

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



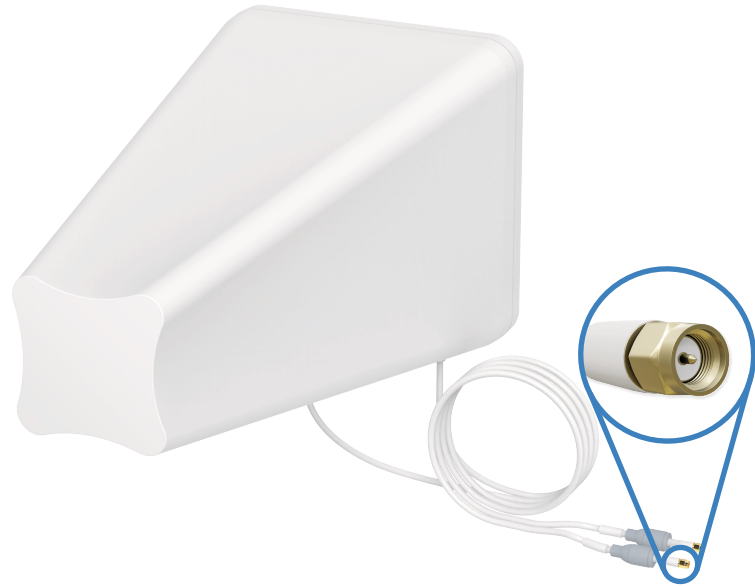
7.1 dBi Average Gain
(8.9 dBi Peak)



Outdoor Rated



SMA-Male Connectors,
with integrated weatherproofing



Specifications:

Electrical:

Freq. Range	600-900 MHz	1700-2700 MHz	3500-4200 MHz
Gain (Avg. Peak)	7.2 dBi $\pm$ 0.3 dB	7.3 dBi $\pm$ 0.4 dB	6.7 dBi $\pm$ 0.3 dB
Azimuth Beamwidth	74 $\pm$ 1 deg	61 $\pm$ 3 deg	65 $\pm$ 11 deg
Elevation Beamwidth	78 $\pm$ 1 deg	64 $\pm$ 3 deg	68 $\pm$ 4 deg
Front-to-Back Ratio	> 25 dB	> 30 dB	> 20 dB
VSWR	$\leq$ 1.4	$\leq$ 1.3	$\leq$ 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, $\pm$ 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)
	Connector	SMA-Male
Cable	Type	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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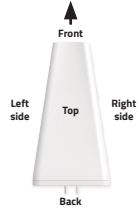
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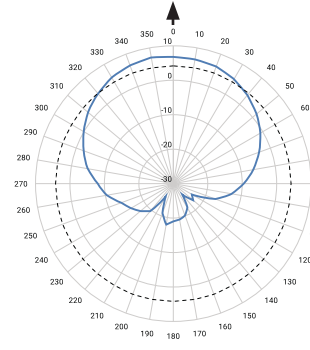
High-Gain 2x2 MIMO Outdoor Log Periodic Antenna

Designed by WAVEFORM in the USA

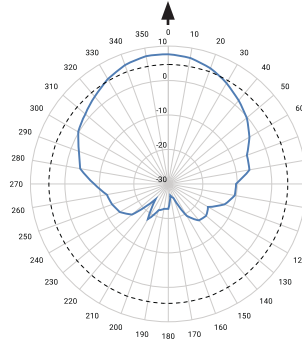
Azimuth Plane "Top-down view"



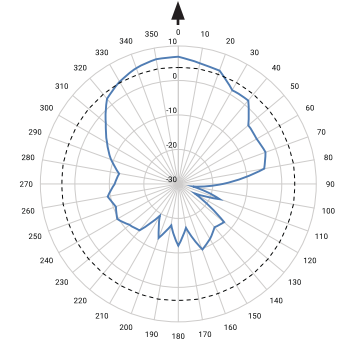
600-900 MHz



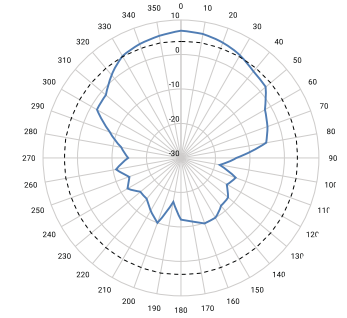
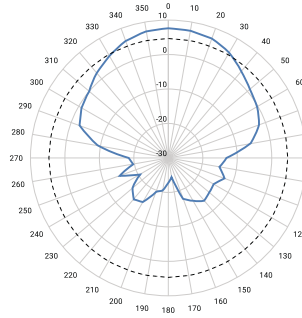
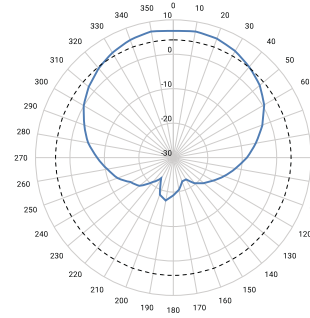
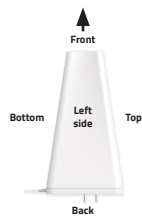
1700-2700 MHz



