

Microwave Path Data Sheet

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COMSEARCH

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

PCN Date: 12/06/2010

Job Number: 101206COMSSL01

New Path

RCN Number: 10120600

Administrative Information

CA-SFO1000A 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-SFO0383A CA

City/County Fremont/Alameda
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQML542
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °31' 50.7" N	37 °30' 38.5" N
Longitude (NAD 83)	121 °58' 14.6" W	121 °57' 55.1" W
Ground Elevation (m/ft-AMSL)	10.00 / 32.8	8.00 / 26.2
Antenna Structure Registration #		
Path Azimuth (°)	167.858	347.861
Path Length (km / miles)	2.277 / 1.415	

Transmit Antenna

80014A	80014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23A	VHLP1-23A
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.11	35.3 / 3.00 / -0.13
Centerline (m / ft - AGL) 26.21 / 86.0	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

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) -40.4	-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)	23375.0000H(8)	23475.0000H(10)	22175.0000H(8)	22275.0000H(10)
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PCN Date: 12/06/2010

Job Number 101206COMSSL01

New Path

RCN Number: 10120600

Administrative Information

CA-SFO0998B 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 WQMM669
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 6.2" N	37 °32' 12.1" N
Longitude (NAD 83)	122 °0' 20.4" W	122 °0' 55.1" W
Ground Elevation (m/ft-AMSL)	15.70 / 51.5	11.50 / 37.7
Antenna Structure Registration #		
Path Azimuth (°)	207.057	27.051
Path Length (km / miles)	1.873 / 1.164	

Transmit Antenna

80014A	80014A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP1-23A	VHLP1-23A
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.13	35.3 / 3.00 / 0.12
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

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) -38.7	-38.7
EIRP (dBm) 50.8	50.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.8	

Transmit Frequencies (MHz)	23375.0000V(8)	23475.0000V(10)	22175.0000V(8)	22275.0000V(10)
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19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 12/06/2010

Job Number 101206COMSSL01

New Path

RCN Number: 10120600

Administrative Information

CA-SFO0355A CA
City/County San Mateo/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQLY857
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0353A CA

Foster City/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQML899
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 °33' 18.0" N
Longitude (NAD 83)	122 °18' 0.0" W	122 °15' 31.5" W
Ground Elevation (m/ft-AMSL)	2.40 / 7.9	0.00 / 0.0
Antenna Structure Registration #		
Path Azimuth (°)	87.179	267.204
Path Length (km / miles)	3.649 / 2.268	

Transmit Antenna

87205A	87205A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP2-23B	VHLP2-23B
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.5 / 1.70 / -0.14	40.5 / 1.70 / 0.11
Centerline (m / ft - AGL) 39.93 / 131.0	34.44 / 113.0

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) -41.1	-41.1
EIRP (dBm) 49.0	49.0
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 130.6	

Transmit Frequencies (MHz)	22125.0000V(7)	22225.0000V(9)	23325.0000V(7)	23425.0000V(9)
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19700 Janelia Farm Boulevard, Ashburn, VA, 20147
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PCN Date: 12/06/2010

Job Number 101206COMSSL01

New Path

RCN Number: 10120600

Administrative Information

CA-SFO0346A CA
City/County Foster City/San Mateo
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQLY858
Licensee Code CLESP3
Licensee Name Clearwire Spectrum Holdings III, LL
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA-SFO0353A CA

Foster City/San Mateo
Engineering Proposal / PRIMARY OPERATION
WQML899
CLESP3
Clearwire Spectrum Holdings III, LL
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °33' 43.9" N	37 °33' 18.0" N
Longitude (NAD 83)	122 °16' 37.2" W	122 °15' 31.5" W
Ground Elevation (m/ft-AMSL)	2.00 / 6.6	0.00 / 0.0
Antenna Structure Registration #		
Path Azimuth (°)	116.339	296.350
Path Length (km / miles)	1.799 / 1.118	

Transmit Antenna

80014A	87205A
ANDREW CORPORATION	ANDREW CORPORATION
VHLP1-23A	VHLP2-23B
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / 0.41	40.5 / 1.70 / -0.42
Centerline (m / ft - AGL) 19.51 / 64.0	34.44 / 113.0

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) -40.2	-40.2
EIRP (dBm) 43.8	49.0
Fixed Loss: Tx / Common (dB) 0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB) 124.5	

Transmit Frequencies (MHz)	21825.0000H(1)	22075.0000H(6)	23025.0000H(1)	23275.0000H(6)
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