



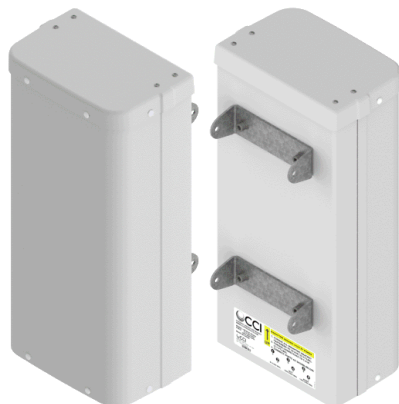
Antennas

MultiPort
Series

DATA SHEET

TriBand Antenna

HPA65F-TE2A



- Two foot (0.6 m), TriBand, six port antenna with a 65° azimuth beamwidth covering 614-960 MHz and 1695-2690 MHz frequencies
- Four wide high band ports covering 1695-2690 MHz and two wide low band ports covering 614-960 MHz in a single antenna
- Full Spectrum Compliance 614-960 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 614-960 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-TE2A

SPECIFICATIONS

Electrical

Ports	2 x Low Band Ports for 614-960 MHz				
Frequency Range	614-698 MHz	698-806 MHz	790-862 MHz	824-896 MHz	880-960 MHz
Gain	10.2 dBi	10.5 dBi	10.7 dBi	10.8 dBi	10.8 dBi
Azimuth Beamwidth (-3dB)	76°	69°	70°	65°	59°
Elevation Beamwidth (-3dB)	34.1°	31.8°	29.6°	28.5°	27.2°
Electrical Downtilt	6°	6°	6°	6°	6°
Elevation Sidelobes (1st Upper)	< -18 dB	< -18 dB	< -18 dB	< -17 dB	< -16 dB
Front-to-Back Ratio @180°	> 30 dB	> 33 dB	> 33 dB	> 33 dB	> 32 dB
Cross-Polar Discrimination at Peak	> 25 dB	> 25 dB	> 25 dB	> 24 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)	500 watts	500 watts	500 watts	500 watts	500 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*	614-698 MHz	698-806 MHz	790-862 MHz	824-896 MHz	880-960 MHz
Frequency Range	614-698 MHz	698-806 MHz	790-862 MHz	824-896 MHz	880-960 MHz
Gain over sub band (dBi)	9.7	10.3	10.2	10.4	10.3
Gain over sub band Tolerance (dB)	0.5	0.3	0.3	0.4	0.4
Azimuth Beamwidth Tolerance (°)	11.5	3.5	5.3	7.9	1.9
Elevation Beamwidth Tolerance (°)	1.2	1.1	1.7	2.1	1.8
Electrical Downtilt Deviation (°)	1.8	2.3	2.5	1.9	1.9
First Upper Sidelobe Suppression (dB)	15.0	14.3	12.1	12.3	13.2
Front-to-Back Ratio over ±20° (dB)	22.0	22.6	22.1	21.9	20.6
Cross-polar Discrimination ±60° (dB)	13.2	9.0	9.8	10.9	6.5

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



TriBand Antenna

HPA65F-TE2A

SPECIFICATIONS

Electrical

Ports	4 x High Band Ports for 1695-2690 MHz				
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2200 MHz	2300-2400 MHz	2496-2690 MHz
Gain	13.0 dBi	13.2 dBi	13.8 dBi	13.7 dBi	14.1 dBi
Azimuth Beamwidth (-3dB)	62°	61°	58°	62°	63°
Elevation Beamwidth (-3dB)	20.7°	19.7°	18.8°	16.5°	15.3°
Electrical Downtilt	4°	4°	4°	4°	4°
Elevation Sidelobes (1st Upper)	< -15 dB	< -15 dB	< -16 dB	< -15 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	> 18 dB	> 18 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*	1695-1880 MHz	1850-1990 MHz	1920-2200 MHz	2300-2400 MHz	2496-2690 MHz
Frequency Range	1695-1880 MHz	1850-1990 MHz	1920-2200 MHz	2300-2400 MHz	2496-2690 MHz
Gain over sub band (dBi)	12.3	12.7	13.0	13.4	13.5
Gain Tolerance over sub band (dB)	0.7	0.6	0.6	0.3	0.6
Azimuth Beamwidth Tolerance (°)	4.8	4.7	4.4	6.8	8.6
Elevation Beamwidth Tolerance (°)	3.4	3.0	2.8	3.2	3.4
Electrical Downtilt Deviation (°)	1.0	0.9	1.3	1.2	1.3
First Upper Sidelobes Suppression (dB)	9.7	12.5	13.1	10.1	8.4
Upper Sidelobe Suppression Peak to 20° (dB)	17.2	18.5	18.5	12.6	9.2
Front-to-Back Ratio over ±20° (dB)	26.4	27.6	26.2	27.8	29.0
Cross-polar Discrimination at ±60° (dB)	8.9	9.2	8.7	5.0	5.3

