



# Antennas

DATA SHEET

## Three-Beam Special Events Antenna

MBA3F-E3A



- Three foot (0.8 m) tall, single band, six port multibeam array. Containing Three Independent LTE Optimized Beams covering 1695-2690 MHz frequencies
- Six High Band Dual-Pol +45°/-45°ports (two ports per beam) covering 1695-2690 MHz in a single antenna
- Full Spectrum Compliance for 1695-2690 MHz Frequencies
- LTE Optimized Beams for improved LTE data throughput by minimizing beam crossover, providing for an efficient use of valuable radio capacity and frequency spectrum
- LTE Optimized FBR, USLS and Co-Pol Beam Isolation Performance. Essential for today's LTE Data Driven Networks
- Exceeds minimum PIM performance requirements

### Overview

This CCI Three-Beam Antenna contains Three Independent LTE Optimized Beams. This Three-Beam Antenna is intended for use at data hotspots and other congested locals, where social media and the ability to share photos and videos and other high demand applications require high capacity and high data rates. This Three-Beam antenna enables maximum spectrum re-use by sectorization, greatly increasing network capacity. Our LTE Optimized Beam Design approach 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 networks. Such an approach enhances data transfer rates within LTE 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
- Antenna intended for use where data throughput and capacity needs are paramount



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## SPECIFICATIONS

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#### Electrical

Ports	6 x High Band Ports for 1695-2690 MHz				
Frequency Range	1695-1880 MHz	1850-1995 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Gain	18.9 dBi	19.6 dBi	20.1 dBi	21.3 dBi	21.5 dBi
Azimuth Beamwidth (-3dB)	19.7°	17.9°	16.8°	14.3°	12.8°
Azimuth Beam Crossover	11.2 dB	11.1 dB	11.0 dB	11.4 dB	11.0 dB
Elevation Beamwidth (-3dB)	14.5°	13.1°	12.5°	11.0°	9.7°
Electrical Downtilt	6°	6°	6°	6°	6°
Elevation Sidelobes (1st Upper) (Typ.)	< -19 dB	< -16 dB	< -19 dB	< -20 dB	< -16 dB
Front-to-Back Ratio @180° (Typ.)	> 35 dB	> 35 dB	> 35 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination (at Peak)	> 22 dB	> 22 dB	> 21 dB	> 20 dB	> 19 dB
Cross-Polar Port-to-Port Isolation	> 24 dB	> 24 dB	> 24 dB	> 24 dB	> 24 dB
Interbeam Co-Pol Isolation	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Interbeam Co-Pol isolation (Non-Adjacent Beams) (Worse Case)	> 12 dB	> 12 dB	> 10 dB	> 12 dB	> 12 dB
Voltage Standing Wave Ratio(VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	200 watts	200 watts	200 watts	200 watts	200 watts
Polarization	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

#### Mechanical

Dimensions (LxWxD)	30.5x24.9x6.6 in (776x633x167 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	162 lbs (722 N) @ 100 mph (161 kph)
Side Wind Load	46 lbs (206 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	6.3 ft <sup>2</sup> (0.6 m <sup>2</sup> )
Weight *	41.6 lbs (18.9 kg)
Connector	6x 7-16 DIN female long neck or 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

