FEMA, Federal Regional Center (FRC) site at 800 N Loop 288, Denton, Texas

| | | |
|---|---|---|
| Antenna: | Rotating Log Periodic - LP1001CA United States Antenna Products, | |
| | Frequency Range | 4 MHz to 30 MHz |
| | Power handling capability | 25 kW with 50 kW Peak |
| | Location | South side of FRC compound ground installation |
| Antenna: | Spiracone - Andrews, 3001-3ML | |
| | Frequency Range | 2.5 MHz/5.6 MHz to 30 MHz |
| | Power handling capability | 25 kW with 50 kW Peak |
| | Location | North and South fields in front of FRC ground installation |
| Antenna: | Spiracone - Andrews, 3002-3ML | |
| | Frequency Range | 2.0 MHz/4.0 MHz to 30 MHz |
| | Power handling capability | 25 kW with 50 kW Peak |
| | Location | Roof of FRC |

**Directional Antenna**

Is a directional antenna (other than radar) used? **See antenna legend above.**

If yes, provide the following information:

i. Width of beam in degrees at the half power point: **N/A**
ii. Orientation in horizontal plane (degrees): **N/A**
iii. Orientation in vertical plane (degrees): **N/A**

**Antenna Height**

Will the antenna extend more than six meters above the ground, or if mounted on an existing building, will it extend more than six meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? **Yes**

If yes, provide the following information:

I Overall height above ground to tip of antenna (in meters):
Spiracone, Andrews 3001-3ML: **39.6 meters above ground**
Spiracone, Andrews 3002-3ML: **10.2 meters above rooftop of FRC**
Log Periodic Antenna, USA Towers, RLP-2: **40 meters (estimated) above ground**

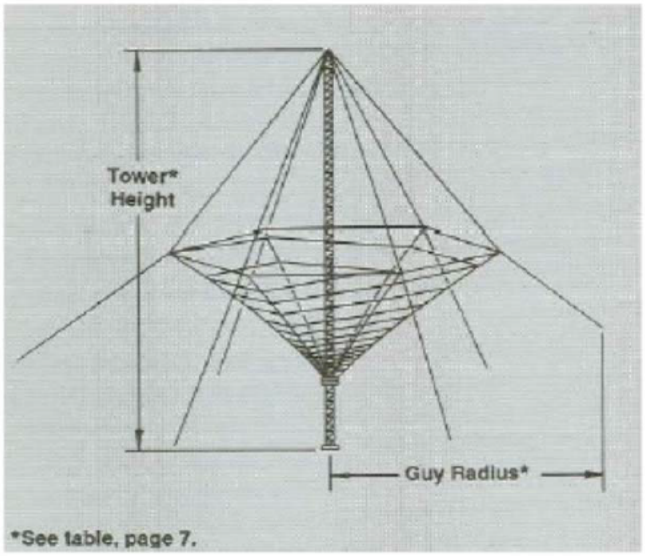
ii Elevation of ground at antenna site above mean sea level is: **196 meters**

iii Distance to nearest aircraft landing area (in kilometers): **10.10 km**

iv List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft and thereby minimize the aeronautical hazard of the antenna. **None**

