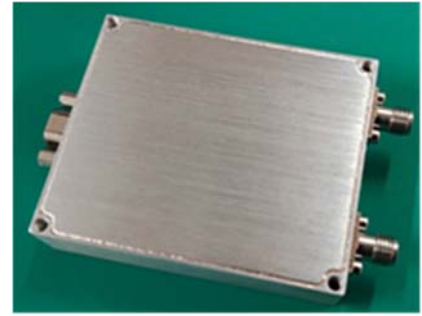


VMFG-50M/22G-SMA

FEATURES

- ◆ Input Frequency: 100MHz
- ◆ Input Power: (7 ± 3) dBm
- ◆ Output Frequency: 50MHz~22000MHz
- ◆ Phase Noise: -110dBc/Hz@1KHz(10GHz)
- ◆ Dimension: 60.0mm×50.0mm×15.0mm
- ◆ Operation Temperature: -40~70°C



TYPICAL APPLICATIONS

- ◆ X, Ku band Radar
- ◆ General Amplification

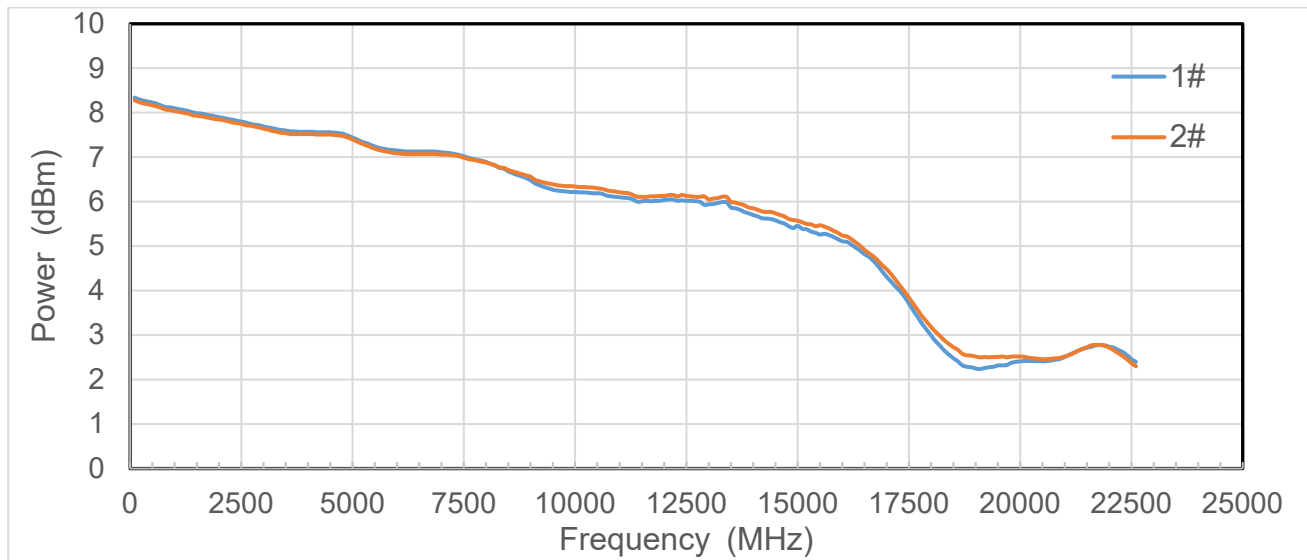
ELECTRICAL SPECIFICATIONS

(TA=25°C, VCC=12V, Input Frequency: 100MHz, Input Power: 10dBm, Input Phase Noise: -156dBc/Hz@1kHz)

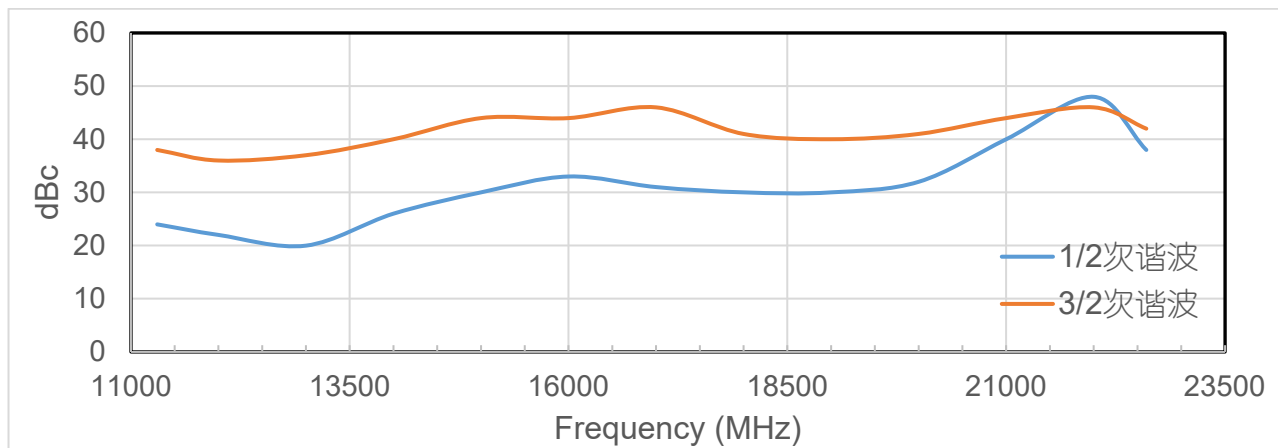
Parameter	Min	Typ	Max	Unit
Output Frequency	50	-	22000	MHz
Frequency Step	-	0.1	-	Hz
Frequency Settint Time	-	-	100	us
Phase Noise (@1KHz@10GHz)	-	-	-110	dBc/Hz
Spurious	-	-	-70	dBc
Sub Harmonic (>11.3GHz)	-	-	-20	dBc
Harmonic	-	-	-9	dBc
Output Power	1	-	9	dBm
Current	-	130	150	mA

