

PAN / Vehicular

5GFR1 + WiFi + GNSS L1 Direct Mount 8-in-1 Antenna

PAN5G84311DM - 617 to 7125 MHz



Features & Applications:

- 🔌 Vehicle roof mount, directly on metal plane
- 🔌 Ground plane independent
- 🔌 4x4 MiMo Cellular 5G-FR1 (4G compatible)
- 🔌 3x3 MiMo WiFi, DSRC, V2X (WiFi-6E/7 compatible)
- 🔌 Active GNSS L1+L2 with low noise 38dB amplifier
- 🔌 Cable length and connector type per request
- 🔌 Heavy and light vehicles
- 🔌 IoT, navigation, tracking

ELECTRICAL SPECIFICATIONS @ 25°C ¹

General Specifications – 5G FR1 + WiFi 6E

Antenna type	Nominal Impedance	Polarization	Radiation pattern	Power withstanding	DC Ground
Monopole ²	50Ω	Vertical / Linear	Omni	45W	No

5G FR1 Antennas: 617 – 7125MHz

Port	Frequency (MHz)	617-960	1710-2700	3300-4200	4400-5000	5150-7125
Port 1,2,3,4	Return Loss	-4:1	-5:1	-5:1	-5:1	-5:1
	Avg. Peak Gain (dBi)	2.3	4.6	5.2	4.7	5.4
	Avg. Efficiency (%)	40	52	60	55	50
Isolation ³	Isolation (dB)	5	10	20	20	25

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

Port	Frequency (MHz)	2400-2500	4900-7125
Port 1,2,3	Return Loss	-5:1	-5:1
	Avg. Peak Gain (dBi)	6.0	5.7
	Avg. Efficiency (%)	62	50
Isolation ³	Isolation (dB)	14	20

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	
VSWR		2:1		2:1	
Gain – Radiating Element (dBic)		2 +/- 1		4 +/- 1	
Polarization	LNA Gain (dB)	Noise Figure (dB)	Operating Voltage (V _{dc})		Current Consumption (mA)
RHCP	38 +/- 2	< 2.4	3.3 – 5.0		< 11
Frequency (MHz)	960	1710	2170	2400	
Out of Band Rejection (dB)	> 65	> 60	> 65	> 65	

Notes:

1. Storage Temperature: -40°C to 85°C
2. (5) Multi-Band Monopoles with built in ground plane, Independent from external ground plane
3. Minimum Isolation (dB)

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MECHANICAL SPECIFICATIONS

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Dimension (Length x Width x Height)	Housing Material	Color	Weight	Fixing System	Mounting Hole Diameter
151.9 x 164.5 x 76 mm (5.98 x 6.48 x 3 inch)	PC, UV Protected	Black	550g (1.22lbs)	Direct Mount	1.346" (34.2mm)
Wireless Technology	No. of Port	Cable Length	Cable Type	Connector Type	
5G FR1/ LTE	4	17ft (5.181m)	RG 58	SMA (Male)	
WiFi 6E	3	17ft (5.181m)	RG 58	RP-SMA Male	
GNSS L1	1	17ft (5.181m)	RG-174	SMA (Male)	

ENVIRONMENTAL SPECIFICATIONS

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

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Mechanical Drawing

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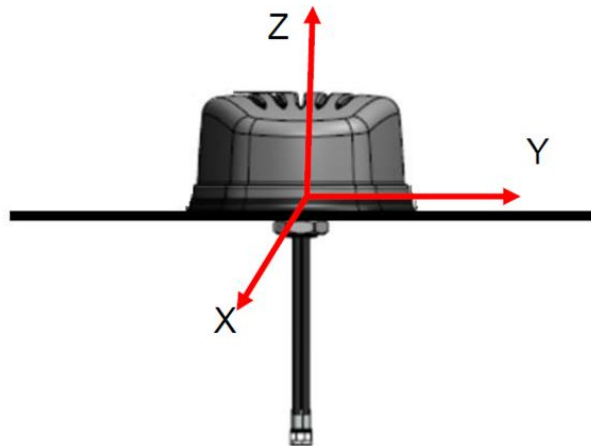


Dimensions: Inches (mm)
Unless otherwise specified, all tolerances are ± 0.010 (0.25mm)

Test Setup

General / Chamber Setup

- All measurements done on Ø 500mm (20") round ground plane.
- S-parameters with 0.5m RG 58 cable
- Gain and Efficiency with 0.5m RG 58 cable
- Measured at Pulse, Suzhou



