

- Six foot (1.8 m), eight port antenna with an 45° azimuth beamwidth covering 698-787 MHz, 824-896 MHz and 1695-2180 MHz
- Four high band and four low band ports in a single antenna
- Sharp elevation beamwidth aides in network planning
- Optimal elevation sidelobe performance
- Enhanced array spacing ensures optimal MIMO performance
- Exceeds minimum PIM performance requirements
- Multi-network solution in one radome with eight ports
- Reduces tower load and increases space for tower mounted remote radio heads
- Multi-band design improves site radio resource management
- Field replaceable, integrated AISG 2.0 compliant Remote Electrical Tilt (RET) system with independent tilt control for each freq group

Overview

The CCI HexPort multi-band array is an eight port antenna with full Advanced Wireless Service (AWS) band coverage. With four high band ports covering 1695-2180 MHz, two ports covering 698-787 MHz and two ports covering 824-896 MHz, this six foot CCI OctoPort provides the capability to deploy 4x4 Multiple-input Multiple-output (MIMO) in the high band.

CCI has engineered its antennas using new and innovative design techniques to provide optimal sidelobe performance, sharp elevation beams, and high front to back ratio.

Multiple technologies can now be connected to a single antenna, reducing tower load, lease expense, deployment time and installation cost.

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 low band
- Increase capacity without adding antennas
- High sector count sites
- Densely populated macro sites
- Cosite current, and next-generation basestation technologies on the same antenna



OctoPort Multi-Band Antenna

OPA-45R-LCWW-H6

SPECIFICATIONS

Electrical

Ports	2 x Low Band Ports for		4 x High Band Ports for 1695-2180 MHz		
	698-787 MHz	824-896 MHz	1850-1990 MHz	1695-1755/2110-2180 MHz	
Frequency Range	698-787 MHz	824-896 MHz	1850-1990 MHz	1695-1755/2110-2180 MHz	
Gain (dBi)	14.7	15.0	18.0	17.6	18.0
Azimuth Beamwidth (-3dB) (°)	51	44	49	49	49
Elevation Beamwidth (-3dB) (°)	13.2	11.1	5.7	6.2	5.1
Electrical Downtilt (°)	0 to 10	0 to 10	0 to 8	0 to 8	0 to 8
Elevation Sidelobes (1st Upper) (dB)	< -18	< -18	< -20	< -20	< -18
Front-to-Back Ratio @180° (dB)	> 30	> 30	> 30	> 30	> 30
Cross-Polar Discrimination (at Peak) (dB)	> 25	> 25	> 20	> 20	> 20
Cross-Polar Port-to-Port Isolation (dB)	> 25	> 25	> 25	> 25	> 25
Voltage Standing Wave Ratio (VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W) (dBc)	≤ -153	≤ -153	≤ -153	≤ -153	≤ -153
Input Power Continuous Wave (CW)	500 watts	500 watts	300 watts	300 watts	300 watts
Polarization	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 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*

	698-787 MHz	824-896 MHz	1850-1990 MHz	1695-1755/2110-2180 MHz	
Frequency Range	698-787 MHz	824-896 MHz	1850-1990 MHz	1695-1755/2110-2180 MHz	
Gain over all Tilts (dBi)	14.7	15.0	18.0	17.6	18.0
Gain over all Tilts Tolerance (dB)	0.3	0.4	0.4	0.4	0.5
Gain at Low-tilt (dBi)	14.8	15.0	18.0	17.7	18.0
Gain at Mid-tilt (dBi)	14.8	15.2	18.1	17.7	18.2
Gain at High-tilt (dBi)	14.5	14.7	17.8	17.5	17.8
Azimuth Beamwidth Tolerance (°)	1.8	3.0	2.6	3.3	3.6
Elevation Beamwidth Tolerance (°)	1.1	0.9	0.3	0.2	0.2
Electrical Downtilt Deviation (°)	0.6	0.6	0.6	0.6	0.7
Front-to-Back Ratio over ± 20° (dB)	25.8	26.6	25.9	22.4	24.3
First Upper Sidelobe Suppression (dB)	15.5	16.0	18.0	17.6	16.4
Upper Sidelobe Suppression peak to 20°(dB)	17.1	17.4	17.3	17.2	16.1

