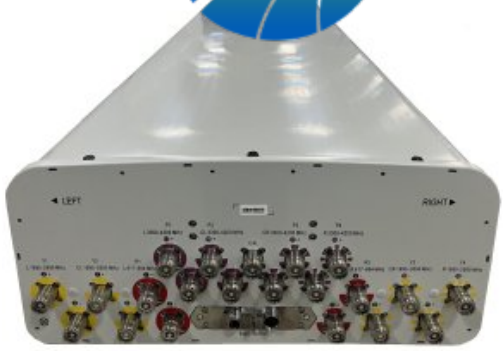
PRODUCT DATASHEET

APXVAA4L9TY24-U-J20, -V-J20

Hybrid FDD/TDD Antenna, X-Pol, 2.4m, 12-ports FDD 2x 617-894/4x 1695-2690 MHz, 65deg, 8T8R 3300-4200 MHz, 90deg unit beam, Integrated RET



FEATURES / BENEFITS

Narrow 499 mm radome for reduced windloading and easier zoning

- MIMO 4x4 in low-band and mid-band x2(L/LC & RC/R)
- TDD beamforming 8T8R 3300-4200 (Horizontal spacing 42mm)
- Integrated and field replaceable mRET
- ACU model number: ACU-X20-N4
- Ships in VSRET mode
- Compliant with AISG V2.0 and 3GPP
- Mechanical down tilt kit included
- Optional with Direct Pipe no tilt mounting hardware (Model name Suffix -V-J20)

Technical features

ELECTRICAL SPECIFICATIONS

Electrical Specification Header		Low Band Arrays (617-894 MHz) Ports 1-4		
Frequency Band	MHz	617-698	698-806	806-894
Gain	dBi	15.8	16.3	15.8
Azimuth Beamwidth 3dB	Deg	67 +/- 6	65 +/- 8	62 +/- 11
Elevation Beamwidth 3dB	Deg	9.9 +/- .7	9.0 +/- .6	8.2 +/- .6
Cross-Pol at Boresight	dB	18	19	21
F/B at 180 Copolar	dB	28	26	28
Electrical Downtilt	Deg	2 to 12	2 to 12	2 to 12
First Upper Side Lobe	dB	19	22	23
VSWR	-	1.5:1	1.5:1	1.5:1
Return Loss	dB	-14	-14	-14
Cross Polar Isolation	dB	25	25	25
3rd Order PIM 2 x 43dBm	dBc	-153	-153	-153
Maximum CW Power per Port	Watt	300	300	300
Gain Over All Tilts	dBi	15.1 +/- 0.7	15.5 +/- 0.8	15.2 +/- 0.6
Cross-Pol over Sector	dB	7	6	1
F/B at +/-30 Total Power	dB	20	21	19
Upper Side Lobe Peak to +20	dB	18	17	15

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ELECTRICAL SPECIFICATIONS

Electrical Specification Header		Mid Band Arrays (1695-2690 MHz) Ports 5-12				
Frequency Band	MHz	1695-1880	1850-1990	1995-2200	2200-2500	2500-2690
Gain	dBi	17.7	17.8	18.4	18.3	18.0
Azimuth Beamwidth 3dB	Deg	71 +/- 8	64 +/- 6	60 +/- 8	55 +/- 5	55 +/- 7
Elevation Beamwidth 3dB	Deg	6.2 +/- 0.5	5.8 +/- 0.3	5.3 +/- 0.4	4.8 +/- 0.3	4.6 +/- 0.3
Cross-Pol at Boresight	dB	20	22	21	19	16
F/B at 180 Copolar	dB	30	29	30	32	31
Electrical Downtilt	Deg	2 to 12	2 to 12	2 to 12	2 to 12	2 to 12
First Upper Side Lobe	dB	18	19	20	20	20
VSWR	-	1.5:1	1.5:1	1.5:1	1.5:1	1.5:1
Return Loss	dB	-14	-14	-14	-14	-14
Cross Polar Isolation	dB	25	25	25	25	25
3rd Order PIM 2 x 43dBm	dBc	-153	-153	-153	-153	-153
Maximum CW Power per Port	Watt	200	200	200	200	200
Gain Over All Tilts	dBi	16.8 +/- 0.9	17.3 +/- 0.5	17.7 +/- 0.7	17.7 +/- 0.6	17.6 +/- 0.4
Cross-Pol over Sector	dB	7	6	3	2	2
F/B at +/-30 Total Power	dB	23	22	22	24	24
Upper Side Lobe Peak to +20	dB	14	16	16	16	15