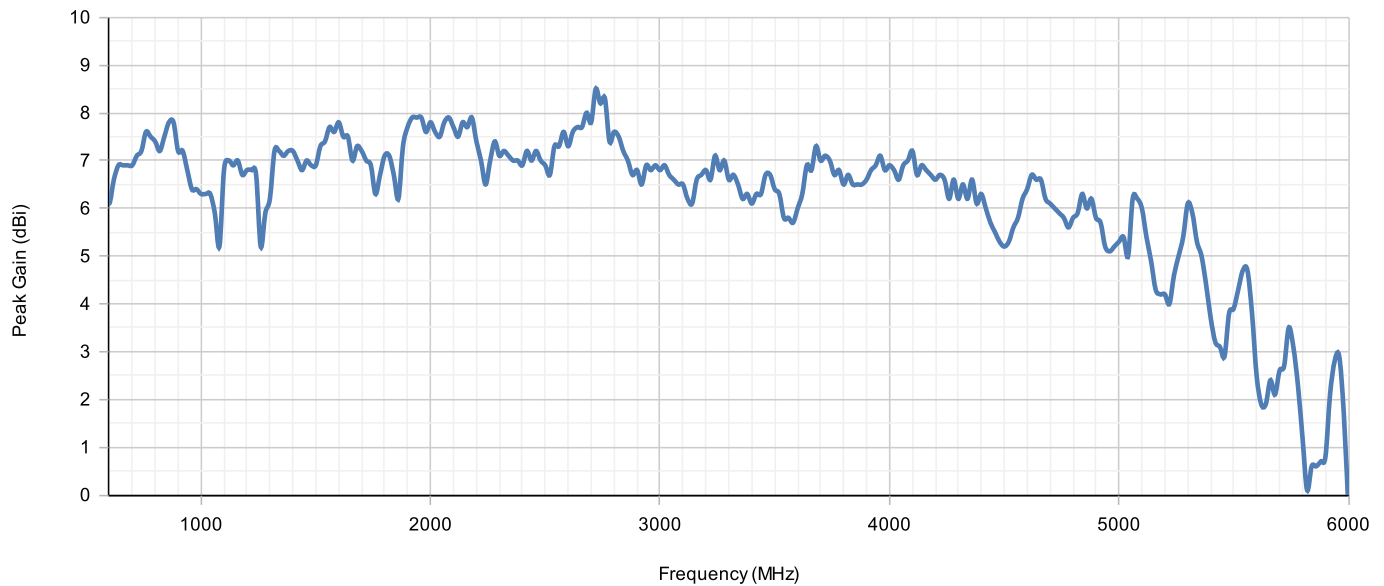
3500-4200 MHz



Elevation Plane "Side-on view"



Antenna Peak Gain (dBi) by Frequency (Mhz)



