

# MIMO-3-V2-13



ANTENNAS | MIMO-3-V2-13

## 3 - IN - 1 TRANSPORTATION & AUTOMOTIVE ANTENNA 2X2 LTE (MIMO), GPS/GLONASS



 410-470; 690-960; 1710-2700 & 3400- 3800 MHz	 5.8 dBi 21 dBi	 Increase x Mb/s	 4x Omni-Directional	 Machine to Machine	 IP 68	
 -40°C to +80°C	 UL 94 HB	 2x2 MIMO	 GPS included	 450 MHz		

- **3-in-1 high performance multi frequency 2G/3G/4G/LTE antenna (5G Ready)**
- **2 x MiMo LTE & GPS / GLONASS**
- **Ultra-Wideband, includes 450MHz and 3.5GHz CBRS Bands**
- **Robust and water resistant (IP68) antenna**
- **Ideal for transportation & marine use**
- **Multi mounting options for easy installation**

APPLICATION AREAS

- Urban
- Rural/Farm
- Marine
- Transportation

### Product Overview

The MIMO-3-V2-13 consists of a 3-in-1 antenna system within a single housing, providing 2x Cellular and a GPS/GLONASS. This antenna is specifically designed for the transportation and marine industry. The 2x Cellular MIMO antennas (for 2G/3G/4G) covers the contemporary 690MHz to 2700MHz bands, as well as the new emerging LTE and 5G spectrum for 450MHz and 3.5GHz CBRS bands, which is becoming popular across the various international cellular network operators for LTE. This antenna, due to its wide band capabilities, can be used across different operators and technologies and is ready for future cellular technologies such as 5G up to 3.8GHz. The third antenna is a high-performance active GPS/GLONASS system operating down to -40 degrees. The antenna exceeds the performance of most competitors due to the attention to the design of this high-performance antenna. The radiation patterns of all radiating elements provide an excellent balance between omnidirectionality, pattern diversity and good radiation abilities at the desired elevation, which is important for this type of antenna, especially for the transportation and marine market. Main applications are for commercial/industrial vehicles, marine, M2M and other IoT systems using a wide range of radio technologies, while remaining futureproof over the wide frequency band offered by this antenna.

### Features

- Ultra-wideband 410MHz to 470MHz, 690MHz to 2700MHz and 3400MHz to 3800MHz bands
- Cleverly designed decorrelated antennas give superior MIMO performance in the cellular bands
- Above features maintained from 698MHz to 5800MHz in relevant bands, including the 450MHz band
- Careful mechanical design provides ruggedness, corrosion, water, dust resistance (IP68)

### Application Areas

- Transport broadband, automation and telemetry for Buses, Utility, Trucking & Public Safety vehicles
- Industrial factory automation, robotic machinery and other M2M systems telemetry
- Farming & Agricultural automation such as M2M & IoT
- Broadband cellular distribution for Marine / Boats (inland and near coastal vessels)
- Mining Vehicles & Machinery communications, telemetry and automation (M2M & IoT)

### MIMO-3-V2-13

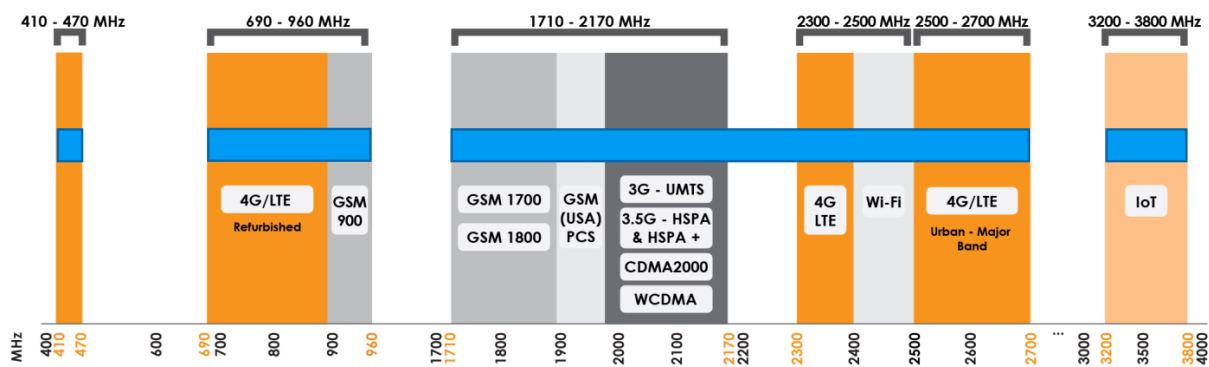
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**Frequency Bands - Cellular**

