5980300P-2

5980300PG-2 5980300PDx-2

6-Band, 24-Port, 65°, XPOL, Two-Sector Antenna, Variable Tilt, 3053 mm

TRIO Series

- Hexa band, Two-sector antenna, 24 connectors
- Independent tilt on each band 2-12° / 2-12° / 2-12° / 2-12° / 2-12° / 2-12°
- Independent azimuth panning ±5° on each sector
- 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 to control all tilt angles, fully inserted inside the antenna (field replaceable)

PRODUCT OVERVIEW							
	Frequency Range (MHz)	698-960	698-960	1695-2690	1695-2690	1695-2690	1695-2690
	Array	R1	R2	Y1	Y2	Y3	Y4
	Connector	1-2	3-4	5-6	7-8	9-10	11-12
	Polarization	XPOL	XPOL	XPOL	XPOL	XPOL	XPOL
	Azimuth Beamwidth (avg)	65°	65°	65°	65°	65°	65°
	Electrical Downtilt	2-12°	2-12°	2-12°	2-12°	2-12°	2-12°
	Dimensions	3053 x Ø750 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)	---	4.3-10 Female	5980300P-2
Remote Electrical Tilt (RET) AISG v2.0 / 3GPP	Multi-Device Control Unit (MDCU)	4.3-10 Female	5980300PG-2
	Multi-Device Dual Unit (MDDU)	4.3-10 Female	5980300PDx*-2

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

5980300P-2

5980300PG-2 5980300PDx-2

6-Band, 24-Port, 65°, XPOL, Two-Sector Antenna, Variable Tilt, 3053 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	16.2 ± 0.6	16.7 ± 0.5
Azimuth Beamwidth		degrees	71.5° ± 3.5°	67.7° ± 3.3°	67.3° ± 2.6°	66.0° ± 3.1°
Elevation Beamwidth		degrees	8.6° ± 0.6°	7.7° ± 0.5	7.4° ± 0.5°	6.9° ± 0.4°
Electrical Downtilt		degrees	2°-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	> 20.8	> 21.7	> 21.4	> 22.6
Upper Sidelobe Suppression, Peak to 20°		dB	> 13.7	> 14.7	> 15.1	> 15.3
Cross Polar Ratio	Main Direction (0°)	dB	> 15.7	> 22.5	> 20.5	> 16.2
	Sector Edges (±60°)	dB	> 6.3	> 6.7	> 6.5	> 6.6
Maximum Effective Power Per Port		Watts	250			
Inter/Intra Band Isolation		dB	> 25			

Values based on NGMN-P-BASTA version 10.0 requirements.

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	15.5 ± 0.6	15.9 ± 0.5	16.2 ± 0.6	16.7 ± 0.5
Azimuth Beamwidth		degrees	71.6° ± 3.8°	66.0° ± 3.5°	65.5° ± 3.2°	66.5° ± 2.6°
Elevation Beamwidth		degrees	8.5° ± 0.7°	7.6° ± 0.6°	7.4° ± 0.4°	6.8° ± 0.5°
Electrical Downtilt		degrees	2°-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	> 21.1	> 22.0	> 21.5	> 22.5
Upper Sidelobe Suppression, Peak to 20°		dB	> 12.1	> 13.4	> 14.7	> 15.4
Cross Polar Ratio	Main Direction (0°)	dB	> 15.3	> 21.5	> 22.2	> 16.4
	Sector Edges (±60°)	dB	> 7.5	> 6.9	> 6.8	> 6.8
Maximum Effective Power Per Port		Watts	250			
Inter/Intra Band Isolation		dB	> 25			

Values based on NGMN-P-BASTA version 10.0 requirements.

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6-Band, 24-Port, 65°, XPOL, Two-Sector Antenna, Variable Tilt, 3053 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	16.4 ± 0.4	16.6 ± 0.3	16.8 ± 0.4	16.6 ± 0.5	17.1 ± 0.5
Azimuth Beamwidth		degrees	66.6° ± 4.0°	63.7° ± 2.3°	60.9° ± 4.6°	61.4° ± 3.5°	62.7° ± 5.9°
Elevation Beamwidth		degrees	7.4° ± 0.5°	6.9° ± 0.4°	6.5° ± 0.5°	5.6° ± 0.3°	5.2° ± 0.3°
Electrical Downtilt		degrees	2°-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	> 24.5	> 25.8	> 26.4	> 25.1	> 25.2
Upper Sidelobe Suppression, Peak to 20°		dB	> 16.2	> 17.0	> 15.5	> 15.4	> 16.2
Cross Polar Ratio	Main Direction (0°)	dB	> 15.1	> 15.3	> 15.6	> 17.9	> 17.8
	Sector Edges (±60°)	dB	> 6.8	> 8.7	> 7.5	> 7.3	> 8.4
Maximum Effective Power Per Port		Watts	200				
Inter/Intra Band Isolation		dB	> 25				

Values based on NGMN-P-BASTA version 10.0 requirements.

