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

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1. Introduction 3
2. Specifications 4
3. Antenna Characteristics 7
4. Radiation Patterns 9
5. Mechanical Drawing 16
6. Packaging 17
7. Installation 18
8. Application Note 20

Changelog 21

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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 enables 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.

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2. Specifications

Electrical									
Band	**Frequency (MHz)**		**Efficiency (%)**	**Average Gain (dB)**	**Peak Gain (dBi)**	**Impedance**	**Max Input Power**	**Polarization**	**Radiation Pattern**
5GNR/4G Band 71	617~698	MIMO 1	40	-4.9	-0.3	50 Ω	10W	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				
5GNR/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

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

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5G/4G Bands			
Band Number	5GNR / 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		✓

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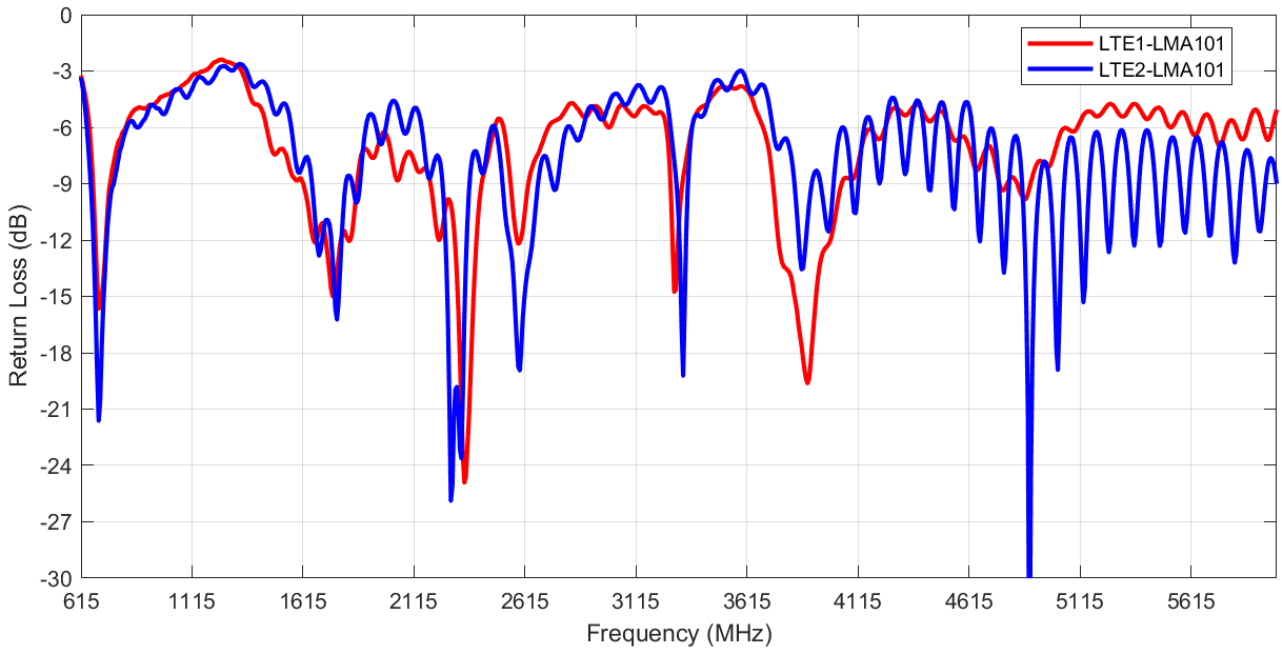
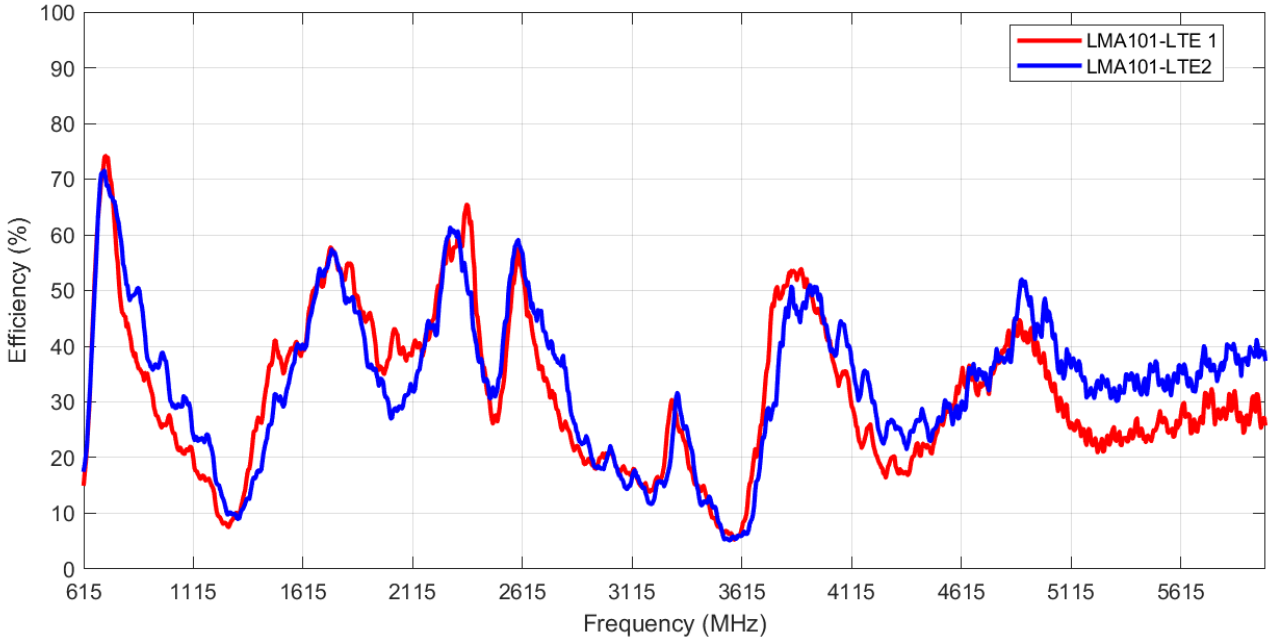
3. Antenna Characteristics