The MIMO-3-V2-13 is suitable for the following frequency bands | 410-470 MHz | 690-960 MHz | 1710-2170 MHz | 2300-2500 MHz | 2500-2700 MHz | 3200-3800 MHz |



Indicates the frequency bands which MIMO-3-V2-13 supports

**Antenna Overview**

Ports	1 & 2	N/A	3
SISO / MIMO	2x2 MIMO	N/A	N/A
Frequency Bands	410 MHz - 3800 MHz	N/A	1575.42 MHz/1600 MHz
Peak Gain	5.8 dBi	N/A	21 dBi
Coax Cable Type	Twin HDF-195	N/A	RTK-031
Coax Cable Length	2m	N/A	2m
Connector Type	SMA Male	N/A	SMA Male

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## MIMO-3-V2-13



### Electrical Specifications - Cellular

Frequency bands:	410-470 MHz 690-960 MHz 1710-2700 MHz 3400-3800 MHz
Gain (max) Port 1 & 2:	5.8 dBi
VSWR Port 1 & 2:	≤2.5:1
Feed power handling:	10 W
Input impedance:	50 Ohm (nominal)
Polarisation:	Linear Vertical
Coax cable loss:	0.35 dB/m @ 900 MHz 0.53 dB/m @ 2000 MHz 0.6 dB/m @ 2500 MHz 0.72 dB/m @ 3500 MHz
Path to Ground:	Yes

### GPS/Glonass Antenna Electrical Specifications

Frequency Range (GPS):	1575.42MHz/1600MHz
Gain (Max):	21+/-2dBi
VSWR:	≤1.5:1
DC Voltage:	2.7-3.3 V
DC Current:	5-15mA
Noise Figure:	≤1.5 dB
Nominal Impedance:	50 Ω
Polarisation:	RHCP
Filter Out Band Attenuation:	12dB Min f0+50MHz, 16dBi Min f0-50MHz
Cable:	0.04m Micro Cable 1.13
Connector:	SMA male
Voltage:	2.7 - 3.3V
Max. Power-W:	50
Polarisation:	2 x Vertical linear
Coax cable loss:	0.6 dB/m @ 2500 MHz 0.72 dB/m @ 3500 MHz 0.981 dB/m @ 5800 MHz
Path to Ground:	Yes

### Coax Cable & Connector Type -Cellular

Cable length:	2m
Coax cable type:	Twin HDF 195
Connector type:	SMA (Male)

### Coax Cable & Connector Type - GPS

Cable length:	2m ±5%
Coax cable type:	RTK-031

Connector type: SMA (Male)

*\*The coax cables & connectors are factory mounted to the antenna*

### Product Box Contents

Antenna:	A-MIMO-0003-V2-13
Mounting bracket:	Threaded Spigots (Up to 60mm clamping thickness), Adhesive Surface Mounting & Optional Magnetic Mount

### Ordering Information

Commercial name:	MIMO-3-V2-13
Order product code:	A-MIMO-0003-V2-13
EAN number:	0707273470287

### Mechanical Specifications

Product dimensions	253 mm x 128 mm x 144 mm
Packaged dimensions:	265 mm x 211 mm x 204 mm
Weight:	1.2 kg
Packaged weight:	1.31 kg
Radome material:	UV Stable SAN Marine ASA
Radome colour:	Brilliant White Pantone P 179-1 C
Mounting Type:	Spigot, Surface with Magnetic mount option