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

Mechanical

Dimensions (LxWxD)	25.5x11.9x7.6 in (647x303x193 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	65 lbs (288 N) @ 100 mph (161 kph)
Side Wind Load	43 lbs (190 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	2.5 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



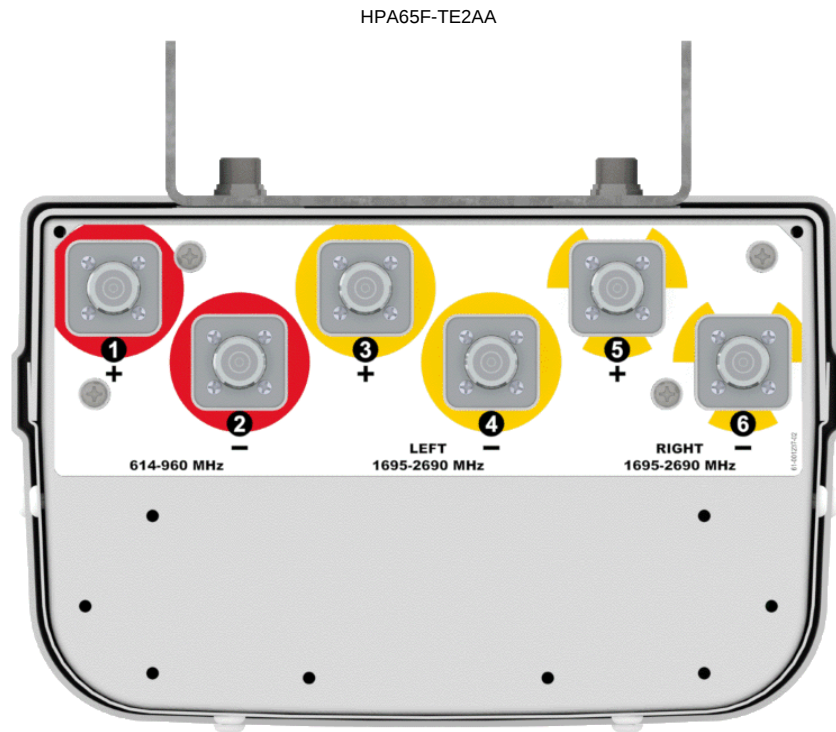
SPECIFICATIONS

TriBand Antenna

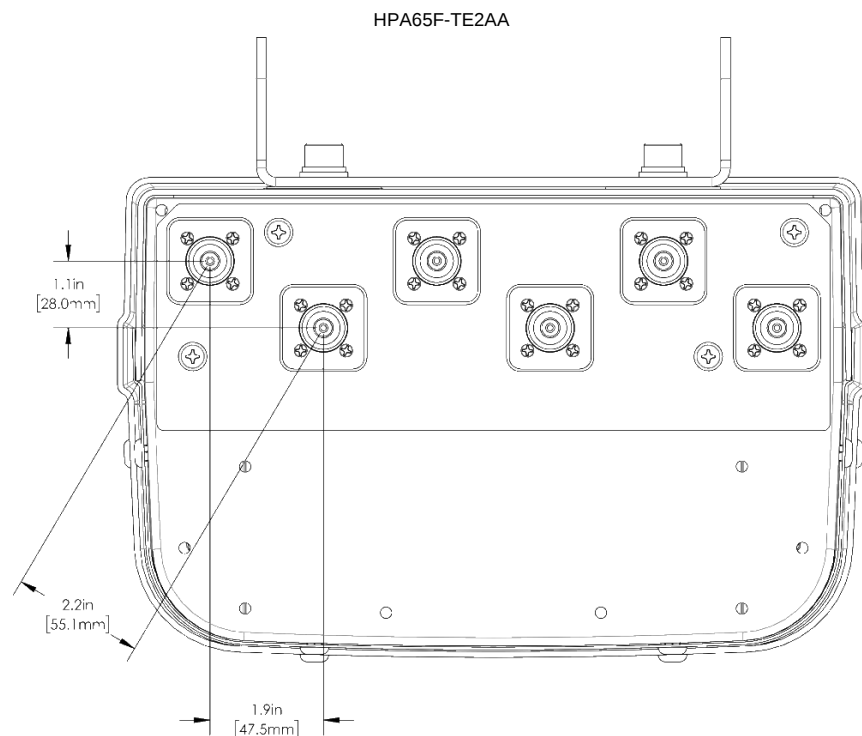
HPA65F-TE2A

Mechanical

Bottom View



Connection Spacing Diagram





SPECIFICATIONS

