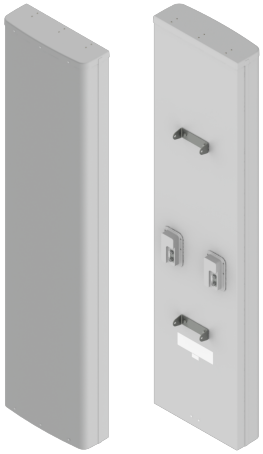
DATA SHEET

Quad Port Low-Band Array

QPA65R-K8A



- Wideband performance, covering 700 MHz, 800 MHz and 900 MHz bands
- Four Low Band ports in one antenna
- Sharp azimuth roll-off reduces Sector Power Ratio, minimizing adjacent sector interference
- Excellent Cross-Pol Discrimination and Horizontal Pattern Tracking maximizes 2x2 and 4x4 MIMO performance
- Excellent elevation side-lobe performance
- Excellent MIMO performance due to array spacing
- Excellent PIM Performance
- A multi-network solution in one radome
- 3GPP/AISG 2.0 compliant RET system with daisy chaining capability available
- Reduces tower loading
- Frees up space for tower mounted E-nodes
- Provides remote control of electrical Downtilt of antenna for easier optimization
- 7-16 DIN female or 4.3-10 female connector options

Overview

The CCI 65° QuadPort Low Band Antenna Array is a 4-port antenna with Low band (698-960 MHz) coverage. With four low band ports, our QuadPort antenna is ready for 4X4 high band MIMO.
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, 800 MHz and 900 MHz 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

- 4x4 MIMO
- Adding additional capacity without adding additional antennas

SPECIFICATIONS

Quad Port Low-Band Array

QPA65R-K8A

Electrical

Ports	4 x Low Band Ports for 698-960 MHz		
Frequency Range	698-806 MHz	824-896 MHz	880-960 MHz
Gain[1]	16.2 dBi	16.8 dBi	16.5 dBi
Gain (Average)[2]	15.7 dBi	16.4 dBi	16.1 dBi
Azimuth Beamwidth (-3dB)	65°	62°	64°
Elevation Beamwidth (-3dB)	8.7°	7.4°	7.0°
Electrical Downtilt	2° to 10°	2° to 10°	2° to 10°
Elevation Sidelobes (1st Upper)	< -19 dB	< -19 dB	< -18 dB
Elevation Sidelobes (Peak to 20º)	< -18 dB	< -18 dB	< -17 dB
Front-to-Back Ratio @180°	> 35 dB	> 30 dB	> 30 dB
Cross-Polar Discrimination (at Peak)	> 21 dB	> 22 dB	> 22 dB
Cross-Polar Discrimination (+/-60º)	> 11 dB	> 10 dB	> 10 dB
Cross-Polar Port-to-Port Isolation	> 30 dB	> 30 dB	> 27 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)	500 watts	500 watts	500 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

[1]Peak gain across sub-bands.
[2]Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V9.6.

Mechanical

Dimensions (LxWxD)	98.0x24.3x7.9 in (2489x618x200 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	537 lbs (2390 N) @ 100 mph (161 kph)
Side Wind Load	216 lbs (963 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	21.0 ft^2 (1.9 m^2)
Weight *	99 lbs (45 kg)
RET System Weight	3.0 lbs (1.5 kg)
Connector	4 x 7-16 DIN female long neck or 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

