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Sharkfin / Vehicular

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

SKF5G72311DMWXXX



SKF5G72311DMW1585

Features & Applications:

- Vehicle roof mount, directly on metal plane
- 2x2 MiMo Cellular 5G-FR1 (4G compatible)
- 3x3 MiMo WiFi, DSRC, V2X (WiFi-6E/7 compatible)
- Active GNSS L1+L2/L5 with 28-30dB low noise amplifier
- Removable flexible TETRA, UHF, VHF whip
- Options1:150MHz, 380MHz, 450MHz
- Options2:TETRA, UHF, VHF 3 band whip
- Cable length and connector type per request
- Heavy and light vehicles
- IoT, navigation, tracking

ELECTRICAL SPECIFICATIONS

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

Antenna type	Nominal Impedance	Polarization	Radiation Pattern	Power Withstanding				DC Ground
				5G: 45W	WiFi: 25W	Single Band LMR 45W	Tri band LMR: 65W	
Monopole[1]	50Ω	Vertical / Linear	Omni					No

5G FR1 Antennas: 617 – 5925MHz

Port	Frequency (MHz)	617-960	1710-2700	3300-4200	4400-5000	5150-5925
Port 1, 2	VSWR	3:1	2:1	2.5:1	2.5:1	2.5:1
	Avg. Peak Gain (dBi)	2.3	4.6	4.9	5.7	5.4
	Avg. Efficiency (%)	51	54	68	68	62
Isolation[2]	Port 1-2 (dB)	10	25	30	40	45

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

Port	Frequency (MHz)	2400-2500	4900-7125
Port 1,2,3	VSWR	2:1	2.5:1
	Avg. Peak Gain (dBi)	6.0	4.7
	Avg. Efficiency (%)	62	76
Port – Port Isolation[2]	Port 1-2 (dB)	10	20
	Port 1-3 (dB)	12	25
	Port 2-3 (dB)	15	30

LMR Antenna: 150-160MHz/380-430MHz/400-512MHz/740-960MHz/150-160&450-512&758-960 MHz

Pulse P/N (7 in 1 Antenna + Whip antenna)		SKF5G72311DMW155	SKF5G72311DMW400	SKF5G72311DMW470	SKF5G72311DMW850	SKF5G72311DMW1585
Pulse P/N (Only Whip antenna)		WLMR155G	WLMR400G	WLMR470G	WLMR850G	WLMR155446850G
Frequency (MHz)		150-160	380-430	400-512	740-960	150-160/450-512/758-960
Whip Antenna Size (MM)		Ø12.8X184mm				Ø12.8X377mm
Port 1	VSWR	3:1	3:1	3:1	3:1	2.5:1
	Avg. Peak Gain (dBi)	1.1	3.0	1.2	2.0	1.2
	Avg. Efficiency (%)	/	55	50	52	42

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

SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

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 GNSS Antenna L5 Band: 1176+/- 1.023MHz			
Frequency (MHz)	L1: 1561-1602	L2: 1215-1237	L5: 1164-1189
Return Loss (dB)	< -10	< -10	< -10
Radiating Element Peak Gain (dBi/dBic)	>2.7/1.5	>1.7/0.2	>1/-2
Avg. Efficiency (%)	>60	>40	>40
LNA Gain (dB) Typical	28	33	30
Noise Figure (dB)	1.7 @1575MHz	2.2@1227MHz	2.2 @1164MHz
Operating Voltage[2] (V)	2.5 - 18		
Power Consumption	Max. 16mA		

MECHANICAL SPECIFICATIONS

SKF5G72311DMLMR

SKF 7in1 antenna Dimension (Length x Width x Height)	Housing Material	Color	Weight	Fixing System	Mounting Hole Diameter
193.1 x 52.5 x 63.8 mm (7.62 x 2.07 x 2.51 inch)	PC, UV Protected	Black	550g (1.22lbs)	Direct Mount	1.063” (27mm)

Wireless Technology	No. of Port	Cable Length	Cable Type	Connector Type
5G FR1/ LTE	2	17ft (5.181m)	LMR195	SMA (Male)
WiFi 6E/7	3	17ft (5.181m)	LMR195	RP-SMA Male
GNSS	1	17ft (5.181m)	RG-174	SMA (Male)
UHF/VHF Whip	1	17ft (5.181m)	RG-174	SMA (Male)

ENVIRONMENTAL SPECIFICATIONS

SKF5G72311DMWXXX

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

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

SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

Mechanical Drawing

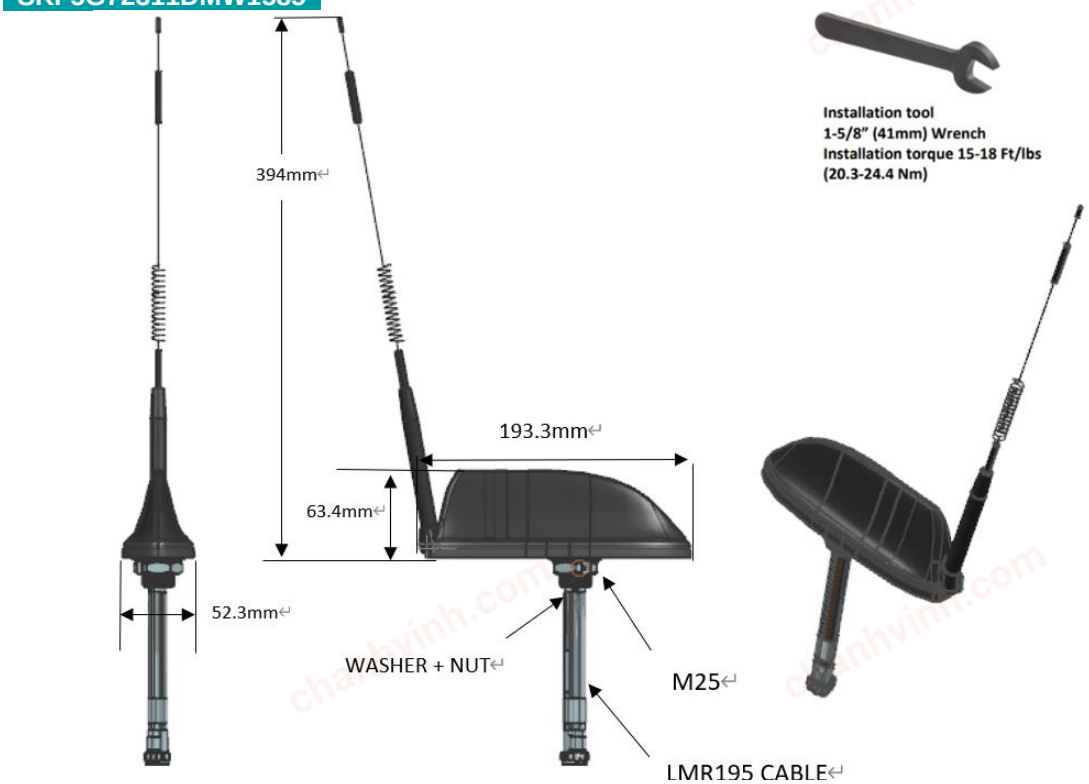
SKF5G72311DMWXXX



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

Mechanical Drawing

SKF5G72311DMW1585



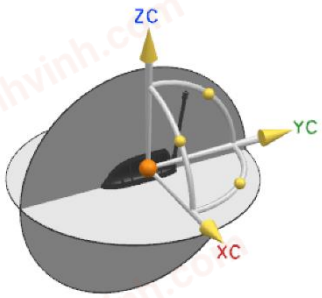
Dimensions: inches (mm) Unless otherwise specified, all tolerances are ±.010 (0.25mm)

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RF Test setup

SKF5G72311DMWXXX

- All measurements done on Ø 500mm (20”) round ground plane.
- S-parameters with 5m LMR 195 cable
- Gain and Efficiency with 0.5m LMR 195 cable
- Measured at Pulse, Suzhou



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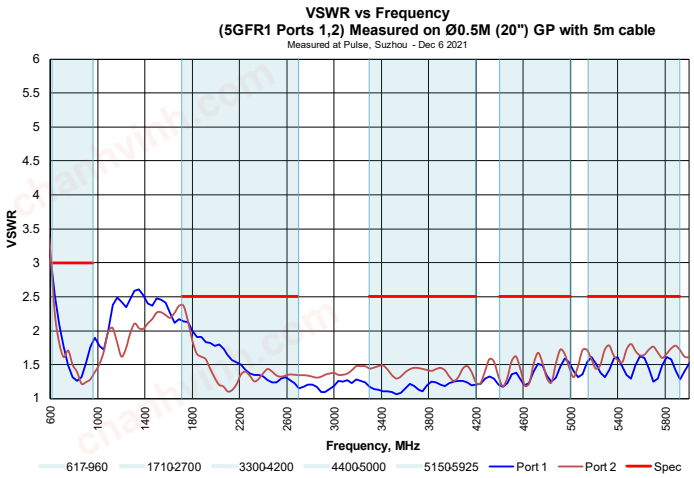
Sharkfin / Vehicular

