



Antennas

DATA SHEET

2.3 GHz Bi-Sector™ Array

BSA-AA65-20R010-32



- Three and a half foot (1.0 m), eight port, dual beam antenna with patented asymmetrical beam shapes optimized for LTE
- Two 4x4 MIMO independent 33° beams to match existing 65° patterns, covering 2300-2400 MHz
- Two pairs of +45° and -45° cross-polarized ports for each beam
- Enhanced array spacing ensures maximum 4x4 MIMO performance
- Slim and low weight single panel design supporting two beams in a single antenna
- Field replaceable, integrated AISG 2.0 compliant Remote Electrical Tilt (RET) system with independent tilt control for each beam
- Boosts data throughput by minimizing interference and optimizing coverage
- Sharp elevation beamwidth aides in network planning
- Optimal elevation sidelobe performance
- Exceeds minimum PIM performance requirements

Overview

The CCI 2.3 GHz Bi-Sector™ array is a dual beam antenna with full 2.3 GHz band coverage. With four pairs of wideband ports covering 2300-2400 MHz, this three and a half foot (1.0 m) CCI Bi-Sector™ provides the capability to deploy two sectors of 4x4 Multiple-input Multiple-output (MIMO) in the 2.3 GHz band. On this Remote Electrical Tilt (RET) antenna all Left beams are linked and controlled with one RET motor and all Right beam are linked and controlled by a second RET motor, enabling maximum flexibility in network deployment.

CCI's unique patented bi-sector technology provides optimized overlap between the pairs of asymmetric beams, lowers soft handover losses in LTE, UMTS/HSPA+ and CDMA/EVDO systems, while minimizing interference between sectors. Fast roll-off of each of the outer beams and high front-to-back ratios ensure reduced interference. This patented approach enhances data transfer rates within LTE, UMTS and EVDO network sectors and addresses "hotspots" in mobile wireless operator networks.

The single panel design of the Bi-Sector™ Array offers the opportunity to reduce antenna count and directly replaces an existing 65° antenna without mount changes and avoids costly leasing and zoning changes. The enhanced coverage matches the existing sector footprint and minimizes the need for optimization and adjacent site changes, providing operators with significant CAPEX and OPEX cost savings.

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

Applications

- Delivers increased capacity and data-throughput for sites that are performance or capacity constrained
- Provides a higher level of spectrum reuse making it an ideal solution for spectrum limited markets
- Increase capacity without the need for new site builds or carrier adds and without using valuable spectrum resources
- Efficient use of spectrum make it ideally suited for spectrum clearing and refarming
- Two sectors of 4x4 MIMO on the 2.3 GHz band



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SPECIFICATIONS

2.3 GHz Bi-Sector™ Array

BSA-AA65-20R010-32

Electrical

	Ports	8 x Ports for 2300-2400 MHz
Frequency Range		2300-2400 MHz
Gain		20.0 dBi
Azimuth Beamwidth (-3dB)		28.5°
Azimuth Beam Cross-over		-13.5 dB
Elevation Beamwidth (-3dB)		7.1°
Electrical Downtilt		0° to 10°
Elevation Sidelobes (1st Upper)		< -17 dB
Front-to-Back Ratio		> 30 dB
Cross-Polar Port-to-Port Isolation		> 25 dB
Nullfill		> -18 dB
Voltage Standing Wave Ratio (VSWR)		< 1.4:1
Passive Intermodulation (2x20W)		≤ -150 dBc
Input Power Continuous Wave (CW)		300 watts
Polarization		Dual Lineal 45°
Input Impedance		50 ohms
Lightning Protection		DC Ground

Mechanical

Dimensions (LxWxD)	39.8x24.1x6.5 in (1012x613x165 mm)
Survival Wind Speed	> 125 mph (> 201 kph)
Front Wind Load	205 lbs (912 N) @ 100 mph (161 kph)
Side Wind Load	63 lbs (279 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	8.0 ft ² (0.7 m ²)
Weight*	52.9 lbs (24.0 kg)
RET System Weight	3.3 lbs (1.5 kg)
Connector	8 x 7-16 DIN female long neck
Mounting Pole	2 to 5 in (5 to 12 cm)

