

# Sharkfin / Vehicular

## 5G-FR1+WiFi-6E/7+GNSS L1+L2 Direct Mount 13-in-1 Antenna

SKF5GEX134811DM - 617 to 7125 MHz



### Features & Applications:

- 🌀 Vehicle roof mount, directly on metal plane
- 🌀 Ground plane independent
- 🌀 4x4 MiMo Cellular 5G-FR1 (4G compatible)
- 🌀 8x8 MiMo WiFi, DSRC, V2X (WiFi-6E/7 compatible)
- 🌀 Active GNSS L1+L2 with 28dB low noise amplifier
- 🌀 Heavy and light vehicles
- 🌀 IoT, navigation, tracking
- 🌀 Metering, EV charging stations
- 🌀 Request separately special cable length and connectors

### ELECTRICAL SPECIFICATIONS

#### General Specifications – 5G FR1 + WiFi 6E/7

Antenna type	Nominal Impedance	Polarization	Radiation pattern	Power withstanding	DC Ground
Monopole <sup>1</sup>	50Ω	Vertical / Linear	Omni	45W	No

#### 5G FR1 Antennas: 617 – 5925MHz

Port	Frequency (MHz)	617-960	1710-2700	3300-4200	4400-5925	5925-7125
Port 1,2,3,4	Return Loss(dB)	-3	-4	-5	-5	-5
	Avg. Peak Gain (dBi)	2.3	4.6	5.2	5.7	4.4
	Avg. Efficiency (%)	40	54	52	49	50
Isolation <sup>2</sup>	Isolation (dB)	7	10	20	20	25

#### WiFi 6E/7 Antennas: 2400-2500 / 4900-7125MHz

Port	Frequency (MHz)	2400-2500	4900-7125
Port 1,2,3,4 5,6,7,8	Return Loss	-5	-5
	Avg. Peak Gain (dBi)	6.0	7.0
	Avg. Efficiency (%)	50	45
Isolation <sup>2</sup>	Isolation (dB)	7	15

Notes:

1. Multi-Band Monopoles with built in ground plane, Independent from external ground plane
2. Minimum Isolation (dB)

**ELECTRICAL SPECIFICATIONS**

GNSS Antenna L1 Band: 1561.098 +/- 2.046MHz, 1575.42 +/- 1.023MHz, 1602.5625 +/- 4MHz  
 GNSS Antenna L2 Band: 1227.6 +/- 1.023MHz

Frequency (MHz)	L1 Band	L2 Band
Return Loss(dB)	< -8	< -10
Gain – Radiating Element (dBic)	2 +/- 1	4 +/- 1
LNA Gain (dB)	28 +/- 2	31 +/- 2
Polarization	RHCP	
Noise Figure (dB)	< 1.8	
Operating Voltage (V <sub>dc</sub> )	2.5-18	
Current Consumption (mA)	< 16	

**MECHANICAL SPECIFICATIONS**

**SKF5GEX134811DM**

Dimension (Length x Width x Height)	Housing Material	Color	Weight	Fixing System	Mounting Hole Diameter
400 x 52.5 x 63.8 mm (15.8 x 2.07 x 2.51 inch)	PC, UV Protected	Black	750g (1.22lbs)	Direct Mount	1.063" (27mm)
Wireless Technology	No. of Port	Cable Length	Cable Type	Connector Type	
5G FR1/ LTE	4	1ft (0.3m)	RG-316	SMA (Male)	
WiFi 6E/7	8	1ft (0.3m)	RG-316	SMA (Male)	
GNSS	1	1ft (0.3m)	RG-174	SMA (Male)	

**ENVIRONMENTAL SPECIFICATIONS**

**SKF5GEX134811DM**

Operating Temperature	Storage Temperature	RoHS Compliant	Ingress Protection
-40 / +85° C	-40 / +85° C	Yes	IP67

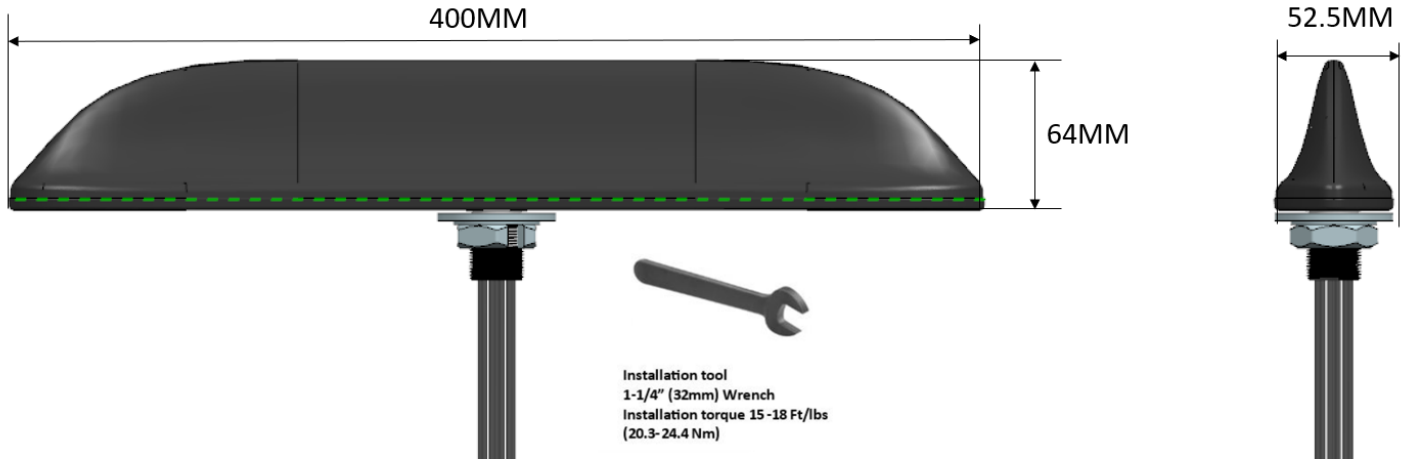
## Sharkfin / Vehicular

### 5G-FR1+WiFi-6E/7+GNSS L1+L2 Direct Mount 13-in-1 Antenna

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## Mechanical Drawing

SKF5GEX134811DM

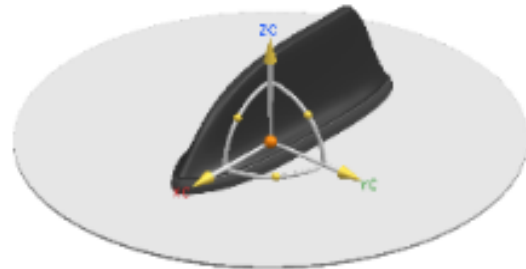


Dimensions: inches (mm) Unless otherwise specified, all tolerances are  $\pm 0.010$  (0.25mm)

