Antennas

MultiPort Series

DATA SHEET

Tri-Band Eight-Port Antenna

OPA65R-TE4C

- Four foot (1.2 m) Tri-Band, eight port antenna with a 65° azimuth beamwidth covering 614-896 MHz and 1695-2690 MHz frequencies
- Four wide high band ports covering 1695-2690 MHz and four wide low band ports covering 614-896 MHz in a single antenna enclosure
- Full Spectrum Compliance 614-896 MHz / 1695-2690 MHz
- Innovative Low and High Band Array configuration allows for 4T4R (4x4 MIMO) on Low Band and 4T4R (4x4 MIMO) High Band Arrays, using full length arrays (non stacked)
- 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 connector, which is 40% smaller than traditional 7/16 DIN connector
- Equipped with Two Field Replaceable, Type 17 integrated AISG 2.0 compliant Remote Electrical Tilt (RET)
- Ordering options for 0°-10° mechanical tilt mounting bracket or a fixed 0° mechanical tilt mounting bracket

Overview

The CCI TriBand array is a eight port antenna, with four wide high band ports covering 1695-2690 MHz and four wide low band ports covering 614-896 MHz. The antenna provides the capability to deploy 4x4 Multiple-Input Multiple-Output (MIMO) in the high 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 High Band ports. This RET arrangement allows for complete flexibility in coverage control between low and high band antenna arrays.

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 High 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

Tri-Band Eight-Port Antenna

SPECIFICATIONS

OPA65R-TE4C

Electrical

Ports	4 x Low Band Ports for 614-896 MHz		
Frequency Range	614-698 MHz	698-806 MHz	824-896 MHz
Gain	13.0 dBi	13.7 dBi	13.8 dBi
Azimuth Beamwidth (-3dB)	73°	63°	56°
Elevation Beamwidth (-3dB)	22.8°	20.6°	17.6°
Electrical Downtilt	2° to 16°	2° to 16°	2° to 16°
Elevation Sidelobes (1st Upper)	<-19 dB	<-19 dB	<-20 dB
Front-to-Back Ratio @180°	> 34 dB	> 34 dB	> 34 dB
Cross-Polar Discrimination at Peak	> 25 dB	> 25 dB	> 25 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	500 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground

BASTA Electrical Specifications			
Frequency Range	614-698 MHz	698-806 MHz	824-896 MHz
Gain over all Tilts (dBi)	12.1	12.8	13.0
Gain over all Tilts Tolerance (dB)	0.6	0.5	0.6
Gain at Low-Tilt (dBi)	12.3	13.0	13.4
Gain at Mid-Tilt (dBi)	12.2	12.9	13.2
Gain at High-Tilt (dBi)	11.9	12.5	12.6
Azimuth Beamwidth Tolerance (°)	8.6	9.3	6.4
Elevation Beamwidth Tolerance (°)	1.6	1.6	1.1
Electrical Downtilt Deviation (°)	1.4	1.4	1.2
First Upper Sidelobe Suppression (dB)	15.8	16.1	15.5
Front-to-Back Ratio over ±20° (dB)	23.7	25.2	26.6
Cross-polar Discrimination at ±60° (dB)	12.1	9.3	9.3

** Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V9.6.*
All specifications are subject to change without notice.

Tri-Band Eight-Port Antenna

SPECIFICATIONS

OPA65R-TE4C

Electrical

Ports	4 x High Band Ports for 1695-2690 MHz				
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Gain	16.2 dBi	16.5 dBi	16.5 dBi	17.2 dBi	17.1 dBi
Azimuth Beamwidth (-3dB)	68°	64°	63°	61°	58°
Elevation Beamwidth (-3dB)	8.3°	7.3°	6.8°	5.9°	5.6°
Electrical Downtilt	2° to 10°	2° to 10°	2° to 10°	2° to 10°	2° to 10°
Elevation Sidelobes (1st Upper)	<-16 dB	<-16 dB	<-15 dB	<-15 dB	<-15 dB
Front-to-Back Ratio @180°	> 35 dB	> 35 dB	> 35 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 17 dB	> 15 dB	> 16 dB	> 18 dB	> 18 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)	15.3	15.9	15.9	16.5	15.8
Gain over all Tilts Tolerance (dB)	0.7	0.4	0.4	0.7	0.8
Gain at Low-Tilt (dBi)	15.2	15.8	15.8	16.5	15.9
Gain at Mid-Tilt (dBi)	15.3	15.9	15.9	16.7	16.2
Gain at High-Tilt (dBi)	15.4	16.1	16.1	16.4	16.1
Azimuth Beamwidth Tolerance (°)	4.3	4.0	6.7	7.7	12.4
Elevation Beamwidth Tolerance (°)	0.7	0.5	0.6	0.3	0.3
Electrical Downtilt Deviation (°)	1.4	1.3	1.4	1.5	1.5
First Upper Sidelobes Suppression (dB)	12.6	12.6	12.0	11.1	13.1
Upper Sidelobe Suppression Peak to 20°(dB)	13.5	12.3	11.3	10.4	12.6
Front-to-Back Ratio over ±20° (dB)	24.5	24.7	23.8	24.6	22.4
Cross-polar Discrimination at ±60° (dB)	4.6	4.9	4.3	3.6	5.4

** Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V9.6.*
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SPECIFICATIONS

Tri-Band Eight-Port Antenna

OPA65R-TE4C

Mechanical

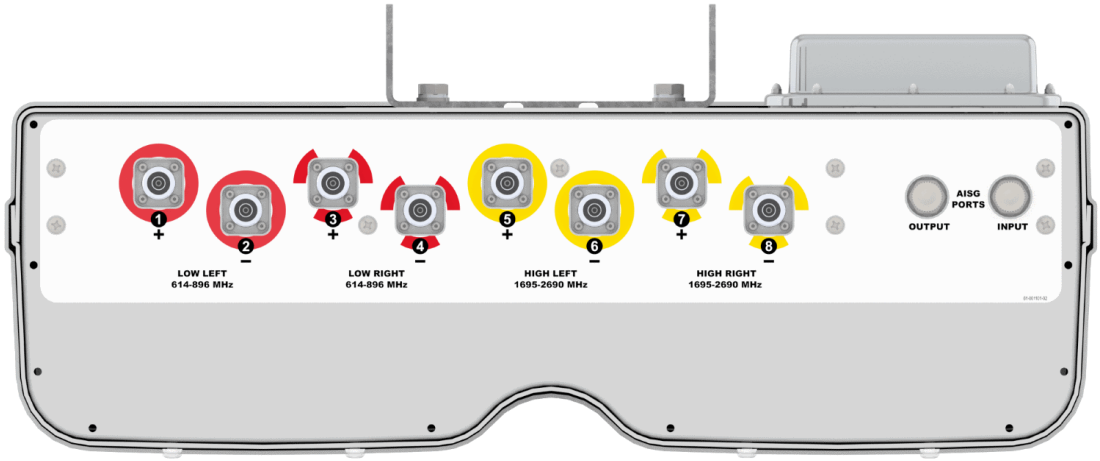
Dimensions (LxWxD)	48.0x25.5x8.1 in (1220x648x205 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	261 lbs (1163 N) @ 100 mph (161 kph)
Side Wind Load	93.0 lbs (415 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	10.2 ft^2 (0.9 m^2)
Weight *	55.3 lbs (25.1 kg)
Connector	8 x 4.3-10 female
Package Dimensions (LxWxD)	56.5x30.2x14.4 in (1434x766x366 mm)
Package Weight	73.0 lbs (33.1 kg)
Mounting Pole	2 to 5 in (5 to 12 cm)