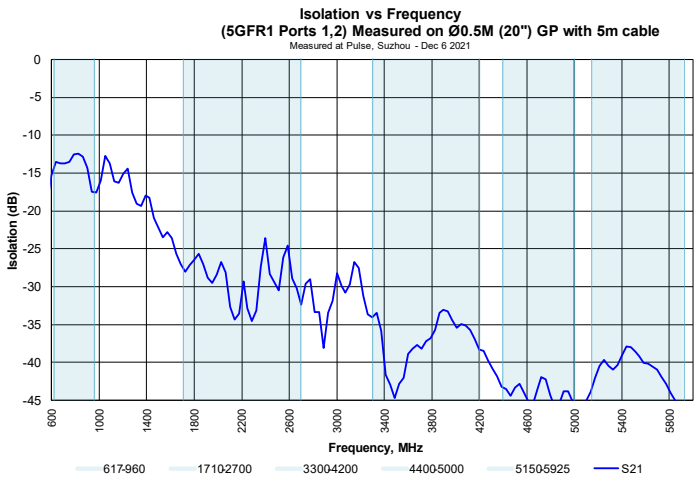
5G-FR1+WiFi-6E/7+GNSS L1+L2+LMR DM 7-in-1 Antenna

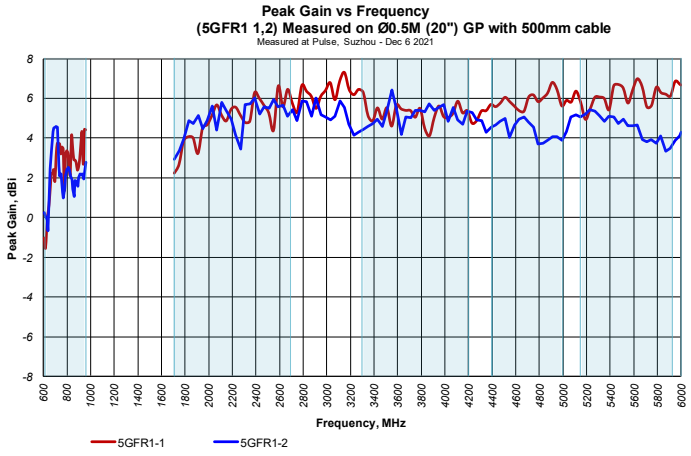
SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

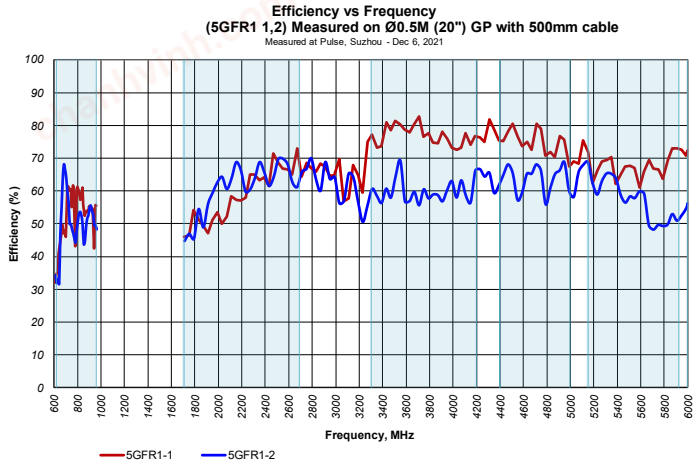
Charts - VSWR, Isolation, Peak Gain, Efficiency

5G FR1









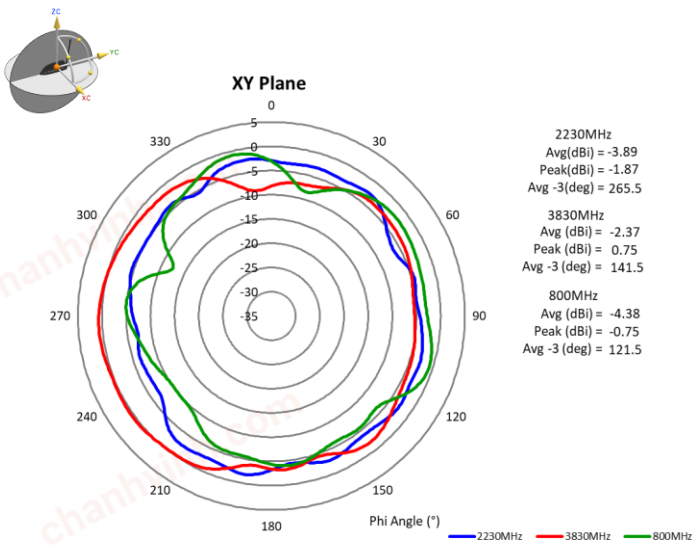
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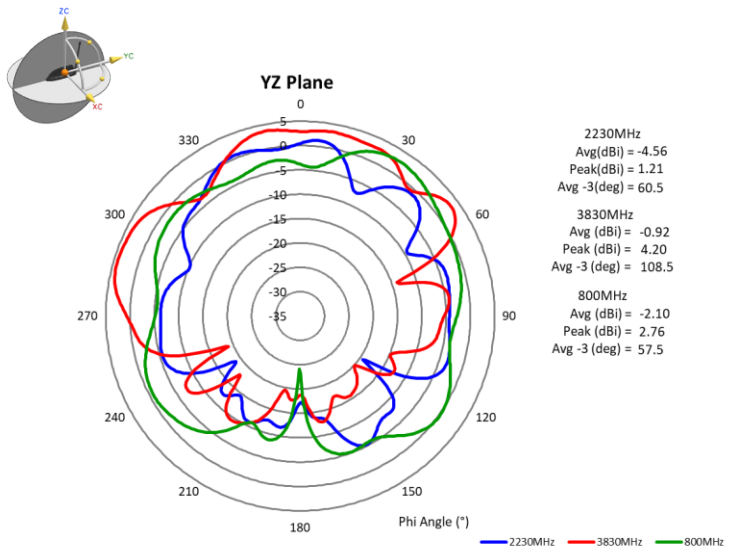
5G-FR1+WiFi-6E/7+GNSS L1+L2+LMR DM 7-in-1 Antenna

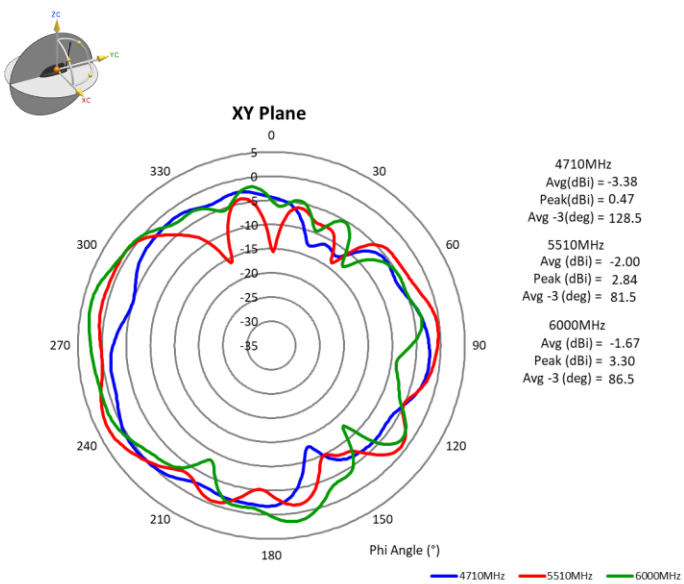
SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