TYPICAL PERFORMANCE CHARACTERISTICS

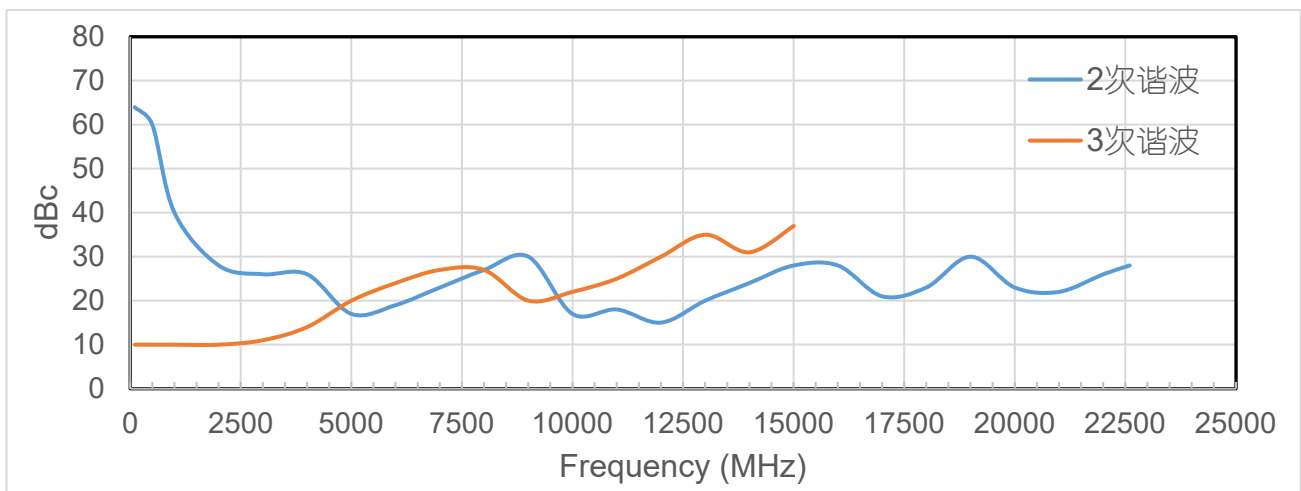
Output Power (TA=+25°C)



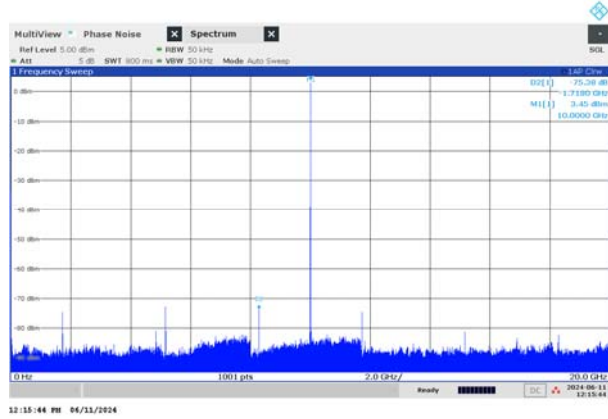
1/2 Sub Harmonic & 3/2 Sub Harmonic (TA=+25°C)



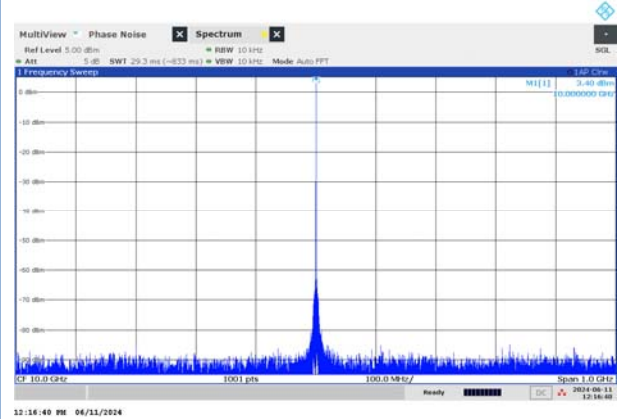
2nd & 3rd Harmonic (TA=+25°C)



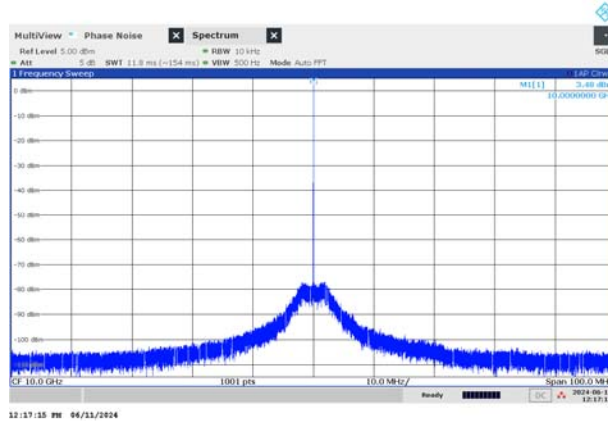
Spur @10.0GHz (Span 20.0GHz) ($T_A=+25^{\circ}\text{C}$)