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 ± 0.3	16.5 ± 0.4	16.7 ± 0.4	16.5 ± 0.4	16.9 ± 0.5
Azimuth Beamwidth		degrees	64.3° ± 4.8°	60.2° ± 2.1°	59.4° ± 2.3°	62.6° ± 4.3°	60.4° ± 5.1°
Elevation Beamwidth		degrees	7.2° ± 0.4°	6.7° ± 0.4°	6.2° ± 0.6°	5.3° ± 0.3°	4.8° ± 0.3°
Electrical Downtilt		degrees	2°-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	> 23.0	> 24.3	> 25.1	> 23.6	> 21.7
Upper Sidelobe Suppression, Peak to 20°		dB	> 19.4	> 19.4	> 18.2	> 16.2	> 14.5
Cross Polar Ratio	Main Direction (0°)	dB	> 15.5	> 15.7	> 15.8	> 20.4	> 18.3
	Sector Edges (±60°)	dB	> 6.5	> 7.2	> 7.2	> 7.9	> 7.6
Maximum Effective Power Per Port		Watts	200				
Inter/Intra Band Isolation		dB	> 25				

Values based on NGMN-P-BASTA version 10.0 requirements.

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6-Band, 24-Port, 65°, XPOL, Two-Sector Antenna, Variable Tilt, 3053 mm

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	16.5 ± 0.3	16.7 ± 0.4	16.9 ± 0.4	16.6 ± 0.3	17.0 ± 0.5
Azimuth Beamwidth		degrees	65.4° ± 4.0°	63.2° ± 1.4°	60.9° ± 4.1°	62.1° ± 2.8°	60.0° ± 5.9°
Elevation Beamwidth		degrees	7.5° ± 0.4°	7.0° ± 0.3°	6.5° ± 0.5°	5.6° ± 0.2°	5.2° ± 0.3°
Electrical Downtilt		degrees	2°-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	> 24.1	> 25.4	> 25.4	> 26.8	> 25.7
Upper Sidelobe Suppression, Peak to 20°		dB	> 16.4	> 17.2	> 16.1	> 15.8	> 15.9
Cross Polar Ratio	Main Direction (0°)	dB	> 15.4	> 16.1	> 16.6	> 18.5	> 18.6
	Sector Edges (±60°)	dB	> 6.4	> 8.2	> 7.4	> 6.9	> 8.9
Maximum Effective Power Per Port		Watts	200				
Inter/Intra Band Isolation		dB	> 25				

Values based on NGMN-P-BASTA version 10.0 requirements.

ELECTRICAL SPECIFICATIONS Ultra Wide Band — Y4

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 ± 0.4	16.8 ± 0.4	16.5 ± 0.3	16.9 ± 0.4
Azimuth Beamwidth		degrees	64.1° ± 3.1°	61.7° ± 1.9°	60.0° ± 3.0°	64.9° ± 4.1°	60.4° ± 6.1°
Elevation Beamwidth		degrees	7.2° ± 0.4°	6.6° ± 0.4°	6.1° ± 0.5°	5.3° ± 0.2°	4.8° ± 0.3°
Electrical Downtilt		degrees	2°-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	> 22.4	> 24.4	> 24.9	> 25.7	> 25.1
Upper Sidelobe Suppression, Peak to 20°		dB	> 18.2	> 18.4	> 17.9	> 15.9	> 14.9
Cross Polar Ratio	Main Direction (0°)	dB	> 15.7	> 15.9	> 16.0	> 18.7	> 18.6
	Sector Edges (±60°)	dB	> 7.7	> 7.6	> 6.9	> 6.6	> 7.9
Maximum Effective Power Per Port		Watts	200				
Inter/Intra Band Isolation		dB	> 25				

Values based on NGMN-P-BASTA version 10.0 requirements.