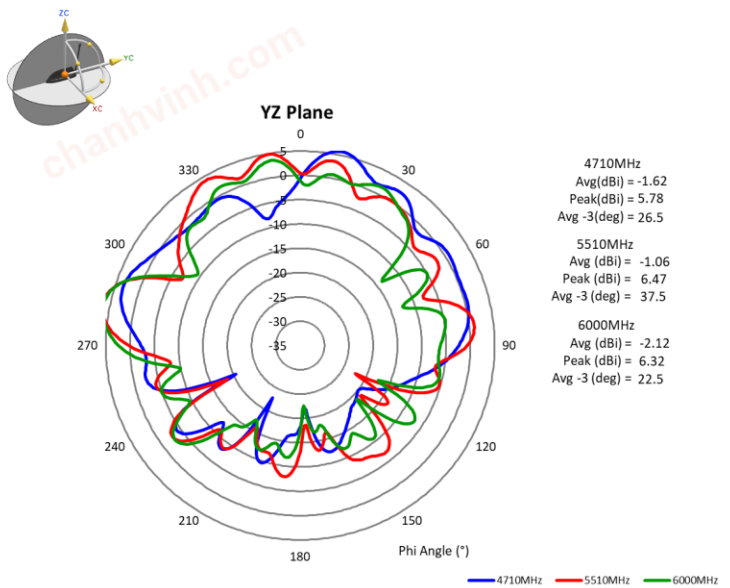
Radiation Pattern

5G FR1 Port 1









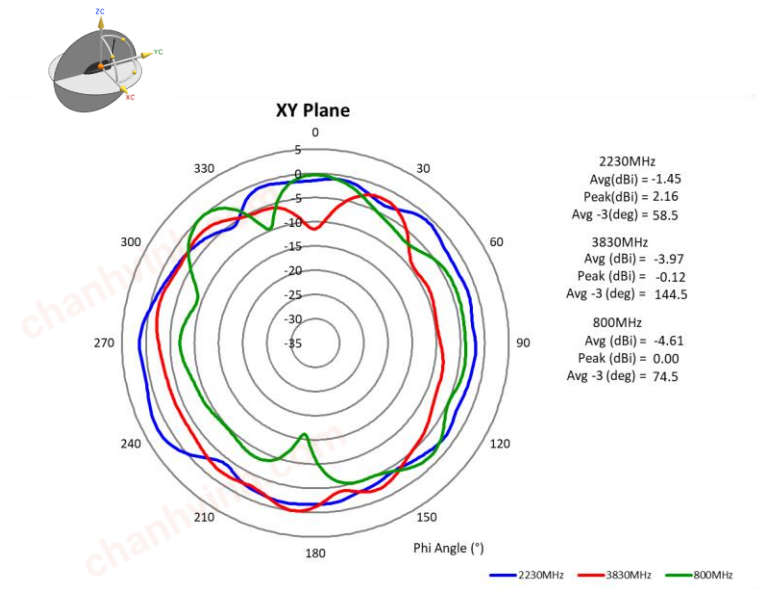
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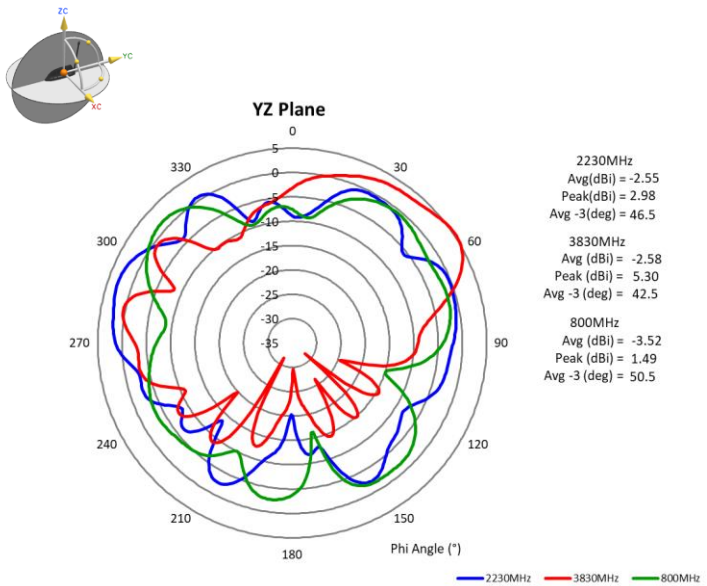
5G-FR1+WiFi-6E/7+GNSS L1+L2+LMR DM 7-in-1 Antenna

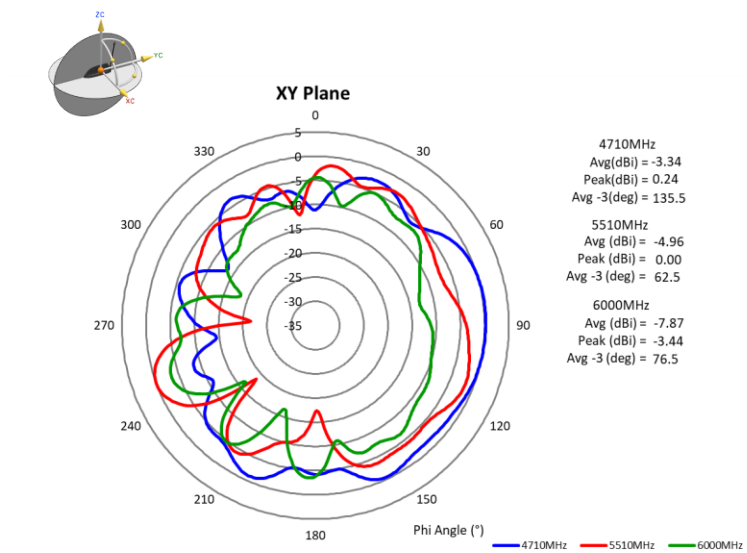
SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

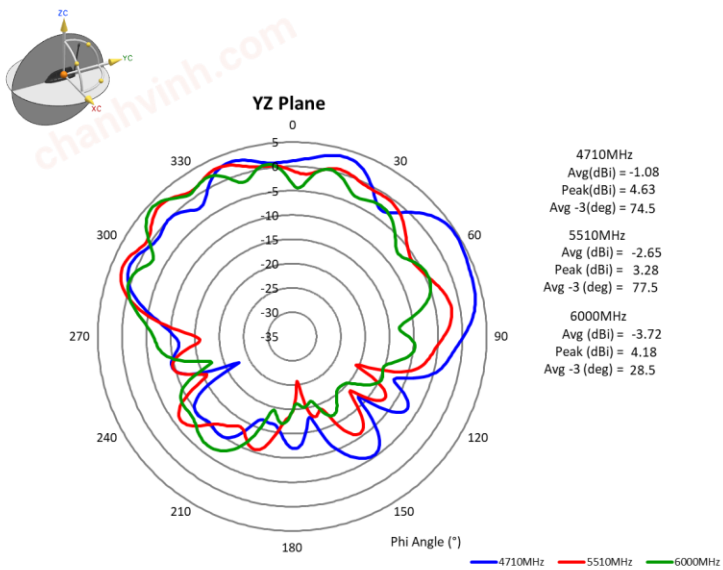
Radiation Pattern

5G FR1 Port 2









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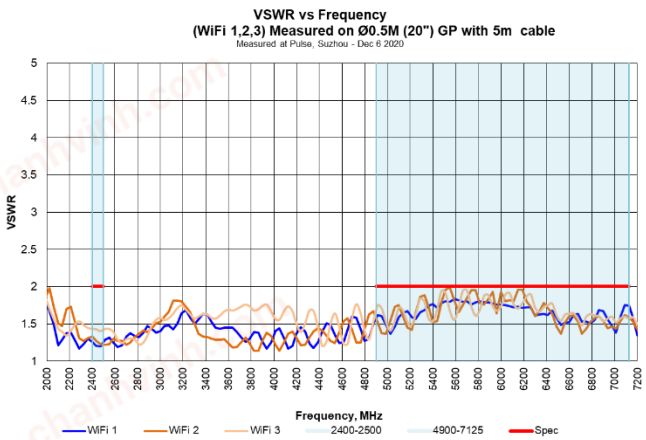
Sharkfin / Vehicular

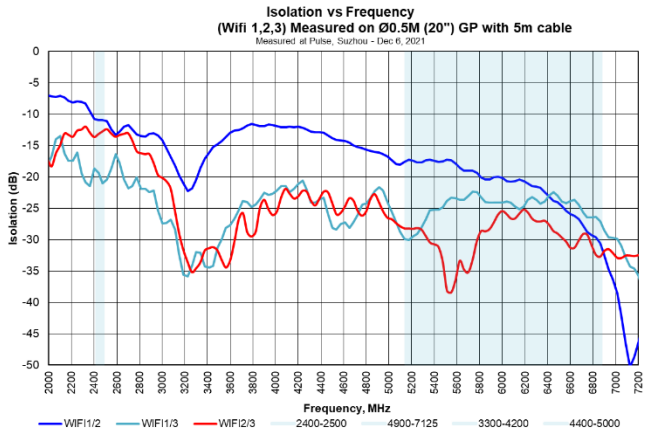
5G-FR1+WiFi-6E/7+GNSS L1+L2+LMR DM 7-in-1 Antenna

