10-Port Panel Antenna

(1x) 698-960 | (2x) 1695-2200 | (2x) 2490-2690 MHz

65° | 1960 mm | INTEGRATED RET | SITE SHARING OPTIONAL

P1-BRRMM20-N0

P1-BRRMM20-S0

Features

- 2 ports / 1 cross pol system in low band (698-960 MHz)
- 2 cross pol systems in high band (1695-2690 MHz), diplexed, resulting in 4 ports 1695-2200 MHz and 4 ports 2490-2690 MHz
- Supporting 4x4 MIMO in high band
- Integrated and field replaceable SRET
- Optional with Site Sharing feature (Model name suffix -S0)
- Compliant with AISG v2.0 and 3GPP

PRODUCT OVERVIEW						
	Frequency Range (MHz)	(1x) 698-960	(2x) 1695-2200		(2x) 2490-2690	
	Array	R1	B1	B2	Y1	Y2
	Connector	1-2	3-4	5-6	7-8	9-10
		10 PORTS				
	Polarization	XPOL				
	Azimuth Beamwidth (avg)	65°	65°		65°	
	Electrical Downtilt	2-12°	2-12°		2-12°	
	Dimensions	1960 x 350 x 200 mm (77.2 x 13.8 x 7.9 in)				

ORDERING OPTIONS Select from the following ordering options

ANTENNA MODEL NUMBER	CONFIGURATION	MOUNTING HARDWARE	MOUNTING PIPE DIAMETER	SHIPPING WEIGHT	MOUNTING HARDWARE WEIGHT
P1-BRRMM20-N0	ACU-I20-B5 Internal RET Included	APM50-B1 Beam Tilt Kit Included	50-110 mm (2.0-4.3 in)	40.8 kg (89.9 lbs)	4.5 kg (9.9 lbs)
P1-BRRMM20-S0	ACU-X20-B5 Internal Site Sharing RET Included	APM50-B1 Beam Tilt Kit Included	50-110 mm (2.0-4.3 in)	40.8 kg (89.9 lbs)	4.5 kg (9.9 lbs)

P1-BRRMM20-N0

P1-BRRMM20-S0

ELECTRICAL SPECIFICATIONS

			R1		
Frequency Range		MHz	698-960		
		MHz	698-806	790-894	880-960
Polarization		---	±45°		
Gain	Over all Tilts	dBi	15.3 ± 0.5	16.1 ± 0.5	16.5 ± 0.5
	Max Gain	dBi	15.8	16.6	17
Azimuth Beamwidth (3 dB)		degrees	69° ± 1.5°	67.8° ± 1°	67.5° ± 1.5°
Elevation Beamwidth (3 dB)		degrees	11.8° ± 1°	10.5° ± 0.5°	9.1° ± 0.5°
Electrical Downtilt		degrees	2-12°		
Impedance		Ohms	50Ω		
VSWR (Return Loss)		---	1.5:1 (-14 dB)		
Passive Intermodulation 3rd Order for 2x20 W Carriers		dBc	-150		
Front-to-Back Ratio, Total Power, ± 30°		dB	23	24.4	24
First Upper Side Lobe Suppression		dB	19	16	15
Cross Polar Discrimination Over Sector		dB	12	11	12
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	30	28.8	27
Maximum Effective Power Per Port		Watts	350 W		
Cross Polar Isolation		dB	26		
Interband Isolation		dB	26		

Specifications follow BASTA guidelines.

ELECTRICAL SPECIFICATIONS

			B1		
Frequency Range		MHz	1695-2200		
		MHz	1695-1880	1850-1990	1920-2200
Polarization		---	±45°		
Gain	Over all Tilts	dBi	17.1 ± 0.5	17.1 ± 0.5	17.2 ± 0.5
	Max Gain	dBi	17.6	17.6	17.7
Azimuth Beamwidth (3 dB)		degrees	61.4° ± 4.5°	64.5° ± 3.5°	64.7° ± 6.7°
Elevation Beamwidth (3 dB)		degrees	6.3° ± 0.5°	6° ± 0°	5.5° ± 0.5°
Electrical Downtilt		degrees	2-12°		
Impedance		Ohms	50Ω		
VSWR (Return Loss)		---	1.5:1 (-14 dB)		
Passive Intermodulation 3rd Order for 2x20 W Carriers		dBc	-150		
Front-to-Back Ratio, Total Power, ± 30°		dB	21	23	24
First Upper Side Lobe Suppression		dB	14	14	14
Cross Polar Discrimination Over Sector		dB	9	7	6
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	18	17	17
Maximum Effective Power Per Port		Watts	250 W		
Cross Polar Isolation		dB	26		
Interband Isolation		dB	26		

Specifications follow BASTA guidelines.

