




# SPECIFICATION SHEET

## GPS+GSM+WIFI Combination Antenna

<b>MESSERS.</b>	
<b>DESCRIPTION</b>	<b>GPS+GSM+WIFI Combination Antenna</b>
<b>PART No.</b>	<b>FES-50EF</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**

- Smart farm
- Autonomous driving
- Vehicle Tracking
- Road/Aviation/Rail/Marine Applications
- Mobile station base station system
- Vehicle tracking energy system
- Telematics and Navigation
- Wireless system
- Logistics and Shipping
- Smart home
- Networks

**◆ KEY FEATURES**

- GSM / 3G / WIFI ANTENNA, GPS/QZSS/Galileo/L1
- 3 x 1 Combination Antenna
- GSM/3G Gain:2dBi, WIFI Gain:3dBi
- Frequency : 824-960MHz/1710-2170MHz, 2400-2483.5MHz
- Active GNSS Gain  $28 \pm 2$ dB
- GPS Voltage Range 2.2V~5.0V



**◆ GSM/3G/WIFI ELECTRICAL SPECIFICATION**

ITEM		SPECIFICATIONS
GSM Antenna	Frequency Range	824~960/1710~2170MHz
	Polarization	Linear
	Gain	2.0dBi(Zenith)
	V.S.W.R(min)	< 2.5
	Impedance	50Ω
WIFI Antenna	Frequency Range	2400-2483.5MHz
	Polarization	Linear
	Gain	3.0dBi(Zenith)
	V.S.W.R	< 2.0
	Impedance	50Ω

**◆ GPS ELECTRICAL SPECIFICATION**

ITEM		SPECIFICATIONS
GPS Antenna	Frequency	GPS L1 /QZSS/Galileo E1
	Polarization	RHCP Right-hand-circulator
	Axial Ratio	≤3dB
	V.S.W.R	≤2.0
	Peak Gain	2.0dBi(Zenith)
	Impedance	50Ω
GPS 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
Waterproof Rating	IP65

RoHS Compliant

### ◆ MECHANICAL SPECIFICATION

ITEM	SPECIFICATIONS
Dimensions	59.2x52.5x15.0mm
Cable	RG174 or others
Connector	SMA(M) or others
Radome	ABS
Mounting Method	Magnet/Adhesive

