



- Eight High Broadband ports simultaneously covering PCS, AWS and WCS bands
- Eight High Broadband ports with four Low Band ports in one antenna
- Excellent elevation side-lobe performance
- Excellent MIMO performance due to array spacing
- Supports up to 8x8 MIMO in high band
- Excellent PIM Performance
- A multi-network solution in one radome
- Reduces tower loading
- Frees up space for tower mounted Remote Radio Heads
- All Band design simplifies radio assignments
- Single radome with twelve ports
- Sharp elevation beam eases network planning

### Overview

The CCI 12-port Multi-Band Antenna Array is an industry first 12-port antenna with eight high band ports that simultaneously cover the full PCS, AWS and WCS bands. In addition to the eight high band ports, the antenna includes two 700 MHz ports and two 850 MHz ports. The 12-port antenna is ready for 8x8 MIMO or dual 4x4 MIMO in high band.

Modern networks demand high performance, consequently CCI has incorporated several new and innovative design techniques to provide an antenna with excellent side-lobe performance, sharp elevation beams, and high front to back ratio.

Multiple networks can now be connected to a single antenna, reducing tower loading and leasing expense, while decreasing deployment time and installation cost.

Full band capability for 700 MHz, Cellular 850 MHz, PCS 1900 MHz, AWS 1695/2180 MHz and WCS 2300 MHz coverage in a single enclosure.

CCI antennas are designed and produced to ISO 9001 certification standards for reliability and quality in our state-of-the-art manufacturing facilities.

### Applications

- 8x8 MIMO or Dual 4x4 MIMO on High Band
- 2x2 MIMO on 700 & 850 Low Bands
- Adding additional capacity without adding additional antennas



SPECIFICATIONS

Twelve Port Multi-Band Antenna

TPA-65R-LCUUUU-H8

Electrical

Ports	2 Low Band Ports for 698-798 MHz	2 Low Band Ports for 824-896 MHz	8 High Band Ports for 1695-2360 MHz			
Frequency Range	698-798 MHz	824-896 MHz	1850-1990 MHz	1695-1780 / 2110-2180 MHz	2305-2360 MHz	
Gain	15.1 dBi	15.6 dBi	15.9 dBi	15.4 dBi	16.4 dBi	16.6 dBi
Azimuth Beamwidth (-3dB)	66°	67°	68°	69°	62°	59°
Elevation Beamwidth (-3dB)	9.3°	7.9°	6.9°	8.1°	6.4°	6.1°
Electrical Downtilt	2° to 10°	2° to 10°	0° to 10°	0° to 10°	0° to 10°	0° to 10°
Elevation Sidelobes (1st Upper)	< -16 dB	< -17 dB	< -17 dB	< -18 dB	< -17 dB	< -17 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Front-to-Back Ratio over ± 20°	> 30 dB	> 30 dB	> 27 dB	> 27 dB	> 27 dB	> 27 dB
Cross-Polar Discrimination (at Peak)	> 22 dB	> 25 dB	> 24 dB	> 26 dB	> 22 dB	> 26 dB
Cross-Polar Discrimination (at ± 60°)	> 18 dB	> 19 dB	> 17 dB	> 17 dB	> 17 dB	> 16 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 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	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc	≤ -150 dBc
Input Power Continuous Wave (CW)	500 watts	500 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Pol 45°	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	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

Mechanical

Dimensions (LxWxD)	96.0x14.4x8.6 in (2437x366x218 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	340 lbs (1514 N) @ 100 mph (161 kph)
Side Wind Load	225 lbs (1001 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	13.3 ft <sup>2</sup> (1.2 m <sup>2</sup> )
Weight *	75 lbs (34.0 kg)
RET System Weight	6.6 lbs (3.0 kg)
Connector	12 x 4.3-10 Female
Mounting Pole	2 to 5 in (5 to 12 cm)