** Weight excludes mounting*

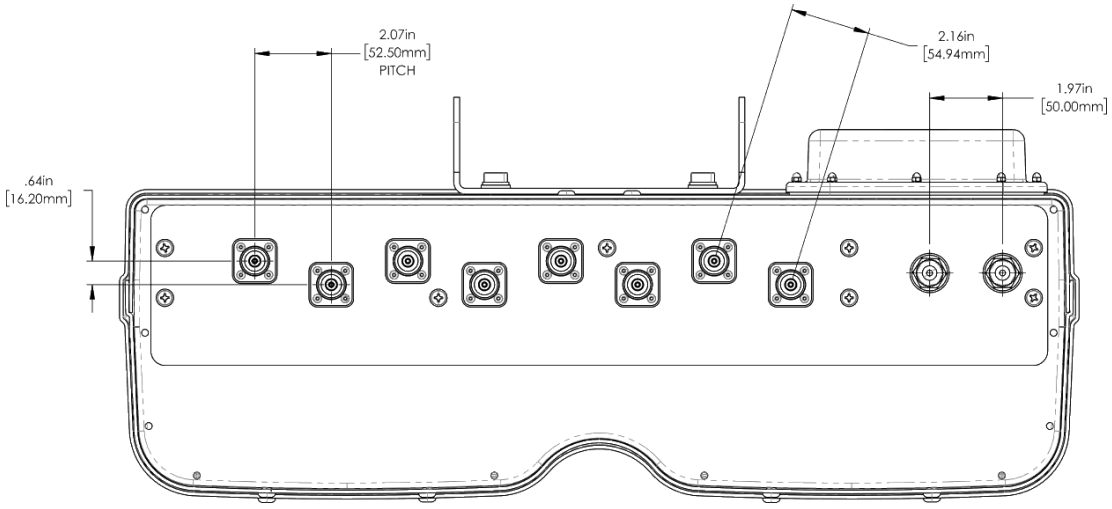
Mechanical

Bottom View

OPA65R-TE4CA (Type 17 Internal RET)



Connector Spacing

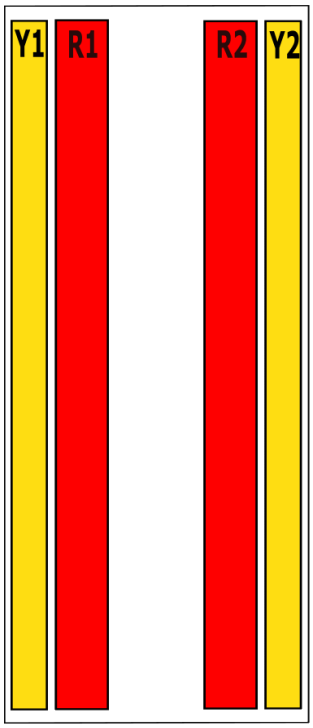


Mechanical

RET to Element Configuration

OPA65R-TE4CA Element and RET configuration (Type 17 Internal RET)

Top of antenna
Viewed from rear



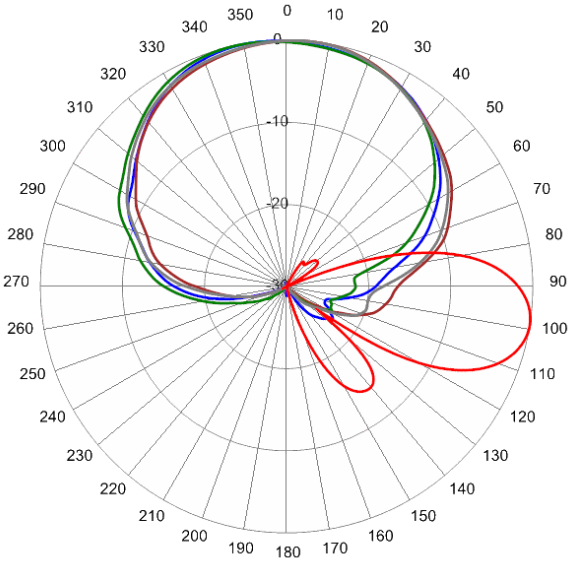
RET placement as viewed from rear of antenna

Top of antenna

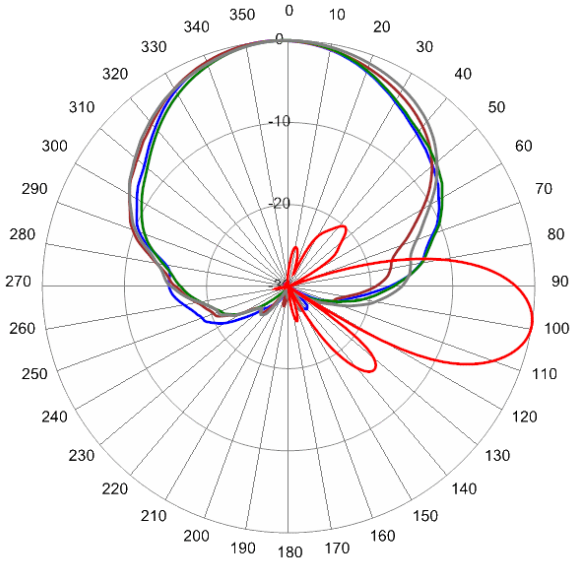
Array	Ports	Freq (MHz)	Ports controlled by common RET	AISG RET UID
R1	1, 2	614-896	1, 2, 3, 4	CIxxxxxxMM.1
R2	3, 4	614-896		
Y1	5, 6	1695-2690	5, 6, 7, 8	CIxxxxxxMM.2
Y2	7, 8	1695-2690		