* Weight excludes mounting and RET



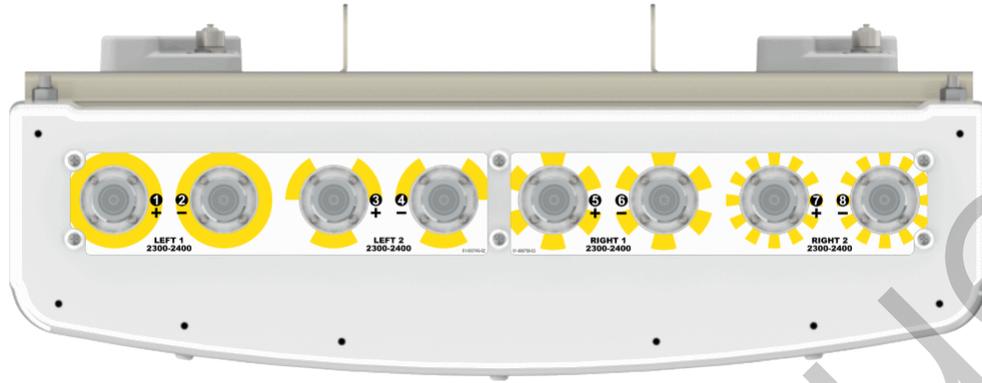
Antennas

SPECIFICATIONS

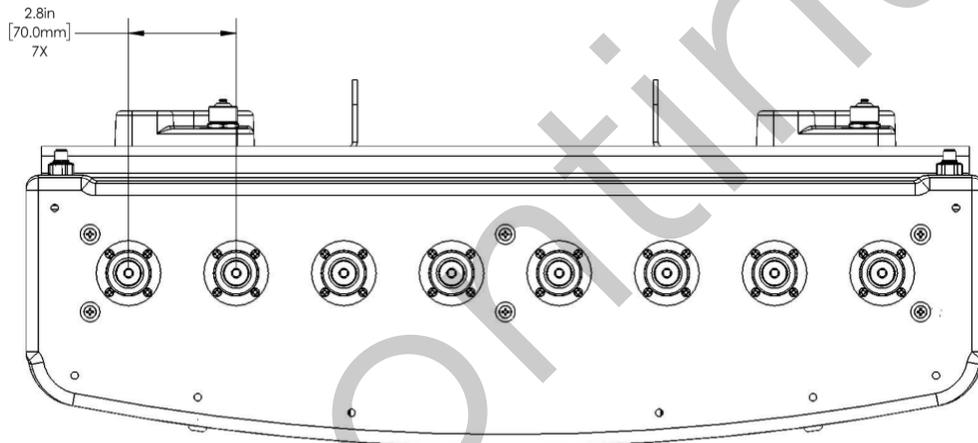
2.3 GHz Bi-Sector™ Array

BSA-AA65-20R010-32

Bottom View



Connector Spacing





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SPECIFICATIONS

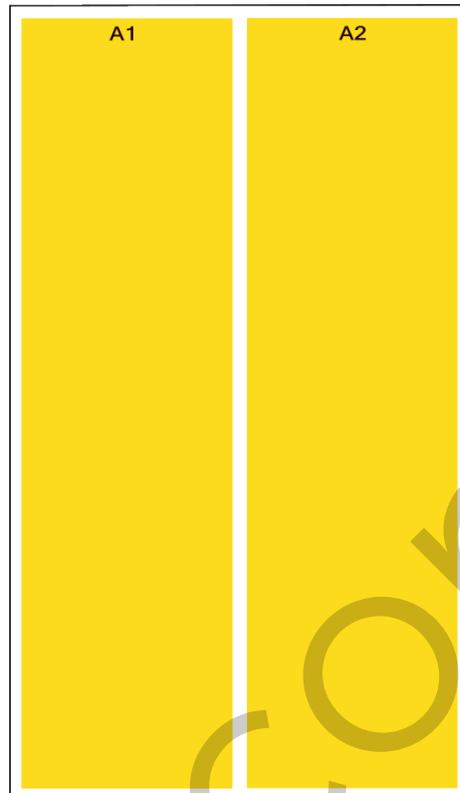
2.3 GHz Bi-Sector™ Array

BSA-AA65-20R010-32

Mechanical

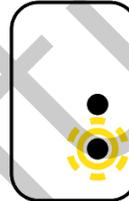
Element and RET Configuration

(Type 1 RET Configuration Only) Top of antenna Viewed from rear



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

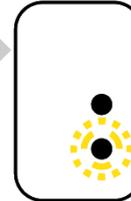
Top of antenna



2300-2400

Left 1 & 2

Ports 1, 2, 3, 4



2300-2400

Right 1 & 2

Ports 5, 6, 7, 8

Array	Ports	Freq (MHz)	Beam	Ports controlled by common RET
A1	1, 2	2300-2400	Left 1	1, 2, 3 & 4
A2	3, 4	2300-2400	Left 2	
A1	5, 6	2300-2400	Right 1	5, 6, 7 & 8
A2	7, 8	2300-2400	Right 2	