** Weight excludes mounting and RET*

SPECIFICATIONS

Quad Port Low-Band Array

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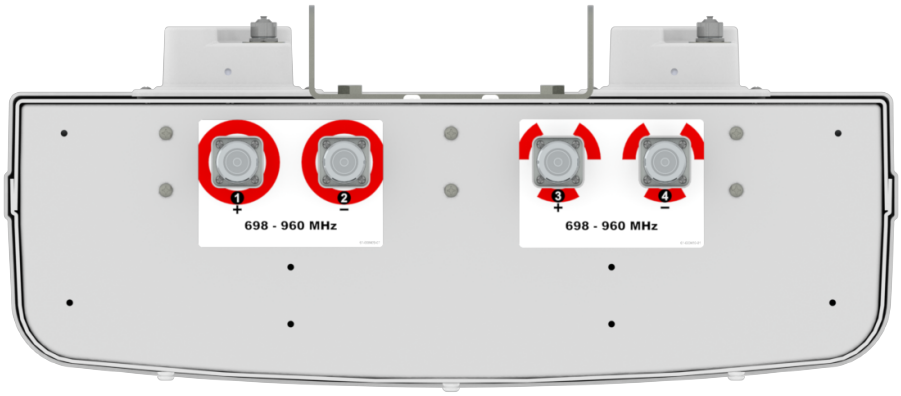
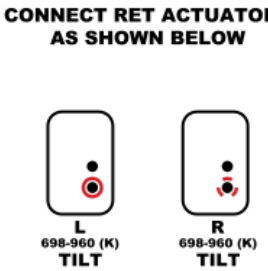
Bottom View

