







5978600P-1

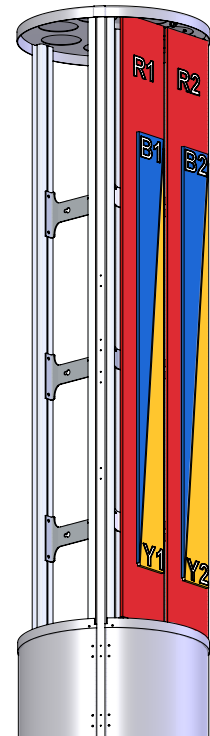
5978600PG-1 5978600PDx-1

6-Band, 12-Port, 65°, XPOL, One-Sector Antenna, Variable Tilt, 2353 mm



- Hexa band, One-sector antenna, 12 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	1427-2180	1427-2180	2490-2690	2490-2690
	Array	 R1	 R2	 B1	 B2	 Y1	 Y2
	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	2353 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	5978600P-1
Remote Electrical Tilt (RET) AISG v2.0 / 3GPP	Multi-Device Control Unit (MDCU)	4.3-10 Female	5978600PG-1
	Multi-Device Dual Unit (MDDU)	4.3-10 Female	5978600PDx*-1

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



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.

5978600P-1

5978600PG-1 5978600PDx-1

6-Band, 12-Port, 65°, XPOL, One-Sector Antenna, Variable Tilt, 2353 mm

ELECTRICAL SPECIFICATIONS Ultra Low Band

R1

Frequency Range		MHz	698-960			
		MHz	698-806	790-862	824-894	880-960
Polarization		---	±45°			
Gain	Over all Tilts	dBi	14.1 ± 0.5	14.8 ± 0.4	15.0 ± 0.6	15.4 ± 0.4
Azimuth Beamwidth		degrees	71.9° ± 2.2°	68.3° ± 3.2°	67.2° ± 2.5°	66.2° ± 2.9°
Elevation Beamwidth		degrees	12.0° ± 1.1°	10.5° ± 0.7°	10.1° ± 0.3°	9.4° ± 0.9°
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	> 24.3	> 23.4	> 23.1	> 23.8
Upper Sidelobe Suppression, Peak to 20°		dB	> 16.5	> 17.8	> 16.9	> 15.3
Cross Polar Ratio	Main Direction (0°)	dB	> 22.7	> 25.2	> 23.1	> 19.0
	Sector Edges (±60°)	dB	> 7.0	> 7.3	> 7.0	> 7.0
Maximum Effective Power Per Port		Watts	250 W			
Inter/Intra Band Isolation		dB	> 25			

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

ELECTRICAL SPECIFICATIONS Ultra Low Band

R2

Frequency Range		MHz	698-960			
		MHz	698-806	790-862	824-894	880-960
Polarization		---	±45°			
Gain	Over all Tilts	dBi	14.1 ± 0.6	14.9 ± 0.5	15.1 ± 0.5	15.4 ± 0.4
Azimuth Beamwidth		degrees	71.9° ± 2.7°	68.5° ± 2.8°	68.2° ± 2.4°	67.6° ± 2.7°
Elevation Beamwidth		degrees	11.9° ± 1.2°	10.4° ± 0.7°	10.0° ± 0.6°	9.3° ± 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	> 22.9	> 23.4	> 23.5	> 23.6
Upper Sidelobe Suppression, Peak to 20°		dB	> 17.7	> 18.1	> 19.1	> 16.6
Cross Polar Ratio	Main Direction (0°)	dB	> 18.8	> 21.4	> 19.9	> 17.8
	Sector Edges (±60°)	dB	> 6.3	> 6.1	> 6.3	> 5.9
Maximum Effective Power Per Port		Watts	250 W			
Inter/Intra Band Isolation		dB	> 25			

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

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.

5978600P-1

5978600PG-1 5978600PDx-1

6-Band, 12-Port, 65°, XPOL, One-Sector Antenna, Variable Tilt, 2353 mm

ELECTRICAL SPECIFICATIONS Filtered Array (Y1)

