



TAOGLAS®



Datasheet

Gemini

Part No:
LMA101.A.BI.001

Description:

Gemini 2*5G/4G MIMO Magnetic/Desk/Wall Mount Antenna

Features:

- 5G/4G MIMO Antenna
- Covers Cellular Bands between 600-6000MHz
- High Efficiency Antenna
- IP67 Rating
- 3 Way Mounting Options
 - Magnetic Mount
 - Wall Mount
 - Desktop Mount
- 2*Low Loss 1m CFD-200 Cables, SMA(M)
- Cable and Connector Customizable
- Enclosure Dimensions: 164*164*36.5mm
- RoHS & Reach Compliant

| | |
|-----------------------------------|----|
| 1. Introduction | 3 |
| 2. Specifications | 4 |
| 3. Active Antenna Characteristics | 8 |
| 4. 4G Antenna Characteristics | 13 |
| 5. Radiation Patterns | 16 |
| 6. Mechanical Drawing | 33 |
| 7. Packaging | 34 |
| <hr/> | |
| 8. Application Note | 35 |
| <hr/> | |
| Changelog | 38 |

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1. Introduction



Taoglas Gemini LMA101 is a 2* 5G/4G MIMO Antenna for use with all 5G/4G cellular routers and access points worldwide requiring MIMO connectivity. It includes two high-efficiency 5G/4G antennas that operate at all common and 5G/4G bands worldwide from 600MHz to 6000MHz. It has been designed to include 3G and 2G bands, meaning the antenna can also be used for fallback in circumstances where 5G/4G is not available. High isolation and low ECC between the two embedded MIMO antennas prevent self-interference and the low loss CFD-200 cables are used to keep efficiency high over longer cable lengths of up to 5 meters.

This unique antenna offers three mounting options for easy installation. The base features eight super-magnets for easy and secure installation on metal surfaces. The rear of the enclosure features a bracket to enable wall installation, keeping your workstation free from clutter or the antenna can also be placed directly on a flat surface using the stand. The LMA101 can be used both indoors and outdoors as the robust external enclosure is fully IP67 rated.

Typical Applications include:

- HD Real-time Streaming Video over LTE
- Intelligent Transport Systems
- Digital Signage and HD Broadcast Systems
- Wireless 5G/4G MIMO M2M devices with legacy 3G/2G functionality.

Cable length and connector types are customizable. Contact your regional Taoglas sales office for support.

2. Specifications

Electrical

| Band | Frequency (MHz) | | Efficiency (%) | Average Gain (dB) | Peak Gain (dBi) | Impedance | Max Input Power | Polarization | Radiation Pattern |
|---|-----------------|--------|----------------|-------------------|-----------------|-----------|-----------------|--------------|-------------------|
| 5G NR/4G Band 71 | 617~698 | MIMO 1 | 40 | -4.9 | -0.3 | 50 Ω | 2W | Linear | Omni-Directional |
| | | MIMO 2 | 39.9 | -4.7 | -0.2 | | | | |
| 4G/3G Band 12,13,14,17,28,29 | 698~806 | MIMO 1 | 60.9 | -2.2 | 2.1 | | | | |
| | | MIMO 2 | 64 | -2 | 2.3 | | | | |
| 4G/3G/NB-IoT/Cat M Band 5,8,18,19,20,26,27 | 824~960 | MIMO 1 | 34.5 | -4.7 | -0.2 | | | | |
| | | MIMO 2 | 43 | -3.7 | 0.7 | | | | |
| 5G NR/4G Band 21,32,74,75,76 | 1427~1518 | MIMO 1 | 35.1 | -4.5 | 1.7 | | | | |
| | | MIMO 2 | 25.7 | -5.8 | 1 | | | | |
| 4G/3G Band 1,2,3,4,9,23,25,35,39,66 | 1710~2200 | MIMO 1 | 45 | -3.5 | 1.9 | | | | |
| | | MIMO 2 | 40.3 | -4.1 | 1.5 | | | | |
| 4G/3G Band 7,38,41 | 2490~2690 | MIMO 1 | 42.3 | -3.8 | 1.6 | | | | |
| | | MIMO 2 | 47.8 | -3.3 | 3 | | | | |
| 5G NR Band 22,42,48,77,78,79 | 3300~5000 | MIMO 1 | 18.1 | -7.8 | -0.6 | | | | |
| | | MIMO 2 | 16.9 | -8.5 | -1.6 | | | | |
| LTE5200/ Wi-Fi 5800 | 5150~5925 | MIMO 1 | 25.7 | -5.9 | -0.9 | | | | |
| | | MIMO 2 | 34.7 | -4.6 | 3.4 | | | | |

Mechanical

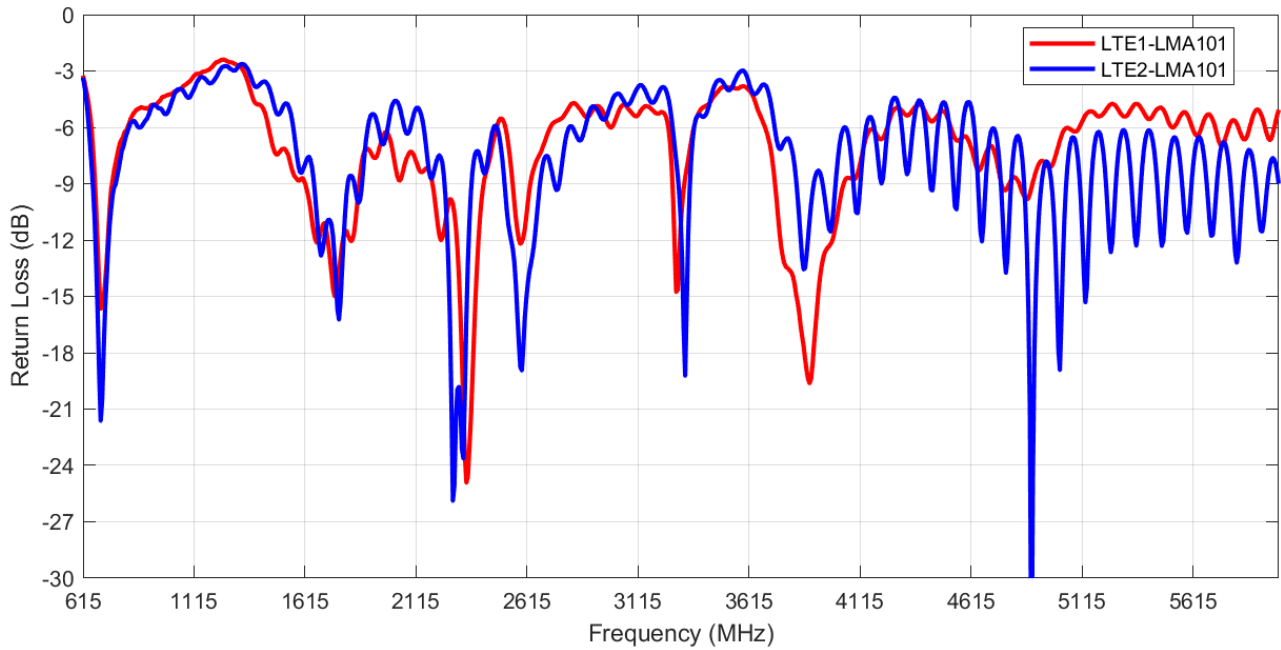
| | |
|---------------------|---|
| Casing | PCL1250Y |
| Coaxial Cable | CFD-200 |
| Cable Length | 1 Meter Standard, fully customizable |
| Connector | SMA Male Standard, fully customizable |
| Weight | 400g (Antenna with 1 meter Cable and Stand) |
| Dimension | 164*164*36.5mm |
| Waterproof Rating | IP67 |
| Magnetic Pull Force | 11.24 kgF-cm |
| Magnetic Dim/Pcs | Ø18*3t N48M/ 8 pcs |

| Environmental | |
|--------------------------|----------------------------|
| Temperature Range | -40°C to 85°C |
| Humidity | Non-condensing 65°C 95% RH |

