

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



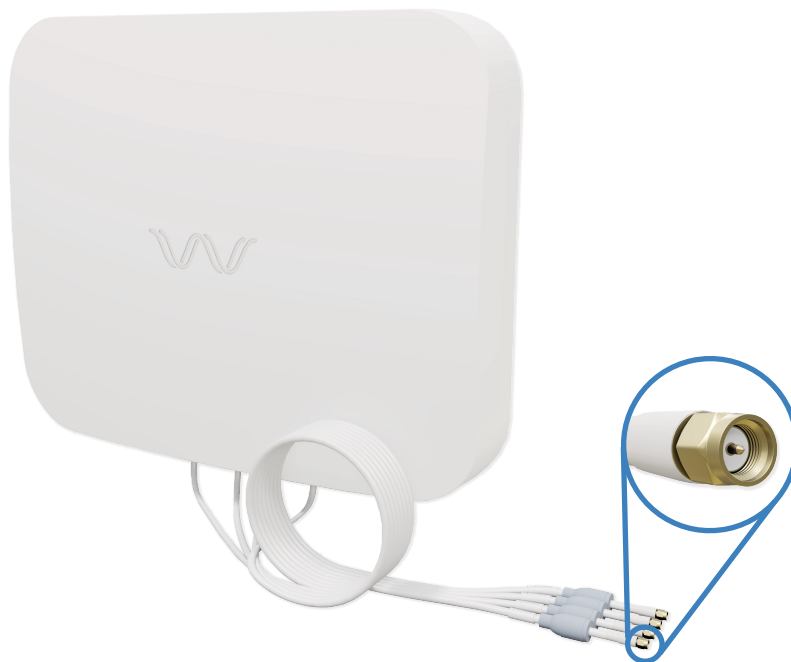
Up to 9.1 dBi Gain



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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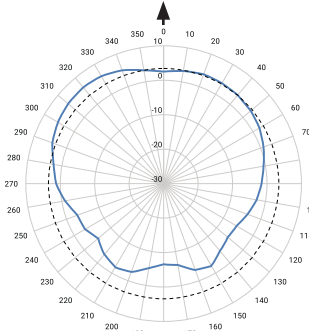
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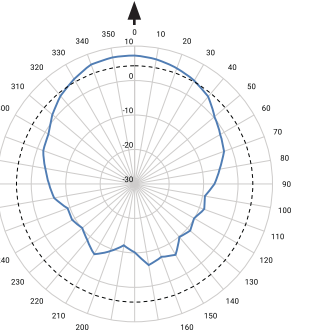
Directional 4x4 MIMO Panel Antenna

