



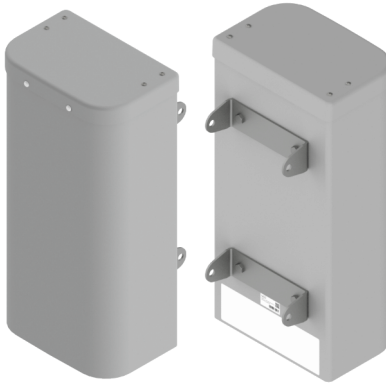
Antennas

MultiPort
Series

DATA SHEET

TriBand Antenna

HPA65F-KE2A



- Two foot (0.6 m), TriBand, six port antenna with a 65° 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

HPA65F-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	10.8 dBi	10.8 dBi	10.9 dBi	10.9 dBi
Azimuth Beamwidth (-3dB)	65°	70°	67°	61°
Elevation Beamwidth (-3dB)	31.7°	29.5°	28.8°	27.9°
Electrical Downtilt	6°	6°	6°	6°
Elevation Sidelobes (1st Upper)	<-20 dB	<-20 dB	<-18 dB	<-17 dB
Front-to-Back Ratio @180°	> 35 dB	> 35 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 25 dB	> 25 dB	> 25 dB	> 24 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)	10.7	10.6	10.6	10.5
Gain over sub band Tolerance (dB)	0.2	0.2	0.2	0.3
Azimuth Beamwidth Tolerance (°)	2.8	3.0	5.4	3.3
Elevation Beamwidth Tolerance (°)	1.8	0.9	1.4	1.0
Electrical Downtilt Deviation (°)	2.1	1.9	1.5	1.2
First Upper Sidelobe Suppression (dB)	17.1	17.3	19.8	13.8
Front-to-Back Ratio over ±20° (dB)	23.7	26.1	26.2	27.0
Cross-polar Discrimination ±60° (dB)	10.2	11.0	10.0	10.2

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



TriBand Antenna

HPA65F-KE2A

SPECIFICATIONS

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	13.4 dBi	13.6 dBi	14.0 dBi	13.9 dBi	13.9 dBi
Azimuth Beamwidth (-3dB)	61°	59°	59°	62°	63°
Elevation Beamwidth (-3dB)	20.7°	19.3°	18.5°	16.5°	14.5°
Electrical Downtilt	4°	4°	4°	4°	4°
Elevation Sidelobes (1st Upper)	<-15 dB	<-18 dB	<-20 dB	<-19 dB	<-12 dB
Front-to-Back Ratio @180°	> 35 dB	> 35 dB	> 35 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 18 dB	> 18 dB	> 19 dB	> 25 dB	> 24 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)	12.4	12.9	13.2	13.4	13.4
Gain Tolerance over sub band (dB)	0.8	0.7	0.7	0.6	0.6
Azimuth Beamwidth Tolerance (°)	5.1	4.2	4.5	8.3	10.1
Elevation Beamwidth Tolerance (°)	3.8	2.8	2.8	2.4	2.9
Electrical Downtilt Deviation (°)	1.1	1.0	1.1	0.9	1.1
First Upper Sidelobes Suppression (dB)	9.5	11.8	12.8	11.6	8.6
Upper Sidelobe Suppression Peak to 20° (dB)	16.6	17.4	16.5	15.6	9.0
Front-to-Back Ratio over ±20° (dB)	27.1	26.1	27.0	27.1	30.1
Cross-polar Discrimination at ±60° (dB)	8.7	9.0	8.2	7.1	8.2

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

Mechanical

Dimensions (LxWxD)	24.3x11.9x7.6 in (618x303x193 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	62 lbs (276 N) @ 100 mph (161 kph)
Side Wind Load	40 lbs (180 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	2.4 ft² (0.2 m²)
Weight*	14.3 lbs (6.5 kg)
Connector	6x 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

