



# MOBILITY 20G

2x2 MIMO 5G-Ready Cellular Antenna System with GPS Receiver

## Overview

### ■ Built for 5G

2x LTE/5G omni-directional antenna for the best performance.

### ■ Ultra-wide bandwidth

Wide frequency range (600-6000MHz) supports LTE and 5G connectivity.

### ■ Robust design

IP68 rated, rugged, low profile and durable housing in Black or White color options.

### ■ Easy installation

Ground plane is not required for installation. Simple panel, wall or pole installation for various applications.

## Applications

- Public Safety and mission critical connectivity
- Mobile Healthcare
- Transportation Connectivity

6.1  
dBi

↑↓  
LTE

📍  
GPS

IP  
68

B71  
Support

Built for  
5G



**TAA**  
COMPLIANT

## Specifications

### Cellular

|                      |                                                                                            |
|----------------------|--------------------------------------------------------------------------------------------|
| Antenna elements     | 2 elements                                                                                 |
| Cellular frequencies | 1.0dBi: 617-960MHz<br>5.6dBi: 1710-2700MHz<br>6.1dBi: 3400-4200MHz<br>5.3dBi: 4900-6000MHz |
| Cellular bands       | LTE bands B1 to B86<br>(except B31, B72, B73, B87, B88),<br>5G bands n1 to n99             |
| VSWR                 | < 2.5 over 85% of the band                                                                 |
| Feed power handling  | 10W                                                                                        |
| Input impedance      | 50 $\Omega$                                                                                |
| Polarisation         | Linear                                                                                     |
| Ground plane         | Not required <sup>#</sup>                                                                  |

### GPS

|                    |                                  |
|--------------------|----------------------------------|
| Frequency range    | 1561-1602 MHz                    |
| Peak gain          | 0.5dBi@1575MHz<br>1.6dBi@1602MHz |
| VSWR               | < 2 dB                           |
| Output return loss | 10dB max                         |
| Gain: LNA          | 28 $\pm$ 3dB                     |
| Noise figure       | 1.5dB max at 3.3V                |
| Operating Voltage  | 3.3V                             |
| Power consumption  | 8.5 $\pm$ 2.5mA at 3.3V          |

### Cable (LTE / 5G)

|                      |                                                                                         |
|----------------------|-----------------------------------------------------------------------------------------|
| Type                 | CFD-200                                                                                 |
| Loss                 | 0.33 dB/m @ 900MHz<br>0.49 dB/m @ 2000MHz<br>0.55 dB/m @ 2500MHz<br>0.87 dB/m @ 5800MHz |
| Diameter             | 13/64" / 5.0mm                                                                          |
| Jacket               | Half matt PVC, UV resistant                                                             |
| Cellular Termination | QMA male, SMA male                                                                      |

### Cable (GPS)

|                      |                                              |
|----------------------|----------------------------------------------|
| Type                 | RG-174                                       |
| Loss                 | 3.40 dB/m @ 1000 MHz<br>4.90 dB/m @ 1800 MHz |
| Diameter             | 0.1" / 2.7mm                                 |
| Jacket               | Half matt PVC, UV resistant                  |
| Cellular Termination | QMA male, SMA male                           |

# Mobility 20G

### Mounting

|                     |                   |
|---------------------|-------------------|
| Supported types     | Panel, wall, pole |
| Mounting hole       | 1 11/16" / 43mm   |
| Max panel thickness | 19/32" / 15mm     |

### Mechanical

|                                              |                                                     |
|----------------------------------------------|-----------------------------------------------------|
| Product dimensions<br>(Height)<br>(Diameter) | 1.42" / 36mm (spigot not included)<br>5.12" / 130mm |
| Package dimensions                           | 8.90"x8.46"x4.29" /<br>226x215x109mm                |
| Radome material                              | UV stable PC                                        |

### Package contents

|             |                                                                                                          |
|-------------|----------------------------------------------------------------------------------------------------------|
| Antenna     | Mobility 20G                                                                                             |
| Accessories | Wall/pole mount<br>Double sided 3M adhesive pad<br>(Diameter: 5.08" / 129 mm<br>Thickness: 0.08" / 2 mm) |

### Environmental, compliance

|                        |                                       |
|------------------------|---------------------------------------|
| IP rating              | IP68                                  |
| Operating temperature  | -40° - 176°F / -40° - 80°C            |
| Storage temperature    | -40° - 176°F / -40° - 80°C            |
| Compliance             | RoHS, REACH, WHEE                     |
| Wind Survivability     | 137mph, 220 km/h                      |
| Enclosure flammability | UL 94 HB                              |
| Cable flammability     | UL 758 (VW-1)                         |
| UV resistance          | UL 746C<br>(F1 long-term UV exposure) |
| Salt Spray             | MIL-STD 810F/ASTM B117                |

<sup>#</sup>All measurements stated in this document were obtained without a ground plane.