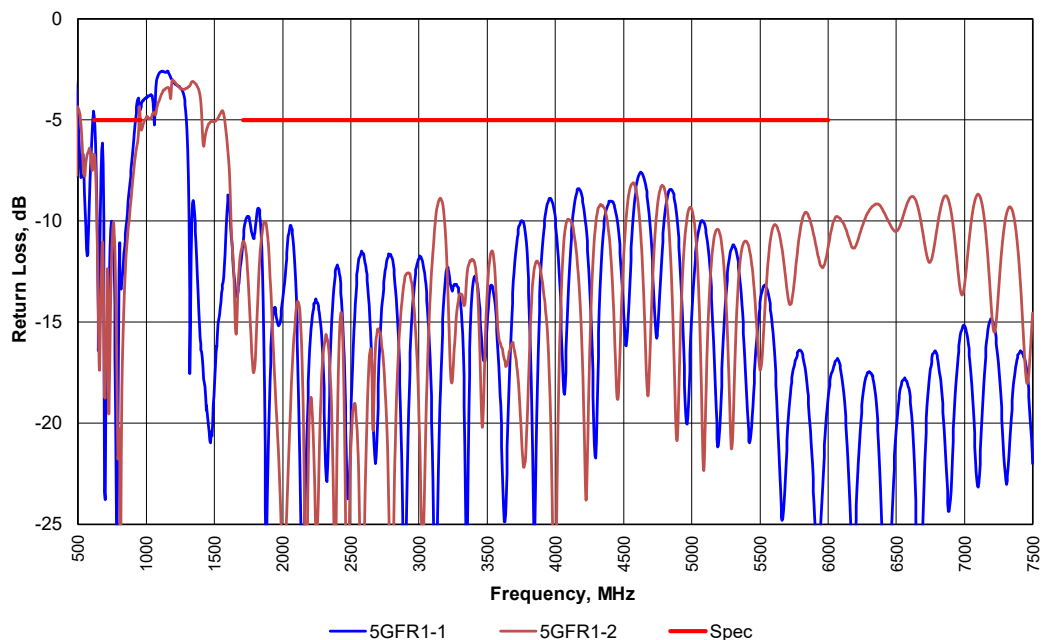
Radiation pattern coordinate system

Charts-Return Loss

5G FR1

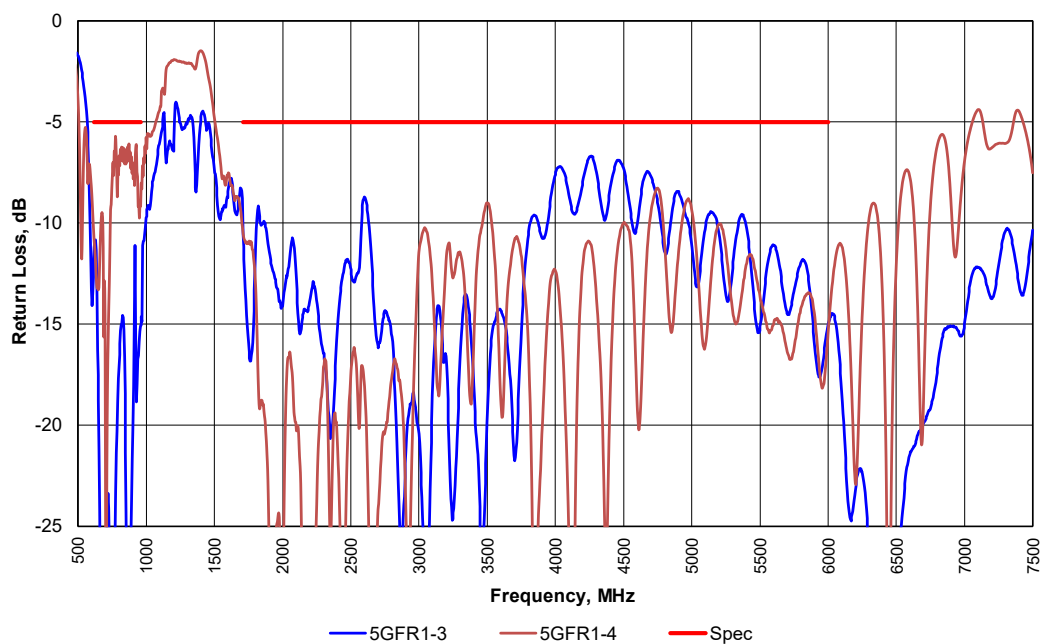
