

APXVLL13P_43-C-A20

Features

A combination of two x-polarized antennas in a single radome, the Amphenol Quad-Pol antennas are designed for applications requiring a minimum number of antennas at a cell site and reduced tower loading. They offer the rugged construction of our new series of high band antennas that feature both high RF performance and energy efficiency. They are ideal for 1800 and 2100 networks where high gain is required. These antennas are especially well-suited for MIMO applications.

- Ultra-broadband design
- Best-in-the-industry gain values
- Two x-polarized broadband panels in a single narrow radome - reduced tower loading and lower profile
- Variable electrical downtilt - provides enhanced precision in controlling intercell interference
- Single ACU-A20-S RET drives both arrays
- High suppression of all upper sidelobes
- High front-to-back ratio



PRODUCT OVERVIEW	Frequency Range (MHz)	(2x) 1695-2690	
	Array	■ Y1	■ Y2
	Connector	1-2	3-4
		4 PORTS	
	Polarization	XPOL	
	Azimuth Beamwidth (avg)	65°	
	Electrical Downtilt	0-12°	
	Dimensions	1390 x 288 x 118 mm (54.7 x 11.3 x 4.6 in)	

ORDERING OPTIONS

Select from the following ordering options

ANTENNA MODEL NUMBER	CONFIGURATION	MOUNTING HARDWARE	MOUNTING PIPE DIAMETER	SHIPPING WEIGHT
APXVLL13P_43-C-A20	One ACU-A20-S External RET Included	APM40-2 Beam Tilt Kit Included	50-120 mm (2.0-4.7 in)	20.8 kg (46 lbs)



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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ELECTRICAL SPECIFICATIONS

■ Y1 ■ Y2

Frequency Range		MHz	(2x) 1695-2690				
		MHz	1695-1880	1850-1990	1920-2200	2300-2500	2500-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	17.4 ± 0.5	16.9 ± 0.5	17.1 ± 0.5	17.6 ± 0.5	17.8 ± 0.5
	Max Gain	dBi	17.9	17.4	17.6	18.1	18.3
Azimuth Beamwidth (3 dB)		degrees	67° ± 3°	66° ± 3°	66° ± 4°	66° ± 5°	61° ± 2°
Elevation Beamwidth (3 dB)		degrees	7.8° ± 0.5°	7.3° ± 0.3°	7.1° ± 0.4°	6.8° ± 0.4°	5.7° ± 0.5°
Electrical Downtilt		degrees	0-12°				
Impedance		Ohms	50Ω				
VSWR (Return Loss)		---	1.5:1 (-14 dB)				
Passive Intermodulation 3rd Order for 2x20 W Carriers		dBc	-153				
Front-to-Back Ratio, Total Power, ± 30°		dB	26	26	26	27	27
Front-to-Back at 180° Copolar		dB	32	32	32	33	35
Upper Side Lobe Suppression, Peak to +20°		dB	16	19	19	18	14
First Upper Side Lobe		dB	16	20	19	18	14
Cross-Pol Over Sector		dB	11	12	11	11	12
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	25	30	32	25	22
Maximum Effective Power Per Port		Watts	300 W				
Cross Polar Isolation		dB	28	28	28	28	28

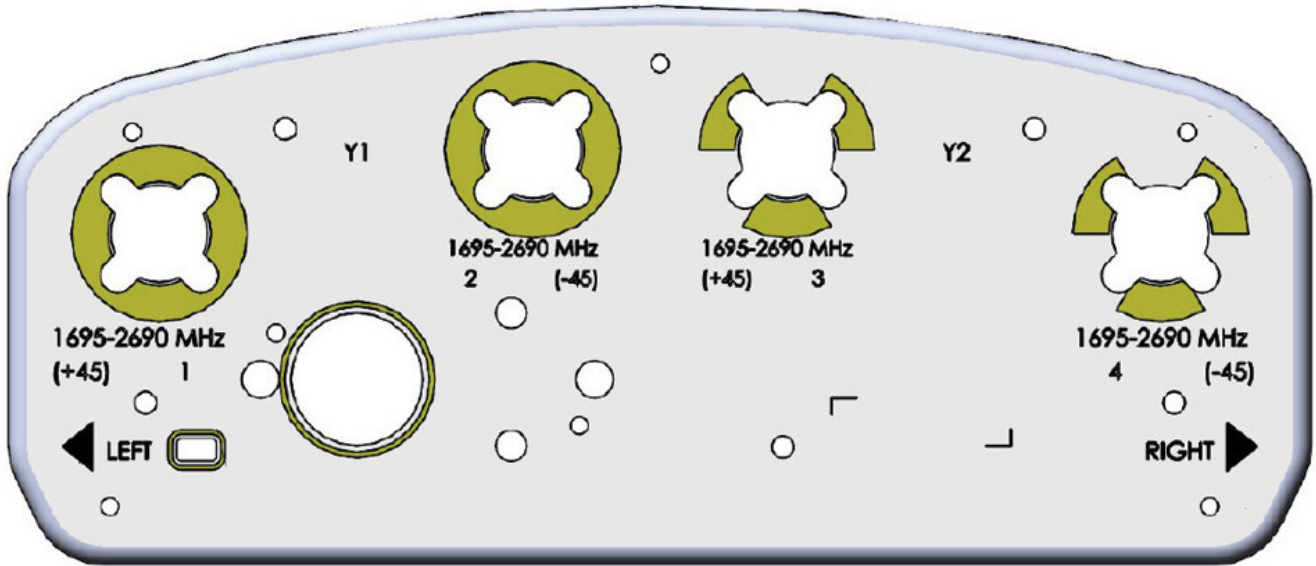
RET ACTUATOR

Frequency		MHz	1695-2690
Model Number		---	ACU-A20-S
Number of RET Actuators		---	1
RET ID		---	Y1
Input Voltage		Vdc	10-30V
Power Consumption	Idle State, maximum	Watts	0.5W @ 10V, 1.5W @ 30V
	Normal Conditions, maximum	Watts	4W @ 10V, 9W @ 30V
Protocol		---	3GPP / AISG v2.0
Tilt Change Duration		---	Less than 15 seconds, typical (may vary depending on antenna type and outdoor temperature)
Precision		degrees	± 0.1°
Tilt Change Capability		---	18,000 minimum
RET Interface		---	One AISG Male and One AISG Female
Field Replaceable Unit		---	Yes
Location		---	External