## RF Test setup

SKF5GEX134811DM

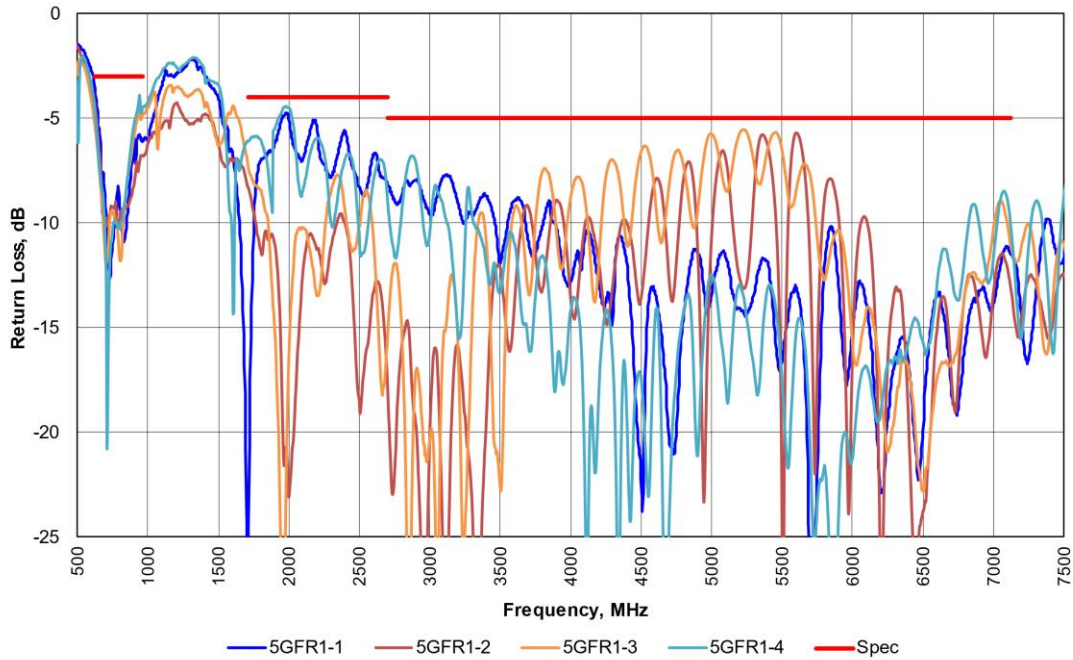
- All measurements done on  $\varnothing 500\text{mm}$  (20") round ground plane.
- S-parameters with 0.3m RG 316 cable
- Gain and Efficiency with 0.3m RG 316 cable
- Measured at Pulse, Suzhou



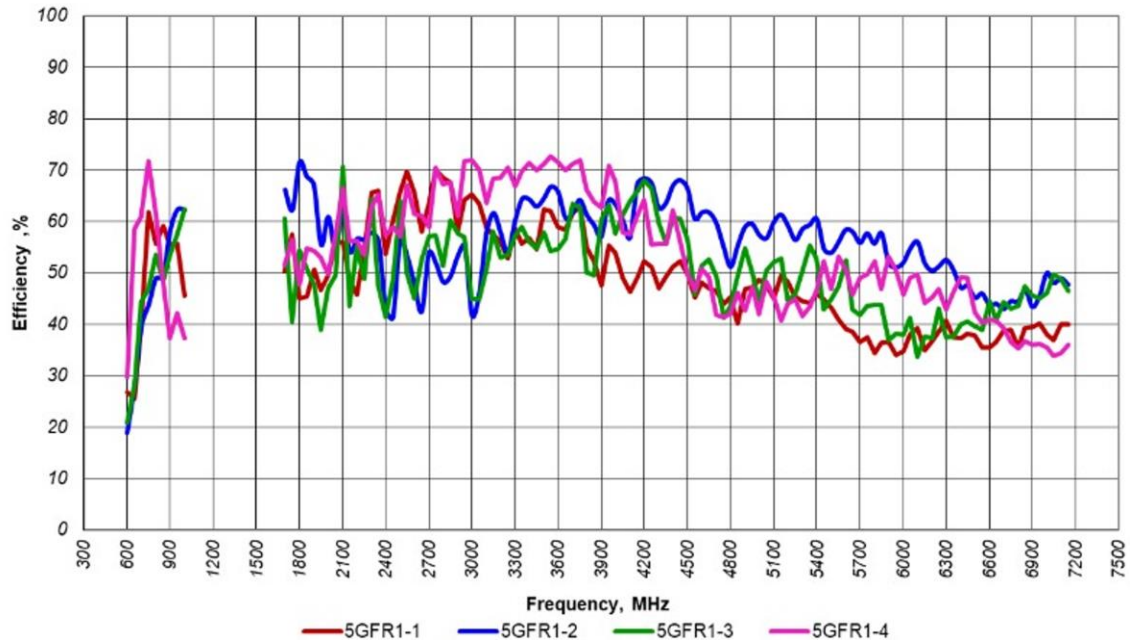
Charts – Return Loss, Efficiency, Peak Gain, Isolation

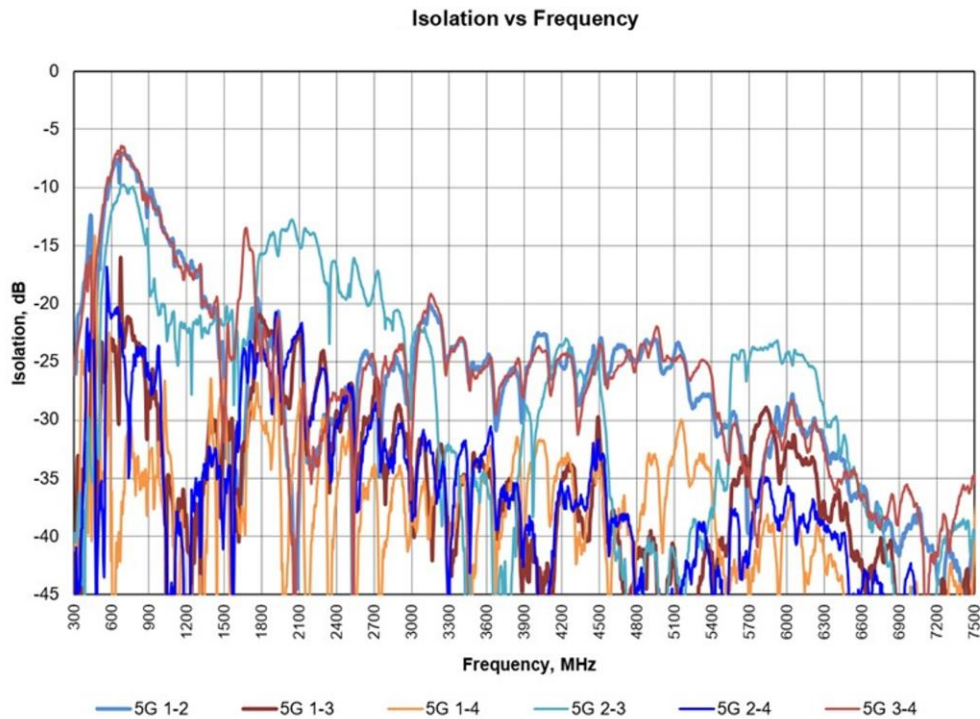
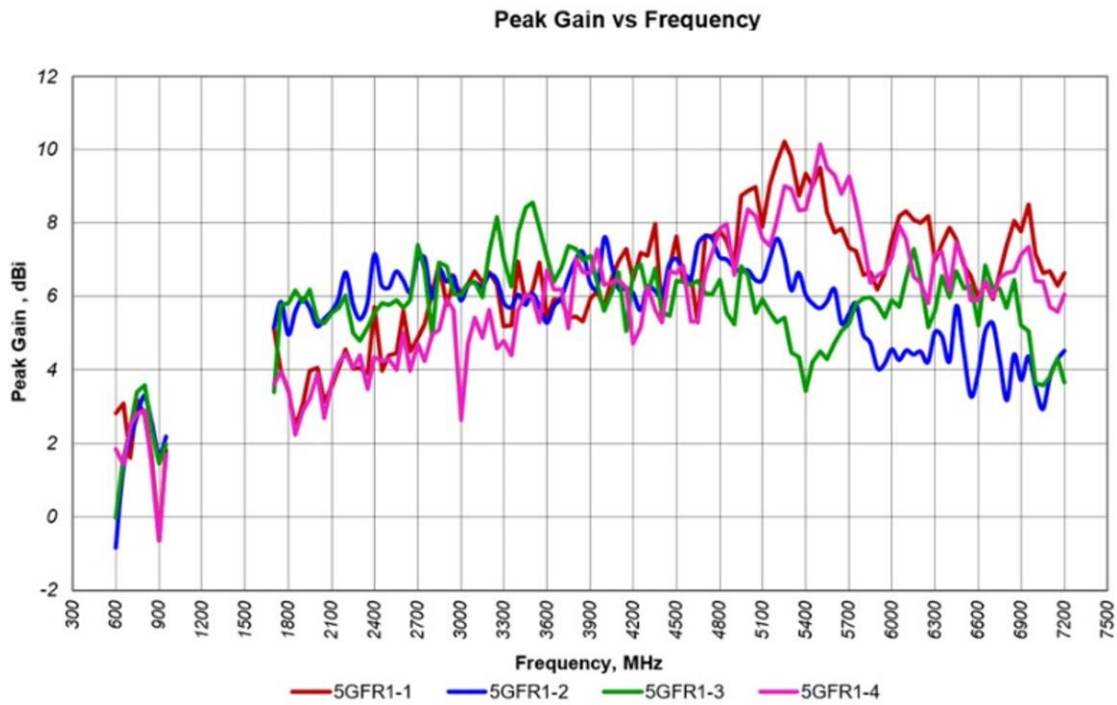
5G FR1

