

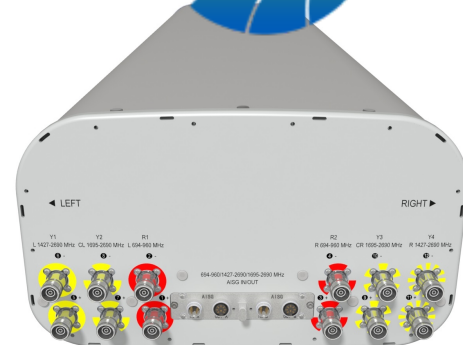
**P4-BBUULL20-J1, -J1N, -I1, -I1N**

12-Ports, X-Pol, Panel Antenna, 2.0m, 2x 694-960/2x 1695-2690/2x 1427-2690MHz, 65deg, Integrated RET, Site Sharing Optional



**FEATURES / BENEFITS**

- 4 ports / 2 cross pol systems in the low band (694-960 MHz)
- 4 ports / 2 cross pol systems in the mid band (1695-2690MHz)
- 4 ports / 2 cross pol systems in very wide mid band (1427-2690 MHz)
- Integrated and field replaceable SRET
- Optional with Site Sharing feature (Model name Suffix -I1, -I1N)
- Optional with Direct Pipe no tilt mounting hardware (Model name Suffix -J1N, -I1N)
- Compliant with AISG V2.0 and 3GPP.



**Technical features**

**ELECTRICAL SPECIFICATIONS**

Electrical Specification Header		LOW BAND ARRAY (694-960 MHz) [R1]		
Frequency Band	MHz	694-806	790-894	880-960
Gain Typical	dBi	15	16	16.2
Gain Over all Tilts	dBi	14.5 +/- 0.5	15.2 +/- 0.8	15.8 +/- 0.4
Azimuth Beamwidth 3dB	Deg	71.8 +/- 8.6	63.8 +/- 7.8	61.6 +/- 4.8
Elevation Beamwidth 3dB	Deg	11.8 +/- 1.4	10.7 +/- 0.7	9.9 +/- 0.6
Cross Polar Discrimination at Boresight	dB	17.4	16.8	21.7
Cross Polar Discrimination over Sector	dB	5	4.9	4.2
F/B at +/-30deg Total Power	dB	21	21.5	20.8
First Upper Side Lobe Suppression	dB	13.4	14.7	17.1
Electrical Downtilt	Deg	2 to 12		
Cross Polar Isolation	dB	25		
Interband Isolation	dB	25		
VSWR	-	1.5		
Passive Intermodulation (3rd Order, 2 x 43dBm)	dBc	-153		
Maximum Effective Power per Port	Watt	250		

**P4-BBUULL20-J1, -J1N, -I1, -I1N**

12-Ports, X-Pol, Panel Antenna, 2.0m, 2x 694-960/2x 1695-2690/2x 1427-2690MHz, 65deg, Integrated RET, Site Sharing Optional



**ELECTRICAL SPECIFICATIONS**

Electrical Specification Header		LOW BAND ARRAY (694-960 MHz) [R2]		
		694-806	790-894	880-960
Frequency Band	MHz	694-806	790-894	880-960
Gain Typical	dBi	15.3	15.5	16
Gain Over all Tilts	dBi	14.7 +/- 0.6	15.1 +/- 0.4	15.7 +/- 0.3
Azimuth Beamwidth 3dB	Deg	70.6 +/- 8.2	65.1 +/- 5.3	62.1 +/- 2.9
Elevation Beamwidth 3dB	Deg	11.7 +/- 1.1	10.5 +/- 0.7	9.7 +/- 0.5
Cross Polar Discrimination at Boresight	dB	17.9	20.5	22.8
Cross Polar Discrimination over Sector	dB	5.3	5.9	4.2
F/B at +/-30deg Total Power	dB	21.9	21.5	20.5
First Upper Side Lobe Suppression	dB	16.3	17.3	17.5
Electrical Downtilt	Deg	2 to 12		
Cross Polar Isolation	dB	25		
Interband Isolation	dB	25		
VSWR	-	1.5		
Passive Intermodulation (3rd Order, 2 x 43dBm)	dBc	-153		
Maximum Effective Power per Port	Watt	250		

**P4-BBUULL20-J1, -J1N, -I1, -I1N**

12-Ports, X-Pol, Panel Antenna, 2.0m, 2x 694-960/2x 1695-2690/2x 1427-2690MHz, 65deg, Integrated RET, Site Sharing Optional