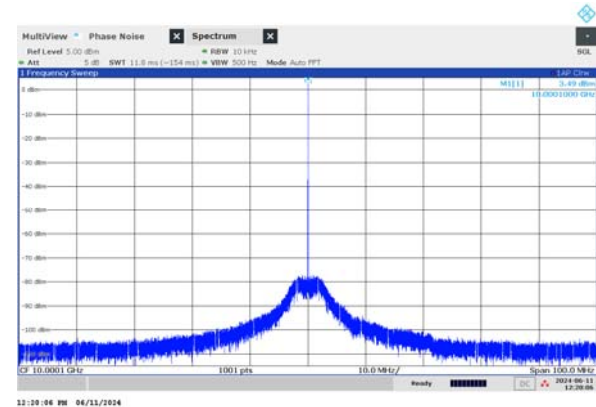
Spur @10.0GHz (Span 1.0GHz) ($T_A=+25^{\circ}\text{C}$)



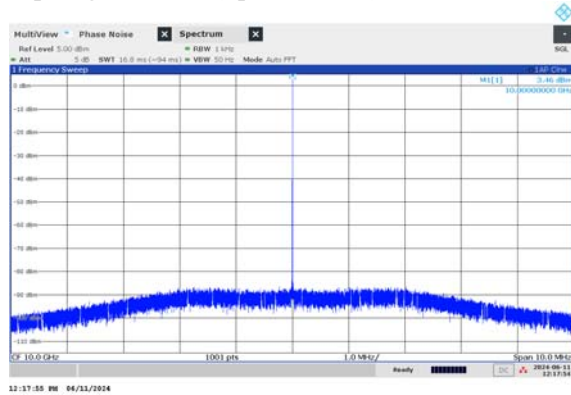
Spur @10.0GHz (Span 100MHz) ($T_A=+25^{\circ}\text{C}$)



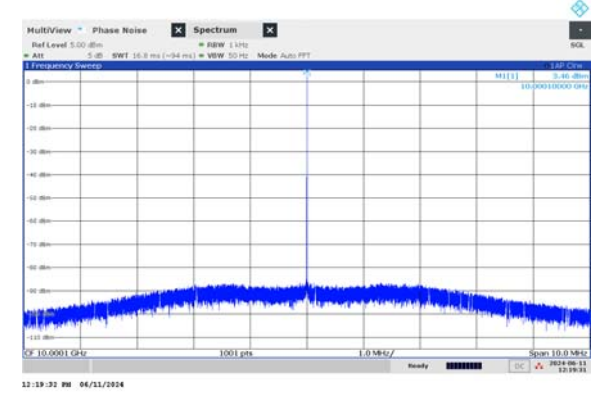
Spur@10.0GHz+100KHz (Span 100MHz) ($T_A=+25^{\circ}\text{C}$)



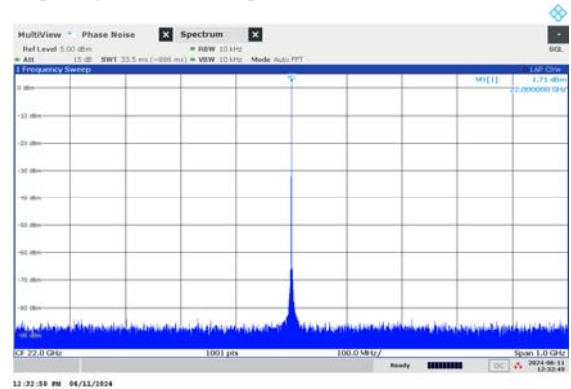
Spur @10.0GHz (Span 10MHz) ($T_A=+25^{\circ}\text{C}$)



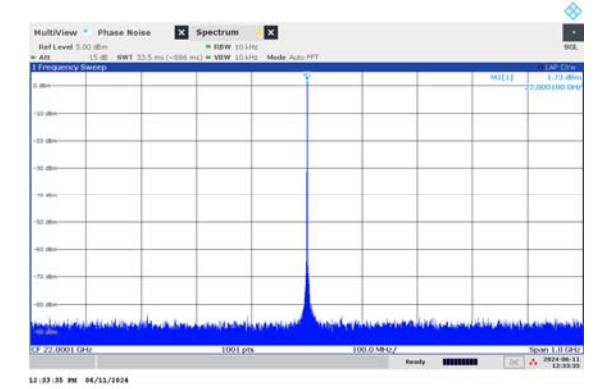
Spur@10.0GHz+100KHz(Span 10MHz)($T_A=+25^{\circ}\text{C}$)



