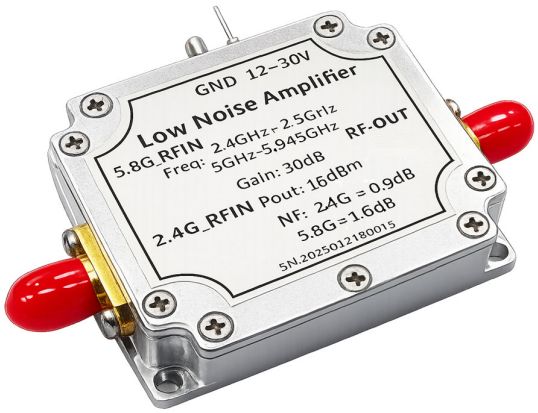
HS-MX2458GT

2.4GHz & 5.8GHz @30dB Dual-band LNA



HS-MX2458GT V1.1(January 2026)
2.4GHz & 5.8GHz Dual-band LNA

Product Overview

The HS-MX2458GT is a dual-band low-noise amplifier supporting 2.4GHz and 5.8GHz frequencies, featuring excellent frequency selectivity, high gain, low noise figure, and flat response characteristics. It is widely applicable in RF receiver front-ends for various scientific research, industrial communications, and other applications. Additionally, its ultra-wide bandwidth enables versatile use in radio management systems, including full-band spectrum reconnaissance testing and EMC (Electromagnetic Compatibility) receiver evaluation.

This amplifier is fabricated from CNC-milled aerospace-grade aluminum alloy,featuring high precision and lightweight construction. Its exterior surface undergoes natural conductive oxidation treatment, delivering exceptional conductivity and electromagnetic shielding performance. It effectively blocks internal radiation while isolating external environmental interference. The power supply port utilizes an RF through-hole capacitor, which efficiently filters out power supply spikes and other noise components.