### Environmental Specifications, Certification & Approvals

Wind Survival:	<220 km/h
Temperature Range (Operating):	-40°C to +80°C
Environmental Conditions:	Outdoor/Indoor
Water ingress protection ratio/standard:	IP 68
Salt Spray:	MIL-STD 810F/ASTM B117
Operating Relative Humidity:	Up to 98%
Storage Humidity:	5% to 95% - non-condensing
Storage Temperature:	-40°C to +80°C
Flammability Rating:	UL 94-HB ECE-R118.02 Certified cables
Impact resistance:	IK 10
Product Safety & Environmental:	Complies with CE, EN, CSA, RoHS and IEC standards



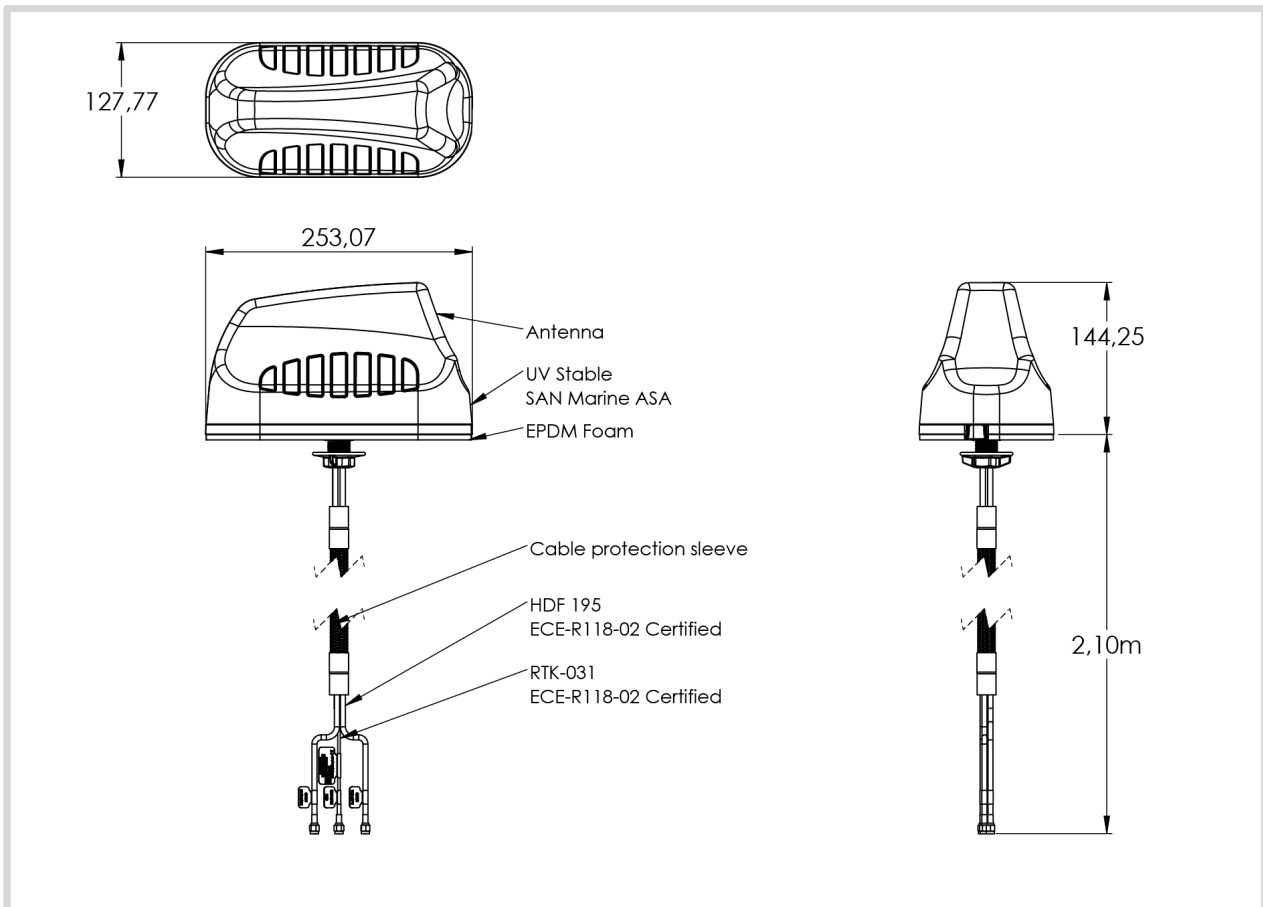
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Technical Drawings

