

10-Port Antenna 698-960 | 1695-2690 | 1695-2690 | 1695-2690 MHz

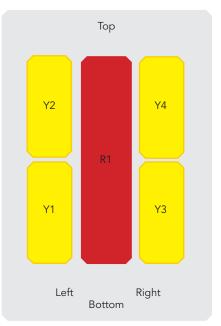
65° 1394 mm

6896312E

6896312EN 6896312ENG 10-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 1394 mm

- Penta band antenna, dual polarisation, 10 connectors
- Independent tilt on each band 2-14° / 2-12° / 2-12° / 2-12°
- 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)

	Frequency Range (MHz)	698-960	1695-2690	1695-2690	1695-2690	1695-2690		
2	Array	R 1	¥1	¥2	¥3	¥4		
PRODUCT OVERVIEW	Connector	1-2	3-4	5-6	7-8	9-10		
CT OVI	Polarization	XPOL	XPOL	XPOL	XPOL	XPOL		
RODU	Azimuth Beamwidth (avg)	65°	65°	65°	65°	65°		
₫	Electrical Downtilt	2-14°	2-12°	2-12°	2-12°	2-12°		
	Dimensions	1394 x 368 x 159 mm						



ORDERING OPTIONS Select from the different options listed below

SELECT ELECTRICAL DOWNTILT CONTROL & AISG PROTOCOL	SELECT CONNECTOR TYPE	ANTENNA MODEL NUMBER
Manual Electrical Tilt (MET)	4.3-10 Female	6896312EN
Remote Electrical Tilt (RET) AISG v2.0 / 3GPP	4.3-10 Female	6896312ENG

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





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R1

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ELECTRICAL SPECIFICATIONS Low Band

		w Daria							
Frequency Ra	ange	MHz		698	-960				
		MHz	698-806	790-862	824-894	880-960			
Polarization				± •	45°	1			
Gain	Over all Tilts	dBi	13.1 ± 0.4	13.4 ± 0.3	13.5 ± 0.4	14.0 ± 0.2			
Azimuth Beamwidth		degrees	69.8 ± 1.8	68.1 ± 1.7	68.3 ± 2.3	70.3 ± 1.7			
Elevation Bea	amwidth	degrees	18.4 ± 1.2	16.8 ± 1.0	16.2 ± 0.8	14.8 ± 0.8			
Electrical Dov	wntilt	degrees	2-14						
Impedance		Ohms	50						
VSWR			< 1.5						
Passive Interr 3rd Order for	nodulation [.] 2 x 20W Carriers	dBc	< -153						
Front-to-Back	k Ratio, Total Power, ±30°	dB	> 26.3	> 27.8	> 27.9	> 28.0			
Upper Sidelok	pe Suppression, Peak to 20°	dB	> 20.0	> 20.2	> 19.8	> 19.0			
Cross Polar	Main Direction (0°)	dB	> 19.3	> 21.8	> 20.6	> 21.2			
Ratio	Sector Edges (60°)	dB	> 14.0	> 11.6	> 10.2	> 8.8			
Maximum Effective Power Per Port		Watts	300						
Inter/Intra Ba	nd Isolation	dB	> 27						

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

Frequency Range Polarization		MHz	1695-2690						
		MHz	1695-1880	1850-1990	1920-2180	2300-2500	2490-2690		
				I	± 45°	1	1		
Gain	Over all Tilts	dBi	13.4 ± 0.4	13.8 ± 0.4	14.2 ± 0.6	15.4 ± 0.3	15.7 ± 0.3		
Azimuth Beamwidth		degrees	63.4 ± 6.6	66.5 ± 2.3	67.0 ± 2.4	65.7 ± 2.9	62.8 ± 2.5		
Elevation Beamwidth		degrees	15.2 ± 1.1	13.8 ± 1.3	12.5 ± 1.1	10.1 ± 0.7	9.3 ± 0.5		
Electrical Downtilt		degrees	2-12						
Impedance		Ohms	50						
VSWR			< 1.5						
Passive Interr 3rd Order for	nodulation 2 x 20W Carriers	dBc	< -153						
Front-to-Back	k Ratio, Total Power, ±30°	dB	> 26.4	> 27.0	> 26.5	> 28.3	> 26.5		
Upper Sidelok	pe Suppression, Peak to 20°	dB	> 17.4	> 17.1	> 16.7	> 16.3	> 16.3		
Cross Polar	Main Direction (0°)	dB	> 21.4	> 23.3	> 24.0	> 23.2	> 20.5		
Ratio	Sector Edges (60°)	dB	> 8.2	> 7.8	> 7.3	> 7.4	> 7.2		
Maximum Effective Power Per Port Watts		Watts	150 W						
Inter/Intra Band Isolation		dB	> 27						

