6177103

6177103G

2-Band, 12-Port, 65°, XPOL, Tri-Sector Antenna, Variable Tilt, 1927 mm

TRIO Series

- Twin band, tri-sector antenna, 6 connectors
- Independent tilt on each band 0-12° / 0-12°
- Independent azimuth panning ±15° on each sector
- MET and RET versions, 3GPP/AISG2.0
- Our patented, RET module controlling all tilt angles, fully inserted inside the antenna (field replaceable)

PRODUCT OVERVIEW			
	Frequency Range (MHz)	1710-2690	1710-2690
	Array	Y1	Y2
	Connector	1-2	3-4
	Polarization	XPOL	XPOL
	Azimuth Beamwidth (avg)	65°	65°
	Electrical Downtilt	0-12°	0-12°
	Dimensions	1927 x Ø573	

ORDERING OPTIONS

Select from the different options listed below

SELECT ELECTRICAL DOWNTILT CONTROL & AISG PROTOCOL	SELECT ACTUATOR	CONNECTOR TYPE	SELECT NUMBER OF SECTORS	ANTENNA MODEL NUMBER
Manual Electrical Tilt (MET)	---	7/16-DIN Female	One Sector	6177103
			Two Sectors	6177102
			Three Sectors	6177101
Remote Electrical Tilt (RET) AISG v2.0 / 3GPP	Multi-Device Control Unit (MDCU)		One Sector	6177103G
			Two Sectors	6177102G
			Three Sectors	6177101G

6177103

6177103G

2-Band, 12-Port, 65°, XPOL, Tri-Sector Antenna, Variable Tilt, 1927 mm

ELECTRICAL SPECIFICATIONS Ultra Wide Band — Y1

Frequency Range		MHz	1710-2690				
		MHz	1710-1880	1850-1990	1920-2180	2300-2500	2490-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	16.7 ± 0.3	16.6 ± 0.3	16.8 ± 0.4	16.9 ± 0.4	17.1 ± 0.5
Azimuth Beamwidth		degrees	70.6° ± 4.5°	70.4° ± 4.7°	72.2° ± 5.2°	67.3° ± 4.2°	62.2° ± 4.1°
Elevation Beamwidth		degrees	7.1° ± 0.4°	6.5° ± 0.4°	6.1° ± 0.5°	5.3° ± 0.2°	4.9° ± 0.3°
Electrical Downtilt		degrees	0°-12°				
Impedance		Ohms	50				
VSWR		---	< 1.5				
Passive Intermodulation 3rd Order for 2 x 20W Carriers		dBm	< -110				
Front-to-Back Ratio, Total Power, ±30°		dB	> 26.6	> 26.8	> 27.1	> 25.8	> 24.8
Upper Sidelobe Suppression, 0° to 20°		dB	> 17.1	> 17.2	> 17.1	> 15.6	> 15.6
Cross Polar Ratio - Main Direction		dB	> 21.6	> 19.1	> 18.9	> 19.8	> 17.4
Maximum Effective Power Per Port		Watts	160 W				
Inter/Intra Band Isolation		dB	> 25				

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

ELECTRICAL SPECIFICATIONS Ultra Wide Band — Y2

Frequency Range		MHz	1710-2690				
		MHz	1710-1880	1850-1990	1920-2180	2300-2500	2490-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	16.8 ± 0.4	16.6 ± 0.4	16.8 ± 0.5	17.0 ± 0.5	17.1 ± 0.5
Azimuth Beamwidth		degrees	71.0° ± 3.5°	70.0° ± 3.4°	72.3° ± 4.8°	67.2° ± 3.2°	63.2° ± 4.5°
Elevation Beamwidth		degrees	7.2° ± 0.4°	6.6° ± 0.4°	6.1° ± 0.6°	5.3° ± 0.2°	4.9° ± 0.2°
Electrical Downtilt		degrees	0°-12°				
Impedance		Ohms	50				
VSWR		---	< 1.5				
Passive Intermodulation 3rd Order for 2 x 20W Carriers		dBm	< -110				
Front-to-Back Ratio, Total Power, ±30°		dB	> 26.0	> 27.9	> 26.8	> 26.9	> 26.2
Upper Sidelobe Suppression, 0° to 20°		dB	> 17.4	> 17.4	> 16.5	> 17.4	> 15.0
Cross Polar Ratio - Main Direction		dB	> 22.3	> 20.4	> 20.1	> 19.3	> 18.1
Maximum Effective Power Per Port		Watts	160 W				
Inter/Intra Band Isolation		dB	> 25				

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

6177103

6177103G

2-Band, 12-Port, 65°, XPOL, Tri-Sector Antenna, Variable Tilt, 1927 mm

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) or a Multi-Device Dual Unit (MDDU) 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.