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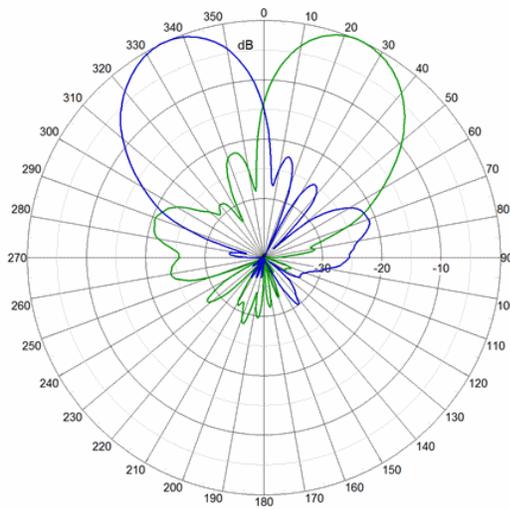
SPECIFICATIONS

2.3 GHz Bi-Sector™ Array

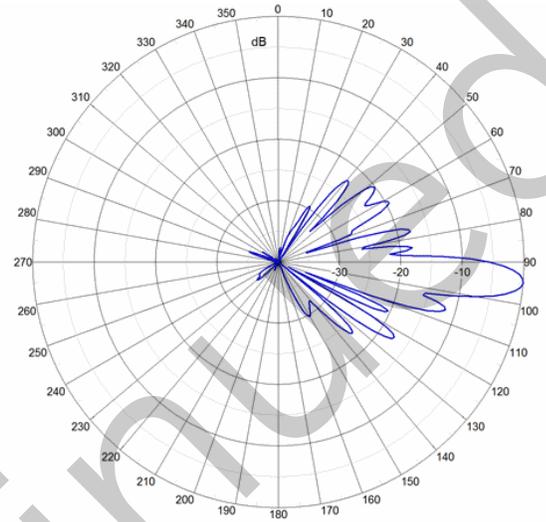
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Typical Antenna Patterns

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



2350 MHz Azimuth



2350 MHz Elevation 5°



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ORDERING

2.3 GHz Bi-Sector™ Array

BSA-AA65-20R010-32

Parts & Accessories

BSA-AA65-20R010-32-K	Four foot (1.0 m) Bi-Sector™ Array 2300/2400 MHz with 7-16 DIN connectors, 2 factory installed BSA-RET200 RET actuators and MBK-02 mounting bracket
MBK-02	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment
BSA-RET200	Remote electrical tilt actuator
CBK-AG-RRU-001	Two RET antenna to RRU AISG cable kit
CBK-RA-AG-RRU-005	Two RET antenna to RRU AISG right angle cable kit
CBK-AG-RRU-003	Two RET antenna to RRU AISG cable kit with single long RRU (5m) Cable

