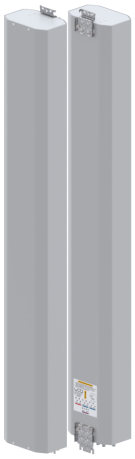
DATA SHEET

TriBand Sixteen-Port Antenna

16C65R-BWH8A



- Eight foot (96") tall, 13.1" wide 16 port TriBand antenna designed for stealth/flagpole applications
- With the custom TM-02 mounting kit (sold separately), 3 antennas on a minimum Ø4.0" (Ø101.6 mm) pole will fit within a shroud ID of Ø24.0" (Ø609.6 mm) and on a maximum Ø10.75" (Ø273.1 mm) pole will fit within a shroud ID of Ø31.0" (Ø787.4 mm)
- Innovative Low, Mid and High Band Array configuration based on patented decoupled element technology which allows eight dual polarization arrays of different frequency bands to be collocated all in a narrow width enclosure, an Industry First
- Four wide Low Band ports covering 698-896 MHz, eight wide Mid Band ports covering 1695-2180 MHz and four high band ports covering 3300-4000 MHz in a single antenna
- Full Spectrum Compliance for 698-896 MHz / 1695-2180 MHz / 3300-4000 MHz
- LTE Optimized FBR, SPR and Boresight/Sector XPD Performance, essential for today's LTE Data Networks
- Exceeds minimum PIM performance requirements
- Equipped with 4 RET-T17iG3-M, internal integrated AISG 2.0 compliant Remote Electrical Tilt (RET) Controllers
- Equipped with 4.3-10 connectors for low and mid bands and Nex10 connectors for the high band

Overview

The CCI 16-Port 65° Stealth MultiBand array is a Sixteen-port antenna, with four wide low band (LB) ports covering 698-896 MHz, eight wide mid band (MB) ports covering 1695-2180 MHz and four high band (HB) ports covering 3300-4000 MHz. The antenna provides the capability to deploy Dual 4x4 Multiple-input Multiple-output (MIMO) in the MB and 4X4 MIMO across the High and Low band ports. The CCI 16-Port 65° MB ports have independent tilt control between first and second set of 4X4 MIMO MB antenna arrays.

In this four RET configuration, the 1st RET is dedicated for the four LB ports. The 2nd RET is dedicated to the first 4X4 MIMO MB ports, the 3rd RET is dedicated to the second 4X4 MIMO MB ports and the 4th RET is dedicated to the HB ports. This RET arrangement allows for complete flexibility in coverage control between first and second mid 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 Low Band, Dual 4x4 MIMO for the Mid Band and 4x4 MIMO for the High Band
- 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

SPECIFICATIONS

TriBand Sixteen-Port Antenna

16C65R-BWH8A

Electrical

Ports	4 x Low Band Ports for 698-896 MHz		4 x High Band Ports for 3300-4000 MHz
Frequency Range	698-806 MHz	824-896 MHz	3300-4000 MHz
Gain (Peak)	13.3 dBi	13.4 dBi	17.8 dBi
Gain (Average)*	13.0 dBi	12.9 dBi	16.6 dBi
Azimuth Beamwidth (-3dB)	67°	66°	59°
Elevation Beamwidth (-3dB)	18.3°	15.8°	4.6°
Electrical Downtilt	2° to 10°	2° to 10°	2° to 10°
Elevation Sidelobes (1st Upper)	< -18 dB	< -19 dB	< -18 dB
Front-to-Back Ratio @ 180°	> 35 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 25 dB	> 25 dB	> 23 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 24 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)	300 watts	300 watts	100 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

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

Ports	8 x Mid Band Ports for 1695-2180 MHz		
Frequency Range	1695-1850 MHz	1850-1910 MHz	1910-2180 MHz
Gain (Peak)	16.4 dBi	16.7 dBi	16.7 dBi
Gain (Average)*	15.6 dBi	16.0 dBi	16.0 dBi
Azimuth Beamwidth (-3dB)	64°	60°	63°
Elevation Beamwidth (-3dB)	8.1°	7.5°	7.2°
Electrical Downtilt	2° to 10°	2° to 10°	2° to 10°
Elevation Sidelobes (1st Upper)	< -16 dB	< -18 dB	< -17 dB
Front-to-Back Ratio @180°	> 35 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 20 dB	> 22 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)	250 watts	250 watts	250 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

** Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1.*
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SPECIFICATIONS

TriBand Sixteen-Port Antenna

16C65R-BWH8A

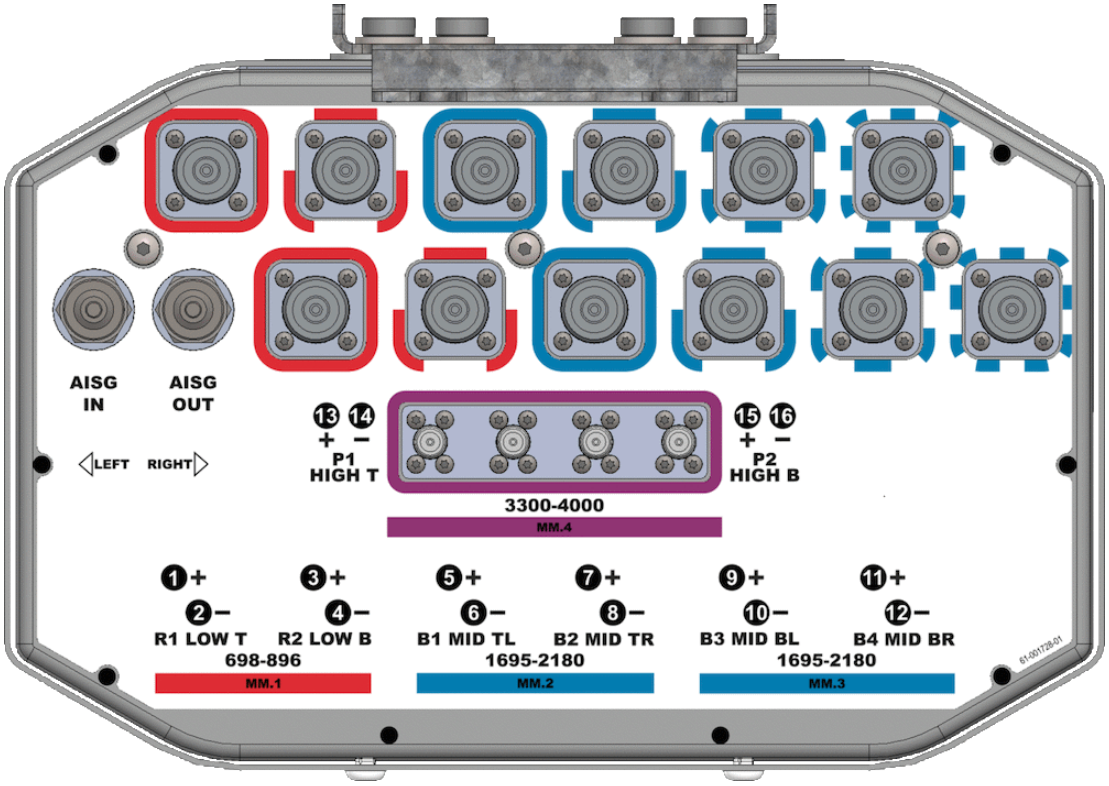
Mechanical

Dimensions (L×W×D)	96.0x13.1x8.4 in (2438x332x214 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load[1]	231 lbf @ 100 mph 1027 N @ 161 kph
Side Wind Load[1]	74 lbf @ 100 mph 327 N @ 161 kph
Effective Projective Area (EPA), Front[1]	9.1 ft^2 (0.9 m^2)
Weight *	67.9 lbs (30.8 kg)
RF Connector	12 x 4.3-10 female & 4 x NEX10 female
Mounting Pole	4 -10.75 in OD (10.2 - 27.3 cm OD)

