

# Microwave Path Data Sheet

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## COMSEARCH

19700 Janelia Farm Boulevard, Ashburn, VA, 20147  
(571)246-3097 [www.comsearch.com](http://www.comsearch.com)

PCN Date: 09/28/2010

Job Number: 100928COMSFB05

New Path

RCN Number: 10092804

### Administrative Information

**MT ALLISON CA**  
City/County /Alameda  
Status / License Basis Engineering Proposal / PRIMARY OPERATION  
Call Sign WQFN862  
Licensee Code SANPUB  
Licensee Name City & County of San Francisco PUC  
Radio Service / Station Class MW -- Microwave Public Safety Pool

### CALAVERASDAM CA

City/County /Alameda  
Status / License Basis Engineering Proposal / PRIMARY OPERATION  
Call Sign  
Licensee Code SANPUB  
Licensee Name City & County of San Francisco PUC  
Radio Service / Station Class FXO -- Fixed

### Site Information

|                                  |                  |                 |
|----------------------------------|------------------|-----------------|
| Latitude (NAD 83)                | 37 °29' 59.0" N  | 37 °29' 17.4" N |
| Longitude (NAD 83)               | 121 °52' 18.5" W | 121 °49' 5.2" W |
| Ground Elevation (m/ft-AMSL)     | 795.53 / 2610.0  | 306.63 / 1006.0 |
| Antenna Structure Registration # |                  |                 |
| Path Azimuth (°)                 | 105.098          | 285.131         |
| Path Length (km / miles)         | 4.918 / 3.056    |                 |

### Transmit Antenna

|                                    |                     |                    |
|------------------------------------|---------------------|--------------------|
| Manufacturer                       | 87216A              | 87216A             |
| Model                              | ANDREW CORPORATION  | ANDREW CORPORATION |
| Gain(dBi) / Beamwidth(°) / Tilt(°) | VHLPX2-18B          | VHLPX2-18B         |
| Centerline (m / ft - AGL)          | 38.9 / 2.10 / -5.94 | 38.9 / 2.10 / 5.91 |
|                                    | 24.38 / 80.0        | 3.05 / 10.0        |

### 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                     | TEML39                      | TEML39                      |
| Model                            | Aviat Networks, Inc.        | Aviat Networks, Inc.        |
| Model Description                | EH18-1OC3-64QAM-40          | EH18-1OC3-64QAM-40          |
| Emission Designator / Modulation | ECLIPSE ODU 300 HP          | ECLIPSE ODU 300 HP          |
| Loading                          | 40M0D7W 64 QAM              | 40M0D7W 64 QAM              |
| Stability (%)                    | 2016CH DIG 167000.000       | 2016CH DIG 167000.000       |
|                                  | 0.001                       | 0.001                       |
|                                  | Nominal Coordinated Maximum | Nominal Coordinated Maximum |
| Power (dBm)                      | 16.5                        | 16.5                        |
| Received Level (dBm)             | -37.4                       | -37.4                       |
| EIRP (dBm)                       | 55.4                        | 55.4                        |
| Fixed Loss: Tx / Common (dB)     | 0.0 / 0.0                   | 0.0 / 0.0                   |
| Free Space Loss (dB)             |                             | 131.7                       |

|                                   |                |                |                |                |
|-----------------------------------|----------------|----------------|----------------|----------------|
| <b>Transmit Frequencies (MHz)</b> | 19360.0000H(3) | 19440.0000V(5) | 17800.0000H(3) | 17880.0000V(5) |
|-----------------------------------|----------------|----------------|----------------|----------------|

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Call Sign  
Licensee Code SANPUB  
Licensee Name City & County of San Francisco PUC  
Radio Service / Station Class MW -- Microwave Public Safety Pool

### CALAVERAS WA CA

City/County /Alameda  
Status / License Basis Engineering Proposal / PRIMARY OPERATION  
Call Sign  
Licensee Code SANPUB  
Licensee Name City & County of San Francisco PUC  
Radio Service / Station Class FXO -- Fixed

### Site Information

|                                  |                 |                  |
|----------------------------------|-----------------|------------------|
| Latitude (NAD 83)                | 37 °29' 17.4" N | 37 °29' 37.7" N  |
| Longitude (NAD 83)               | 121 °49' 5.2" W | 121 °49' 23.5" W |
| Ground Elevation (m/ft-AMSL)     | 306.63 / 1006.0 | 249.63 / 819.0   |
| Antenna Structure Registration # |                 |                  |
| Path Azimuth (°)                 | 324.311         | 144.308          |
| Path Length (km / miles)         | 0.771 / 0.479   |                  |

### Transmit Antenna

|                                    |                     |                    |
|------------------------------------|---------------------|--------------------|
| Manufacturer                       | 87216A              | 87216A             |
| Model                              | ANDREW CORPORATION  | ANDREW CORPORATION |
| Gain(dBi) / Beamwidth(°) / Tilt(°) | VHLPX2-18B          | VHLPX2-18B         |
| Centerline (m / ft - AGL)          | 38.9 / 2.10 / -4.12 | 38.9 / 2.10 / 4.11 |
|                                    | 4.57 / 15.0         | 6.10 / 20.0        |

### 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                     | TEML39                      | TEML39                      |
| Model                            | Aviat Networks, Inc.        | Aviat Networks, Inc.        |
| Model Description                | EH18-1OC3-64QAM-40          | EH18-1OC3-64QAM-40          |
| Emission Designator / Modulation | ECLIPSE ODU 300 HP          | ECLIPSE ODU 300 HP          |
| Loading                          | 40M0D7W 64 QAM              | 40M0D7W 64 QAM              |
| Stability (%)                    | 2016CH DIG 167000.000       | 2016CH DIG 167000.000       |
|                                  | 0.001                       | 0.001                       |
|                                  | Nominal Coordinated Maximum | Nominal Coordinated Maximum |
| Power (dBm)                      | 16.5                        | 16.5                        |
| Received Level (dBm)             | -21.3                       | -21.3                       |
| EIRP (dBm)                       | 55.4                        | 55.4                        |
| Fixed Loss: Tx / Common (dB)     | 0.0 / 0.0                   | 0.0 / 0.0                   |
| Free Space Loss (dB)             |                             | 115.6                       |

|                                   |                |                 |                |                 |
|-----------------------------------|----------------|-----------------|----------------|-----------------|
| <b>Transmit Frequencies (MHz)</b> | 18000.0000V(8) | 18120.0000H(11) | 19560.0000V(8) | 19680.0000H(11) |
|-----------------------------------|----------------|-----------------|----------------|-----------------|