

**850/900 Bi-SECTOR™ ARRAY**

**Model BSA-B65-17R412-02**



**850/900  
Bi-Sector Array**

**Benefits**

- ◆ Dramatically increase site capacity through higher order sectorization
- ◆ Avoid carrier-adds and building of new capacity sites
- ◆ Patented asymmetrical beam shape maximizes coverage in a standard tri-sector cell plan
- ◆ Boosts data throughput by lowering interference
- ◆ Provides remote control of electrical downtilt of antenna for easier optimization

**Features**

- ◆ Single panel design supporting two beams without mount changes
- ◆ Asymmetric dual beams optimized to match existing cloverleaf (65°) deployments
- ◆ Dual +45° and -45° cross-polarization for Left and Right beams
- ◆ Medium-gain antenna with two ports per LH and RH beam (4 RF ports per panel)
- ◆ 3GPP/AISG 2.0 compliant
- ◆ Daisy chaining capability
- ◆ Software upgradeable
- ◆ Rugged, weather resistant and highly reliable internal design

**Applications**

- ◆ Upgrade of data-throughput or capacity constrained sites
- ◆ Spectrum limited markets
- ◆ Deferral of CDMA/EVDO or UMTS//HSPA+ carrier adds
- ◆ Spectrum clearing and refarming

The CCI RET Series 850/900 Bi-Sector™ Array is an advanced phased array that supports two traditional sectors from a single antenna. Our unique patented bi-sector technology provides optimized overlap between pairs of asymmetric beams, lowers soft handover losses in UMTS/HSPA+ and CDMA/EVDO systems, and minimizes interference between sectors. Fast-roll off of each of the outer beams and high front-to-back ratios ensure reduced interference. Such an approach enhances data transfer rates within UMTS and EVDO network sectors and addresses “hotspots” in mobile wireless operator networks for GSM, CDMA, and UMTS technologies.

The remote electrical tilt (RET) Series 850/900 Bi-Sector Array enables operators to remotely control the electrical down-tilt of the antenna in the field with sealed AISG compliant RET actuators. The CCI RET system is designed to meet the reliability, flexibility and efficiency requirements in a wide range of environments. The RET actuators are fully AISG compliant, software upgradeable, daisy chaining capable and fully weather resistant. The remote electrical capability allows independent adjustment of sub-beams for easier optimization.

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 new coverage that matches the existing footprint minimizes the need for optimization and adjacent site changes, and allows for Bi-Sector Array sites to have significant CAPEX and OPEX cost savings.

All CCI antennas are manufactured under ISO 9001.



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**BSA-B65 Bi-Sector™ Array**

**Electrical Specifications**

Frequency Range	824-896 MHz	870-960 MHz
Azimuth Beamwidth (-3dB)	31.5° Asymmetric	29.0° Asymmetric
Elevation Beamwidth (-3dB)	14.4°	13.5°
Elevation Sidelobes (1st Upper) (Typ.)	< -18dB	< -18dB
Gain	16.2 dBi (14.1 dBd)	16.5 dBi (14.4 dBd)
Polarization	±45° Slant	±45° Slant
VSWR	< 1.4:1	< 1.4:1
Front-to-Back Ratio	> 30dB	> 30dB
Isolation <sup>1</sup> (Rx bands)	> 30dB	> 30dB
Electrical Downtilt	4° to 12°	4° to 12°
Input Impedance	50 Ohms	50 Ohms
Input Power	300 Watts CW	300 Watts CW
Passive Intermodulation (2x20W)	≤ -150dBc	≤ -150dBc
Lightning Protection	DC Ground	DC Ground

<sup>1</sup> Cross-Polar Port-to-Port Isolation

**Mechanical Specifications**

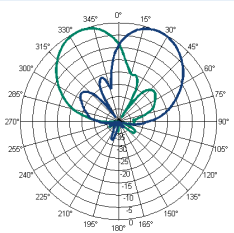
Dimensions (LxWxD)	64.0 x 32 x 9 inches (1630 x 810 x 220 mm)
Survival Wind Speed	> 120 mph (> 193 km/hr)
Front Wind Load	429 lbs (1907 N) @ 100 mph (161 kph)
Side Wind Load	140 lbs (621 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	14.0 ft <sup>2</sup> (1.3 m <sup>2</sup> )
Weight (without Mounting)	99.0 lbs (45 kg)
RET System Weight	3.3 lbs (1.5 kg)
Connector	4, 7-16 DIN female
Mounting Pole	2-5 inches (5-12 cm)