\* Weight excludes mounting and RET



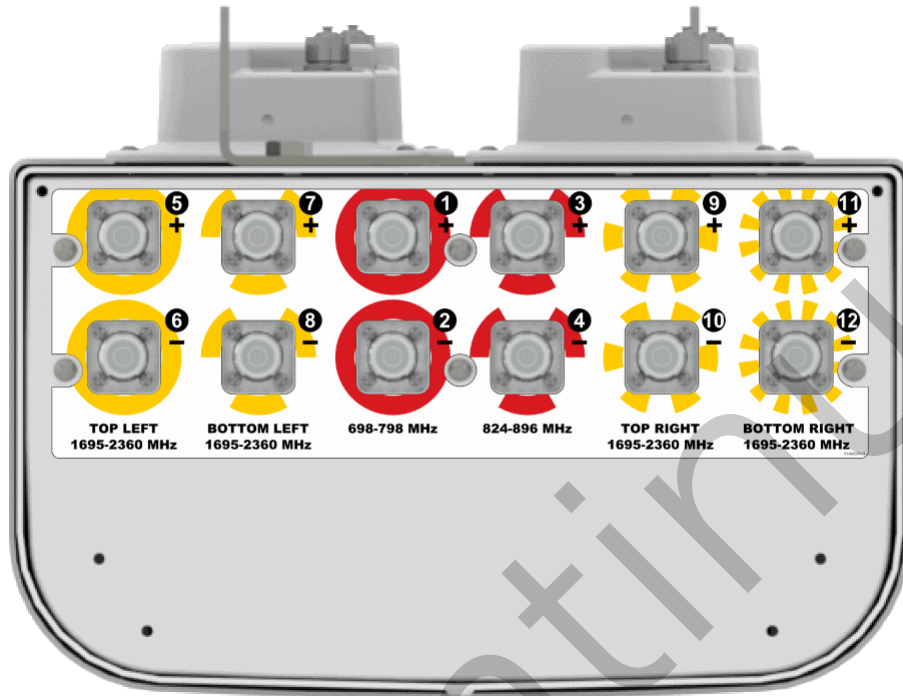
Twelve Port Multi-Band Antenna

TPA-65R-LCUUUU-H8

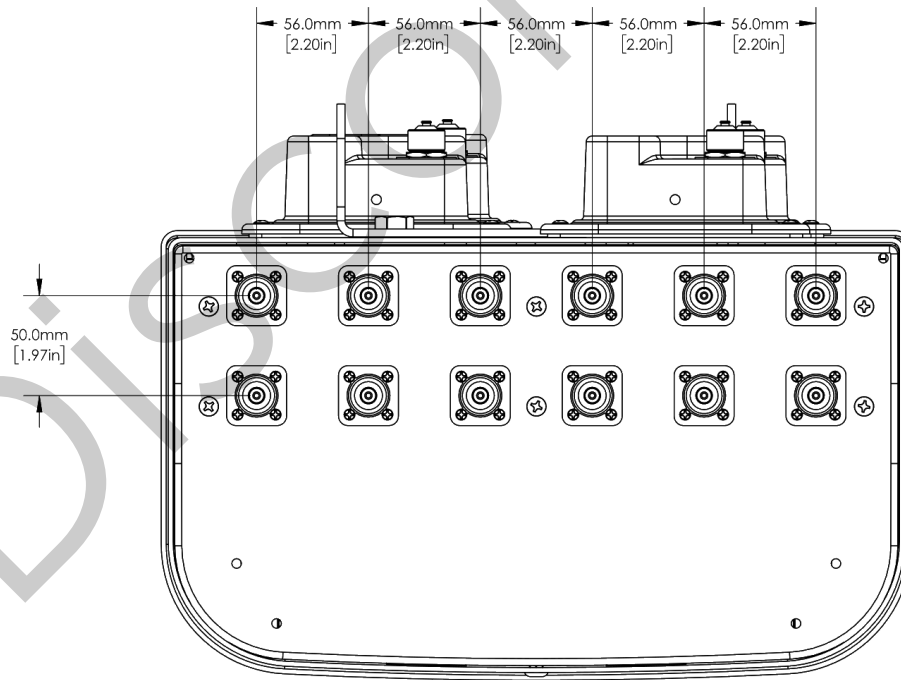
SPECIFICATIONS

Mechanical

Bottom View



Connector Spacing



SPECIFICATIONS

Twelve Port Multi-Band Antenna

TPA-65R-LCUUUU-H8

Mechanical

Element and RET configuration

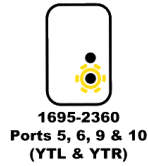
**Element arrays as viewed from rear of antenna**