Return Loss vs Frequency



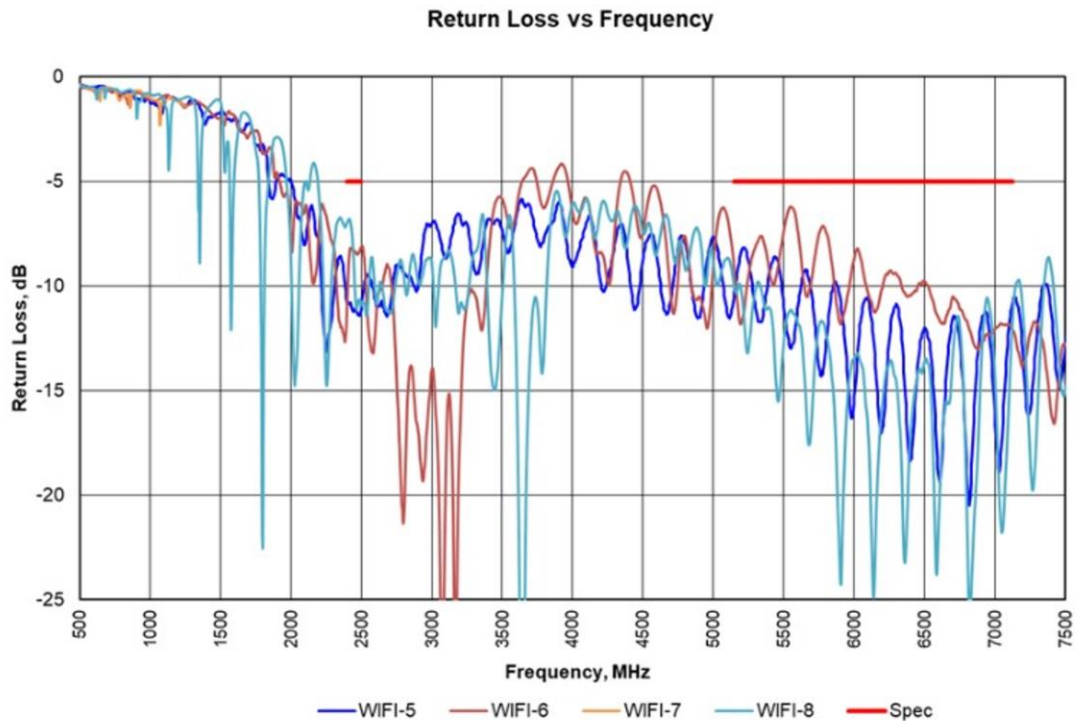
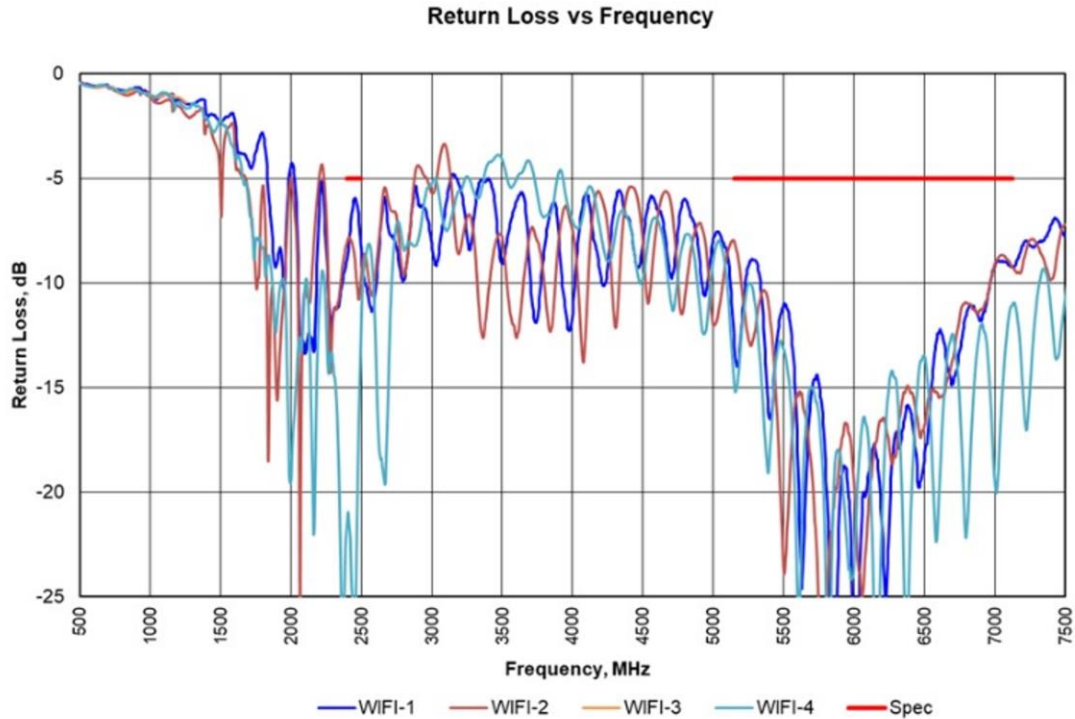
Efficiency vs Frequency



