DATASHEET

AWT2-3910

Common Name 18 Port (2P/4P x 3) 1.9M Low Band, Mid Band Modular Tri-Sector, T2 Series

Frequency	Ports	Tilt	Gain	Beamwidth
698-960MHz	6	eRET	15.0	69°
1695-2690MHz	12	eRET	17.8	65°

PRODUCT INFORMATION

Part	Part Name	Description
1	Base Stack	This is the antenna stack supplied with the AWT2-3910. There is a Mount Plate located on the bottom of the Base Stack to attach to the Monopole.
2	Extension Stack	This antenna stack is not supplied with the AWT2-3910. It can be bought at a later date and mounted on top of the Base Stack if additional capacity is required

The Modular Tri-Sector T2 Series is a flexible antenna platform designed for Streetwork deployments. The AWT2 Platform is made up using discrete parts. The AWT2-3910 consists of two modular antenna stacks which are detailed in the table below:

Stack Type	Frequency Bands	Ports per Stack
Base Stack	698-960MHz 1695-2690MHz	6 12
Extension Stack	3300-4200MHz	24 +3

Each stack is made up of three panels that are positioned at 0°, 120° and 240° in the Azimuth plane. These individual panels are replaceable in the field for upgrade or maintenance purposes.

Important: The Alpha Wireless AWT2 series can only support a single Base Stack and a single Extension Stack. The Alpha Wireless AWT4 series can support a single Base Stack and up to three Extension Stacks.

APPLICATION

Sector antennas support multiple antennas into one attractive package. These canisters deliver an elegant macro solution for pole-top, rooftop and streetworks applications. Alpha Wireless produces one of the smallest diameter canisters in the marketplace.

STANDARD & CERTIFICATIONS

Certification	BS EN ISO 9001:2015

RoHS COMPLIANT

CE

FEATURES

- The AWT2 Series supports up to two modular stacks.
- Field upgradable sectors without decommissioning the other sectors.
- Three sector canister with sectors orientated at 0°, 120° and 240° in the Azimuth Plane
- 698-960MHz x 2 Ports per sector
- 1695-2690MHz x 4 Ports per sector
- 3300-4200MHz x 8 Ports per sector with Beamforming capability
- Beamforming sectors have half lambda spacing between Radiator Columns.
- 698-960MHz tilt range T2° - T12°.
- 1695-2690MHz tilt range T2° - T12°.
- 3300-42000MHz tilt range T0° - T10°.
- Low PIM performance to reduce interference.

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

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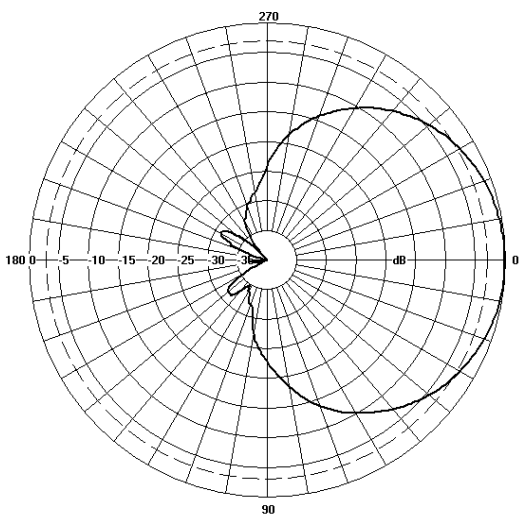
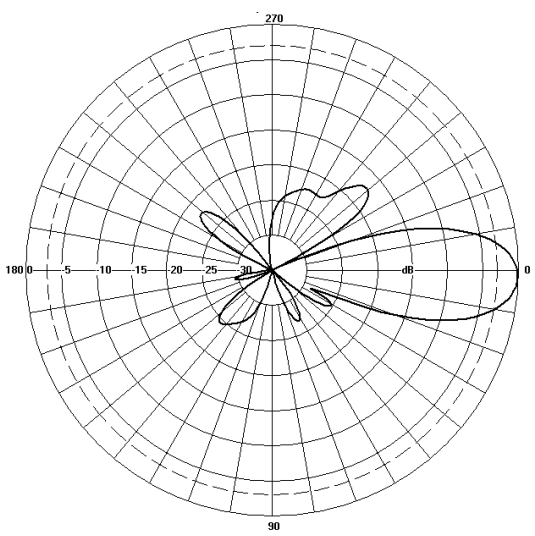
TECHNICAL SPECIFICATION