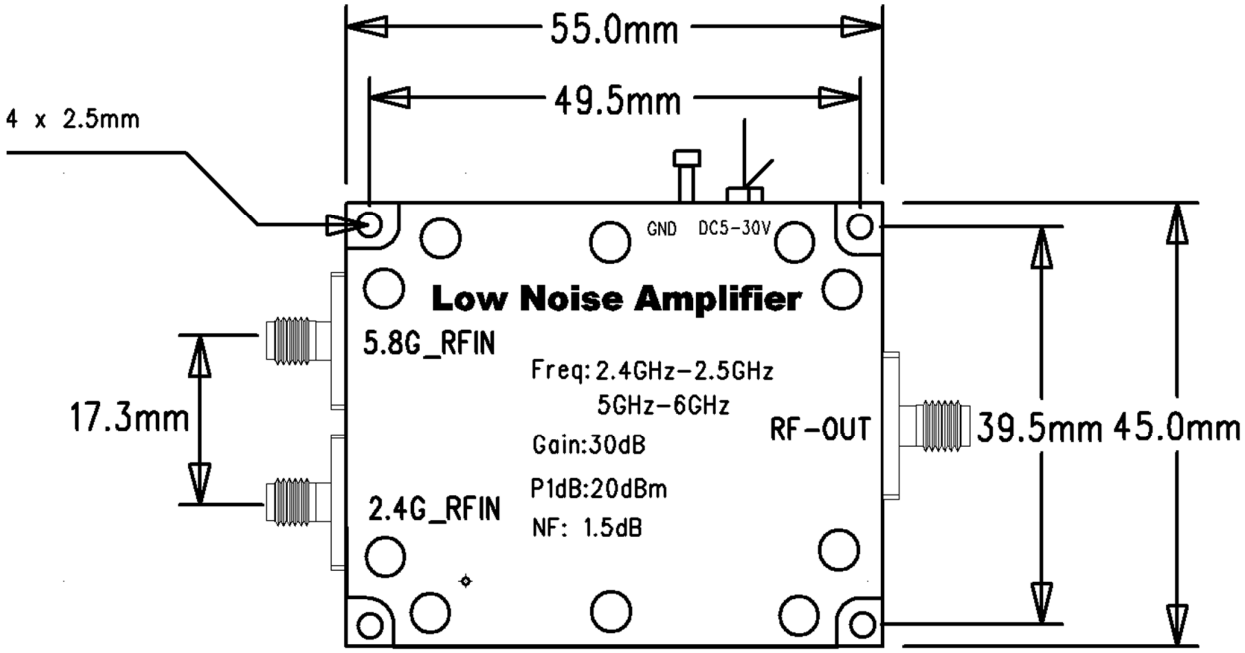
1. Main Features

- Frequency Range: 2.4 GHz and 5.8 GHz
- Gain: 30dB(Type)
- P1dB: 20dBm
- Noise Figure: 1.5dB(Type)
- Power Supply Voltage: 5V~30V
- Operating Current: 160mA @ 12V(Type)
- RF Connector: SMA-F
- Power Supply Method: 3000pF shunt capacitor

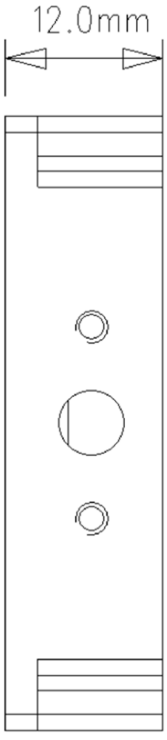
2. Electrical Specifications

Parameters	Min	Typ	Max	Units
Frequency Range	2400		2500	MHz
	5000		5945	
Gain	29	30	31	dB
Gain Flatness (2.4GHz)		±0.5		dB
Gain Flatness (5.5GHz)		±1		dB
Noise Figure (2.4GHz)	0.6	0.8	0.9	dB
Noise Figure (5.5GHz)	0.9	1.2	1.4	dB
2.4GHz Output Power (2.4GHz)		15		dBm
5.8GHz Output Power (5.8GHz)		17		dBm
Input Standing Wave Ratio(VSWR)		< 2.0		2:1
Output Standing Wave Ratio(VSWR)		< 2.0		2:1
Characteristic Impedance		50		Ohm
Input Power (CW)		-15		dBm
Power Supply Voltage	12		30	V
Operating Current(28V)	0.3	0.35	0.4	A
Operating Temperature	-40	+25	+65	℃
Storage Temperature	-40	+25	+85	℃
Weight		63		g

