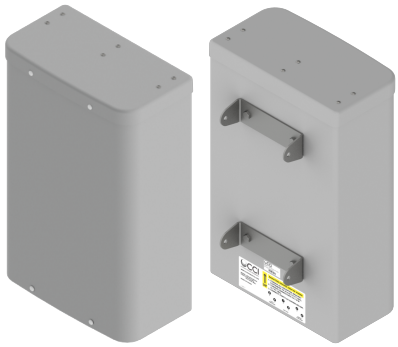
Antennas

MultiPort Series

DATA SHEET

TriBand Antenna

HPA45F-KE2A



- Two foot (0.6 m), TriBand, six port antenna with a 45° azimuth beamwidth covering 698-960 MHz and 1695-2690 MHz frequencies
- Four wide high band ports covering 1695-2690 MHz and two wide low band ports covering 698-960 MHz in a single antenna
- Full Spectrum Compliance 698-960 MHZ / 1695-2690 MHz
- LTE Optimized FBR and SPR performance, providing for an efficient use of valuable radio capacity
- LTE Optimized Boresight and Sector XPD and USL performance, essential for LTE Performance
- Exceeds minimum PIM performance requirements
- 4.3-10 connector, which is 40% smaller than traditional 7/16 DIN connector

Overview

The CCI TriBand is a six port antenna, with four wide high band ports covering 1695-2690 MHz and two wide low band ports covering 698-960 MHz. The CCI TriBand antenna provides the capability to deploy 4x4 Multiple-input Multiple-output (MIMO) in the high band and 2x2 Multiple-input Multiple-output in the low band.

CCI antennas are designed and produced to ISO 9001 certification standards for reliability and quality in our state-of-the-art manufacturing facilities.

Applications

- 4x4 MIMO for the high band and 2x2 MIMO for the low band
- Ready for Network Standardization on 4.3-10 connectors
- With CCI's TriBand antennas, wireless providers can connect multiple platforms to a single antenna, reducing tower load, lease expense, deployment time and installation costs

TriBand Antenna

HPA45F-KE2A

SPECIFICATIONS

Electrical

Ports	2 x Low Band Ports for 698-960 MHz			
Frequency Range	698-806 MHz	790-862 MHz	824-896 MHz	880-960 MHz
Gain	12.5 dBi	12.7 dBi	13.2 dBi	13.4 dBi
Azimuth Beamwidth (-3dB)	50°	49°	46°	43°
Elevation Beamwidth (-3dB)	33.2°	31.1°	30.4°	29.1°
Electrical Downtilt	4°	4°	4°	4°
Elevation Sidelobes (1st Upper)	<-22 dB	<-20 dB	<-21 dB	<-22 dB
Front-to-Back Ratio @180°	> 30 dB	> 35 dB	> 30 dB	> 28 dB
Cross-Polar Discrimination at Peak	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 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)	500 watts	500 watts	500 watts	500 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°
Input Impedance	50 ohms	50 ohms	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground

BASTA Electrical Specifications*				
Frequency Range	698-806 MHz	790-862 MHz	824-896 MHz	880-960 MHz
Gain over sub band (dBi)	12.2	12.5	12.8	13.2
Gain over sub band Tolerance (dB)	0.3	0.2	0.3	0.3
Azimuth Beamwidth Tolerance (°)	0.9	2.1	3.3	1.7
Elevation Beamwidth Tolerance (°)	1.2	1.1	0.9	1.2
Electrical Downtilt Deviation (°)	2.4	1.6	0.8	1.0
First Upper Sidelobe Suppression (dB)	20.7	19.3	19.8	19.4
Upper Sidelobe Suppression Peak to 20° (dB)	NA	NA	NA	NA
Front-to-Back Ratio over ±20° (dB)	22.3	25.0	24.9	22.7
Cross-polar Discrimination at 3 dB (dB)	25.0	27.7	26.6	26.1

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

MultiPort Series

TriBand Antenna

SPECIFICATIONS

HPA45F-KE2A

Electrical

Ports	4 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	14.4 dBi	14.7 dBi	15.1 dBi	15.8 dBi	15.9 dBi
Azimuth Beamwidth (-3dB)	44°	41°	39°	38°	38°
Elevation Beamwidth (-3dB)	19.4°	18.4°	17.4°	15.1°	14.0°
Electrical Downtilt	4°	4°	4°	4°	4°
Elevation Sidelobes (1st Upper)	<-14 dB	<-16 dB	<-16 dB	<-15 dB	<-14 dB
Front-to-Back Ratio @180°	> 30 dB	> 32 dB	> 34 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 20 dB	> 19 dB	> 22 dB	> 25 dB	> 25 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 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)	300 watts	300 watts	300 watts	300 watts	300 watts
Polarization	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 45°	Dual Linear 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

