DATASHEET

AWL4001

Common Name 24 Port (12P/12P) Lower and Upper Mid Band Curved Panel Antenna

Frequency	Ports	Tilt	Gain	Beamwidth
1695-2690MHz	12	Fixed	13.0	65°
3300-4200MHz	12	Fixed	14.8	65°

PRODUCT INFORMATION

The AWL4001 panel antenna is intended to offer 24 Ports on the Lower and Upper Mid Band Spectrums. The antenna has twelve ports covering Lower Mid Band 1695 – 2690 MHz and twelve ports covering Upper Mid Band 3300 – 4200 MHz. The high port count support multiple radios to achieve the best coverage and highest data rates across LTE and 5G NR bands.

One AWL4001 panel serves as a single sector. Three panels can be wrapped around existing infrastructure to provide a middle of pole canister solution as well as pole top or sidearm mounted. Three AWL4001 panels mounted around a center pole forms into a concealed canister with a 22 inch diameter. There are a number of mounting options with shroud kits available, making deployments on lamp posts, utility poles, walls and other vertical structures possible.

APPLICATION

Alpha Wireless multiband small cell provides flexible coverage solutions whilst in an ultra-compact radome design. This small cell modular antenna system can be configured as a single-, dual-, or tri-sector. Three panels can be wrapped around existing infrastructure to provide a middle-of-pole canister solution. The high port count for each sector in Lower and Upper Mid Bands is for ultimate data throughput in 4G and 5G applications. The antenna is designed to be installed in an urban environment where low visual impact is required.

FEATURES

- Allows 4x4 MIMO on dual bands for multiple radios across Mid band and C band.
- Fits within 650mm (25.6") height restriction.
- Three curved panels around a pole form a 22 inch canister.
- Visually appealing design that blends with the Streetscape.
- Middle of pole, pole top and side-arm mounting options.
- Compact design - Low visual impact.

STANDARD & CERTIFICATIONS

Certification	BS EN ISO 9001:2015

RoHS COMPLIANT

CE

The parameters in this specification follow the definitions and recommendations per NGMN P-Basta, Release 9.6.

ALPHA WIRELESS

AWL4001

TECHNICAL SPECIFICATION

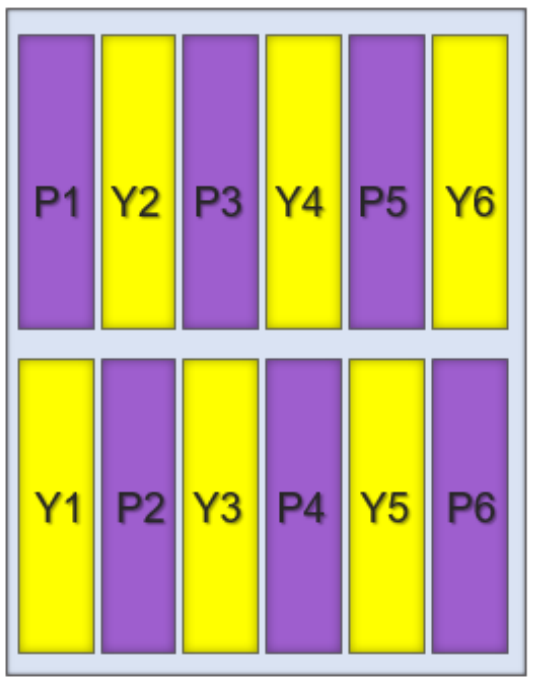
Electrical Specifications			Lower Mid band				Upper Mid Band		
Frequency Range		MHz	1695-1995	1920-2170	2170-2500	2500-2690	3300-3500	3500-3800	3800-4200
Connector			12 Ports				12 Ports		
Polarisation		Degree	+/- 45° Slant Linear						
Gain	Basta	dBi	12.1±0.5	12.7±0.5	13.1±0.5	13.1±0.5	14.3±0.5	14.8±0.5	15.0±0.5
	Max	dBi	12.6	13.2	13.6	13.6	14.8	15.3	15.5
Azimuth Beamwidth		Degree	68	69	68	64	62	64	66
Azimuth Beam Squint		Degree <	5	5	5	5	5	5	5
Elevation Beamwidth		Degree	28	25	22	19	15.5	14.5	13.5
Electrical Downtilt		Degree	2, 4, or 6				2, 4, or 6		
Electrical Downtilt Deviation		Degree <	2				1.5		
Impedance		Ohms	50						
VSWR		<	1.5						
Return Loss		dB >	14						
Intraband Isolation		dB >	25				25		
Network-to-Network Isolation		dB >	28				28		
Interband Isolation		dB >	28				28		
Passive Intermodulation		dBc <	-153				-153		
Cross-Polar Discrimination		dB >	16	16	16	16	16	16	16
Maximum Effective Power Per Port		W	150				50		
Maximum total input power		W	2,400						

