HFC171V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 32 QAM	45M8D7W 32 QAM
Stability (%)	1 CH DIG 171000.000	1 CH DIG 171000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	20.0	20.0
Received Level (dBm)	-41.2	-41.2
EIRP (dBm)	55.3	55.3
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		131.8

Transmit Frequencies (MHz)	23025.0000V(1)	23125.0000V(3)	21825.0000V(1)	21925.0000V(3)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0136D CA
City/County Danville/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0139B CA

Danville/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 48' 52.0~ N	37 ° 48' 34.2~ N
Longitude (NAD 83)	121 ° 58' 43.7~ W	121 ° 59' 37.3~ W
Ground Elevation (m/ft-AMSL)	135.10 / 443.2	121.00 / 397.0
Antenna Structure Registration #		
Path Azimuth (°)	247.291	67.282
Path Length (km / miles)	1.421 / 0.883	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.79	35.1 / 2.70 / 0.78
CENTERLINE (m / ft - AGL) 14.94 / 49.0	9.60 / 31.5

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEM020	TEM020
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC371V02	23HD50SFC371V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 49M2D7W 256 QAM	49M2D7W 256 QAM
LOADING 1 CH DIG 371000.000	1 CH DIG 371000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -46.7	-46.7
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 122.4	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0156A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0608A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 47' 38.4~ N	37 ° 47' 29.1~ N
Longitude (NAD 83)	122 ° 23' 45.5~ W	122 ° 24' 18.3~ W
Ground Elevation (m/ft-AMSL)	2.60 / 8.5	23.40 / 76.8
Antenna Structure Registration #		
Path Azimuth (°)	250.341	70.336
Path Length (km / miles)	0.852 / 0.530	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 4.43	35.1 / 2.70 / -4.44
CENTERLINE (m / ft - AGL) 65.96 / 216.4	111.25 / 365.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEM020	TEM020
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC371V02	23HD50SFC371V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 49M2D7W 256 QAM	49M2D7W 256 QAM
LOADING 1 CH DIG 371000.000	1 CH DIG 371000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -42.3	-42.3
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 118.0	

Transmit Frequencies (MHz)	22125.0000H(7)	22225.0000H(9)	23325.0000H(7)	23425.0000H(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147

(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0161B CA
 City/County San Francisco/San Francisco
 Status / License Basis Engineering Proposal / PRIMARY OPERATION
 Call Sign
 Licensee Code CLESP3
 Licensee Name Clearwire Spectrum Holdings III, LL
 Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0158A CA

San Francisco/San Francisco
 Engineering Proposal / PRIMARY OPERATION
 Licensee Code CLESP3
 Licensee Name Clearwire Spectrum Holdings III, LL
 Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 47' 32.4~ N	37 ° 47' 38.7~ N
Longitude (NAD 83)	122 ° 24' 2.8~ W	122 ° 24' 6.0~ W
Ground Elevation (m/ft-AMSL)	4.80 / 15.7	4.90 / 16.1
Antenna Structure Registration #		
Path Azimuth (°)	338.047	158.047
Path Length (km / miles)		0.209 / 0.130

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -9.42	35.1 / 2.70 / 9.42
Centerline (m / ft - AGL) 51.69 / 169.6	16.86 / 55.3

Receive Antenna

Same As Transmit

Manufacturer
 Model
 Gain (dBi) / Beamwidth (°)
 Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
 Model
 Gain (dBi) / Beamwidth (°)
 Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC371V02	23HD50SFC371V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) -1.6	-1.6
Received Level (dBm) -37.2	-37.2
EIRP (dBm) 33.5	33.5
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)	105.8

Transmit Frequencies (MHz)	22125.0000H(7)	22225.0000H(9)	23325.0000H(7)	23425.0000H(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0165A CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0561A CA

City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 47' 25.6~ N	37 ° 45' 8.3~ N
Longitude (NAD 83)	122 ° 10' 15.0~ W	122 ° 11' 21.6~ W
Ground Elevation (m/ft-AMSL)	272.60 / 894.4	4.10 / 13.5
Antenna Structure Registration #		
Path Azimuth (°)	201.065	21.053
Path Length (km / miles)	4.536 / 2.819	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -3.32	35.3 / 3.00 / 3.29
Centerline (m / ft - AGL) 14.33 / 47.0	20.73 / 68.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ49	TEMQ49
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC171V02	23HD50HFC171V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 32 QAM	45M8D7W 32 QAM
Loading 1 CH DIG 171000.000	1 CH DIG 171000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 20.0	20.0
Received Level (dBm) -41.9	-41.9
EIRP (dBm) 55.3	55.3
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 132.5	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0170D CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0180A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °47' 1.8~ N	37 °46' 54.7~ N
Longitude (NAD 83)	122 °23' 51.9~ W	122 °23' 29.6~ W
Ground Elevation (m/ft-AMSL)	15.10 / 49.5	8.40 / 27.6
Antenna Structure Registration #		
Path Azimuth (°)	111.857	291.861
Path Length (km / miles)	0.588 / 0.365	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.98	35.3 / 3.00 / 0.98
Centerline (m / ft - AGL) 28.68 / 94.1	25.30 / 83.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC371V02	23HD50SFC371V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -38.6	-38.6
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 114.7	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0179A CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0165A CA

City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 46' 59.6~ N	37 ° 47' 25.6~ N
Longitude (NAD 83)	122 ° 12' 11.5~ W	122 ° 10' 15.0~ W
Ground Elevation (m/ft-AMSL)	37.20 / 122.0	272.60 / 894.4
Antenna Structure Registration #		
Path Azimuth (°)	74.283	254.303
Path Length (km / miles)	2.961 / 1.840	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 4.55	35.3 / 3.00 / -4.57
Centerline (m / ft - AGL) 13.72 / 45.0	14.33 / 47.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC215V02	23HD50HFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 18.5	18.5
Received Level (dBm) -39.7	-39.7
EIRP (dBm) 53.8	53.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.8	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0183A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0556A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 46' 53.6~ N	37 ° 47' 7.4~ N
Longitude (NAD 83)	122 ° 24' 27.5~ W	122 ° 24' 39.4~ W
Ground Elevation (m/ft-AMSL)	9.60 / 31.5	20.20 / 66.3
Antenna Structure Registration #		
Path Azimuth (°)	325.614	145.612
Path Length (km / miles)	0.516 / 0.320	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 14.01	35.1 / 2.70 / -14.01
CENTERLINE (m / ft - AGL) 36.78 / 120.7	154.84 / 508.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEM020	TEM020
MANUFACTURER DRAGONWAVE INC	DRAGONWAVE INC
MODEL 23HD50SFC371V02	23HD50SFC371V02
MODEL DESCRIPTION HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 49M2D7W 256 QAM	49M2D7W 256 QAM
LOADING 1 CH DIG 371000.000	1 CH DIG 371000.000
STABILITY (%) 0.001	0.001
Power (dBm)	Nominal Coordinated Maximum
Received Level (dBm)	5.5
EIRP (dBm)	-37.9
	40.6
Fixed Loss: Tx / Common (dB)	0.0 / 0.0
Free Space Loss (dB)	113.6

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0184A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0551A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 46' 50.9~ N	37 ° 45' 19.0~ N
Longitude (NAD 83)	122 ° 28' 22.9~ W	122 ° 27' 10.0~ W
Ground Elevation (m/ft-AMSL)	51.50 / 169.0	254.20 / 834.0
Antenna Structure Registration #		1001289
Path Azimuth (°)	147.795	327.807
Path Length (km / miles)		3.348 / 2.081

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 5.19	35.1 / 2.70 / -5.21
Centerline (m / ft - AGL) 12.19 / 40.0	114.00 / 374.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC215V02	23HD50HFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 18.5	18.5
Received Level (dBm) -41.2	-41.2
EIRP (dBm) 53.6	53.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.9	

Transmit Frequencies (MHz)	21875.0000H(2)	21975.0000H(4)	23075.0000H(2)	23175.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0205A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0190A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 45' 59.4~ N	37 ° 46' 29.3~ N
Longitude (NAD 83)	122 ° 27' 12.3~ W	122 ° 27' 8.4~ W
Ground Elevation (m/ft-AMSL)	83.00 / 272.3	100.50 / 329.7
Antenna Structure Registration #		
Path Azimuth (°)	5.911	185.912
Path Length (km / miles)		0.927 / 0.576

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 1.04	35.1 / 2.70 / -1.05
CENTERLINE (m / ft - AGL) 13.72 / 45.0	13.11 / 43.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEM020	TEM020
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC371V02	23HD50SFC371V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 49M2D7W 256 QAM	49M2D7W 256 QAM
LOADING 1 CH DIG 371000.000	1 CH DIG 371000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -43.0	-43.0
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 118.7	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0205A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0551A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °45' 59.4~ N	37 °45' 19.0~ N
Longitude (NAD 83)	122 °27' 12.3~ W	122 °27' 10.0~ W
Ground Elevation (m/ft-AMSL)	83.00 / 272.3	254.20 / 834.0
Antenna Structure Registration #		1001289
Path Azimuth (°)	177.412	357.412
Path Length (km / miles)		1.247 / 0.775

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 12.16	35.1 / 2.70 / -12.17
Centerline (m / ft - AGL) 16.36 / 53.7	114.00 / 374.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMR36	TEMR36
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC364V02	23HD50HFC364V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M1D7W 256 QAM	47M1D7W 256 QAM
Loading 1 CH DIG 364000.000	1 CH DIG 364000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -39.4	-39.4
EIRP (dBm) 48.7	48.7
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 121.3	

Transmit Frequencies (MHz)	22125.0000V(7)	22225.0000V(9)	23325.0000V(7)	23425.0000V(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0210C CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0200A CA

City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 45' 26.9~ N	37 ° 46' 11.3~ N
Longitude (NAD 83)	122 ° 8' 45.5~ W	122 ° 9' 5.7~ W
Ground Elevation (m/ft-AMSL)	117.80 / 386.5	139.20 / 456.7
Antenna Structure Registration #		
Path Azimuth (°)	340.143	160.140
Path Length (km / miles)		1.455 / 0.904

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.72	35.1 / 2.70 / -0.73
Centerline (m / ft - AGL) 6.10 / 20.0	3.05 / 10.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -44.9	-44.9
EIRP (dBm) 42.6	42.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 122.6	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0210C CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0240A CA

City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 45' 26.9~ N	37 ° 44' 8.2~ N
Longitude (NAD 83)	122 ° 8' 45.5~ W	122 ° 11' 54.0~ W
Ground Elevation (m/ft-AMSL)	117.80 / 386.5	2.70 / 8.9
Antenna Structure Registration #		
Path Azimuth (°)	242.281	62.249
Path Length (km / miles)	5.214 / 3.240	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.91	35.3 / 3.00 / 0.88
Centerline (m / ft - AGL) 3.05 / 10.0	36.58 / 120.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ53	TEMQ53
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC110V02	23HD50HFC110V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M2D7W 16 QAM	45M2D7W 16 QAM
Loading 1 CH DIG 110000.000	1 CH DIG 110000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 20.5	20.5
Received Level (dBm) -42.6	-42.6
EIRP (dBm) 55.8	55.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 133.7	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0212A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0191C CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 45' 18.6~ N	37 ° 46' 36.2~ N
Longitude (NAD 83)	122 ° 25' 6.0~ W	122 ° 24' 53.3~ W
Ground Elevation (m/ft-AMSL)	21.00 / 68.9	16.70 / 54.8
Antenna Structure Registration #		
Path Azimuth (°)	7.401	187.404
Path Length (km / miles)	2.413 / 1.499	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.49	35.1 / 2.70 / 0.48
Centerline (m / ft - AGL) 40.54 / 133.0	24.38 / 80.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC322V02	23HD50HFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 17.5	17.5
Received Level (dBm) -39.3	-39.3
EIRP (dBm) 52.6	52.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 127.0	

Transmit Frequencies (MHz)	22125.0000V(7)	22225.0000V(9)	23325.0000V(7)	23425.0000V(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0212A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0207A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 45' 18.6~ N	37 ° 45' 54.9~ N
Longitude (NAD 83)	122 ° 25' 6.0~ W	122 ° 25' 11.8~ W
Ground Elevation (m/ft-AMSL)	21.00 / 68.9	9.70 / 31.8
Antenna Structure Registration #		
Path Azimuth (°)	352.771	172.770
Path Length (km / miles)	1.128 / 0.701	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.75	35.1 / 2.70 / 1.75
CENTERLINE (m / ft - AGL) 40.54 / 133.0	17.37 / 57.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMR36	TEMR36
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC364V02	23HD50HFC364V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 47M1D7W 256 QAM	47M1D7W 256 QAM
LOADING 1 CH DIG 364000.000	1 CH DIG 364000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 13.5	13.5
Received Level (dBm) -36.7	-36.7
EIRP (dBm) 48.6	48.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 120.4	

Transmit Frequencies (MHz)	21875.0000V(2)	21975.0000V(4)	23075.0000V(2)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0212A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0222A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 45' 18.6~ N	37 ° 45' 15.2~ N
Longitude (NAD 83)	122 ° 25' 6.0~ W	122 ° 24' 18.9~ W
Ground Elevation (m/ft-AMSL)	21.00 / 68.9	21.40 / 70.2
Antenna Structure Registration #		
Path Azimuth (°)	95.191	275.199
Path Length (km / miles)	1.158 / 0.719	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.09	35.1 / 2.70 / 1.08
CENTERLINE (m / ft - AGL) 40.54 / 133.0	18.29 / 60.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMR36	TEMR36
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC364V02	23HD50HFC364V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 47M1D7W 256 QAM	47M1D7W 256 QAM
LOADING 1 CH DIG 364000.000	1 CH DIG 364000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 14.1	14.1
Received Level (dBm) -36.3	-36.3
EIRP (dBm) 49.2	49.2
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 120.6	

Transmit Frequencies (MHz)	21825.0000H(1)	21925.0000H(3)	23025.0000H(1)	23125.0000H(3)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0246A CA
City/County San Leandro/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0220C CA

City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 43' 36.1~ N	37 ° 44' 49.2~ N
Longitude (NAD 83)	122 ° 11' 10.6~ W	122 ° 12' 13.9~ W
Ground Elevation (m/ft-AMSL)	5.40 / 17.7	2.30 / 7.5
Antenna Structure Registration #	1236461	
Path Azimuth (°)	325.489	145.478
Path Length (km / miles)	2.735 / 1.700	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.67	35.3 / 3.00 / -0.69
Centerline (m / ft - AGL) 14.63 / 48.0	50.29 / 165.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC322V02	23HD50HFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 17.5	17.5
Received Level (dBm) -40.0	-40.0
EIRP (dBm) 52.8	52.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.1	

Transmit Frequencies (MHz)	21825.0000H(1)	21975.0000H(4)	23025.0000H(1)	23175.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0250D CA
City/County Castro Valley/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0269A CA

City/County Castro Valley/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 43' 12.7~ N	37 ° 41' 36.8~ N
Longitude (NAD 83)	122 ° 5' 52.8~ W	122 ° 4' 24.3~ W
Ground Elevation (m/ft-AMSL)	167.60 / 549.9	52.60 / 172.6
Antenna Structure Registration #		
Path Azimuth (°)	143.744	323.759
Path Length (km / miles)	3.666 / 2.278	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -1.72	35.3 / 3.00 / 1.70
Centerline (m / ft - AGL) 4.57 / 15.0	10.06 / 33.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC215V02	23HD50HFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 18.5	18.5
Received Level (dBm) -41.5	-41.5
EIRP (dBm) 53.8	53.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.6	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0252A CA
City/County San Leandro/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0262A CA

San Leandro/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 42' 56.0~ N	37 ° 42' 23.1~ N
Longitude (NAD 83)	122 ° 10' 44.0~ W	122 ° 11' 28.1~ W
Ground Elevation (m/ft-AMSL)	6.10 / 20.0	3.30 / 10.8
Antenna Structure Registration #	1017965	1271536
Path Azimuth (°)	226.804	46.796
Path Length (km / miles)	1.482 / 0.921	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.08	35.1 / 2.70 / -0.09
Centerline (m / ft - AGL) 13.11 / 43.0	17.98 / 59.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC371V02	23HD50SFC371V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -47.1	-47.1
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 122.8	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0252A CA
City/County San Leandro/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0264A CA

City/County San Leandro/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 42' 56.0~ N	37 ° 42' 15.1~ N
Longitude (NAD 83)	122 ° 10' 44.0~ W	122 ° 9' 39.6~ W
Ground Elevation (m/ft-AMSL)	6.10 / 20.0	6.80 / 22.3
Antenna Structure Registration #	1017965	
Path Azimuth (°)	128.634	308.645
Path Length (km / miles)	2.019 / 1.255	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.16	35.3 / 3.00 / -0.17
Centerline (m / ft - AGL) 13.11 / 43.0	18.29 / 60.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMR36	TEMR36
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC364V02	23HD50HFC364V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M1D7W 256 QAM	47M1D7W 256 QAM
Loading 1 CH DIG 364000.000	1 CH DIG 364000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -39.4	-39.4
EIRP (dBm) 50.8	50.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 125.5	

Transmit Frequencies (MHz)	21875.0000H(2)	21975.0000H(4)	23075.0000H(2)	23175.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0260E CA
City/County Castro Valley/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0263A CA

San Leandro/Alameda
Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 41' 59.1~ N	37 ° 42' 12.3~ N
Longitude (NAD 83)	122 ° 5' 58.4~ W	122 ° 8' 26.6~ W
Ground Elevation (m/ft-AMSL)	134.70 / 441.9	12.80 / 42.0
Antenna Structure Registration #	1053805	
Path Azimuth (°)	276.409	96.384
Path Length (km / miles)	3.653 / 2.270	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.78	35.1 / 2.70 / 1.75
Centerline (m / ft - AGL) 13.72 / 45.0	23.16 / 76.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC215V02	23HD50HFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 18.5	18.5
Received Level (dBm) -41.9	-41.9
EIRP (dBm) 53.6	53.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.6	

Transmit Frequencies (MHz)	22175.0000H(8)	22275.0000H(10)	23375.0000H(8)	23475.0000H(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0261A CA
City/County Daly City/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0589B CA

Daly City/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 42' 24.2~ N	37 ° 42' 19.2~ N
Longitude (NAD 83)	122 ° 25' 7.4~ W	122 ° 24' 31.9~ W
Ground Elevation (m/ft-AMSL)	34.60 / 113.5	6.90 / 22.6
Antenna Structure Registration #		
Path Azimuth (°)	100.050	280.056
Path Length (km / miles)	0.883 / 0.549	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -3.57	35.1 / 2.70 / 3.57
CENTERLINE (m / ft - AGL) 39.62 / 130.0	12.19 / 40.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEM020	TEM020
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC371V02	23HD50SFC371V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 49M2D7W 256 QAM	49M2D7W 256 QAM
LOADING 1 CH DIG 371000.000	1 CH DIG 371000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -42.6	-42.6
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 118.3	

Transmit Frequencies (MHz)	21825.0000V(1)	21925.0000V(3)	23025.0000V(1)	23125.0000V(3)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0263A CA
City/County San Leandro/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0270A CA

San Leandro/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 42' 12.3~ N	37 ° 41' 34.0~ N
Longitude (NAD 83)	122 ° 8' 26.6~ W	122 ° 10' 8.0~ W
Ground Elevation (m/ft-AMSL)	12.80 / 42.0	2.10 / 6.9
Antenna Structure Registration #		1201912
Path Azimuth (°)	244.584	64.567
Path Length (km / miles)		2.750 / 1.709

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.16	35.1 / 2.70 / 0.14
CENTERLINE (m / ft - AGL) 23.16 / 76.0	26.82 / 88.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC215V02	23HD50HFC215V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 64 QAM	45M8D7W 64 QAM
LOADING 1 CH DIG 215000.000	1 CH DIG 215000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 18.5	18.5
RECEIVED LEVEL (dBm) -41.3	-41.3
EIRP (dBm) 53.6	51.7
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB)	128.1