BASTA Electrical Specifications*					
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2180 MHz	2300-2400 MHz	2496-2690 MHz
Gain over sub band (dBi)	13.5	14.1	14.6	15.1	15.3
Gain Tolerance over sub band (dB)	0.6	0.8	0.5	0.5	0.6
Azimuth Beamwidth Tolerance (°)	4.4	3.8	3.6	4.4	4.5
Elevation Beamwidth Tolerance (°)	1.1	1.4	1.1	0.8	0.9
Electrical Downtilt Deviation (°)	2.0	1.3	1.3	1.2	1.3
First Upper Sidelobes Suppression (dB)	11.5	13.8	14.3	12.0	13.0
Upper Sidelobe Suppression Peak to 20° (dB)	NA	NA	19.6	15.8	14.1
Front-to-Back Ratio over ±20° (dB)	20.3	22.6	24.1	27.7	26.5
Cross-polar Discrimination at 3 dB (dB)	16.3	17.1	19.2	19.0	18.9

** Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V9.6.*
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Mechanical

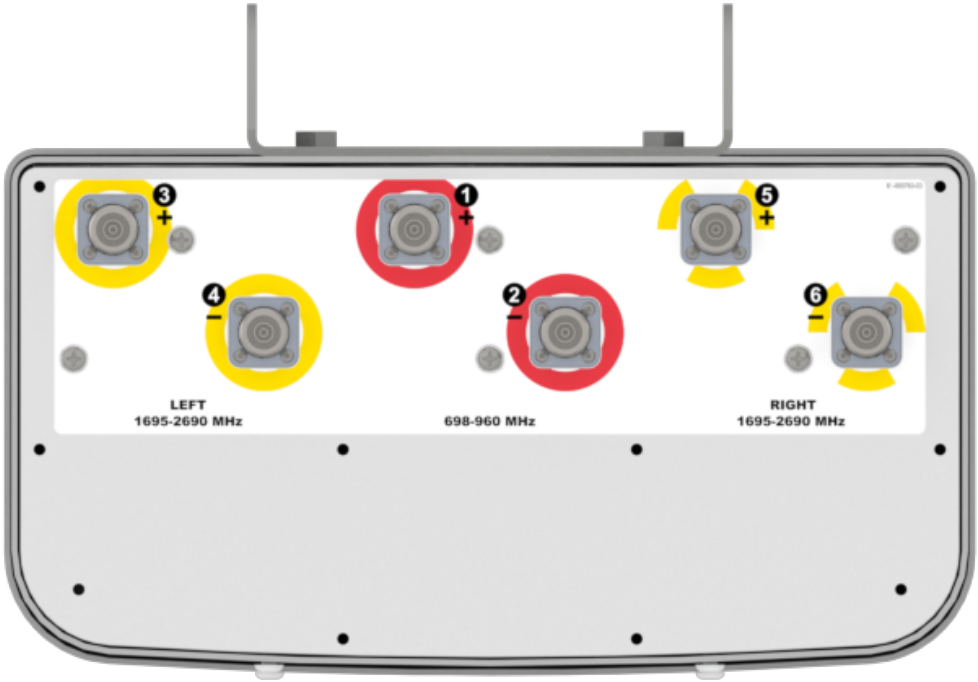
Dimensions (LxWxD)	24.3x15.4x8.2 in (618x391x208 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	80 lbs (355 N) @ 100 mph (161 kph)
Side Wind Load	43 lbs (192 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	3.1 ft^2 (0.3 m^2)
Weight*	15.2 lbs (6.9 kg)
Connector	6x 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