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

Mechanical

Dimensions (LxWxD)	72.1x18.6x8.2 in (1833x472x210 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	301 lbs (1337 N) @ 100 mph (161 kph)
Side Wind Load	154 lbs (686 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	11.7 ft ² (1.1 m ²)
Weight *	67.0 lbs (30.4 kg)
Connector	8x 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

* Weight excludes mounting



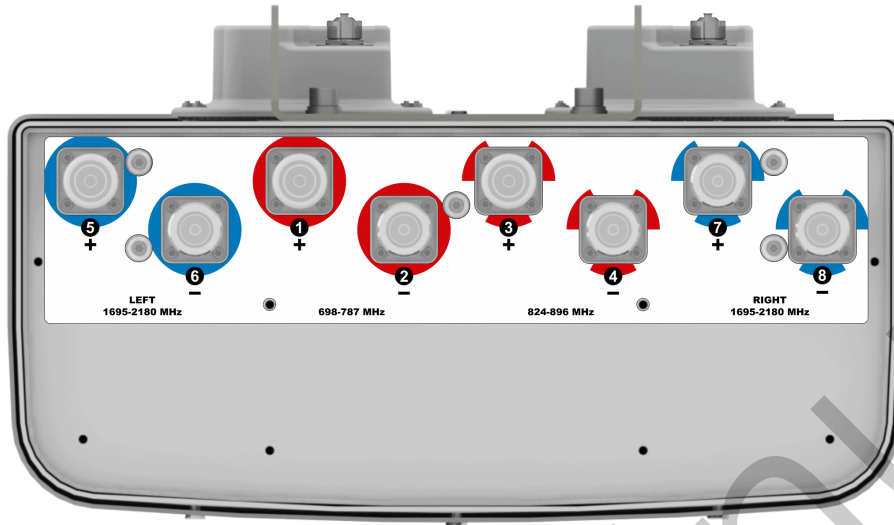