3.1 Return Loss



3.2 Efficiency



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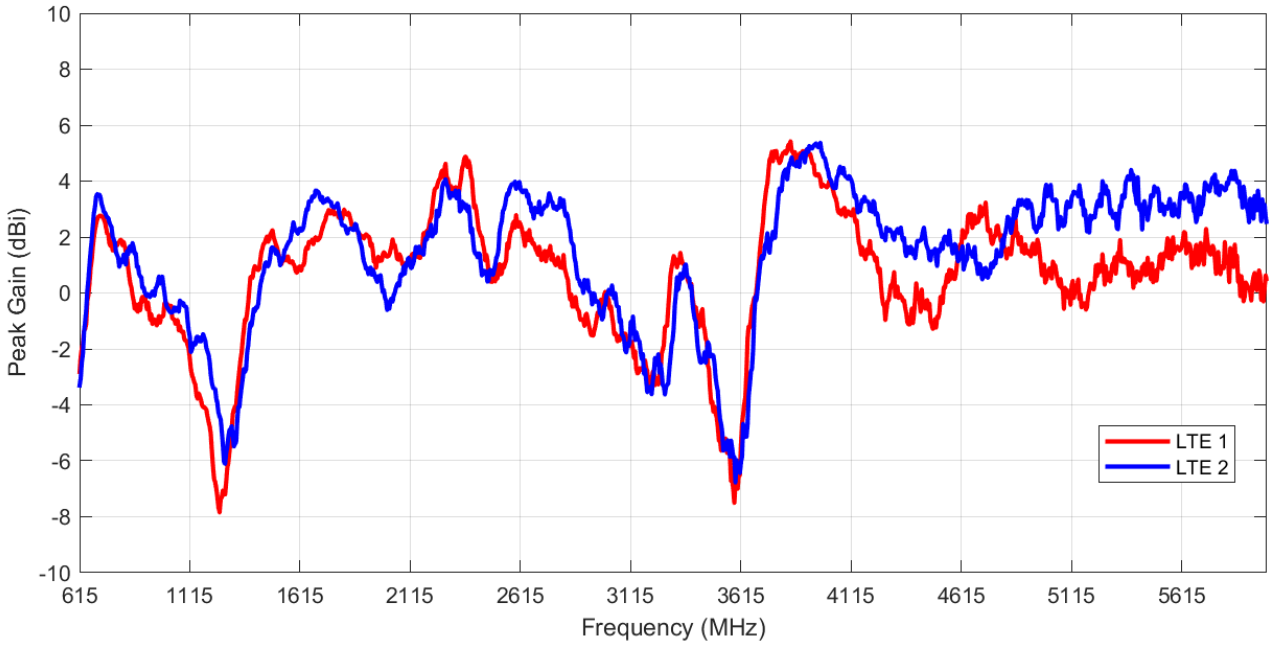
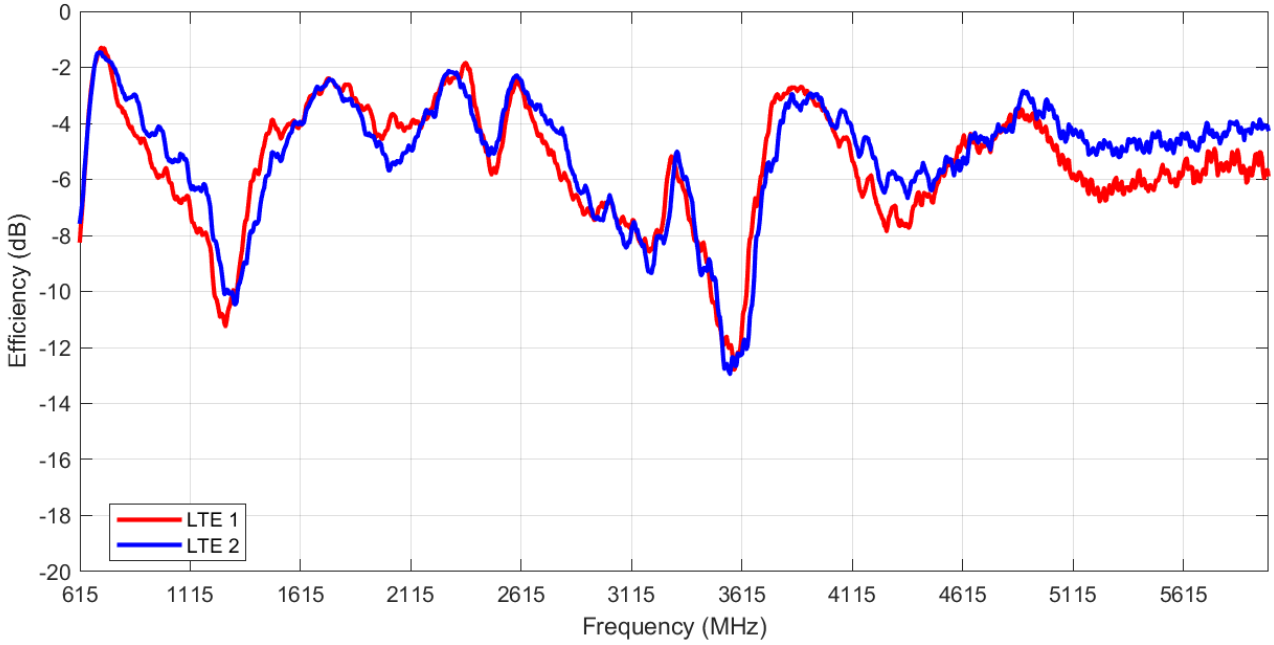
3.3 Peak Gain



