

DualPlus

High-Gain 2x2 MIMO Outdoor Log Periodic Antenna

Designed by WAVEFORM in the USA

SKU: ANT-2-642-LP-SM



600 to 4200 MHz



4G and 5G Support



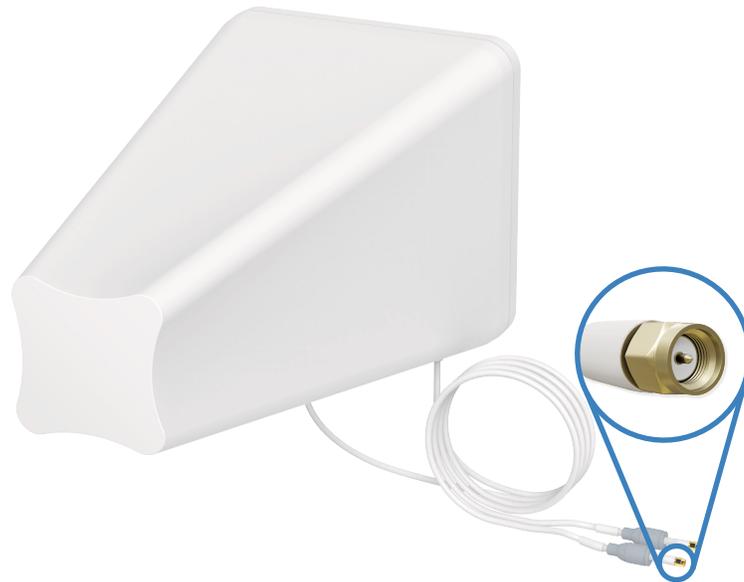
7.1 dBi Average Gain
(8.9 dBi Peak)



Outdoor Rated



SMA-Male Connectors,
with integrated weatherproofing



Specifications:

Electrical:

	600-900 MHz	1700-2700 MHz	3500-4200 MHz
Freq. Range	600-900 MHz	1700-2700 MHz	3500-4200 MHz
Gain (Avg. Peak)	7.2 dBi ± 0.3 dB	7.3 dBi ± 0.4 dB	6.7 dBi ± 0.3 dB
Azimuth Beamwidth	74 ± 1 deg	61 ± 3 deg	65 ± 11 deg
Elevation Beamwidth	78 ± 1 deg	64 ± 3 deg	68 ± 4 deg
Front-to-Back Ratio	> 25 dB	> 30 dB	> 20 dB
VSWR	≤ 1.4	≤ 1.3	≤ 1.2
MIMO Isolation (Peak)	52.1 dB	43.3 dB	41.4 dB
Efficiency (Peak)	86 %	72 %	71 %
Input Impedance	50 Ω		
Polarization	2x2 Cross-Polarized, ± 45 deg		
Antenna Type	Directional		
Power Rating	50 W (Peak)		

Environmental:

Protection Class	IP65
Impact Rating	IK08
Rated Wind Velocity	225 kph (140 mph) [Sustained] 250 kph (155 mph) [Maximum]
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)
	Material	ASA (UV Stabilized)
	Dimensions (l x w x h)	44.7 x 24.0 x 24.0 cm (17.60 x 9.45 x 9.45 in)
Cable	Connector Type	SMA-Male LMR195
	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	2.1 kg (4.6 lbs)	

Mechanical (Assembly):

Captive Bolt	Material	304 stainless steel
	Specification	M6
Nut	Material	304 stainless steel
	Specification	M6
Flat Washer	Material	304 stainless steel
	Specification	M6
Lock Washer	Material	304 stainless steel
	Specification	M6



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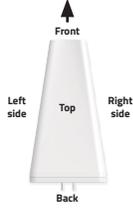
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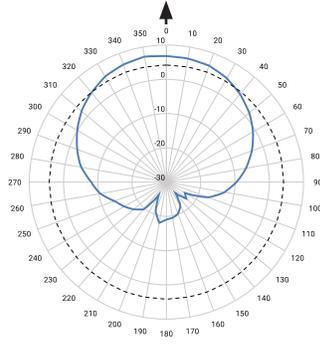
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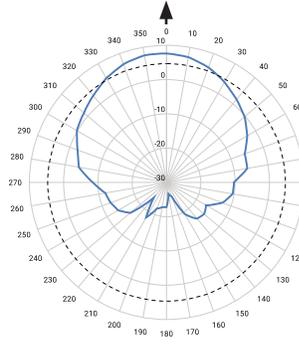
Azimuth Plane "Top-down view"