* Weight excludes mounting



TriBand Antenna

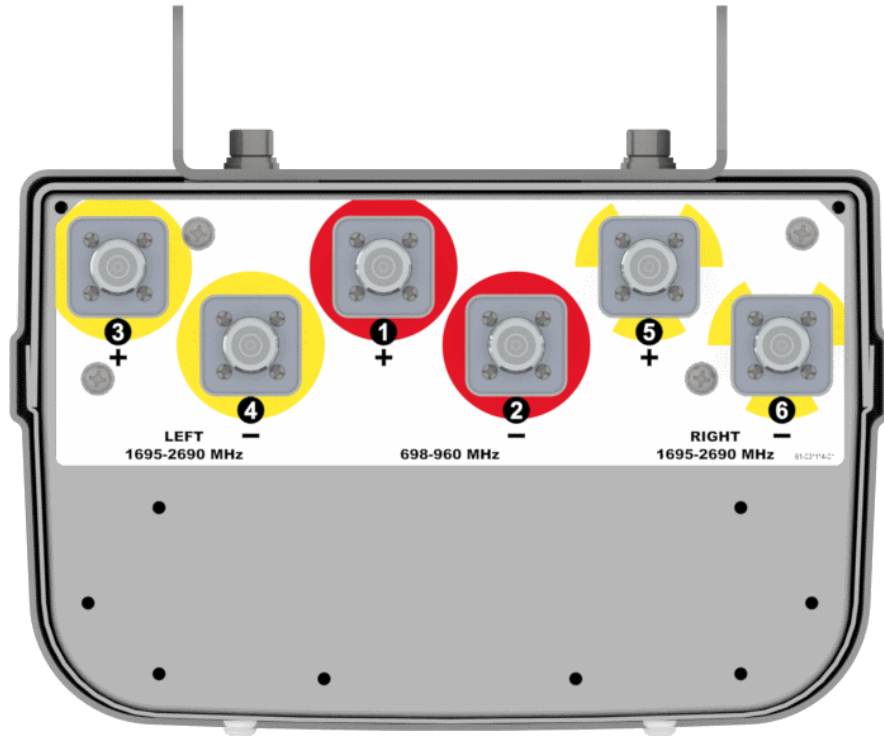
HPA65F-KE2A

SPECIFICATIONS

Mechanical

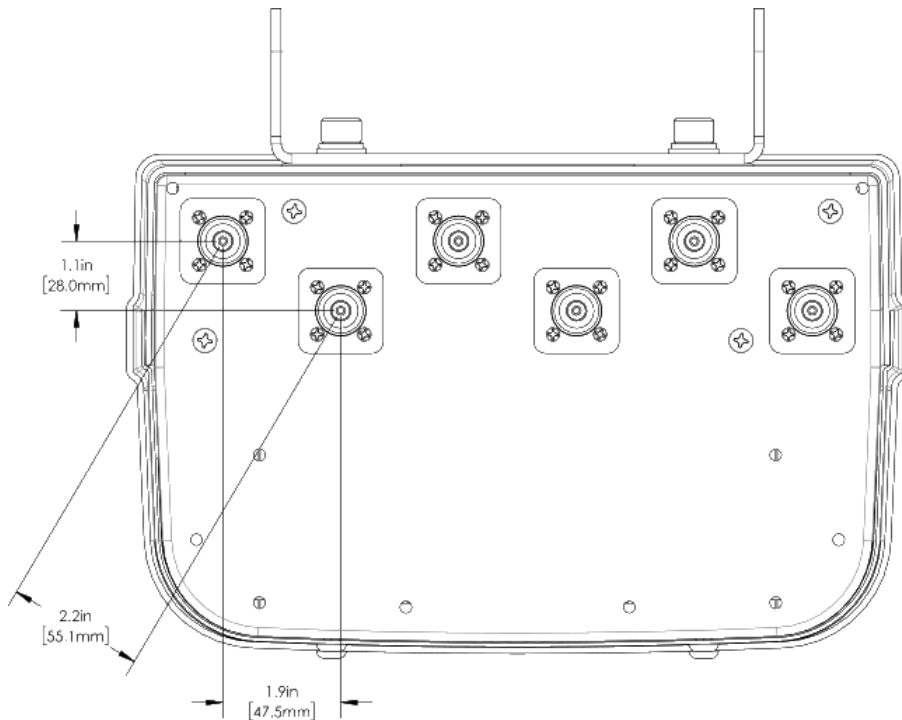
Bottom View

HPA65F-KE2AA



Connection Spacing Diagram

HPA65F-KE2AA