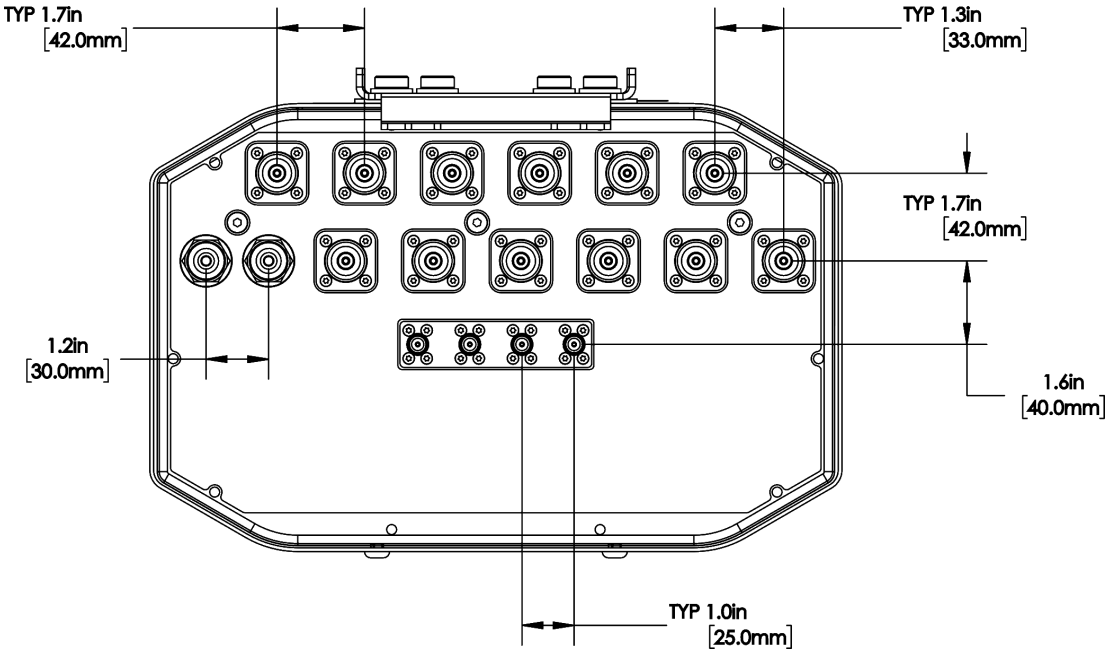
[1]Windload values calculated using CFD analysis
** Weight excludes mounting*