Return Loss vs Frequency

Measured at Pulse, Suzhou - 20230224



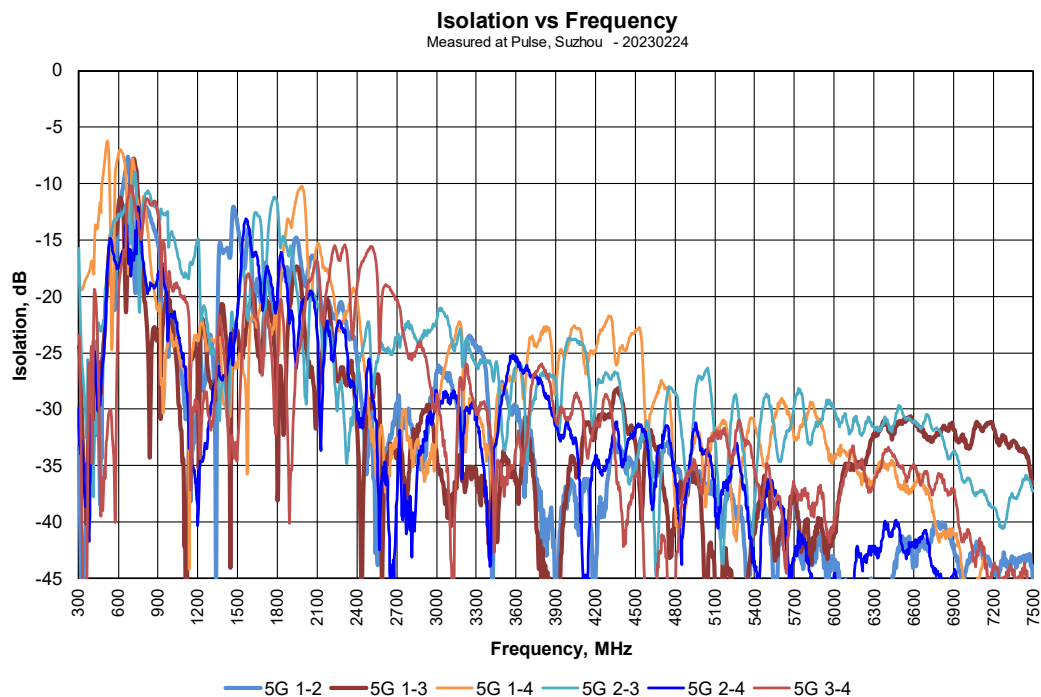
Return Loss vs Frequency

Measured at Pulse, Suzhou - 20230224