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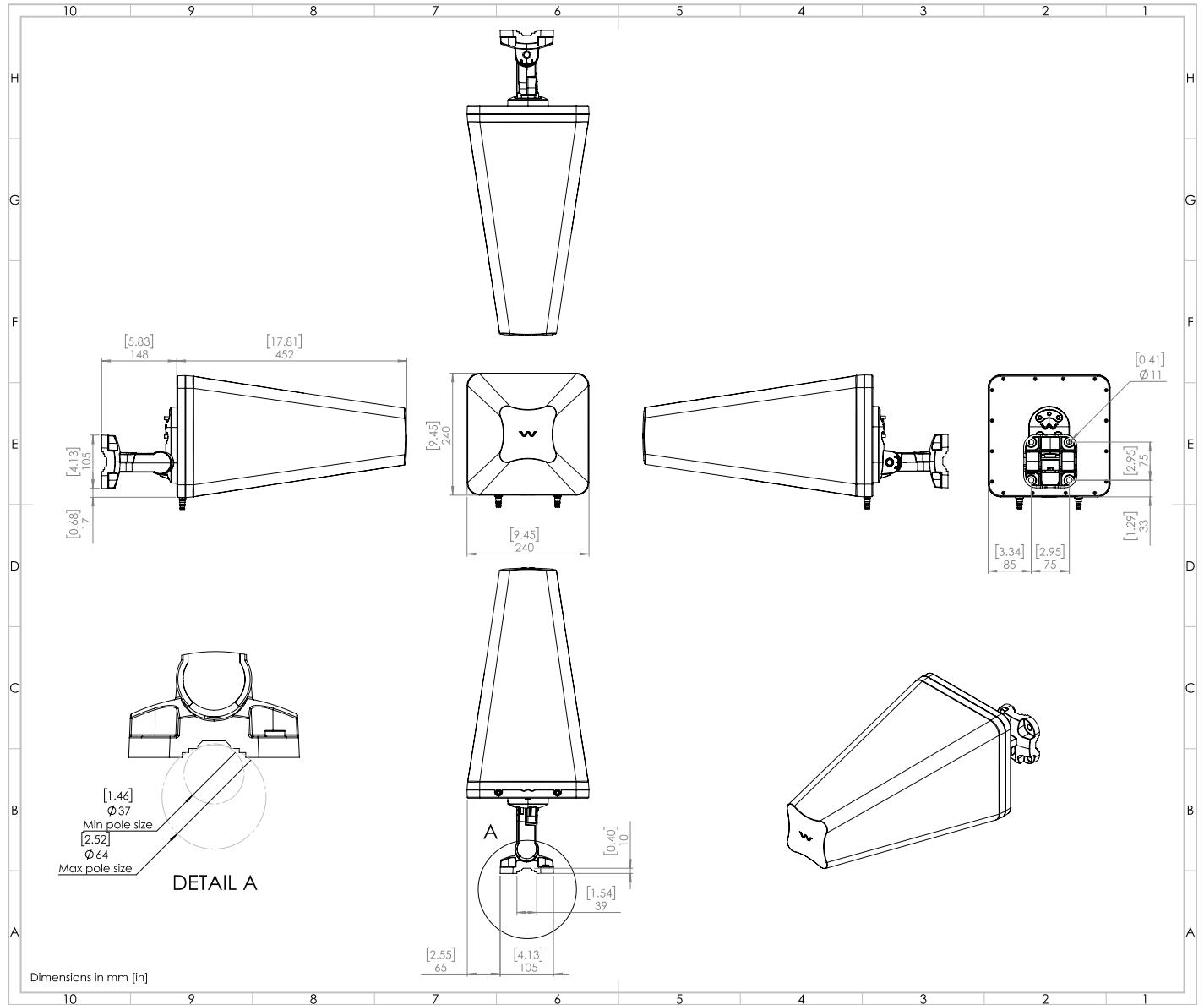
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High-Gain 2x2 MIMO Outdoor Log Periodic Antenna

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Dimensions (with FlexMount):



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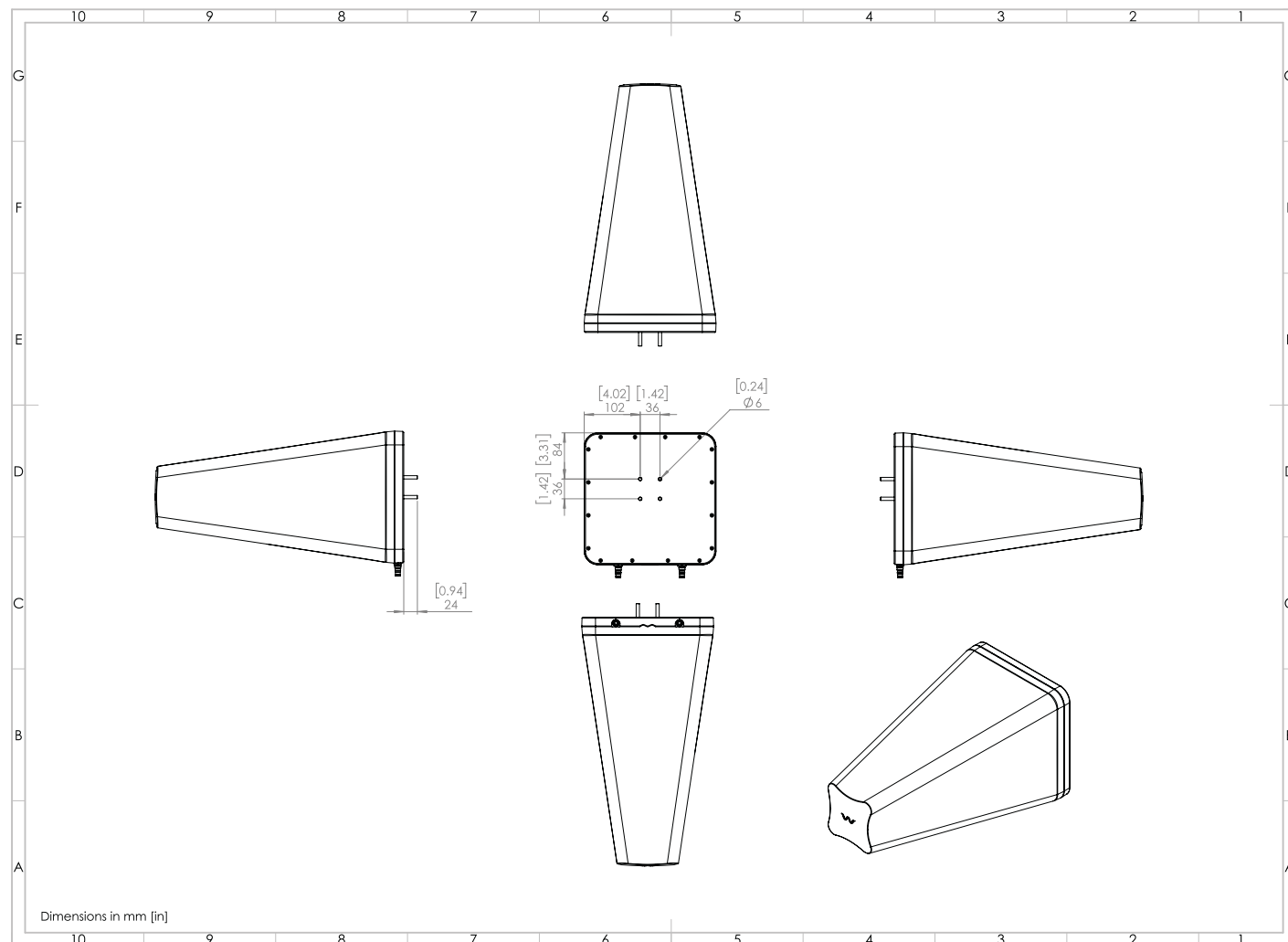
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1-800-761-3041