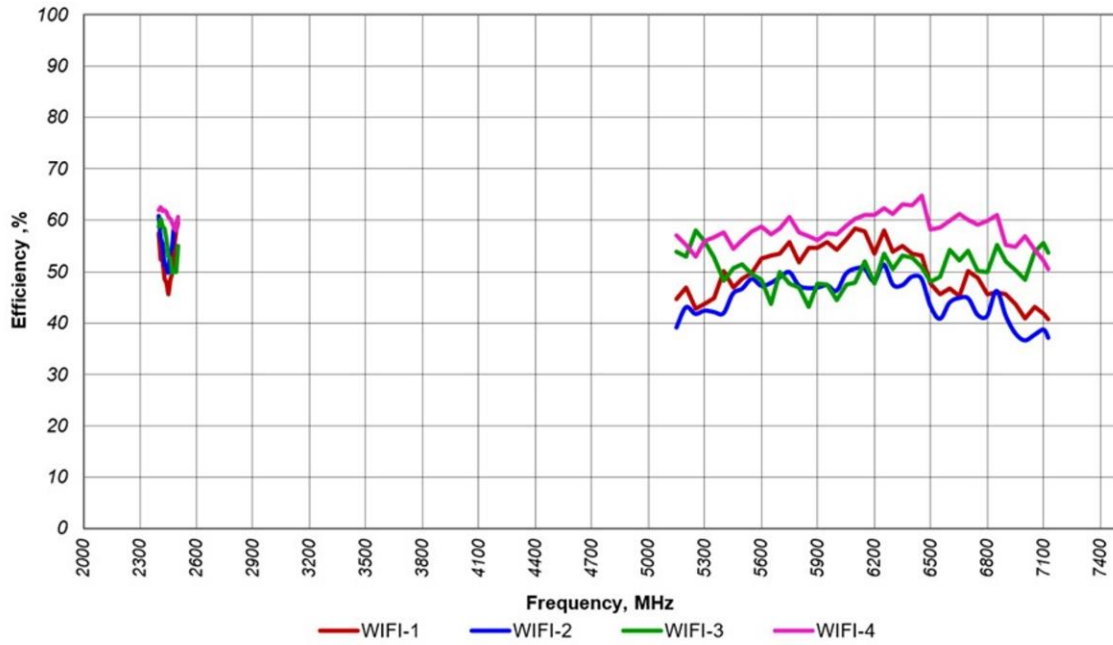


Charts - Return Loss, Efficiency, Peak Gain, Isolation

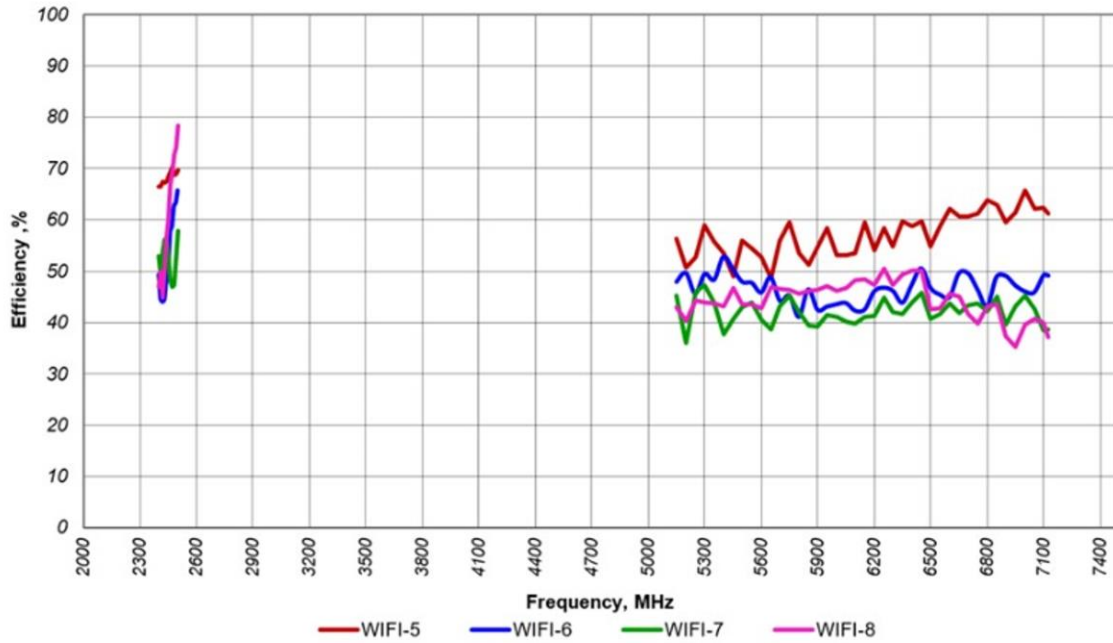
WiFi 6E/7



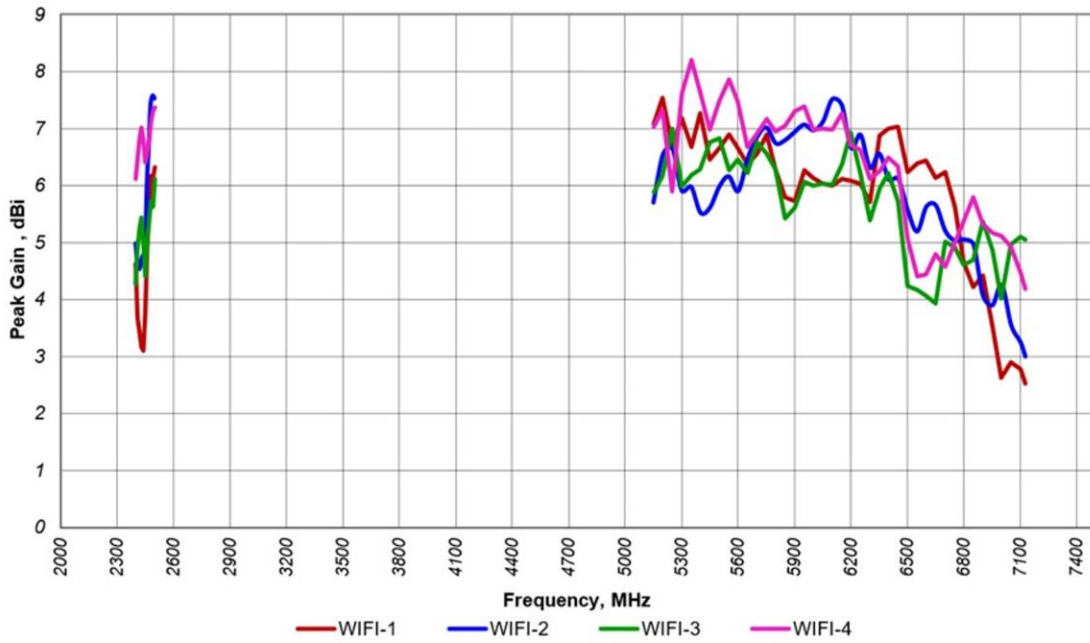
