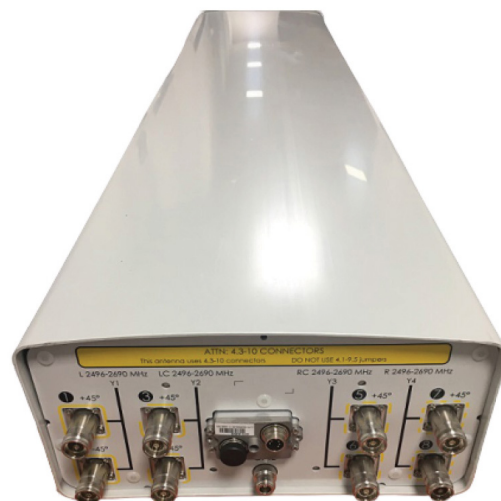


## APXV9TM13\_43-C-I20

### Features

- TDD beamforming 8T8R
- Integrated RET
- ACU-A20-S, ACU HW version HW05
- Compliant with AISG v2.0 and 3GPP
- Mechanical downtilt kit included
- 58 mm column spacing - 0.5 wavelength @ 2.6 GHz



PRODUCT OVERVIEW	Frequency Range (MHz)	TDD 8T8R			
		(4x) 2496-2690			
	Array	■ Y1	■ Y2	■ Y3	■ Y4
	Connector	1-2	3-4	5-6	7-8
		8 PORTS			
	Polarization	XPOL			
	Azimuth Beamwidth (avg)	90° Unit Beam			
	Electrical Downtilt	0-9°			
	Dimensions	1395 x 320 x 160 mm (55.0 x 12.6 x 6.3 in)			

### ORDERING OPTIONS

Select from the following ordering options

ANTENNA MODEL NUMBER	CONFIGURATION	MOUNTING HARDWARE	MOUNTING PIPE DIAMETER	SHIPPING WEIGHT
APXV9TM13_43-C-I20	ACU-A20-S Integrated RET Included	APM40-2 Beam Tilt Kit Included	60-120 mm (2.4-4.7 in)	32 kg (70.5 lbs)

## APXV9TM13\_43-C-I20

■ Y1 ■ Y2 ■ Y3 ■ Y4  
Unit Beam

### ELECTRICAL SPECIFICATIONS

Frequency Range		MHz	(4x) 2496-2690
Polarization		---	±45°
Gain	Over all Tilts	dBi	16.5 ± 0.5
	Max Gain	dBi	17.0
Azimuth Beamwidth (3 dB)		degrees	82° ± 10°
Elevation Beamwidth (3 dB)		degrees	5.0° ± 0.3°
Electrical Downtilt		degrees	0-9°
Impedance		Ohms	50Ω
VSWR (Return Loss)		---	1.5:1 (-14 dB)
Passive Intermodulation		dBc	-150 (3rd Order for 2x20 W Carriers)
Front-to-Back Ratio, Total Power, ± 30°		dB	22
Front-to-Back at 180° Copolar		dB	29
Upper Side Lobe Suppression, Peak to +20°		dB	15
First Upper Side Lobe		dB	15
Cross-Pol Over Sector		dB	9
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	17
Cross Polar Isolation		dB	25

### ELECTRICAL SPECIFICATIONS

#### Broadcast Beam 65°

Frequency Range		MHz	2496-2690
Polarization		---	±45°
Gain	Over all Tilts	dBi	17.9 ± 0.5
	Max Gain	dBi	18.4
Azimuth Beamwidth (3 dB)		degrees	60° ± 6°
Elevation Beamwidth (3 dB)		degrees	5.0° ± 0.3°
Electrical Downtilt		degrees	0-9°
Impedance		Ohms	50Ω
Front-to-Back Ratio, Total Power, ± 30°		dB	25
Front-to-Back at 180° Copolar		dB	36
Upper Side Lobe Suppression, Peak to +20°		dB	16
First Upper Side Lobe		dB	15
Cross-Pol Over Sector		dB	11
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	22