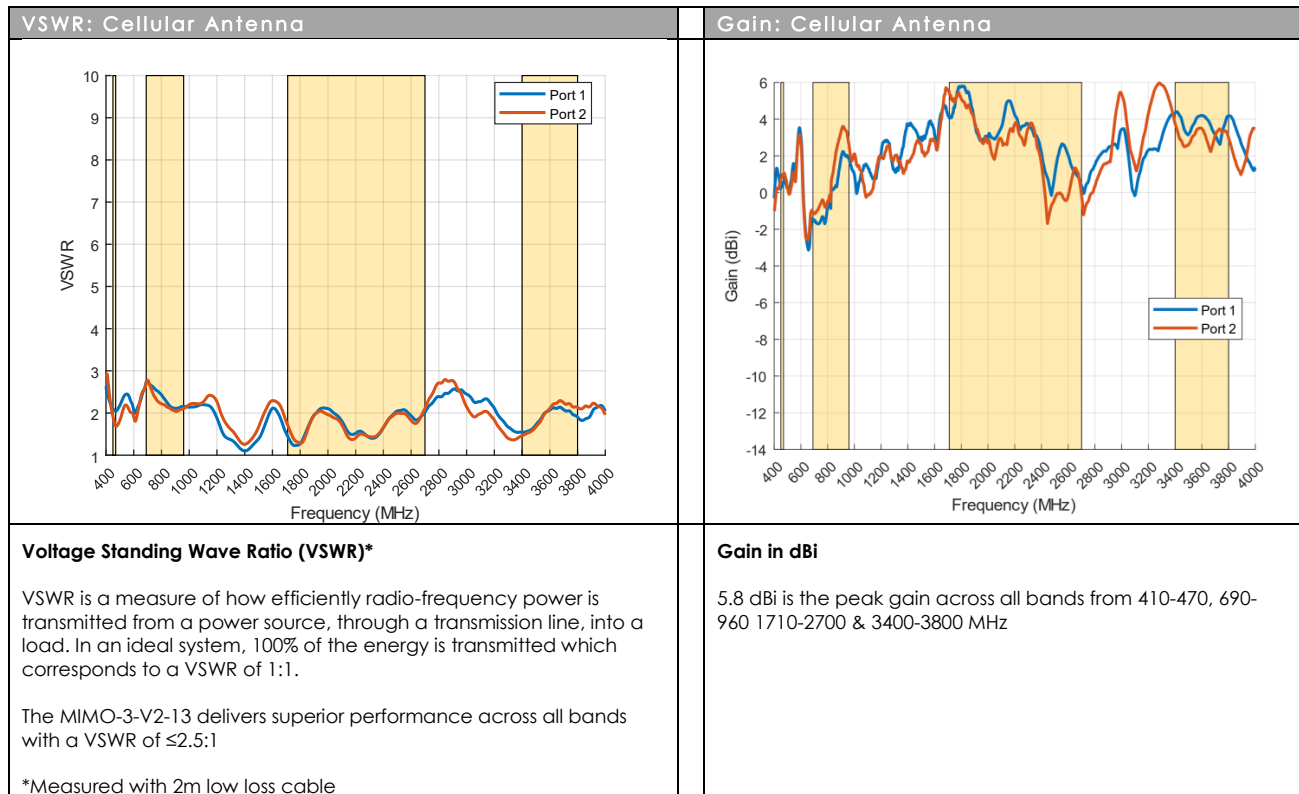


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