Ordering information

Mobility 20G

Antenna series name

2x 4G/5G antenna elements number

0x Wi-Fi antenna elements number

G - 1x GPS antennas number

RF connector type  
(2 options: S - SMA male, Q - QMA male)

Color  
(2 options: W - white, B - black)

RF cable length in ft  
(2 options: 1 - 1 ft / 0.3 meter, 6 - 6.5 ft / 2 meter)

ANT - MB - 20G - S - W - 6

| Product Code     | Description                                                     |
|------------------|-----------------------------------------------------------------|
| ANT-MB-20G-S-W-6 | 2xLTE/5G, 1xGPS 600-6000MHz, IP68, SMA male, White, 6.5 ft / 2m |
| ANT-MB-20G-S-B-6 | 2xLTE/5G, 1xGPS 600-6000MHz, IP68, SMA male, Black, 6.5 ft / 2m |
| ANT-MB-20G-Q-W-1 | 2xLTE/5G, 1xGPS 600-6000MHz, IP68, QMA male, White, 1 ft / 0.3m |
| ANT-MB-20G-Q-B-1 | 2xLTE/5G, 1xGPS 600-6000MHz, IP68, QMA male, Black, 1 ft / 0.3m |

Extension cable

Extension Cables

Cable terminal 1  
(2 options: S - SMA male, Q - QMA male)

Cable terminal 2  
(1 option: Q - QMA female)

Cable length in ft  
(1 option: 15 ft / 4.5 meter)

EXC - SQ - 15

LTE/GPS elements

Device

XF

Cable Terminal 1

XM

Extension Cable

Cable Terminal 2

QF

QM

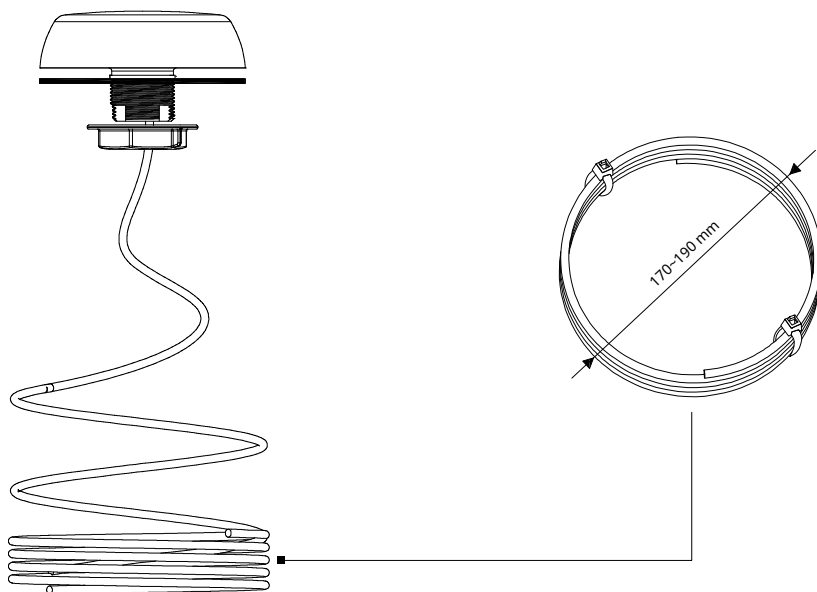
Antenna

| Product Code | Element type     | Description                                                         |
|--------------|------------------|---------------------------------------------------------------------|
| EXC-SQ-15    | LTE/GPS elements | Extension coax cable, SMA male to QMA female connector, 15ft / 4.5m |
| EXC-QQ-15    | LTE/GPS elements | Extension coax cable, QMA male to QMA female connector, 15ft / 4.5m |

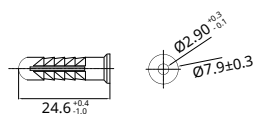


## Technical drawing

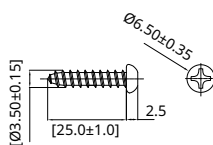
(unit: mm)



### Mounting Set



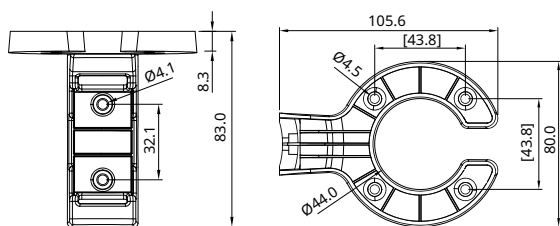
Plastic fixing for M3.5 screw  
(2 pcs)



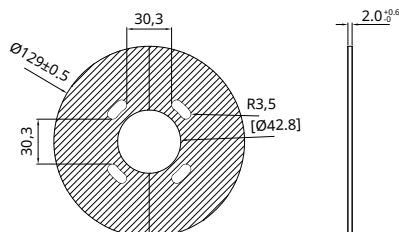
Tapping screws  
(2 pcs, M3.5\*24L)