Array	Ports	Freq (MHz)	Ports controlled by common RET
R	1, 2	698-798	1, 2
R	3, 4	824-896	3, 4
YTL	5, 6	1695-2360	5, 6, 9, 10
YTR	9, 10	1695-2360	
YBL	7, 8	1695-2360	7, 8, 11, 12
YBR	11, 12	1695-2360	



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

**Top of antenna**





SPECIFICATIONS

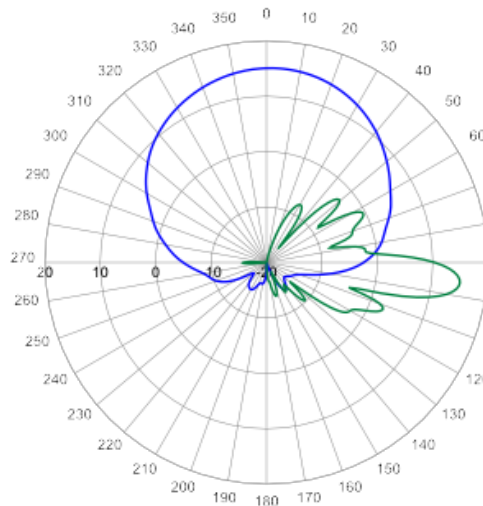
Twelve Port Multi-Band Antenna

TPA-65R-LCUUUU-H8

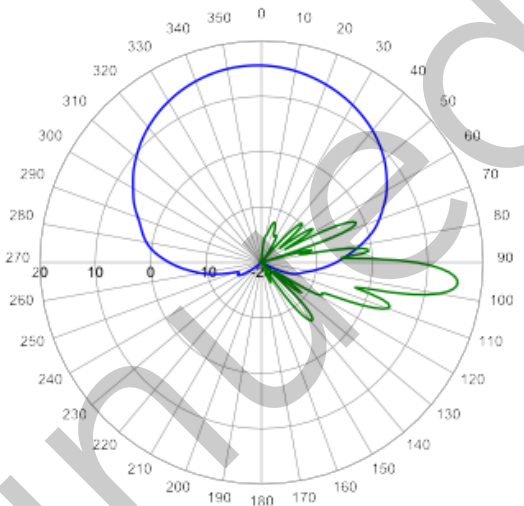
Typical Antenna Patterns

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

— Azimuth  
— Elevation

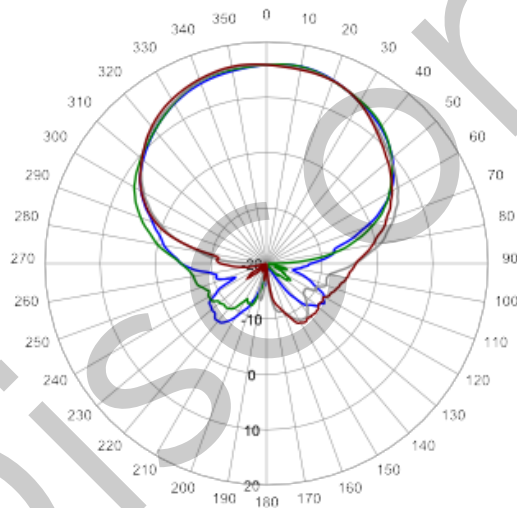


737 MHz Azimuth with Elevation 6°

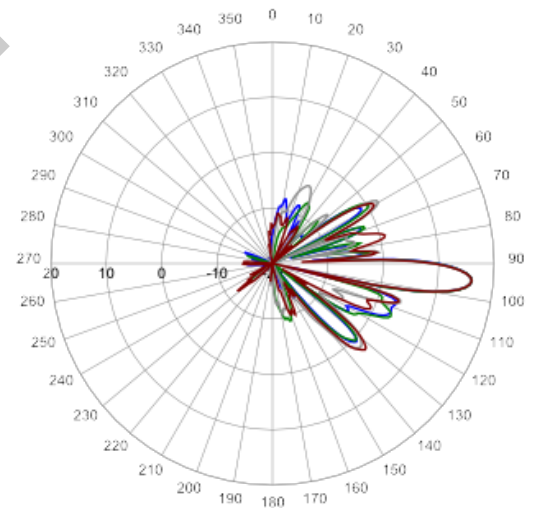


862 MHz Azimuth with Elevation 6°

Legend  
— L+  
— L-  
— R+  
— R-



1920 MHz Azimuth



1920 MHz Elevation 5°



ORDERING

Twelve Port Multi-Band Antenna

TPA-65R-LCUUUU-H8

Parts & Accessories

<b>TPA-65R-LCUUUU-H8-K</b>	8 foot (2.4 m) Twelve Port antenna with 65° azimuth beamwidth, 4.3-10 connectors, 4 factory installed BSA-RET200 RET actuators and MBK-01 mounting bracket
