



- Six foot (1.8 m) TriBand, eight port antenna with a 33° azimuth beamwidth covering 614-960 MHz and 1695-2690 MHz frequencies
- Four wide mid band ports covering 1695-2690 MHz and four wide low band ports covering 614-960 MHz in a single antenna enclosure
- Full Spectrum Compliance 614-960 MHz / 1695-2690 MHz
- Innovative Low and Mid Band Array configuration allows for 4T4R (4x4 MIMO) on Low Band and 4T4R (4x4 MIMO) Mid Band Arrays
- LTE Optimized FBR and SPR performance, providing for an efficient use of valuable radio capacity
- LTE Optimized Boresight and Sector XPD and USL performance, essential for LTE Performance
- Exceeds minimum PIM performance requirements
- Equipped with new 4.3-10 connectors, which are 40% smaller than traditional 7/16 DIN connectors
- Equipped with 2 field replaceable, integrated AISG 2.0 compliant Remote Electrical Tilt (RET) Controllers (Type 17 Internal)

Overview

The CCI OctoPort TriBand array is an eight port antenna, with four wide mid band ports covering 1695-2690 MHz and four wide low band ports covering 614-960 MHz. The antenna provides the capability to deploy 4x4 Multiple-input Multiple-output (MIMO) in the mid band and 4X4 MIMO across low band ports.

In this two RET configuration, the 1st RET is dedicated for the four Low Band ports. The 2nd RET is dedicated for the four Mid Band ports.

CCI antennas are designed and produced to ISO 9001 certification standards for reliability and quality in our state-of-the-art manufacturing facilities.

Applications

- 4x4 MIMO for the Mid Band and 4X4 MIMO Low Band ports
- Ready for Network Standardization on 4.3-10 DIN connectors
- With CCI's TriBand antennas, wireless providers can connect multiple platforms to a single antenna, reducing tower load, lease expense, deployment time and installation costs



TriBand Eight-Port Antenna

OPA33R-TE6C

SPECIFICATIONS

Electrical

| Ports | 4 x Low Band Ports for 614-960 MHz | | | | |
|------------------------------------|------------------------------------|-----------------|-----------------|-----------------|-----------------|
| Frequency Range | 614-698 MHz | 698-806 MHz | 790-862 MHz | 824-896 MHz | 880-960 MHz |
| Gain | 14.0 dBi | 14.8 dBi | 15.2 dBi | 15.3 dBi | 15.7 dBi |
| Azimuth Beamwidth (-3dB) | 36° | 35° | 33° | 31° | 30° |
| Elevation Beamwidth (-3dB) | 30.1° | 26.4° | 23.8° | 22.2° | 20.6° |
| Electrical Downtilt | 2° to 16° | 2° to 16° | 2° to 16° | 2° to 16° | 2° to 16° |
| Elevation Sidelobes (1st Upper) | <-22 dB | <-20 dB | <-18 dB | <-19 dB | <-19 dB |
| Front-to-Back Ratio @180° | > 28 dB | > 33 dB | > 35 dB | > 35 dB | > 35 dB |
| Front-to-Back Ratio @±20° | > 28 dB | > 33 dB | > 34 dB | > 33 dB | > 32 dB |
| Cross-Polar Discrimination at Peak | > 23 dB | > 25 dB | > 25 dB | > 25 dB | > 23 dB |
| Cross-Polar Port-to-Port Isolation | > 25 dB | > 25 dB | > 25 dB | > 25 dB | > 24 dB |
| Voltage Standing Wave Ratio (VSWR) | < 1.5:1 | < 1.5:1 | < 1.5:1 | < 1.5:1 | < 1.5:1 |
| Passive Intermodulation (2x20W) | ≤ -153 dBc | ≤ -153 dBc | ≤ -153 dBc | ≤ -153 dBc | ≤ -153 dBc |
| Input Power Continuous Wave (CW) | 500 watts | 500 watts | 500 watts | 500 watts | 500 watts |
| Polarization | Dual Linear 45° | Dual Linear 45° | Dual Linear 45° | Dual Linear 45° | Dual Linear 45° |
| Input Impedance | 50 ohms | 50 ohms | 50 ohms | 50 ohms | 50 ohms |
| Lightning Protection | DC Ground | DC Ground | DC Ground | DC Ground | DC Ground |