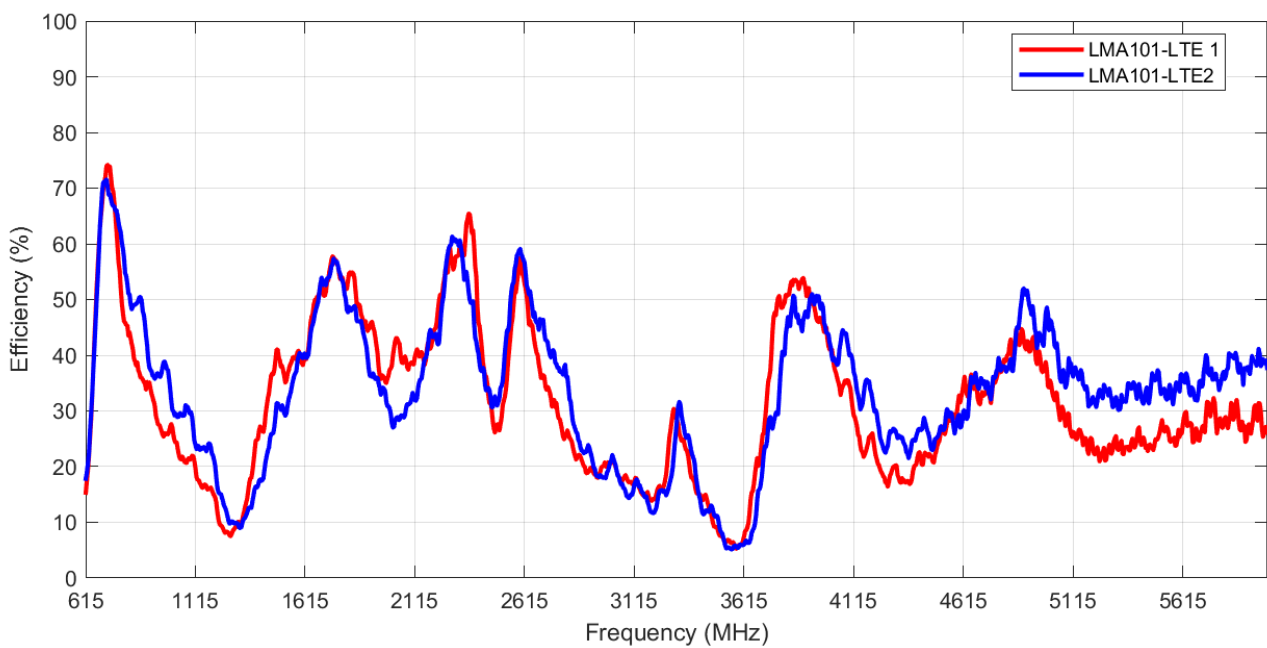
| 5G/4G Bands | | | |
|-------------|---|----------------------|---------|
| Band Number | 5G NR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA / Cat M / NB-IoT | | |
| | Uplink | Downlink | Covered |
| 1 | UL: 1920 to 1980 | DL: 2110 to 2170 | ✓ |
| 2 | UL: 1850 to 1910 | DL: 1930 to 1990 | ✓ |
| 3 | UL: 1710 to 1785 | DL: 1805 to 1880 | ✓ |
| 4 | UL: 1710 to 1755 | DL: 2110 to 2155 | ✓ |
| 5 | UL: 824 to 849 | DL: 869 to 894 | ✓ |
| 7 | UL: 2500 to 2570 | DL: 2620 to 2690 | ✓ |
| 8 | UL: 880 to 915 | DL: 925 to 960 | ✓ |
| 9 | UL: 1749.9 to 1784.9 | DL: 1844.9 to 1879.9 | ✓ |
| 11 | UL: 1427.9 to 1447.9 | DL: 1475.9 to 1495.9 | ✓ |
| 12 | UL: 699 to 716 | DL: 729 to 746 | ✓ |
| 13 | UL: 777 to 787 | DL: 746 to 756 | ✓ |
| 14 | UL: 788 to 798 | DL: 758 to 768 | ✓ |
| 17 | UL: 704 to 716 | DL: 734 to 746 | ✓ |
| 18 | UL: 815 to 830 | DL: 860 to 875 | ✓ |
| 19 | UL: 830 to 845 | DL: 875 to 890 | ✓ |
| 20 | UL: 832 to 862 | DL: 791 to 821 | ✓ |
| 21 | UL: 1447.9 to 1462.9 | DL: 1495.9 to 1510.9 | ✓ |
| 22 | UL: 3410 to 3490 | DL: 3510 to 3590 | ✓ |
| 23 | UL: 2000 to 2020 | DL: 2180 to 2200 | ✓ |
| 24 | UL: 1625.5 to 1660.5 | DL: 1525 to 1559 | ✓ |
| 25 | UL: 1850 to 1915 | DL: 1930 to 1995 | ✓ |
| 26 | UL: 814 to 849 | DL: 859 to 894 | ✓ |
| 27 | UL: 807 to 824 | DL: 852 to 869 | ✓ |
| 28 | UL: 703 to 748 | DL: 758 to 803 | ✓ |
| 29 | UL: - | DL: 717 to 728 | ✓ |
| 30 | UL: 2305 to 2315 | DL: 2350 to 2360 | ✓ |
| 31 | UL: 452.5 to 457.5 | DL: 462.5 to 467.5 | ✗ |
| 32 | UL: - | DL: 1452 - 1496 | ✓ |
| 35 | | 1850 to 1910 | ✓ |
| 38 | | 2570 to 2620 | ✓ |
| 39 | | 1880 to 1920 | ✓ |
| 40 | | 2300 to 2400 | ✓ |
| 41 | | 2496 to 2690 | ✓ |
| 42 | | 3400 to 3600 | ✗ |
| 43 | | 3600 to 3800 | ✓ |
| 48 | | 3550 to 3700 | ✓ |
| 66 | UL: 1710-1780 | DL: 2110-2200 | ✓ |
| 71 | | 617 to 698 | ✓ |
| 74/75/76 | | 1427 to 1518 | ✓ |
| 77 | | 3300 to 4200 | ✓ |
| 78 | | 3300 to 3800 | ✗ |
| 79 | | 4400 to 5000 | ✓ |