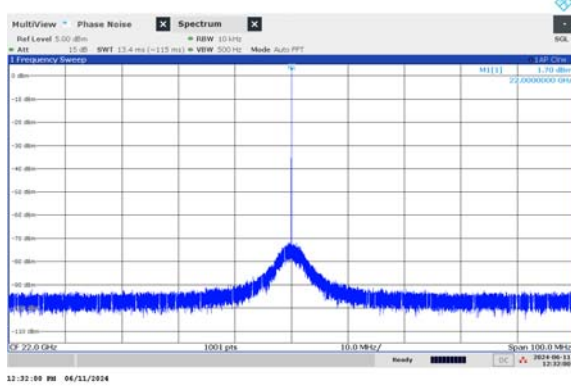
Spur @22.0GHz (Span 1GHz) ($T_A=+25^{\circ}\text{C}$)



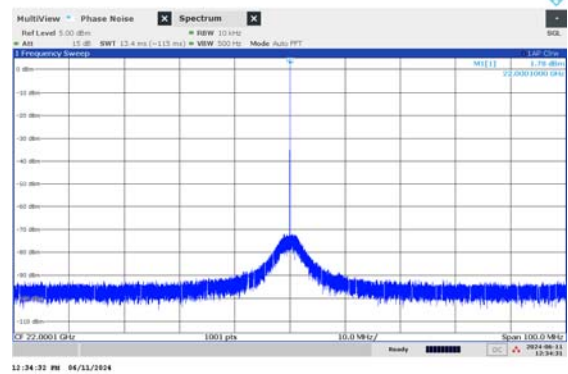
Spur@22.0GHz+100KHz (Span 1GHz) ($T_A=+25^{\circ}\text{C}$)



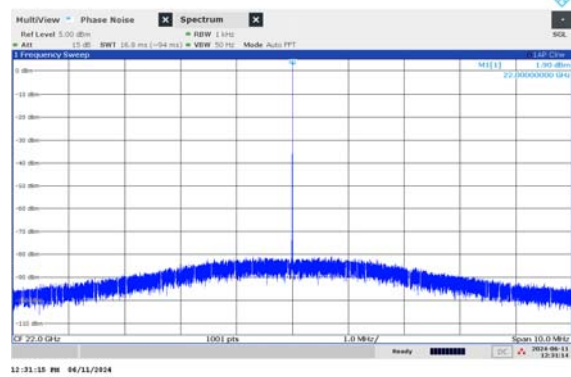
Spur @22.0GHz (Span 100MHz) ($T_A=+25^{\circ}\text{C}$)



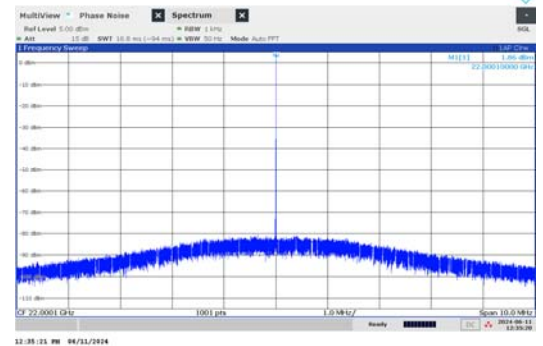
Spur@22.0GHz+100KHz (Span 100MHz)
($T_A=+25^{\circ}\text{C}$)



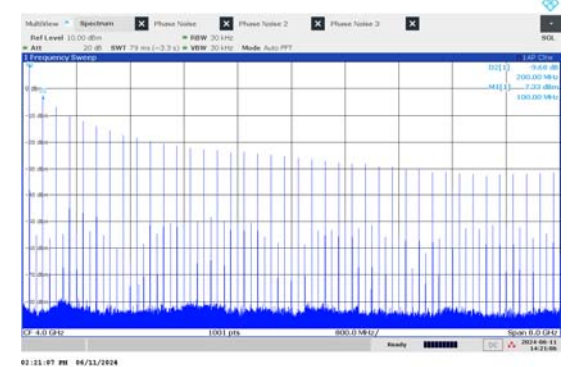
Spur @22.0GHz (Span 10MHz)($T_A=+25^{\circ}\text{C}$)



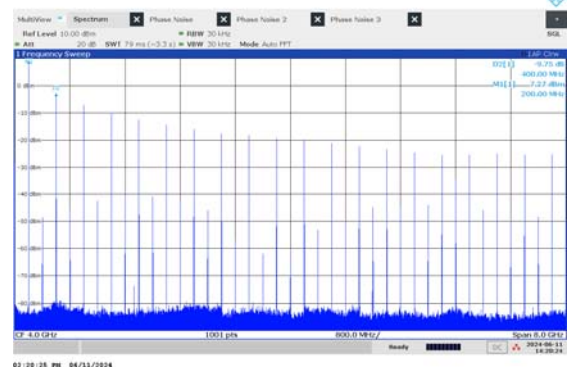
Spur@22.0GHz+100KHz (Span 10MHz)
($T_A=+25^{\circ}\text{C}$)



