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Sharkfin / Vehicular

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

SKF5GEX74211DM - 617 to 7125 MHz



Features & Applications:

- Vehicle roof mount, directly on metal plane
- Ground plane independant
- 4x4 MiMo Cellular 5G-FR1 (4G compatible)
- 2x2 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[1]	50Ω	Vertical / Linear	Omni	45W	No

5G FR1 Antennas: 617 – 5925MHz

Port	Frequency (MHz)	617-960	1710-2700	3300-4200	4400-5000	5150-5925
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[2]	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,	Return Loss	-5	-5
	Avg. Peak Gain (dBi)	5.0	5.5
	Avg. Efficiency (%)	60	50
Isolation[2]	Isolation (dB)	20	35

Notes:

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

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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_{dc})	2.5-18	
Current Consumption (mA)	< 16	

MECHANICAL SPECIFICATIONS

SKF5GEX74211DM

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	2	1ft (0.3m)	RG-316	SMA (Male)
GNSS	1	1ft (0.3m)	RG-174	SMA (Male)

ENVIRONMENTAL SPECIFICATIONS

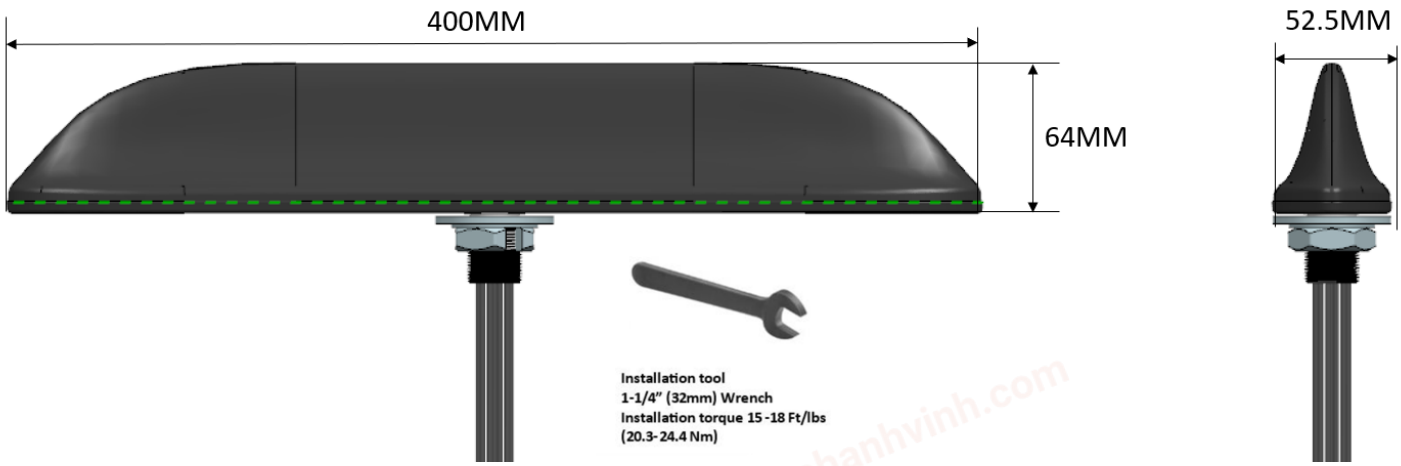
SKF5GEX74211DM

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

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Mechanical Drawing

SKF5GEX74211DM



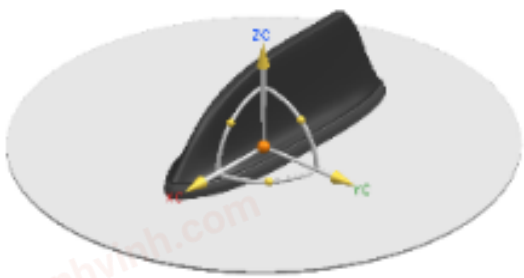
Dimensions: inches (mm) Unless otherwise specified, all tolerances are ±.010 (0.25mm)

RF Test setup

SKF5GEX74211DM

- All measurements done on Ø 500mm (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