Transmit Frequencies (MHz)	21825.0000H(1)	21975.0000H(4)	23025.0000H(1)	23175.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0263A CA
City/County San Leandro/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0271B CA

San Leandro/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 42' 12.3~ N	37 ° 41' 26.2~ N
Longitude (NAD 83)	122 ° 8' 26.6~ W	122 ° 9' 5.4~ W
Ground Elevation (m/ft-AMSL)	12.80 / 42.0	5.50 / 18.0
Antenna Structure Registration #		
Path Azimuth (°)	213.777	33.770
Path Length (km / miles)	1.710 / 1.062	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.67	35.1 / 2.70 / 0.66
CENTERLINE (m / ft - AGL) 23.16 / 76.0	10.67 / 35.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
MANUFACTURER DRAGONWAVE INC	DRAGONWAVE INC
MODEL 23HD50HFC322V02	23HD50HFC322V02
MODEL DESCRIPTION HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Power (dBm)	Nominal Coordinated Maximum
Received Level (dBm)	18.5
EIRP (dBm)	-35.3
	53.6
Fixed Loss: Tx / Common (dB)	0.0 / 0.0
Free Space Loss (dB)	124.0

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0268A CA
City/County Daly City/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0554E CA

/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 42' 2.7~ N	37 ° 41' 14.5~ N
Longitude (NAD 83)	122 ° 29' 47.1~ W	122 ° 26' 5.4~ W
Ground Elevation (m/ft-AMSL)	67.20 / 220.5	380.10 / 1247.0
Antenna Structure Registration #	1269587	1205149
Path Azimuth (°)	105.283	285.321
Path Length (km / miles)	5.631 / 3.499	

Transmit Antenna

91233R	RD1150
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 3.42	40.2 / 1.70 / -3.45
Centerline (m / ft - AGL) 11.58 / 38.0	36.58 / 120.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ53	TEMQ53
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC110V02	23HD50HFC110V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M2D7W 16 QAM	45M2D7W 16 QAM
Loading 1 CH DIG 110000.000	1 CH DIG 110000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 20.5	20.5
Received Level (dBm) -38.6	-38.6
EIRP (dBm) 55.6	60.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 134.4	

Transmit Frequencies (MHz)	23475.0000H(10)	23525.0000H(11)	22275.0000H(10)	22325.0000H(11)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0278A CA
City/County Daly City/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0282E CA

Daly City/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 40' 47.5~ N	37 ° 39' 49.3~ N
Longitude (NAD 83)	122 ° 28' 28.0~ W	122 ° 28' 3.0~ W
Ground Elevation (m/ft-AMSL)	133.40 / 437.7	114.40 / 375.3
Antenna Structure Registration #		
Path Azimuth (°)	161.146	341.150
Path Length (km / miles)	1.896 / 1.178	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.47	35.1 / 2.70 / 1.45
CENTERLINE (m / ft - AGL) 49.99 / 164.0	20.67 / 67.8

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMR36	TEMR36
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC364V02	23HD50HFC364V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 47M1D7W 256 QAM	47M1D7W 256 QAM
LOADING 1 CH DIG 364000.000	1 CH DIG 364000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -39.2	-39.2
EIRP (dBm) 50.6	50.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.9	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0280A CA
City/County Daly City/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0291B CA

City/County Pacifica/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 40' 15.9~ N	37 ° 39' 7.8~ N
Longitude (NAD 83)	122 ° 29' 21.6~ W	122 ° 28' 21.8~ W
Ground Elevation (m/ft-AMSL)	199.70 / 655.2	222.30 / 729.3
Antenna Structure Registration #		
Path Azimuth (°)	145.077	325.087
Path Length (km / miles)	2.561 / 1.591	

Transmit Antenna

Manufacturer	91233R	91233R
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HPLP1-23	HPLP1-23
Centerline (m / ft - AGL)	35.1 / 2.70 / 0.33	35.1 / 2.70 / -0.34
	16.76 / 55.0	9.14 / 30.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMR36	TEMR36
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC364V02	23HD50HFC364V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	15.5	15.5
Received Level (dBm)	-41.8	-41.8
EIRP (dBm)	50.6	50.6
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		127.5

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0283D CA
City/County South San Francisco/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0295E CA

City/County South San Francisco/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °39' 35.4~ N	37 °38' 54.8~ N
Longitude (NAD 83)	122 °26' 22.2~ W	122 °25' 28.3~ W
Ground Elevation (m/ft-AMSL)	17.50 / 57.4	10.90 / 35.8
Antenna Structure Registration #		
Path Azimuth (°)	133.449	313.458
Path Length (km / miles)	1.820 / 1.131	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.65	35.1 / 2.70 / 0.63
Centerline (m / ft - AGL) 24.38 / 80.0	10.67 / 35.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMR36	TEMR36
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC364V02	23HD50HFC364V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M1D7W 256 QAM	47M1D7W 256 QAM
Loading 1 CH DIG 364000.000	1 CH DIG 364000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -38.9	-38.9
EIRP (dBm) 50.6	50.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.6	

Transmit Frequencies (MHz)	22175.0000V(8)	22325.0000V(11)	23375.0000V(8)	23525.0000V(11)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0291B CA
City/County Pacifica/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0284D CA

Pacifica/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °39' 7.8~ N	37 °39' 42.4~ N
Longitude (NAD 83)	122 °28' 21.8~ W	122 °28' 39.5~ W
Ground Elevation (m/ft-AMSL)	222.30 / 729.3	200.40 / 657.5
Antenna Structure Registration #		
Path Azimuth (°)	337.870	157.867
Path Length (km / miles)	1.152 / 0.716	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.06	35.1 / 2.70 / 1.06
CENTERLINE (m / ft - AGL) 9.14 / 30.0	9.75 / 32.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEM020	TEM020
MANUFACTURER DRAGONWAVE INC	DRAGONWAVE INC
MODEL 23HD50SFC371V02	23HD50SFC371V02
MODEL DESCRIPTION HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 49M2D7W 256 QAM	49M2D7W 256 QAM
LOADING 1 CH DIG 371000.000	1 CH DIG 371000.000
STABILITY (%) 0.001	0.001
POWER (dBm)	
RECEIVED LEVEL (dBm)	
EIRP (dBm)	
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB)	120.6

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0294B CA
City/County Hayward/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0303A CA

City/County Hayward/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °38' 23.3~ N	37 °37' 43.3~ N
Longitude (NAD 83)	122 °6' 19.4~ W	122 °6' 55.1~ W
Ground Elevation (m/ft-AMSL)	12.80 / 42.0	4.20 / 13.8
Antenna Structure Registration #		1271129
Path Azimuth (°)	215.369	35.363
Path Length (km / miles)		1.512 / 0.940

Transmit Antenna

RD1150	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HP2-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -0.28	35.1 / 2.70 / 0.27
Centerline (m / ft - AGL) 16.76 / 55.0	17.98 / 59.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC371V02	23HD50SFC371V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -42.1	-42.1
EIRP (dBm) 45.7	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 122.9	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0294B CA
City/County Hayward/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0308A CA

City/County Hayward/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °38' 23.3~ N	37 °37' 11.5~ N
Longitude (NAD 83)	122 °6' 19.4~ W	122 °5' 57.3~ W
Ground Elevation (m/ft-AMSL)	12.80 / 42.0	0.60 / 2.0
Antenna Structure Registration #		1202647
Path Azimuth (°)	166.243	346.246
Path Length (km / miles)		2.279 / 1.416

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.20	35.1 / 2.70 / 0.18
Centerline (m / ft - AGL) 16.76 / 55.0	21.34 / 70.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMR36	TEMR36
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC364V02	23HD50HFC364V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M1D7W 256 QAM	47M1D7W 256 QAM
Loading 1 CH DIG 364000.000	1 CH DIG 364000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -40.8	-40.8
EIRP (dBm) 50.6	50.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 126.5	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0304C CA
City/County San Bruno/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0307C CA

San Bruno/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °37' 41.3~ N	37 °37' 15.6~ N
Longitude (NAD 83)	122 °25' 30.7~ W	122 °24' 15.0~ W
Ground Elevation (m/ft-AMSL)	36.50 / 119.8	7.50 / 24.6
Antenna Structure Registration #	1248698	
Path Azimuth (°)	113.108	293.121
Path Length (km / miles)	2.018 / 1.254	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.20	35.1 / 2.70 / 1.18
CENTERLINE (m / ft - AGL) 27.43 / 90.0	14.53 / 47.7

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMR36	TEMR36
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC364V02	23HD50HFC364V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 47M1D7W 256 QAM	47M1D7W 256 QAM
LOADING 1 CH DIG 364000.000	1 CH DIG 364000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -39.8	-39.8
EIRP (dBm) 50.6	50.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 125.5	

Transmit Frequencies (MHz)	21825.0000H(1)	21975.0000H(4)	23025.0000H(1)	23175.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0320B CA
City/County Union City/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0312B CA

City/County Union City/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °35' 54.1~ N	37 °36' 27.5~ N
Longitude (NAD 83)	122 °4' 3.0~ W	122 °4' 17.6~ W
Ground Elevation (m/ft-AMSL)	5.20 / 17.1	5.90 / 19.4
Antenna Structure Registration #		
Path Azimuth (°)	340.825	160.822
Path Length (km / miles)	1.090 / 0.677	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / -0.08	35.3 / 3.00 / 0.07
	15.24 / 50.0	13.11 / 43.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO20	TEMO20
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC371V02	23HD50SFC371V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	49M2D7W 256 QAM	49M2D7W 256 QAM
Stability (%)	1 CH DIG 371000.000	1 CH DIG 371000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	0.0	0.0
Received Level (dBm)	-49.5	-49.5
EIRP (dBm)	35.3	35.3
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		120.1

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147

(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0327A CA
 City/County Union City/Alameda
 Status / License Basis Engineering Proposal / PRIMARY OPERATION
 Call Sign
 Licensee Code CLESP3
 Licensee Name Clearwire Spectrum Holdings III, LL
 Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0314A CA

City/County Union City/Alameda
 Status / License Basis Engineering Proposal / PRIMARY OPERATION
 Call Sign
 Licensee Code CLESP3
 Licensee Name Clearwire Spectrum Holdings III, LL
 Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °35' 16.8~ N	37 °36' 28.6~ N
Longitude (NAD 83)	122 °1' 37.6~ W	122 °2' 24.2~ W
Ground Elevation (m/ft-AMSL)	12.20 / 40.0	15.30 / 50.2
Antenna Structure Registration #		
Path Azimuth (°)	332.692	152.684
Path Length (km / miles)	2.491 / 1.548	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 1.15	35.3 / 3.00 / -1.17
Centerline (m / ft - AGL) 10.67 / 35.0	57.91 / 190.0

Receive Antenna

Same As Transmit

Manufacturer
 Model
 Gain (dBi) / Beamwidth (°)
 Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
 Model
 Gain (dBi) / Beamwidth (°)
 Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC322V02	23HD50HFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 17.5	17.5
Received Level (dBm) -39.2	-39.2
EIRP (dBm) 52.8	52.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 127.3	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0332B CA
City/County Burlingame/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0326C CA

Burlingame/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °34' 37.1~ N	37 °35' 37.9~ N
Longitude (NAD 83)	122 °20' 59.6~ W	122 °21' 54.9~ W
Ground Elevation (m/ft-AMSL)	12.00 / 39.4	2.40 / 7.9
Antenna Structure Registration #		
Path Azimuth (°)	324.107	144.098
Path Length (km / miles)	2.314 / 1.438	

Transmit Antenna

87016A	87016A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-23	VHLP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.60 / 0.43	40.4 / 1.60 / -0.44
Centerline (m / ft - AGL) 19.81 / 65.0	46.94 / 154.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -40.3	-40.3
EIRP (dBm) 45.9	45.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 126.6	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0345D CA
City/County Hillsborough/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0343A CA

San Mateo/San Mateo
Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 28.7~ N	37 °33' 56.7~ N
Longitude (NAD 83)	122 °20' 19.4~ W	122 °19' 43.9~ W
Ground Elevation (m/ft-AMSL)	38.70 / 127.0	9.40 / 30.8
Antenna Structure Registration #		
Path Azimuth (°)	45.262	225.268
Path Length (km / miles)	1.226 / 0.762	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.40	35.1 / 2.70 / 0.40
CENTERLINE (m / ft - AGL) 15.24 / 50.0	35.97 / 118.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -45.4	-45.4
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 121.1	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0348A CA
City/County San Mateo/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0355A CA

San Mateo/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 40.6~ N	37 °33' 12.2~ N
Longitude (NAD 83)	122 °18' 52.8~ W	122 °18' 0.0~ W
Ground Elevation (m/ft-AMSL)	4.50 / 14.8	2.40 / 7.9
Antenna Structure Registration #		
Path Azimuth (°)	124.040	304.049
Path Length (km / miles)	1.564 / 0.972	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.92	35.1 / 2.70 / -0.93
CENTERLINE (m / ft - AGL) 12.19 / 40.0	39.62 / 130.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
RECEIVED LEVEL (dBm) -45.5	-45.5
EIRP (dBm) 42.6	42.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.2	

Transmit Frequencies (MHz)	23375.0000V(8)	23475.0000V(10)	22175.0000V(8)	22275.0000V(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0352A CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0340D CA

City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 30.2~ N	37 °34' 13.1~ N
Longitude (NAD 83)	121 °58' 44.4~ W	121 °58' 18.2~ W
Ground Elevation (m/ft-AMSL)	17.20 / 56.4	22.30 / 73.2
Antenna Structure Registration #		
Path Azimuth (°)	25.925	205.929
Path Length (km / miles)	1.471 / 0.914	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / 0.06	35.3 / 3.00 / -0.07
	19.81 / 65.0	16.46 / 54.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMO20	TEMO20
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC371V02	23HD50SFC371V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	49M2D7W 256 QAM	49M2D7W 256 QAM
Stability (%)	1 CH DIG 371000.000	1 CH DIG 371000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	5.5	5.5
Received Level (dBm)	-46.6	-46.6
EIRP (dBm)	40.8	40.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		122.7

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0355A CA
City/County San Mateo/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0339A CA

San Mateo/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 12.2~ N	37 °34' 10.4~ N
Longitude (NAD 83)	122 °18' 0.0~ W	122 °18' 42.6~ W
Ground Elevation (m/ft-AMSL)	2.40 / 7.9	2.70 / 8.9
Antenna Structure Registration #		
Path Azimuth (°)	329.775	149.768
Path Length (km / miles)	2.077 / 1.290	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.71	35.1 / 2.70 / 0.70
CENTERLINE (m / ft - AGL) 39.62 / 130.0	13.72 / 45.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 64 QAM	45M8D7W 64 QAM
LOADING 1 CH DIG 215000.000	1 CH DIG 215000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
RECEIVED LEVEL (dBm) -47.0	-47.0
EIRP (dBm) 43.6	43.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 125.7	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0355A CA
City/County San Mateo/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0359A CA

Foster City/San Mateo
Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 12.2~ N	37 °32' 55.8~ N
Longitude (NAD 83)	122 °18' 0.0~ W	122 °16' 29.7~ W
Ground Elevation (m/ft-AMSL)	2.40 / 7.9	2.00 / 6.6
Antenna Structure Registration #		
Path Azimuth (°)	102.842	282.858
Path Length (km / miles)	2.273 / 1.413	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.56	35.3 / 3.00 / 0.54
Centerline (m / ft - AGL) 39.62 / 130.0	18.29 / 60.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC215V02	23HD50HFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -47.4	-47.4
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 126.5	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0355A CA
City/County San Mateo/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0372A CA

San Mateo/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 12.2~ N	37 °31' 51.3~ N
Longitude (NAD 83)	122 °18' 0.0~ W	122 °17' 17.4~ W
Ground Elevation (m/ft-AMSL)	2.40 / 7.9	2.40 / 7.9
Antenna Structure Registration #		
Path Azimuth (°)	157.248	337.256
Path Length (km / miles)	2.705 / 1.681	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -0.54	40.2 / 1.70 / 0.52
Centerline (m / ft - AGL) 39.62 / 130.0	14.63 / 48.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -40.1	-40.1
EIRP (dBm) 47.7	47.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.0	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0356A CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0365A CA

Newark/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 2.9~ N	37 °32' 12.1~ N
Longitude (NAD 83)	122 °1' 8.4~ W	122 °0' 55.1~ W
Ground Elevation (m/ft-AMSL)	13.10 / 43.0	11.50 / 37.7
Antenna Structure Registration #		
Path Azimuth (°)	168.223	348.226
Path Length (km / miles)	1.600 / 0.994	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.34	35.3 / 3.00 / -0.35
Centerline (m / ft - AGL) 16.76 / 55.0	28.04 / 92.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC322V02	23HD50HFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.0	7.0
Received Level (dBm) -45.8	-45.8
EIRP (dBm) 42.3	42.3
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.4	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0358E CA
City/County San Mateo/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0343A CA

San Mateo/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °32' 56.0~ N	37 °33' 56.7~ N
Longitude (NAD 83)	122 °19' 13.1~ W	122 °19' 43.9~ W
Ground Elevation (m/ft-AMSL)	17.90 / 58.7	9.40 / 30.8
Antenna Structure Registration #		
Path Azimuth (°)	338.006	158.001
Path Length (km / miles)	2.018 / 1.254	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / BEAMWIDTH(°) / TILT(°) 35.1 / 2.70 / 0.04	35.1 / 2.70 / -0.05
CENTERLINE (m / ft - AGL) 25.91 / 85.0	35.97 / 118.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / BEAMWIDTH (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / BEAMWIDTH (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ20	TEMQ20
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC171V02	23HD50SFC171V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 32 QAM	45M8D7W 32 QAM
LOADING 1 CH DIG 171000.000	1 CH DIG 171000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 10.0	10.0
Received Level (dBm) -49.1	-49.1
EIRP (dBm) 43.2	43.2
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 125.5	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0360C CA
City/County Newark/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0361A CA

Newark/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 0.9~ N	37 °32' 36.9~ N
Longitude (NAD 83)	122 °3' 8.6~ W	122 °2' 14.0~ W
Ground Elevation (m/ft-AMSL)	5.40 / 17.7	8.00 / 26.2
Antenna Structure Registration #		
Path Azimuth (°)	118.897	298.906
Path Length (km / miles)	1.531 / 0.951	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.08	35.1 / 2.70 / 0.07
CENTERLINE (m / ft - AGL) 19.20 / 63.0	14.63 / 48.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMR36	TEMR36
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC364V02	23HD50HFC364V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 47M1D7W 256 QAM	47M1D7W 256 QAM
LOADING 1 CH DIG 364000.000	1 CH DIG 364000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.0	7.0
RECEIVED LEVEL (dBm) -45.9	-45.9
EIRP (dBm) 42.1	42.1
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB) 123.1	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information	CA-SFO0360C CA	CA-SFO0370B CA
City/County	Newark/Alameda	Newark/Alameda
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign		
Licensee Code	CLESP3	CLESP3
Licensee Name	Clearwire Spectrum Holdings III, LL	Clearwire Spectrum Holdings III, LL
Radio Service / Station Class	MG -- Microwave Industrial/Business Pool	FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 0.9~ N	37 °31' 49.1~ N
Longitude (NAD 83)	122 °3' 8.6~ W	122 °2' 16.4~ W
Ground Elevation (m/ft-AMSL)	5.40 / 17.7	6.10 / 20.0
Antenna Structure Registration #		
Path Azimuth (°)	149.928	329.937
Path Length (km / miles)	2.558 / 1.589	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / -0.22	35.3 / 3.00 / 0.20
	19.20 / 63.0	9.14 / 30.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ48	TEMQ48
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC322V02	23HD50HFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	17.5	17.5
Received Level (dBm)	-39.4	-39.4
EIRP (dBm)	52.8	52.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		127.5

Transmit Frequencies (MHz) 23125.0000H(3) 23275.0000H(6) 21925.0000H(3) 22075.0000H(6)

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0367D CA
City/County San Mateo/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0358E CA

