# MIMO-3-12

**ANTENNAS** | MIMO-3-12 SERIES

## 2-IN-1 TRANSPORTATION & AUTOMOTIVE ANTENNA

410 – 3800 MHz; 2X2 LTE (MIMO), 5.8 dBi

410 – 470 MHz; 698 -960 MHz; 1710 -2700 MHz; 3400 -3800 MHz

5.8 dBi

Increase x Mb/s

Omni-Directional

410 – 470 MHz

4G LTE

5G Ready

2X2 MIMO

Chemical Protection

Machine to Machine

IP 68

-40°C to +80°C

Fire Resistant

CBRS Band

APPLICATION AREAS

Urban

Rural/Farm

Marine

Vehicle

- **2-in-1 High performance multi frequency 2G/3G/4G/LTE antenna (5G Ready)**
- **2X2 MIMO LTE**
- **Ultra-wideband, includes 450 MHz and 3.5 GHz CBRS bands**
- **Robust and water-resistant antenna (IP 68)**
- **Ideal for transportation and marine use**
- **Multi mounting options for easy installation**

### Product Overview

The MIMO-3-12 is a 2-in-1 high performance multi frequency antenna within a single housing. The two cellular MIMO antennas (for 2G/3G/4G) covers the contemporary 698 MHz to 2700 MHz 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. The ultra-wideband performance of the antenna allows it to be used across different operators and technologies and is ready for future cellular technologies up to 3.8 GHz for 5G applications. 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. This is an important criterion for the transportation and marine market. which the antenna was specifically designed for. 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.

### Features

- Ultra-wideband from 410 to 470 MHz, 698 to 2700 MHz and 3400 to 3800 MHz bands.
- Cleverly designed decorrelated antennas give superior MIMO performance in the cellular bands
- Above features maintained from 698 to 3800 MHz in relevant bands, including the 450 MHz
- Careful mechanical design provides ruggedness, corrosion, water, dust resistance (IP 68)
- Ground plane independent: MIMO-3 is designed with an internal ground plane, making the antenna suitable for implementation on all surface types.

### Application Areas

- Transport broadband, automation and telemetry for busses, utility, trucking and 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 costal vessels)
- Mining vehicles and machinery communications, telemetry and automation (M2M & IoT)



**Revised:** August 2020

**Regulatory Compliance:** RoHS 2011/65/EU Compliant | ISO 9001:2015
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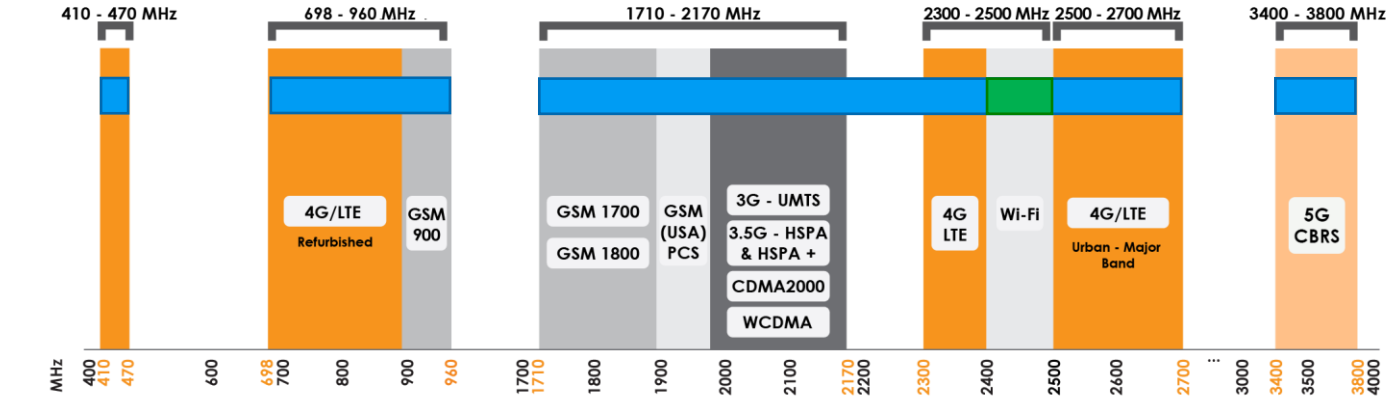
## Frequency Bands

