DATASHEET

AWL4002

Common Name 20 Port (4P/12P/4P) Multiband Curved Panel Antenna

Frequency	Ports	Tilt	Gain	Beamwidth
617-894MHz	4	Fixed	7.8	75°
1695-2690MHz	12	Fixed	13.0	65°
3300-4200MHz	4	Fixed	14.7	62°

PRODUCT INFORMATION

This product is a flexible anntenna platform that offers multiple ports across multiple bands. The antenna has four ports covering Low Band 617 – 894 MHz, 12 ports covering Lower Mid Band 1695 – 2690 MHz and four ports covering Upper Mid Band 3300 – 4200 MHz. The high port count enables multiple operators to achieve high data rates across LTE and 5G NR bands.

A single curved panel serves as a single sector. Three panels mounted around a center pole forms into a concealed canister with a 22 inch diameter. This canister can be configured with external combiners to create different azimuth pattern profiles. There are a number of mounting options 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 multiple 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 multiple bands for multiple operators
- Fits within 650mm (25.6") height restriction.
- Three curved panels around a pole form a canister.
- Pole-top and side-arm mounting options
- High port count enabling multiple operators
- Compact design - Low visual impact.
- Different fixed tilt configurations.

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

AWL4002

TECHNICAL SPECIFICATION

Electrical Specifications			Low Band			Lower Mid Band				Upper Mid Band		
Connector		-	4 Ports			12 Ports				4 Ports		
Frequency Range		MHz	617-703	703-788	788-894	1695-1995	1920-2170	2170-2500	2500-2690	3300-3550	3550-3800	3800-4200
Polarisation		Degree	+/- 45° Slant Linear									
Gain	Basta	dBi	8.1	7.8	7.3	11.8	12.2	13.2	13.2	14.2	14.7	15.0
	Max	dBi	8.6	8.3	7.8	12.3	12.7	13.7	13.7	14.7	15.2	15.5
Azimuth Beamwidth		Degree	69	76	80	65	69	66	70	63	62	61
Azimuth Beam Squint		Degree <	5	5	5	5	5	5	5	5	5	5
Elevation Beamwidth		Degree	78	79	80	28	25	22	19	15.5	14.5	13.5
Electrical Downtilt		Degree	0 degree Fixed Tilt only			2, 4, or 6 degree Fixed Tilt Options				2, 4, or 6 degree Fixed Tilt Options		
Electrical Downtilt Deviation		Degree <	5			2				1.5		
Impedance		Ohms	50									
VSWR		NA <	1.5			1.5				1.5		
Return Loss		dB >	14			14				14		
Isolation		dB >										
Intraband Isolation		dB >	25			25				25		
Network-to-Network Isolation		dB>	28			28				28		
Interband Isolation		dB>	28			28				28		
Passive Intermodulation		dBc <	-153			-153				-153		
Cross Polar Discrimination		dB >	16			16				16		
Maximum Effective Power Per Port		W	150			150				100		

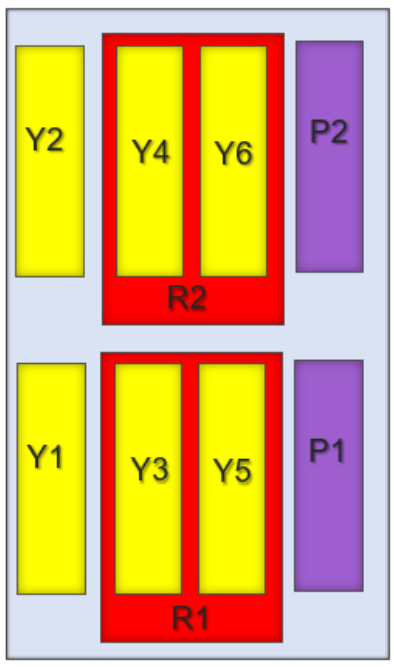
ALPHA WIRELESS

AWL4002

TECHNICAL SPECIFICATION

Mechanical Specifications		
Dimensions	mm (in)	650 (25.6) x 475 (18.7) x 180 (7.1) - Antenna
Volume	l (ft^3)	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 Position Quantity	-	20 (4 Ports Low Band, 12 Port Lower Mid Band, 4 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.