Designed by WAVEFORM in the USA

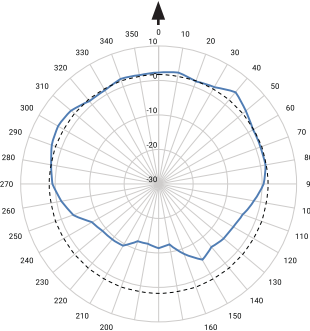
600-900 MHz



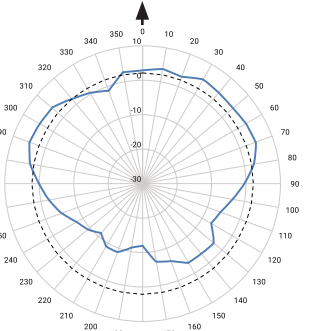
1700-2700 MHz



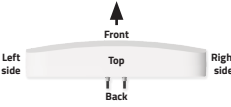
3500-4200 MHz



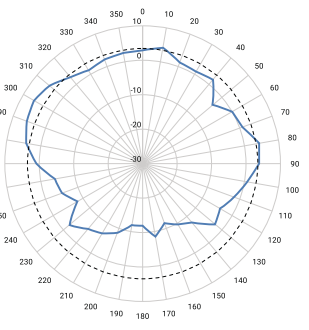
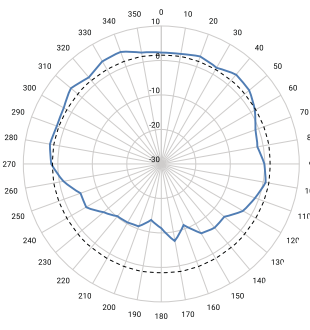
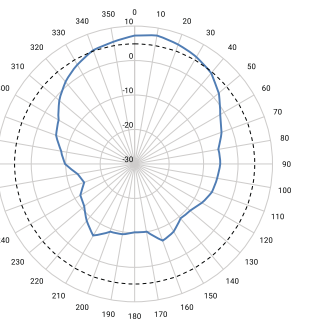
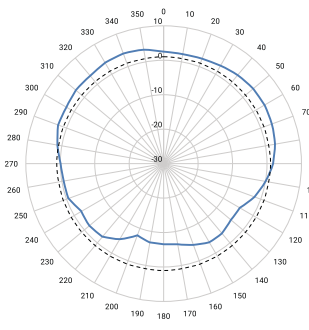
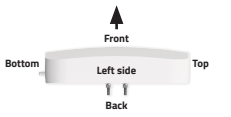
5000-6000 MHz



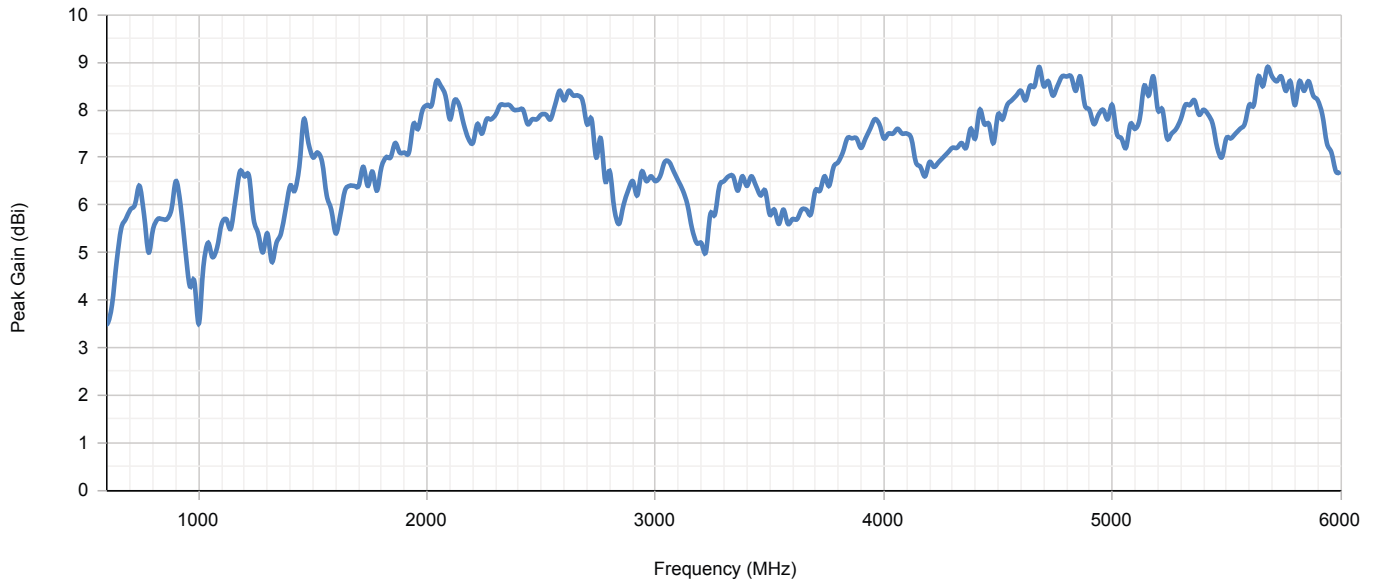
Azimuth Plane
"Top-down view"



Elevation Plane
"Side-on view"