3. Antenna Characteristics

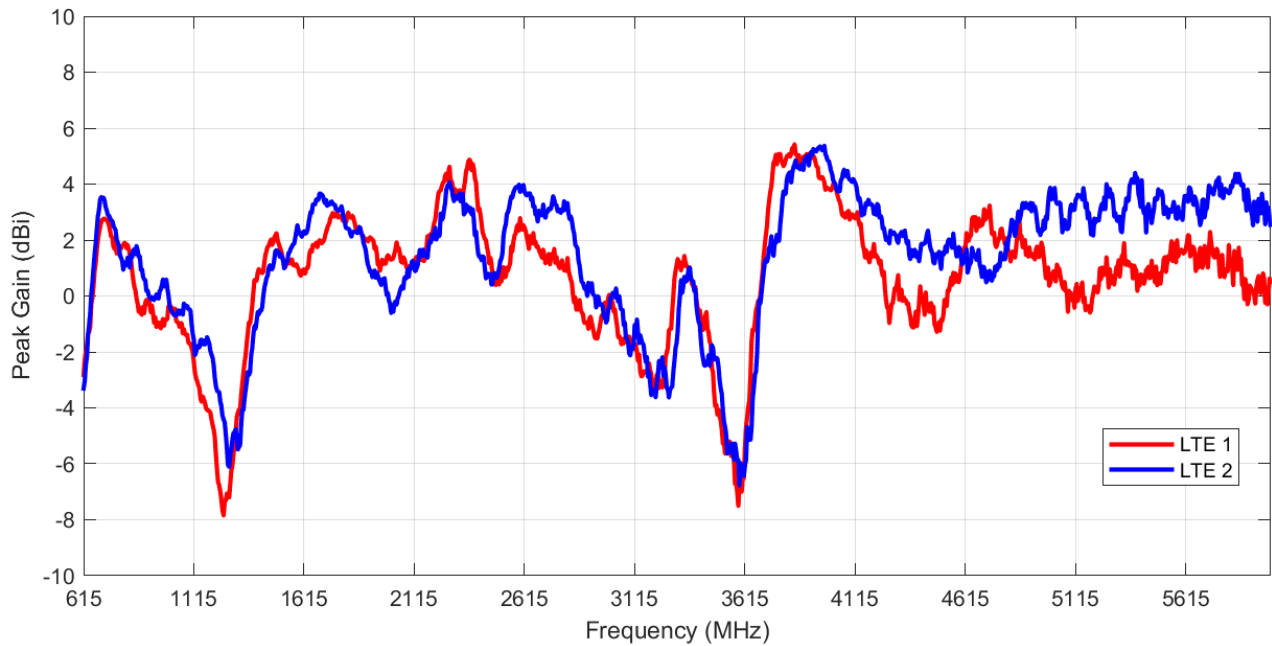
3.1 Return Loss



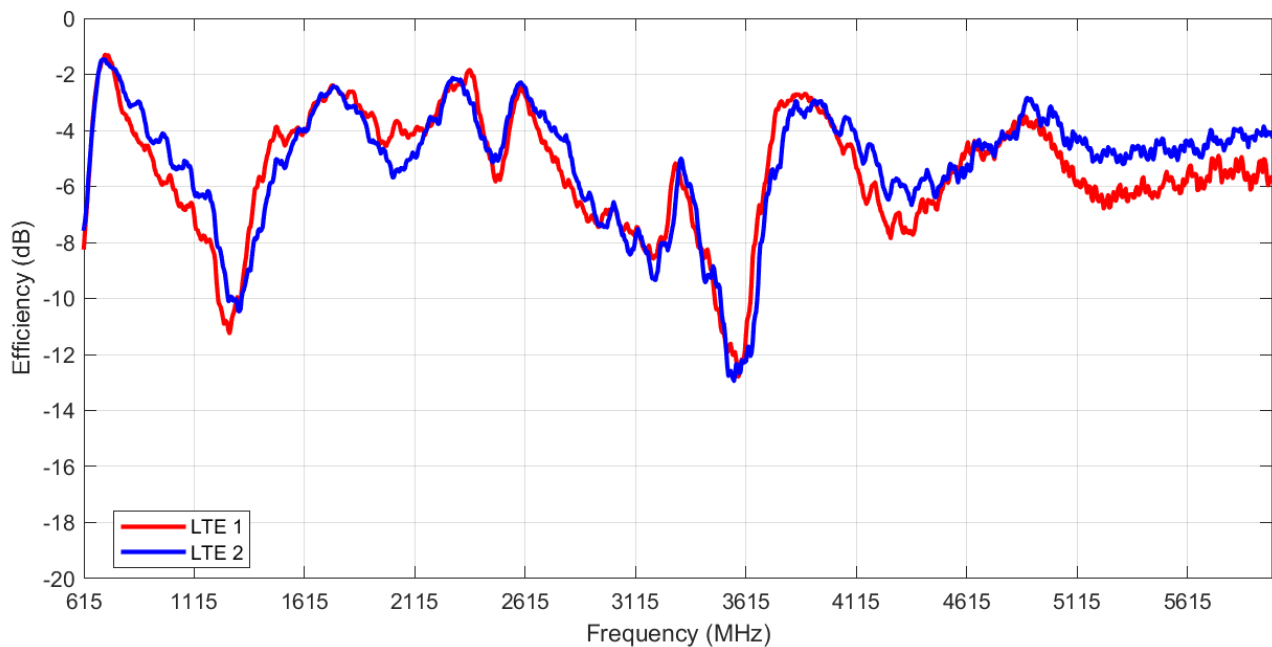
3.2 Efficiency



3.3 Peak Gain



3.4 Average Gain



4. Radiation Patterns

4.1 Test Setup

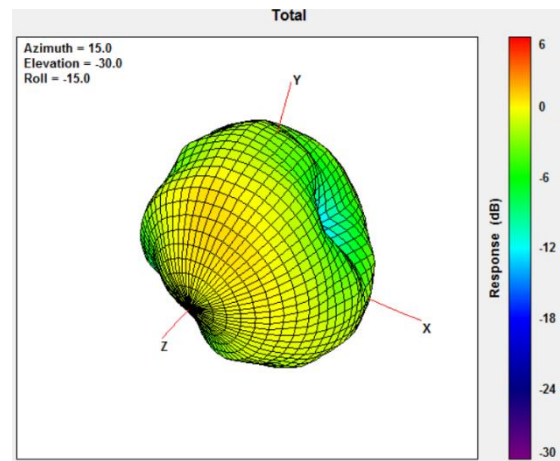
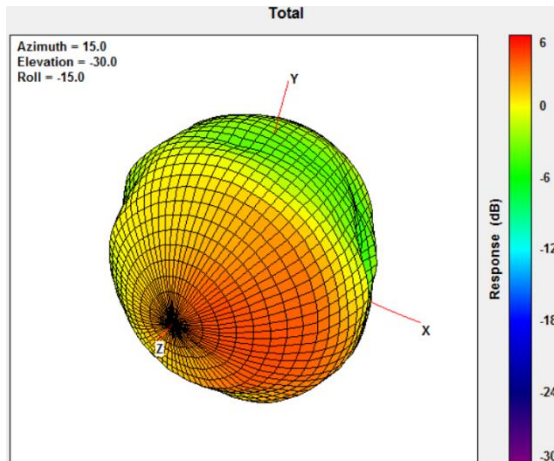