OctoPort Multi-Band Antenna

OPA-45R-LCWW-H6

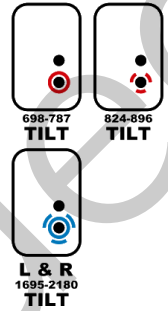
SPECIFICATIONS

Bottom View

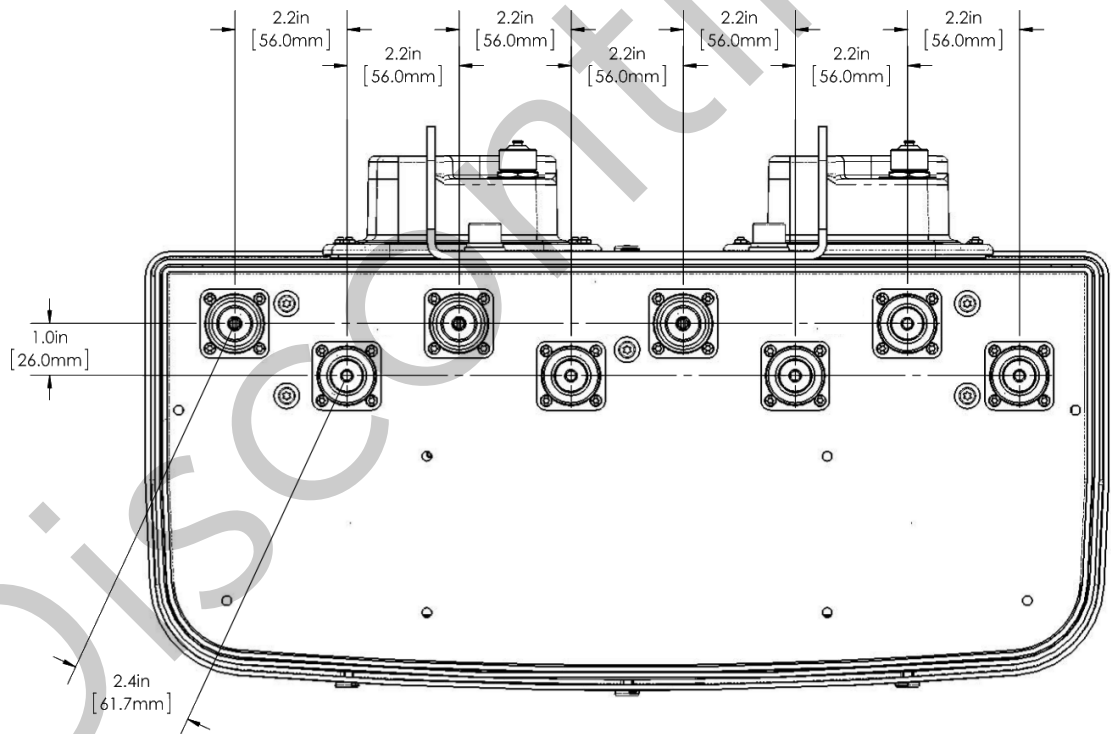
RET Position



CONNECT RET ACTUATORS AS SHOWN BELOW



Connector Spacing





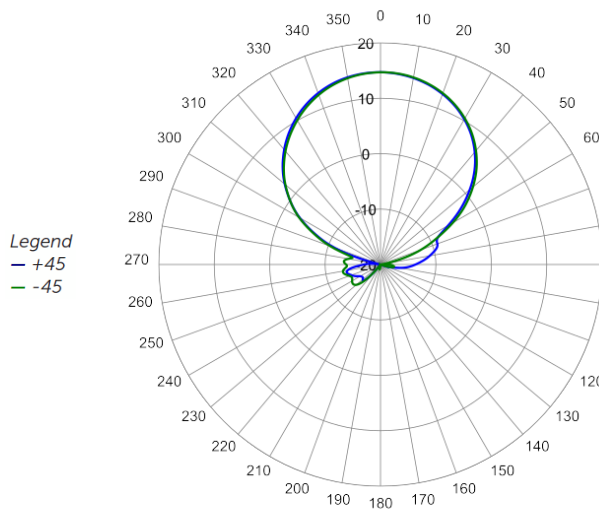
OctoPort Multi-Band Antenna

OPA-45R-LCWW-H6

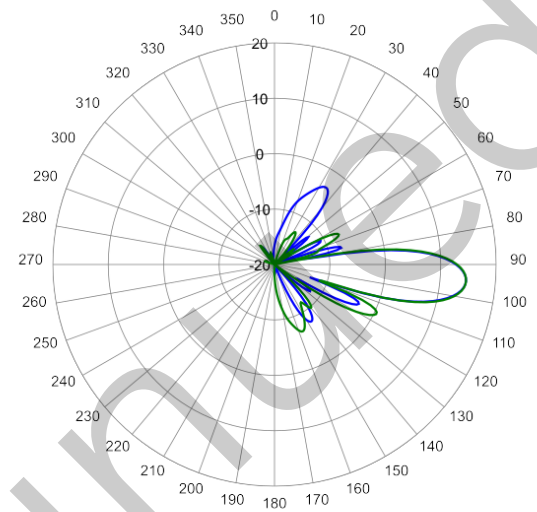
SPECIFICATIONS

Typical Antenna Patterns

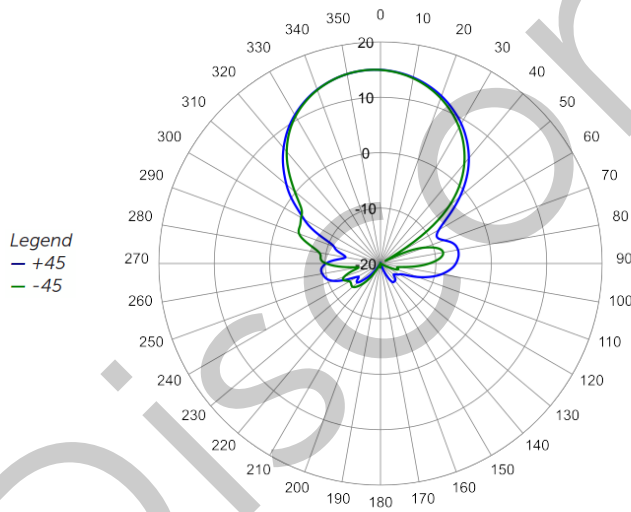
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



