

QuadPro

Directional 4x4 MIMO Panel Antenna

Designed by WAVEFORM in the USA

SKU: ANT-4-660-PA-SM



600 to 6000 MHz



4G and 5G Support



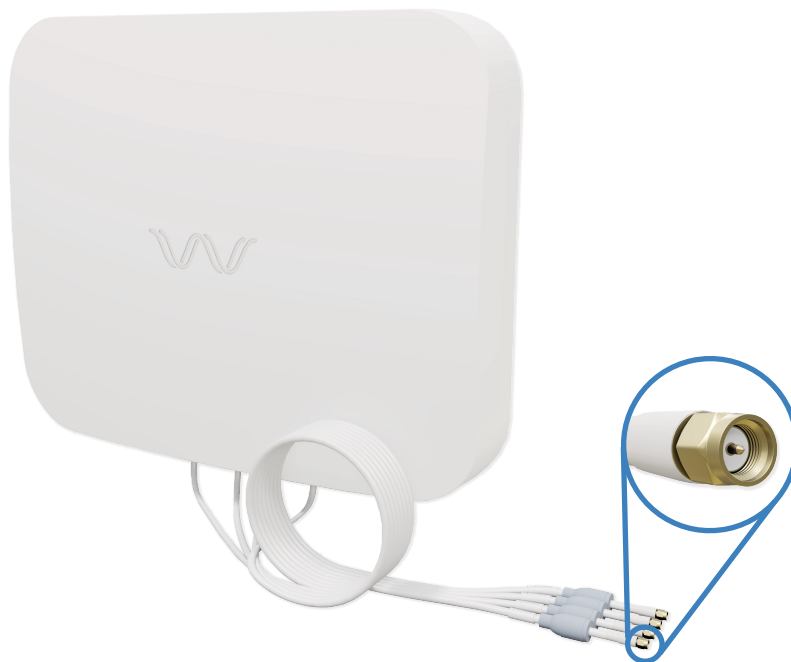
Up to 9.1 dBi Gain



Outdoor Rated



SMA-Male Connectors,
with integrated weatherproofing



Specifications:

Electrical:

Freq. Range	600-900 MHz	1700-2700 MHz	3500-4200 MHz	5000-6000 MHz
Gain (Avg. Peak)	5.5 dBi ± 0.6 dB	7.7 dBi ± 0.5 dB	6.8 dBi ± 0.6 dB	7.9 dBi ± 0.5 dB
Azimuth Beamwidth	110 ± 10 deg	70 ± 10 deg	130 ± 20 deg	165 ± 10 deg
Elevation Beamwidth	155 ± 15 deg	70 ± 10 deg	145 ± 10 deg	145 ± 20 deg
Front-to-Back Ratio	> 10 dB	> 17 dB	> 14 dB	> 14 dB
VSWR	≤ 2.8	≤ 1.5	≤ 1.5	≤ 1.7
MIMO Isolation (Peak)	41.8 dB	42.1 dB	53.0 dB	85.3 dB
Efficiency (Peak)	80 %	76 %	69 %	72 %
Input Imped.	50 Ω			
Polarization	4x4 Cross-Polarized, ± 45 deg			
Antenna Type	Directional			
Power Rating	50 W (Peak)			

Environmental:

Protection Class	IP65
Impact Rating	IK08
Rated Wind Velocity	200 kph (125 mph)
UV Rated?	Yes
Operating Temperature	-40 to +65 deg C (-40 to + 150 deg F)
Lightning Protection	DC Ground

Mechanical (Antenna):

Antenna	Radome Color	White (RAL 9003)
	Radome Material	ASA (UV Stabilized)
	Dimensions (w x h x d)	38.8 x 31.0 x 7.8 cm (15.3 x 12.2 x 3.1 in)
Cable	Connector Type	SMA-Male Ultraflex RG141
	Jacket Color	White
	Jacket Material	TPE
	Length	1.0 m (3.3 ft)
	Bending Radius	22 mm (0.9 in) [Repeat] 40 mm (1.6 in) [Install]
Cable Boot	Material	Silicone Rubber
Net Weight	2.28 kg (5.03 lbs)	

Mechanical (Assembly):

Captive Bolt	Material	316 stainless steel
	Specification	M6
Nut	Material	316 stainless steel
	Specification	M6
Flat Washer	Material	316 stainless steel
	Specification	M6
Lock Washer	Material	316 stainless steel
	Specification	M6



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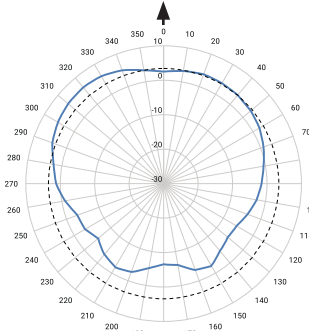
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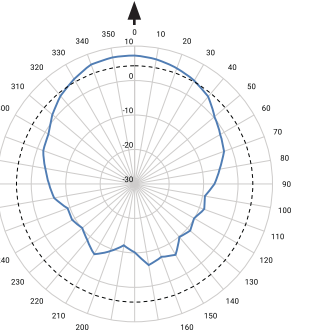
Directional 4x4 MIMO Panel Antenna