Free space

4.2 4G MIMO 1 - 3D and 2D Radiation Patterns

704MHz

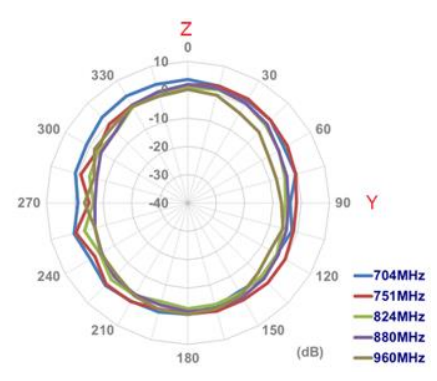
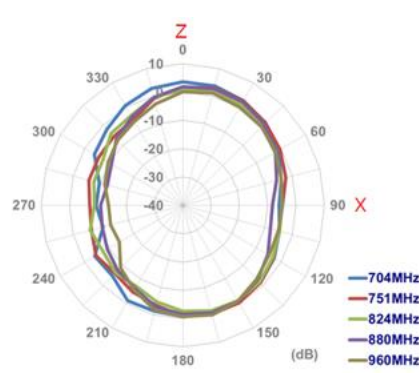
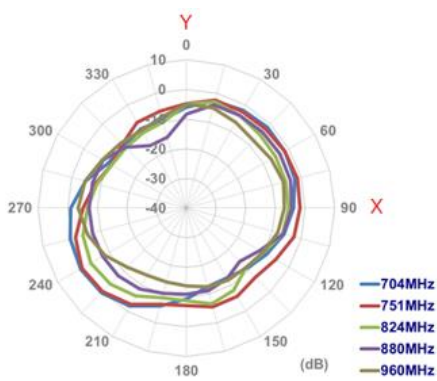
960MHz



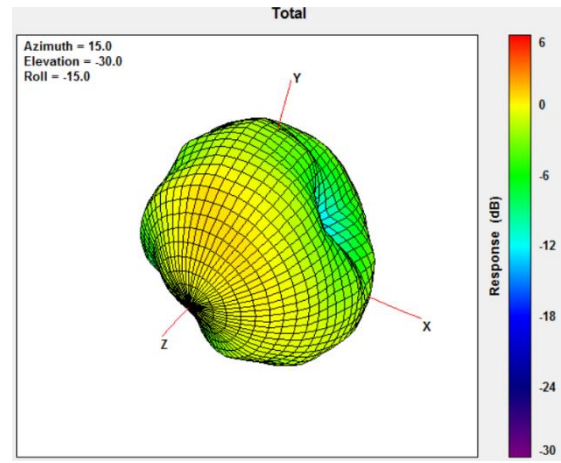
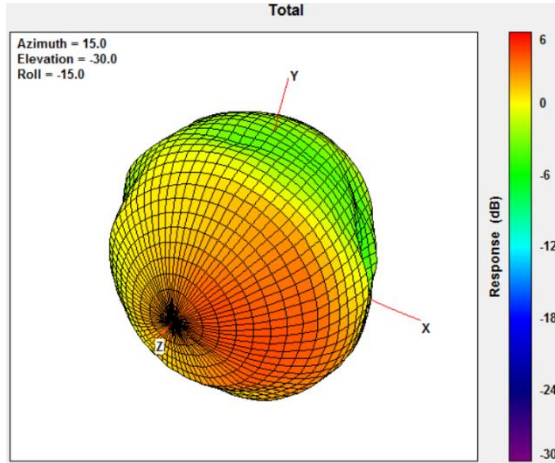
XY Plane

XZ Plane

YZ Plane



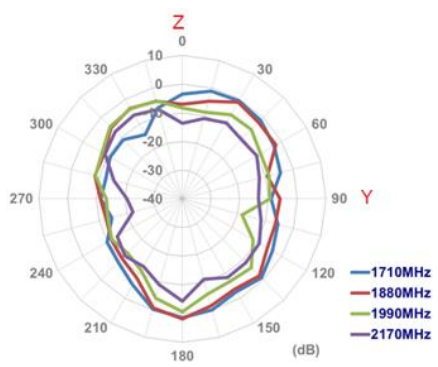
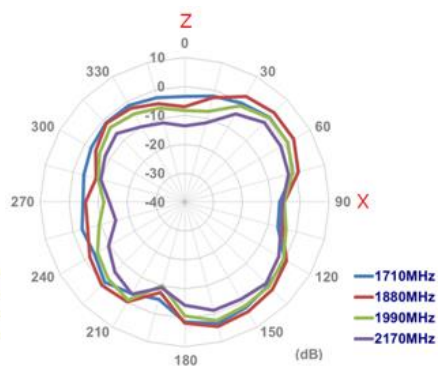
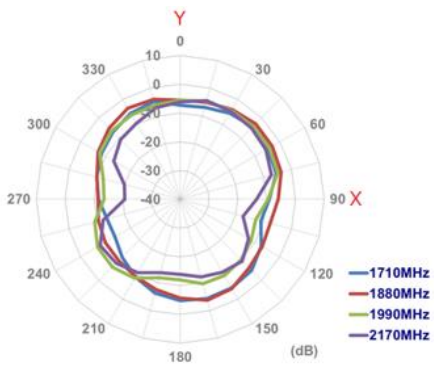
1710MHz 2170MHz