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



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65° 1394 mm

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10-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 1394 mm

L SPECIFICATIONS Ultra	a Wide Band			Y2				
Frequency Range			1695-2690					
		1695-1880	1850-1990	1920-2180	2300-2500	2490-2690		
Polarization				± 45°				
Over all Tilts	dBi	13.2 ± 0.4	13.4 ± 0.3	13.7 ± 0.7	15.1 ± 0.3	15.3 ± 0.4		
Azimuth Beamwidth		61.4 ± 8.7	67.9 ± 2.2	67.8 ± 2.4	65.2 ± 2.0	64.0 ± 3.4		
Elevation Beamwidth		15.0 ± 1.0	14.0 ± 1.5	12.6 ± 1.0	10.4 ± 0.6	9.7 ± 0.5		
Electrical Downtilt		2-12						
Impedance		50						
VSWR		< 1.5						
nodulation 2 x 20W Carriers	dBc	< -153						
Ratio, Total Power, ±30°	dB	> 27.6	> 27.4	> 26.3	> 26.9	> 26.1		
pe Suppression, Peak to 20°	dB	> 16.0	> 14.6	> 14.9	> 15.4	> 15.3		
Main Direction (0°)	dB	> 18.7	> 21.4	> 20.9	> 18.6	> 21.1		
Sector Edges (60°)	dB	> 8.0	> 7.5	> 7.8	> 7.2	> 7.5		
Maximum Effective Power Per Port Watts		150						
nd Isolation	dB			> 27				
	Over all Tilts nwidth mwidth vntilt anodulation 2 x 20W Carriers a Ratio, Total Power, ±30° be Suppression, Peak to 20° Main Direction (0°) Sector Edges (60°) ective Power Per Port	MHz MHz Immidulation 2 × 20W Carriers Ratio, Total Power, ±30° MBc Main Direction (0°) Base Core Edges (60°) Main Direction Per Port	MHzMHzMHz1695-1880Over all TiltsdBi 13.2 ± 0.4 nwidthdegrees 61.4 ± 8.7 nwidthdegrees 15.0 ± 1.0 nmwidthdegrees 15.0 ± 1.0 ovntiltdegreesOhmsnodulation $2 \times 20W$ CarriersdBcRatio, Total Power, $\pm 30^{\circ}$ dB> 27.6be Suppression, Peak to 20°dBMain Direction (0°)dBSector Edges (60°)dBettive Power Per PortWatts	MHz MHz 1695-1880 1850-1990 Over all Tilts dBi 13.2 ± 0.4 13.4 ± 0.3 nwidth degrees 61.4 ± 8.7 67.9 ± 2.2 inwidth degrees 61.4 ± 8.7 67.9 ± 2.2 inwidth degrees 15.0 ± 1.0 14.0 ± 1.5 inwidth degrees 15.0 ± 1.0 14.0 ± 1.5 inwidth 4 4 3 inwidth degrees 50.0 ± 1.0 14.0 ± 1.5 14.0 ± 1.5 14.0 ± 1.5 inwidth degrees 50.0 ± 1.0 14.0 ± 1.5 14.0 ± 1.5 indulation $2 \times 20W$ Carriers dBc $$ $$ $$ indulation $2 \times 20W$ Carriers dBc > 27.6 > 27.4 > 27.4 indulation $2 \times 20W$ Carriers dB > 16.0 > 14.6 indulation $2 \times 20W$ Carriers dB > 18.7 > 21.4 indulation $2 \times 20W$ 38.0	MHz MHz 1695-2690 MHz 1695-1880 1850-1990 1920-2180 $\pm 45^{\circ}$ $\pm 45^{\circ}$ Over all Tilts dBi 13.2 ± 0.4 13.4 ± 0.3 13.7 ± 0.7 nwidth degrees 61.4 ± 8.7 67.9 ± 2.2 67.8 ± 2.4 mwidth degrees 15.0 ± 1.0 14.0 ± 1.5 12.6 ± 1.0 vntilt degrees 15.0 ± 1.0 14.0 ± 1.5 12.6 ± 1.0 vntilt degrees 50 $$ 153 nodulation $2.20W$ Carriers dBc 53 153 Ratio, Total Power, $\pm 30^{\circ}$ dB > 27.6 > 27.4 > 26.3 se Suppression, Peak to 20^{\circ} dB > 16.0 > 14.6 > 14.9 Main Direction (0°) dB > 18.7 > 21.4 > 20.9 Sector Edges (60°) dB > 8.0 > 7.5 > 7.8	MHz 1695-2690 MHz 1695-1880 1850-1990 1920-2180 2300-2500 Image: I		