Typical Antenna Patterns

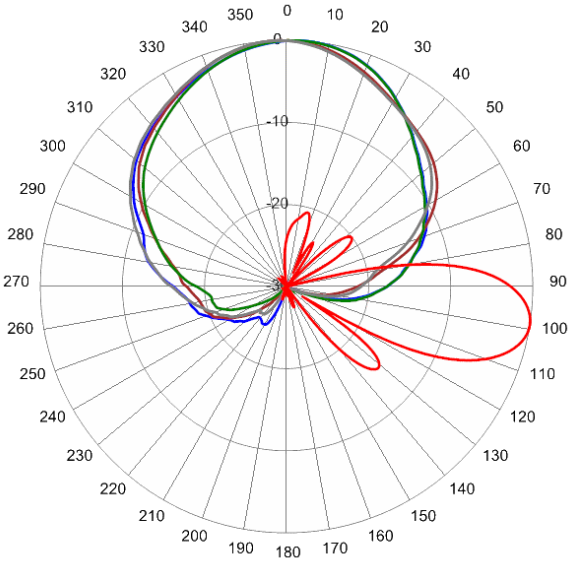
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



645 MHz Azimuth with Elevation 9°

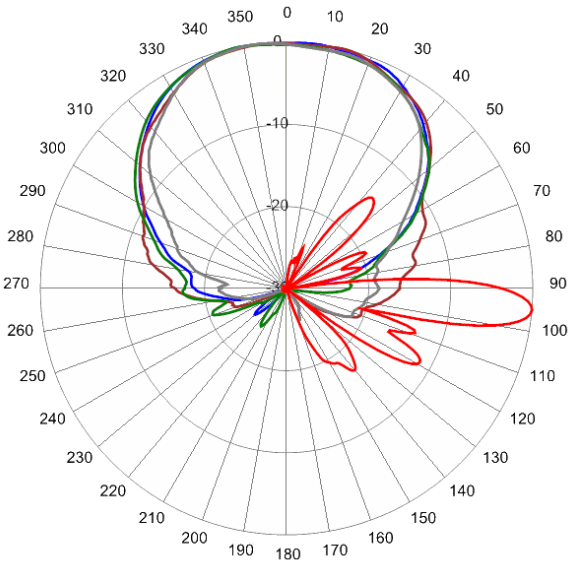


763 MHz Azimuth with Elevation 9°

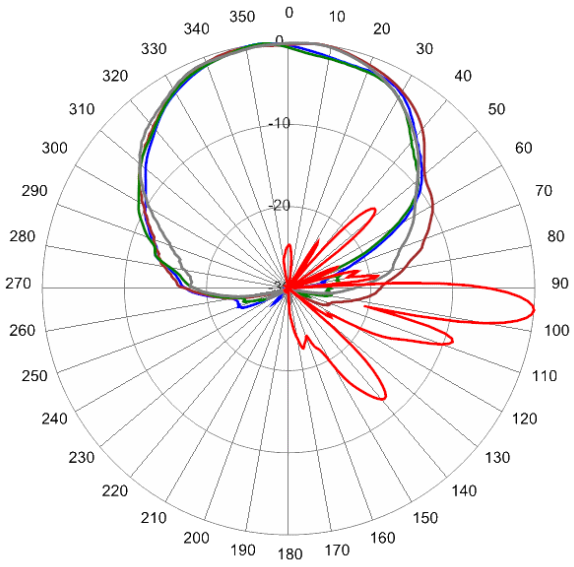


824 MHz Azimuth with Elevation 9°

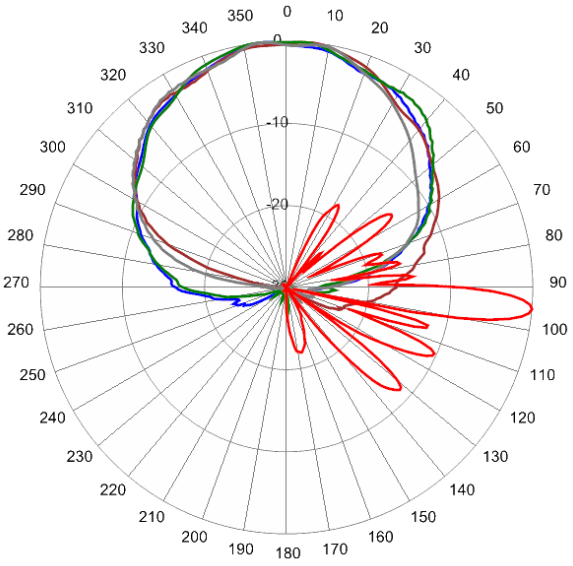
Typical Antenna Patterns



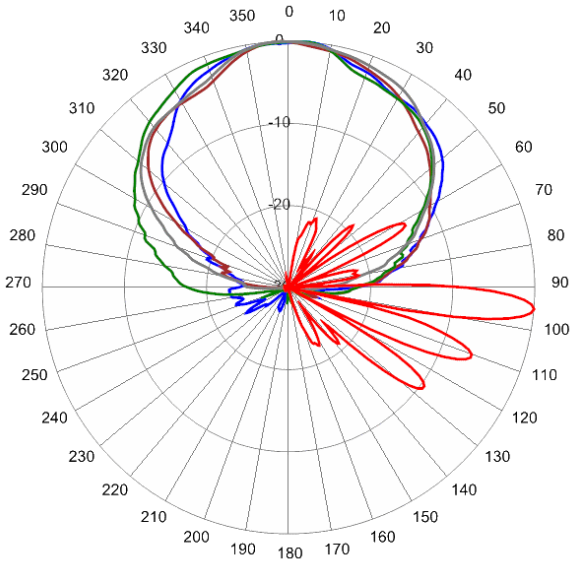
1740 MHz Azimuth with Elevation 5°



1880 MHz Azimuth with Elevation 5°



2155 MHz Azimuth with Elevation 5°



2510 MHz Azimuth with Elevation 5°

Parts & Accessories

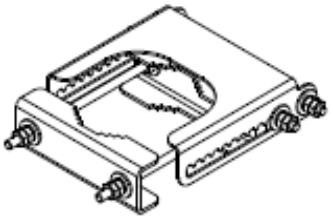