Efficiency vs Frequency



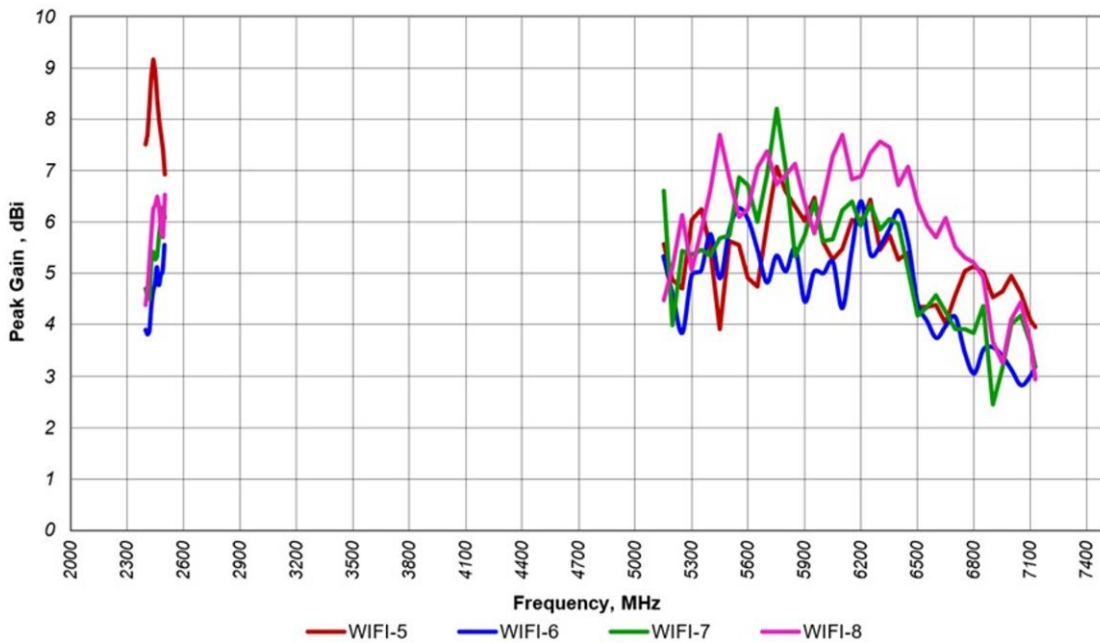
Efficiency vs Frequency



Peak Gain vs Frequency

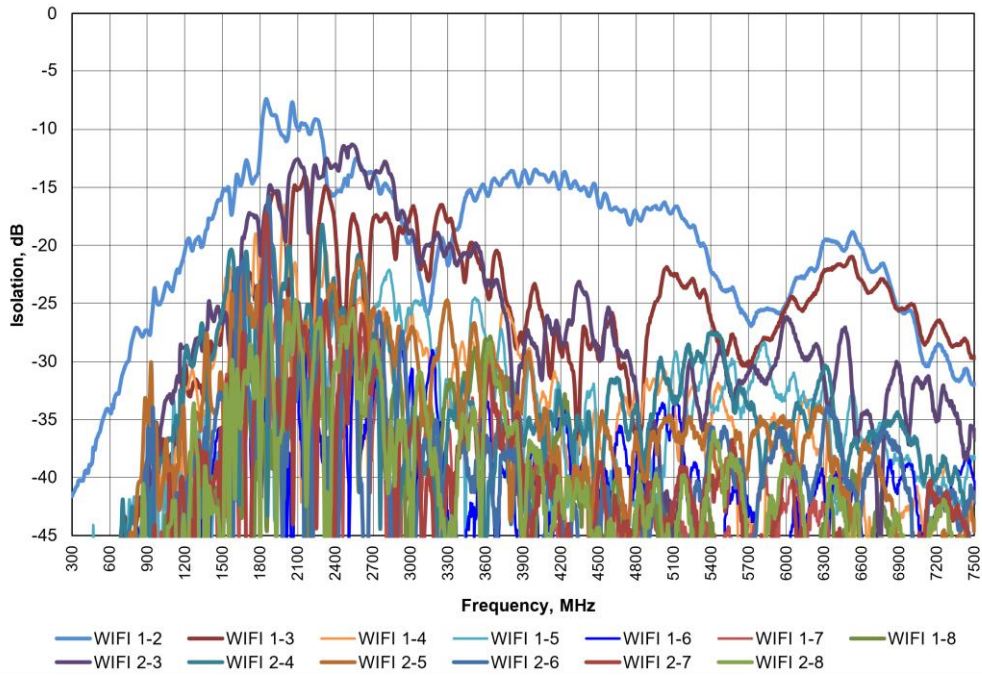


