



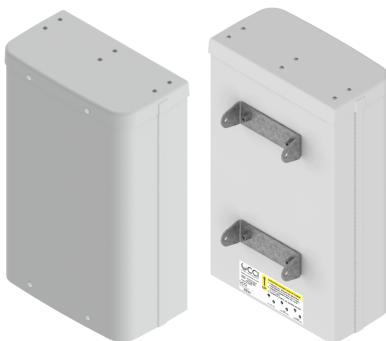
Antennas

MultiPort
Series

DATA SHEET

TriBand Antenna

HPA45F-TE2A



- Two foot (0.6 m), TriBand, six port antenna with a 45° 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

HPA45F-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	12.0 dBi	12.6 dBi	13.3 dBi	13.4 dBi	13.5 dBi
Azimuth Beamwidth (-3dB)	56°	50°	48°	44°	41°
Elevation Beamwidth (-3dB)	33.8°	31.6°	29.0°	27.5°	26.4°
Electrical Downtilt	4°	4°	4°	4°	4°
Elevation Sidelobes (1st Upper)	< -18 dB	< -20 dB	< -20 dB	< -20 dB	< -20 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 35 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 22 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)	11.4	12.4	12.9	13.2	13.3
Gain over sub band Tolerance (dB)	0.7	0.3	0.4	0.3	0.2
Azimuth Beamwidth Tolerance (°)	5.9	0.6	3.2	5.1	1.6
Elevation Beamwidth Tolerance (°)	1.5	1.5	1.8	1.4	1.2
Electrical Downtilt Deviation (°)	3.1	2.1	1.0	0.6	0.7
First Upper Sidelobe Suppression (dB)	17.2	19.1	18.4	18.3	16.5
Front-to-Back Ratio over ±20° (dB)	21.8	24.5	26.9	24.8	23.7
Cross-polar Discrimination at 3 dB (dB)	19.6	23.8	25.0	18.9	16.1

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



TriBand Antenna

HPA45F-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	14.2 dBi	14.3 dBi	14.8 dBi	15.4 dBi	16.2 dBi
Azimuth Beamwidth (-3dB)	43°	40°	40°	42°	34°
Elevation Beamwidth (-3dB)	19.0°	18.4°	17.6°	15.1°	14.1°
Electrical Downtilt	4°	4°	4°	4°	4°
Elevation Sidelobes (1st Upper)	<-14 dB	<-15 dB	<-16 dB	<-16 dB	<-15 dB
Front-to-Back Ratio @180°	> 32 dB	> 34 dB	> 35 dB	> 35 dB	> 35 dB
Cross-Polar Discrimination at Peak	> 19 dB	> 18 dB	> 20 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*	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)	13.5	14.0	14.3	15.1	15.6
Gain Tolerance over sub band (dB)	0.4	0.4	0.3	0.2	0.5
Azimuth Beamwidth Tolerance (°)	4.1	3.7	3.3	1.7	5.8
Elevation Beamwidth Tolerance (°)	0.6	1.0	1.5	0.6	1.5
Electrical Downtilt Deviation (°)	2.1	1.2	1.6	1.6	1.3
First Upper Sidelobes Suppression (dB)	11.5	12.3	13.0	12.9	9.9
Upper Sidelobe Suppression Peak to 20° (dB)	20.0	18.8	20.0	16.2	10.6
Front-to-Back Ratio over ±20° (dB)	20.4	23.3	25.2	29.4	26.8
Cross-polar Discrimination at 3 dB (dB)	14.1	14.1	15.2	18.0	18.7

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

Mechanical

Dimensions (LxWxD)	25.9x15.9x8.1 in (658x405x205 mm)
Survival Wind Speed	> 150 mph (> 241 kph)
Front Wind Load	88 lbs (391 N) @ 100 mph (161 kph)
Side Wind Load	46 lbs (203 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	3.4 ft ² (0.3 m ²)
Weight*	18.3 lbs (8.3 kg)
Connector	6x 4.3-10 female
Mounting Pole	2 to 5 in (5 to 12 cm)

