



Antennas

DATA SHEET

Ultra Wideband Six Beam Antenna

MBA6-9F-E-H3



- Ultra wideband coverage 1695-2690 MHz, including AWS & AWS-3, DCS 1800, PCS, UMTS 2100, WCS and BRS/2.6 GHz bands
- 3 ft (0.7 m) tall, single panel design supporting six beams without mount changes
- Dual +45° and -45° cross-polarization for each beam pair
- Separate beams support 6 sub-sectors
- Rugged, weather resistant and highly reliable internal design
- Enables efficient evolution of wireless networks
- Increase site capacity through higher order sectorization
- Avoid carrier-adds and building of new capacity sites
- Boosts data throughput by lowering interference
- Patented beam shaping technology maximizes coverage
- Optimized beam crossover and spacing for maximum throughput
- 7-16 DIN female or 4.3-10 Female connector options

Overview

The CCI Six-Beam Special Events Antenna is an LTE ready multi-beam antenna that supports multiple sectors (6) from a single antenna. This Six-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. This Six-beam antenna has one row of six dual +45° and -45° cross-polarized beam pairs, each roughly 15 degrees apart that are used to segment large audiences into multiple sectors. The antenna enables maximum spectrum re-use by sectorization, providing as much as nine 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 ratio (CINR) 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 Six-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 of capacity constrained sites
- Antenna intended for use at sporting and entertainment venues



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SPECIFICATIONS

Ultra Wideband Six Beam Antenna

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Electrical

Ports	12 x High Band Ports which cover the full range from 1695-2690 MHz				
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Gain	20.6 dBi	21.4 dBi	21.6 dBi	22.2 dBi	22.6 dBi
Azimuth Beamwidth (-3dB)	11.0°	10.0°	9.3°	7.8°	7.1°
Azimuth Beam Crossover	10.7 dB	10.4 dB	10.4 dB	10.7 dB	10.1 dB
Elevation Beamwidth (-3dB)	14.0°	12.8°	12.1°	10.6°	9.6°
Electrical Downtilt	6°	6°	6°	6°	6°
Elevation Sidelobes (1st Upper) (Typ.)	< -22 dB	< -20 dB	< -19 dB	< -21 dB	< -19 dB
Front-to-Back Ratio @180° (Typ.)	> 40 dB	> 40 dB	> 40 dB	> 40 dB	> 40 dB
Cross-Polar Port-to-Port Isolation	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Interbeam Co-Pol Isolation	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Interbeam Co-Pol Isolation (Non-Adjacent Beams) (Worse Case)	> 13 dB	> 13 dB	> 15 dB	> 13 dB	> 14 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 per Port	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)	27.9x41.7x7.5 in (708x1058x191 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load ¹	214 lbf @ 100 mph 953 N @ 161 kph
Side Wind Load ¹	13 lbf @ 100 mph 60 N @ 161 kph
Effective Projective Area (EPA), Front ¹	8.6 ft ² (0.8 m ²)
Weight *	63.7 lbs (28.9 kg)
Package Dimensions (LxWxD)	35.1x51.5x15.0 in (891x1307x380 mm)
Package Weight	93.0 lbs (42.2 kg)
RF Connector	12 x 7-16 DIN long neck female or 12 x 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

¹Windload values calculated using CFD analysis

* weight excludes mounting kit and is for the heavier MBA6-9F-W-H3-C1 version



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SPECIFICATIONS

Ultra Wideband Six Beam Antenna

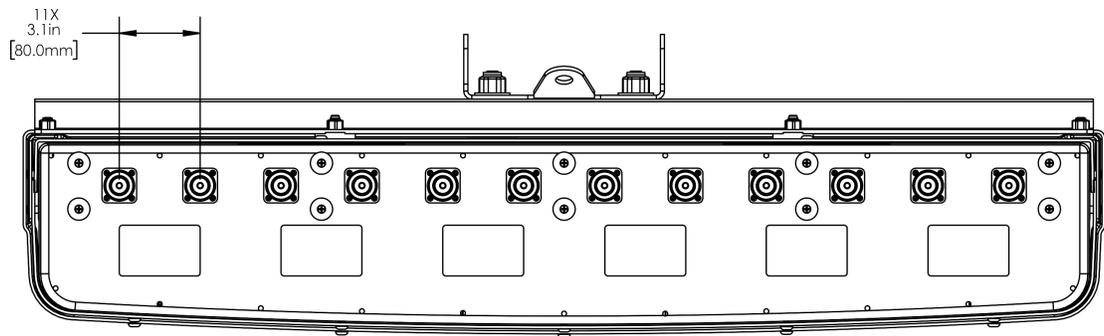
MBA6-9F-E-H3

Mechanical

Bottom View



Connector Spacing





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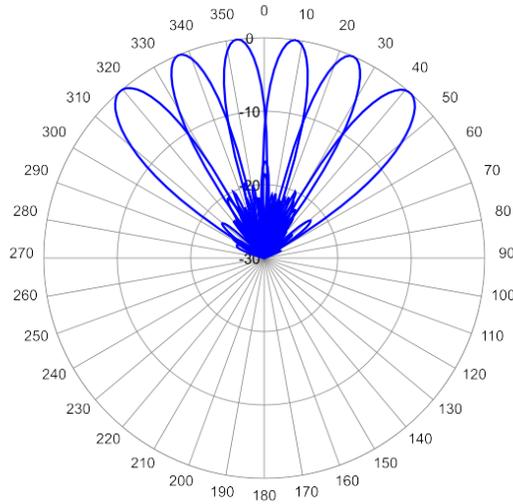
SPECIFICATIONS