Discontinued



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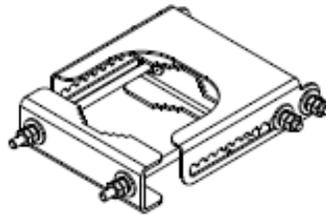
ACCESSORIES

Mounting Bracket Kit

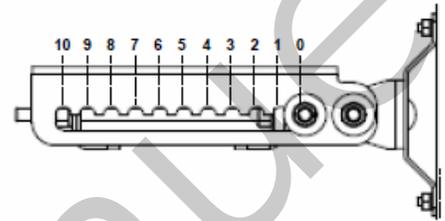
MBK-02

Mechanical

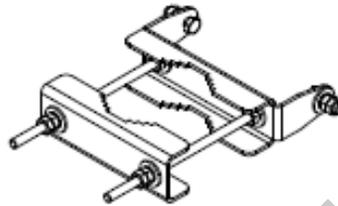
Weight	9.8 lbs (4.4 kg)
Hinge Pitch	31.5 in (800 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft-lbs (20 N·m)
Mechanical Tilt Adjustment	0° - 10°



MBK-02 Top Adjustable Bracket



MBK-02 Top Adjustable Bracket Side View



MBK-02 Bottom Fixed Bracket



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ACCESSORIES

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

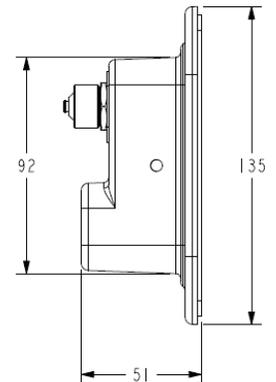
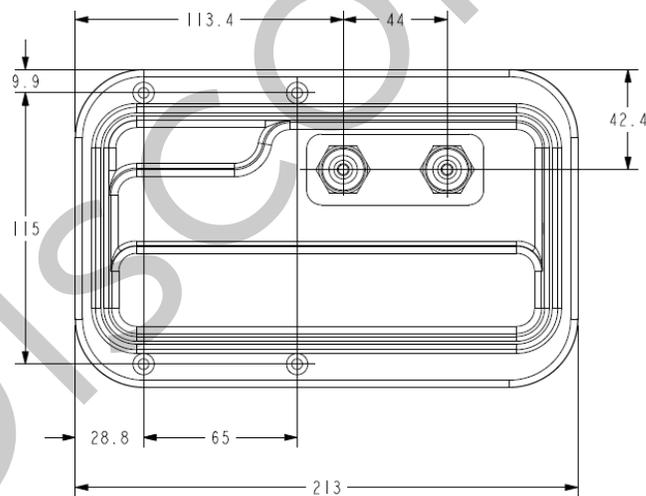
Electrical

