

HEX454CU0000x

TRI BAND | HEX PORT | PANEL ANTENNA | XXX-POL | 45° / 45° / 45° | 15.1 / 17.8 / 17.8 DBI | VARIABLE TILT

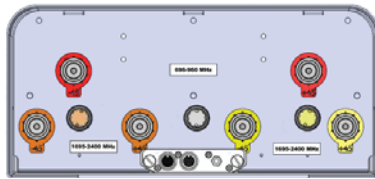
Features

- Ultra wide-band, AWS-3 Ready
- 4x4 MIMO high band compatible
- Patented internal RET actuator adds no additional length to the antenna
- Can be ordered with a Multi-Device Dual Unit (MDDU) with two separate inputs for independent control of each band

Connector Description

The antenna has six (6) connectors located at the bottom, each marked with a colored ring.

Low Band	696-960 MHz	Red Rings		(2x) 7/16-DIN Female
High Band #1	1695-2400 MHz	Yellow Rings		(2x) 7/16-DIN Female
High Band #2	1695-2400 MHz	Orange Rings		(2x) 7/16-DIN Female



Electrical Characteristics	Low Band		High Band #1 and #2			
Frequency Bands (MHz)	696-960 MHz		(2x) 1695-2400 MHz			
	696-806	806-960	1695-1850	1850-1990	2100-2180	2200-2400
Polarization	±45°		(2x) ±45°			
Horizontal Beamwidth	48°	41°	50°	45°	43°	41°
Vertical Beamwidth	22.0°	18.2°	9.0°	8.5°	7.8°	6.9°
Gain	13.8 dBi	15.1 dBi	16.5 dBi	17.0 dBi	17.5 dBi	17.8 dBi
Electrical Downtilt	0-14°		0-10°			
Impedance	50Ω		50Ω			
VSWR	< 1.5:1		< 1.5:1			
Upper Sidelobe Suppression	> 18 dB Typical		> 15 dB Typical			
Front-to-Back Ratio	> 24 dB		> 27 dB			
In-Band Isolation	> 25 dB		> 28 dB			
Isolation Between Ports	> 30 dB		> 30 dB			
IM3 (2x20W carrier)	< -153 dBc		< -153 dBc			
Input Power	(2x) 500 W		(4x) 250 W			
Diplexed	No					
Lightning Protection	Direct Ground					
Operating Temperature	-40° to +60° C (-40° to +140° F)					

Mechanical Characteristics

Dimensions (Length x Width x Depth)		1189 x 397 x 187 mm	46.8 x 15.6 x 7.4 in
Weight	Antenna Only	18.1 kg	40.0 lbs
	Antenna with Mounting Bracket Kit 36210006	22.2 kg	48.9 lbs
Survival Wind Speed		241 km/hr	150 mph
Wind Loads (160 km/hr or 100 mph)	Front	604 N	136 lbf
	Side	280 N	63 lbf

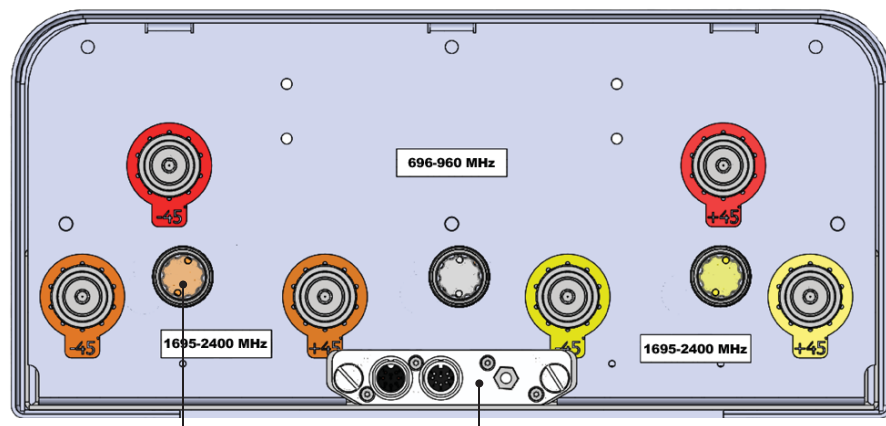
Quoted performance parameters are provided to offer typical, peak or range values only and may vary as a result of normal testing, manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to products may be made without notice.