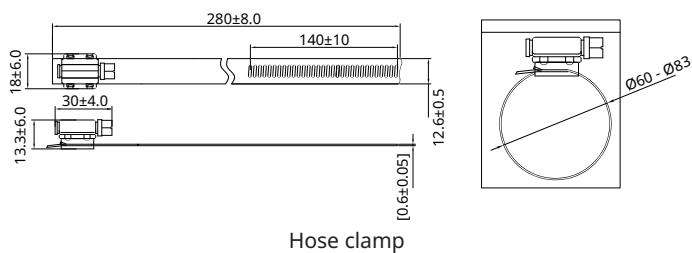
Screws  
(4 pcs, M4\*15L)



Mounting bracket



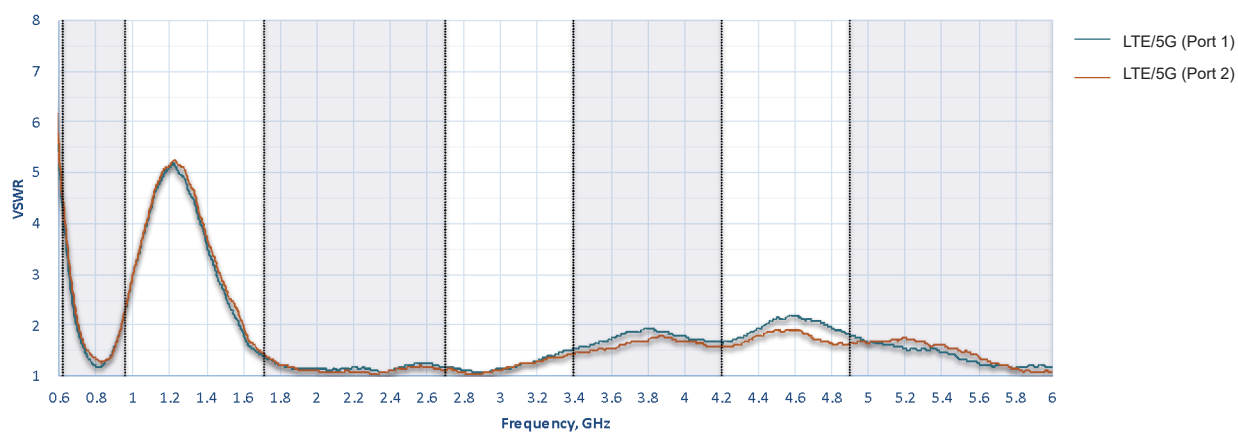
Double sided 3M adhesive pad



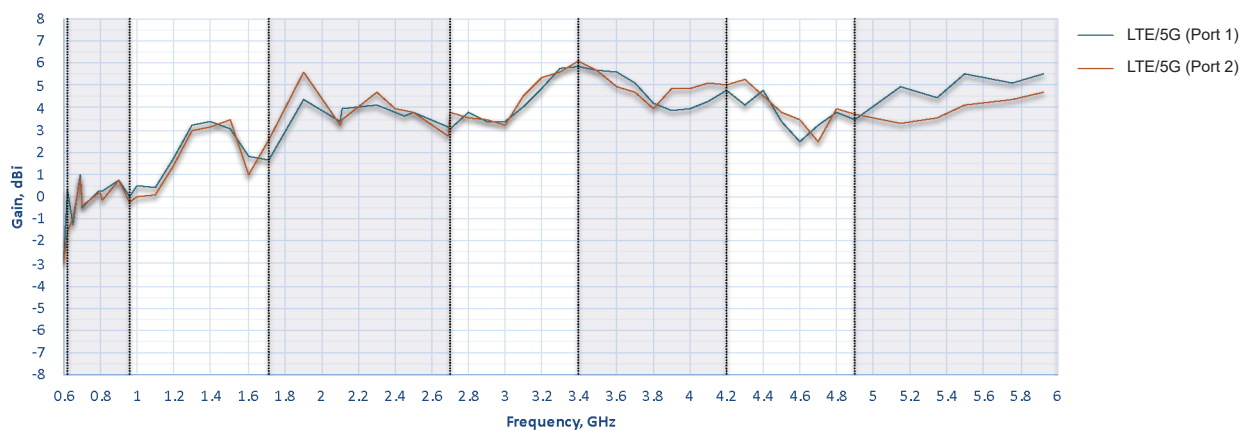
Hose clamp



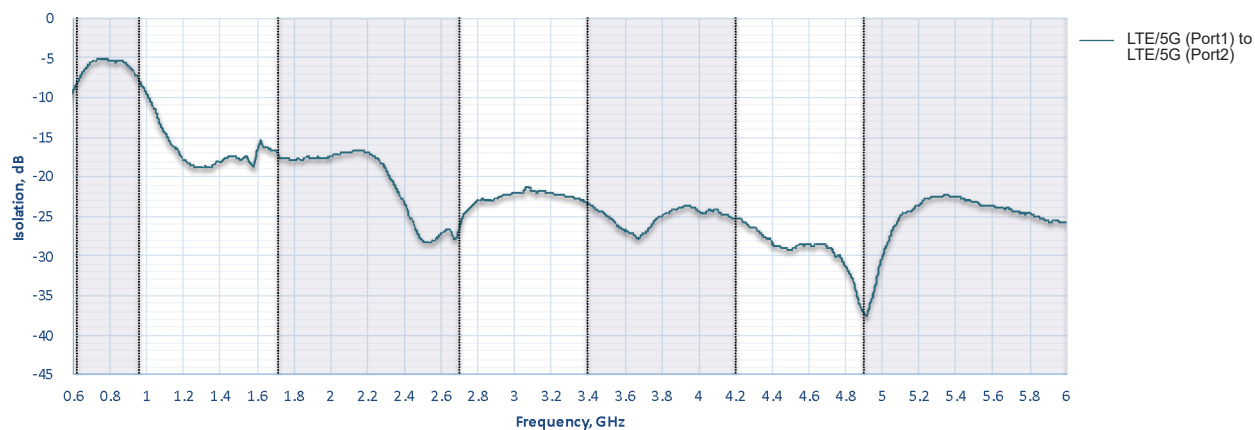
## LTE/ 5G Antenna VSWR



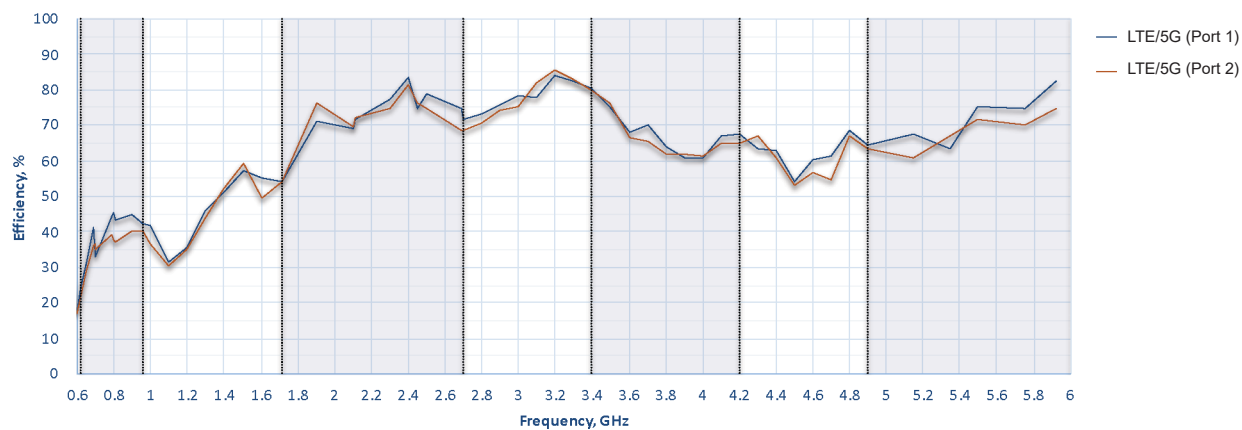
## LTE/ 5G Antenna Gain



## LTE/ 5G Antenna Isolation

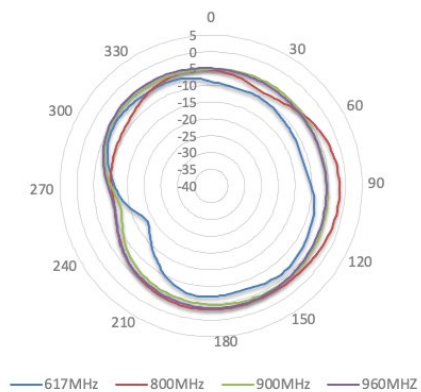


## LTE/ 5G Antenna Efficiency

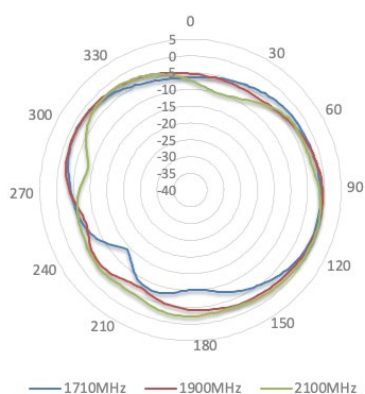


