





6890300N-3

6890300NG-3 6890300NDx-3

4-Band, 24-Port, 65°, XPOL, Tri-Sector Antenna, Variable Tilt, 3108 mm



- Quad band, tri-sector antenna, 24 connectors
- Independent tilt on each band 0-10° / 0-12° / 0-12° / 0-10°
- Independent azimuth panning ±15° 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	1695-2690	1695-2690	1695-2690
	Array	 R1	 Y1	 Y2	 Y3
	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°	0-12°	0-12°	0-10°
	Dimensions	3108 x Ø573 (Includes 432 mm Service Area)			

ORDERING OPTIONS

Select from the different options listed below

SELECT ELECTRICAL DOWNTILT CONTROL & AISG PROTOCOL	SELECT ACTUATOR	SELECT CONNECTOR TYPE	ANTENNA MODEL NUMBER		
			STANDARD 3-SECTOR MODEL	OPTIONAL 2-SECTOR MODEL	OPTIONAL 1-SECTOR MODEL
Manual Electrical Tilt (MET)	---	4.3-10 Female	6890300N-3	6890300N-2	6890300N-1
Remote Electrical Tilt (RET) AISG v2.0 / 3GPP	Multi-Device Control Unit (MDCU)	4.3-10 Female	6890300NG-3	6890300NG-2	6890300NG-1

*Pre-commisioned configuration; Contact Amphenol for further details



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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	15.3 ± 0.6	15.9 ± 0.5	16.3 ± 0.4	16.7 ± 0.4
Azimuth Beamwidth		degrees	71.5° ± 2.0°	67.6° ± 2.4°	67.2° ± 1.3°	67.5° ± 2.0°
Elevation Beamwidth		degrees	8.4° ± 0.6°	7.4° ± 0.5°	7.3° ± 0.4°	6.8° ± 0.4°
Electrical Downtilt		degrees	0°-10°			
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	> 24.2	> 26.5	> 25.1	> 24.2
Upper Sidelobe Suppression, Peak to 20°		dB	> 17.0	> 16.0	> 15.6	> 14.8
Cross Polar Ratio - Main Direction (0°)		dB	> 16.1	> 17.1	> 16.0	> 15.9
Maximum Effective Power Per Port		Watts	200 W			
Inter/Intra Band Isolation		dB	> 25			

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

ELECTRICAL SPECIFICATIONS Ultra Wide Band

Y1

Frequency Range		MHz	1695-2690			
		MHz	1695-1880	1850-1990	1920-2180	2300-2500
Polarization		---	±45°			
Gain	Over all Tilts	dBi	16.4 ± 0.4	16.5 ± 0.4	16.7 ± 0.4	16.6 ± 0.4
Azimuth Beamwidth		degrees	66.9° ± 4.1°	66.4° ± 3.8°	63.0° ± 4.4°	64.9° ± 3.6°
Elevation Beamwidth		degrees	7.5° ± 0.6°	7.0° ± 0.4°	6.5° ± 0.6°	5.6° ± 0.1°
Electrical Downtilt		degrees	0°-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	> 23.4	> 23.0	> 23.3	> 24.6
Upper Sidelobe Suppression, Peak to 20°		dB	> 16.6	> 16.9	> 16.9	> 16.8
Cross Polar Ratio - Main Direction (0°)		dB	> 14.6	> 14.6	> 15.1	> 14.9
Maximum Effective Power Per Port		Watts	200 W			
Inter/Intra Band Isolation		dB	> 25			

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

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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	16.5 ± 0.4	16.6 ± 0.5	16.9 ± 0.5	16.9 ± 0.5	16.8 ± 0.4
Azimuth Beamwidth		degrees	65.6° ± 4.5°	64.5° ± 4.9°	62.1° ± 4.4°	62.6° ± 4.5°	65.9° ± 4.0°
Elevation Beamwidth		degrees	7.1° ± 0.5°	6.6° ± 0.4°	6.2° ± 0.5°	5.2° ± 0.3°	4.8° ± 0.2°
Electrical Downtilt		degrees	0°-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	> 23.4	> 23.6	> 24.9	> 25.6	> 25.5
Upper Sidelobe Suppression, Peak to 20°		dB	> 16.9	> 16.5	> 16.9	> 16.1	> 15.9
Cross Polar Ratio - Main Direction (0°)		dB	> 14.9	> 15.0	> 15.7	> 14.8	> 15.3
Maximum Effective Power Per Port		Watts	200 W				
Inter/Intra Band Isolation		dB	> 25				

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

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	17.4 ± 0.4	17.4 ± 0.3	17.5 ± 0.5	17.9 ± 0.3	18.0 ± 0.5
Azimuth Beamwidth		degrees	63.5° ± 3.9°	62.9° ± 3.5°	60.9° ± 4.2°	64.7° ± 3.4°	61.3° ± 3.7°
Elevation Beamwidth		degrees	6.0° ± 0.4°	5.5° ± 0.4°	5.1° ± 0.6°	4.4° ± 0.2°	4.1° ± 0.3°
Electrical Downtilt		degrees	0°-10°				
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	> 26.9	> 25.1	> 25.2	> 28.8	> 28.1
Upper Sidelobe Suppression, Peak to 20°		dB	> 15.8	> 17.1	> 17.2	> 15.6	> 16.2
Cross Polar Ratio - Main Direction (0°)		dB	> 21.0	> 22.5	> 23.4	> 19.1	> 18.2
Maximum Effective Power Per Port		Watts	200 W				
Inter/Intra Band Isolation		dB	> 28				

