

## PCTEL Heavy Duty Omnidirectional Base Station Platform



The PCTEL BOA omnidirectional base station antennas consist of a linear array, encapsulated in a heavy duty fiberglass radome with a thick walled 6061-T6 aluminum mounting base. The rugged and robust design makes these antennas ideal for deployment in harsh environments where long term reliability and durability cannot be compromised. This platform is ideal for industrial wireless applications in the SCADA, Utility Smart Grid, Positive Train Control, Remote Monitoring, Precision Agriculture, and Military/Defense markets.

### Features

- UV stable gray fiberglass radome
- Versatile mounting brackets included
- Black, hard coat anodized finish on antenna base and mounting brackets
- Galvanized Mounting Hardware
- Movable drain plug for upright or inverted mounting
- DC grounded for ESD protection
- Stable pattern and gain performance with no field tuning required



BOA9025 and  
BAM1005 mount



BOA2175 and  
MMK5 mount

### STANDARD CONFIGURATION

| Model    | Connector         | Mount                       |
|----------|-------------------|-----------------------------|
| BOA9025  | N Female bulkhead | BAM1005 mast mount included |
| BOA9028  | N Female bulkhead | BAM1005 mast mount included |
| BOA90211 | N Female bulkhead | MMK5 mast mount included    |
| BOA4409  | N Female bulkhead | MMK5 mast mount included    |
| BOA4357  | N Female bulkhead | BAM1005 mast mount included |
| BOA2177  | N Female bulkhead | MMK5 mast mount included    |
| BOA2175  | N Female bulkhead | MMK5 mast mount included    |

### ELECTRICAL SPECIFICATIONS - RF ANTENNA

| Model    | Frequency Range | Gain             | VSWR  | Elevation Half Power Beamwidth | Average Power | Nominal Impedance |
|----------|-----------------|------------------|-------|--------------------------------|---------------|-------------------|
| BOA9025  | 902-928 MHz     | 5.1 dBi / 3 dBd  | < 1.5 | 25°                            | 250 watts     | 50 ohms           |
| BOA9028  | 902-928 MHz     | 8.1 dBi / 6 dBd  | < 1.5 | 13°                            | 250 watts     | 50 ohms           |
| BOA90211 | 902-928 MHz     | 11.1 dBi / 9 dBd | < 1.5 | 6°                             | 250 watts     | 50 ohms           |
| BOA4409  | 440-460 MHz     | 9.1 dBi / 7 dBd  | < 1.7 | 11°                            | 250 watts     | 50 ohms           |
| BOA4357  | 430-470MHz      | 7.1 dBi / 5 dBd  | < 1.7 | 18°                            | 250 watts     | 50 ohms           |
| BOA2177  | 217-222 MHz     | 7.1 dBi / 5 dBd  | < 2.0 | 18°                            | 250 watts     | 50 ohms           |
| BOA2175  | 215-225 MHz     | 5 dBi / 3 dBd    | < 2.0 | 18°                            | 250 watts     | 50 ohms           |

### MECHANICAL & ENVIRONMENTAL SPECIFICATIONS

| Model    | Dimensions                   | Weight   | Housing Material | Rated Wind | Temperature Range |
|----------|------------------------------|----------|------------------|------------|-------------------|
| BOA9025  | 2 OD x 55 in (5 x 139.7 cm)  | 5.0 lbs  | Fiberglass       | 125 mhp    | -40°C to +85°C    |
| BOA9028  | 2 OD x 68 in (5 x 172.7 cm)  | 6.0 lbs  | Fiberglass       | 125 mhp    | -40°C to +85°C    |
| BOA90211 | 2 OD x 122 in (5 x 309.9 cm) | 10.0 lbs | Fiberglass       | 125 mhp    | -40°C to +85°C    |
| BOA4409  | 2 OD x 151 in (5 x 383.5 cm) | 12 lbs   | Fiberglass       | 125 mhp    | -40°C to +85°C    |
| BOA4357  | 2 OD x 83 in (5 x 210.8 cm)  | 7.0 lbs  | Fiberglass       | 125 mhp    | -40°C to +85°C    |
| BOA2177  | 2 OD x 151 in (5 x 383.5 cm) | 12 lbs   | Fiberglass       | 125 mhp    | -40°C to +85°C    |
| BOA2175  | 2 OD x 122 in (5 x 309.8 cm) | 10 lbs   | Fiberglass       | 125 mhp    | -40°C to +85°C    |