Designed by WAVEFORM in the USA

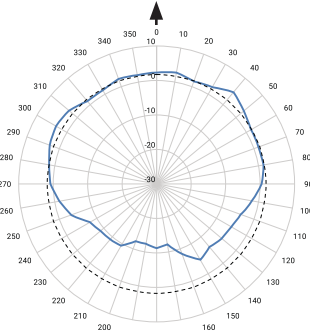
600-900 MHz



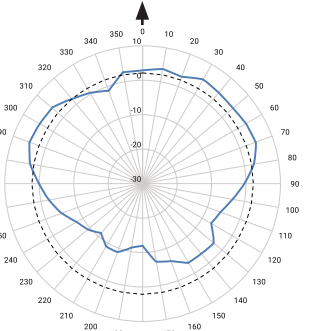
1700-2700 MHz



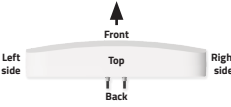
3500-4200 MHz



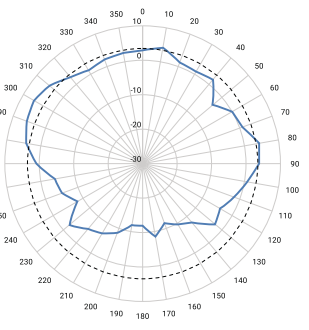
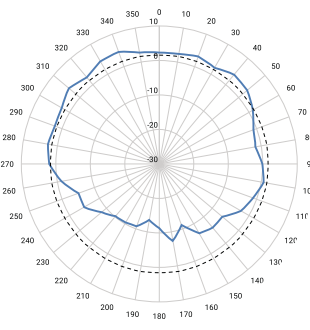
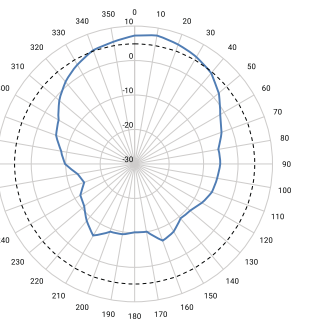
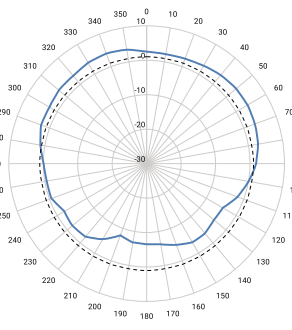
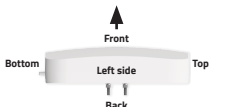
5000-6000 MHz



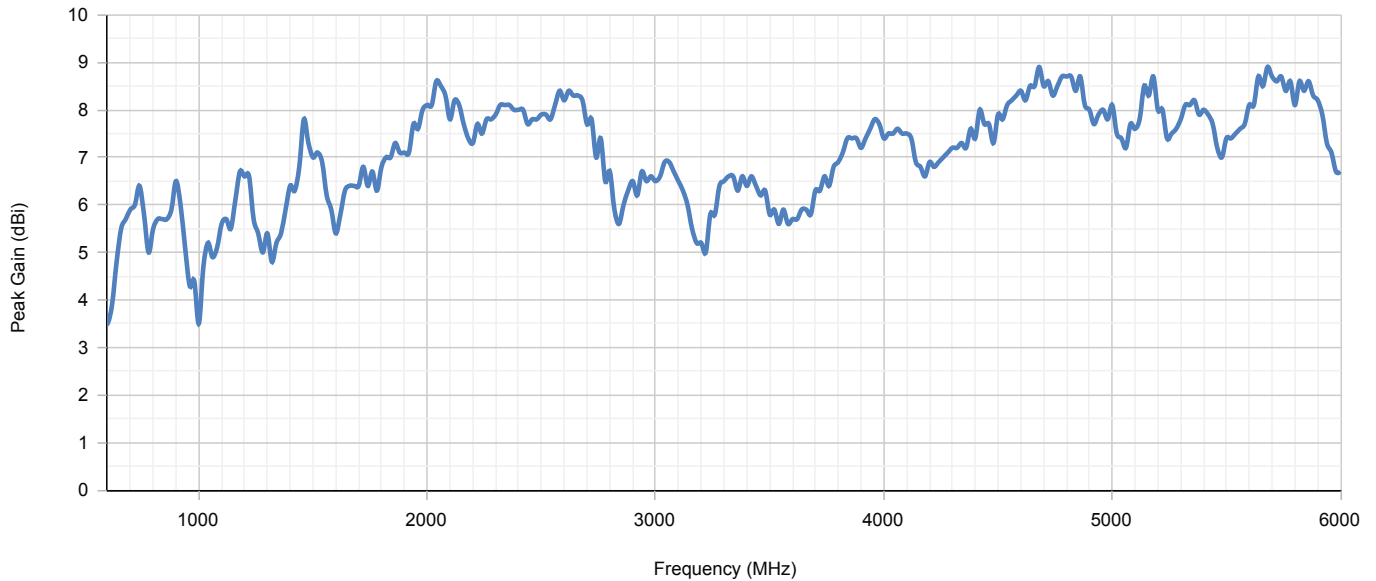
Azimuth Plane
"Top-down view"



Elevation Plane
"Side-on view"



Antenna Peak Gain (dBi) by Frequency (MHz)



