




# SPECIFICATION SHEET

## 4G LTE MIMO+ GNSS Combination Antenna

<b>MESSERS.</b>	
<b>DESCRIPTION</b>	<b>4G LTE MIMO+GNSS Combination Antenna</b>
<b>PART No.</b>	<b>FES-2CABLM</b>

ACCEPTANCE		
PREPARED	CHECKED	APPROVED
/	/	/

SUPPLIER		
PREPARED	CHECKED	APPROVED
		
10/02	10/02	10/02

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**◆ REVISION HISTORY**

NO	DATE	REVISION	NOTE	AUTHORS
1	2024.10.02	00	First Draft	LEE.

**◆ APPLICATION**

- WEARABLE DEVICES, GIS SYSTEM, MOBILE WEB
- FULL HD MOBILE TV , SMART METERING,AUTOMOTIVE
- GAMING SERVICES ,ENERGY SYSTEM ,SURVEY
- SMART BLACK BOX ,VEHICLE TRACKING DEVICE
- MONITORING, HIGH SPEED DATA etc. OTHERS

**◆ KEY FEATURES**

- 4G LTE MIMO ANTENNA, GPS/GLONASS /BEIDOU/QZSS/Galileo/L1
- 3 x 1 Combination Antenna
- 4G LTE Gain 2.5dBi
- Frequency : 698~960MHz/1710~2690MHz
- Active GNSS Gain  $28 \pm 2$ dB
- GPS Voltage Range 2.2V~5.0V



**◆ 4G LTE ELECTRICAL SPECIFICATION**

ITEM		SPECIFICATIONS
4G LTE MIMO Antenna	Frequency Range	698~960/1710~2690MHz
	Polarization	Linear
	Gain	2.5dBi(Zenith)
	V.S.W.R(min)	< 3.0
	Impedance	50Ω

**◆ GNSS ELECTRICAL SPECIFICATION**

ITEM		SPECIFICATIONS
GNSS Antenna	Frequency	GPS/GLONASS/BEIDOU/QZSS/Galileo L1
	Polarization	RHCP Right-hand-circulator
	Axial Ratio	≤3dB
	V.S.W.R	≤2.0
	Peak Gain	5.0dBi(Zenith)
	Impedance	50Ω
	Dimension	33.5x33.5x6mm
GNSS LNA	Gain	28 ± 2.0dB
	Noise Figure	≤2.0
	Supply Voltage	2.2-5.0V
	Current Consumption	≤15mA Typ.
	V.S.W.R	≤2.0

**◆ ENVIRONMENTAL SPECIFICATION**

ITEM	SPECIFICATIONS
Operating Temperature	-40°C~+85°C
Storage Temperature	-40°C~+85°C
Relative Humidity	65°C, 95%RH for 96 hours

RoHS Compliant

**◆ MECHANICAL SPECIFICATION**

ITEM	SPECIFICATIONS
Dimensions	120.0x52.0x16.0mm
Cable	RG174 or others
Connector	SMA(M)/FAKRA or others
Radome	ABS
Mounting Method	Adhesive