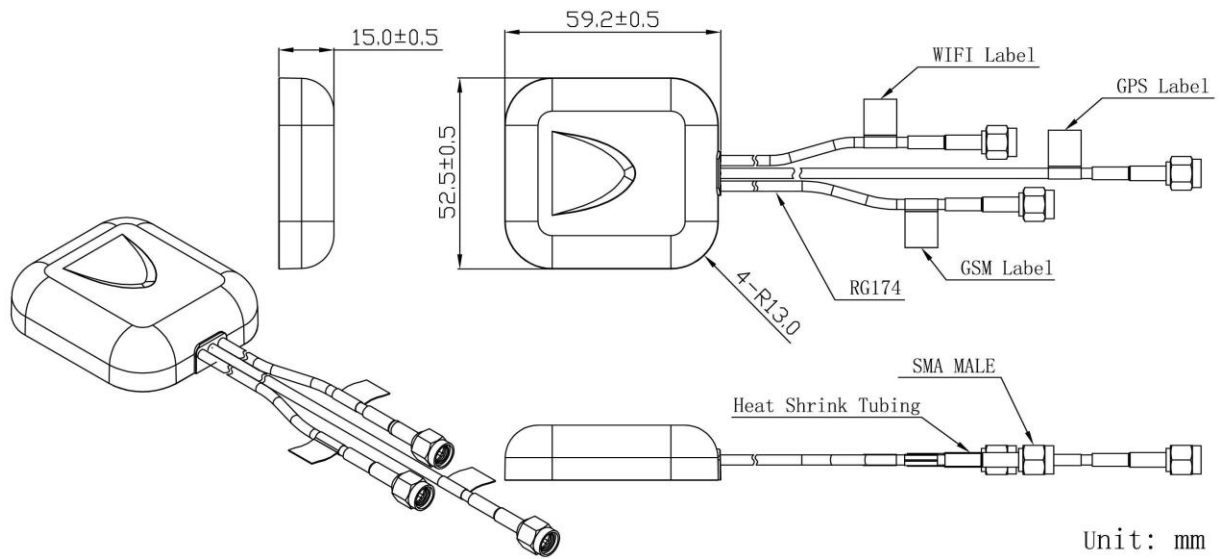
### ❖ GNSS FREQUENCY BAND

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			

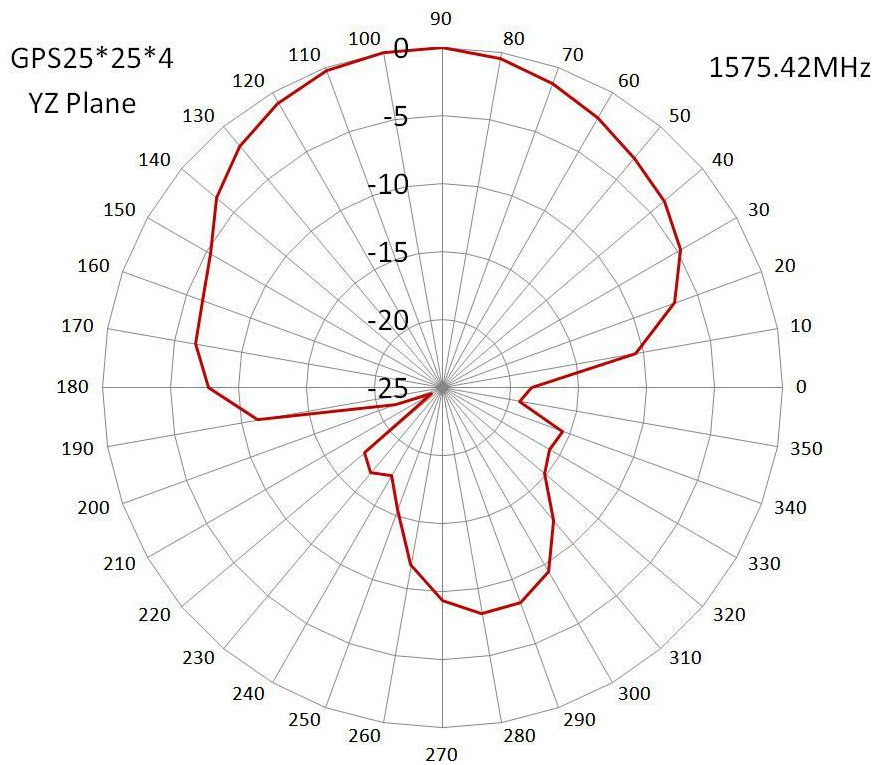
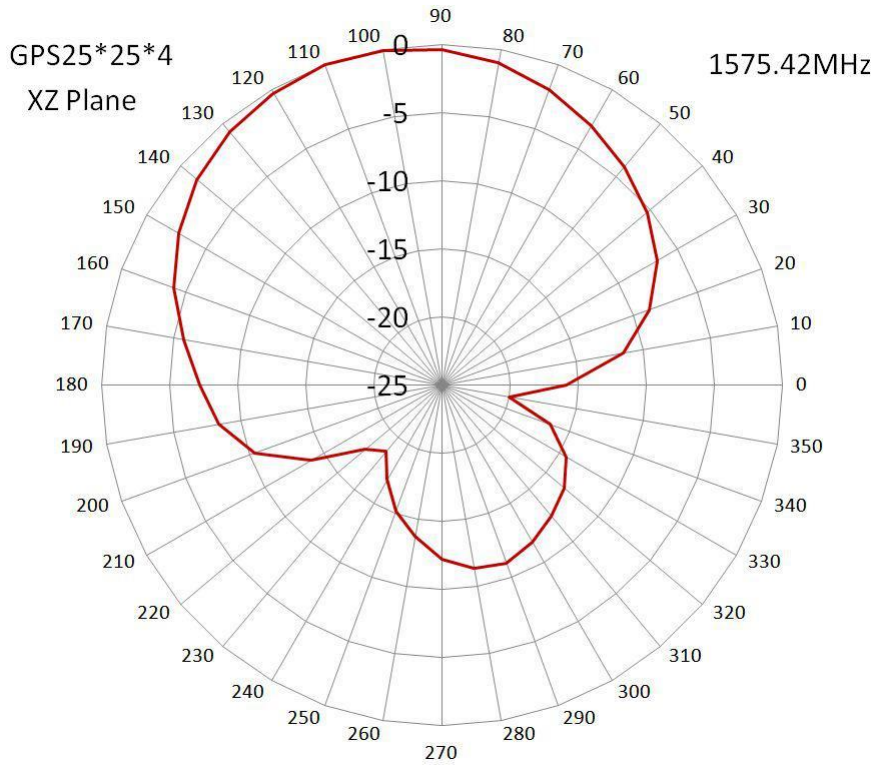
### ❖ 2G/3G FREQUENCY BAND

