

## P2-BBRRMM15-N0

### P2-BBRRMM15-S0

#### Features

- 4 ports / 2 cross pol systems 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 low band and in high band
- Integrated and field replaceable SRET
- Optional with Site Sharing feature (Model name suffix -S0)
- Compliant with AISG v2.0 and 3GPP



<b>PRODUCT OVERVIEW</b>	Frequency Range (MHz)	(2x) 698-960		(2x) 1695-2200		(2x) 2490-2690	
	Array	■ R1	■ R2	■ B1	■ B2	■ Y1	■ Y2
	Connector	1-2	3-4	5-6	7-8	9-10	11-12
		12 PORTS					
	Polarization	XPOL					
	Azimuth Beamwidth (avg)	65°		65°		65°	
	Electrical Downtilt	2-15°		2-12°		2-12°	
Dimensions	1588 x 499 x 199 mm (62.5 x 19.6 x 7.8 in)						

#### ORDERING OPTIONS Select from the following ordering options

ANTENNA MODEL NUMBER	CONFIGURATION	MOUNTING HARDWARE	MOUNTING PIPE DIAMETER	SHIPPING WEIGHT	MOUNTING HARDWARE WEIGHT
P2-BBRRMM15-N0	ACU-I20-B6 Internal RET Included	APM50-B1 Beam Tilt Kit Included	50-110 mm (2.0-4.3 in)	37.5 kg (82.7 lbs)	4.5 kg (9.9 lbs)
P2-BBRRMM15-S0	ACU-X20-B6 Internal Site Sharing RET Included	APM50-B1 Beam Tilt Kit Included	50-110 mm (2.0-4.3 in)	37.5 kg (82.7 lbs)	4.5 kg (9.9 lbs)



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65°

1588 mm

INTEGRATED RET

SITE SHARING OPTIONAL

## P2-BBRRMM15-N0

### P2-BBRRMM15-S0

#### ELECTRICAL SPECIFICATIONS

■ R1

Frequency Range		MHz	698-960		
		MHz	698-806	790-894	880-960
Polarization		---	±45°		
Gain	Over all Tilts	dBi	13.5 ± 0.9	14.6 ± 0.5	14.9 ± 0.4
	Max Gain	dBi	14.4	15.1	15.3
Azimuth Beamwidth (3 dB)		degrees	60.4° ± 4.1°	60.6° ± 2.1°	60.7° ± 3.7°
Elevation Beamwidth (3 dB)		degrees	16.2° ± 1.3°	14.9° ± 0.7°	13.9° ± 0.7°
Electrical Downtilt		degrees	2-15°		
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	17.1	22.2	22.2
First Upper Side Lobe Suppression		dB	18.7	15.7	13.6
Cross Polar Discrimination Over Sector		dB	6.1	9.6	6.5
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	15.4	17.3	17.7
Maximum Effective Power Per Port		Watts	350 W		
Cross Polar Isolation		dB	26		
Interband Isolation		dB	26		

Specifications follow BASTA guidelines.

#### ELECTRICAL SPECIFICATIONS

■ R2

Frequency Range		MHz	698-960		
		MHz	698-806	790-894	880-960
Polarization		---	±45°		
Gain	Over all Tilts	dBi	13.6 ± 1	14.6 ± 0.5	15.1 ± 0.3
	Max Gain	dBi	14.6	15.1	15.4
Azimuth Beamwidth (3 dB)		degrees	61.3° ± 5°	61.4° ± 2.6°	60.7° ± 2.8°
Elevation Beamwidth (3 dB)		degrees	16.1° ± 1.3°	14.7° ± 0.7°	13.8° ± 0.7°
Electrical Downtilt		degrees	2-15°		
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	17.4	21.7	21
First Upper Side Lobe Suppression		dB	17.4	16.3	15.2
Cross Polar Discrimination Over Sector		dB	6.8	10	8.7
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	14.8	16.7	19.2
Maximum Effective Power Per Port		Watts	350 W		
Cross Polar Isolation		dB	26		
Interband Isolation		dB	26		

