5961300

5961300G 5961300Dx

4-Band, 8-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 2683 mm

TwinLine

- Quad band antenna, dual polarisation, 8 connectors
- Independent tilt on each band 0-10° / 0-10° / 0-10° / 0-10°
- Lightweight Twin+™, next generation TwinLine™ platform and low windload
- MET and RET versions, 3GPP/AISG2.0, in multiple single RET (multiple device type1) or in Multi-RET (device type 17, with firmware above MD3.10).
- Our patented, RET module controlling all tilt angles, fully inserted inside the antenna (field replaceable)

PRODUCT OVERVIEW					
	Frequency Range (MHz)	698-960	698-960	1695-2690	1695-2690
	Array	R1	R2	Y1	Y2
	Connector	1-2	3-4	5-6	7-8
	Polarization	XPOL	XPOL	XPOL	XPOL
	Azimuth Beamwidth (avg)	65°	65°	65°	65°
	Electrical Downtilt	0-10°	0-10°	0-10°	0-10°
	Dimensions	2683 x 432 x 153 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	5961300
Remote Electrical Tilt (RET) AISG v2.0 / 3GPP	Multi-Device Control Unit (MDCU)	7/16-DIN Female	5961300G
	Multi-Device Dual Unit (MDDU)	7/16-DIN Female	5961300Dx*

*Pre-commissioned configuration; Contact Amphenol for further details.

5961300

5961300G 5961300Dx

4-Band, 8-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 2683 mm

ELECTRICAL SPECIFICATIONS Low Band			**R1**			
Frequency Range		MHz	698-960			
		MHz	698-806	790-862	824-894	880-960
Polarization		---	±45°			
Gain	Over all Tilts	dBi	15.5 ± 0.5	16.0 ± 0.4	16.1 ± 0.5	16.7 ± 0.4
Azimuth Beamwidth		degrees	74.4° ± 6.5°	71.1° ± 4.7°	72.2° ± 2.9°	70.9° ± 1.8°
Elevation Beamwidth		degrees	8.6° ± 0.7°	7.8° ± 0.6°	7.6° ± 0.6°	7.1° ± 0.4°
Electrical Downtilt		degrees	0°-10°			
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	> 21.0	> 21.3	> 21.4	> 23.6
Upper Sidelobe Suppression, Peak to 20°		dB	> 15.5	> 17.6	> 18.4	> 17.8
Cross Polar Ratio Main Direction (0°)		dB	> 16.1	> 17.0	> 16.7	> 16.6
Maximum Effective Power Per Port		Watts	250			
Inter/Intra Band Isolation		dB	> 25			

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

ELECTRICAL SPECIFICATIONS Low Band			**R2**			
Frequency Range		MHz	698-960			
		MHz	698-806	790-862	824-894	880-960
Polarization		---	±45°			
Gain	Over all Tilts	dBi	15.4 ± 0.6	16.0 ± 0.4	16.3 ± 0.5	16.6 ± 0.3
Azimuth Beamwidth		degrees	75.1° ± 5.5°	70.5° ± 3.6°	70.3° ± 2.6°	72.1° ± 2.2°
Elevation Beamwidth		degrees	8.5° ± 0.6°	7.8° ± 0.4°	7.7° ± 0.4°	7.1° ± 0.5°
Electrical Downtilt		degrees	0°-10°			
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	> 21.7	> 22.5	> 24.3	> 25.1
Upper Sidelobe Suppression, Peak to 20°		dB	> 14.8	> 16.1	> 17.1	> 17.6
Cross Polar Ratio - Main Direction (0°)		dB	> 17.0	> 17.2	> 16.8	> 16.2
Maximum Effective Power Per Port		Watts	250			
Inter/Intra Band Isolation		dB	> 25			