GSM/DCS/PCS/CDMA/GPRS BANDS	
Bands	Frequency
GSM850	824-896MHz
GSM900	880-960MHz
DCS	1710-1880MHz
PCS	1850-1990MHz
CDMA	1920-2170MHz

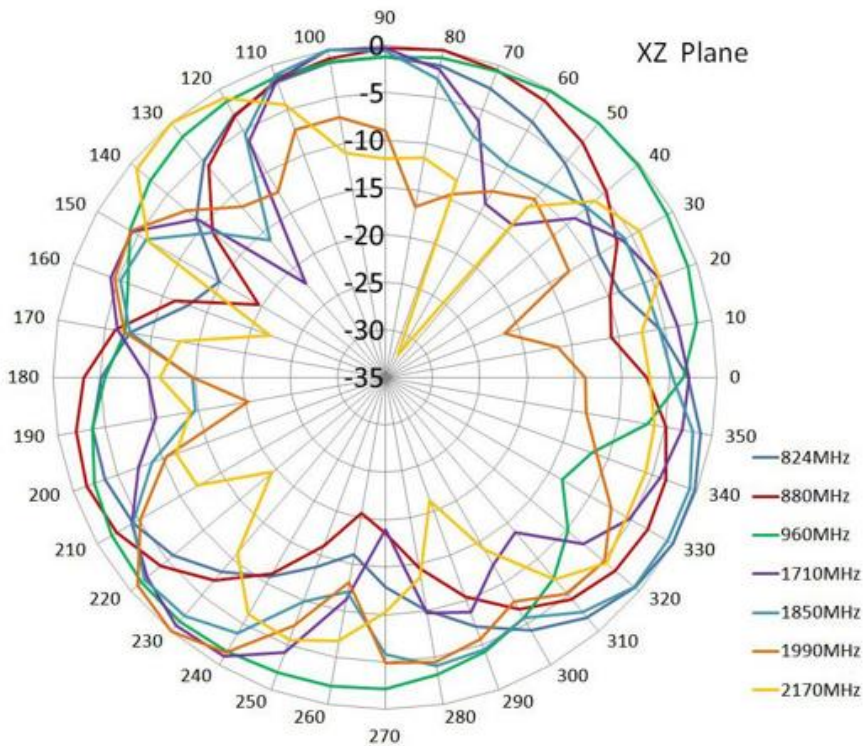
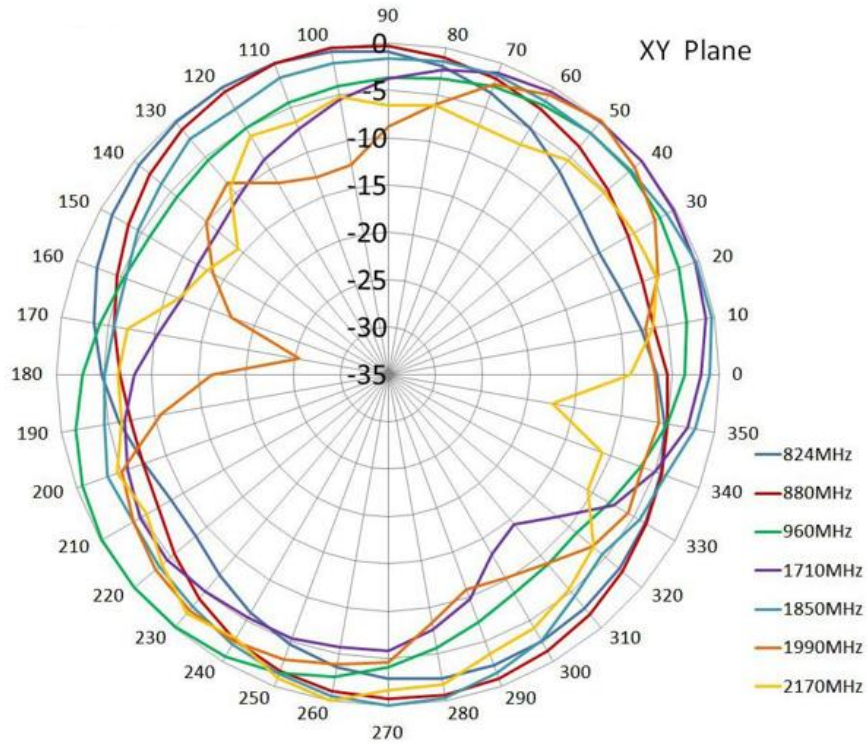
### ◆ ANTENNA DIMENSION



◆ Radiation Pattern(GPS)



◆ Radiation Pattern(GSM/3G)





◆ Radiation Pattern(GSM/3G)