**ELECTRICAL SPECIFICATIONS**

Electrical Specification Header		MID BAND ARRAY (1427-2690MHz) [Y1]					
		1427-1518	1695-1880	1850-1990	1920-2170	2300-2400	2490-2690
Frequency Band	MHz	1427-1518	1695-1880	1850-1990	1920-2170	2300-2400	2490-2690
Gain Typical	dBi	16.3	17.9	18.2	18.6	18.8	19
Gain Over all Tilts	dBi	15.7 +/- 0.6	17.0 +/- 0.9	17.9 +/- 0.3	18.1 +/- 0.5	18.4 +/- 0.4	18.5 +/- 0.5
Azimuth Beamwidth 3dB	Deg	68.6 +/- 7.2	68.1 +/- 7.8	64.6 +/- 6.0	60.4 +/- 8.0	55.9 +/- 4.1	56.1 +/- 7.4
Elevation Beamwidth 3dB	Deg	7.3 +/- 0.4	6.6 +/- 0.5	6.1 +/- 0.4	5.7 +/- 0.6	4.9 +/- 0.4	4.6 +/- 0.3
Cross Polar Discrimination at Boresight	dB	20.4	22.5	23.3	23.1	21.1	18.1
Cross Polar Discrimination over Sector	dB	7.9	5.3	9.2	4.6	1.5	1.1
F/B at +/-30deg Total Power	dB	19.3	21.9	23.5	19.6	22.2	20.5
First Upper Side Lobe Suppression	dB	16	16.3	18.1	17	20.8	21.2
Electrical Downtilt	Deg	2 to 12					
Cross Polar Isolation	dB	25					
Interband Isolation	dB	25					
VSWR	-	1.5					
Passive Intermodulation (3rd Order, 2 x 43dBm)	dBc	-153					
Maximum Effective Power per Port	Watt	250					

**P4-BBUULL20-J1, -J1N, -I1, -I1N**

12-Ports, X-Pol, Panel Antenna, 2.0m, 2x 694-960/2x 1695-2690/2x 1427-2690MHz, 65deg, Integrated RET, Site Sharing Optional



**ELECTRICAL SPECIFICATIONS**

Electrical Specification Header		MID BAND ARRAY (1695-2690MHz) [Y2]				
		1695-1880	1850-1990	1920-2170	2300-2400	2490-2690
Frequency Band	MHz	1695-1880	1850-1990	1920-2170	2300-2400	2490-2690
Gain Typical	dBi	17.6	18	18.7	18.5	18.4
Gain Over all Tilts	dBi	16.7 +/- 0.9	17.4 +/- 0.6	17.9 +/- 0.8	17.9 +/- 0.6	17.7 +/- 0.7
Azimuth Beamwidth 3dB	Deg	63.3 +/- 11.3	59.5 +/- 7.1	52.6 +/- 9.1	52.6 +/- 4.8	55.0 +/- 5.9
Elevation Beamwidth 3dB	Deg	6.6 +/- 0.6	6.0 +/- 0.6	5.6 +/- 0.7	4.7 +/- 0.3	4.4 +/- 0.3
Cross Polar Discrimination at Boresight	dB	20.4	21.1	21.9	21.1	20.8
Cross Polar Discrimination over Sector	dB	5.6	6.1	5.5	1.8	1.4
F/B at +/-30deg Total Power	dB	23.4	24.4	23.9	24.4	23.4
First Upper Side Lobe Suppression	dB	15.1	13.8	13.4	14.4	14.8
Electrical Downtilt	Deg	2 to 12				
Cross Polar Isolation	dB	25				
Interband Isolation	dB	25				
VSWR	-	1.5				
Passive Intermodulation (3rd Order, 2 x 43dBm)	dBc	-153				
Maximum Effective Power per Port	Watt	250				

**P4-BBUULL20-J1, -J1N, -I1, -I1N**

12-Ports, X-Pol, Panel Antenna, 2.0m, 2x 694-960/2x 1695-2690/2x 1427-2690MHz, 65deg, Integrated RET, Site Sharing Optional



