

Microwave Path Data Sheet

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COMSEARCH

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

PCN Date: 01/05/2011

Job Number: 110105COMSSL03

New Path

RCN Number: 11010503

Administrative Information

CA-SJC0180A 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
WQLY512
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °16' 49.0" N	37 °17' 7.0" N
Longitude (NAD 83)	121 °54' 39.0" W	121 °51' 28.0" W
Ground Elevation (m/ft-AMSL)	54.00 / 177.2	131.00 / 429.8
Antenna Structure Registration #		
Path Azimuth (°)	83.257	263.290
Path Length (km / miles)	4.738 / 2.944	

Transmit Antenna

99141R	RD1150
RADIO WAVES, INC	RADIO WAVES, INC
HPCPE-23	HP2-23
Gain(dBi) / Beamwidth(°) / Tilt(°) 34.4 / 2.90 / 1.16	40.2 / 1.70 / -1.19
Centerline (m / ft - AGL) 10.06 / 33.0	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) -37.8	-37.8
EIRP (dBm) 54.9	60.7
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 132.9	

Transmit Frequencies (MHz)	22175.0000V(8)	22325.0000V(11)	23375.0000V(8)	23525.0000V(11)
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PCN Date: 01/05/2011

Job Number 110105COMSSL03

New Path

RCN Number: 11010503

Administrative Information

CA-SFO0220C CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQLY334
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0247A CA

Alameda/Alameda
Engineering Proposal / PRIMARY OPERATION

CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 44' 49.2" N	37 ° 43' 33.9" N
Longitude (NAD 83)	122 ° 12' 13.9" W	122 ° 14' 31.4" W
Ground Elevation (m/ft-AMSL)	2.30 / 7.5	1.00 / 3.3
Antenna Structure Registration #		
Path Azimuth (°)	235.423	55.399
Path Length (km / miles)	4.090 / 2.541	

Transmit Antenna

80014A	80014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23A	VHLP1-23A
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.59	35.3 / 3.00 / 0.56
Centerline (m / ft - AGL) 50.29 / 165.0	10.52 / 34.5

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

TEMQ49	TEMQ49
DRAGONWAVE INC	DRAGONWAVE INC
23HD50HFC171V02	23HD50HFC171V02
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) -41.0	-41.0
EIRP (dBm) 55.3	55.3
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 131.6	

Transmit Frequencies (MHz)	23325.0000H(7)	23425.0000H(9)	22125.0000H(7)	22225.0000H(9)
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(858)232-4372 www.comsearch.com

PCN Date: 01/05/2011

Job Number 110105COMSSL03

New Path

RCN Number: 11010503

Administrative Information

CA-SFO0202A CA
City/County Oakland/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQLY336
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0871A CA

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

Site Information

Latitude (NAD 83)	37 ° 46' 2.5" N	37 ° 45' 30.7" N
Longitude (NAD 83)	122 ° 12' 44.7" W	122 ° 12' 30.6" W
Ground Elevation (m/ft-AMSL)	5.50 / 18.0	2.00 / 6.6
Antenna Structure Registration #		
Path Azimuth (°)	160.607	340.609
Path Length (km / miles)		1.039 / 0.646

Transmit Antenna

80014A	80014A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23A	VHLP1-23A
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.75	35.3 / 3.00 / 0.74
Centerline (m / ft - AGL) 25.30 / 83.0	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) -43.6	-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)	23075.0000H(2)	23225.0000H(5)	21875.0000H(2)	22025.0000H(5)
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PCN Date: 01/05/2011

Job Number 110105COMSSL03

New Path

RCN Number: 11010503

Administrative Information

CA-SFO0479D 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
WQML650
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 41' 45.0" N	37 ° 39' 34.0" N
Longitude (NAD 83)	121 ° 55' 27.0" W	121 ° 55' 59.5" W
Ground Elevation (m/ft-AMSL)	102.30 / 335.6	453.50 / 1487.9
Antenna Structure Registration #		1015996
Path Azimuth (°)	191.157	11.152
Path Length (km / miles)	4.117 / 2.558	

Transmit Antenna

87204A	87204A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-18B	VHLP2-18B
Gain(dBi) / Beamwidth(°) / Tilt(°) 38.9 / 2.10 / 5.46	38.9 / 2.10 / -5.49
Centerline (m / ft - AGL) 23.77 / 78.0	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

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) 14.2	14.2
Received Level (dBm) -38.2	-38.2
EIRP (dBm) 53.1	53.1
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.2	

Transmit Frequencies (MHz)	18015.0000H(6)	18115.0000H(8)	19575.0000H(6)	19675.0000H(8)
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PCN Date: 01/05/2011

Job Number 110105COMSSL03

New Path

RCN Number: 11010503

Administrative Information

CA-SFO0066A CA
City/County Pleasant Hill/Contra Costa
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQND227
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0564A CA

/Contra Costa
Engineering Proposal / PRIMARY OPERATION
WQLY410
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 56' 6.4" N	37 ° 48' 57.0" N
Longitude (NAD 83)	122 ° 4' 12.1" W	122 ° 3' 44.7" W
Ground Elevation (m/ft-AMSL)	26.00 / 85.3	613.20 / 2011.8
Antenna Structure Registration #		1010559
Path Azimuth (°)	177.102	357.107
Path Length (km / miles)		13.256 / 8.237

Transmit Antenna

77083A	70709A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-11A	VHLP800-11C
Gain(dBi) / Beamwidth(°) / Tilt(°) 34.4 / 3.30 / 2.58	37.4 / 2.10 / -2.67
Centerline (m / ft - AGL) 15.04 / 49.3	35.20 / 115.5

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

TEMQ01	TEMQ01
Manufacturer DRAGONWAVE INC	DRAGONWAVE INC
Model 11HD30HFC107V02	11HD30HFC107V02
Model Description 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) -47.1	-47.1
EIRP (dBm) 52.4	55.4
Fixed Loss: Tx / Common (dB) 0.0 / 1.0	0.0 / 1.0
Free Space Loss (dB) 135.9	

Transmit Frequencies (MHz)	11485.0000H(8)	11645.0000H(12)	10995.0000H(8)	11155.0000H(12)
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