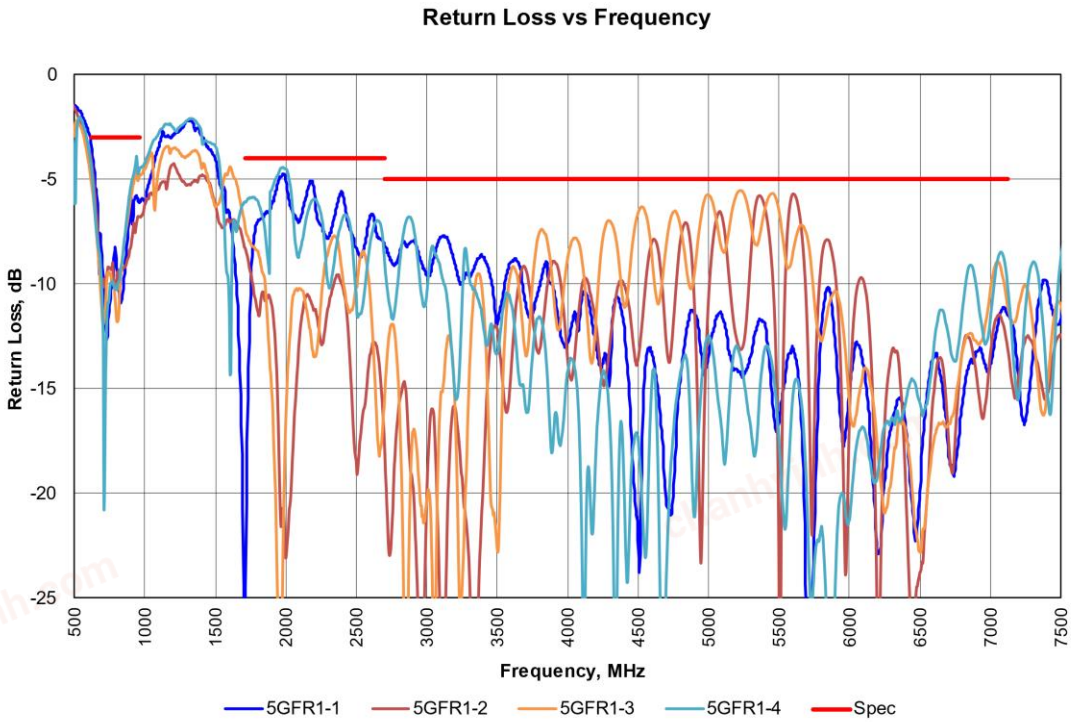


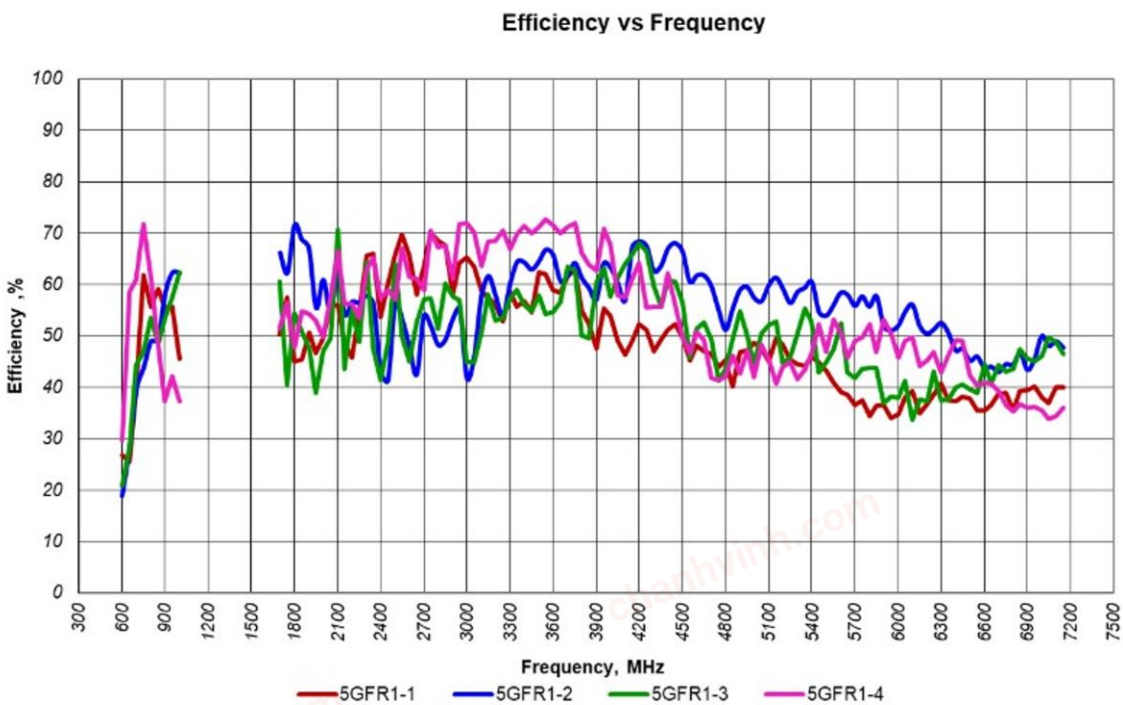


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Charts – Return Loss, Efficiency, Peak Gain, Isolation

