Antennas

DATA SHEET

Six/Three-Beam Special Events Antenna

MBM9F-KE6A

- Six foot (1.9 m) tall, thirty-six port, Dual Band Multifunction Multibeam array. Containing Nine Independent (Three for Low Band and Six for High Band) LTE Optimized Beams with 4x4 MIMO capability or Eighteen Independent LTE Optimized Beams with 2x2 MIMO capability covering 698-960 MHz and 1695-2690 MHz frequencies, an Industry First
- Twelve Low Band and Twenty-four High Band Dual-Pol +45°/-45°ports (Two or Four ports per Beam) covering 698-960 MHz and 1695-2690 MHz in a single antenna
- Full Spectrum Compliance for 698-960 MHz / 1695-2690 MHz Frequencies
- Unique Antenna Configuration provides the end user with complete flexibility with both the MIMO Configuration and Low Band and High Band Frequency Configuration of each beam, an Industry First
- Deployment of a 4x4 MIMO LTE Optimized Beam allows for greater capacity and data throughput over a conventional 2x2 MIMO LTE Optimized Beam deployment. Essential for today's LTE Data Driven Networks
- LTE Optimized Beams for improved LTE data throughput by minimizing beam crossover, providing for an efficient use of valuable radio capacity and frequency spectrum. Essential for today's LTE Data Driven Networks
- 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 Dual Band Multifunction Multibeam Antenna contains Nine Independent (Three for Low Band and Six for High Band) LTE Optimized Beams with 4x4 MIMO capability or Eighteen Independent LTE Optimized Beams with 2x2 MIMO capability covering 698-960 MHz and 1695-2690 MHz frequencies. This Dual Band Multifunction Multibeam 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 Dual Band Multifunction Multibeam Antenna enables maximum spectrum re-use by sectorization, greatly increasing network capacity. With deployment of 4x4 MIMO (on any of the beams available), capacity and data throughput is greatly enhanced, over a conventional 2x2 MIMO beam deployment. 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 Dual Band Multifunction Multibeam 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 and capacity, through the use of 4x4 MIMO deployment
- Antenna intended for use where data throughput and capacity needs are paramount
- Ready for Network Standardization on 4.3-10 connectors

SPECIFICATIONS

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Electrical

Ports	12 x Low Band Ports for 698-960 MHz			
Frequency Range	698-806 MHz	790-862 MHz	824-896 MHz	880-960 MHz
Gain	16.9 dBi	17.8 dBi	18.2 dBi	18.4 dBi
Azimuth Beamwidth (-3dB)	18.4°	16.7°	15.9°	14.8°
Azimuth Beam Crossover	10.5 dB	10.5 dB	10.5 dB	10.4 dB
Elevation Beamwidth (-3dB)	24.5°	22.1°	21.4°	20.7°
Electrical Downtilt	6°	6°	6°	6°
Elevation Sidelobes (1st Upper)	< -28 dB	< -22 dB	< -22 dB	< -24 dB
Front-to-Back Ratio @180°	> 40 dB	> 40 dB	> 40 dB	> 40 dB
Cross-Polar Port-to-Port Isolation	> 24 dB	> 24 dB	> 24 dB	> 28 dB
Interbeam Co-Pol Isolation (Adjacent Beams) (Worst Case)	> 15 dB	> 15 dB	> 15 dB	> 15 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

Ports	24 x High Band Ports for 1695-2690 MHz				
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Gain	19.4 dBi	20.3 dBi	20.7 dBi	21.3 dBi	22.1 dBi
Azimuth Beamwidth (-3dB)	10.0°	9.0°	8.5°	7.2°	6.4°
Azimuth Beam Crossover	10.1 dB	10.0 dB	9.6 dB	9.4 dB	9.9 dB
Elevation Beamwidth (-3dB)	13.4°	12.5°	11.5°	10.5°	9.2°
Electrical Downtilt	4°	4°	4°	4°	4°
Elevation Sidelobes (1st Upper)	< -14 dB	< -17 dB	< -17 dB	< -17 dB	< -18 dB
Front-to-Back Ratio @180°	> 40 dB	> 40 dB	> 40 dB	> 40 dB	> 40 dB
Cross-Polar Port-to-Port Isolation	> 28 dB	> 28 dB	> 28 dB	> 28 dB	> 28 dB
Interbeam Co-Pol Isolation (Adjacent Beams) (Worst Case)	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 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