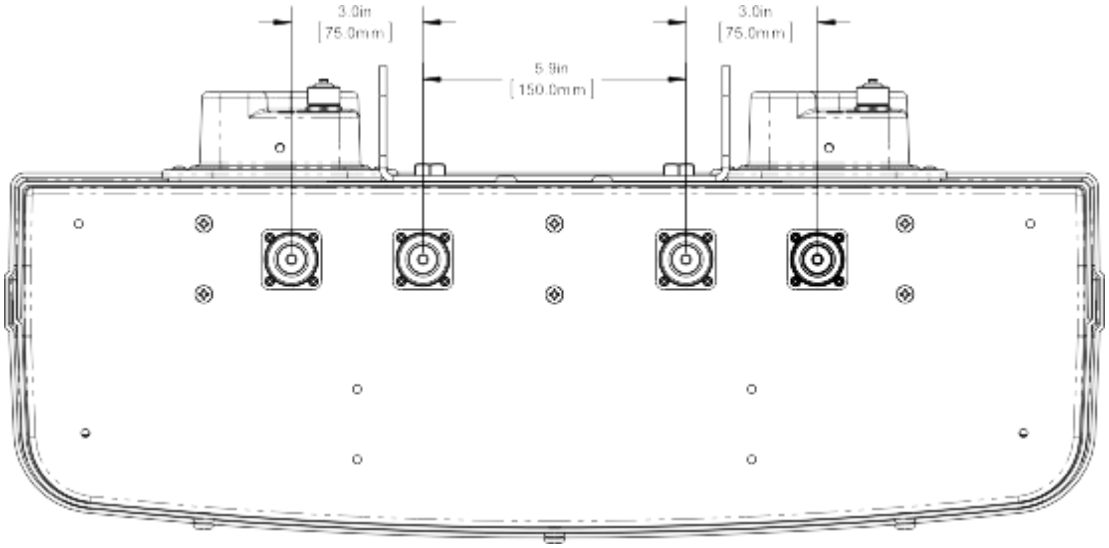


RET Connection Diagram



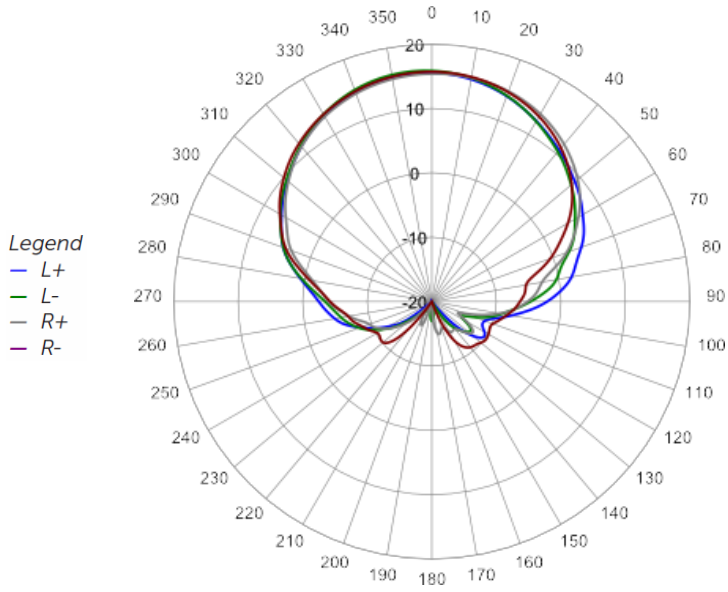
Mechanical

Connector Spacing

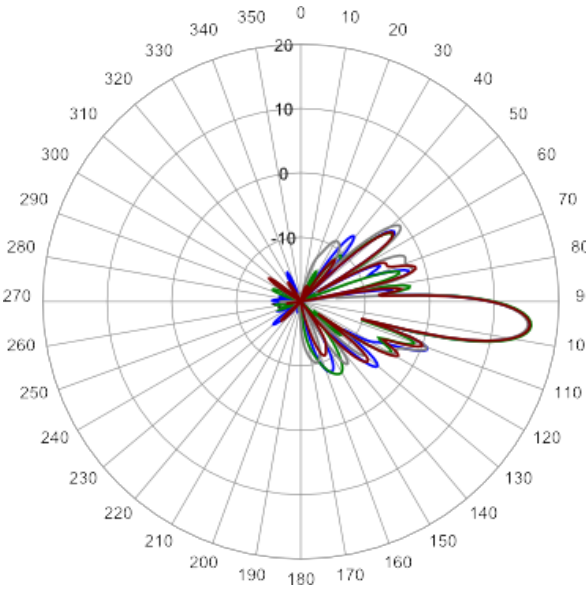


Typical Antenna Patterns

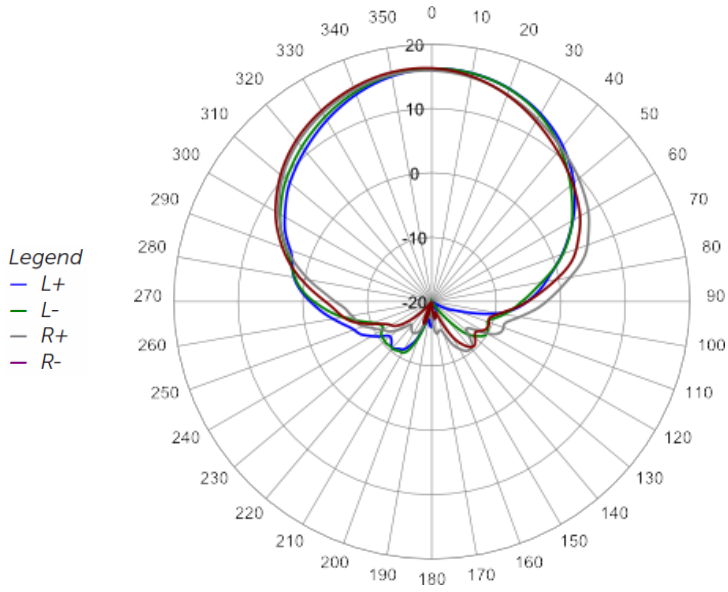
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