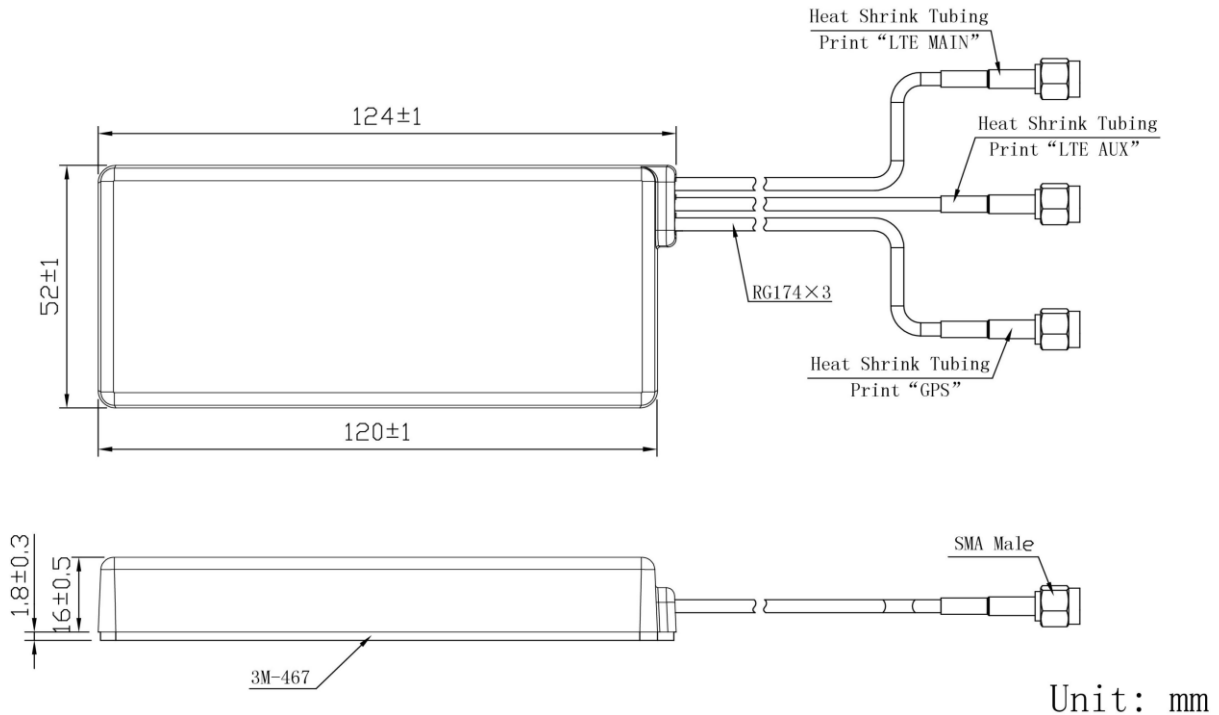
**❖ GNSS FREQUENCY BAND**

GPS/GNSS FREQUENCY BAND					
GPS /QZSS	L1	L2	L5	L6	
	1575.42MHz	1227MHz	1176MHz	1278MHz	
GLONASS	G1	G2	G3		
	1602MHz	1248MHz	1207MHz		
GALILEO	E1	E5a	E5b	E6	
	1575.42MHz	1176MHz	1202MHz	1278MHz	
BEIDOU	B1	B2a	B2b	B3	
	1561MHz	1176MHz	1207MHz	1268MHz	
SBAS	L1	G1	L5	G2	G3
	1575.42MHz	1602MHz	1176MHz	1248MHz	1207MHz
L-BAND IRNSS	L-BAND	IRNSS			
	1542MHz	1176MHz			

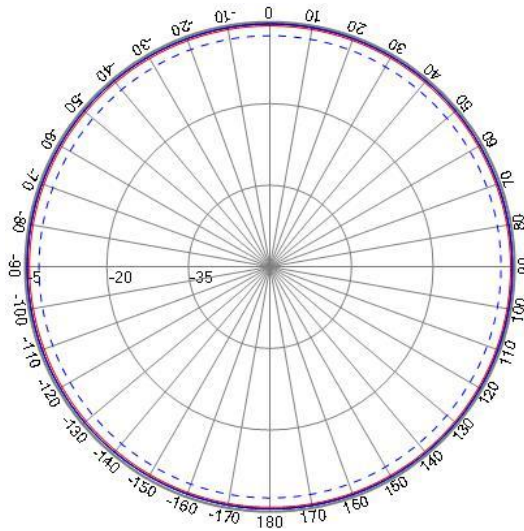
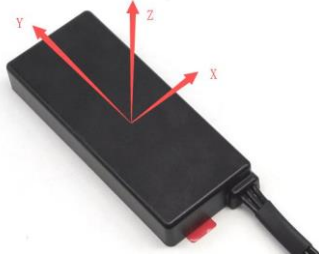
### ❖ 4G LTE FREQUENCY BAND

Frequency		4G LTE Bands	3G Bands	2G Bands	CDMA Bands
698-960MHz	700/850/900MHz	B5 B6 B8 B12 B13 B14 B17 B18 B19 B20 B26 B27 B28 B29 B44 B67 B68 B85	B5 B6 B8 B12 B13 B14 B19 B20 B26	710 750 810 850 900	BC0 BC2 BC3 BC7 BC9 BC10 BC12 BC18 BC19
1710-2170MHz	1700/1800/1900/ 200/2100MHz	B1 B2 B3 B4 B9 B10 B25 B33 B34 B35 B36 B37 B39 B65 B66 B70	B1 B2 B3 B4 B9 B10 B25 B33 B34 B35 B36 B37 B39	DCS(1800) PCS(1900)	BC1 BC4 BC6 BC8 BC14 BC15
2500-2690MHz	2500/2600MHz	B7 B38 B41 B69	B7 B38		BC13 BC16 BC20 BC21

### ◆ ANTENNA DIMENSION



◆ Radiation Pattern(GPS)