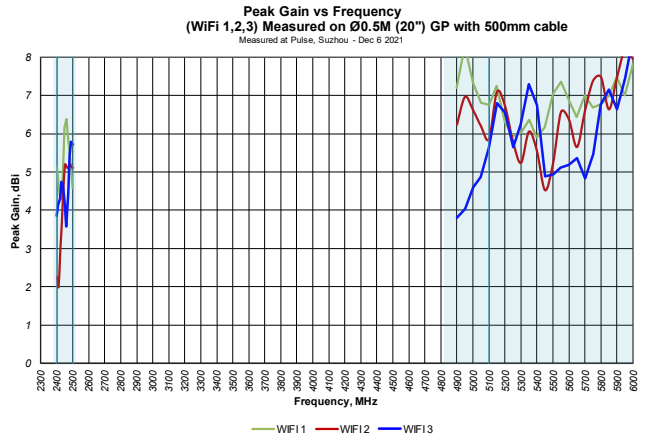
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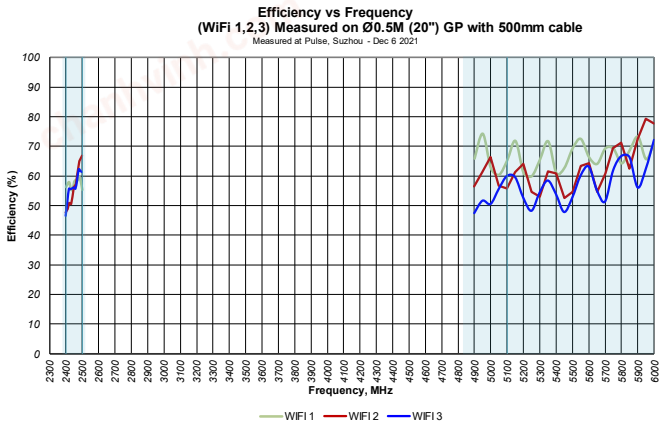
Charts - VSWR, Isolation, Peak Gain, Efficiency

WiFi 6E/7









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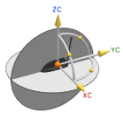
Sharkfin / Vehicular

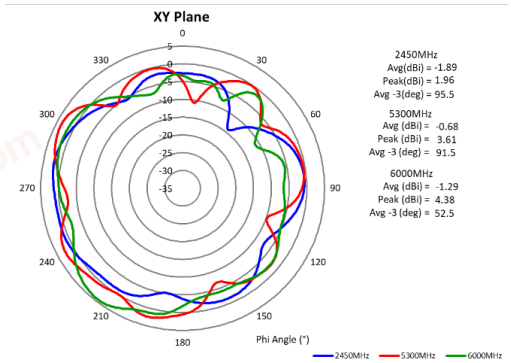
5G-FR1+WiFi-6E/7+GNSS L1+L2+LMR DM 7-in-1 Antenna

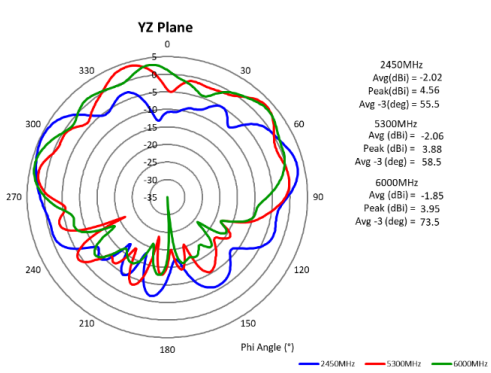
SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

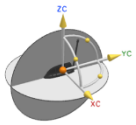
Radiation Pattern

WiFi 6E/7 Port 1

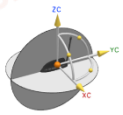


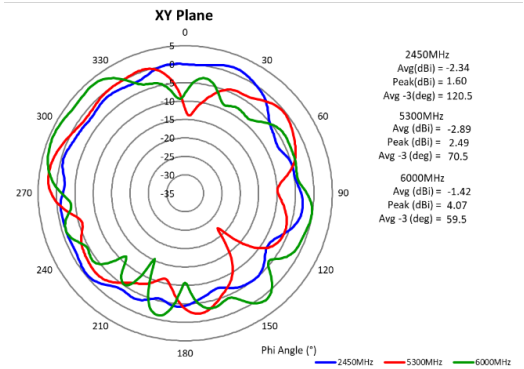


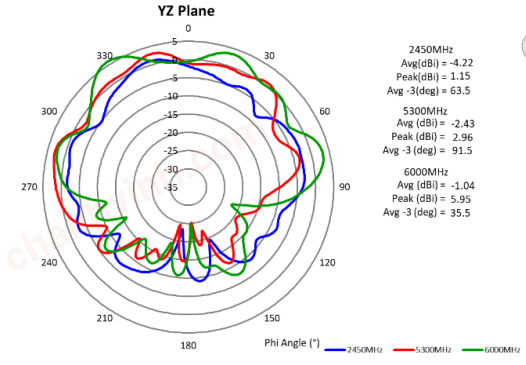


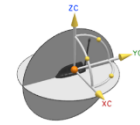


WiFi 6E/7 Port 2

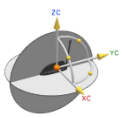


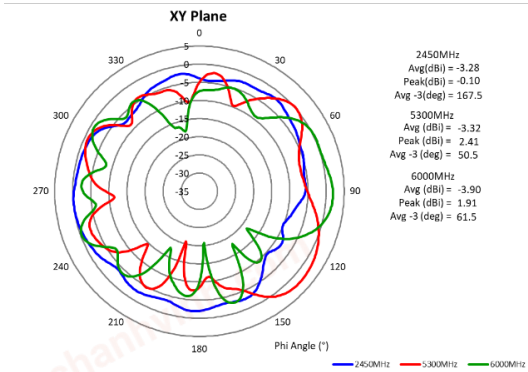


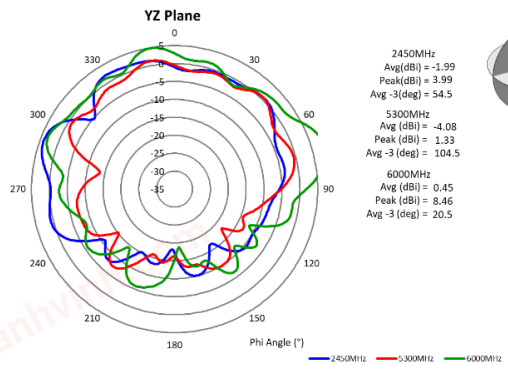


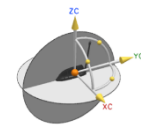


WiFi 6E/7 Port 3









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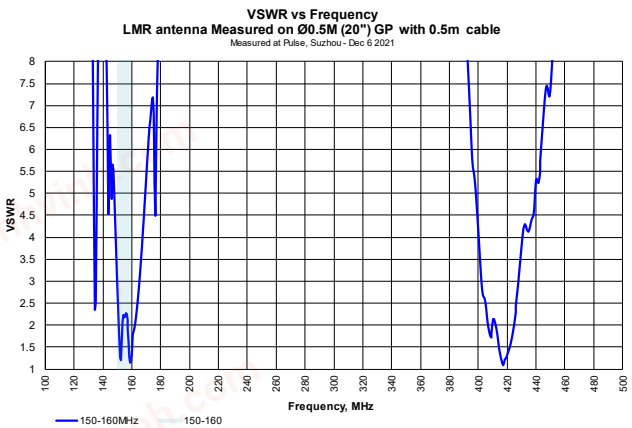
Sharkfin / Vehicular

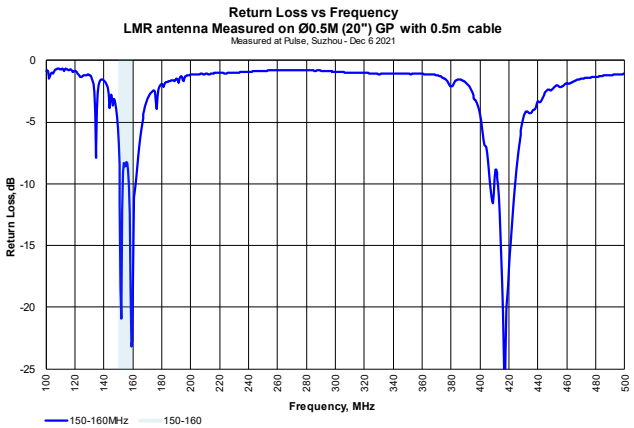
5G-FR1+WiFi-6E/7+GNSS L1+L2+LMR DM 7-in-1 Antenna

SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

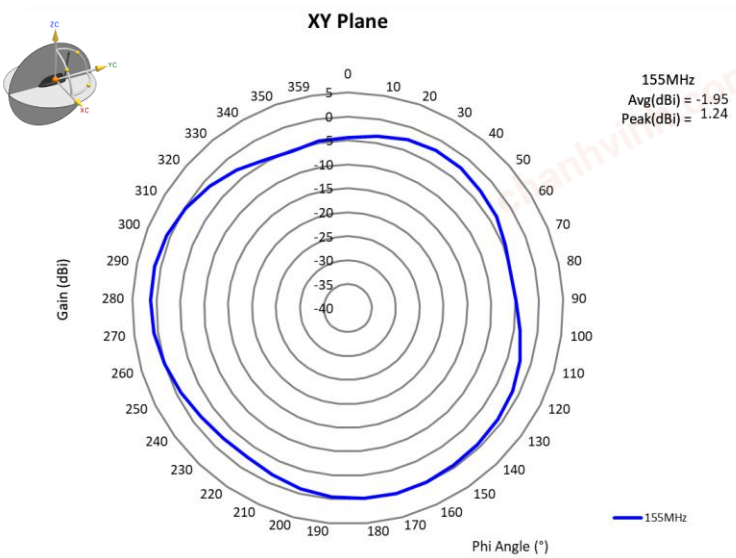
Charts – VSWR

LMR Whip
150-160MHz





Frequency(MHz)	150	155	160
Peak Gain(dBi)	1.27	2.02	0.29



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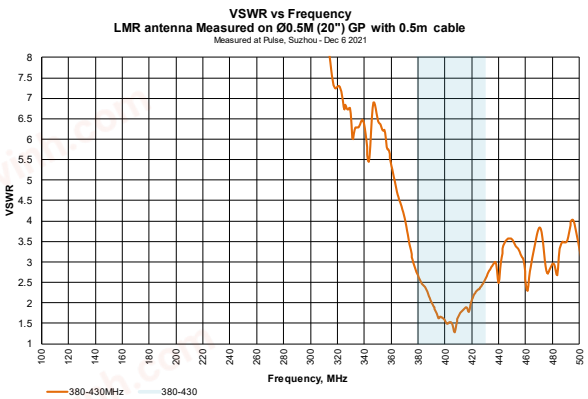
Sharkfin / Vehicular

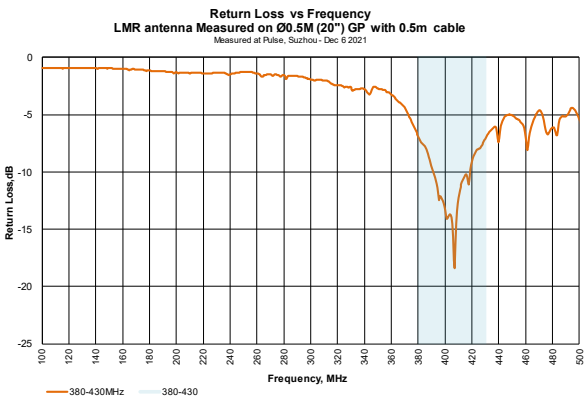
5G-FR1+WiFi-6E/7+GNSS L1+L2+LMR DM 7-in-1 Antenna

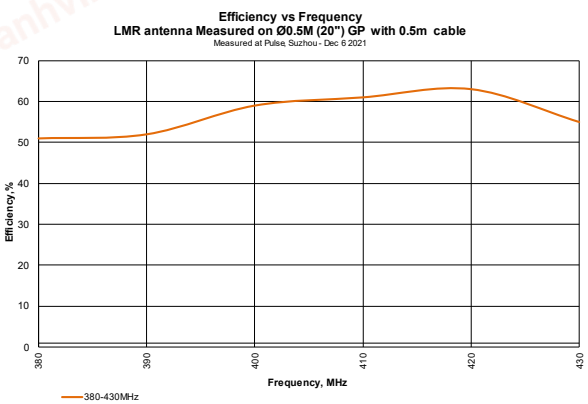
SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

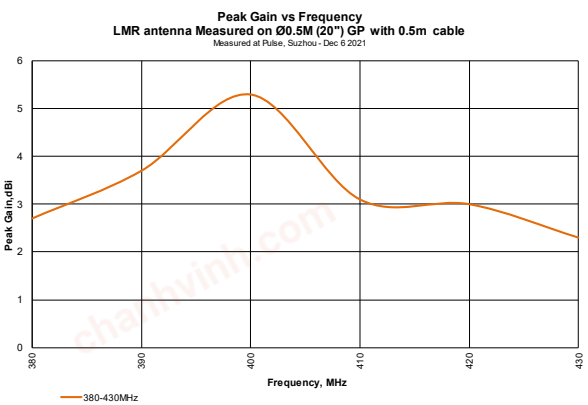
Charts – VSWR, Peak Gain, Efficiency

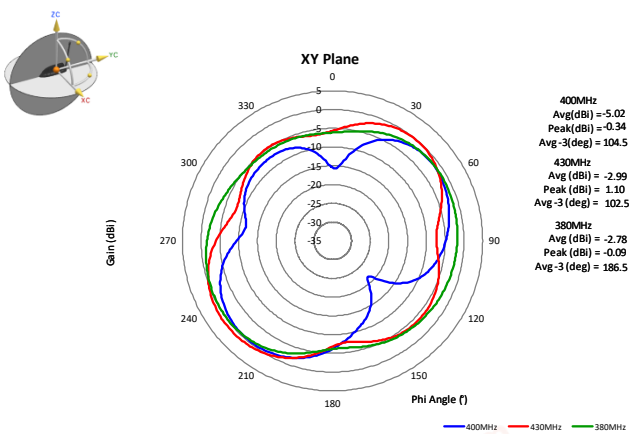
LMR Whip
380-430MHz

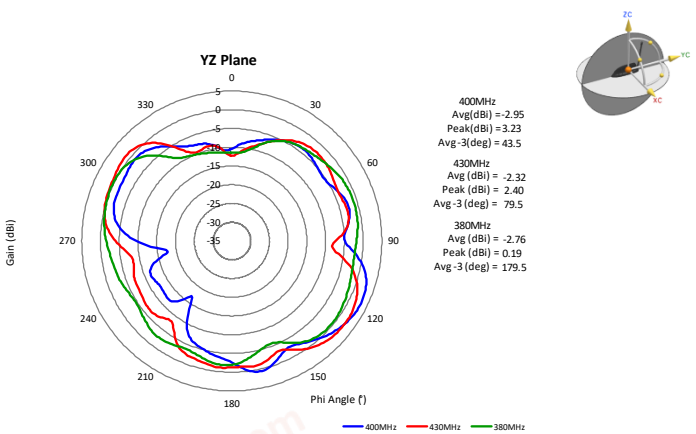












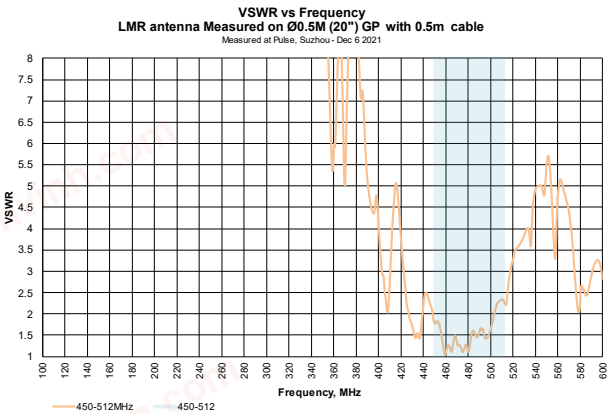
Sharkfin / Vehicular

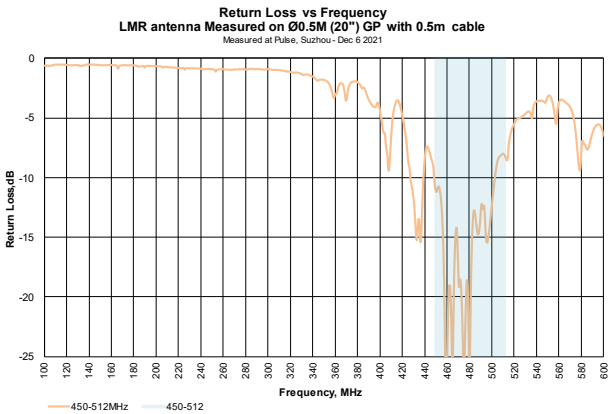
5G-FR1+WiFi-6E/7+GNSS L1+L2+LMR DM 7-in-1 Antenna

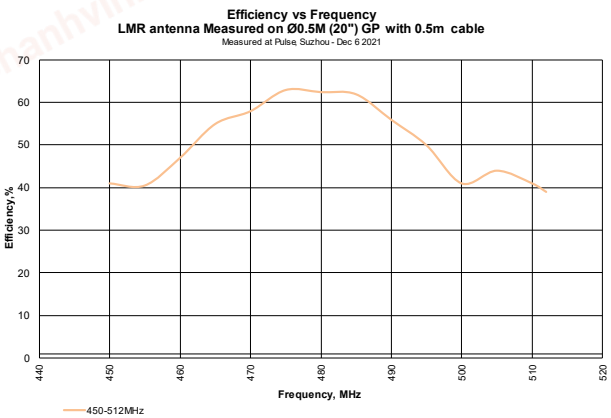
SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