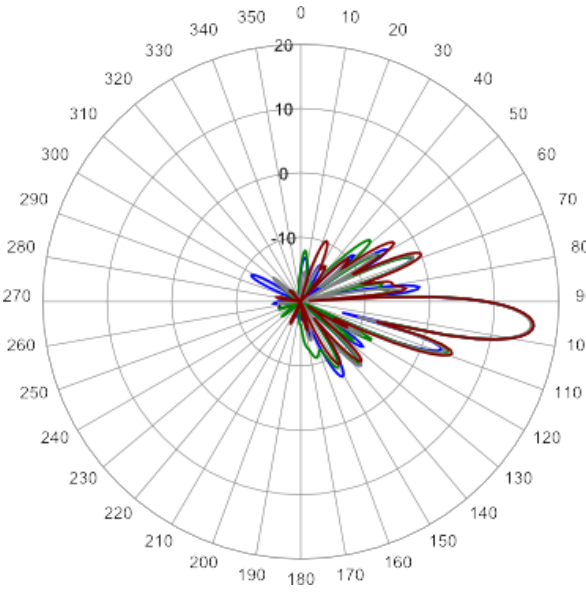
743 MHz Azimuth



743 MHz Elevation 6°



830 MHz Azimuth



830 MHz Elevation 6°

Parts & Accessories

QPA65R-K8AA	8 foot (2.5 m) QuadPort antenna with 65° azimuth beamwidth and 2 factory installed BSA-RET200 actuators and 7-16 DIN female connectors
QPA65R-K8AB	8 foot (2.5 m) QuadPort antenna with 65° azimuth beamwidth and 2 factory installed BSA-RET200 actuators and 4.3-10 female connectors
QPA65R-K8AA-K	Antenna kit with 2 factory installed RET actuators, 7-16 DIN female connectors and MBK-01 mounting bracket
QPA65R-K8AB-K	Antenna kit with 2 factory installed RET actuators, 4.3-10 female connectors 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
QPA-CBK-AG-RRU	QuadPort antenna to RRU AISG cable kit
QPA-CBK-RA-AG-RRU	QuadPort antenna to RRU AISG right angle cable kit

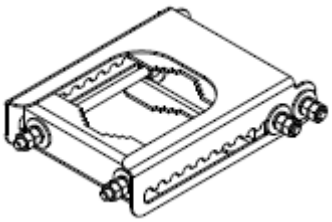
MultiPort Series

Mounting Bracket Kit

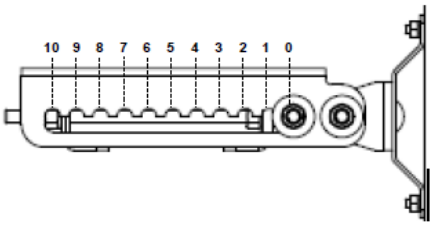
MBK-01

Mechanical

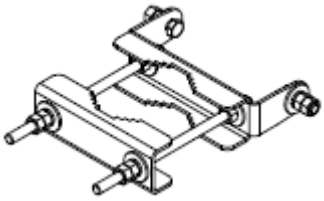
Weight	12.6 lbs (5.7 kg)
Hinge Pitch	47.25 in (1200 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M12
Installation Torque	40 ft·lb (54 N·m)
Mechanical Tilt Adjustment	0° - 10°



MBK-01 Top Adjustable Bracket



MBK-01 Top Adjustable Bracket Side View



MBK-01 Bottom Fixed Bracket

Remote Electrical Tilt Actuator (RET)

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

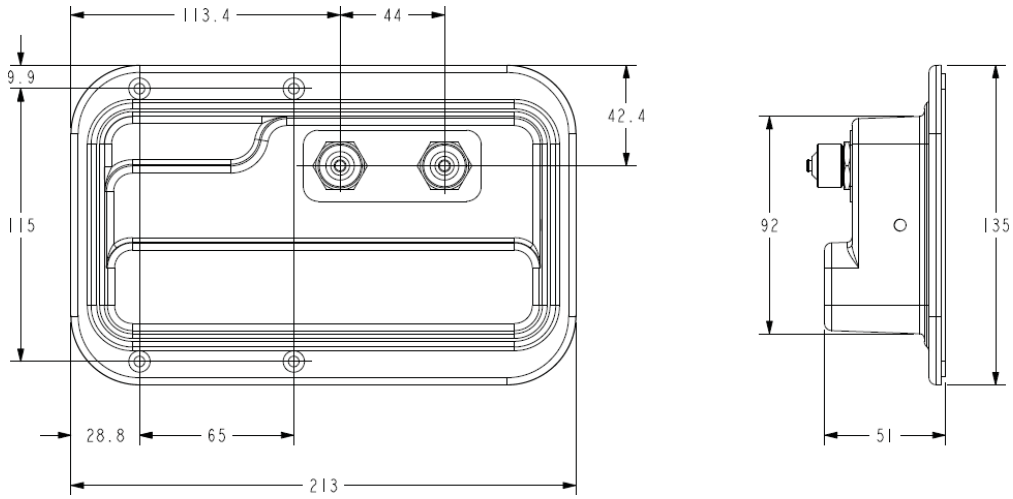
Electrical

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 x 8 pin Daisy Chain
Output Connector	Female 1 x 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=Acrylanitrile Butadiene Styrene