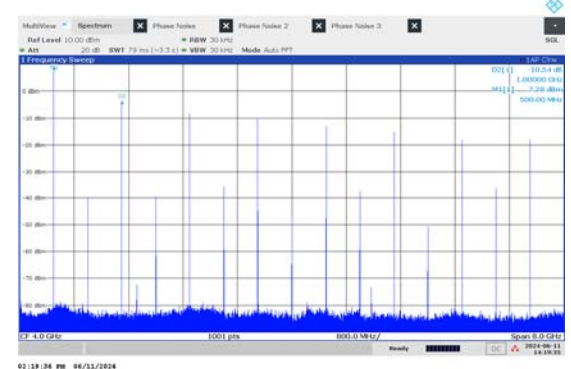
Harmonic@100Mz



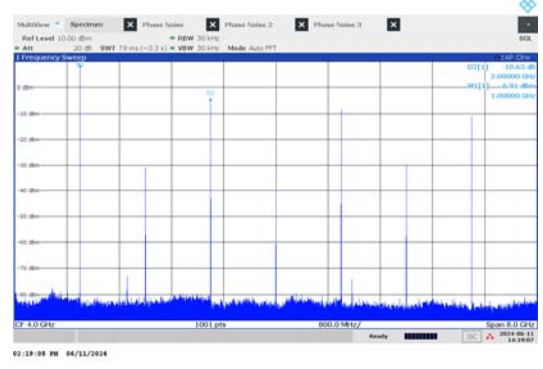
Harmonic@200MHz



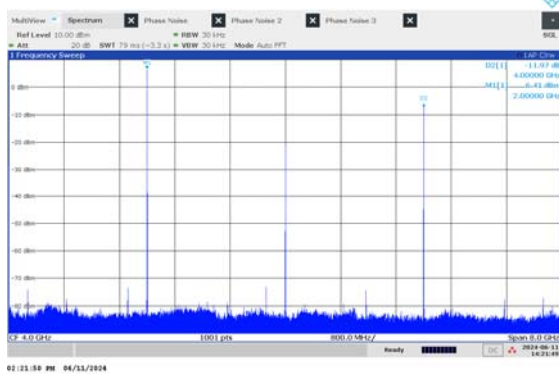
Harmonic@500MHz



Harmonic@1GHz



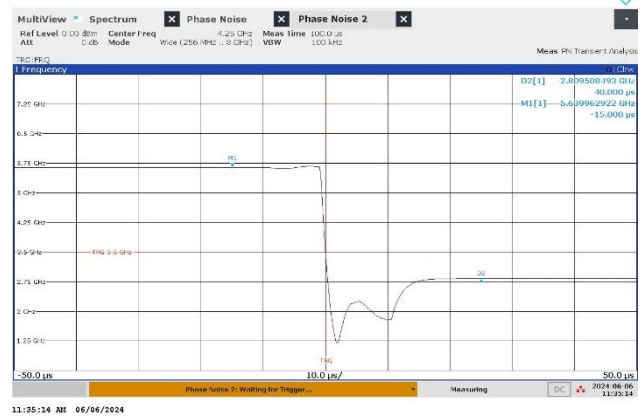
Harmonic@2GHz



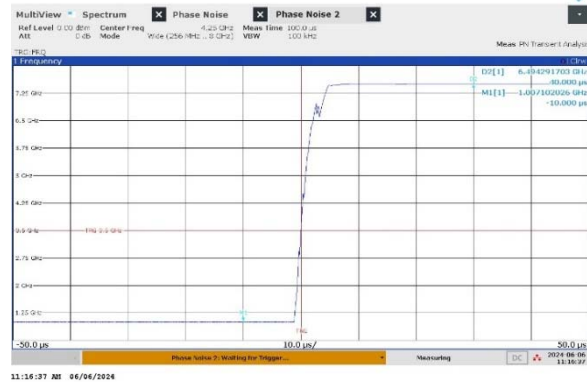
Frequency Setting time (5660MHz to 11280MHz) Test through Div-2



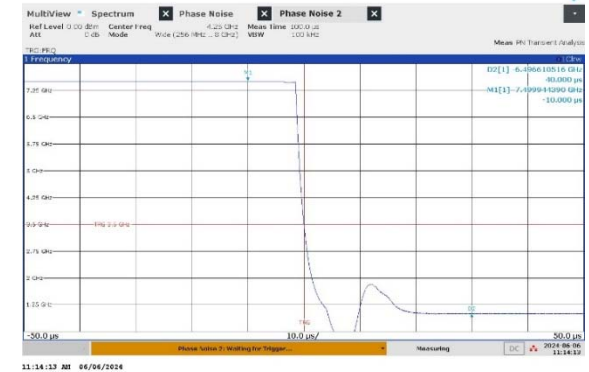
Frequency Setting time (11280MHz to 5640MHz) Test through Div-2



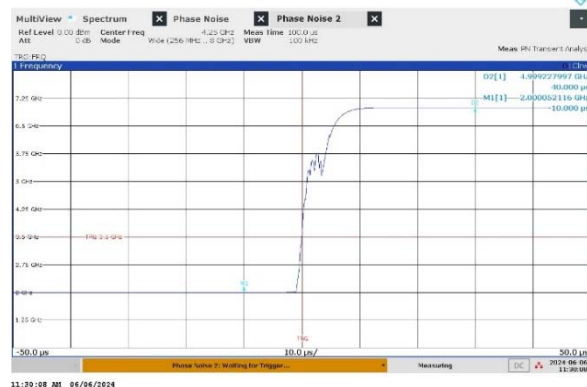
Frequency Setting time (1000MHz to 7500MHz)