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65°

1588 mm

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SITE SHARING OPTIONAL

## P2-BBRRMM15-N0

### P2-BBRRMM15-S0

#### ELECTRICAL SPECIFICATIONS

■ B1

Frequency Range		MHz	1695-2200		
		MHz	1695-1880	1850-1990	1920-2200
Polarization		---	±45°		
Gain	Over all Tilts	dBi	16.7 ± 0.9	16.7 ± 1.2	17 ± 1.3
	Max Gain	dBi	17.6	17.9	18.3
Azimuth Beamwidth (3 dB)		degrees	57.2° ± 3.7°	60.8° ± 8.4°	61.9° ± 8°
Elevation Beamwidth (3 dB)		degrees	6.2° ± 0.4°	5.9° ± 0.3°	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	21.6	22.8	23
First Upper Side Lobe Suppression		dB	18.5	16.7	15.4
Cross Polar Discrimination Over Sector		dB	8.5	5.8	5.7
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	16.1	16.5	14.3
Maximum Effective Power Per Port		Watts	250 W		
Cross Polar Isolation		dB	26		
Interband Isolation		dB	26		

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#### ELECTRICAL SPECIFICATIONS

■ B2

Frequency Range		MHz	1695-2200		
		MHz	1695-1880	1850-1990	1920-2200
Polarization		---	±45°		
Gain	Over all Tilts	dBi	16.6 ± 0.8	16.7 ± 1.2	16.9 ± 1.2
	Max Gain	dBi	17.4	17.9	18.1
Azimuth Beamwidth (3 dB)		degrees	58.2° ± 5°	59.2° ± 5.4°	61.4° ± 9.2°
Elevation Beamwidth (3 dB)		degrees	6.3° ± 0.3°	5.8° ± 0.4°	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	23.1	23.1	22.4
First Upper Side Lobe Suppression		dB	19	16.5	15.8
Cross Polar Discrimination Over Sector		dB	9	5.4	5.2
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	15.8	17	14.6
Maximum Effective Power Per Port		Watts	250 W		
Cross Polar Isolation		dB	26		
Interband Isolation		dB	26		

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## P2-BBRRMM15-N0

### P2-BBRRMM15-S0

#### ELECTRICAL SPECIFICATIONS

■ Y1

Frequency Range	MHz	2490-2690	
Polarization	---	±45°	
Gain	Over all Tilts	dBi	17.6 ± 0.8
	Max Gain	dBi	18.4
Azimuth Beamwidth (3 dB)	degrees	50.5° ± 5.8°	
Elevation Beamwidth (3 dB)	degrees	4.6° ± 0.3°	
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	24.9	
First Upper Side Lobe Suppression	dB	15	
Cross Polar Discrimination Over Sector	dB	0.7	
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)	dB	23.2	
Maximum Effective Power Per Port	Watts	250 W	
Cross Polar Isolation	dB	26	
Interband Isolation	dB	26	

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#### ELECTRICAL SPECIFICATIONS

■ Y2

Frequency Range	MHz	2490-2690	
Polarization	---	±45°	
Gain	Over all Tilts	dBi	17.7 ± 0.6
	Max Gain	dBi	18.3
Azimuth Beamwidth (3 dB)	degrees	51.2° ± 5.7°	
Elevation Beamwidth (3 dB)	degrees	4.5° ± 0.3°	
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	25.1	
First Upper Side Lobe Suppression	dB	15.6	
Cross Polar Discrimination Over Sector	dB	0.8	
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)	dB	20.2	
Maximum Effective Power Per Port	Watts	250 W	
Cross Polar Isolation	dB	26	
Interband Isolation	dB	26	

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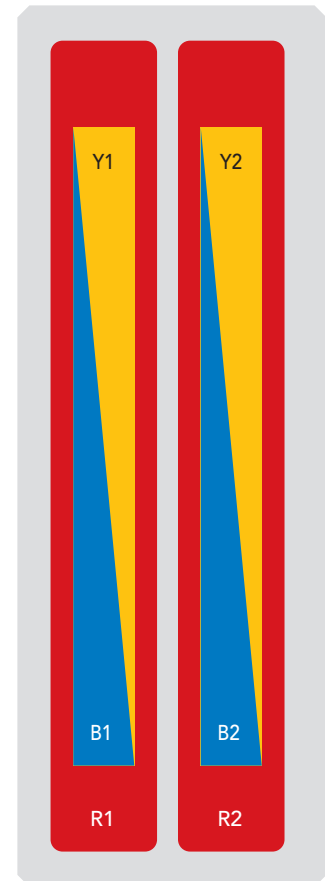
### BOTTOM VIEW - LABELING