OPA65R-TE4CA-K	Four foot (1.2 m) TriBand antenna with 65° azimuth beamwidth, 4.3-10 female connectors, 2 factory installed BSA-RET400 RET actuators (Type 17 Internal) and 0° - 10° mechanical tilt mounting bracket (MBK-02)
MBK-02	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment
MBK-15	Mounting bracket kit (top and bottom) with fixed 0° mechanical tilt
BSA-RET400	Remote electrical tilt actuator Type 17 Internal

Mounting Bracket Kit

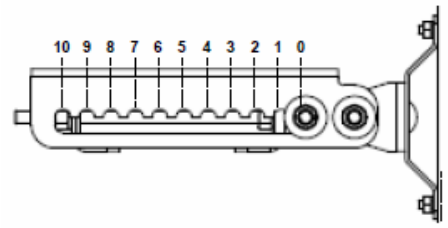
MBK-02

Mechanical

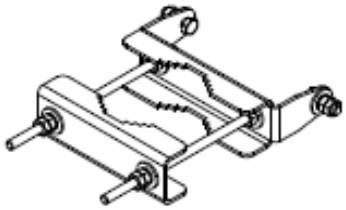
Weight	9.8 lbs (4.4 kg)
Hinge Pitch	31.5 in (800 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft·lbs (20 Nm)
Mechanical Tilt Adjustment	0° - 10°