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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)

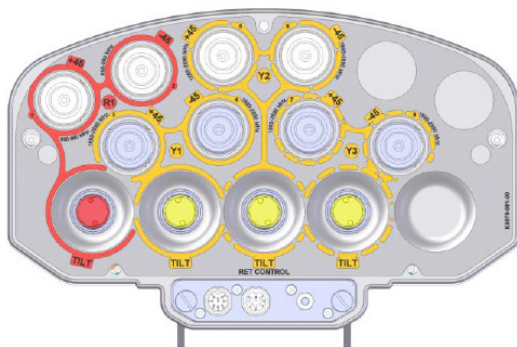
Field Replaceable Unit

Yes

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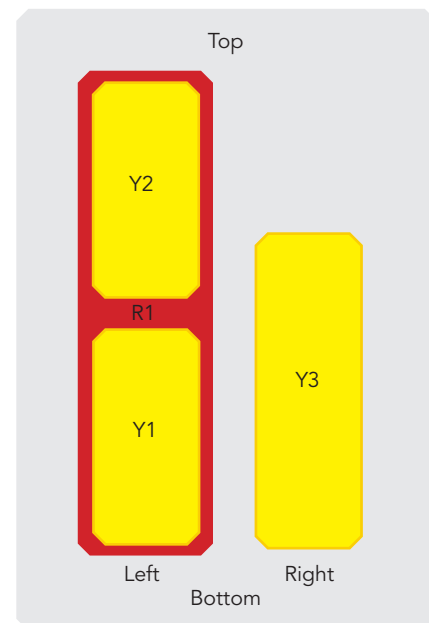
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ARRAY LAYOUT	ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE
	■ R1	698-960	1-2	4.3-10 Female
	■ Y1	1695-2690	3-4	4.3-10 Female
	■ Y2	1695-2690	5-6	4.3-10 Female
	■ Y3	1695-2690	7-8	4.3-10 Female

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)	3108 (122.4)
Width		mm (in)	573 (22.6)
Depth		mm (in)	1 (6.4)
Net Weight - Antenna Only	Standard 3-sector Model	kg (lbs)	190 (418.9)
	Optional 2-Sector Model	kg (lbs)	153 (337.3)
	Optional 1-Sector Model	kg (lbs)	116 (255.7)
Weight of Service Area		kg (lbs)	37 (81.6)
Windload (Wind Tunnel Coefficients)	Calculation	km/h (mph)	150 (93.2)
	Frontal	N (lbf)	1055 (237.2)
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

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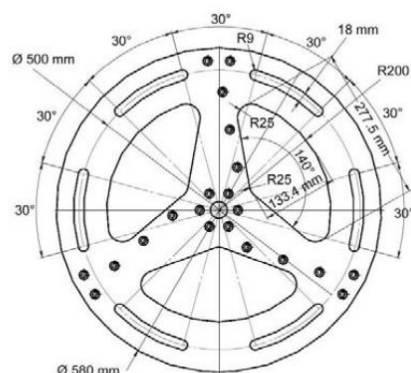
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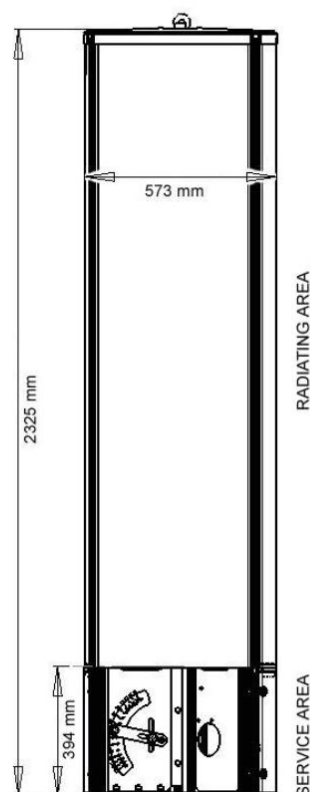
ENVIRONMENTAL SPECIFICATIONS

ETSI EN300019-2-4 v2.4.1 for Vibration	Sinusoidal	---	IEC60068-2-6
	Random	---	IEC60068-2-64
	Shock	---	IEC60068-2-27
ETSI EN300019-2-4 for Environmental Conditions (Temperature Change, Damp Heat Cycling, Salt Mist)		---	IEC60068-2-52
Operating Temperature		° C (° F)	-40° to +60° (-40° to 140°)
Product Environmental Compliance		---	Product is RoHs Compliant

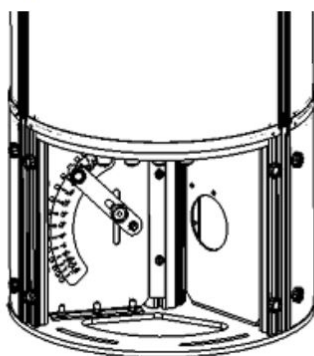
Mounting Flange Interface



Dimensions



Service Area (Opened Shroud)



TRIO EXTENSION ACCESSORY

Dimensions (Length x Diameter)	mm (in)	870 x Ø573 (34.3 x Ø22.6)
Weight	kg (lbs)	66 (145.5)
Shroud Material	---	Outdoor Plastic
Shroud Color		Grey RAL7035
Flange	---	Galvanised Steel
Operational Wind Speed	km/h (mph)	160 (99.4)
Survival Wind Speed	km/h (mph)	200 (124.3)



INSTALLATION Please read all installation notes before installing this product.

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