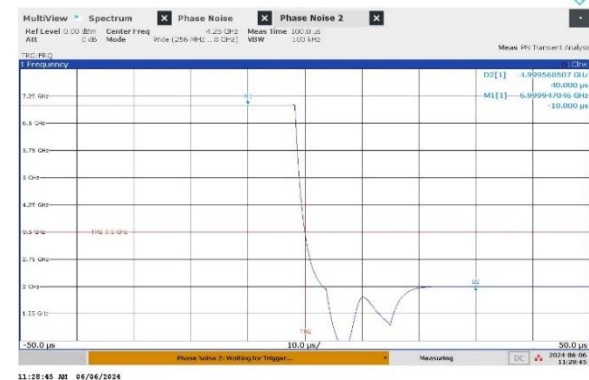
Frequency Setting time (7500MHz to 1000MHz)



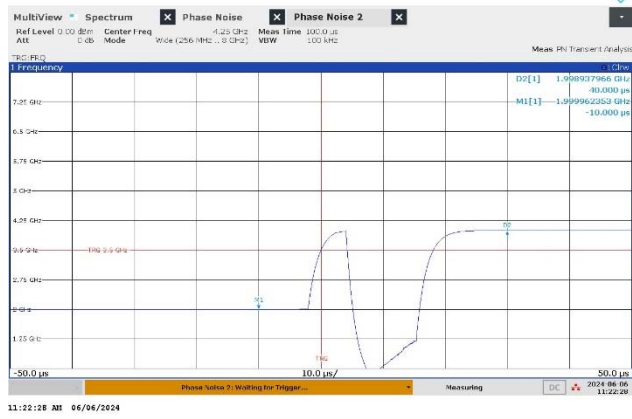
Frequency Setting time (2000MHz to 7000MHz)



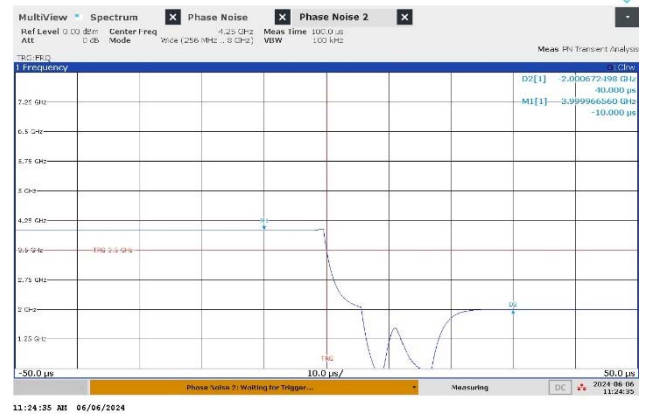
Frequency Setting time (7000MHz to 2000MHz)



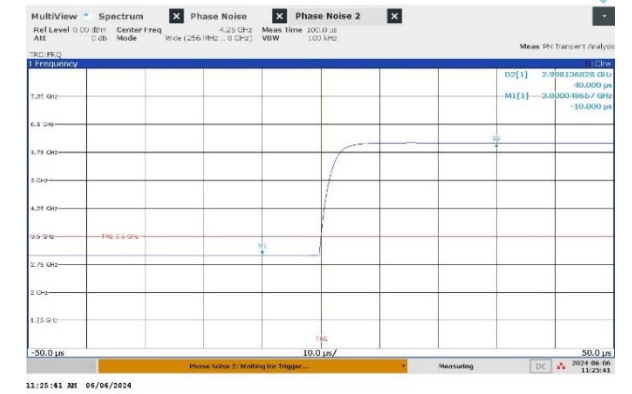
Frequency Setting time (2000MHz to 4000MHz)



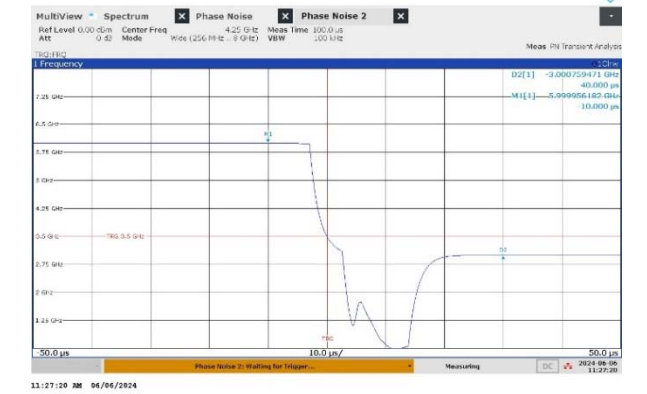
Frequency Setting time (4000MHz to 2000MHz)