3.4 Average Gain



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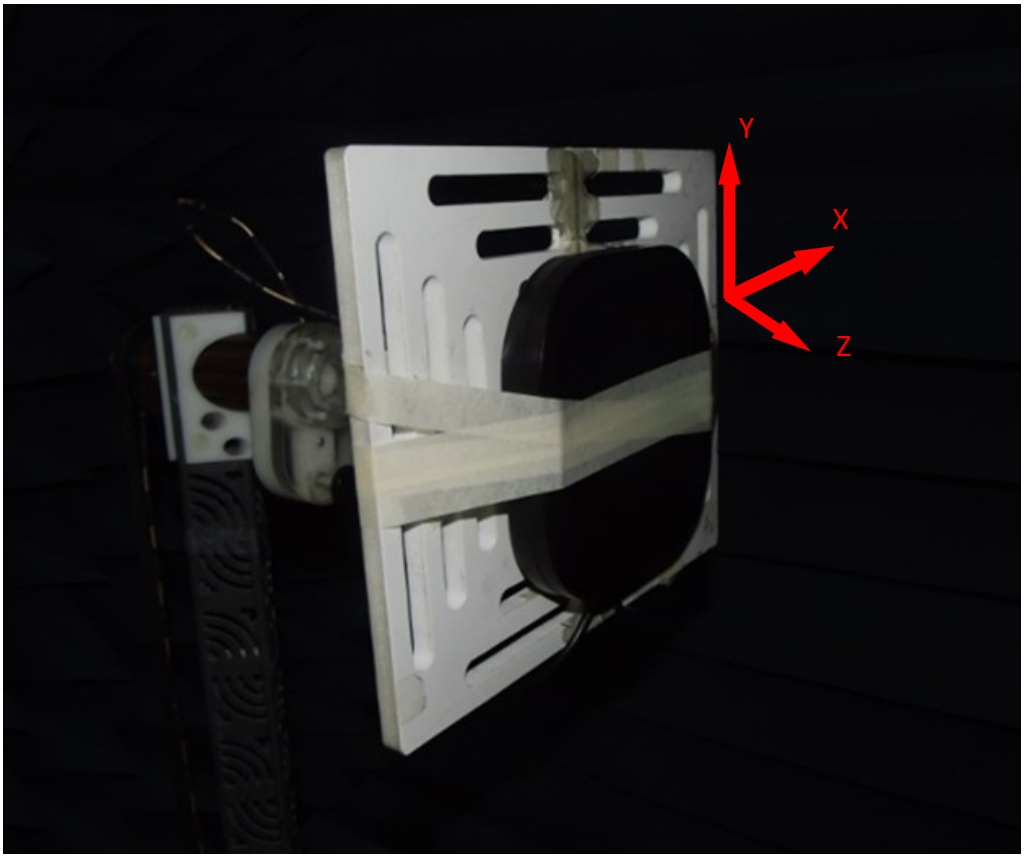
4. Radiation Patterns

4.1 Test Setup



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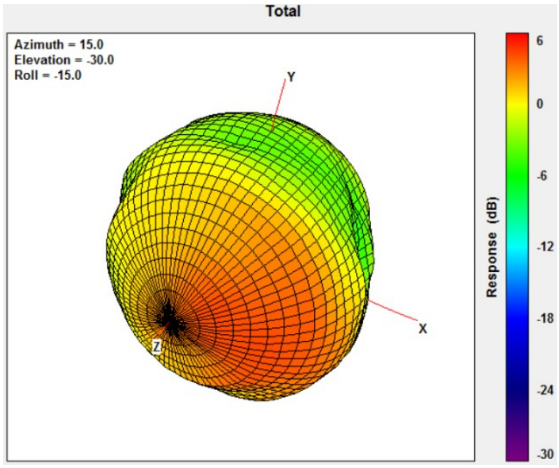
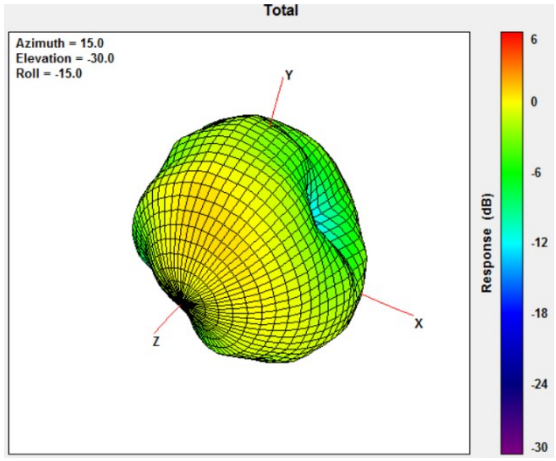
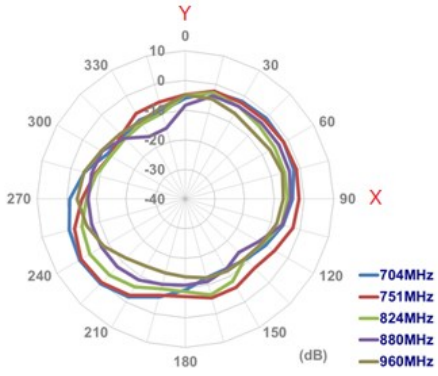
4.2 4G MIMO 1 - 3D and 2D Radiation Patterns

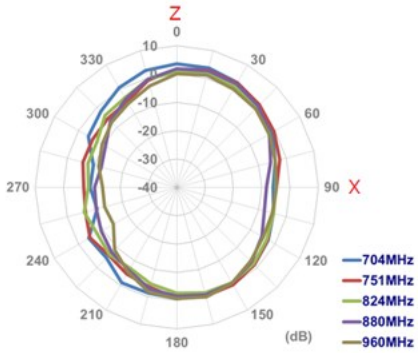
704MHz	960MHz

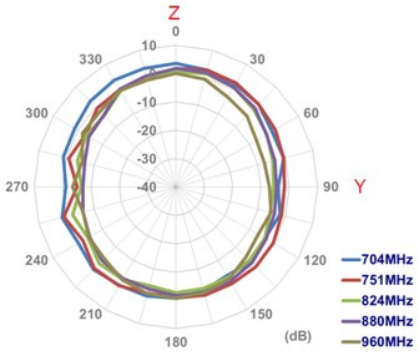




XY Plane	XZ Plane	YZ Plane







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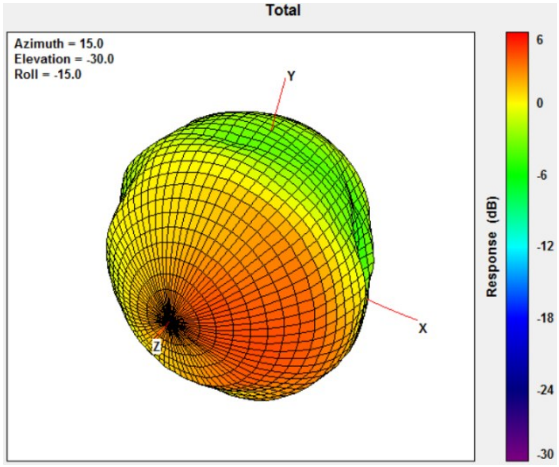
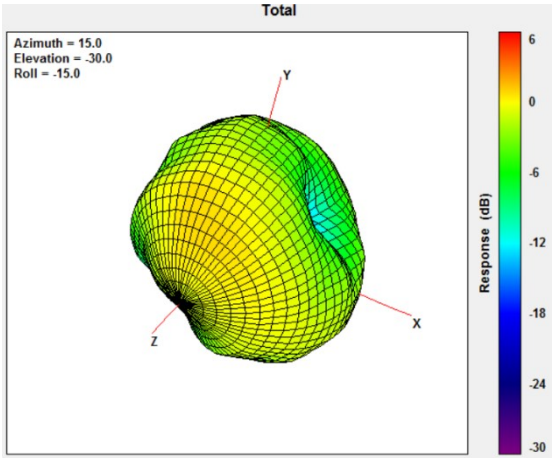
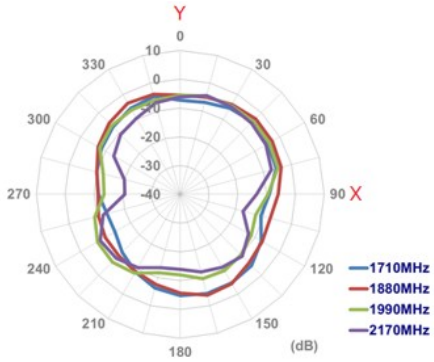
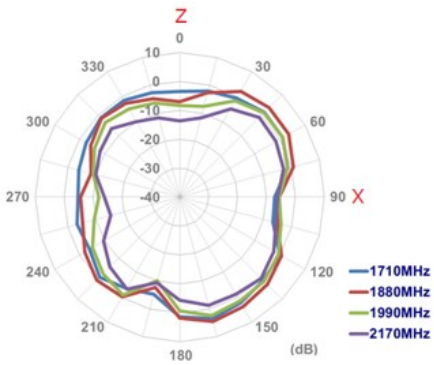
1710MHz	2170MHz