## APXV9TM13\_43-C-I20

### ELECTRICAL SPECIFICATIONS

#### Broadcast Beam 90°

Frequency Range		MHz	2496-2690
Polarization		---	±45°
Gain	Over all Tilts	dBi	17.0 ± 0.5
	Max Gain	dBi	17.5
Azimuth Beamwidth (3 dB)		degrees	91° ± 4°
Elevation Beamwidth (3 dB)		degrees	5.0° ± 0.3°
Electrical Downtilt		degrees	0-9°
Impedance		Ohms	50Ω
Front-to-Back Ratio, Total Power, ± 30°		dB	25
Front-to-Back at 180° Copolar		dB	31
Upper Side Lobe Suppression, Peak to +20°		dB	15
First Upper Side Lobe		dB	17
Cross-Pol Over Sector		dB	10
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	21

### ELECTRICAL SPECIFICATIONS

#### Service Beam at 0°

Frequency Range		MHz	2496-2690
Polarization		---	±45°
Gain	Over all Tilts	dBi	21.4 ± 0.5
	Max Gain	dBi	21.9
Azimuth Beamwidth (3 dB)		degrees	28° ± 1°
Elevation Beamwidth (3 dB)		degrees	5.0° ± 0.3°
Electrical Downtilt		degrees	0-9°
Impedance		Ohms	50Ω
Front-to-Back Ratio, Total Power, ± 30°		dB	31
Front-to-Back at 180° Copolar		dB	36
Upper Side Lobe Suppression, Peak to +20°		dB	16
First Upper Side Lobe		dB	16
Cross-Pol Over 3dB		dB	19
Cross Polar Discrimination (XPD) at Beam Peak		dB	20

## APXV9TM13\_43-C-I20

### ELECTRICAL SPECIFICATIONS

### Service Beam at 30°

Frequency Range		MHz	2496-2690
Polarization		---	±45°
Gain	Over all Tilts	dBi	20.1 ± 0.4
	Max Gain	dBi	20.5
Azimuth Beamwidth (3 dB)		degrees	32° ± 1°
Elevation Beamwidth (3 dB)		degrees	5.0° ± 0.4°
Electrical Downtilt		degrees	0-9°
Impedance		Ohms	50Ω
Front-to-Back Ratio, Total Power, ± 30°		dB	28
Front-to-Back at 180° Copolar		dB	30
Upper Side Lobe Suppression, Peak to +20°		dB	17
First Upper Side Lobe		dB	17
Cross-Pol Over 3dB		dB	14
Cross Polar Discrimination (XPD) at Beam Peak		dB	15

### ELECTRICAL SPECIFICATIONS

### Calibration & Electrical Parameters

Frequency Range		MHz	2496-2690
Transmission from Antenna Ports to CAL Port		dB	26 ± 2
Amplitude Diff Between Antenna Port and CAL Port		dB	< 0.7
Phase Diff Between Antenna Port and CAL Port		degrees	< 5°
Same Polarization Isolation		dB	> 20 (typical)
Different Polarization Isolation		dB	25

## APXV9TM13\_43-C-I20

### RET ACTUATOR

Frequency		MHz	2496-2690
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		---	No
Location		---	Integrated

