



- Eight foot (2.4 m), TriBand, ten port antenna with a 65° azimuth beamwidth covering 698-960 MHz and 1695-2690 MHz frequencies
- Eight Ultra wide high band ports covering 1695-2690 MHz and two wide low band ports covering 698-960 MHz in a single antenna
- Full Spectrum Compliance 698-960 MHz / 1695-2690 MHz
- Supports Dual 4x4 MIMO in high band
- 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 3 field replaceable, integrated AISG 2.0 compliant Remote Electrical Tilt (RET) Controllers (Type 1 External)

### Overview

The CCI 10-Port TriBand array is a ten port antenna, with eight Ultra Wide high band ports covering 1695-2690 MHz and two Ultra Wide low band ports covering 698-960 MHz. The antenna provides the capability to deploy Dual 4x4 Multiple-input Multiple-output (MIMO) in the high band and 2X2 MIMO across low band ports. The CCI 10-Port allows independent tilt control between the low band ports and high band ports.

In this three RET configuration, the 1st RET is dedicated for the two Low Band ports. The 2nd and 3rd RET are each dedicated to four separate High Band ports. This RET arrangement allows for complete flexibility in coverage control between all eight high 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

- Dual 4x4 MIMO on High Band
- 2x2 MIMO on Low Band
- Adding additional capacity without adding additional antennas



Ten Port Multi-Band Antenna

DPA65R-KE8A

SPECIFICATIONS

Electrical

Ports	2 × Low Band Ports for 698-960 MHz			
Frequency Range	698-806 MHz	790-862 MHz	824-896 MHz	880-960 MHz
Gain	16.1 dBi	16.3 dBi	16.3 dBi	16.5 dBi
Azimuth Beamwidth (-3dB)	67°	70°	66°	61°
Elevation Beamwidth (-3dB)	10.0°	8.8°	8.5°	7.9°
Electrical Downtilt	0° to 10°	0° to 10°	0° to 10°	0° to 10°
Elevation Sidelobes (1st Upper)	<-16 dB	<-18 dB	<-20 dB	<-20 dB
Front-to-Back Ratio @180°	>35 dB	>35 dB	>35 dB	>35 dB
Cross-Polar Discrimination at Peak	>25 dB	>25 dB	>25 dB	>25 dB
Cross-Polar Port-to-Port Isolation	>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
Passive Intermodulation (2x20W)	≤-153 dBc	≤-153 dBc	≤-153 dBc	≤-153 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	500 watts	500 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground

BASTA Electrical Specifications				
Frequency Range	698-806 MHz	790-862 MHz	824-896 MHz	880-960 MHz
Gain over all Tilts (dBi)	15.5	15.7	15.9	16.0
Gain over all Tilts Tolerance (dB)	0.5	0.3	0.5	0.5
Gain at Low-Tilt (dBi)	15.5	15.7	15.7	15.8
Gain at Mid-Tilt (dBi)	15.7	15.9	16.1	16.3
Gain at High-Tilt (dBi)	15.4	15.6	15.8	16.1
Azimuth Beamwidth Tolerance (°)	2.7	3.5	5.7	1.7
Elevation Beamwidth Tolerance (°)	0.9	0.5	0.6	0.5
Electrical Downtilt Deviation (°)	0.8	0.8	0.7	0.5
First Upper Sidelobe Suppression (dB)	13.7	15.1	16.9	16.5
Upper Sidelobe Suppression Peak to 20°(dB)	15.5	15.0	15.9	15.5
Front-to-Back Ratio over ±20° (dB)	25.6	28.5	28.5	29.0
Cross-polar Discrimination at ±60° (dB)	11.2	11.8	12.4	11.6