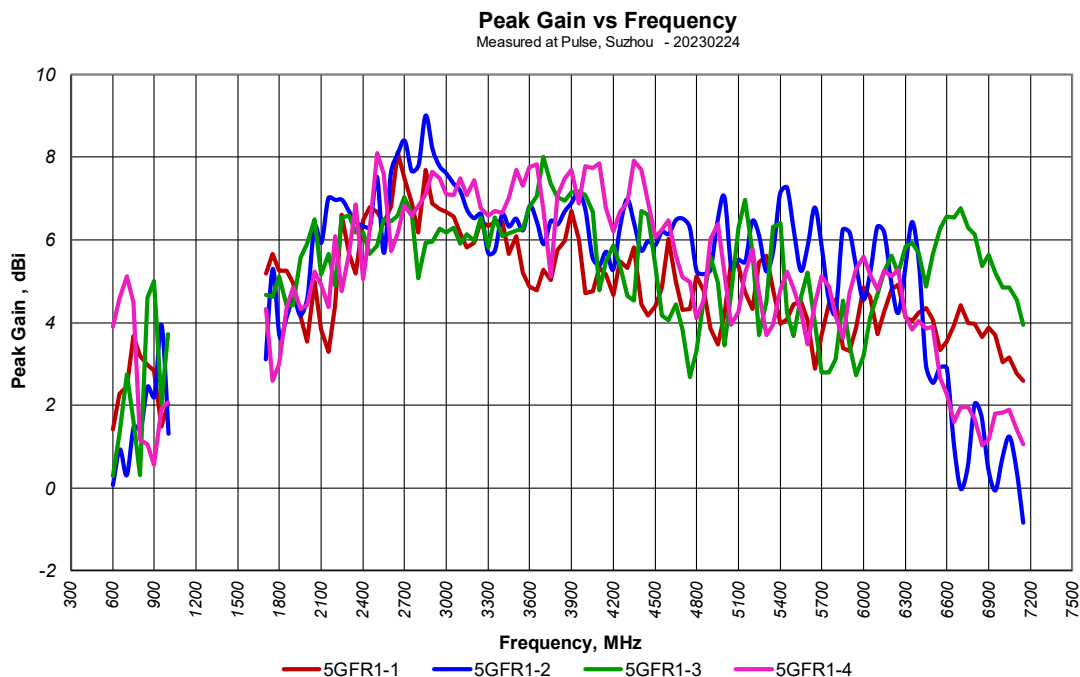
Charts-Isolation

5G FR1



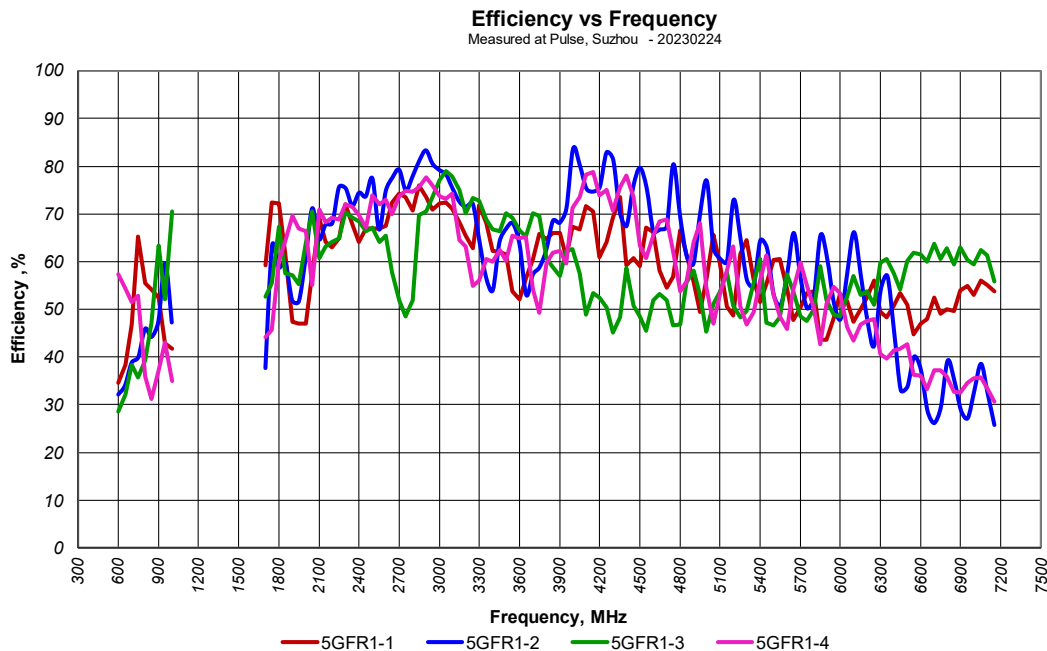
Charts-Peak Gain

5G FR1