3. Dimensions (mm)



Top View



Side View

4. Test Report

4.1 Test conditions: TA=+25°C, DC=5V-28V,160mA/28V

4.2 Testing instruments: E5071C, Agilent 346A, N5182A, N9020A

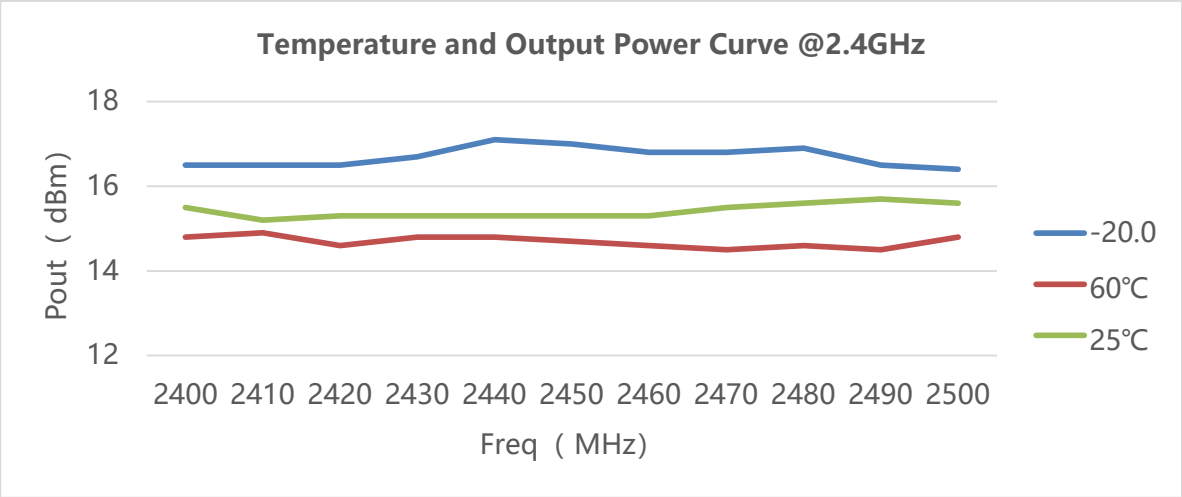
4.3 Test results：

Gain: 30dB, Noise Figure: 0.8dB @2.4GHz

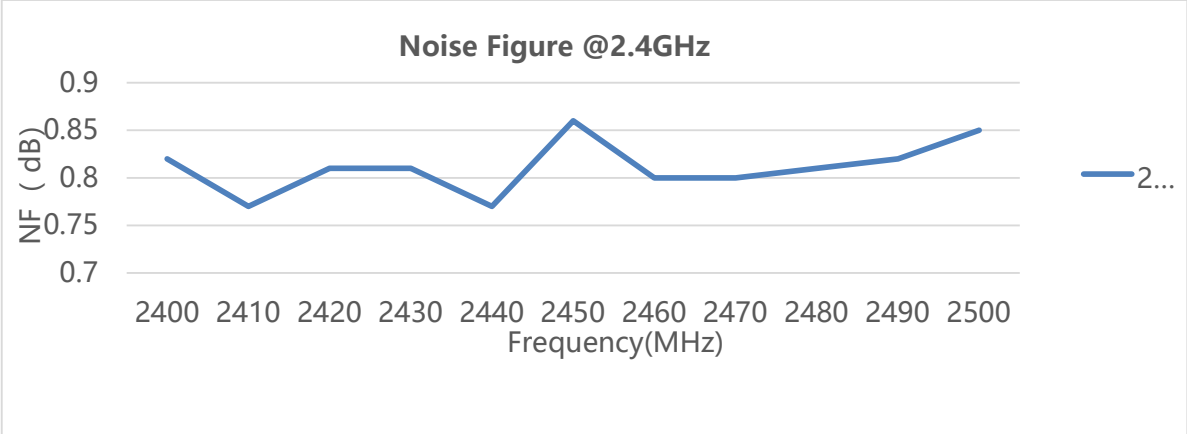
Gain: 30dB, Noise Figure: 1.3dB @5.8GHz

Frequency(MHz)	P1dBm(dBm)	Gain (dB)	Noise Figure(dB)
2400	15.5	30.5	0.82
2410	15.2	30.5	0.77
2420	15.3	30.5	0.81
2430	15.3	30.5	0.81
2440	15.3	30.5	0.77
2450	15.3	30.5	0.86
2460	15.3	30.5	0.8
2470	15.5	30.5	0.8
2480	15.6	30.5	0.81
2490	15.7	30.5	0.82
2500	15.6	30.5	0.85