TriBand Antenna

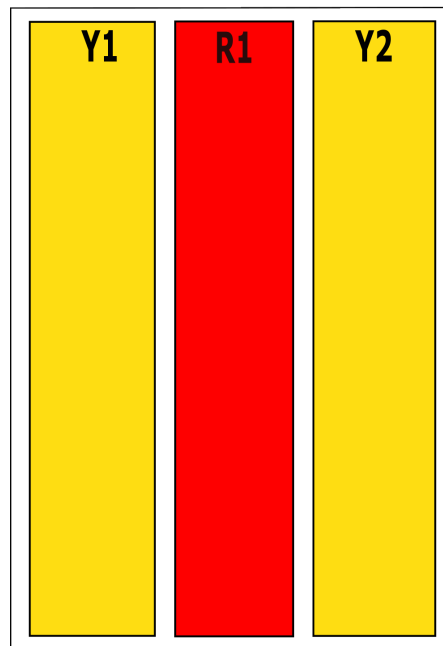
HPA65F-TE2A

Mechanical

Antenna Array Configuration

HPA65F-TE2AA

**Top of antenna
Viewed from rear**



Array	Ports	Freq (MHz)
R1	1, 2	614-960
Y1	3, 4	1695-2690
Y2	5, 6	1695-2690



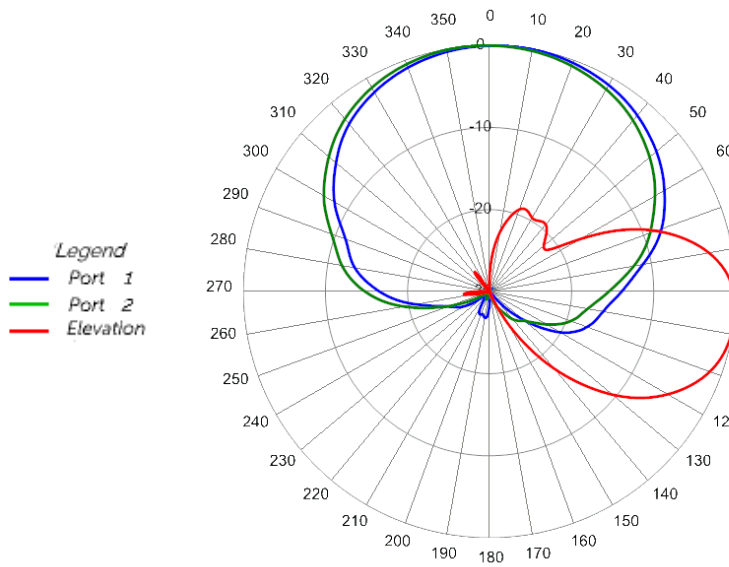
SPECIFICATIONS

TriBand Antenna

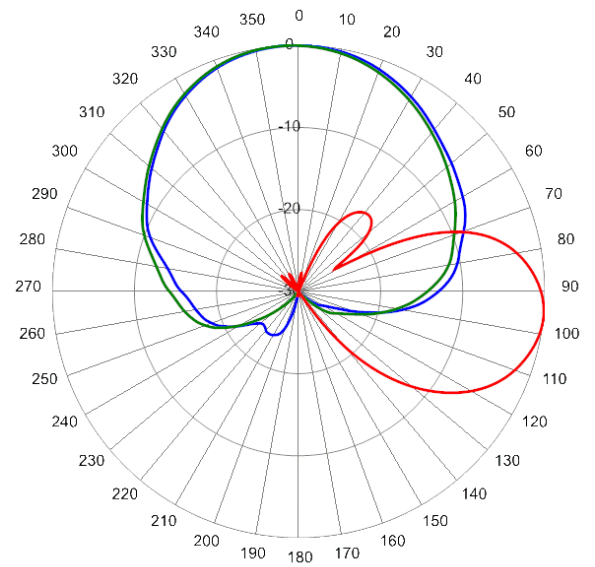
HPA65F-TE2A

Typical Antenna Patterns

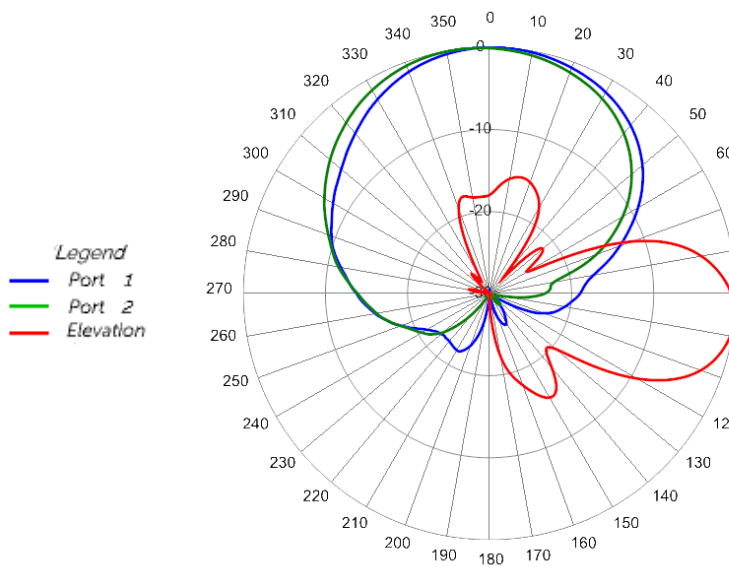
For detailed information on additional antenna patterns, contact customer support at support@cciprducts.com