Mechanical

Bottom View

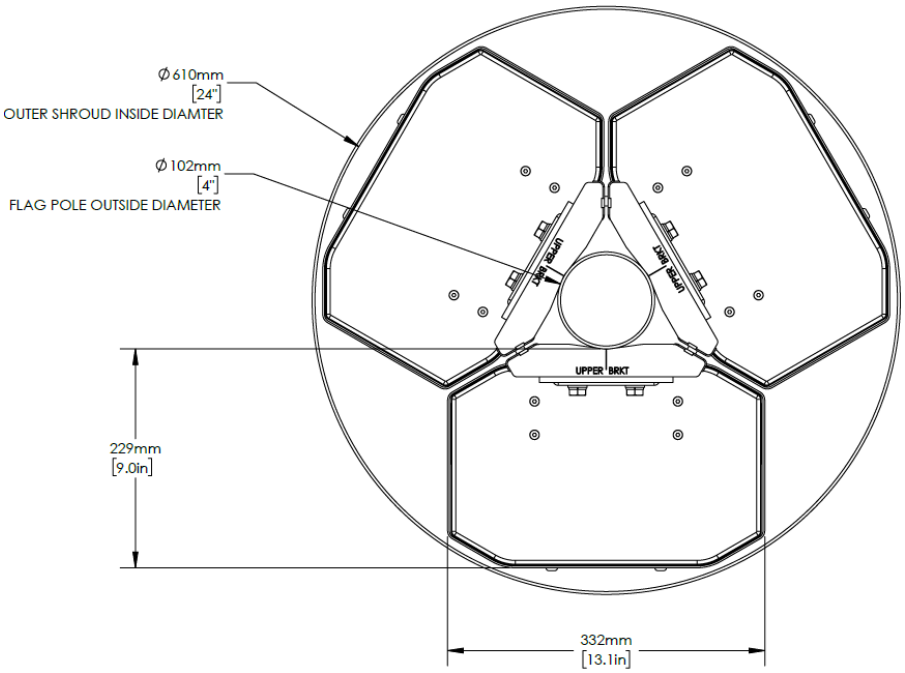


Connector Spacing

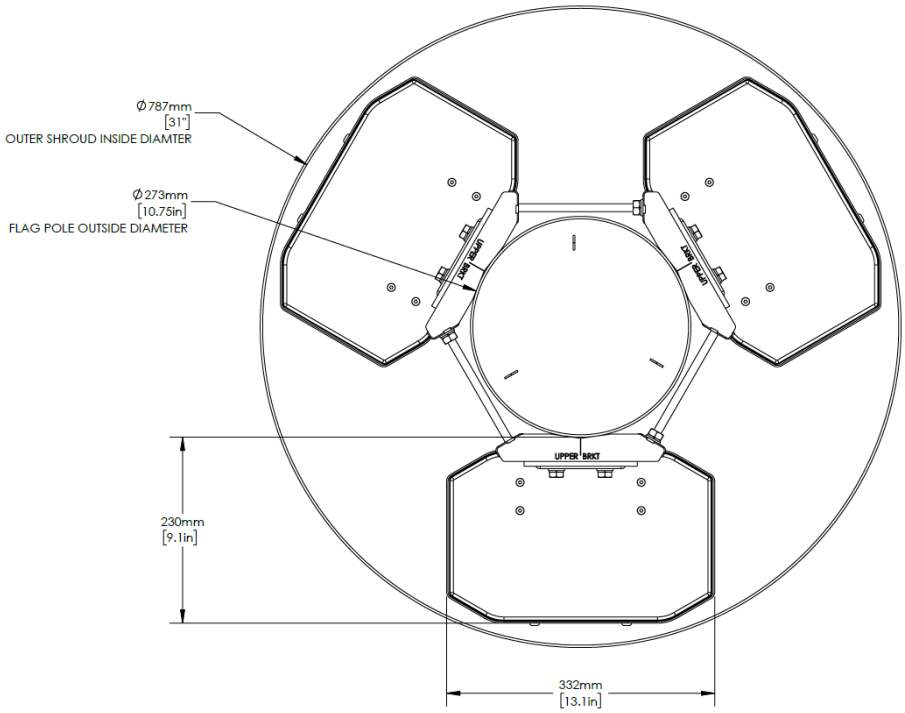


Mechanical

24" Shroud Top View

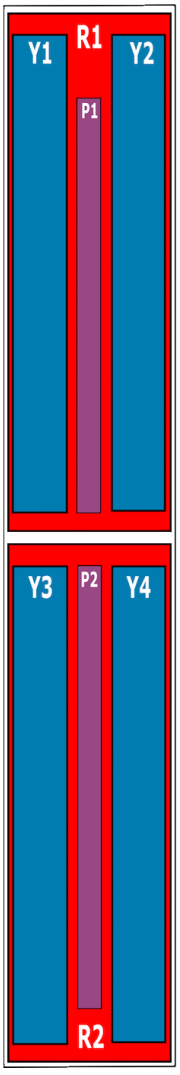


31" Shroud Top View



RET to Arrray Configuration

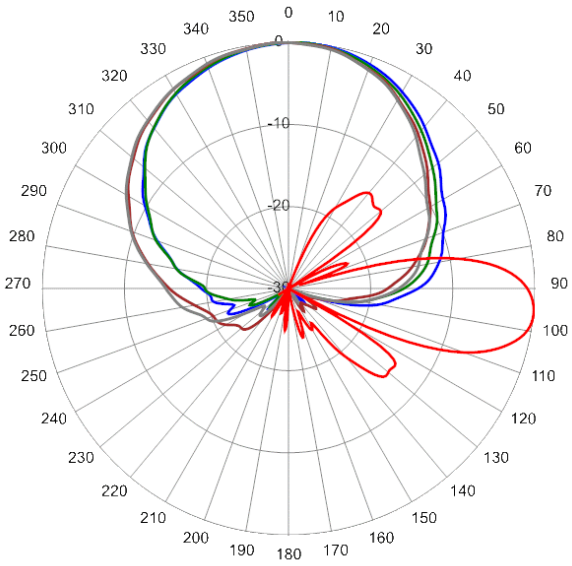
Top of antenna
Viewed from rear



