



- Eight foot (2.4 m) internally multiplexed MultiBand antenna, including eight external RF ports (12 RF ports internal), with a 65° azimuth beamwidth covering 698-896 MHz and 1695-2400 MHz frequencies
- Four wide high band ports covering 1695-2400 MHz and four wide low band ports covering 698-896 MHz in a single antenna enclosure
- Innovative Multiplexed/RET Control configuration, supporting Dual Band Radio Configurations (B12/B5 and B29/B5). The antenna provides Dual 4T4R (4x4 MIMO) capability, while providing independent RET control, an Industry First
- 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), all in a 20.7" (525 mm) width enclosure, an Industry First
- Industry leading antenna topology and RET shielding techniques drastically mitigate PIM propagation from B12/B14/B29 operations, allowing for superior Network performance
- Full Spectrum Compliance for PCS, AWS-3 and WCS frequencies and 700/850 MHz Dual Band Radio Configurations
- 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
- Ordering options for External RET Controllers (Type 1) or Internally Integrated RET Controllers (Type 17)

### Overview

The CCI internally multiplexed MultiBand array is an eight port (12 RF ports internal) antenna, with four wide band ports covering 1695-2400 MHz and four low band ports covering 698-896 MHz. The antenna provides the capability to deploy 4T4R (4x4 MIMO) in the high band, with separate RET control. The antenna also provides the capability to provide independent RET control for 700/850 MHz Dual Band Radio Configurations, while maintaining 4T4R (4x4 MIMO) across the low 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 High Band and 4X4 MIMO Low Band ports
- Ready for Network Standardization on 4.3-10 DIN connectors
- With CCI's multiband antennas, wireless providers can connect multiple platforms to a single antenna, reducing tower load, lease expense, deployment time and installation costs



Electrical

Ports	4 x Low Band Ports for 698-896 MHz	
Frequency Range	698-798 MHz	824-896 MHz
Gain <sup>1</sup>	15.1 dBi	16.0 dBi
Gain (Average) <sup>2</sup>	14.1 dBi	15.1 dBi
Azimuth Beamwidth (-3dB)	75°	64°
Elevation Beamwidth (-3dB)	9.5°	8.0°
Electrical Downtilt	2° to 12°	2° to 12°
Elevation Sidelobes (1st Upper)	<-19 dB	<-19 dB
Front-to-Back Ratio @180°	> 32 dB	> 35 dB
Front-to-Back Ratio ±20°	> 30 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 25 dB	> 25 dB
Cross-Polar Discrimination at Sector <sup>2</sup>	10.9 dB	11.0 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts
Polarization	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground

<sup>1</sup>Peak gain across sub-bands.

<sup>2</sup>Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V9.6.

Ports	4 x High Band Ports for 1695-2400 MHz			
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz
Gain <sup>1</sup>	17.6 dBi	17.8 dBi	18.2 dBi	18.1 dBi
Gain (Average) <sup>2</sup>	16.7 dBi	17.0 dBi	17.3 dBi	17.2 dBi
Azimuth Beamwidth (-3dB)	70°	68°	68°	54°
Elevation Beamwidth (-3dB)	5.7°	5.1°	4.8°	4.1°
Electrical Downtilt	0° to 8°	0° to 8°	0° to 8°	0° to 8°
Elevation Sidelobes (1st Upper)	<-17 dB	<-18 dB	<-18 dB	<-17 dB
Front-to-Back Ratio @180°	> 35 dB	> 35 dB	> 35 dB	> 35 dB
Front-to-Back Ratio ±20°	> 32 dB	> 32 dB	> 32 dB	> 32 dB
Cross-Polar Discrimination at Peak	> 19 dB	> 18 dB	> 20 dB	> 20 dB
Cross-Polar Discrimination at Sector <sup>2</sup>	10.8 dB	8.2 dB	8.5 dB	8.3 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)	300 watts	300 watts	300 watts	300 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

<sup>1</sup>Peak gain across sub-bands.

<sup>2</sup>Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V9.6.



