

P4-BBRRMMUU15-N0

P4-BBRRMMUU15-N0N, P4-BBRRMMUU15-S0, P4-BBRRMMUU15-S0N

Features

- Low profile for low visual impact and enhanced wind load for minimizing tower wind loading
- 4 ports / 2 cross pol systems in low band (694-960 MHz)
- 4 ports / 2 cross pol systems in high band (1427-2690 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
- Integrated and field replaceable SRET
- Optional with Site Sharing feature (Model name suffix -S0, -S0N)
- Optional with Direct Pipe No Tilt mounting hardware (Model name suffix -N0N, -S0N)
- Compliant with AISG v2.0 and 3GPP
- Optimized radome for low windload

PRODUCT OVERVIEW	Frequency Range (MHz)	(2x) 694-960		(2x) 1695-2200		(2x) 2490-2690		(2x) 1427-2690	
	Array	■ R1	■ R2	■ B1	■ B2	■ Y1	■ Y4	■ Y2	■ Y3
	Connector	1-2	3-4	5-6	7-8	9-10	15-16	11-12	13-14
		16 PORTS							
	Polarization	XPOL							
	Azimuth Beamwidth (avg)	65°		65°		65°		65°	
	Electrical Downtilt	2-12°		2-12°				2-12°	
	Dimensions	1498 x 499 x 215 mm (59.0 x 19.6 x 8.4 in)							

ORDERING OPTIONS

Select from the following ordering options

ANTENNA MODEL NUMBER	CONFIGURATION	MOUNTING HARDWARE	MOUNTING PIPE DIAMETER	SHIPPING WEIGHT	MOUNTING HARDWARE WEIGHT
P4-BBRRMMUU15-N0	ACU-I20-H12K Internal RET Included	APM50-H2 Beam Tilt Kit Included	50-125 mm (2.0-4.9 in)	44 kg (97 lbs)	5.5 kg (12.1 lbs)
P4-BBRRMMUU15-N0N	ACU-I20-H12K Internal RET Included	APM50-H2N Direct Pipe No Tilt Mounting Kit Included	50-125 mm (2.0-4.9 in)	42.5 kg (93.7 lbs)	4 kg (8.8 lbs)
P4-BBRRMMUU15-S0	ACU-X20 Internal RET for Site Sharing Included	APM50-H2 Beam Tilt Kit Included	50-125 mm (2.0-4.9 in)	44 kg (97 lbs)	5.5 kg (12.1 lbs)
P4-BBRRMMUU15-S0N	ACU-X20 Internal RET for Site Sharing Included	APM50-H2N Direct Pipe No Tilt Mounting Kit Included	50-125 mm (2.0-4.9 in)	42.5 kg (93.7 lbs)	4 kg (8.8 lbs)



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ELECTRICAL SPECIFICATIONS

■ R1

Frequency Range		MHz	694-960		
		MHz	694-806	790-894	880-960
Polarization		---	±45°		
Gain	Over all Tilts	dBi	13.3 ± 0.8	14.1 ± 0.5	14.4 ± 0.5
	Max Gain	dBi	14.1	14.6	14.9
Azimuth Beamwidth (3 dB)		degrees	63.3° ± 6.7°	58.6° ± 4.2°	54.6° ± 4.3°
Elevation Beamwidth (3 dB)		degrees	15.7° ± 1.2°	14.1° ± 1.2°	12.3° ± 1.1°
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	-153		
Front-to-Back Ratio, Total Power, ± 30°		dB	18.5	21.1	20.2
First Upper Side Lobe Suppression		dB	15.2	14.9	13.8
Cross Polar Discrimination Over Sector		dB	8.6	8	8.8
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	23.7	25.7	27.2
Maximum Effective Power Per Port		Watts	250 W		
Cross Polar Isolation		dB	26		
Interband Isolation		dB	26		

Specifications follow BASTA guidelines.