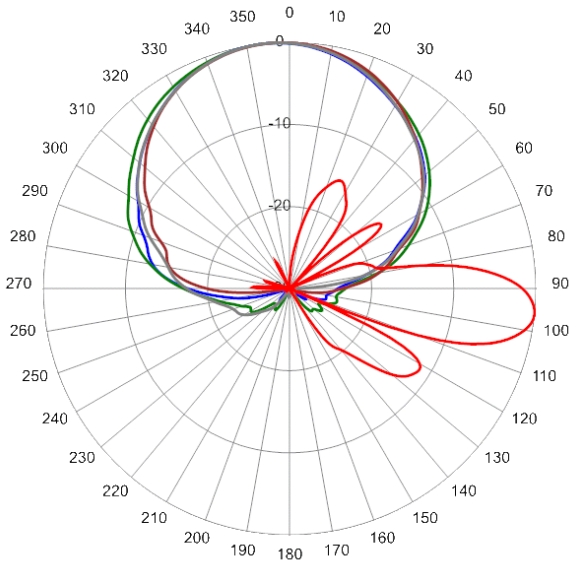
Array	Ports	Freq (MHz)	Ports controlled by common RET	AISG RET UID
R1	1, 2	698-896	1, 2, 3, 4	CIxxxxxxMM.1
R2	3, 4	698-896		
Y1	5, 6	1695-2180	5, 6, 7, 8	CIxxxxxxMM.2
Y2	7, 8	1695-2180		
Y3	9, 10	1695-2180	9, 10, 11, 12	CIxxxxxxMM.3
Y4	11, 12	1695-2180		
P1	13, 14	3300-4000	13, 14, 15, 16	CIxxxxxxMM.4
P2	15, 16	3300-4000		