Antenna Peak Gain (dBi) by Frequency (Mhz)



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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 | |
| Conn. Material | Steel | | |
| Conn. 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 |
| | ROHS Rated? | Yes |
| Integrated Grounding Cable | Operating Temperature | -20 to +80 deg C (-4 to +176 deg F) |

*Includes 1x spare



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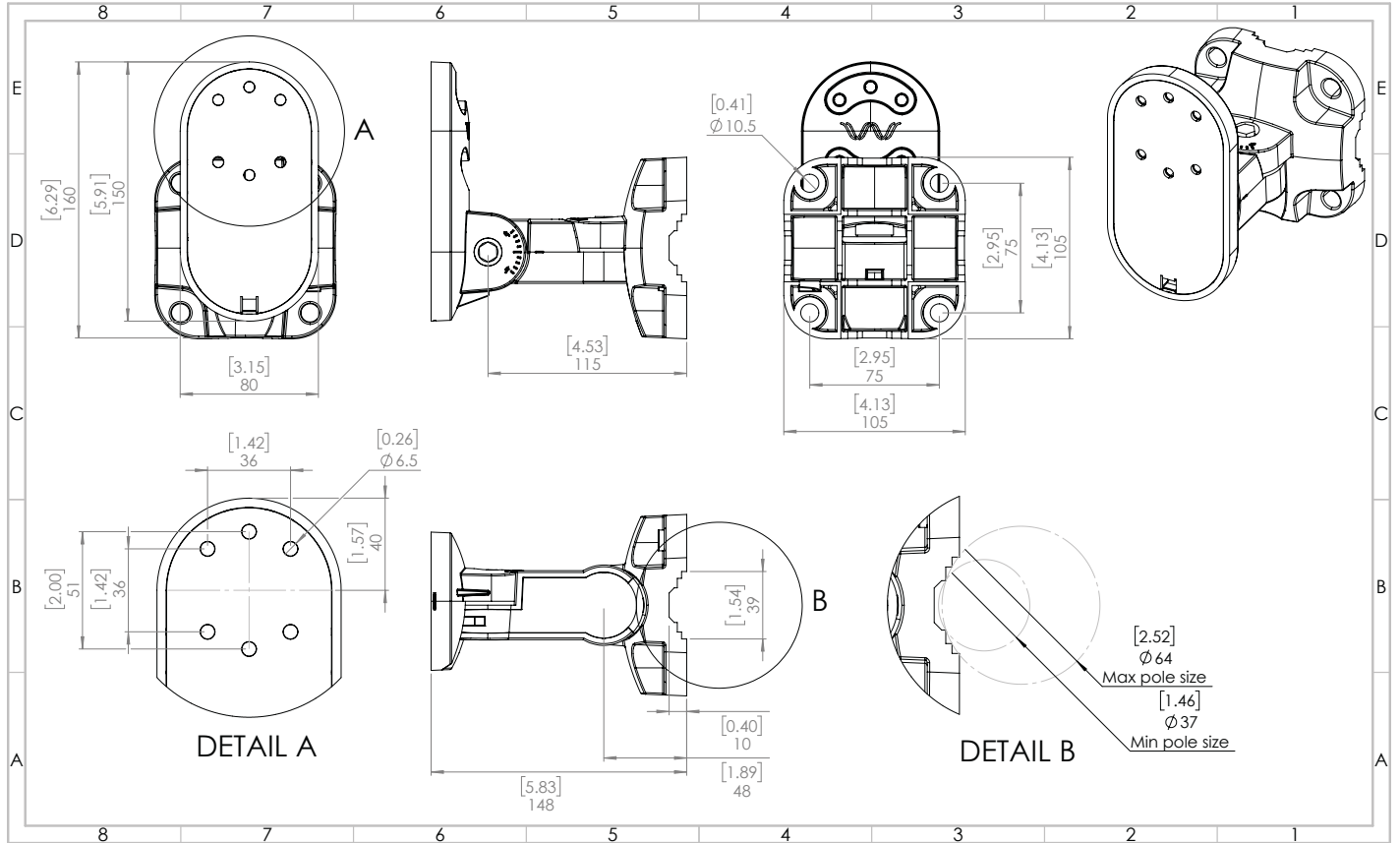
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FlexMount