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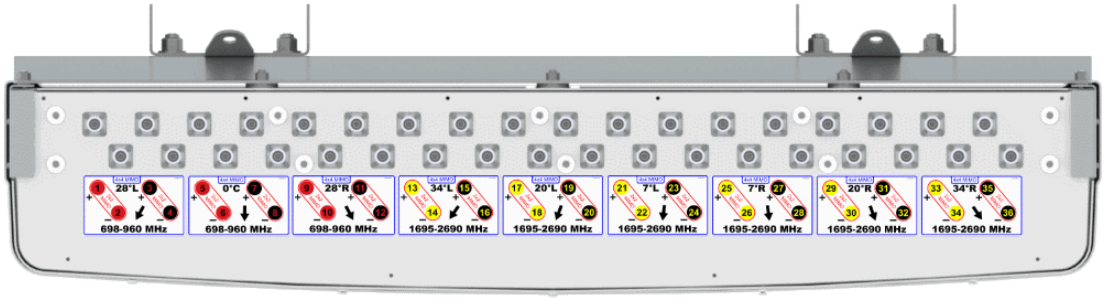
Mechanical

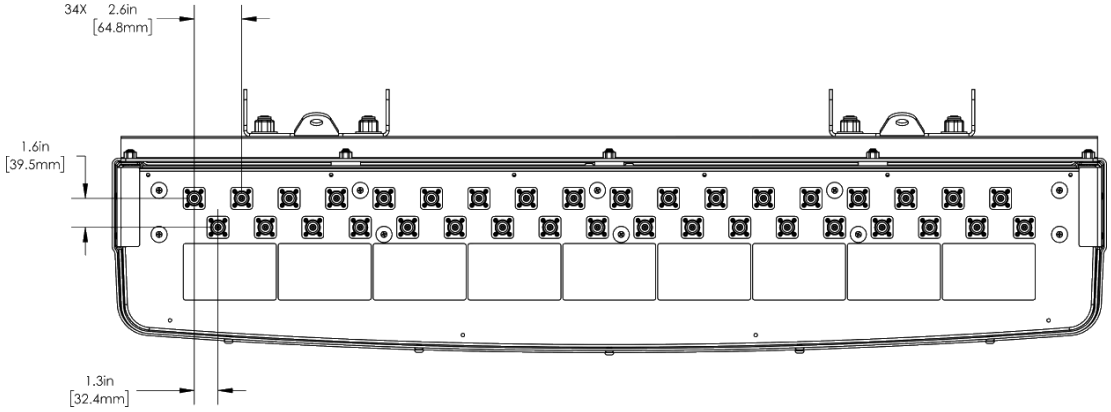
Dimensions (LxWxD)	77.0x53.0x9.9 in (1955x1345x252 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	869 lbs (3867 N) @ 100 mph (161 kph)
Side Wind Load	193 lbs (860 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	34.0 ft² (3.2 m²)
Weight*	203.5 lbs (92.3 kg)
Connector	36 x 4.3-10 female
Mounting Poles	2x 2 to 5 in (5 to 12 cm)
Pole Spacing	31.5 in (800 mm)

** Weight excludes mounting*

Bottom View



Connector Spacing



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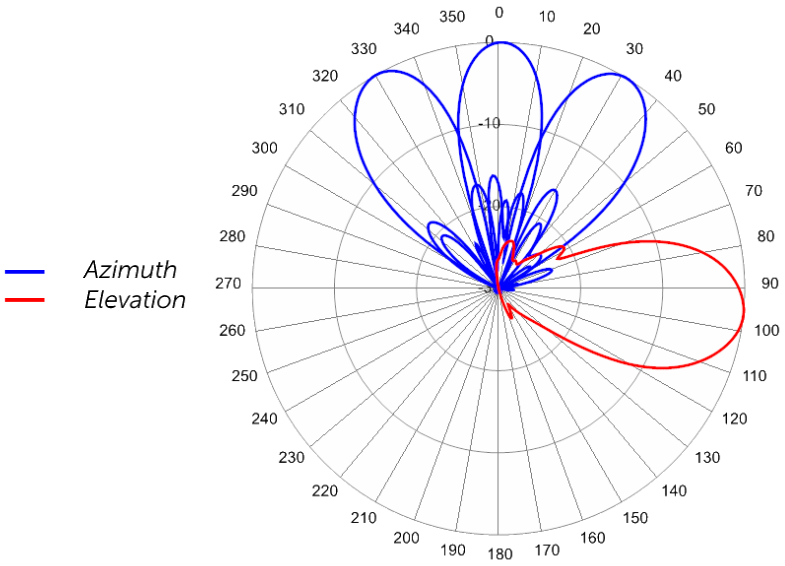
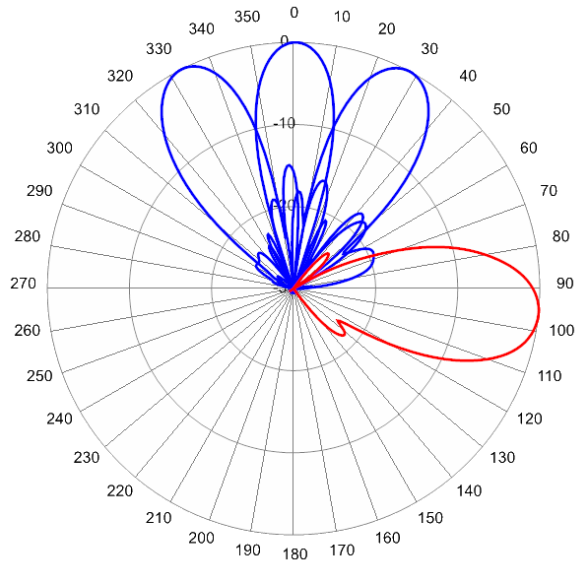
Typical Antenna Patterns