The MIMO-3-12 is suitable for the following Cellular frequency bands | 410-470 MHz | 698-960 MHz | 1710-2700 MHz | 3400-3800 MHz | and the following Wi-Fi frequency bands | 2400-2500 MHz |




Indicates the LTE bands on which **MIMO-3-12 works**

Indicates the WI-FI bands on which **MIMO-3-12 works**

## Antenna Overview

| | LTE |
|---|---|
| Ports | 1 & 2 |
| SISO / MIMO | 2x2 MIMO |
| Frequency Bands | 410 – 3800 MHz |
| Polarisation | Linear (Vertical) |
| Peak Gain | 5.8 dBi |
| Coax Cable Type | Twin HDF 195 |
| Coax Cable Length | 2m |
| Connector Type | SMA (M) |

**The coax cable & connector are factory mounted to the antenna*



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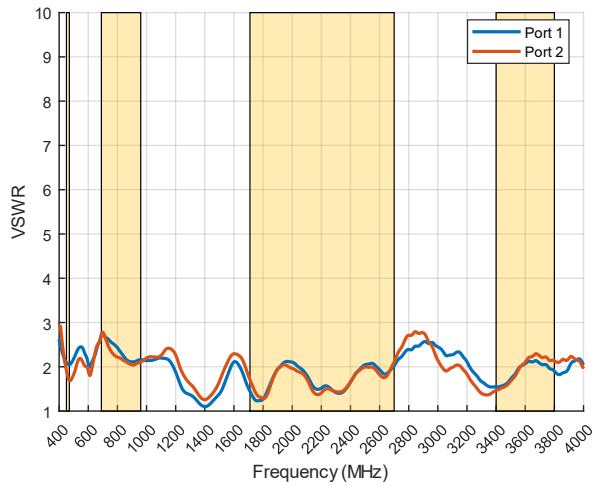
## Antenna Performance Plots

### VSWR: Cellular Antenna



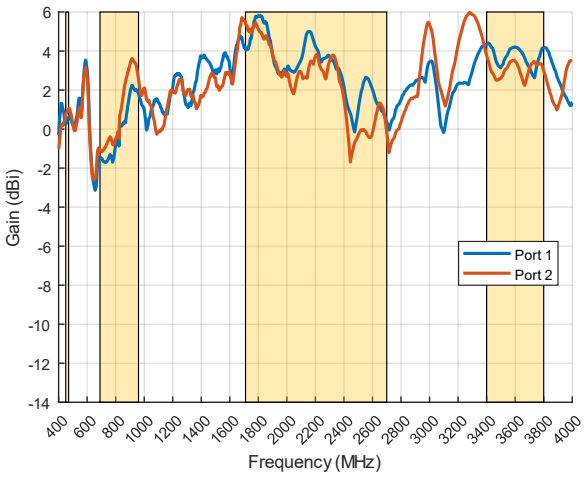

**Voltage Standing Wave Ratio (VSWR)***

VSWR is a measure of how efficiently radio-frequency power is transmitted from a power source, through a transmission line, into a load. In an ideal system, 100% of the energy is transmitted which corresponds to a VSWR of 1:1.

The MIMO-3-12 delivers superior performance across all bands with a VSWR of ≤ 2.5:1 across 90% of the bands

*Measured with 2m low loss cable, 650 x 650 mm ground plane, and unused ports terminated with 50Ω load.