Designed by WAVEFORM in the USA

Dimensions:



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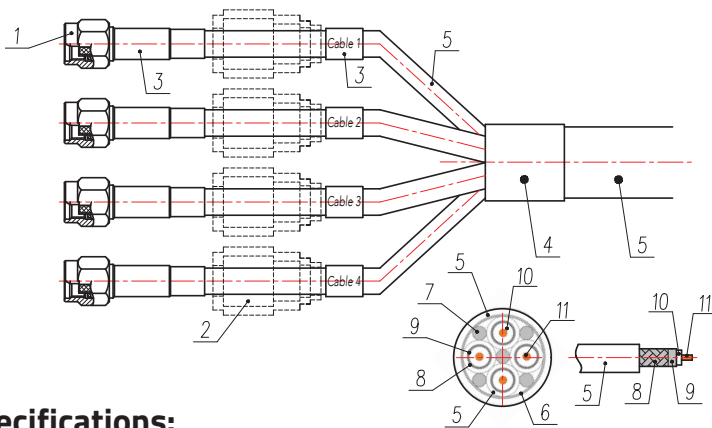
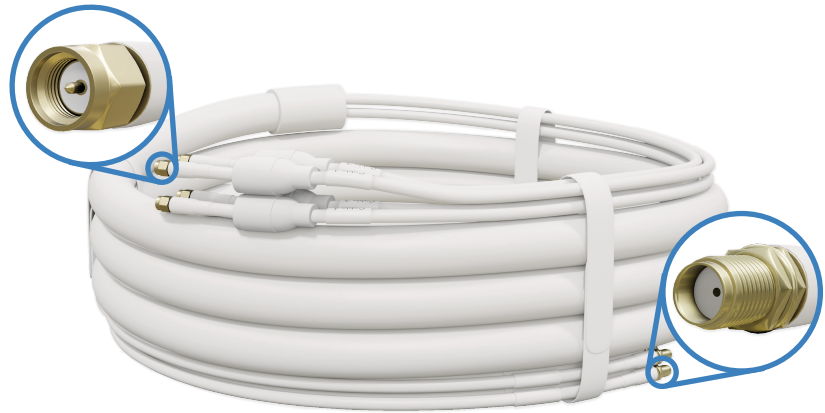
UltraFlex-Quad