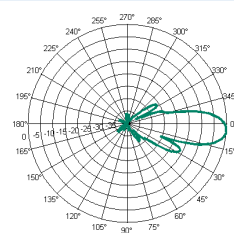
**Rear View**

**Bottom View**

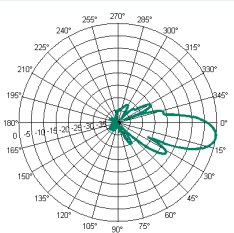
**Antenna Patterns\***



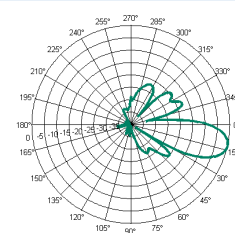
**Azimuth**



**Elevation 4°**



**Elevation 8°**



**Elevation 12°**

\*Typical antenna patterns. For detail information on antenna pattern, please contact us at [info@cciproducts.com](mailto:info@cciproducts.com). All specifications are subject to change without notice.

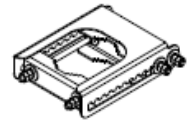
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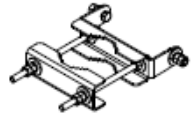
**Ordering Information:**

BSA-B65R-17R412-02	Antenna (6'), Bi-Sector Array, 850/900 MHz, with Factory Installed Actuators (2)
BSA-B65R-17R412-02-K	Complete Kit with Antenna, Factory Installed Actuators (2) and MBK-01 Mounting Bracket
BSA-RET200	RET Actuator
MBK-01	Mounting Bracket (Top & Bottom) with 0° through 10° Mechanical tilt Adjustment: See Installation Guide 50-000036-01 for Details: Weight 13.6 Lbs. (6.2 kg)

**MBK-01 Top Mounting Bracket**



**MBK-01 Bottom Mounting Bracket**



**RET [Remote Electrical Tilt] System**

**General Specification**

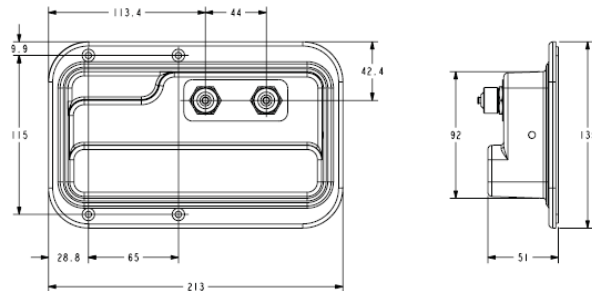
Part Number	BSA-89-000006
Protocols	AISG 2.0
RET Type (Reference AISG 1.1)	Type 1
Adjustment Cycles	>10,000 cycles
Adjustment Time (full range)	30 sec
Tilt Accuracy	±0.1°
Temperature Range	-40°C ... +70°C

**Electrical Specification**

Interface Signal	Data   dc
Input Voltage Range	10-30 Vdc
Current consumption during tilting	120mA at Vin = 24V
Current consumption idle	55mA at Vin=24V
Hardware Interface	AISG - RS 485 A/B
Input Connector	1x8-pin Daisy Chain In Male
Output Connector	1x8-pin Daisy Chain Out Female

**Mechanical Specification and Dimensions**

Housing Material	ASA / ABS / Aluminum
Dimensions (H x W x D)	8 x 5 x 2 inches (213 x 135 x 51 mm)
Weight	1.5 lbs (0.68 kg)



**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 60068-2-30, IEC 60068-2-52, IEC 60068-2-64, GR-63-CORE 4.3.1, EN60529 IP24

**Regulatory Certification**

AISG, FCC Part 15 Class B, CE, CSA US