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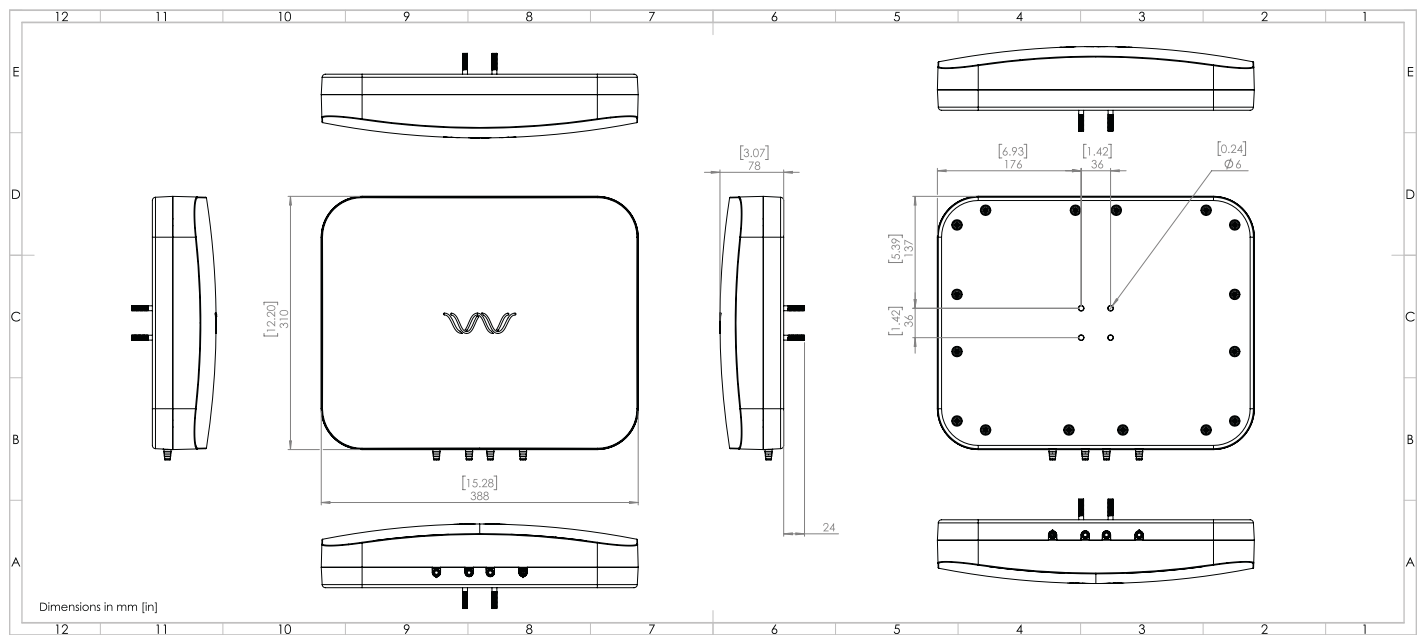
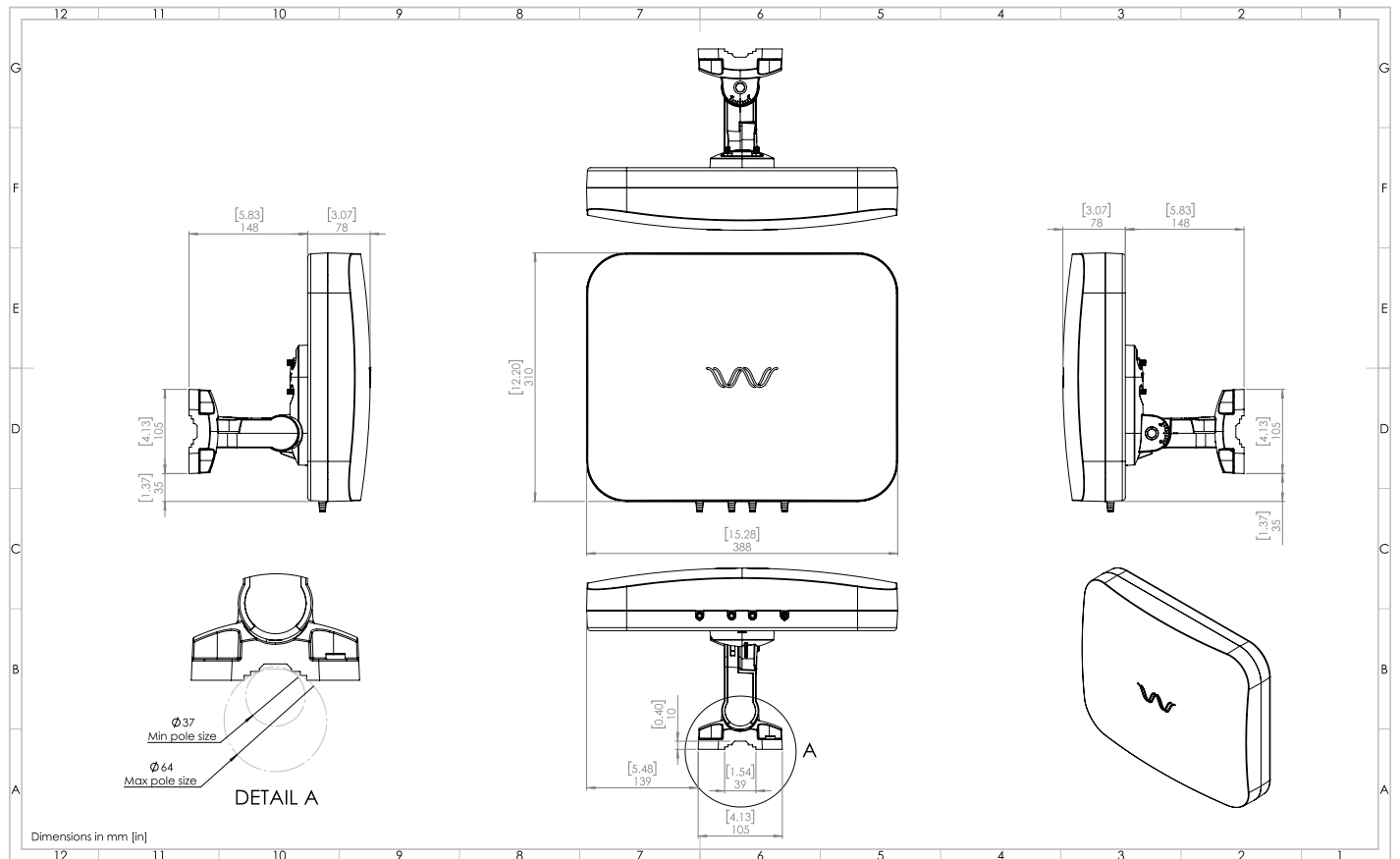
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Directional 4x4 MIMO Panel Antenna

Designed by WAVEFORM in the USA

Dimensions:



FlexMount

Designed by WAVEFORM in the USA

SKU: MNT-FM

Features:

- 80° of horizontal and vertical articulation
- Integrated 16 AWG ground wire
- Includes equipment for vertical pole, horizontal pole, and wall installations.

A 1x FlexMount Bracket



Antenna Bracket

Mounting Bracket

B 2x U-Bolt Assemblies



C 5x Screws & Wall Anchors*



D 5x Velcro Ties



E 1x Size-5mm Allen Wrench



G 1x Size-10mm Socket Wrench



F 1x Size-17mm Combination Wrench



Specifications:

Mechanical (FlexMount):

FlexMount	Articulation	80° - horizontal 80° - vertical	
	Color	White (RAL 9003)	
	Material	PA6+30%GF	
	Dimensions (l x w x h)	14.8 x 10.5 x 16.0 cm (5.8 x 4.1 x 6.3 in)	
Integrated Grounding Cable	Cable	Color	Red
		Jacket	PVC
		Inner Conduct.	Tinned Stranded Copper
		Diam.	3.5 mm (0.14 in)
		Gauge	16 AWG
		Length	29.0 cm (11.4 in)
Conn.	Type	Ring Terminal	
	Material	Steel	
	Spec.	M6 & M10	
Locking Bolt	Material	316 stainless steel	
	Specification	Hex-Socket; M6 x 30 mm (1.2 in)	
Net Weight	0.4 kg (0.9 lbs)		

Mechanical (Assembly):

U-Bolt	Material	316 stainless steel
	Dimensions (l x h x w)	M10; 75 x 135 x 60 mm (2.9 x 5.3 x 2.4 in)
	Supported Pole Diam.	64 mm (2.52 in) [Max] 37 mm (1.46 in) [Min]
Nut	Material	316 stainless steel
	Spec.	M10
Flat Washer	Material	316 stainless steel
	Spec.	M10
Lock Washer	Material	316 stainless steel
	Spec.	M10
Wall Screw	Material	5.8 grade steel
	Spec.	M10 x 60 mm (2.4 in)
Wall Anchor	Material	PA66
	Dimensions	50 x Ø 10.0 mm (2.0 x Ø 0.4 in)
Velcro Tie	Material	PP [Hooks], Nylon [Loops]
	Dimensions	150 mm (5.9 in)

Electrical (Grounding Cable):

Voltage Rating (AC)	300 V
---------------------	-------

Mechanical (Tools):