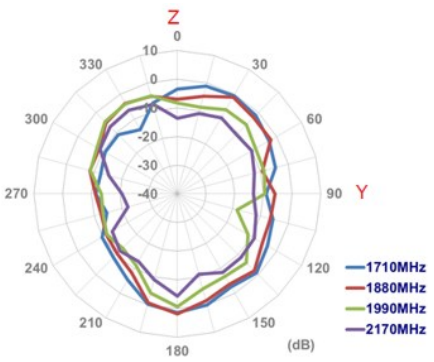




XY Plane	XZ Plane	YZ Plane







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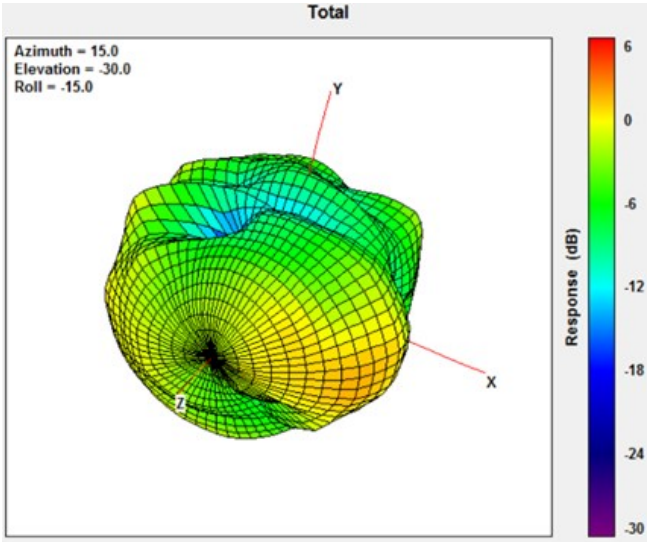
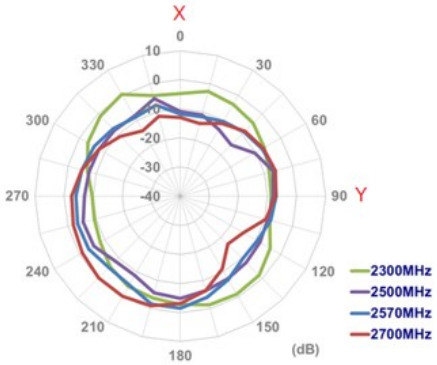
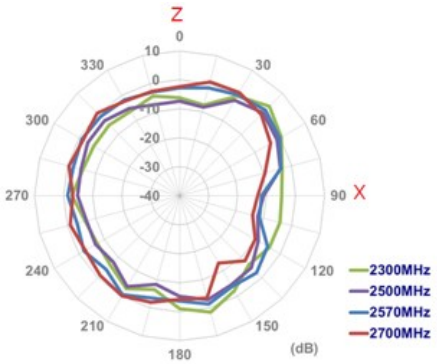
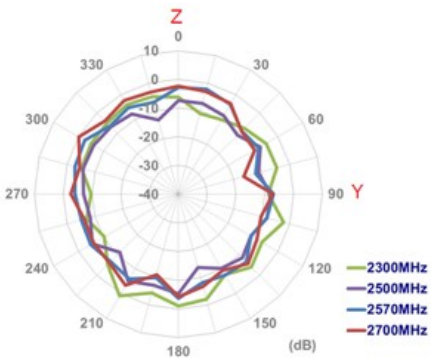
2600MHz



XY Plane	XZ Plane	YZ Plane







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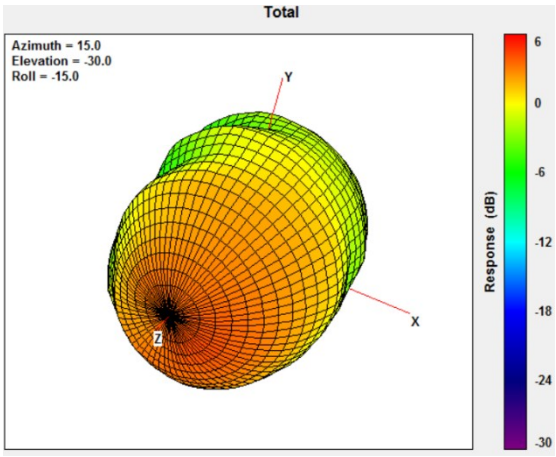
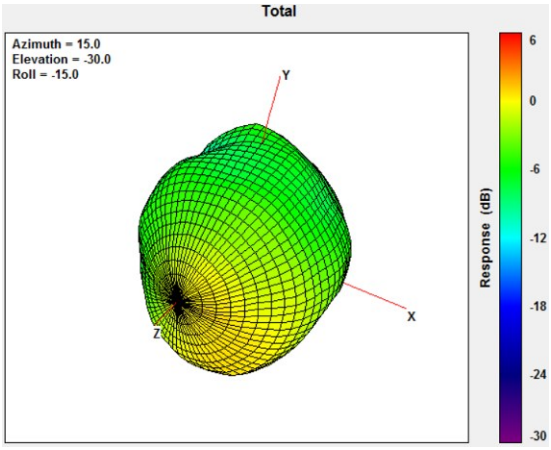
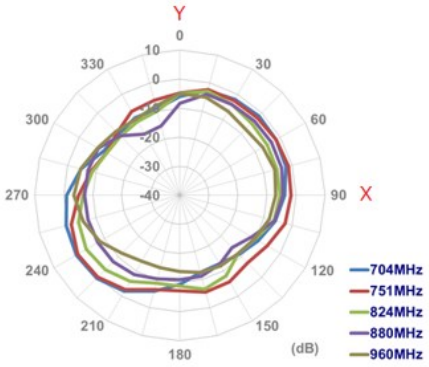
4.3 4G MIMO 2 - 3D and 2D Radiation Patterns