** Weight excludes mounting*

Mechanical

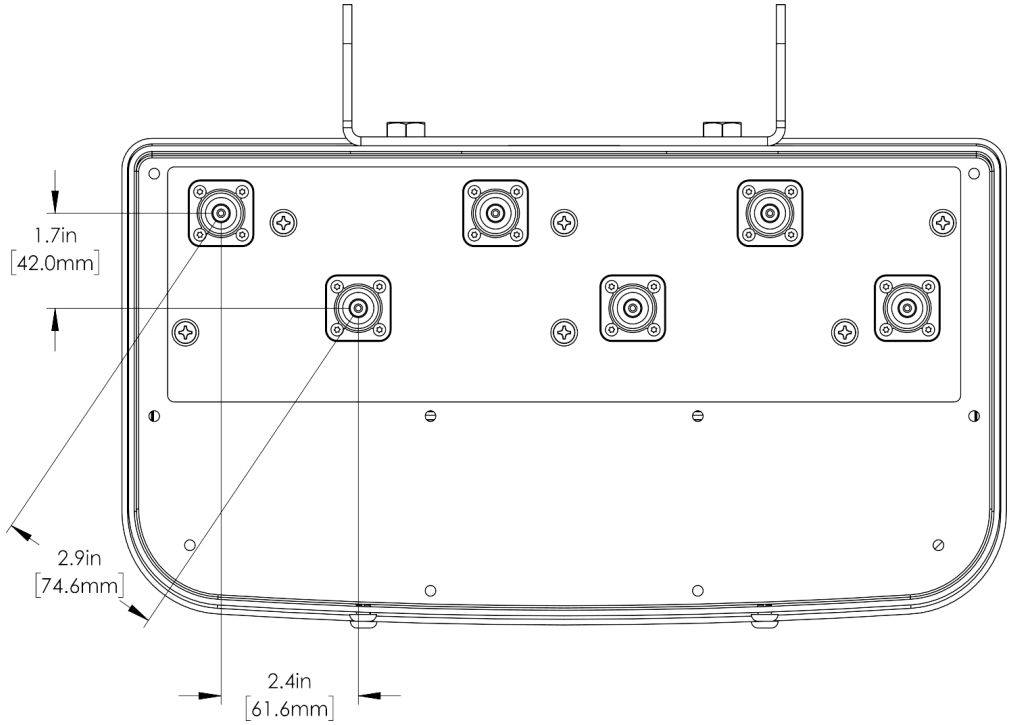
Bottom View

HPA45F-KE2AA



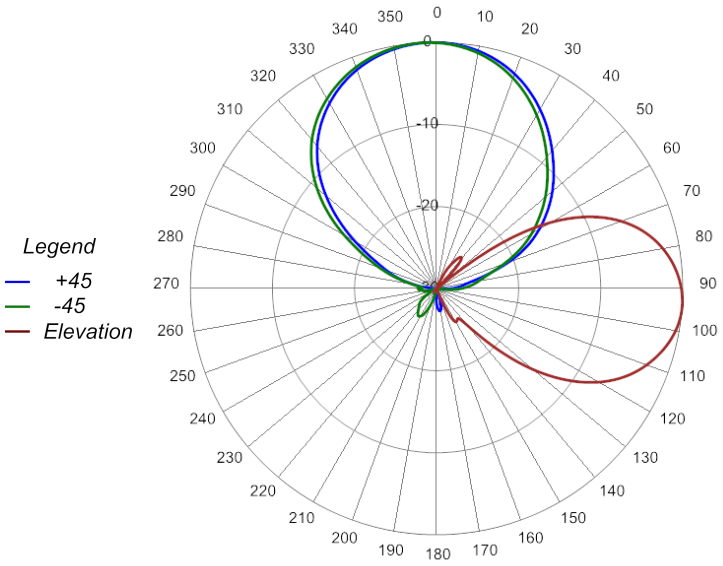
Connection Spacing Diagram

HPA45F-KE2AA

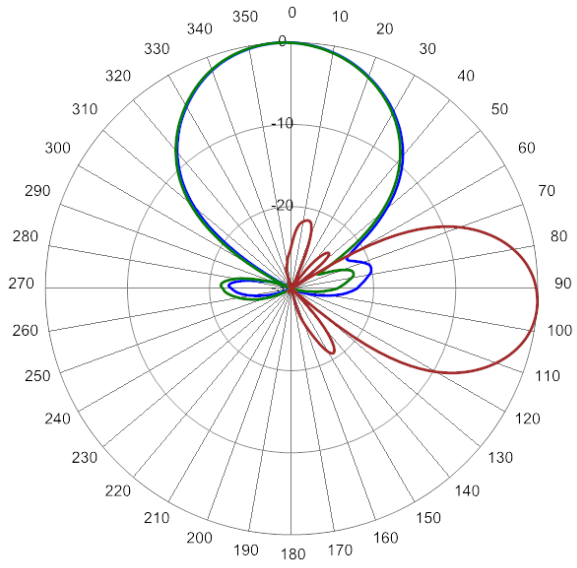


Typical Antenna Patterns

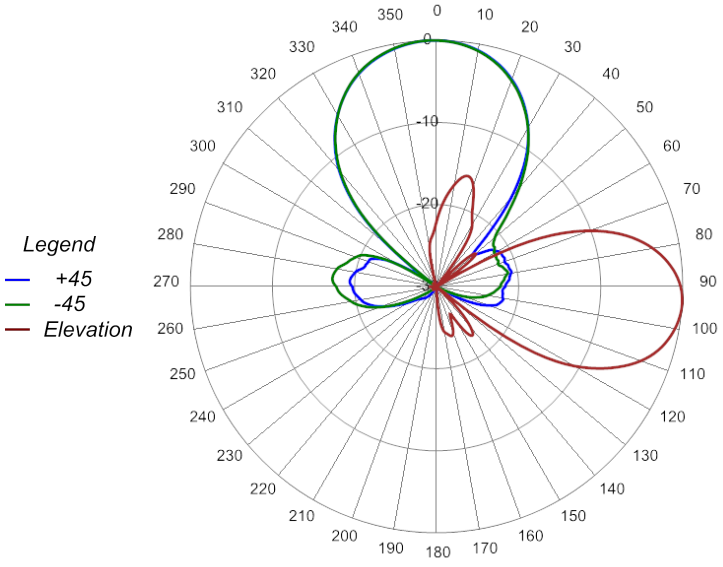
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