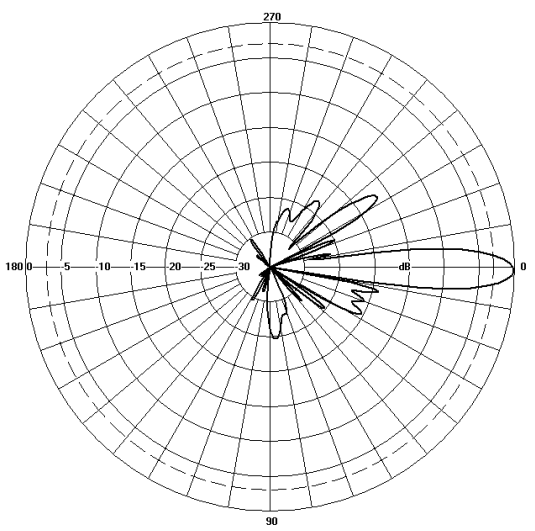
Electrical Specifications			Low Band			Mid Band		
Frequency Range		MHz	698-790	790-890	890-960	1710-1920	1920-2170	2300-2690
Polarisation		Degree	+/- 45° Slant Linear					
Gain	Basta	dBi	13.8 ±0.5	14.5±0.5	14.5±0.5	16.8 ±0.5	17.1 ±0.5	17.3 ±0.5
	Max	dBi	14.3	15.0	15.0	17.3	17.6	17.8
Azimuth Beamwidth		Degree	72°	69°	67°	63°	62°	66°
Azimuth Beam Squint		Degree<	5°			5°		
Elevation Beamwidth		Degree	16.2°	14.6°	13.4°	7.2°	6.5°	5.5°
Electrical Downtilt		Degree	T2° - T12°			T2° - T12°		
Electrical Downtilt Deviation		Degree<	1°	1°	1°	1°	1°	1°
Impedance		Ohms	50					
VSWR		<	1.5					
Return Loss		dB>	14					
Isolation		dB>	25	25	25	25	25	25
Passive Intermodulation		dBc<	-150	-150	-150	-150	-150	-150
Upper Sidelobe Suppression, Peak to 20°		dB>	15	15	15	15	15	15
Cross-Polar Discrimination		dB>	15	15	15	15	15	15
Max Power Per Port		W	300			250		

Radiation Pattern Files





Low Band



Mid Band

Azimuth	Elevation

For radiation pattern files, please login at www.alphawireless.com

ALPHA WIRELESS

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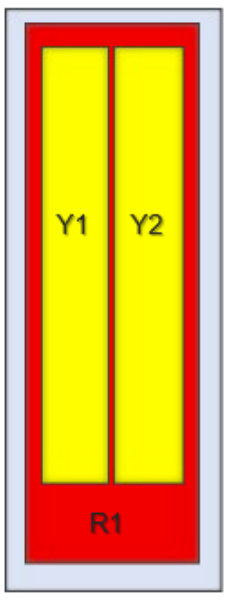
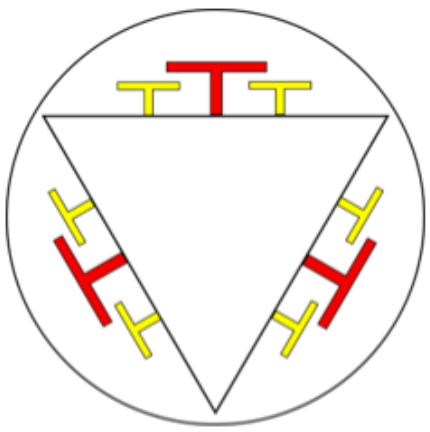
TECHNICAL SPECIFICATION