* Weight excludes mounting

SPECIFICATIONS

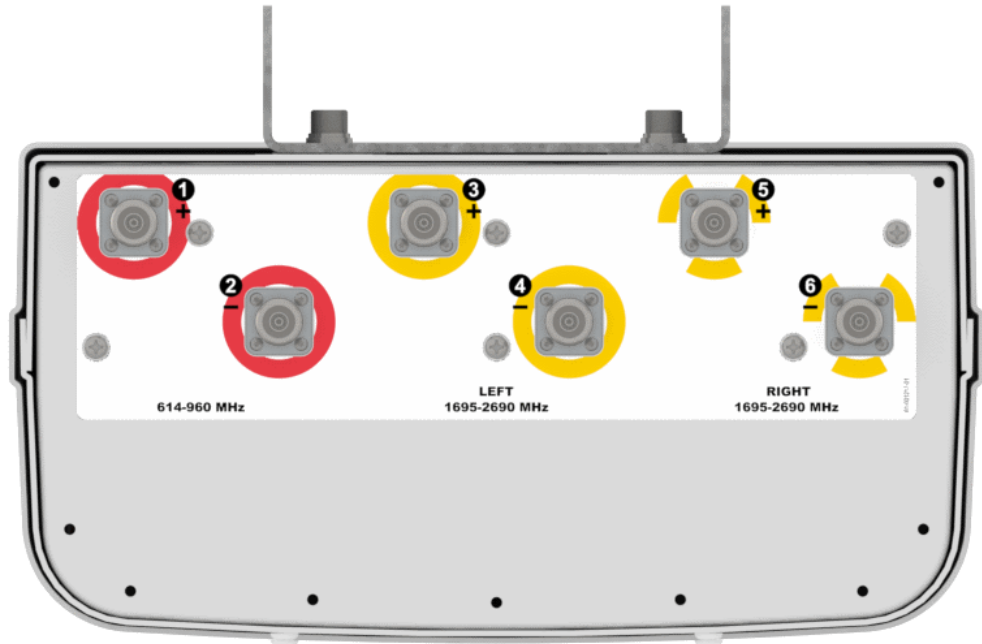
TriBand Antenna

HPA45F-TE2A

Mechanical

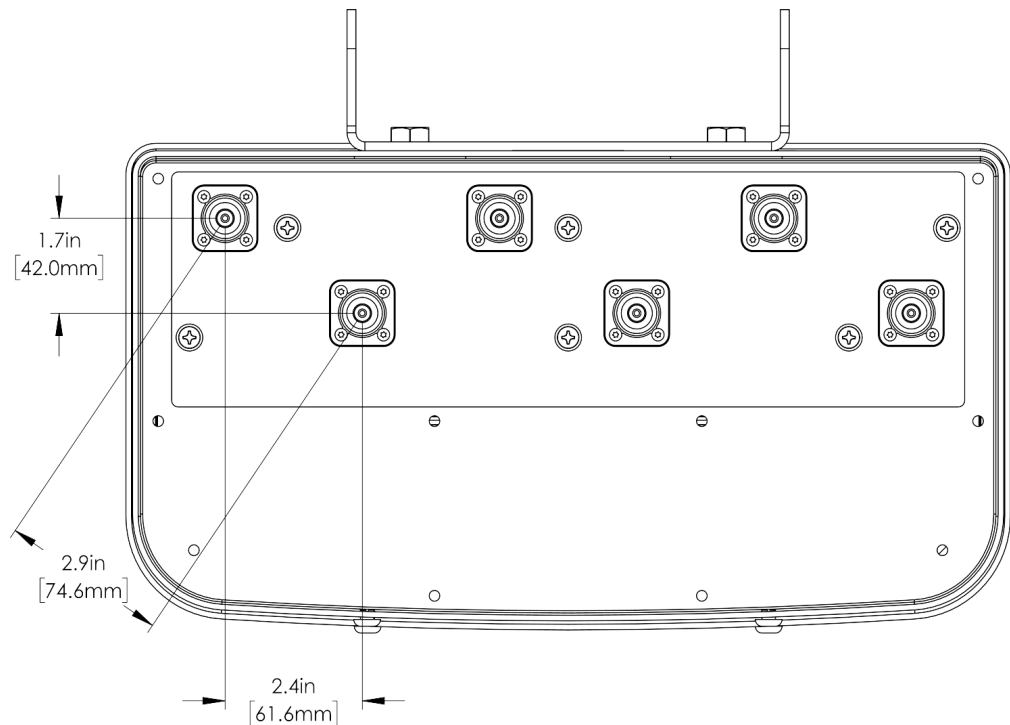
Bottom View

HPA45F-TE2AA



Connection Spacing Diagram

HPA45F-TE2AA





SPECIFICATIONS

TriBand Antenna

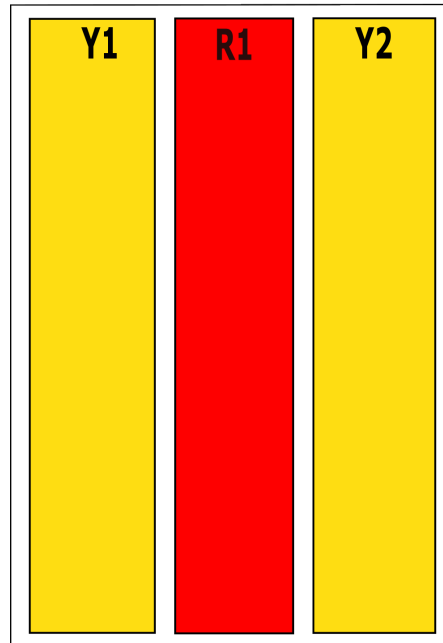
HPA45F-TE2A

Mechanical

Antenna Array Configuration

HPA45F-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



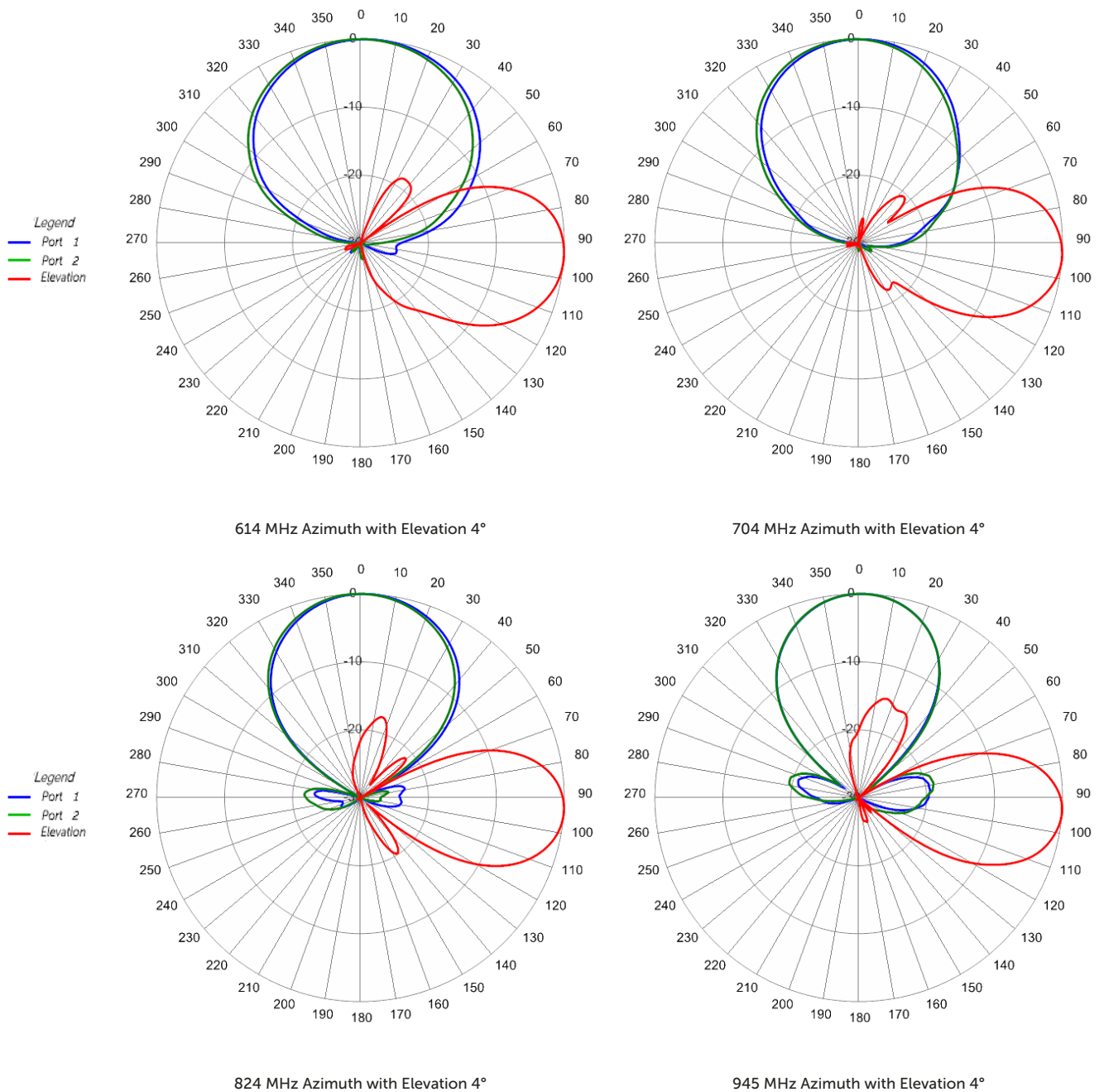
SPECIFICATIONS

TriBand Antenna