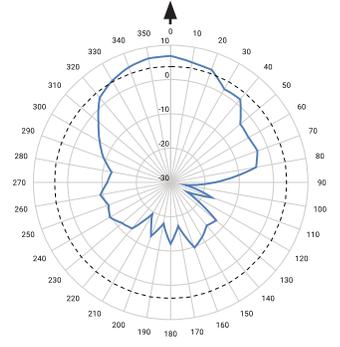
600-900 MHz



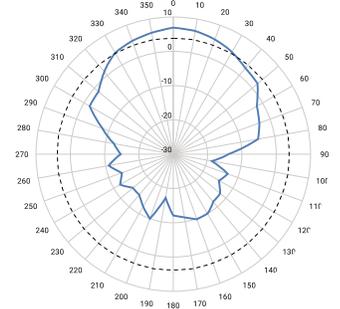
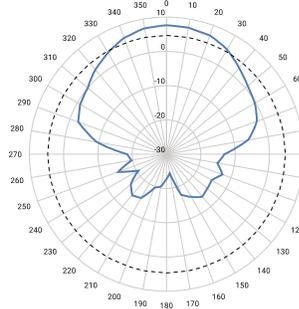
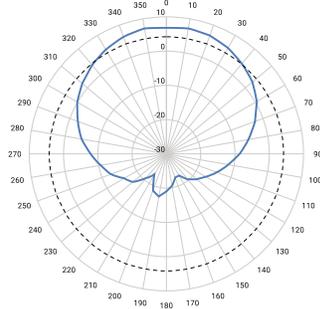
1700-2700 MHz



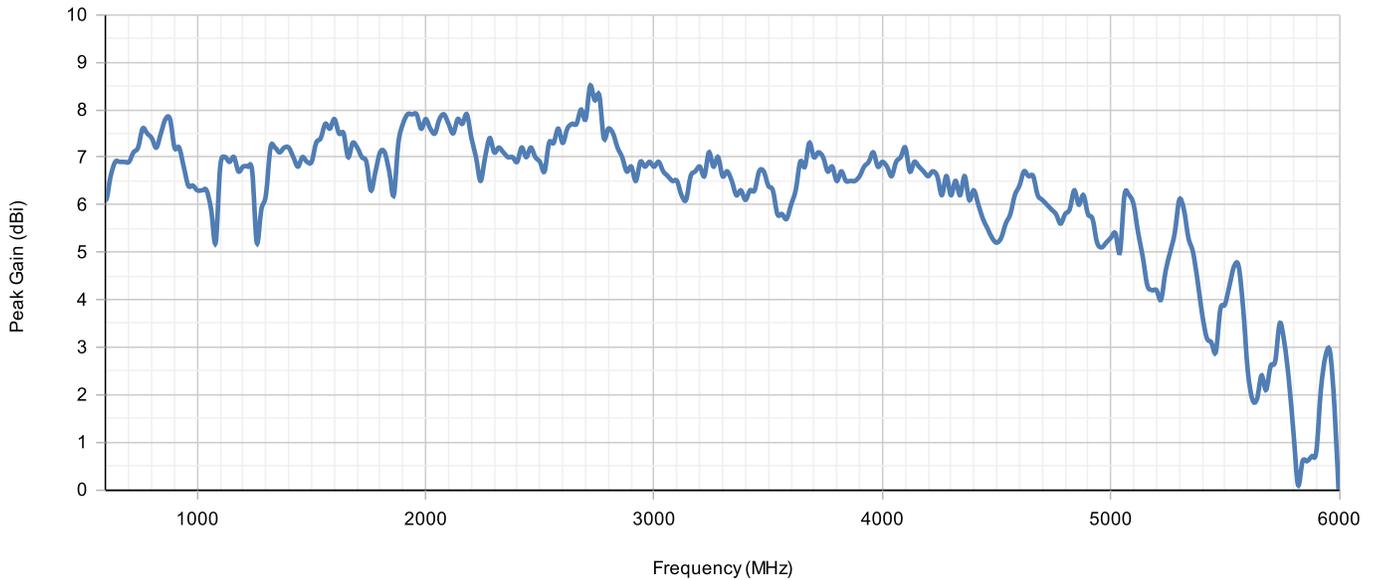
3500-4200 MHz



Elevation Plane "Side-on view"