Mechanical Specifications		
Size of Crate 1 - Base Stack and Interface (LxWxD)	mm (in)	2100 (82.6) x 570 (22.4) x 628 (24.7)
Shipping Weight of Crate 1 - Base Stack	kg (lb)	149 (327.8)
Weight of Base Stack	kg (lb)	96.5 (212.3)
Weight of Extension Stacks	kg (lb)	74.5 (163.9)
Connector Type (Female)	-	4.3-10
Connector Position	-	Bottom
Connector Quantity	-	18 (6P Low Band, 12P Mid Band)
Windload Frontal (at Rated Wind Speed: 150km/h)	N (lbf)	640 (144)
Windload Lateral (at Rated Wind Speed: 150km/h)	N (lbf)	640 (144)
Survival Wind Speed	km/h (mph)	200 (125)
Radome Material	-	UV Stabilised ASA capped ABS
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





Array layout depicts one individual sector.
Note: Coloured box sizes do not represent antenna sizes.

Array	Frequency MHz	Ports	RET
R1	698 – 960	1 – 2	1
Y1	1710 –2690	3 – 4	2
Y2		5 – 6	3

Configuration	
698-960 MHz	One RET per array: R1 x 3 Sectors
1710-2690 MHz	One RET per array: Y1, Y2 x 3 Sectors
Total Quantity	Nine RET Motor Controllers
Location and Interface	
RET Controller Location	Inside antenna radome housing
RET Interface	Pair of AISG 8 Pin DIN connectors, one male, one female
RET Interface Quantity	Three pairs of AISG 8 Pin DIN connectors, one per sector
RET Interface Location	On connector plate located at bottom of antenna
Electrical	
Input Voltage	10 – 30V
Power Idle Mode	< 1W
Power Active Mode	< 10W
Protocol	3GPP / AISG 2.0

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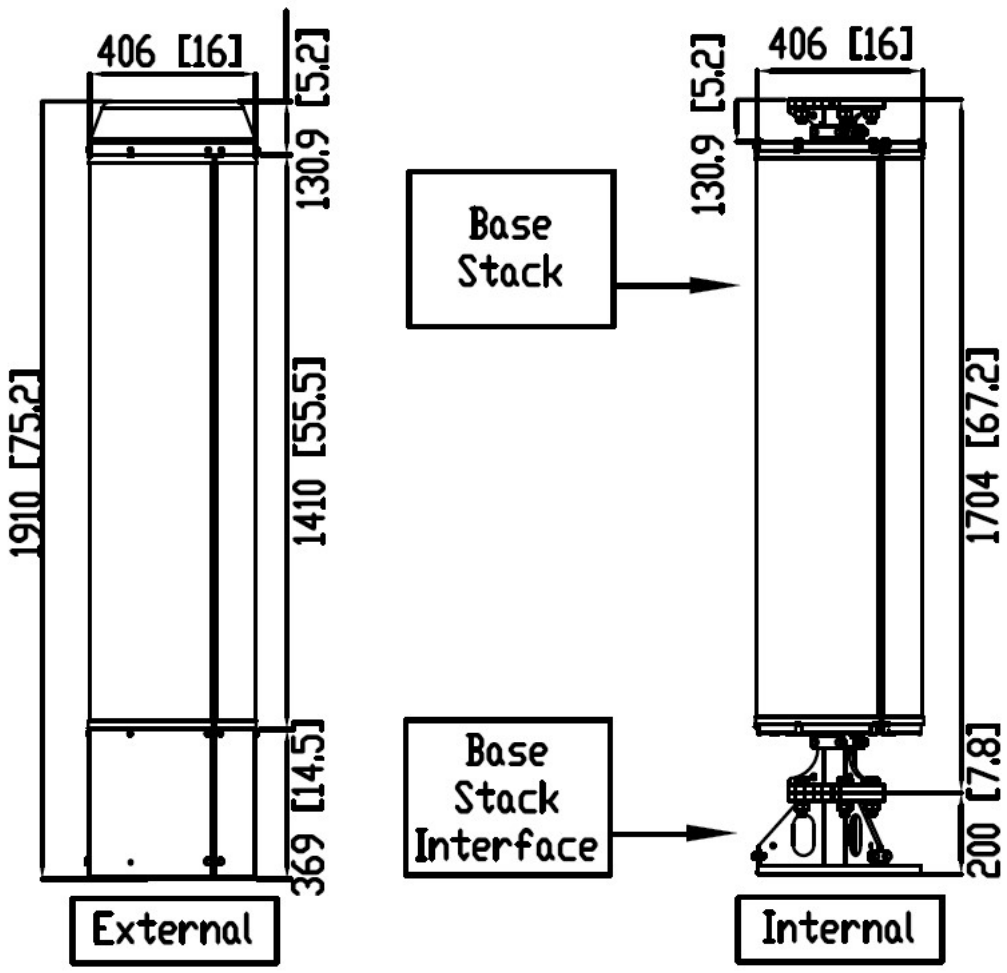
TECHNICAL SPECIFICATION

