Amphenol ANTENNA SOLUTIONS

6-Port Antenna

1695-2690 MHz

65° | 1758 mm

6176103

1-Band, 6-Port, 65°, XPOL, Tri-Sector Antenna, Variable Tilt, 1758 mm

TRIO Series

- Single band, tri-sector antenna, 6 connectors
- Independent tilt on each band 0-12°
- RET versions 3GPP/AISG2.0
- Single RET module to control all tilt angles, fully inserted inside the antenna (field replaceable)

PRODUCT OVERVIEW				
	Frequency Range (MHz)	1695-2690		
	Sector	Sector 1	Sector 2	Sector 3
	Array	Y1	Y2	Y3
	Connector	1-2	3-4	5-6
	Polarization	XPOL		
	Azimuth Beamwidth (avg)	65°		
	Electrical Downtilt	0-12°		
	Dimensions	1758 x Ø234 mm (length includes 346 mm service area)		

ELECTRICAL SPECIFICATIONS Ultra Wide Band — **Y1, Y2,** & **Y3**

Frequency Range		MHz	1695-2690				
		MHz	1695-1880	1850-1990	1920-2180	2300-2500	2490-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	15.5 ± 0.1	15.7 ± 0.2	16.3 ± 0.6	18.2 ± 0.2	17.8 ± 0.3
Azimuth Beamwidth		degrees	74.4° ± 2.4°	75.3° ± 2.8°	73.5° ± 5.5°	62.9° ± 2.8°	62.1° ± 2°
Elevation Beamwidth		degrees	8.1° ± 0.6°	7.3° ± 0.6°	6.6° ± 0.6°	5.5° ± 0.4°	5.3° ± 0.3°
Electrical Downtilt		degrees	0°-12°				
Impedance		Ohms	50				
VSWR		---	< 1.5				
Passive Intermodulation 3rd Order for 2 x 20W Carriers		dBc	< -153				
Front-to-Back Ratio, Total Power, ±30°		dB	> 27.2	> 25.6	> 24.5	> 28.7	> 29.4
Upper Sidelobe Suppression, Peak to 20°		dB	> 18.9	> 18.5	> 17.9	> 17.2	> 16.3
Cross Polar Ratio - Main Direction (0°)		dB	> 25.2	> 23.3	> 21.0	> 17.8	> 16.3
Maximum Effective Power Per Port		Watts	250				
Inter/Intra Band Isolation		dB	> 28				

Values based on NGMN-P-BASTA version 9.6 requirements.

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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.**
Remote Electrical Tilt (RET) Control	The remote control of the electrical tilt is managed by a Multi-Device Control Unit (MDCU) inserted in the bottom of the antenna. *See details below and refer to the ordering options to see which actuators are available with this particular 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 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	**Multi-Device Control Unit (MDCU).** The MCDU 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.

Number of RET-READY Actuators		One per antenna
Input Voltage		+10 to +30 V
Power Consumption	Idle State	0.5 W
	Operating	4 W typical / 10 W maximum
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
Field Replaceable Unit		Yes

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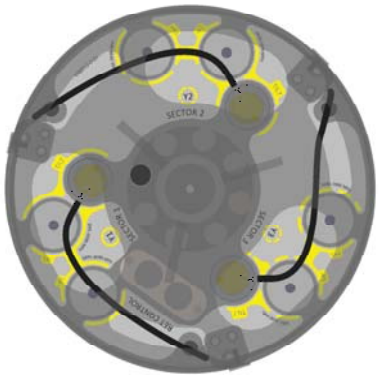
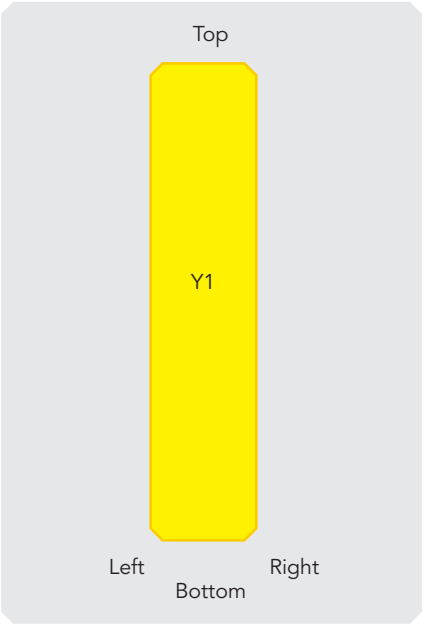




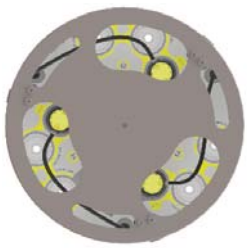
Depicts each individual sector

ARRAY LAYOUT	ARRAY / SECTOR	SECTOR AXIS	FREQUENCY	CONNECTOR	CONNECTOR TYPE
	Y1 / Sector 1	0° (±15°)	1695-2690	1-2	7/16-DIN Female
	Y2 / Sector 2	120° (±15°)	1695-2690	3-4	7/16-DIN Female
	Y3 / Sector 3	240° (±15°)	1695-2690	5-6	7/16-DIN Female

Diagram shown at right depicts the view from the front of the antenna. The illustration is not shown to scale.

MECHANICAL SPECIFICATIONS

Length including Service Area		mm (in)	1758 (69.2)
Service Area Length		mm (in)	346 (13.6)
Diameter		mm (in)	234 (9.2)
Net Weight - Antenna Only		kg (lbs)	31 (68.3)
Windload (Wind Tunnel Coefficients)	Calculation	km/h (mph)	160 (99.4)
	Frontal	N (lbf)	620 (139.4)
Operational Wind Speed		km/h (mph)	160 (99.4)
Survival Wind Speed		km/h (mph)	200 (124)
Radome Color		---	Gray RAL7035
Radome Material		---	Outdoor Fibreglass
Lightning Protection		---	Direct Ground
Flange Interface	Outer Diameter (OD)	mm (in)	230.6 (9.1)
	Inner Diameter (ID)	mm (in)	158.8 (6.3)
	Slots	---	(3x) 13.5 mm wide x 30° slots, equally spaced on a 190.5 mm bolt circle
	Flange Thickness	mm (in)	9.5 (0.37)



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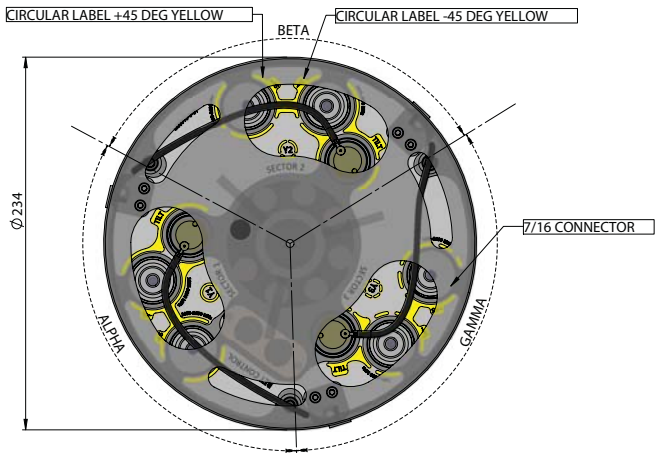
ENVIRONMENTAL SPECIFICATIONS

Environmental	---	ETS 300 019
Operating Temperature	° C (° F)	-40° to +60° (-40° to +140°)
Product Environmental Compliance	---	Product is RoHs Compliant

Mounting Flange Interface Dimensions shown in mm



Antenna Dimensions shown in mm