## PCTEL Heavy Duty Omnidirectional Base Station Platform



The BOA omnidirectional base station antenna design utilizes a linear array, encapsulated in a heavy duty fiberglass radome with a thick walled mounting base for reliable, long term use. This rugged design withstands harsh environments making the antennas ideal for Industrial Wireless and Military applications. The antennas in this series are DC grounded for ESD protection of radio components.

### Features

- UV Stable, Black Fiberglass Radome (0.625" diameter)
- Black Chrome Plated Mounting Base
- DC Grounded Design
- Fully Sealed IP67\* Design
- Type N Male or Female connector options



BOA24004NF

### STANDARD CONFIGURATION

| Model          | Connector | Mount  |
|----------------|-----------|--|
| BOA24004NF     | N Female  | BAM1009 or BAM1011-HCA mast mounts<br>sold separately (all models) |
| BOA24006NF     | N Female  |  |
| BOA24006NM     | N Male    |  |
| BOA24008NF     | N Female  |  |
| BOA24008NM     | N Male    |  |
| BOA24008DT12NF | N Female  |  |
| BOA24008DT12NM | N Male    |  |
| BOA24008DT7NF  | N Female  |  |
| BOA24008DT7NM  | N Male    |  |
| BOA51004NF     | N Female  |  |
| BOA51004NM     | N Male    |  |
| BOA58006NF     | N Female  |  |
| BOA58010NF     | N Female  |  |
| BOA58010NM     | N Male    |  |

### ELECTRICAL SPECIFICATIONS - RF ANTENNA

| Model          | Frequency Range | Nominal Gain | VSWR    | Elevation Half Power Beamwidth | Maximum Power | Nominal Impedance |
|----------------|-----------------|--------------|---------|--------------------------------|---------------|-------------------|
| BOA24004NF     | 2.4-2.5 GHz     | 4 dBi        | < 1.5:1 | 42°                            | 40 watts      | 50 ohms           |
| BOA24006NF     | 2.4-2.5 GHz     | 6 dBi        | < 1.5:1 | 28°                            | 40 watts      | 50 ohms           |
| BOA24006NM     | 2.4-2.5 GHz     | 6 dBi        | < 1.5:1 | 28°                            | 40 watts      | 50 ohms           |
| BOA24008NF     | 2.4-2.5 GHz     | 8 dBi        | < 1.5:1 | 15°                            | 40 watts      | 50 ohms           |
| BOA24008NM     | 2.4-2.5 GHz     | 8 dBi        | < 1.5:1 | 15°                            | 40 watts      | 50 ohms           |
| BOA24008DT12NF | 2.4-2.5 GHz     | 8 dBi        | < 1.5:1 | 15°                            | 40 watts      | 50 ohms           |
| BOA24008DT12NM | 2.4-2.5 GHz     | 8 dBi        | < 1.5:1 | 15°                            | 40 watts      | 50 ohms           |
| BOA24008DT7NF  | 2.4-2.5 GHz     | 8 dBi        | < 1.5:1 | 15°                            | 40 watts      | 50 ohms           |
| BOA24008DT7NM  | 2.4-2.5 GHz     | 8 dBi        | < 1.5:1 | 15°                            | 40 watts      | 50 ohms           |
| BOA51004NF     | 5.1-5.9 GHz     | 4 dBi        | < 1.5:1 | 42°                            | 20 watts      | 50 ohms           |
| BOA51004NM     | 5.1-5.9 GHz     | 4 dBi        | < 1.5:1 | 42°                            | 20 watts      | 50 ohms           |
| BOA58006NF     | 5.7-5.8GHz      | 6 dBi        | < 1.5:1 | 28°                            | 20 watts      | 50 ohms           |
| BOA58010NF     | 5.7-5.8GHz      | 10 dBi       | < 1.5:1 | 10°                            | 20 watts      | 50 ohms           |
| BOA58010NM     | 5.7-5.8GHz      | 10 dBi       | < 1.5:1 | 10°                            | 20 watts      | 50 ohms           |