Combo. Wrench	Material	Drop forge steel
	Specification	Size-17mm
Allen Wrench	Material	Drop forge steel
	Specification	Size-5mm
Socket Wrench	Material	Drop forge steel
	Specification	Size-10mm

Environmental:

FlexMount	Protection Class	IP44
	Impact Rating	IK08
	Rated Wind Velocity	200 kph (125 mph)
	UV Rated?	Yes
	Operating Temperature	-40 to +80 deg C (-40 to +176 deg F)
	UV Rated?	Yes
Integrated Grounding Cable	ROHS Rated?	Yes
	Operating Temperature	-20 to +80 deg C (-4 to +176 deg F)

*Includes 1x spare



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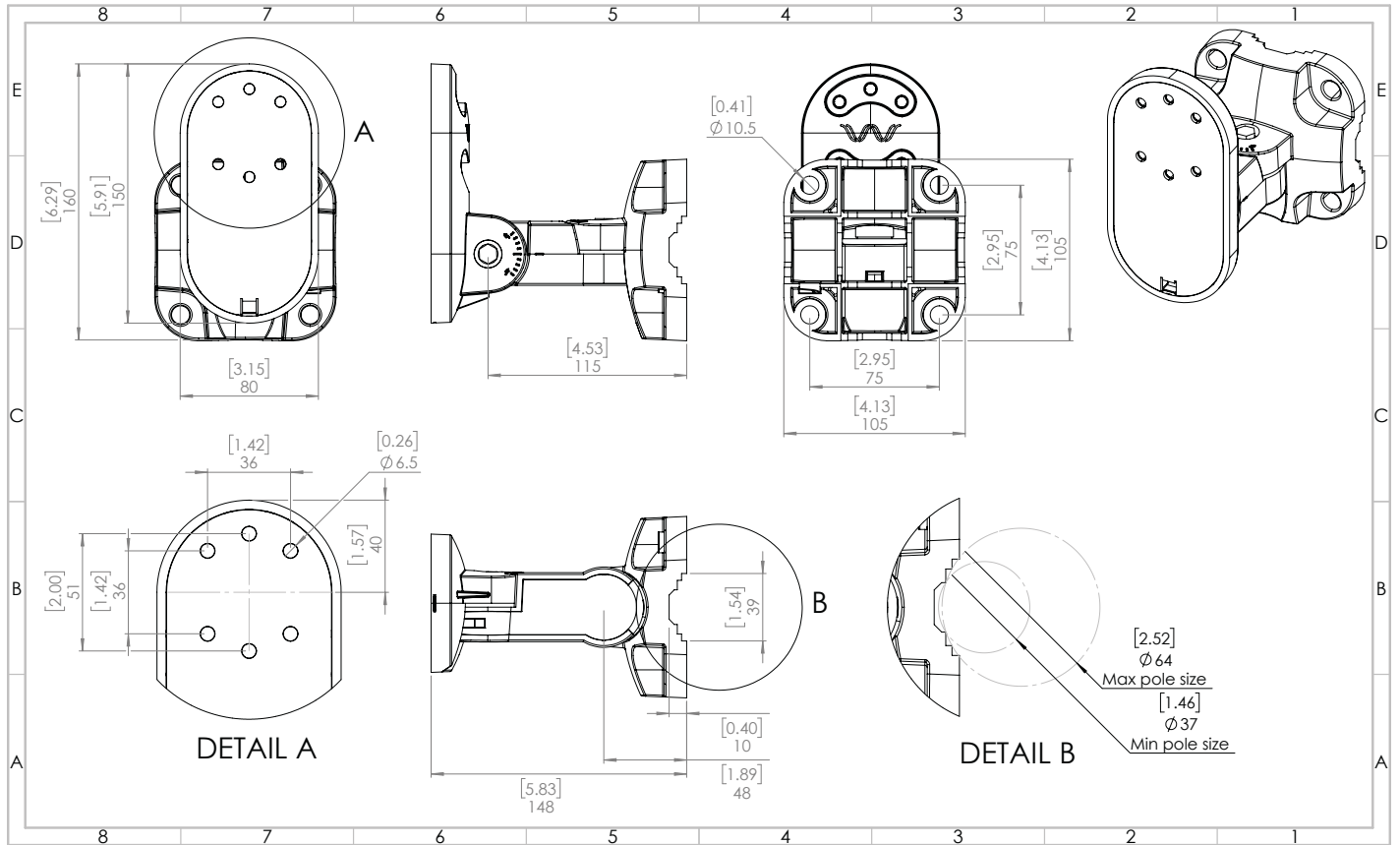
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FlexMount

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Dimensions:



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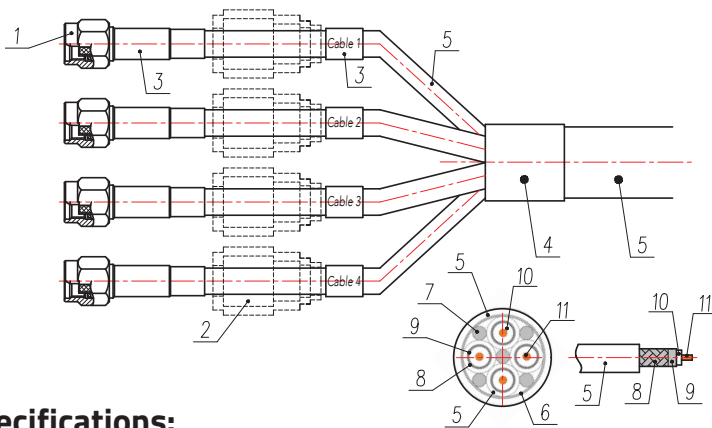
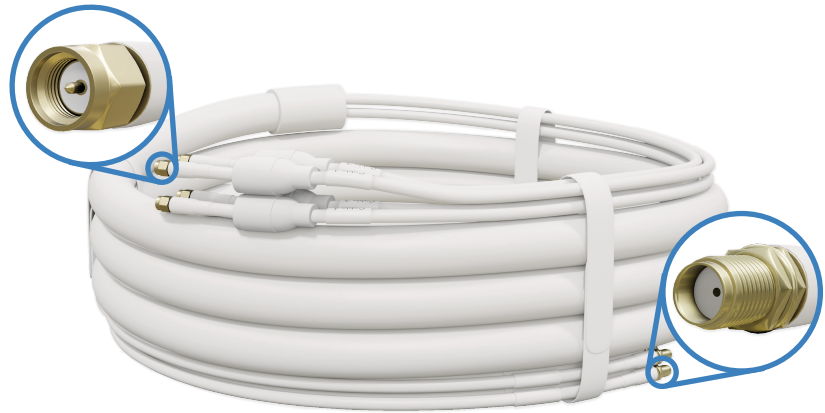
UltraFlex-Quad