704 MHz Azimuth with Elevation 5°



850 MHz Azimuth with Elevation 5°



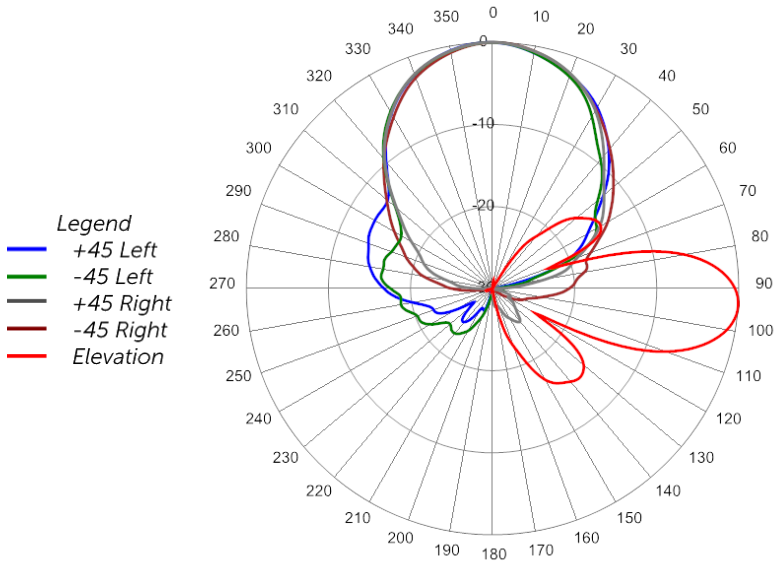
945 MHz Azimuth with Elevation 5°

SPECIFICATIONS

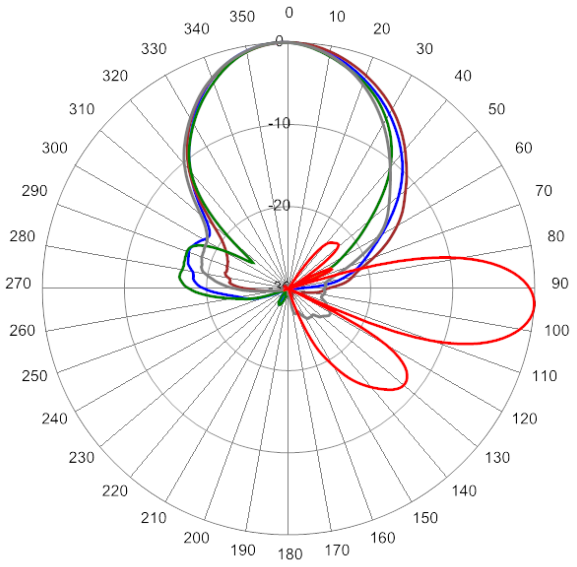
TriBand Antenna

HPA45F-KE2A

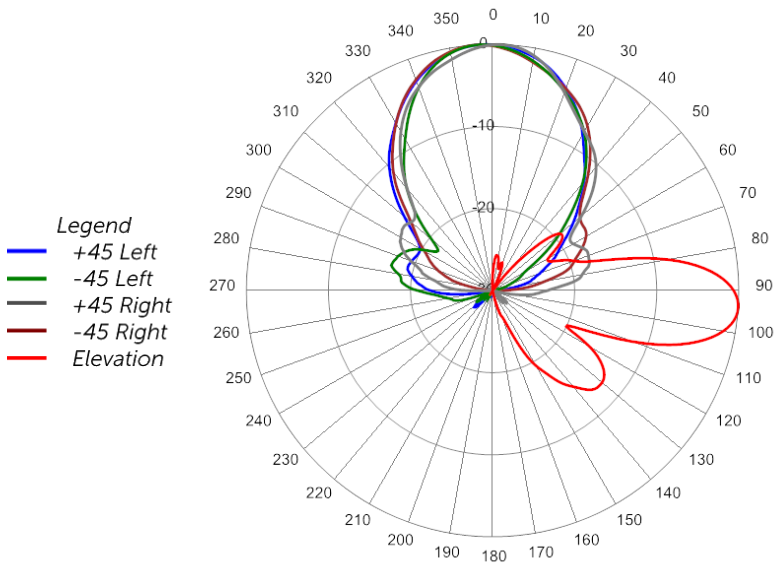
Typical Antenna Patterns



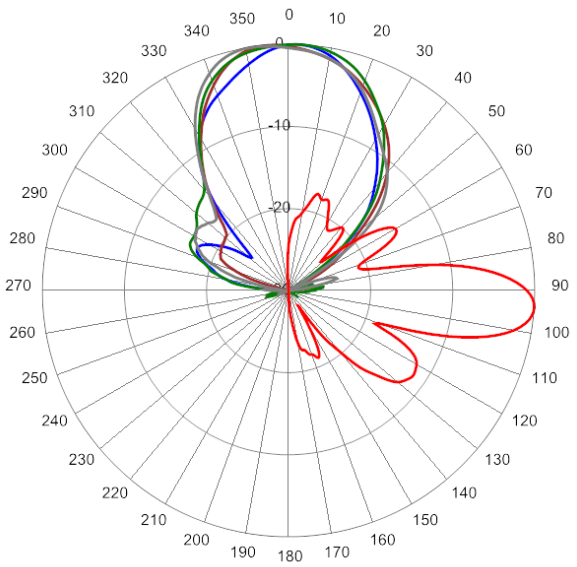
1710 MHz Azimuth with Elevation 4°



1970 MHz Azimuth with Elevation 4°



2155 MHz Azimuth with Elevation 4°



2500 MHz Azimuth with Elevation 4°

Parts & Accessories

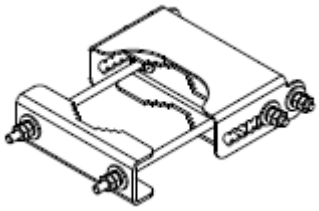