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Electrical Downtilt Control

Manual Electrical Tilt (MET) Control	Electrical downtilt for each band can be controlled separately. A colored knob at the end of the tilt indicator allows change of the tilt without need of a tool. The knob color is identical to the corresponding connector ring color. To access the knob, remove the cap by turning it counter-clockwise. It is re-installed by opposite rotation. Do not remove the transparent cap(s) from the antenna.	
Remote Electrical Tilt (RET) Control	Electrical downtilt for each band can be controlled separately. The remote control of the electrical tilt is managed by either a Multi-Device Control Unit (MDCU) or a Multi-Device Dual Unit (MDDU) inserted in the bottom of the antenna. A single actuator individually controls the tilt of each band (no need for daisy chain cables between the bands). This module does not add any additional length to the antenna. For RET control, the transparent caps must be in place and locked. The tilt angle indicators always remain visible and the antenna still has manual tilt control (manual override). Do not remove the transparent cap(s) from the antenna.	
RET Actuators (Units are Field Replaceable)	Multi-Device Control Unit (MDCU) An electronic module that allows the remote control of the electrical downtilt (RET) in Amphenol antennas with factory embedded motors. The MDCU is factory installed.	Multi-Device Dual Unit (MDDU) Allows two separate RET Controllers to independently drive the RETs in Amphenol antennas with factory installed motors (for antenna sharing). The MDDU is factory installed. Refer to Ordering Options for unique AISG port configurations
		 Two separate inputs for independent control of each band



Tilt indicators covered by transparent caps.
Knob colors are the same as the connectors.

Location of the MDCU or MDDU
for RET Control (MDCU shown)

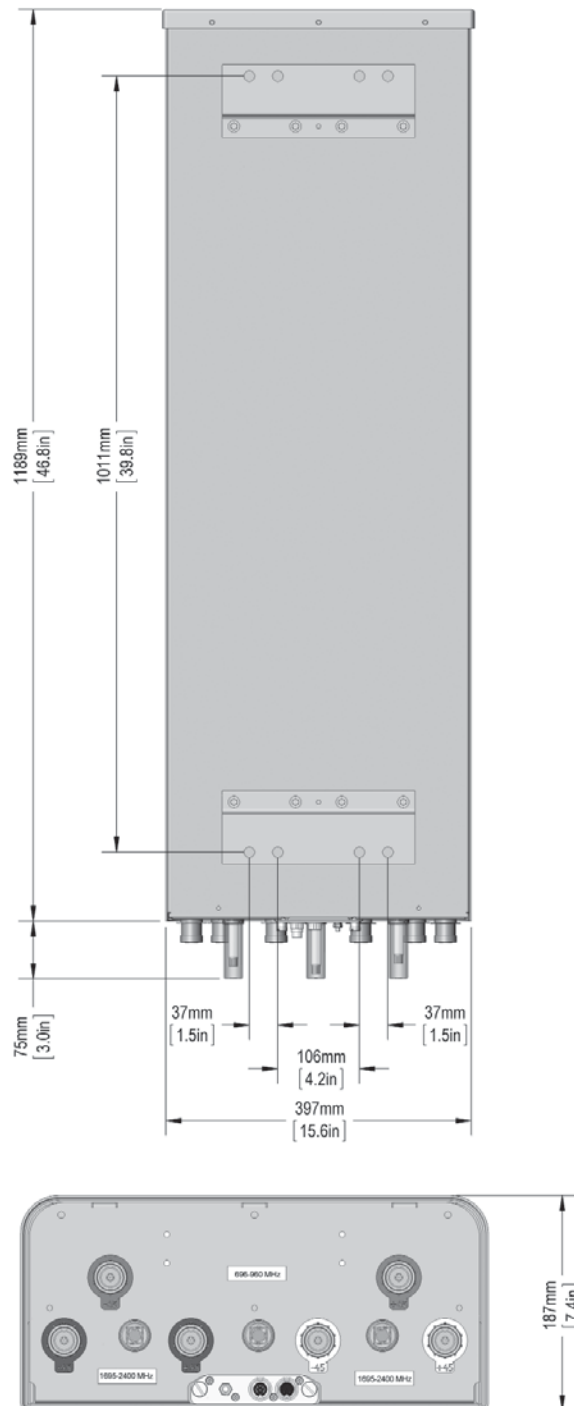


In order to operate RET control, the transparent caps covering the tilt adjustment indicators must be engaged and locked. Do not cut them from the antenna.

