



Antennas

DATA SHEET

Special Events Multibeam Antenna

MBA5F-U3A



- Three foot (0.9 m) tall, single panel design supporting five beams without mount changes
- Dual +45° and -45° cross-polarization for each beam pair
- Separate beams support 5 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

Overview

The CCI Five-Beam Special Events Antenna is an LTE ready multi-beam antenna that supports multiple sectors (5) from a single antenna. This Five-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 five-beam antenna has one row of five dual +45° and -45° cross-polarized beam pairs, each roughly 10 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 six 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 Five-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 UMTS//HSPA+ carrier adds
- Spectrum clearing and refarming
- Antenna intended for use at sporting and entertainment venues



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SPECIFICATIONS

Special Events Multibeam Antenna

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Electrical

Ports	10 x High Band Ports which cover the full range from 1710-2400 MHz			
Frequency Range	1710-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz
Gain ¹	22.3 dBi	22.5 dBi	22.8 dBi	23.0 dBi
Azimuth Beamwidth (-3dB)	13.7°	12.5°	11.6°	9.7°
Azimuth Beam Crossover	10.3 dB	10.3 dB	10.3 dB	10.5 dB
Elevation Beamwidth (-3dB)	12.4°	11.1°	10.8°	10.4°
Electrical Downtilt	6°	6°	6°	6°
Elevation Sidelobes (1st Upper) (Typ.)	< -18 dB	< -18 dB	< -18 dB	< -16 dB
Front-to-Back Ratio @180° (Typ.)	> 40 dB	> 40 dB	> 40 dB	> 40 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 21 dB	> 25 dB
Interbeam Co-Pol Isolation	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Interbeam Co-Pol Isolation (Non-Adjacent Beams)	> 12.5 dB	> 12.5 dB	> 12.5 dB	> 12.5 dB
Voltage Standing Wave Ratio(VSWR)	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	200 watts	200 watts	200 watts	200 watts
Polarization	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground

¹Peak gain across sub-bands.

BASTA Electrical Specifications*

	1710-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz
Frequency Range	1710-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz
Gain (dBi)	20.9	21.6	22.0	22.0
Gain Tolerance (dB)	1.1	1.1	1.1	0.8
Azimuth Beamwidth Tolerance (°)	3.0	2.4	2.1	1.1
Elevation Beamwidth Tolerance (°)	0.8	0.6	0.6	0.6
Electrical Downtilt Deviation (°)	2.3	2.1	1.8	2.7
Front-to-Back Ratio over ± 20° (dB)	32.5	32.9	32.4	31.8
First Upper Sidelobe Suppression (dB)	16.6	16.6	16.8	14.9
Upper Sidelobe Suppression peak to 20°(dB)	19.2	17.7	19.3	15.1

* Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V9.6. All specifications are subject to change without notice.

Mechanical

Dimensions (LxWxD)	33.0x33.4x6.5 in (839x849x165 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	236 lbs (1048 N) @ 100 mph (161 kph)
Side Wind Load	50 lbs (223 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	9.2 ft ² (0.9 m ²)
Weight *	50.7 lbs (23.0 kg)
Connector	10 x 7-16 DIN female long neck or 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

* Weight excludes mounting



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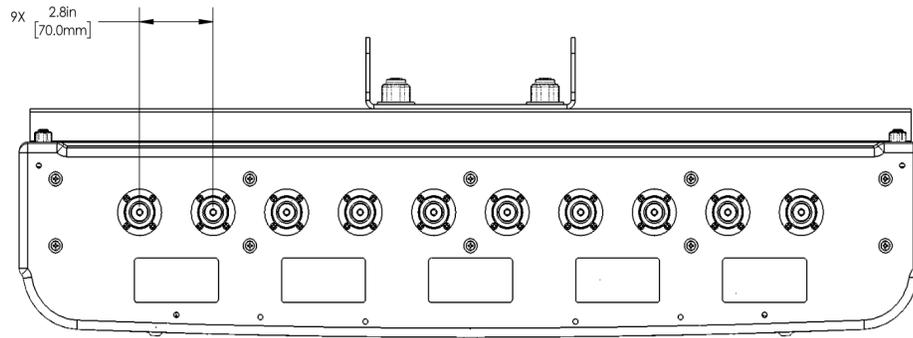
MBA5F-U3A