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



SPECIFICATIONS

Ten Port Multi-Band Antenna

DPA65R-KE8A

Electrical

Ports	8 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	16.8 dBi	17.3 dBi	17.4 dBi	17.2 dBi	17.2 dBi
Azimuth Beamwidth (-3dB)	64°	62°	62°	61°	60°
Elevation Beamwidth (-3dB)	8.1°	7.2°	6.7°	5.9°	5.7°
Electrical Downtilt	2° to 10°	2° to 10°	2° to 10°	2° to 10°	2° to 10°
Elevation Sidelobes (1st Upper)	<-18 dB	<-17 dB	<-17 dB	<-14 dB	<-14 dB
Front-to-Back Ratio @180°	>35 dB	>35 dB	>35 dB	>35 dB	>35 dB
Cross-Polar Discrimination at Peak	>18 dB	>17 dB	>18 dB	>20 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	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Gain over all Tilts (dBi)	15.9	16.3	16.6	16.3	16.1
Gain over all Tilts Tolerance (dB)	0.5	0.5	0.5	0.6	0.8
Gain at Low-Tilt (dBi)	16.0	16.5	16.7	16.6	16.2
Gain at Mid-Tilt (dBi)	15.9	16.3	16.6	16.4	16.2
Gain at High-Tilt (dBi)	15.8	16.2	16.4	16.0	15.8
Azimuth Beamwidth Tolerance (°)	3.9	3.9	3.8	5.7	5.4
Elevation Beamwidth Tolerance (°)	0.8	0.5	0.5	0.5	0.5
Electrical Downtilt Deviation (°)	1.7	1.6	1.5	1.4	1.4
First Upper Sidelobes Suppression (dB)	14.4	14.3	14.3	11.3	11.2
Upper Sidelobe Suppression Peak to 20°(dB)	12.3	11.7	11.4	10.4	10.9
Front-to-Back Ratio over ±20° (dB)	26.6	26.0	26.0	27.5	27.4
Cross-polar Discrimination at ±60° (dB)	7.6	6.7	6.9	7.1	7.6

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

Mechanical

Dimensions (LxWxD)	96.1x12.1x9.6 in (2441x308x244 mm)
Survival Wind Speed	> 150 mph (>241 kph)
Front Wind Load	297 lbs (1320 N) @ 100 mph (161 kph)
Side Wind Load	246 lbs (1096 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	11.6 ft <sup>2</sup> (1.1 m <sup>2</sup> )
Weight *	64.6 lbs (29.3 kg)
Connector	10x 4.3-10 Female
Mounting Pole	2 to 5 in (5 to 12 cm)