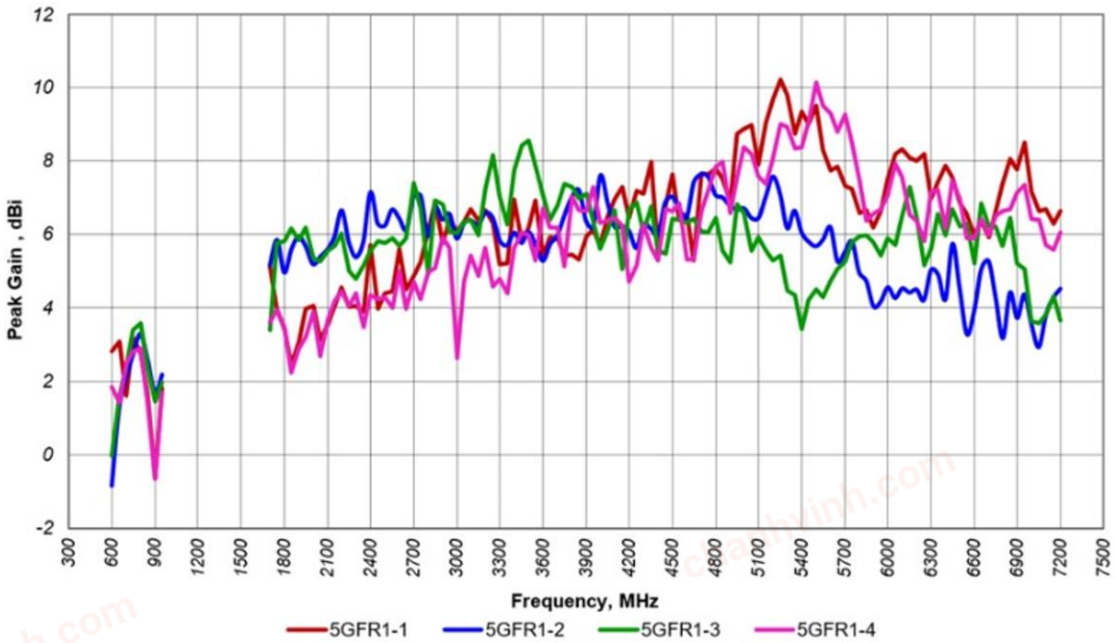
5G FR1



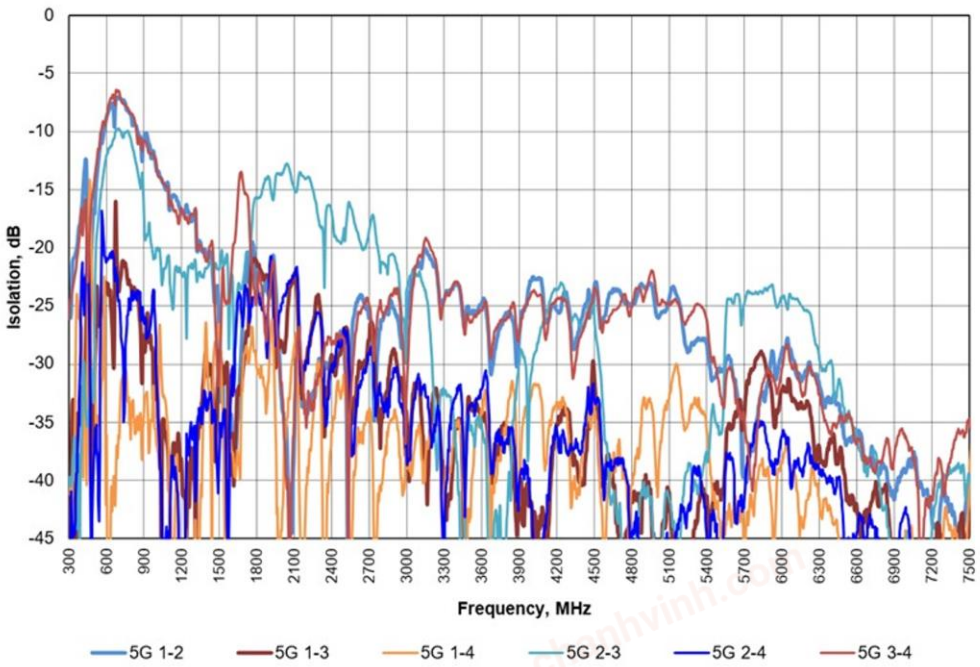


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Peak Gain vs Frequency



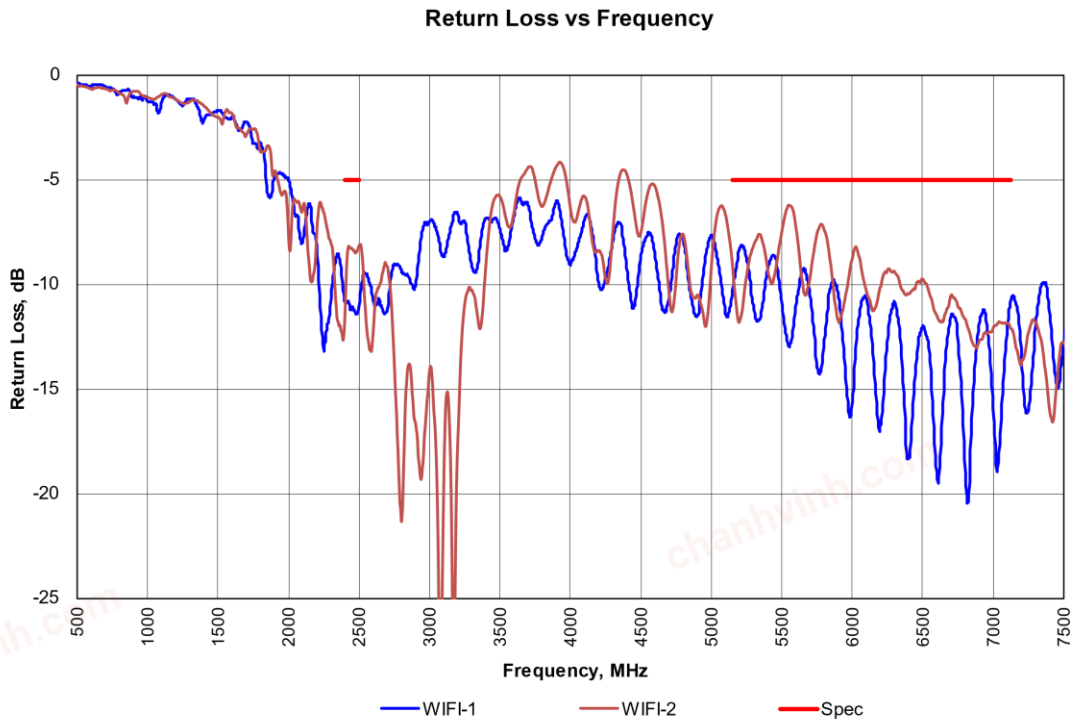