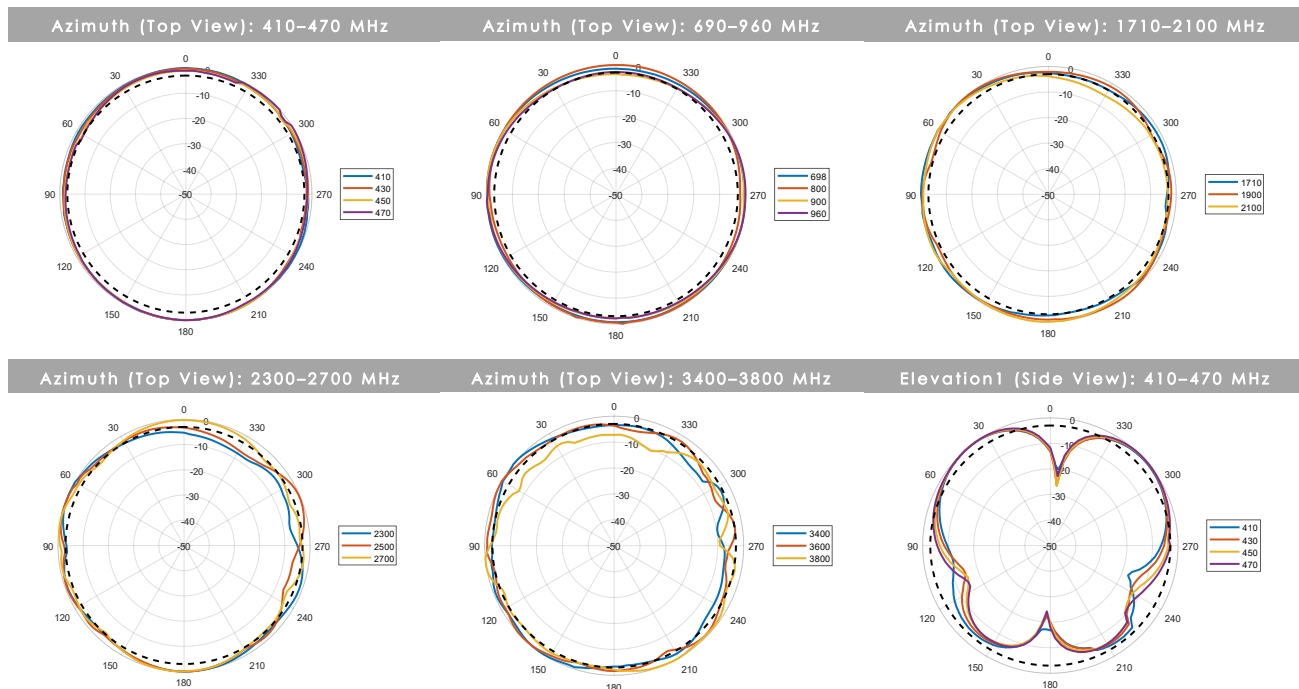
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**Antenna Performance Plots**