## LTE/5G Antenna Radiation patterns (Azimuth)

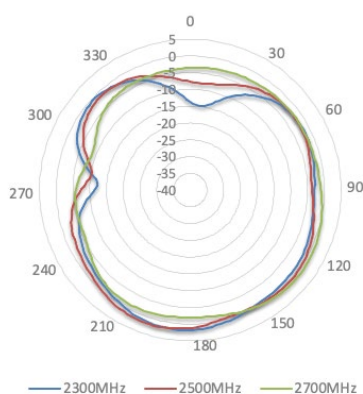
617-960 MHz



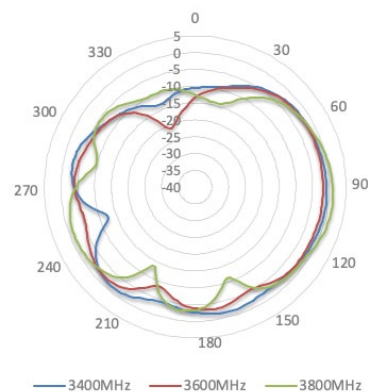
1710-2100 MHz



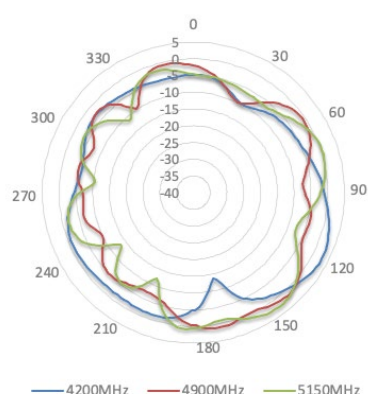
2300-2700 MHz



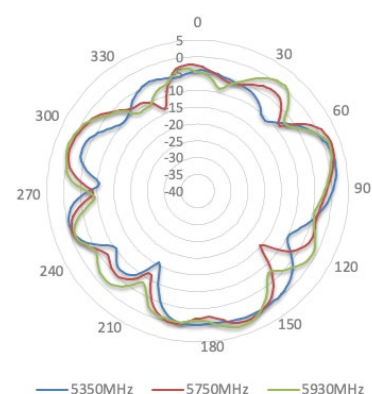
3400-3800 MHz



4200-5150 MHz



5350-5930 MHz

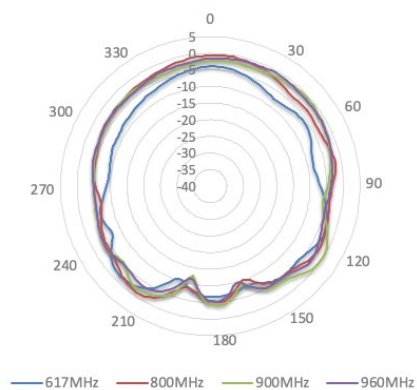


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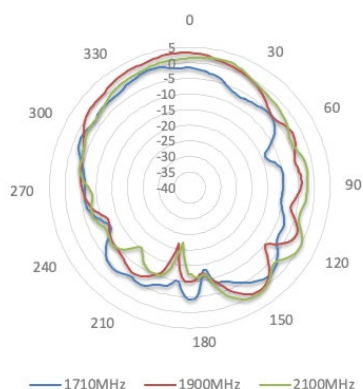