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 |

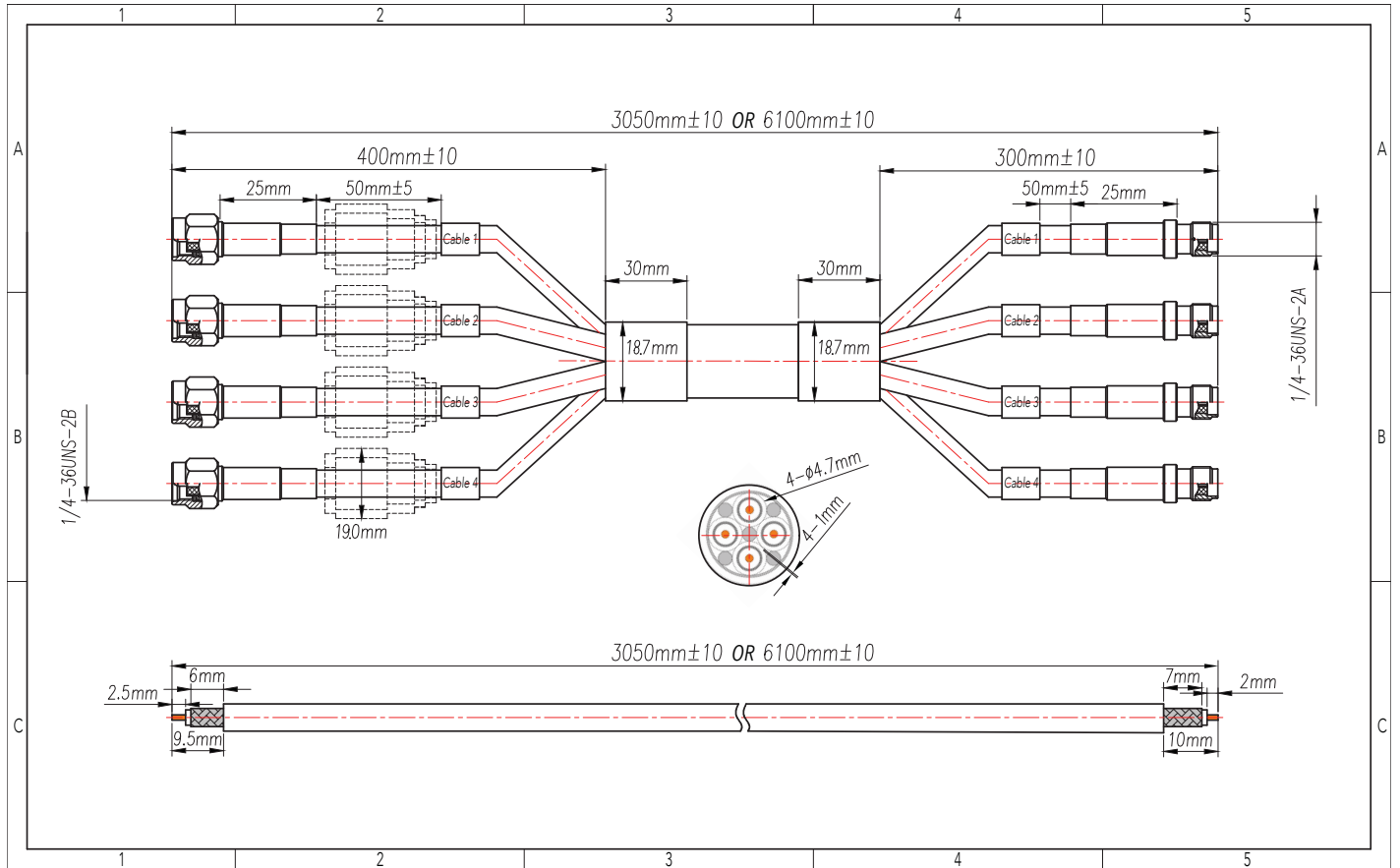
Specifications:

| 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:



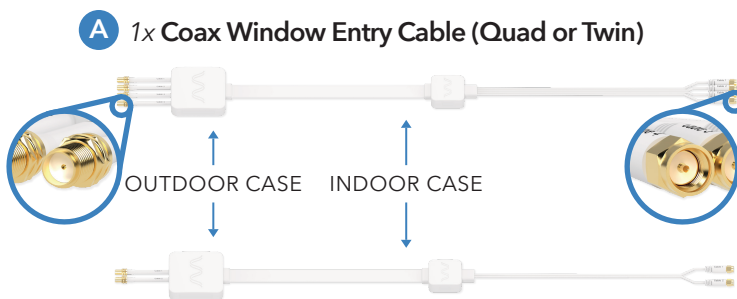
Coax Window Entry Cable (Twin & Quad)

Designed by WAVEFORM in the USA

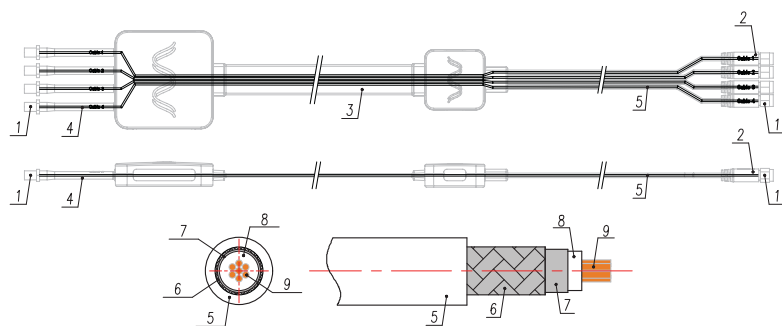
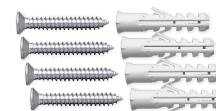
SKU: 113WP-SFM-x-V2