San Mateo/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °32' 14.9~ N	37 °32' 56.0~ N
Longitude (NAD 83)	122 °19' 41.6~ W	122 °19' 13.1~ W
Ground Elevation (m/ft-AMSL)	125.90 / 413.1	17.90 / 58.7
Antenna Structure Registration #		
Path Azimuth (°)	28.903	208.908
Path Length (km / miles)	1.447 / 0.899	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -3.95	40.2 / 1.70 / 3.94
Centerline (m / ft - AGL) 17.68 / 58.0	25.91 / 85.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -40.5	-40.5
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 122.6	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0369D CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0351B CA

City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °32' 31.5~ N	37 °33' 43.9~ N
Longitude (NAD 83)	121 °58' 23.5~ W	121 °57' 33.7~ W
Ground Elevation (m/ft-AMSL)	17.20 / 56.4	22.90 / 75.1
Antenna Structure Registration #		
Path Azimuth (°)	28.702	208.711
Path Length (km / miles)	2.545 / 1.581	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / -0.21	35.3 / 3.00 / 0.19
	26.82 / 88.0	12.19 / 40.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ48	TEMQ48
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC322V02	23HD50HFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	17.5	17.5
Received Level (dBm)	-39.4	-39.4
EIRP (dBm)	52.8	52.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		127.5

Transmit Frequencies (MHz)	23325.0000V(7)	23425.0000V(9)	22125.0000V(7)	22225.0000V(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0369D CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0363A CA

City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °32' 31.5~ N	37 °32' 22.9~ N
Longitude (NAD 83)	121 °58' 23.5~ W	121 °57' 46.8~ W
Ground Elevation (m/ft-AMSL)	17.20 / 56.4	16.00 / 52.5
Antenna Structure Registration #		
Path Azimuth (°)	106.395	286.401
Path Length (km / miles)	0.939 / 0.584	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.31	35.1 / 2.70 / -0.32
Centerline (m / ft - AGL) 26.82 / 88.0	33.22 / 109.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC371V02	23HD50SFC371V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -45.0	-45.0
EIRP (dBm) 40.6	38.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB) 118.8	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0369D CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0376A CA

City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °32' 31.5~ N	37 °31' 27.5~ N
Longitude (NAD 83)	121 °58' 23.5~ W	121 °56' 49.6~ W
Ground Elevation (m/ft-AMSL)	17.20 / 56.4	18.50 / 60.7
Antenna Structure Registration #		
Path Azimuth (°)	130.551	310.567
Path Length (km / miles)		3.034 / 1.886

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / -0.18	35.3 / 3.00 / 0.16
	26.82 / 88.0	16.46 / 54.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ54	TEMQ54
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC215V02	23HD50HFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	18.5	18.5
Received Level (dBm)	-39.9	-39.9
EIRP (dBm)	53.8	53.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		129.0

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0369D CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0595A CA

City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °32' 31.5~ N	37 °33' 14.0~ N
Longitude (NAD 83)	121 °58' 23.5~ W	121 °59' 30.0~ W
Ground Elevation (m/ft-AMSL)	17.20 / 56.4	18.50 / 60.7
Antenna Structure Registration #		1211950
Path Azimuth (°)	308.759	128.748
Path Length (km / miles)		2.093 / 1.301

Transmit Antenna

87016A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.60 / -0.33	35.3 / 3.00 / 0.32
Centerline (m / ft - AGL) 26.82 / 88.0	13.72 / 45.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -42.6	-42.6
EIRP (dBm) 47.9	42.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)	125.8

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0375A CA
City/County Newark/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0378B CA

Newark/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °31' 34.0~ N	37 °31' 37.4~ N
Longitude (NAD 83)	122 °0' 28.8~ W	122 °1' 28.1~ W
Ground Elevation (m/ft-AMSL)	9.10 / 29.9	6.70 / 22.0
Antenna Structure Registration #		
Path Azimuth (°)	274.123	94.113
Path Length (km / miles)		1.460 / 0.907

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.11	35.3 / 3.00 / 0.10
Centerline (m / ft - AGL) 14.02 / 46.0	13.72 / 45.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC371V02	23HD50SFC371V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -46.5	-46.5
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 122.6	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0377D CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0381A CA

Newark/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °31' 24.2~ N	37 °31' 19.6~ N
Longitude (NAD 83)	121 °58' 37.7~ W	121 °59' 27.6~ W
Ground Elevation (m/ft-AMSL)	11.60 / 38.1	10.00 / 32.8
Antenna Structure Registration #		
Path Azimuth (°)	263.402	83.394
Path Length (km / miles)	1.233 / 0.766	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / 0.63	35.3 / 3.00 / -0.64
	13.72 / 45.0	28.96 / 95.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMR36	TEMR36
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC364V02	23HD50HFC364V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	10.0	10.0
Received Level (dBm)	-42.5	-42.5
EIRP (dBm)	43.4	45.3
Fixed Loss: Tx / Common (dB)	0.0 / 1.9	0.0 / 0.0
Free Space Loss (dB)	121.2	

Transmit Frequencies (MHz)	23325.0000V(7)	23425.0000V(9)	22125.0000V(7)	22225.0000V(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0381A CA
City/County Newark/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0364B CA

City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °31' 19.6~ N	37 °32' 16.3~ N
Longitude (NAD 83)	121 °59' 27.6~ W	121 °59' 28.0~ W
Ground Elevation (m/ft-AMSL)	10.00 / 32.8	13.50 / 44.3
Antenna Structure Registration #		
Path Azimuth (°)	359.678	179.678
Path Length (km / miles)	1.748 / 1.086	

Transmit Antenna

Manufacturer	91233R	91233R
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HPLP1-23	HPLP1-23
Centerline (m / ft - AGL)	35.1 / 2.70 / -0.34	35.1 / 2.70 / 0.33
	28.96 / 95.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMR36	TEMR36
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC364V02	23HD50HFC364V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	10.0	10.0
Received Level (dBm)	-44.0	-44.0
EIRP (dBm)	45.1	45.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		124.2

Transmit Frequencies (MHz)	22175.0000V(8)	22275.0000V(10)	23375.0000V(8)	23475.0000V(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0381A CA
City/County Newark/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0374B CA

City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °31' 19.6~ N	37 °31' 52.0~ N
Longitude (NAD 83)	121 °59' 27.6~ W	121 °57' 46.4~ W
Ground Elevation (m/ft-AMSL)	10.00 / 32.8	15.60 / 51.2
Antenna Structure Registration #		
Path Azimuth (°)	68.092	248.109
Path Length (km / miles)	2.678 / 1.664	

Transmit Antenna

Manufacturer	91233R	91233R
Model	RADIO WAVES, INC	RADIO WAVES, INC
	HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°)	35.1 / 2.70 / -0.16	35.1 / 2.70 / 0.14
Centerline (m / ft - AGL)	28.96 / 95.0	16.46 / 54.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ47	TEMQ47
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC271V02	23HD50HFC271V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M8D7W 128 QAM	47M8D7W 128 QAM
Stability (%)	1 CH DIG 271000.000	1 CH DIG 271000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	17.0	17.0
Received Level (dBm)	-40.7	-40.7
EIRP (dBm)	52.1	52.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		127.9

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information	CA-SFO0381A CA	CA-SFO0383A CA
City/County	Newark/Alameda	Fremont/Alameda
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign		
Licensee Code	CLESP3	CLESP3
Licensee Name	Clearwire Spectrum Holdings III, LL	Clearwire Spectrum Holdings III, LL
Radio Service / Station Class	MG -- Microwave Industrial/Business Pool	FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °31' 19.6~ N	37 °30' 38.5~ N
Longitude (NAD 83)	121 °59' 27.6~ W	121 °57' 55.1~ W
Ground Elevation (m/ft-AMSL)	10.00 / 32.8	8.00 / 26.2
Antenna Structure Registration #		
Path Azimuth (°)	119.146	299.161
Path Length (km / miles)	2.601 / 1.616	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / 0.03	35.3 / 3.00 / -0.05
	28.96 / 95.0	32.92 / 108.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ54	TEMQ54
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC215V02	23HD50HFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	18.5	18.5
Received Level (dBm)	-40.5	-40.5
EIRP (dBm)	53.8	51.9
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB)		127.7

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0384A CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0583A CA

/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °30' 46.8~ N	37 °29' 57.0~ N
Longitude (NAD 83)	121 °56' 45.6~ W	121 °52' 20.0~ W
Ground Elevation (m/ft-AMSL)	9.80 / 32.2	794.30 / 2606.0
Antenna Structure Registration #		1044718
Path Azimuth (°)	103.222	283.267
Path Length (km / miles)	6.702 / 4.164	

Transmit Antenna

87016A	87016A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-23	VHLP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.60 / 6.68	40.4 / 1.60 / -6.72
Centerline (m / ft - AGL) 27.74 / 91.0	30.48 / 100.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ53	TEMQ53
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC110V02	23HD50HFC110V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M2D7W 16 QAM	45M2D7W 16 QAM
Loading 1 CH DIG 110000.000	1 CH DIG 110000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 20.5	20.5
Received Level (dBm) -34.6	-34.6
EIRP (dBm) 60.9	60.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 135.9	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0400A CA
City/County East Palo Alto/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0107A CA

City/County East Palo Alto/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQLN743
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °28' 26.2~ N	37 °27' 33.7~ N
Longitude (NAD 83)	122 °8' 2.4~ W	122 °8' 29.8~ W
Ground Elevation (m/ft-AMSL)	4.50 / 14.8	8.84 / 29.0
Antenna Structure Registration #		
Path Azimuth (°)	202.590	22.585
Path Length (km / miles)	1.753 / 1.089	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / 0.47	35.3 / 3.00 / -0.49
	14.94 / 49.0	25.30 / 83.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ55	TEMQ55
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC215V02	23HD50SFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	8.5	8.5
Received Level (dBm)	-45.1	-45.1
EIRP (dBm)	43.8	43.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		124.2

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0404A CA
City/County East Palo Alto/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0097A CA

Palo Alto/Santa Clara
Engineering Proposal / PRIMARY OPERATION
WQKU516
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °28' 5.3~ N	37 °26' 56.0~ N
Longitude (NAD 83)	122 °9' 10.7~ W	122 °9' 33.0~ W
Ground Elevation (m/ft-AMSL)	6.90 / 22.6	14.00 / 45.9
Antenna Structure Registration #		1017316
Path Azimuth (°)	194.389	14.385
Path Length (km / miles)	2.206 / 1.371	

Transmit Antenna

Manufacturer	91233R	91233R
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HPLP1-23	HPLP1-23
Centerline (m / ft - AGL)	35.1 / 2.70 / 2.04	35.1 / 2.70 / -2.05
	10.67 / 35.0	82.30 / 270.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMU07	TEMU07
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HS50HFC364V01	23HS50HFC364V01
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	47M1D7W 256 QAM	47M1D7W 256 QAM
Stability (%)	1 CH DIG 364000.000	1 CH DIG 364000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	18.0	18.0
Received Level (dBm)	-38.0	-38.0
EIRP (dBm)	53.1	53.1
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		126.2

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0408A CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0031A CA

Milpitas/Santa Clara
Engineering Proposal / PRIMARY OPERATION
WQKU521
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °27' 29.0~ N	37 °25' 22.1~ N
Longitude (NAD 83)	121 °55' 15.7~ W	121 °55' 8.4~ W
Ground Elevation (m/ft-AMSL)	2.60 / 8.5	6.10 / 20.0
Antenna Structure Registration #		
Path Azimuth (°)	177.373	357.374
Path Length (km / miles)		3.916 / 2.434

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.39	35.3 / 3.00 / -0.42
Centerline (m / ft - AGL) 15.85 / 52.0	40.23 / 132.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ52	TEMQ52
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC110V02	23HD50SFC110V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M2D7W 16 QAM	45M2D7W 16 QAM
Loading 1 CH DIG 110000.000	1 CH DIG 110000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 10.5	10.5
Received Level (dBm) -50.1	-50.1
EIRP (dBm) 45.8	45.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 131.2	

Transmit Frequencies (MHz)	23375.0000H(8)	23475.0000H(10)	22175.0000H(8)	22275.0000H(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0414B CA
City/County /Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0415C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 3.1~ N	37 °24' 34.7~ N
Longitude (NAD 83)	121 °51' 5.2~ W	121 °51' 57.9~ W
Ground Elevation (m/ft-AMSL)	99.00 / 324.8	38.20 / 125.3
Antenna Structure Registration #	1270998	
Path Azimuth (°)	235.961	55.952
Path Length (km / miles)	1.564 / 0.972	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -2.13	35.3 / 3.00 / 2.12
Centerline (m / ft - AGL) 11.03 / 36.2	13.72 / 45.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -45.1	-45.1
EIRP (dBm) 42.8	42.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.2	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0418A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0190C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 38.2~ N	37 °22' 59.2~ N
Longitude (NAD 83)	121 °55' 12.8~ W	121 °54' 0.8~ W
Ground Elevation (m/ft-AMSL)	11.80 / 38.7	17.30 / 56.8
Antenna Structure Registration #		
Path Azimuth (°)	69.917	249.929
Path Length (km / miles)	1.886 / 1.172	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -0.26	40.2 / 1.70 / 0.24
Centerline (m / ft - AGL) 27.43 / 90.0	13.72 / 45.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC322V02	23HD50HFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 14.0	14.0
Received Level (dBm) -30.5	-30.5
EIRP (dBm) 54.2	54.2
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.9	

Transmit Frequencies (MHz)	22125.0000V(7)	22275.0000V(10)	23325.0000V(7)	23475.0000V(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0419C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0190C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 39.9~ N	37 °22' 59.2~ N
Longitude (NAD 83)	121 °52' 52.1~ W	121 °54' 0.8~ W
Ground Elevation (m/ft-AMSL)	23.30 / 76.4	17.30 / 56.8
Antenna Structure Registration #		
Path Azimuth (°)	289.400	109.388
Path Length (km / miles)	1.792 / 1.113	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -0.25	40.2 / 1.70 / 0.23
Centerline (m / ft - AGL) 15.24 / 50.0	13.72 / 45.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC371V02	23HD50SFC371V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -42.3	-42.3
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 124.4	

Transmit Frequencies (MHz)	22225.0000V(9)	22375.0000V(12)	23425.0000V(9)	23575.0000V(12)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0426C CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0432C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 51.3~ N	37 °19' 2.8~ N
Longitude (NAD 83)	121 °57' 58.0~ W	121 °56' 51.1~ W
Ground Elevation (m/ft-AMSL)	34.10 / 111.9	44.10 / 144.7
Antenna Structure Registration #		
Path Azimuth (°)	132.227	312.238
Path Length (km / miles)	2.225 / 1.382	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.93	35.3 / 3.00 / -0.95
Centerline (m / ft - AGL) 22.86 / 75.0	49.38 / 162.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -47.2	-47.2
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 126.3	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0429A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0238A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 20.9~ N	37 °18' 47.3~ N
Longitude (NAD 83)	121 °46' 44.9~ W	121 °47' 37.6~ W
Ground Elevation (m/ft-AMSL)	87.50 / 287.1	62.40 / 204.7
Antenna Structure Registration #		
Path Azimuth (°)	231.405	51.396
Path Length (km / miles)	1.660 / 1.032	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.18	35.1 / 2.70 / 1.17
CENTERLINE (m / ft - AGL) 21.34 / 70.0	12.50 / 41.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC322V02	23HD50HFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.0	15.0
Received Level (dBm) -38.6	-38.6
EIRP (dBm) 50.1	50.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.8	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0432C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0157B CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 2.8~ N	37 °18' 17.5~ N
Longitude (NAD 83)	121 °56' 51.1~ W	121 °57' 5.5~ W
Ground Elevation (m/ft-AMSL)	44.10 / 144.7	50.30 / 165.0
Antenna Structure Registration #		
Path Azimuth (°)	194.248	14.245
Path Length (km / miles)	1.441 / 0.895	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.30	35.1 / 2.70 / 1.29
CENTERLINE (m / ft - AGL) 49.38 / 162.0	10.67 / 35.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
RECEIVED LEVEL (dBm) -46.8	-46.8
EIRP (dBm) 40.6	40.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB) 122.5	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0434B CA
City/County Cupertino/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0029A CA

Cupertino/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °18' 53.9~ N	37 °19' 16.0~ N
Longitude (NAD 83)	122 °2' 23.2~ W	122 °1' 51.6~ W
Ground Elevation (m/ft-AMSL)	87.00 / 285.4	71.70 / 235.2
Antenna Structure Registration #		
Path Azimuth (°)	48.790	228.795
Path Length (km / miles)	1.034 / 0.643	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.11	35.3 / 3.00 / -0.12
Centerline (m / ft - AGL) 11.89 / 39.0	29.26 / 96.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -43.5	-43.5
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 119.6	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0436C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0218C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °18' 56.3~ N	37 °18' 23.4~ N
Longitude (NAD 83)	121 °51' 57.8~ W	121 °50' 56.4~ W
Ground Elevation (m/ft-AMSL)	33.50 / 109.9	39.20 / 128.6
Antenna Structure Registration #		
Path Azimuth (°)	123.850	303.860
Path Length (km / miles)	1.821 / 1.131	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.10	35.1 / 2.70 / -0.11
CENTERLINE (m / ft - AGL) 17.68 / 58.0	15.24 / 50.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
RECEIVED LEVEL (dBm) -48.9	-48.9
EIRP (dBm) 40.6	40.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB) 124.6	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0441A CA
City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0166D CA

City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 37.8~ N	37 °17' 18.7~ N
Longitude (NAD 83)	121 °57' 40.6~ W	121 °56' 5.8~ W
Ground Elevation (m/ft-AMSL)	55.00 / 180.4	59.40 / 194.9
Antenna Structure Registration #		1204443
Path Azimuth (°)	104.145	284.161
Path Length (km / miles)	2.408 / 1.496	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 1.31	35.1 / 2.70 / -1.33
Centerline (m / ft - AGL) 15.85 / 52.0	67.06 / 220.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -48.3	-48.3
EIRP (dBm) 43.6	43.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 127.0	

Transmit Frequencies (MHz)	22175.0000V(8)	22325.0000V(11)	23375.0000V(8)	23525.0000V(11)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0442A CA
City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0166D CA

City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 6.7~ N	37 °17' 18.7~ N
Longitude (NAD 83)	121 °58' 51.6~ W	121 °56' 5.8~ W
Ground Elevation (m/ft-AMSL)	71.10 / 233.3	59.40 / 194.9
Antenna Structure Registration #		1204443
Path Azimuth (°)	84.810	264.838
Path Length (km / miles)	4.101 / 2.548	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.56	35.1 / 2.70 / -0.59
Centerline (m / ft - AGL) 14.02 / 46.0	67.06 / 220.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMZ82	TEMZ82
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD40HFC142V02	23HD40HFC142V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 36M2D7W 32 QAM	36M2D7W 32 QAM
Loading 1 CH DIG 142000.000	1 CH DIG 142000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 19.0	19.0
Received Level (dBm) -42.4	-42.4
EIRP (dBm) 54.1	54.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 131.6	

Transmit Frequencies (MHz)	22220.0000V(9)	22370.0000V(12)	23420.0000V(9)	23570.0000V(12)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0443D CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0194A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 13.8~ N	37 °16' 30.7~ N
Longitude (NAD 83)	121 °52' 28.3~ W	121 °53' 34.1~ W
Ground Elevation (m/ft-AMSL)	66.00 / 216.5	48.00 / 157.5
Antenna Structure Registration #		
Path Azimuth (°)	230.663	50.652
Path Length (km / miles)	2.096 / 1.302	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -0.73	40.2 / 1.70 / 0.71
Centerline (m / ft - AGL) 17.22 / 56.5	8.84 / 29.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -39.9	-39.9
EIRP (dBm) 45.7	45.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 125.8	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0446A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0234B CA