**ELECTRICAL SPECIFICATIONS**

Electrical Specification Header		MID BAND ARRAY (1695-2690MHz) [Y3]				
		1695-1880	1850-1990	1920-2170	2300-2400	2490-2690
Frequency Band	MHz	1695-1880	1850-1990	1920-2170	2300-2400	2490-2690
Gain Typical	dBi	17.2	17.7	18.4	18.3	18.2
Gain Over all Tilts	dBi	16.2 +/- 1.0	17.2 +/- 0.5	17.6 +/- 0.8	17.9 +/- 0.4	17.6 +/- 0.6
Azimuth Beamwidth 3dB	Deg	67.0 +/- 10.1	62.5 +/- 6.8	54.5 +/- 10.9	54.8 +/- 7.4	57.2 +/- 6.6
Elevation Beamwidth 3dB	Deg	6.5 +/- 0.6	5.9 +/- 0.6	5.6 +/- 0.6	4.9 +/- 0.4	4.5 +/- 0.3
Cross Polar Discrimination at Boresight	dB	22.1	24.4	20.5	19.2	18.9
Cross Polar Discrimination over Sector	dB	3.4	2.8	3.5	1.2	0.7
F/B at +/-30deg Total Power	dB	21.7	23.7	22.9	23.9	23.5
First Upper Side Lobe Suppression	dB	15.7	14.6	14.7	17.3	17.1
Electrical Downtilt	Deg	2 to 12				
Cross Polar Isolation	dB	25				
Interband Isolation	dB	25				
VSWR	-	1.5				
Passive Intermodulation (3rd Order, 2 x 43dBm)	dBc	-153				
Maximum Effective Power per Port	Watt	250				

**P4-BBUULL20-J1, -J1N, -I1, -I1N**

12-Ports, X-Pol, Panel Antenna, 2.0m, 2x 694-960/2x 1695-2690/2x 1427-2690MHz, 65deg, Integrated RET, Site Sharing Optional



**ELECTRICAL SPECIFICATIONS**

Electrical Specification Header		MID BAND ARRAY (1427-2690MHz)[Y4]					
Frequency Band	MHz	1427-1518	1695-1880	1850-1990	1920-2170	2300-2400	2490-2690
Gain Typical	dBi	16.4	18	18.2	18.5	19.2	19.2
Gain Over all Tilts	dBi	15.5 +/- 0.9	17.0 +/- 1.0	17.8 +/- 0.4	17.9 +/- 0.6	18.6 +/- 0.6	18.6 +/- 0.6
Azimuth Beamwidth 3dB	Deg	69.9 +/- 11.2	67.7 +/- 6.1	65.8 +/- 4.8	61.7 +/- 8.2	53.9 +/- 4.6	55.0 +/- 5.6
Elevation Beamwidth 3dB	Deg	7.7 +/- 1.4	6.7 +/- 0.8	6.2 +/- 0.4	5.7 +/- 0.7	4.9 +/- 0.4	4.6 +/- 0.3
Cross Polar Discrimination at Boresight	dB	20.8	21.8	20.9	20.8	21.4	19.2
Cross Polar Discrimination over Sector	dB	9.1	7.6	6	3.9	1.4	0.3
F/B at +/-30deg Total Power	dB	21.3	23.3	22.2	19.4	19.4	20.3
First Upper Side Lobe Suppression	dB	13.5	19.9	23.2	18.6	20.9	20.4
Electrical Downtilt	Deg	2 to 12					
Cross Polar Isolation	dB	25					
Interband Isolation	dB	25					
VSWR	-	1.5					
Passive Intermodulation (3rd Order, 2 x 43dBm)	dBc	-153					
Maximum Effective Power per Port	Watt	250					

**ELECTRICAL SPECIFICATIONS**

Impedance	Ohm	50
Polarization	Deg	±45°

**MECHANICAL SPECIFICATIONS**

Dimensions - H x W x D	mm (in)	2050 x 430 x 245 (80.7 x 16.9 x 9.6)
Weight (Antenna Only)	kg (lb)	32 (70.5)
Packing size- HxWxD	mm (in)	2265 x 540 x 368 (89.2 x 21.2 x 14.5)
Connector type		12x 4.3-10 Female Connectors + 2x AISG ports (1 male, 1 female), (Site Sharing) 4x AISG ports (2 male, 2 female)
Radome Material / Color		Fiberglass / Light Grey RAL7035

**TESTING AND ENVIRONMENTAL**

Temperature Range	°C (°F)	-40 to 60 (-40 to 140 )
Grounding type		Direct Ground
Survival/Rated Wind Velocity	km/h	240 (150 )