Mechanical Illustration



Description of Parts	
Base Stack	This contains the Antenna Sectors. Mounted onto the Base Stack Interface. The top of the Base Stack has a mounting flange onto which the Extension Stack is mounted.
Extension Stack	**Note:** The Extension Stack is not supplied with the AWT2-3910. It can be ordered separately. At the top of the Extension Stack there is a a mounting flange onto which an Active Antenna unit (AAU) can be mounted.
RF Jumpers Base Stack	Feeders from the Radio Cabinet feed directly into the connectors located at the bottom of the Base Stack.
RF Jumpers Extension Stack	RF Jumpers are routed behind the Base Stack Radomes.

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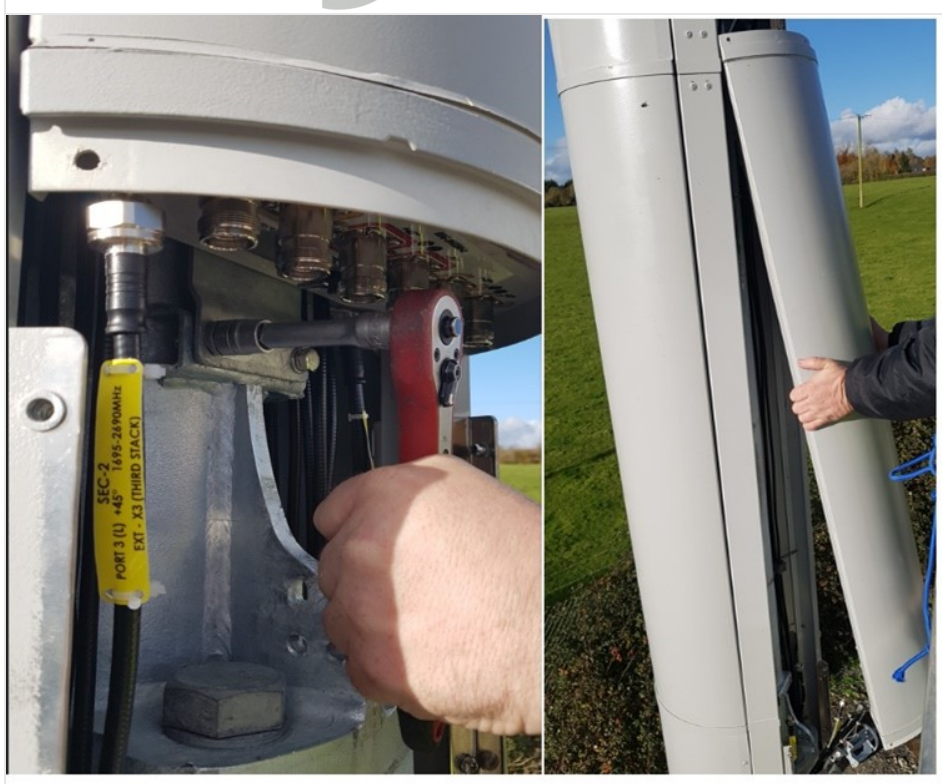
TECHNICAL SPECIFICATION

Tri-Sector Construction

Left Image showing one sector detached from each level of the 2 level assembly.
Each sector can be detached individually.
Right Image showing the single Internal Structure along with the Base Extension bolted onto the Base of the Internal Structure.