Typical Antenna Patterns

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

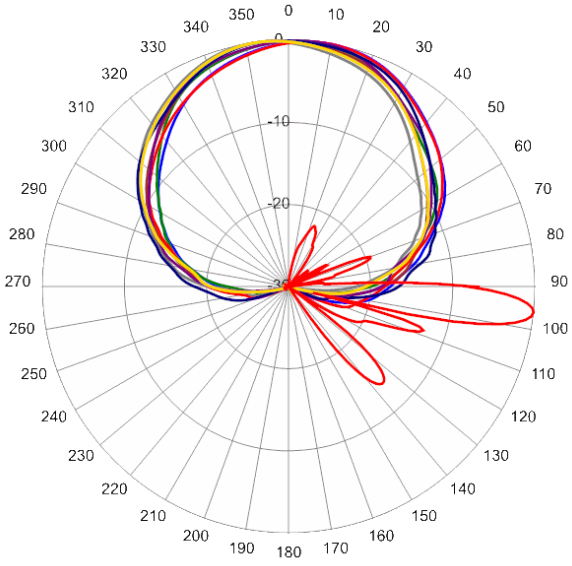


728 MHz Azimuth with Elevation 6°

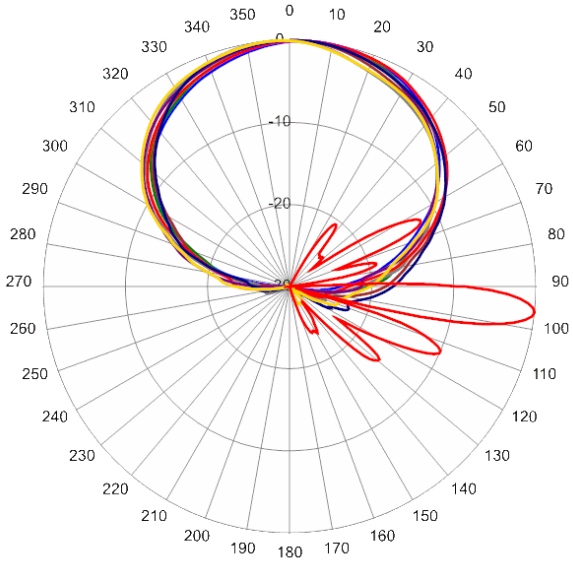


880 MHz Azimuth with Elevation 6°

Typical Antenna Patterns

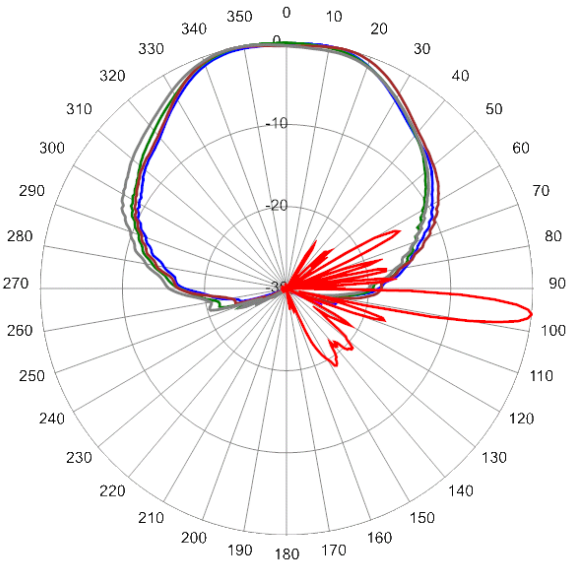


1920 MHz Azimuth with Elevation 6°

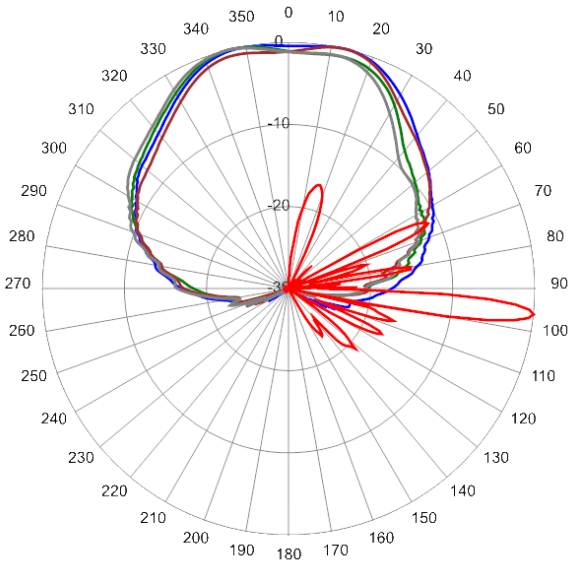


2110 MHz Azimuth with Elevation 6°

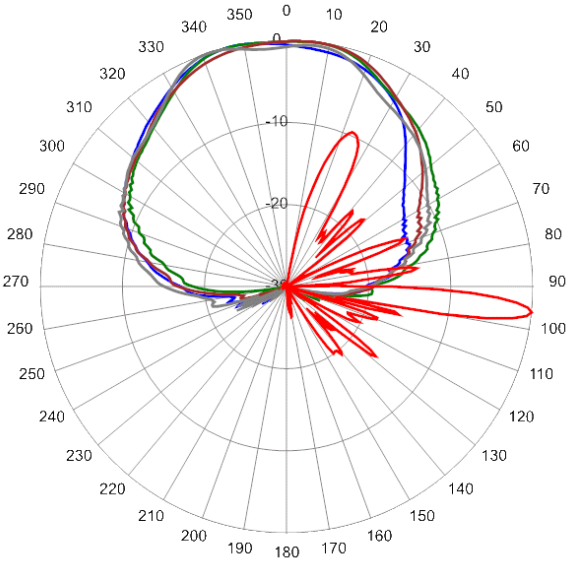
Typical Antenna Patterns



3425 MHz Azimuth with Elevation 6°



3700 MHz Azimuth with Elevation 6°



3900 MHz Azimuth with Elevation 6°

Parts & Accessories

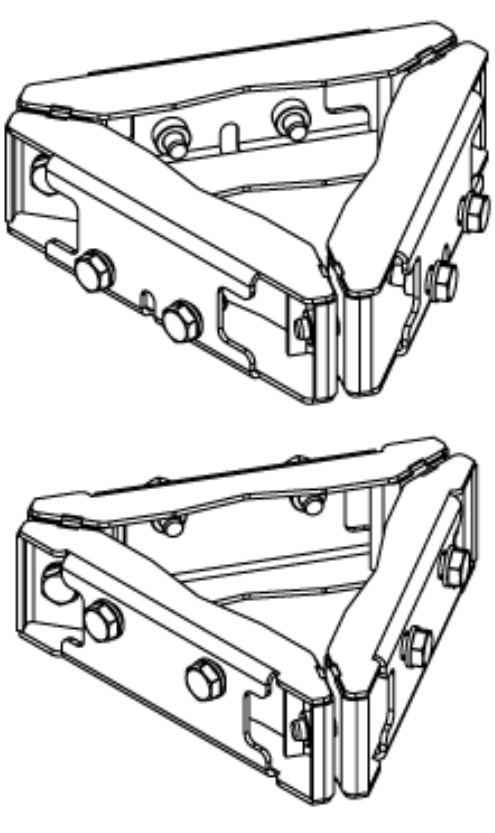
16C65R-BWH8AA	Eight foot (2.4 m) TriBand antenna with 65° azimuth beamwidth, 4.3-10 female connectors and NEX10 female connector, 4 factory installed T17iG3-M RET actuators
TM-02	Mounting bracket kit (top and bottom) with fixed 0° mechanical tilt
AISGC-M-F-10FT	10 Foot (3 M) Male/Female AISG cable
T17iG3-M	(This is an internal part and is not orderable) Click link for datasheet and Firmware