### Gain: Cellular Antenna

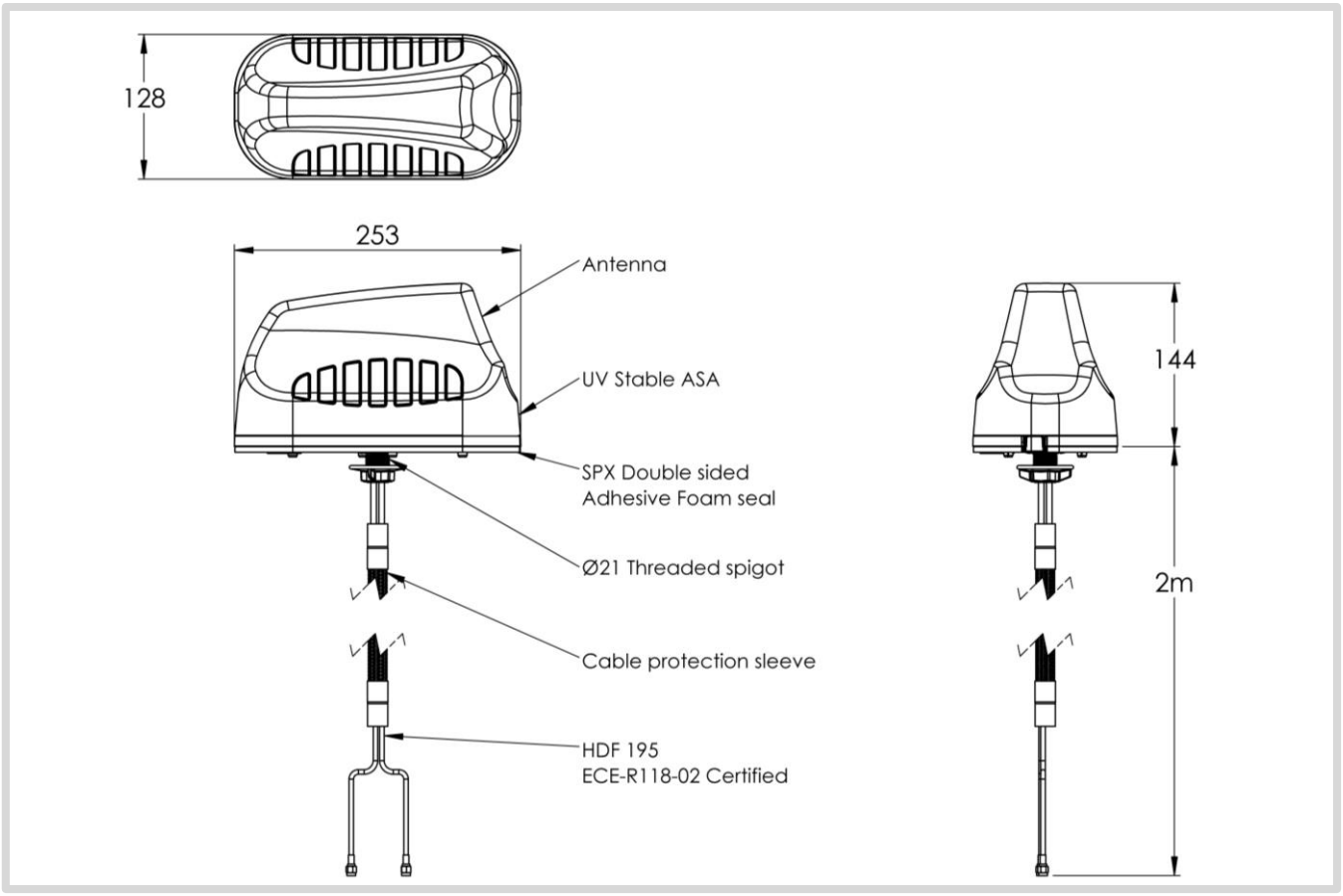



**Gain in dBi**

5.8 dBi is the peak gain across all bands from 410 -3800 MHz

| | |
|---|---|
| Gain @ 410-470 MHz: | 1 dBi |
| Gain @ 698-960 MHz: | 3.5 dBi |
| Gain @ 1710-2700 MHz: | 5.8 dBi |
| Gain @ 3400-3800 MHz: | 4 dBi |

## Technical Drawings



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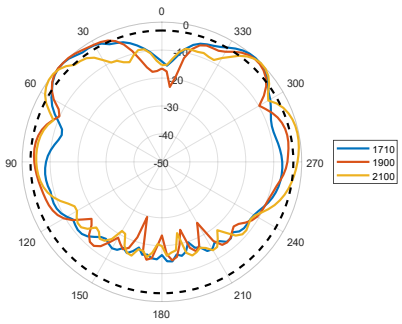
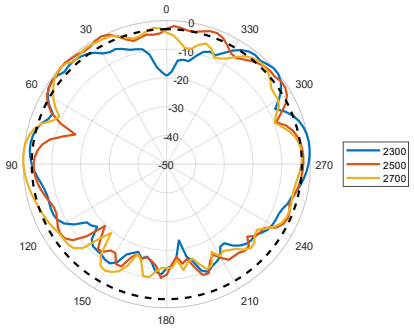
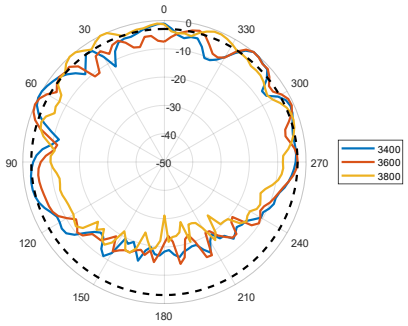
| Elevation2 (Side View): 1710–2100 MHz | Elevation2 (Side View): 2300–2700 MHz | Elevation2 (Side View): 3400-3800 MHz |
|---|---|---|