\* Weight excludes mounting



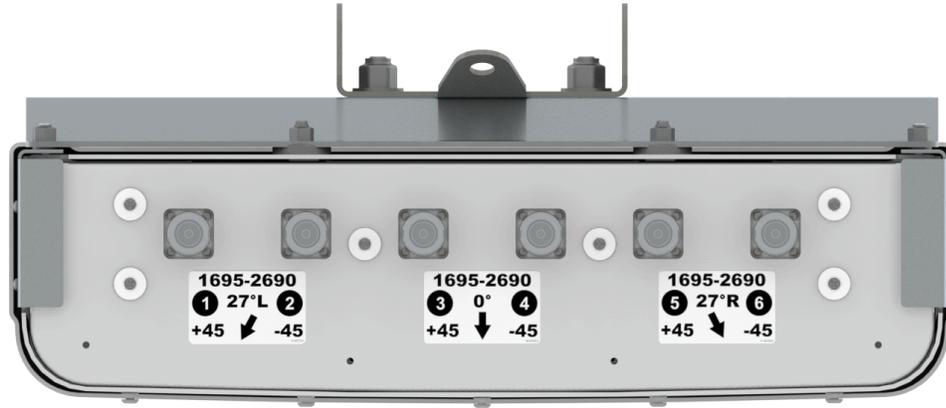
# Antennas

## SPECIFICATIONS

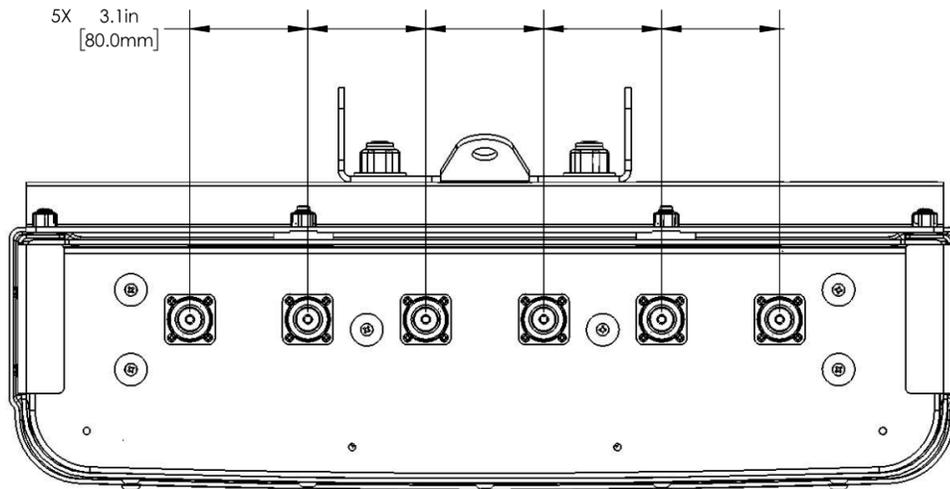
### Three-Beam Special Events Antenna

MBA3F-E3A

Bottom View



Connector Spacing





# Antennas

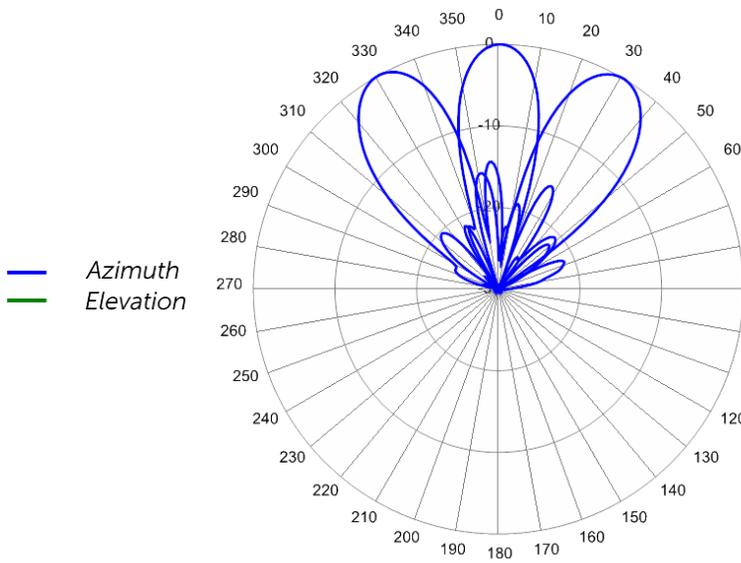