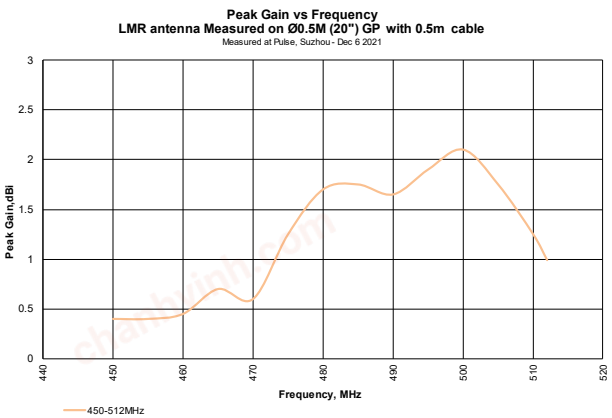
Charts – VSWR, Peak Gain, Efficiency

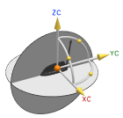
LMR Whip
450-512MHz

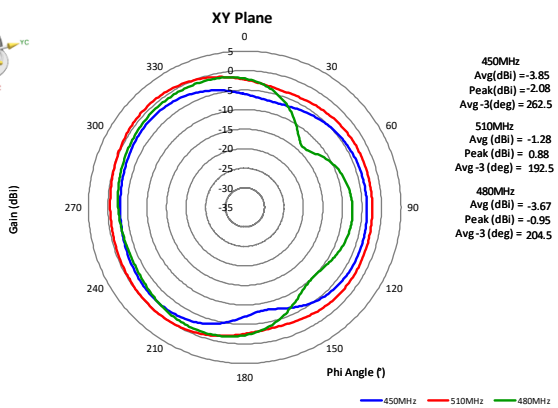


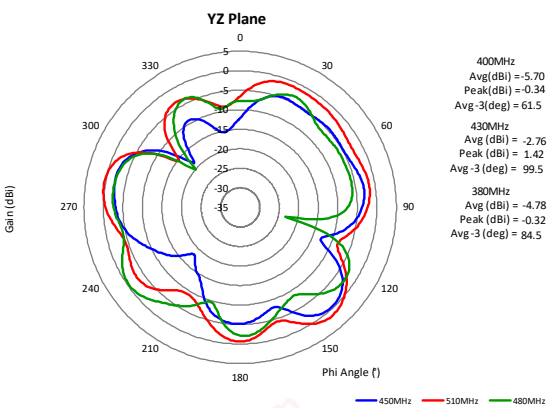


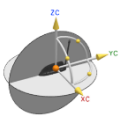












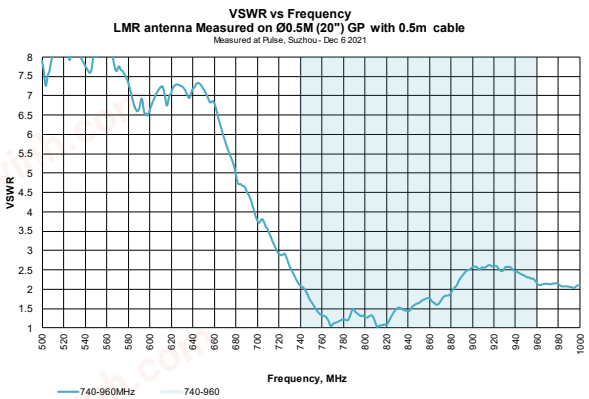
Sharkfin / Vehicular

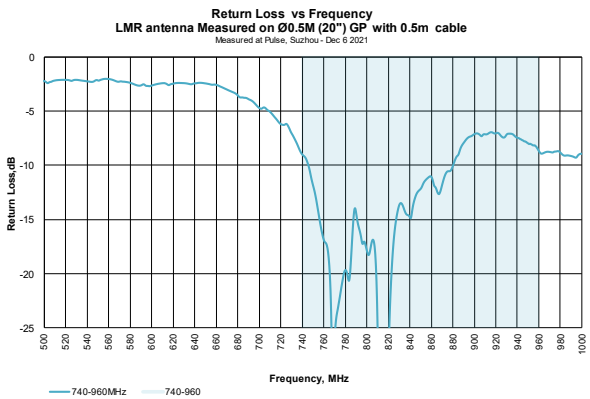
5G-FR1+WiFi-6E/7+GNSS L1+L2+LMR DM 7-in-1 Antenna

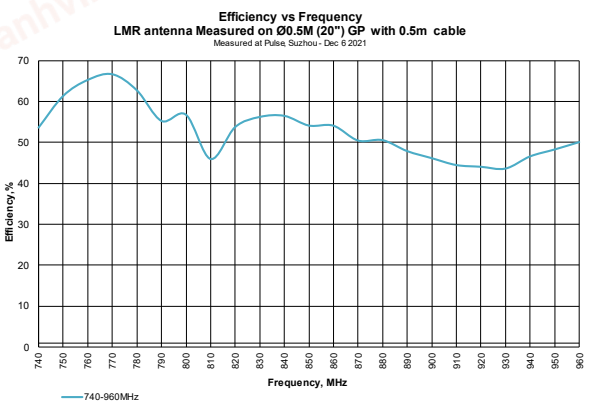
SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