**Radiation Patterns – Cellular**



**MIMO-3-V2-13**

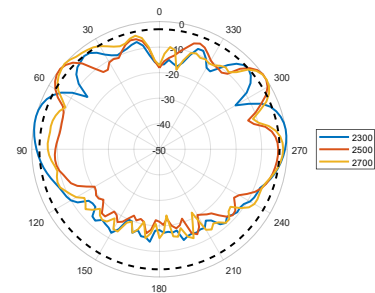
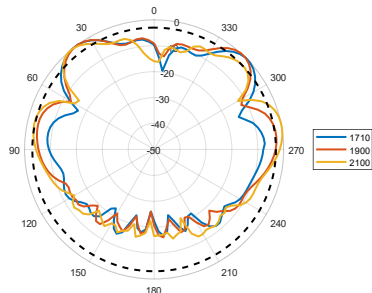
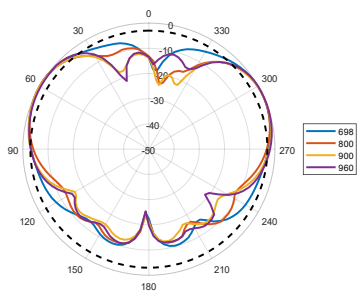
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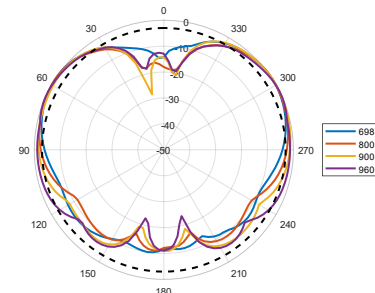
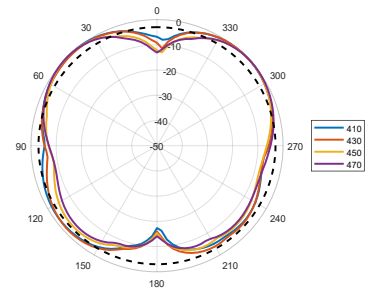
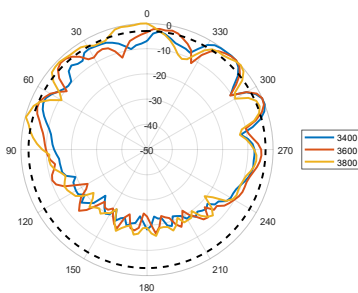
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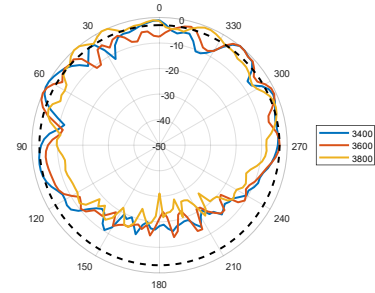
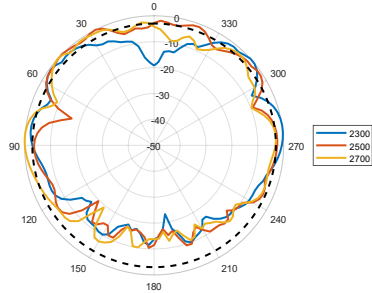
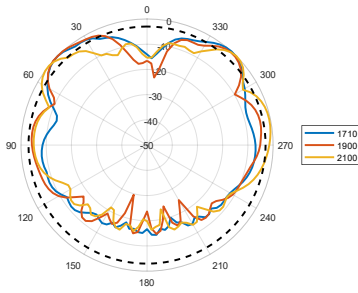
Elevation1 (Side View): 690–960 MHz      Elevation1 (Side View): 1710–2100 MHz      Elevation1 (Side View): 2300–2700 MHz



Elevation1 (Side View): 3400–3800 MHz      Elevation2 (Side View): 410–470 MHz      Elevation2 (Side View): 690–960 MHz

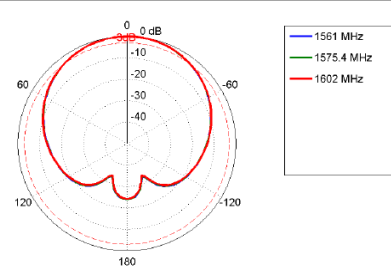
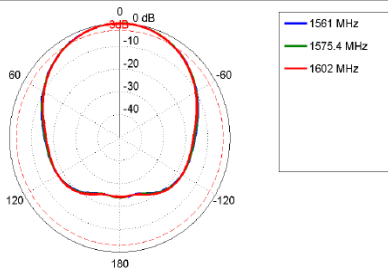
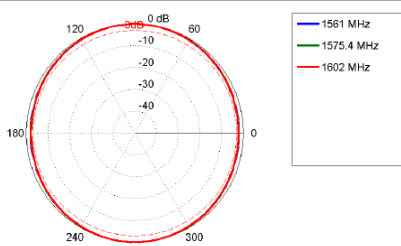