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Typical Antenna Patterns

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



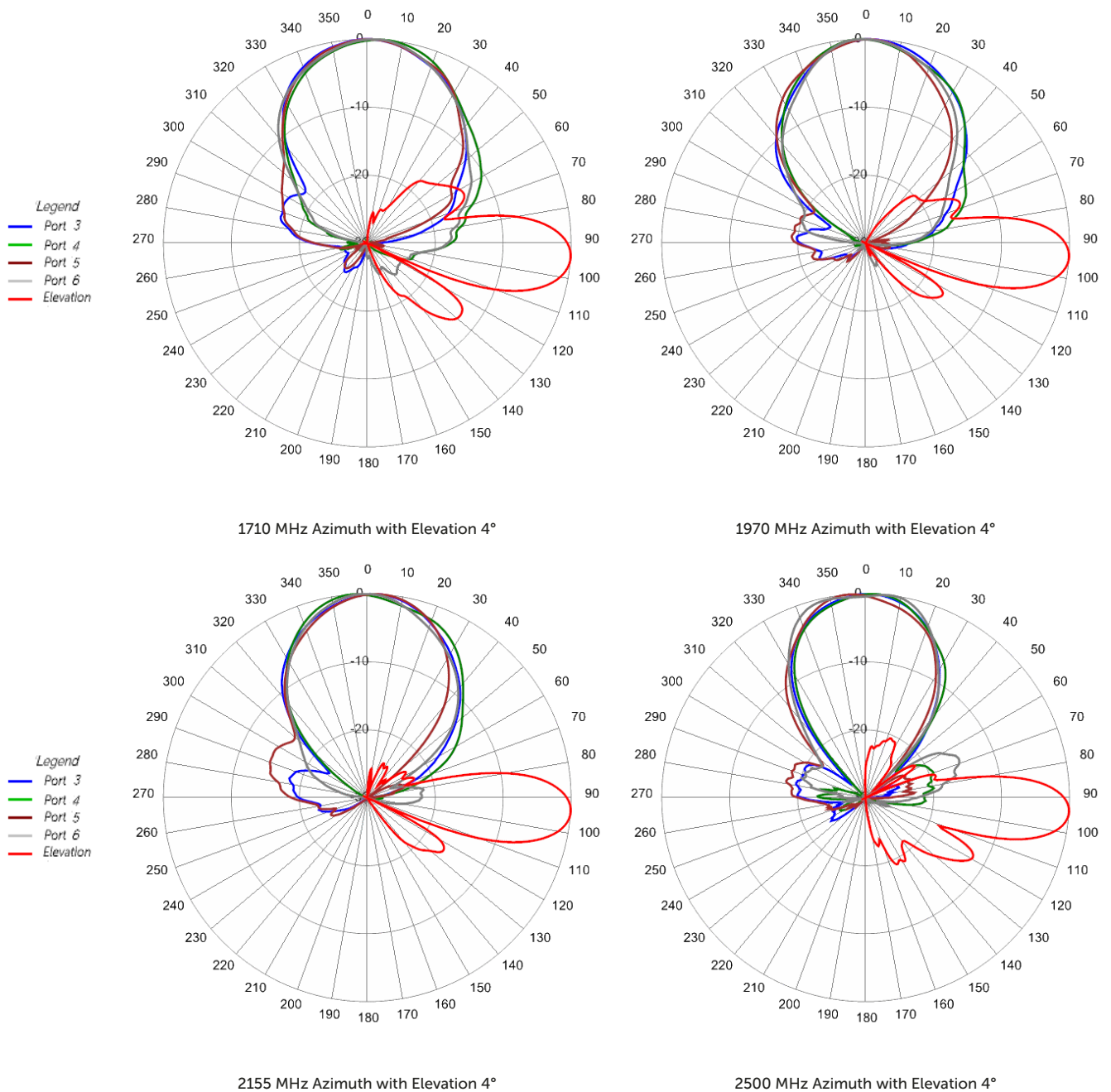


SPECIFICATIONS

TriBand Antenna

HPA45F-TE2A

Typical Antenna Patterns





ORDERING

TriBand Antenna

HPA45F-TE2A

Parts & Accessories

HPA45F-TE2AA-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
TM-01	Triple Pole Mounting Bracket (top and bottom) with fixed 0° mechanical tilt



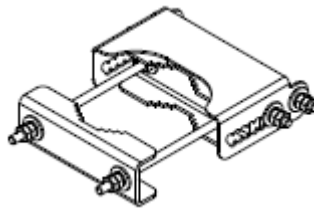
ACCESSORIES

Mounting Bracket Kit