Designed by WAVEFORM in the USA

SKU: 195Q-SFM-xx

Features:

- Four SMA-Female to SMA-Male ultraflex LMR195 cables grouped into one highly flexible cable.
- Integrated Weatherproof boots offer a fortified outdoor SMA connection.
- 0 MHz to 6000 MHz



#	Description	Material
1	SMA Body	Gold-Plated Brass
2	Weatherproof Boot	Silicone Rubber
3	Heatshrink	PVC
4	Cable Molding	Solid TPE
5	Cable Jacket (Group & Individ.)	TPE
6	Inter-cable Sheath	Clear PET
7	Inter-cable Filler	PP Lattice
8	Outer Conductor (#1)	Tinned Copper Braid
9	Outer Conductor (#2)	Bonded Aluminum Foil
10	Dielectric	PE Foam
11	Inner Conductor	Bare Copper

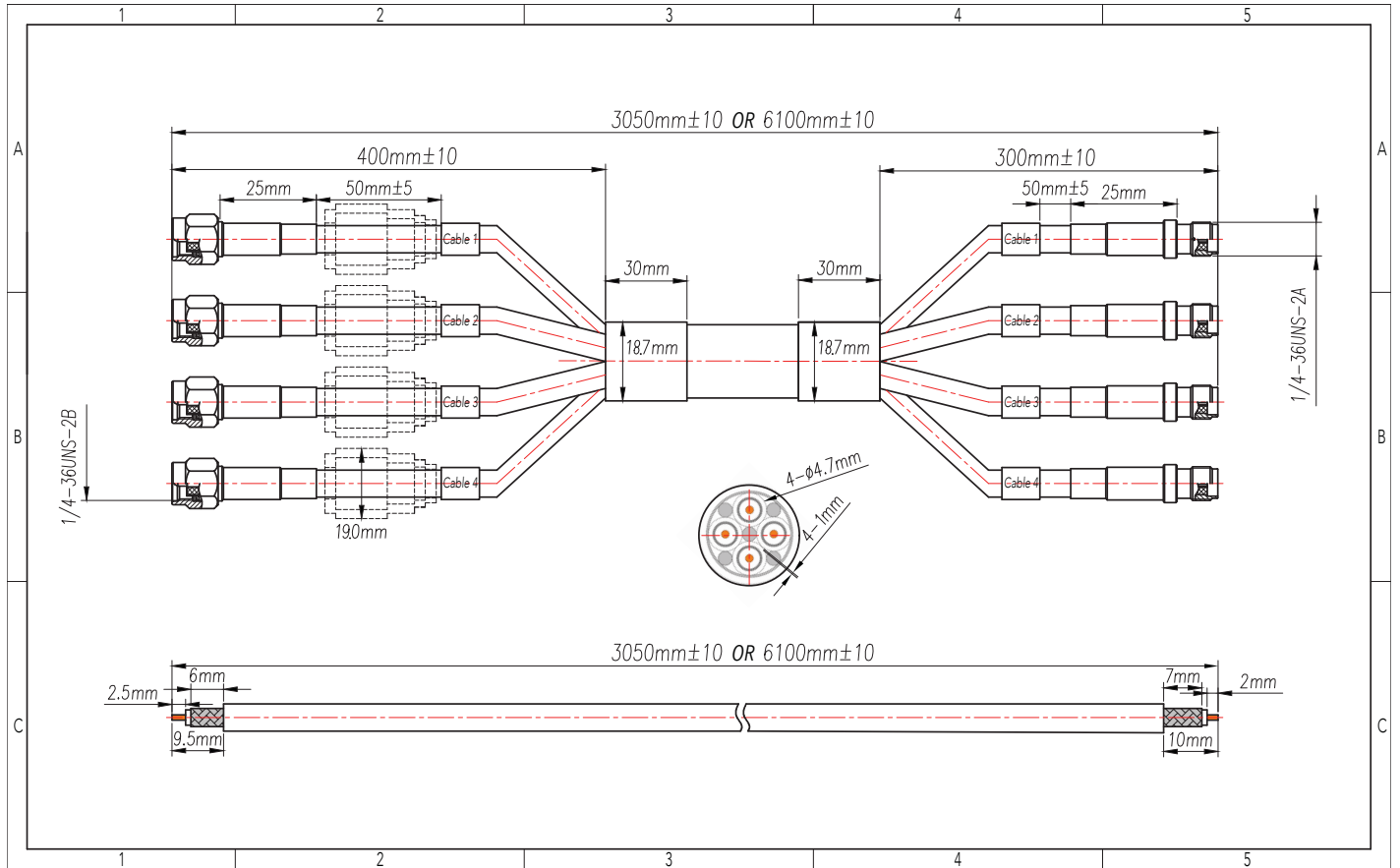
Specifications:

Electrical:		RF Attenuation (per 10 ft):		Mechanical:		
Input Impedance	50 Ω	600 MHz	0.9 dB	Cable (Whole)	Jacket Color	White (RAL 9016)
Frequency Range	0 - 6000 MHz	900 MHz	1.1 dB		Type	LMR195
VSWR	≤ 1.5	1800 MHz	1.6 dB		Length	3.05 m (10 ft) 6.10 m (20 ft)
Capacitance	83.3 pF/m	2100 MHz	1.7 dB		Diameter	13.4 mm (0.53 in) [Group] 18.7 mm (0.74 in) [Mold] 4.7 mm (0.19 in) [Indiv.]
Velocity	75 %	2500 MHz	1.9 dB			Bending Radius
Shielding	> 90 dB	3000 MHz	2.1 dB	Male Cable End	Connector Type	SMA-Male
Voltage	1000 V max (Working) 3000 V rms (Withstand)	4000 MHz	2.4 dB		Connector Diam.	7.9 mm (0.31 in)
	Contact Resist. (Cables)	$\leq 24.9 \Omega/\text{km}$ (Center) $\leq 16.1 \Omega/\text{km}$ (Outer)	5000 MHz		2.8 dB	Cable Length
Contact Resist. (Connectors)	$\leq 3.0 \text{ m}\Omega$ (Center) $\leq 2.5 \text{ m}\Omega$ (Outer)	6000 MHz	3.0 dB	Female Cable End	Connector Type	SMA-Female
	Insulation Resist.	$\geq 1000 \text{ m}\Omega$	Environmental: Protection Class IP66 (w/ Boots) Burial Rated? No UV Rated? Yes Operating Temperature -40 to +85 deg C (-40 to +185 deg F)		Connector Diam.	7.0 mm (0.28 in)
Power Rating	2.5 kW (Peak)	Net Weight			0.58 kg (1.28 lbs) [10 ft] 1.13 kg (2.50 lbs) [20 ft]	