| BASTA Electrical Specifications | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|
| Frequency Range | 614-698 MHz | 698-806 MHz | 790-862 MHz | 824-896 MHz | 880-960 MHz |
| Gain over all Tilts (dBi) | 13.2 | 14.1 | 14.6 | 14.8 | 15.1 |
| Gain over all Tilts Tolerance (dB) | 0.8 | 0.5 | 0.4 | 0.5 | 0.5 |
| Gain at Low-Tilt (dBi) | 13.4 | 14.2 | 14.7 | 14.9 | 15.2 |
| Gain at Mid-Tilt (dBi) | 13.0 | 13.9 | 14.4 | 14.6 | 14.9 |
| Gain at High-Tilt (dBi) | 13.3 | 14.1 | 14.7 | 14.9 | 15.2 |
| Azimuth Beamwidth Tolerance (°) | 2.8 | 0.9 | 1.5 | 2.7 | 1.7 |
| Elevation Beamwidth Tolerance (°) | 3.0 | 2.6 | 1.8 | 2.6 | 1.8 |
| Electrical Downtilt Deviation (°) | 1.4 | 1.2 | 1.4 | 1.8 | 1.8 |
| First Upper Sidelobe Suppression (dB) | 19.4 | 17.0 | 16.1 | 15.8 | 15.0 |
| Upper Sidelobe Suppression Peak to 20°(dB) | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Front-to-Back Ratio over ±20° (dB) | 22.0 | 25.1 | 27.5 | 26.5 | 25.4 |
| Cross-polar Discrimination at 3 dB (dB) | 20.6 | 22.2 | 21.8 | 15.4 | 13.5 |

* Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1.
All specifications are subject to change without notice.



TriBand Eight-Port Antenna

OPA33R-TE6C

SPECIFICATIONS

Electrical

| Ports | 4 x Mid Band Ports for 1695-2690 MHz | | | | |
|------------------------------------|--------------------------------------|-----------------|-----------------|-----------------|-----------------|
| Frequency Range | 1695-1880 MHz | 1850-1990 MHz | 1920-2180 MHz | 2300-2400 MHz | 2496-2690 MHz |
| Gain | 19.7 dBi | 20.2 dBi | 20.3 dBi | 20.7 dBi | 21.1 dBi |
| Azimuth Beamwidth (-3dB) | 37° | 35° | 35° | 33° | 32° |
| Elevation Beamwidth (-3dB) | 5.3° | 4.9° | 4.5° | 3.7° | 3.5° |
| Electrical Downtilt | 2° to 10° | 2° to 10° | 2° to 10° | 2° to 10° | 2° to 10° |
| Elevation Sidelobes (1st Upper) | <-15 dB | <-15 dB | <-14 dB | <-14 dB | <-14 dB |
| Front-to-Back Ratio @180° | > 35 dB | > 35 dB | > 35 dB | > 35 dB | > 35 dB |
| Front-to-Back Ratio @±20° | > 33 dB | > 33 dB | > 34 dB | > 33 dB | > 34 dB |
| Cross-Polar Discrimination at Peak | > 19 dB | > 17 dB | > 18 dB | > 18 dB | > 20 dB |
| Cross-Polar Port-to-Port Isolation | > 25 dB | > 25 dB | > 25 dB | > 25 dB | > 25 dB |
| Voltage Standing Wave Ratio (VSWR) | < 1.5:1 | < 1.5:1 | < 1.5:1 | < 1.5:1 | < 1.5:1 |
| Passive Intermodulation (2x20W) | ≤ -153 dBc | ≤ -153 dBc | ≤ -153 dBc | ≤ -153 dBc | ≤ -153 dBc |
| Input Power Continuous Wave (CW) | 300 watts | 300 watts | 300 watts | 300 watts | 300 watts |
| Polarization | Dual Linear 45° | Dual Linear 45° | Dual Linear 45° | Dual Linear 45° | Dual Linear 45° |
| Input Impedance | 50 ohms | 50 ohms | 50 ohms | 50 ohms | 50 ohms |
| Lightning Protection | DC Ground | DC Ground | DC Ground | DC Ground | DC Ground |