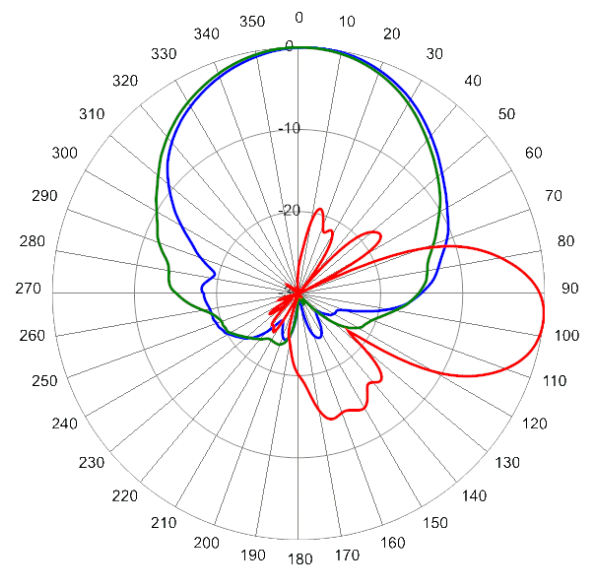
614 MHz Azimuth with Elevation 6°



704 MHz Azimuth with Elevation 6°



824 MHz Azimuth with Elevation 6°



945 MHz Azimuth with Elevation 6°

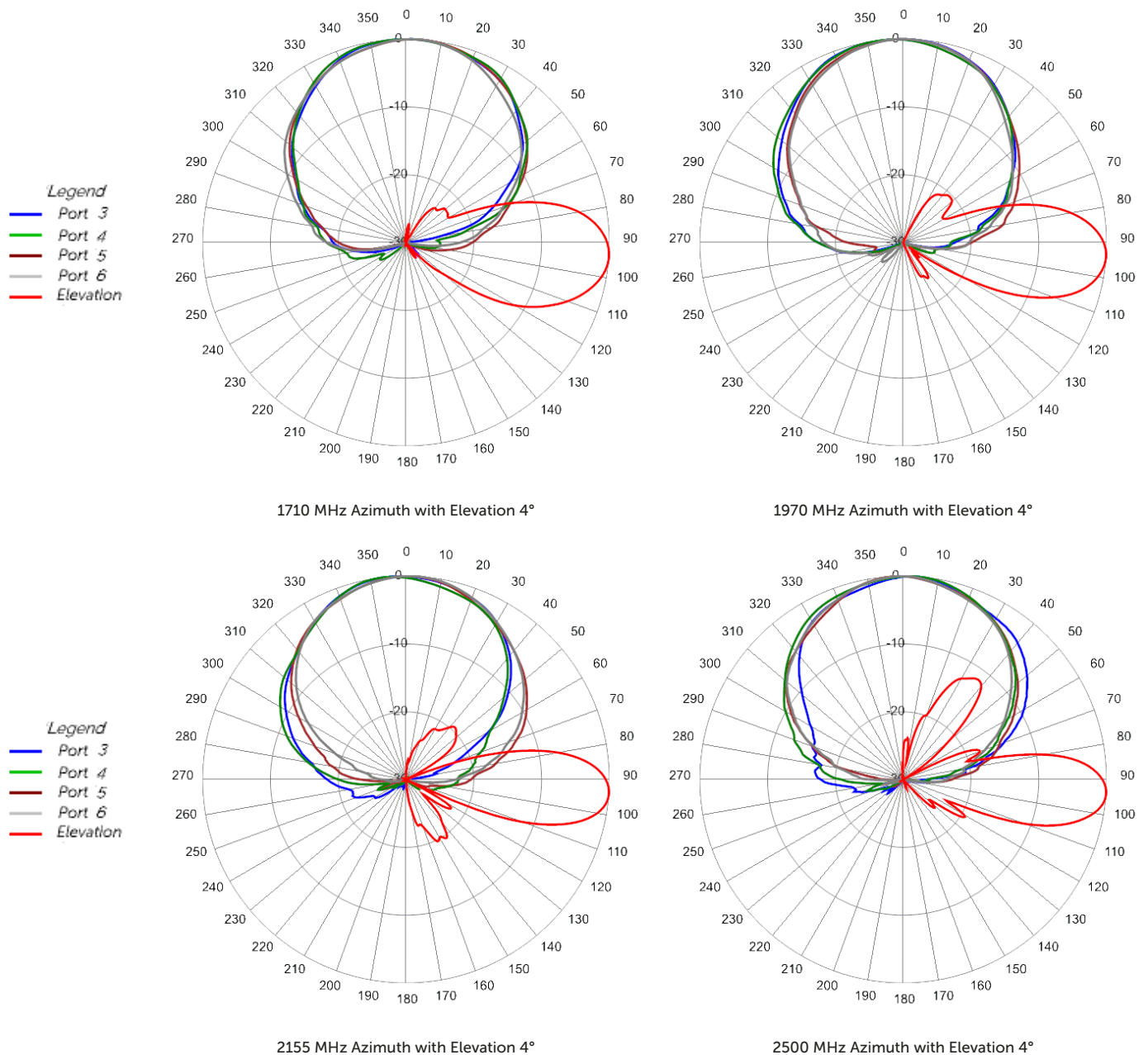


SPECIFICATIONS

TriBand Antenna

HPA65F-TE2A

Typical Antenna Patterns





ORDERING

TriBand Antenna

HPA65F-TE2A

Parts & Accessories

HPA65F-TE2AA-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



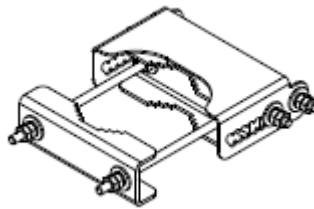
ACCESSORIES

Mounting Bracket Kit

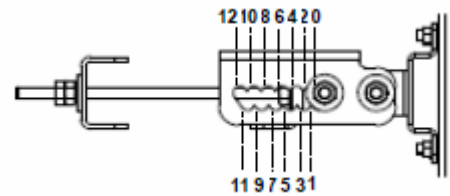
MBK-03

Mechanical

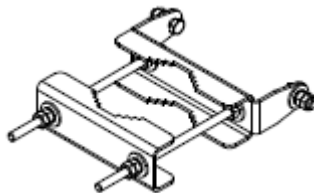
Weight	9.8 lbs (4.4 kg)
Hinge Pitch	13 in (330 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft-lbs (20 N·m)
Mechanical Tilt Adjustment	0° - 12°



MBK-03 Top Adjustable Bracket



MBK-03 Top Adjustable Bracket Side View



MBK-03 Bottom Fixed Bracket



STANDARDS & CERTIFICATIONS

TriBand Antenna

HPA65F-TE2A

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