## LTE/5G Antenna Radiation patterns (Elevation 1)

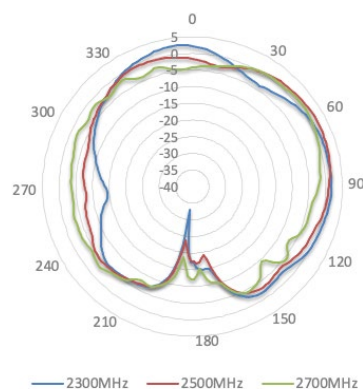
617-960 MHz



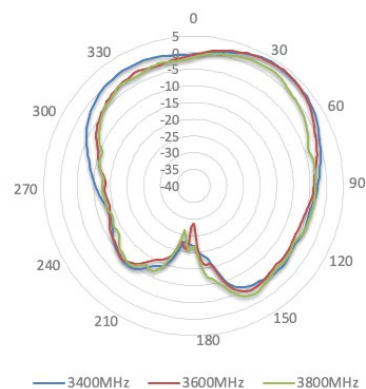
1710-2100 MHz



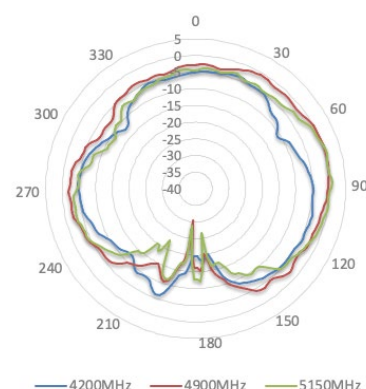
2300-2700 MHz



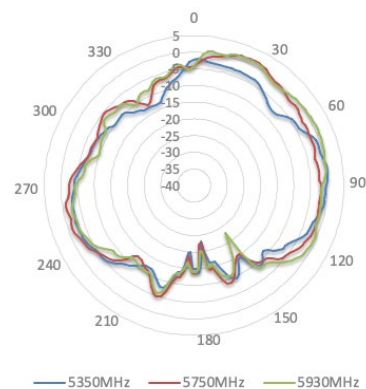
3400-3800 MHz



4200-5150 MHz



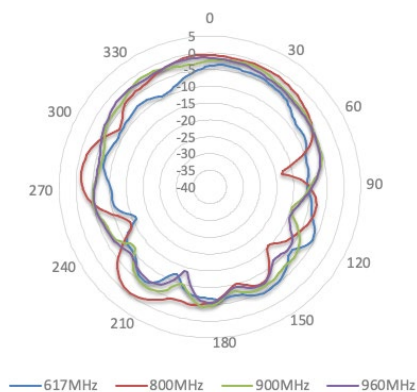
5350-5930 MHz



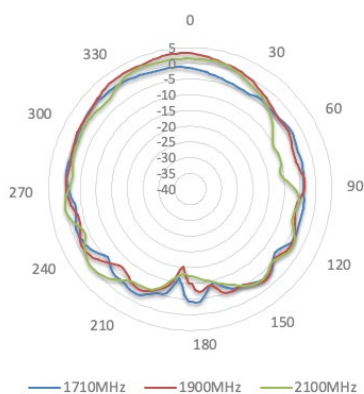
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## LTE/5G Antenna Radiation patterns (Elevation 2)