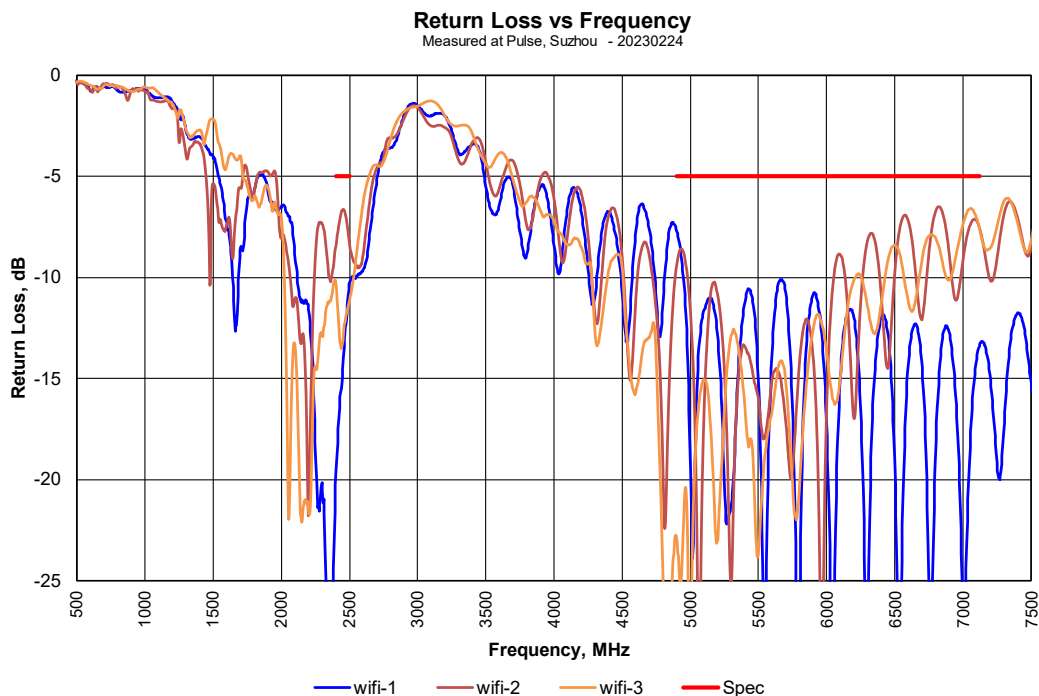
Charts- Peak Efficiency

5G FR1



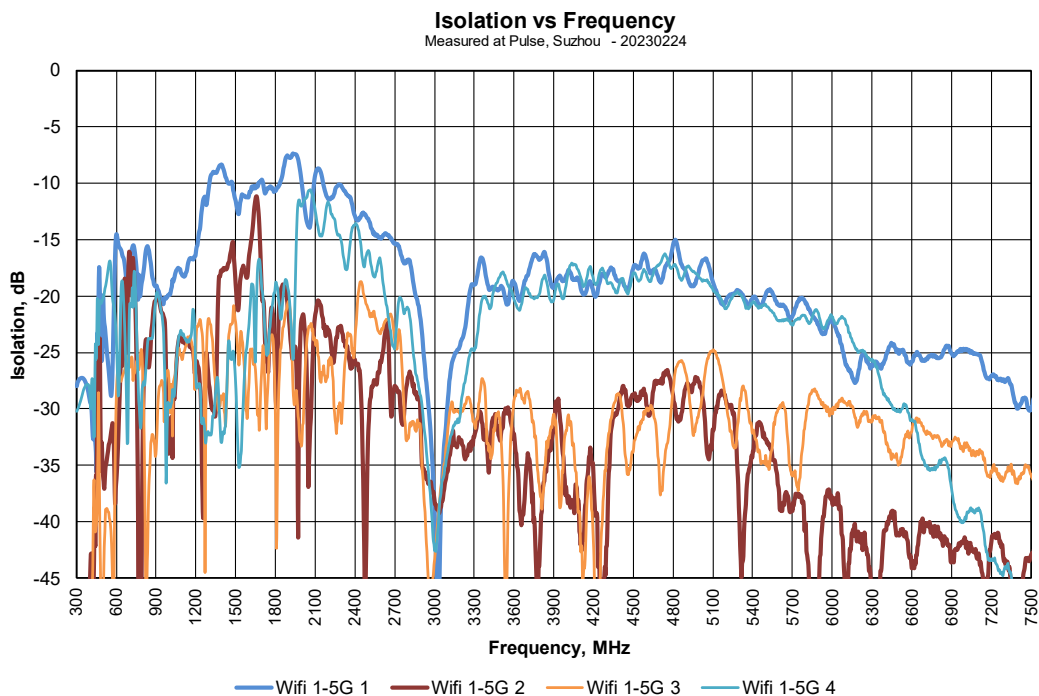
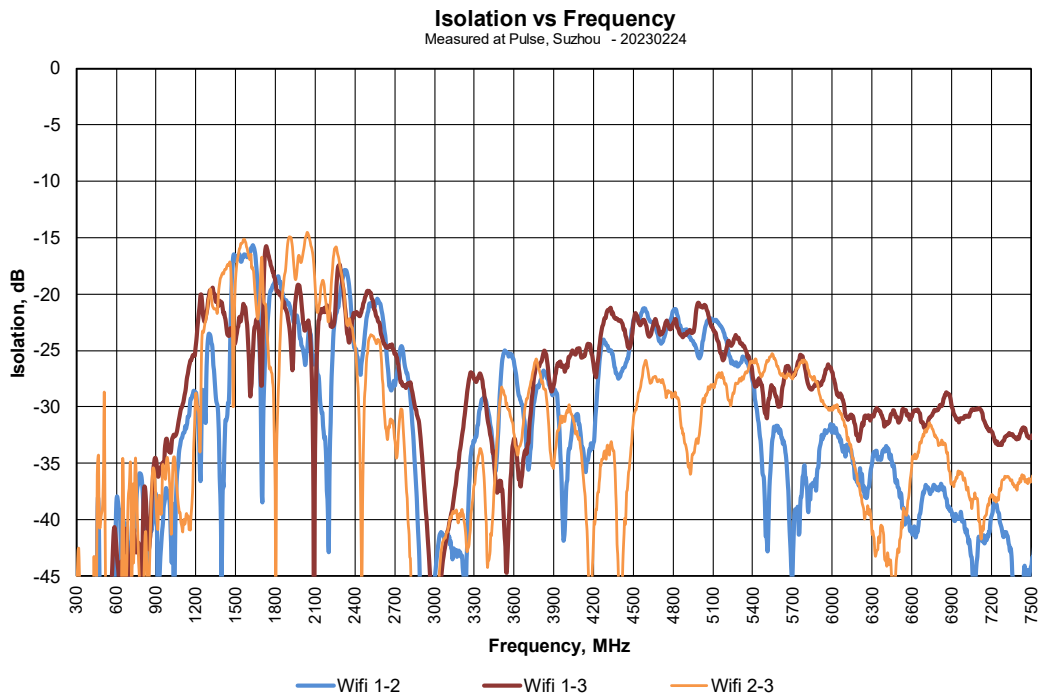
Charts-Return Loss