/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 8.0~ N	37 °17' 28.4~ N
Longitude (NAD 83)	121 °49' 5.1~ W	121 °48' 30.3~ W
Ground Elevation (m/ft-AMSL)	51.60 / 169.3	83.20 / 273.0
Antenna Structure Registration #		
Path Azimuth (°)	53.730	233.736
Path Length (km / miles)	1.063 / 0.661	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 1.41	35.3 / 3.00 / -1.41
Centerline (m / ft - AGL) 10.91 / 35.8	5.49 / 18.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -43.8	-43.8
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 119.9	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0448C CA
City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0163A CA

City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °16' 46.7~ N	37 °16' 26.5~ N
Longitude (NAD 83)	121 °56' 13.9~ W	121 °56' 42.2~ W
Ground Elevation (m/ft-AMSL)	63.30 / 207.7	67.90 / 222.8
Antenna Structure Registration #		
Path Azimuth (°)	228.231	48.226
Path Length (km / miles)	0.935 / 0.581	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / -0.52	35.3 / 3.00 / 0.52
	30.48 / 100.0	17.37 / 57.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ16	TEMQ16
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC322V02	23HD50SFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	5.5	5.5
Received Level (dBm)	-44.6	-44.6
EIRP (dBm)	38.9	40.8
Fixed Loss: Tx / Common (dB)	0.0 / 1.9	0.0 / 0.0
Free Space Loss (dB)		118.8

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0449A CA
City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0166D CA

City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °16' 51.0~ N	37 °17' 18.7~ N
Longitude (NAD 83)	121 °57' 28.0~ W	121 °56' 5.8~ W
Ground Elevation (m/ft-AMSL)	63.10 / 207.0	59.40 / 194.9
Antenna Structure Registration #		1204443
Path Azimuth (°)	67.126	247.140
Path Length (km / miles)	2.198 / 1.365	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 1.25	35.3 / 3.00 / -1.26
Centerline (m / ft - AGL) 15.24 / 50.0	67.06 / 220.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -47.1	-47.1
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 126.2	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0451C CA
City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0166D CA

City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °16' 2.5~ N	37 °17' 18.7~ N
Longitude (NAD 83)	121 °57' 30.3~ W	121 °56' 5.8~ W
Ground Elevation (m/ft-AMSL)	73.00 / 239.5	59.40 / 194.9
Antenna Structure Registration #		1204443
Path Azimuth (°)	41.538	221.553
Path Length (km / miles)		3.139 / 1.950

Transmit Antenna

RD1150	RD1150
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
Model HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / 0.78	40.2 / 1.70 / -0.80
Centerline (m / ft - AGL) 9.75 / 32.0	66.45 / 218.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -40.4	-40.4
EIRP (dBm) 48.7	48.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.3	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0453D CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0229B CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °16' 34.2~ N	37 °14' 59.0~ N
Longitude (NAD 83)	121 °49' 34.5~ W	121 °49' 58.5~ W
Ground Elevation (m/ft-AMSL)	87.90 / 288.4	51.10 / 167.7
Antenna Structure Registration #		
Path Azimuth (°)	191.394	11.390
Path Length (km / miles)	2.994 / 1.860	

Transmit Antenna

RD1150	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
Model HP2-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -0.81	35.1 / 2.70 / 0.79
Centerline (m / ft - AGL) 14.33 / 47.0	9.14 / 30.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -45.1	-45.1
EIRP (dBm) 48.7	43.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.9	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0456C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0207A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °15' 9.6~ N	37 °15' 11.2~ N
Longitude (NAD 83)	121 °53' 48.3~ W	121 °52' 40.8~ W
Ground Elevation (m/ft-AMSL)	63.40 / 208.0	57.60 / 189.0
Antenna Structure Registration #		
Path Azimuth (°)	88.296	268.307
Path Length (km / miles)	1.664 / 1.034	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.10	35.1 / 2.70 / 0.09
CENTERLINE (m / ft - AGL) 18.90 / 62.0	21.95 / 72.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 64 QAM	45M8D7W 64 QAM
LOADING 1 CH DIG 215000.000	1 CH DIG 215000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
RECEIVED LEVEL (dBm) -45.1	-45.1
EIRP (dBm) 43.6	43.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.8	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0458A CA
City/County /Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0457C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °15' 32.7~ N	37 °15' 32.2~ N
Longitude (NAD 83)	121 °50' 32.1~ W	121 °49' 54.8~ W
Ground Elevation (m/ft-AMSL)	48.60 / 159.4	51.50 / 169.0
Antenna Structure Registration #		
Path Azimuth (°)	90.958	270.964
Path Length (km / miles)	0.919 / 0.571	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.08	35.1 / 2.70 / -0.09
Centerline (m / ft - AGL) 12.19 / 40.0	10.67 / 35.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -42.9	-42.9
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 118.6	

Transmit Frequencies (MHz)

23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0460C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0185B CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °15' 11.0~ N	37 °14' 47.9~ N
Longitude (NAD 83)	121 °54' 30.2~ W	121 °54' 10.5~ W
Ground Elevation (m/ft-AMSL)	62.30 / 204.4	70.60 / 231.6
Antenna Structure Registration #		
Path Azimuth (°)	145.714	325.718
Path Length (km / miles)	0.862 / 0.536	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 1.92	35.3 / 3.00 / -1.92
Centerline (m / ft - AGL) 11.58 / 38.0	32.19 / 105.6

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -42.0	-42.0
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 118.1	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0461B CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0235A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °15' 20.7~ N	37 °15' 32.0~ N
Longitude (NAD 83)	121 °49' 13.7~ W	121 °48' 34.1~ W
Ground Elevation (m/ft-AMSL)	54.10 / 177.5	57.10 / 187.3
Antenna Structure Registration #		
Path Azimuth (°)	70.350	250.357
Path Length (km / miles)	1.036 / 0.644	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.38	35.3 / 3.00 / 0.37
Centerline (m / ft - AGL) 21.64 / 71.0	11.89 / 39.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -43.6	-43.6
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 119.7	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0462B CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0453D CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °14' 57.4~ N	37 °16' 34.2~ N
Longitude (NAD 83)	121 °50' 40.7~ W	121 °49' 34.5~ W
Ground Elevation (m/ft-AMSL)	49.70 / 163.1	87.90 / 288.4
Antenna Structure Registration #		
Path Azimuth (°)	28.656	208.667
Path Length (km / miles)	3.401 / 2.113	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.65	35.3 / 3.00 / -0.67
Centerline (m / ft - AGL) 13.41 / 44.0	14.33 / 47.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ52	TEMQ52
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC110V02	23HD50SFC110V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M2D7W 16 QAM	45M2D7W 16 QAM
Loading 1 CH DIG 110000.000	1 CH DIG 110000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 10.5	10.5
Received Level (dBm) -48.9	-48.9
EIRP (dBm) 45.8	45.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.0	

Transmit Frequencies (MHz)	21875.0000H(2)	22025.0000H(5)	23075.0000H(2)	23225.0000H(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0463A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0185B CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °14' 44.0~ N	37 °14' 47.9~ N
Longitude (NAD 83)	121 °53' 20.7~ W	121 °54' 10.5~ W
Ground Elevation (m/ft-AMSL)	66.10 / 216.9	70.60 / 231.6
Antenna Structure Registration #		
Path Azimuth (°)	275.599	95.591
Path Length (km / miles)	1.233 / 0.766	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 1.28	35.3 / 3.00 / -1.28
Centerline (m / ft - AGL) 9.14 / 30.0	32.19 / 105.6

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC322V02	23HD50HFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -38.9	-38.9
EIRP (dBm) 48.9	48.9
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 121.2	

Transmit Frequencies (MHz)

23075.0000H(2)	23225.0000H(5)	21875.0000H(2)	22025.0000H(5)
23325.0000H(7)	23425.0000H(9)	22125.0000H(7)	22225.0000H(9)

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information	CA-SFO0469A CA	CA-SJC0211A CA
City/County	San Jose/Santa Clara	/Santa Clara
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign		
Licensee Code	CLESP3	CLESP3
Licensee Name	Clearwire Spectrum Holdings III, LL	Clearwire Spectrum Holdings III, LL
Radio Service / Station Class	MG -- Microwave Industrial/Business Pool	FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °13' 11.6~ N	37 °13' 54.4~ N
Longitude (NAD 83)	121 °52' 45.5~ W	121 °52' 0.3~ W
Ground Elevation (m/ft-AMSL)	77.00 / 252.6	86.80 / 284.8
Antenna Structure Registration #		
Path Azimuth (°)	40.177	220.185
Path Length (km / miles)	1.727 / 1.073	

Transmit Antenna

Manufacturer	87066A	87016A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2.5-23A	VHLP2-23
Centerline (m / ft - AGL)	43.0 / 1.20 / 0.47	40.4 / 1.60 / -0.48
	10.67 / 35.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ16	TEMQ16
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC322V02	23HD50SFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	5.5	5.5
Received Level (dBm)	-39.0	-39.0
EIRP (dBm)	46.6	44.0
Fixed Loss: Tx / Common (dB)	0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB)		124.1

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0471A CA
City/County Castro Valley/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0585A CA

City/County Castro Valley/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 42' 24.4~ N	37 ° 41' 35.0~ N
Longitude (NAD 83)	122 ° 4' 28.5~ W	122 ° 5' 38.1~ W
Ground Elevation (m/ft-AMSL)	71.20 / 233.6	71.60 / 234.9
Antenna Structure Registration #		1203986
Path Azimuth (°)	228.232	48.220
Path Length (km / miles)		2.286 / 1.421

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.15	35.3 / 3.00 / -0.17
Centerline (m / ft - AGL) 10.67 / 35.0	16.76 / 55.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC322V02	23HD50HFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -40.4	-40.4
EIRP (dBm) 50.8	50.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)	126.5

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0480D CA
City/County Dublin/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0492A CA

Dublin/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 43' 19.6~ N	37 ° 42' 37.2~ N
Longitude (NAD 83)	121 ° 54' 54.8~ W	121 ° 54' 55.9~ W
Ground Elevation (m/ft-AMSL)	161.90 / 531.2	102.70 / 336.9
Antenna Structure Registration #		
Path Azimuth (°)	181.181	1.181
Path Length (km / miles)	1.308 / 0.812	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -2.54	35.3 / 3.00 / 2.53
Centerline (m / ft - AGL) 10.97 / 36.0	12.19 / 40.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC371V02	23HD50SFC371V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 3.0	3.0
Received Level (dBm) -48.1	-48.1
EIRP (dBm) 38.3	38.3
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 121.7	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0481A CA
City/County Pleasanton/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0494D CA

Pleasanton/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 41' 49.9~ N	37 ° 41' 2.6~ N
Longitude (NAD 83)	121 ° 52' 58.8~ W	121 ° 52' 25.7~ W
Ground Elevation (m/ft-AMSL)	104.30 / 342.2	105.80 / 347.1
Antenna Structure Registration #		
Path Azimuth (°)	150.919	330.925
Path Length (km / miles)	1.669 / 1.037	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.34	35.3 / 3.00 / 0.33
Centerline (m / ft - AGL) 23.77 / 78.0	12.50 / 41.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM025	TEM025
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC271V02	23HD50SFC271V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M8D7W 128 QAM	47M8D7W 128 QAM
Loading 1 CH DIG 271000.000	1 CH DIG 271000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.0	7.0
Received Level (dBm) -46.2	-46.2
EIRP (dBm) 42.3	42.3
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.8	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0482A CA
City/County Pleasanton/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0478C CA

/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °39' 39.3~ N	37 °39' 54.2~ N
Longitude (NAD 83)	121 °53' 2.2~ W	121 °55' 5.6~ W
Ground Elevation (m/ft-AMSL)	102.50 / 336.3	146.60 / 481.0
Antenna Structure Registration #		
Path Azimuth (°)	278.647	98.626
Path Length (km / miles)	3.059 / 1.901	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.54	35.1 / 2.70 / -0.56
Centerline (m / ft - AGL) 22.56 / 74.0	7.92 / 26.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ47	TEMQ47
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC271V02	23HD50HFC271V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M8D7W 128 QAM	47M8D7W 128 QAM
Loading 1 CH DIG 271000.000	1 CH DIG 271000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 17.0	17.0
Received Level (dBm) -41.9	-41.9
EIRP (dBm) 52.1	52.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.1	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0486A CA
City/County San Ramon/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0480D CA

Dublin/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 43' 49.5~ N	37 ° 43' 19.6~ N
Longitude (NAD 83)	121 ° 55' 45.3~ W	121 ° 54' 54.8~ W
Ground Elevation (m/ft-AMSL)	110.50 / 362.5	161.90 / 531.2
Antenna Structure Registration #		
Path Azimuth (°)	126.698	306.706
Path Length (km / miles)	1.542 / 0.958	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 1.86	35.1 / 2.70 / -1.87
Centerline (m / ft - AGL) 12.19 / 40.0	10.97 / 36.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC371V02	23HD50SFC371V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -47.4	-47.4
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.1	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0496D CA
City/County Pleasanton/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0485D CA

Dublin/Alameda
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 42' 1.2~ N	37 ° 42' 21.2~ N
Longitude (NAD 83)	121 ° 52' 19.2~ W	121 ° 53' 16.2~ W
Ground Elevation (m/ft-AMSL)	106.00 / 347.8	106.70 / 350.1
Antenna Structure Registration #		
Path Azimuth (°)	293.832	113.822
Path Length (km / miles)	1.526 / 0.948	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.36	35.1 / 2.70 / -0.37
CENTERLINE (m / ft - AGL) 10.67 / 35.0	19.81 / 65.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEM020	TEM020
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC371V02	23HD50SFC371V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 49M2D7W 256 QAM	49M2D7W 256 QAM
LOADING 1 CH DIG 371000.000	1 CH DIG 371000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -47.3	-47.3
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.0	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0551A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0232A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °45' 19.0~ N	37 °44' 41.8~ N
Longitude (NAD 83)	122 °27' 10.0~ W	122 °27' 11.4~ W
Ground Elevation (m/ft-AMSL)	254.20 / 834.0	177.80 / 583.3
Antenna Structure Registration #	1001289	
Path Azimuth (°)	181.712	1.712
Path Length (km / miles)	1.147 / 0.713	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -8.67	35.1 / 2.70 / 8.66
Centerline (m / ft - AGL) 115.21 / 378.0	16.76 / 55.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMR36	TEMR36
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC364V02	23HD50HFC364V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M1D7W 256 QAM	47M1D7W 256 QAM
Loading 1 CH DIG 364000.000	1 CH DIG 364000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 13.7	13.7
Received Level (dBm) -36.7	-36.7
EIRP (dBm) 48.8	48.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 120.5	

Transmit Frequencies (MHz)	22175.0000H(8)	22275.0000H(10)	23375.0000H(8)	23475.0000H(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0554E CA
City/County /San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0249A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 41' 14.5~ N	37 ° 43' 23.5~ N
Longitude (NAD 83)	122 ° 26' 5.4~ W	122 ° 27' 12.5~ W
Ground Elevation (m/ft-AMSL)	380.10 / 1247.0	91.50 / 300.2
Antenna Structure Registration #	1205149	
Path Azimuth (°)	337.552	157.541
Path Length (km / miles)	4.303 / 2.674	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -4.21	35.1 / 2.70 / 4.18
Centerline (m / ft - AGL) 36.58 / 120.0	9.45 / 31.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ49	TEMQ49
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC171V02	23HD50HFC171V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 32 QAM	45M8D7W 32 QAM
Loading 1 CH DIG 171000.000	1 CH DIG 171000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 19.9	19.9
Received Level (dBm) -41.9	-41.9
EIRP (dBm) 55.0	55.0
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 132.0	

Transmit Frequencies (MHz)	22125.0000H(7)	22225.0000H(9)	23325.0000H(7)	23425.0000H(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0554E CA
City/County /San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0589B CA

Daly City/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 41' 14.5~ N	37 ° 42' 19.2~ N
Longitude (NAD 83)	122 ° 26' 5.4~ W	122 ° 24' 31.9~ W
Ground Elevation (m/ft-AMSL)	380.10 / 1247.0	6.90 / 22.6
Antenna Structure Registration #	1205149	
Path Azimuth (°)	48.941	228.957
Path Length (km / miles)	3.037 / 1.887	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -7.47	35.1 / 2.70 / 7.45
Centerline (m / ft - AGL) 36.58 / 120.0	12.19 / 40.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC215V02	23HD50HFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 18.5	18.5
Received Level (dBm) -40.3	-40.3
EIRP (dBm) 53.6	53.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.0	

Transmit Frequencies (MHz)	21975.0000H(4)	22075.0000H(6)	23175.0000H(4)	23275.0000H(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0558A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0571A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °47' 35.0~ N	37 °46' 32.5~ N
Longitude (NAD 83)	122 °23' 53.0~ W	122 °23' 14.4~ W
Ground Elevation (m/ft-AMSL)	3.00 / 9.8	1.40 / 4.6
Antenna Structure Registration #	1049604	
Path Azimuth (°)	153.885	333.891
Path Length (km / miles)	2.146 / 1.333	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -4.78	35.1 / 2.70 / 4.77
Centerline (m / ft - AGL) 186.54 / 612.0	8.92 / 29.3

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMR36	TEMR36
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC364V02	23HD50HFC364V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M1D7W 256 QAM	47M1D7W 256 QAM
Loading 1 CH DIG 364000.000	1 CH DIG 364000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -40.3	-40.3
EIRP (dBm) 50.6	50.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 126.0	

Transmit Frequencies (MHz)	22125.0000H(7)	22225.0000H(9)	23325.0000H(7)	23425.0000H(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0565A CA
City/County /Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0196A CA

San Ramon/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 44' 20.0~ N	37 ° 46' 19.2~ N
Longitude (NAD 83)	121 ° 59' 42.5~ W	121 ° 59' 38.7~ W
Ground Elevation (m/ft-AMSL)	562.40 / 1845.1	173.90 / 570.5
Antenna Structure Registration #	1222544	
Path Azimuth (°)	1.450	181.450
Path Length (km / miles)	3.676 / 2.284	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -6.32	35.1 / 2.70 / 6.30
CENTERLINE (m / ft - AGL) 30.48 / 100.0	12.50 / 41.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ47	TEMQ47
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC271V02	23HD50HFC271V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 47M8D7W 128 QAM	47M8D7W 128 QAM
LOADING 1 CH DIG 271000.000	1 CH DIG 271000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 17.0	17.0
Received Level (dBm) -43.5	-43.5
EIRP (dBm) 52.1	52.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.7	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0565A CA
City/County /Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0197C CA

San Ramon/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 44' 20.0~ N	37 ° 46' 16.4~ N
Longitude (NAD 83)	121 ° 59' 42.5~ W	121 ° 58' 27.2~ W
Ground Elevation (m/ft-AMSL)	562.40 / 1845.1	153.30 / 503.0
Antenna Structure Registration #	1222544	
Path Azimuth (°)	27.180	207.192
Path Length (km / miles)	4.034 / 2.507	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -6.06	35.1 / 2.70 / 6.03
CENTERLINE (m / ft - AGL) 30.48 / 100.0	12.19 / 40.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
MANUFACTURER DRAGONWAVE INC	DRAGONWAVE INC
MODEL 23HD50HFC215V02	23HD50HFC215V02
MODEL DESCRIPTION HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 64 QAM	45M8D7W 64 QAM
LOADING 1 CH DIG 215000.000	1 CH DIG 215000.000
STABILITY (%) 0.001	0.001
Power (dBm)	Nominal Coordinated Maximum
Received Level (dBm)	18.5
EIRP (dBm)	-42.8
	53.6
Fixed Loss: Tx / Common (dB)	0.0 / 0.0
Free Space Loss (dB)	131.5

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0590A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0150A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 47' 39.0~ N	37 ° 48' 3.0~ N
Longitude (NAD 83)	122 ° 25' 21.6~ W	122 ° 25' 30.0~ W
Ground Elevation (m/ft-AMSL)	55.80 / 183.1	27.40 / 89.9
Antenna Structure Registration #		1202070
Path Azimuth (°)	344.479	164.478
Path Length (km / miles)		0.768 / 0.477

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -2.03	35.1 / 2.70 / 2.03
Centerline (m / ft - AGL) 31.70 / 104.0	32.87 / 107.8