\* Weight excludes mounting



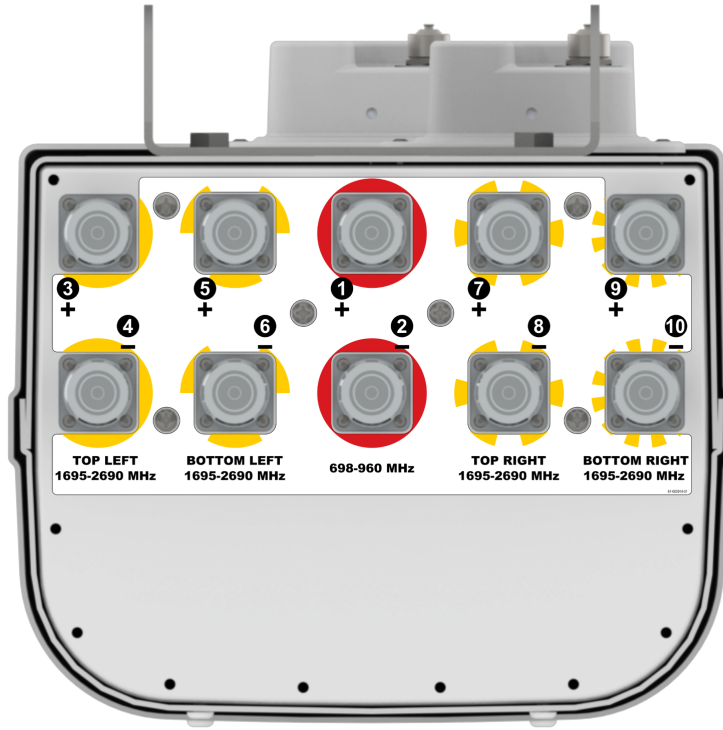
SPECIFICATIONS

Ten Port Multi-Band Antenna

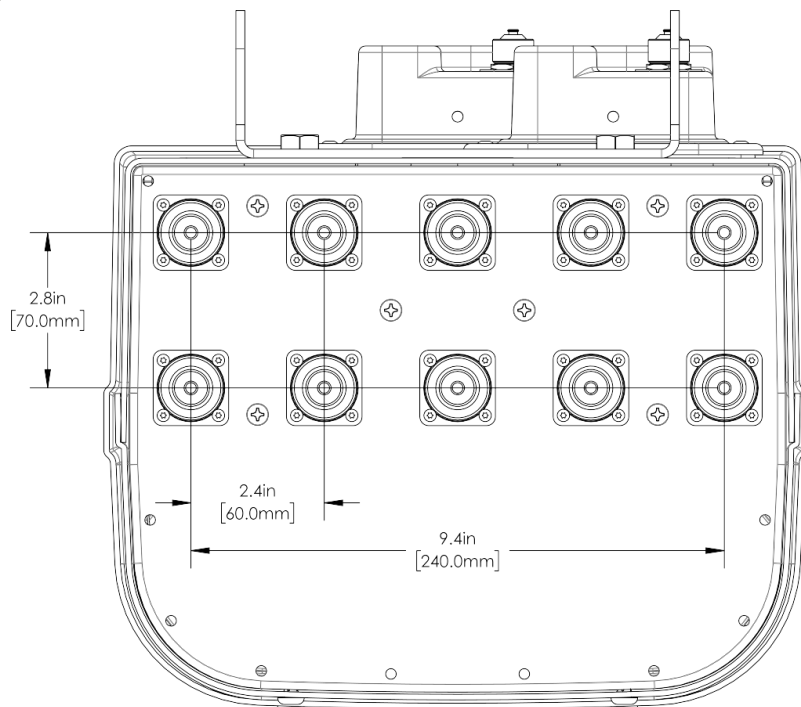
DPA65R-KE8A

Mechanical

Bottom View



Connector Spacing



Ten Port Multi-Band Antenna

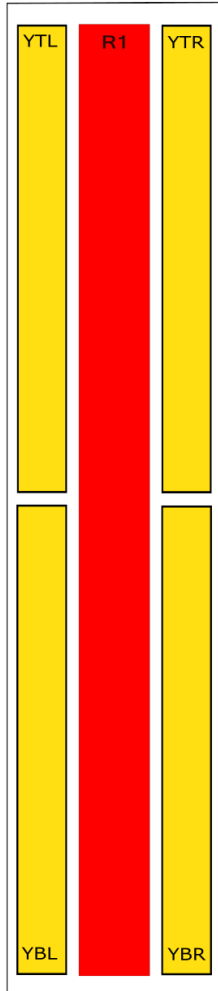
DPA65R-KE8A

SPECIFICATIONS

Mechanical

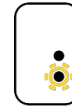
RET/Element Configuration

**Top of antenna  
Viewed from rear**

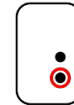


**RET placement  
as view from rear  
of antenna**

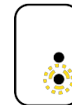
Top of antenna



**TOP**  
1695-2690  
Ports 3, 4, 7 & 8  
(YTL & YTR)



698-960  
Ports 1, 2  
(R1)



**BOTTOM**  
1695-2690  
Ports 5, 6, 9 & 10  
(YBL & YBR)

Array	Ports	Freq (MHz)	Ports controlled by common RET
<b>R1</b>	<b>1, 2</b>	<b>698-960</b>	<b>1, 2</b>
<b>YTL</b>	<b>3, 4</b>	<b>1695-2690</b>	<b>3, 4, 7,8</b>
<b>YTR</b>	<b>7, 8</b>	<b>1695-2690</b>	
<b>YBL</b>	<b>5, 6</b>	<b>1695-2690</b>	<b>5, 6, 9, 10</b>
<b>YBR</b>	<b>9, 10</b>	<b>1695-2690</b>	