Spiracone - Andrews, 3001-3ML

## Series 3001 Full Sized



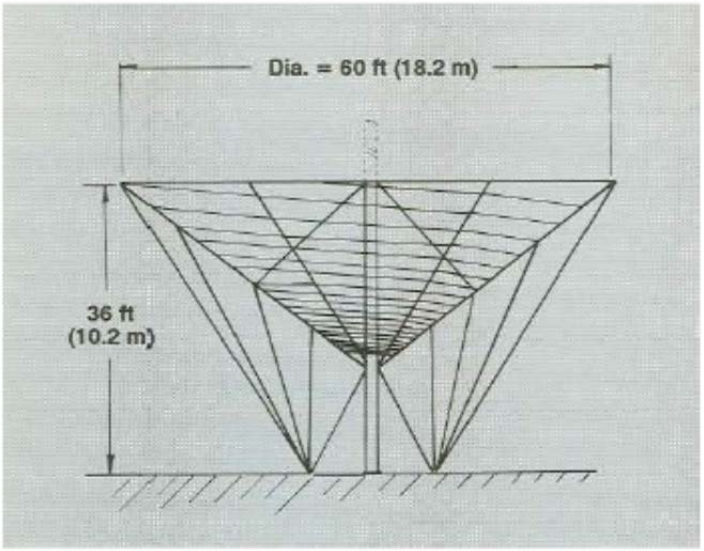

### Ordering Information, Series 3001

| Type Number<br>Mode | 3001-2VL-(*)<br>Very Low Angle | 3001-2L-(*)<br>Low Angle | 3001-2ML-(*)<br>Medium Low Angle | 3001-3L-(*)<br>Low Angle | 3001-3ML-(*)<br>Medium Low Angle | 3001-4L-(*)<br>Low Angle |
|---|---|---|---|---|---|---|
| Tower Height, ft (m) | 240 (73.2) | 220 (67.1) | 200 (60.9) | 150 (45.7) | 130 (39.6) | 120 (36.6) |
| Guy Radius, ft (m) | 267 (81.4) | 265 (80.8) | 238 (72.5) | 166(50.6) | 157 (47.9) | 135 (41.2) |
| Freq. Range High-Angle Mode, MHz | 2-30 | 2-30 | 2-30 | 3-30 | 3-30 | 4-30 |
| Freq. Range Low-Angle Mode, MHz | 3.6-30 | 3.6-30 | 3.6-30 | 5.4-30 | 5.4-30 | 7.2-30 |
| 4 MHz Upper ½ Power Angle, deg. | 57 | 66 | 70 | | | |
| 4 MHz Beam Peak Angle, deg. | 33 | 38 | 42 | | | |
| 4 MHz Lower ½ Power Angle, deg. | 16 | 17 | 19 | | | |
| 6 MHz Upper ½ Power Angle, deg. | | | | 57 | 68 | |
| 6 MHz Beam Peak Angle, deg. | | | | 33 | 40 | |
| 6 MHz Lower ½ Power Angle, deg. | | | | 16 | 18 | |
| 8 MHz Upper ½ Power Angle, deg. | | | | | | 52 |
| 8 MHz Beam Peak Angle, deg. | | | | | | 30 |
| 8 MHz Lower ½ Power Angle, deg. | | | | | | 14 |
| 30 MHz Upper ½ Power Angle, deg. | 15 | 15 | 31 | 15 | 31 | 15 |
| 30 MHz Beam Peak Angle, deg. | 10 | 10 | 20 | 10 | 20 | 10 |
| 30 MHz Lower ½ Power Angle, deg. | 5 | 5 | 9 | 5 | 9 | 5 |

* Append with Power Level Function Number from Series 3001 Option Table below.

Spiracone - Andrews, 3002-3ML

## Series 3002A Roof Mount



United States Antenna Products, LP-1001CA, Rotating Log Periodic Antenna

| Model Number | LP-1005 | LP-1001 | LP-1002 |
|---|---|---|---|
| | | | |
| Military nomenclature | Part of AS-3515/GRC | Part of 0E-175/FRC | Part of AS-2178/G |
| National stock number | 5985-00-121-4334 | 5985-00-009-0131 | 5985-00-145-2962 |
| *Electrical Characteristics* | | | |
| Frequency range | 3.0 - 30 0 MHz | 4.0 - 30.0 MHz | 6.0 - 40.0 MHz |
| Power handling capability | | | |
| PEP/average | 50/25 kW | 50/25 kW | 50/25 kW |
| Polarization | Horizontal | Horizontal | Horizontal |
| Cross polarization (in db,+/- down) | 20 | 20 | 20 |
| Forward gain over average sod Conditons at 100 ft/30 5 in (in dBi) | 10-13.5 | 10-13.5 | 10-13.5 |
| Front to back ratio On de, nominal) | 14 | 14 | 14 |
| Nominal VSWR (with respect to 50Ω) | 3:1 (3-4 MHz) 2:1 (4-30 MHz) | 2:1 | 2:1 |
| Input impedance | 50Ω | 50Ω | 50Ω |
| In connector | 1-518' EIA | 1-5/8" EIA | 1-5/8- EIA |
| Azimuth half power beam width (average) | 70° | 70° | 70° |
| *Structural Characteristics* | | | |
| Boom length | 72 feet/21.95 meters | 72 feet/21.95 meters | 64 feet/19.66 meters |
| Longest element | 104.16 feet/31.75 meters | 87 feet/26.65 meters | 81 feet 24.69 meters |
| Turning radius | 63.5 feet/19.35 meters | 54 feet/16.46 milers | 51 feet/14.94 meters |
| Total number of elements | 19 | 19 | 14 |
| Wind loading capability No ice | 120 mph/193.08 kph | 140 mph/225 kph | 140mph/225 kph |
| Radial ice 0 25' (6 3 mm) | 80 mph/128.7 kph | 100 mph/161 kph | 100 mph/161 kph |
| Net weight | 2100 lbs/955 kg | 1695/700.45 kg | 1400 lbs/636.36 kg |
| Shipping weight | 3650 lbs/1659 kg | 3408 lbs/1546 kg | 2102 lbs/955.3 kg |
| Shipping volume | 242 cu ft/6.85 cu m | 280 cu ft/7.94 cu m | 121.9 cu f/3.45 cu m |
| Wind surface area | 120 sq ft/11.15 sq m | 108sq ft/10.03 sq m | 88sq ft/18 sq m |

Aerial view of FEMA, Federal Regional Center (FRC) site at 800 N Loop 288, Denton, Texas


Spiracones
Andrews 3001-3ML
Ground Installation

Spiracone
Andrews 3002-3ML
Roof of FRC Installation

Log Periodic Antenna
US Antenna Products, 1001CA
Ground Installation

Antennas (left to right):  Spiracone, Andrews 3002-3ML, rooftop installation on FRC, two Log Periodic Antennas, US Antenna Products, 1001CA, south ground installations, and Spiracone, Andrews 3001-3ML, south field ground installation

Antenna:  Spiracone, Andrews 3001-3ML, north field ground installation