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High-Gain 2x2 MIMO Outdoor Log Periodic Antenna

Designed by WAVEFORM in the USA

Dimensions (Standalone):



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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



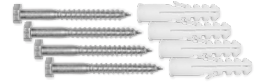
Antenna
Bracket

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)
	Type	Ring Terminal	
Conn.	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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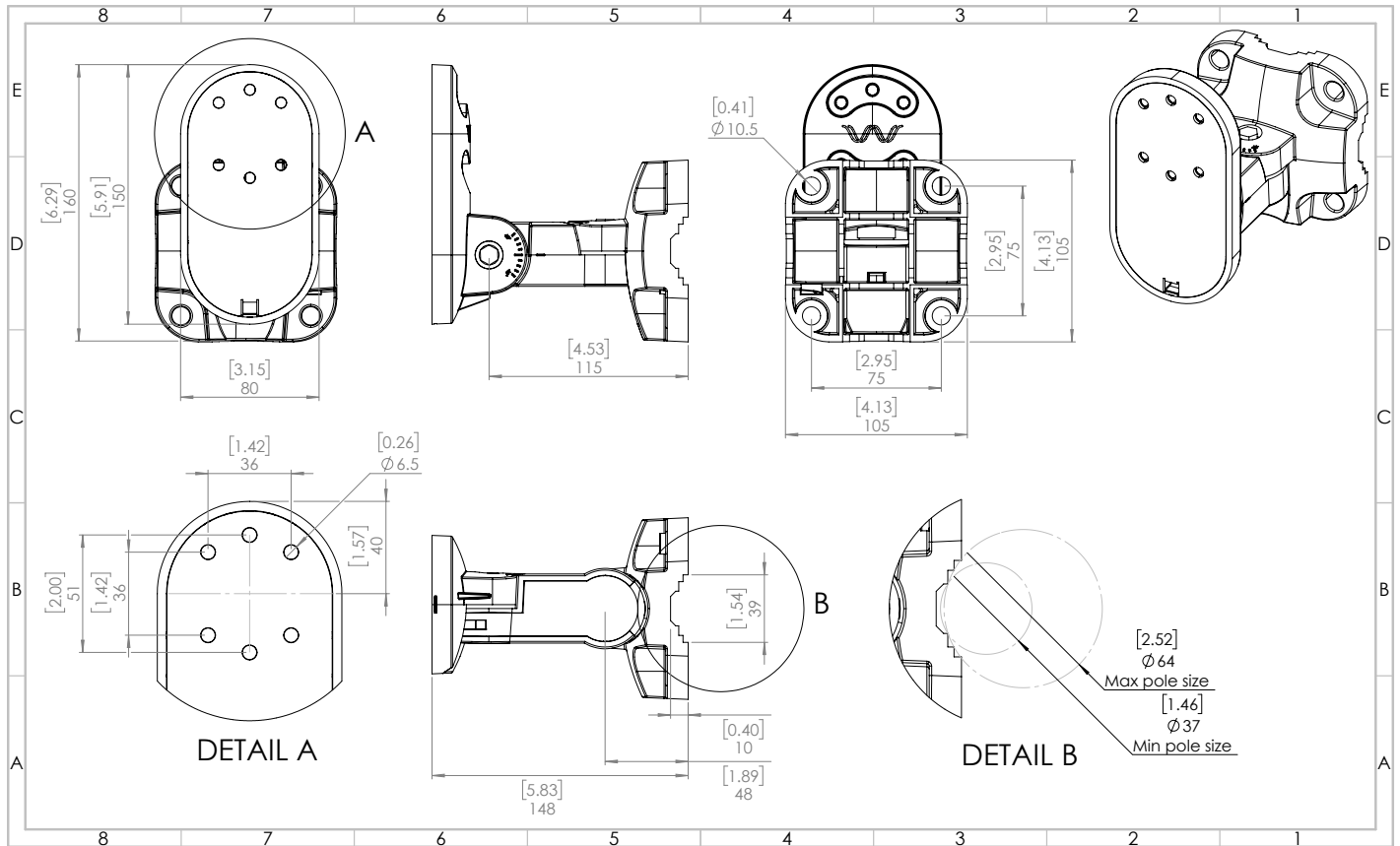
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FlexMount