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





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ACCESSORIES

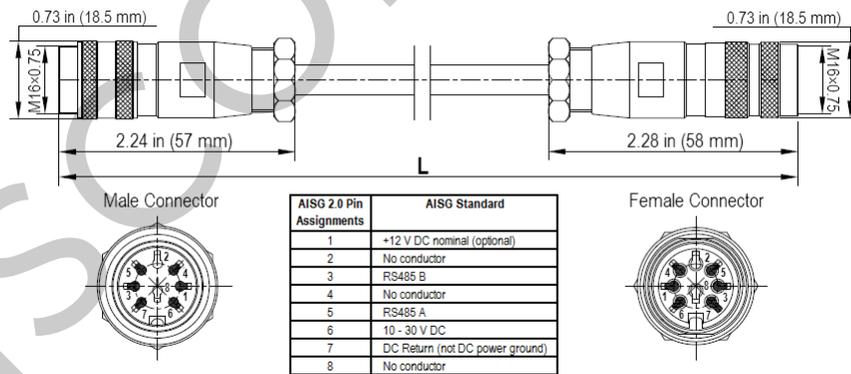
AISG Cable Kit

CBK-AG-RRU-001

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	1	2

Mechanical Specifications



AISG-Male to AISG-Female Jumper Cable



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ACCESSORIES

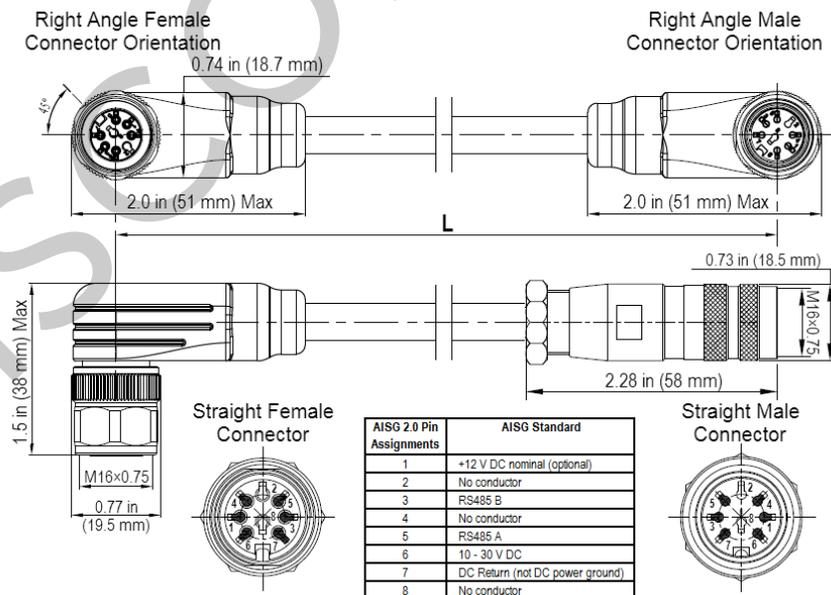
AISG Cable Kit

CBK-RA-AG-RRU-005

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 \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	36 in (914 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



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



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ACCESSORIES

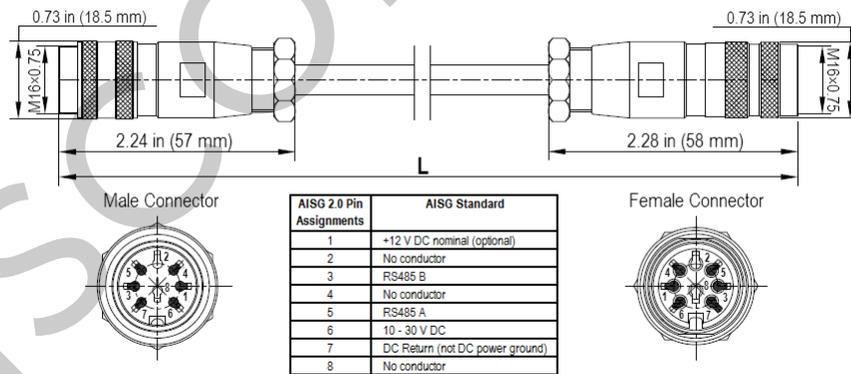
AISG Cable Kit

CBK-AG-RRU-003

Electrical/Mechanical/Environmental Specifications

	RET to RET Cables	RRU to Antenna Cables
Individual Cable Part Number	AISGC-M-F-27	AISGC-M-F-16FT
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 Straight male/straight female	
Length	27 in (686 mm)	196 in (5 m)
Weight	0.33 lbs (0.15 kg)	0.69 lbs (0.31 kg)
Cables per kit	1	1

Mechanical Specifications



AISG-Male to AISG-Female Jumper Cable



Antennas

STANDARDS & CERTIFICATIONS

2.3 GHz Bi-Sector™ Array

BSA-AA65-20R010-32

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



Discontinued



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Communication Components Inc.

EXTENDING WIRELESS PERFORMANCE