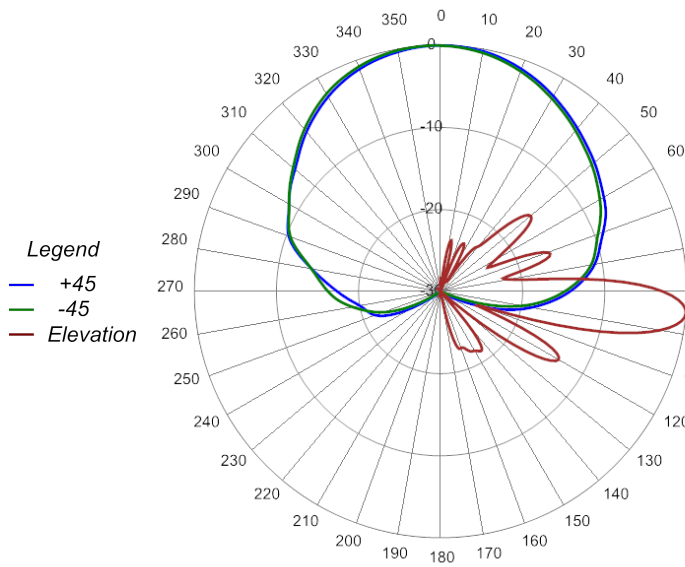
SPECIFICATIONS

Ten Port Multi-Band Antenna

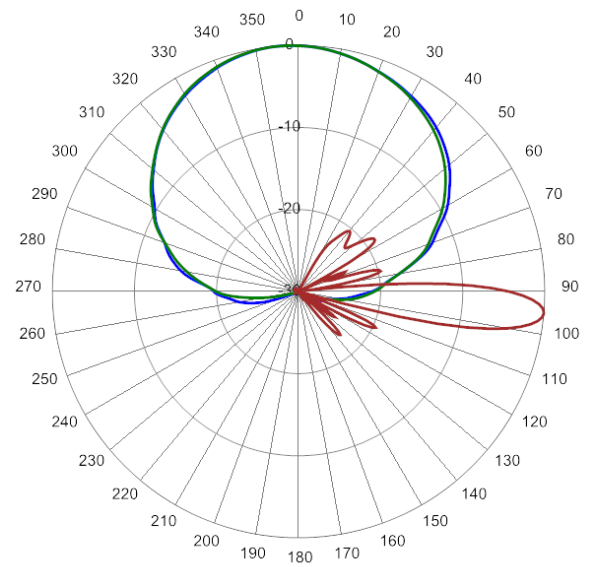
DPA65R-KE8A

Typical Antenna Patterns

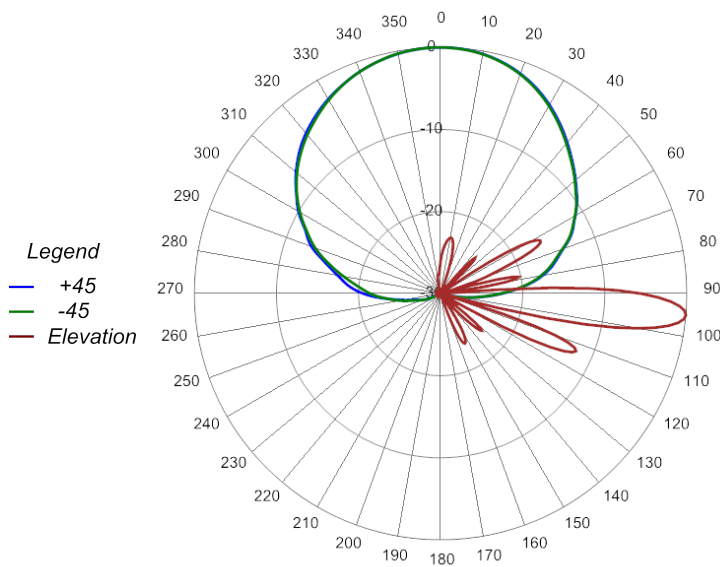
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