Isolation vs Frequency

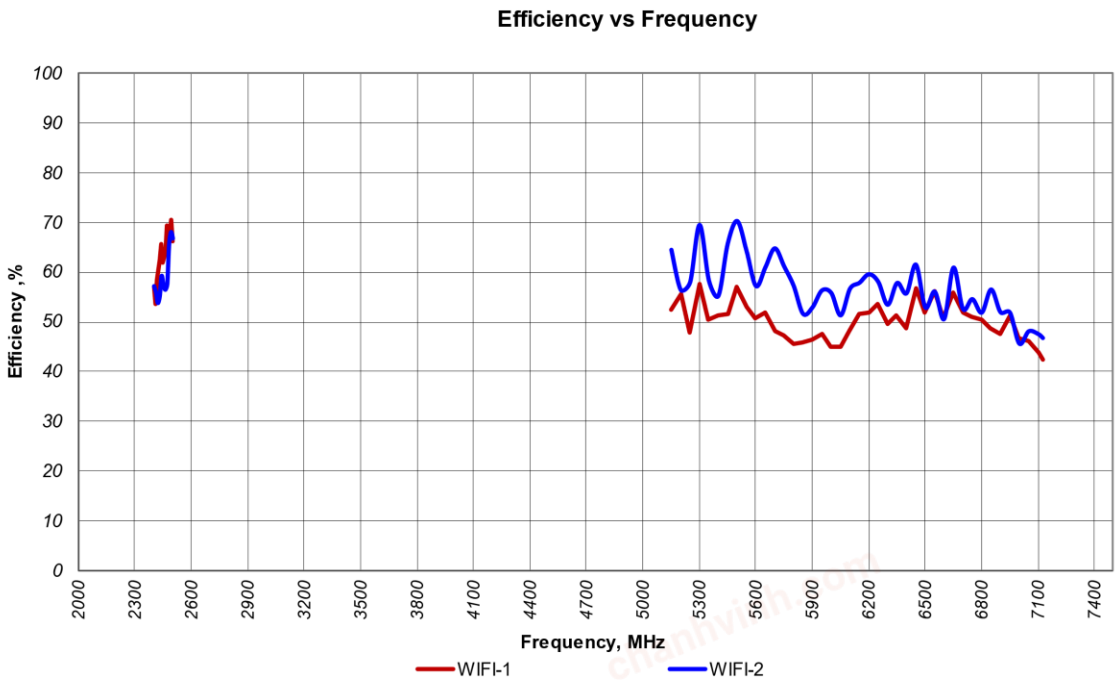


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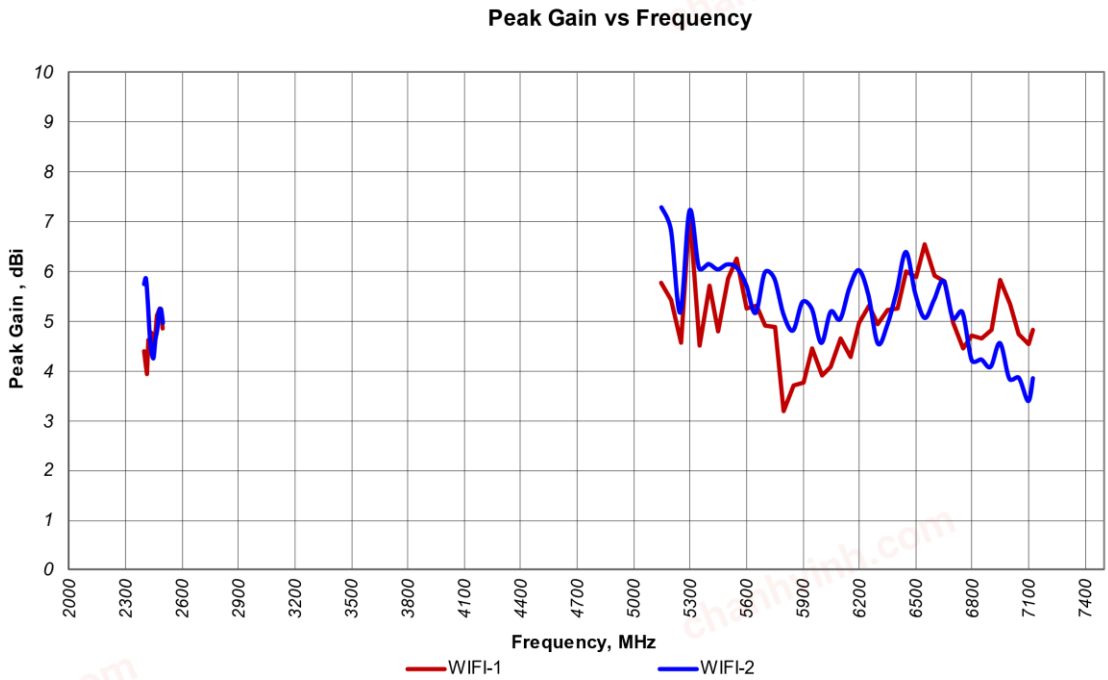
Charts – Return Loss, Efficiency, Peak Gain, Isolation