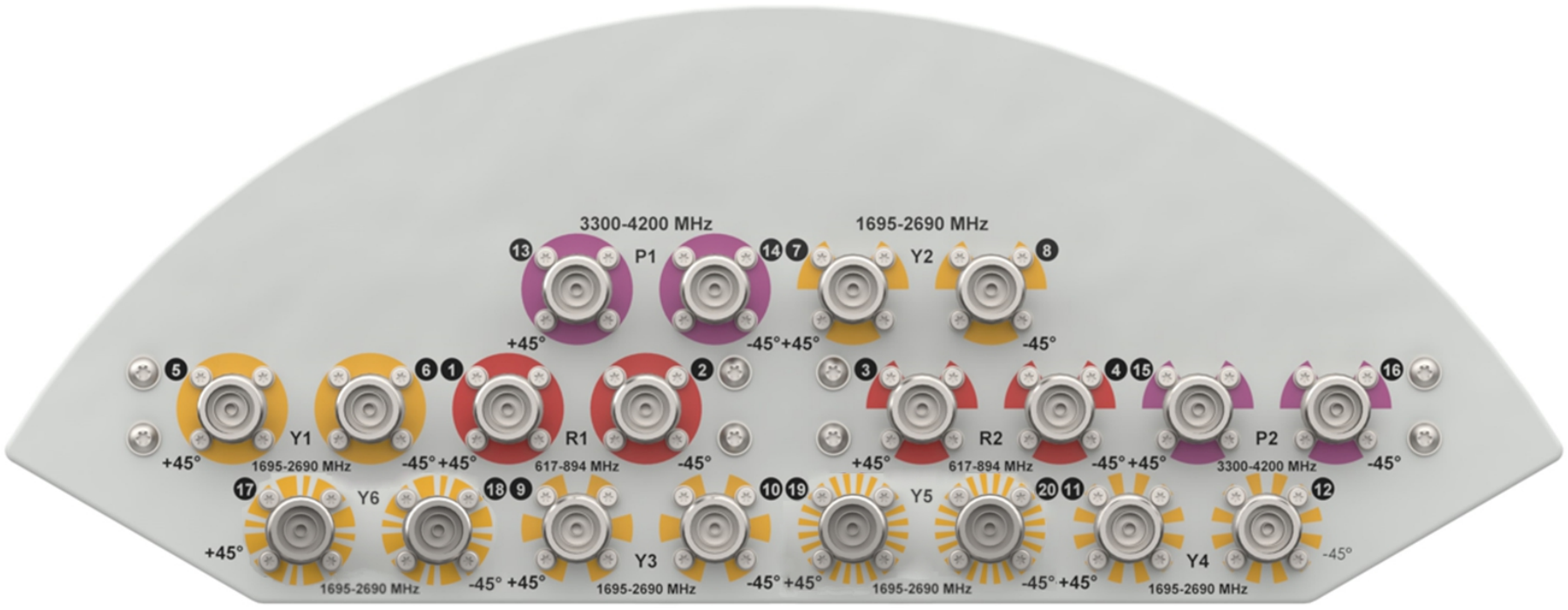
Array	Frequency MHz	Ports
R1	617 – 894	1 – 2
R2	617 – 894	3 – 4
Y1	1695 – 2690	5 – 6
Y2	1695 – 2690	7 – 8
Y3	1695 – 2690	9 – 10
Y4	1695 – 2690	11 – 12
Y5	1695 – 2690	13 – 14
Y6	1695 – 2690	15 – 16
P1	3300 – 4200	17 – 18
P2	3300 – 4200	19 – 20