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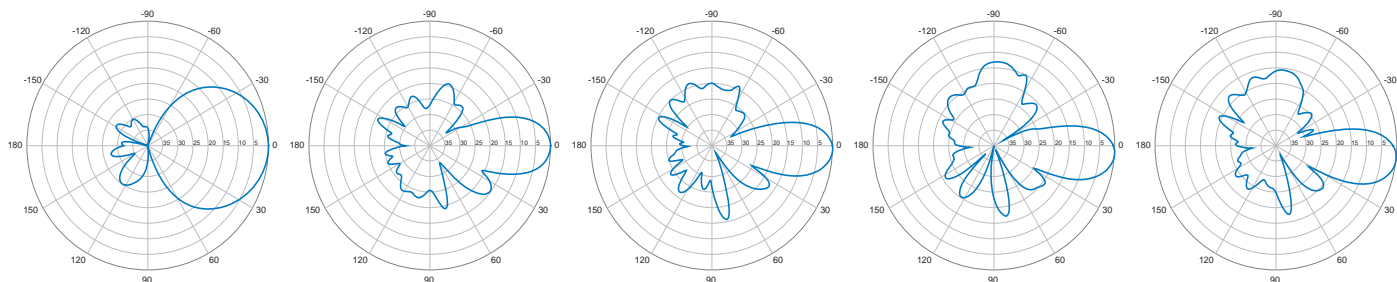