SPECIFICATIONS

Diplexed Multi-Band Antenna

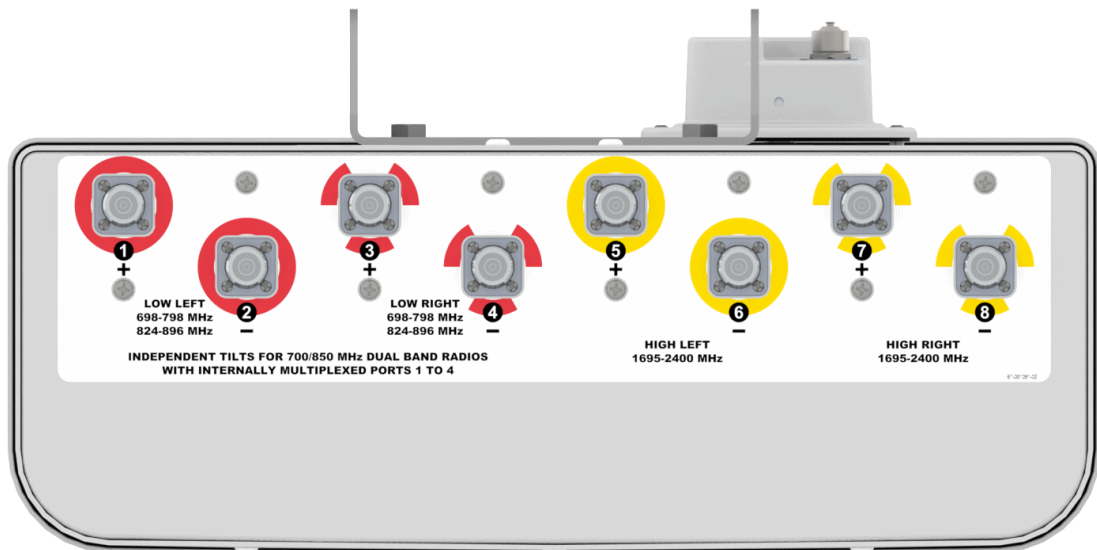
DMP65R-BU8D

Mechanical

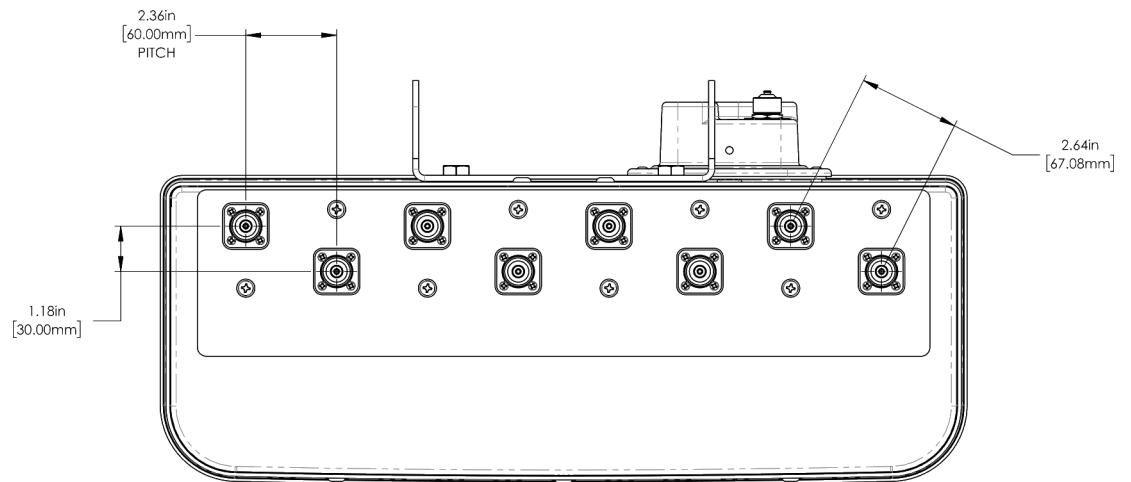
<b>Dimensions (LxWxD)</b>	96.0x20.7x7.7 in (2438x525x197 mm)
<b>Survival Wind Speed</b>	> 150 mph (> 241 kph)
<b>Front Wind Load</b>	457 lbs (2033 N) @ 100 mph (161 kph)
<b>Side Wind Load</b>	209 lbs (929 N) @ 100 mph (161 kph)
<b>Equivalent Flat Plate Area</b>	17.9 ft <sup>2</sup> (1.7 m <sup>2</sup> )
<b>Weight *</b>	119.0 lbs (54.0 kg)
<b>Connector</b>	8 x 4.3-10 female
<b>Mounting Pole</b>	2 to 5 in (5 to 12 cm)

