

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)232-4372 www.comsearch.com

PCN Date: 12/27/2010

Job Number: 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SFO0073A 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-SFO0563A CA

/Contra Costa
Engineering Proposal / PRIMARY OPERATION
WQLY428
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °55' 20.5" N	37 °52' 54.2" N
Longitude (NAD 83)	122 °0' 59.8" W	121 °55' 8.8" W
Ground Elevation (m/ft-AMSL)	43.20 / 141.7	1097.60 / 3601.0
Antenna Structure Registration #		1014626
Path Azimuth (°)	117.716	297.775
Path Length (km / miles)		9.689 / 6.020

Transmit Antenna

70709A	70709A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP800-11C	VHLP800-11C
Gain(dBi) / Beamwidth(°) / Tilt(°) 37.4 / 2.10 / 6.33	37.4 / 2.10 / -6.39
Centerline (m / ft - AGL) 33.45 / 109.7	58.83 / 193.0

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) -39.4	-39.4
EIRP (dBm) 56.4	56.4
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 133.2	

Transmit Frequencies (MHz)	10735.0000H(1)	10815.0000H(3)	11225.0000H(1)	11305.0000H(3)
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PCN Date: 12/27/2010

Job Number 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SFO0448C CA
City/County Campbell/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQMN265
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
WQLY512
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °16' 46.7" N	37 °17' 7.0" N
Longitude (NAD 83)	121 °56' 13.9" W	121 °51' 28.0" W
Ground Elevation (m/ft-AMSL)	63.30 / 207.7	131.00 / 429.8
Antenna Structure Registration #		
Path Azimuth (°)	84.898	264.946
Path Length (km / miles)		7.071 / 4.393

Transmit Antenna

87204A	87204A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2-18B	VHLP2-18B
38.9 / 2.10 / 0.56	38.9 / 2.10 / -0.61
13.41 / 44.0	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

TEM090	TEM090
DRAGONWAVE INC	DRAGONWAVE INC
18HD50HFC215V02	18HD50HFC215V02
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
18.5	18.5
-38.6	-38.6
57.4	57.4
0.0 / 0.0	0.0 / 0.0
	134.9

Transmit Frequencies (MHz)

18015.0000V(6)	18115.0000V(8)	19575.0000V(6)	19675.0000V(8)
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PCN Date: 12/27/2010

Job Number 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SFO0228B CA
City/County /Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQMN210
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0498B CA

Dublin/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQLY500
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 44' 56.3" N	37 ° 42' 11.5" N
Longitude (NAD 83)	121 ° 55' 23.3" W	121 ° 53' 49.7" W
Ground Elevation (m/ft-AMSL)	194.90 / 639.4	102.10 / 335.0
Antenna Structure Registration #		
Path Azimuth (°)	155.711	335.727
Path Length (km / miles)	5.574 / 3.464	

Transmit Antenna

Manufacturer	87204A	87204A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2-18B	VHLP2-18B
Centerline (m / ft - AGL)	38.9 / 2.10 / -0.69	38.9 / 2.10 / 0.65
	3.96 / 13.0	31.67 / 103.9

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	TEMQ19	TEMQ19
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	18HD50SFC171V02	18HD50SFC171V02
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)	10.0	10.0
Received Level (dBm)	-45.0	-45.0
EIRP (dBm)	48.9	48.9
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		132.8

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
(858)232-4372 www.comsearch.com

PCN Date: 12/27/2010

Job Number 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SFO0172A 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-SFO0212A CA

San Francisco/San Francisco
Engineering Proposal / PRIMARY OPERATION
WQML885
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 47' 11.6" N	37 ° 45' 18.6" N
Longitude (NAD 83)	122 ° 23' 35.0" W	122 ° 25' 6.0" W
Ground Elevation (m/ft-AMSL)	21.60 / 70.9	21.00 / 68.9
Antenna Structure Registration #		
Path Azimuth (°)	212.597	32.581
Path Length (km / miles)	4.135 / 2.569	