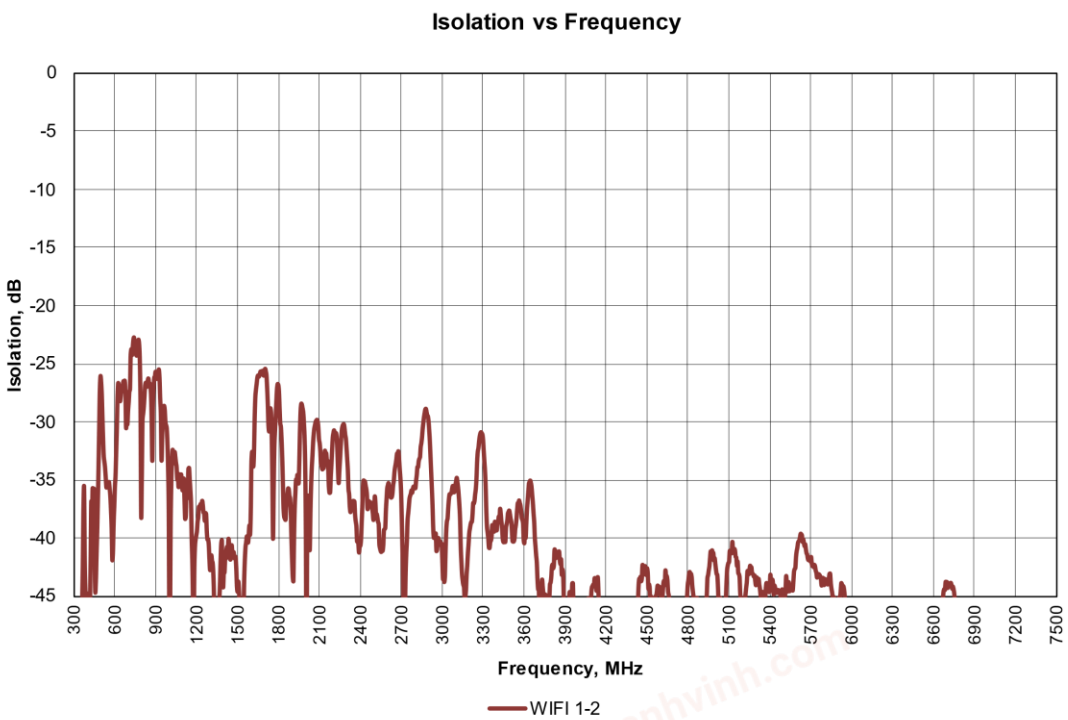
WiFi 6E/7





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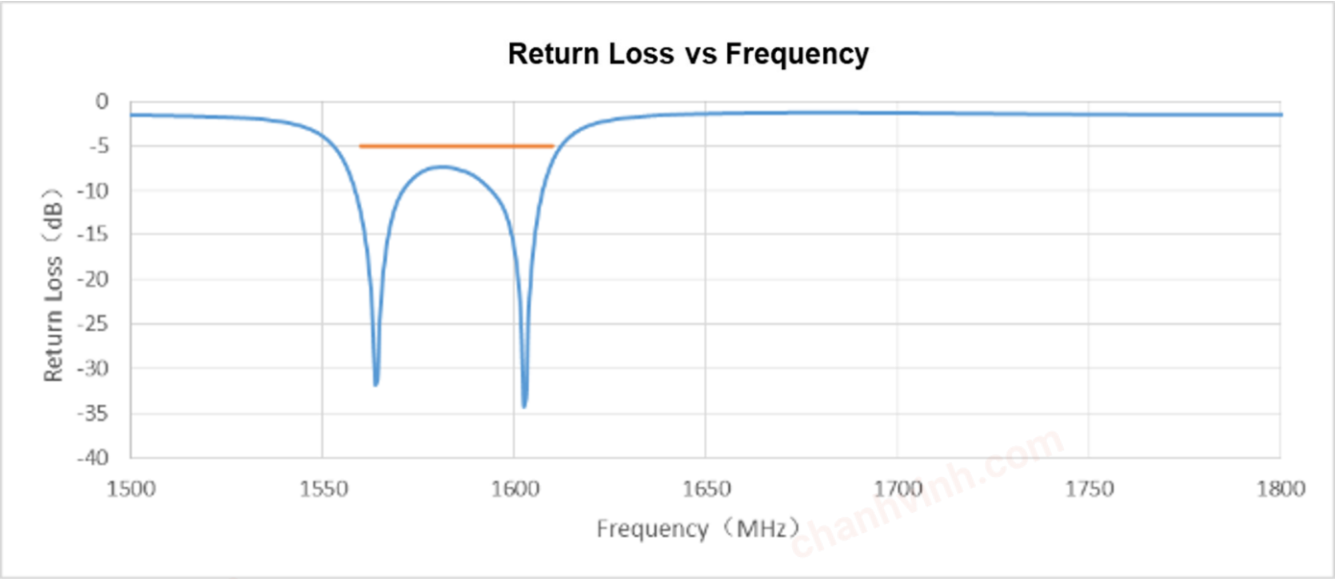