\* Weight excludes mounting

Bottom View



Connector Spacing



## Diplexed Multi-Band Antenna

DMP65R-BU8D

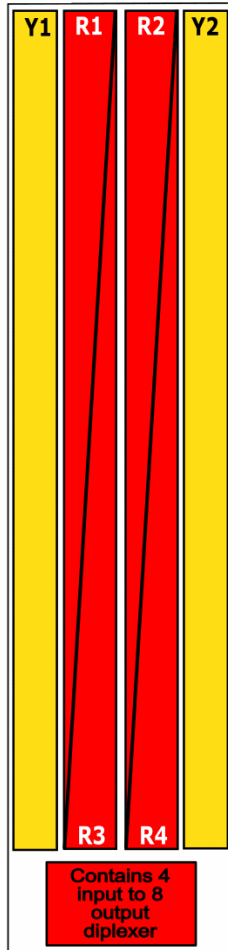
### SPECIFICATIONS

#### Mechanical

RET to Element Configuration

DMP65R-BU8DA Element and RET configuration (Type 1 External RET)

#### Top of antenna Viewed from rear



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

Top of antenna



**MM.1**

698-798 MHz (700 RET)  
Ports 1, 2, 3 & 4  
(R1 & R2)



**MM.2**

824-896 MHz (850 RET)  
Ports 1, 2, 3 & 4  
(R3 & R4)

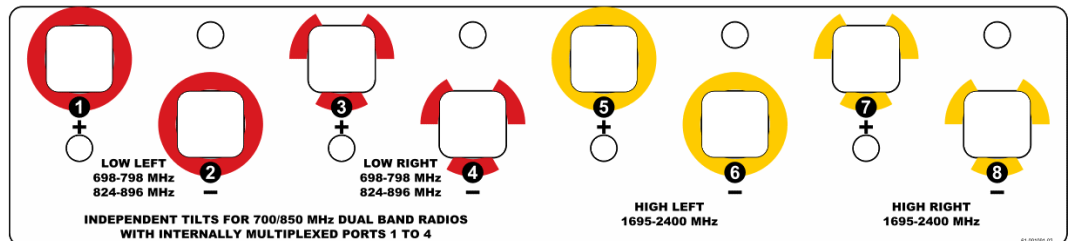


**MM.3**

1695-2400 MHz  
Ports 5, 6, 7 & 8  
(Y1 & Y2)

Array	Ports	Freq (MHz)	Ports controlled by dedicated RET	RET location on Antenna	AISG RET UID
R1	1, 2	698-798	1, 2, 3, 4	Top (700 RET)	ClxxxxxxMM.1
R2	3, 4				
R3	1, 2	824-896	1, 2, 3, 4	Middle (850 RET)	ClxxxxxxMM.2
R4	3, 4				
Y1	5, 6	1695-2400	5, 6, 7, 8	Bottom	ClxxxxxxMM.3
Y2	7, 8				