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

Frequency Range Polarization		MHz	1695-2690						
		MHz	1695-1880	1850-1990	1920-2180	2300-2500	2490-2690		
				I	± 45°	1	1		
Gain	Over all Tilts	dBi	13.3 ± 0.4	13.9 ± 0.4	14.4 ± 0.6	15.5 ± 0.3	15.9 ± 0.4		
Azimuth Beamwidth		degrees	66.4 ± 5.6	65.4 ± 5.0	65.5 ± 3.1	65.2 ± 3.4	59.1 ± 2.8		
Elevation Beamwidth		degrees	15.8 ± 1.5	13.9 ± 0.8	12.9 ± 1.1	10.7 ± 0.6	9.8 ± 0.5		
Electrical Downtilt		degrees	2-12						
Impedance		Ohms	50						
VSWR			< 1.5						
Passive Interr 3rd Order for	nodulation 2 x 20W Carriers	dBc	< -153						
Front-to-Back	k Ratio, Total Power, ±30°	dB	> 25.3	> 25.4	> 25.7	> 27.2	> 26.8		
Upper Sidelok	pe Suppression, Peak to 20°	dB	> 15.7	> 14.3	> 14.2	> 15.4	> 14.4		
Cross Polar	Main Direction (0°)	dB	> 20.6	> 22.5	> 23.2	> 23.2	> 21.1		
Ratio	Sector Edges (60°)	dB	> 11.2	> 7.5	> 7.1	> 7.6	> 7.2		
Maximum Effective Power Per Port Watt		Watts	150						
Inter/Intra Band Isolation		dB	> 27						

