



Power Amplifier

Model: PA-20M-1G-20-L

0.02-1GHz 20W CW

Ultrabroad frequency range, high performance and exceptional RF characteristics

Features:

- Frequency range: 0.02-1GHz
- High output power at saturation, 20W Min.
- High gain, 43 dB Min.
- 50 Ohm Matched Input / Output.

Applications:

- Cellular
- PCN
- GSM
- ISM
- Lab Test

Product Overview:

The PA-20M-1G-20-L is a power amplifier with a minimum power gain of 43 dB and a minimum P_{sat} of 20W across the frequency range of 0.02 to 1GHz. The DC power requirement for the amplifier is +28 VDC/1 A. The input and output port configuration offers coax adapter structure with SMA female. And it has built-in protection functions included over TEM protection.



Electrical Specifications at 25°C:

Parameter	Min	Typ	Max	Units
Frequency range	0.02		1	GHz
Small Signal Gain	43	45		dB
Small Signal Gain Flatness		±2	±3	dB
Output P1dB		41		dBm
Output Psat	43	44		dBm
Harmonic		-10		dBc
Input VSWR		1.5	2	:1
DC Voltage		28	30	V DC
DC Supply Current		1	5	A
Impedance		50		Ohms

Mechanical Specifications:

ParameterKg	Value	Notes
Operating Temperature*	-40°C to +50°C	
Non-operating Temperature*	-50°C to +60°C	
Relative humidity	95%	
RF Input/Output Connector	SMA Female/SMA Female	
DC Bias	DSUB-9	
Altitude	10,000	feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis	
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions	
Dimensions W x H x D	170*80*20(Without Heatsink) 264*140*82(With Heatsink)	mm
Weight	3.7	Kg

*Note: For a wider temperature range, please consult the manufacturer.

Absolute Maximum Ratings:

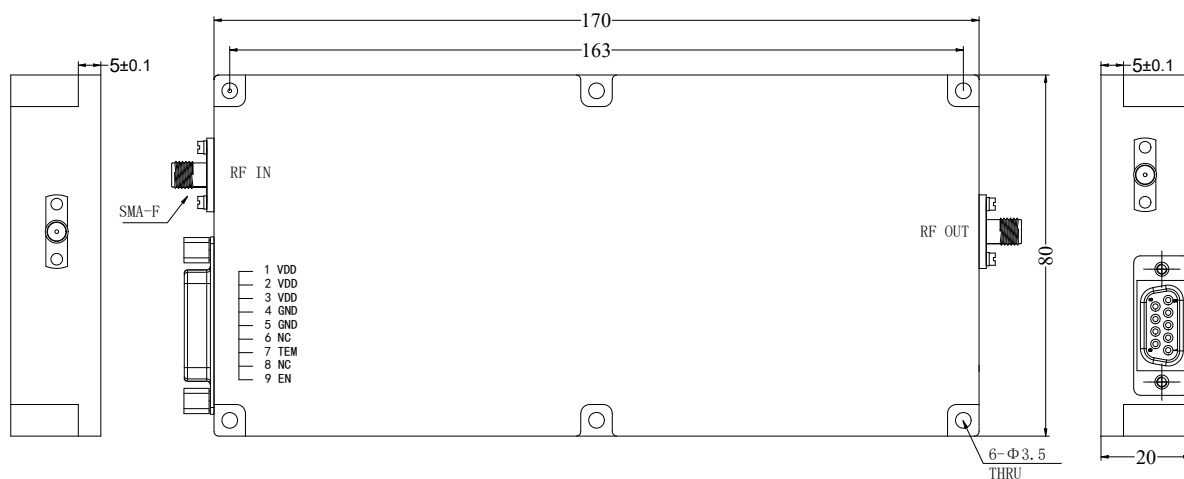
Parameter	Value
Supply Bias Voltage	+30 V
RF Input Power	+5 dBm
ESD sensitivity (HBm)	Class 0, passed 150V



