



# Antennas

DATA SHEET

## Dual Band Cardioid Antenna

SCA-CA-360F-BU-H2



- Two foot (0.5 m), four port, dual band Cardioid antenna with a notched pattern ideal for utility pole mounting covering 698-894 MHz and 1710-2360 MHz
- Shaped pattern reduces energy loss from pole mounting and provides uniform coverage across all bands of operation in a single compact radome
- Two pair of cross-polarized ports covering the full operating frequency range
- Small size and center mount post make it ideal for mounting on utility, lighting and traffic poles
- Unique shaped pattern optimized for pole mounting increases deployment options
- Optional GPS antenna integrated into the radome
- Simple single housing blends easily into urban environments
- Simplified radio assignments due to all band design
- Only one antenna is needed due to multi-band operation
- Exceeds minimum PIM performance requirements

### Overview

CCI's multi-band Cardioid Small Cell antenna provides full 700 MHz, SMR 800, Cellular, AWS, PCS and WCS band coverage. With two high band cross-polarized ports covering 1710-2360 MHz and two low band cross-polarized ports covering 698-894 MHz, this two foot (0.5 m) compact antenna provides the optimal pattern for outdoor small cell and micro-cell deployment in urban and suburban environments. Typical outdoor small cell deployments are on existing utility and light poles such that the mounting pole is in close proximity and directly in the line of sight of the antenna radiation pattern. Consequently, when using conventional omnidirectional or quasi-omni antennas, there is a significant distortion of the antenna patterns. More importantly, there is a high probability of generating intermodulation products which can significantly deteriorate the receiver sensitivity and the through put performance of the small cell. This problem is particularly exacerbated when deployments are on metal poles and when higher power small cells are utilized.

Utilizing CCI's unique beam shaping technology the multi-band Cardioid antenna delivers a unique solution to this problem by creating a deep null in the antenna pattern in the direction of the mounting pole, thus minimizing pattern distortion and the generation of intermodulation products.

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

### Applications

- Microcells and Small Cells in Urban, Suburban and other visually sensitive environments
- Outdoor Distributed Antenna Systems (ODAS), neutral host in venues, campuses and other outdoor coverage applications



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### SPECIFICATIONS

#### Electrical

Ports	2 x Ports which cover the full range from 698-894 MHz		2 x Ports which cover the full range from 1710-2360 MHz			
Frequency Range	698-746 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2150 MHz	2305-2360 MHz	
Gain	6.7 dBi	6.6 dBi	10.4 dBi	10.2 dBi	10.8 dBi	11.0 dBi
Cardioid Null depth	26.0 dB	22.0 dB	25.0 dB	25.0 dB	25.0 dB	20.0 dB
Elevation Beamwidth (-3dB)	38.5°	33.5°	15.5°	17.0°	13.2°	12.6°
Electrical Downtilt	4°	4°	2°	2°	2°	2°
First upper sidelobes at peak gain	< -12 dB	< -11 dB	< -16 dB	< -16 dB	< -18 dB	< -18 dB
Cross-Polar Port-to-Port Isolation	> 20 dB	> 20 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Interband Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 20 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)	300 watts	300 watts	200 watts	200 watts	200 watts	200 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 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)	21.5 x 15.4 x 13.5 in (546 x 392 x 342 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	71 lbs (315 N) @ 100 mph (161 kph)
Side Wind Load	62 lbs (275 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	2.8 ft <sup>2</sup> (0.3 m <sup>2</sup> )
Weight *	14.3 lbs (6.5 kg)
Connector (RF)	4 x 4.3-10 female
Connector (GPS)(if equipped)	1 x 4.3-10 female
Mounting Pole	2 to 5.0 in (5 to 12 cm)