#### Port Label



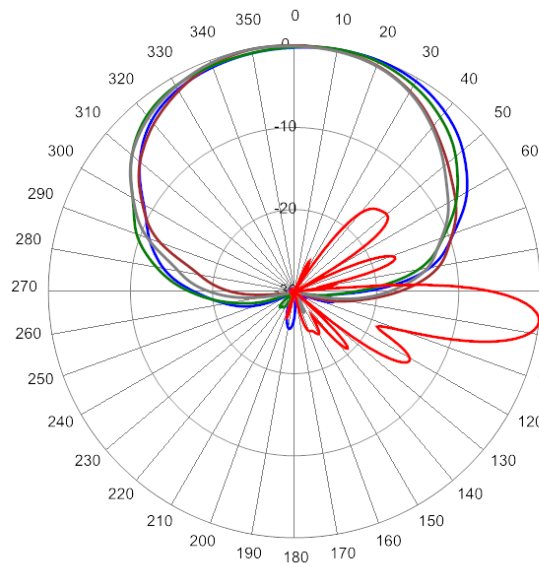


Diplexed Multi-Band Antenna

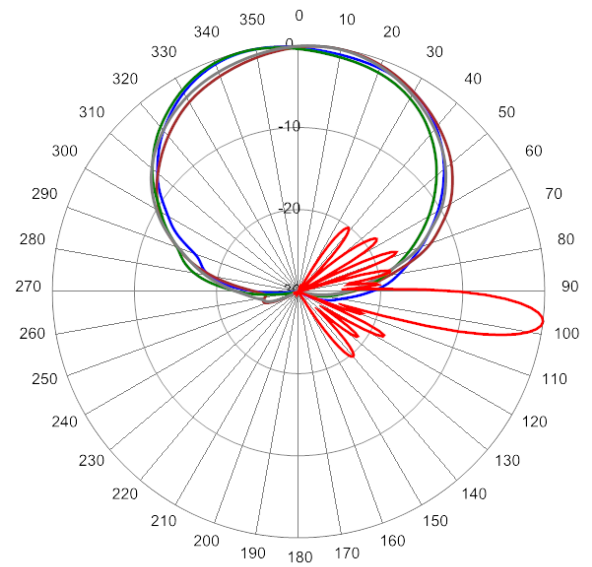
DMP65R-BU8D

Typical Antenna Patterns

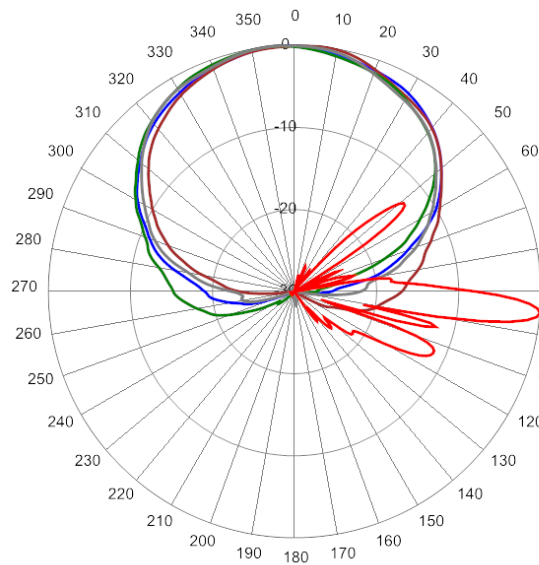
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



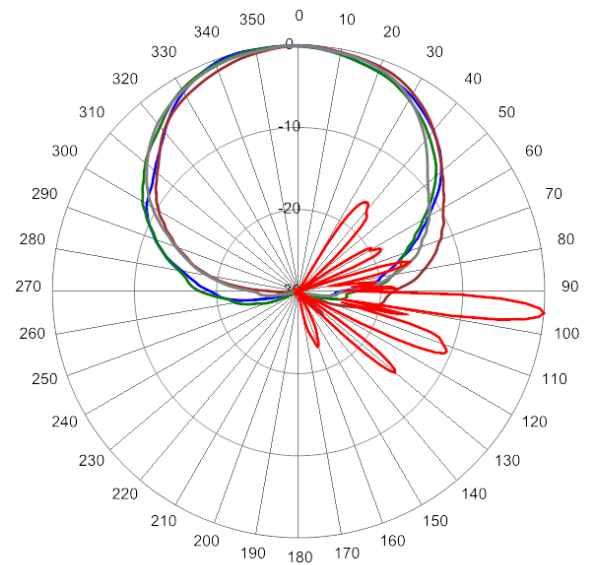
698 MHz Azimuth with Elevation 7°



840 MHz Azimuth with Elevation 7°



1780 MHz Azimuth with Elevation 5°



2155 MHz Azimuth with Elevation 5°



Diplexed Multi-Band Antenna

DMP65R-BU8D

Parts & Accessories

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<b>DMP65R-BU8DA-K</b>	Eight foot (2.4 m) antenna with 65° azimuth beamwidth, 4.3-10 female connectors, 3 factory installed BSA-RET200 RET actuators (Type 1 external) and fixed tilt mounting bracket MBK-16
<b>DMP65R-BU8DB-K</b>	Eight foot (2.4 m) antenna with 65° azimuth beamwidth, 4.3-10 female connectors, 3 factory installed BSA-RET400 RET actuators (Type 17 internal) and fixed tilt mounting bracket MBK-16
<b>MBK-16</b>	Mounting bracket kit (top and bottom) with fixed 0° mechanical tilt
<b>MBK-01</b>	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt
<b>DM-02</b>	Dual mount mast bracket for side by side antenna mounting
<b>BSA-RET200</b>	Type 1 External Remote Electrical Tilt System (RET)
<b>BSA-RET400</b>	Type 17 Internal Remote Electrical Tilt System (RET)
<b>DPA-CBK-AG-RRU</b>	Antenna with 3 Type 1 RET to RRU AISG cable kit
<b>CBK-RA-AG-RRU-004</b>	Antenna with 3 Type 1 RET to RRU AISG right angle cable kit