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

5961300

5961300G 5961300Dx

4-Band, 8-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 2683 mm

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	17.2 ± 0.2	17.3 ± 0.3	17.5 ± 0.2	17.7 ± 0.2	17.7 ± 0.3
Azimuth Beamwidth		degrees	66.9° ± 4.1°	66.4° ± 3.8°	63.0° ± 4.4°	64.9° ± 3.6°	65.5° ± 4.2°
Elevation Beamwidth		degrees	6.1° ± 0.3°	5.7° ± 0.3°	5.3° ± 0.4°	4.6° ± 0.3°	4.2° ± 0.2°
Electrical Downtilt		degrees	0°-10°				
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	> 23.4	> 23.0	> 23.3	> 24.6	> 25.3
Upper Sidelobe Suppression, Peak to 20°		dB	> 18.4	> 18.3	> 17.8	> 16.0	> 15.9
Cross Polar Ratio - Main Direction (0°)		dB	> 14.6	> 14.6	> 15.1	> 14.9	> 14.9
Maximum Effective Power Per Port		Watts	200				
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	1695-2690				
		MHz	1695-1880	1850-1990	1920-2180	2300-2500	2490-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	17.0 ± 0.2	17.1 ± 0.2	17.3 ± 0.3	17.6 ± 0.3	17.6 ± 0.3
Azimuth Beamwidth		degrees	66.2° ± 4.5°	66.8° ± 4.0°	61.9° ± 4.3°	64.3° ± 4.0°	65.0° ± 4.2°
Elevation Beamwidth		degrees	6.1° ± 0.4°	5.7° ± 0.4°	5.4° ± 0.4°	4.6° ± 0.2°	4.2° ± 0.3°
Electrical Downtilt		degrees	0°-10°				
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	> 24.9	> 25.3	> 25.2	> 25.8	> 25.5
Upper Sidelobe Suppression, Peak to 20°		dB	> 18.1	> 17.8	> 17.9	> 17.5	> 16.9
Cross Polar Ratio - Main Direction (0°)		dB	> 14.8	> 15.4	> 15.1	> 14.9	> 15.3
Maximum Effective Power Per Port		Watts	200				
Inter/Intra Band Isolation		dB	> 25				

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

5961300

5961300G 5961300Dx

4-Band, 8-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 2683 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. The manual tilt 'override' function is always available with no need to remove the physical RET motor. **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.

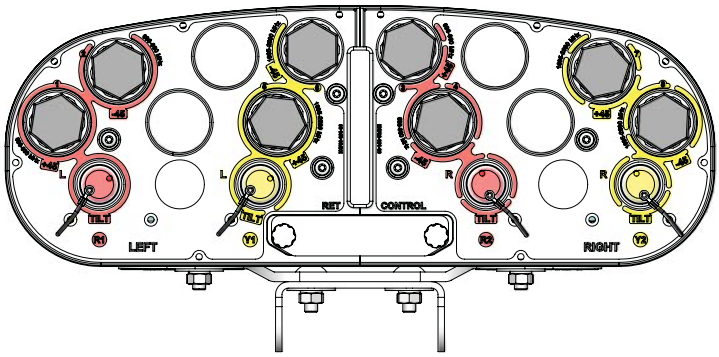
RET-READY ACTUATORS	Multi-Device Control Unit (MDCU). The MCDU is an electronic module that allows the remote control of the electrical downtilt (RET) in Amphenol antennas with factory embedded motors. The MDCU is factory installed. *Refer to the* ORDERING OPTIONS *for availability with this model.*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