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6-Band, 24-Port, 65°, XPOL, Two-Sector Antenna, Variable Tilt, 3053 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 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. *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

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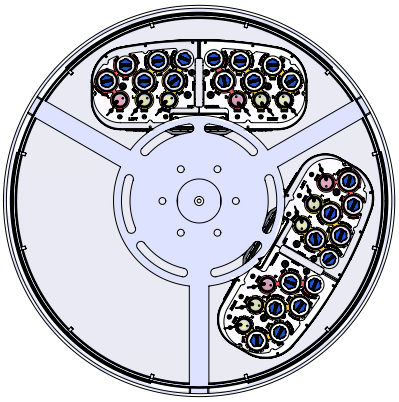
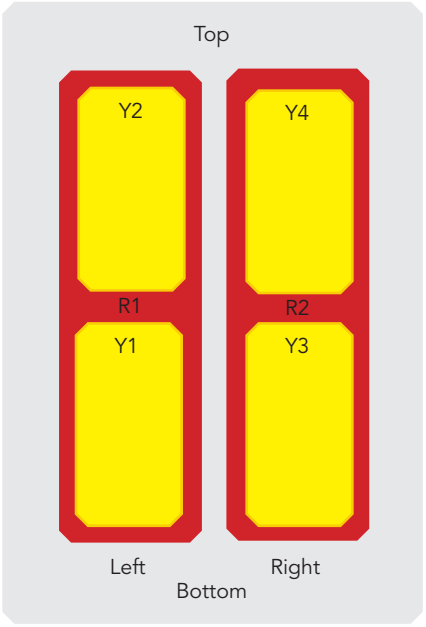
6-Band, 24-Port, 65°, XPOL, Two-Sector Antenna, Variable Tilt, 3053 mm





Depicts each individual sector

ARRAY LAYOUT	ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE
	R1	698-960	1-2	4.3-10 Female
	R2	698-960	3-4	4.3-10 Female
	Y1	1695-2690	5-6	4.3-10 Female
	Y2	1695-2690	7-8	4.3-10 Female
	Y3	1695-2690	9-10	4.3-10 Female
	Y4	1695-2690	11-12	4.3-10 Female

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)	3053 (120.1)
Diameter		mm (in)	750 (29.5)
Net Weight - Antenna Only	Two Sectors	kg (lbs)	186 (410.0)
	One Sector	kg (lbs)	138 (304.2)
Windload (EN 1991-1-4:2005 using Wind Tunnel Coefficients)	Calculation	km/h (mph)	150 (93.2)
	Frontal	N (lbf)	2110 (474.3)
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)	3350 x 900 x 950 (131.8 x 35.4 x 37.4)
	Shipping Weight	kg (lbs)	350 (771.6)
	Shipping Volume	m^3 (ft^3)	2.8 (98.8)

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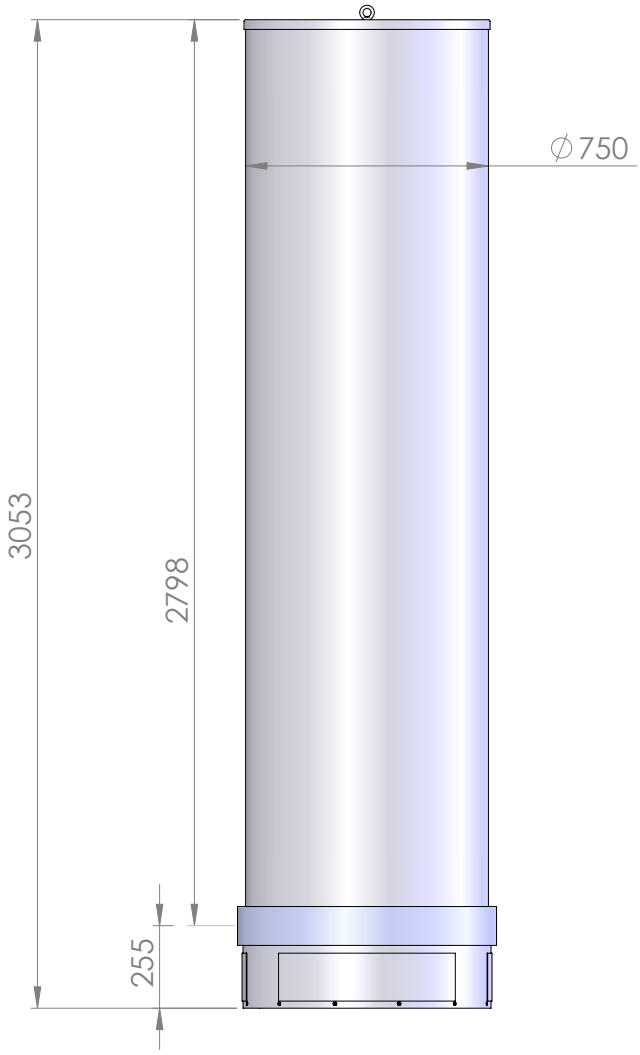
6-Band, 24-Port, 65°, XPOL, Two-Sector Antenna, Variable Tilt, 3053 mm

ENVIRONMENTAL SPECIFICATIONS

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

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.



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