HPA45F-KE2AA-K	Two foot (0.6 m) TriBand antenna with 45° azimuth beamwidth, 4.3-10 female connectors and MBK-03 mounting bracket
MBK-03	Mounting bracket kit (top and bottom) with 0° to 10° mechanical tilt adjustment

Mounting Bracket Kit

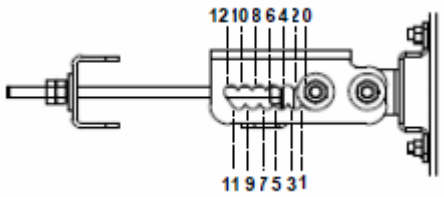
MBK-03

Mechanical

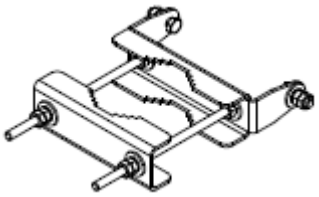
Weight	9.8 lbs (4.4 kg)
Hinge Pitch	13 in (330 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft·lbs (20 Nm)
Mechanical Tilt Adjustment	0° - 12°



MBK-03 Top Adjustable Bracket



MBK-03 Top Adjustable Bracket Side View



MBK-03 Bottom Fixed Bracket

STANDARDS & CERTIFICATIONS

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