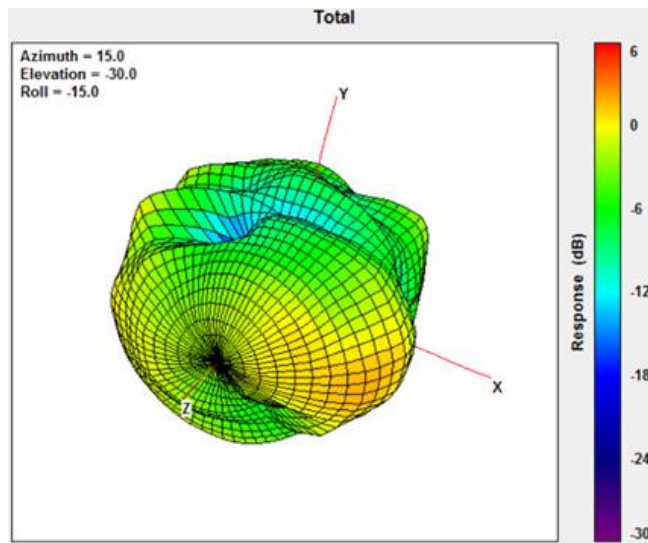
XY Plane

XZ Plane

YZ Plane



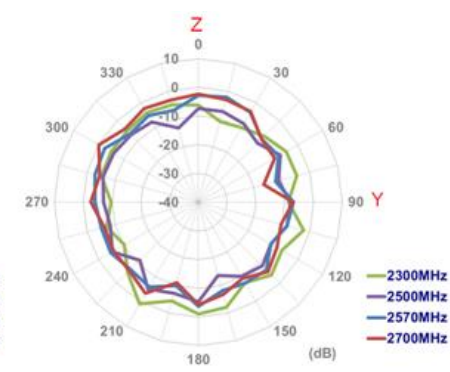
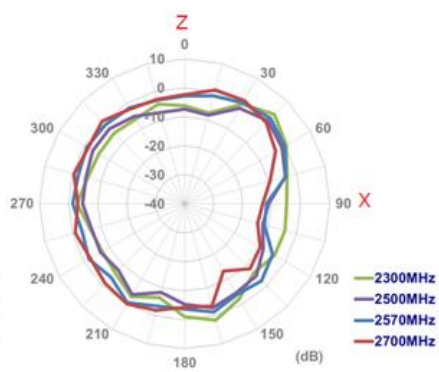
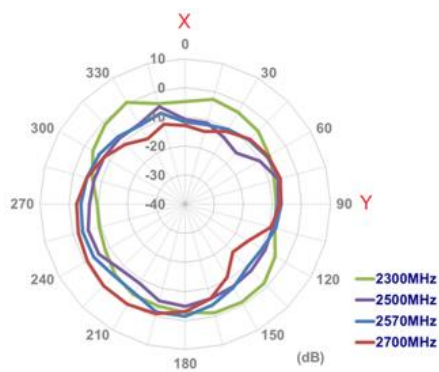
2600MHz



XY Plane

XZ Plane

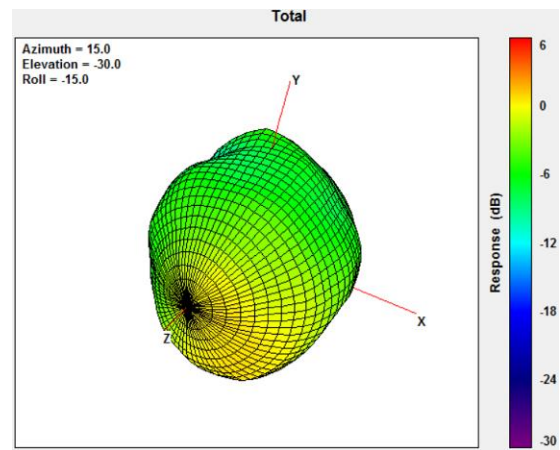
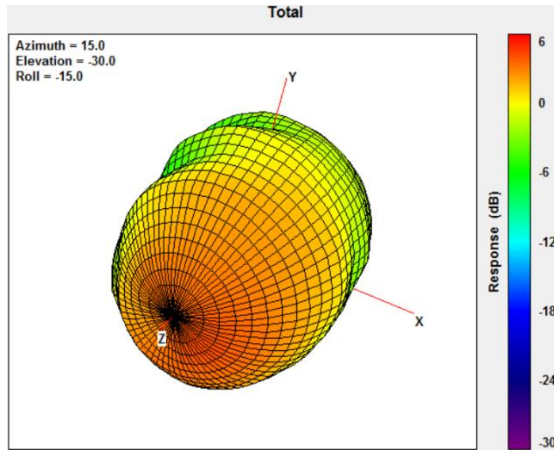
YZ Plane



4.3 4G MIMO 2 - 3D and 2D Radiation Patterns

704MHz

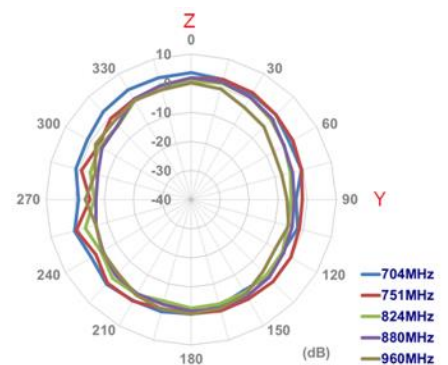
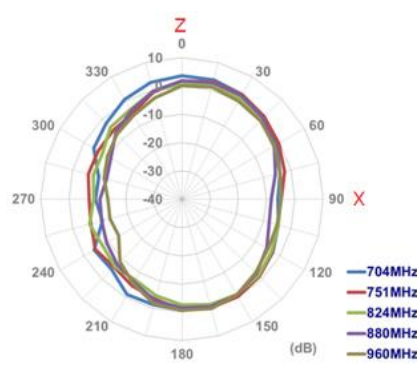
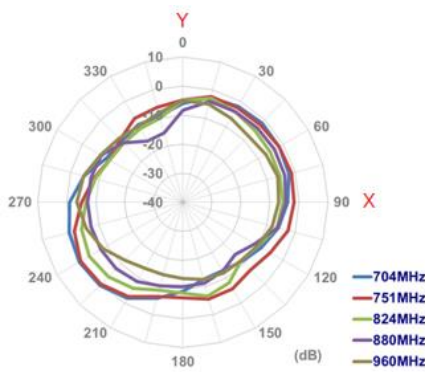
960MHz



XY Plane

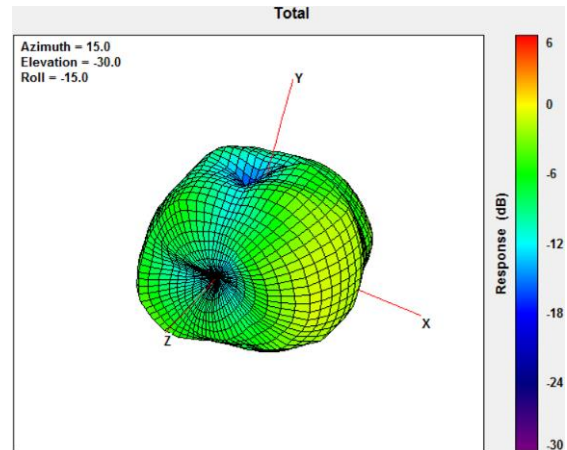
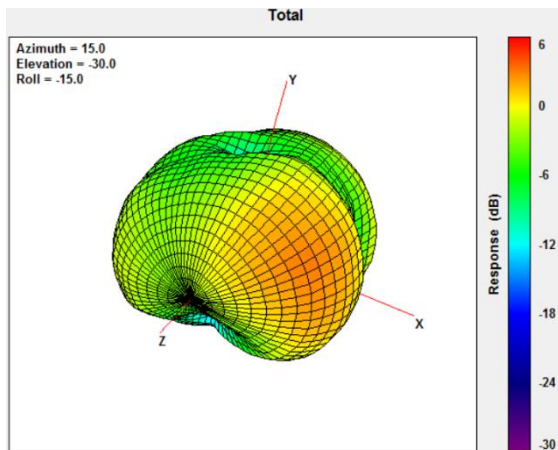
XZ Plane