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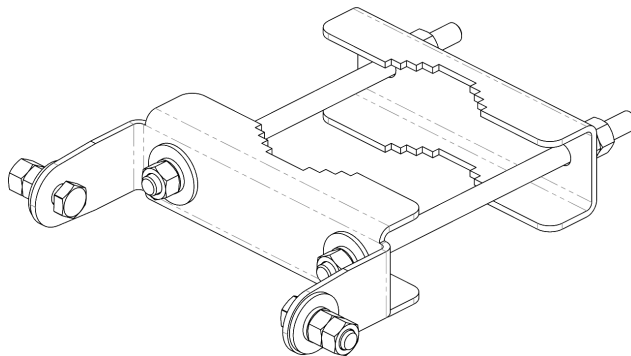
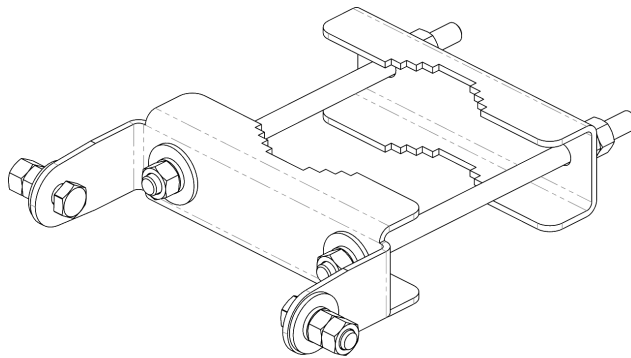


Mounting Bracket Kit

MBK-16

Mechanical

<b>Weight</b>	9.9 lbs (4.5 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·lbs (54 N·m)
<b>Mechanical Tilt</b>	0°



MBK-16 Top and Bottom Bracket

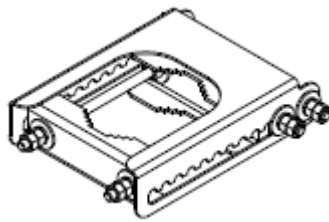


Mounting Bracket Kit

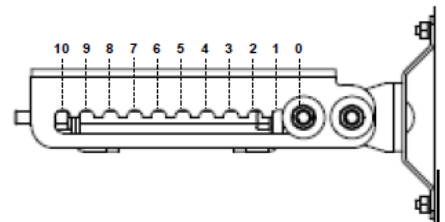
MBK-01

Mechanical

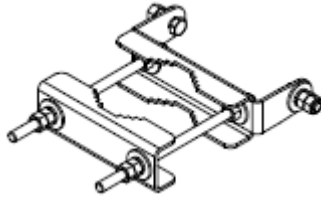
<b>Weight</b>	12.6 lbs (5.7 kg)
<b>Hinge Pitch</b>	47.25 in (1200 mm)
<b>Mounting Pole Dimension</b>	2 to 5 in (5 to 12 cm)
<b>Fastener Size</b>	M12
<b>Installation Torque</b>	40 ft·lb (54 N·m)
<b>Mechanical Tilt Adjustment</b>	0° - 10°