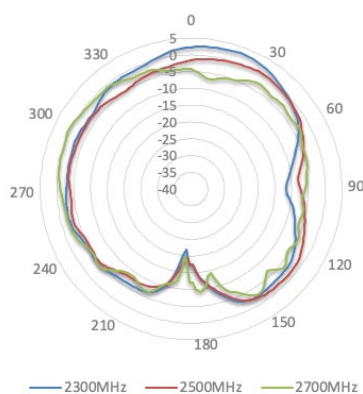
617-960 MHz



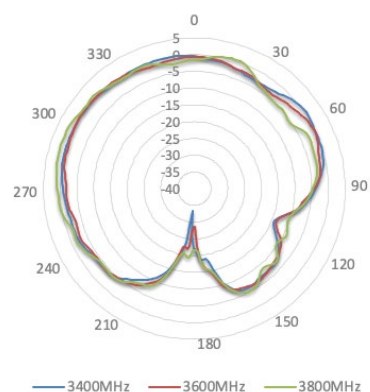
1710-2100 MHz



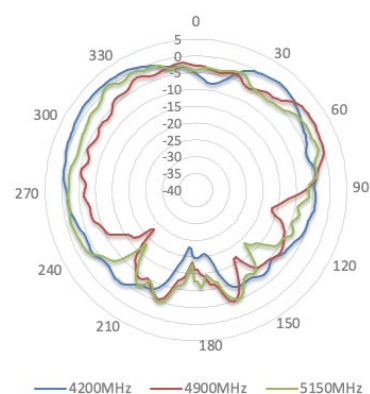
2300-2700 MHz



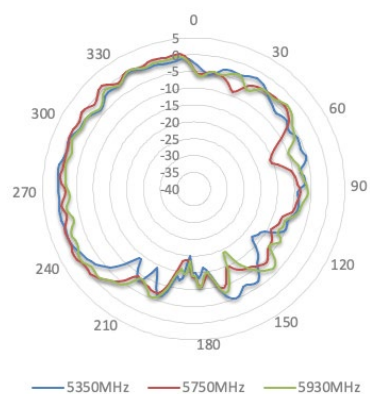
3400-3800 MHz



4200-5150 MHz



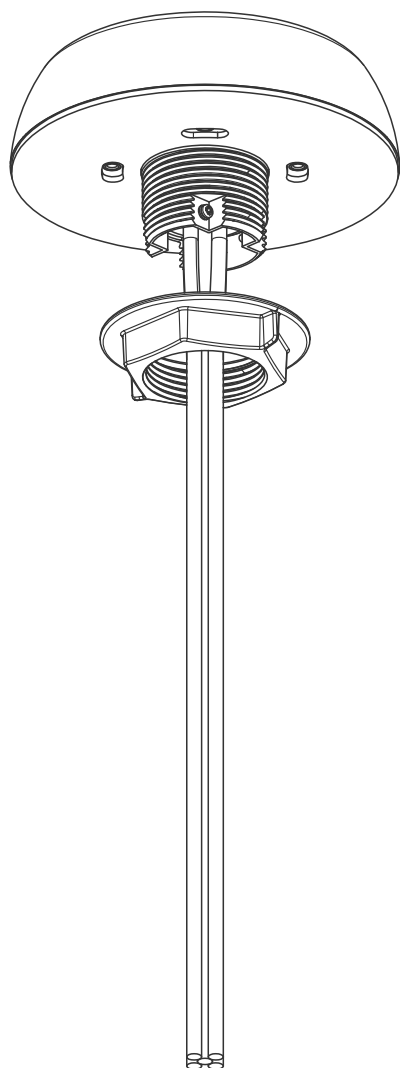
5350-5930 MHz



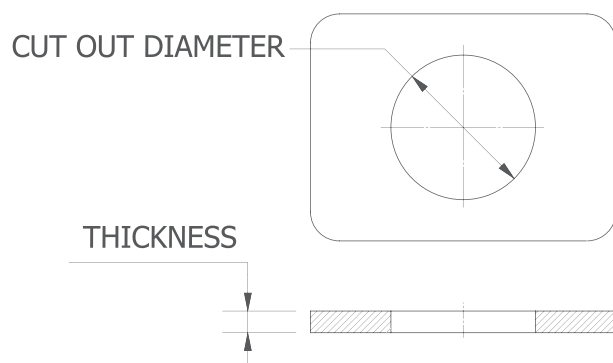
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## Installation recommendation

