Antennas

DATA SHEET

Three-Beam Special Events Antenna

MBA3F-B3A

- Three low-band beams optimized for maximum throughput over the 698-896 MHz frequency band
- Separate beams support three low-band sub-sectors
- Dual +/- 45° cross-polarization for each beam pair
- Six low-band ports simultaneously covering LTE 700 MHz, 800 MHz and Cellular 850 MHz
- Excellent PIM performance
- Increases site capacity through higher order sectorization
- Optimized interbeam azimuth crossover and azimuth offsets for maximum throughput
- Boosts data throughput by lowering interference

Overview

The CCI Three Beam Special Events Antenna simultaneously supports (3) low-band sectors from a single antenna. This Three-Beam Antenna is intended for use at sporting and entertainment venues where social media and the ability to share photos and videos demand high capacity and high data rates. The low band ports provide LTE 700 MHz, 800 MHz and Cellular 850 MHz band capability in a compact, 3.4 ft (1.0 m) high single enclosure. Each beam is fed by a pair of +45° and -45° cross-polarized ports. This antenna segments large audiences into multiple sectors thus enabling maximum spectrum re-use by sectorization, providing as much as three times increase in network capacity. Our unique beam shaping technology provides fast roll off between beams, minimizing interference between sectors thus increasing the carrier to interference plus noise (CINR) ratio and lowering soft handover losses in LTE, UMTS/HSPA+ and CDMA/EVDO networks. Such an 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 CCI Three-Beam Special Event Antenna offers the opportunity to reduce antenna count and directly replaces multiple narrow beam antennas. The antenna minimizes the need for optimization as each beam is spaced optimally for maximum throughput thus providing 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

- Upgrade of data-throughput or capacity constrained sites
- Spectrum limited markets
- Deferral of CDMA/EVDO or UTMS/HSPA+ carrier adds

SPECIFICATIONS

Three-Beam Special Events Antenna

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Electrical

Ports	6 x Low Band Ports for 698-896 MHz		
Frequency Range	698-806 MHz	790-862 MHz	824-896 MHz
Gain	17.1 dBi	18.1 dBi	18.4 dBi
Azimuth Beamwidth (-3dB)	18.5°	16.7°	16.0°
Azimuth Beam Crossover	10.4°	10.3°	10.5°
Elevation Beamwidth (-3dB)	23.7°	21.4°	20.6°
Electrical Downtilt	6°	6°	6°
Elevation Sidelobes (1st Upper)	< -26 dB	< -22 dB	< -22 dB
Front-to-Back Ratio @180°	> 40 dB	> 40 dB	> 40 dB
Cross-Polar Port-to-Port Isolation	> 24 dB	> 24 dB	> 24 dB
Interbeam Co-Pol Isolation (Adjacent Beams) (Worst Case)	> 15 dB	> 15 dB	> 15 dB
Interbeam Co-Pol Isolation (Non Adjacent Beams) (Worst Case)	> 10 dB	> 10 dB	> 10 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)	200 watts	200 watts	200 watts
Polarization	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°
Input Impedance	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground

Mechanical

Dimensions (LxWxD)	38.9x53.0x8.6 in (988x1345x220 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	439 lbs (1955 N) @ 100 mph (161 kph)
Side Wind Load	77 lbs (343 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	17.2 ft^2 (1.60 m^2)
Weight*	83.3 lbs (37.8 kg)
Connector	6 x 7-16 DIN female long neck or 4.3-10 female
Mounting Poles	2x 2 to 5 in (5 to 12 cm)

** Weight excludes mounting*

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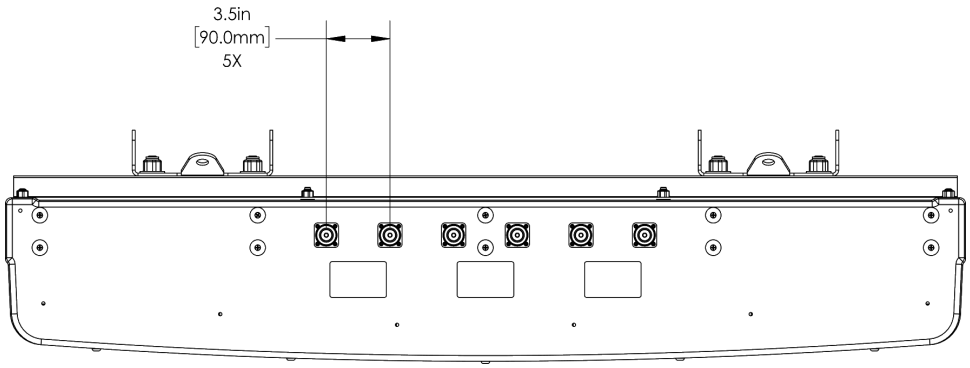
Mechanical