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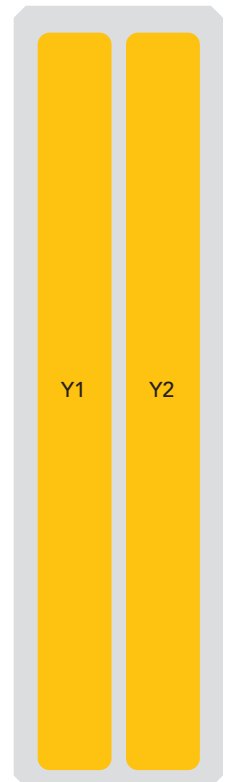
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BOTTOM VIEW - LABELING



ARRAY LAYOUT

ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE	RET	AISG RET UID
■ Y1	1695-2690 MHz	1-2	(2x) 4.3-10 Female	Y1	RFxxxxxxxxxx-2Y1
■ Y2	1695-2690 MHz	3-4	(2x) 4.3-10 Female		



The illustration is not shown to scale.

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MECHANICAL SPECIFICATIONS

Length	mm (in)	1390 (54.7)
Width	mm (in)	288 (11.3)
Depth	mm (in)	118 (4.6)
Net Weight - Antenna Only	kg (lbs)	13 (28.5)
Net Weight - Mounting Hardware Only	kg (lbs)	3.4 (7.5)
Wind Load Rated at 150 km/h (93 mph)	Front	N (lbf) 456 (103)
	Side	N (lbf) 187 (42)
	Rear	N (lbf) 492 (111)
Survival Wind Speed / Rated Wind Speed	km/h (mph)	240 (160)
Connector Type	--	(4x) 4.3-10 Female at Bottom
Radome Color	---	Light Grey RAL7035
Radome Material	---	ASA
Lightning Protection	---	Direct Ground
Shipping	Packing Size (Length x Width x Depth)	mm (in) 1585 x 380 x 260 (62.4 x 15.0 x 10.2)
	Shipping Weight	kg (lbs) 20.8 (45.7)

ENVIRONMENTAL SPECIFICATIONS

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

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ACCESSORIES Accessories may be ordered separately unless otherwise indicated.

ITEM	MODEL NUMBER	WEIGHT
Beam Tilt Mounting Bracket Kit for Pole Diameter 50-120 mm (2.0-4.7 in) <i>Shipped with antenna</i>	APM40-2	3.4 kg (7.5 lbs)

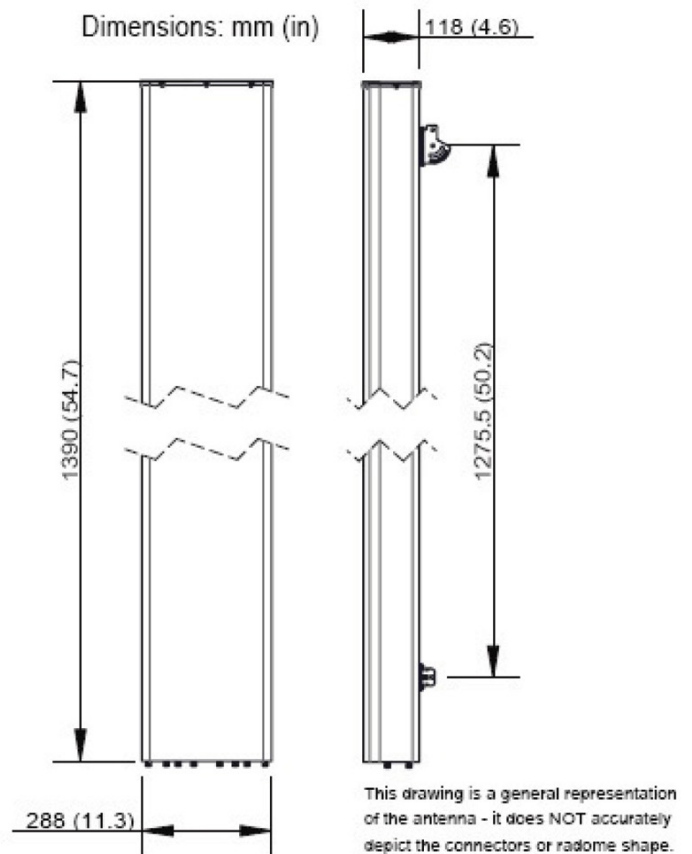
INSTALLATION Please read all installation notes before installing product.



- Always attach the antenna using all mounting points.
- Do not install antenna with the connectors facing upwards.

EXTERNAL DOCUMENT LINKS

[APM40 Mounting Kit Series Installation Instructions](#)



NOTES

Specifications follow BASTA guidelines.

For additional mounting information, please check **External Document Links**.

For Radiating Patterns: [Request pattern files](#)