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696-960 MHz



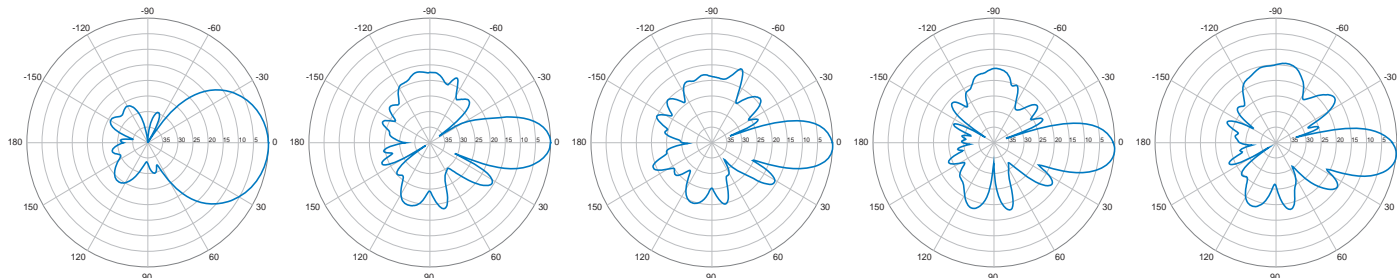
Horizontal | 750 MHz

0° | Vertical | 750 MHz

2° | Vertical | 750 MHz

4° | Vertical | 750 MHz

6° | Vertical | 750 MHz



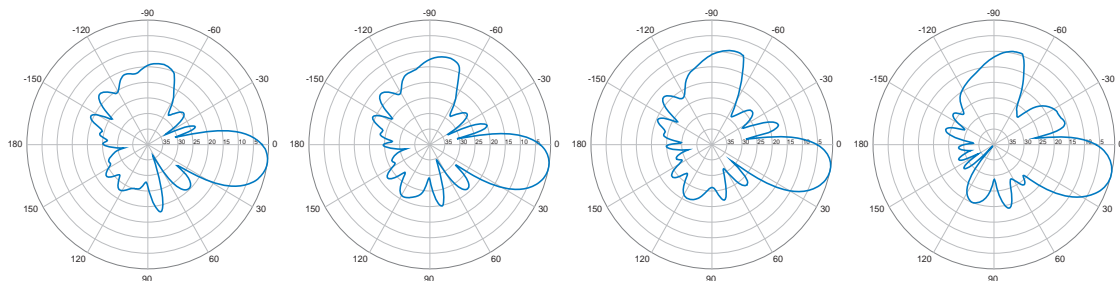
Horizontal | 850 MHz

0° | Vertical | 850 MHz

2° | Vertical | 850 MHz

4° | Vertical | 850 MHz

6° | Vertical | 850 MHz

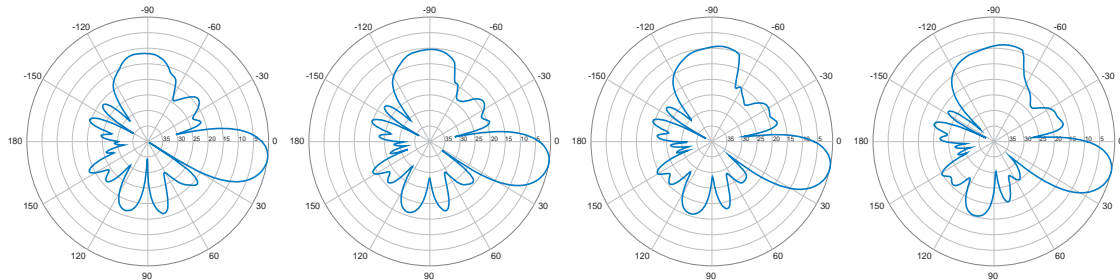


8° | Vertical | 750 MHz

10° | Vertical | 750 MHz

12° | Vertical | 750 MHz

14° | Vertical | 750 MHz



8° | Vertical | 850 MHz

10° | Vertical | 850 MHz

12° | Vertical | 850 MHz

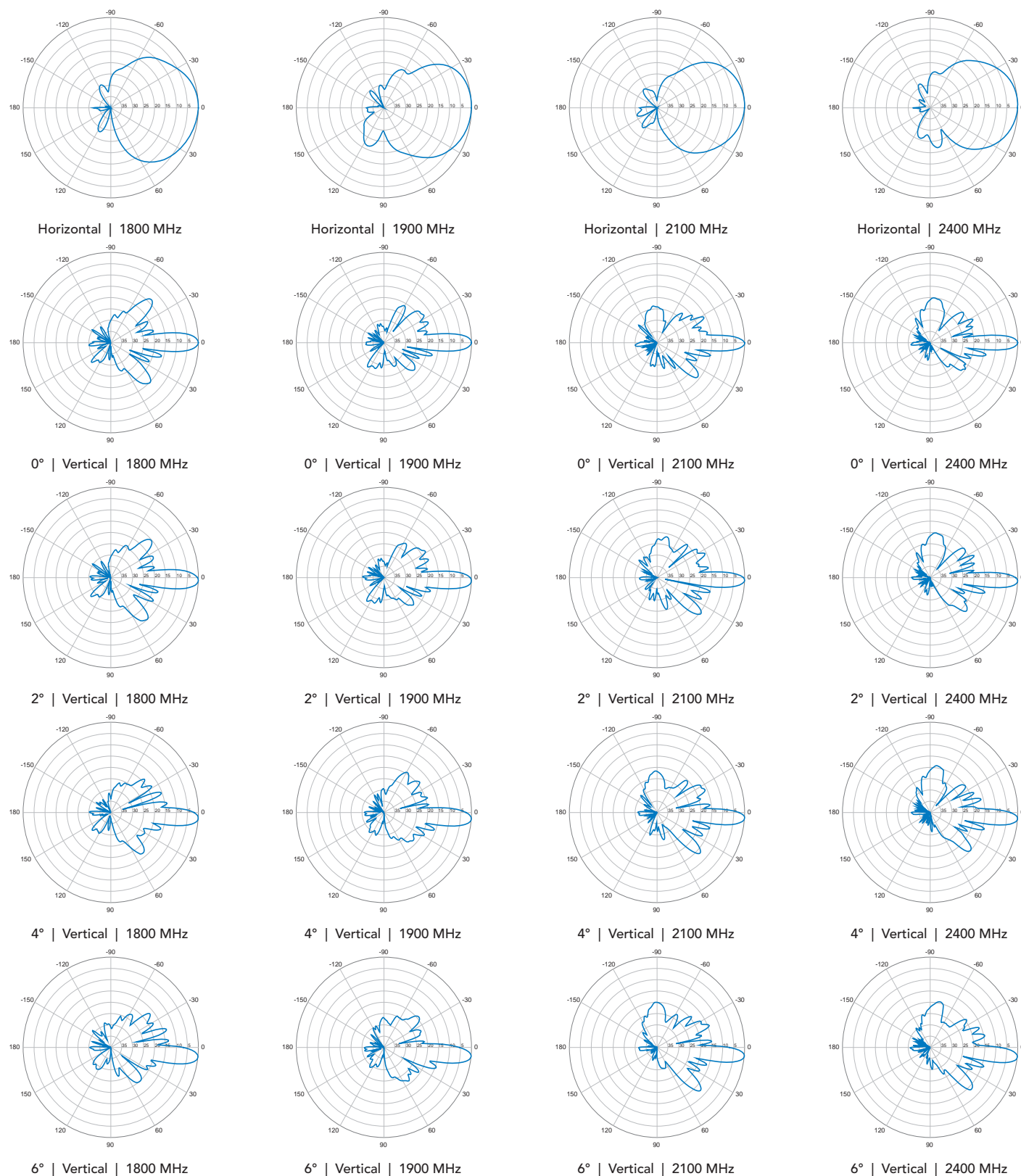
14° | Vertical | 850 MHz

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1695-2400 MHz



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Figure 10 displays eight polar plots arranged in a 2x4 grid, showing the radiation pattern of a vertical antenna at two different elevation angles (8° and 10°) for four different frequencies (1800 MHz, 1900 MHz, 2100 MHz, and 2400 MHz). The plots are labeled as follows:

- Top Row (8° Elevation):
 - 8° | Vertical | 1800 MHz
 - 8° | Vertical | 1900 MHz
 - 8° | Vertical | 2100 MHz
 - 8° | Vertical | 2400 MHz
- Bottom Row (10° Elevation):
 - 10° | Vertical | 1800 MHz
 - 10° | Vertical | 1900 MHz
 - 10° | Vertical | 2100 MHz
 - 10° | Vertical | 2400 MHz