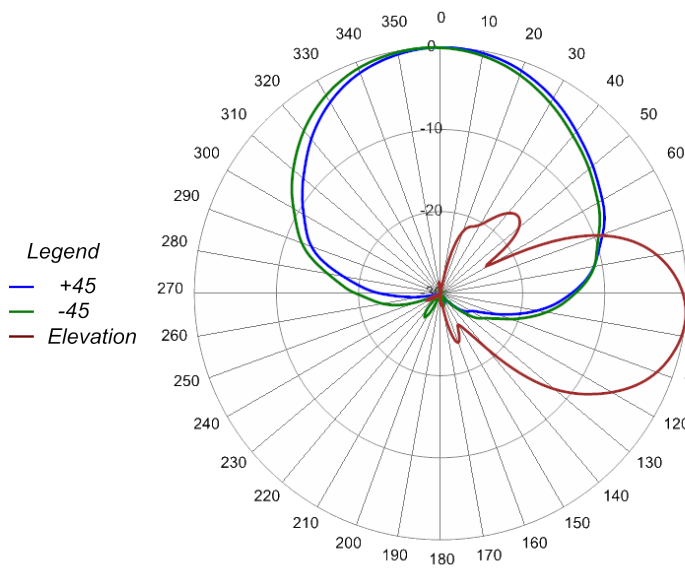
SPECIFICATIONS

TriBand Antenna

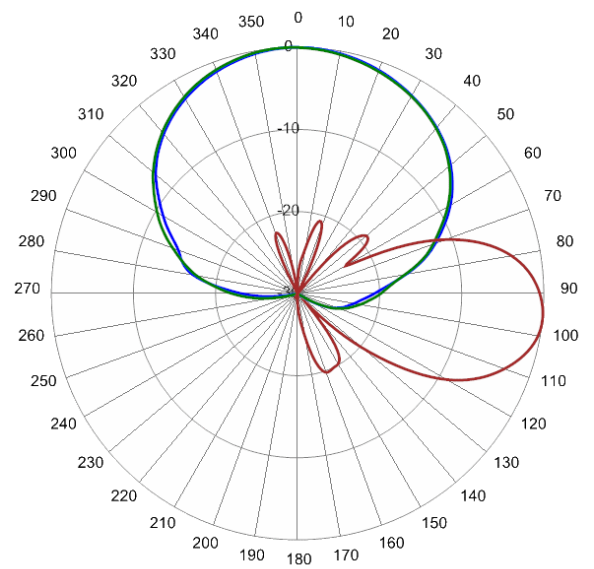
HPA65F-KE2A

Typical Antenna Patterns

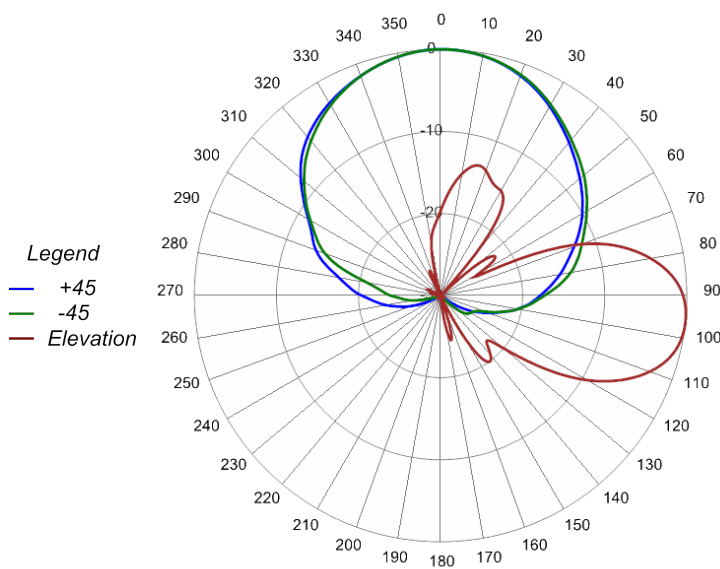
For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