AWL4001

TECHNICAL SPECIFICATION

Mechanical Specifications		
Dimensions	mm (in)	650 (25.6) x 475 (18.7) x 180 (7.1) - Antenna
Volume	l (ft3)	66.5 (2.35)
Packing Size (LxWxD)	mm (in)	711 (28) x 508 (20) x 305 (12)
Net Weight (antenna)	kg (lb)	9.5 (21)
Shipping Weight	kg (lb)	10 (22)
Connector Type (Female)	-	4.3-10
Connector Position	-	Bottom
Connector Quantity	-	24 (12 Ports Lower Mid Band and 12 Ports Upper Mid Band)
Windload Frontal (at Rated Wind Speed: 150km/h)	N (lbf)	260 (59)
Windload Lateral (at Rated Wind Speed: 150km/h)	N (lbf)	90 (20)
Survival Wind Speed	km/h (mph)	241 (150)
Radome Material	-	uPVC
Radome Colour	RAL	7035 (light grey)
Product Compliance Environmental	-	RoHS
Lightning Protection	-	DC Grounded
Cold Temperature Survival	Celsius (Fahrenheit)	-40 (-40)
Hot Temperature Survival	Celsius (Fahrenheit)	70 (158)

Array Layout and RET Information



Note: Coloured box sizes do not represent antenna sizes.

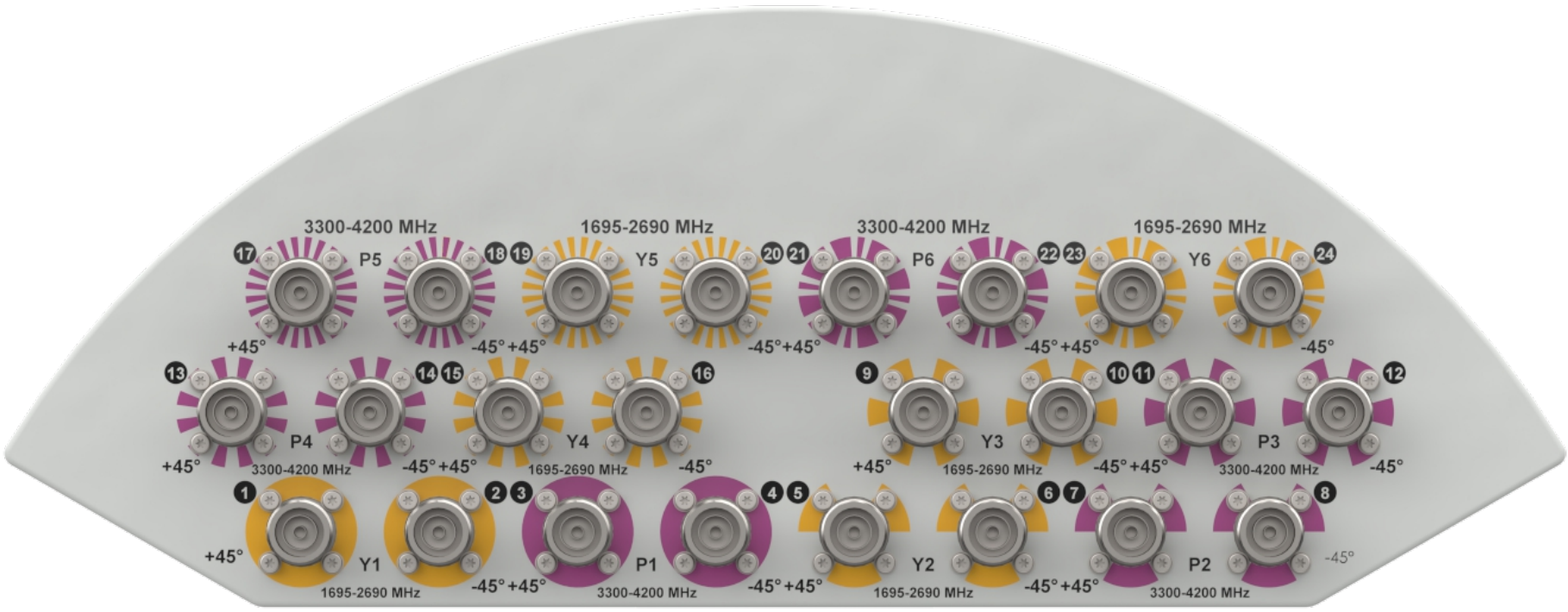
Array	Frequency MHz	Ports
Y1	1695 – 2690MHz	1 – 2
Y2		3 – 4
Y3		5 – 6
Y4		7 – 8
Y5		9 – 10
Y6		11 – 12
P1	3300 – 4200 MHz	13 – 14
P2		15 – 16
P3		17 – 18
P4		19 – 20
P5		21 – 22
P6		23 – 24