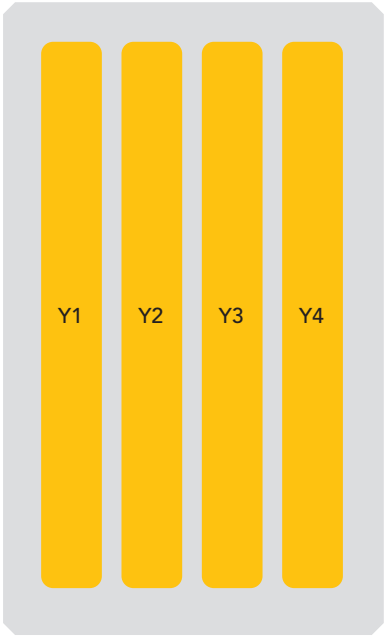
### BOTTOM VIEW - LABELING



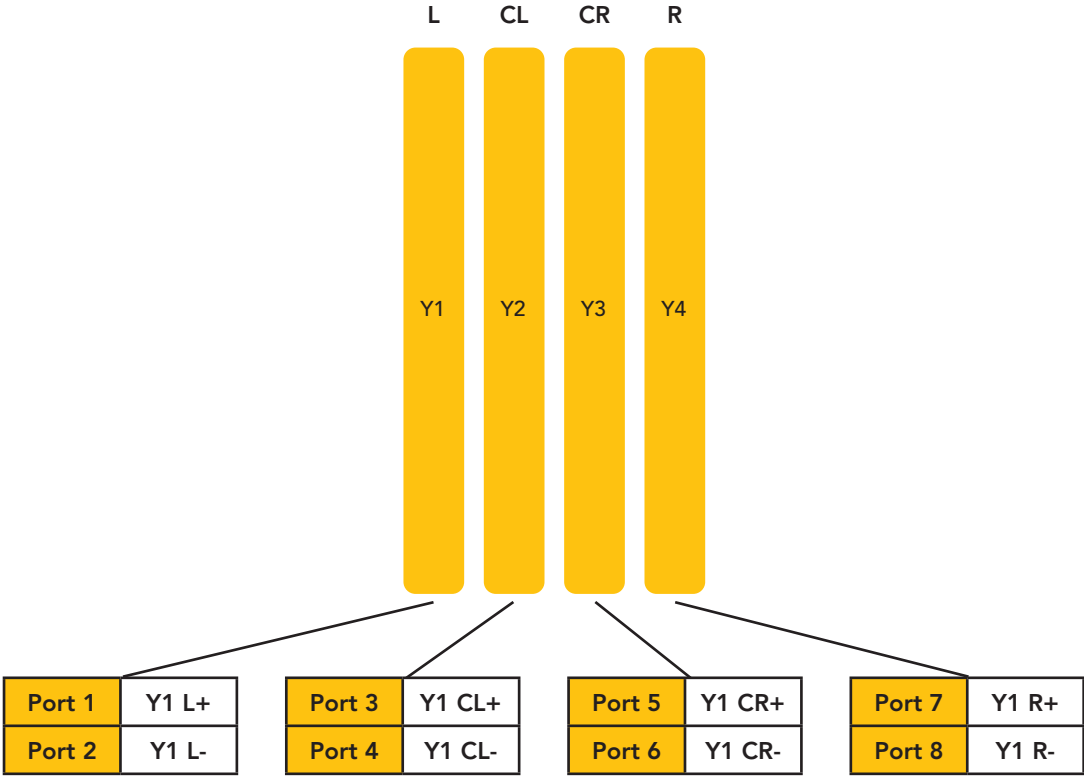
## APXV9TM13\_43-C-I20

### ARRAY LAYOUT

ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE	RET	AISG RET UID
■ Y1	2496-2690 MHz	1-2	(2x) 4.3-10 Female	Y1	RFxxxxxxxxxx-2Y1
■ Y2	2496-2690 MHz	3-4	(2x) 4.3-10 Female		
■ Y3	2496-2690 MHz	5-6	(2x) 4.3-10 Female		
■ Y4	2496-2690 MHz	7-8	(2x) 4.3-10 Female		



The illustration is not shown to scale.



Physical array and port mapping according to AISG naming convention:  
 Left - Center Left - Center Right - Right (seen from front of antenna)

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.

