

DUAL BAND BI-SECTOR™ ARRAY

Model BSA-DA65-19R212-02



Dual Band 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

Dual Band array provides both 850 MHz and 1900 MHz coverage in a single enclosure

Provides remote control of electrical downtilt of antenna for easier optimization

The CCI RET Series Dual Band Bi-Sector™ Array is an advanced phased array that supports two traditional sectors from a single antenna and provides both 850 MHz and 1900 MHz coverage in a single enclosure. 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 Dual Band 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.

Features

- ◆ Single panel design supporting two beams without mount changes
- ◆ Asymmetric dual beams optimized to match existing cloverleaf (65°) deployments from 816-896 MHz and 1850-1995 MHz
- ◆ Dual +45° and -45° cross-polarization for Left and Right beams
- ◆ Independently adjustable sub-beams provide unmatched flexibility in optimization, leading to differentiated performance
- ◆ 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



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BSA-DA65 Bi-Sector™ Array

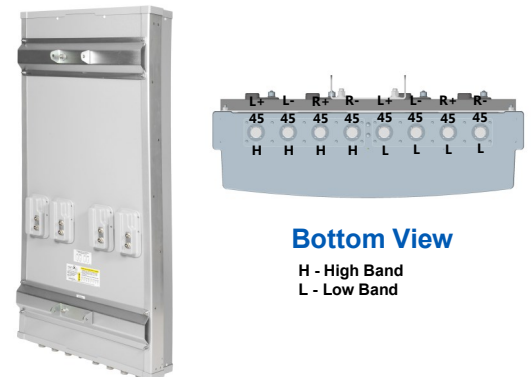
Electrical Specifications

Frequency Range	816-896 MHz	1850-1995 MHz
Azimuth Beamwidth (-3dB)	30.0° ±3.0° Asymmetric	30.0° ±3.0° Asymmetric
Elevation Beamwidth (-3dB)	14.0° ± 1.0°	6.7° ± 0.5°
Elevation Sidelobes (1st Upper) (Typ.)	< -17dB	< -17dB
Gain	16.5 ±1dBi (14.4 dBd)	18.3 ± 1 dBi (16.2 dBd)
Polarization	±45° Slant	±45° Slant
VSWR	< 1.5:1	< 1.5:1
Front-to-Back Ratio	> 30dB	> 30dB
Isolation ¹	> 30dB	> 30dB (6° and 10° tilts); >25dB (2° tilt)
Electrical Downtilt	4° to 12°	2° to 10°
Input Impedance	50 Ohms	50 Ohms
Input Power	250 Watts CW	250 Watts CW
Passive Intermodulation (2x20W)	≤ -150dBc	≤ -150dBc
Lightning Protection	DC Ground	DC Ground

¹ 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 ² (1.3 m ²)
Weight (without Mounting)	99.0 lbs (45 kg)
RET System Weight	6.6 lbs (3.0 kg)
Connector	8; 7-16 DIN female
Mounting Pole	2-5 inches (5-12 cm)

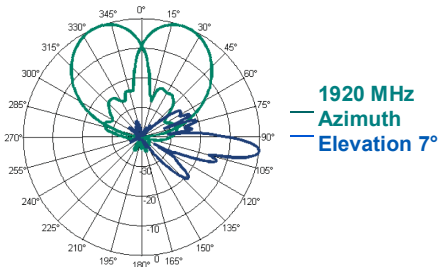
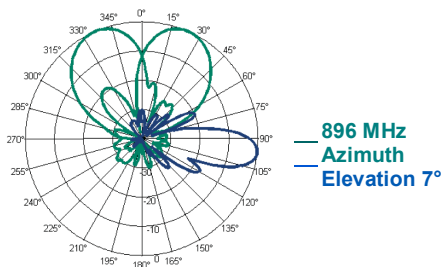


Rear View

Bottom View

H - High Band
L - Low Band

Antenna Patterns*



*Typical antenna patterns at 896 MHz and 1920 MHz. For detailed information on antenna patterns, please contact us at info@cciprducts.com. All specifications are subject to change without notice.

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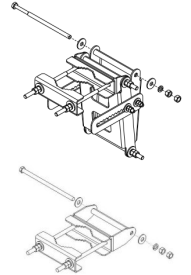
Model BSA-DA65-19R212-02

Ordering Information:

BSA-M65-19R212-02	Antenna (6'), Bi-Sector Array, Dual-band (850 MHz & 1900 MHz), with Factory Installed Actuators (4)
BSA-M65-19R212-02-K	Complete Kit with Antenna (6'), with Factory Installed Actuators (4) and M03 Mounting Bracket
BSA-RET200	RET Actuator
BSA-M03	Mounting Bracket (Top & Bottom with 0° through 10° Mechanical tilt Adjustment)

M03 Top Mounting Bracket

M03 Bottom Mounting Bracket



RET [Remote Electrical Tilt] System

General Specification

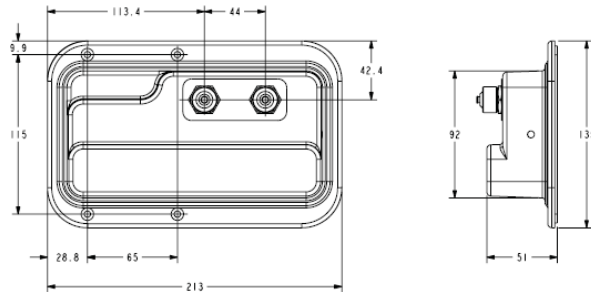
Part Number	BSA-89-000001
Protocols	AISG 2.0
Adjustment Cycles	>10,000 cycles
Adjustment Time (full range)	30 sec
Tilt Accuracy	±0.1°
Temperature Range	-40°C ... +70°C

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 Dimen-

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