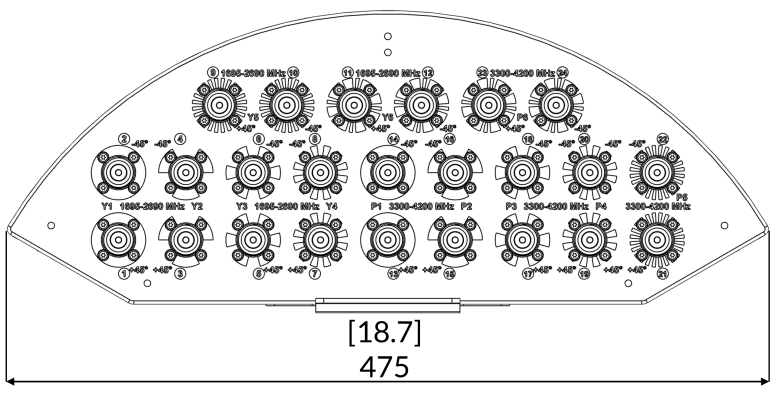
ALPHA WIRELESS

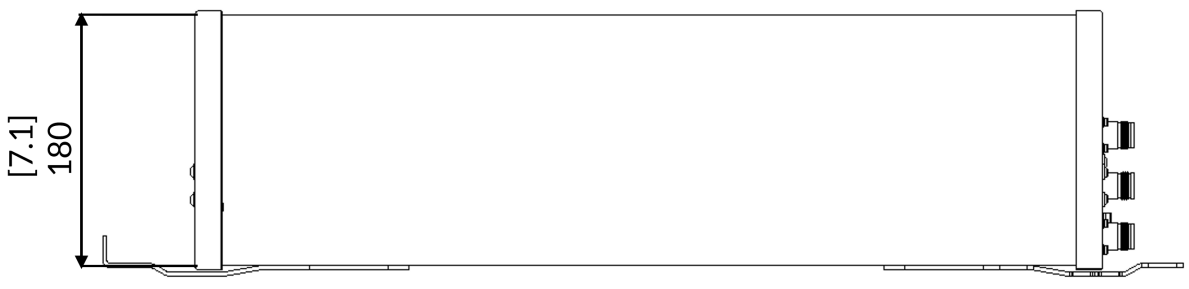
AWL4002

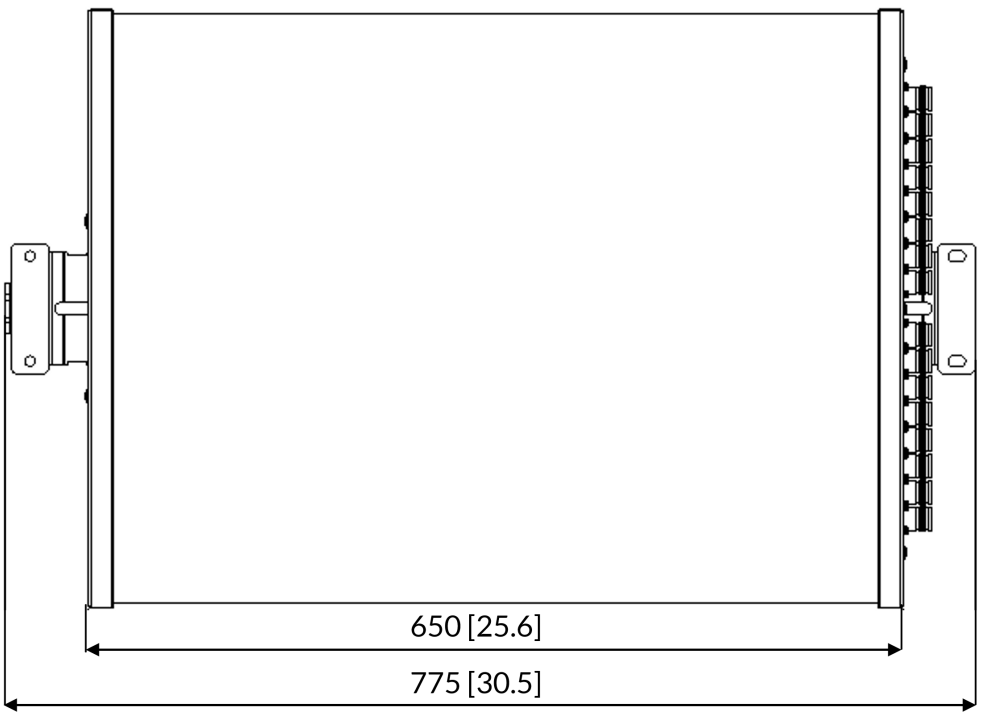
TECHNICAL SPECIFICATION

Mechanical Illustration





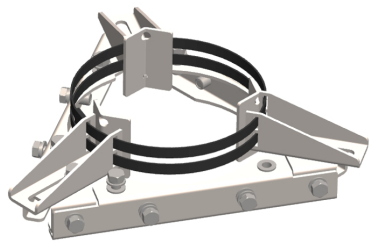


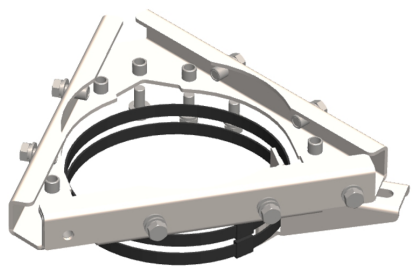


TECHNICAL SPECIFICATION

Mounting Bracket Kit

CL-V-222 –Pole Mount Kit for Tri-Sector Configuration (Ordered separately).