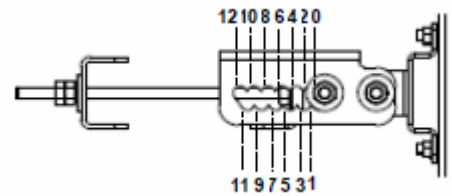
MBK-03

Mechanical

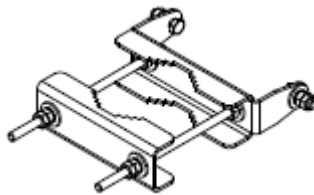
Weight	9.8 lbs (4.4 kg)
Hinge Pitch	13 in (330 mm)
Mounting Pole Dimension	2 to 5 in (5 to 12 cm)
Fastener Size	M10
Installation Torque	15 ft-lbs (20 N·m)
Mechanical Tilt Adjustment	0° - 12°



MBK-03 Top Adjustable Bracket



MBK-03 Top Adjustable Bracket Side View



MBK-03 Bottom Fixed Bracket



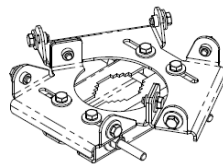
ACCESSORIES

Triple Mount Cluster Bracket

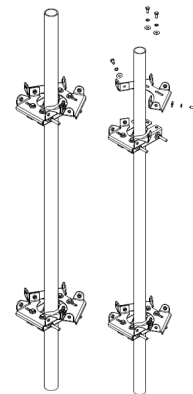
TM-01

Mechanical

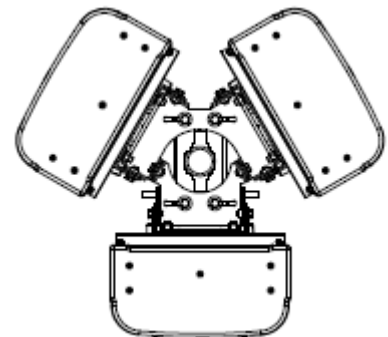
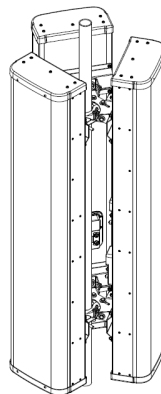
Weight	21.6 lbs (9.8 kg)
Fastener Size	M10
Installation Torque	40 ft-lb (54 N-m)
Hinge Pitch (Vertical)	13.0 in (330 mm) or 31.5 in (800 mm) or 47.2 in (1200 mm)
Mechanical Tilt Adjustment	None



TM-01 Bracket



TM-01 Mounting Brackets (on Pole)



3 - 65° Antennas Mounted on Pole using TM-01 Brackets (Iso and Top Views)



STANDARDS & CERTIFICATIONS

TriBand Antenna

HPA45F-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