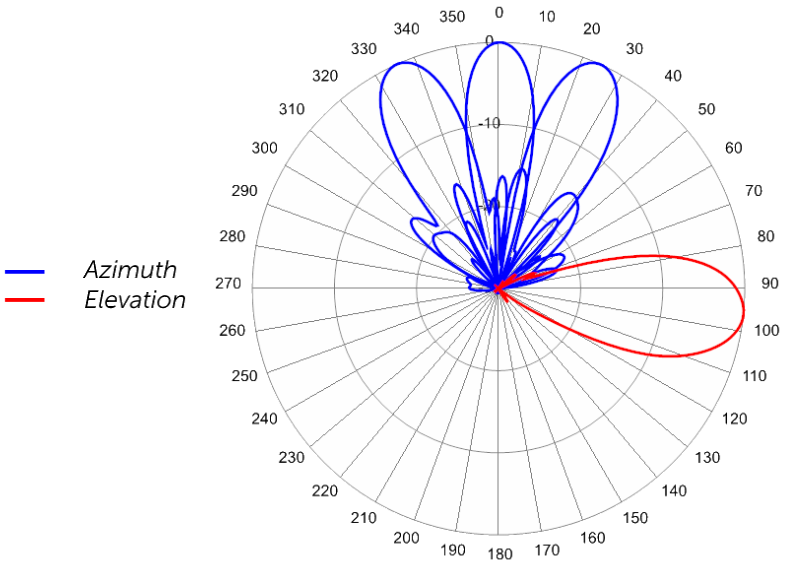
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



740 MHz Azimuth with Elevation 6°



806 MHz Azimuth with Elevation 6°



915 MHz Azimuth with Elevation 6°

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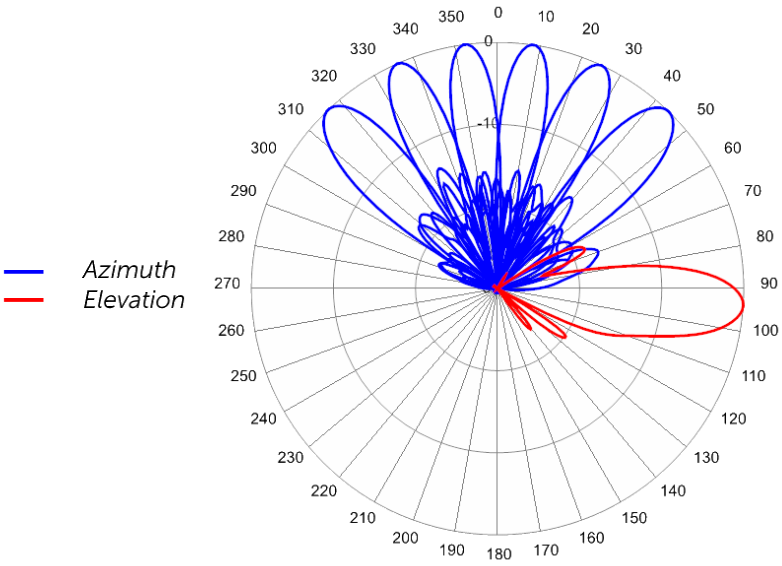
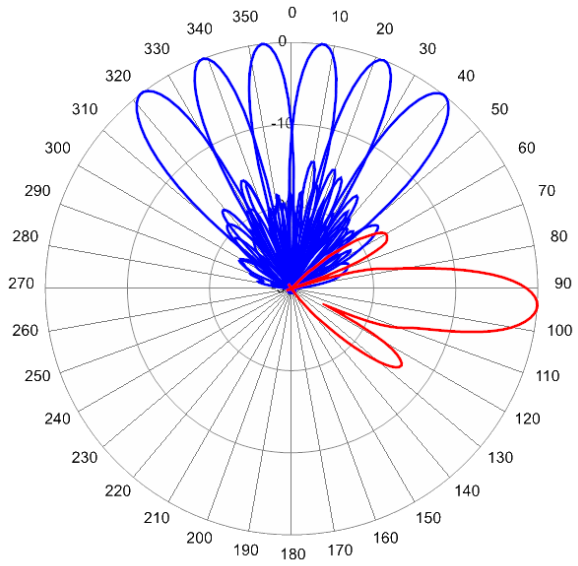
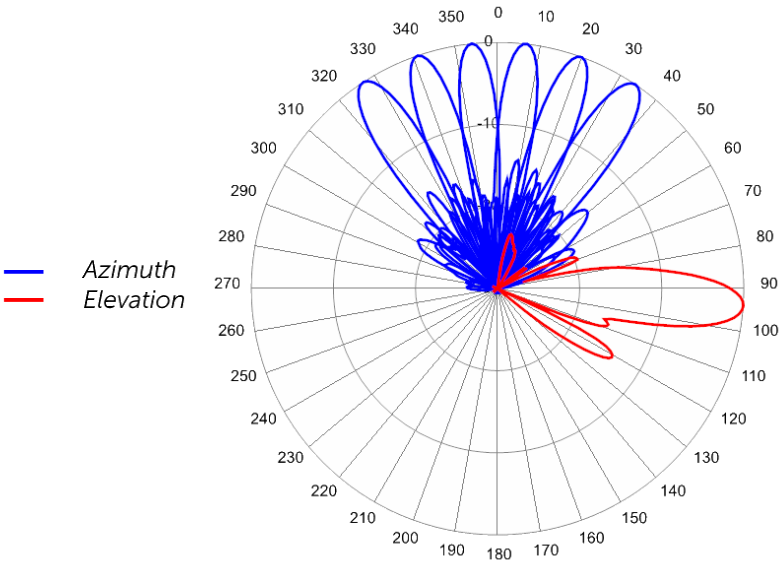