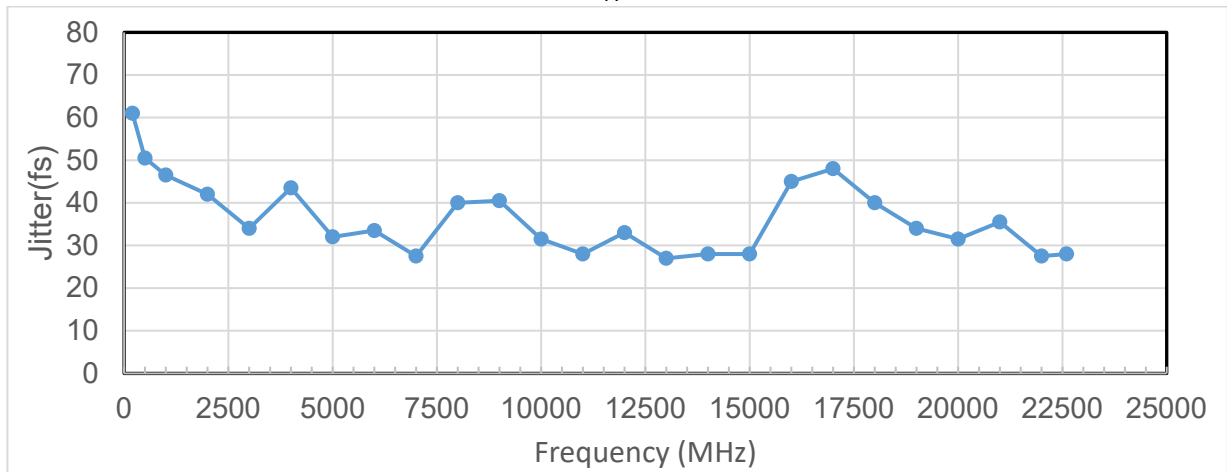
Frequency Setting time (3000MHz to 6000MHz)



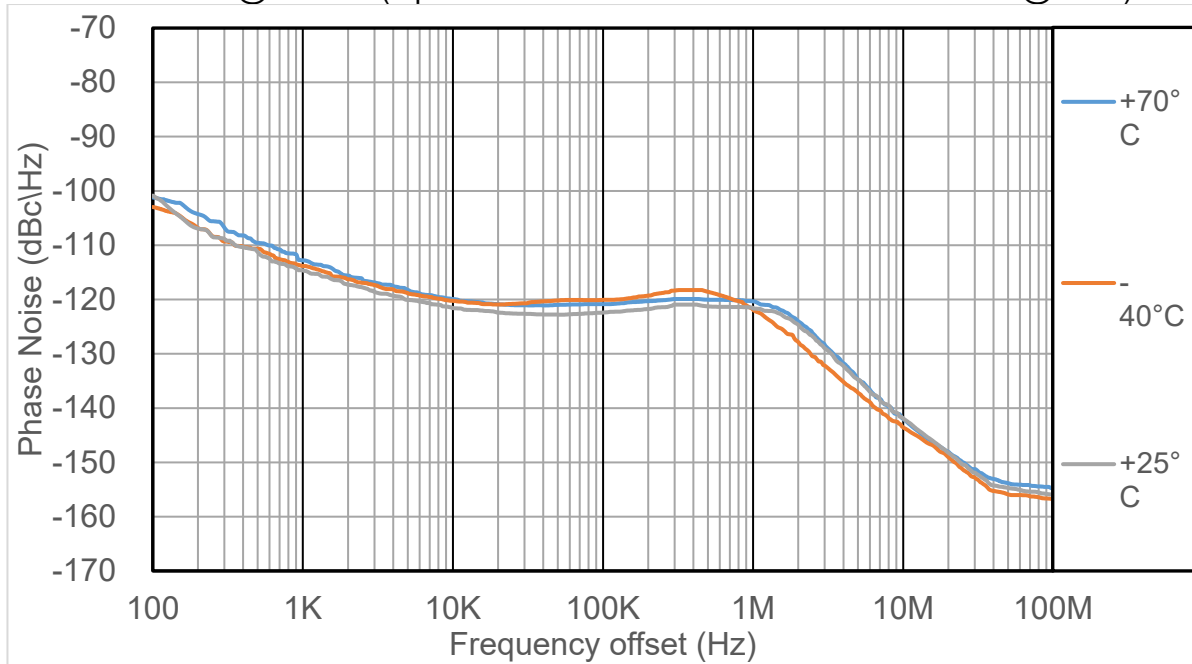
Frequency Setting time (6000MHz to 3000MHz)



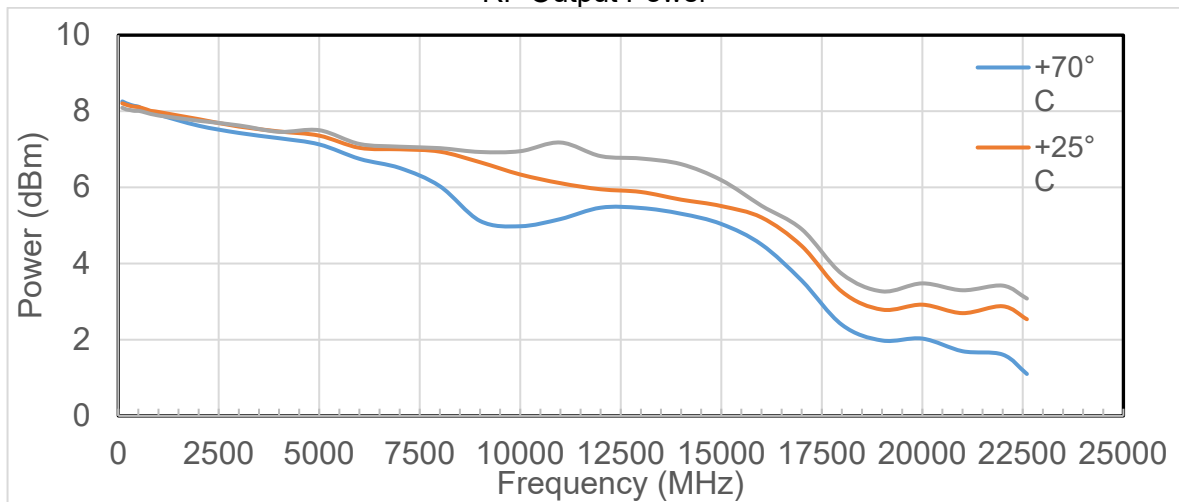
Jitter ($T_A=+25^{\circ}\text{C}$)



