

Microwave Path Data Sheet

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COMSEARCH

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

PCN Date: 03/24/2011

Job Number: 110324COMSSL01

New Path

RCN Number: 11032400

Administrative Information

CA0522 CA
City/County /Stanislaus
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code OPNRAN
Licensee Name Open Range Communications
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA0192 CA
City/County Newman/Stanislaus
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code OPNRAN
Licensee Name Open Range Communications
Radio Service / Station Class FXO -- Fixed

Site Information

Latitude (NAD 83) 37 °24' 55.8" N
Longitude (NAD 83) 121 °9' 25.2" W
Ground Elevation (m/ft-AMSL) 125.80 / 412.7
Antenna Structure Registration #
Path Azimuth (°) 133.818
Path Length (km / miles) 16.227 / 10.083

37 °18' 51.1" N
121 °1' 29.7" W
28.00 / 91.9
313.898

Transmit Antenna

77083A
Manufacturer ANDREW CORPORATION
Model VHLP2-11A
Gain(dBi) / Beamwidth(°) / Tilt(°) 34.4 / 3.30 / -0.42
Centerline (m / ft - AGL) 38.10 / 125.0

77083A
Manufacturer ANDREW CORPORATION
Model VHLP2-11A
Gain(dBi) / Beamwidth(°) / Tilt(°) 34.4 / 3.30 / 0.32
Centerline (m / ft - AGL) 31.09 / 102.0

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

TEMK19
Manufacturer Aviat Networks, Inc.
Model EH11-70DS1-32QAM-30
Model Description ECLIPSE ODU 300 HP
Emission Designator / Modulation 30M0D7W 32 QAM
Loading 1 CH DIG 117800.000
Stability (%) 0.001
Nominal Coordinated Maximum
Power (dBm) 21.5
Received Level (dBm) -49.4
EIRP (dBm) 54.9
Fixed Loss: Tx / Common (dB) 0.0 / 1.0
Free Space Loss (dB) 137.7

TEMK19
Manufacturer Aviat Networks, Inc.
Model EH11-70DS1-32QAM-30
Model Description ECLIPSE ODU 300 HP
Emission Designator / Modulation 30M0D7W 32 QAM
Loading 1 CH DIG 117800.000
Stability (%) 0.001
Nominal Coordinated Maximum
Power (dBm) 21.5
Received Level (dBm) -49.4
EIRP (dBm) 54.9
Fixed Loss: Tx / Common (dB) 0.0 / 1.0

Transmit Frequencies (MHz) 11405.0000V(6)

10915.0000V(6)

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PCN Date: 03/24/2011
Job Number 110324COMSSL01

New Path
RCN Number: 11032400

Administrative Information

CA0524 CA
City/County Modesto/Stanslaus
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code OPNRAN
Licensee Name Open Range Communications
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA0119 CA

/Stanslaus
Engineering Proposal / PRIMARY OPERATION
OPNRAN
Open Range Communications
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 40' 49.5" N	37 ° 38' 46.0" N
Longitude (NAD 83)	120 ° 55' 29.3" W	120 ° 46' 33.2" W
Ground Elevation (m/ft-AMSL)	34.40 / 112.9	49.00 / 160.8
Antenna Structure Registration #	1060758	
Path Azimuth (°)	106.115	286.206
Path Length (km / miles)	13.680 / 8.500	

Transmit Antenna

77043A	77043A
Manufacturer ANDREW CORPORATION	ANDREW CORPORATION
Model VHLP4-11B	VHLP4-11B
Gain(dBi) / Beamwidth(°) / Tilt(°) 40.4 / 1.50 / -0.16	40.4 / 1.50 / 0.07
Centerline (m / ft - AGL) 77.72 / 255.0	35.05 / 115.0

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

TEMK19	TEMK19
Manufacturer Aviat Networks, Inc.	Aviat Networks, Inc.
Model EH11-70DS1-32QAM-30	EH11-70DS1-32QAM-30
Model Description ECLIPSE ODU 300 HP	ECLIPSE ODU 300 HP
Emission Designator / Modulation 30M0D7W 32 QAM	30M0D7W 32 QAM
Loading 1 CH DIG 117800.000	1 CH DIG 117800.000
Stability (%) 0.001	0.001
	Nominal Coordinated Maximum
Power (dBm) 21.5	21.5
Received Level (dBm) -35.9	-35.9
EIRP (dBm) 60.9	60.9
Fixed Loss: Tx / Common (dB) 0.0 / 1.0	0.0 / 1.0
Free Space Loss (dB) 136.2	

Transmit Frequencies (MHz) 10715.0000V(1)

11215.0000V(1)

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PCN Date: 03/24/2011

Job Number 110324COMSSL01

New Path

RCN Number: 11032400

Administrative Information

CA0035 RIVER CA
City/County Riverbank/Stanislaus
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQMA320
Licensee Code OPNRAN
Licensee Name Open Range Communications
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA0524 CA

Modesto/Stanislaus
Engineering Proposal / PRIMARY OPERATION

OPNRAN
Open Range Communications
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 ° 43' 51.1" N	37 ° 40' 49.5" N
Longitude (NAD 83)	120 ° 56' 6.0" W	120 ° 55' 29.3" W
Ground Elevation (m/ft-AMSL)	43.30 / 142.1	34.40 / 112.9
Antenna Structure Registration #	1233589	1060758
Path Azimuth (°)	170.875	350.881
Path Length (km / miles)	5.671 / 3.524	