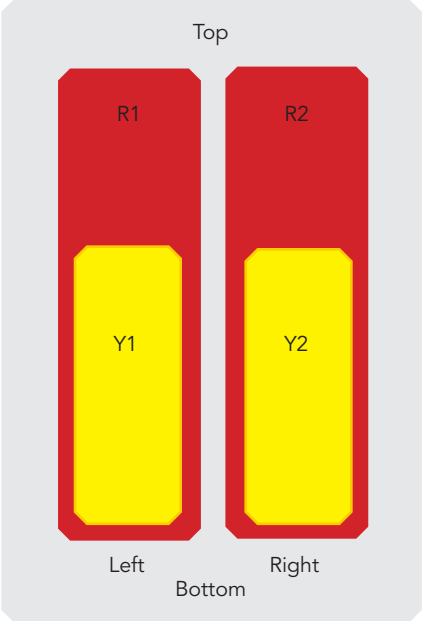
Number of RET-READY Actuators		One per antenna
Input Voltage		+10 to +30 V
Power Consumption	Idle State (AISG P1)	0.5 W
	High Power Mode (AISG P2)	3 W
Protocol		3GPP/AISG 2.0
Tilt Change Duration		Less than 15 seconds, typical (may vary dependent on antenna type and outdoor temperature)
Precision		±0.5°
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

5961300

5961300G 5961300Dx

4-Band, 8-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 2683 mm





ARRAY LAYOUT	ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE
	R1	698-960	1-2	7/16-DIN Female Long Neck
	R2	698-960	3-4	7/16-DIN Female Long Neck
	Y1	1695-2690	5-6	7/16-DIN Female Long Neck
	Y2	1695-2690	7-8	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)	2683 (105.6)
Width		mm (in)	432 (17.0)
Depth		mm (in)	153 (6.0)
Net Weight - Antenna Only		kg (lbs)	42 (92.6)
Mechanical Distance Between Mounting Points		mm (in)	1865 (73.4)
Windload (EN 1991-1-4:2005 using Wind Tunnel Coefficients)	Calculation	km/h (mph)	150 (93.2)
	Frontal	N (lbf)	790 (177.6)
	Lateral	N (lbf)	555 (124.8)
	Rearside	N (lbf)	920 (206.8)
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
Shipping	Shipping Dimensions (Length x Width x Depth)	mm (in)	2930 x 550 x 280 (115.4 x 21.7 x 11.0)
	Shipping Weight	kg (lbs)	55 (121.3)
	Shipping Volume	m^3 (ft^3)	0.45 (15.9)

5961300

5961300G 5961300Dx

4-Band, 8-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 2683 mm

ENVIRONMENTAL SPECIFICATIONS

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

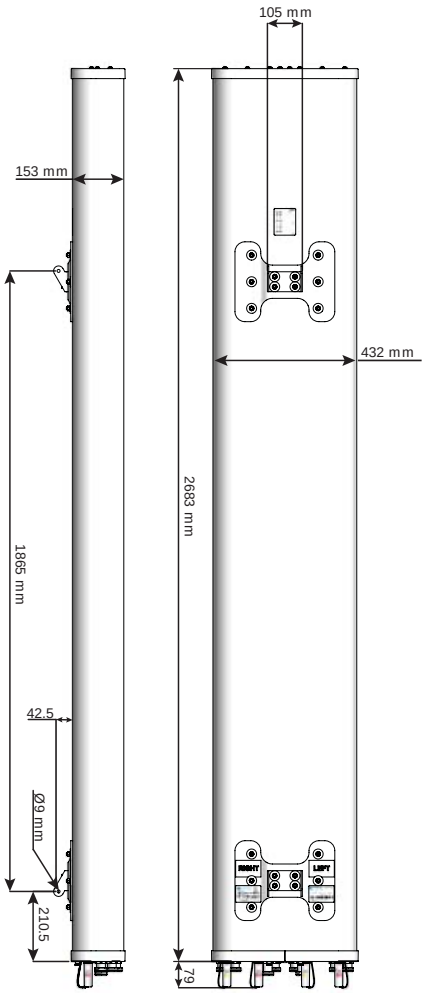
ACCESSORIES All accessories are ordered separately unless otherwise indicated

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

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.
	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 caps covering the tilt adjustment indicators must be engaged and locked.

Dimensions shown in mm



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.