The sectors can be individually removed by undoing four bolts, two at the bottom and two at the top. The photo above left shows the two bolts securing the bracket at the bottom. The picture above right shows how the sector can be lifted off the internal structure and then replaced using the reverse process. Note The RF Jumper Cables and AISG Cables should be detached before removing the sector.

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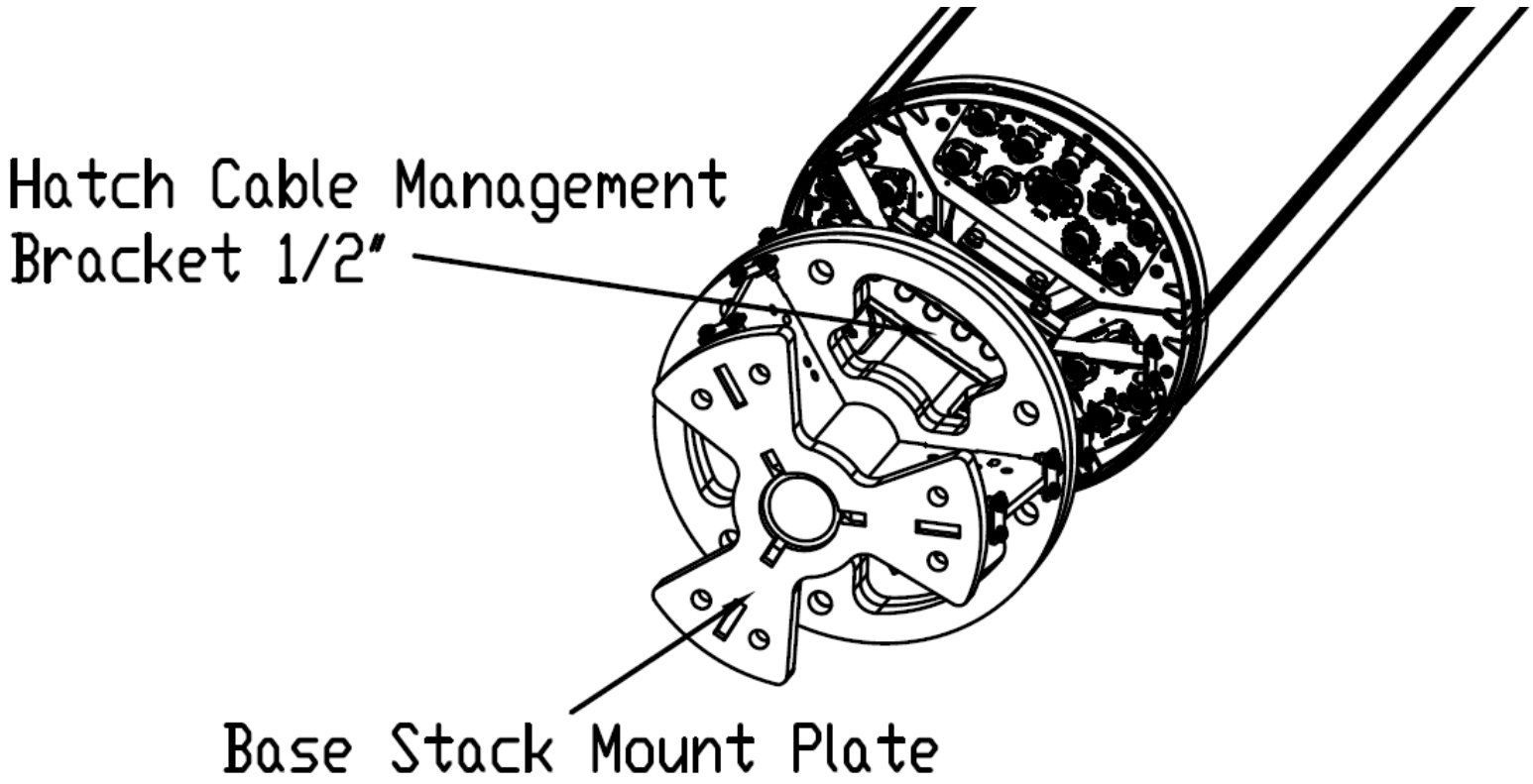
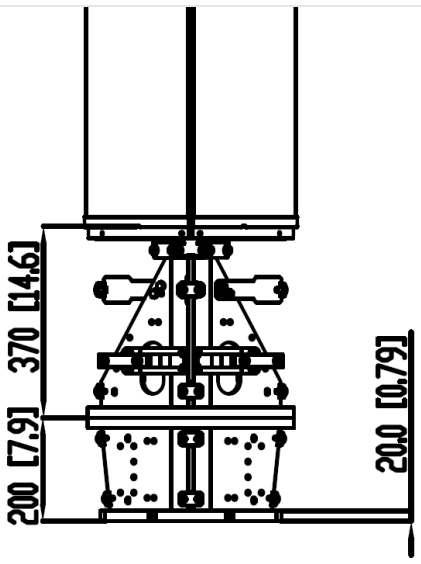
Cable Management