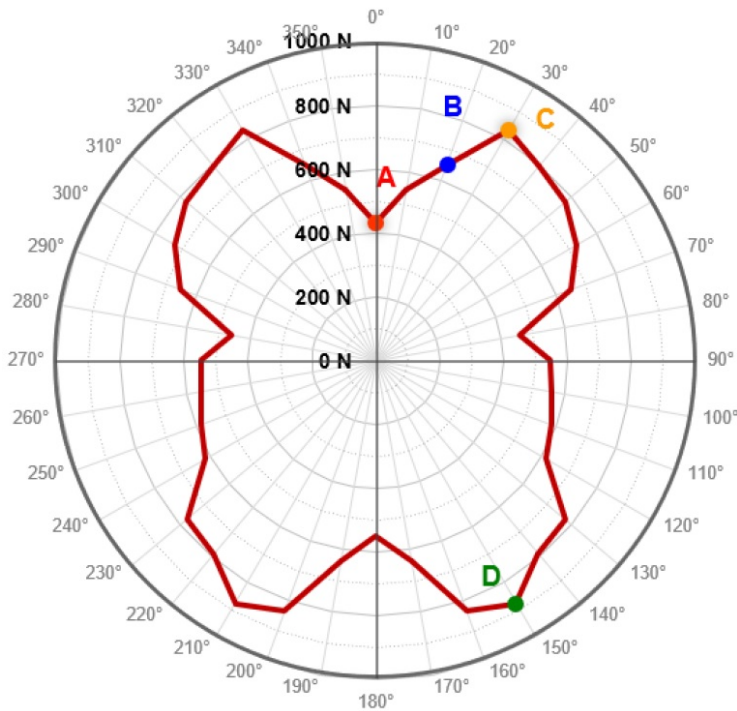
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**ORDERING INFORMATION**

Order No.	Configuration	Mounting Hardware	Mounting Pipe Diameter	Shipping Weight kg(lb)	Mounting Hardware Weight kg(lb)
<b>P4-BBUULL20-J1</b>	Internal RET (ACU-X20N)	APM40-2	60-120mm	44.5 (98.1)	3.9 (8.6)
<b>P4-BBUULL20-J1N</b>	Internal RET (ACU-X20N)	APM40-1 (Direct Pipe no tilt)	60-120mm	43.8 (96.6)	3.2 (7.0)
<b>P4-BBUULL20-I1</b>	Internal Site Sharing RET (ACU-X20)	APM40-2	60-120mm	44.5 (98.1)	3.9 (8.6)
<b>P4-BBUULL20-I1N</b>	Internal Site Sharing RET (ACU-X20)	APM40-1 (Direct Pipe no tilt)	60-120mm	43.8 (96.6)	3.2 (7.0)

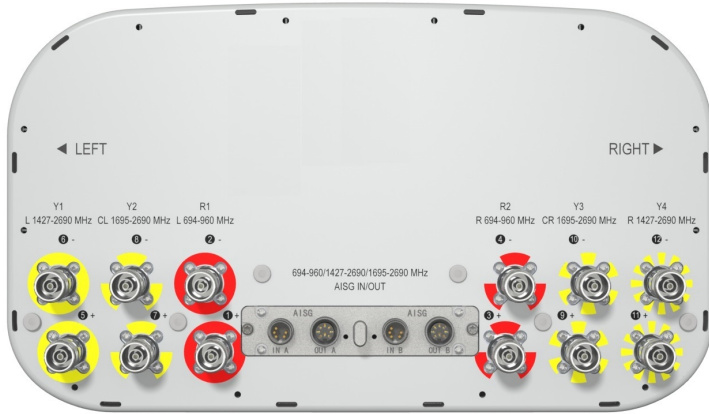


<b>Rated Wind Speed, Km/h</b>	<b>150</b>
<b>Wind Load Frontal, Resultant, N</b>	<b>433</b>
<b>Wind Load Side, Resultant, N</b>	<b>548</b>
<b>Wind Load Rear, Resultant, N</b>	<b>549</b>
<b>Maximum Wind Load, Resultant, N</b>	<b>877</b>