## APXV9TM13\_43-C-I20

### MECHANICAL SPECIFICATIONS

Length		mm (in)	1395 (55.0)
Width		mm (in)	320 (12.6)
Depth		mm (in)	160 (6.3)
Mechanical Distance Between Mounting Points		mm (in)	907 (35.7)
Net Weight - Antenna Only		kg (lbs)	25 (55)
Net Weight - Mounting Hardware Only		kg (lbs)	3.5 (7.7)
Wind Load  Rated at 150 km/h (93 mph)	Front	N (lbf)	616 (138)
	Side	N (lbf)	473 (106)
	Rear	N (lbf)	572 (129)
Survival Wind Speed / Rated Wind Speed		km/h (mph)	200 (160)
Connector Type		--	(8x) 4.3-10 Female, (2x) AISG Connectors (1 Male, 1 Female) at Bottom
Radome Color		---	Light Grey RAL7035
Radome Material		---	ASA
Lightning Protection		---	Direct Ground
<b>Shipping</b>	Packing Size (Length x Width x Depth)	mm (in)	1540 x 400 x 360 (60.6 x 15.7 x 14.2)
	Shipping Weight	kg (lbs)	32 (70.5)

### ENVIRONMENTAL SPECIFICATIONS

Environmental Standard	---	ETSI 300-019-2-4 Class 4.1E
Operating Temperature	degrees	-40° to +60° C (-40° to +140° F)
Product Environmental Compliance	---	Product is RoHS Compliant

## APXV9TM13\_43-C-I20


### ACCESSORIES

Accessories may be ordered separately unless otherwise indicated.

ITEM	MODEL NUMBER	WEIGHT
Beam Tilt Mounting Bracket Kit for Pole Diameter 60-120 mm (2.4-4.7 in) <i>Shipped with antenna</i>	APM40-2	3.5 kg (7.7 lbs)

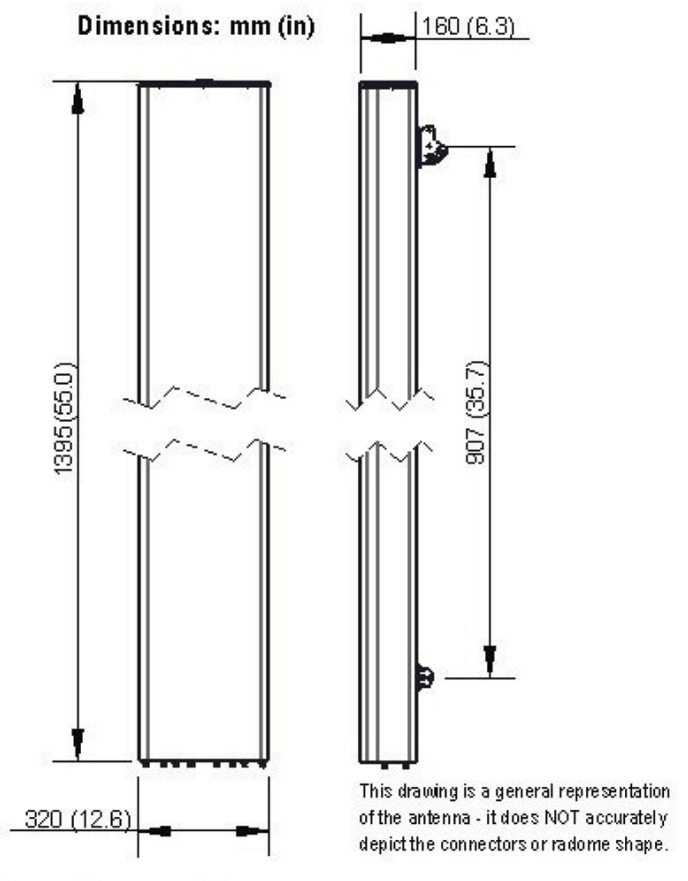
### INSTALLATION

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 <b>External Document Links</b> .
For Radiating Patterns: <a href="#">Request pattern files</a>