Antenna Peak Gain (dBi) by Frequency (Mhz)



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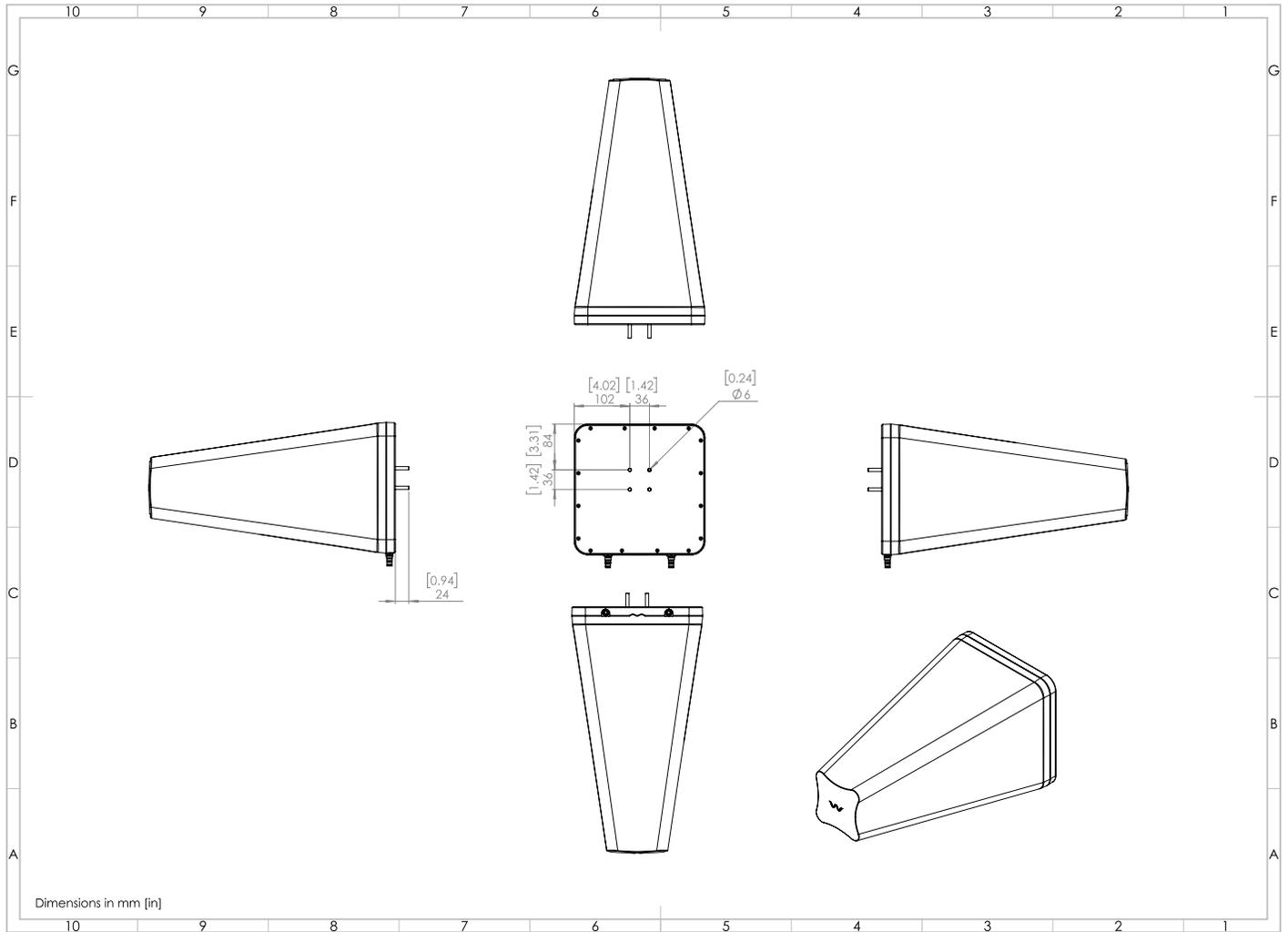
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Dimensions (Standalone):



