

Microwave Path Data Sheet

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COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147
(703)726-5824 www.comsearch.com

PCN Date: 05/18/2011

Job Number: 101117COMSSL04

Administrative Information	CA-SFO0582A CA	CA-SFO0134A CA
City/County	Hayward/Alameda	Danville/Contra Costa
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign	WQML650	
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 °39' 34.0" N	37 °48' 56.5" N
Longitude (NAD 83)	121 °55' 59.5" W	121 °55' 21.9" W
Ground Elevation (m/ft-AMSL)	453.50 / 1487.9	253.98 / 833.3
Antenna Structure Registration #	1015996	
Path Azimuth (°)	3.035	183.042
Path Length (km / miles)	17.367 / 10.791	

Transmit Antenna

Manufacturer	77083A	77083A
Model	ANDREW CORPORATION	ANDREW CORPORATION
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2-11A	VHLP2-11A
Centerline (m / ft - AGL)	34.4 / 3.30 / -0.93	34.4 / 3.30 / 0.81
	67.06 / 220.0	1.83 / 6.0

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	TEMO98	TEMO98
Model	DRAGONWAVE INC	DRAGONWAVE INC
Model Description	11HD40HFC142V02	11HD40HFC142V02
Emission Designator / Modulation	HORIZON DUO	HORIZON DUO
Loading	36M2D7W 32 QAM	36M2D7W 32 QAM
Stability (%)	1 CH DIG 142000.000	1 CH DIG 142000.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	19.0	19.0
Received Level (dBm)	-50.4	-50.4
EIRP (dBm)	53.4	53.4
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		138.2

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

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PCN Date: 05/18/2011

Job Number 101117COMSSL04

Administrative Information	CA-SJC0176A CA	CA-SJC0179A CA
City/County	San Jose/Santa Clara	San Jose/Santa Clara
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION
Call Sign	WQMM680	WQMN287
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' 8.0" N	37 °17' 49.2" N
Longitude (NAD 83)	121 °55' 3.1" W	121 °54' 47.2" W
Ground Elevation (m/ft-AMSL)	28.80 / 94.5	49.10 / 161.1
Antenna Structure Registration #		
Path Azimuth (°)	174.771	354.774
Path Length (km / miles)	4.297 / 2.670	

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 / -0.04	40.2 / 1.70 / 0.01
	35.66 / 117.0	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	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)	14.0	14.0
Received Level (dBm)	-37.6	-37.6
EIRP (dBm)	54.2	54.2
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0
Free Space Loss (dB)		132.0

Transmit Frequencies (MHz) 22225.0000V(9) 22325.0000V(11) 23425.0000V(9) 23525.0000V(11)

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PCN Date: 05/18/2011

Job Number 101117COMSSL04

Administrative Information		CA-SJC0174C CA	CA-SFO0443D CA
City/County	San Jose/Santa Clara	San Jose/Santa Clara	
Status / License Basis	Engineering Proposal / PRIMARY OPERATION	Engineering Proposal / PRIMARY OPERATION	
Call Sign	WQMM302	WQMM212	
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 °16' 15.2" N	37 °17' 13.8" N	
Longitude (NAD 83)	121 °55' 4.8" W	121 °52' 28.3" W	
Ground Elevation (m/ft-AMSL)	56.40 / 185.0	66.00 / 216.5	
Antenna Structure Registration #			
Path Azimuth (°)	64.880	244.906	
Path Length (km / miles)		4.258 / 2.646	
Transmit Antenna			
Manufacturer	87205A	87205A	
Model	ANDREW CORPORATION	ANDREW CORPORATION	
Gain(dBi) / Beamwidth(°) / Tilt(°)	VHLP2-23B	VHLP2-23B	
Centerline (m / ft - AGL)	40.5 / 1.70 / -0.05	40.5 / 1.70 / 0.02	
	28.96 / 95.0	17.07 / 56.0	
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)	14.0	14.0	
Received Level (dBm)	-36.9	-36.9	
EIRP (dBm)	54.5	54.5	
Fixed Loss: Tx / Common (dB)	0.0 / 0.0	0.0 / 0.0	
Free Space Loss (dB)		131.9	
Transmit Frequencies (MHz)	21925.0000V(3)	22025.0000V(5)	23125.0000V(3) 23225.0000V(5)