### ARRAY LAYOUT

ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE	RET	AISG RET UID
<span style="color: red;">■</span> R1	698-960 MHz	1-2	(2x) 4.3-10 Female	R1	RFxxxxxxxxxx-R1
<span style="color: red;">■</span> R2	698-960 MHz	3-4	(2x) 4.3-10 Female	R2	RFxxxxxxxxxx-R2
<span style="color: blue;">■</span> B1	1695-2200 MHz	5-6	(2x) 4.3-10 Female	B1	RFxxxxxxxxxx-B1
<span style="color: blue;">■</span> B2	1695-2200 MHz	7-8	(2x) 4.3-10 Female	B2	RFxxxxxxxxxx-B2
<span style="color: yellow;">■</span> Y1	2490-2690 MHz	9-10	(2x) 4.3-10 Female	Y1	RFxxxxxxxxxx-Y1
<span style="color: yellow;">■</span> Y2	2490-2690 MHz	11-12	(2x) 4.3-10 Female	Y2	RFxxxxxxxxxx-Y2

**NOTE: RET motors will tilt one at a time, not simultaneously**



The illustration is not shown to scale.

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SITE SHARING OPTIONAL

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### P2-BBRRMM15-S0

#### MECHANICAL SPECIFICATIONS

Length	mm (in)	1588 (62.5)
Width	mm (in)	499 (19.6)
Depth	mm (in)	199 (7.8)
Net Weight - Antenna Only	kg (lbs)	29 (63.9)
Wind Load Rated at 150 km/h (93 mph)	Front	N (lbf) 526 (118)
	Side	N (lbf) 459 (103)
	Rear	N (lbf) 610 (137)
Survival Wind Speed	km/h (mph)	200 (124)
Connector Type	--	(12x) 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
<b>Shipping</b>	Packing Size (Length x Width x Depth)	mm (in) 1840 x 595 x 295 (72.4 x 23.4 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

## P2-BBRRMM15-N0

### P2-BBRRMM15-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) <i>Shipped with Antenna</i>	APM50-B1	4.5 kg (9.9 lbs)

**INSTALLATION** Please read all installation notes before installing product.

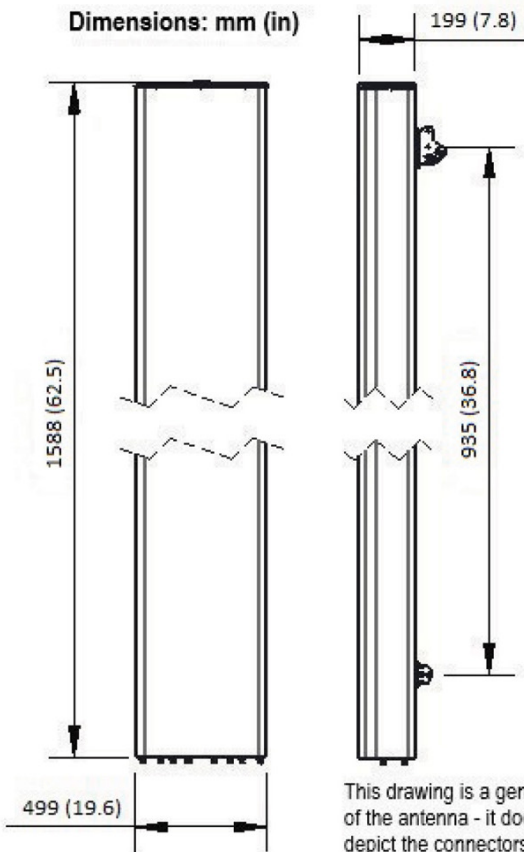


Always attach the antenna using all mounting points.

Do not install antenna with the connectors facing upwards.

**EXTERNAL DOCUMENT LINKS**

[APM50 Mounting Kit Series Installation Instructions](#)



This drawing is a general representation of the antenna - it does NOT accurately depict the connectors or radome shape.

**NOTES**

Specifications follow BASTA guidelines.

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

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