<b>MBK-01</b>	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment
<b>BSA-RET200</b>	Remote electrical tilt actuator
<b>KUE-CBK-AG-RRU</b>	OctoPort antenna to RRU AISG cable kit
<b>KUE-CBK-RA-AG-RRU</b>	OctoPort antenna to RRU AISG right angle cable kit

Discontinued

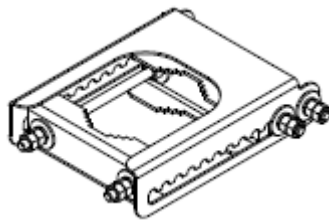


Mounting Bracket Kit

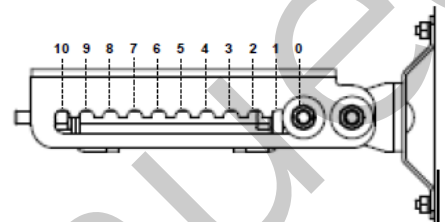
MBK-01

Mechanical

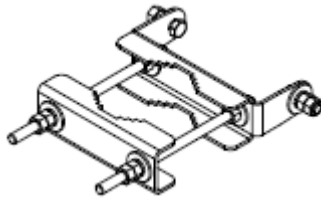
<b>Weight</b>	12.6 lbs (5.7 kg)
<b>Hinge Pitch</b>	47.25 in (1200 mm)
<b>Mounting Pole Dimension</b>	2 to 5 in (5 to 12 cm)
<b>Fastener Size</b>	M12
<b>Installation Torque</b>	40 ft·lb (54 N·m)
<b>Mechanical Tilt Adjustment</b>	0° - 10°



MBK-01 Top Adjustable Bracket



MBK-01 Top Adjustable Bracket Side View



MBK-01 Bottom Fixed Bracket

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

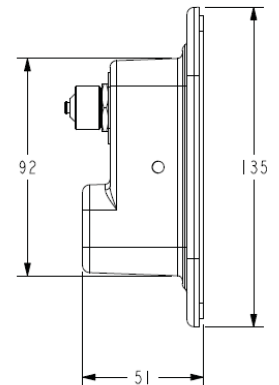
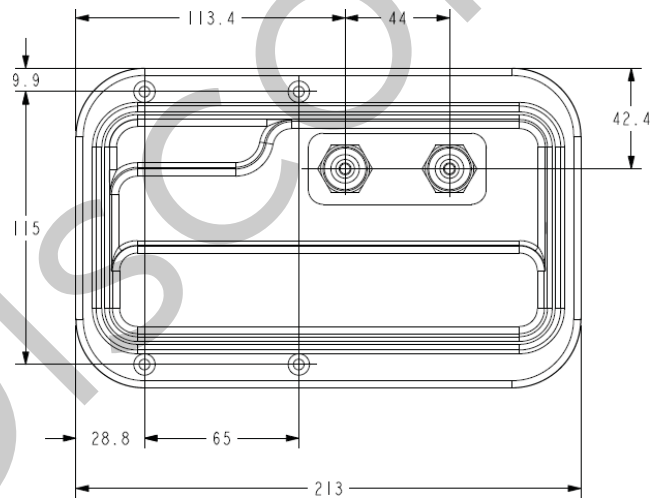
Electrical

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





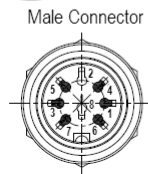
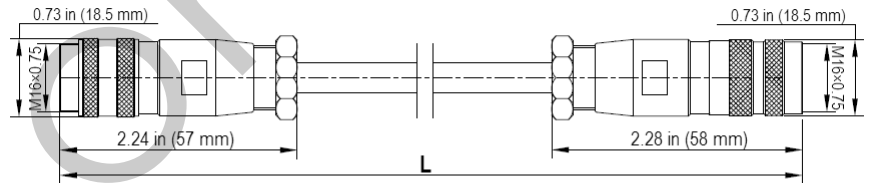