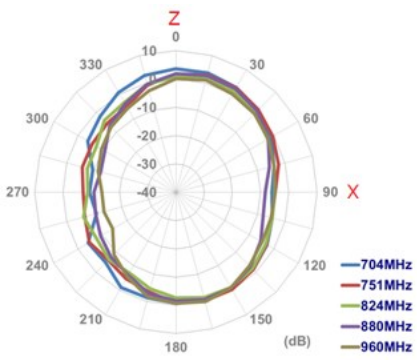
704MHz	960MHz

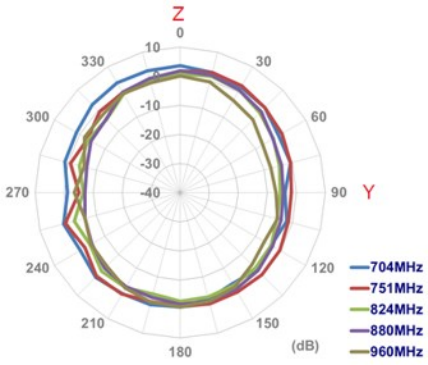




XY Plane	XZ Plane	YZ Plane







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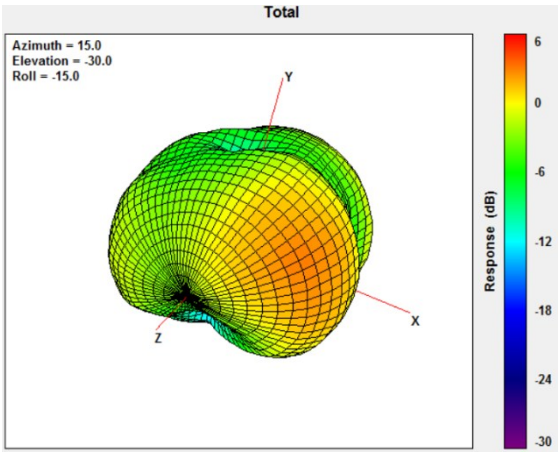
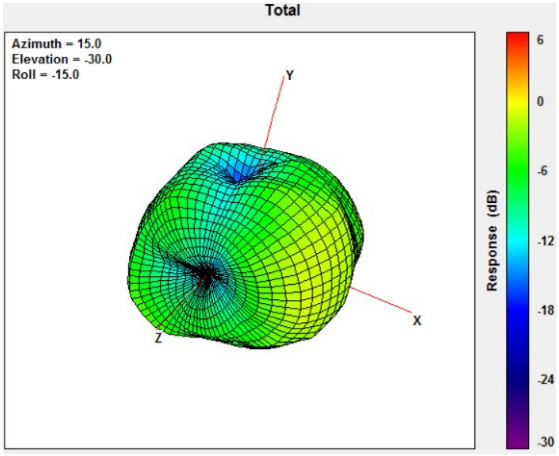
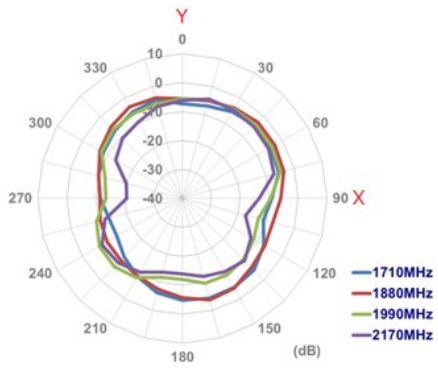
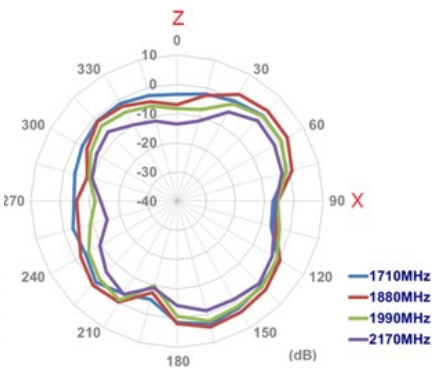
1710MHz	2170MHz

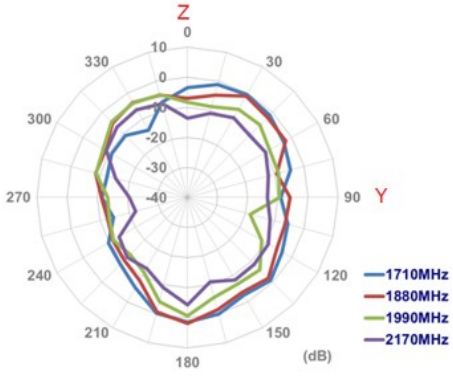




XY Plane	XZ Plane	YZ Plane







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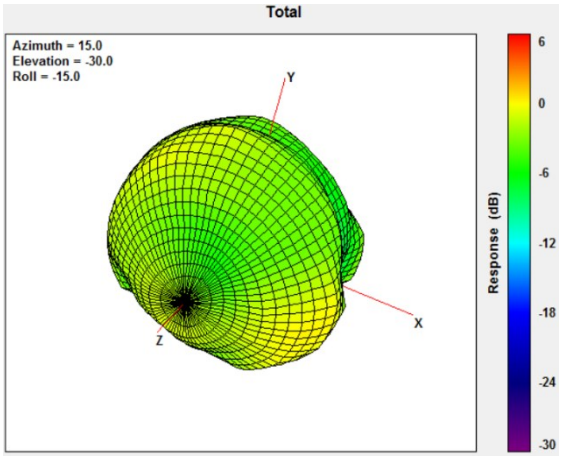
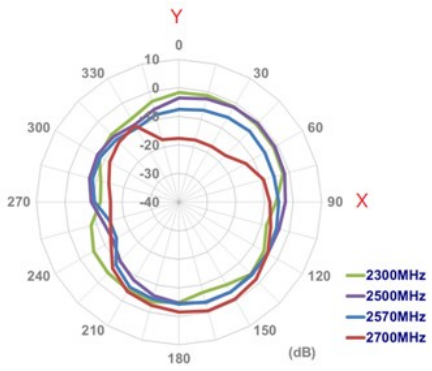
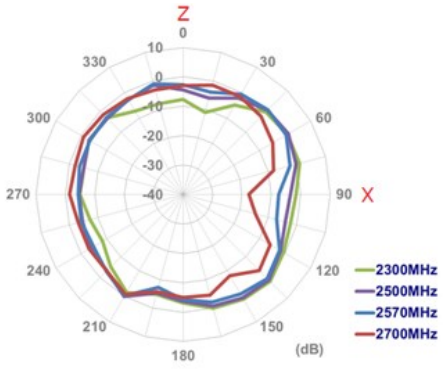
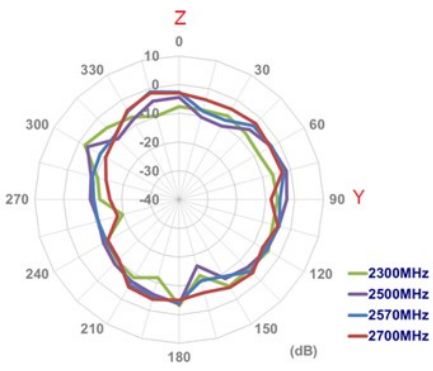
2600MHz