ELECTRICAL SPECIFICATIONS

Electrical Specification Header		High Band Arrays - Unit Beam (3300-4200 MHz) Ports 13-20		
Frequency Band	MHz	3300-3600	3600-3800	3800-4200
Gain	dBi	16.6	16.4	16.7
Azimuth Beamwidth 3dB	Deg	91 +/- 12	88 +/- 11	79 +/- 12
Elevation Beamwidth 3dB	Deg	6.2+/- 0.4	6.2+/- 0.4	6.0+/- 0.3
Cross-Pol at Boresight	dB	21	17	16
F/B at 180 Copolar	dB	30	30	31
Electrical Downtilt	Deg	2 to 12	2 to 12	2 to 12
First Upper Side Lobe	dB	16	15	16
VSWR	-	1.5:1	1.5:1	1.5:1
Return Loss	dB	-14	-14	-14
Cross Polar Isolation	dB	25	25	25
3rd Order PIM 2 x 43dBm	dBm	-153	-153	-153
Maximum CW Power per Port	Watt	100	100	100
Gain Over All Tilts	dBi	15.9+/- 0.7	15.7+/- 0.7	15.9+/- 0.8
Cross-Pol over Sector	dB	12	7	5
F/B at +/-30 Total Power	dB	22	22	22
Upper Side Lobe Peak to +20	dB	14	14	15

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Hybrid FDD/TDD Antenna, X-Pol, 2.4m, 12-ports FDD 2x 617-894/4x 1695-2690 MHz, 65deg, 8T8R 3300-4200 MHz, 90deg unit beam, Integrated RET

ELECTRICAL SPECIFICATIONS

Electrical Specification Header		High Band Arrays - Broadcast Beam (3300-4200 MHz)		
Frequency Band	MHz	3300-3600	3600-3800	3800-4200
Gain	dBi	17.8	17.5	18.0
Azimuth Beamwidth 3dB	Deg	65 +/- 6	65 +/- 4	62 +/- 4
Elevation Beamwidth 3dB	Deg	6.6 +/- 0.5	6.2 +/- 0.3	5.9 +/- 0.3
Cross-Pol at Boresight	dB	21	25	21
F/B at 180 Copolar	dB	33	33	33
Electrical Downtilt	Deg	2 to 12	2 to 12	2 to 12
First Upper Side Lobe	dB	20	20	18
Gain Over All Tilts	dBi	17.3 +/- 0.5	17.0 +/- 0.5	17.3 +/- 0.7
Cross-Pol over Sector	dB	10	5	1
F/B at +/-30 Total Power	dB	25	25	25
Upper Side Lobe Peak to +20	dB	15	14	15

ELECTRICAL SPECIFICATIONS

Electrical Specification Header		High Band Arrays - Service Beam at 0deg (3300-4200 MHz)		
Frequency Band	MHz	3300-3600	3600-3800	3800-4200
Gain	dBi	21.5	21.5	21.6
Azimuth Beamwidth 3dB	Deg	25 +/- 1	25 +/- 1	24 +/- 2
Elevation Beamwidth 3dB	Deg	6.6+/- 0.4	6.2+/- 0.3	5.9+/- 0.3
Cross-Pol at Beam Peak	dB	25	22	19
F/B at 180 Copolar	dB	35	32	34
Electrical Downtilt	Deg	2 to 12	2 to 12	2 to 12
First Upper Side Lobe	dB	17	17	17
Gain Over All Tilts	dBi	21.2 +/- 0.3	21.0 +/- 0.5	21.1 +/- 0.5
Cross-Pol over 3dB	dB	23	20	18
F/B at +/-30 Total Power	dB	29	28	28
Upper Side Lobe Peak to +20	dB	17	17	17

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Hybrid FDD/TDD Antenna, X-Pol, 2.4m, 12-ports FDD 2x 617-894/4x 1695-2690 MHz, 65deg, 8T8R 3300-4200 MHz, 90deg unit beam, Integrated RET

ELECTRICAL SPECIFICATIONS

Electrical Specification Header		High Band Arrays - Service Beam at 30deg (3300-4200 MHz)		
Frequency Band	MHz	3300-3600	3600-3800	3800-4200
Gain	dBi	20.6	20.4	21.5
Azimuth Beamwidth 3dB	dB	32 +/- 2	30 +/- 2	24 +/- 5
Elevation Beamwidth 3dB	Deg	6.6 +/- 0.3	6.2 +/- 0.2	6.0 +/- 0.4
Cross-Pol at Beam Peak	dB	21	20	15
F/B at 180 Copolar	dB	32	32	32
Electrical Downtilt	Deg	2 to 12	2 to 12	2 to 12
First Upper Side Lobe	dB	17	18	21
Gain Over All Tilts	dB	20.2 +/- 0.4	20.0 +/- 0.4	20.5 +/- 1.0
Cross-Pol over 3dB	dB	18	17	14
F/B at +/-30 Total Power	dB	25	25	25
Upper Side Lobe Peak to +20	dB	17	16	17