Triple Mount Cluster Bracket

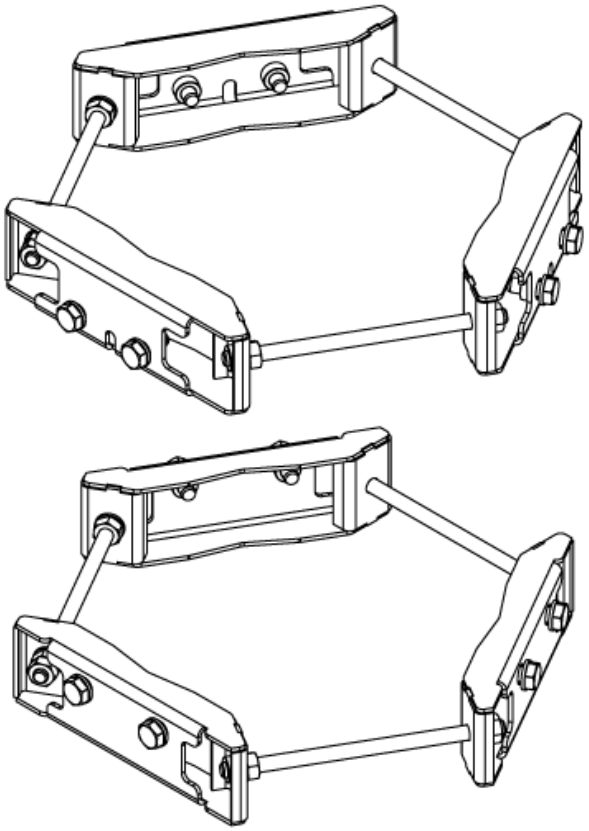
TM-02

Mechanical

Weight	11.7 lbs (5.3 kg)
Fastener Size	M10
Installation Torque	15 ft·lb (20 N·m)
Cluster Bracket Pitch (Vertical)	66.9 in (1700 mm) for 14C65R-BUH5A and 103.3 in (2625 mm) for 16C65R-BUH8A
Mechanical Tilt Adjustment	None