Transmit Antenna

87204A	87204A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-18B	VHLP2-18B
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.9 / 2.10 / 0.16	38.9 / 2.10 / -0.19
Centerline (m / ft - AGL) 27.13 / 89.0	40.54 / 133.0

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

TEMR29	TEMR29
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 18HD50HFC364V02	18HD50HFC364V02
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) 14.6	14.6
Received Level (dBm) -37.8	-37.8
EIRP (dBm) 53.5	53.5
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.2	

Transmit Frequencies (MHz)	17965.0000H(5)	18065.0000H(7)	19525.0000H(5)	19625.0000H(7)
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PCN Date: 12/27/2010

Job Number 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SJC0063B 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
WQMM308
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °21' 34.8" N	37 °20' 55.4" N
Longitude (NAD 83)	122 °3' 42.3" W	122 °2' 33.8" W
Ground Elevation (m/ft-AMSL)	50.30 / 165.0	56.90 / 186.7
Antenna Structure Registration #		
Path Azimuth (°)	125.768	305.779
Path Length (km / miles)	2.078 / 1.291	

Transmit Antenna

99141R	99141R
MANUFACTURER RADIO WAVES, INC	RADIO WAVES, INC
MODEL HPCPE-23	HPCPE-23
GAIN(dBi) / BEAMWIDTH(°) / TILT(°) 34.4 / 2.90 / -0.51	34.4 / 2.90 / 0.49
CENTERLINE (m / ft - AGL) 39.32 / 129.0	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
Power (dBm)	Nominal Coordinated Maximum
Received Level (dBm)	8.5
EIRP (dBm)	-48.4
	42.9
Fixed Loss: Tx / Common (dB)	0.0 / 0.0
Free Space Loss (dB)	125.7

Transmit Frequencies (MHz)	22175.0000H(8)	22275.0000H(10)	23375.0000H(8)	23475.0000H(10)
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19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)232-4372 www.comsearch.com

PCN Date: 12/27/2010

Job Number 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SJC0059A CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQMM315
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 °23' 11.2" N	37 °21' 34.8" N
Longitude (NAD 83)	122 °5' 3.7" W	122 °3' 42.3" W
Ground Elevation (m/ft-AMSL)	31.60 / 103.7	50.30 / 165.0
Antenna Structure Registration #		
Path Azimuth (°)	146.017	326.031
Path Length (km / miles)	3.584 / 2.227	

Transmit Antenna

87205A	87205A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-23B	VHLP2-23B
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.5 / 1.70 / 0.61	40.5 / 1.70 / -0.63
Centerline (m / ft - AGL) 19.20 / 63.0	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

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) -40.9	-40.9
EIRP (dBm) 49.0	49.0
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.4	

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
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PCN Date: 12/27/2010

Job Number 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SJC0058A CA
City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQLY565
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SJC0071A CA

City/County Mountain View/Santa Clara
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQMM326
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' 39.9" N
Longitude (NAD 83)	122 °6' 40.5" W	122 °4' 46.9" W
Ground Elevation (m/ft-AMSL)	21.20 / 69.6	22.50 / 73.8
Antenna Structure Registration #		
Path Azimuth (°)	105.235	285.254
Path Length (km / miles)	2.896 / 1.799	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / -0.09	40.2 / 1.70 / 0.07
Centerline (m / ft - AGL) 26.52 / 87.0	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

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) 11.0	11.0
Received Level (dBm) -37.2	-37.2
EIRP (dBm) 51.2	51.2
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 128.6	

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)232-4372 www.comsearch.com

PCN Date: 12/27/2010

Job Number 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SFO0384A CA
City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQMM938
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0383A CA