Mechanical

Bottom View

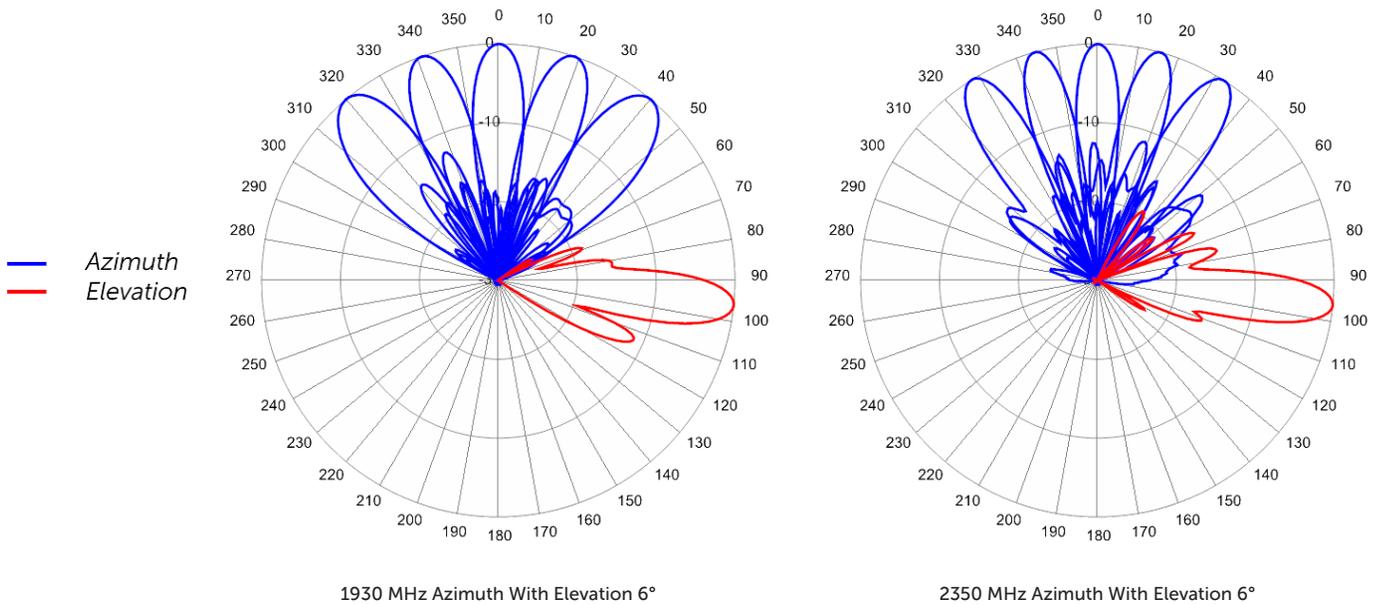


Connector Spacing



Typical Antenna Patterns

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





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ORDERING

Special Events Multibeam Antenna

MBA5F-U3A

Parts & Accessories

MBA5F-U3AA-K	3 foot (0.8 m) Special Events Five-Beam Antenna with Fixed Electrical Tilt, 7-16 DIN long neck female connectors and MBK-03 mounting brackets
MBA5F-U3AB-K	3 foot (0.8 m) Special Events Five-Beam Antenna with Fixed Electrical Tilt, 4.3-10 female connectors and MBK-03 mounting brackets
MBK-03	Mounting bracket kit (top and bottom) with 0° to 12° mechanical tilt adjustment



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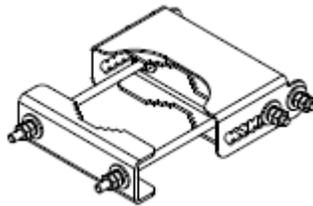
ACCESSORIES

Mounting Bracket Kit

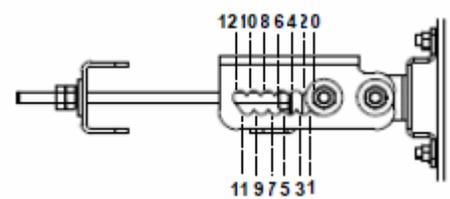
MBK-03

Mechanical

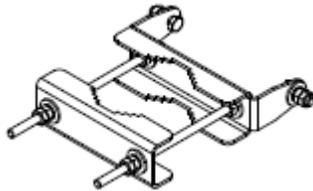
Weight	9.8 lbs (4.4 kg)
Hinge Pitch	13 in (330 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft-lbs (20 Nm)
Mechanical Tilt Adjustment	0° - 12°



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, ISO 9001

