




## 6177412E

6177412EN 6177412EG 6177412ENG

6-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 1428 mm

- Tri band antenna, dual polarisation, 6 connectors
- Independent tilt on each band 2-12° / 2-12° / 2-12°
- MET and RET versions, 3GPP/AISG2.0
- Our patented RET module to control all tilt angles, fully inserted inside the antenna (field replaceable)

PRODUCT OVERVIEW	Frequency Range (MHz)	1695-2690	1695-2690	1695-2690
	Array	 Y1	 Y2	 Y3
	Connector	1-2	3-4	5-6
	Polarization	XPOL	XPOL	XPOL
	Azimuth Beamwidth (avg)	65°	65°	65°
	Electrical Downtilt	2-12°	2-12°	2-12°
	Dimensions	1428 x <358 x <190 mm		



### ORDERING OPTIONS

Select from the different options listed below

SELECT ELECTRICAL DOWNTILT CONTROL & AISG PROTOCOL	SELECT ACTUATOR	SELECT CONNECTOR TYPE	ANTENNA MODEL NUMBER
Manual Electrical Tilt (MET)	---	7/16-DIN Female	6177412E
		4.3-10 Female	6177412EN
Remote Electrical Tilt (RET) AISG v2.0 / 3GPP	Multi-Device Control Unit (MDCU)	7/16-DIN Female	6177412EG
		4.3-10 Female	6177412ENG



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### ELECTRICAL SPECIFICATIONS Ultra Wide Band

Y1

Frequency Range		MHz	1695-2690				
		MHz	1695-1880	1850-1990	1920-2180	2300-2500	2490-2690
Polarization		---	± 45°				
Gain	Over all Tilts	dBi	16.3 ± 0.3	16.5 ± 0.3	16.9 ± 0.3	17.3 ± 0.3	17.6 ± 0.4
Azimuth Beamwidth		degrees	72.4 ± 2.0	71.8 ± 2.1	71.6 ± 2.1	68.4 ± 2.0	61.9 ± 4.6
Elevation Beamwidth		degrees	7.4 ± 0.5	6.9 ± 0.6	6.7 ± 0.5	5.7 ± 0.2	5.2 ± 0.4
Electrical Downtilt		degrees	2-12				
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	> 25.3	> 25.7	> 26.6	> 26.7	> 26.5
Upper Sidelobe Suppression, Peak to 20°		dB	> 15.5	> 15.8	> 15.4	> 15.3	> 14.8
Cross Polar Ratio	Main Direction (0°)	dB	> 19.8	> 19.3	> 20.5	> 20.1	> 19.2
	Sector Edges (60°)	dB	> 11.0	> 11.3	> 10.4	> 7.0	> 6.9
Maximum Effective Power Per Port		Watts	250				
Inter/Intra Band Isolation		dB	> 27				

Standard values based on NGMN-P-BASTA version 10.0 recommendation.

### ELECTRICAL SPECIFICATIONS Ultra Wide Band

Y2

Frequency Range		MHz	1695-2690				
		MHz	1695-1880	1850-1990	1920-2180	2300-2500	2490-2690
Polarization		---	± 45°				
Gain	Over all Tilts	dBi	16.3 ± 0.4	16.7 ± 0.5	17.0 ± 0.4	17.4 ± 0.3	17.5 ± 0.5
Azimuth Beamwidth		degrees	72.8 ± 1.5	69.6 ± 3.0	68.6 ± 2.0	67.2 ± 3.2	61.9 ± 5.2
Elevation Beamwidth		degrees	7.4 ± 0.4	7.0 ± 0.5	6.7 ± 0.6	5.6 ± 0.3	5.3 ± 0.4
Electrical Downtilt		degrees	2-12				
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	> 27.8	> 26.7	> 27.0	> 26.3	> 27.2
Upper Sidelobe Suppression, Peak to 20°		dB	> 15.7	> 16.5	> 16.9	> 16.6	> 15.2
Cross Polar Ratio	Main Direction (0°)	dB	> 19.2	> 18.0	> 17.9	> 17.5	> 17.2
	Sector Edges (60°)	dB	> 8.4	> 9.5	> 11.0	> 9.3	> 7.8
Maximum Effective Power Per Port		Watts	250				
Inter/Intra Band Isolation		dB	> 27				

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### ELECTRICAL SPECIFICATIONS Ultra Wide Band