Fremont/Alameda
Engineering Proposal / PRIMARY OPERATION
WQML542
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °30' 46.8" N	37 °30' 38.5" N
Longitude (NAD 83)	121 °56' 45.6" W	121 °57' 55.1" W
Ground Elevation (m/ft-AMSL)	9.80 / 32.2	8.00 / 26.2
Antenna Structure Registration #		
Path Azimuth (°)	261.480	81.468
Path Length (km / miles)		1.726 / 1.072

Transmit Antenna

80014A	80014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23A	VHLP1-23A
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.07	35.3 / 3.00 / 0.05
Centerline (m / ft - AGL) 45.72 / 150.0	45.72 / 150.0

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

TEMU06	TEMU06
DRAGONWAVE INC	DRAGONWAVE INC
23HS50HFC322V01	23HS50HFC322V01
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) 18.0	18.0
Received Level (dBm) -35.5	-35.5
EIRP (dBm) 53.3	53.3
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.1	

Transmit Frequencies (MHz) 21925.0000V(3)

23125.0000V(3)

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(858)232-4372 www.comsearch.com

PCN Date: 12/27/2010

Job Number 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SJC0391B 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-SJC0176A CA

San Jose/Santa Clara
Engineering Proposal / PRIMARY OPERATION
WQMM680
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °20' 33.8" N	37 °20' 8.0" N
Longitude (NAD 83)	121 °52' 39.5" W	121 °55' 3.1" W
Ground Elevation (m/ft-AMSL)	25.90 / 85.0	28.80 / 94.5
Antenna Structure Registration #		
Path Azimuth (°)	257.331	77.306
Path Length (km / miles)	3.623 / 2.251	

Transmit Antenna

RD1150	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HP2-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.2 / 1.70 / 0.14	40.2 / 1.70 / -0.16
Centerline (m / ft - AGL) 28.96 / 95.0	35.66 / 117.0

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) 13.3	13.3
Received Level (dBm) -36.8	-36.8
EIRP (dBm) 53.5	53.5
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.5	

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)232-4372 www.comsearch.com

PCN Date: 12/27/2010

Job Number 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SJC0177C 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-SJC0391B CA

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

Site Information

Latitude (NAD 83)	37 °22' 10.4" N	37 °20' 33.8" N
Longitude (NAD 83)	121 °54' 58.9" W	121 °52' 39.5" W
Ground Elevation (m/ft-AMSL)	14.33 / 47.0	25.90 / 85.0
Antenna Structure Registration #		
Path Azimuth (°)	130.949	310.973
Path Length (km / miles)	4.543 / 2.823	

Transmit Antenna

87066A	87066A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP2.5-23A	VHLP2.5-23A
Gain(dBi) / Beamwidth(°) / Tilt(°) 43.0 / 1.20 / 0.25	43.0 / 1.20 / -0.28
Centerline (m / ft - AGL) 19.20 / 63.0	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

TENA60	TENA60
DRAGONWAVE INC	DRAGONWAVE INC
23QD50HFC364V03	23QD50HFC364V03
HORIZON QUANTUM	HORIZON QUANTUM
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) -31.0	-31.0
EIRP (dBm) 58.5	58.5
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 132.5	

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)232-4372 www.comsearch.com

PCN Date: 12/27/2010

Job Number 101227COMSSL01

New Path

RCN Number: 10122716

Administrative Information

CA-SFO0043A CA
City/County Concord/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQLX780
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0053B 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' 14.8" N
Longitude (NAD 83)	122 °3' 13.9" W	122 °1' 38.1" W
Ground Elevation (m/ft-AMSL)	9.70 / 31.8	18.20 / 59.7
Antenna Structure Registration #		
Path Azimuth (°)	129.482	309.498
Path Length (km / miles)	3.030 / 1.883	

Transmit Antenna

80014A	87205A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23A	VHLP2-23B
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.24	40.5 / 1.70 / 0.22
Centerline (m / ft - AGL) 36.58 / 120.0	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
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	49.0
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 129.0	

Transmit Frequencies (MHz)	23375.0000V(8)	23475.0000V(10)	22175.0000V(8)	22275.0000V(10)
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