Dimensions in mm [in]



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FlexMount

Designed by WAVEFORM in California

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 4x 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
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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)



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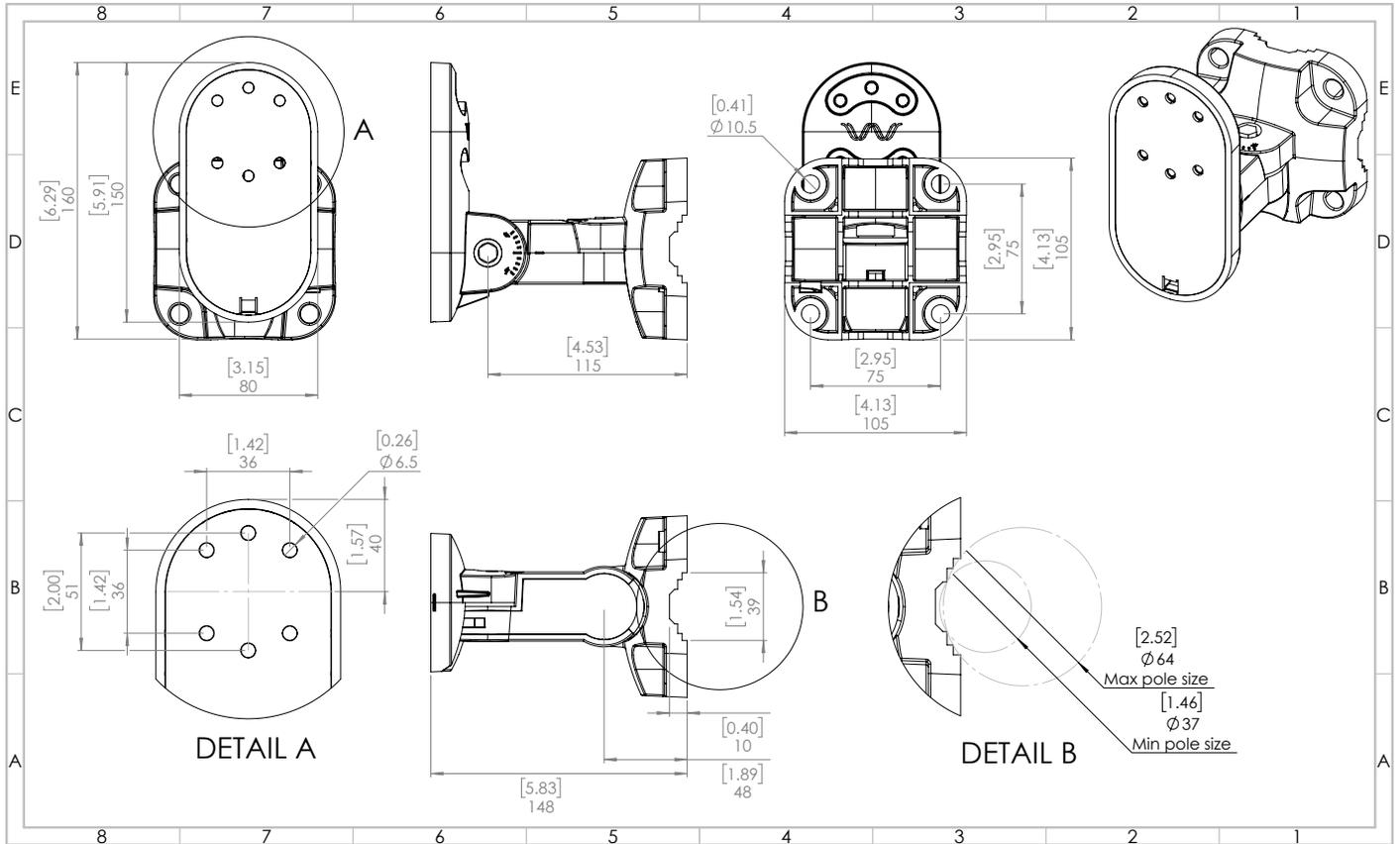
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FlexMount