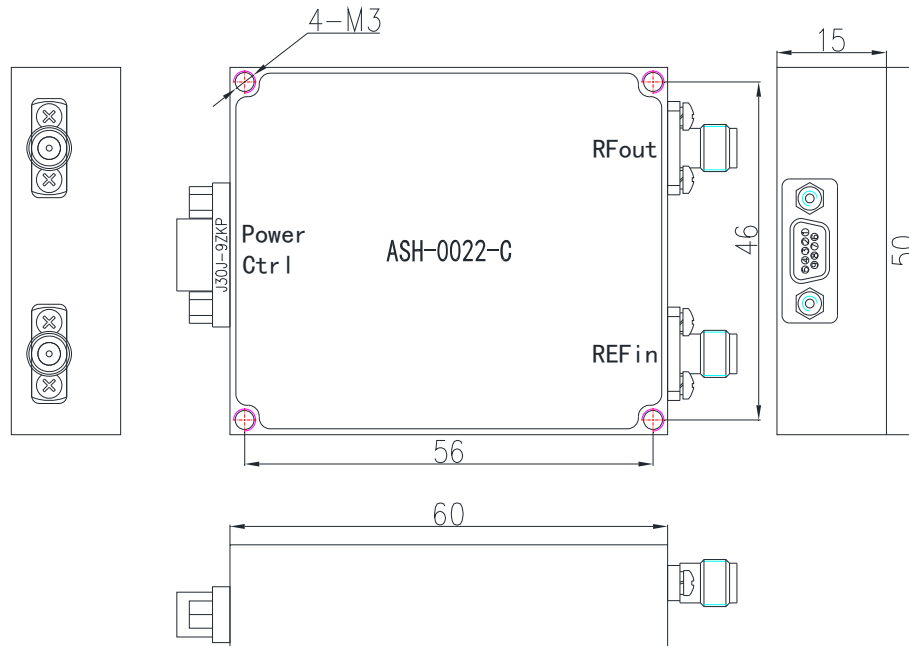
Phase Noise@11.2GHz(Input Clock Phase Noise better than -156dBc/Hz@1KHz)



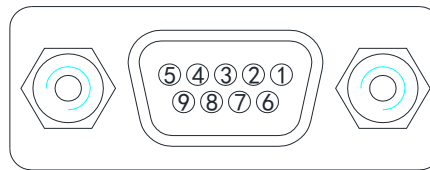
RF Output Power



OUTLINE AND INTERFACE



INTERFACE DEFINITION



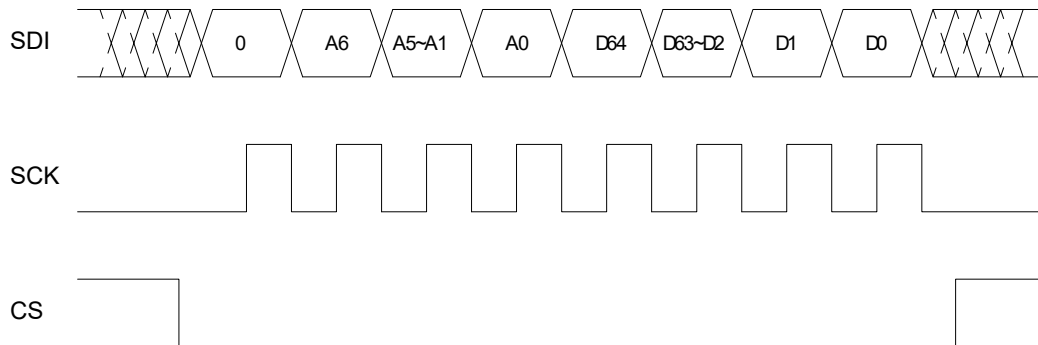
J30J-9ZKP Interface

No.	Symbol	Function	No.	Symbol	Function
1	LD	Lock Detect Out	6	Vin	Power Supply (12±6V, <0.9A@9V)
2	SCK	SPI Clock IN	7	Vin	
3	SDO	SPI Data Out(Reserved)	8	GND	Power Ground
4	CS	SPI Enable IN	9	GND	
5	SDI	SPI DATA IN	/	/	/

SPI COMMUNICATION PROTOCOL

4-Wire SPI Timing Diagram

Write :



Data Definition :

R/W	A6~A0	D63~D16	D15~D0	Data	Frequency
0	02	HEX(Freq./0.1Hz)	0000(Deserved)	02 00 00 3B 9A CA 00 00 00	100MHz
0	02	HEX(Freq./0.1Hz)	0000(Deserved)	02 00 0B A4 3B 74 00 00 00	5000MHz
0	02	HEX Freq./0.1Hz)	0000(Deserved)	02 00 17 48 76 E8 00 00 00	10000MHz