MBK-01 Top Adjustable Bracket



MBK-01 Top Adjustable Bracket Side View



MBK-01 Bottom Fixed Bracket



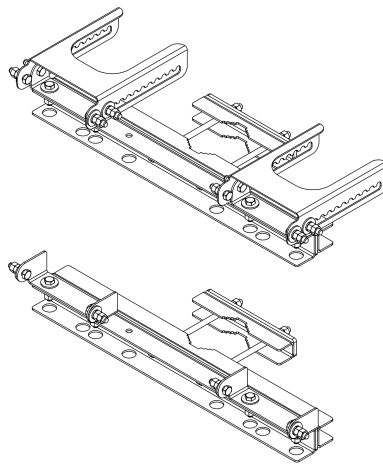


Dual Mount Mast Bracket

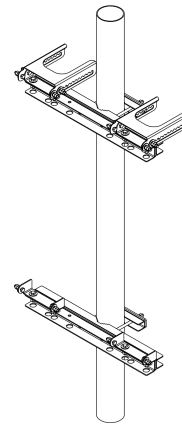
DM-02

Mechanical

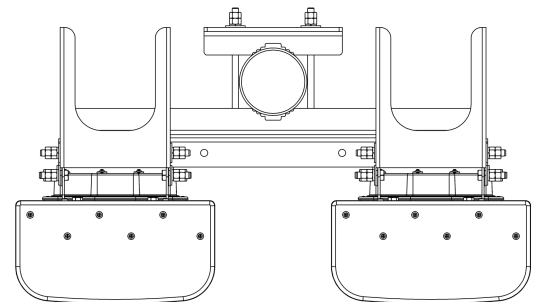
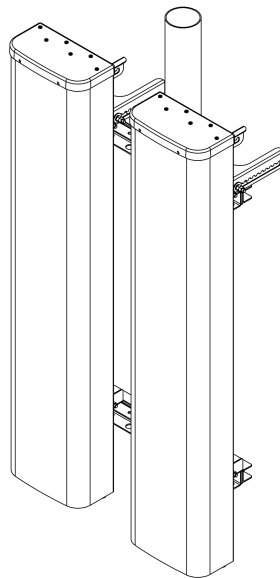
<b>Weight</b>	70.5 lbs (32.0 kg)
<b>Hinge Pitch (Vertical)</b>	47.25 in (1200 mm)
<b>Antenna Spacing (Horizontal)</b>	15.6 in (396 mm) or 23.4 in (594 mm)
<b>Fastener Size</b>	M12
<b>Installation Torque</b>	40 ft-lb (54 N·m)
<b>Mechanical Tilt Adjustment</b>	0° - 10°



DM-02 Bracket



DM-02 Mounting Brackets (on Pole)



Two - 65° Antennas Mounted on Pole using DM-02 Brackets (Iso and Top Views)