YZ Plane



1710MHz

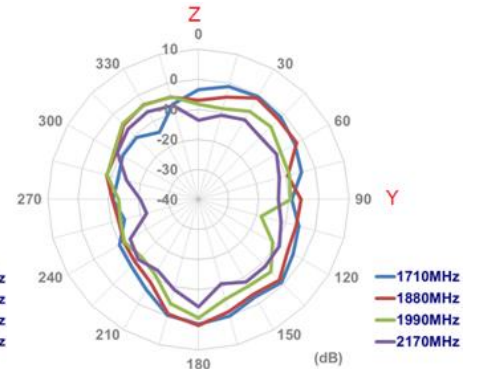
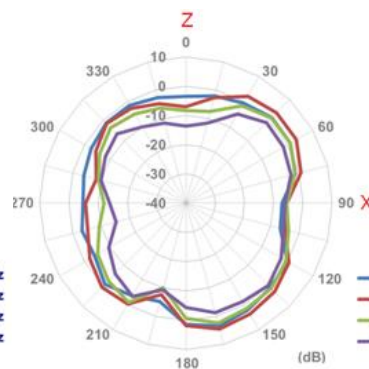
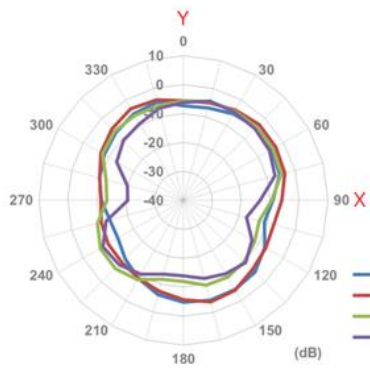
2170MHz