ELECTRICAL SPECIFICATIONS

Electrical Specification Header		Calibration & Electrical Parameters (3300-4200MHz)		
Frequency Range	MHz	3300-3600	3600-3800	3800-4200
Horizontal Spacing	mm	42		
Transmission from antenna ports to CAL port	dB	-26 +/- 2	-26 +/- 2	-26 +/- 2
Amplitude Diff Between antenna port and CAL port	dB	< 0.9	< 0.9	< 0.9
Phase Diff Between antenna port and CAL port	Deg	<7	<7	<7
Same Polarization Isolation	dB	20	20	20
Different Polarization Isolation	dB	25	25	25

ELECTRICAL SPECIFICATIONS

Impedance	Ohm	50
Polarization	Deg	+/- 45

MECHANICAL SPECIFICATIONS

Dimensions - H x W x D	mm (in)	2432 x 499 x 215 (95.8 x 19.7 x 8.5)
Weight (Antenna Only)	kg (lb)	39 (86)
Packing size- HxWxD	mm (in)	2642 x 560 x 285 (104 x 22 x 11.2)
Connector type		20 x 4.3-10 female + 1 4.3-10 female CAL+ 2 AISG connectors (1 male, 1 female) at bottom
Radome Material / Color		ASA / Light Grey RAL7035

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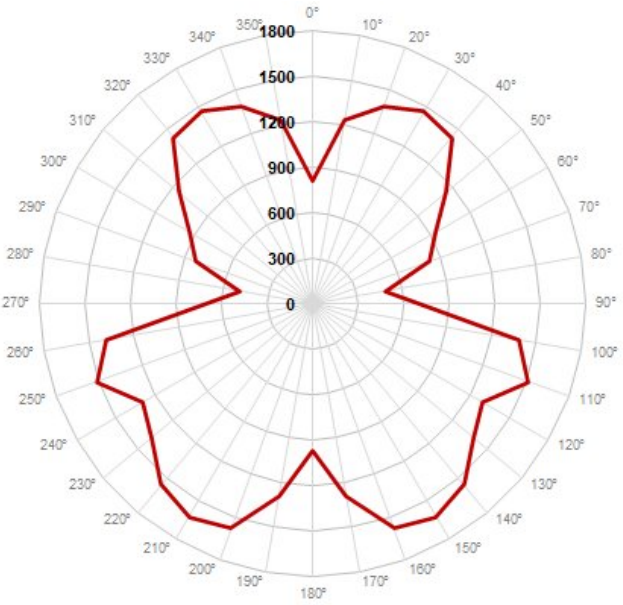
Hybrid FDD/TDD Antenna, X-Pol, 2.4m, 12-ports FDD 2x 617-894/4x 1695-2690 MHz, 65deg, 8T8R 3300-4200 MHz, 90deg unit beam, Integrated RET

TESTING AND ENVIRONMENTAL

Temperature Range	°C (°F)	-40 to 60 (-40 to 140)
Lightning protection		Direct Ground
Survival/Rated Wind Velocity	km/h	240 (150)
Wind Load @Rated Wind Front	N	816
Wind Load @Rated Wind Side	N	701
Wind Load @Rated Wind Rear	N	969

ORDERING INFORMATION

Order No.	Configuration	Mounting Hardware	Mounting pipe Diameter	Shipping Weight	Mounting Hardware Weight
APXVAA4L9TY24-U-J20	ACU-X20-N4 Field Replaceable RET included	APM40-5E Beam tilt kit & APM40-E10T (included)	60-120mm	55.5 kg (122 lb)	8.5 kg (19 lb)
APXVAA4L9TY24-V-J20	ACU-X20-N4 Field Replaceable RET included	APM40-1E (Direct Pipe No Tilt) & APM40-E10T (included)	60-120mm	53.3 kg (117 lb)	6.3 kg (14 lb)



Rated Wind Speed, Km/h	150
Windload Frontal, Resultant, N	816
Windload Lateral , Resultant, N	701
Windload Rear, Resultant, N	969
Windload Maximum, Resultant, N	1627
Windload Maximum, Drag Force, N	1439