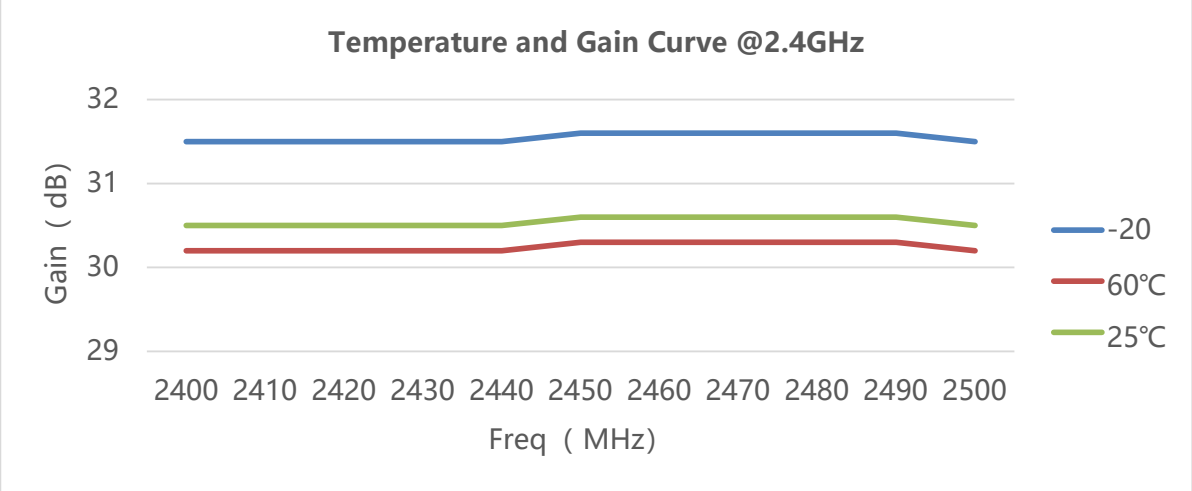
Test Results @2.4GHz to 2.5GHz



Temperature and Output Power Curve @2.4GHz



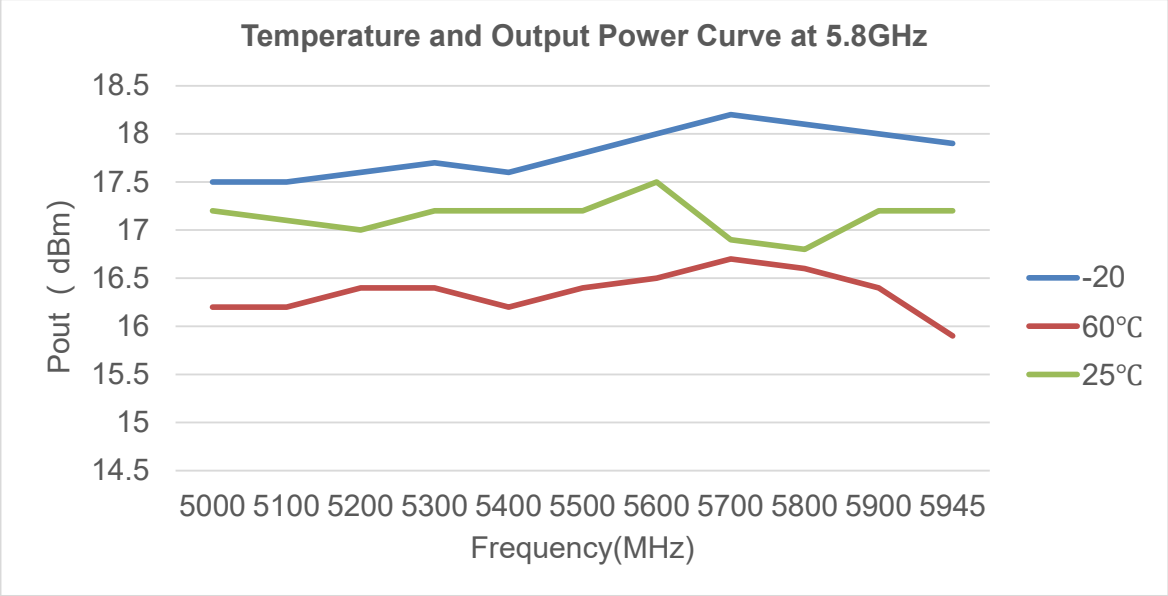
Noise Figure @2.4GHz



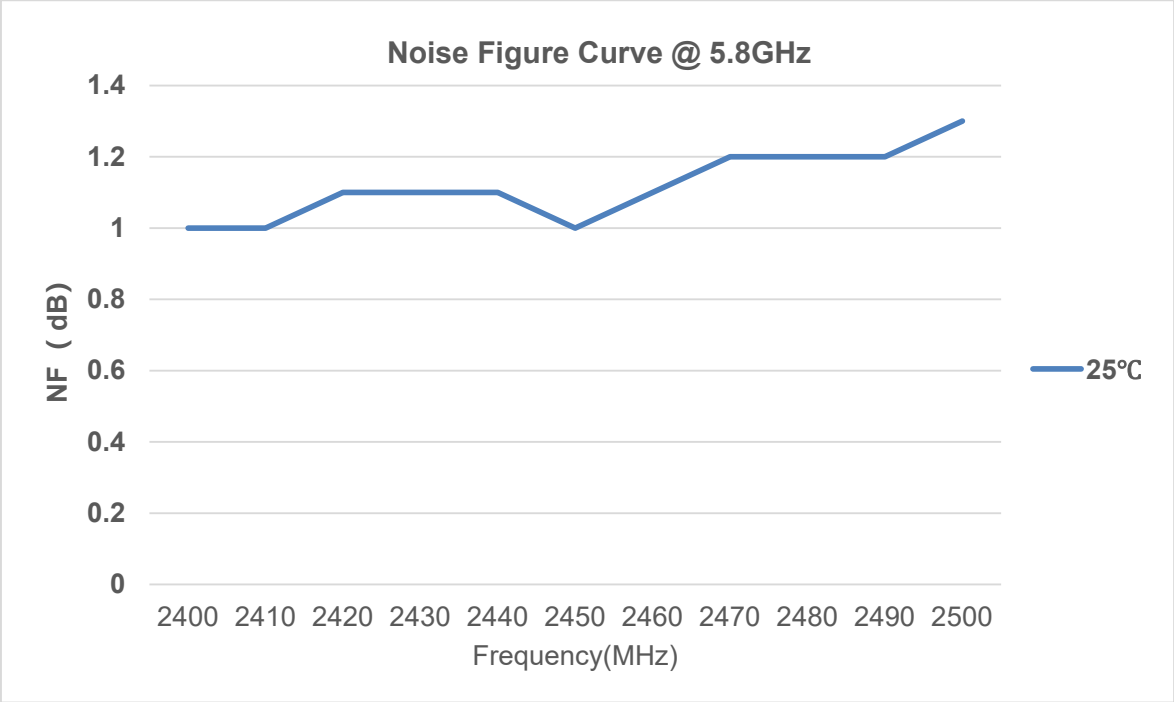
Temperature and Gain Curve @2.4GHz

Frequency(MHz)	P1dBm(dBm)	Gain(dB)	Noise Figure(dB)
5000	17.2	31.5	1.0
5100	17.1	31.6	1.0
5200	17	31.5	1.1
5300	17.2	31.3	1.1
5400	17.2	31.2	1.1
5500	17.2	31.2	1.0
5600	17.5	31.3	1.1
5700	16.9	31.3	1.2
5800	16.8	31.3	1.2
5900	17.2	30.7	1.2
5945	17.2	30.6	1.3