PRODUCT DATASHEET

**P4-BBUULL20-J1, -J1N, -I1, -I1N**

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Port	Array	Frequency	RET	3GPP RET UID
1	R1	694-960 MHz	R1	RFxxxxxxxxxx-R1
2				
3	R2	694-960 MHz	R2	RFxxxxxxxxxx-R2
4				
5	Y1	1427-2690 MHz	Y1	RFxxxxxxxxxx-Y1
6				
7	Y2	1695-2690 MHz	Y2	RFxxxxxxxxxx-Y2
8				
9	Y3	1695-2690 MHz	Y3	RFxxxxxxxxxx-Y3
10				
11	Y4	1427-2690 MHz	Y4	RFxxxxxxxxxx-Y4
12				

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

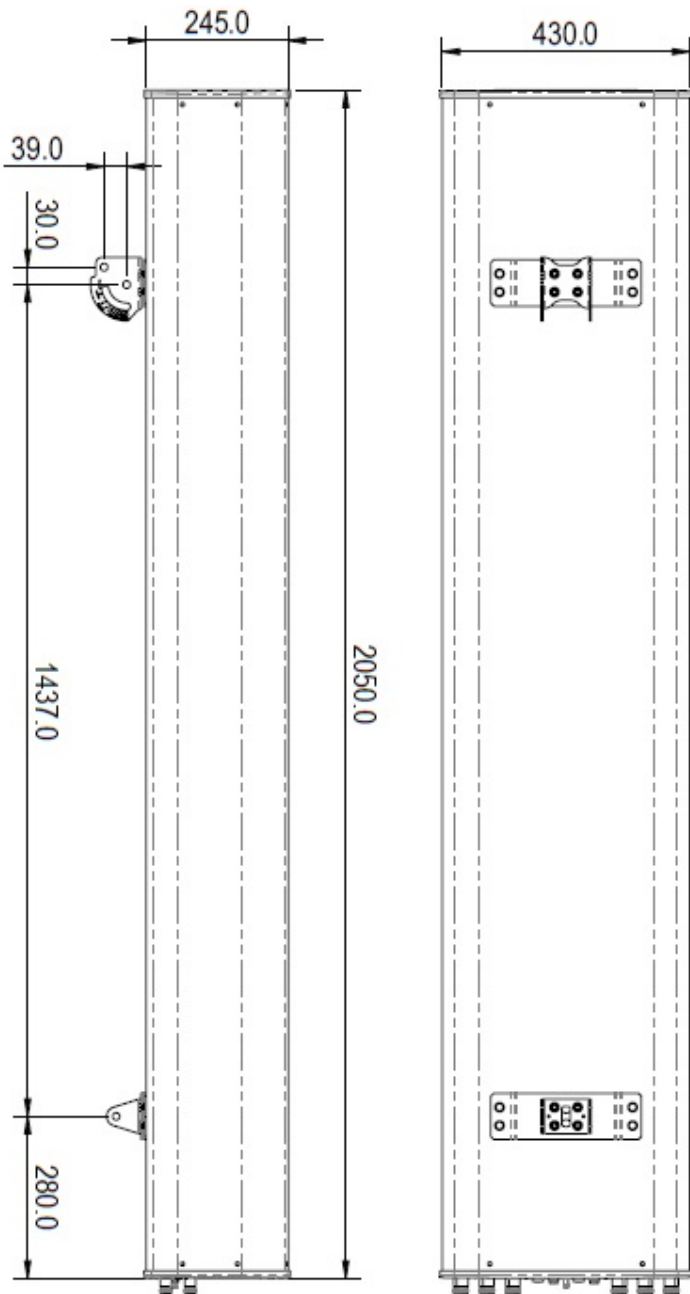




PRODUCT DATASHEET

**P4-BBUULL20-J1, -J1N, -I1, -I1N**

12-Ports, X-Pol, Panel Antenna, 2.0m, 2x 694-960/2x 1695-2690/2x 1427-2690MHz, 65deg,  
Integrated RET, Site Sharing Optional



[External Document Links](#)  
[APM40\\_Series\\_Installation\\_Instructions](#)

**Notes**

- All electrical parameters are compliant with NGMN P-BASTA 12 requirements.
- For additional mounting information please click "External Document Links".
- This datasheet is provisional and subject to changes.

PRODUCT DATASHEET

**P4-BBUULL20-J1, -J1N, -I1, -I1N**

12-Ports, X-Pol, Panel Antenna, 2.0m, 2x 694-960/2x 1695-2690/2x 1427-2690MHz, 65deg,  
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- Radiating patterns: [Request pattern files](#)