UltraFlex-Quad

Designed by WAVEFORM in the USA

Dimensions:



Coax Window Entry Cable (Twin & Quad)

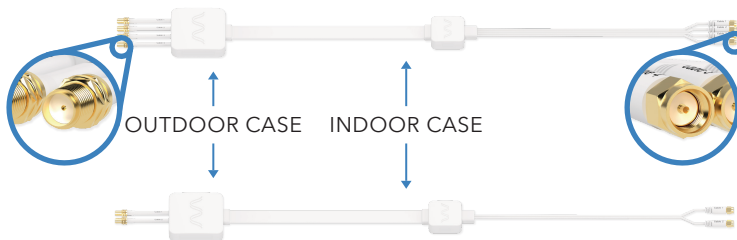
Designed by WAVEFORM in the USA

SKU: 113WP-SFM-x-V2

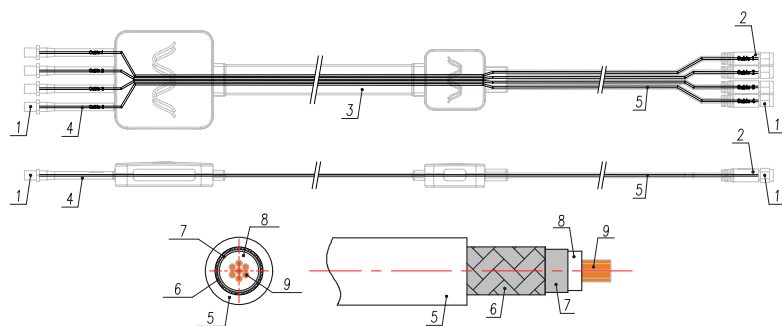
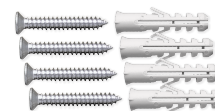
Features:

- Quad-cable or Twin-cable variants
- Ultra-thin 245 mm (9.6 in) section for placement in a window.
- Adjustable cable directions
- 0 MHz to 6000 MHz

A 1x Coax Window Entry Cable (Quad or Twin)



B 4x Wall Screws & Anchors



#	Description	Material
1	SMA-Bodies	Gold-Plated Copper
2	Heatshrink	PE & EVA
3	Cable Cover (Flat)	Silicone 70A
4	Cable Cover (Outdoor)	TPE
5	Cable Jacket (Indiv.)	FEP
6	Outer Conductor (#1)	Tinned Copper Braid
7	Outer Conductor (#2)	Bonded Aluminum Foil
8	Dielectric	FEP
9	Inner Conductor	Silver-Plated Copper

Specifications:

Electrical:

Input Impedance	50 Ω
Frequency Range	0 - 6000 MHz
VSWR	≤ 2.0
Capacitance	98.0 pF/m
Velocity	70 %
Shielding	> 100 dB
Voltage	300 V max (Working) 1500 V rms (Withstand)
Contact Resist. (Cables)	≤ 571 Ω/km (Center) ≤ 258 Ω/km (Outer)
Contact Resist. (Connectors)	≤ 3 mΩ (Center) ≤ 2 mΩ (Outer)
Insulation Resist.	≥ 5000 MΩ/km

RF Attenuation:

600 MHz	0.84 dB
900 MHz	0.95 dB
1800 MHz	1.3 dB
2100 MHz	1.4 dB
2500 MHz	1.5 dB
3000 MHz	1.7 dB
4000 MHz	2.1 dB
5000 MHz	2.5 dB
6000 MHz	2.8 dB

Mechanical (Cables):

Cable (Whole)	Jacket Color	White (P179-1C)
	Type	Low-loss RG1.13
	Length	70 cm (27.5 in)
Outdoor Cables	Conn. Type	SMA-Female
	Conn. Diam.	7.0 mm (0.28 in)
	Dimensions	50.0 x Ø 5.0 mm (2.0 x Ø 0.2 in)
Center Cable	Bending Radius	40.0 mm (1.6 in) [Repeat] 80.0 mm (3.1 in) [Install]
	Dimensions	245 x 20 x 2.3 mm (9.7 x 0.8 x 0.1 in)
Indoor Cables	Conn. Type	SMA-Male
	Conn. Diam.	7.9 mm (0.31 in)
	Dimensions	300 x Ø 4.0 mm (12.0 x Ø 0.16 in)
Net Weight	Bending Radius	8.0 mm (0.3 in) [Repeat] 6.0 mm (0.2 in) [Install]
	Weight	113 g (4.0 oz) [Quad] 90 g (3.2 oz) [Twin]

Mechanical (Cases & Accessories):

Cases	Material	ASA
	Outdoor Case Dims.	65 x 65 x 15 mm (2.6 x 2.6 x 0.6 in)
	Indoor Case Dims.	40 x 40 x 15 mm (1.6 x 1.6 x 0.6 in)
Covers	Material	TPE
Wall Screws	Material	Galvanized Steel
	Spec.	Size-#7 x 3.0 cm (1.18 in)
Wall Anchors	Material	PP
	Dims.	30 x Ø 6.0 mm (1.2 x Ø 0.24 in)

Environmental:

Protection Class	IP65
Impact Rating	IK05
Burial Rated?	No
UV Rated?	Yes
Operating Temperature	-40 to +80 deg C (-40 to 176 deg F)