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



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nge	MHz		1695-2690					
		1695-1880	1850-1990	1920-2180	2300-2500	2490-2690		
				± 45°	, 			
Over all Tilts	dBi	13.4 ± 0.4	13.8 ± 0.3	14.2 ± 0.6	15.4 ± 0.3	15.7 ± 0.4		
Azimuth Beamwidth		64.0 ± 6.9	66.9 ± 3.2	66.9 ± 2.8	65.3 ± 2.9	61.5 ± 3.0		
Elevation Beamwidth		15.3 ± 1.2	13.9° ± 1.1	12.7 ± 1.0	10.4 ± 0.6	9.6 ± 0.5		
Electrical Downtilt		2-12						
Impedance		50						
VSWR		< 1.5						
nodulation 2 x 20W Carriers	dBc	< -110						
Ratio, Total Power, ±30°	dB	> 25.4	> 26.3	> 26.3	> 27.1	> 25.3		
e Suppression, Peak to 20°	dB	> 16.3	> 15.3	> 15.3	> 16.0	> 15.5		
Main Direction (0°)	dB	> 20.5	> 21.7	> 22.5	> 22.7	> 20.8		
Sector Edges (60°)	dB	> 10.3	> 7.8	> 7.6	> 7.2	> 7.5		
Maximum Effective Power Per Port Watts		150 W						
Inter/Intra Band Isolation				> 27				
	Over all Tilts nwidth mwidth untilt nodulation 2 x 20W Carriers Ratio, Total Power, ±30° e Suppression, Peak to 20° Main Direction (0°) Sector Edges (60°) ective Power Per Port	MHZ MHz MHz Over all Tilts dBi nwidth degrees nwidth degrees nwidth degrees nwidth degrees notilt degrees notilt degrees notilt degrees notilt degrees notilt degrees notilt dBc notiltion dBc atio, Total Power, ±30° dB e Suppression, Peak to 20° dB Main Direction (0°) dB sector Edges (60°) dB ective Power Per Port Watts	MHz MHz $I695-1880$ MHz $I695-1880$ $I3.4 \pm 0.4$ $I5.3 \pm 1.2$	MHz MHz 1695-1880 1850-1990 Over all Tilts dBi 13.4 ± 0.4 13.8 ± 0.3 nwidth degrees 64.0 ± 6.9 66.9 ± 3.2 mwidth degrees 15.3 ± 1.2 $13.9^{\circ} \pm 1.1$ untilt degrees 15.3 ± 1.2 $13.9^{\circ} \pm 1.1$ untilt degrees $$ Ohms nodulation dBc nodulation dBc Ratio, Total Power, $\pm 30^{\circ}$ dB > 25.4 > 26.3 e Suppression, Peak to 20° dB > 16.3 > 15.3 Main Direction (0°) dB > 20.5 > 21.7 Sector Edges (60°) dB > 10.3 > 7.8	MHz 1695-2690 MHz 1695-1880 1850-1990 1920-2180 Image:	MHZ Information Information <thinformation< th=""> <thin< td=""></thin<></thinformation<>		

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ELECTRICAL DOWNTILT CONTROL

For multiband antennas, electrical downtilt for each band can be controlled separately.					
Manual Electrical Tilt (MET) Control	The manual tilt 'override' function is always available				
Remote Electrical Tilt (RET) Control	The remote control of the electrical tilt is managed by single RET unit 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.

Number of RET-READY Actuators		One per antenna			
Input Voltage		+10 to +30 V			
Power Consumption Idle State Operating		0.5 W			
		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			

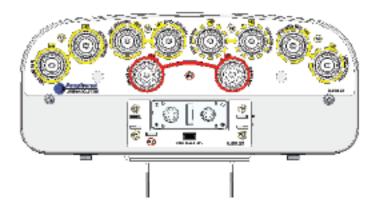


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	ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE
UT	R 1	698-960	1-2	4.3-10 Female Long Neck
LAYOUT	<mark></mark> Y1	1695-2690	3-4	4.3-10 Female Long Neck
	Y 2	1695-2690	5-6	4.3-10 Female Long Neck
ARRAY	Y3	1695-2690	7-8	4.3-10 Female Long Neck
	¥4	1695-2690	9-10	4.3-10 Female Long Neck

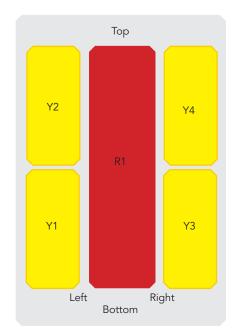


Diagram shown above depicts the view from the front of the antenna. The illustration is not shown to scale.

MECHANICAL SPECIFICATIONS

Length	mm (in)	1394 (54.9)
Width	mm (in)	368 (14.4)
Depth	mm (in)	159 (6.2)
Net Weight - Antenna Only	kg (lbs)	24 (52.9)
Mechanical Distance Between Mounting Points	mm (in)	TBD
Operational Wind Speed	km/h (mph)	160 (99.4)
Survival Wind Speed	km/h (mph)	200 (124)
Radome Color		Gray RAL7035
Radome Material		FRP
Lightning Protection		Direct Ground (unless otherwise noted)

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.

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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) <i>delivered as standard</i>	0900181/00	3.4 kg (7.5 lbs)
Kit to add mechanical tilt (0° to 10°) to above brackets optional	0900397/00	3.0 kg (6.6 lbs)

Wall mounting brackets are available upon request

INSTALLATION Please read all installation notes before installing this product.

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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.