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



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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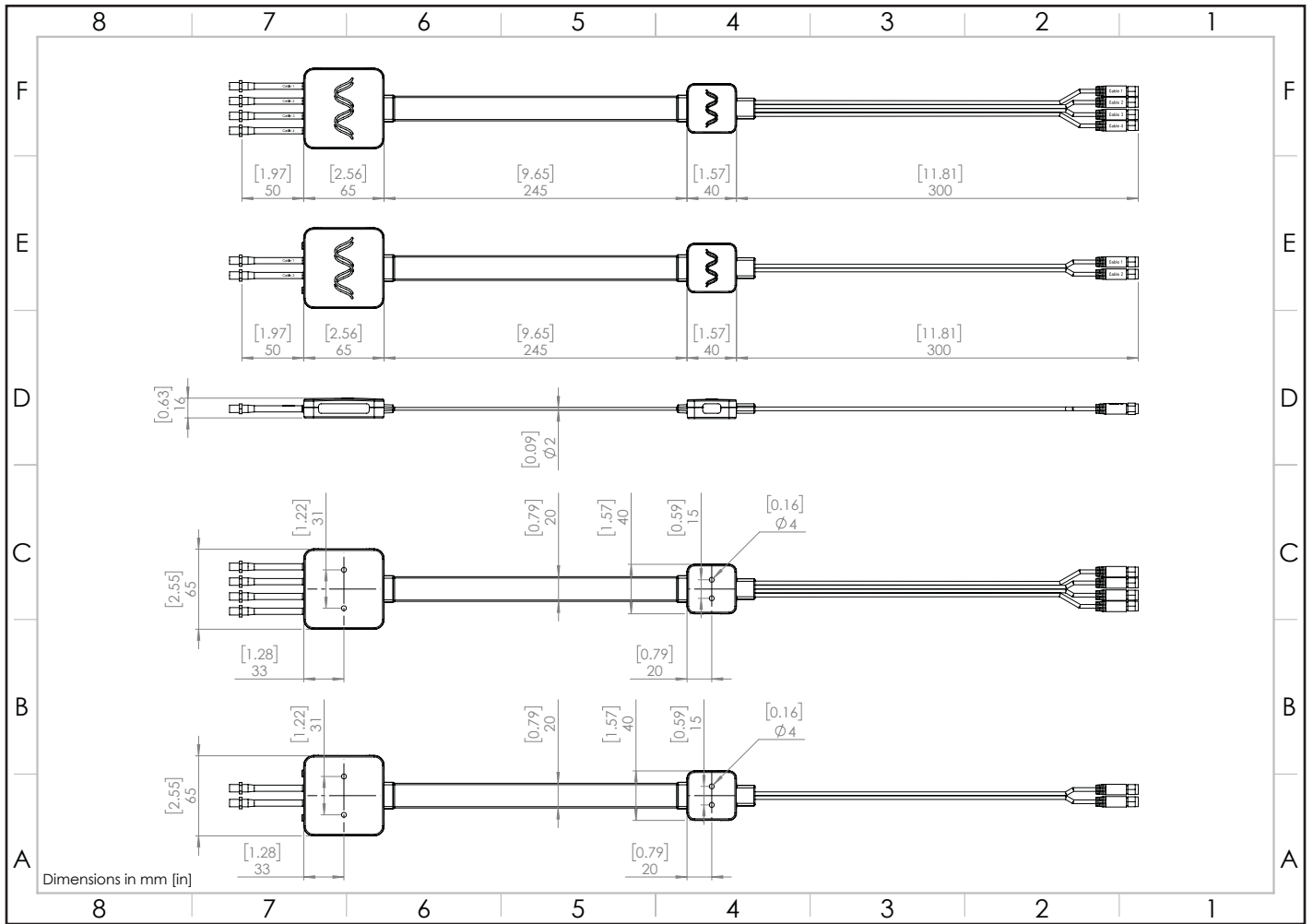
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Coax Window Entry Cable (Twin & Quad)