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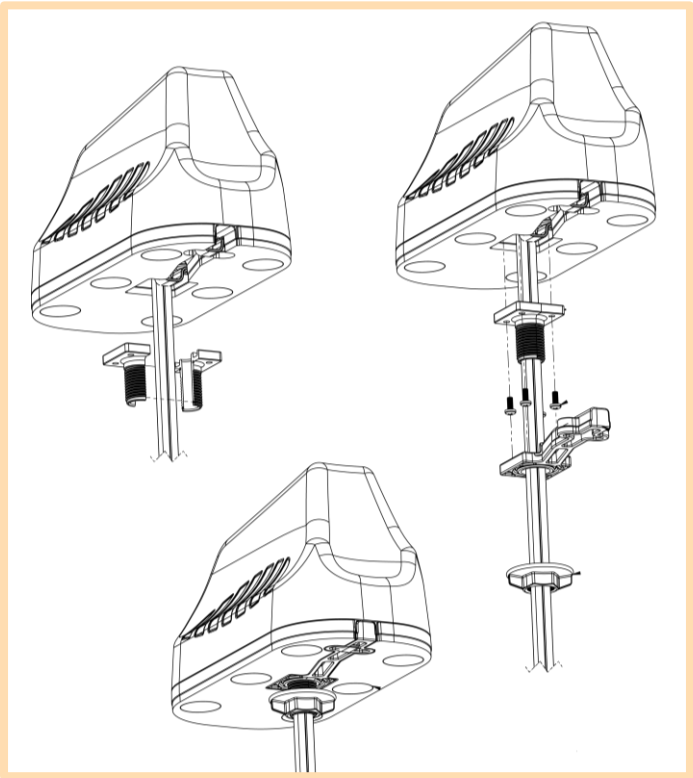
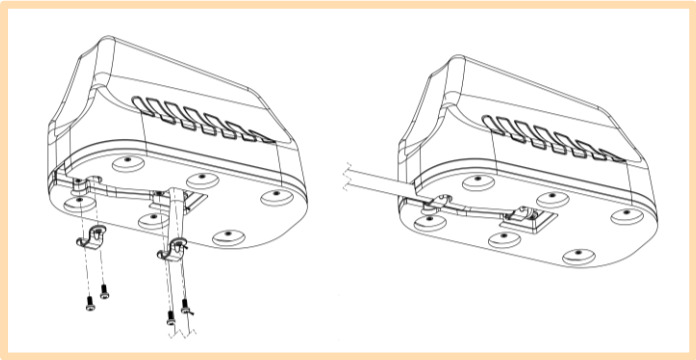
## Mounting Options



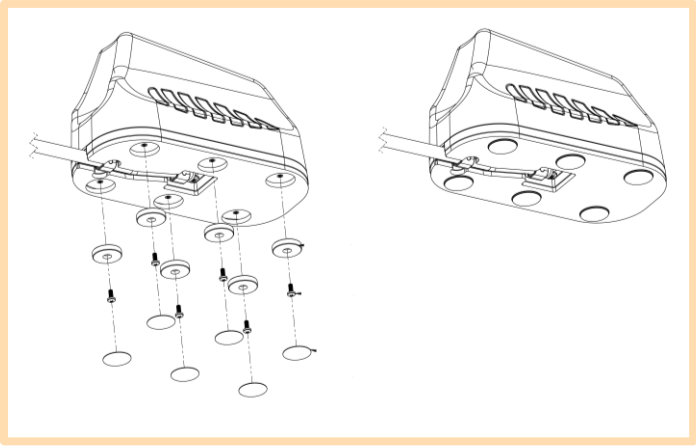
### Standard Spigot Mount

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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