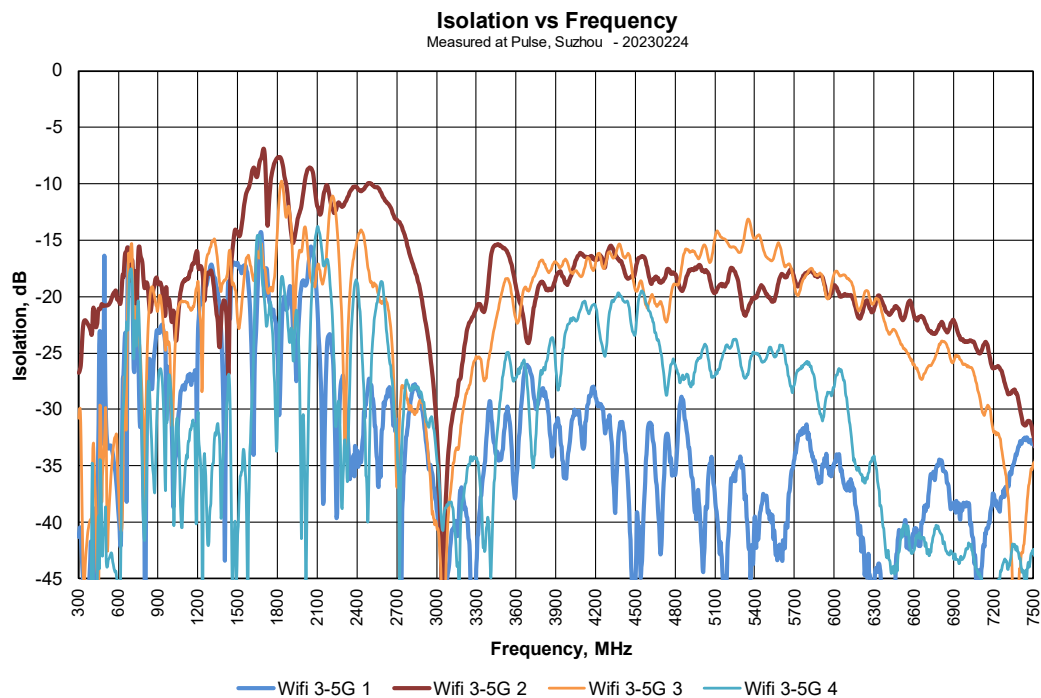
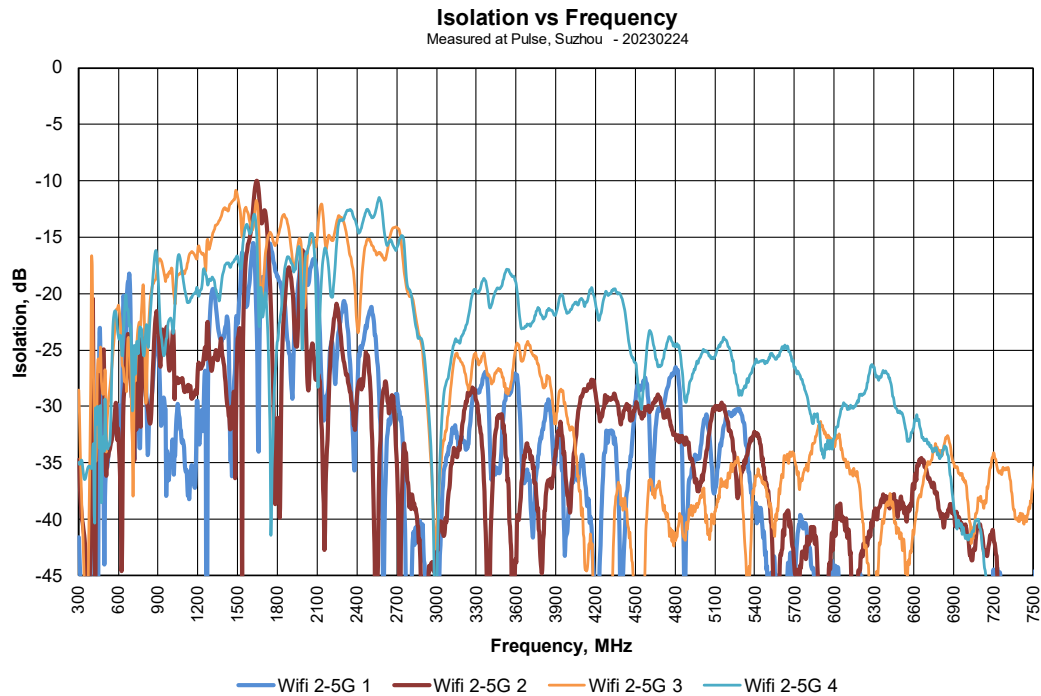
WiFi 6E