\* Weight excludes mounting



# Antennas

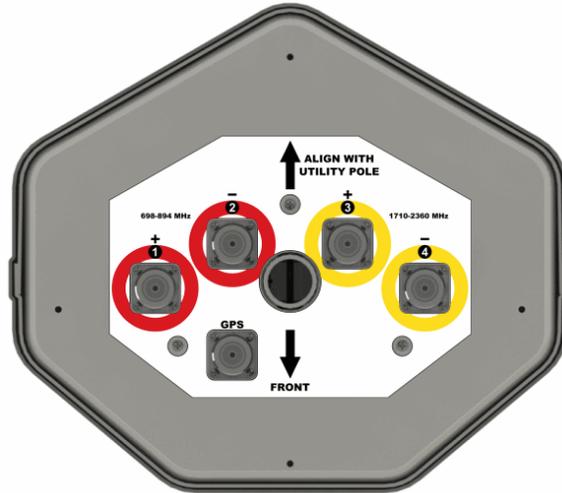
## SPECIFICATIONS

### Dual Band Cardioid Antenna

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#### Mechanical

Bottom Views



Front View



Rear View



# Antennas

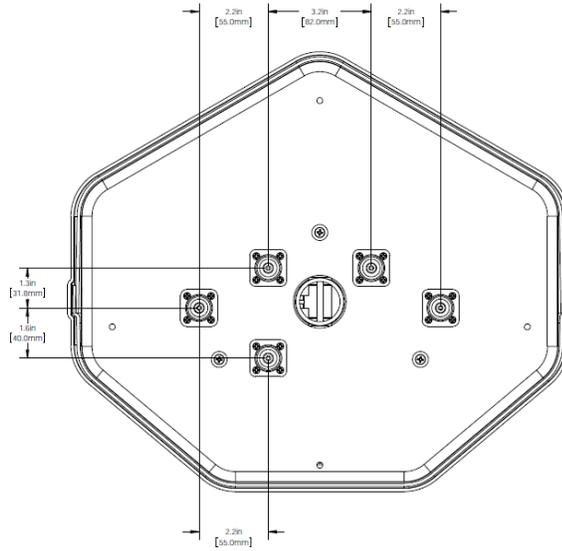
## Dual Band Cardioid Antenna

SCA-CA-360F-BU-H2

### SPECIFICATIONS

#### Mechanical

##### Connector Spacing





# Antennas

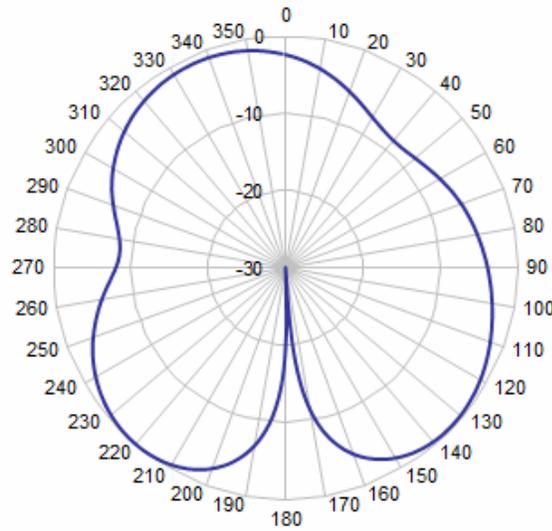
## SPECIFICATIONS

### Dual Band Cardioid Antenna

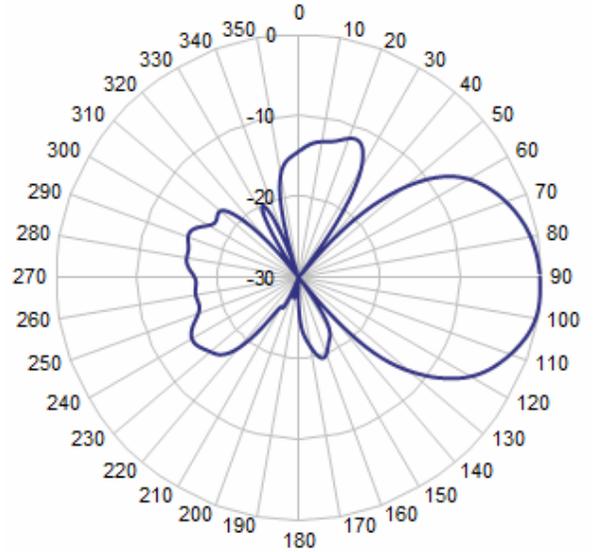
SCA-CA-360F-BU-H2

#### Typical Antenna Patterns

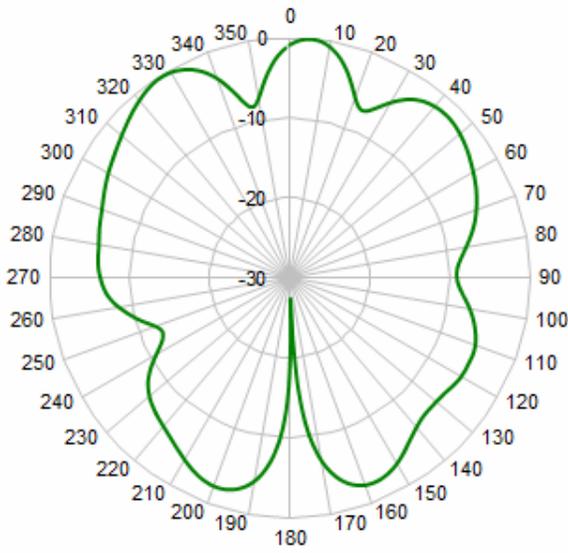
For detailed information on additional antenna patterns, contact customer support at [support@cciproducts.com](mailto:support@cciproducts.com)