### Panel Mount



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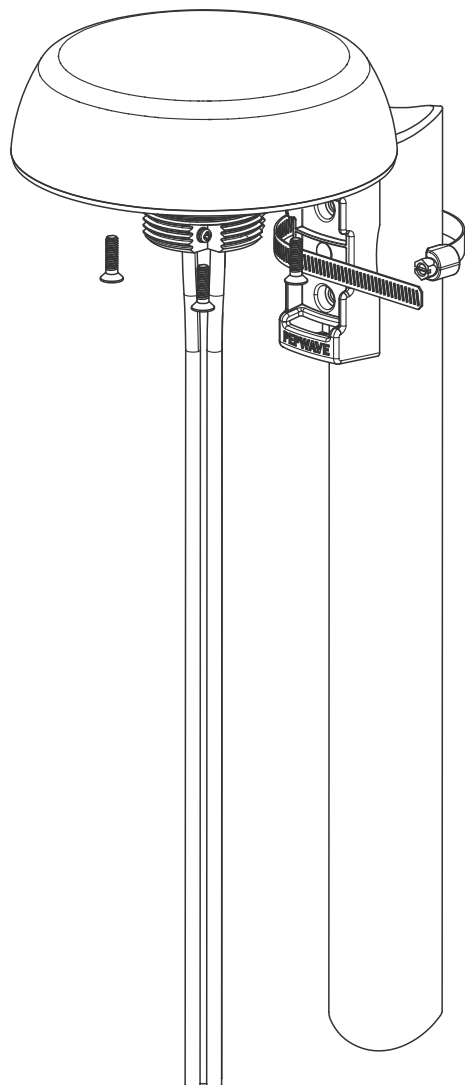


### Notes

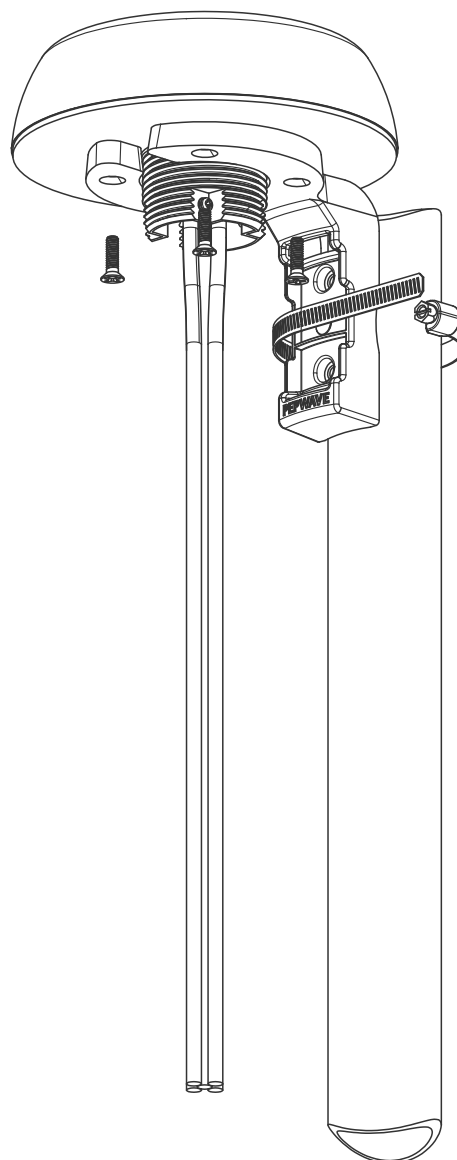
- Cover panel surface to protect the paint work. When drilling a hole, start with a small one, then increase it.
- Diameter of the cut out should be 1 11/16" / 43mm. Maximum allowed thickness of the panel - 15mm.
- After drilling, clean up the surface and apply some paint around the hole to prevent corrosion. Attach the antenna.

