

**Antenna Information****Directionality/Beamwidth and Orientation of Antennas**

The following information describes the directionality, beamwidth and orientation of the antennas associated with the requested Facilities (all below 6m):

**Directional Antennas**

| Manufacturer | Model #     | Quantity | Gain (Nominal) | 3dB BW E (Vertical) | 3dB BW H (Horizontal) |
|--------------|-------------|----------|----------------|---------------------|-----------------------|
| KMA          | 26500       | 1        | -6dBi          | 90°                 | 90°                   |
| SA           | 26-0.1      | 1        | +8 dBi         | 60°                 | 120°                  |
| SA           | 29-0.1      | 2        | +8 dBi         | 60°                 | 120°                  |
| SA           | 27-1.0/8    | 1        | +8 dBi         | 9°                  | 1.5°                  |
| SA           | 28-1.0/8/10 | 1        | +8 dBi         | 9°                  | 4.5°                  |
| Sanders      | 1/2 Horn    | 1        | +8dBi          | 60-30°              | N/A                   |
| Sanders      | Dual Horn   | 1        | +8dBi          | 60-30°              | 60-30°                |
| Sanders      | 1/2 Horn    | 1        | +8dBi          | 60-45°              | N/A                   |
| Condor       | AS-48461    | 1        | +5-18 dBi      | 60-10°              | 60-10°                |
| AEL          | H-1498      | 1        | +8-12 dBi      | 60-30°              | 60-30°                |
| SA           | 28-2.0/8/10 | 1        | +8 dBi         | 60-30°              | 60-30°                |

**Non-Directional Antennas**

| Manufacturer    | Model #  | Quantity | Gain (Nominal)    | 3dB BW E (Vertical) | 3dB BW H (Horizontal) |
|-----------------|----------|----------|-------------------|---------------------|-----------------------|
| Sanders         | 1/4Mon   | 4        | -5.2 dBi          | OMNI                | N/A                   |
| Electro Metrics | EM-6924  | 2        | +2.6 dBi          | OMNI                | 120°                  |
| Sanders         | TASES 36 | 2        | -60 to -5dBi      | OMNI                | N/A                   |
| Sanders         | TASES 24 | 2        | -31.5 to +1.1 dBi | OMNI                | N/A                   |
| Sanders         | TASES 12 | 2        | -10 to -5         | OMNI                | N/A                   |
| Sanders         | Slant    | 1        | -20 to -5         | OMNI                | N/A                   |

## **Transmitting Equipment and Additional Signal Amplification**

### **Transmitting Equipment (all non-experimental):**

| Manufacturer | Model   | Quantity |
|--------------|---------|----------|
| HP           | HP8645A | 1        |
| HP           | HP8341  | 1        |
| HP           | HP8643A | 1        |
| HP           | HP8340B | 1        |
| HP           | HP8662A | 1        |
| HP           | HP8671A | 1        |
| HP           | HP8753A | 1        |
| HP           | HP8753D | 1        |
| HP           | HP8753E | 1        |
| HP           | HP8510B | 1        |
| HP           | HP8510C | 1        |
| Agilent      | E8257D  | 1        |

### **Additional Signal Amplification:**

Additional signal amplification may be utilized as follows:

| Power Amplifiers | Model         | Frequency Band    | Power Output | Quantity |
|------------------|---------------|-------------------|--------------|----------|
| OPHIR            | 5163          | .8GHz-4.2GHz      | 50W          | 1        |
| OPHIR            | 5162          | 20-10000 MHz      | 50W          | 1        |
| OPHIR            | 5127          | 20-1000 MHz       | 250W         | 1        |
| OPHIR            | 5069          | .5MHz to 500MHz   | 8W           | 1        |
| OPHIR            | 5094          | 1MHz to 1000MHz   | 3W           | 1        |
| OPHIR            | 5160          | .8GHz to 4.2GHz   | 7W           | 1        |
| CPI              | VZV-2776K4/K6 | 4.0GHz to 18GHz   | 25W          | 1        |
| ENI              | 510L          | 1.7MHz to 500MHz  | 9.5W         | 1        |
| ENI              | 603L          | .8 MHz to 1000MHz | 3W           | 1        |