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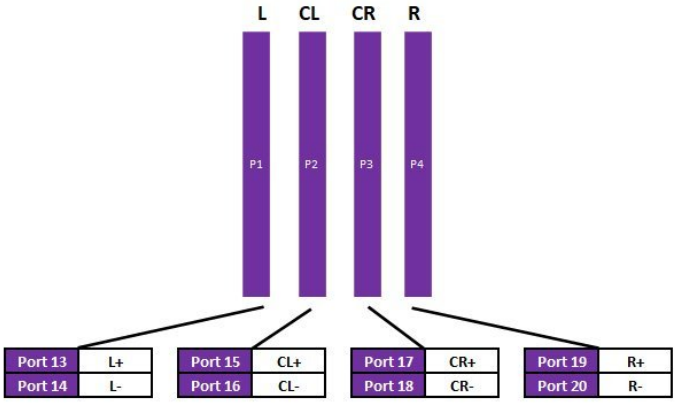
Port	Array	Frequency	RET	AISG RET UID
1	R1	617-894	R1	RFxxxxxxxxxxx-2R1
2		617-894		
3	R2	617-894		
4		617-894		
5	Y1	1695-2690	Y1	RFxxxxxxxxxxx-2Y1
6		1695-2690		
7	Y2	1695-2690		
8		1695-2690		
9	Y3	1695-2690	Y2	RFxxxxxxxxxxx-2Y2
10		1695-2690		
11	Y4	1695-2690		
12		1695-2690		
13	P1	3300-4200	P1	RFxxxxxxxxxxx-2P1
14		3300-4200		
15	P2	3300-4200		
16		3300-4200		
17	P3	3300-4200		
18		3300-4200		
19	P4	3300-4200		
20		3300-4200		

RET Information			
Frequency	617-894	1695-2690	3300-4200
Model	ACU-X20-N4		
Location	Semi-internal		
Field Replaceable	Yes		
Quantity	1		
RET ID	R1	Y1 & Y2	P1



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

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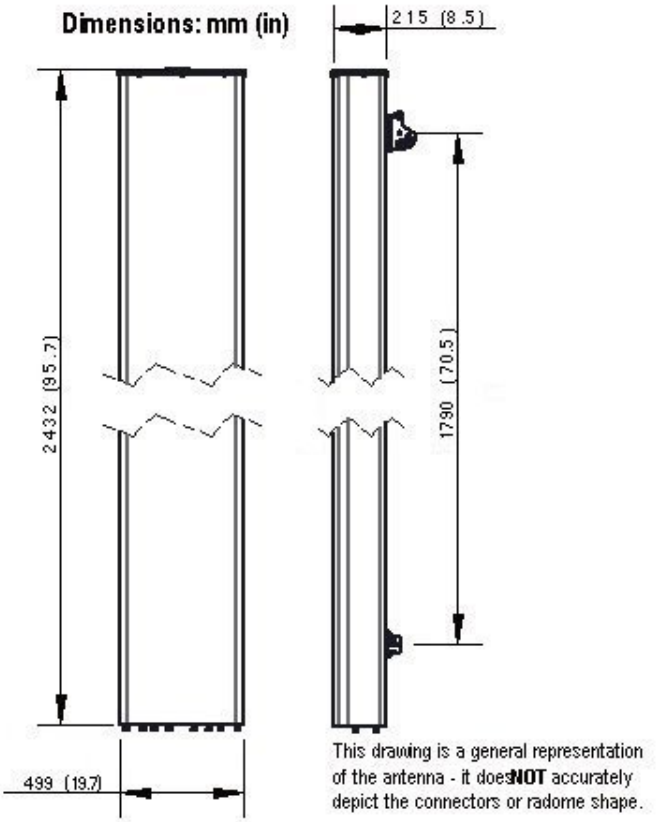
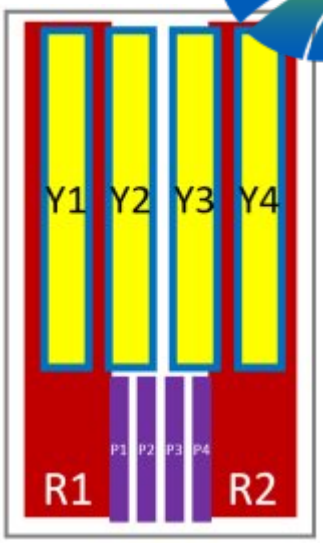
Hybrid FDD/TDD Antenna, X-Pol, 2.4m, 12-ports FDD 2x 617-894/4x 1695-2690 MHz, 65deg, 8T8R 3300-4200 MHz, 90deg unit beam, Integrated RET





External Document Links

APM40_Series_Installation_Instructions

Notes

- All electrical parameters are compliant with BASTA NGMN 11.1 requirements.
- For additional mounting information please click ""External Document Links"".

- **Radiating patterns:** Request pattern files