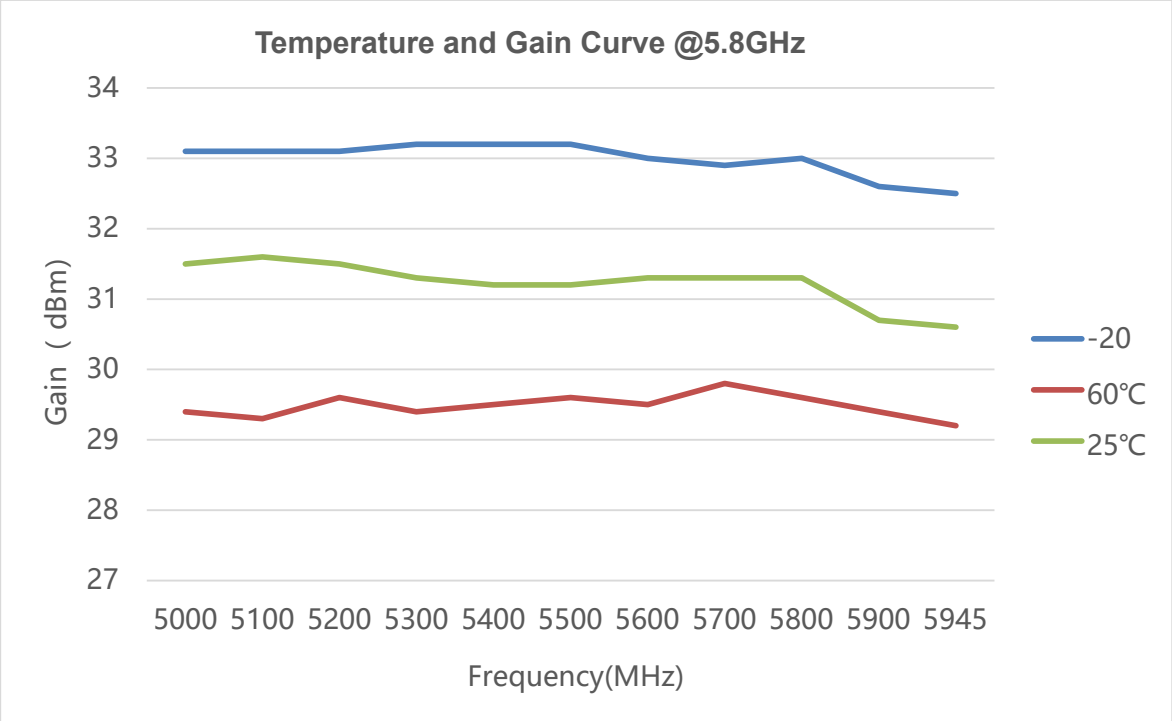
Test Results @5GHz~5.945GHz



Temperature and Output Power @5.8GHz



Noise Figure @5.8GHz



Temperature and Gain @5.8GHz

5. Noise Figure&Gain Curve

Frequency	Noise Figure	Gain
2.400000000 GHz	0.7348 dB	29.925 dB
2.411111111 GHz	0.7548 dB	29.906 dB
2.422222222 GHz	0.7562 dB	29.867 dB
2.433333333 GHz	0.6997 dB	29.794 dB
2.444444444 GHz	0.7519 dB	29.827 dB
2.455555556 GHz	0.6925 dB	30.077 dB
2.466666667 GHz	0.7313 dB	29.918 dB
2.477777778 GHz	0.7210 dB	29.801 dB
2.488888889 GHz	0.7669 dB	29.893 dB
2.500000000 GHz	0.7593 dB	29.980 dB

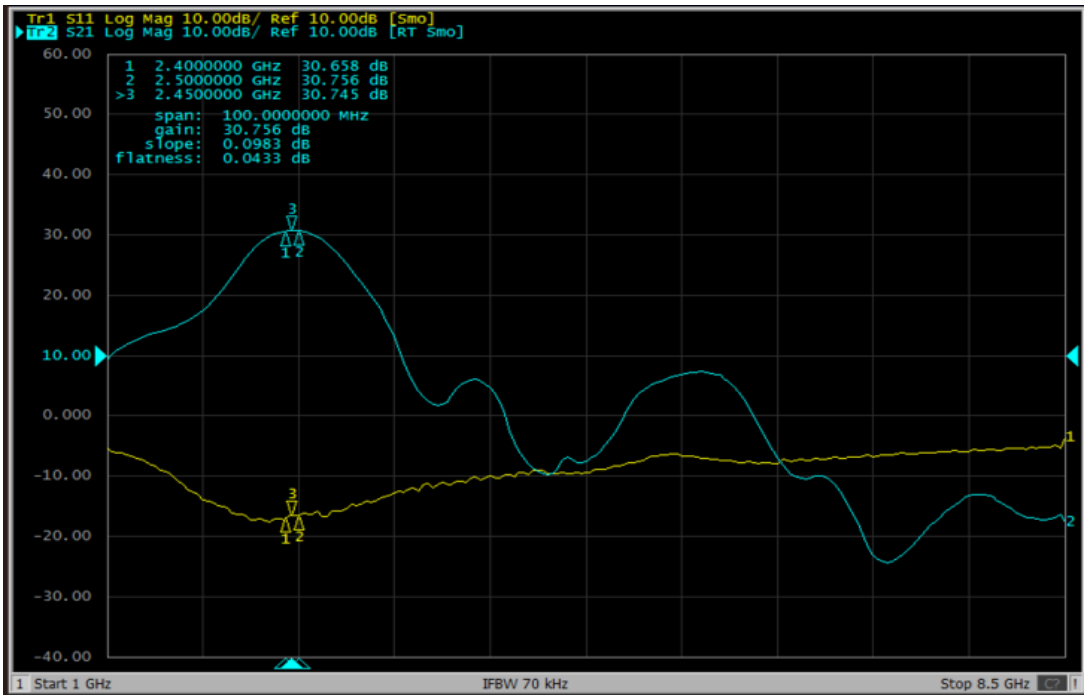
Start Freq 2.40000 GHz Stop Freq 2.50000 GHz
BW 4.0 MHz T cold 296.50 K (Default) Noise Source: Norm Points 10