MBK-02 Top Adjustable Bracket



MBK-02 Top Adjustable Bracket Side View



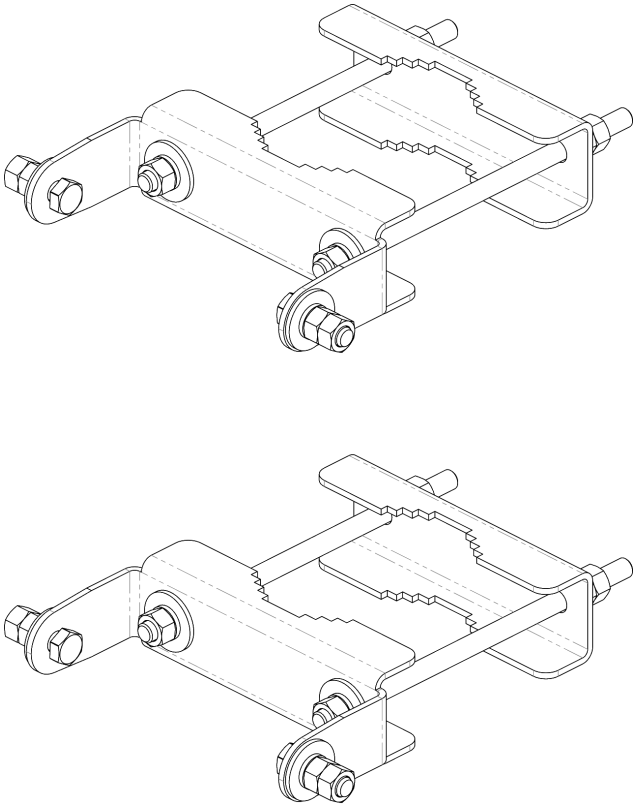
MBK-02 Bottom Fixed Bracket

Mounting Bracket Kit

MBK-15

Mechanical

Weight	8.6 lbs (3.9 kg)
Hinge Pitch	31.5 in (800 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft·lbs (20 Nm)
Mechanical Tilt	0°



MBK-15 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

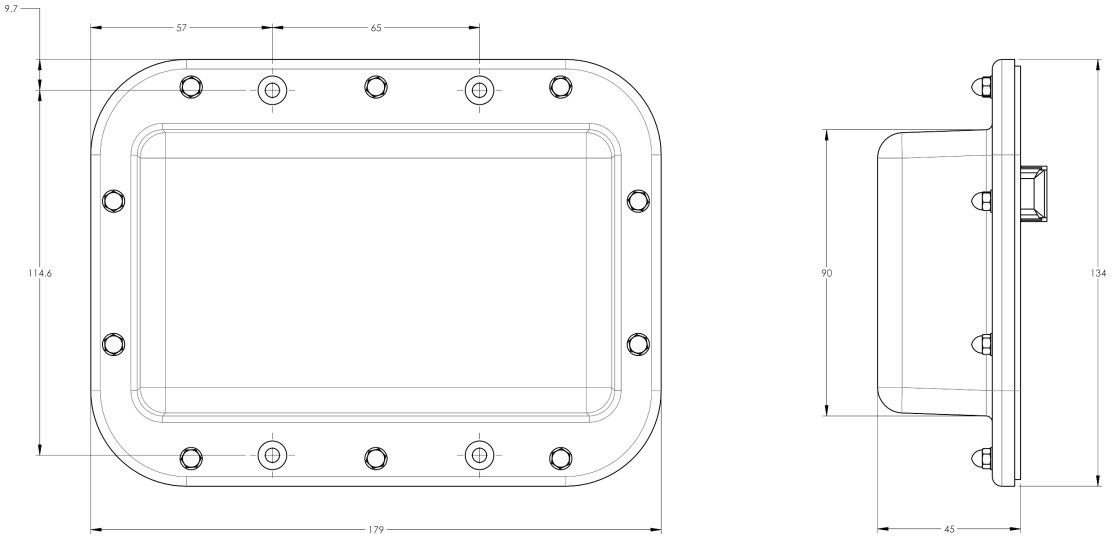
Data Interface Signal	DC
Input Voltage	10-30 Vdc
Current Consumption Tilt	100 mA at V_{in}=24 (500 mA MAX)
Current Consumption Idle	10 mA at V_{in}=24

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=Acrylanitrile Butadiene Styrene



STANDARDS & CERTIFICATIONS

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