Peak Gain vs Frequency

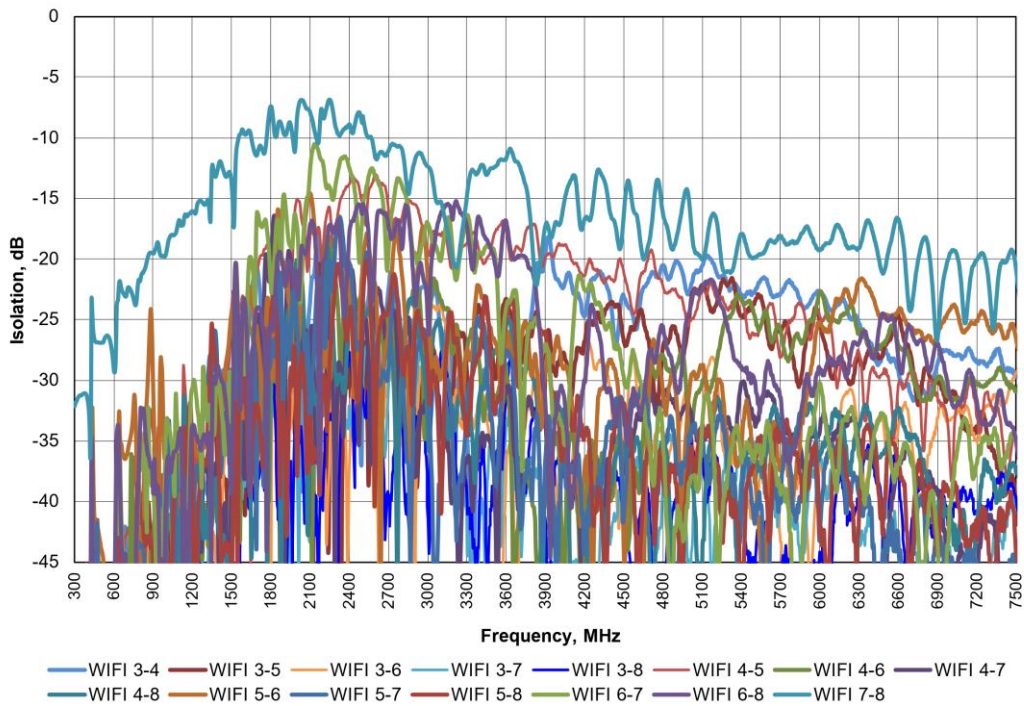




Isolation vs Frequency

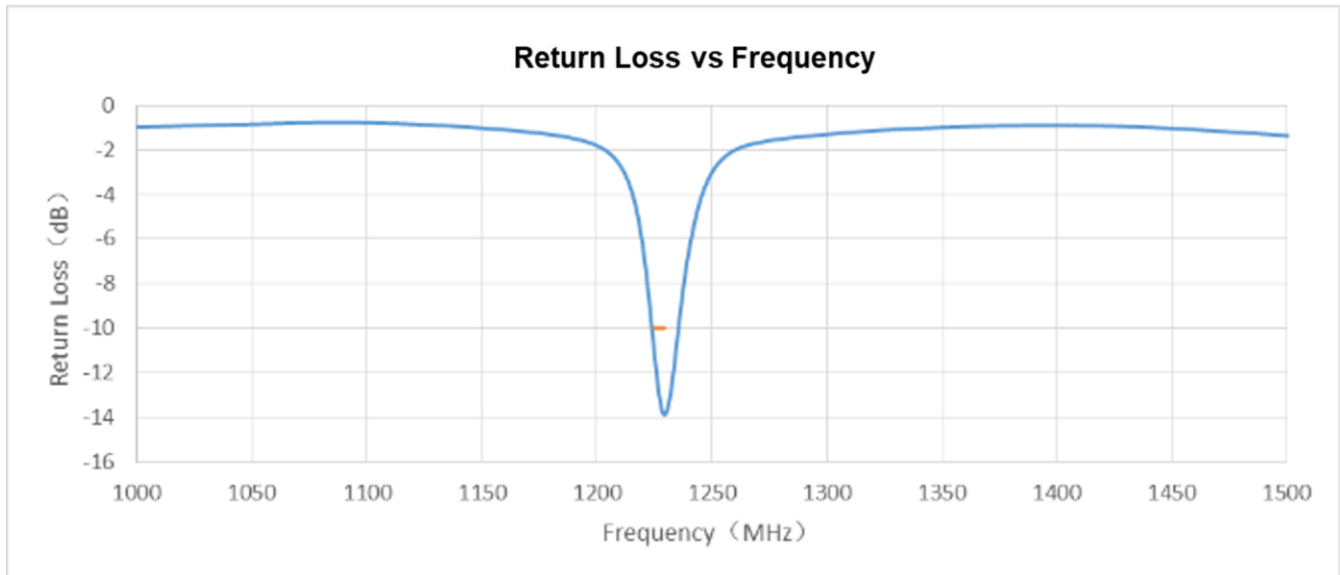
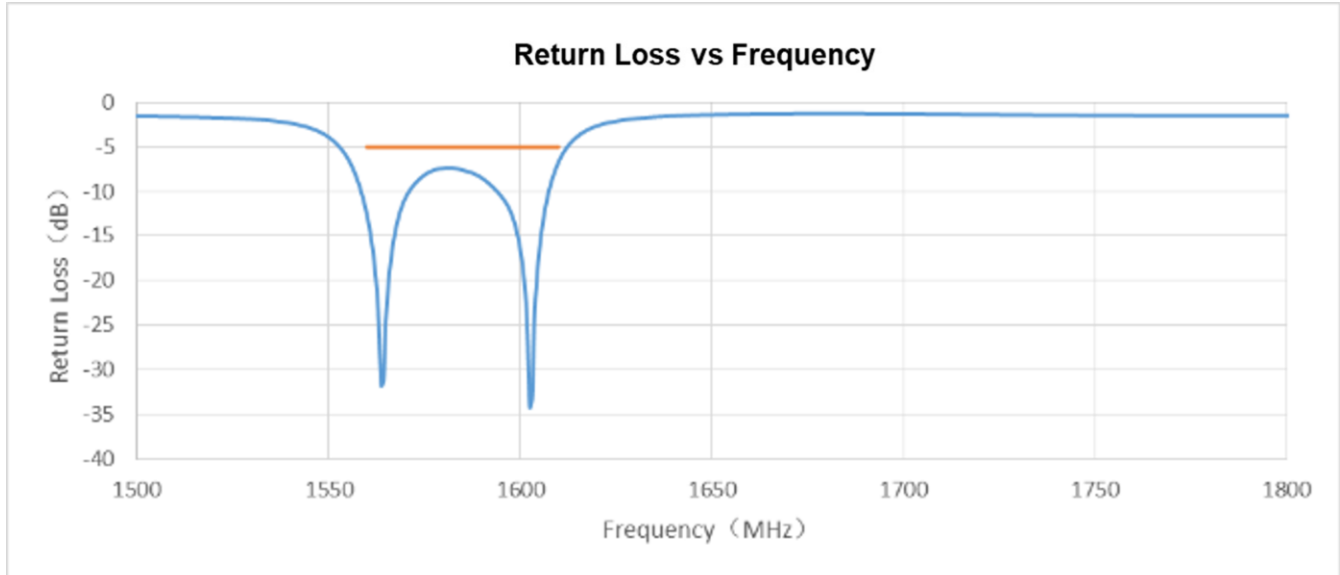