Ultra Wideband Six Beam Antenna

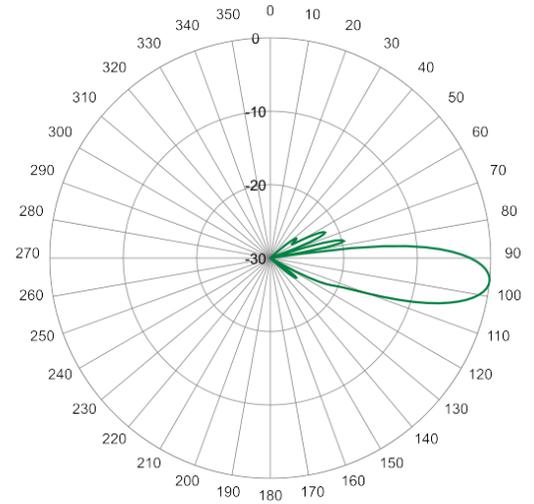
MBA6-9F-E-H3

Typical Antenna Patterns

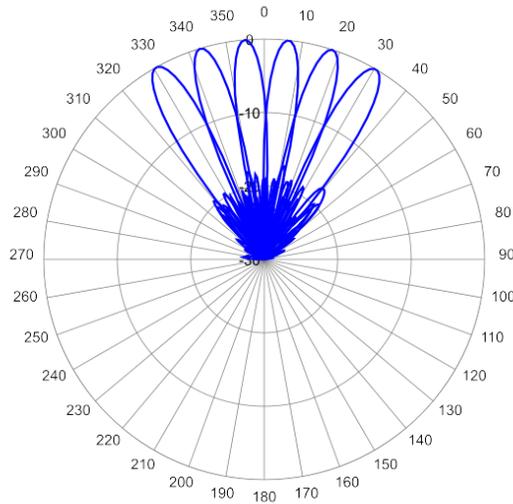
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



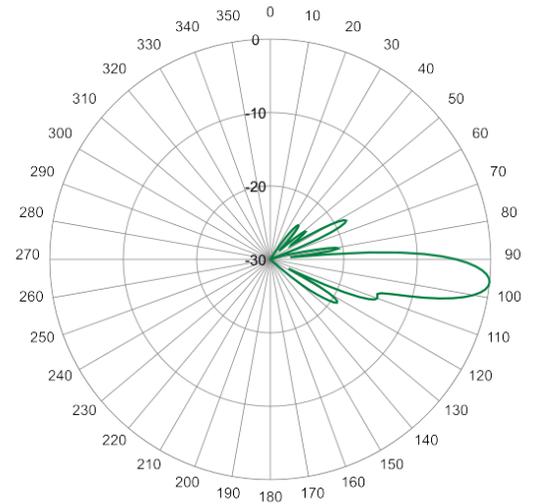
1930 MHz Azimuth



1930 MHz Elevation 6°



2562 MHz Azimuth



2562 MHz Elevation 6°



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ORDERING

Ultra Wideband Six Beam Antenna

MBA6-9F-E-H3

Parts & Accessories

MBA6-9F-E-H3-C1-K	Three foot (0.7 m) Special Events Six-Beam Antenna with Fixed Electrical Tilt and 7-16 DIN Female connectors and MBK-03 mounting bracket
MBA6-9F-E-H3-C2-K	Three foot (0.7 m) Special Events Six-Beam Antenna with Fixed Electrical Tilt and 4.3-10 Female connectors and MBK-03 mounting bracket
MBK-03	Mounting bracket kit (top and bottom) with 0° to 12° mechanical tilt adjustment



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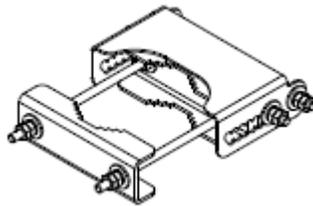
ACCESSORIES

Mounting Bracket Kit

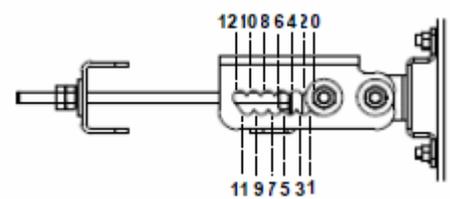
MBK-03

Mechanical

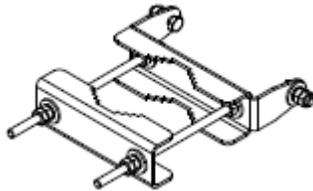
Weight	9.8 lbs (4.4 kg)
Hinge Pitch	13 in (330 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft-lbs (20 N·m)
Mechanical Tilt Adjustment	0° - 12°



MBK-03 Top Adjustable Bracket



MBK-03 Top Adjustable Bracket Side View



MBK-03 Bottom Fixed Bracket



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STANDARDS & CERTIFICATIONS

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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, CE, CSA US, ISO 9001



CCI

Communication Components Inc.

EXTENDING WIRELESS PERFORMANCE