

P4-BBUULL15-N1

P4-BBUULL15-N1N, P4-BBUULL15-S1, P4-BBUULL15-S1N

Features

- 4 ports / 2 cross pol systems in low band (694-960 MHz)
- 4 ports / 4 cross pol systems in high band (1427-2690 MHz)
- 4 ports / 2 cross pol systems in high band (1695-2690 MHz)
- Supporting 4x4 MIMO in low band and high band
- Integrated and field replaceable SRET
- Dual primary support for antenna sharing
 - Both dynamic and static site sharing modes are offered as default factory settings (see ordering information for more details)
 - Site sharing mapping is reconfigurable remotely
- Optional with Site Sharing feature (Model name suffix -S1, -S1N)
- Optional with Direct Pipe No Tilt mounting hardware (Model name suffix -N1N, -S1N)
- Compliant with AISG v2.0 and 3GPP
- Optimized radome for low windload
 - Maximum windload, drag force: 663 N
 - Maximum windload, resultant: 751 N



PRODUCT OVERVIEW	Frequency Range (MHz)	(2x) 694-960		(2x) 1427-2690		(2x) 1695-2690	
	Array	■ R1	■ R2	■ Y2	■ Y3	■ Y1	■ Y4
	Connector	1-2	3-4	7-8	9-10	5-6	11-12
		12 PORTS					
	Polarization	XPOL					
	Azimuth Beamwidth (avg)	65°		65°		65°	
	Electrical Downtilt	2-12°		2-12°		2-12°	
Dimensions	1498 x 499 x 257 mm (59.0 x 19.6 x 10.1 in)						

ORDERING OPTIONS

Select from the following ordering options

ANTENNA MODEL NUMBER	CONFIGURATION	MOUNTING HARDWARE	MOUNTING PIPE DIAMETER	SHIPPING WEIGHT	MOUNTING HARDWARE WEIGHT
P4-BBUULL15-N1	ACU-I20-H12J Internal RET Included	APM50-H2 Beam Tilt Kit Included	50-125 mm (2.0-4.9 in)	37.2 kg (82 lbs)	5.5 kg (12.1 lbs)
P4-BBUULL15-N1N	ACU-I20-H12J Internal RET Included	APM50-H2N Direct Pipe No Tilt Mounting Kit Included	50-125 mm (2.0-4.9 in)	35.7 kg (78.7 lbs)	4 kg (8.8 lbs)
P4-BBUULL15-S1	ACU-X20H Internal RET for Site Sharing Included	APM50-H2 Beam Tilt Kit Included	50-125 mm (2.0-4.9 in)	37.2 kg (82 lbs)	5.5 kg (12.1 lbs)
P4-BBUULL15-S1N	ACU-X20H Internal RET for Site Sharing Included	APM50-H2N Direct Pipe No Tilt Mounting Kit Included	50-125 mm (2.0-4.9 in)	35.7 kg (78.7 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	13.5 ± 0.6	14 ± 0.5	14.2 ± 0.6
	Max Gain	dBi	14.1	14.5	14.8
Azimuth Beamwidth (3 dB)		degrees	68.6° ± 6.7°	64.5° ± 4.2°	58.4° ± 6.9°
Elevation Beamwidth (3 dB)		degrees	13.6° ± 1.2°	12.3° ± 0.9°	11.4° ± 0.9°
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	20.3	20.4	21.5
First Upper Side Lobe Suppression		dB	13.6	12.7	15.1
Cross Polar Discrimination Over Sector		dB	8.1	6.7	8.4
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	22.3	22.3	21.3
Maximum Effective Power Per Port		Watts	250 W		
Cross Polar Isolation		dB	25		
Interband Isolation		dB	25		

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 ± 0.8	14 ± 0.5	14.5 ± 0.6
	Max Gain	dBi	14.3	14.5	15.1
Azimuth Beamwidth (3 dB)		degrees	71° ± 4.8°	67.2° ± 5.2°	60° ± 7.1°
Elevation Beamwidth (3 dB)		degrees	13.7° ± 1.6°	12.4° ± 0.8°	11.4° ± 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	20.1	20.5	21.4
First Upper Side Lobe Suppression		dB	13	12.2	13.9
Cross Polar Discrimination Over Sector		dB	10.9	11	9.7
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	22.6	22.3	22.2
Maximum Effective Power Per Port		Watts	250 W		
Cross Polar Isolation		dB	25		
Interband Isolation		dB	25		

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P4-BBUULL15-N1N, P4-BBUULL15-S1, P4-BBUULL15-S1N