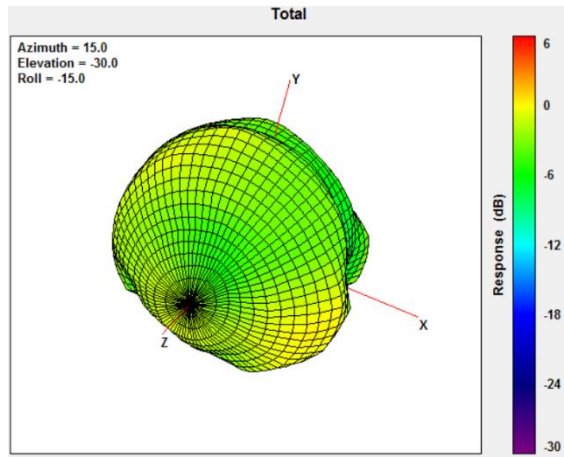
XY Plane

XZ Plane

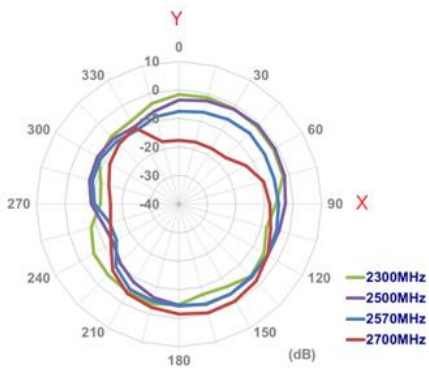
YZ Plane



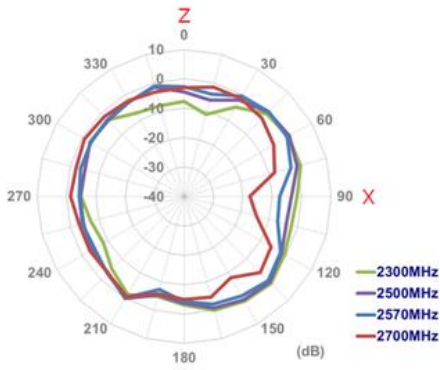
2600MHz



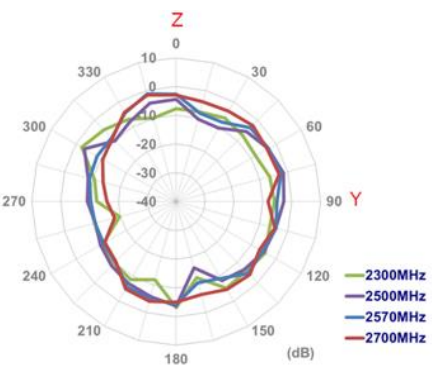
XY Plane



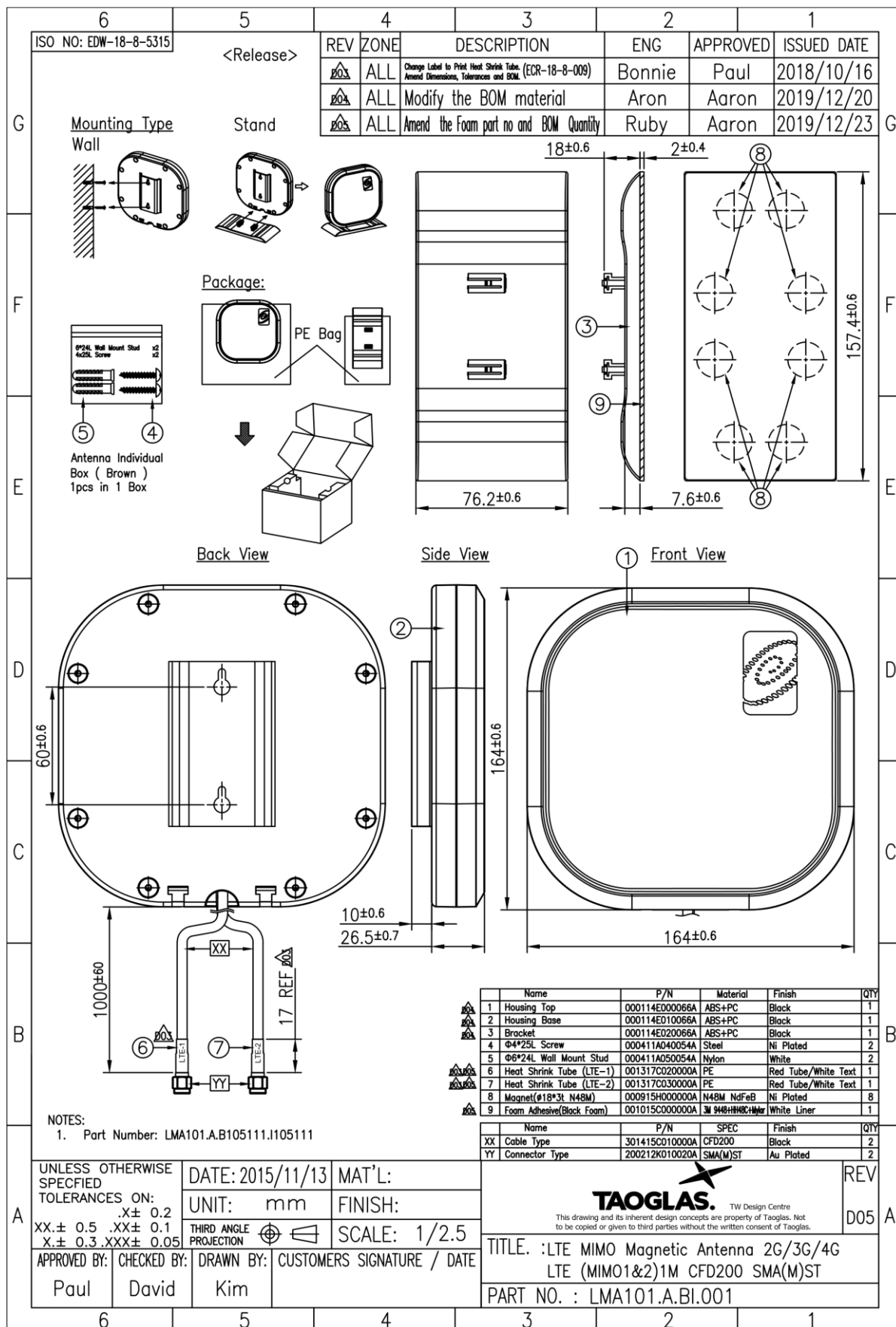
XZ Plane



YZ Plane



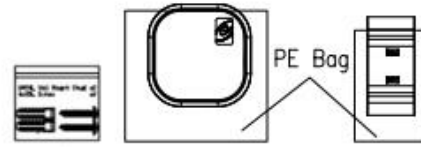
5. Mechanical Drawing (Units: mm)



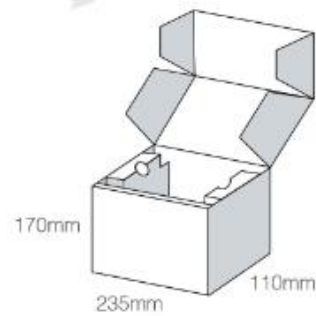
6. Packaging

LMA101.A.BI.001

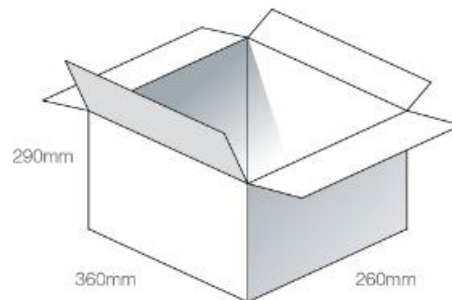
Packaging Specifications



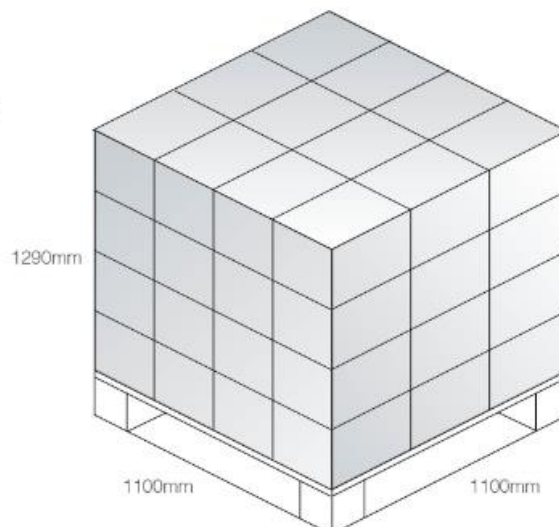
1pc LMA101.A.BI.001 per small box
 Box Dimensions - 235*170*110mm
 Weight - 650g



5 small boxes in one carton
 Carton Dimensions - 360*290*260mm
 Weight - 3.8Kg



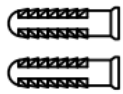
Pallet Dimensions 1100*1100*1290mm
 48 Cartons per Pallet
 12 Cartons per layer
 4 Layers