704 MHz Azimuth with Elevation 6°



850 MHz Azimuth with Elevation 6°



945 MHz Azimuth with Elevation 6°

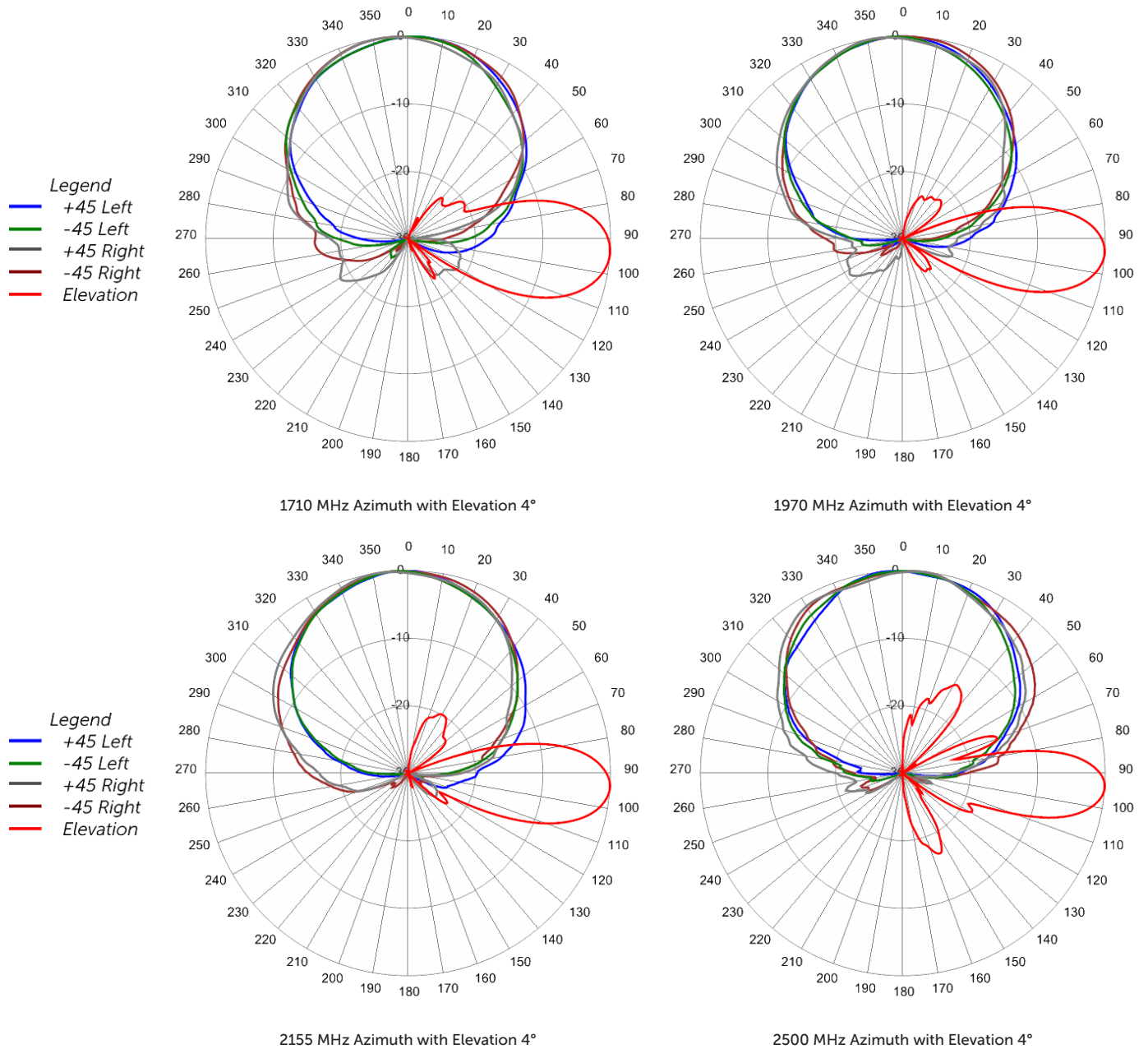


SPECIFICATIONS

TriBand Antenna

HPA65F-KE2A

Typical Antenna Patterns





ORDERING

TriBand Antenna

HPA65F-KE2A

Parts & Accessories

HPA65F-KE2AA-K Two foot (0.6 m) TriBand antenna with 65° 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

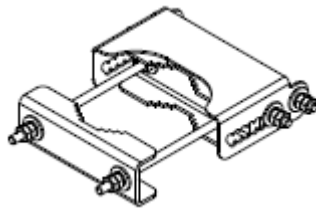


Mounting Bracket Kit

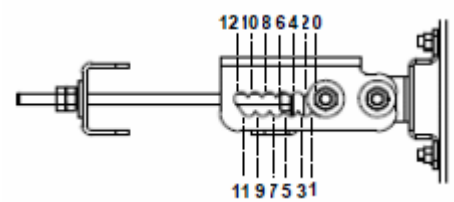
MBK-03

Mechanical

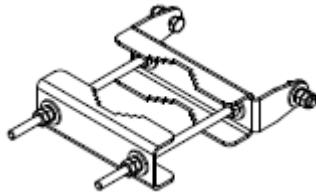
Weight	9.8 lbs (4.4 kg)
Hinge Pitch	13 in (330 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft-lbs (20 Nm)
Mechanical Tilt Adjustment	0° - 12°



MBK-03 Top Adjustable Bracket



MBK-03 Top Adjustable Bracket Side View



MBK-03 Bottom Fixed Bracket



STANDARDS & CERTIFICATIONS

TriBand Antenna

HPA65F-KE2A

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