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 / 0.40	41.0 / 1.50 / -0.44
	27.43 / 90.0	77.72 / 255.0

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	TEMN90	TEMN90
Model	Aviat Networks, Inc.	Aviat Networks, Inc.
Model Description	EH18-70DS1-32QAM-30	EH18-70DS1-32QAM-30
Emission Designator / Modulation	ECLIPSE ODU 300 HP	ECLIPSE ODU 300 HP
Loading	30M0D7W 32 QAM	30M0D7W 32 QAM
Stability (%)	1 CH DIG 117800.000	1 CH DIG 117800.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	17.0	17.0
Received Level (dBm)	-36.0	-36.0
EIRP (dBm)	57.0	57.0
Fixed Loss: Tx / Common (dB)	0.0 / 1.0	0.0 / 1.0
Free Space Loss (dB)		133.0

Transmit Frequencies (MHz) 19525.0000V(8)

17965.0000V(8)

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PCN Date: 03/24/2011

Job Number 110324COMSSL01

New Path

RCN Number: 11032400

Administrative Information

CA0095 CA
City/County /Stanislaus
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign WQMA313
Licensee Code OPNRAN
Licensee Name Open Range Communications
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA0522 CA

/Stanislaus
Engineering Proposal / PRIMARY OPERATION

OPNRAN
Open Range Communications
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °28' 8.4" N	37 °24' 55.8" N
Longitude (NAD 83)	121 °7' 19.2" W	121 °9' 25.2" W
Ground Elevation (m/ft-AMSL)	29.10 / 95.5	125.80 / 412.7
Antenna Structure Registration #		
Path Azimuth (°)	207.558	27.537
Path Length (km / miles)	6.697 / 4.161	

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 / 0.87	41.0 / 1.50 / -0.92
	30.48 / 100.0	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

Manufacturer	TEMZ02	TEMZ02
Model	Aviat Networks, Inc.	Aviat Networks, Inc.
Model Description	EH18-100DS1-32QAM-40	EH18-100DS1-32QAM-40
Emission Designator / Modulation	ECLIPSE ODU 300 HP	ECLIPSE ODU 300 HP
Loading	40M0D7W 32 QAM	40M0D7W 32 QAM
Stability (%)	1 CH DIG 168100.000	1 CH DIG 168100.000
	0.001	0.001
	Nominal Coordinated Maximum	Nominal Coordinated Maximum
Power (dBm)	17.0	17.0
Received Level (dBm)	-37.4	-37.4
EIRP (dBm)	57.0	57.0
Fixed Loss: Tx / Common (dB)	0.0 / 1.0	0.0 / 1.0
Free Space Loss (dB)		134.4

Transmit Frequencies (MHz) 19360.0000V(3)

17800.0000V(3)

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PCN Date: 03/24/2011
Job Number 110324COMSSL01

Prev Job Num: 101117COMSSL05
RCN Number: 11032400

Administrative Information

CA0119 CA
City/County /Stanislaus
Status / License Basis Engineering Proposal / PRIMARY OPERATION
Call Sign
Licensee Code OPNRAN
Licensee Name Open Range Communications
Radio Service / Station Class MG -- Microwave Industrial/Business Pool

CA0530 CA

Hickman/Stanislaus
Engineering Proposal / PRIMARY OPERATION
OPNRAN
Open Range Communications
FXO -- Fixed

Site Information

Latitude (NAD 83)	37 °38' <u>46.0</u> " N	37 °38' 4.6" N
Longitude (NAD 83)	120 °46' <u>33.2</u> " W	120 °45' <u>15.4</u> " W
Ground Elevation (m/ft-AMSL)	<u>49.00</u> / <u>160.8</u>	<u>51.46</u> / <u>168.8</u>
Antenna Structure Registration #		
Path Azimuth (°)	<u>123.783</u>	<u>303.796</u>
Path Length (km / miles)		<u>2.295</u> / <u>1.426</u>

Transmit Antenna

80014A
Manufacturer ANDREW CORPORATION
Model VHLP1-23A
Gain(dBi) / Beamwidth(°) / Tilt(°) 35.3 / 3.00 / -0.25
Centerline (m / ft - AGL) 35.05 / 115.0

80014A
ANDREW CORPORATION
VHLP1-23A
35.3 / 3.00 / 0.24
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

TEMZ61
Manufacturer Aviat Networks, Inc.
Model EH23-32DS1-16QAM-20
Model Description ECLIPSE ODU 300 HP
Emission Designator / Modulation 20M0D7W 16 QAM
Loading 672 CH DIG 54200.000
Stability (%) 0.001
Nominal Coordinated Maximum
Power (dBm) 17.5
Received Level (dBm) -38.5
EIRP (dBm) 52.8
Fixed Loss: Tx / Common (dB) 0.0 / 0.0
Free Space Loss (dB) 126.6

TEMZ61
Aviat Networks, Inc.
EH23-32DS1-16QAM-20
ECLIPSE ODU 300 HP
20M0D7W 16 QAM
672 CH DIG 54200.000
0.001
Nominal Coordinated Maximum
17.5
-38.5
52.8
0.0 / 0.0

Transmit Frequencies (MHz) 23030.0000V(2)

21830.0000V(2)