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM020	TEM020
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC371V02	23HD50SFC371V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 49M2D7W 256 QAM	49M2D7W 256 QAM
Loading 1 CH DIG 371000.000	1 CH DIG 371000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -41.4	-41.4
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 117.1	

Transmit Frequencies (MHz)	22125.0000V(7)	22225.0000V(9)	23325.0000V(7)	23425.0000V(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0590A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0556A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 47' 39.0~ N	37 ° 47' 7.4~ N
Longitude (NAD 83)	122 ° 25' 21.6~ W	122 ° 24' 39.4~ W
Ground Elevation (m/ft-AMSL)	55.80 / 183.1	20.20 / 66.3
Antenna Structure Registration #		
Path Azimuth (°)	133.334	313.341
Path Length (km / miles)	1.420 / 0.882	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 3.12	35.1 / 2.70 / -3.13
CENTERLINE (m / ft - AGL) 40.54 / 133.0	153.62 / 504.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMR36	TEMR36
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC364V02	23HD50HFC364V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 47M1D7W 256 QAM	47M1D7W 256 QAM
LOADING 1 CH DIG 364000.000	1 CH DIG 364000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -40.5	-40.5
EIRP (dBm) 48.7	48.7
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 122.4	

Transmit Frequencies (MHz)	21875.0000H(2)	22025.0000H(5)	23075.0000H(2)	23225.0000H(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0597A CA
City/County Concord/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0059A CA

Pleasant Hill/Contra Costa
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °57' 3.1~ N	37 °56' 44.5~ N
Longitude (NAD 83)	122 °2' 47.2~ W	122 °3' 38.5~ W
Ground Elevation (m/ft-AMSL)	16.50 / 54.1	16.50 / 54.1
Antenna Structure Registration #		
Path Azimuth (°)	245.403	65.394
Path Length (km / miles)	1.378 / 0.856	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.18	35.1 / 2.70 / -0.19
CENTERLINE (m / ft - AGL) 11.28 / 37.0	15.65 / 51.3

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEM020	TEM020
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC371V02	23HD50SFC371V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 49M2D7W 256 QAM	49M2D7W 256 QAM
LOADING 1 CH DIG 371000.000	1 CH DIG 371000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
RECEIVED LEVEL (dBm) -46.4	-46.4
EIRP (dBm) 40.6	40.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB) 122.1	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0607A CA
City/County Foster City/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0353A CA

City/County Foster City/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 29.4~ N	37 °33' 18.0~ N
Longitude (NAD 83)	122 °16' 35.0~ W	122 °15' 31.5~ W
Ground Elevation (m/ft-AMSL)	2.00 / 6.6	0.00 / 0.0
Antenna Structure Registration #		
Path Azimuth (°)	102.703	282.713
Path Length (km / miles)	1.598 / 0.993	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / -1.72	35.3 / 3.00 / 1.71
	80.47 / 264.0	34.59 / 113.5

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ55	TEMQ55
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC215V02	23HD50SFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	8.5	8.5
Received Level (dBm)	-46.2	-46.2
EIRP (dBm)	43.8	41.9
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB)		123.4

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0607A CA
City/County Foster City/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0373E CA

City/County Foster City/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 29.4~ N	37 °32' 11.7~ N
Longitude (NAD 83)	122 °16' 35.0~ W	122 °15' 47.3~ W
Ground Elevation (m/ft-AMSL)	2.00 / 6.6	2.40 / 7.9
Antenna Structure Registration #		1272142
Path Azimuth (°)	153.947	333.955
Path Length (km / miles)	2.666 / 1.657	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / -1.04	35.3 / 3.00 / 1.02
	80.47 / 264.0	32.00 / 105.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ54	TEMQ54
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC215V02	23HD50HFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	18.5	18.5
Received Level (dBm)	-40.7	-40.7
EIRP (dBm)	53.8	51.9
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB)		127.9

Transmit Frequencies (MHz)	23125.0000H(3)	23275.0000H(6)	21925.0000H(3)	22075.0000H(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SFO0608A CA
City/County San Francisco/San Francisco
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0144B CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 47' 29.1~ N	37 ° 48' 28.2~ N
Longitude (NAD 83)	122 ° 24' 18.3~ W	122 ° 24' 43.8~ W
Ground Elevation (m/ft-AMSL)	23.40 / 76.8	3.90 / 12.8
Antenna Structure Registration #		
Path Azimuth (°)	341.103	161.098
Path Length (km / miles)	1.926 / 1.197	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -3.47	35.1 / 2.70 / 3.46
Centerline (m / ft - AGL) 111.25 / 365.0	14.23 / 46.7

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMR36	TEMR36
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC364V02	23HD50HFC364V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M1D7W 256 QAM	47M1D7W 256 QAM
Loading 1 CH DIG 364000.000	1 CH DIG 364000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -39.3	-39.3
EIRP (dBm) 50.6	50.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 125.0	

Transmit Frequencies (MHz)	23375.0000H(8)	23475.0000H(10)	22175.0000H(8)	22275.0000H(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147

(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0003A CA
 City/County Santa Clara/Santa Clara
 Status / License Basis Engineering Proposal / PRIMARY OPERATION
 Call Sign WQKU519
 Licensee Code CLESP3
 Licensee Name Clearwire Spectrum Holdings III, LL
 Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0104B CA

Santa Clara/Santa Clara
 Engineering Proposal / PRIMARY OPERATION
 CLESP3
 Clearwire Spectrum Holdings III, LL
 FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 1.9~ N	37 °21' 23.4~ N
Longitude (NAD 83)	121 °58' 43.5~ W	121 °58' 39.1~ W
Ground Elevation (m/ft-AMSL)	10.06 / 33.0	22.00 / 72.2
Antenna Structure Registration #		
Path Azimuth (°)	177.958	357.959
Path Length (km / miles)	3.039 / 1.888	

Transmit Antenna

87014A
 Manufacturer ANDREW CORPORATION
 Model VHLP1-23
 Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.13
 Centerline (m / ft - AGL) 32.00 / 105.0

87014A
 ANDREW CORPORATION
 VHLP1-23
 35.3 / 3.00 / 0.11
 13.72 / 45.0

Receive Antenna

Same As Transmit

Manufacturer
 Model
 Gain (dBi) / Beamwidth (°)
 Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
 Model
 Gain (dBi) / Beamwidth (°)
 Centerline (m / ft - AGL)

Radio Information

TEMQ20
 Manufacturer DRAGONWAVE INC
 Model 23HD50SFC171V02
 Model Description HORIZON DUO
 Emission Designator / Modulation 45M8D7W 32 QAM
 Loading 1 CH DIG 171000.000
 Stability (%) 0.001

	Nominal	Coordinated	Maximum
Power (dBm)		10.0	
Received Level (dBm)		-48.4	
EIRP (dBm)		45.3	

 Fixed Loss: Tx / Common (dB) 0.0 / 0.0
 Free Space Loss (dB) 129.0

TEMQ20
 DRAGONWAVE INC
 23HD50SFC171V02
 HORIZON DUO
 45M8D7W 32 QAM
 1 CH DIG 171000.000
 0.001

	Nominal	Coordinated	Maximum
		10.0	
		-48.4	
		45.3	

 0.0 / 0.0

Transmit Frequencies (MHz)	23075.0000H(2)	23225.0000H(5)	21875.0000H(2)	22025.0000H(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0029A CA
City/County Cupertino/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0137A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 16.0~ N	37 °18' 30.9~ N
Longitude (NAD 83)	122 °1' 51.6~ W	122 °1' 53.3~ W
Ground Elevation (m/ft-AMSL)	71.70 / 235.2	79.60 / 261.2
Antenna Structure Registration #		
Path Azimuth (°)	181.725	1.724
Path Length (km / miles)	1.391 / 0.864	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.32	35.1 / 2.70 / 0.32
Centerline (m / ft - AGL) 29.26 / 96.0	13.59 / 44.6

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -46.5	-46.5
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 122.2	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0030B CA
City/County Cupertino/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQKU520
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0126A CA

Cupertino/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 19' 32.7~ N	37 ° 20' 4.0~ N
Longitude (NAD 83)	122 ° 0' 54.9~ W	122 ° 1' 16.6~ W
Ground Elevation (m/ft-AMSL)	57.00 / 187.0	58.90 / 193.2
Antenna Structure Registration #		
Path Azimuth (°)	331.032	151.028
Path Length (km / miles)	1.103 / 0.685	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.45	35.3 / 3.00 / 0.44
Centerline (m / ft - AGL) 28.12 / 92.3	17.68 / 58.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -44.1	-44.1
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 120.2	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0033D CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQKU517
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0040B CA

City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 47.7~ N	37 °25' 2.0~ N
Longitude (NAD 83)	122 °5' 53.7~ W	122 °5' 55.5~ W
Ground Elevation (m/ft-AMSL)	1.98 / 6.5	5.10 / 16.7
Antenna Structure Registration #		
Path Azimuth (°)	181.799	1.799
Path Length (km / miles)	1.410 / 0.876	

Transmit Antenna

Manufacturer	91233R	91233R
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HPLP1-23	HPLP1-23
Centerline (m / ft - AGL)	35.1 / 2.70 / -0.83	35.1 / 2.70 / 0.82
	36.58 / 120.0	13.11 / 43.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ55	TEMQ55
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC215V02	23HD50SFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	8.5	8.5
Received Level (dBm)	-45.5	-45.5
EIRP (dBm)	41.7	43.6
Fixed Loss: Tx / Common (dB)	0.0 / 1.9	0.0 / 0.0
Free Space Loss (dB)		122.3

Transmit Frequencies (MHz)	22125.0000V(7)	22225.0000V(9)	23325.0000V(7)	23425.0000V(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0033D CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQKU517
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0094B CA

Palo Alto/Santa Clara
Engineering Proposal / PRIMARY OPERATION

CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 47.7~ N	37 °26' 16.3~ N
Longitude (NAD 83)	122 °5' 53.7~ W	122 °6' 52.0~ W
Ground Elevation (m/ft-AMSL)	1.98 / 6.5	2.60 / 8.5
Antenna Structure Registration #		
Path Azimuth (°)	301.604	121.594
Path Length (km / miles)		1.683 / 1.046

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.42	35.3 / 3.00 / 0.41
Centerline (m / ft - AGL) 41.76 / 137.0	28.96 / 95.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -48.6	-48.6
EIRP (dBm) 41.9	41.9
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 123.9	

Transmit Frequencies (MHz)	22175.0000V(8)	22275.0000V(10)	23375.0000V(8)	23475.0000V(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0038B CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0100B CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 14.3~ N	37 °21' 48.4~ N
Longitude (NAD 83)	122 °2' 9.7~ W	122 °1' 14.9~ W
Ground Elevation (m/ft-AMSL)	49.10 / 161.1	32.60 / 107.0
Antenna Structure Registration #		1270702
Path Azimuth (°)	52.057	232.067
Path Length (km / miles)	1.710 / 1.062	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.08	35.3 / 3.00 / 0.07
Centerline (m / ft - AGL) 17.68 / 58.0	32.00 / 105.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -46.8	-46.8
EIRP (dBm) 43.8	41.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB) 124.0	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0041D CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0027A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 15.5~ N	37 °25' 11.5~ N
Longitude (NAD 83)	121 °57' 6.8~ W	121 °56' 0.2~ W
Ground Elevation (m/ft-AMSL)	2.40 / 7.9	6.30 / 20.7
Antenna Structure Registration #		
Path Azimuth (°)	94.301	274.312
Path Length (km / miles)	1.642 / 1.020	

Transmit Antenna

87016A	87016A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-23	VHLP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.60 / 0.43	40.4 / 1.60 / -0.44
Centerline (m / ft - AGL) 13.72 / 45.0	22.25 / 73.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.0	5.0
Received Level (dBm) -37.9	-37.9
EIRP (dBm) 45.4	45.4
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.7	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0041D CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0066B CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 15.5~ N	37 °24' 18.4~ N
Longitude (NAD 83)	121 °57' 6.8~ W	121 °58' 35.0~ W
Ground Elevation (m/ft-AMSL)	2.40 / 7.9	3.90 / 12.8
Antenna Structure Registration #		
Path Azimuth (°)	230.944	50.929
Path Length (km / miles)	2.793 / 1.736	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / 1.03	40.2 / 1.70 / -1.05
Centerline (m / ft - AGL) 13.72 / 45.0	63.03 / 206.8

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -40.4	-40.4
EIRP (dBm) 47.7	47.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.3	

Transmit Frequencies (MHz)	23325.0000H(7)	23425.0000H(9)	22125.0000H(7)	22225.0000H(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0042A CA
City/County Atherton/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0097A CA

Palo Alto/Santa Clara
Engineering Proposal / PRIMARY OPERATION
WQKU516
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °27' 41.8~ N	37 °26' 56.0~ N
Longitude (NAD 83)	122 °10' 26.6~ W	122 °9' 33.0~ W
Ground Elevation (m/ft-AMSL)	15.80 / 51.8	14.00 / 45.9
Antenna Structure Registration #		1017316
Path Azimuth (°)	136.982	316.991
Path Length (km / miles)	1.931 / 1.200	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 1.93	35.3 / 3.00 / -1.94
Centerline (m / ft - AGL) 15.24 / 50.0	82.30 / 270.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -46.0	-46.0
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 125.1	

Transmit Frequencies (MHz)	22125.0000V(7)	22275.0000V(10)	23325.0000V(7)	23475.0000V(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0043D CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0066B CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 13.9~ N	37 °24' 18.4~ N
Longitude (NAD 83)	121 °58' 29.4~ W	121 °58' 35.0~ W
Ground Elevation (m/ft-AMSL)	2.30 / 7.5	3.90 / 12.8
Antenna Structure Registration #		
Path Azimuth (°)	184.602	4.601
Path Length (km / miles)	1.717 / 1.067	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 1.69	35.1 / 2.70 / -1.70
CENTERLINE (m / ft - AGL) 13.72 / 45.0	63.03 / 206.8

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 64 QAM	45M8D7W 64 QAM
LOADING 1 CH DIG 215000.000	1 CH DIG 215000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
RECEIVED LEVEL (dBm) -45.3	-45.3
EIRP (dBm) 43.6	43.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB) 124.0	

Transmit Frequencies (MHz)	23375.0000H(8)	23475.0000H(10)	22175.0000H(8)	22275.0000H(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0045B CA
City/County Milpitas/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0199B CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °24' 9.8~ N	37 °23' 12.7~ N
Longitude (NAD 83)	121 °54' 39.2~ W	121 °53' 15.5~ W
Ground Elevation (m/ft-AMSL)	11.20 / 36.7	21.30 / 69.9
Antenna Structure Registration #		
Path Azimuth (°)	130.525	310.539
Path Length (km / miles)	2.709 / 1.683	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -0.16	40.2 / 1.70 / 0.14
Centerline (m / ft - AGL) 29.26 / 96.0	12.19 / 40.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC322V02	23HD50HFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 9.9	9.9
Received Level (dBm) -37.7	-37.7
EIRP (dBm) 50.1	50.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.0	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0058A CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0077C CA

Palo Alto/Santa Clara
Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °24' 4.6~ N	37 °23' 51.6~ N
Longitude (NAD 83)	122 °6' 40.5~ W	122 °7' 47.1~ W
Ground Elevation (m/ft-AMSL)	21.20 / 69.6	33.20 / 108.9
Antenna Structure Registration #		
Path Azimuth (°)	256.257	76.246
Path Length (km / miles)	1.686 / 1.048	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.74	35.3 / 3.00 / -0.76
Centerline (m / ft - AGL) 2.74 / 9.0	12.80 / 42.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -44.8	-44.8
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.9	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0071A CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0116B CA

City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 39.9~ N	37 °24' 19.6~ N
Longitude (NAD 83)	122 °4' 46.9~ W	122 °4' 7.9~ W
Ground Elevation (m/ft-AMSL)	22.50 / 73.8	13.30 / 43.6
Antenna Structure Registration #		
Path Azimuth (°)	38.083	218.090
Path Length (km / miles)	1.555 / 0.966	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.24	35.1 / 2.70 / 0.23
Centerline (m / ft - AGL) 21.34 / 70.0	24.08 / 79.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -46.4	-46.4
EIRP (dBm) 43.6	41.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB) 123.2	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0071A CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0275A CA

City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 39.9~ N	37 °23' 25.9~ N
Longitude (NAD 83)	122 °4' 46.9~ W	122 °4' 52.9~ W
Ground Elevation (m/ft-AMSL)	22.50 / 73.8	26.70 / 87.6
Antenna Structure Registration #		
Path Azimuth (°)	198.878	18.877
Path Length (km / miles)	0.456 / 0.283	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 2.67	35.1 / 2.70 / -2.67
Centerline (m / ft - AGL) 22.56 / 74.0	39.62 / 130.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 4.0	4.0
Received Level (dBm) -38.3	-38.3
EIRP (dBm) 39.1	39.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 112.5	

Transmit Frequencies (MHz)	22175.0000V(8)	22275.0000V(10)	23375.0000V(8)	23475.0000V(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0076C CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQKU514
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0092B CA

City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 36.4~ N	37 °24' 47.6~ N
Longitude (NAD 83)	122 °4' 19.7~ W	122 °4' 8.2~ W
Ground Elevation (m/ft-AMSL)	1.98 / 6.5	7.20 / 23.6
Antenna Structure Registration #		
Path Azimuth (°)	169.354	349.356
Path Length (km / miles)	1.531 / 0.951	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / 0.68	35.3 / 3.00 / -0.69
	22.25 / 73.0	35.36 / 116.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ55	TEMQ55
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC215V02	23HD50SFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	8.5	8.5
Received Level (dBm)	-45.9	-45.9
EIRP (dBm)	43.8	41.9
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB)		123.1

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0078C CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0069B CA

City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 20.5~ N	37 °22' 10.4~ N
Longitude (NAD 83)	122 °5' 18.4~ W	122 °4' 48.2~ W
Ground Elevation (m/ft-AMSL)	44.70 / 146.7	47.20 / 154.9
Antenna Structure Registration #		
Path Azimuth (°)	112.733	292.738
Path Length (km / miles)	0.806 / 0.501	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 1.41	35.1 / 2.70 / -1.42
Centerline (m / ft - AGL) 10.67 / 35.0	28.08 / 92.1

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -41.8	-41.8
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 117.5	

Transmit Frequencies (MHz)	23025.0000H(1)	23175.0000H(4)	21825.0000H(1)	21975.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0079C CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0063B CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 10.7~ N	37 °21' 34.8~ N
Longitude (NAD 83)	122 °3' 47.0~ W	122 °3' 42.3~ W
Ground Elevation (m/ft-AMSL)	57.30 / 188.0	50.30 / 165.0
Antenna Structure Registration #		
Path Azimuth (°)	8.848	188.849
Path Length (km / miles)	0.752 / 0.467	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.14	35.3 / 3.00 / -0.14
Centerline (m / ft - AGL) 30.48 / 100.0	39.32 / 129.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -44.6	-44.6
EIRP (dBm) 38.9	38.9
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 116.9	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0080B CA
City/County Cupertino/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0057A CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 14.3~ N	37 °19' 53.2~ N
Longitude (NAD 83)	122 °3' 53.5~ W	122 °3' 8.1~ W
Ground Elevation (m/ft-AMSL)	83.10 / 272.6	85.60 / 280.8
Antenna Structure Registration #		
Path Azimuth (°)	120.197	300.205
Path Length (km / miles)	1.293 / 0.804	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.80	35.3 / 3.00 / -0.80
Centerline (m / ft - AGL) 29.26 / 96.0	44.81 / 147.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -46.3	-46.3
EIRP (dBm) 41.9	41.9
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 121.6	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0082B CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0125A CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 58.3~ N	37 °21' 53.2~ N
Longitude (NAD 83)	121 °59' 40.0~ W	121 °58' 58.0~ W
Ground Elevation (m/ft-AMSL)	32.00 / 105.0	17.90 / 58.7
Antenna Structure Registration #		
Path Azimuth (°)	31.408	211.415
Path Length (km / miles)	1.983 / 1.232	