P1-BRRMM20-N0

P1-BRRMM20-S0

ELECTRICAL SPECIFICATIONS			■ B2		
Frequency Range		MHz	1695-2200		
		MHz	1695-1880	1850-1990	1920-2200
Polarization		---	±45°		
Gain	Over all Tilts	dBi	17.1 ± 0.5	17.1 ± 0.5	17.2 ± 0.5
	Max Gain	dBi	176	17.6	17.7
Azimuth Beamwidth (3 dB)		degrees	61.3° ± 4.5°	65.1° ± 3.8°	65.6° ± 6.4°
Elevation Beamwidth (3 dB)		degrees	6.4° ± 0.5°	6° ± 0.1°	5.6° ± 0.5°
Electrical Downtilt		degrees	2-12°		
Impedance		Ohms	50Ω		
VSWR (Return Loss)		---	1.5:1 (-14 dB)		
Passive Intermodulation 3rd Order for 2x20 W Carriers		dBc	-150		
Front-to-Back Ratio, Total Power, ± 30°		dB	22	22	23
First Upper Side Lobe Suppression		dB	16	16	15
Cross Polar Discrimination Over Sector		dB	7	7	6
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	18	18	17
Maximum Effective Power Per Port		Watts	250 W		
Cross Polar Isolation		dB	26		
Interband Isolation		dB	26		

Specifications follow BASTA guidelines.

ELECTRICAL SPECIFICATIONS			■ Y1
Frequency Range		MHz	2490-2690
Polarization		---	±45°
Gain	Over all Tilts	dBi	17.4 ± 1
	Max Gain	dBi	18.4
Azimuth Beamwidth (3 dB)		degrees	59.9° ± 4°
Elevation Beamwidth (3 dB)		degrees	4.7° ± 0.5°
Electrical Downtilt		degrees	2-12°
Impedance		Ohms	50Ω
VSWR (Return Loss)		---	1.5:1 (-14 dB)
Passive Intermodulation 3rd Order for 2x20 W Carriers		dBc	-150
Front-to-Back Ratio, Total Power, ± 30°		dB	24
First Upper Side Lobe Suppression		dB	18.9
Cross Polar Discrimination Over Sector		dB	1
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	18
Maximum Effective Power Per Port		Watts	250 W
Cross Polar Isolation		dB	26
Interband Isolation		dB	26

Specifications follow BASTA guidelines.

P1-BRRMM20-N0

P1-BRRMM20-S0

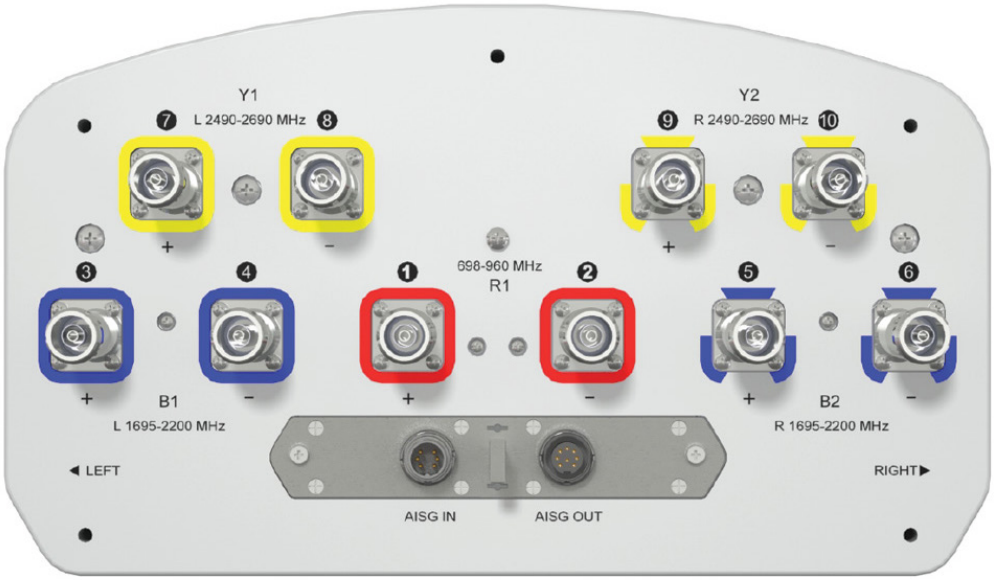
ELECTRICAL SPECIFICATIONS			Y2
Frequency Range		MHz	2490-2690
Polarization		---	±45°
Gain	Over all Tilts	dBi	17.4 ± 1
	Max Gain	dBi	18.4
Azimuth Beamwidth (3 dB)		degrees	59.5° ± 4°
Elevation Beamwidth (3 dB)		degrees	4.8° ± 0.5°
Electrical Downtilt		degrees	2-12°
Impedance		Ohms	50Ω
VSWR (Return Loss)		---	1.5:1 (-14 dB)
Passive Intermodulation 3rd Order for 2x20 W Carriers		dBc	-150
Front-to-Back Ratio, Total Power, ± 30°		dB	25
First Upper Side Lobe Suppression		dB	18
Cross Polar Discrimination Over Sector		dB	2
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	19
Maximum Effective Power Per Port		Watts	250 W
Cross Polar Isolation		dB	26
Interband Isolation		dB	26

Specifications follow BASTA guidelines.