| BASTA Electrical Specifications | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|
| Frequency Range | 1695-1880 MHz | 1850-1990 MHz | 1920-2180 MHz | 2300-2400 MHz | 2496-2690 MHz |
| Gain over all Tilts (dBi) | 18.6 | 19.3 | 19.6 | 20.1 | 19.7 |
| Gain over all Tilts Tolerance (dB) | 0.9 | 0.5 | 0.5 | 0.4 | 1.1 |
| Gain at Low-Tilt (dBi) | 18.6 | 19.2 | 19.5 | 20.0 | 20.1 |
| Gain at Mid-Tilt (dBi) | 18.7 | 19.4 | 19.8 | 20.3 | 20.2 |
| Gain at High-Tilt (dBi) | 18.5 | 19.3 | 19.5 | 20.0 | 19.0 |
| Azimuth Beamwidth Tolerance (°) | 3.6 | 3.5 | 2.9 | 2.0 | 2.8 |
| Elevation Beamwidth Tolerance (°) | 0.5 | 0.3 | 0.4 | 0.2 | 0.3 |
| Electrical Downtilt Deviation (°) | 0.9 | 0.9 | 1.0 | 0.9 | 1.0 |
| First Upper Sidelobes Suppression (dB) | 11.7 | 13.5 | 12.4 | 12.0 | 11.3 |
| Upper Sidelobe Suppression Peak to 20°(dB) | 12.2 | 14.6 | 12.7 | 11.9 | 11.4 |
| Front-to-Back Ratio over ±20° (dB) | 28.2 | 29.3 | 29.7 | 28.9 | 28.7 |
| Cross-polar Discrimination at ±60° (dB) | 12.8 | 11.8 | 12.8 | 13.7 | 14.4 |

* Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1.
All specifications are subject to change without notice.



SPECIFICATIONS

TriBand Eight-Port Antenna

OPA33R-TE6C

Mechanical

| | |
|---|--|
| Dimensions (LxWxD) | 72.0x25.2x8.7 in (1829x641x220 mm) |
| Survival Wind Speed | > 150 mph (> 241 kph) |
| Front Wind Load¹ | 320 lbf @ 100 mph 1425 N @ 161 kph |
| Side Wind Load¹ | 52 lbf @ 100 mph 231 N @ 161 kph |
| Effective Projective Area (EPA), Front¹ | 12.9 ft ² (1.2 m ²) |
| Weight * | 87.2 lbs (39.5 kg) |
| RF Connector | 8 x 4.3-10 female |
| Mounting Pole | 2 to 5 in (5 to 12 cm) |