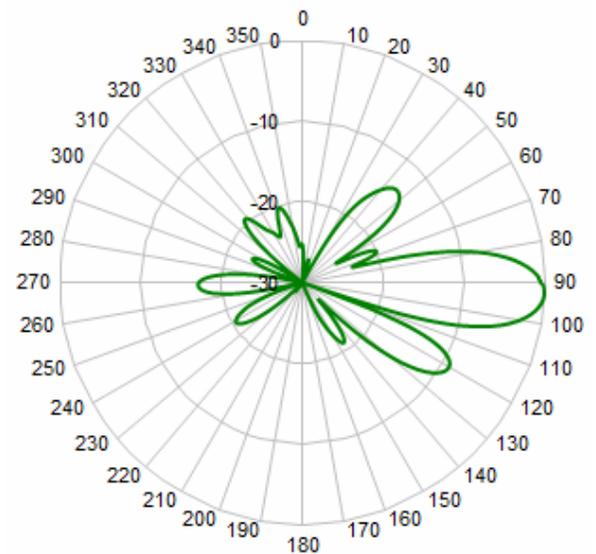
731 MHz Azimuth



731 MHz Azimuth Elevation 4°



1910 MHz Azimuth



1910 MHz Azimuth Elevation 2°



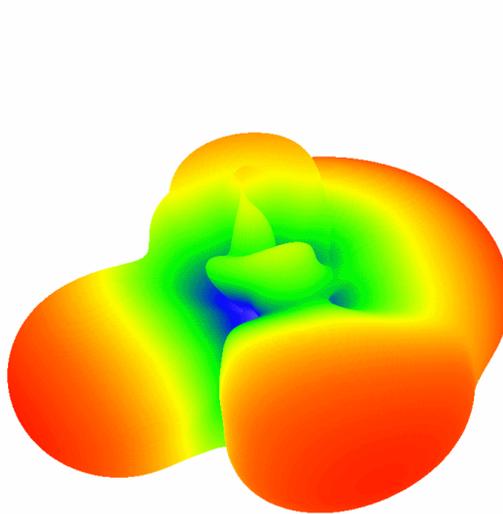
# Antennas

SPECIFICATIONS

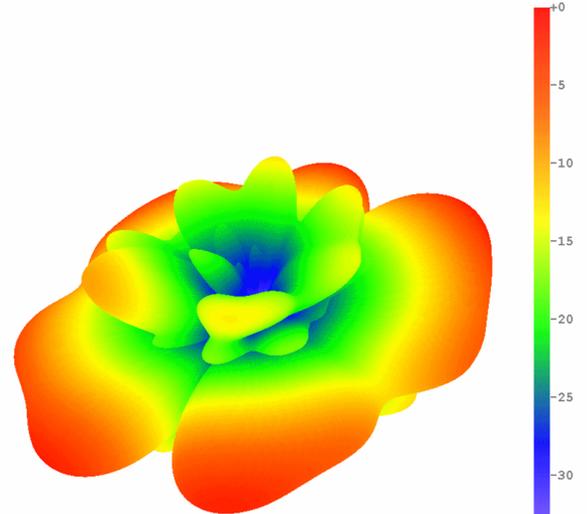
Dual Band Cardioid Antenna

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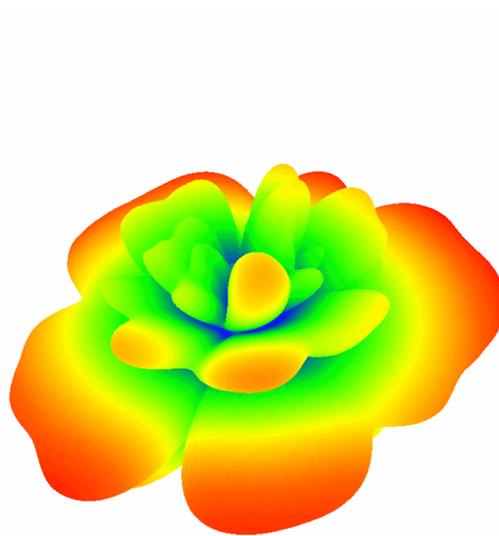
3D Antenna Patterns



731 MHz



1910 MHz



2350 MHz



# Antennas

ORDERING

## Dual Band Cardioid Antenna

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### Parts & Accessories

<b>SCA-CA-360F-BU-H2</b>	Two foot (0.5 m) antenna Cardioid Omni, Dual-band
<b>SCA-CA-360F-BU-H2-K</b>	Two foot (0.5 m) antenna Cardioid Omni, Dual-band and MBC-04 clamp kit(suitable for pole or wall mounting)