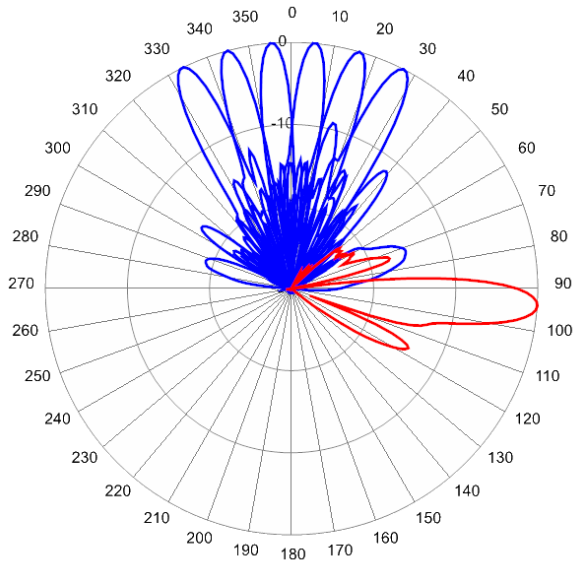
1740 MHz Azimuths with Elevation 4°



1950 MHz Azimuths with Elevation 4°



2170 MHz Azimuths with Elevation 4°



2650 MHz Azimuths with Elevation 4°

ORDERING

Six/Three-Beam Special Events Antenna

MBM9F-KE6A

Parts & Accessories

MBM9F-KE6AA-K	6 foot (1.9 m) Special Events Dual Band 9-Beam Antenna with fixed electrical tilt, 4.3-10 connectors and 2x MBK-01 mounting bracket.
MBK-01(x2)	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment

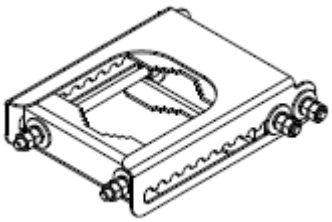
ACCESSORIES

Mounting Bracket Kit

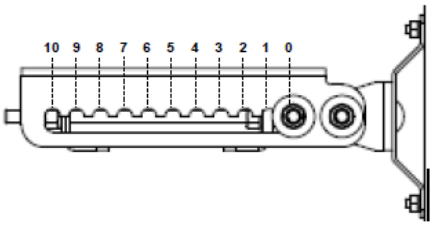
MBK-01

Mechanical

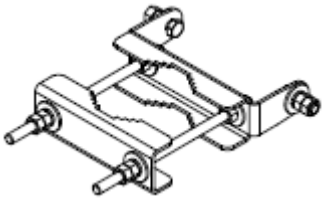
Weight	12.6 lbs (5.7 kg)
Hinge Pitch	47.25 in (1200 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M12
Installation Torque	40 ft·lb (54 N·m)
Mechanical Tilt Adjustment	0° - 10°



MBK-01 Top Adjustable Bracket



MBK-01 Top Adjustable Bracket Side View



MBK-01 Bottom Fixed Bracket

STANDARDS & CERTIFICATIONS

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