¹Windload values calculated using CFD analysis
* Weight excludes mounting



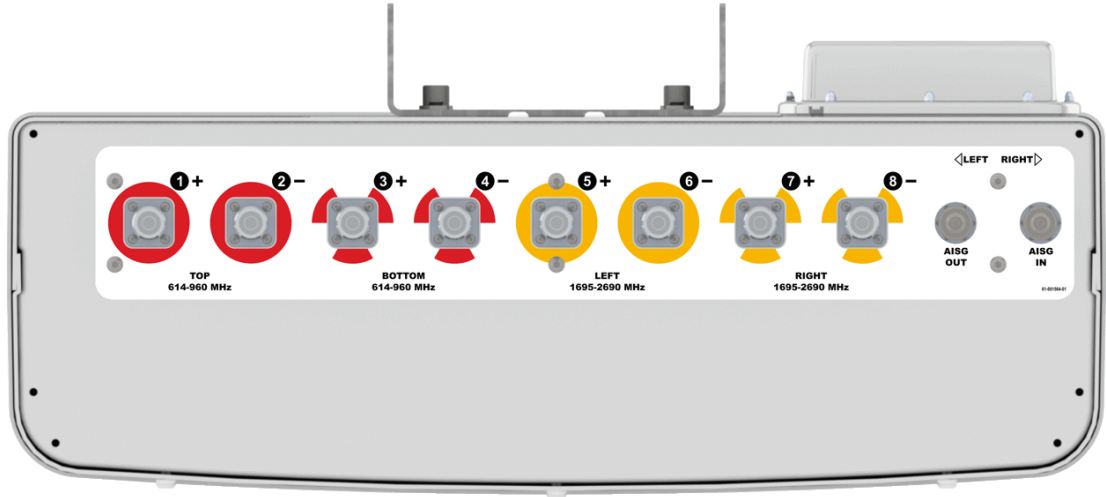
SPECIFICATIONS

TriBand Eight-Port Antenna

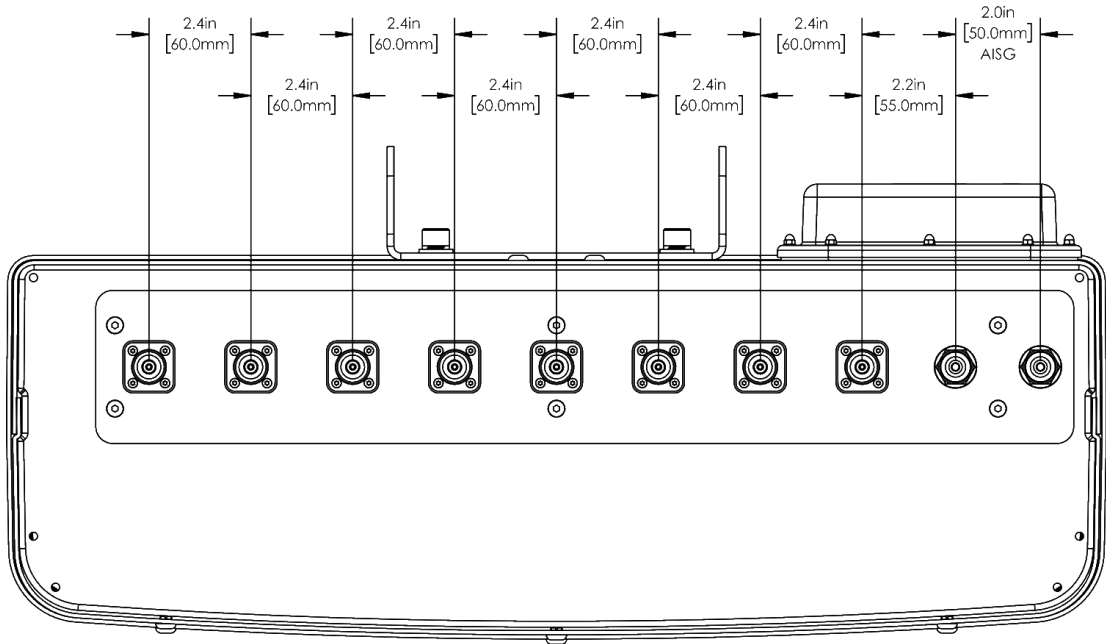
OPA33R-TE6C

Mechanical

Bottom View



Connector Spacing



TriBand Eight-Port Antenna

OPA33R-TE6C

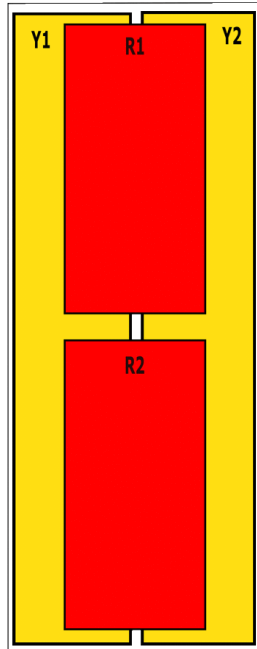
SPECIFICATIONS

Mechanical

RET to Element Configuration

OPA33R-TE6CA Element and RET configuration (Type 17 Internal RET)

**Top of antenna
Viewed from rear**



**RET placement
as viewed from rear
of antenna**

Top of antenna



| Array | Ports | Freq (MHz) | Ports controlled by common RET | AISG RET UID |
|-------|-------|------------|--------------------------------|--------------|
| R1 | 1, 2 | 614-960 | 1, 2, 3, 4 | ClxxxxxMM.1 |
| R2 | 3, 4 | 614-960 | | |
| Y1 | 5, 6 | 1695-2690 | 5, 6, 7, 8 | ClxxxxxMM.2 |
| Y2 | 7, 8 | 1695-2690 | | |