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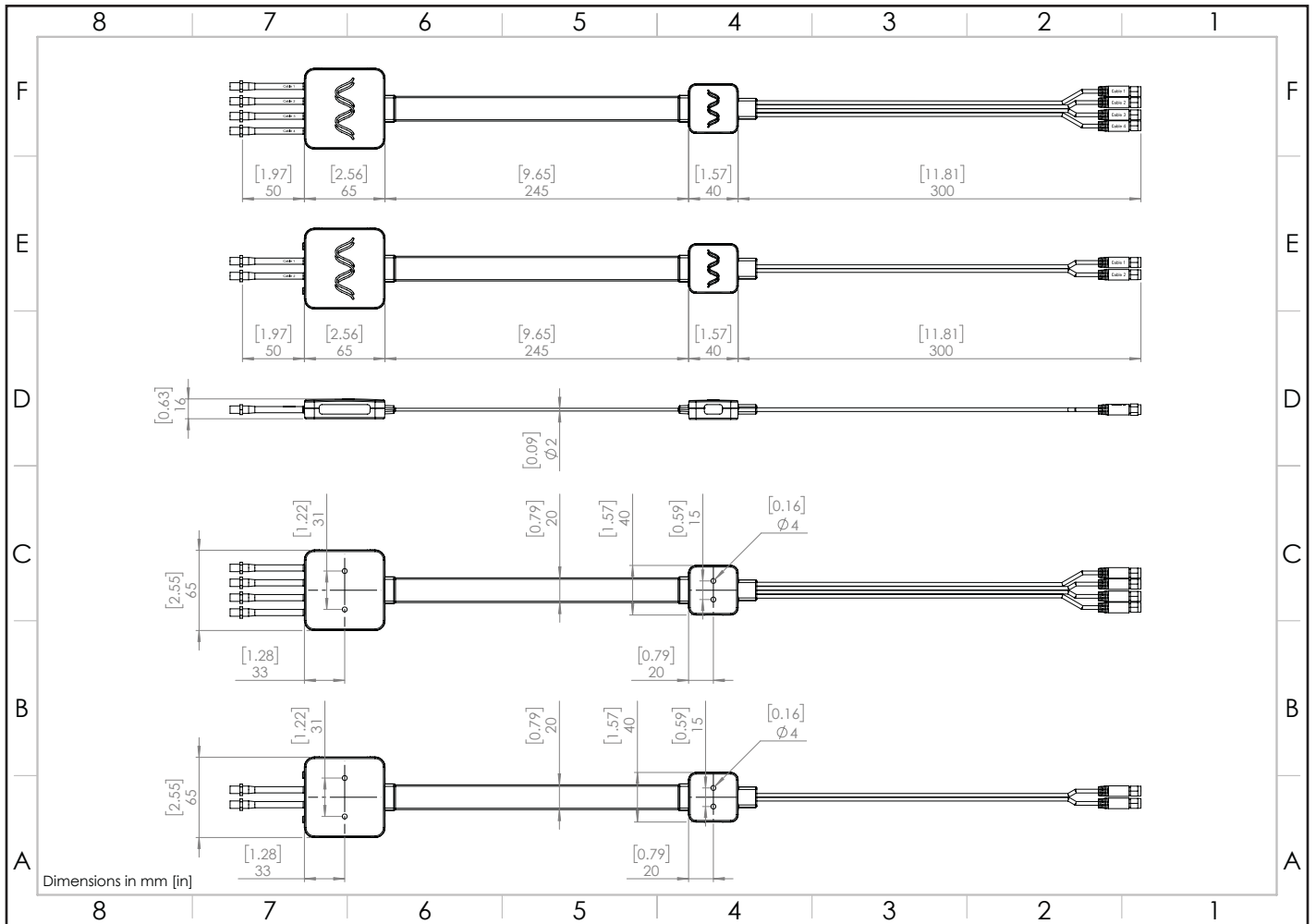
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Coax Window Entry Cable (Twin & Quad)

Designed by WAVEFORM in the USA

Dimensions:



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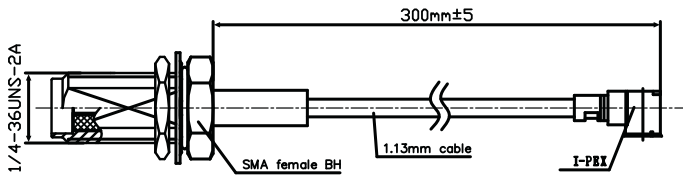
SMA-Female to U.FL Pigtail Adapter

Designed by WAVEFORM in the USA

SKU: PTA-SMAF-UFL-V2

Features:

- SMA-Female to U.FL-Female connector
- 0-6000 MHz Frequency Support
- 50 Ω Impedance
- 1.13 mm diameter cable type



Section Description	Material	Plating
SMA Body	Brass	Gold
I-PEX UFL Body	Brass	Gold
Inner Conductor	Steel	Silver & Copper
Dielectric	PTFE	N/A
Outer Conductor	Copper Braid	Silver
Jacket	FEP	Nickel

Specifications:

Electrical:

Input Impedance	50 Ω
Frequency Range	0 - 6000 MHz
VSWR	≤ 1.15 (Straight) ≤ 1.25 (Right Angle)
Capacitance	95.6 pF/m
Velocity	70 %
Voltage	335 V max (Working) 1000 V rms (Withstand)
Insertion Loss	< 0.7 dB @ 6000 MHz
Contact Resistance	≤ 3 mΩ (Center) ≤ 2 mΩ (Outer)
Insulation Resistance	≥ 5000 MΩ

Mechanical:

Jacket Color	Black
Cable Type	1.13mm
Cable Diameter	1.13 mm (0.05 in.)
Cable Length	30 cm (12 in.)
Bending Radius	4 mm (0.15 in.)
Connector A Type	SMA-Female Bulk-head
Connector A Angle	Straight
Connector A Diameter	7.0 mm (0.27 in.)
Connector B Type	U.FL-Female
Connector B Angle	Right-Angle
Connector B Diameter	2.0 mm (0.08 in.)
Net Weight	15 g (0.5 oz)

Environmental:

Burial Rated?	No
UV Rated?	No
Operating Temp.	-40 to +85 deg C



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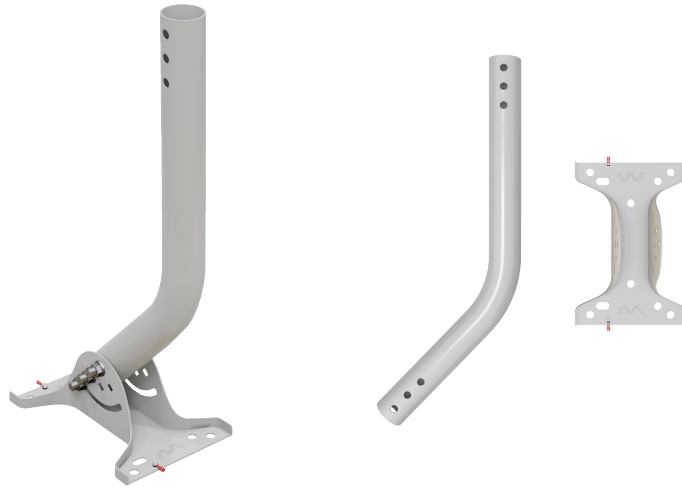
UltraPole: The Universal Antenna Mount (Base Kit)