## SPECIFICATIONS

### Three-Beam Special Events Antenna

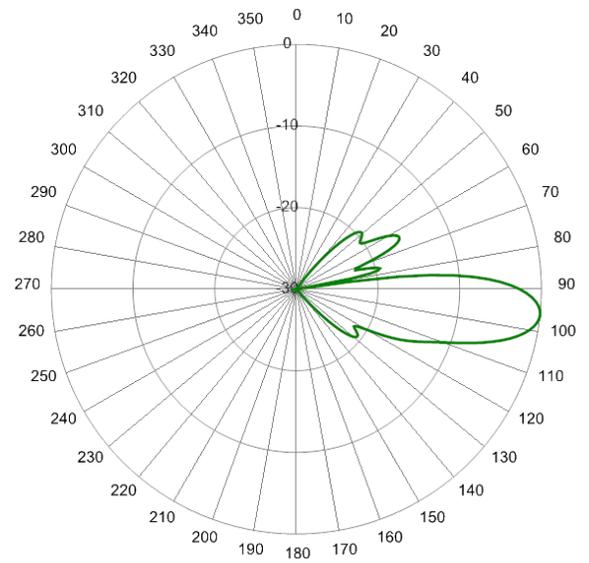
MBA3F-E3A

#### Typical Antenna Patterns

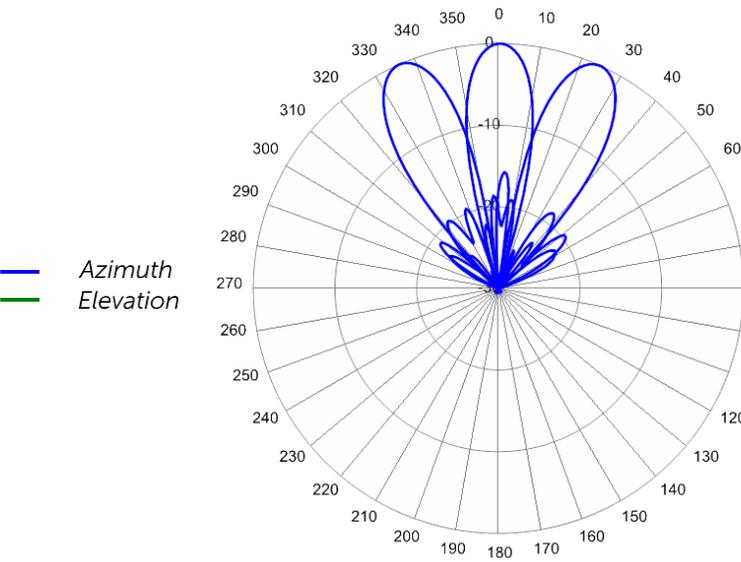
For detailed information on additional antenna patterns, contact customer support at [support@cciproducts.com](mailto:support@cciproducts.com)