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### MECHANICAL & ENVIRONMENTAL SPECIFICATIONS

| Model          | Dimensions                            | Weight              | Housing Material                                       |
|----------------|---------------------------------------|---------------------|--|
| BOA24004NF     | .825 OD x 10.1 L in (2.09 x 25.65 cm) | 0.33 lbs (151 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA24006NF     | .825 OD x 15.0 L in (2.09 x 38.1 cm)  | 0.38 lbs (176 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA24006NM     | .825 OD x 14.8 L in (2.09 x 37.5 cm)  | 0.30 lbs (134 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA24008NF     | .825 OD x 19.4 L in (2.09 x 49.3 cm)  | 0.45 lbs (203 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA24008NM     | .825 OD x 19.1 L in (2.09 x 48.5 cm)  | 0.35 lbs (161 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA24008DT12NF | .825 OD x 25.4 L in (2.09 x 64.5 cm)  | 0.52 lbs (235 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA24008DT12NM | .825 OD x 25 L in (2.09 x 63.5 cm)    | 0.40 lbs (182 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA24008DT7NF  | .825 OD x 25.4 L in (2.09 x 64.5 cm)  | 0.52 lbs (235 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA24008DT7NM  | .825 OD x 25 L in (2.09 x 63.5 cm)    | 0.42 lbs (192 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA51004NF     | .825 OD x 5.5 L in (2.09 x 13.9 cm)   | 0.27 lbs (124 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA51004NM     | .825 OD x 5.3 L in (2.09 x 13.5 cm)   | 0.18 lbs (82 gram)  | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA58006NF     | .825 OD x 7.29 in (2.09 x 18.5 cm)    | 0.30 lbs (134 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA58010NF     | .825 OD x 17.9 L in (2.09 x 45.5 cm)  | 0.43 lbs (194 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |
| BOA58010NM     | .825 OD x 17.6 L in (2.09 x 19.3 cm)  | 0.33 lbs (152 gram) | Black UV Stable Pultruded Fiberglass (0.625" diameter) |

### MECHANICAL & ENVIRONMENTAL SPECIFICATIONS, continued

| Model          | Rated Wind | Bending Moment at Rated Wind | Lateral Thrust at Rated Wind | Equivalent Flat Plate Area | Temperature Range |
|----------------|------------|------------------------------|------------------------------|----------------------------|-------------------|
| BOA24004NF     | 125 mph    | 0.97 lbf-ft                  | 2.31 lbf                     | 0.03 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA24006NF     | 125 mph    | 2.13 lbf-ft                  | 3.41 lbf                     | 0.04 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA24006NM     | 125 mph    | 2.07 lbf-ft                  | 3.36 lbf                     | 0.04 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA24008NF     | 125 mph    | 4.24 lbf-ft                  | 5.25 lbf                     | 0.05 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA24008NM     | 125 mph    | 4.14 lbf-ft                  | 5.19 lbf                     | 0.05 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA24008DT12NF | 125 mph    | 7.16 lbf-ft                  | 6.81 lbf                     | 0.07 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA24008DT12NM | 125 mph    | 7.04 lbf-ft                  | 6.74 lbf                     | 0.07 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA24008DT7NF  | 125 mph    | 7.16 lbf-ft                  | 6.81 lbf                     | 0.07 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA24008DT7NM  | 125 mph    | 7.04 lbf-ft                  | 6.74 lbf                     | 0.07 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA51004NF     | 125 mph    | 0.30 lbf-ft                  | 1.31 lbf                     | 0.02 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA51004NM     | 125 mph    | 0.27 lbf-ft                  | 1.25 lbf                     | 0.02 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA58006NF     | 125 mph    | 0.51 lbf-ft                  | 1.70 lbf                     | 0.02 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA58010NF     | 125 mph    | 3.57 lbf-ft                  | 4.83 lbf                     | 0.05 ft <sup>2</sup>       | -40°C to + 85°C   |
| BOA58010NM     | 125 mph    | 3.48 lbf-ft                  | 4.76 lbf                     | 0.05 ft <sup>2</sup>       | -40°C to + 85°C   |