Elevation2 (Side View): 1710–2100 MHz      Elevation2 (Side View): 2300–2700 MHz      Elevation2 (Side View): 3400–3800 MHz



Radiation Patterns – GPS

XY Plane: 1561–1602 MHz      XZ Plane: 1561–1602 MHz      YZ Plane: 1561–1602 MHz

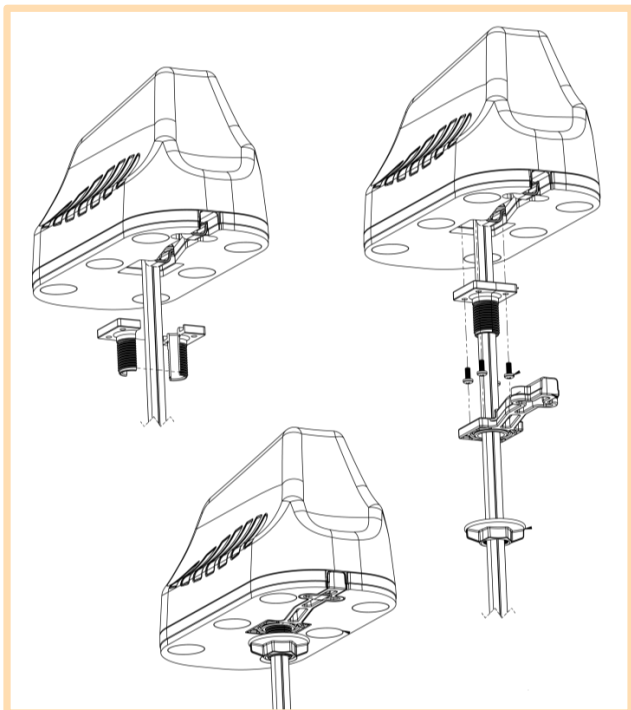


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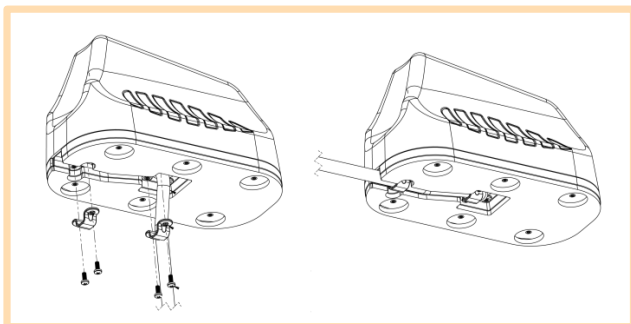
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**Mounting Options**



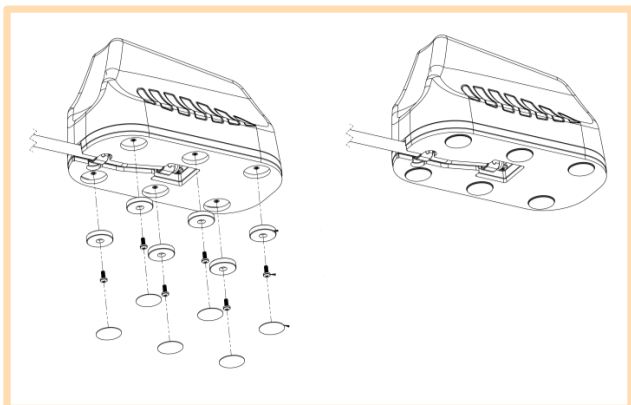
**Standard Spigot Mount**

Threaded Spigot Mounting



**Surface Mount**

Adhesive Surface Mounting



**Magnetic Mount**

Optional Magnetic Base Kit

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### Additional Accessories



A-MBK-0001-V1.0

Magnetic Base Kit



Various Cable Extensions Available

### Contact Poynting

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