ELECTRICAL SPECIFICATIONS

■ R2

Frequency Range		MHz	694-960		
		MHz	694-806	790-894	880-960
Polarization		---	±45°		
Gain	Over all Tilts	dBi	13.5 ± 0.7	14 ± 0.4	14.1 ± 0.4
	Max Gain	dBi	14.2	14.4	14.5
Azimuth Beamwidth (3 dB)		degrees	62.1° ± 4.4°	62.9° ± 5.9°	71° ± 7.9°
Elevation Beamwidth (3 dB)		degrees	15.4° ± 1.2°	14.3° ± 0.9°	13° ± 0.6°
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	-153		
Front-to-Back Ratio, Total Power, ± 30°		dB	19.4	20.1	21.5
First Upper Side Lobe Suppression		dB	14.2	17.2	20.5
Cross Polar Discrimination Over Sector		dB	9	9.3	7.7
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	24.3	26.8	23.3
Maximum Effective Power Per Port		Watts	250 W		
Cross Polar Isolation		dB	26		
Interband Isolation		dB	26		

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ELECTRICAL SPECIFICATIONS

■ B1

Frequency Range		MHz	1695-2200		
		MHz	1695-1880	1850-1990	1920-2200
Polarization		---	±45°		
Gain	Over all Tilts	dBi	16.4 ± 0.6	16.7 ± 0.3	16.6 ± 0.4
	Max Gain	dBi	17	17	17
Azimuth Beamwidth (3 dB)		degrees	63.9° ± 5.6°	64.4° ± 5.3°	63° ± 5.3°
Elevation Beamwidth (3 dB)		degrees	6.7° ± 0.4°	6.3° ± 0.3°	5.8° ± 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	-153		
Front-to-Back Ratio, Total Power, ± 30°		dB	22.2	20.8	19.6
First Upper Side Lobe Suppression		dB	13.4	14	15.9
Cross Polar Discrimination Over Sector		dB	8.7	7.9	2
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	20.6	18.7	19.6
Maximum Effective Power Per Port		Watts	200 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	16.3 ± 0.6	16.9 ± 0.4	16.6 ± 0.5
	Max Gain	dBi	16.9	17.3	17.1
Azimuth Beamwidth (3 dB)		degrees	65.9° ± 6.6°	64° ± 5.3°	61.5° ± 6.5°
Elevation Beamwidth (3 dB)		degrees	6.6° ± 0.5°	6.1° ± 0.2°	5.8° ± 0.4°
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	-153		
Front-to-Back Ratio, Total Power, ± 30°		dB	23.2	22.9	20.9
First Upper Side Lobe Suppression		dB	13.5	14	15.9
Cross Polar Discrimination Over Sector		dB	7.4	7.6	1.4
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	23.5	21.6	21.4
Maximum Effective Power Per Port		Watts	200 W		
Cross Polar Isolation		dB	26		
Interband Isolation		dB	26		

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ELECTRICAL SPECIFICATIONS

■ Y1

Frequency Range	MHz	2490-2690	
Polarization	---	±45°	
Gain	Over all Tilts	dBi	17.5 ± 0.7
	Max Gain	dBi	18.2
Azimuth Beamwidth (3 dB)	degrees	55.2° ± 8.2°	
Elevation Beamwidth (3 dB)	degrees	4.8° ± 0.2°	
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	-153	
Front-to-Back Ratio, Total Power, ± 30°	dB	18.1	
First Upper Side Lobe Suppression	dB	17.7	
Cross Polar Discrimination Over Sector	dB	3	
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)	dB	23.5	
Maximum Effective Power Per Port	Watts	200 W	
Cross Polar Isolation	dB	26	
Interband Isolation	dB	26	

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ELECTRICAL SPECIFICATIONS

■ Y4

Frequency Range	MHz	2490-2690	
Polarization	---	±45°	
Gain	Over all Tilts	dBi	17.6 ± 0.6
	Max Gain	dBi	18.2
Azimuth Beamwidth (3 dB)	degrees	57.4° ± 5°	
Elevation Beamwidth (3 dB)	degrees	4.8° ± 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	-153	
Front-to-Back Ratio, Total Power, ± 30°	dB	19.3	
First Upper Side Lobe Suppression	dB	18.2	
Cross Polar Discrimination Over Sector	dB	1.3	
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)	dB	25.2	
Maximum Effective Power Per Port	Watts	200 W	
Cross Polar Isolation	dB	26	
Interband Isolation	dB	26	

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P4-BBRRMMUU15-N0N, P4-BBRRMMUU15-S0, P4-BBRRMMUU15-S0N