### 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

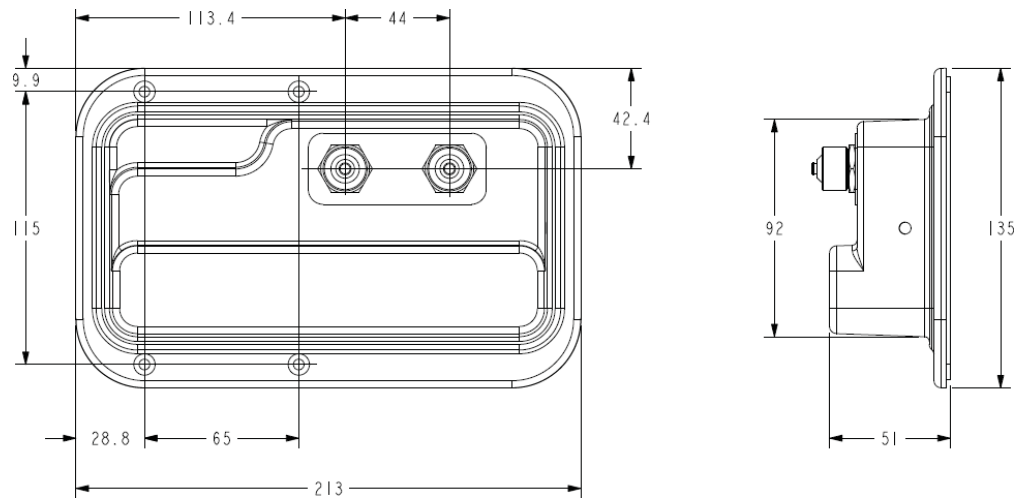
#### Electrical

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





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

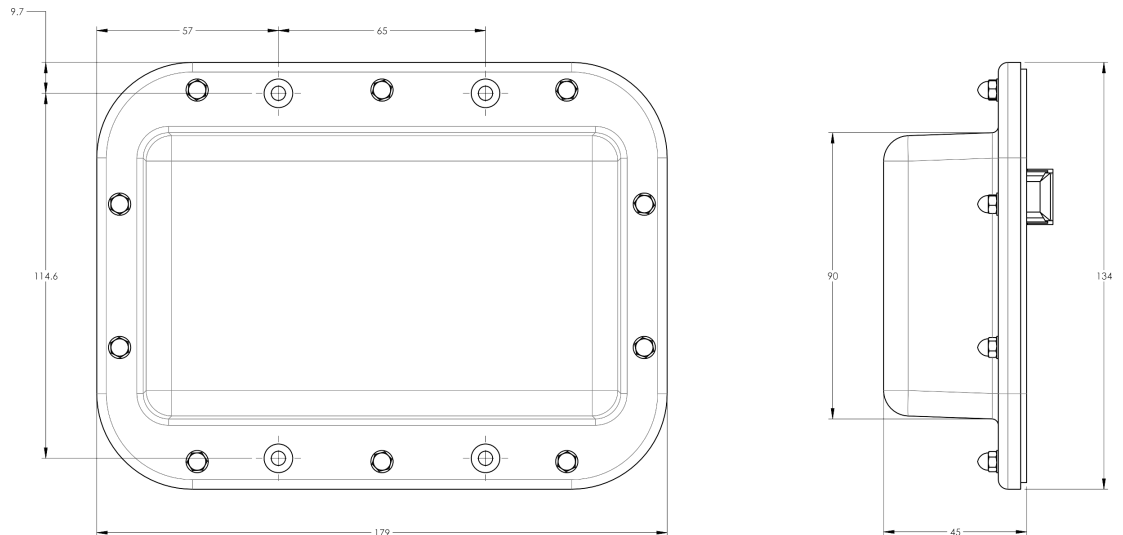
Electrical

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



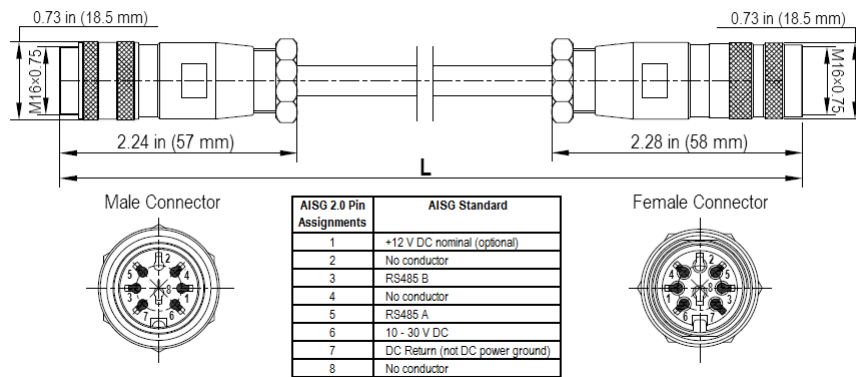


AISG Cable Kit

Electrical/Mechanical/Environmental Specifications

	RET to RET Cables	RRU to Antenna Cables
Individual Cable Part Number	AISGC-M-F-27	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	27 in (686 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



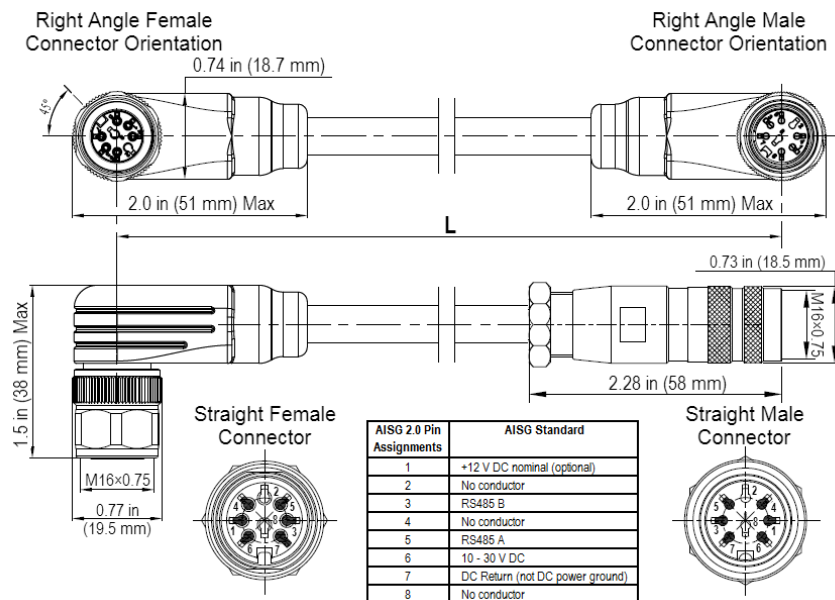
AISG-Male to AISG-Female Jumper Cable



Electrical/Mechanical/Environmental Specifications

Individual Cable Part Number	RET to RET Cables		RRU to Antenna Cables
	AISGC-MRA-FRA-22	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	22 in (559 mm)	36 in (914 mm)	120 in (3048 mm)
Weight	0.18 lbs (0.08 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

Diplexed Multi-Band Antenna

DMP65R-BU8D

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