B1

Frequency Range		MHz	1427-2180			
		MHz	1427-1518	1695-1880	1850-1990	1920-2180
Polarization		---	±45°			
Gain	Over all Tilts	dBi	15.5 ± 0.4	16.4 ± 0.5	16.5 ± 0.5	16.8 ± 0.5
Azimuth Beamwidth		degrees	70.5° ± 2.0°	68.3° ± 3.1°	65.0° ± 2.5°	63.4° ± 2.9°
Elevation Beamwidth		degrees	8.3° ± 0.4°	6.9° ± 0.5°	6.5° ± 0.4°	6.0° ± 0.7°
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	> 25.9	> 28.5	> 31.0	> 29.6
Upper Sidelobe Suppression, Peak to 20°		dB	> 13.3	> 15.6	> 14.7	> 13.4
Cross Polar Ratio	Main Direction (0°)	dB	> 17.5	> 20.0	> 22.3	> 20.9
	Sector Edges (±60°)	dB	> 9.1	> 7.1	> 8.9	> 8.2
Maximum Effective Power Per Port		Watts	200 W			
Inter/Intra Band Isolation		dB	> 28			

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

ELECTRICAL SPECIFICATIONS Filtered Array (Y2)

B2

Frequency Range		MHz	1427-2180			
		MHz	1427-1518	1695-1880	1850-1990	1920-2180
Polarization		---	±45°			
Gain	Over all Tilts	dBi	15.6 ± 0.4	16.4 ± 0.4	16.5 ± 0.5	16.8 ± 0.5
Azimuth Beamwidth		degrees	70.1° ± 2.0°	67.8° ± 2.3°	66.2° ± 2.1°	63.7° ± 3.6°
Elevation Beamwidth		degrees	8.1° ± 0.5°	6.8° ± 0.4°	6.4° ± 0.4°	5.9° ± 0.7°
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	> 26.7	> 27.5	> 29.4	> 28.5
Upper Sidelobe Suppression, Peak to 20°		dB	> 13.1	> 16.3	> 15.1	> 14.4
Cross Polar Ratio	Main Direction (0°)	dB	> 19.6	> 19.0	> 19.5	> 17.3
	Sector Edges (±60°)	dB	> 8.4	> 7.4	> 9.2	> 8.5
Maximum Effective Power Per Port		Watts	200 W			
Inter/Intra Band Isolation		dB	> 28			

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

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.

5978600P-1

5978600PG-1 5978600PDx-1

6-Band, 12-Port, 65°, XPOL, One-Sector Antenna, Variable Tilt, 2353 mm

ELECTRICAL SPECIFICATIONS Filtered Array (B1)

Y1

Frequency Range		MHz	2490-2690
Polarization		---	±45°
Gain	Over all Tilts	dBi	16.8 ± 0.3
Azimuth Beamwidth		degrees	60.8° ± 4.4°
Elevation Beamwidth		degrees	4.7° ± 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	> 28.0
Upper Sidelobe Suppression, Peak to 20°		dB	> 13.7
Cross Polar Ratio	Main Direction (0°)	dB	> 16.4
	Sector Edges (±60°)	dB	> 6.7
Maximum Effective Power Per Port		Watts	200 W
Inter/Intra Band Isolation		dB	> 25

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

ELECTRICAL SPECIFICATIONS Filtered Array (B2)

Y2

Frequency Range		MHz	2490-2690
Polarization		---	±45°
Gain	Over all Tilts	dBi	16.8 ± 0.4
Azimuth Beamwidth		degrees	60.9° ± 4.3°
Elevation Beamwidth		degrees	4.7° ± 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	> 25.5
Upper Sidelobe Suppression, Peak to 20°		dB	> 13.4
Cross Polar Ratio	Main Direction (0°)	dB	> 15.6
	Sector Edges (±60°)	dB	> 6.8
Maximum Effective Power Per Port		Watts	200 W
Inter/Intra Band Isolation		dB	> 25

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

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.

5978600P-1

5978600PG-1 5978600PDx-1

6-Band, 12-Port, 65°, XPOL, One-Sector Antenna, Variable Tilt, 2353 mm

ELECTRICAL DOWNTILT CONTROL

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

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. The manual tilt 'override' function is always available with no need to remove the physical RET motor.

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.