Designed by WAVEFORM in California

Dimensions:



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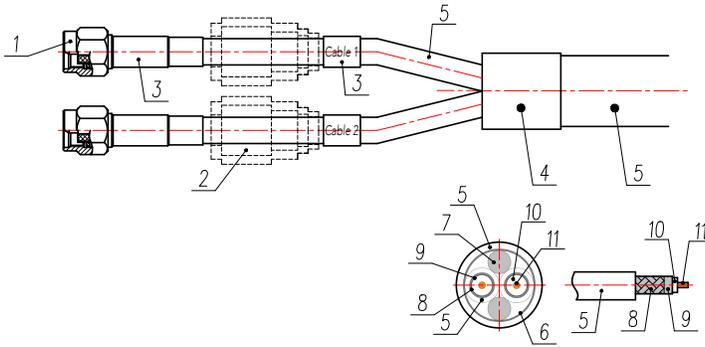
UltraFlex-Twin

Designed by WAVEFORM in the USA

SKU: 195T-SFM-xx

Features:

- Two 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

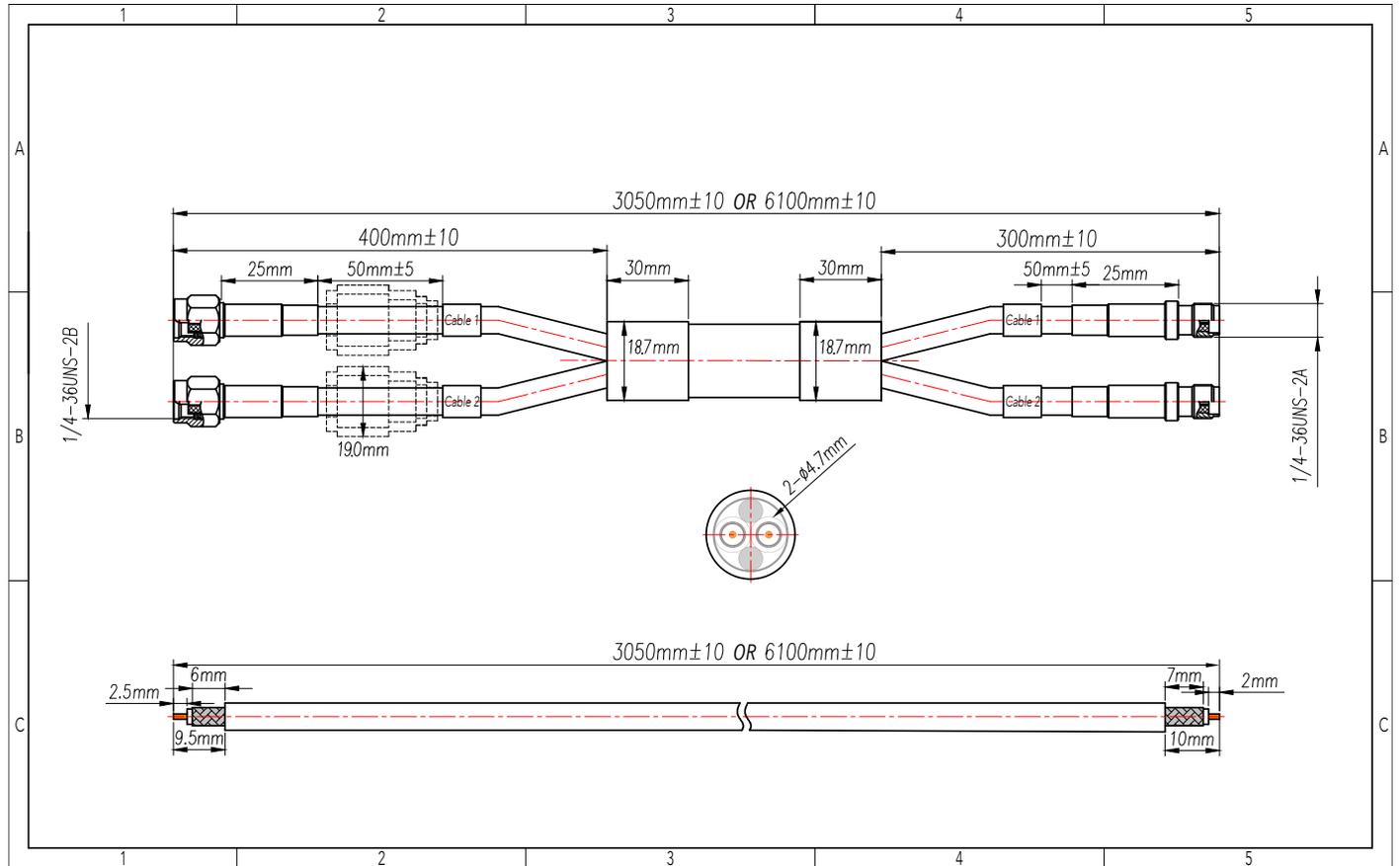
Specifications:

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	1.2 dB		Type	LMR195
VSWR	≤ 1.5	1800 MHz	1.6 dB		Length	3.05 m (10 ft) 6.10 m (20 ft)
Capacitance	78 \pm 5 pF/m	2100 MHz	1.8 dB		Diameter	11.6 mm (0.46 in) [Group] 18.7 mm (0.74 in) [Mold] 4.7 mm (0.19 in) [Indiv.]
Velocity	83 %	2500 MHz	2.0 dB			Bending Radius
Shielding	> 90 dB	3000 MHz	2.1 dB	Male Cable End	Connector Type	SMA-Male
Voltage	1000 V max (Working) 1500 V rms (Withstand)	4000 MHz	2.3 dB		Connector Diam.	7.9 mm (0.31 in)
	Contact Resist. (Cables)	$\leq 24.9 \Omega$ /km (Center) $\leq 16.1 \Omega$ /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			0.35 kg (0.76 lbs) [10 ft] 0.70 kg (1.54 lbs) [20 ft]	

UltraFlex-Twin

Designed by WAVEFORM in the USA

Dimensions:



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UltraPole: The Universal Antenna Mount (Base Kit)

by WAVEFORM

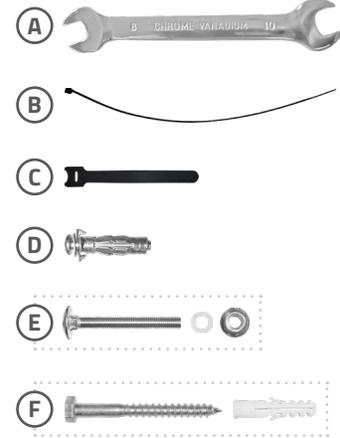
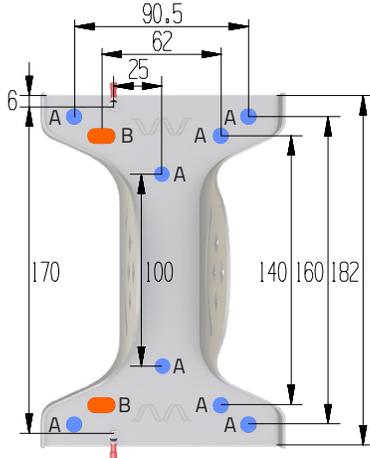
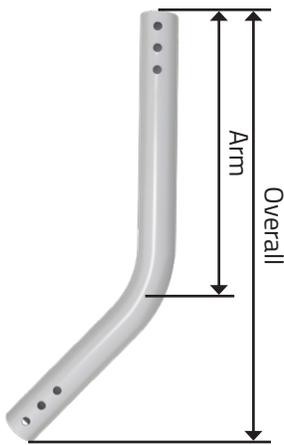
SKU: WF-UPM-Base

Main 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

Coax Window Entry Cable (Twin & Quad)