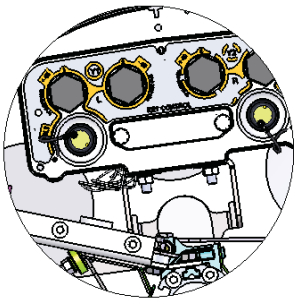
RET-READY ACTUATORS	**Multi-Device Control Unit (MDCU).** The MCDU is an electronic module that allows the remote control of the electrical downtilt (RET) in Amphenol antennas with factory embedded motors. The MDCU is factory installed. *Refer to the* ORDERING OPTIONS *for availability with this model*
	Multi-Device Dual Unit (MDDU). 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. *Refer to the* ORDERING OPTIONS *for availability with this model.*

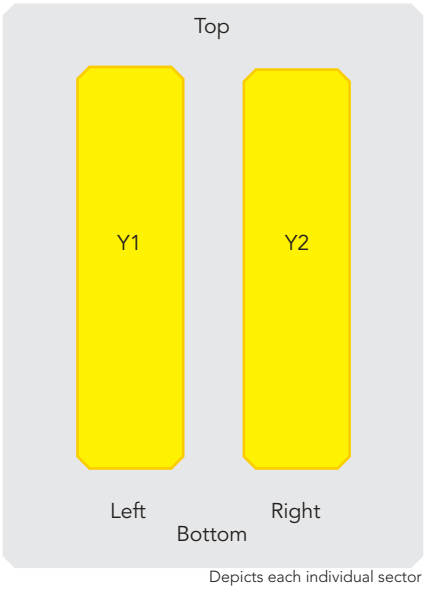
Number of RET-READY Actuators		One per antenna
Input Voltage		+10 to +30 V
Power Consumption	Idle State	0.5 W
	Operating	4 W typical / 10 W maximum
Protocol		3GPP/AISG 2.0
Tilt Change Duration		Less than 15 seconds, typical (may vary dependent on antenna type and outdoor temperature)
Precision		±0.5°
Tilt Change Capability		50,000 minimum
RET Interface		1 pair of AISG Male and Female (type IEC60130-9)
Field Replaceable Unit		Yes

6177103

6177103G

2-Band, 12-Port, 65°, XPOL, Tri-Sector Antenna, Variable Tilt, 1927 mm





Depicts each individual sector

ARRAY LAYOUT PER SECTOR	ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE
	Y1	1710-2690	1-2	7/16-DIN Female Ultra Long Neck
	Y2	1710-2690	3-4	7/16-DIN Female Ultra Long Neck

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

MECHANICAL SPECIFICATIONS

The 6177103 is a Tri-Sector system that contains three Twin Band antennas installed at 120° in a cylindrical shroud with ±15° azimuth panning capability independent on each sector. A service area at the bottom can be opened for access to connectors and the manual adjustment of the electrical downtilt and azimuth panning. Variants can be delivered with only one or two sectors fitted.

Length (including Service Area)		mm (in)	1927 (75.9)
Service Area Length		mm (in)	408 (16.1)
Diameter		mm (in)	573 (22.6)
Net Weight	Three Sectors	kg (lbs)	103 (227.1)
	Two Sectors	kg (lbs)	89 (196.2)
	One Sector	kg (lbs)	75 (165.3)
Windload (Wind Tunnel Coefficients)	Calculation	km/h (mph)	150 (93.2)
	Frontal	N (lbf)	827 (185.9)
Operational Wind Speed		km/h (mph)	160 (99.4)
Survival Wind Speed		km/h (mph)	200 (124)
Radome Color		---	Gray RAL7035
Radome Material		---	Outdoor Plastic
Lightning Protection		---	Direct Ground

TRIO EXTENSION

A TRIO Extension is a short mounting (0.85 m) mast which has the same diameter (573 mm), same outside material, and same colour as the antenna. The two major advantages of the extensions are getting the antenna higher, and housing our TMA.

Dimensions (Height x Diameter)		mm (in)	850 x Ø573 (33.5 x Ø22.6)
Weight		kg (lbs)	66 (145.5)
Shroud Color		---	Gray RAL7035
Shroud Material		---	Outdoor Plastic
Flange		---	Galvanised Steel
Wind Speed	Operational	km/h (mph)	160 (99.4)
	Survival	km/h (mph)	200 (124)

Refer to the separate documentation on TRIO extensions for more details

6177103

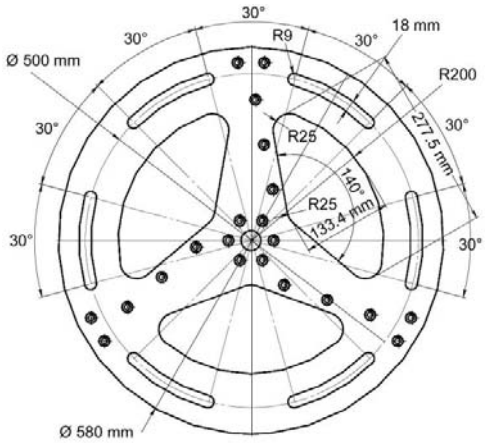
6177103G

2-Band, 12-Port, 65°, XPOL, Tri-Sector Antenna, Variable Tilt, 1927 mm

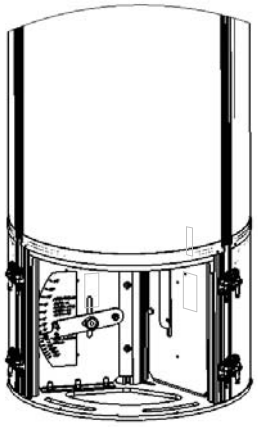
ENVIRONMENTAL SPECIFICATIONS

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

Mounting Flange Interface



Service Area (Opened Shroud)



Trio Extension

Dimensions