Bottom View

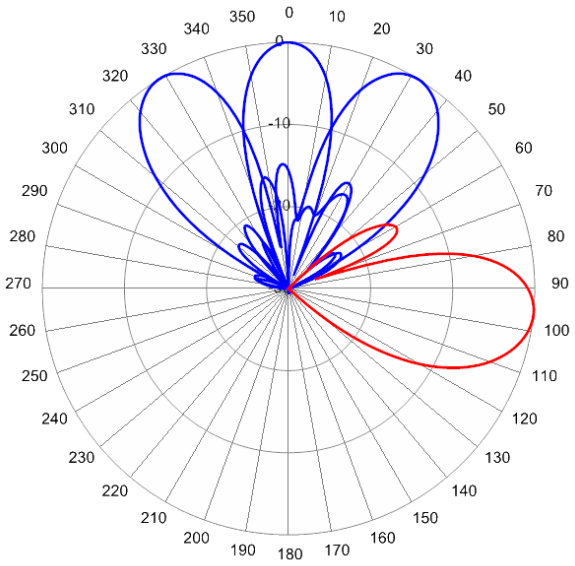
Connector Spacing



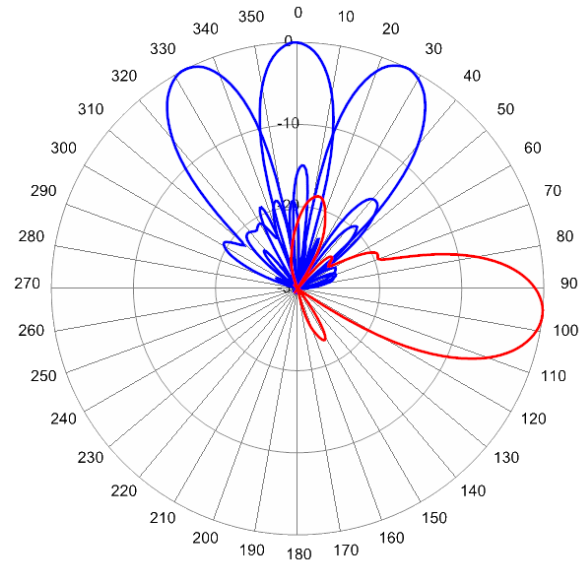
Typical Antenna Patterns

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

Azimuth
Elevation



710 MHz Azimuth with Elevation 6°



850 MHz Azimuth with Elevation 6°

ORDERING

Three-Beam Special Events Antenna

MBA3F-B3A

Parts & Accessories

MBA3F-B3AA-K	3 foot (0.7 m) Special Events 3-Beam Antenna with fixed electrical tilt, 7-16 DIN connectors and 2x MBK-03 mounting bracket.
MBA3F-B3AB-K	3 foot (0.7 m) Special Events 3-Beam Antenna with fixed electrical tilt, 4.3-10 connectors and 2x MBK-03 mounting bracket.
MBK-03	Mounting bracket kit (top and bottom) with 0° to 12° mechanical tilt adjustment

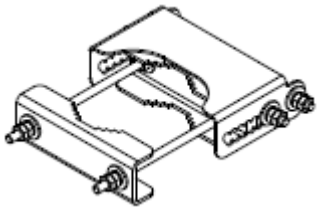
ACCESSORIES

Mounting Bracket Kit

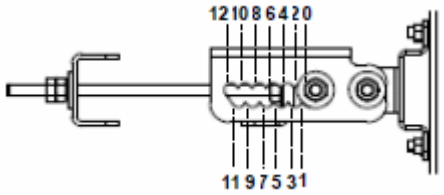
MBK-03

Mechanical

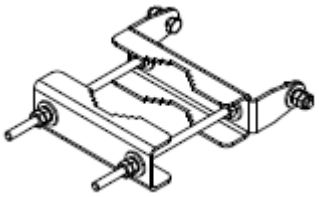
Weight	9.8 lbs (4.4 kg)
Hinge Pitch	13 in (330 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft·lbs (20 Nm)
Mechanical Tilt Adjustment	0° - 12°



MBK-03 Top Adjustable Bracket



MBK-03 Top Adjustable Bracket Side View



MBK-03 Bottom Fixed Bracket

STANDARDS & CERTIFICATIONS

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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 60529, IP 24

Certifications

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