XY Plane	XZ Plane	YZ Plane







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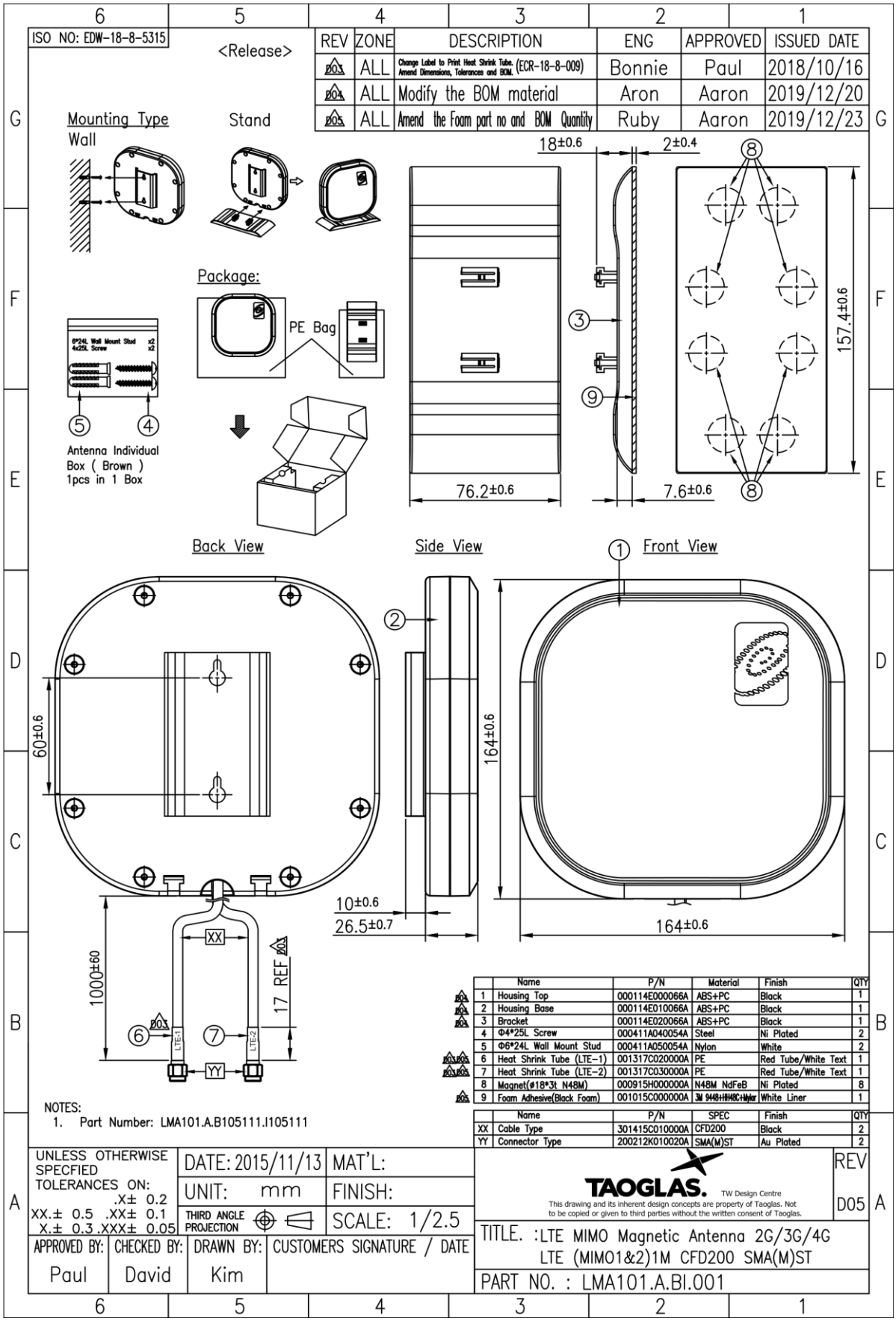
5. Mechanical Drawing (Units: mm)



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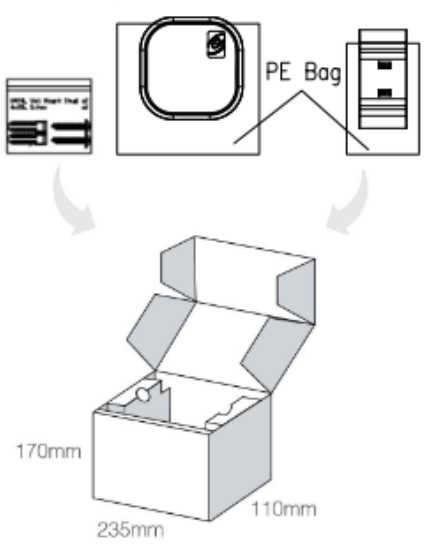
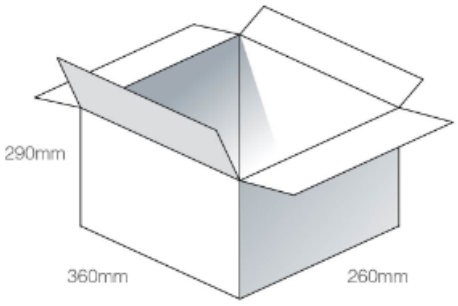
6. Packaging