Quarter Inch RF Jumper Cables (4.3-10M - 4.3-10F) are routed from Sectors located in the upper extension stacks down to the bottom of the base stack. These are secured in the base with quarter inch cable clamps. There are cable clamps sized for 1/2" diameter cables positioned under the 1/4" cable clamp to secure cables coming up from the cabinet below. The intention is for the two cable diameters to be joined between the cable clamps.



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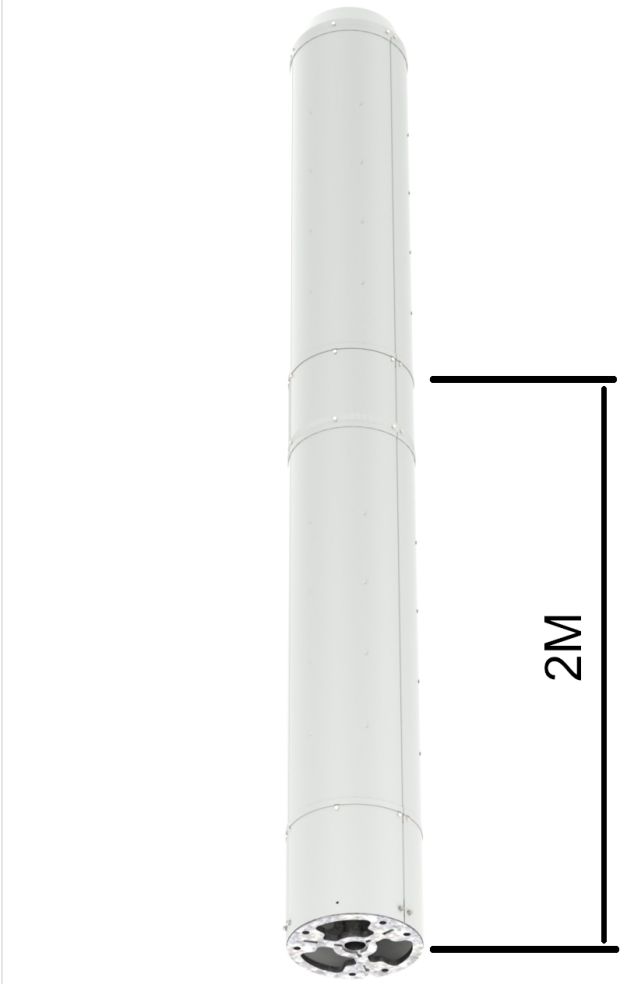
TECHNICAL SPECIFICATION

RF Jumper Cables



Part Number: AW1014-2-FM-FF-NB
Description: Jumper 4.3-10M – 4.3-10F, 2M, ¼" Super Flexible PE (S)
Quantity: 18

Active Antenna Unit

An Active Antenna Unit (AAU) can be mounted on top of the Extension if required. A bracket will need to be designed and manufactured to fit the particular AAU selected by the customer. A drawing of the top plate can be provided upon request.