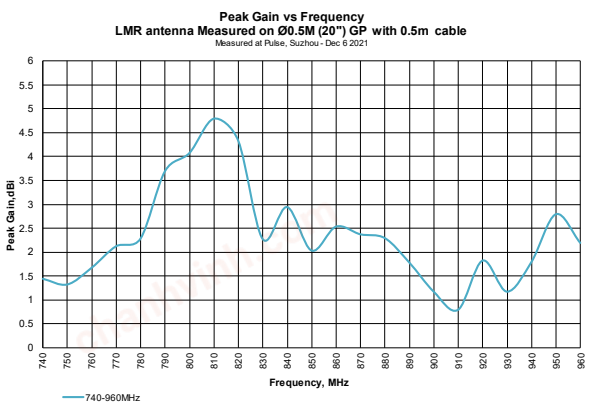
Charts – VSWR, Peak Gain, Efficiency

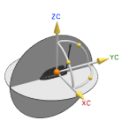
LMR Whip
740-960MHz

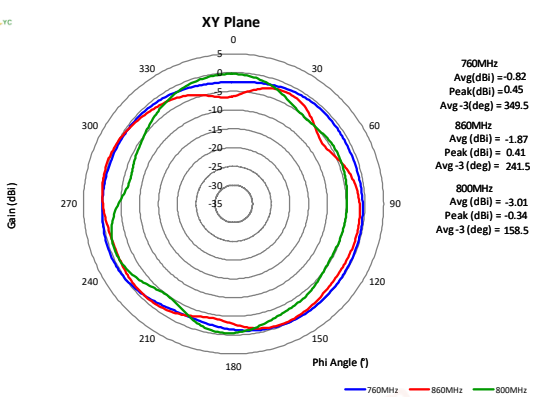


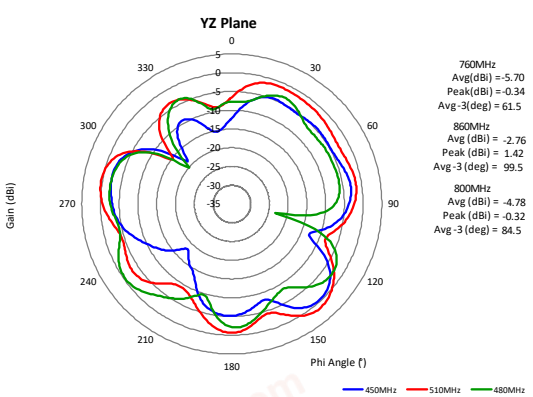


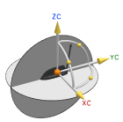








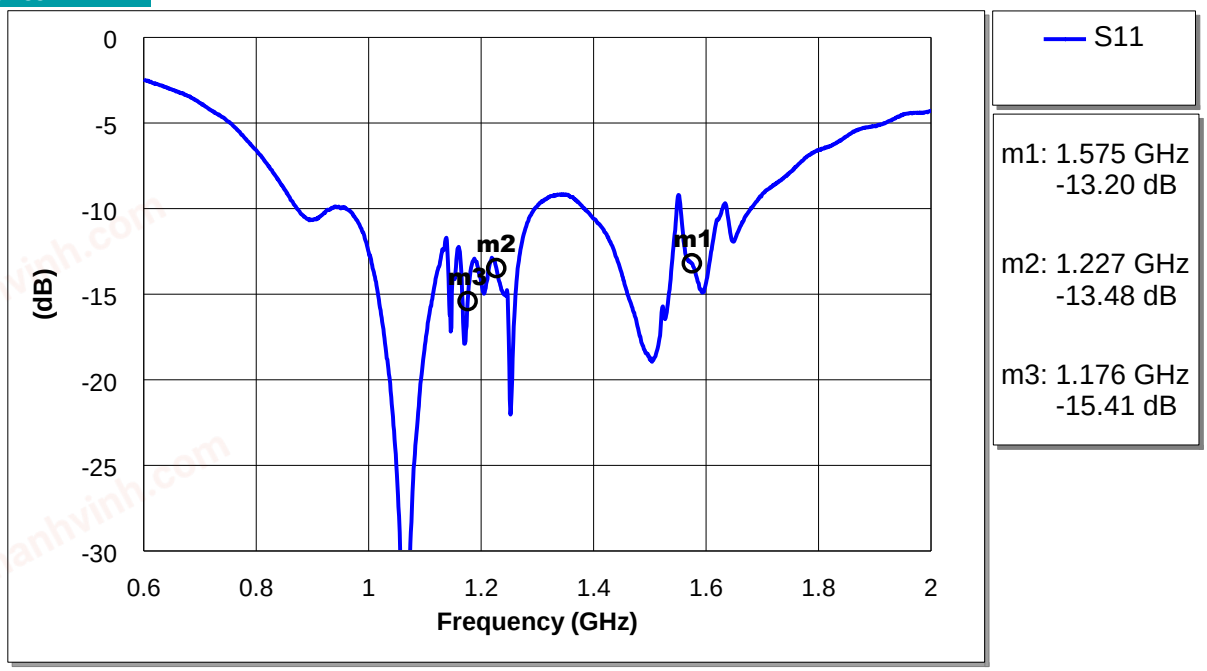




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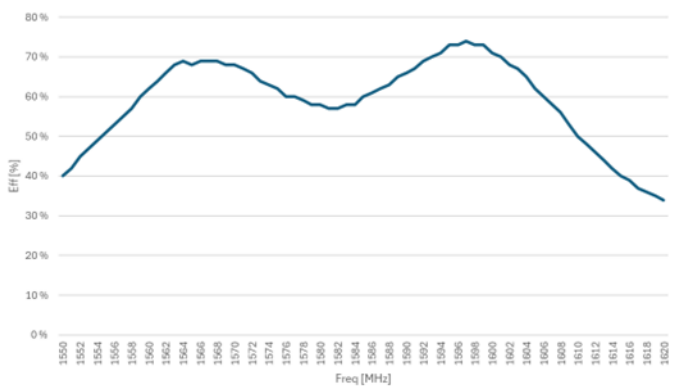
GNSS Antenna Return Loss

GNSS

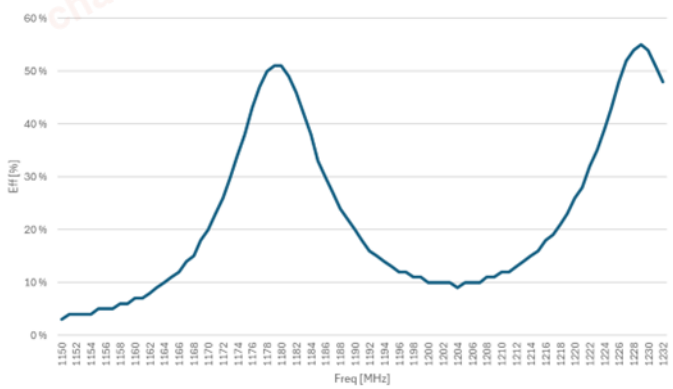


GNSS Radiating Element Efficiency

GNSS



L1 Band



L2 + L5 Band

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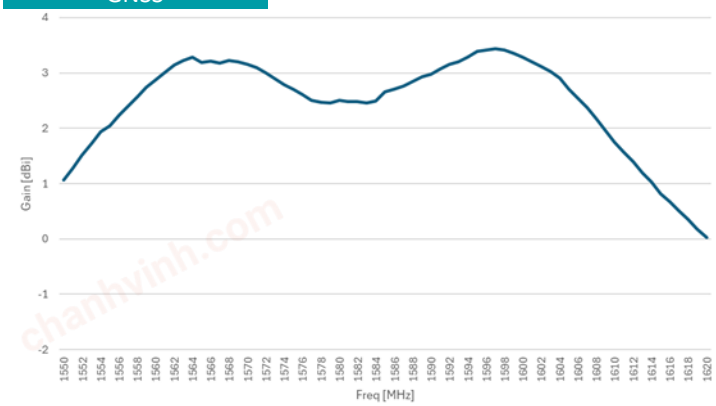
Sharkfin / Vehicular

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

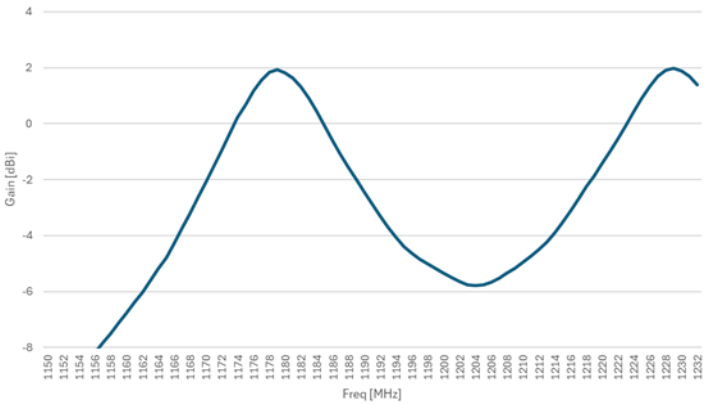
SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

GNSS Radiating Element Peak Gain (Linear)