Mechanical

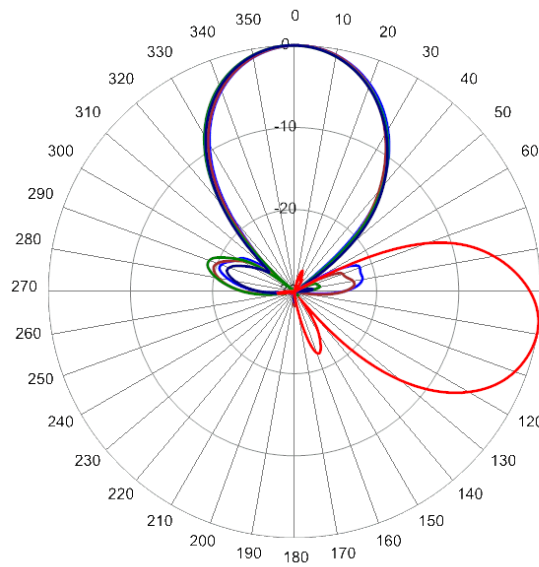


TriBand Eight-Port Antenna

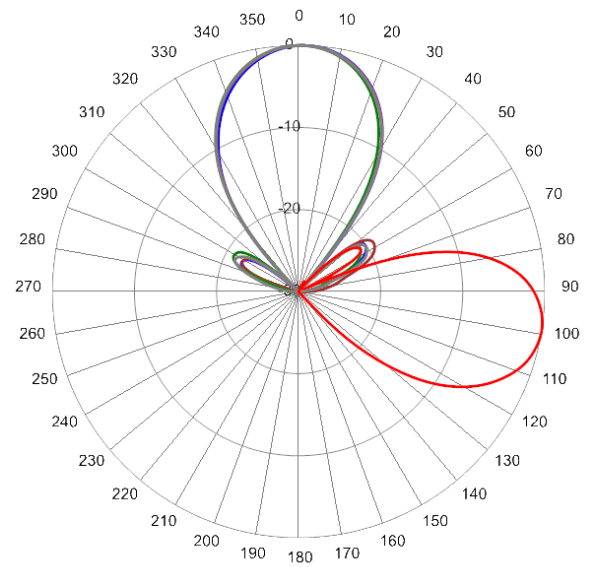
OPA33R-TE6C

Typical Antenna Patterns

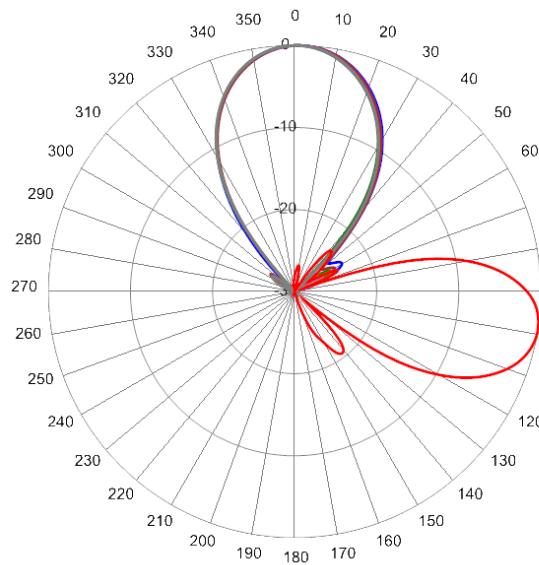
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