The plots show the radiation pattern in the horizontal plane, with the main lobe pointing towards 0° (right) and a smaller lobe pointing towards 180° (left). The radiation pattern becomes more complex and multi-lobed as the frequency increases.

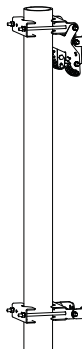
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Antenna Ordering Options

Select Electrical Tilt Type	Actuator Description	Select RET Actuator Port Configuration		Antenna Model Number
		Port A	Port B	
Manual Electrical Tilt	---	---	---	HEX454CU0000 0M
Remote Electrical Tilt AISG v2.0 / 3GPP with an MDCU RET Actuator	The MDCU (Multi-Device Control Unit) is an electronic module that allows the remote control of the electrical downtilt (RET) in Amphenol antennas with factory embedded motors. The MDCU is factory installed.	---	---	HEX454CU0000 0G
Remote Electrical Tilt AISG v2.0 / 3GPP with an MDDU RET Actuator	The MDDU (Multi-Device Dual Unit) allows two separate RET Controllers to independently drive the RETs in Amphenol antennas with factory installed motors (for antenna sharing). The MDDU is factory installed.	Red 696-960 MHz	Orange / Yellow 1695-2400 / 1695-2400 MHz	HEX454CU0000 0L
		Yellow 1695-2400 MHz	Orange / Red 1695-2400 / 696-960 MHz	HEX454CU0000 L1
		Orange 1695-2400 MHz	Yellow / Red 1695-2400 / 696-960 MHz	HEX454CU0000 L2

Mounting Kit Ordering Options All mounting bracket kits are ordered separately unless otherwise indicated.

Mounting Options	Part Number	Image	Fits Pipe Diameter	Weight
2-Point Mounting and Downtilt Bracket Kit	36210006		40-115 mm 1.6-4.5 in	4.1 kg 9 lbs