704 MHz Azimuth with Elevation 5°



850 MHz Azimuth with Elevation 5°



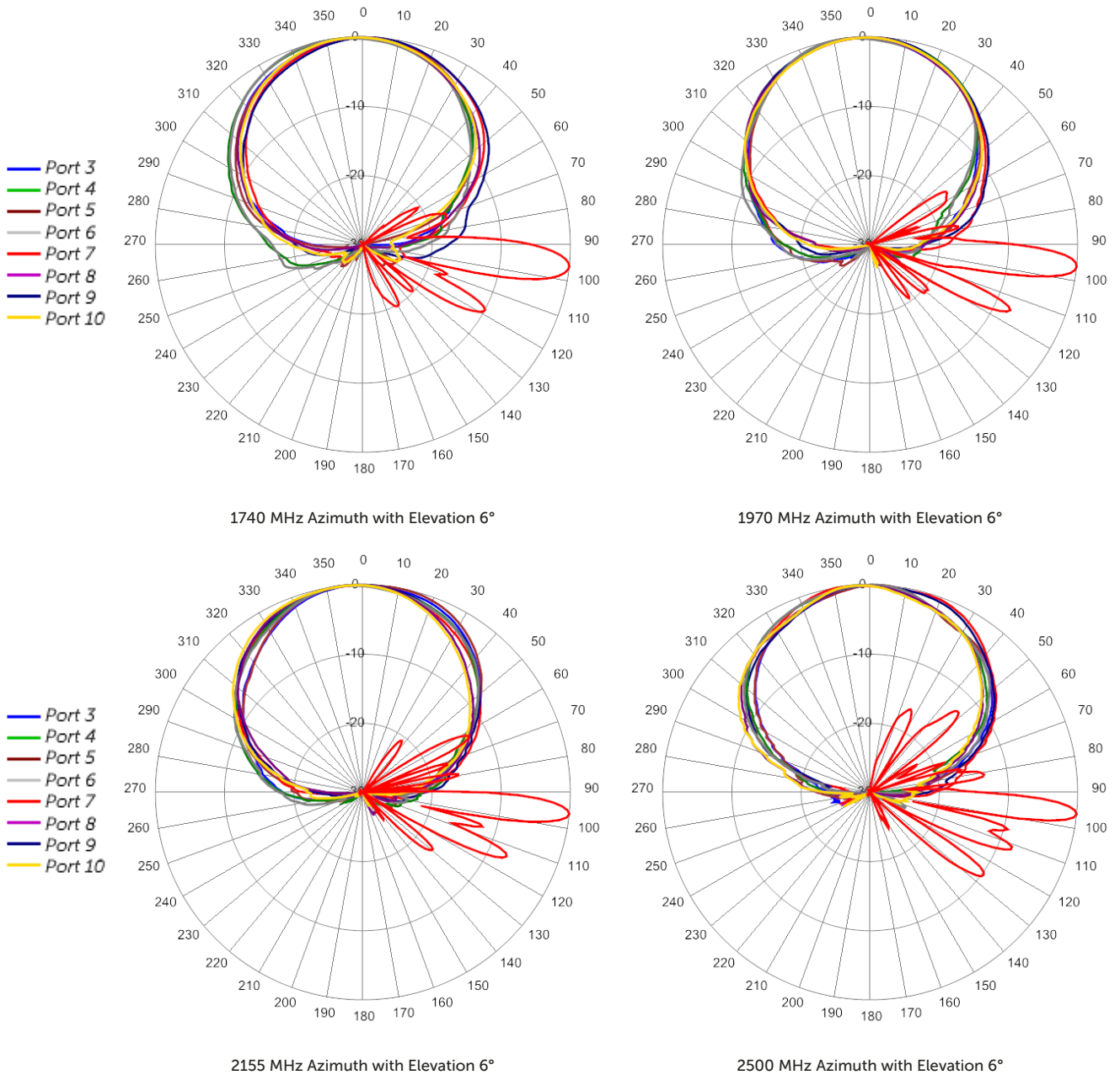
945 MHz Azimuth with Elevation 5°



Ten Port Multi-Band Antenna

DPA65R-KE8A

Typical Antenna Patterns





## Ten Port Multi-Band Antenna

DPA65R-KE8A

### Parts & Accessories

<b>DPA65R-KE8AA-K</b>	8 foot (2.4 m) Ten Port antenna with 65° azimuth beamwidth, 4.3-10 female connectors and 3 factory installed external BSA-RET200 RET actuators (Type 1 external) and MBK-01 mounting kit
<b>MBK-01</b>	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment
<b>BSA-RET200</b>	Type 1 remote electrical tilt actuator
<b>CBK-AG-RRU-004</b>	Three RET antenna to RRU AISG cable kit
<b>CBK-RA-AG-RRU-003</b>	Three RET antenna to RRU AISG right angle cable kit



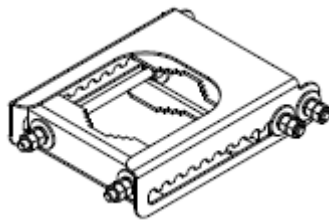


Mounting Bracket Kit

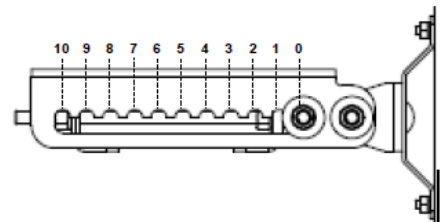
MBK-01

Mechanical

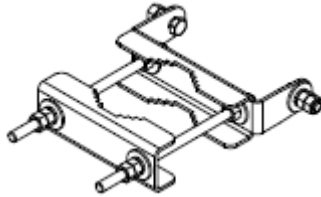
<b>Weight</b>	12.6 lbs (5.7 kg)
<b>Hinge Pitch</b>	47.25 in (1200 mm)
<b>Mounting Pole Dimension</b>	2 to 5 in (5 to 12 cm)
<b>Fastener Size</b>	M12
<b>Installation Torque</b>	40 ft·lb (54 N·m)
<b>Mechanical Tilt Adjustment</b>	0° - 10°