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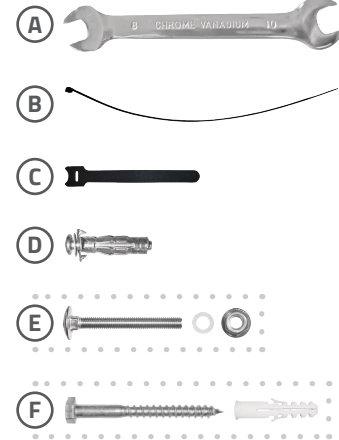
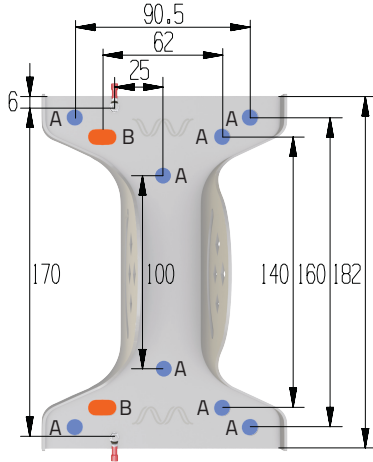
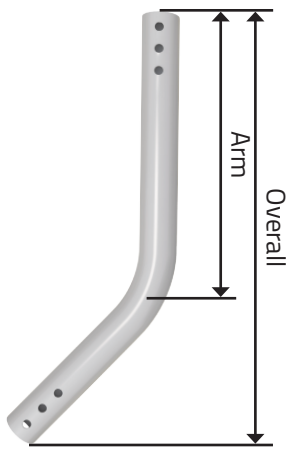
SKU: WF-UPM-Base

Features:

- Made of galvanized carbon steel for corrosion protection
- 90° of free pivoting with 3 lockable pivot positions (0°, 45°, 90°)
- Integrated ground terminals
- Easy to install
- **Net weight:** 1.2 kg (2.7 lbs)



Specifications:



J-Pole:

Color	Industrial Grey (RAL7035)
Material	Galvanized Carbon Steel
Thickness	2.0 mm (0.1 in.)
Diameter	38 mm (1.5 in.) O.D. 34 mm (1.4 in.) I.D.
Overall Length	42.0 cm (16.5 inch)
Arm Length	26.7 cm (10.5 inch)
Coating	Matte Powder Coat
Weight	0.8 kg (1.8 lbs)
Quantity	1

Footpad:

Color	Industrial Grey (RAL7035)
Material	Galvanized Carbon Steel
Thickness	2.1 mm (0.1 in.)
Footpad	18.2 x 12.5 x 7.7 cm (7.2 x 4.9 x 3.0 in.)
Hole A	Ø8.3 mm (Ø0.33 in.)
Hole B	14.6 x 8.3 mm (0.6 x 0.3 in.)
Ground Terminal	M3 x 10.0 mm
Coating	Matte Powder Coat
Weight	0.4 kg (0.9 lbs)
Quantity	1

Mounting Tools:

#	Part Name	Material	Dimensions	Qua.
A	Wrench	Steel	Size-8/10 mm	1
B	Zip Tie	Plastic	250 mm	4
C	Velcro Tie	Plastic	150 x 12 x 1 mm	5
D	Expansion Bolt	Steel	M6 x 52 mm	5*
	Carriage Bolt	Steel	M6 x 55 mm	
E	Washer	Plastic	M6	4*
	Flange Nut	Steel	M6	
F	Hex-Head Wood Screw	Steel	M6 x 60 mm	5*
	Anchor	Plastic	Ø10 x 50 mm	

*Includes 1x spare

UltraPole: The Universal Antenna Mount (Extension Kit)

Designed by WAVEFORM in the USA

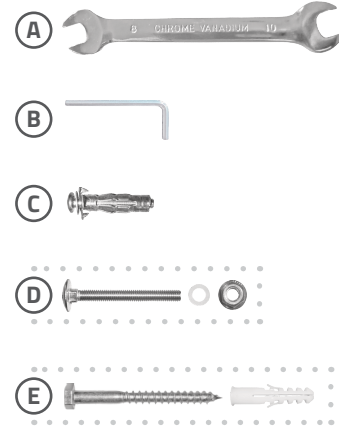
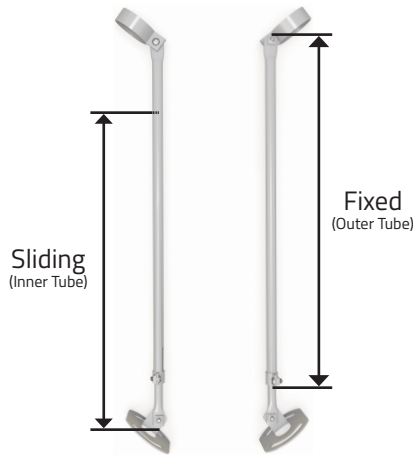
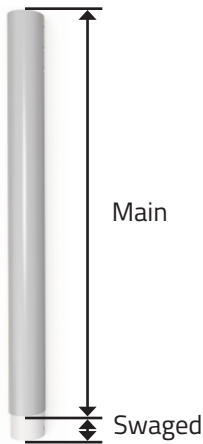
SKU: WF-UPM-Ext

Features:

- Made of galvanized carbon steel for corrosion protection
- Extends pole length by 38.4 cm
- Includes brace arm supports for heavy duty installations
- Easy to install
- **Net weight:** 1.5 kg (3.3 lbs)



Specifications:



Extension Pole:

Color	Industrial Grey (RAL7035)
Material	Galvanized Carbon Steel
Thickness	2.0 mm (0.08 in.)
Main Section	38.0 mm (1.5 in.) O.D. 34.0 mm (1.4 in.) I.D.
Swaged Section	34.0 mm (1.4 in.) O.D. 30.0 mm (1.8 in.) I.D.
Length	41.9 cm (16.5 in.)
Coating	Matte Powder Coat
Weight	0.8 kg (1.8 lbs)
Quantity	1

Brace Arms:

Color	Industrial Grey (RAL7035)
Material	Galvanized Carbon Steel
Fixed Section	32.0 x Ø12.0 mm (1.26 x Ø0.5 in.)
Sliding Section	30.0 x Ø8.0 mm (1.18 x Ø0.3 in.)
Overall Length	61.0 cm (24.0 in.) max 35.0 cm (13.8 in.) min
Footpad	5.0 x 6.0 cm (1.96 x 2.4 in.)
Coating	Matte Powder Coat
Weight	0.7 kg (1.5 lbs)
Quantity	2

Mounting Tools:

#	Part Name	Material	Size	Qua.
A	Wrench	Steel	Size-8/10 mm	1
B	Allen Wrench	Aluminum	Size-4mm	1
C	Expansion Bolt	Steel	M6 x 52 mm	5*
D	Carriage Bolt	Steel	M6 x 55 mm	2*
	Washer	Plastic	M6	
E	Flange Nut	Steel	M6	5*
	Hex-Head Wood Screw	Steel	M6 x 60 mm	
	Anchor	Plastic	Ø10 x 50 mm	

*Includes 1x spare