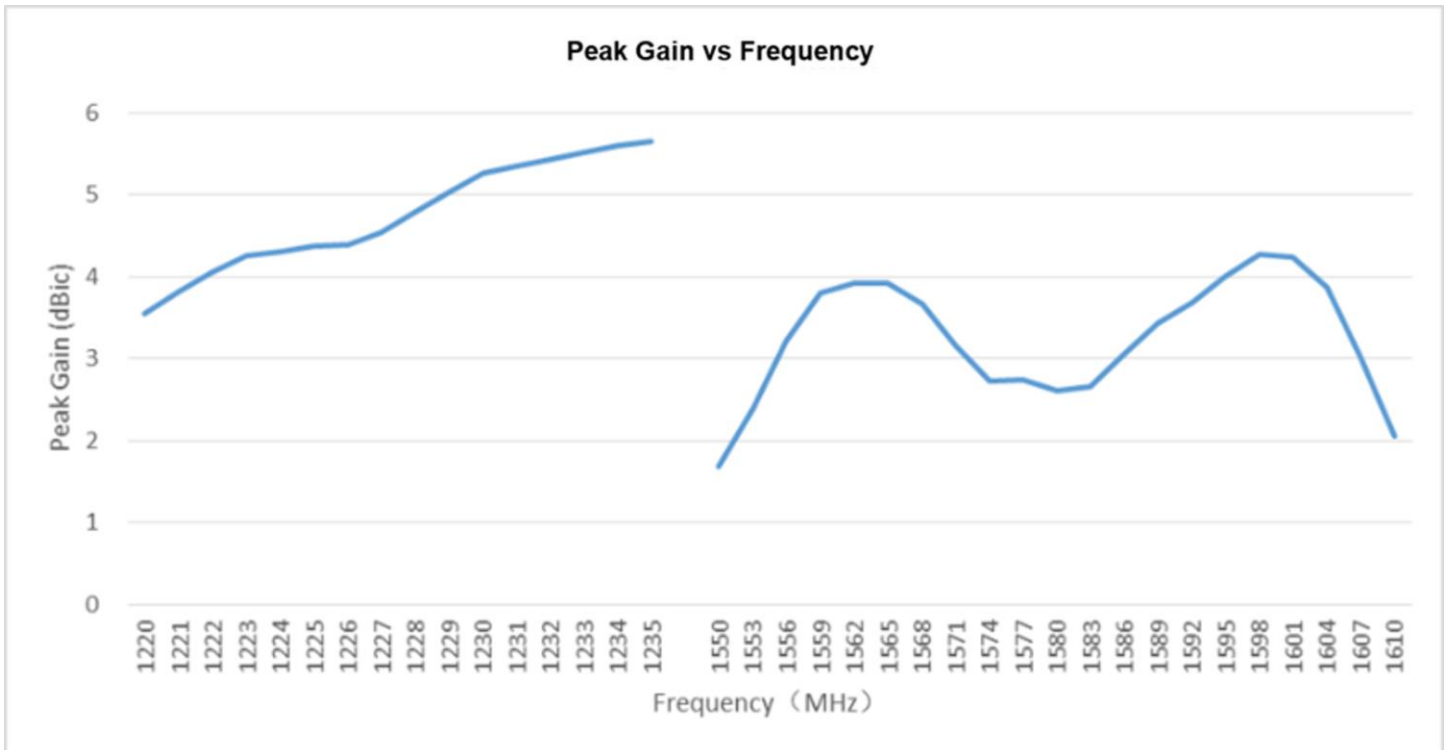
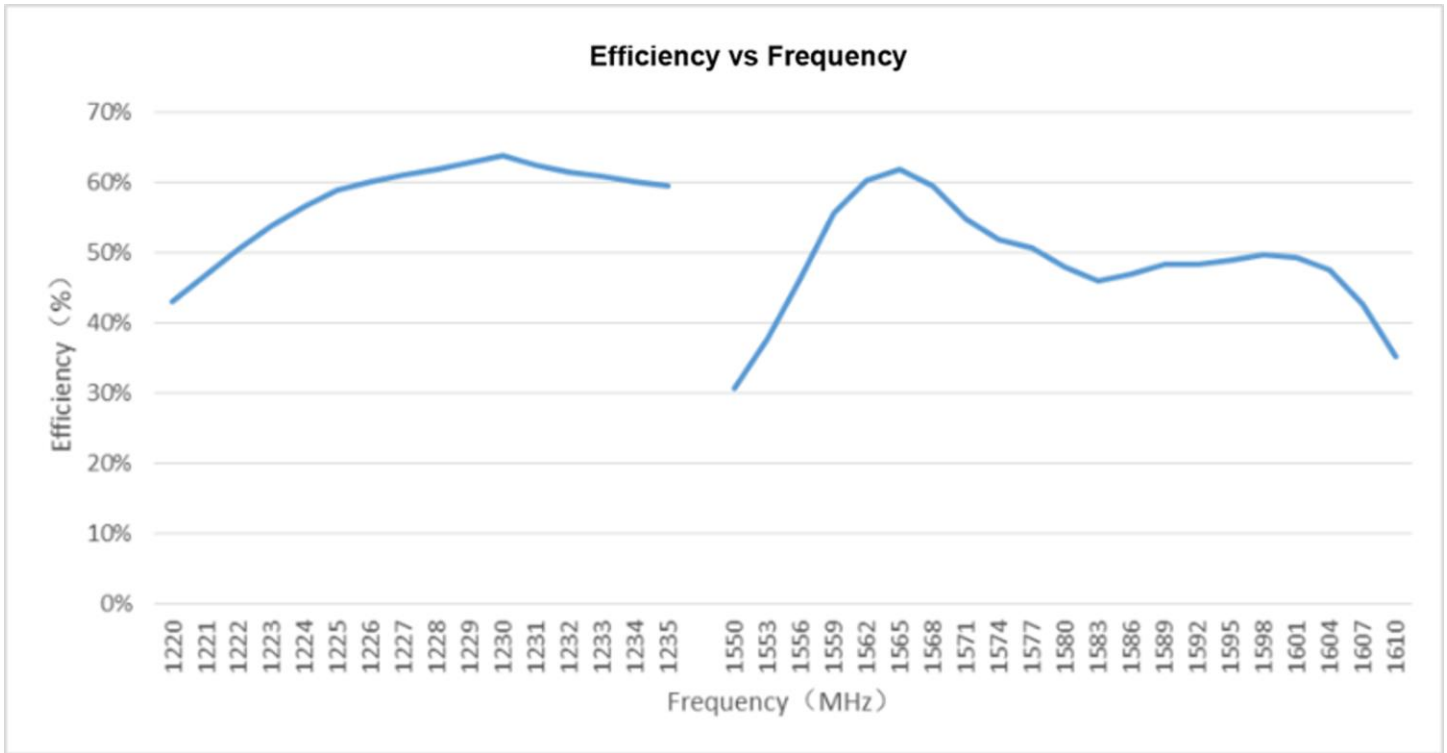
Isolation vs Frequency