MBK-01 Top Adjustable Bracket



MBK-01 Top Adjustable Bracket Side View



MBK-01 Bottom Fixed Bracket



### Remote Electrical Tilt Actuator (RET)

BSA-RET200

#### General Specifications

Part Number	BSA-RET200
Protocols	AISG 2.0
RET Type	Type 1
Adjustment Cycles	>10,000 cycles
Tilt Accuracy	±0.1°
Temperature Range	-40° C to 70° C

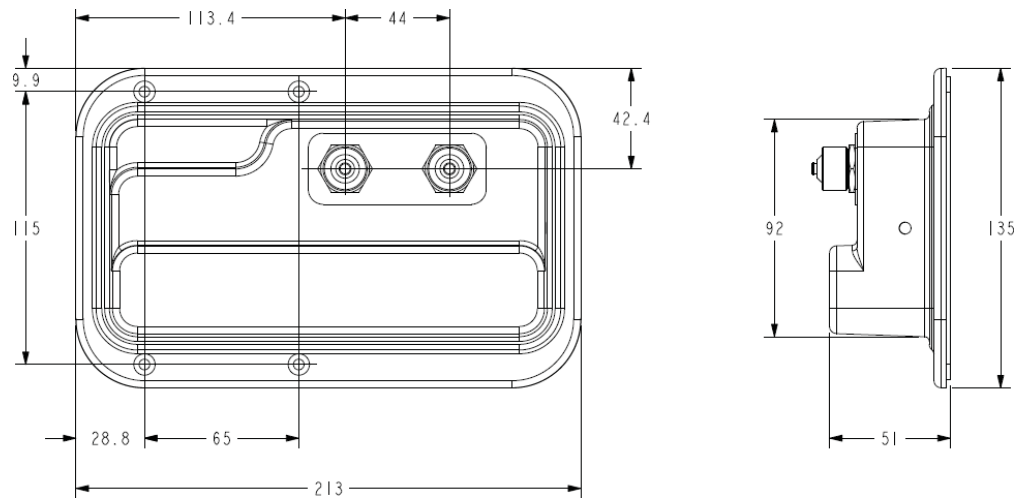
#### Electrical

Data Interface Signal	DC
Input Voltage	10-30 Vdc
Current Consumption Tilt	120 mA at $V_{in}=24$
Current Consumption Idle	55 mA at $V_{in}=24$
Hardware Interface	AISG-RS 485 A/B
Input Connector	Male 1 × 8 pin Daisy Chain
Output Connector	Female 1 × 8 pin Daisy Chain

#### Mechanical

Dimensions (LxWxD)	8.0x5.0x2.0 in. (213x135x51 mm)
Housing	ASA/ABS/Aluminum
Weight	1.7 lbs (0.75 kg)