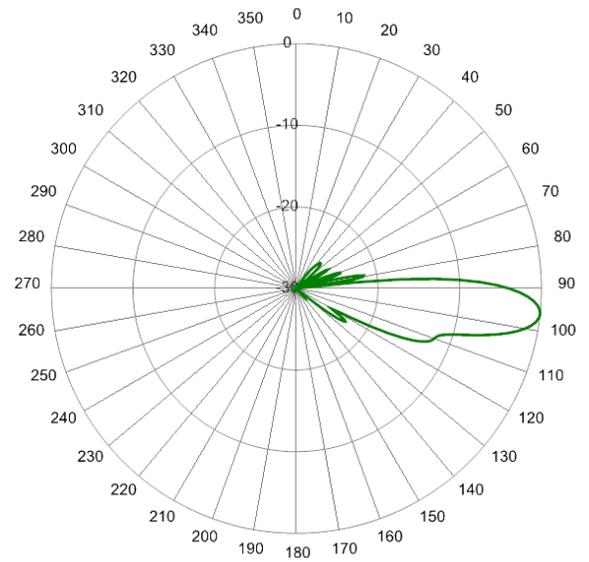
1930 MHz Azimuths



1930 MHz Elevation 6°



2360 MHz Azimuths



2360 MHz Elevation 6°

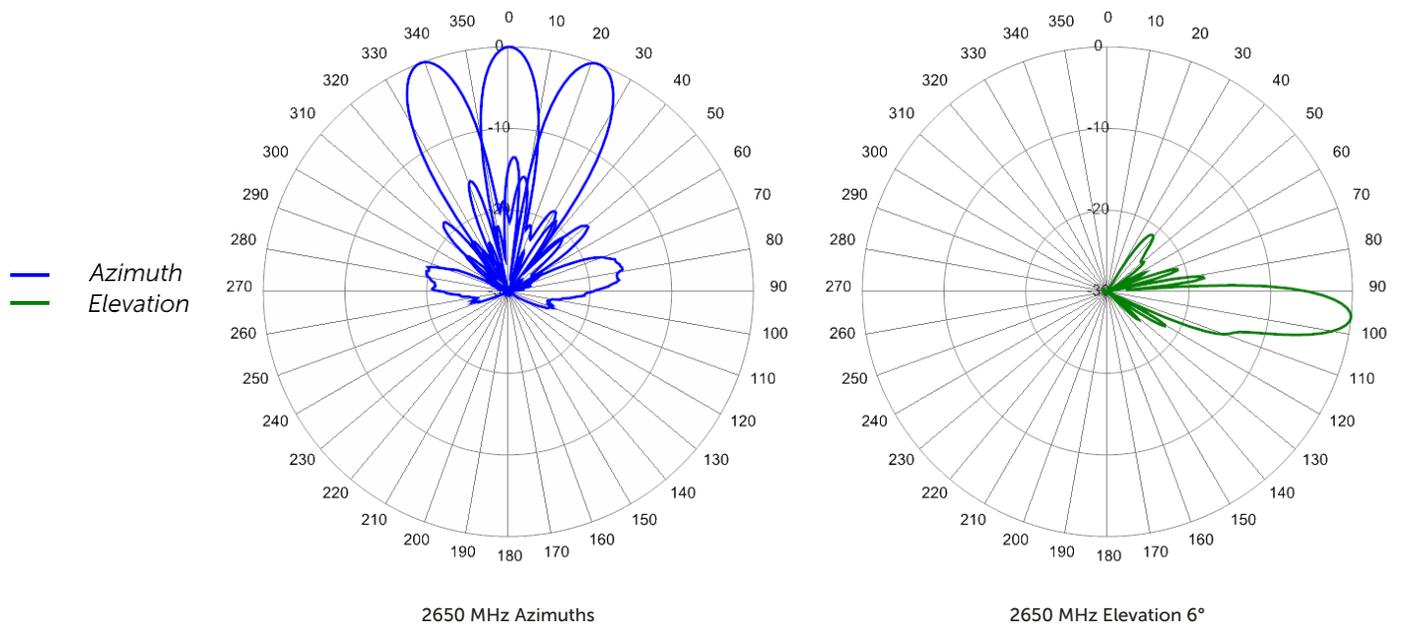


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## SPECIFICATIONS

### Three-Beam Special Events Antenna

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# Antennas

ORDERING

## Three-Beam Special Events Antenna

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### Parts & Accessories

<b>MBA3F-E3AA-K</b>	3 foot (0.8 m) Special Events 3-Beam Antenna with fixed electrical tilt, 7-16 DIN connectors and MBK-03 mounting bracket.
<b>MBA3F-E3AB-K</b>	3 foot (0.8 m) Special Events 3-Beam Antenna with fixed electrical tilt, 4.3-10 connectors and MBK-03 mounting bracket.
<b>MBK-03</b>	Mounting bracket kit (top and bottom) with 0° to 12° mechanical tilt adjustment



# Antennas

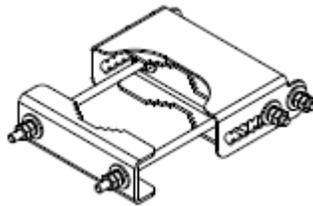
ACCESSORIES

## Mounting Bracket Kit

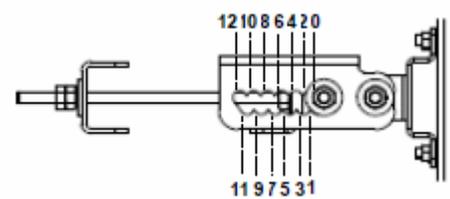
MBK-03

### Mechanical

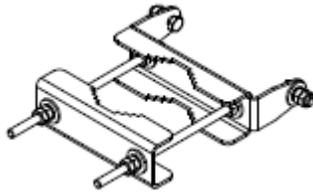
<b>Weight</b>	9.8 lbs (4.4 kg)
<b>Hinge Pitch</b>	13 in (330 mm)
<b>Mounting Pole Dimension</b>	2 to 5 in (5 to 12 cm)
<b>Fastener Size</b>	M10
<b>Installation Torque</b>	15 ft-lbs (20 Nm)
<b>Mechanical Tilt Adjustment</b>	0° - 12°



MBK-03 Top Adjustable Bracket



MBK-03 Top Adjustable Bracket Side View



MBK-03 Bottom Fixed Bracket



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## STANDARDS & CERTIFICATIONS

### Three-Beam Special Events 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 60529, IP 24

#### Certifications

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