Transmit Antenna

87016A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.60 / -0.41	35.3 / 3.00 / 0.40
Centerline (m / ft - AGL) 22.86 / 75.0	22.86 / 75.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -42.1	-42.1
EIRP (dBm) 47.9	42.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 125.3	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0086A CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0057A CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 27.4~ N	37 °19' 53.2~ N
Longitude (NAD 83)	122 °2' 31.8~ W	122 °3' 8.1~ W
Ground Elevation (m/ft-AMSL)	67.30 / 220.8	85.60 / 280.8
Antenna Structure Registration #		
Path Azimuth (°)	220.285	40.278
Path Length (km / miles)	1.382 / 0.859	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 1.64	35.1 / 2.70 / -1.65
CENTERLINE (m / ft - AGL) 12.19 / 40.0	33.53 / 110.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 64 QAM	45M8D7W 64 QAM
LOADING 1 CH DIG 215000.000	1 CH DIG 215000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
RECEIVED LEVEL (dBm) -45.4	-45.4
EIRP (dBm) 43.6	41.7
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
FREE SPACE LOSS (dB) 122.2	

Transmit Frequencies (MHz)	23025.0000V(1)	23225.0000V(5)	21825.0000V(1)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0090C CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0062B CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 40.0~ N	37 °23' 57.8~ N
Longitude (NAD 83)	121 °56' 41.2~ W	121 °58' 3.3~ W
Ground Elevation (m/ft-AMSL)	6.40 / 21.0	5.20 / 17.1
Antenna Structure Registration #		
Path Azimuth (°)	285.210	105.196
Path Length (km / miles)	2.093 / 1.300	

Transmit Antenna

87016A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.60 / 0.18	35.3 / 3.00 / -0.19
Centerline (m / ft - AGL) 22.56 / 74.0	30.48 / 100.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -43.5	-43.5
EIRP (dBm) 48.9	41.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB) 125.8	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0090C CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0072A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 40.0~ N	37 °24' 2.4~ N
Longitude (NAD 83)	121 °56' 41.2~ W	121 °56' 26.3~ W
Ground Elevation (m/ft-AMSL)	6.40 / 21.0	4.60 / 15.1
Antenna Structure Registration #		
Path Azimuth (°)	27.953	207.956
Path Length (km / miles)	0.782 / 0.486	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / -0.58	35.3 / 3.00 / 0.58
	22.56 / 74.0	16.46 / 54.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ16	TEMQ16
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC322V02	23HD50SFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	5.5	5.5
Received Level (dBm)	-41.1	-41.1
EIRP (dBm)	40.8	40.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		117.2

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0097A CA
City/County Palo Alto/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQKU516
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0398A CA

Menlo Park/San Mateo
Engineering Proposal / PRIMARY OPERATION

CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °26' 56.0~ N	37 °28' 35.1~ N
Longitude (NAD 83)	122 °9' 33.0~ W	122 °9' 7.2~ W
Ground Elevation (m/ft-AMSL)	14.00 / 45.9	3.30 / 10.8
Antenna Structure Registration #	1017316	
Path Azimuth (°)	11.722	191.726
Path Length (km / miles)	3.120 / 1.939	

Transmit Antenna

87016A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.60 / -1.53	35.3 / 3.00 / 1.51
Centerline (m / ft - AGL) 82.30 / 270.0	10.36 / 34.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ54	TEMQ54
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50HFC215V02	23HD50HFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -45.0	-45.0
EIRP (dBm) 48.9	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.2	

Transmit Frequencies (MHz)	23025.0000H(1)	23175.0000H(4)	21825.0000H(1)	21975.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0097A CA
City/County Palo Alto/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQKU516
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0405A CA

Menlo Park/San Mateo
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °26' 56.0~ N	37 °27' 57.0~ N
Longitude (NAD 83)	122 °9' 33.0~ W	122 °9' 38.2~ W
Ground Elevation (m/ft-AMSL)	14.00 / 45.9	10.60 / 34.8
Antenna Structure Registration #	1017316	
Path Azimuth (°)	356.113	176.112
Path Length (km / miles)	1.885 / 1.171	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -2.15	35.1 / 2.70 / 2.13
Centerline (m / ft - AGL) 82.30 / 270.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -46.2	-46.2
EIRP (dBm) 43.6	43.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.9	

Transmit Frequencies (MHz)	23375.0000V(8)	23525.0000V(11)	22175.0000V(8)	22325.0000V(11)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0097A CA
City/County Palo Alto/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQKU516
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0048C CA

Palo Alto/Santa Clara
Engineering Proposal / PRIMARY OPERATION

CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °26' 56.0~ N	37 °26' 4.2~ N
Longitude (NAD 83)	122 °9' 33.0~ W	122 °7' 47.7~ W
Ground Elevation (m/ft-AMSL)	14.00 / 45.9	5.10 / 16.7
Antenna Structure Registration #	1017316	
Path Azimuth (°)	121.664	301.682
Path Length (km / miles)	3.041 / 1.890	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.49	35.1 / 2.70 / 1.47
Centerline (m / ft - AGL) 82.30 / 270.0	12.80 / 42.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ20	TEMQ20
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC171V02	23HD50SFC171V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 32 QAM	45M8D7W 32 QAM
Loading 1 CH DIG 171000.000	1 CH DIG 171000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 10.0	10.0
Received Level (dBm) -48.8	-48.8
EIRP (dBm) 45.1	45.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.0	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0100B CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0124C CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 48.4~ N	37 °21' 19.9~ N
Longitude (NAD 83)	122 °1' 14.9~ W	122 °0' 50.0~ W
Ground Elevation (m/ft-AMSL)	32.60 / 107.0	35.00 / 114.8
Antenna Structure Registration #	1270702	
Path Azimuth (°)	145.106	325.110
Path Length (km / miles)	1.071 / 0.666	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.71	35.3 / 3.00 / 0.70
Centerline (m / ft - AGL) 34.75 / 114.0	19.20 / 63.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -42.8	-42.8
EIRP (dBm) 41.9	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 0.0
Free Space Loss (dB) 120.0	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0103A CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0083A CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 49.5~ N	37 °23' 50.8~ N
Longitude (NAD 83)	122 °0' 34.5~ W	121 °59' 49.7~ W
Ground Elevation (m/ft-AMSL)	6.90 / 22.6	6.20 / 20.3
Antenna Structure Registration #		
Path Azimuth (°)	87.913	267.921
Path Length (km / miles)	1.103 / 0.685	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -1.17	35.3 / 3.00 / 1.16
Centerline (m / ft - AGL) 30.78 / 101.0	9.02 / 29.6

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -44.0	-44.0
EIRP (dBm) 40.9	42.8
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 0.0
Free Space Loss (dB) 120.2	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0106E CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0079C CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 9.5~ N	37 °21' 10.7~ N
Longitude (NAD 83)	122 °3' 9.8~ W	122 °3' 47.0~ W
Ground Elevation (m/ft-AMSL)	46.80 / 153.5	57.30 / 188.0
Antenna Structure Registration #		
Path Azimuth (°)	206.796	26.790
Path Length (km / miles)	2.031 / 1.262	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / 0.30	35.3 / 3.00 / -0.31
	30.18 / 99.0	30.48 / 100.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ54	TEMQ54
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50HFC215V02	23HD50HFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	18.5	18.5
Received Level (dBm)	-40.2	-40.2
EIRP (dBm)	51.9	51.9
Fixed Loss: Tx / Common (dB)	0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB)		125.5

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0107A CA
City/County East Palo Alto/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQLN743
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0065C CA

Palo Alto/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °27' 33.7~ N	37 °27' 9.5~ N
Longitude (NAD 83)	122 °8' 29.8~ W	122 °7' 33.4~ W
Ground Elevation (m/ft-AMSL)	8.84 / 29.0	1.80 / 5.9
Antenna Structure Registration #		1001916
Path Azimuth (°)	118.286	298.296
Path Length (km / miles)		1.574 / 0.978

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.77	35.1 / 2.70 / 0.76
Centerline (m / ft - AGL) 28.65 / 94.0	14.63 / 48.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -44.6	-44.6
EIRP (dBm) 43.6	43.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.3	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0109A CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0274A CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 13.6~ N	37 °23' 16.4~ N
Longitude (NAD 83)	121 °59' 56.1~ W	121 °58' 25.9~ W
Ground Elevation (m/ft-AMSL)	20.40 / 66.9	9.90 / 32.5
Antenna Structure Registration #		
Path Azimuth (°)	48.889	228.905
Path Length (km / miles)	2.945 / 1.830	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.17	35.3 / 3.00 / -0.19
Centerline (m / ft - AGL) 18.59 / 61.0	38.10 / 125.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ20	TEMQ20
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC171V02	23HD50SFC171V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 32 QAM	45M8D7W 32 QAM
Loading 1 CH DIG 171000.000	1 CH DIG 171000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 10.0	10.0
Received Level (dBm) -48.1	-48.1
EIRP (dBm) 45.3	45.3
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.7	

Transmit Frequencies (MHz)	21825.0000H(1)	21975.0000H(4)	23025.0000H(1)	23175.0000H(4)
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Microwave Path Data Sheet

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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information**CA-SJC0111A CA**City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool**CA-SJC0051B CA**City/County Cupertino/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed**Site Information**

Latitude (NAD 83)	37 °19' 20.5~ N	37 °19' 3.1~ N
Longitude (NAD 83)	121 °59' 48.9~ W	122 °0' 32.2~ W
Ground Elevation (m/ft-AMSL)	50.60 / 166.0	61.30 / 201.1
Antenna Structure Registration #		1269478
Path Azimuth (°)	243.294	63.287
Path Length (km / miles)	1.193 / 0.742	

Transmit Antenna87014A
Manufacturer ANDREW CORPORATION
Model VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.08
Centerline (m / ft - AGL) 28.65 / 94.087014A
Manufacturer ANDREW CORPORATION
Model VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.07
Centerline (m / ft - AGL) 16.31 / 53.5**Receive Antenna**

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)**Diversity Receive Antenna**Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)**Radio Information**TEMQ16
Manufacturer DRAGONWAVE INC
Model 23HD50SFC322V02
Model Description HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM
Loading 1 CH DIG 322000.000
Stability (%) 0.001

	Nominal	Coordinated	Maximum
Power (dBm)		5.5	
Received Level (dBm)		-44.8	
EIRP (dBm)		40.8	

Fixed Loss: Tx / Common (dB) 0.0 / 0.0
Free Space Loss (dB) 120.9TEMQ16
Manufacturer DRAGONWAVE INC
Model 23HD50SFC322V02
Model Description HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM
Loading 1 CH DIG 322000.000
Stability (%) 0.001

	Nominal	Coordinated	Maximum
Power (dBm)		5.5	
Received Level (dBm)		-44.8	
EIRP (dBm)		40.8	

Fixed Loss: Tx / Common (dB) 0.0 / 0.0

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0111A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0287A CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 20.5~ N	37 °20' 10.8~ N
Longitude (NAD 83)	121 °59' 48.9~ W	121 °59' 40.8~ W
Ground Elevation (m/ft-AMSL)	50.60 / 166.0	42.30 / 138.8
Antenna Structure Registration #		1270126
Path Azimuth (°)	7.327	187.328
Path Length (km / miles)	1.563 / 0.971	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.97	35.3 / 3.00 / 0.96
Centerline (m / ft - AGL) 28.65 / 94.0	10.67 / 35.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -45.1	-45.1
EIRP (dBm) 42.8	42.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.2	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0115B CA
City/County Palo Alto/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0052A CA

Palo Alto/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 15.0~ N	37 °24' 55.3~ N
Longitude (NAD 83)	122 °8' 28.5~ W	122 °7' 43.1~ W
Ground Elevation (m/ft-AMSL)	12.10 / 39.7	12.60 / 41.3
Antenna Structure Registration #		
Path Azimuth (°)	118.544	298.552
Path Length (km / miles)	1.271 / 0.790	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -1.38	35.3 / 3.00 / 1.37
Centerline (m / ft - AGL) 41.15 / 135.0	10.06 / 33.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -45.3	-45.3
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 121.4	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0117C CA
City/County Palo Alto/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0064A CA

Palo Alto/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °24' 37.3~ N	37 °24' 20.6~ N
Longitude (NAD 83)	122 °8' 50.2~ W	122 °8' 22.8~ W
Ground Elevation (m/ft-AMSL)	40.30 / 132.2	31.80 / 104.3
Antenna Structure Registration #		
Path Azimuth (°)	127.379	307.384
Path Length (km / miles)	0.848 / 0.527	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.39	35.3 / 3.00 / -0.40
Centerline (m / ft - AGL) 11.58 / 38.0	25.91 / 85.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -41.8	-41.8
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 117.9	

Transmit Frequencies (MHz)	21875.0000H(2)	22025.0000H(5)	23075.0000H(2)	23225.0000H(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0119C CA
City/County Palo Alto/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0097A CA

Palo Alto/Santa Clara
Engineering Proposal / PRIMARY OPERATION
WQKU516
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °26' 39.8~ N	37 °26' 56.0~ N
Longitude (NAD 83)	122 °8' 0.8~ W	122 °9' 33.0~ W
Ground Elevation (m/ft-AMSL)	5.40 / 17.7	14.00 / 45.9
Antenna Structure Registration #		1017316
Path Azimuth (°)	282.436	102.420
Path Length (km / miles)		2.321 / 1.442

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 2.01	35.1 / 2.70 / -2.03
Centerline (m / ft - AGL) 9.14 / 30.0	82.30 / 270.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -48.0	-48.0
EIRP (dBm) 43.6	43.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 126.7	

Transmit Frequencies (MHz)	22225.0000V(9)	22375.0000V(12)	23425.0000V(9)	23575.0000V(12)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0120A CA
City/County Palo Alto/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0033D CA

Mountain View/Santa Clara
Engineering Proposal / PRIMARY OPERATION
WQKU517
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 23.4~ N	37 °25' 47.7~ N
Longitude (NAD 83)	122 °6' 50.4~ W	122 °5' 53.7~ W
Ground Elevation (m/ft-AMSL)	5.10 / 16.7	1.98 / 6.5
Antenna Structure Registration #		
Path Azimuth (°)	61.742	241.752
Path Length (km / miles)		1.583 / 0.983

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.81	35.3 / 3.00 / -0.82
Centerline (m / ft - AGL) 16.15 / 53.0	41.76 / 137.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -46.1	-46.1
EIRP (dBm) 43.8	41.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB) 123.3	

Transmit Frequencies (MHz)

23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0124C CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0061A CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 19.9~ N	37 °21' 6.4~ N
Longitude (NAD 83)	122 °0' 50.0~ W	122 °0' 39.1~ W
Ground Elevation (m/ft-AMSL)	35.00 / 114.8	38.30 / 125.7
Antenna Structure Registration #		
Path Azimuth (°)	147.195	327.197
Path Length (km / miles)	0.495 / 0.308	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.50	35.1 / 2.70 / 0.50
CENTERLINE (m / ft - AGL) 19.20 / 63.0	11.58 / 38.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
RECEIVED LEVEL (dBm) -41.3	-41.3
EIRP (dBm) 38.7	38.7
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 113.2	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0125A CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0022A CA

City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 53.2~ N	37 °22' 30.0~ N
Longitude (NAD 83)	121 °58' 58.0~ W	121 °58' 38.3~ W
Ground Elevation (m/ft-AMSL)	17.90 / 58.7	13.40 / 44.0
Antenna Structure Registration #		
Path Azimuth (°)	23.133	203.136
Path Length (km / miles)	1.234 / 0.767	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / -0.51	35.3 / 3.00 / 0.50
	22.86 / 75.0	16.46 / 54.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ16	TEMQ16
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC322V02	23HD50SFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	5.5	5.5
Received Level (dBm)	-45.1	-45.1
EIRP (dBm)	40.8	40.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		121.2

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0125A CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0288B CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 53.2~ N	37 °21' 25.0~ N
Longitude (NAD 83)	121 °58' 58.0~ W	121 °59' 40.9~ W
Ground Elevation (m/ft-AMSL)	17.90 / 58.7	26.00 / 85.3
Antenna Structure Registration #		
Path Azimuth (°)	230.532	50.524
Path Length (km / miles)	1.368 / 0.850	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.02	35.3 / 3.00 / -0.02
Centerline (m / ft - AGL) 22.86 / 75.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -46.0	-46.0
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 122.1	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0126A CA
City/County Cupertino/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0084A CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 4.0~ N	37 °20' 31.6~ N
Longitude (NAD 83)	122 °1' 16.6~ W	122 °1' 32.9~ W
Ground Elevation (m/ft-AMSL)	58.90 / 193.2	54.70 / 179.5
Antenna Structure Registration #		
Path Azimuth (°)	334.755	154.752
Path Length (km / miles)	0.941 / 0.585	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.44	35.3 / 3.00 / 0.44
Centerline (m / ft - AGL) 13.72 / 45.0	10.67 / 35.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -42.7	-42.7
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 118.8	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0127B CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0113B CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 40.2~ N	37 °22' 29.7~ N
Longitude (NAD 83)	122 °2' 0.3~ W	122 °1' 0.4~ W
Ground Elevation (m/ft-AMSL)	29.80 / 97.8	23.40 / 76.8
Antenna Structure Registration #		
Path Azimuth (°)	102.383	282.393
Path Length (km / miles)	1.509 / 0.938	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.23	35.3 / 3.00 / -0.24
Centerline (m / ft - AGL) 19.20 / 63.0	31.70 / 104.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -45.7	-45.7
EIRP (dBm) 43.8	41.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB) 122.9	

Transmit Frequencies (MHz)

23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
23375.0000V(8)	23475.0000V(10)	22175.0000V(8)	22275.0000V(10)

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0127B CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0121A CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 40.2~ N	37 °22' 55.3~ N
Longitude (NAD 83)	122 °2' 0.3~ W	122 °0' 53.8~ W
Ground Elevation (m/ft-AMSL)	29.80 / 97.8	17.00 / 55.8
Antenna Structure Registration #		
Path Azimuth (°)	74.111	254.122
Path Length (km / miles)	1.701 / 1.057	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -1.02	35.3 / 3.00 / 1.01
Centerline (m / ft - AGL) 33.53 / 110.0	16.15 / 53.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -44.9	-44.9
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.0	

Transmit Frequencies (MHz)	23025.0000H(1)	23175.0000H(4)	21825.0000H(1)	21975.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0140B CA
City/County Cupertino/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0137A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °18' 38.4~ N	37 °18' 30.9~ N
Longitude (NAD 83)	122 °0' 46.5~ W	122 °1' 53.3~ W
Ground Elevation (m/ft-AMSL)	69.00 / 226.4	79.60 / 261.2
Antenna Structure Registration #		
Path Azimuth (°)	262.004	81.993
Path Length (km / miles)	1.661 / 1.032	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.22	35.3 / 3.00 / -0.23
Centerline (m / ft - AGL) 17.68 / 58.0	13.59 / 44.6

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -44.7	-44.7
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.8	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0145C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0142A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °18' 23.9~ N	37 °18' 1.8~ N
Longitude (NAD 83)	121 °59' 39.9~ W	122 °0' 18.2~ W
Ground Elevation (m/ft-AMSL)	63.70 / 209.0	71.60 / 234.9
Antenna Structure Registration #		
Path Azimuth (°)	234.161	54.155
Path Length (km / miles)	1.164 / 0.723	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.88	35.3 / 3.00 / 0.87
Centerline (m / ft - AGL) 36.58 / 120.0	10.97 / 36.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -44.6	-44.6
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 120.7	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0156A CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0165A CA

City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 9.9~ N	37 °20' 49.4~ N
Longitude (NAD 83)	121 °57' 32.7~ W	121 °56' 24.8~ W
Ground Elevation (m/ft-AMSL)	24.30 / 79.7	22.90 / 75.1
Antenna Structure Registration #		1055725
Path Azimuth (°)	110.710	290.721
Path Length (km / miles)	1.787 / 1.110	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.80	35.1 / 2.70 / -0.81
Centerline (m / ft - AGL) 17.37 / 57.0	43.89 / 144.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -45.7	-45.7
EIRP (dBm) 43.6	43.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.4	