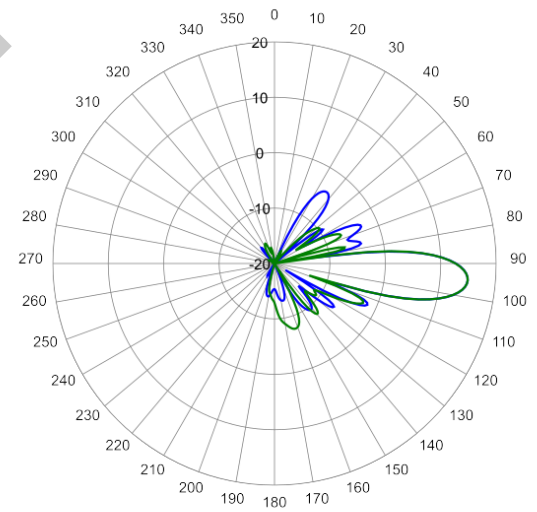
782 MHz Azimuth



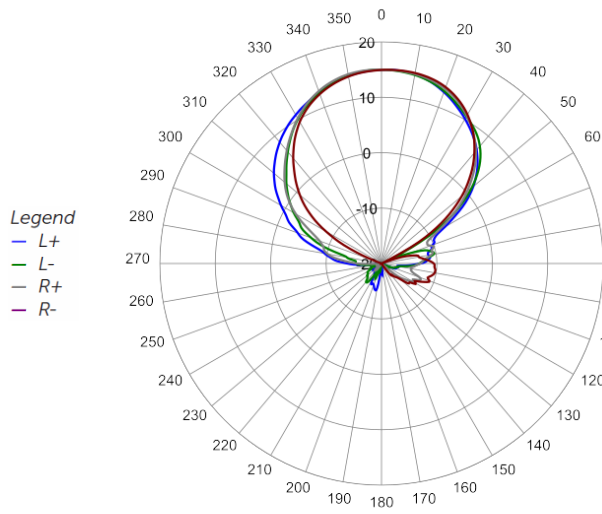
782 MHz Elevation 5°



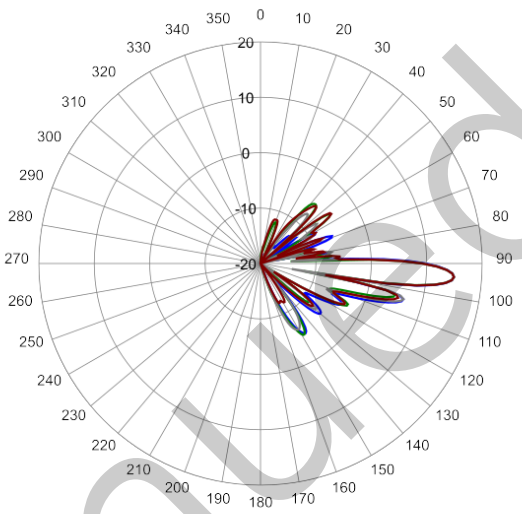
842 MHz Azimuth



842 MHz Elevation 5°



1930 MHz Azimuth



1930 MHz Elevation 4°

Discontinuing



ORDERING

OctoPort Multi-Band Antenna

OPA-45R-LCWW-H6

Parts & Accessories

OPA-45R-LCWW-H6-K	Six foot (1.8 m) OctoPort antenna with 45° azimuth beamwidth, 4.3-10 female connectors, 3 factory installed BSA-RET200 RET actuators and MBK-01 mounting bracket
MBK-01	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment
BSA-RET200	Remote electrical tilt actuator (Type 1)
HPA-CBK-AG-RRU	OPA antenna with 3 RET to RRU AISG cable kit
HPA-CBK-RA-AG-RRU	OPA antenna with 3 RET to RRU AISG right angle cable kit