Charts-Isolation

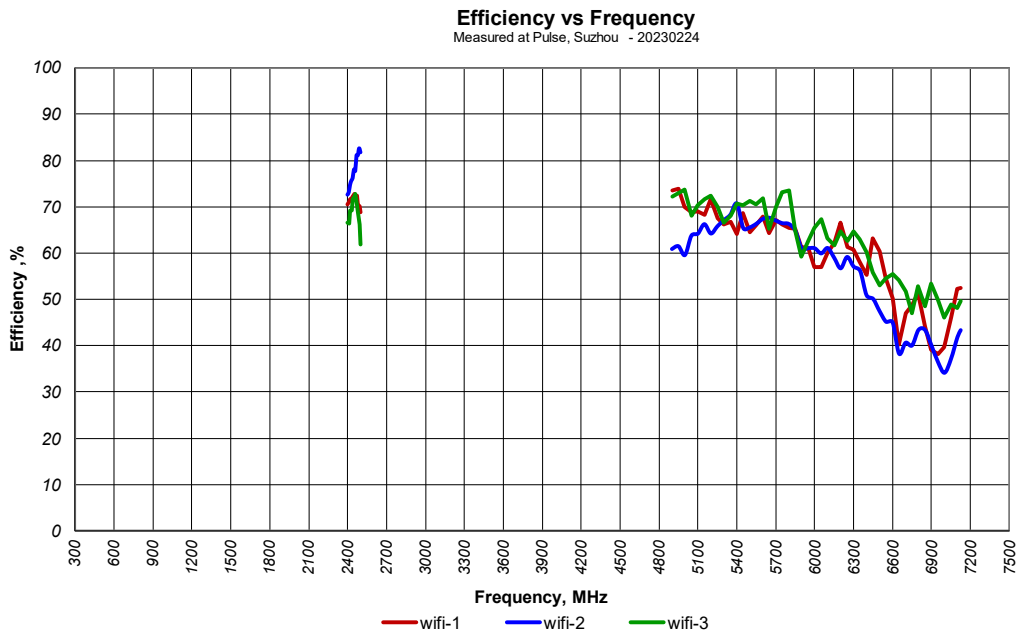
WiFi 6E





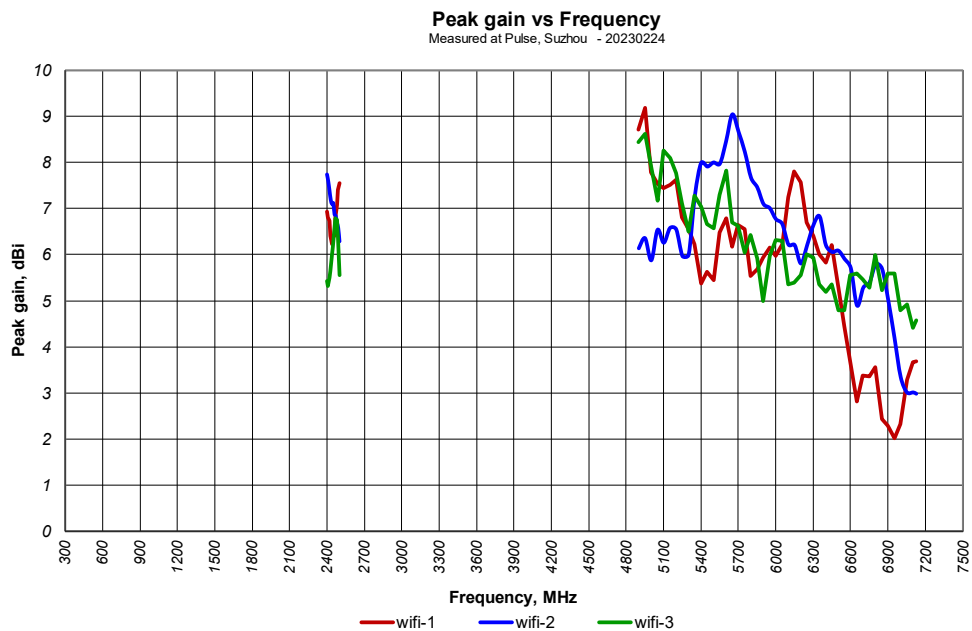
Charts-Peak Gain

WiFi 6E



Charts- Peak Efficiency

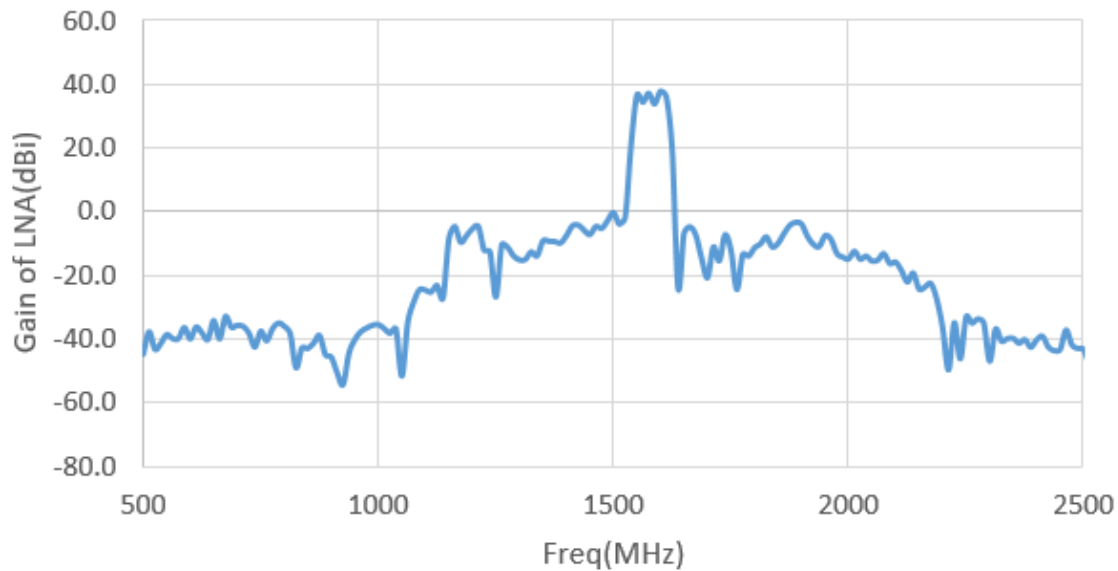
WiFi 6E



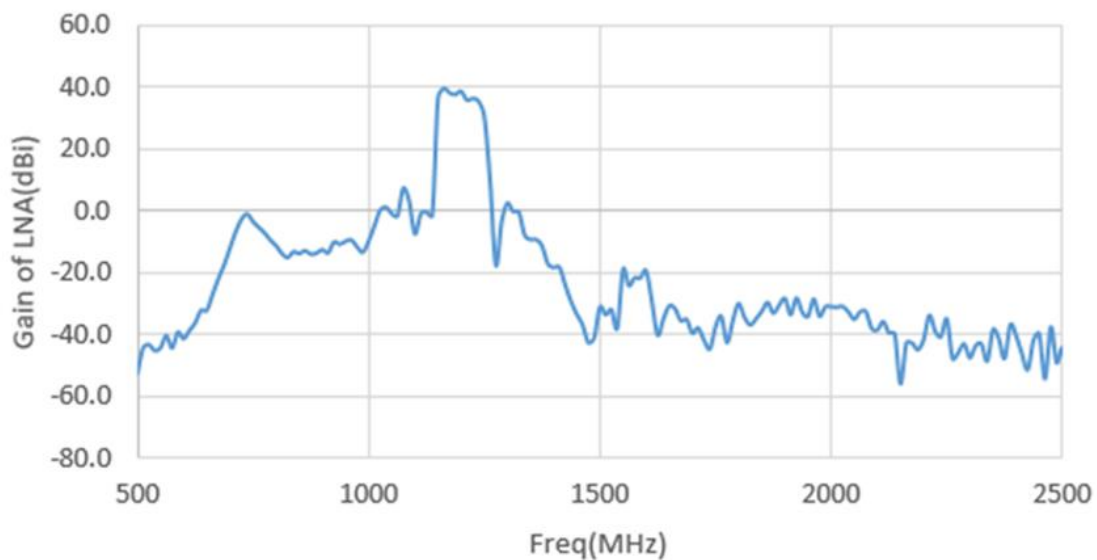
GNSS Antenna - LNA Gain

LNA gain and Out-of-band Rejection

L1 Band



L2 Band



PACKAGING

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One antenna packed in one PE bag, 6 antennas packed in one box.

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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