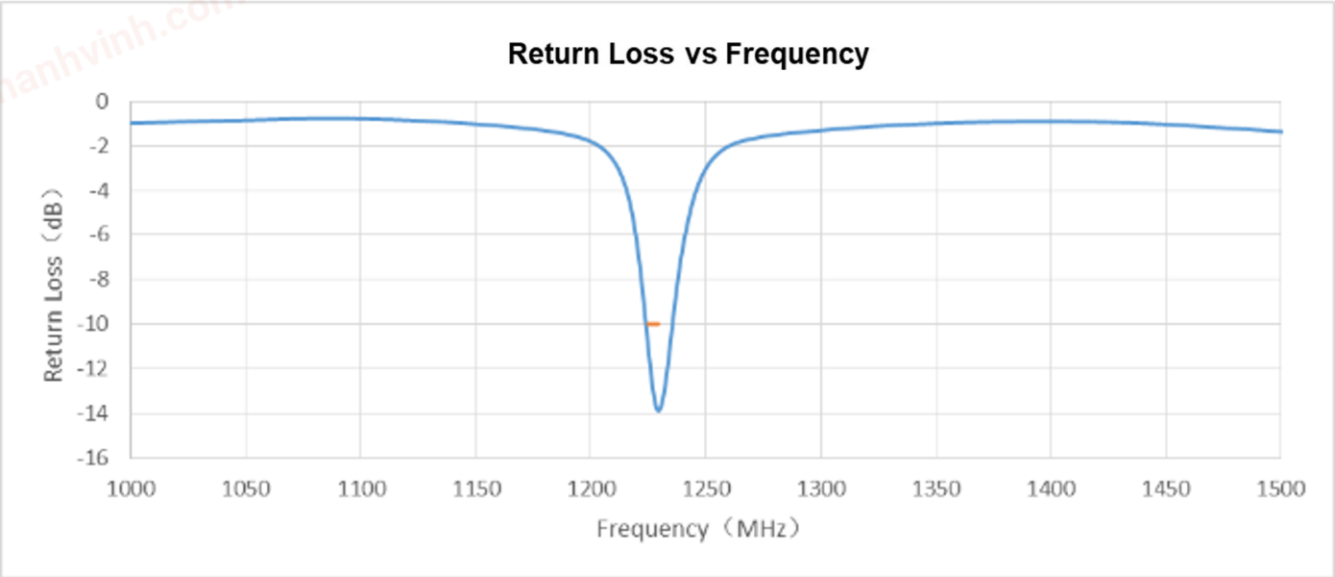


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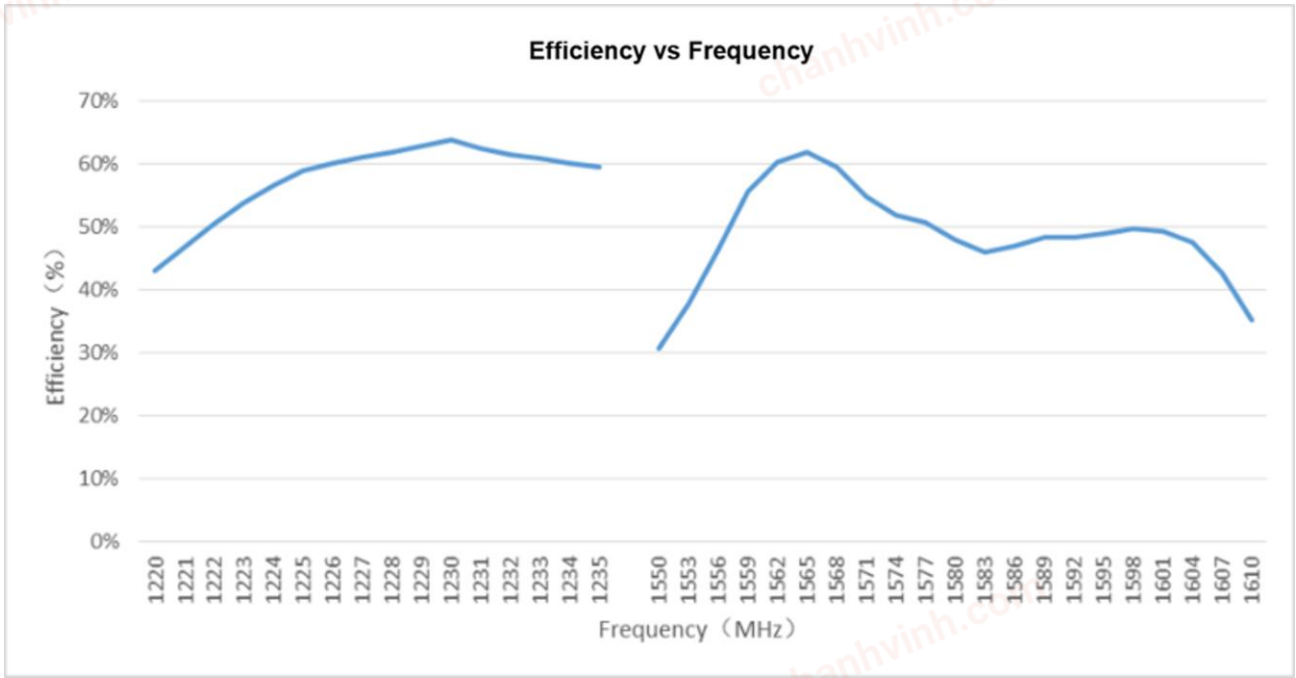
Charts- GNSS Antenna Return Loss, Efficiency, Peak Gain