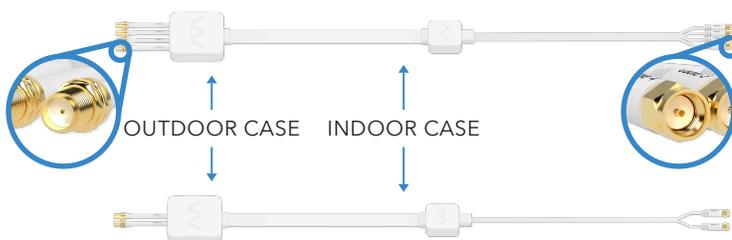
Designed by WAVEFORM in California

SKU: 113WP-SFM-x-V2

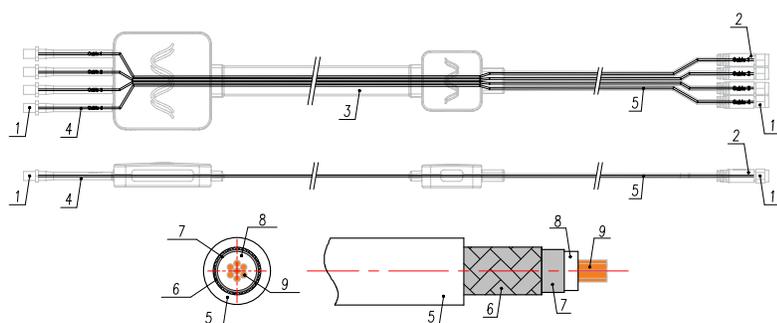
Features:

- 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

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)

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 (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)

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]
	Net Weight	113 g (4.0 oz) [Quad] 90 g (3.2 oz) [Twin]



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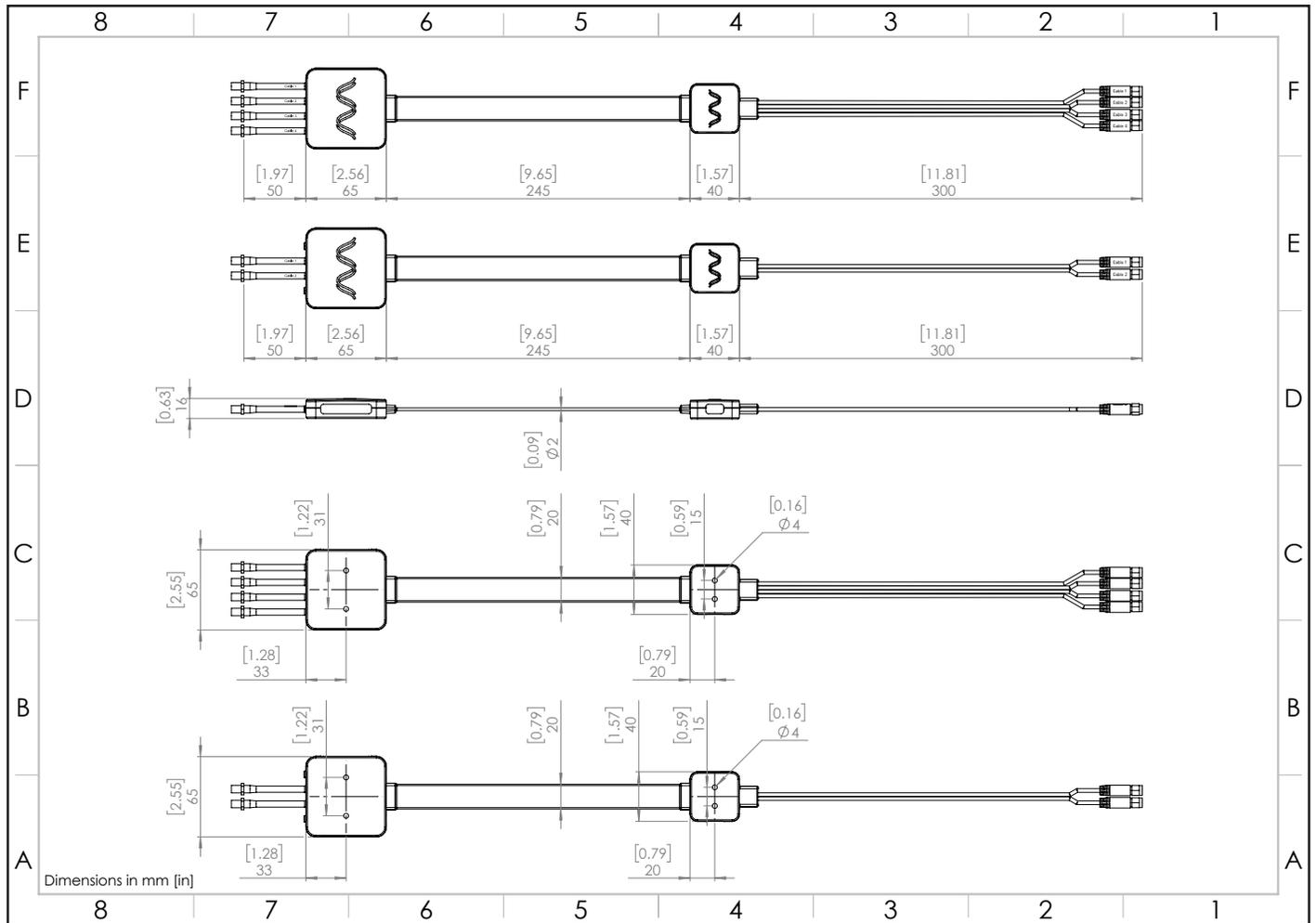
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Coax Window Entry Cable (Twin & Quad)