Power and Fibre connections can be routed between the base of the antenna and the top AAU mounting through the same channels used to route the RF Jumper Cables. The Power and Fibre cables can be routed through the Cable Clamps located in the channels alongside the RF Jumper Cables.

TECHNICAL SPECIFICATION

RET Section

	Each RET Motor is located at the bottom of each antenna sector as part of the Connector Plate. Each RET motor can be accessed individually and if necessary replaced individually by releasing two screws and sliding out the RET Motor Cartridge. A new RET Motor Cartridge can be slid back in as replacement.

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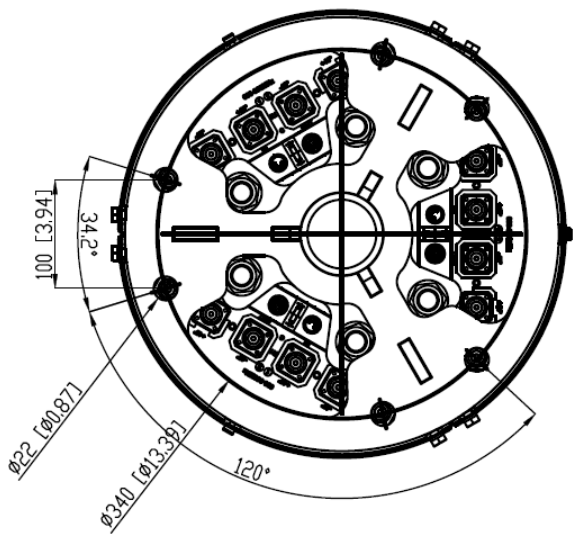
TECHNICAL SPECIFICATION

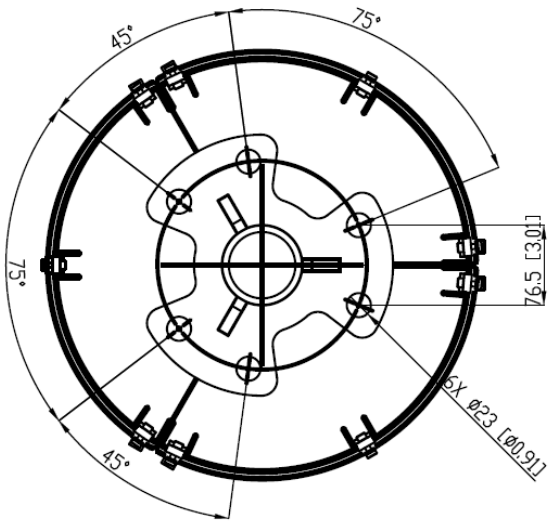
Mounting Bracket Kit

3 inch Bracket description

Bottom view



Top view



Mounting Kit Tilt Range	Mounting Kit Material	Mounting Kit Pole Diameter
0	Galvanized Steel	N/A

Ordering Info

Order Code - Antenna	Description
AWT2-3910	Enclosed Remote Electrical Tilt (eRET) with 4.3-10 Connectors.
Order Code - Accessories	**Description**
AW1012-2-FM-FM	RF Jumper Cable, connector types 4.3-10 (m) / 4.3-10 (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")
PADC 1000	Portable AISG Controller
AW0326-3-PM-PF	AISG Jumper Cable Lengths 3 metres (9' 10")
AW0326-10-PM-PF	AISG Jumper Cable Lengths 10 metres (32' 9")
AW0326-25-PM-PF	AISG Jumper Cable Lengths 25 metres (82')
AW0326-50-PM-PF	AISG Jumper Cable Lengths 50 metres (164')

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