P1-BRRMM20-N0

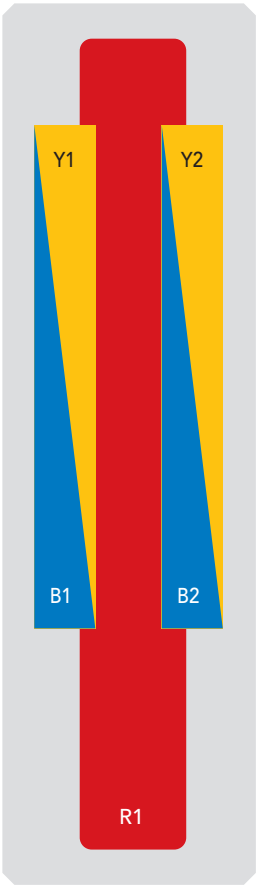
P1-BRRMM20-S0

BOTTOM VIEW - LABELING



ARRAY LAYOUT

ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE	RET	AISG RET UID
R1	698-960 MHz	1-2	(2x) 4.3-10 Female	R1	RFxxxxxxxxxxx-R1
B1	1695-2200 MHz	3-4	(2x) 4.3-10 Female	B1	RFxxxxxxxxxxx-B1
B2	1695-2200 MHz	5-6	(2x) 4.3-10 Female	B2	RFxxxxxxxxxxx-B2
Y1	2490-2690 MHz	7-8	(2x) 4.3-10 Female	Y1	RFxxxxxxxxxxx-Y1
Y2	2490-2690 MHz	9-10	(2x) 4.3-10 Female	Y2	RFxxxxxxxxxxx-Y2



The illustration is not shown to scale.

P1-BRRMM20-N0

P1-BRRMM20-S0

MECHANICAL SPECIFICATIONS

Length		mm (in)	1960 (77.2)
Width		mm (in)	350 (13.8)
Depth		mm (in)	200 (7.9)
Net Weight - Antenna Only		kg (lbs)	27.8 (61.3)
Wind Load Rated at 150 km/h (93 mph)	Front	N (lbf)	880 (198)
	Side	N (lbf)	456 (103)
	Rear	N (lbf)	498 (112)
Survival Wind Speed		km/h (mph)	200 (124)
Connector Type		--	(10x) 4.3-10 Female, (2x) AISG Connectors (1 Male, 1 Female) at Bottom Site Sharing: (4x) AISG Connectors (2 Male, 2 Female) at Bottom
Radome Color		---	Light Grey RAL7035
Radome Material		---	Fiberglass
Lightning Protection		---	Direct Ground
Shipping	Packing Size (Length x Width x Depth)	mm (in)	2240 x 445 x 295 (88.2 x 17.5 x 11.6)

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

P1-BRRMM20-N0

P1-BRRMM20-S0

ACCESSORIES

Accessories may be ordered separately unless otherwise indicated.

ITEM	MODEL NUMBER	WEIGHT
Beam Tilt Mounting Bracket Kit for Pole Diameter 50-110 mm (2.0-4.3 in) *Shipped with Antenna*	APM50-B1	4.5 kg (9.9 lbs)

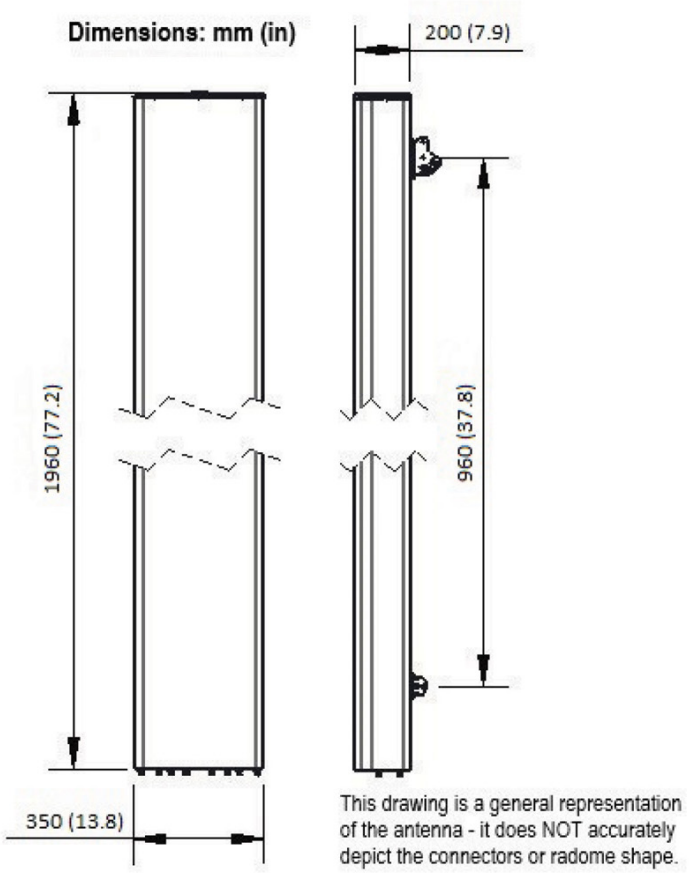
INSTALLATION

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

APM50 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