Electrical Specifications

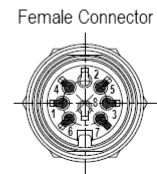
<b>Individual Cable Part Number</b>	AISGC-M-F-34	AISGC-M-F-10FT
<b>Cable style</b>	UL2464	UL2464
<b>Protocol</b>	AISG 1.1 and AISG 2.0	AISG 1.1 and AISG 2.0
<b>Maximum voltage</b>	300 V	300 V
<b>Rated current</b>	5 A at 104° F (40° C)	5 A at 104° F (40° C)

Mechanical Specifications

<b>Individual Cable Part Number</b>	AISGC-M-F-34	AISGC-M-F-10FT
<b>Cables per kit</b>	3	2
<b>Connectors</b>	2 x 8 pin IEC 60130-9 Straight male/straight female	2 x 8 pin IEC 60130-9 Straight male/straight female
<b>Tightening torque</b>	Hand tighten only ≈ 1.84 ft-lbs (2.5 N-m)	Hand tighten only ≈ 1.84 ft-lbs (2.5 N-m)
<b>Construction</b>	Shielded (Tinned Copper Braid)	Shielded (Tinned Copper Braid)
<b>Braid coverage</b>	85%	85%
<b>Jacket Material</b>	Matte Polyurethane (Black)	Matte Polyurethane (Black)
<b>Conductors</b>	1 twisted pair - 24 AWG 3 conductors - 19 AWG AWM style 2464	1 twisted pair - 24 AWG 3 conductors - 19 AWG AWM style 2464
<b>Cable Diameter</b>	0.307 in (7.8 mm)	0.307 in (7.8 mm)
<b>Length</b>	34 in (864 mm)	120 in (3048 mm)
<b>Weight</b>	0.33 lbs (0.15 kg)	0.69 lbs (.31 kg)
<b>Minimum bend radius</b>	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

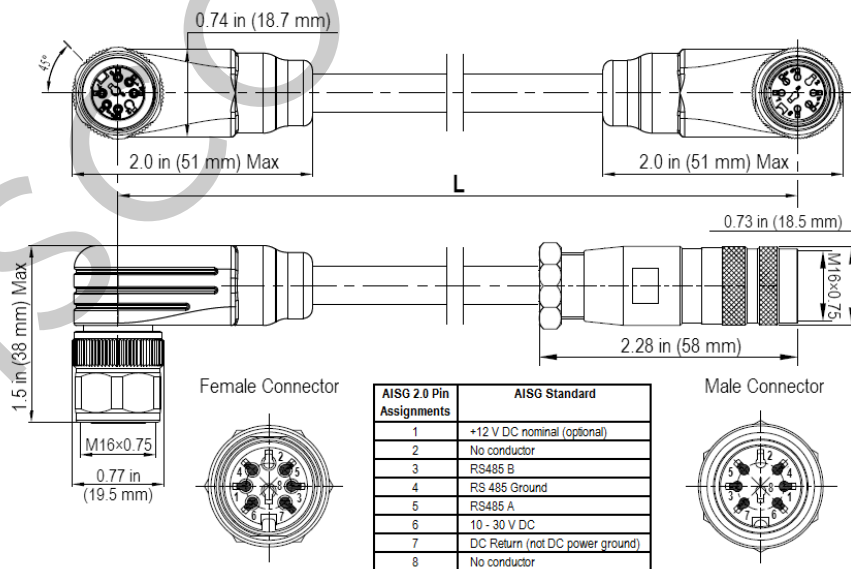
Environmental Specifications

<b>Individual Cable Part Number</b>	AISGC-M-F-34	AISGC-M-F-10FT
<b>Temperature Range</b>	-40° to 80° C	-40° to 80° C
<b>Flammability</b>	UL 1581 VW-1	UL 1581 VW-1
<b>Ingress Protection</b>	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-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	36 in (914 mm)	120 in (3048 mm)
Weight	0.23 lbs (0.10 kg)	0.77 lbs (0.35 kg)
Cables per kit	3	2

Mechanical Specifications



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



STANDARDS & CERTIFICATIONS

Twelve Port Multi-Band Antenna

TPA-65R-LCUUUU-H8

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



Discontinued