GNSS



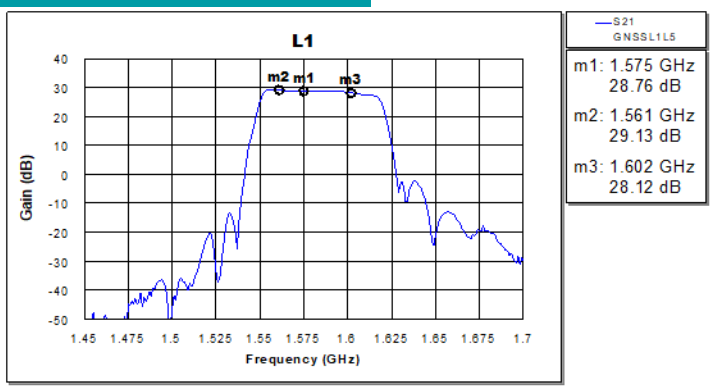
L1 Band

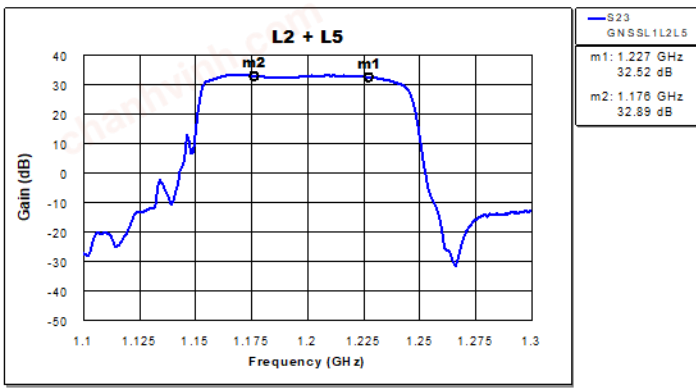


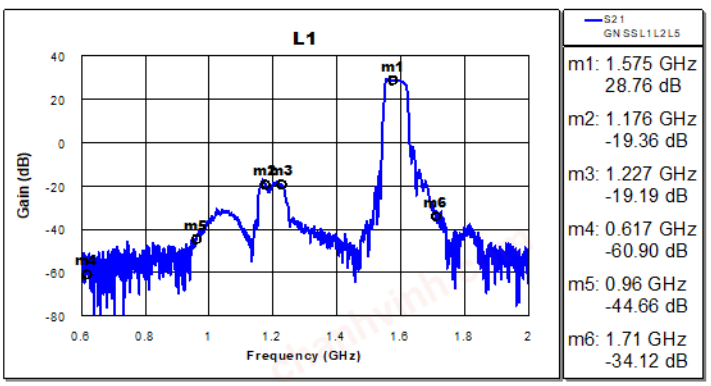
L2 + L5 Band

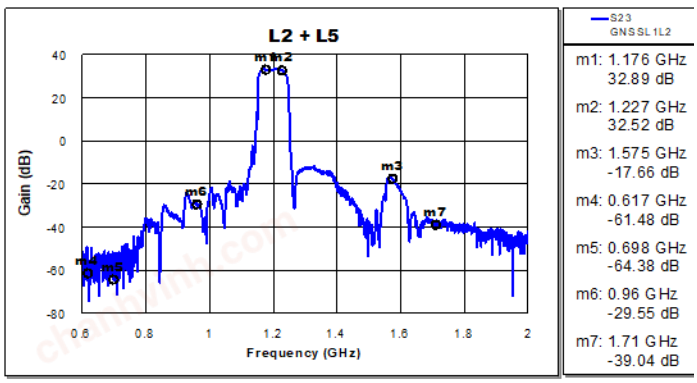
GNSS Antenna - LNA Gain

GNSS





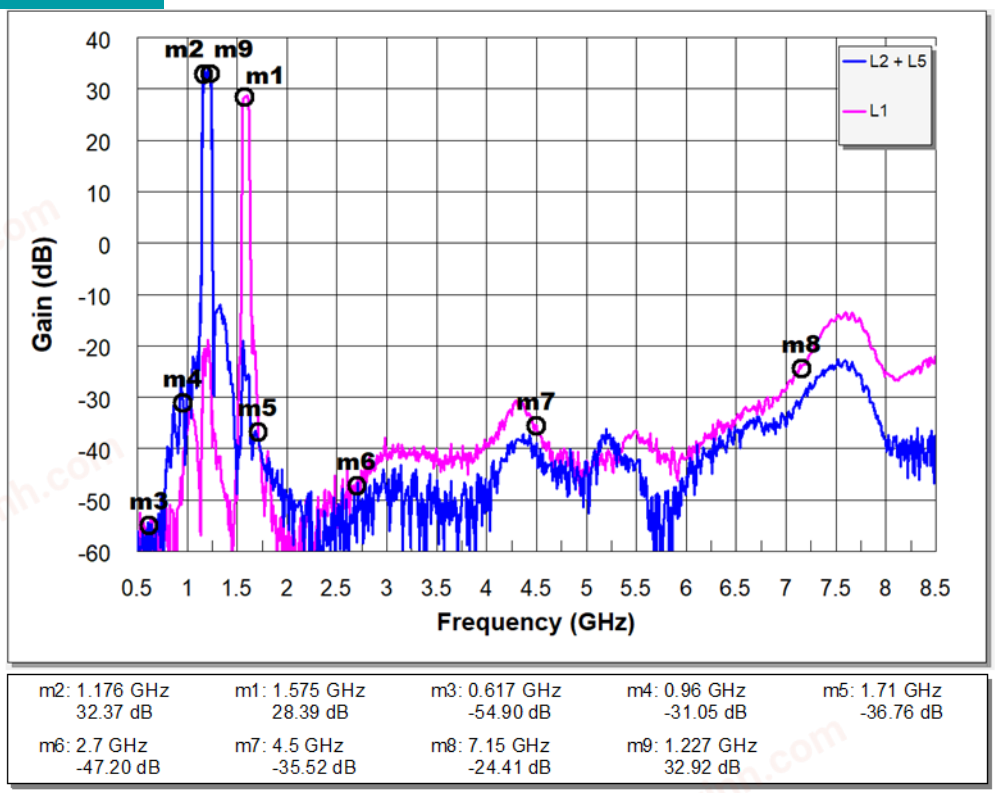




Sharkfin / Vehicular
5G-FR1+WiFi-6E/7+GNSS L1+L2+LMR DM 7-in-1 Antenna
SKF5G72311DMWXXX - 617 to 7125 MHz + TETRA

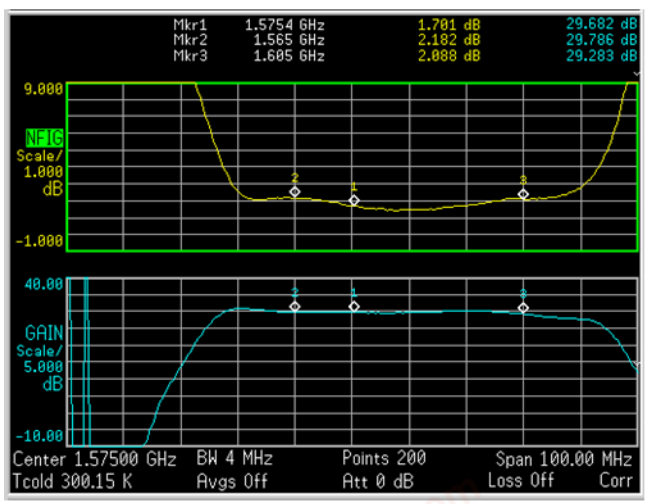
GNSS Antenna - LNA Out of band rejection

GNSS

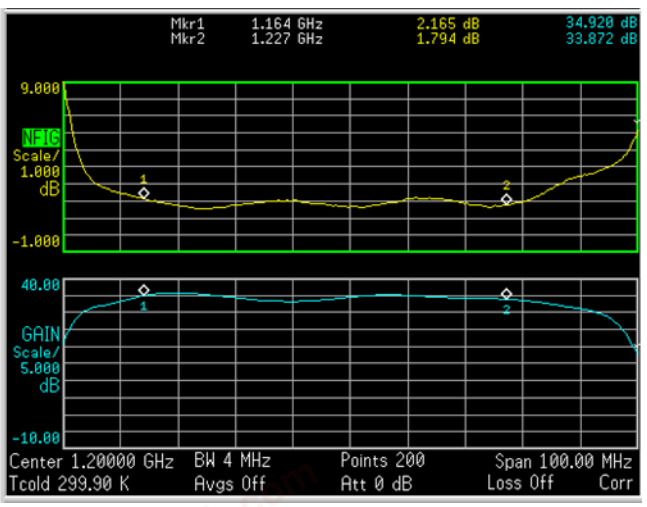


GNSS Antenna - LNA Noise Figure

GNSS



L1 Noise Figure

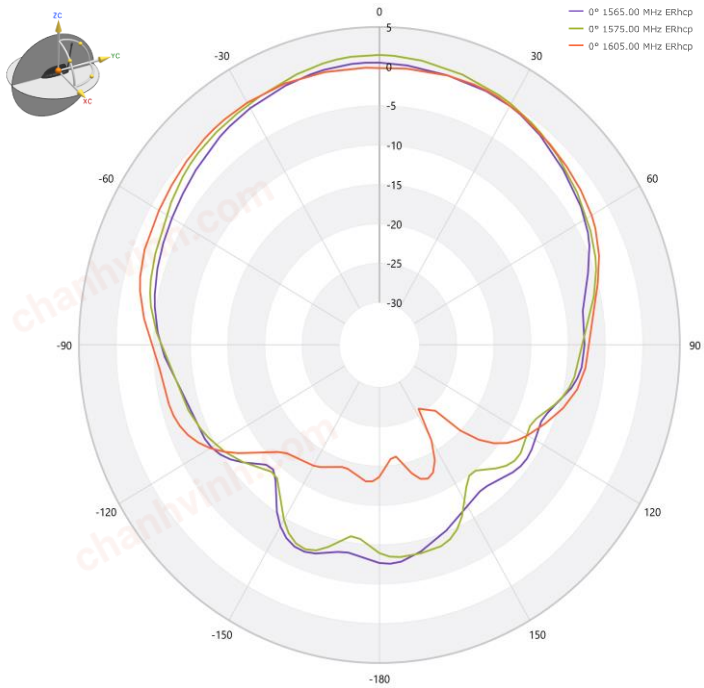


L2 + L5 Noise Figure

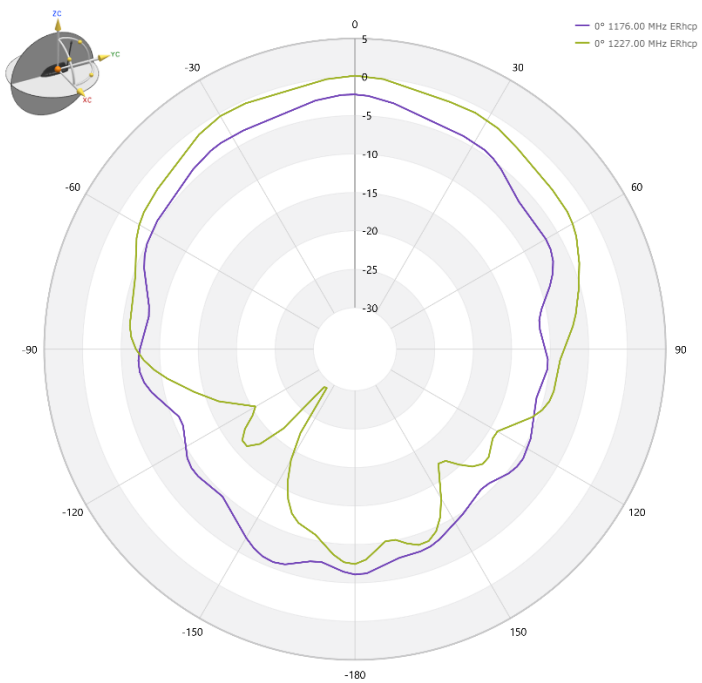
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GNSS Antenna - Radiation Patterns RHCP (dBic)

GNSS



L1 RHCP Pattern



L2 + L5 RHCP Pattern

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PACKAGING

SKF5G72311DMWXXX

1pcs antennas per plastic bag
2pcs antennas per package box
Package box: 17x x12 x 9in

Notes:

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

For More Information:
Americas - antennas.us@pulseelectronics.com | Europe – antennas.eu@pulseelectronics.com | Asia – antennas.as@pulseelectronics.com | Questions? +1-800-ANTENNA
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