Y3

Frequency Range		MHz	1695-2690				
		MHz	1695-1880	1850-1990	1920-2180	2300-2500	2490-2690
Polarization		---	± 45°				
Gain	Over all Tilts	dBi	16.3 ± 0.5	16.5 ± 0.4	16.8 ± 0.4	17.3 ± 0.3	17.6 ± 0.5
Azimuth Beamwidth		degrees	73.1 ± 2.0	68.8 ± 3.0	67.5 ± 2.1	67.4 ± 2.0	62.1 ± 4.6
Elevation Beamwidth		degrees	7.6 ± 0.4	7.1 ± 0.4	6.6 ± 0.7	5.7 ± 0.3	5.3 ± 0.2
Electrical Downtilt		degrees	2-12				
Impedance		Ohms	50				
VSWR		---	< 1.5				
Passive Intermodulation		dBc	< -153				
Front-to-Back Ratio, Total Power, ±30°		dB	> 27.5	> 26.5	> 26.4	> 26.6	> 25.5
Upper Sidelobe Suppression, Peak to 20°		dB	> 14.8	> 14.9	> 14.6	> 16.7	> 15.7
Cross Polar Ratio	Main Direction (0°)	dB	> 18.3	> 17.7	> 20.3	> 17.4	> 17.1
	Sector Edges (60°)	dB	> 7.9	> 8.2	> 8.7	> 8.5	> 7.5
Maximum Effective Power Per Port		Watts	250				
Inter/Intra Band Isolation		dB	> 27				

Standard values based on NGMN-P-BASTA version 10.0 recommendation.

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### ELECTRICAL DOWNTILT CONTROL

For multiband antennas, electrical downtilt for each band can be controlled separately.

#### Manual Electrical Tilt (MET) Control

The MET is a separate kit provided on the bottom of the antenna. This kit has colored knobs with a respective array identification indicated within it. This knob can be rotated to set an electrical downtilt as per the requirement. The tilt information of the respective arrays can be observed with an indicator provided near the knob.

#### Remote Electrical Tilt (RET) Control

The remote control of the electrical tilt is managed by single RET unit 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.

### 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.

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
RET Interface		1 pair of AISG Male and Female (type IEC60130-9)
Field Replaceable Unit		Yes

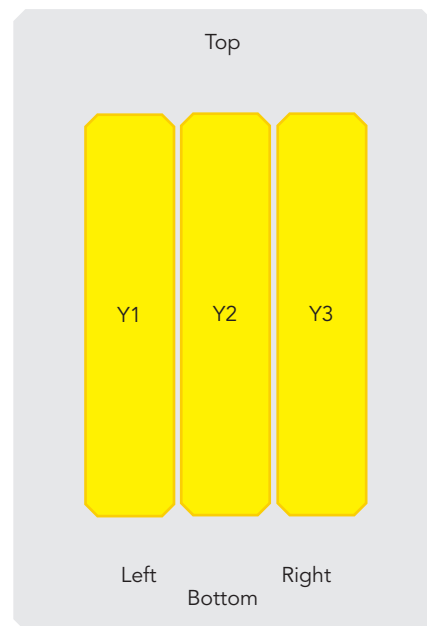
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ARRAY LAYOUT	ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE
	Y1	1695-2690	1-2	4.3-10 Female or 7/16-DIN Female Long Neck
	Y2	1695-2690	3-4	4.3-10 Female or 7/16-DIN Female Long Neck
	Y3	1695-2690	5-6	4.3-10 Female or 7/16-DIN Female Long Neck

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



### MECHANICAL SPECIFICATIONS

Length	mm (in)	1428 (56.2)
Width	mm (in)	< 358 (14.0)
Depth	mm (in)	< 190 (7.4)
Net Weight - Antenna Only	kg (lbs)	19 (41.8)
Mechanical Distance Between Mounting Points	mm (in)	Refer to Diagram
Operational Wind Speed	km/h (mph)	160 (99.4)
Survival Wind Speed	km/h (mph)	200 (124)
Radome Color	---	Gray RAL7035
Radome Material	---	FRP
Lightning Protection	---	Direct Ground
Shipping	Shipping Dimensions (Length x Width x Depth)	mm (in) 1595 x 528 x 240 mm (62.8 x 20.7 x 9.4 in)
	Shipping Weight	kg (lbs) 26 (57.3)
	Shipping Volume	m <sup>3</sup> (ft <sup>3</sup> ) 0.198 (7.0)

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### ENVIRONMENTAL SPECIFICATIONS

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

### ACCESSORIES All accessories are ordered separately unless otherwise indicated

ITEM	MODEL NUMBER	WEIGHT
Brackets for pole Ø48 to Ø115 mm (Ø1.9 to Ø4.5 in) <b>delivered as standard</b>	0900181/00	3.4 kg (7.5 lbs)
Brackets for pole Ø70 to Ø150 mm (Ø2.8-Ø5.9 in) <b>optional</b>	0900182/00	3.9 kg (8.6 lbs)
Kit to add mechanical tilt (0° to 10°) to above brackets <b>optional</b>	0900397/00	3.0 kg (6.6 lbs)

Wall mounting brackets are available upon request

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



Always attach the antenna by all mounting points.

Do not install the antenna with the connectors facing upwards.