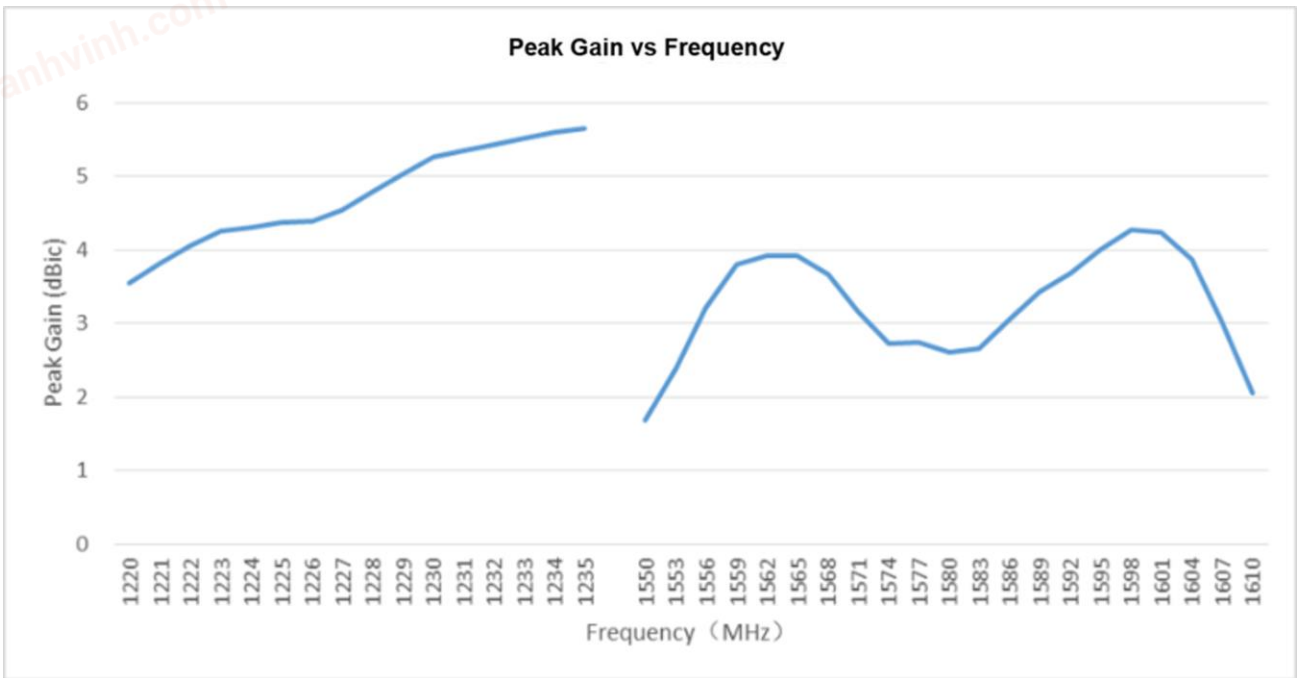
GNSS





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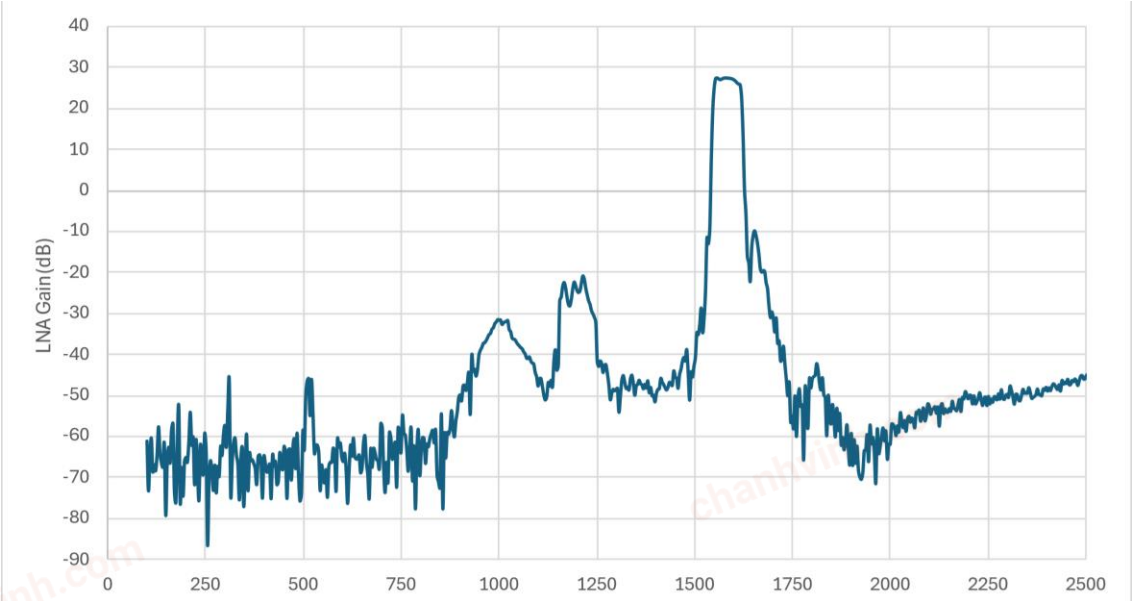




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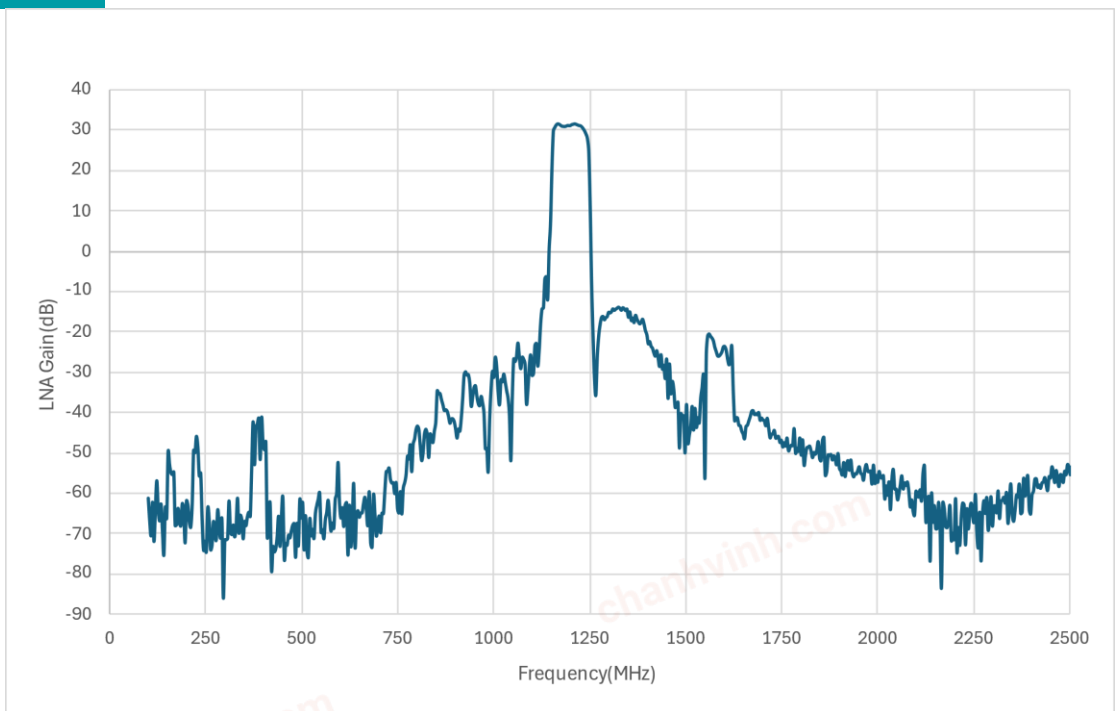
GNSS Antenna - LNA Gain