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

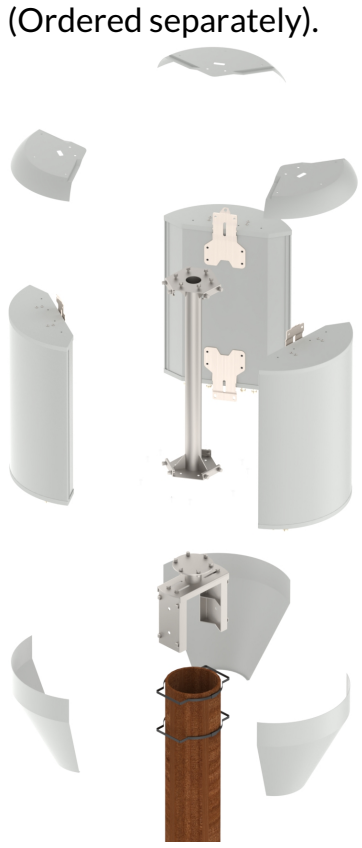
CL-V-214 – Middle of Tapered Pole Mount and Shroud Kit for Tri-Sector Configuration (Ordered separately).

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

TECHNICAL SPECIFICATION

Mounting Bracket Kit

CL-V-215 – Top of Pole Mount Kit and Shroud Kit for Tri-sector Configuration (Ordered separately).



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

CL-V-216 – Stood off from Pole Mount and Shroud Kit for Tri-Sector Configuration (Ordered separately).

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

AWL4002

TECHNICAL SPECIFICATION

Ordering Info

Sector Panel Configurations

The AWL4002 refers to a single panel antenna. The customer may order one, two, or three of the AWL4002 for Single-sector, Dual-sector, and Tri-sector deployments, respectively. The mount bracket and shroud kit are ordered separately.

Fixed Tilt Options

This antenna can be ordered with different Fixed Electrical Tilt values for each frequency band.
The Order Code is structured as 'AWL4002-R**x**Y***y***P**z** ' in which **x, y,** and **z** specify the Fixed Electrical Tilt options for each frequency band.

Ordering Information Select from the following order codes.

Electrical Tilt Options For Each Band			**Order Code**
617-894MHz	1695-2690MHz	3300-4200MHz	
0°	2°	2°	AWL4002-R0Y2P2-F
0°	2°	4°	AWL4002-R0Y2P4-F
0°	2°	6°	AWL4002-R0Y2P6-F
0°	4°	2°	AWL4002-R0Y4P2-F
0°	4°	4°	AWL4002-R0Y4P4-F
0°	4°	6°	AWL4002-R0Y4P6-F
0°	6°	2°	AWL4002-R0Y6P2-F
0°	6°	4°	AWL4002-R0Y6P4-F
0°	6°	6°	AWL4002-R0Y6P6-F

Enquiries

Global Headquarters
Ashgrove Business Centre,
Ballybrittas, Portlaoise,
R32 DT0A, IRELAND
sales@alphawireless.com
+353 57 86 33847

North America
7301 W. 129th Street, Suite 150,
Overland Park,
KS 66213, USA
sales@alphawireless.com
+1 913 279 0008

Australia
3/76 Regentville Rd,
Jamisontown,
NSW 2750, AUSTRALIA
sales@alphawireless.com
+ 61 2 4504 8212

DISCLAIMER
The information in this document is provided solely regarding Alpha Wireless products. The information is not a guarantee of performance or characteristics. Alpha Wireless reserves the right to modify, change, amend, improve or make corrections to this document and its products, at any time and its sole discretion without prior written consent or notice. No license to any intellectual property rights is granted or implied under this document. Alpha Wireless disclaims warranties and liabilities of any kind including non-infringement of intellectual property rights of any third party.
© Alpha Wireless Limited 2024