Noise Figure @2.4GHz

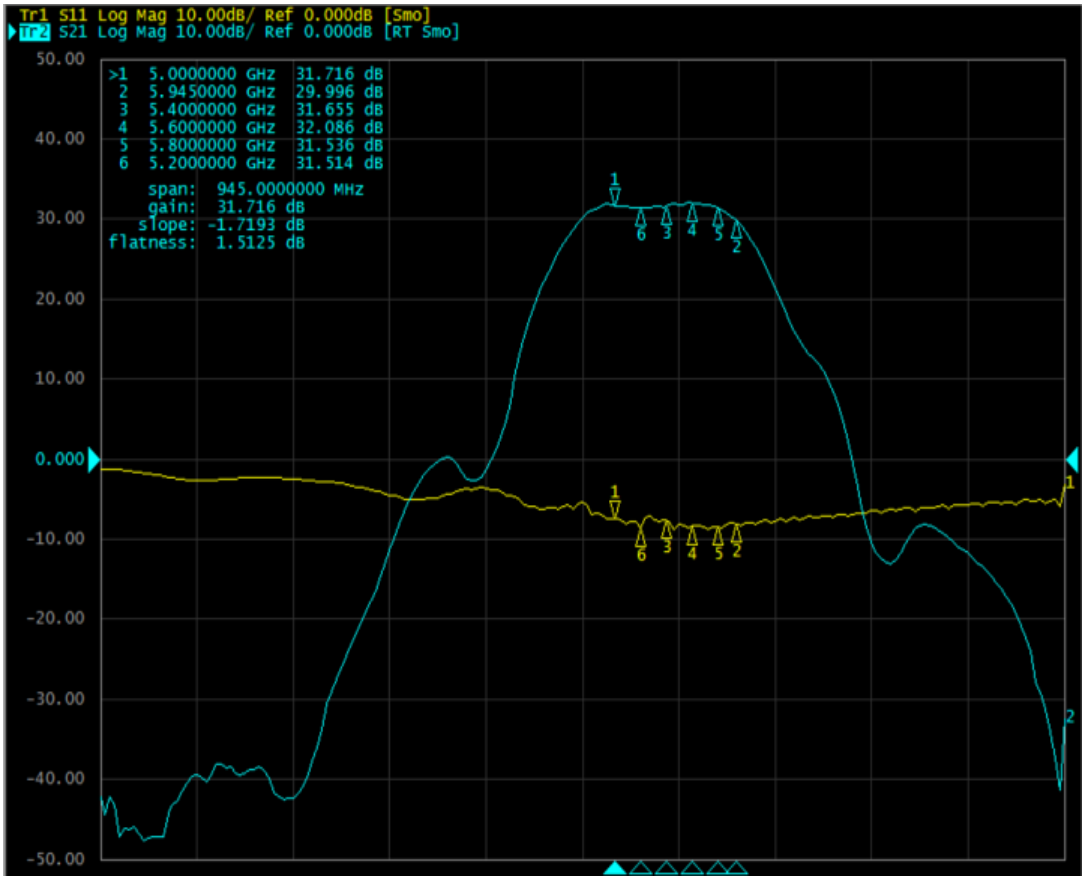
Frequency	Noise Figure	Gain
5.000000000 GHz	1.0251 dB	32.413 dB
5.105000000 GHz	0.9902 dB	32.638 dB
5.210000000 GHz	1.0894 dB	33.190 dB
5.315000000 GHz	1.0920 dB	33.904 dB
5.420000000 GHz	1.0402 dB	34.009 dB
5.525000000 GHz	1.0297 dB	33.772 dB
5.630000000 GHz	1.1260 dB	33.504 dB
5.735000000 GHz	1.1675 dB	32.951 dB
5.840000000 GHz	1.3445 dB	30.984 dB
5.945000000 GHz	1.4303 dB	28.489 dB

Start Freq 5.00000 GHz Stop Freq 5.94500 GHz
BW 4.0 MHz T cold 296.50 K (Default) Noise Source: Norm Points 10

Noise Figure @5.8GHz



Gain Curve @2.4GHz



Gain Curve @5.8GHz

6. RoHS Compliance

The products manufactured by our company do not contain cadmium (Cd), lead (Pb), mercury (Hg), hexavalent chromium, polybrominated biphenyls (PBB), or polybrominated diphenyl ethers (PBDE), and are therefore considered to comply with the RoHS standards.

7. Electrostatic Protection

Although this product is designed to be as robust as possible, static electricity may cause damage to it; therefore, caution should be exercised during operation.

8. Disclaimer

The information provided herein is deemed reliable at the time of publication. The Company reserves the right to modify its products, specifications, and product descriptions without prior notice. The Company assumes no liability for the use of such information, and all associated risks are solely borne by users. The Company does not warrant the suitability of its products for specific applications and shall not be held liable for any indirect or consequential damages. The Company grants no authorization or guarantees that its products can be used in life support equipment or systems.