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Dimensions:



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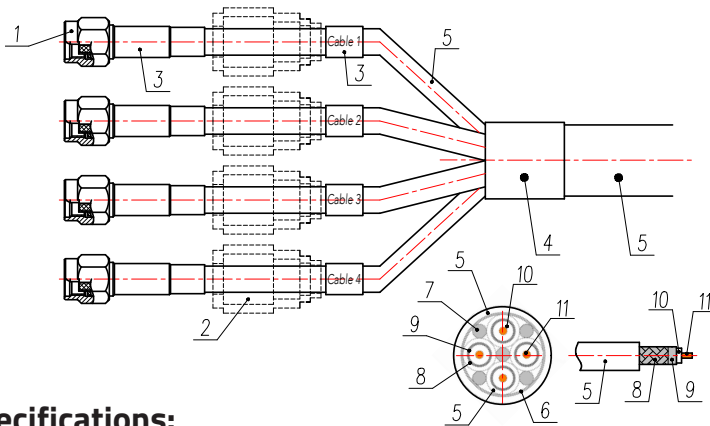
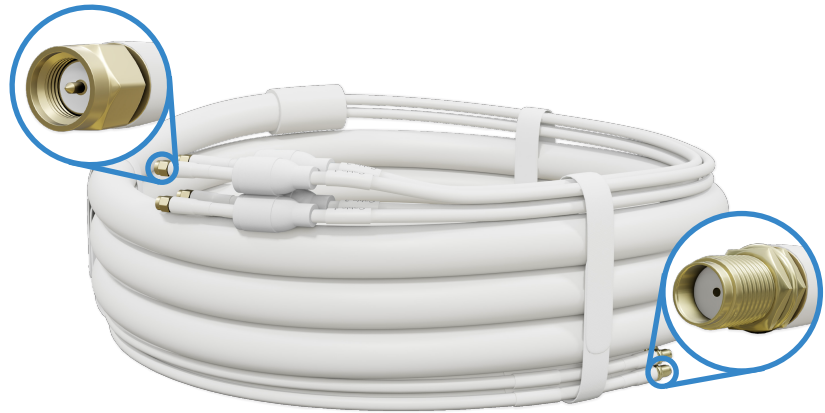
UltraFlex-Quad

Designed by WAVEFORM in California

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 & Indiv.)	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

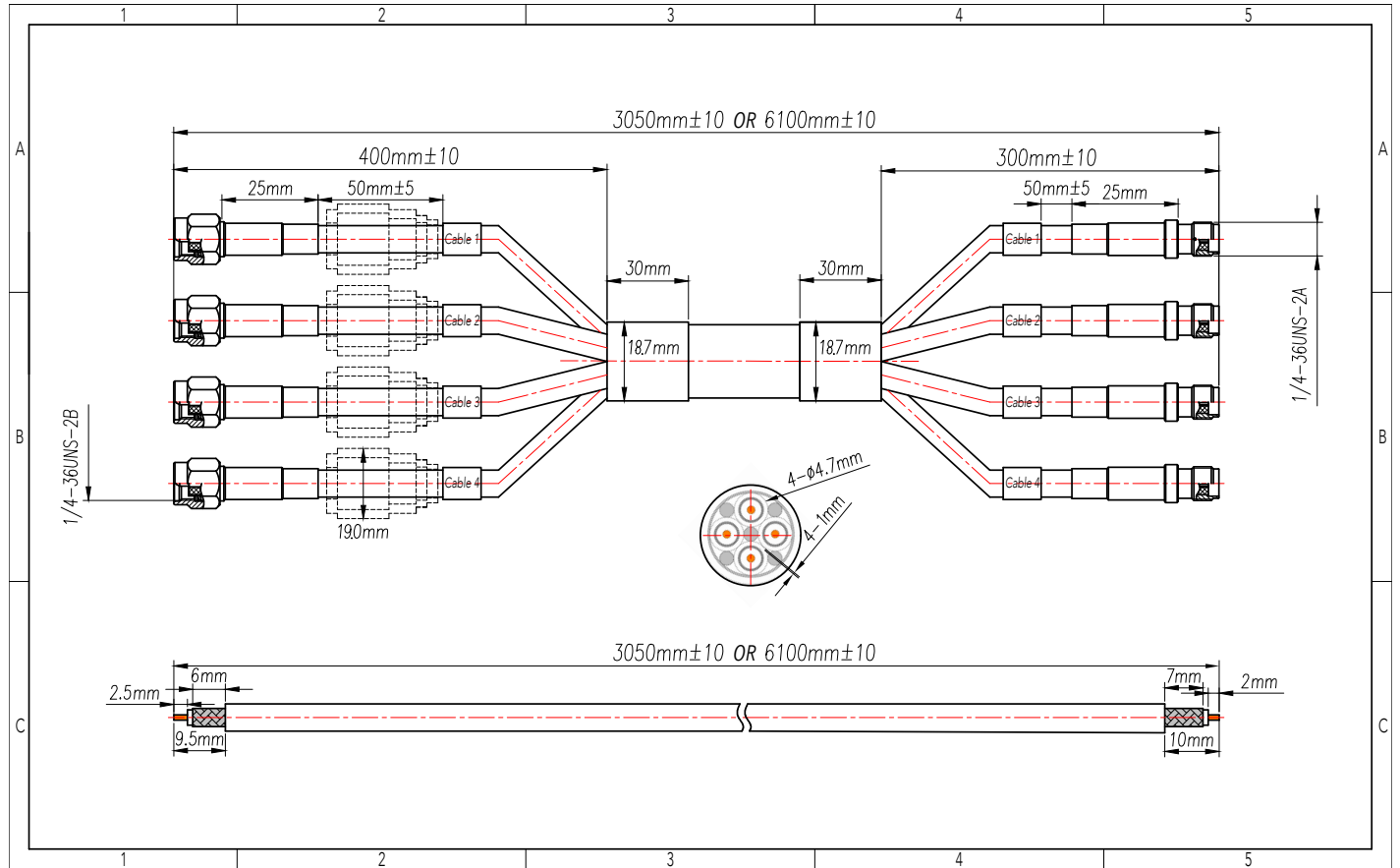
Specifications:

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			
Shielding	> 90 dB	3000 MHz	2.1 dB			
Voltage	1000 V max (Working) 3000 V rms (Withstand)	4000 MHz	2.4 dB	Bending Radius	130 mm (5.1 in) [Repeat] 65 mm (2.6 in) [Install]	
		5000 MHz	2.8 dB			
Contact Resist. (Cables)	≤ 24.9 Ω/km (Center) ≤ 16.1 Ω/km (Outer)	6000 MHz	3.0 dB		Connector Type	SMA-Male
Contact Resist. (Connectors)	≤ 3.0 mΩ (Center) ≤ 2.5 mΩ (Outer)	Environmental:		Male Cable End	Connector Diam.	7.9 mm (0.31 in)
		Protection Class	IP66 (w/ Boots)		Cable Length	400 mm (16 in)
Insulation Resist.	≥ 1000 mΩ	Burial Rated?	No	Female Cable End	Connector Type	SMA-Female
Power Rating	2.5 kW (Peak)	UV Rated?	Yes		Connector Diam.	7.0 mm (0.28 in)
		Operating Temperature	-40 to +85 deg C (-40 to +185 deg F)		Cable Length	300 mm (12 in)
				Net Weight	0.58 kg (1.28 lbs) [10 ft] 1.13 kg (2.50 lbs) [20 ft]	

UltraFlex-Quad

Designed by WAVEFORM in California

Dimensions:



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UltraPole: The Universal Antenna Mount (Base Kit)

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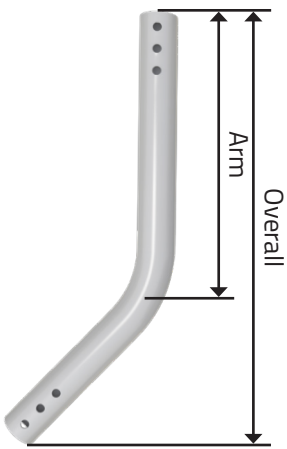
SKU: WF-UPM-Base

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)

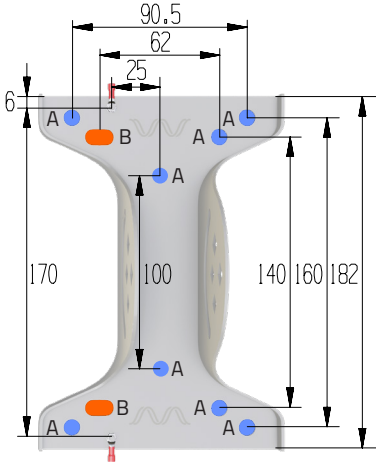


Specifications:



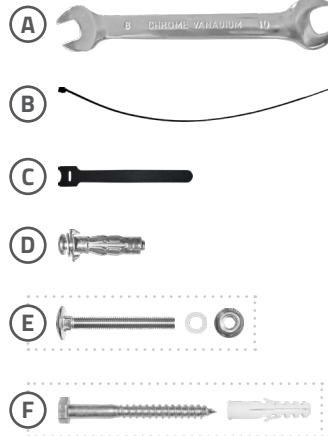
J-Pole:

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

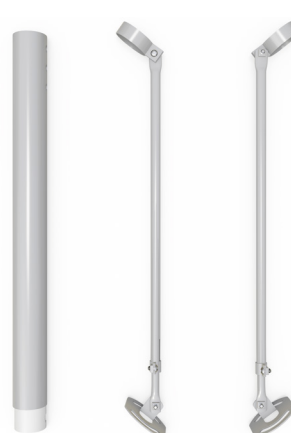
UltraPole: The Universal Antenna Mount (Extension Kit)

by WAVEFORM

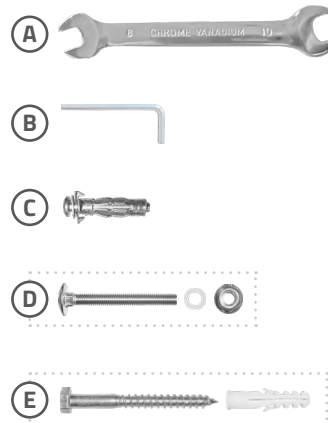
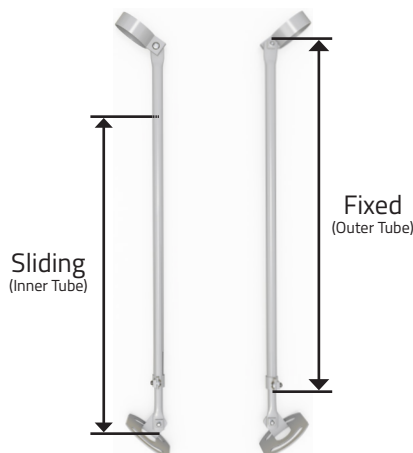
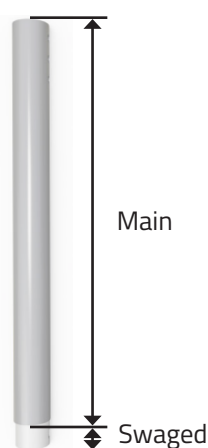
SKU: WF-UPM-Ext

Main 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

Coax Window Entry Cable (Twin & Quad)

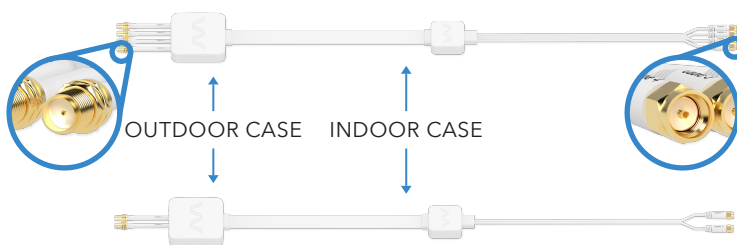
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SKU: 113WP-SFM-x-V2

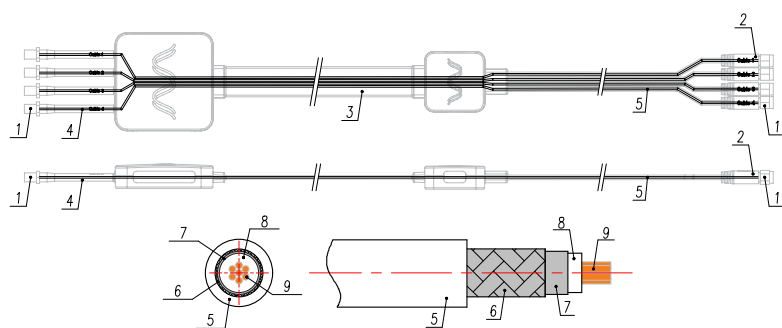
Features:

- 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)	$\leq 571 \Omega/\text{km}$ (Center) $\leq 258 \Omega/\text{km}$ (Outer)
Contact Resist. (Connectors)	$\leq 3 \text{ m}\Omega$ (Center) $\leq 2 \text{ m}\Omega$ (Outer)
Insulation Resist.	$\geq 5000 \text{ M}\Omega/\text{km}$

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 $\varnothing$ 6.0 mm (1.2 x $\varnothing$ 0.24 in)

Mechanical (Cables):