LMA101.A.BI.001

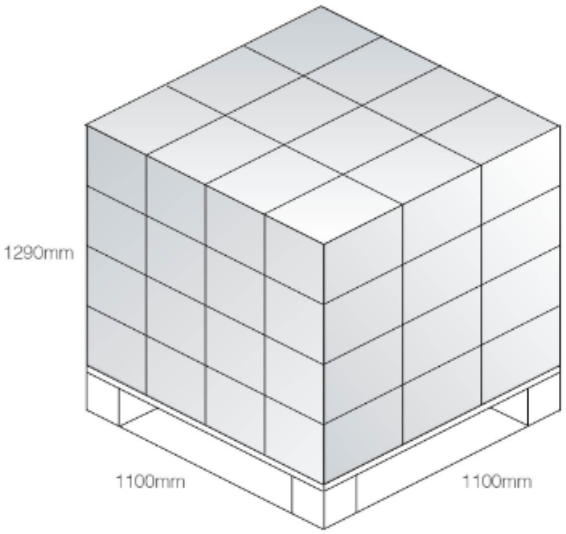
Packaging Specifications



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

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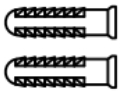
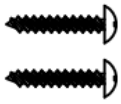
7. Installation

7.1 Package Contents

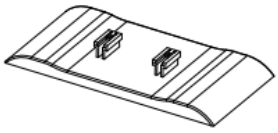
6*24L
Wall Mount
Stud *2



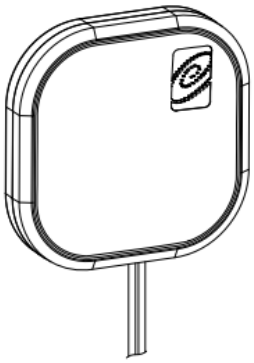
4*25L
Screw*2



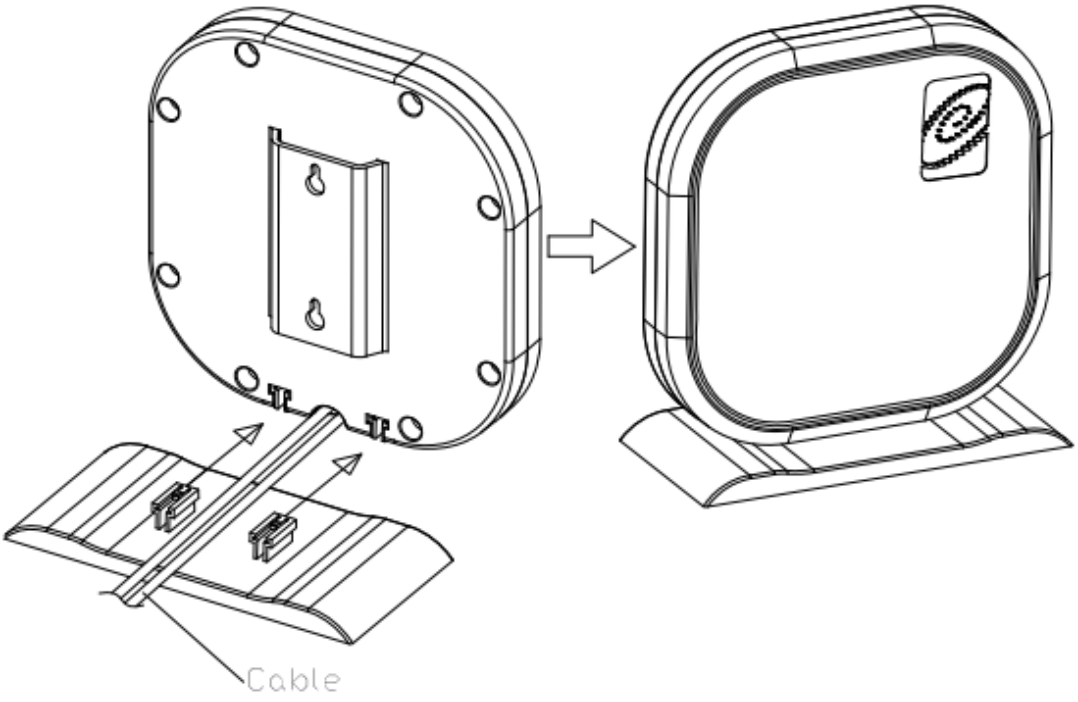
Stand *1



Antenna *1



7.2 Desktop Stand/Magnet Mount



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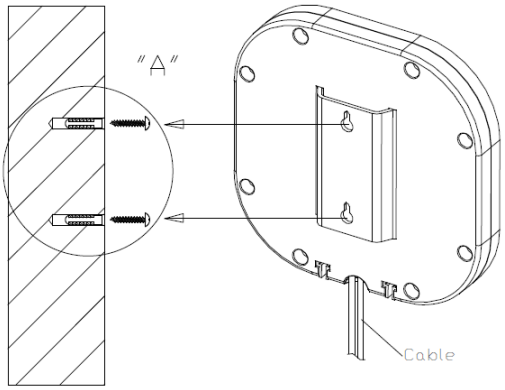
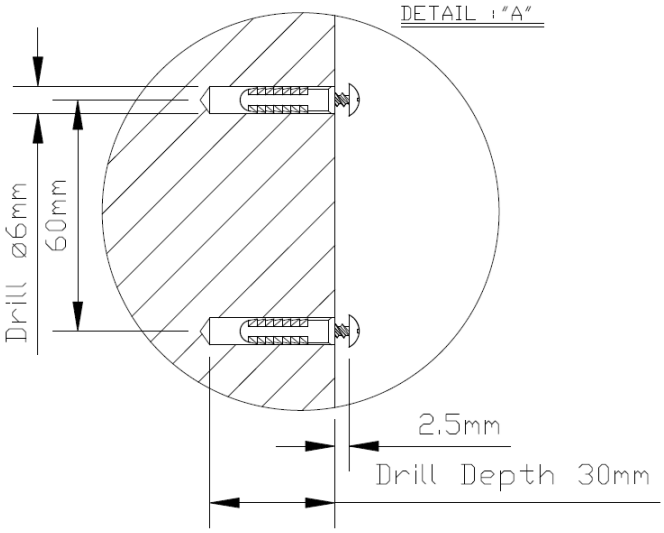
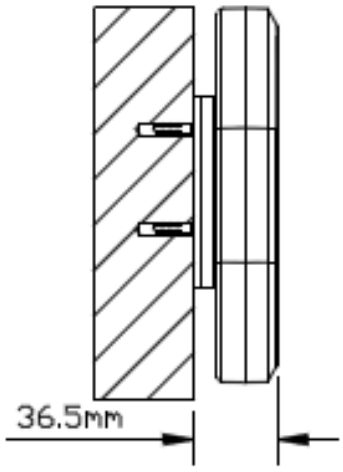
7.3 Wall Mount