Transmit Frequencies (MHz)	23325.0000V(7)	23425.0000V(9)	22125.0000V(7)	22225.0000V(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0159A CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0165A CA

City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 33.8~ N	37 °20' 49.4~ N
Longitude (NAD 83)	121 °57' 3.4~ W	121 °56' 24.8~ W
Ground Elevation (m/ft-AMSL)	30.20 / 99.1	22.90 / 75.1
Antenna Structure Registration #		1055725
Path Azimuth (°)	63.148	243.155
Path Length (km / miles)		1.065 / 0.662

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.59	35.3 / 3.00 / -0.59
Centerline (m / ft - AGL) 13.11 / 43.0	31.39 / 103.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -43.8	-43.8
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 119.9	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0161D CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0165A CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 35.4~ N	37 °20' 49.4~ N
Longitude (NAD 83)	121 °56' 48.7~ W	121 °56' 24.8~ W
Ground Elevation (m/ft-AMSL)	18.00 / 59.1	22.90 / 75.1
Antenna Structure Registration #		1055725
Path Azimuth (°)	157.471	337.475
Path Length (km / miles)		1.535 / 0.954

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.81	35.1 / 2.70 / -0.82
Centerline (m / ft - AGL) 14.33 / 47.0	31.39 / 103.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -45.4	-45.4
EIRP (dBm) 42.6	42.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.1	

Transmit Frequencies (MHz)

23025.0000H(1)	23175.0000H(4)	21825.0000H(1)	21975.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0162A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0154A CA

Los Gatos/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °15' 7.5~ N	37 °15' 2.2~ N
Longitude (NAD 83)	121 °56' 47.3~ W	121 °57' 53.4~ W
Ground Elevation (m/ft-AMSL)	86.10 / 282.5	82.20 / 269.7
Antenna Structure Registration #		
Path Azimuth (°)	264.278	84.267
Path Length (km / miles)	1.637 / 1.017	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.40	35.3 / 3.00 / -0.41
Centerline (m / ft - AGL) 29.87 / 98.0	45.42 / 149.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -46.4	-46.4
EIRP (dBm) 43.8	41.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB) 123.6	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information**CA-SJC0162A CA**City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool**CA-SJC0169C CA**City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed**Site Information**

Latitude (NAD 83)	37 °15' 7.5~ N	37 °14' 56.1~ N
Longitude (NAD 83)	121 °56' 47.3~ W	121 °55' 51.0~ W
Ground Elevation (m/ft-AMSL)	86.10 / 282.5	77.70 / 254.9
Antenna Structure Registration #		
Path Azimuth (°)	104.209	284.219
Path Length (km / miles)	1.431 / 0.889	

Transmit Antenna

Manufacturer	91233R	91233R
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HPLP1-23	HPLP1-23
Centerline (m / ft - AGL)	35.1 / 2.70 / -1.17	35.1 / 2.70 / 1.16
	29.87 / 98.0	9.14 / 30.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)**Diversity Receive Antenna**Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)**Radio Information**

Manufacturer	TEMQ16	TEMQ16
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC322V02	23HD50SFC322V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 256 QAM	45M8D7W 256 QAM
Stability (%)	1 CH DIG 322000.000	1 CH DIG 322000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	7.5	7.5
Received Level (dBm)	-44.8	-44.8
EIRP (dBm)	42.6	42.6
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		122.5

Transmit Frequencies (MHz)	21925.0000H(3)	22075.0000H(6)	23125.0000H(3)	23275.0000H(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0164A CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0102B CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 47.1~ N	37 °22' 5.8~ N
Longitude (NAD 83)	121 °56' 24.7~ W	121 °57' 29.6~ W
Ground Elevation (m/ft-AMSL)	9.60 / 31.5	14.00 / 45.9
Antenna Structure Registration #		1255516
Path Azimuth (°)	231.437	51.427
Path Length (km / miles)	2.042 / 1.269	

Transmit Antenna

87014A	87016A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.26	40.4 / 1.60 / -0.28
Centerline (m / ft - AGL) 17.68 / 58.0	22.86 / 75.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -42.4	-42.4
EIRP (dBm) 42.8	47.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 125.6	

Transmit Frequencies (MHz)	23025.0000H(1)	23175.0000H(4)	21825.0000H(1)	21975.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0165A CA
City/County Santa Clara/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0285A CA

Santa Clara/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 49.4~ N	37 °21' 10.6~ N
Longitude (NAD 83)	121 °56' 24.8~ W	121 °58' 9.3~ W
Ground Elevation (m/ft-AMSL)	22.90 / 75.1	22.40 / 73.5
Antenna Structure Registration #	1055725	
Path Azimuth (°)	284.267	104.249
Path Length (km / miles)	2.654 / 1.649	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / 0.49	40.2 / 1.70 / -0.51
Centerline (m / ft - AGL) 12.19 / 40.0	35.84 / 117.6

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -38.9	-38.9
EIRP (dBm) 48.7	48.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 127.8	

Transmit Frequencies (MHz)	22175.0000V(8)	22275.0000V(10)	23375.0000V(8)	23475.0000V(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0166D CA
City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0445D CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 18.7~ N	37 °16' 45.5~ N
Longitude (NAD 83)	121 °56' 5.8~ W	121 °55' 18.3~ W
Ground Elevation (m/ft-AMSL)	59.40 / 194.9	58.70 / 192.6
Antenna Structure Registration #	1204443	
Path Azimuth (°)	131.173	311.181
Path Length (km / miles)	1.555 / 0.966	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -1.60	35.3 / 3.00 / 1.59
Centerline (m / ft - AGL) 67.06 / 220.0	24.38 / 80.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -46.0	-46.0
EIRP (dBm) 43.8	41.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB) 123.2	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0166D CA
City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0175A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 18.7~ N	37 °15' 43.3~ N
Longitude (NAD 83)	121 °56' 5.8~ W	121 °55' 3.3~ W
Ground Elevation (m/ft-AMSL)	59.40 / 194.9	62.70 / 205.7
Antenna Structure Registration #	1204443	
Path Azimuth (°)	152.361	332.371
Path Length (km / miles)	3.320 / 2.063	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -0.93	35.1 / 2.70 / 0.91
Centerline (m / ft - AGL) 67.06 / 220.0	10.67 / 35.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ52	TEMQ52
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC110V02	23HD50SFC110V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M2D7W 16 QAM	45M2D7W 16 QAM
Loading 1 CH DIG 110000.000	1 CH DIG 110000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 10.5	10.5
Received Level (dBm) -49.1	-49.1
EIRP (dBm) 45.6	45.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.8	

Transmit Frequencies (MHz)	23325.0000V(7)	23475.0000V(10)	22125.0000V(7)	22275.0000V(10)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0166D CA
City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0179A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 18.7~ N	37 °17' 49.2~ N
Longitude (NAD 83)	121 °56' 5.8~ W	121 °54' 47.2~ W
Ground Elevation (m/ft-AMSL)	59.40 / 194.9	49.10 / 161.1
Antenna Structure Registration #	1204443	
Path Azimuth (°)	64.088	244.101
Path Length (km / miles)	2.152 / 1.337	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.62	35.1 / 2.70 / 1.61
Centerline (m / ft - AGL) 67.06 / 220.0	16.76 / 55.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -47.3	-47.3
EIRP (dBm) 43.6	43.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 126.0	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0168B CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0162A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °15' 53.7~ N	37 °15' 7.5~ N
Longitude (NAD 83)	121 °56' 1.2~ W	121 °56' 47.3~ W
Ground Elevation (m/ft-AMSL)	68.60 / 225.1	86.10 / 282.5
Antenna Structure Registration #		
Path Azimuth (°)	218.579	38.571
Path Length (km / miles)	1.822 / 1.132	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 1.05	35.3 / 3.00 / -1.06
Centerline (m / ft - AGL) 13.72 / 45.0	29.87 / 98.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -45.5	-45.5
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.6	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0168B CA

City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0170B CA

City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °15' 53.7~ N	37 °14' 22.9~ N
Longitude (NAD 83)	121 °56' 1.2~ W	121 °55' 15.5~ W
Ground Elevation (m/ft-AMSL)	68.60 / 225.1	73.90 / 242.5
Antenna Structure Registration #		
Path Azimuth (°)	158.080	338.087
Path Length (km / miles)	3.017 / 1.875	

Transmit Antenna

87016A
Manufacturer ANDREW CORPORATION
Model VHLP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.60 / -0.60
Centerline (m / ft - AGL) 50.14 / 164.5

87016A
Manufacturer ANDREW CORPORATION
Model VHLP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.60 / 0.58
Centerline (m / ft - AGL) 13.72 / 45.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55
Manufacturer DRAGONWAVE INC
Model 23HD50SFC215V02
Model Description HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM
Loading 1 CH DIG 215000.000
Stability (%) 0.001
Nominal Coordinated Maximum
Power (dBm) 8.5
Received Level (dBm) -41.5
EIRP (dBm) 48.9
Fixed Loss: Tx / Common (dB) 0.0 / 0.0
Free Space Loss (dB) 128.9

TEMQ55
Manufacturer DRAGONWAVE INC
Model 23HD50SFC215V02
Model Description HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM
Loading 1 CH DIG 215000.000
Stability (%) 0.001
Nominal Coordinated Maximum
Power (dBm) 8.5
Received Level (dBm) -41.5
EIRP (dBm) 47.0
Fixed Loss: Tx / Common (dB) 0.0 / 1.9

Transmit Frequencies (MHz)

23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0171C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0437E CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °18' 57.4~ N	37 °18' 18.5~ N
Longitude (NAD 83)	121 °55' 52.3~ W	121 °55' 32.2~ W
Ground Elevation (m/ft-AMSL)	43.30 / 142.1	47.00 / 154.2
Antenna Structure Registration #		
Path Azimuth (°)	157.571	337.575
Path Length (km / miles)	1.297 / 0.806	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.15	35.1 / 2.70 / -0.15
Centerline (m / ft - AGL) 20.73 / 68.0	20.42 / 67.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal	Coordinated
Power (dBm) 5.5	Maximum
Received Level (dBm) -45.9	
EIRP (dBm) 40.6	
Nominal	Coordinated
Power (dBm) 5.5	Maximum
Received Level (dBm) -45.9	
EIRP (dBm) 40.6	
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 121.6	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0174C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0186A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °16' 15.2~ N	37 °16' 16.4~ N
Longitude (NAD 83)	121 °55' 4.8~ W	121 °54' 14.1~ W
Ground Elevation (m/ft-AMSL)	56.40 / 185.0	52.10 / 170.9
Antenna Structure Registration #		
Path Azimuth (°)	88.299	268.308
Path Length (km / miles)	1.250 / 0.777	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.93	35.3 / 3.00 / 0.92
Centerline (m / ft - AGL) 29.26 / 96.0	13.41 / 44.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM025	TEM025
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC271V02	23HD50SFC271V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M8D7W 128 QAM	47M8D7W 128 QAM
Loading 1 CH DIG 271000.000	1 CH DIG 271000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.0	7.0
Received Level (dBm) -45.6	-45.6
EIRP (dBm) 40.4	42.3
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 0.0
Free Space Loss (dB) 121.3	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0176A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0167C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 8.0~ N	37 °19' 31.8~ N
Longitude (NAD 83)	121 °55' 3.1~ W	121 °55' 33.5~ W
Ground Elevation (m/ft-AMSL)	28.80 / 94.5	36.00 / 118.1
Antenna Structure Registration #		
Path Azimuth (°)	213.848	33.843
Path Length (km / miles)	1.344 / 0.835	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.68	35.3 / 3.00 / -0.69
Centerline (m / ft - AGL) 13.11 / 43.0	21.95 / 72.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -45.8	-45.8
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 121.9	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0181A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0192B CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 52.8~ N	37 °21' 57.2~ N
Longitude (NAD 83)	121 °54' 29.4~ W	121 °53' 34.1~ W
Ground Elevation (m/ft-AMSL)	16.50 / 54.1	18.30 / 60.0
Antenna Structure Registration #		1240678
Path Azimuth (°)	84.303	264.312
Path Length (km / miles)		1.367 / 0.850

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.25	35.3 / 3.00 / -0.26
Centerline (m / ft - AGL) 18.59 / 61.0	22.86 / 75.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -46.0	-46.0
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 122.1	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information	CA-SJC0183C CA	CA-SJC0208C CA
City/County	San Jose/Santa Clara	San Jose/Santa Clara
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign		
Licensee Code	CLESP3	CLESP3
Licensee Name	Clearwire Spectrum Holdings III, LL	Clearwire Spectrum Holdings III, LL
Radio Service / Station Class	MG -- Microwave Industrial/Business Pool	FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 56.0~ N	37 °22' 10.8~ N
Longitude (NAD 83)	121 °54' 1.0~ W	121 °52' 28.4~ W
Ground Elevation (m/ft-AMSL)	20.00 / 65.6	25.80 / 84.6
Antenna Structure Registration #	1014940	
Path Azimuth (°)	44.652	224.667
Path Length (km / miles)	3.242 / 2.014	

Transmit Antenna

Manufacturer	RD1150	RD1150
Model	RADIO WAVES, INC	RADIO WAVES, INC
Gain(dBi) / Beamwidth(°) / Tilt(°)	HP2-23	HP2-23
Centerline (m / ft – AGL)	40.2 / 1.70 / –0.65	40.2 / 1.70 / 0.62
	51.82 / 170.0	10.06 / 33.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft – AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft – AGL)

Radio Information

Manufacturer	TEMQ55	TEMQ55
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC215V02	23HD50SFC215V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M8D7W 64 QAM	45M8D7W 64 QAM
Stability (%)	1 CH DIG 215000.000	1 CH DIG 215000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	8.5	8.5
Received Level (dBm)	–40.7	–40.7
EIRP (dBm)	48.7	48.7
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		129.6

Transmit Frequencies (MHz)	21875.0000H(2)	22075.0000H(6)	23075.0000H(2)	23275.0000H(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0189E CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0200A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °14' 2.3~ N	37 °13' 56.6~ N
Longitude (NAD 83)	121 °53' 57.4~ W	121 °53' 0.0~ W
Ground Elevation (m/ft-AMSL)	82.30 / 270.0	73.50 / 241.1
Antenna Structure Registration #		
Path Azimuth (°)	97.075	277.084
Path Length (km / miles)	1.426 / 0.886	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.92	35.3 / 3.00 / 0.91
Centerline (m / ft - AGL) 44.50 / 146.0	30.48 / 100.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC322V02	23HD50HFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -40.1	-40.1
EIRP (dBm) 48.9	48.9
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 122.4	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0190C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0187A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 59.2~ N	37 °22' 27.4~ N
Longitude (NAD 83)	121 °54' 0.8~ W	121 °54' 10.7~ W
Ground Elevation (m/ft-AMSL)	17.30 / 56.8	16.20 / 53.1
Antenna Structure Registration #		
Path Azimuth (°)	193.953	13.951
Path Length (km / miles)	1.010 / 0.628	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.02	35.1 / 2.70 / -0.03
CENTERLINE (m / ft - AGL) 13.72 / 45.0	15.24 / 50.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEM020	TEM020
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC371V02	23HD50SFC371V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 49M2D7W 256 QAM	49M2D7W 256 QAM
LOADING 1 CH DIG 371000.000	1 CH DIG 371000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
RECEIVED LEVEL (dBm) -43.7	-43.7
EIRP (dBm) 40.6	40.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB) 119.4	

Transmit Frequencies (MHz)	23375.0000H(8)	23525.0000H(11)	22175.0000H(8)	22325.0000H(11)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0197C CA
City/County Milpitas/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0210C CA

Milpitas/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °25' 10.9~ N	37 °25' 5.0~ N
Longitude (NAD 83)	121 °53' 8.2~ W	121 °52' 21.1~ W
Ground Elevation (m/ft-AMSL)	18.00 / 59.1	36.00 / 118.1
Antenna Structure Registration #		
Path Azimuth (°)	98.922	278.930
Path Length (km / miles)	1.172 / 0.728	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.27	35.1 / 2.70 / -0.27
Centerline (m / ft - AGL) 24.38 / 80.0	11.89 / 39.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -45.0	-45.0
EIRP (dBm) 40.6	40.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 120.7	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0199B CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0203A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 12.7~ N	37 °23' 45.0~ N
Longitude (NAD 83)	121 °53' 15.5~ W	121 °53' 10.0~ W
Ground Elevation (m/ft-AMSL)	21.30 / 69.9	21.60 / 70.9
Antenna Structure Registration #		
Path Azimuth (°)	7.737	187.737
Path Length (km / miles)	1.005 / 0.624	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.76	35.1 / 2.70 / -0.77
CENTERLINE (m / ft - AGL) 12.19 / 40.0	25.30 / 83.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
RECEIVED LEVEL (dBm) -43.7	-43.7
EIRP (dBm) 40.6	40.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 119.4	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0201A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0436C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 5.7~ N	37 °18' 56.3~ N
Longitude (NAD 83)	121 °53' 5.1~ W	121 °51' 57.8~ W
Ground Elevation (m/ft-AMSL)	33.20 / 108.9	33.50 / 109.9
Antenna Structure Registration #		
Path Azimuth (°)	99.914	279.925
Path Length (km / miles)	1.682 / 1.045	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.18	35.1 / 2.70 / -0.19
Centerline (m / ft - AGL) 12.50 / 41.0	17.68 / 58.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEM025	TEM025
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC271V02	23HD50SFC271V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 47M8D7W 128 QAM	47M8D7W 128 QAM
Loading 1 CH DIG 271000.000	1 CH DIG 271000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.0	7.0
Received Level (dBm) -46.7	-46.7
EIRP (dBm) 42.1	42.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.9	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0205A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0443D CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °18' 21.0~ N	37 °17' 13.8~ N
Longitude (NAD 83)	121 °52' 40.9~ W	121 °52' 28.3~ W
Ground Elevation (m/ft-AMSL)	39.00 / 128.0	66.00 / 216.5
Antenna Structure Registration #		
Path Azimuth (°)	171.480	351.482
Path Length (km / miles)	2.095 / 1.302	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.69	35.3 / 3.00 / -0.70
Centerline (m / ft - AGL) 18.90 / 62.0	17.22 / 56.5

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -46.7	-46.7
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 125.8	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0209C CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0214C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °14' 30.2~ N	37 °15' 5.9~ N
Longitude (NAD 83)	121 °51' 39.0~ W	121 °51' 44.5~ W
Ground Elevation (m/ft-AMSL)	55.80 / 183.1	56.60 / 185.7
Antenna Structure Registration #		
Path Azimuth (°)	352.979	172.978
Path Length (km / miles)	1.109 / 0.689	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.34	35.1 / 2.70 / -0.34
CENTERLINE (m / ft - AGL) 14.02 / 46.0	19.81 / 65.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
RECEIVED LEVEL (dBm) -44.6	-44.6
EIRP (dBm) 40.6	40.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB) 120.3	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0215D CA
City/County /Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0196C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 7.0~ N	37 °15' 58.1~ N
Longitude (NAD 83)	121 °51' 28.0~ W	121 °53' 24.3~ W
Ground Elevation (m/ft-AMSL)	131.00 / 429.8	51.20 / 168.0
Antenna Structure Registration #	1017275	
Path Azimuth (°)	233.458	53.439
Path Length (km / miles)	3.567 / 2.216	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -1.73	40.2 / 1.70 / 1.71
Centerline (m / ft - AGL) 38.10 / 125.0	10.67 / 35.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -41.5	-41.5
EIRP (dBm) 48.7	48.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.4	