<b>SCA-CA-360F-BU-H2G-K</b>	Two foot (0.5 m) antenna Cardioid Omni, Dual-band with internal GPS receiver and MBC-04 clamp kit(suitable for pole or wall mounting)
<b>MBC-04</b>	Mast bracket clamp kit, Pipe range 2 - 5 in. (5 to 12 cm)



# Antennas

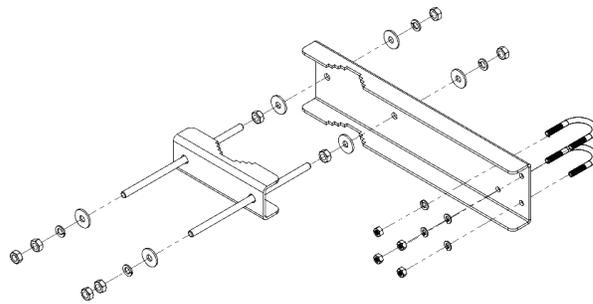
ACCESSORIES

## Mast Bracket Clamp

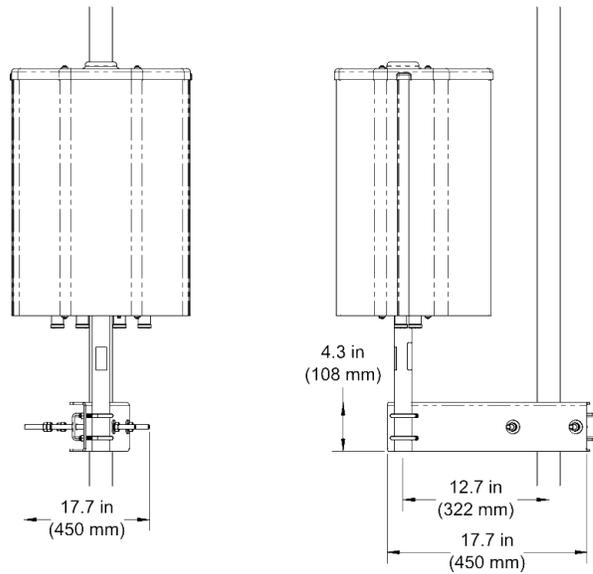
MBC-04

Mechanical

<b>Weight</b>	8.4 lbs (3.8 kg)
<b>Mounting Pole Dimension</b>	2 to 5 in (5 to 12 cm)
<b>Fastener Size</b>	M10
<b>Installation Torque</b>	15 ft-lbs (20 Nm)



MBC-04 Bracket



Cartioid Antenna Mount views



# Antennas

## STANDARDS & CERTIFICATIONS

### Dual Band Cardioid Antenna

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#### Standards & Compliance

**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 606529, IP 24

#### Certifications

Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001