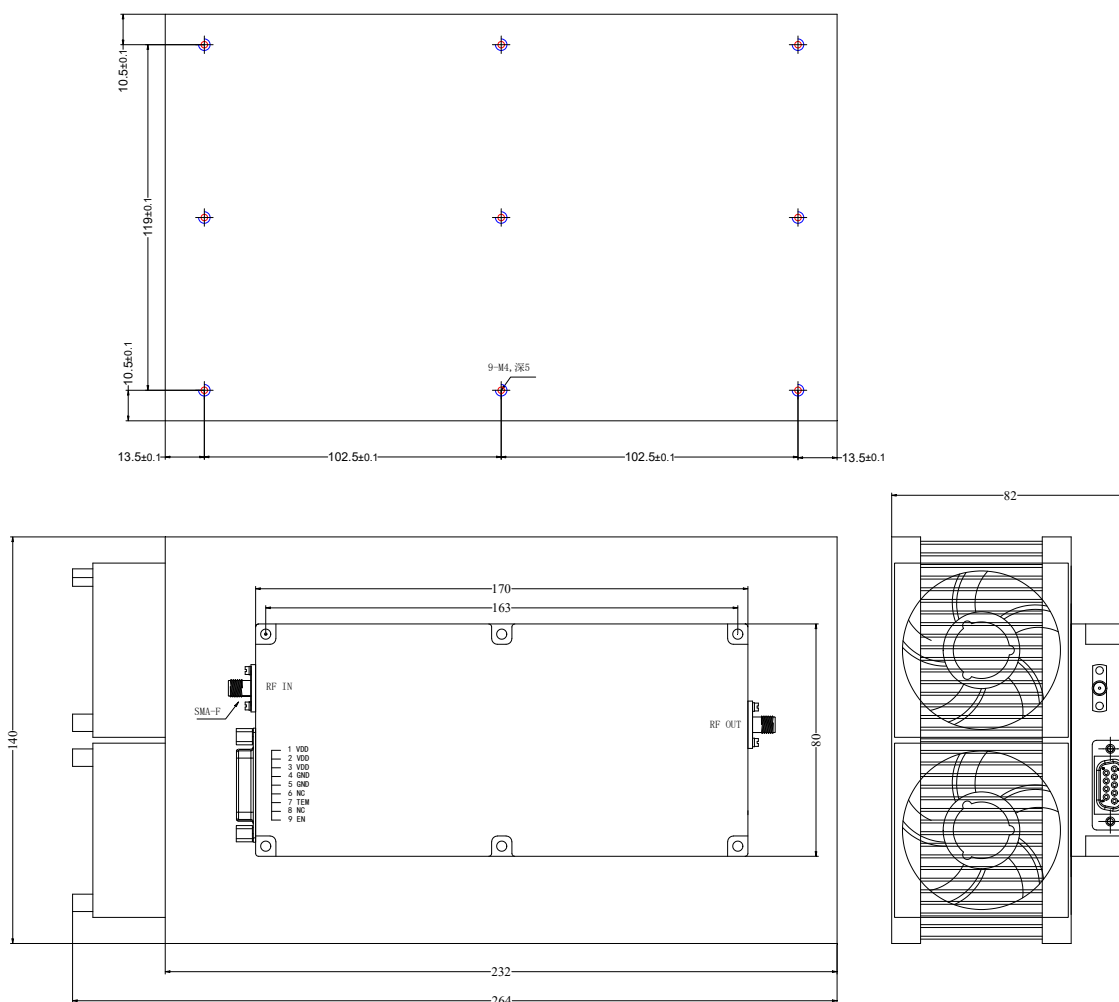
Outline Drawing:

Unit:mm

PA-20M-1G-20-L



PA-20M-1G-20-L-HS





Fans Supply Current:

Fan power supply	
Red line	Power supply positive,+24 VDC DC current: 0.3A
Black line	Ground

DC Supply Connector(DSUB-9 Female):

Pin	Name	Function
1	+28V	+26.0-30.0VDC
2	+28V	+26.0-30.0VDC
3	+28V	+26.0-30.0VDC
4	GND	Ground
5	GND	Ground
6	NC	Not connected
7	Over TEM	When the temperature of the case exceeds 85 °C, the power amplifier will turn off and this pin will be pulled high. If the temperature of case drops to 70 °C, the power amplifier will return to normal operation, and this pin will be pulled low.
8	NC	Not connected
9	EN	Amplifier Enable: TTL High (5V) (Internally Pulled-High) Amplifier Disable: Short to ground