ELECTRICAL SPECIFICATIONS

■ Y2

Frequency Range		MHz	1427-2690				
		MHz	1427-1518	1695-1880	1920-2170	2300-2400	2490-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	15.3 ± 0.4	16.5 ± 1	17.2 ± 0.4	17.2 ± 0.5	17.6 ± 0.4
	Max Gain	dBi	15.7	17.5	17.6	17.7	18
Azimuth Beamwidth (3 dB)		degrees	66.8° ± 9°	67.7° ± 11.9°	59.4° ± 5.3°	62.4° ± 6.8°	55.3° ± 6.9°
Elevation Beamwidth (3 dB)		degrees	7.6° ± 0.3°	6.5° ± 0.5°	5.8° ± 0.4°	5.3° ± 0.3°	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	-153				
Front-to-Back Ratio, Total Power, ± 30°		dB	21.2	24.3	25.3	24.8	25.3
First Upper Side Lobe Suppression		dB	14.8	14.3	14.6	15.8	14.8
Cross Polar Discrimination Over Sector		dB	4.8	9.3	1.9	2.5	0.7
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	18.8	19	17.9	21.4	23.5
Maximum Effective Power Per Port		Watts	200 W				
Cross Polar Isolation		dB	26				
Interband Isolation		dB	26				

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ELECTRICAL SPECIFICATIONS

■ Y3

Frequency Range		MHz	1427-2690				
		MHz	1427-1518	1695-1880	1920-2170	2300-2400	2490-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	15.6 ± 0.6	16.5 ± 1.2	17.1 ± 0.4	16.9 ± 0.5	17.4 ± 0.4
	Max Gain	dBi	16.2	17.7	17.5	17.4	17.8
Azimuth Beamwidth (3 dB)		degrees	66.5° ± 9.1°	65.1° ± 7.7°	60.3° ± 6.8°	66.9° ± 5.1°	58.3° ± 6.4°
Elevation Beamwidth (3 dB)		degrees	7.7° ± 0.2°	6.5° ± 0.5°	6° ± 0.4°	5.4° ± 0.3°	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	-153				
Front-to-Back Ratio, Total Power, ± 30°		dB	22.5	24.6	25	24.8	24.8
First Upper Side Lobe Suppression		dB	13.6	16.4	15.9	16.1	16
Cross Polar Discrimination Over Sector		dB	5.5	9.6	4.2	4.9	1
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	21.5	19.4	17.4	22.7	21.6
Maximum Effective Power Per Port		Watts	200 W				
Cross Polar Isolation		dB	26				
Interband Isolation		dB	26				