ELECTRICAL SPECIFICATIONS

■ Y1

Frequency Range		MHz	1695-2690				
		MHz	1695-1880	1850-1990	1920-2170	2300-2400	2490-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	16.7 ± 0.4	17.2 ± 0.2	17.3 ± 0.5	17.6 ± 0.5	18.1 ± 0.4
	Max Gain	dBi	17.1	17.4	17.8	18.1	18.5
Azimuth Beamwidth (3 dB)		degrees	65.9° ± 4.6°	63.2° ± 2.9°	60.4° ± 4.7°	58.6° ± 6.8°	53.8° ± 6.3°
Elevation Beamwidth (3 dB)		degrees	6.7° ± 0.4°	6.1° ± 0.3°	5.8° ± 0.4°	5.2° ± 0.2°	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	22	18.7	18.7	21.3	21.8
First Upper Side Lobe Suppression		dB	16.9	17	17	17.4	17.6
Cross Polar Discrimination Over Sector		dB	7.9	9.8	4.1	6.3	2.7
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	24.2	21.4	21.4	25.2	24.7
Maximum Effective Power Per Port		Watts	200 W				
Cross Polar Isolation		dB	26				
Interband Isolation		dB	25				

Specifications follow BASTA guidelines.

ELECTRICAL SPECIFICATIONS

■ Y2

Frequency Range		MHz	1427-2690				
		MHz	1427-1518	1695-1920	1920-2170	2300-2400	2490-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	15.4 ± 0.6	16.7 ± 0.8	17.3 ± 0.5	17.1 ± 0.7	17.3 ± 0.4
	Max Gain	dBi	16	17.5	17.8	17.8	17.7
Azimuth Beamwidth (3 dB)		degrees	70.6° ± 9.1°	65.4° ± 8°	58.8° ± 3.6°	58.9° ± 10.7°	55.5° ± 8.2°
Elevation Beamwidth (3 dB)		degrees	7.6° ± 0.5°	6.6° ± 0.4°	6° ± 0.4°	5.6° ± 0.4°	5.2° ± 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	21.7	25.5	24.8	24.9	24.9
First Upper Side Lobe Suppression		dB	12	15.9	15.2	14.9	14.3
Cross Polar Discrimination Over Sector		dB	4.8	12.7	7	3.7	0.7
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	22	24.5	20.3	20.9	20.8
Maximum Effective Power Per Port		Watts	200 W				
Cross Polar Isolation		dB	26				
Interband Isolation		dB	25				

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65°

1498 mm

INTEGRATED RET

SITE SHARING OPTIONAL

P4-BBUULL15-N1

P4-BBUULL15-N1N, P4-BBUULL15-S1, P4-BBUULL15-S1N

ELECTRICAL SPECIFICATIONS

■ Y3

Frequency Range		MHz	1427-2690				
		MHz	1427-1518	1695-1920	1920-2170	2300-2400	2490-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	15.7 ± 0.3	16.5 ± 0.9	17.1 ± 0.4	17.4 ± 0.6	17.3 ± 0.5
	Max Gain	dBi	16	17.4	17.5	18	17.8
Azimuth Beamwidth (3 dB)		degrees	66.6° ± 9.6°	68.5° ± 10°	59.5° ± 5.4°	58.3° ± 6.1°	55.4° ± 9°
Elevation Beamwidth (3 dB)		degrees	7.4° ± 0.2°	6.4° ± 0.3°	5.9° ± 0.4°	5.4° ± 0.3°	5.2° ± 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	22.2	24.9	25.2	23.9	23.7
First Upper Side Lobe Suppression		dB	11.8	16.5	16.9	16.5	14.8
Cross Polar Discrimination Over Sector		dB	4	11.2	6.9	5.4	0.9
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	20.2	24	18.7	23.6	22.7
Maximum Effective Power Per Port		Watts	200 W				
Cross Polar Isolation		dB	26				
Interband Isolation		dB	25				

Specifications follow BASTA guidelines.

ELECTRICAL SPECIFICATIONS

■ Y4

Frequency Range		MHz	1695-2690				
		MHz	1695-1880	1850-1990	1920-2170	2300-2400	2490-2690
Polarization		---	±45°				
Gain	Over all Tilts	dBi	16.7 ± 0.6	17.3 ± 0.4	17.3 ± 0.4	17.5 ± 0.4	18.2 ± 0.4
	Max Gain	dBi	17.3	17.7	17.7	17.9	18.6
Azimuth Beamwidth (3 dB)		degrees	65.5° ± 4.5°	62.9° ± 2.6°	60.9° ± 3.9°	59.3° ± 6°	54.9° ± 7°
Elevation Beamwidth (3 dB)		degrees	6.6° ± 0.4°	6.1° ± 0.2°	5.8° ± 0.4°	5.2° ± 0.3°	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	22.2	23.3	22	18.5	21.2
First Upper Side Lobe Suppression		dB	17.2	16.7	17.1	18	19.4
Cross Polar Discrimination Over Sector		dB	7.1	8.6	2.7	2	2
Cross Polar Discrimination (XPD) at Mechanical Boresight (0°)		dB	27.2	24.2	23.4	20.5	21.9
Maximum Effective Power Per Port		Watts	200 W				
Cross Polar Isolation		dB	26				
Interband Isolation		dB	25				