ASA= Acrylic Styrene Acrylonitrile  
ABS=Acrylonitrile Butadiene Styrene





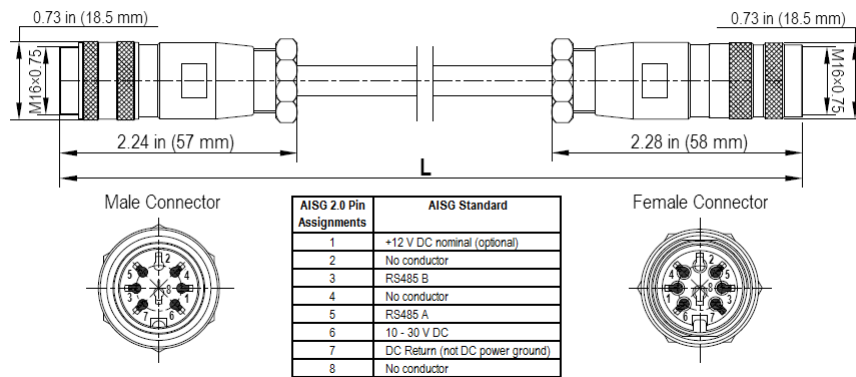
AISG Cable Kit

CBK-AG-RRU-004

Electrical/Mechanical/Environmental Specifications

	RET to RET Cables	RRU to Antenna Cables
Individual Cable Part Number	AISGC-M-F-34	AISGC-M-F-10FT
Cable style	UL2464	
Protocol	AISG 1.1 and AISG 2.0	
Maximum voltage	300 V	
Rated current	5 A at 104° F (40° C)	
Temperature Range	-40° to 80° C	
Flammability	UL 1581 VW-1	
Ingress Protection	IEC 60529:2001, IP67	
Tightening torque	Hand tighten only ≈ 1.84 ft-lbs (2.5 N·m)	
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)	
Minimum bend radius	3.9 in (100 mm)	
Connectors	2 x 8 pin IEC 60130-9 Straight male/straight female	
Length	34 in (864 mm)	120 in (3048 mm)
Weight	0.33 lbs (0.15 kg)	0.69 lbs (0.31 kg)
Cables per kit	2	2

Mechanical Specifications



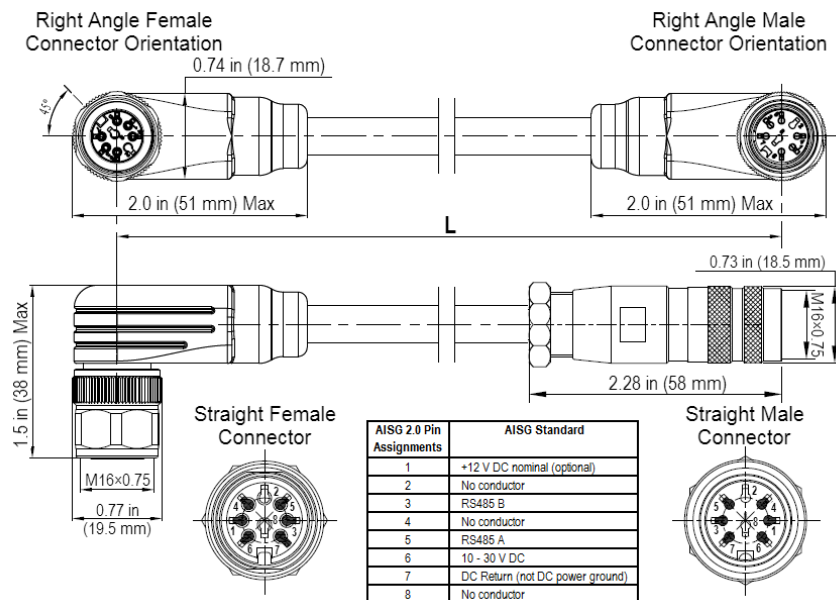
AISG-Male to AISG-Female Jumper Cable



Electrical/Mechanical/Environmental Specifications

Individual Cable Part Number	RET to RET Cables		RRU to Antenna Cables
	AISGC-MRA-FRA-27	AISGC-MRA-FRA-36	AISGC-M-FRA-10FT
Cable style	UL2464		
Protocol	AISG 1.1 and AISG 2.0		
Maximum voltage	300 V		
Rated current	5 A at 104° F (40° C)		
Temperature Range	-40° to 80° C		
Flammability	UL 1581 VW-1		
Ingress Protection	IEC 60529:2001, IP67		
Tightening torque	Hand tighten only ≈ 1.84 ft-lbs (2.5 N-m)		
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)		
Minimum bend radius	3.9 in (100 mm)		
Connectors	2 x 8 pin IEC 60130-9 Right angle male/right angle female		2 x 8 pin IEC 60130-9 Straight male/right angle female
Length	27 in (685 mm)	36 in (914 mm)	120 in (3048 mm)
Weight	0.20 lbs (0.09 kg)	0.23 lbs (0.10 kg)	0.77 lbs (0.35 kg)
Cables per kit	1	1	2

Mechanical Specifications



Right Angle to Right Angle and Right Angle to Straight Jumper Cable



STANDARDS & CERTIFICATIONS

Ten Port Multi-Band Antenna

DPA65R-KE8A

Standards & Compliance

<b>Safety</b>	EN 60950-1, UL 60950-1
<b>Emission</b>	EN 55022
<b>Immunity</b>	EN 55024
<b>Environmental</b>	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