Designed by WAVEFORM in the USA

Dimensions:



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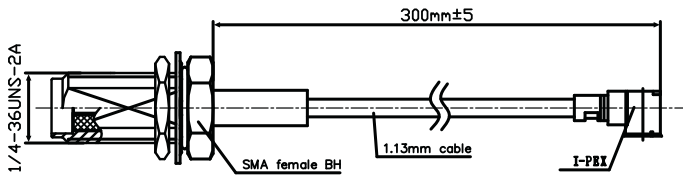
SMA-Female to U.FL Pigtail Adapter

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 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 |



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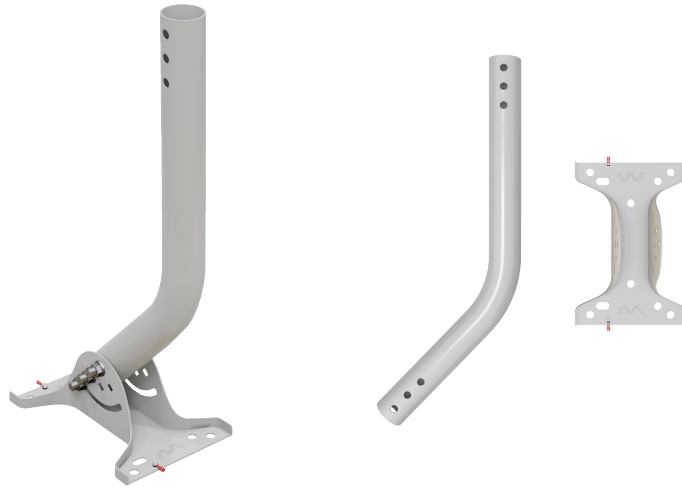
UltraPole: The Universal Antenna Mount (Base Kit)

Designed by WAVEFORM in the USA

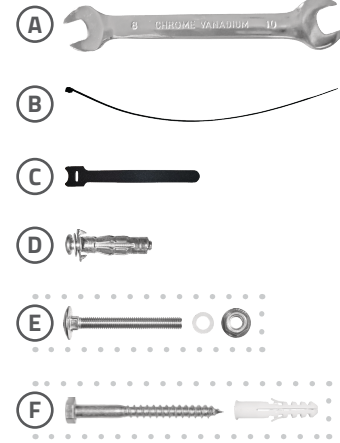
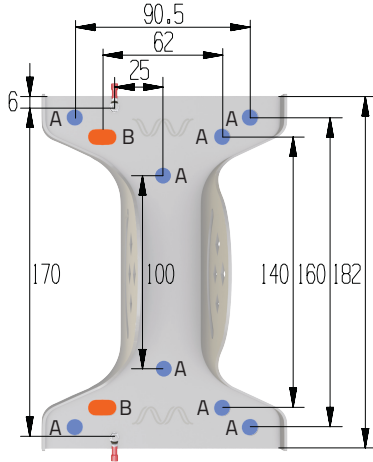
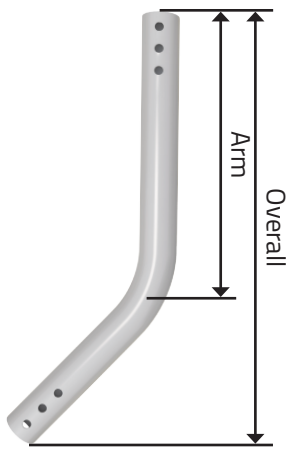
SKU: WF-UPM-Base

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