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



GNSS Antenna - LNA Gain

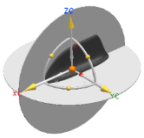
LNA gain and Out-of-band Rejection (L2)

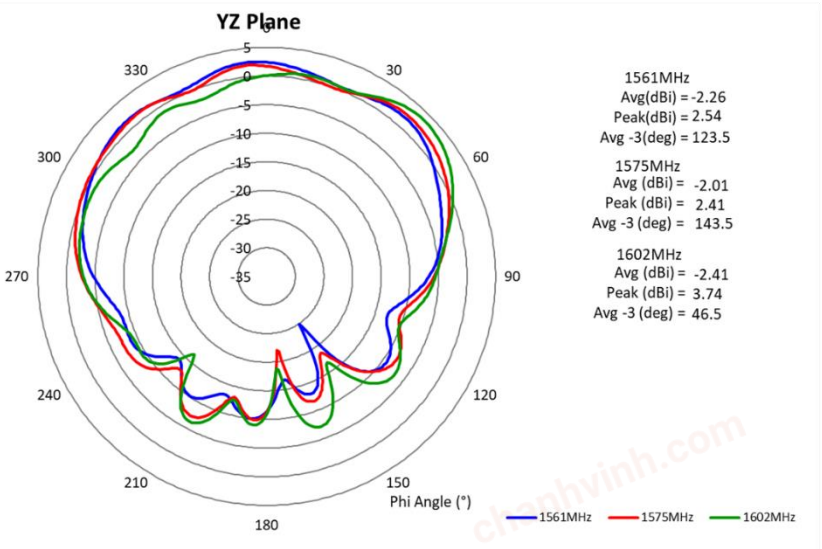


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GNSS Antenna - Radiation Pattern (YZ Plane) Plots

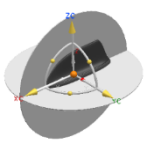
YZ Plane: Passive measurement (L1)

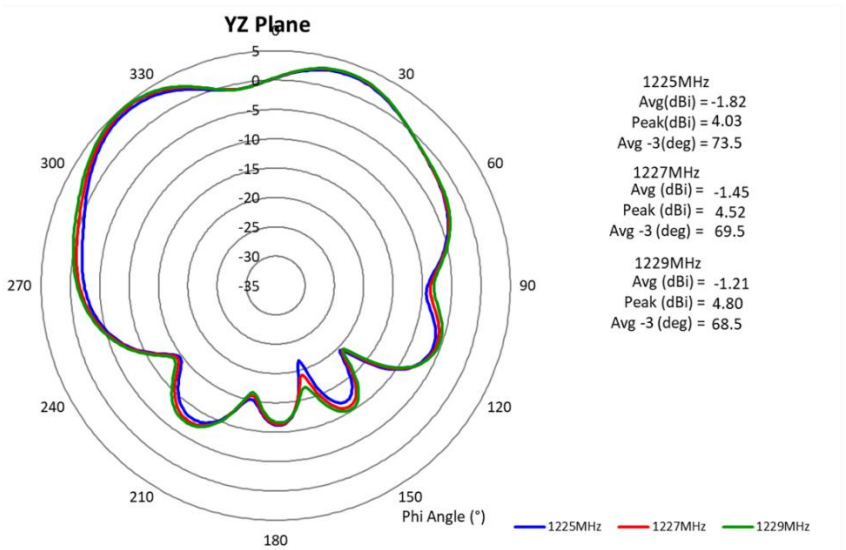




GNSS Antenna - LNA Gain and Radiation Pattern (YZ Plane) Plots

YZ Plane: Passive measurement (L2)





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PACKAGING

SKF5GEX74211DM

1pcs antennas per plastic bag

Additional Product Info

Cable Assemblies for SKF5GEX74211DM (Not included)



TWC (Twin Castle) Cable Assemblies							
SKD5GEX7 Cable Assemblies							
Orderable P/N[1]	5G FR1 Port 1	5G FR1 Port 2	5G FR1 Port 3	5G FR1 Port 4	WiFi 6E Port 1	WiFi 6E Port 2	GNSS Port 1
SKF5GEX7-3M	SMA-M	SMA-M	SMA-M	SMA-M	RPSMA-M	RPSMA-M	SMA-M
SKF5GEX7-5M	SMA-M	SMA-M	SMA-M	SMA-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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