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)

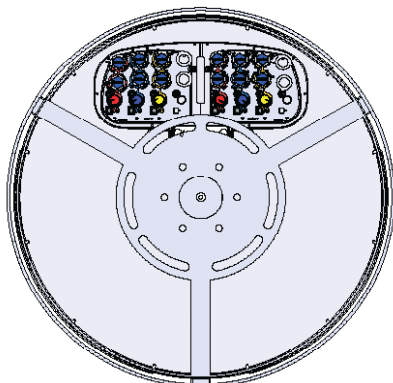
Field Replaceable Unit

Yes

5978600P-1

5978600PG-1 5978600PDx-1

6-Band, 12-Port, 65°, XPOL, One-Sector Antenna, Variable Tilt, 2353 mm



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
	B1	1427-2180	5-6	4.3-10 Female
	B2	1427-2180	7-8	4.3-10 Female
	Y1	2490-2690	9-10	4.3-10 Female
	Y2	2490-2690	11-12	4.3-10 Female

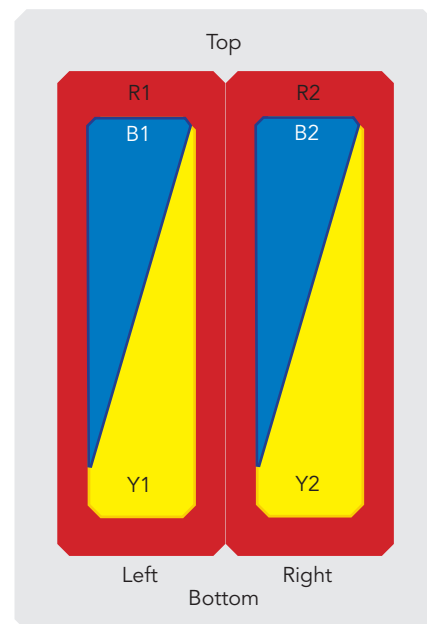


Diagram shown at right depicts the view from the front of the antenna.
The illustration is not shown to scale.

MECHANICAL SPECIFICATIONS

Length		mm (in)	2353 (92.6)
Diameter		mm (in)	750 (29.5)
Net Weight	One Sector	kg (lbs)	112 (246.9)
Windload (EN 1991-1-4:2005 using Wind Tunnel Coefficients)	Calculation	km/h (mph)	150 (93.2)
	Frontal	N (lbf)	1575 (354.0)
Operational Wind Speed		km/h (mph)	160 (99.4)
Survival Wind Speed		km/h (mph)	200 (124)
Radome Color		---	Light Grey
Radome Material		---	Stretched Membrane
Lightning Protection		---	Direct Ground
Shipping	Shipping Dimensions (Length x Width x Depth)	mm (in)	2650 x 900 x 950 (104.3 x 35.4 x 37.4)
	Shipping Weight	kg (lbs)	222 (489.4)
	Shipping Volume	m ³ (ft ³)	2.2 (77.6)

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.

5978600P-1


5978600PG-1 5978600PDx-1

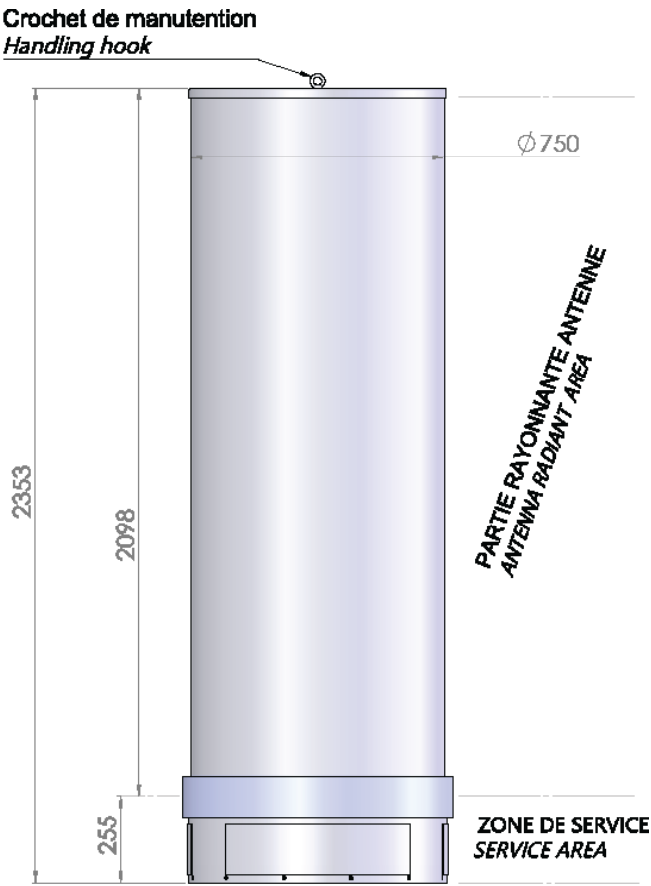
6-Band, 12-Port, 65°, XPOL, One-Sector Antenna, Variable Tilt, 2353 mm

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.



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.