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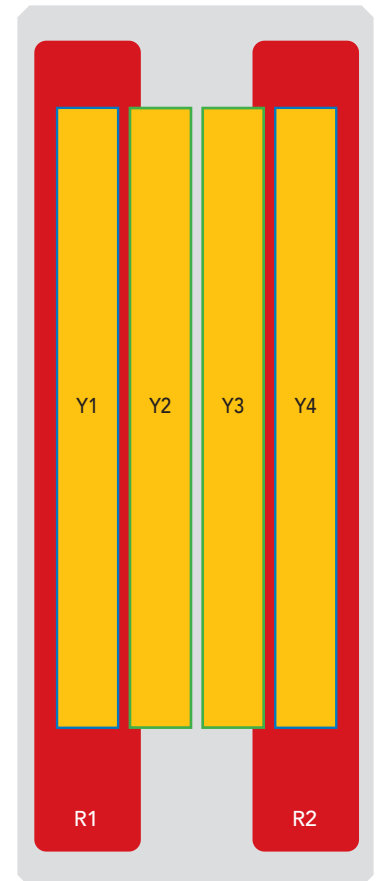
BOTTOM VIEW - LABELING



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
■ Y1	1695-2690 MHz	5-6	(2x) 4.3-10 Female	Y1	RFxxxxxxxxxx-Y1
■ Y2	1427-2690 MHz	7-8	(2x) 4.3-10 Female	Y2	RFxxxxxxxxxx-Y2
■ Y3	1427-2690 MHz	9-10	(2x) 4.3-10 Female	Y3	RFxxxxxxxxxx-Y3
■ Y4	1695-2690 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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65°

1498 mm

INTEGRATED RET

SITE SHARING OPTIONAL

P4-BBUULL15-N1

P4-BBUULL15-N1N, P4-BBUULL15-S1, P4-BBUULL15-S1N

MECHANICAL SPECIFICATIONS

Length	mm (in)	1498 (59.0)
Width	mm (in)	499 (19.6)
Depth	mm (in)	257 (10.1)
Net Weight - Antenna Only	kg (lbs)	27.2 (60)
Wind Load Rated at 150 km/h (93 mph)	Front	N (lbf) 399 (90)
	Side	N (lbf) 320 (72)
	Rear	N (lbf) 419 (94)
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
Radome Material	---	ASA
Lightning Protection	---	DC Ground
Shipping	Packing Size (Length x Width x Depth)	mm (in) 1698 x 594 x 377 (66.9 x 23.4 x 14.8)

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

P4-BBUULL15-N1

P4-BBUULL15-N1N, P4-BBUULL15-S1, P4-BBUULL15-S1N

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.

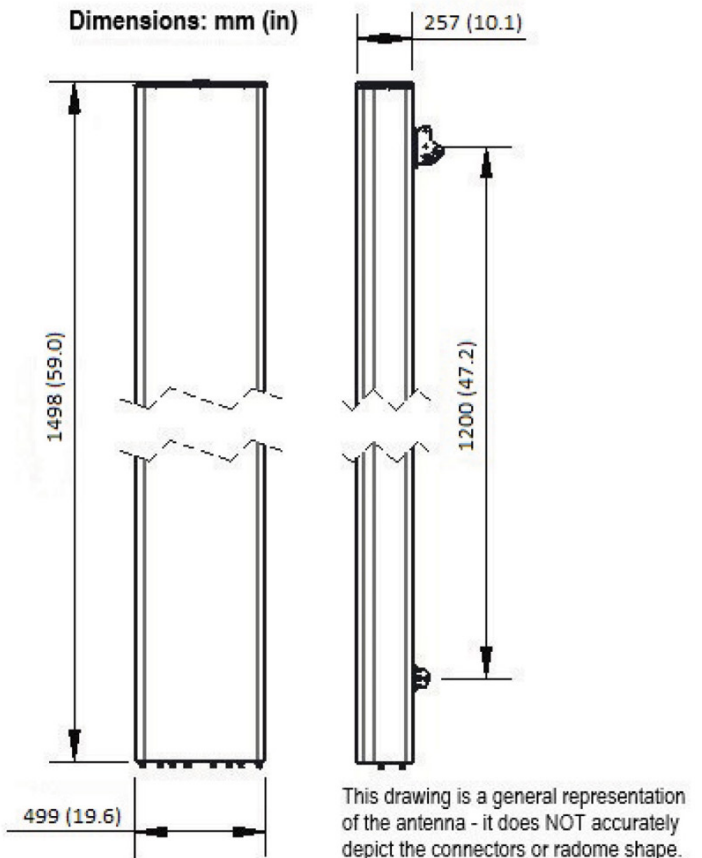


Always attach the antenna using all mounting points.

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](#)