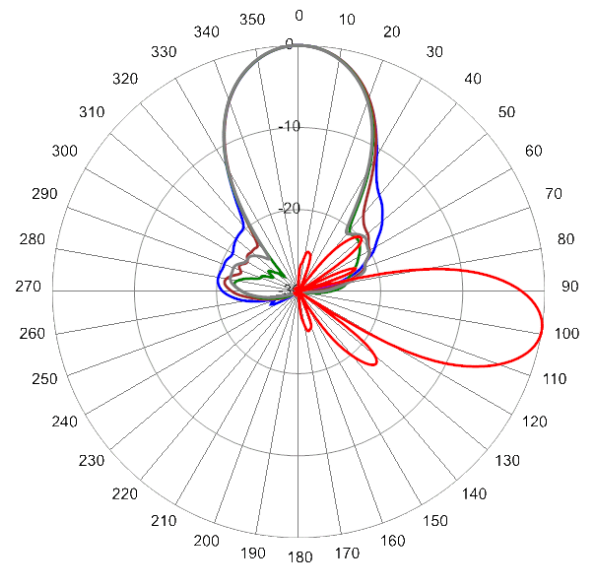
645 MHz Azimuth with Elevation 9°



725 MHz Azimuth with Elevation 9°



824 MHz Azimuth with Elevation 9°



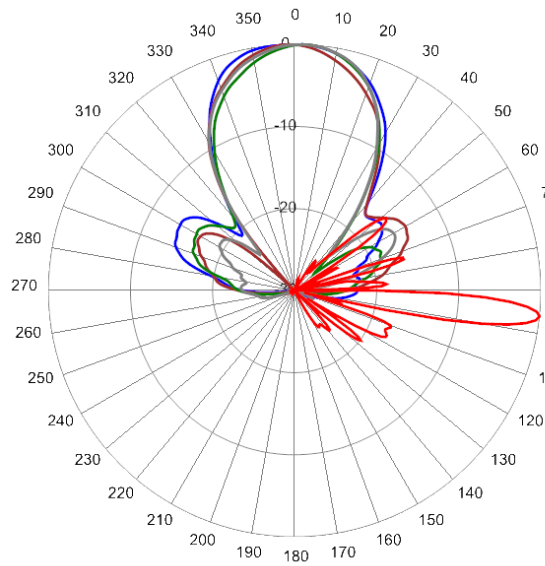
925 MHz Azimuth with Elevation 9°



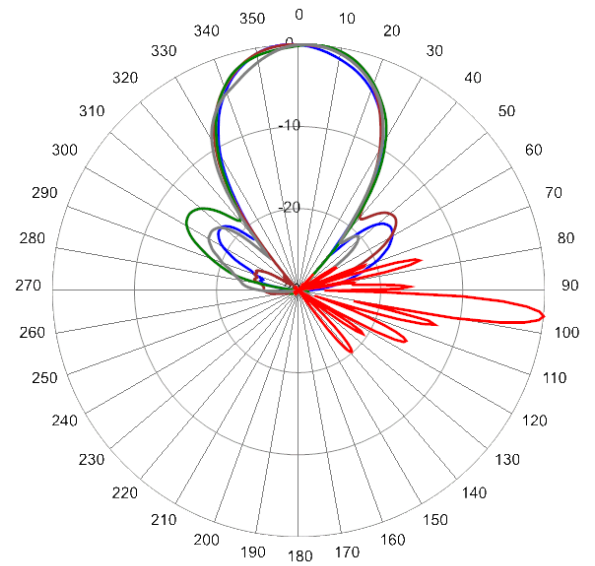
TriBand Eight-Port Antenna

OPA33R-TE6C

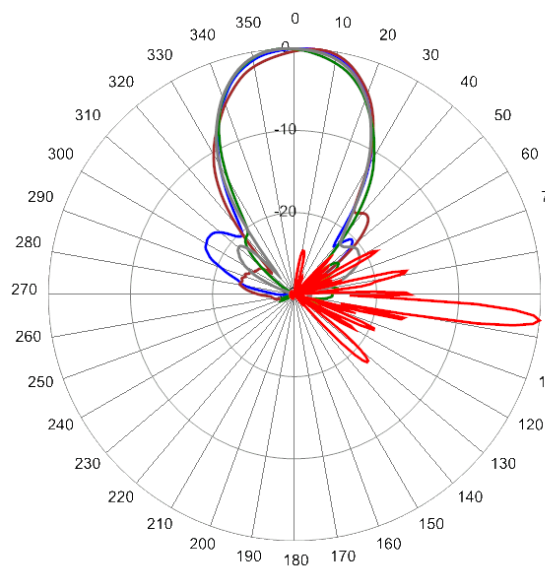
Typical Antenna Patterns



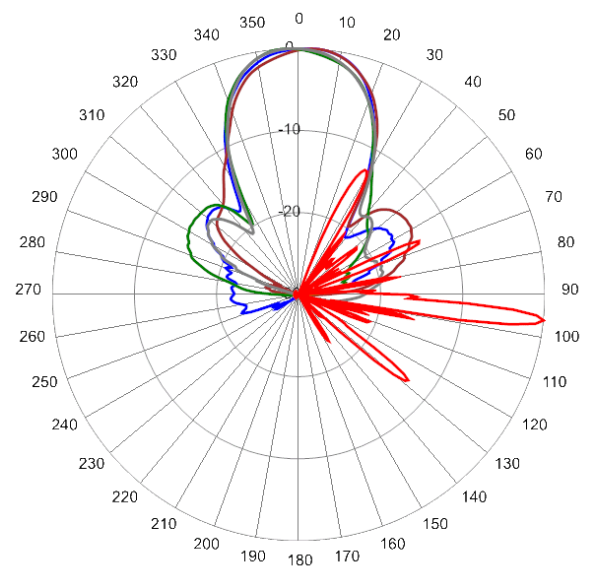
1825 MHz Azimuth with Elevation 6°



2010 MHz Azimuth with Elevation 6°



2305 MHz Azimuth with Elevation 6°



2590 MHz Azimuth with Elevation 6°



TriBand Eight-Port Antenna

OPA33R-TE6C

Parts & Accessories

| | |
|-----------------------|---|
| OPA33R-TE6CA-K | Six foot (1.8 m) TriBand antenna with 33° azimuth beamwidth, 4.3-10 female connectors, 2 factory installed BSA-RET400 RET actuators and MBK-01 mounting bracket |
| MBK-01 | Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment |
| MBK-16 | Mounting bracket kit (top and bottom) with fixed 0° mechanical tilt |
| BSA-RET400 | Type 17 Internal Remote Electrical Tilt System (RET) |
| AISGC-M-F-10FT | 10 Foot (3 M) Male/Female AISG cable |
| SCU-AISG-P | Portable AISG 2.0 Site Control Unit |

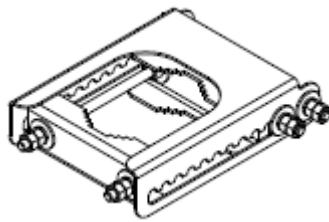


Mounting Bracket Kit

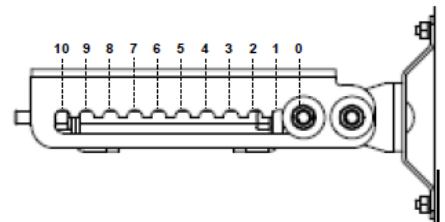
MBK-01

Mechanical

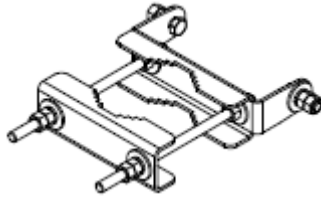
| | |
|-----------------------------------|------------------------|
| Weight | 12.6 lbs (5.7 kg) |
| Hinge Pitch | 47.25 in (1200 mm) |
| Mounting Pole Dimension | 2 to 5 in (5 to 12 cm) |
| Fastener Size | M12 |
| Installation Torque | 40 ft·lb (54 N·m) |
| Mechanical Tilt Adjustment | 0° - 10° |



MBK-01 Top Adjustable Bracket



MBK-01 Top Adjustable Bracket Side View



MBK-01 Bottom Fixed Bracket

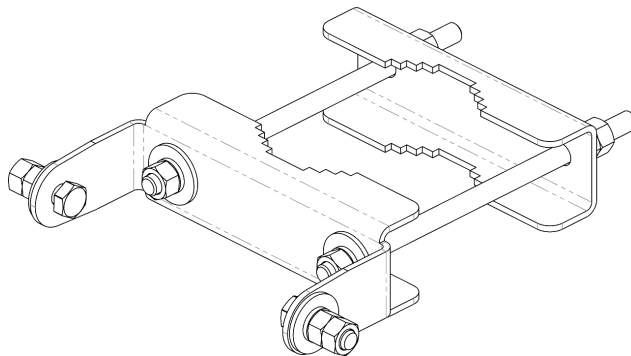
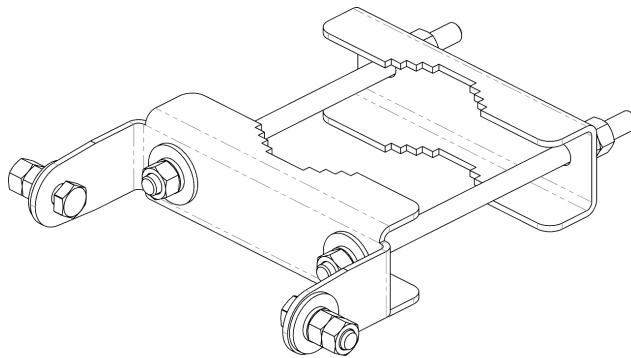