Cable (Whole)	Jacket Color	White (P179-1C)
	Type	Low-loss RG1.13
	Length	70 cm (27.5 in)
	Conn. Type	SMA-Female
Outdoor Cables	Conn. Diam.	7.0 mm (0.28 in)
	Cable Dimensions	50.0 x $\varnothing$ 5.0 mm (2.0 x $\varnothing$ 0.2 in)
	Bending Radius	40.0 mm (1.6 in) [Repeat] 80.0 mm (3.1 in) [Install]
Center Cable	Cable Dimensions	245 x 20 x 2.3 mm (9.7 x 0.8 x 0.1 in)
	Bending Radius	15.0 mm (0.6 in) [Repeat] 1.0 mm (0.04 in) [Install]
	Conn. Type	SMA-Male
Indoor Cables	Conn. Diam.	7.9 mm (0.31 in)
	Cable Dimensions	300 x $\varnothing$ 4.0 mm (12.0 x $\varnothing$ 0.16 in)
	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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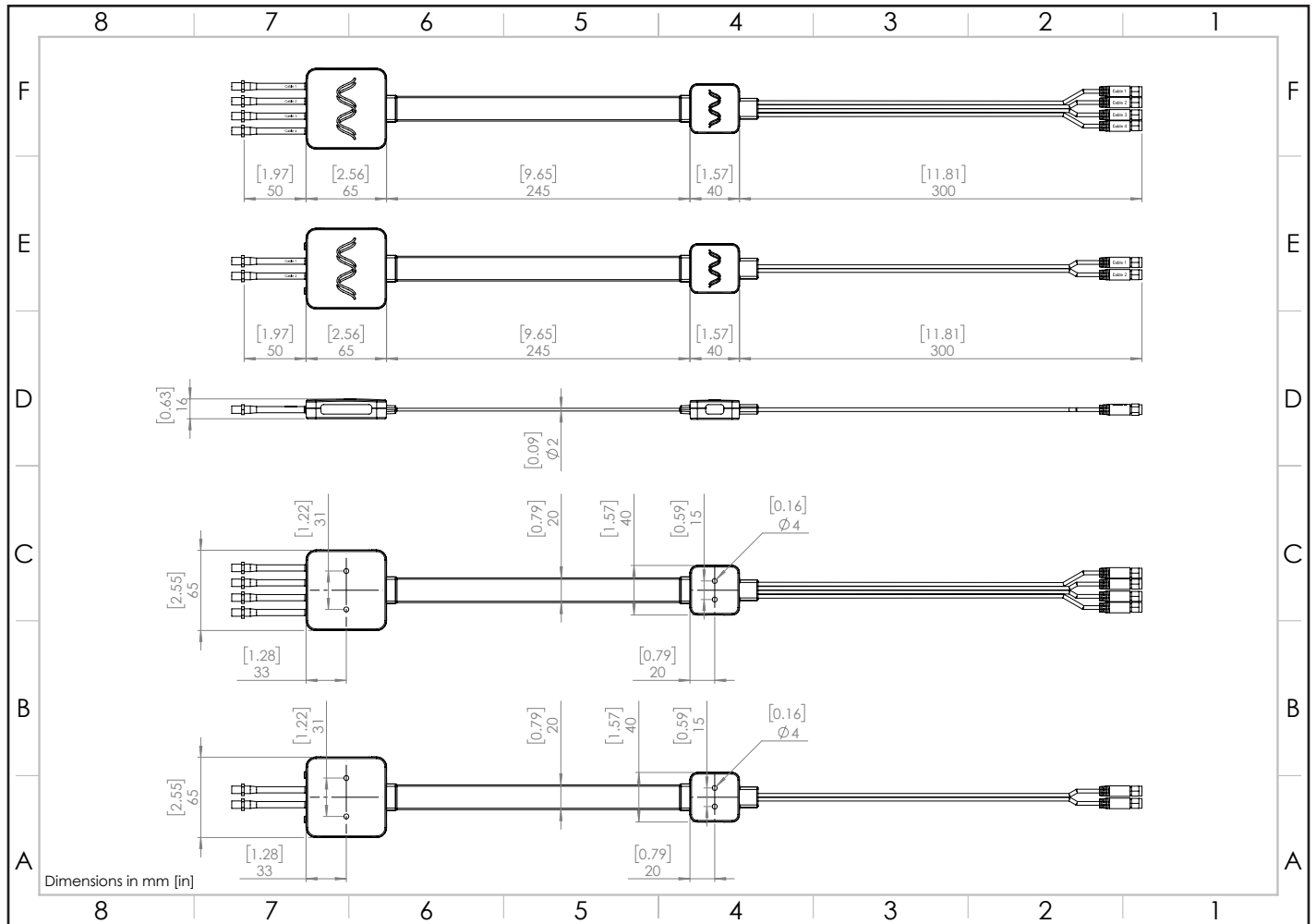
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Coax Window Entry Cable (Twin & Quad)

Designed by WAVEFORM in California

Dimensions:



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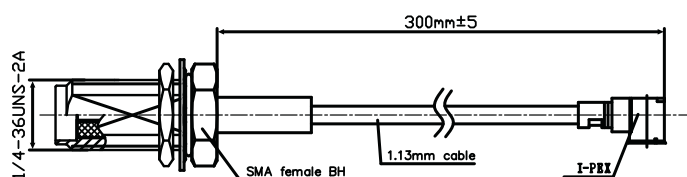
SMA-Female to U.FL Pigtail Adapter

by WAVEFORM

SKU: PTA-SMAF-UFL-V2

Main 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 m Ω (Center) ≤ 2 m Ω (Outer)
Insulation Resistance	≥ 5000 M Ω

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



WAVEFORM

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