Designed by WAVEFORM in California

Dimensions:



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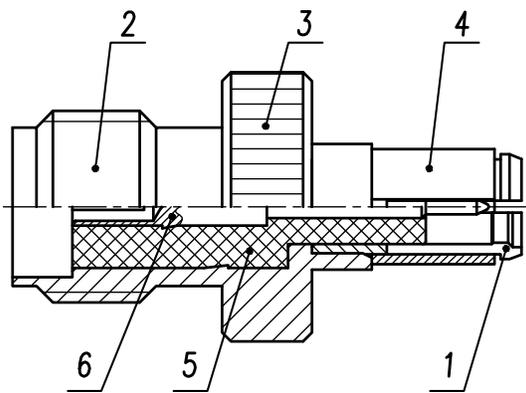
TS9-Male to SMA-Female Adapter (2-pack)

by WAVEFORM

SKU: ADT-SF-TM-2

Features:

- 2x TS9-Male to SMA-Female Adapters
- 0 MHz to 4500 MHz
- 50 Ω



#	Description	Material	Plating
1	TS9-Male Body	Copper Alloy (C3604)	Gold
2	SMA-Female Body	Copper Alloy (C3604)	Gold
3	Adapter Body	Copper Alloy (C3604)	Gold
4	Sleeve	Copper Alloy (C3604)	Gold
5	Dielectric	PTFE	N/A
6	Inner Conductor	Copper Alloy (C3604)	Gold

Specifications:

Electrical:		Mechanical:		Environmental:	
Input Impedance	50 Ω	Length	17.0 mm (0.67 in)	Burial Rated?	No
Frequency Range	0 - 4500 MHz	Connector A	Type TS9-Male	UV Rated?	Yes
VSWR	≤ 1.2	Connector A	Diameter 3.9 mm (0.15 in)	Operating Temperature	-55 to +155 deg C (-67 to +311 deg F)
Capacitance	95 pF/m	Connector B	Type SMA-Female		
Shielding	90%	Connector B	Diameter 7.0 mm (0.28 in)		
Insertion Loss (Typical)	≤ 0.13 dB (0-3000 MHz) ≤ 0.25 dB (3000-4500 MHz)	Net Weight	2.6 g (0.1 oz) [Each] 5.2 g (0.2 oz) [2-Pack]		
Voltage	300 V max (Working) 1000 V rms (Withstand)				
Contact Resist.	≤ 4.0 m Ω (Center) ≤ 2.5 m Ω (Outer)				
Insulation Resist.	≥ 5000 M Ω				

TS9-Male to SMA-Female Adapter (2-pack)

by WAVEFORM

Dimensions:

