

## HEX858CU0000x

### 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



PRODUCT OVERVIEW	Frequency Range (MHz)	696-960	1695-2400	1695-2400
	Array	■ R1	■ Y1	■ Y2
	Connector	1-2	3-4	5-6
	Connector Type	7/16-DIN Female	7/16-DIN Female	7/16-DIN Female
	Polarization	XPOL	XPOL	XPOL
	Azimuth Beamwidth (avg)	85°	85°	85°
	Electrical Downtilt	0-10°	0-10°	0-10°
	Dimensions	2508 x 305 x 180 mm (98.7 x 12.0 x 7.1 in)		

### ELECTRICAL SPECIFICATIONS Low Band

■ R1

Frequency Range		MHz	(1x) 696-960	
Frequency Sub-Range		MHz	696-806	806-960
Polarization		---	(1x) ±45°	
Gain	Low Tilt	dBi	15.0	15.4
	Mid Tilt	dBi	15.1	15.6
	High Tilt	dBi	14.9	15.4
	Over all Tilts	dBi	14.9 ± 0.5	15.5 ± 0.3
	Max Gain	dBi	15.4	15.8
Azimuth Beamwidth (3 dB)		degrees	84.3 ± 3.2	83.3 ± 2.2
Elevation Beamwidth (3 dB)		degrees	9.1 ± 0.7	8.0 ± 0.5
Electrical Downtilt		degrees	0-10	
Impedance		Ohms	50Ω	
VSWR		---	< 1.5:1	
Passive Intermodulation 3rd Order for 2x20 W Carriers		dBm (dBc)	< -110 (< -153)	
Front-to-Back Ratio ± 30° @ 180° from boresite		dB	> 23.9	> 26.9
Upper Sidelobe Rejection 20° Sector Above Main Beam		dB	> 13.3	> 12.9
Maximum Power Per Port		Watts	500W	
Interband/Intraband Isolation		dB	> 23 / > 30	> 23 / > 30

*Standard values based on NGMN-P-BASTA version 9.6 recommendation.*

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### ELECTRICAL SPECIFICATIONS Mid Band

■ Y1 ■ Y2

Frequency Range		MHz	(2x) 1695-2400			
Frequency Sub-Range		MHz	1695-1850	1850-1990	2100-2180	2200-2400
Polarization		---	(2x) ±45°			
Gain	Low Tilt	dBi	17.3	17.4	16.9	17.0
	Mid Tilt	dBi	17.5	17.5	17.3	16.9
	High Tilt	dBi	17.3	17.1	16.7	16.2
	Over all Tilts	dBi	17.4 ± 0.5	17.3 ± 0.4	17.0 ± 0.6	16.6 ± 1.0
	Max Gain	dBi	17.9	17.7	17.6	17.6
Azimuth Beamwidth (3 dB)		degrees	75.9 ± 4.3	76.7 ± 4.7	78.1 ± 5.8	75.1 ± 16.6
Elevation Beamwidth (3 dB)		degrees	5.2 ± 0.4	4.8 ± 0.2	4.6 ± 0.4	6.5 ± 14.5
Electrical Downtilt		degrees	0-10			
Impedance		Ohms	50Ω			
VSWR		---	< 1.5:1			
Passive Intermodulation 3rd Order for 2x20 W Carriers		dBm (dBc)	< -110 (< -153)			
Front-to-Back Ratio ± 30° @ 180° from boresite		dB	> 29.1	> 29.2	> 28.4	> 25.9
Upper Sidelobe Rejection 20° Sector Above Main Beam		dB	> 14.0	> 13.6	> 12.8	> 10.5
Maximum Power Per Port		Watts	250W			
Interband/Intraband Isolation		dB	> 25 / > 30	> 25 / > 30	> 25 / > 30	> 25 / > 30

Standard values based on NGMN-P-BASTA version 9.6 recommendation.

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### ELECTRICAL DOWNTILT CONTROL

For multiband antennas, electrical downtilt for each band can be controlled separately. Tilt indicator(s) are covered by removable transparent cap(s).

Manual Electrical Tilt (MET) Control	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 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. The manual tilt 'override' function is always available with no need to remove the physical RET motor. <b>Do not remove the transparent cap(s) from the antenna.</b>
Remote Electrical Tilt (RET) Control	The remote control of the electrical tilt is managed by a Multi-Device Control Unit (MDCU) or a Multi-Device Dual Unit (MDDU) inserted in the bottom of the antenna. <i>See details below and refer to the ordering options to see which actuators are available with this particular antenna.</i> 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). <b>Do not remove the transparent cap(s) from the antenna.</b>

### RET ACTUATOR

Amphenol's **RET-READY** antennas are delivered with the RET Actuator already installed and pre-commissioned with all antenna parameters. Every RET device is factory configured and calibrated so the antenna is ready to be used once delivered to the site which means that there is no need for further installation of RET devices or for programming their configuration or for running a calibration process.

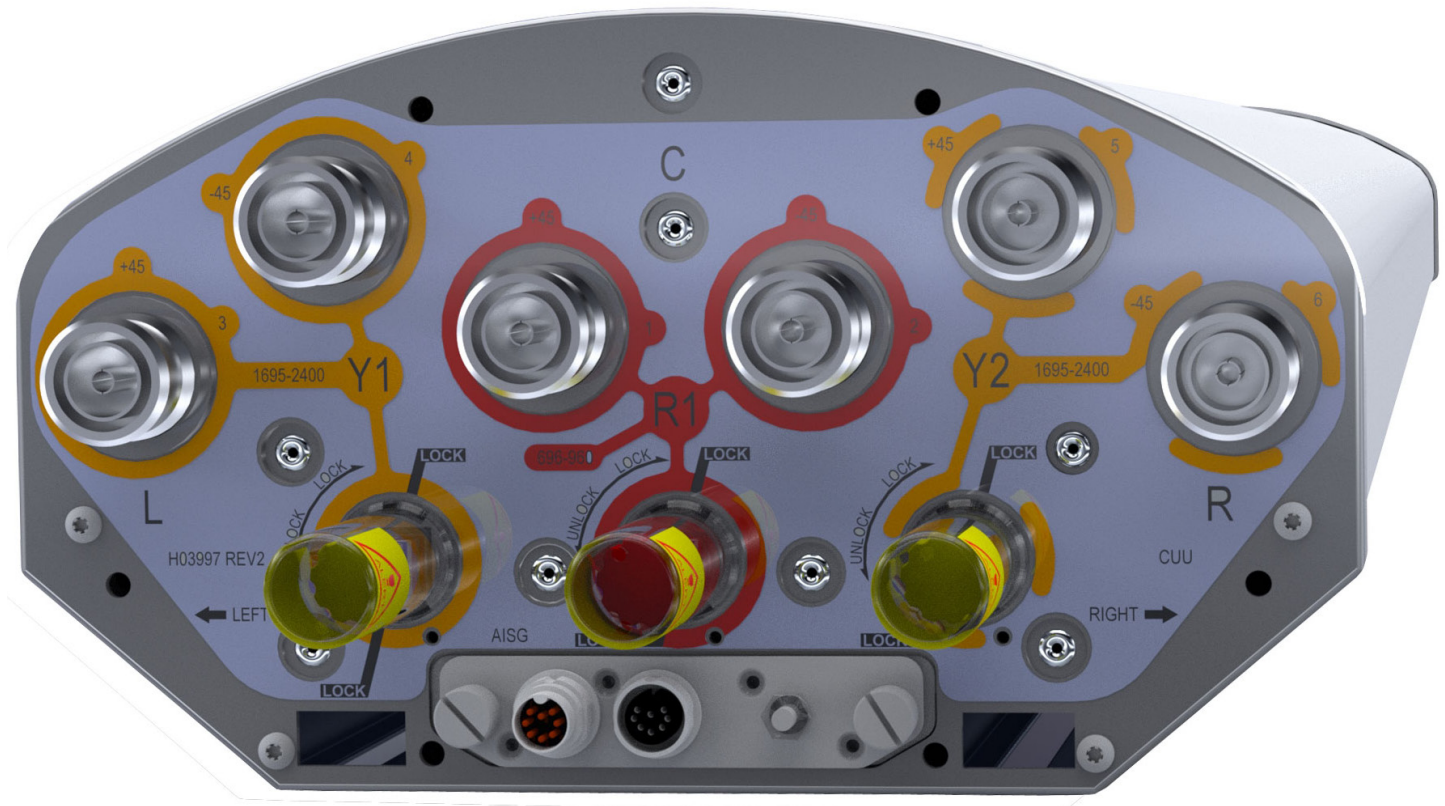
RET-READY ACTUATORS	<b>Multi-Device Control Unit (MDCU).</b> The MDCU is an electronic module that allows the remote control of the electrical downtilt (RET) in Amphenol antennas with factory embedded motors. The MDCU is factory installed. <i>Refer to the ORDERING OPTIONS for availability with this model.</i>
	<b>Multi-Device Dual Unit (MDDU).</b> The MDDU allows two separate RET Controllers to independently drive the RETs in antennas with factory embedded motors (for antenna sharing or two technologies). The MDDU is factory installed. <i>Refer to the ORDERING OPTIONS for availability with this model.</i>
Number of RET-READY Actuators	One per antenna
Input Voltage	+10 to +30 V
Power Consumption	Idle State (AISG P1) 0.5 W
	High Power Mode (AISG P2) 3 W
Protocol	3GPP/AISG 2.0
Tilt Change Duration	Less than 15 seconds, typical (may vary dependent on antenna type and outdoor temperature)
Precision	±0.5°
Tilt Change Capability	50,000 minimum
RET Interface	MDCU One pair of AISG Male and Female (type IEC60130-9)
	MDDU Two male AISG 8 pin connectors (type IEC60130-9 Ed 3.0)
Field Replaceable Unit	Yes

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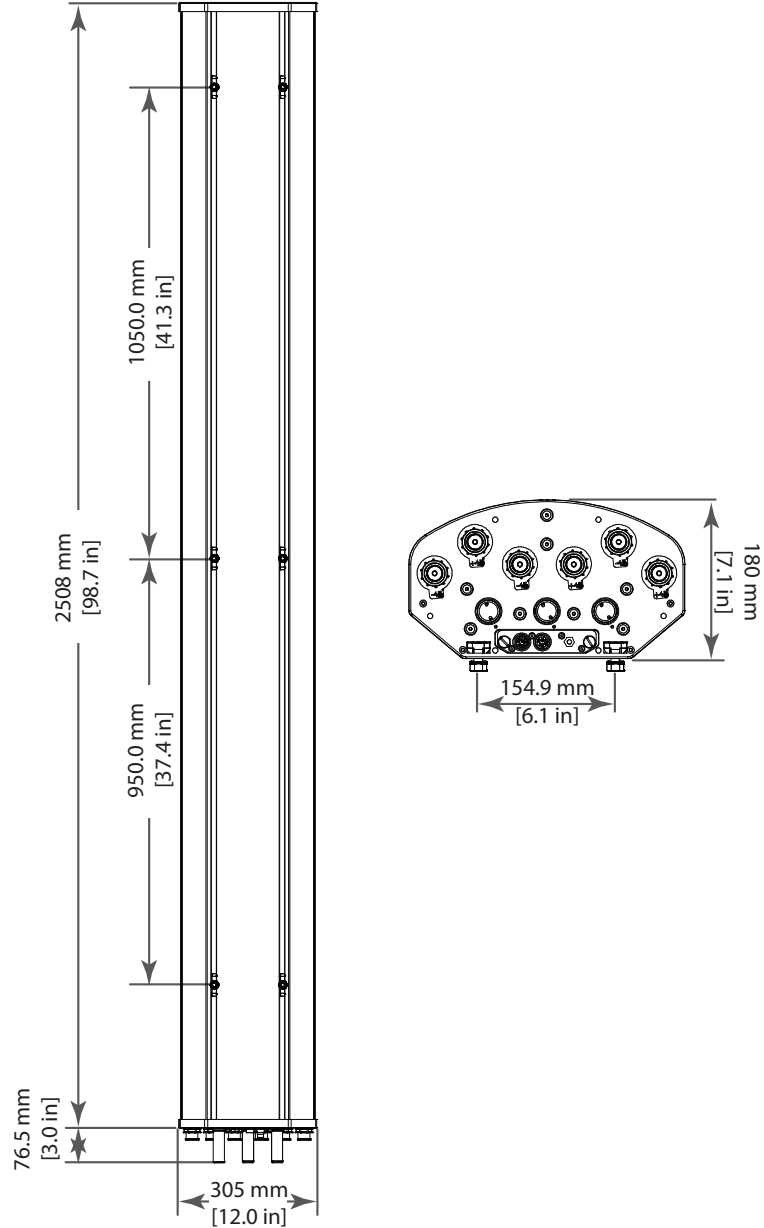
### MECHANICAL SPECIFICATIONS

<b>Antenna</b>	Length	mm (in)	2508 (98.7)
	Width	mm (in)	305 (12.0)
	Depth	mm (in)	180 (7.1)
Net Weight - Antenna Only		kg (lbs)	19.8 (43.7)
Windload	Calculation	km/h (mph)	161 (100)
	Frontal	N (lbf)	930 (209)
	Lateral	N (lbf)	550 (124)
Survival Wind Speed		km/h (mph)	241 (150)
Connector	Type	---	7/16-DIN Female
	Quantity	---	6
	Position	---	Bottom
Lightning Protection (Grounding Type)		---	Direct Ground
Operating Temperature		degrees	-40° to +60° C (-40° to +140° F)



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**INSTALLATION** Please read all installation notes before installing this product.



Always attach the antenna using all mounting points.

Do not install the antenna with the connectors facing upwards.

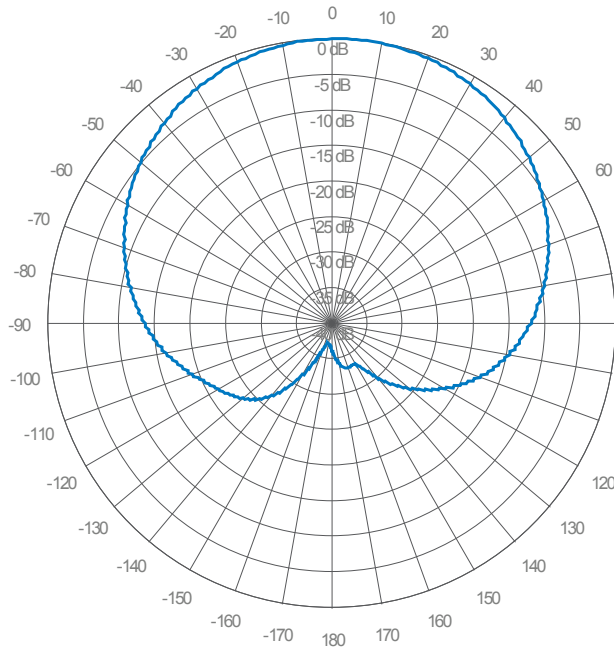
Do not cut the tethered transparent cap(s) that cover the antenna's tilt adjustment indicators

In order to operate the RET control, the transparent cap(s) covering the tilt adjustment indicators must be engaged and locked.

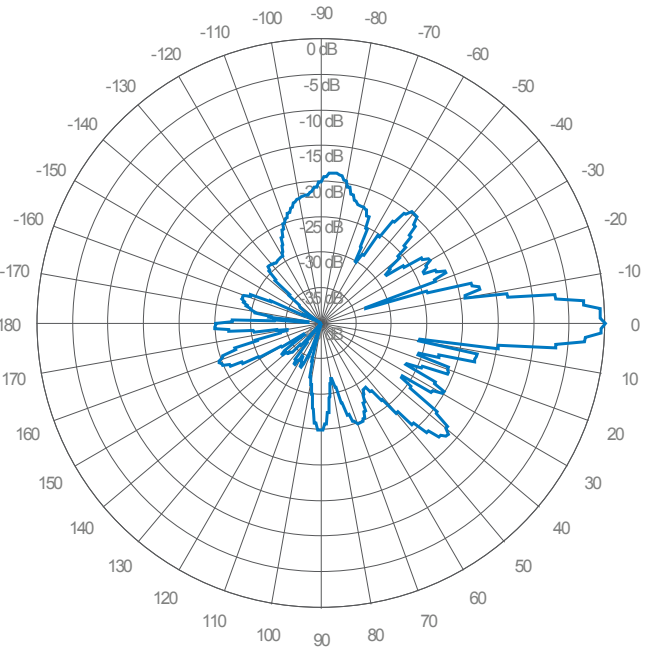
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**HEX858CU0000x**

LOW BAND

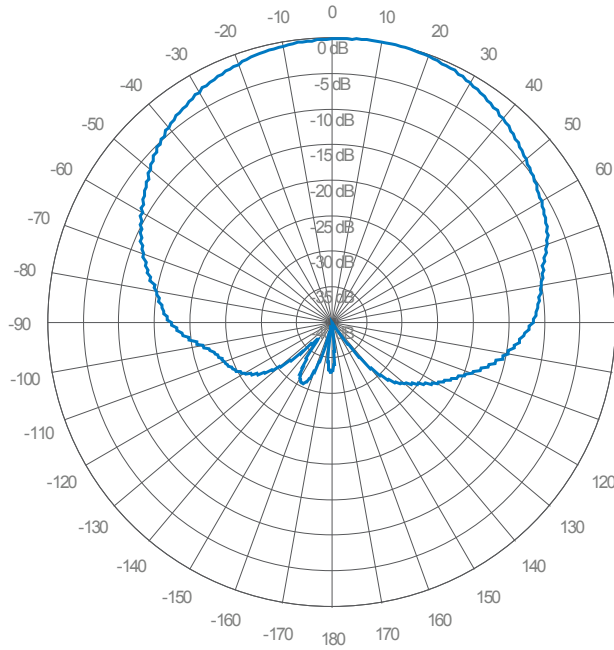


AZIMUTH  
696-960 MHz

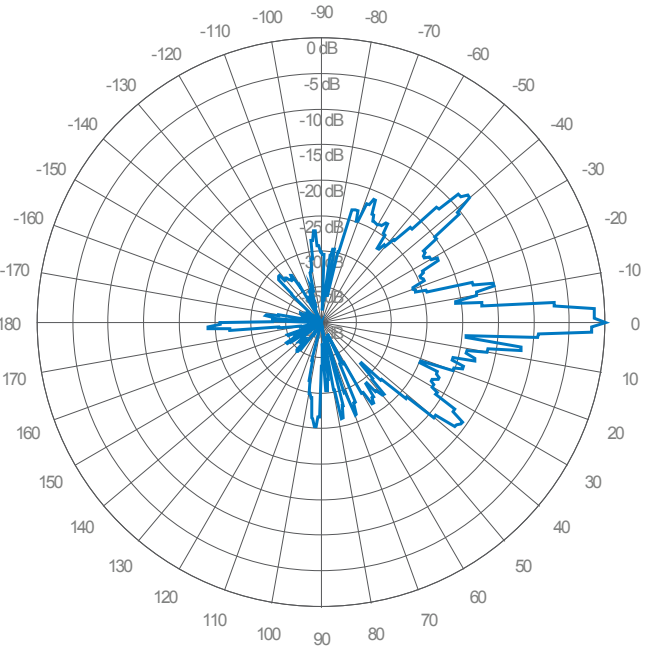


ELEVATION  
696-960 MHz

MID BAND



AZIMUTH  
1695-2400 MHz





ELEVATION  
1695-2400 MHz










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**MOUNTING KITS** The default mounting kit is included in the price of the antenna. Any other mounting kits are optional and must be ordered separately.

	MODEL NUMBER	DESCRIPTION	FITS PIPE DIAMETER	WEIGHT
<b>DEFAULT MOUNTING KIT</b> <i>Shipped as standard and included in the price of the antenna</i> 	MKS09T02	3-Point, Scissor Tilt, Mounting & Downtilt Bracket Kit	50-115 mm (2.0-4.5 in)	6.4 kg (14 lbs)
<b>OPTIONAL MOUNTING KIT</b> <i>Must be ordered separately</i> 	MKS09P02	3-Point Mounting Bracket Kit	50-115 mm (2.0-4.5 in)	4.1 kg (9 lbs)

**ORDERING OPTIONS** Select from the following ordering options

SELECT ELECTRICAL DOWNTILT CONTROL	SELECT ACTUATOR	SELECT RET ACTUATOR PORT CONFIGURATION		ANTENNA MODEL NUMBER
		Port A	Port B	
Manual Electrical Tilt	---	---	---	HEX858CU0000 <b>M</b>
Remote Electrical Tilt AISG v2.0 / 3GPP with an <b>MDCU</b> RET Actuator	The <b>MDCU</b> (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.	---	---	HEX858CU0000 <b>G</b>
Remote Electrical Tilt AISG v2.0 / 3GPP with an <b>MDDU</b> RET Actuator	The <b>MDDU</b> (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.	 R1 696-960 MHz	 Y1 /  Y2 1695-2400 / 1695-2400 MHz	HEX858CU0000 <b>L</b>
		 Y2 1695-2400 MHz	 Y1 /  R1 1695-2400 / 696-960 MHz	HEX858CU0000 <b>L1</b>
		 Y1 1695-2400 MHz	 Y2 /  R1 1695-2400 / 696-960 MHz	HEX858CU0000 <b>L2</b>

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