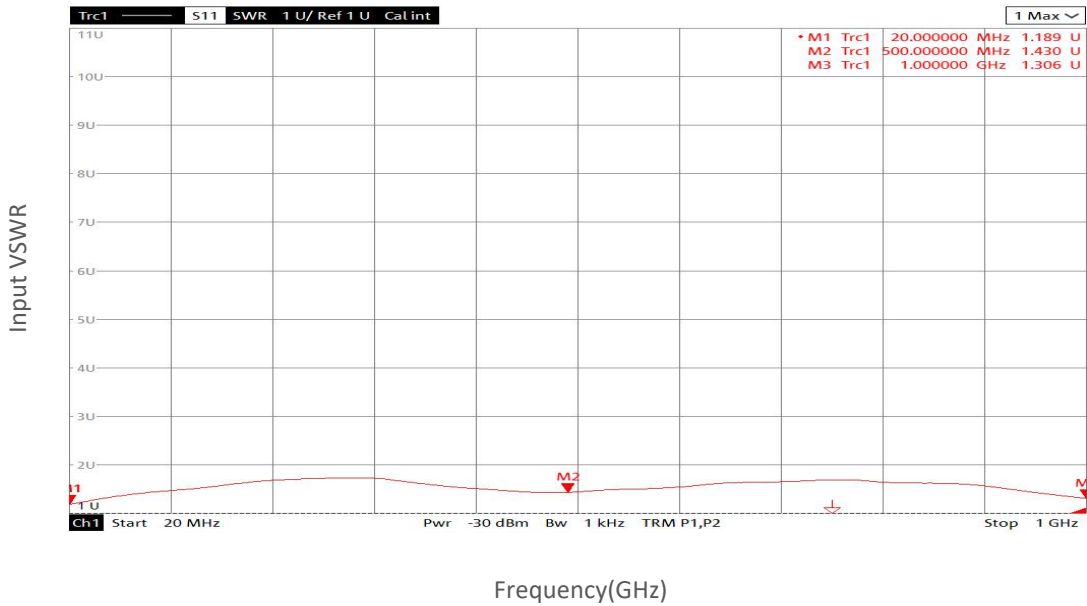
Ordering Information:

Base Number	Description	Optional
PA-20M-1G-20-L	Power Amplifier,0.02-1GHz, Gain:43dB,Psat:20W,+28V DC	Without Heatsink
PA-20M-1G-20-L-HS	Power Amplifier,0.02-1GHz, Gain:43dB,Psat:20W,+28V DC	With Heatsink

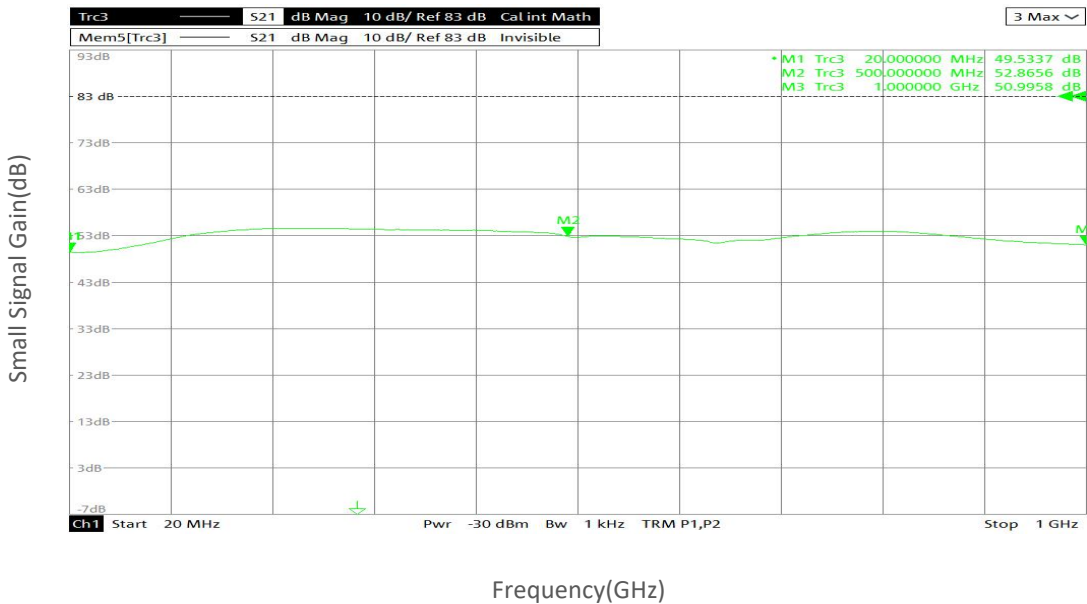


Typical Performance Data:

Input VSWR vs Frequency



Small Signal Gain vs Frequency

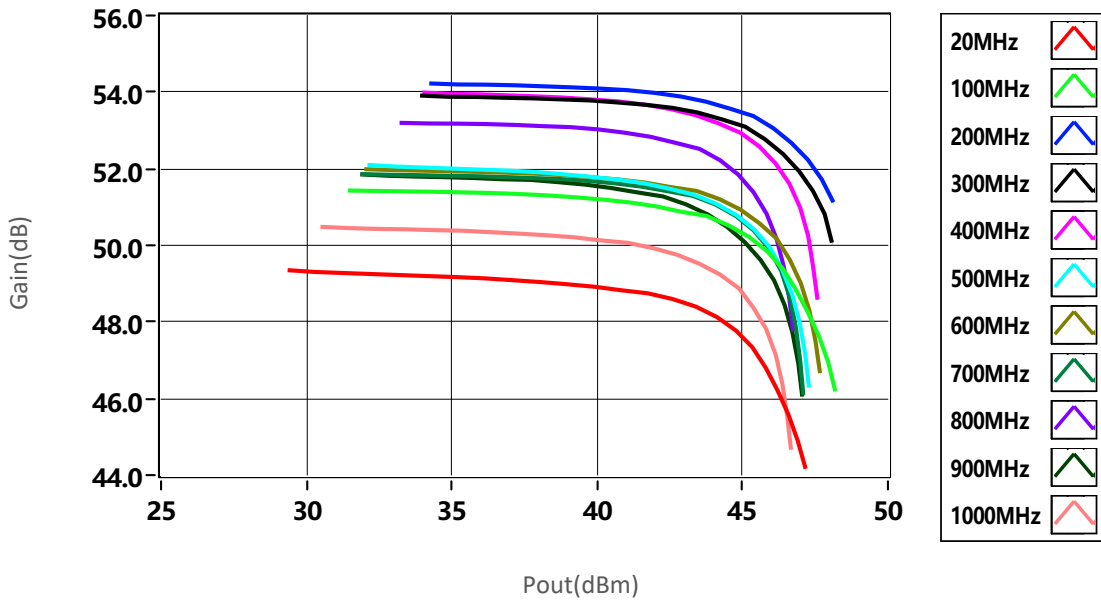


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

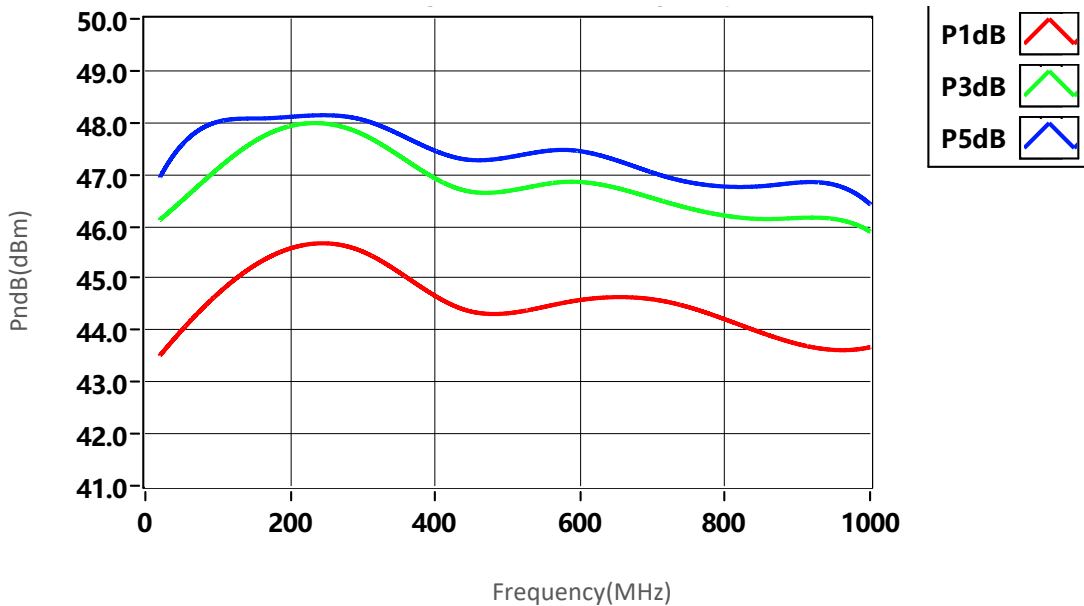


Typical Performance Data:

Gain vs Output Power



PndB vs Frequency

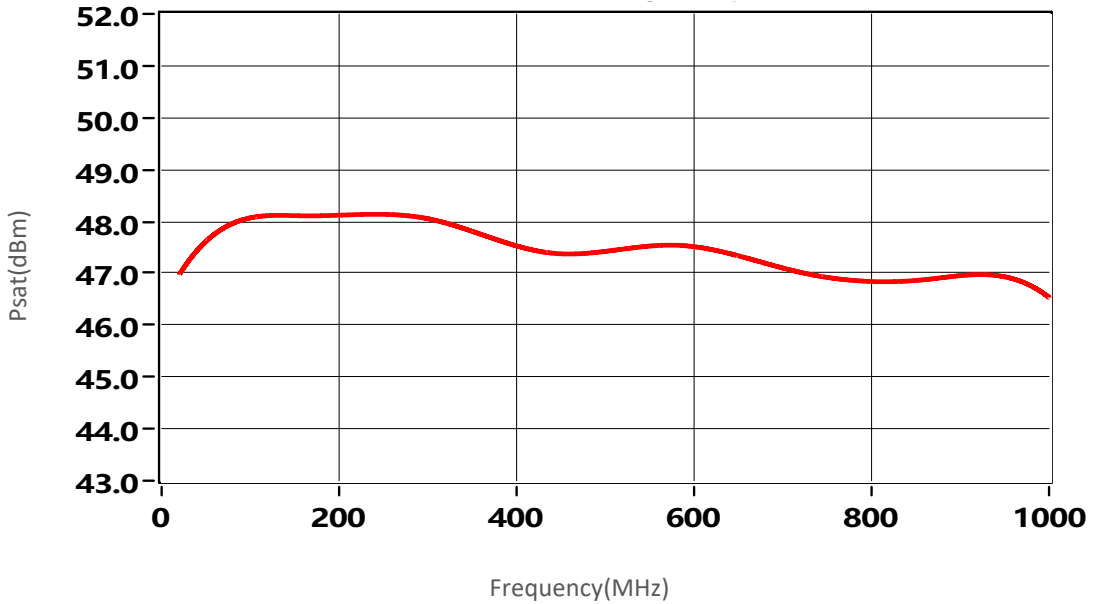


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

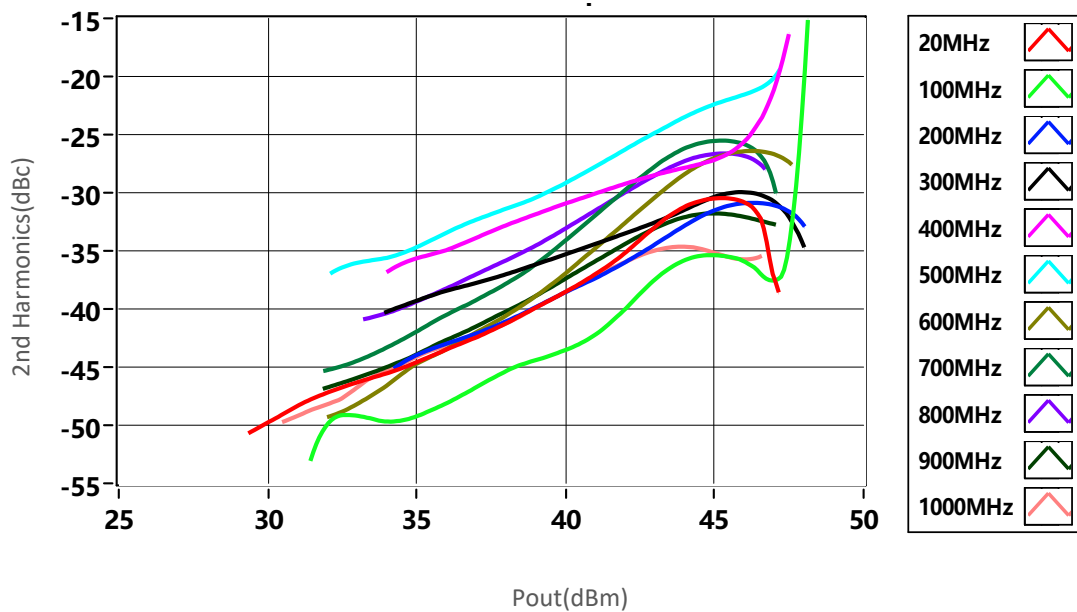


Typical Performance Data:

Psat vs Frequency



2nd Harmonics vs Output Power

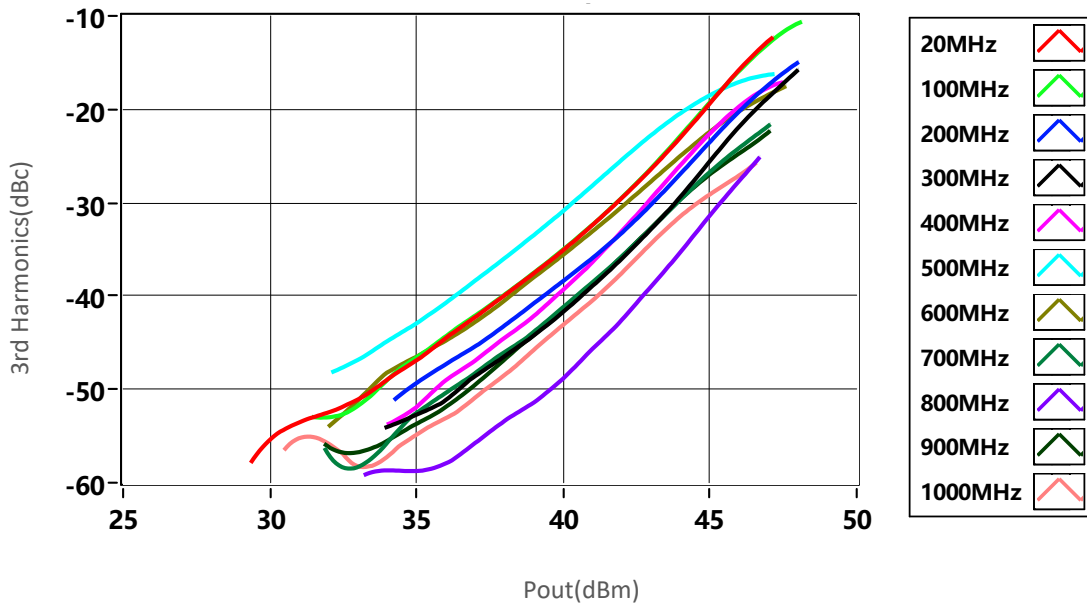


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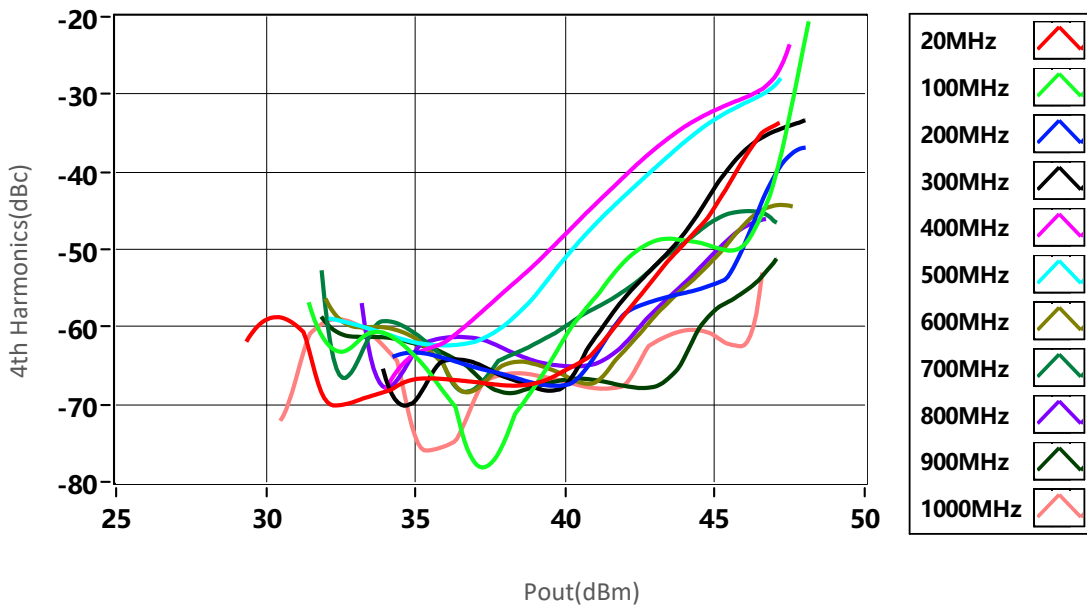


Typical Performance Data:

3rd Harmonics vs Output Power



4th Harmonics vs Output Power



Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.