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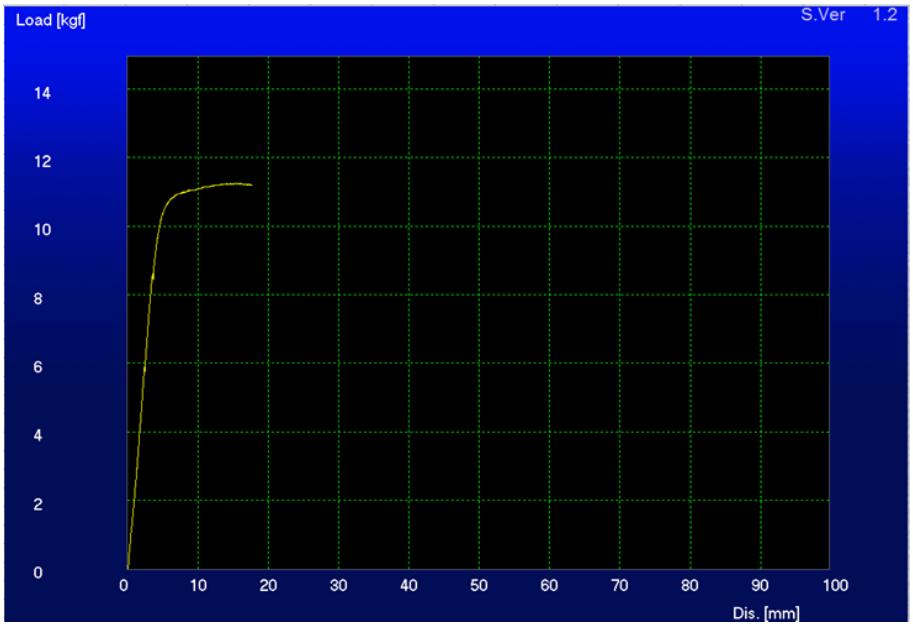
8. Application Note

8.1 Testing setup

1) Test Equipment Force gauge connect to PC	2)Bracket base layout+ magnet implement
	
3) Final Test Product LMA100+ bracket base+ magnet+ EPDM foam	4) Final product on 30*30 ground plane to perform pull force test
	



Max Pull Force: 11.24Kgf-cm

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Changelog for the datasheet

SPE-17-8-017 – LMA101.A.BI.001

Revision: E (Current Version)	
Date:	2023-07-10
Changes:	Update electrical specifications
Changes Made by:	Cesar Sousa

Previous Revisions

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

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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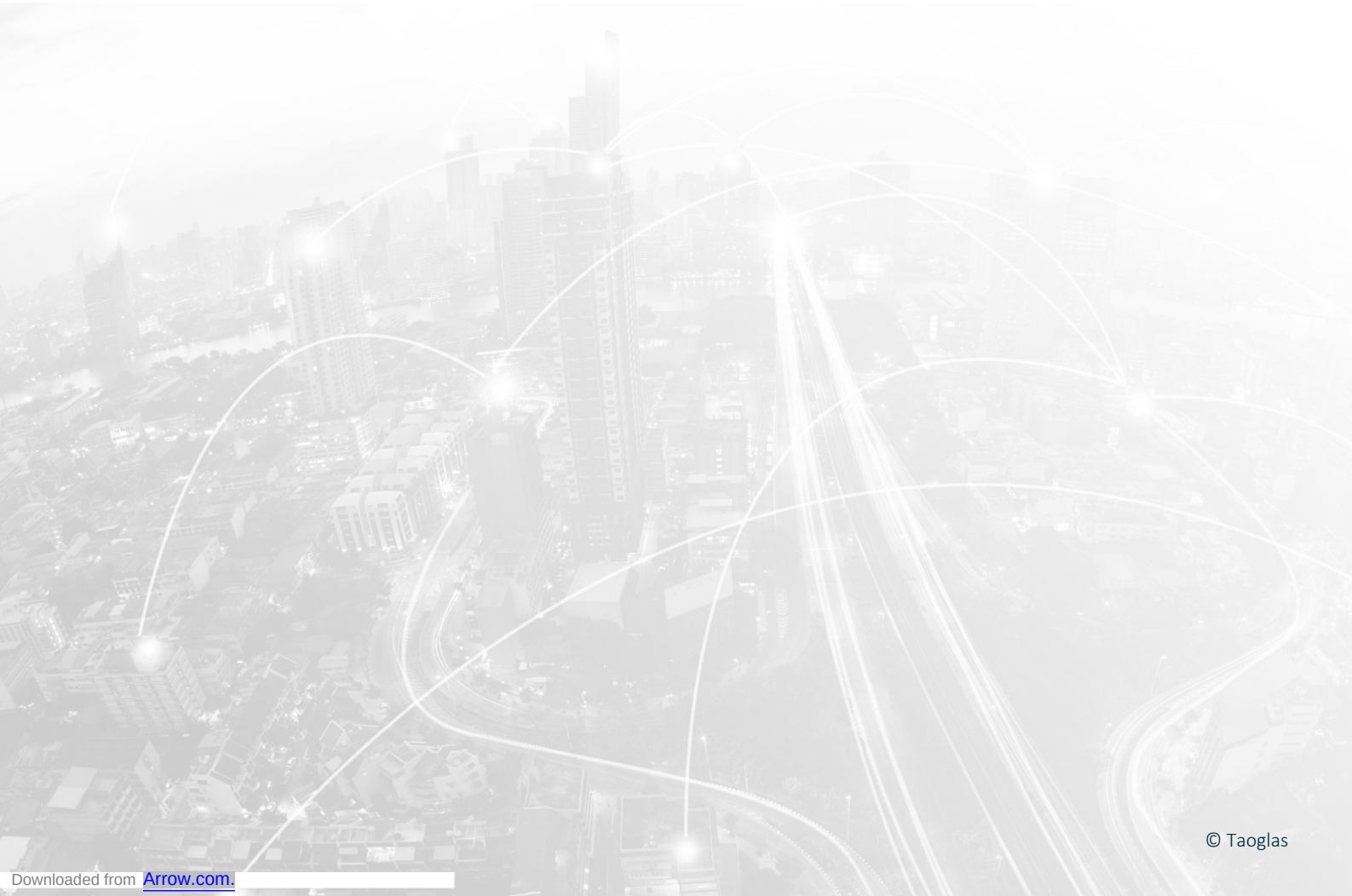

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