## Installation recommendation

### Pole Mount



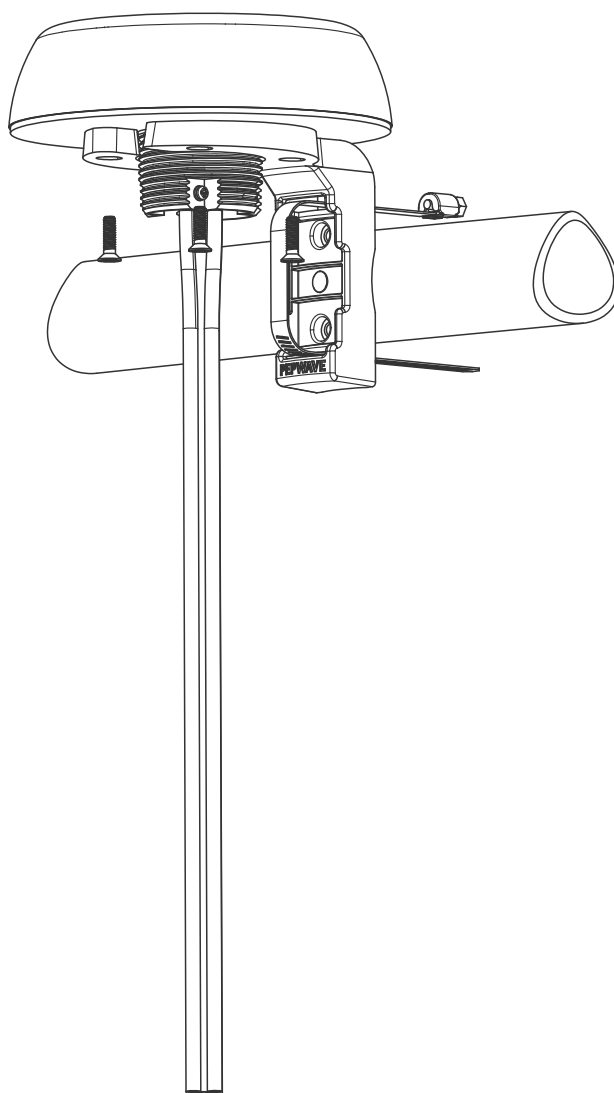
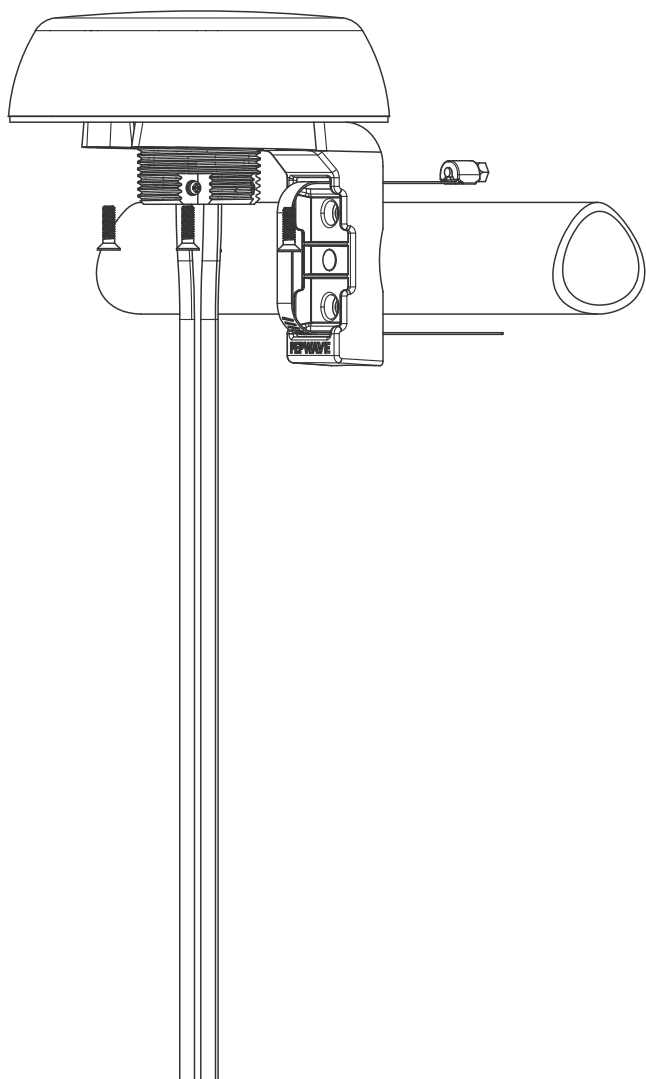
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## Installation recommendation

### Horizontal Pole Mount

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## Installation recommendation

Wall Mount

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