Discontinued

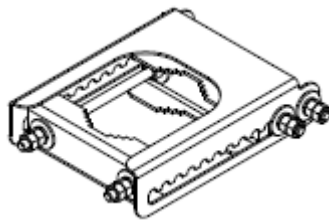


Mounting Bracket Kit

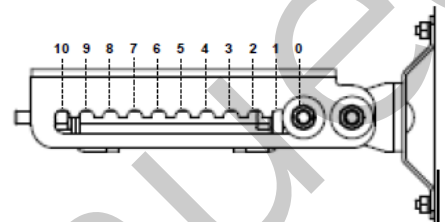
MBK-01

Mechanical

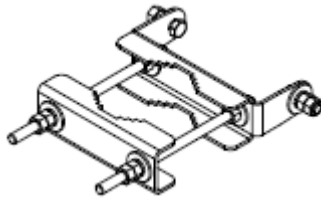
Weight	12.6 lbs (5.7 kg)
Hinge Pitch	47.25 in (1200 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M12
Installation Torque	40 ft·lb (54 N·m)
Mechanical Tilt Adjustment	0° - 10°



MBK-01 Top Adjustable Bracket



MBK-01 Top Adjustable Bracket Side View



MBK-01 Bottom Fixed Bracket

Discontinued



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

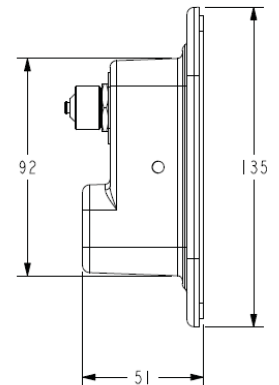
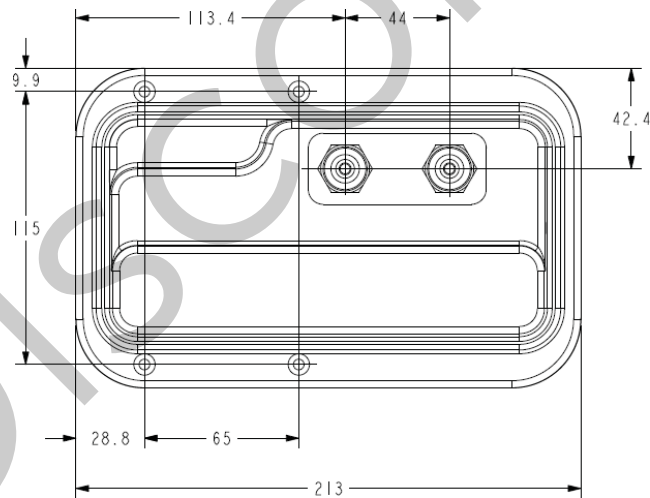
Electrical

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



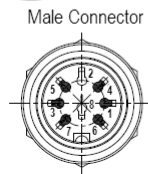
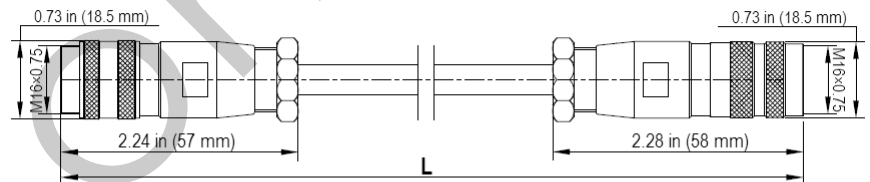


Electrical Specifications

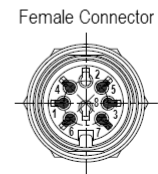
Individual Cable Part Number	AISGC-M-F-18	AISGC-M-F-10FT
Cable style	UL2464	UL2464
Protocol	AISG 1.1 and AISG 2.0	AISG 1.1 and AISG 2.0
Maximum voltage	300 V	300 V
Rated current	5 A at 104° F (40° C)	5 A at 104° F (40° C)