Mounting Bracket Kit

MBK-16

Mechanical

| | |
|--------------------------------|------------------------|
| Weight | 9.9 lbs (4.5 kg) |
| Hinge Pitch | 47.25 in (1200 mm) |
| Mounting Pole Dimension | 2 to 5 in (5 to 12 cm) |
| Fastener Size | M12 |
| Installation Torque | 40 ft·lbs (54 N·m) |
| Mechanical Tilt | 0° |



MBK-16 Top and Bottom Bracket



Internal Remote Electrical Tilt (iRET)

BSA-RET400

General Specifications

| | |
|-------------------|-----------------|
| Part Number | BSA-RET400 |
| Protocols | AISG 2.0 |
| RET Type | Type 17 |
| Adjustment Cycles | >10,000 cycles |
| Tilt Accuracy | ±0.1° |
| Temperature Range | -40° C to 70° C |

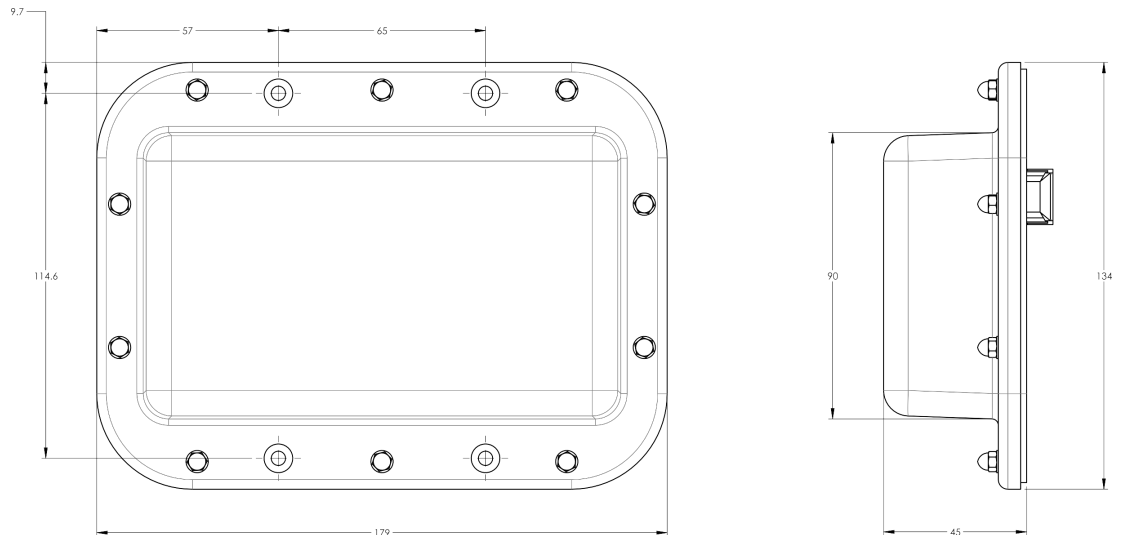
Electrical

| | |
|--------------------------|------------------------------------|
| Data Interface Signal | DC |
| Input Voltage | 10-30 Vdc |
| Current Consumption Tilt | 100 mA at $V_{in}=24$ (500 mA MAX) |
| Current Consumption Idle | 10 mA at $V_{in}=24$ |

Mechanical

| | |
|--------------------|---------------------------------|
| Dimensions (LxWxD) | 7.0x5.3x1.8 in. (179x134x45 mm) |
| Housing | ASA/ABS/Aluminum |
| Weight | 1.3 lbs (0.6 kg) |

ASA= Acrylic Styrene Acrylonitrile
ABS=Acrylonitrile Butadiene Styrene





STANDARDS & CERTIFICATIONS

TriBand Eight-Port Antenna

OPA33R-TE6C

Standards & Compliance

| | |
|----------------------|--|
| Safety | EN 60950-1, UL 60950-1 |
| Emission | EN 55022 |
| Immunity | EN 55024 |
| Environmental | IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-5, IEC 60068-2-6, IEC-60068-2-11, IEC 60068-2-14, IEC 60068-2-18, IEC 60068-2-27, IEC 60068-2-29, IEC 60068-02-30, IEC 60068-2-52, IEC 60068-2-64, GR-63-CORE 4.3.1, EN 60529, IP 24 |

Certifications

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001