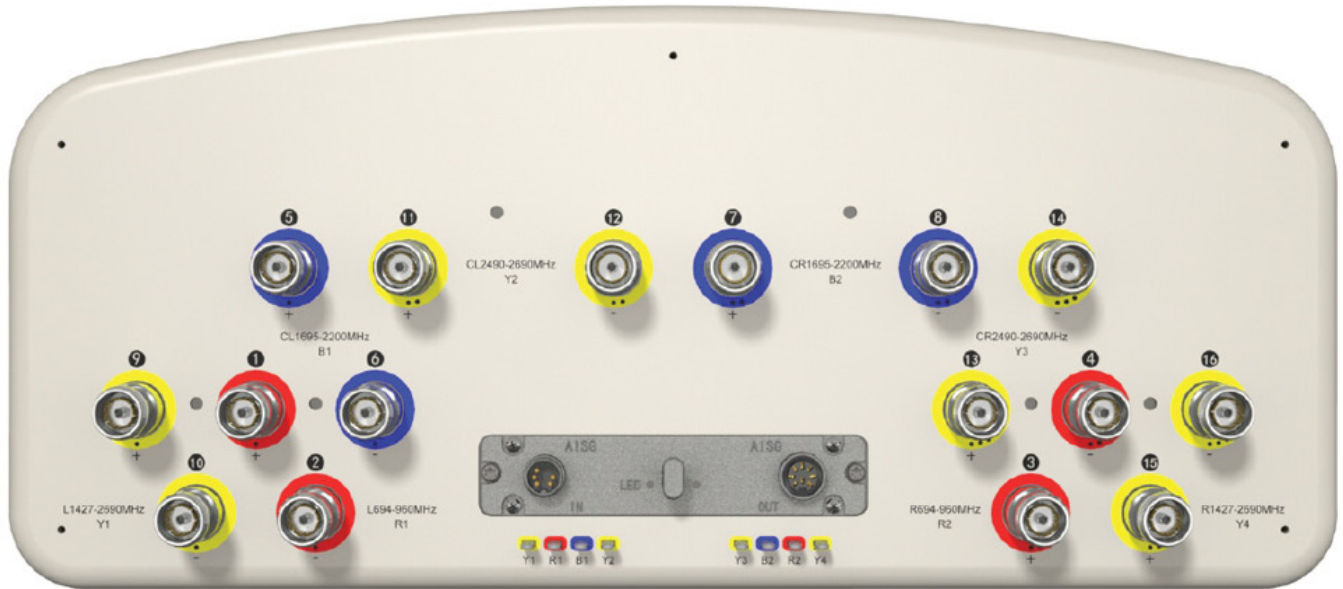
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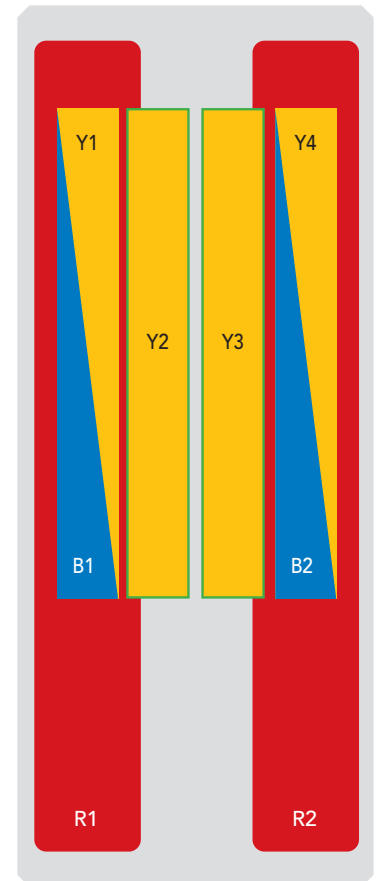
BOTTOM VIEW - LABELING



ARRAY LAYOUT

ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE	RET	AISG RET UID
■ R1	694-960 MHz	1-2	(2x) 4.3-10 Female	R1	RFxxxxxxxxxx-R1
■ R2	694-960 MHz	3-4	(2x) 4.3-10 Female	R2	RFxxxxxxxxxx-R2
■ B1	1695-2200 MHz	5-6	(2x) 4.3-10 Female	B1	RFxxxxxxxxxx-B1
■ B2	1695-2200 MHz	7-8	(2x) 4.3-10 Female	B2	RFxxxxxxxxxx-B2
■ Y1	2490-2690 MHz	9-10	(2x) 4.3-10 Female	Y1	RFxxxxxxxxxx-Y1
■ Y2	1427-2690 MHz	13-14	(2x) 4.3-10 Female	Y2	RFxxxxxxxxxx-Y2
■ Y3	1427-2690 MHz	15-16	(2x) 4.3-10 Female	Y3	RFxxxxxxxxxx-Y3
■ Y4	2490-2690 MHz	11-12	(2x) 4.3-10 Female	Y4	RFxxxxxxxxxx-Y4

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



The illustration is not shown to scale.

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MECHANICAL SPECIFICATIONS

Length	mm (in)	1498 (59.0)
Width	mm (in)	499 (19.6)
Depth	mm (in)	215 (8.5)
Net Weight - Antenna Only	kg (lbs)	32 (70.5)
Wind Load Rated at 150 km/h (93 mph)	Front	N (lbf) 393 (88)
	Side	N (lbf) 343 (77)
	Rear	N (lbf) 413 (93)
	Maximum, Resultant	N (lbf) 986 (222)
Survival Wind Speed	km/h (mph)	200 (124)
Connector Type	--	(16x) 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) 1698 x 594 x 335 (66.8 x 23.4 x 13.2)

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 50-125 mm (2.0-4.9 in) <i>Refer to ordering options</i>	APM50-H2	5.5 kg (12.1 lbs)
Direct Pipe No Tilt Bracket Kit for Pole Diameter 50-125 mm (2.0-4.9 in) <i>Refer to ordering options</i>	APM50-H2N	4 kg (8.8 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](#)