7. Installation

7.1 Package Contents

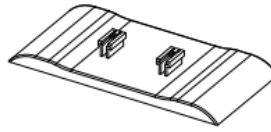
6*24L
Wall Mount
Stud *2



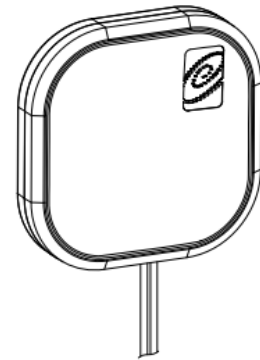
4*25L
Screw*2



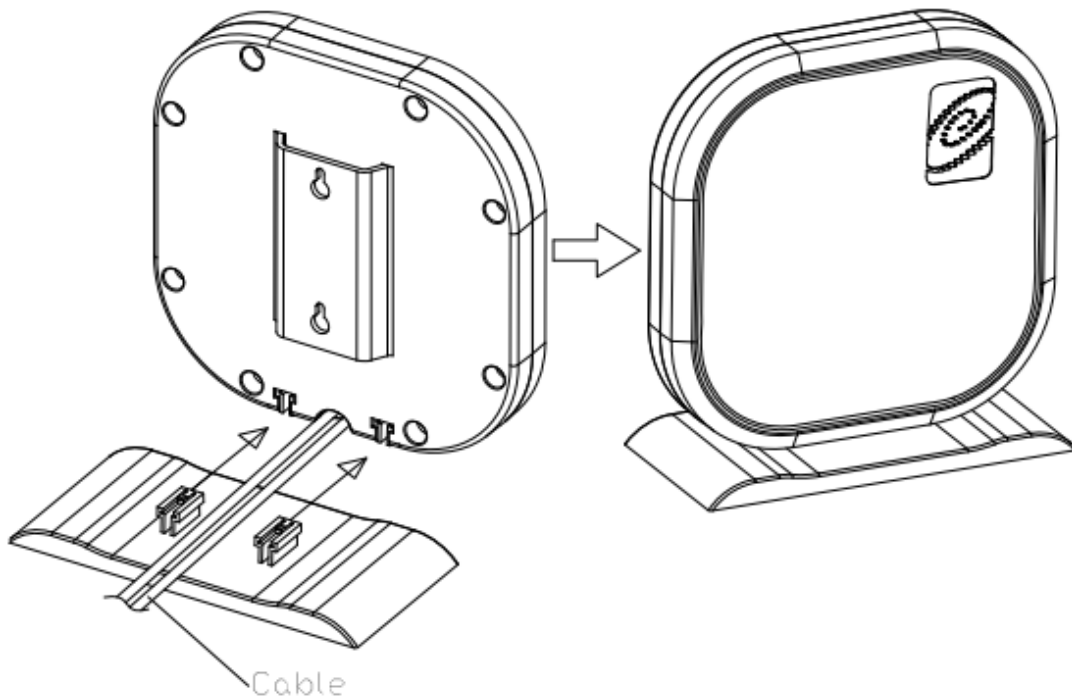
Stand *1



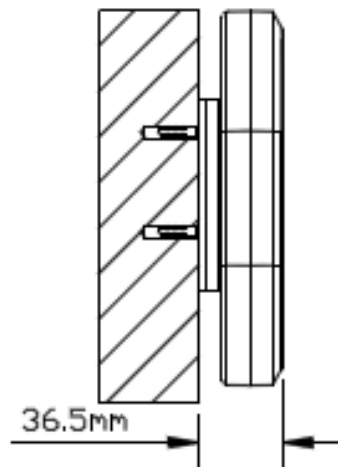
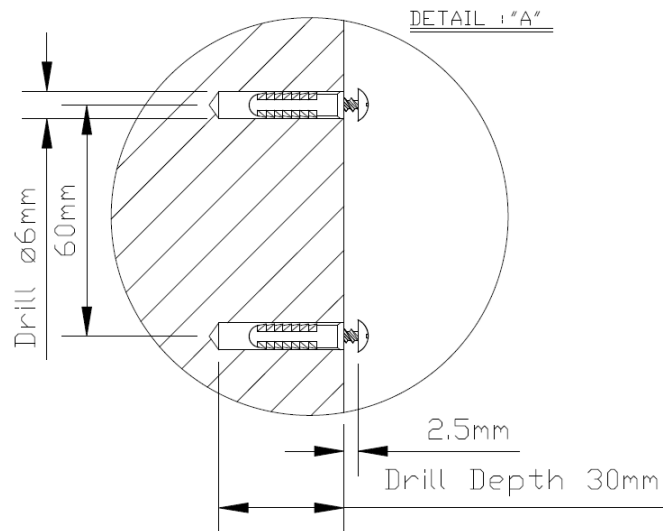
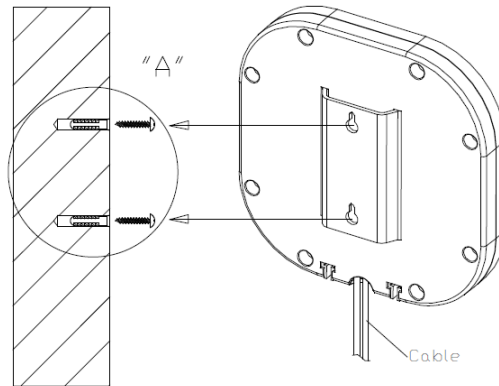
Antenna *1



7.2 Desktop Stand/Magnet Mount

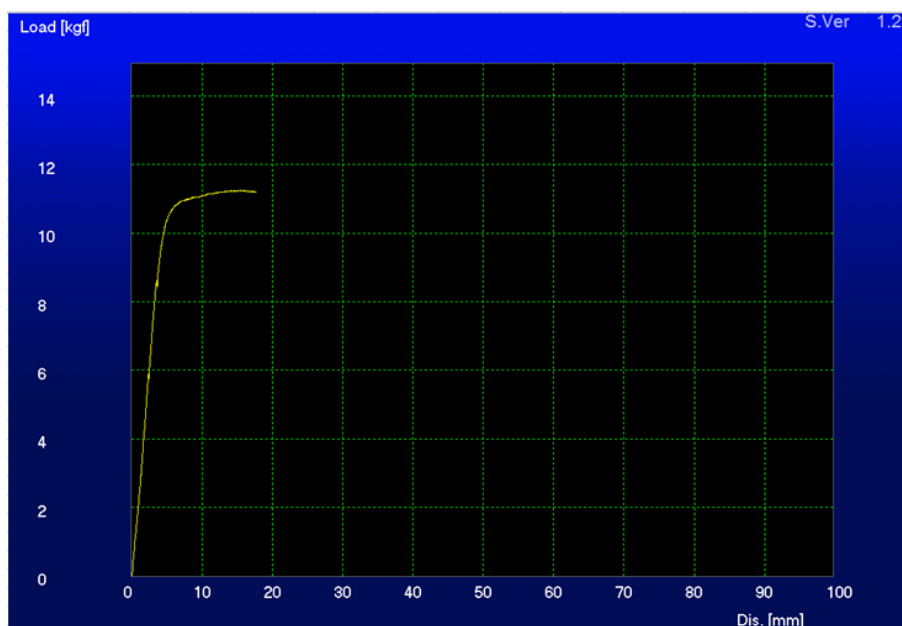
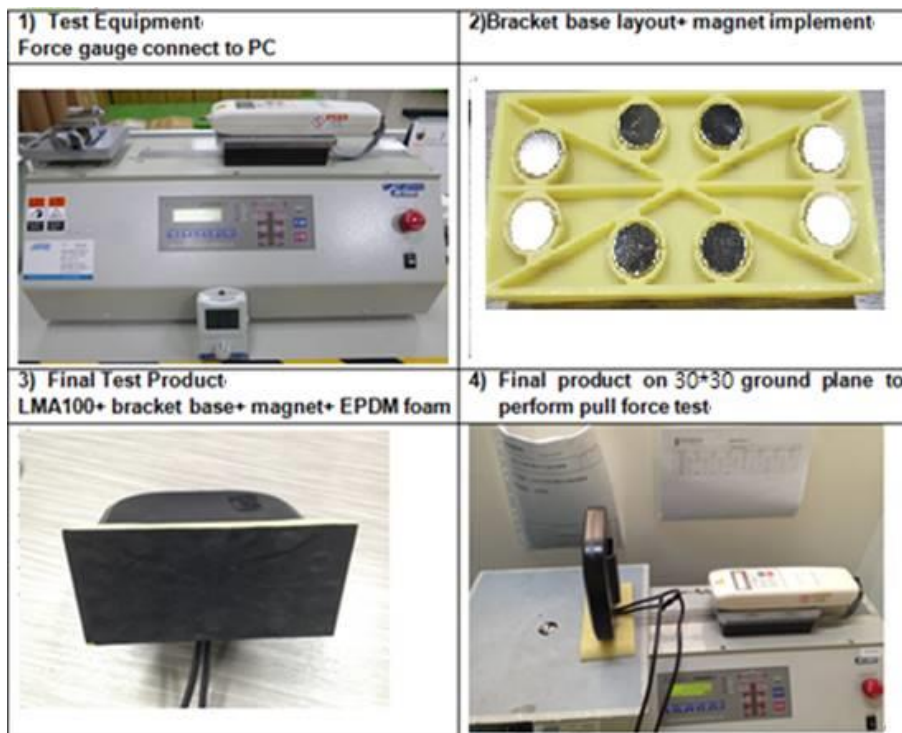


7.3 Wall Mount



8. Installation

8.1 Testing setup



Max Pull Force: 11.24Kgf-cm

Changelog for the datasheet

SPE-17-8-017 – LMA101.A.BI.001

Revision: D (Current Version)

| | |
|------------------|-------------------------|
| Date: | 2019-01-02 |
| Changes: | Updated to show 5G data |
| Changes Made by: | Jack Conroy |

Previous Revisions

Revision: C

| | |
|------------------|------------------------|
| Date: | 2018-12-20 |
| Changes: | Updated Drawing issues |
| Changes Made by: | Jack Conroy |

Revision: B

| | |
|------------------|----------------------|
| Date: | 2017-06-15 |
| Changes: | Updated to match PCN |
| Changes Made by: | Andy Mahoney |

Revision: A (Original First Release)

| | |
|---------|-------------|
| Date: | 2017-02-23 |
| Notes: | |
| Author: | Jack Conroy |



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