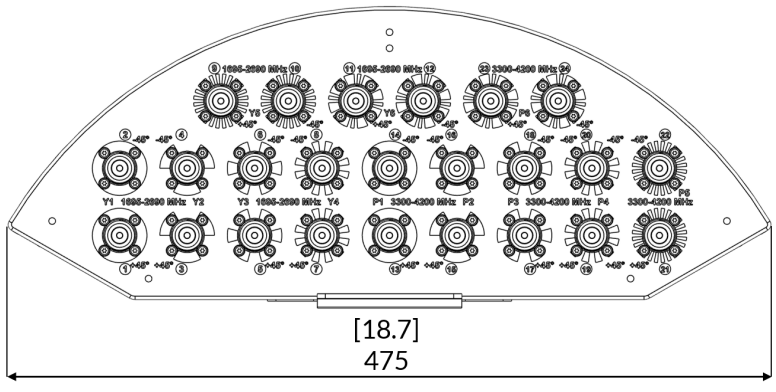
ALPHA WIRELESS

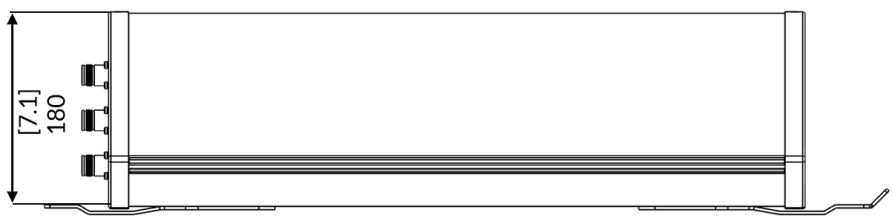
AWL4001

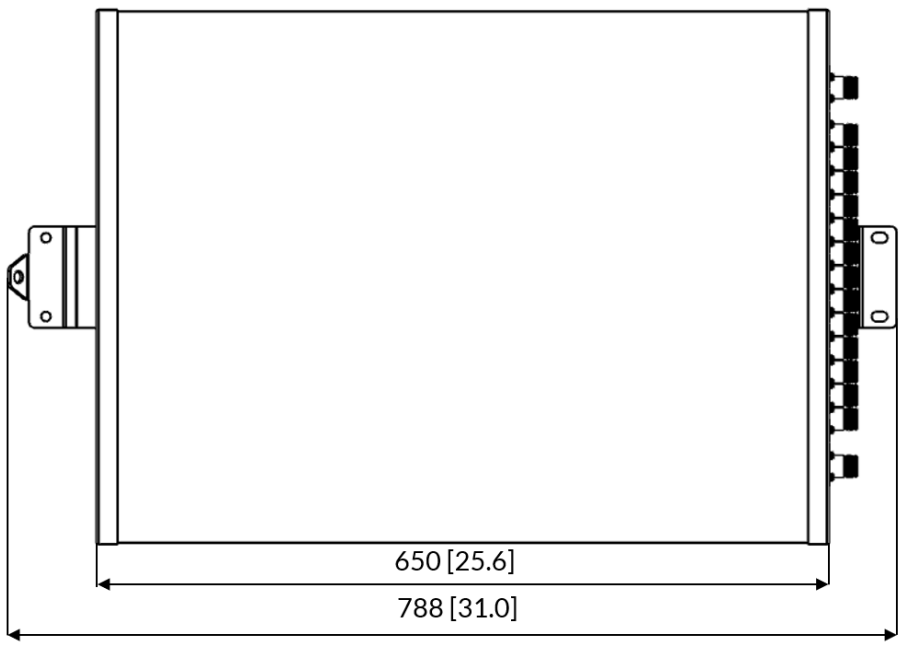
TECHNICAL SPECIFICATION

Mechanical Illustration









TECHNICAL SPECIFICATION

Mounting Bracket Kit

CL-V-214 – Middle of Tapered Pole Mount Kit for Tri-Sector Configuration (Ordered separately).
Includes 1 x Set of Tri-sector Pole Brackets, 3 x Cable Shroud Covers and 3 x Top Cap Covers.

Mounting Kit Tilt Range	Mounting Kit Material	Mounting Kit Pole Diameter
0°	Stainless Steel	63mm-168mm (2.5"-6.6")

Mounting Bracket Kit

CL-V-215 – Top of Pole Mount Kit for Tri-sector Configuration (Ordered separately).
Includes 1 x Center Pole Structure and Tri-sector Brackets, 1 x Pole Bracket, 3 x Cable Shroud Covers and 3 x Top Cap Covers.

Mounting Kit Tilt Range	Mounting Kit Material	Mounting Kit Pole Diameter
0°	Stainless and Galvanized Steel	152mm-203mm (6" to 8")

TECHNICAL SPECIFICATION

Mounting Bracket Kit

CL-V-216 – Stood off from Pole Mount Kit for Tri-Sector Configuration (Ordered separately).
Includes 1 x Center Pole Structure and Tri-sector Brackets, 1 x Side Arm Bracket, 3 x Cable Shroud Covers and 3 x Top Cap Covers.

Mounting Kit Tilt Range	Mounting Kit Material	Mounting Kit Pole Diameter
0°	Stainless and Galvanized Steel	152mm-254mm (6" to 10")

AWL4001

TECHNICAL SPECIFICATION

Ordering Info

Details

Sector Panel Configurations