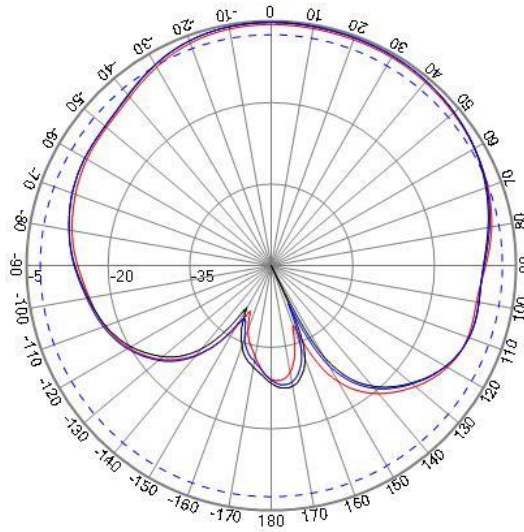


XY-PLANE

Freq: 1602

Freq: 1561

Freq: 1575

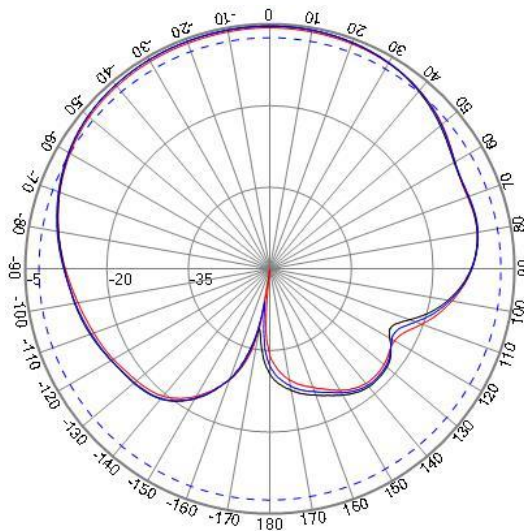


XZ-PLANE

Freq: 1602

Freq: 1561

Freq: 1575



YZ-PLANE

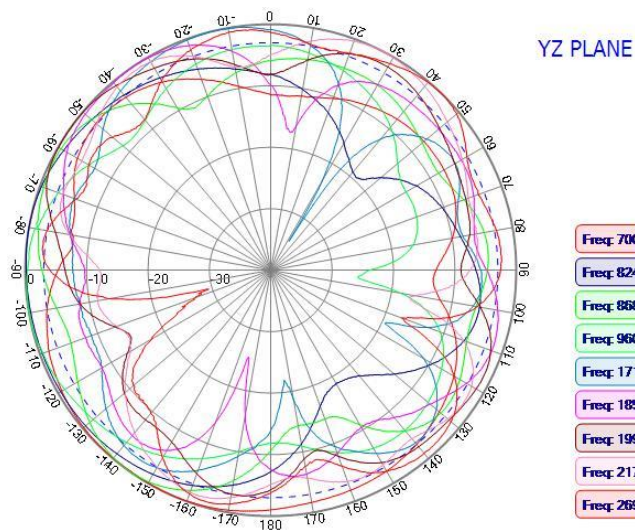
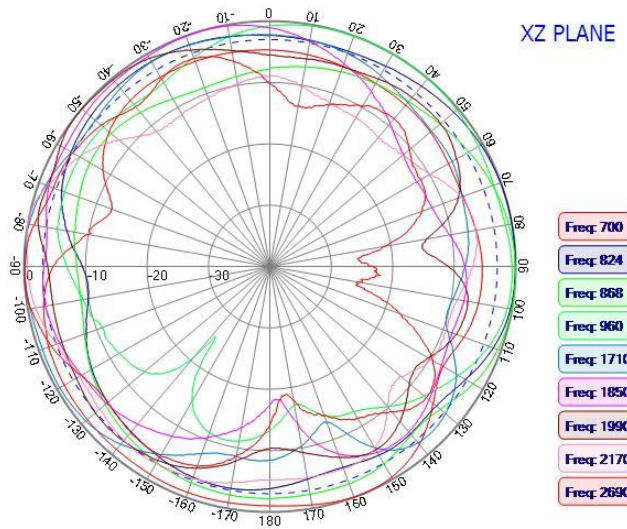
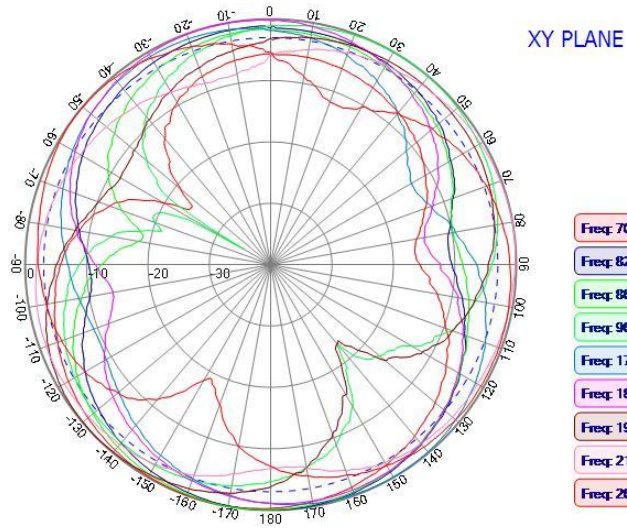
Freq: 1602

Freq: 1561

Freq: 1575



◆ Radiation Pattern(4G LTE-MAIN)





◆ Radiation Pattern(4G LTE-SUB)