Transmit Frequencies (MHz)	23125.0000H(3)	23275.0000H(6)	21925.0000H(3)	22075.0000H(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0216B CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0222A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 55.0~ N	37 °23' 29.3~ N
Longitude (NAD 83)	121 °51' 41.0~ W	121 °50' 42.8~ W
Ground Elevation (m/ft-AMSL)	40.80 / 133.9	61.80 / 202.8
Antenna Structure Registration #	1201027	1269897
Path Azimuth (°)	53.546	233.556
Path Length (km / miles)	1.780 / 1.106	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.08	35.3 / 3.00 / -0.09
Centerline (m / ft - AGL) 33.53 / 110.0	15.24 / 50.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ20	TEMQ20
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC171V02	23HD50SFC171V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 32 QAM	45M8D7W 32 QAM
Loading 1 CH DIG 171000.000	1 CH DIG 171000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 10.0	10.0
Received Level (dBm) -45.7	-45.7
EIRP (dBm) 43.4	45.3
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 0.0
Free Space Loss (dB) 124.4	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0219A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0466C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °13' 58.3~ N	37 °14' 23.4~ N
Longitude (NAD 83)	121 °50' 47.1~ W	121 °50' 4.9~ W
Ground Elevation (m/ft-AMSL)	53.00 / 173.9	50.60 / 166.0
Antenna Structure Registration #		
Path Azimuth (°)	53.351	233.358
Path Length (km / miles)	1.296 / 0.806	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / BEAMWIDTH(°) / TILT(°) 35.1 / 2.70 / 0.13	35.1 / 2.70 / -0.14
CENTERLINE (m / ft - AGL) 5.79 / 19.0	11.28 / 37.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / BEAMWIDTH (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / BEAMWIDTH (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 64 QAM	45M8D7W 64 QAM
LOADING 1 CH DIG 215000.000	1 CH DIG 215000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
RECEIVED LEVEL (dBm) -42.9	-42.9
EIRP (dBm) 43.6	43.6
FIXED LOSS: TX / COMMON (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB) 121.6	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0220A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0222A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °24' 5.0~ N	37 °23' 29.3~ N
Longitude (NAD 83)	121 °50' 59.8~ W	121 °50' 42.8~ W
Ground Elevation (m/ft-AMSL)	56.70 / 186.0	61.80 / 202.8
Antenna Structure Registration #		1269897
Path Azimuth (°)	159.196	339.199
Path Length (km / miles)	1.177 / 0.732	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.35	35.3 / 3.00 / -0.36
Centerline (m / ft - AGL) 15.24 / 50.0	17.37 / 57.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -42.7	-42.7
EIRP (dBm) 42.8	42.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 120.8	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0225B CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0458A CA

/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °16' 2.0~ N	37 °15' 32.7~ N
Longitude (NAD 83)	121 °50' 0.2~ W	121 °50' 32.1~ W
Ground Elevation (m/ft-AMSL)	50.60 / 166.0	48.60 / 159.4
Antenna Structure Registration #		
Path Azimuth (°)	221.032	41.027
Path Length (km / miles)	1.197 / 0.744	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.10	35.3 / 3.00 / 0.09
Centerline (m / ft - AGL) 12.19 / 40.0	12.19 / 40.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -44.8	-44.8
EIRP (dBm) 40.8	40.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 120.9	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information	CA-SJC0226C CA	CA-SFO0444A CA
City/County	San Jose/Santa Clara	San Jose/Santa Clara
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign		
Licensee Code	CLESP3	CLESP3
Licensee Name	Clearwire Spectrum Holdings III, LL	Clearwire Spectrum Holdings III, LL
Radio Service / Station Class	MG -- Microwave Industrial/Business Pool	FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 39.5~ N	37 °17' 12.0~ N
Longitude (NAD 83)	121 °49' 46.4~ W	121 °47' 47.5~ W
Ground Elevation (m/ft-AMSL)	47.80 / 156.8	201.10 / 659.8
Antenna Structure Registration #		
Path Azimuth (°)	106.135	286.155
Path Length (km / miles)	3.049 / 1.894	

Transmit Antenna

Manufacturer	87014A	87014A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP1-23	VHLP1-23
Centerline (m / ft - AGL)	35.3 / 3.00 / 2.62	35.3 / 3.00 / -2.64
	24.38 / 80.0	11.28 / 37.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

Manufacturer	TEMQ52	TEMQ52
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	23HD50SFC110V02	23HD50SFC110V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	45M2D7W 16 QAM	45M2D7W 16 QAM
Stability (%)	1 CH DIG 110000.000	1 CH DIG 110000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	10.5	10.5
Received Level (dBm)	-47.9	-47.9
EIRP (dBm)	45.8	45.8
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		129.0

Transmit Frequencies (MHz) 23075.0000H(2) 23225.0000H(5) 21875.0000H(2) 22025.0000H(5)

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0232A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0425C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 32.5~ N	37 °20' 55.3~ N
Longitude (NAD 83)	121 °48' 53.4~ W	121 °48' 16.4~ W
Ground Elevation (m/ft-AMSL)	48.40 / 158.8	53.60 / 175.9
Antenna Structure Registration #		
Path Azimuth (°)	141.547	321.554
Path Length (km / miles)	1.464 / 0.910	

Transmit Antenna

91233R	RD1150
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HP2-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 0.32	40.2 / 1.70 / -0.33
CENTERLINE (m / ft - AGL) 17.37 / 57.0	20.42 / 67.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -39.9	-39.9
EIRP (dBm) 42.6	47.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 122.7	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0232A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0231A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 32.5~ N	37 °20' 33.5~ N
Longitude (NAD 83)	121 °48' 53.4~ W	121 °49' 23.8~ W
Ground Elevation (m/ft-AMSL)	48.40 / 158.8	35.70 / 117.1
Antenna Structure Registration #		1246272
Path Azimuth (°)	202.362	22.357
Path Length (km / miles)	1.967 / 1.222	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.09	35.3 / 3.00 / -0.11
Centerline (m / ft - AGL) 17.37 / 57.0	33.53 / 110.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ20	TEMQ20
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC171V02	23HD50SFC171V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 32 QAM	45M8D7W 32 QAM
Loading 1 CH DIG 171000.000	1 CH DIG 171000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 10.0	10.0
Received Level (dBm) -46.5	-46.5
EIRP (dBm) 45.3	43.4
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB) 125.2	

Transmit Frequencies (MHz)	23125.0000V(3)	23275.0000V(6)	21925.0000V(3)	22075.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0234B CA
City/County /Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0435C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °17' 28.4~ N	37 °18' 35.9~ N
Longitude (NAD 83)	121 °48' 30.3~ W	121 °49' 22.0~ W
Ground Elevation (m/ft-AMSL)	83.20 / 273.0	46.20 / 151.6
Antenna Structure Registration #		
Path Azimuth (°)	328.543	148.535
Path Length (km / miles)	2.440 / 1.516	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.68	35.3 / 3.00 / 0.66
Centerline (m / ft - AGL) 7.32 / 24.0	15.85 / 52.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ20	TEMQ20
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC171V02	23HD50SFC171V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 32 QAM	45M8D7W 32 QAM
Loading 1 CH DIG 171000.000	1 CH DIG 171000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 10.0	10.0
Received Level (dBm) -48.4	-48.4
EIRP (dBm) 45.3	43.4
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 1.9
Free Space Loss (dB) 127.1	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0238A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0291A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °18' 47.3~ N	37 °18' 4.2~ N
Longitude (NAD 83)	121 °47' 37.6~ W	121 °47' 5.1~ W
Ground Elevation (m/ft-AMSL)	62.40 / 204.7	110.10 / 361.2
Antenna Structure Registration #		
Path Azimuth (°)	148.935	328.941
Path Length (km / miles)	1.551 / 0.964	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 1.97	35.1 / 2.70 / -1.98
Centerline (m / ft - AGL) 12.50 / 41.0	18.29 / 60.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
Received Level (dBm) -45.5	-45.5
EIRP (dBm) 42.6	42.6
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 123.2	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0239B CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0429A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 44.6~ N	37 °19' 20.9~ N
Longitude (NAD 83)	121 °47' 51.7~ W	121 °46' 44.9~ W
Ground Elevation (m/ft-AMSL)	45.50 / 149.3	87.50 / 287.1
Antenna Structure Registration #		
Path Azimuth (°)	113.949	293.960
Path Length (km / miles)	1.800 / 1.118	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / 1.62	35.1 / 2.70 / -1.63
CENTERLINE (m / ft - AGL) 12.19 / 40.0	21.34 / 70.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC215V02	23HD50SFC215V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 64 QAM	45M8D7W 64 QAM
LOADING 1 CH DIG 215000.000	1 CH DIG 215000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
RECEIVED LEVEL (dBm) -45.8	-45.8
EIRP (dBm) 43.6	43.6
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB) 124.5	

Transmit Frequencies (MHz)	21925.0000V(3)	22075.0000V(6)	23125.0000V(3)	23275.0000V(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0239B CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0236C CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 44.6~ N	37 °19' 19.7~ N
Longitude (NAD 83)	121 °47' 51.7~ W	121 °48' 20.1~ W
Ground Elevation (m/ft-AMSL)	45.50 / 149.3	45.80 / 150.3
Antenna Structure Registration #		
Path Azimuth (°)	222.331	42.326
Path Length (km / miles)	1.038 / 0.645	

Transmit Antenna

91233R	87014A
MANUFACTURER RADIO WAVES, INC	ANDREW CORPORATION
MODEL HPLP1-23	VHLP1-23
GAIN(dBi) / BEAMWIDTH(°) / TILT(°) 35.1 / 2.70 / 0.95	35.3 / 3.00 / -0.96
CENTERLINE (m / ft - AGL) 12.19 / 40.0	29.26 / 96.0

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / BEAMWIDTH (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / BEAMWIDTH (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 7.5	7.5
RECEIVED LEVEL (dBm) -43.7	-43.7
EIRP (dBm) 42.6	40.9
FIXED LOSS: TX / COMMON (dB) 0.0 / 0.0	0.0 / 1.9
FREE SPACE LOSS (dB) 119.7	

Transmit Frequencies (MHz)	21825.0000V(1)	21975.0000V(4)	23025.0000V(1)	23175.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0240A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0237A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °14' 11.5~ N	37 °14' 25.0~ N
Longitude (NAD 83)	121 °47' 9.9~ W	121 °48' 3.5~ W
Ground Elevation (m/ft-AMSL)	62.40 / 204.7	58.60 / 192.3
Antenna Structure Registration #		
Path Azimuth (°)	287.490	107.481
Path Length (km / miles)	1.385 / 0.861	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.23	35.3 / 3.00 / 0.22
Centerline (m / ft - AGL) 41.45 / 136.0	39.81 / 130.6

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ48	TEMQ48
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC322V02	23HD50HFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 15.5	15.5
Received Level (dBm) -39.9	-39.9
EIRP (dBm) 48.9	48.9
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 122.2	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0275A CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0039B CA

City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 25.9~ N	37 °23' 26.6~ N
Longitude (NAD 83)	122 °4' 52.9~ W	122 °3' 16.9~ W
Ground Elevation (m/ft-AMSL)	26.70 / 87.6	24.10 / 79.1
Antenna Structure Registration #		1016140
Path Azimuth (°)	89.468	269.485
Path Length (km / miles)		2.362 / 1.467

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.63	35.3 / 3.00 / 0.61
Centerline (m / ft - AGL) 39.62 / 130.0	16.76 / 55.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ55	TEMQ55
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC215V02	23HD50SFC215V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 64 QAM	45M8D7W 64 QAM
Loading 1 CH DIG 215000.000	1 CH DIG 215000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 8.5	8.5
Received Level (dBm) -47.7	-47.7
EIRP (dBm) 43.8	43.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 126.8	

Transmit Frequencies (MHz)	23025.0000H(1)	23175.0000H(4)	21825.0000H(1)	21975.0000H(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0275A CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0059A CA

City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 25.9~ N	37 °23' 11.2~ N
Longitude (NAD 83)	122 °4' 52.9~ W	122 °5' 3.7~ W
Ground Elevation (m/ft-AMSL)	26.70 / 87.6	31.60 / 103.7
Antenna Structure Registration #		
Path Azimuth (°)	210.381	30.379
Path Length (km / miles)	0.525 / 0.326	

Transmit Antenna

91233R	91233R
Manufacturer RADIO WAVES, INC	RADIO WAVES, INC
Model HPLP1-23	HPLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -1.69	35.1 / 2.70 / 1.69
Centerline (m / ft - AGL) 39.62 / 130.0	19.20 / 63.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC322V02	23HD50SFC322V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.0	5.0
Received Level (dBm) -38.6	-38.6
EIRP (dBm) 40.1	40.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 113.8	

Transmit Frequencies (MHz)	23075.0000V(2)	23225.0000V(5)	21875.0000V(2)	22025.0000V(5)
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Microwave Path Data Sheet

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19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0275A CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0118A CA

City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °23' 25.9~ N	37 °23' 50.4~ N
Longitude (NAD 83)	122 °4' 52.9~ W	122 °3' 4.6~ W
Ground Elevation (m/ft-AMSL)	26.70 / 87.6	16.80 / 55.1
Antenna Structure Registration #		1017312
Path Azimuth (°)	74.161	254.179
Path Length (km / miles)		2.769 / 1.721

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.58	35.3 / 3.00 / 0.56
Centerline (m / ft - AGL) 39.62 / 130.0	21.95 / 72.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ52	TEMQ52
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD50SFC110V02	23HD50SFC110V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M2D7W 16 QAM	45M2D7W 16 QAM
Loading 1 CH DIG 110000.000	1 CH DIG 110000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 10.5	10.5
Received Level (dBm) -47.1	-47.1
EIRP (dBm) 45.8	45.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.2	

Transmit Frequencies (MHz)	23325.0000V(7)	23425.0000V(9)	22125.0000V(7)	22225.0000V(9)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0276A CA
City/County San Jose/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0201A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °19' 49.6~ N	37 °19' 5.7~ N
Longitude (NAD 83)	121 °53' 18.4~ W	121 °53' 5.1~ W
Ground Elevation (m/ft-AMSL)	29.70 / 97.4	33.20 / 108.9
Antenna Structure Registration #		
Path Azimuth (°)	166.398	346.400
Path Length (km / miles)	1.392 / 0.865	

Transmit Antenna

87016A	87066A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-23	VHLP2.5-23A
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.60 / -3.84	43.0 / 1.20 / 3.83
Centerline (m / ft - AGL) 107.59 / 353.0	10.67 / 35.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.0	5.0
Received Level (dBm) -37.6	-37.6
EIRP (dBm) 43.5	46.1
Fixed Loss: Tx / Common (dB) 0.0 / 1.9	0.0 / 1.9
Free Space Loss (dB) 122.2	

Transmit Frequencies (MHz)	21875.0000V(2)	22025.0000V(5)	23075.0000V(2)	23225.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0283A CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0060A CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 13.0~ N	37 °22' 9.9~ N
Longitude (NAD 83)	122 °2' 23.0~ W	122 °2' 8.9~ W
Ground Elevation (m/ft-AMSL)	38.60 / 126.6	37.80 / 124.0
Antenna Structure Registration #		
Path Azimuth (°)	105.400	285.403
Path Length (km / miles)	0.360 / 0.224	

Transmit Antenna

91233R	91233R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPLP1-23	HPLP1-23
GAIN(dBi) / Beamwidth(°) / Tilt(°) 35.1 / 2.70 / -4.06	35.1 / 2.70 / 4.06
CENTERLINE (m / ft - AGL) 42.67 / 140.0	17.92 / 58.8

Receive Antenna

Same As Transmit

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Diversity Receive Antenna

MANUFACTURER
MODEL
GAIN (dBi) / Beamwidth (°)
CENTERLINE (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
EMISSION DESIGNATOR / MODULATION 45M8D7W 256 QAM	45M8D7W 256 QAM
LOADING 1 CH DIG 322000.000	1 CH DIG 322000.000
STABILITY (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 4.0	4.0
RECEIVED LEVEL (dBm) -36.3	-36.3
EIRP (dBm) 39.1	39.1
FIXED LOSS: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
FREE SPACE LOSS (dB) 110.5	

Transmit Frequencies (MHz)	21925.0000H(3)	22075.0000H(6)	23125.0000H(3)	23275.0000H(6)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0283A CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0101B CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 13.0~ N	37 °20' 55.4~ N
Longitude (NAD 83)	122 °2' 23.0~ W	122 °2' 33.8~ W
Ground Elevation (m/ft-AMSL)	38.60 / 126.6	56.90 / 186.7
Antenna Structure Registration #		
Path Azimuth (°)	186.340	6.338
Path Length (km / miles)	2.407 / 1.496	

Transmit Antenna

87014A	87014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.30	35.3 / 3.00 / 0.28
Centerline (m / ft - AGL) 42.67 / 140.0	12.19 / 40.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMZ85	TEMZ85
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 23HD40SFC111V02	23HD40SFC111V02
Model Description HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 36M2D7W 16 QAM	36M2D7W 16 QAM
Loading 1 CH DIG 111000.000	1 CH DIG 111000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 9.0	9.0
Received Level (dBm) -47.4	-47.4
EIRP (dBm) 44.3	44.3
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 127.0	

Transmit Frequencies (MHz)	21870.0000V(2)	22020.0000V(5)	23070.0000V(2)	23220.0000V(5)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0283A CA
City/County Sunnyvale/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0114A CA

Sunnyvale/Santa Clara
Engineering Proposal / PRIMARY OPERATION
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °22' 13.0~ N	37 °20' 54.4~ N
Longitude (NAD 83)	122 °2' 23.0~ W	122 °1' 4.5~ W
Ground Elevation (m/ft-AMSL)	38.60 / 126.6	44.90 / 147.3
Antenna Structure Registration #		
Path Azimuth (°)	141.431	321.444
Path Length (km / miles)	3.099 / 1.926	

Transmit Antenna

87014A	87014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23	VHLP1-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.46	35.3 / 3.00 / 0.44
Centerline (m / ft - AGL) 42.67 / 140.0	12.19 / 40.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMZ85	TEMZ85
DRAGONWAVE INC	DRAGONWAVE INC
23HD40SFC111V02	23HD40SFC111V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 36M2D7W 16 QAM	36M2D7W 16 QAM
Loading 1 CH DIG 111000.000	1 CH DIG 111000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 9.0	9.0
Received Level (dBm) -49.6	-49.6
EIRP (dBm) 44.3	44.3
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.2	

Transmit Frequencies (MHz)	21820.0000V(1)	21970.0000V(4)	23020.0000V(1)	23170.0000V(4)
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Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)273-1639 www.comsearch.com

PCN Date: 04/27/2010

Job Number 100427COMSSL01

New Path

RCN Number: 10042707

Administrative Information

CA-SJC0284A CA
City/County /Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0076C CA

Mountain View/Santa Clara
Engineering Proposal / PRIMARY OPERATION
WQKU514
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °24' 49.8~ N	37 °25' 36.4~ N
Longitude (NAD 83)	122 °3' 37.3~ W	122 °4' 19.7~ W
Ground Elevation (m/ft-AMSL)	6.60 / 21.7	1.98 / 6.5
Antenna Structure Registration #		
Path Azimuth (°)	324.036	144.028
Path Length (km / miles)		1.775 / 1.103

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -0.03	40.2 / 1.70 / 0.02
Centerline (m / ft - AGL) 18.29 / 60.0	22.25 / 73.0

Receive Antenna

Same As Transmit

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Diversity Receive Antenna

Manufacturer
Model
Gain (dBi) / Beamwidth (°)
Centerline (m / ft - AGL)

Radio Information

TEMQ16	TEMQ16
DRAGONWAVE INC	DRAGONWAVE INC
23HD50SFC322V02	23HD50SFC322V02
HORIZON DUO	HORIZON DUO
Emission Designator / Modulation 45M8D7W 256 QAM	45M8D7W 256 QAM
Loading 1 CH DIG 322000.000	1 CH DIG 322000.000
Stability (%) 0.001	0.001
Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm) 5.5	5.5
Received Level (dBm) -38.4	-38.4
EIRP (dBm) 45.7	45.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.3	

Transmit Frequencies (MHz)	23025.0000V(1)	23175.0000V(4)	21825.0000V(1)	21975.0000V(4)
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