Charts- GNSS Antenna Return Loss, Efficiency, Peak Gain

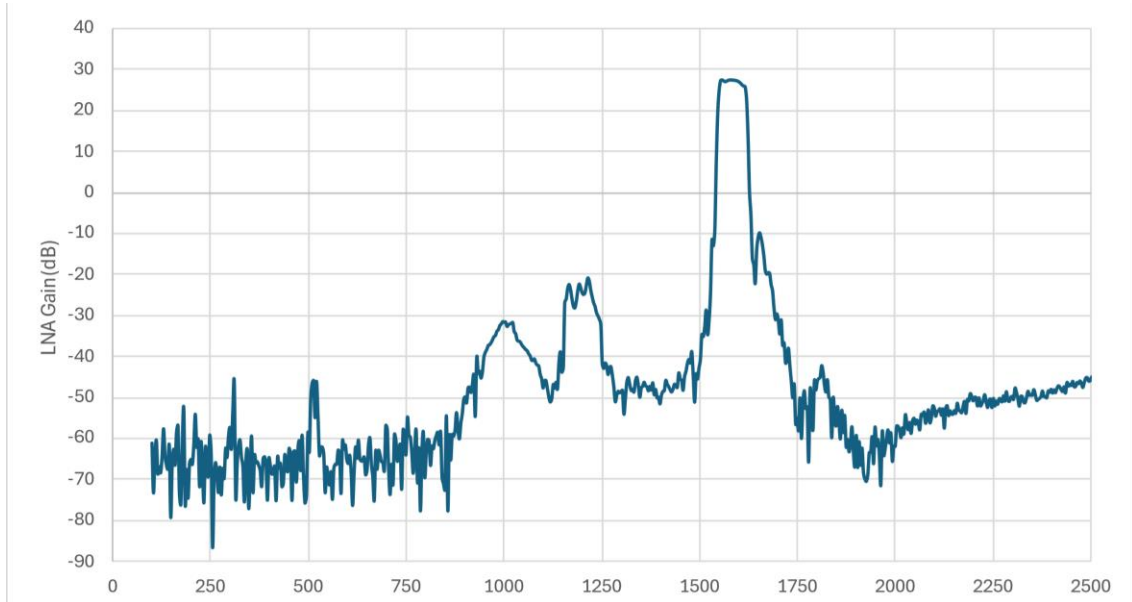
GNSS





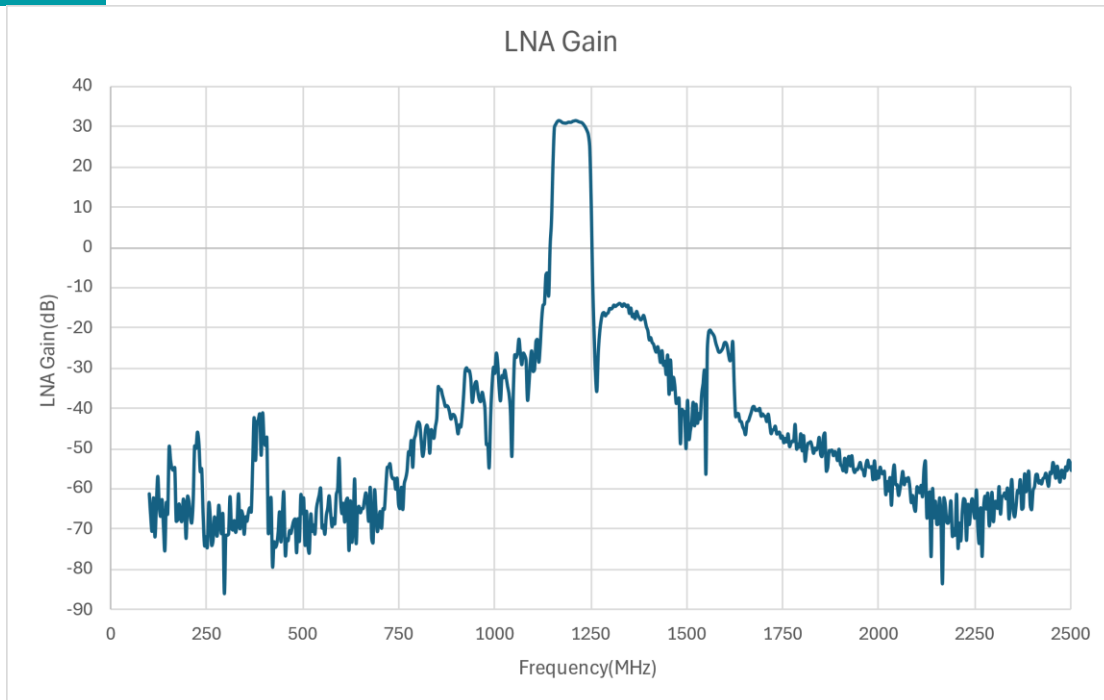
### GNSS Antenna - LNA Gain

LNA gain and Out-of-band Rejection (L1)



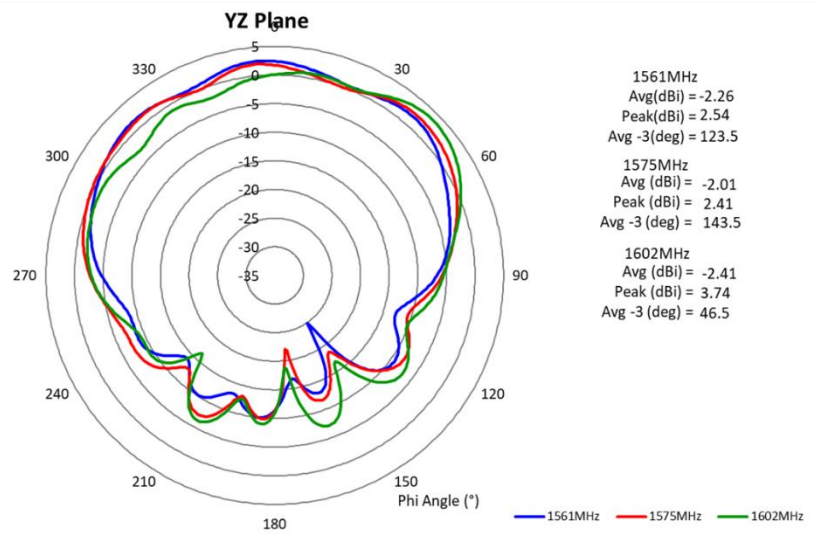
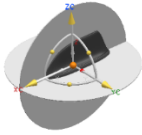
### GNSS Antenna - LNA Gain

LNA gain and Out-of-band Rejection (L2)



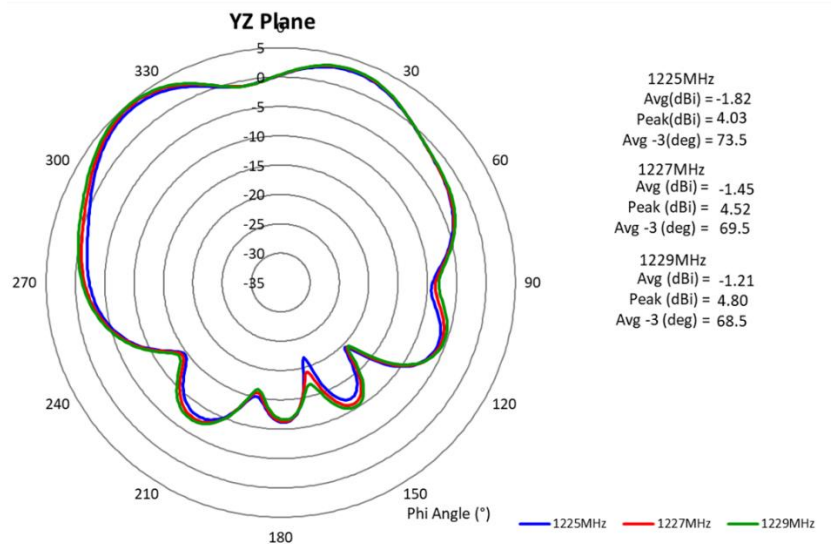
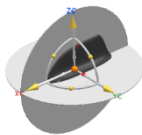
GNSS Antenna - Radiation Pattern (YZ Plane) Plots

YZ Plane: Passive measurement (L1)



GNSS Antenna - LNA Gain and Radiation Pattern (YZ Plane) Plots

YZ Plane: Passive measurement (L2)



PACKAGING

SKF5GEX134811DM

1pcs antennas per plastic bag

Additional Product Info

Cable Assemblies for  
 SKF5GEX134811DM (Not included)



Cable Assemblies

SKF5GEX13 Cable Assemblies

Orderable P/N <sup>1</sup>	5G FR1 Port 1	5G FR1 Port 2	5G FR1 Port 3	5G FR1 Port 4	WiFi 6E Port 1&2 (2PCS)	WiFi 6E Port 3&4 (2PCS)	WiFi 6E Port 5&6 (2PCS)	WiFi 6E Port 7&8 (2PCS)	GNSS Port 1
SKF5GEX13-3M	SMA-M	SMA-M	SMA-M	SMA-M	RPSMA-M	RPSMA-M	RPSMA-M	RPSMA-M	SMA-M
SKF5GEX13-5M	SMA-M	SMA-M	SMA-M	SMA-M	RPSMA-M	RPSMA-M	RPSMA-M	RPSMA-M	SMA-M

Notes:

1. Please contact sales for availability, lead time, and/or any special requests. Samples available upon request.

For More Information:

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