The AWL4001 refers to a single panel antenna. The customer may order one, two, or three of the AWL4001 for Single-sector, Dual-sector, and Tri-sector deployments, respectively. The mount bracket kit is ordered separately.

Fixed Tilt Options

This antenna can be ordered with different Fixed Electrical Tilt values for contiguous pairs of arrays in the same frequency band. That is, the downtilt of array Y_1 is equal to Y_2, the downtilt of array Y_3 is equal to Y_4, the downtilt of array P_1 is equal to P_2, which is repeated across all arrays.

The Order Code is structured as ' AWL4001-Y ***abc***P***xyz*** ' in which the Fixed Tilt values is recorded in degrees as:

a=Y_1=Y_2, ***b***=Y_3=Y_4, ***c***=Y_5=Y_6, ***x***=P_1=P_2, ***y***=P_3=P_4, ***z***=P_5=P_6.

Frequency Range	Fixed Tilt Options
1695-2690MHz	2°, 4°, 6°
3300-4200MHz	2°, 4°, 6°

Order Code - Antenna	Description
AWL4001-Y222P222-F	Fixed Tilt: $Y_{1,2}$=2°, $Y_{3,4}$=2°, $Y_{5,6}$=2°, $P_{1,2}$=2°, $P_{3,4}$=2°, $P_{5,6}$=2°, 4.3-10 Female Connectors
AWL4001-Y226P226-F	Fixed Tilt: $Y_{1,2}$=2°, $Y_{3,4}$=2°, $Y_{5,6}$=6°, $P_{1,2}$=2°, $P_{3,4}$=2°, $P_{5,6}$=6°, 4.3-10 Female Connectors

Order Code - Accessories	Description
AW1012-2-FM-FM	RF Jumper Cable, connector types 4.3-10 (m) / Nex10 (m), length 2 metres (6'6")
AW1012-2-FM-NM	RF Jumper Cable, connector types 4.3-10 (m) / N-Type (m), length 2 metres (6'6")
AW1014-2-FM-TM	RF Jumper Cable, connector types 4.3-10 (m) / Nex10 (m), length 2 metres (6'6")

Enquiries

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