Mechanical Specifications

Individual Cable Part Number	AISGC-M-F-18	AISGC-M-F-10FT
Cables per kit	2	2
Connectors	2 x 8 pin IEC 60130-9 Straight male/straight female	2 x 8 pin IEC 60130-9 Straight male/straight female
Tightening torque	Hand tighten only ≈ 1.84 ft-lbs (2.5 N-m)	Hand tighten only ≈ 1.84 ft-lbs (2.5 N-m)
Construction	Shielded (Tinned Copper Braid)	Shielded (Tinned Copper Braid)
Braid coverage	85%	85%
Jacket Material	Matte Polyurethane (Black)	Matte Polyurethane (Black)
Conductors	1 twisted pair - 24 AWG 3 conductors - 19 AWG AWM style 2464	1 twisted pair - 24 AWG 3 conductors - 19 AWG AWM style 2464
Cable Diameter	0.307 in (7.8 mm)	0.307 in (7.8 mm)
Length	18 - 20 in (457 - 508 mm)	120 in (3048 mm)
Weight	0.27 lbs (0.12 kg)	0.69 lbs (.31 kg)
Minimum bend radius	3.9 in (100 mm)	3.9 in (100 mm)



AISG 2.0 Pin Assignments	AISG Standard
1	+12 V DC nominal (optional)
2	No conductor
3	RS485 B
4	RS 485 Ground
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

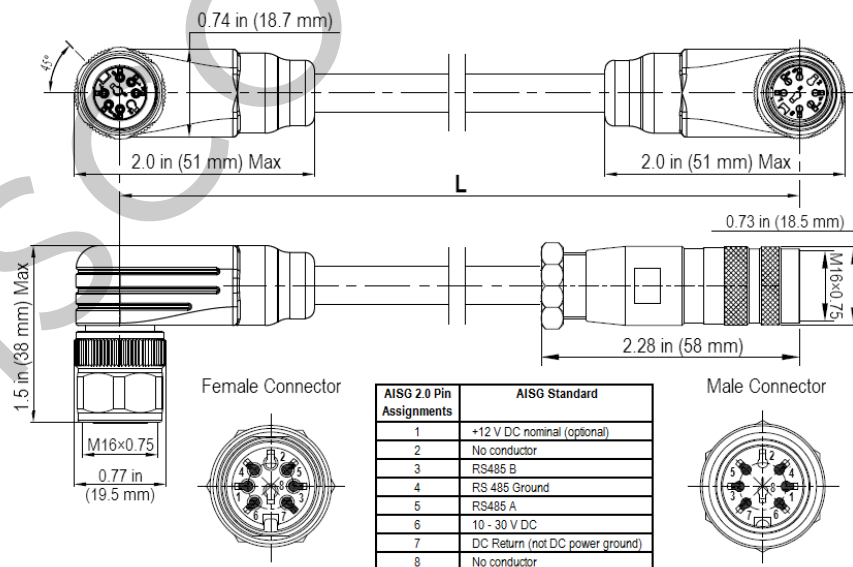
Environmental Specifications

Individual Cable Part Number	AISGC-M-F-18	AISGC-M-F-10FT
Temperature Range	-40° to 80° C	-40° to 80° C
Flammability	UL 1581 VW-1	UL 1581 VW-1
Ingress Protection	IEC 60529:2001, IP67	IEC 60529:2001, IP67

Electrical/Mechanical/Environmental Specifications

	RET to RET Cables	RRU to Antenna Cables
Individual Cable Part Number	AISGC-MRA-FRA-20	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 \approx 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	20 in (508 mm)	120 in (3048 mm)
Weight	0.23 lbs (0.10 kg)	0.77 lbs (0.35 kg)
Cables per kit	2	2

Mechanical Specifications



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



STANDARDS & CERTIFICATIONS

OctoPort Multi-Band Antenna

OPA-45R-LCWW-H6

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



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