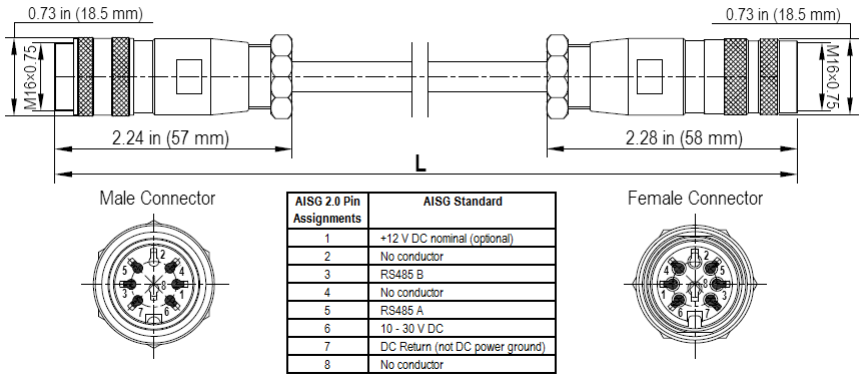
Quad Port AISG Cable Kit

QPA-CBK-AG-RRU

Electrical/Mechanical/Environmental Specifications

	RET to RET Cables	RRU to Antenna Cables
Individual Cable Part Number	AISGC-M-F-18	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	18-20 in (457-508)	120 in (3048 mm)
Weight	0.27 lbs (0.12 kg)	0.69 lbs (0.31 kg)
Cables per kit	1	2

Mechanical Specifications



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

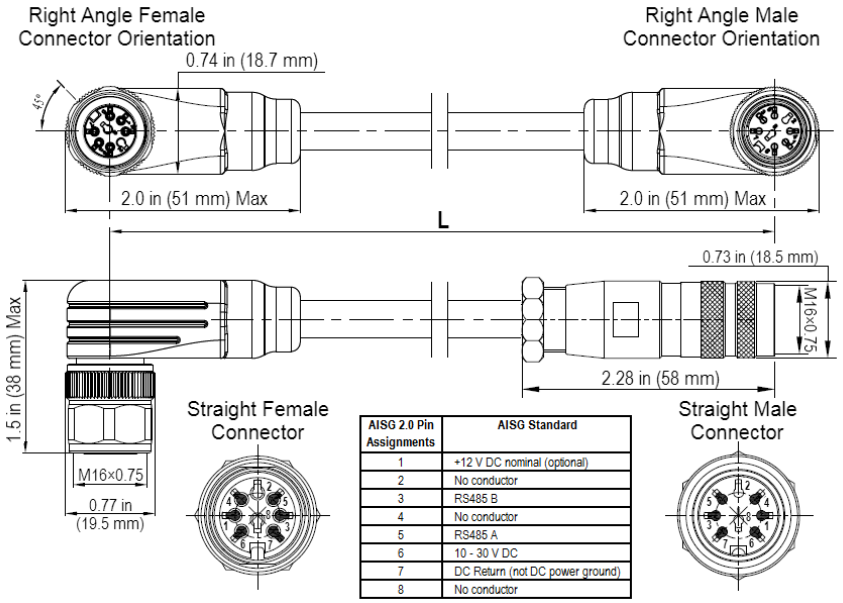
Quad Port AISG Cable Kit

QPA-CBK-RA-AG-RRU

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 ≈ 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	1	2

Mechanical Specifications



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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

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

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