TM-02 Bracket, small OD pole

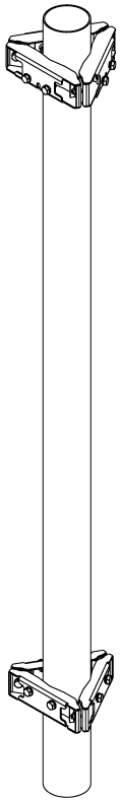


TM-02 Bracket, larger OD pole

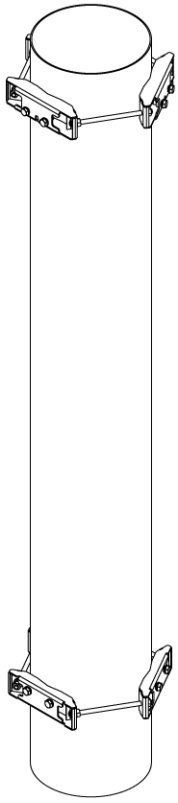
Triple Mount Cluster Bracket

TM-02

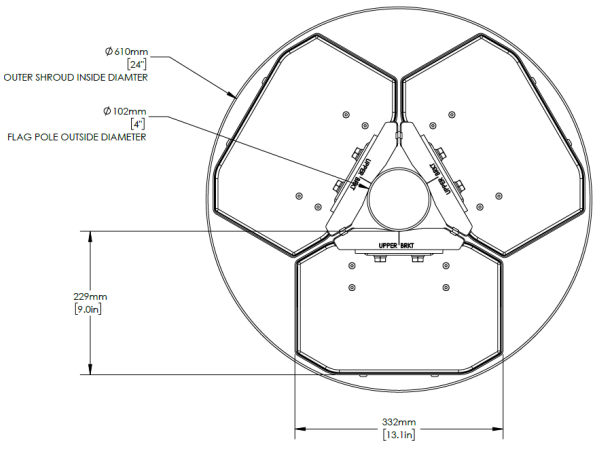
Mechanical



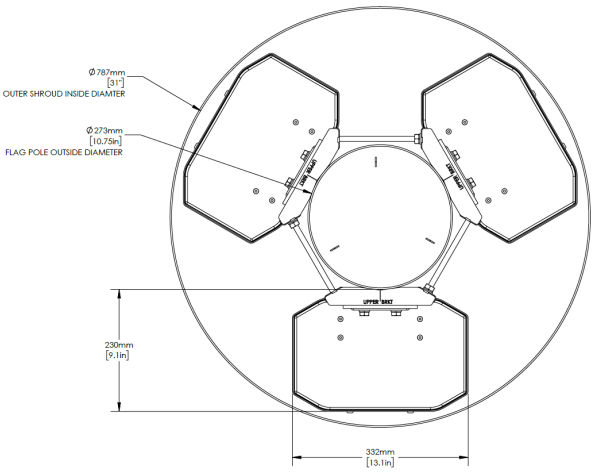
TM-02 Mounting Brackets (on 4.0" OD Pole)



TM-02 Mounting Brackets (on 10.75" OD Pole)



3 - 65° Antennas Mounted on 4" (101.6 mm) OD Pole



3 - 65° Antennas Mounted on 10.75" (273.1 mm) OD Pole

AISG Cable

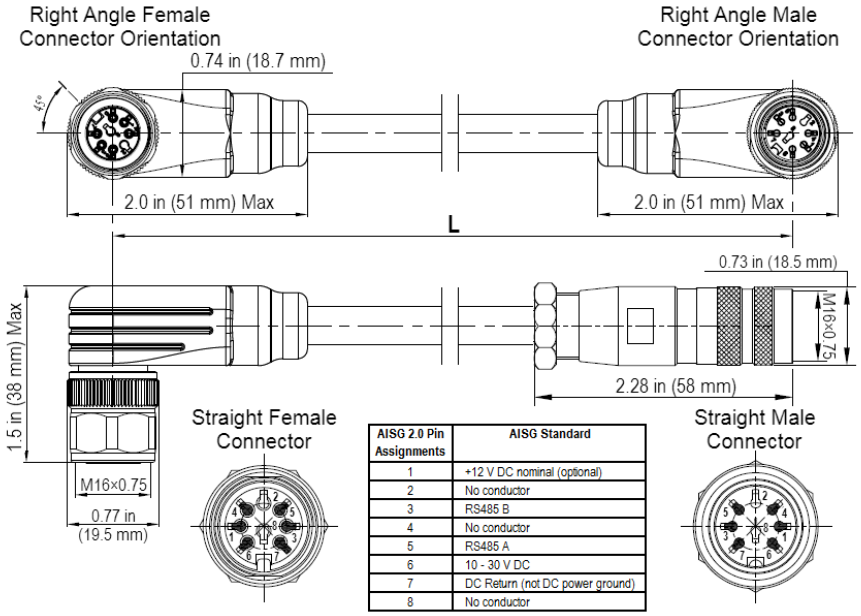
AISGC-M-F-xFT

Electrical Specifications

Individual Cable Part Number	AISGC-M-F-x(FT)
Cable style	UL2464
Protocol	AISG 1.1 and AISG 2.0
Maximum voltage	300 V
Rated current	5 A at 104° F (40° C)

Mechanical Specifications

Individual Cable Part Number	AISGC-M-F-x(FT)
Cables per kit	1
Connectors	2 x 8 pin IEC 60130-9 Straight male/straight female
Tightening torque	Hand tighten only ≈ 1.84 ft-lbs (2.5 Nm)
Construction	Shielded (Tinned Copper Braid)
Braid coverage	85%
Jacket Material	Matte Polyurethane (Black)
Conductors	1 twisted pair - 24 AWG 3 conductors - 19 AWG AWM style 2464
Cable Diameter	0.307 in (7.8 mm)
Length	See order details
Minimum bend radius	3.15 in (80 mm)



AISG 2.0 Pin Assignments	AISG Standard
1	+12 V DC nominal (optional)
2	No conductor
3	RS485 B
4	No conductor
5	RS485 A
6	10 - 30 V DC
7	DC Return (not DC power ground)
8	No conductor

AISG-Male to AISG-Female Jumper Cable

Environmental Specifications

Individual Cable Part Number	AISGC-M-F-xFT
Temperature Range	-40° to 80° C
Flammability	UL 1581 VW-1
Ingress Protection	IEC 60529:2001, IP67

Standards & Compliance

Safety	EN 60950-1, UL 60950-1
Emission	EN 55032
Immunity	EN 55035
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 60068-2-27:2008, 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