High Power Amplifier

Model:RPA-2G-18G-400-P

2-18GHz 400W Pulse

Ultrabroad frequency range, high performanceand exceptional RF characteristics

Features:

- Frequency range: 2-18GHz
- High output power at saturation, 56dBm Min
- High gain, 56dB Min
- Operates from AC line power: 220V

Applications:

- Laboratory test instrument
- RF Power stress test
- EMI and antenna testing
- Reliability testing

Product Overview：

The RPA-2G-18G-400-P is a high power, rack mount amplifier with a self-contained AC power supply which can be used for a wide variety of laboratory testing applications. This rugged amplifier is capable of amplifying signals up to 400W output power over its entire operating bandwidth of 2 to 18GHz. The control functions RPA-2G-18G-400-P possesses include the on/off of the power supply. Built-in safety features include fans alarms and automatic shut down mechanism to prevent damage in the event of excessive internal temperatures. The amplifier's output stage is further protected in the event of a fault condition, allowing high power operation for up to 5 minutes into an open or short load (refer to the maximum input power specifications). And it has built-in protection functions inculded over TEM, over voltage, over current and over VSWR protection. It can also be remotely controlled via RS422 or LAN.

Electrical Specifications at 25℃:

Parameter	Symbol	Min	Typ	Max	Units
Frequency range	BW	2-18			GHz
Working Mode	MOD	PULSE ONLY			
PowerGain	GP	56			dB
Gain flatness	ΔGL		±3		dB
Output Psat	Psat	56			dBm
Spurious@Pout=400W	Spur			-55	dBc
Harmonics@Pout=400W	HAM		-15	-10	dBc
Modulation Signal Level	TTL	0		5	V
Modulation Frequency	MF	1		100	KHz
Pulse Width	T	0.3		500	us
Duty Cycle	τ	0.1		20	%
Rise/Fall Time	Tr		50	100	ns
Pulse Input	TTL level, 50 ohm nominal termination				
Pulse Drop@T=100us	Pdrop		0.5	1	dB
Star Delay	DSU		150		ns
Shutoff Delay	TOF		250		ns
Input VSWR	VSWR		1.5	2	:1
AC Voltage	Vac	220 VAC(±10%), Single phase, 50Hz(±10%)			V AC
Power consumption@20%	Pdiss	700/1200			W
Output power control (Power Variation)	OPC		20		dB
Impedance	I/O-IMP	50			Ohms

Mechanical Specifications:

Parameter	Value	Notes
Operating Temerature*	-20 to +40	℃
Non-operating Temperature*	-30 to +50	℃
Relative humidity	95	%
RF Input/Output Connector	N Female/N Female	

Parameter	Value	Notes
Forward/Reverse Coupling Connector	SMA Female/SMA Female	
Front Panel LCD Screen Display	7 inch LCD Screen Display	
Pulse Input Connector	BNC Female	
Communication Connector	DB9/RJ-45	
Digital Monitor & Control	RS422;LAN	
Cooling	Front to back forced air cooling fans makes this ideal for usage in test equipment racks	
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	19 Inch 8U*800 depth	mm
Weight	≤100	Kg

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

Absolute Maximum Ratings:

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

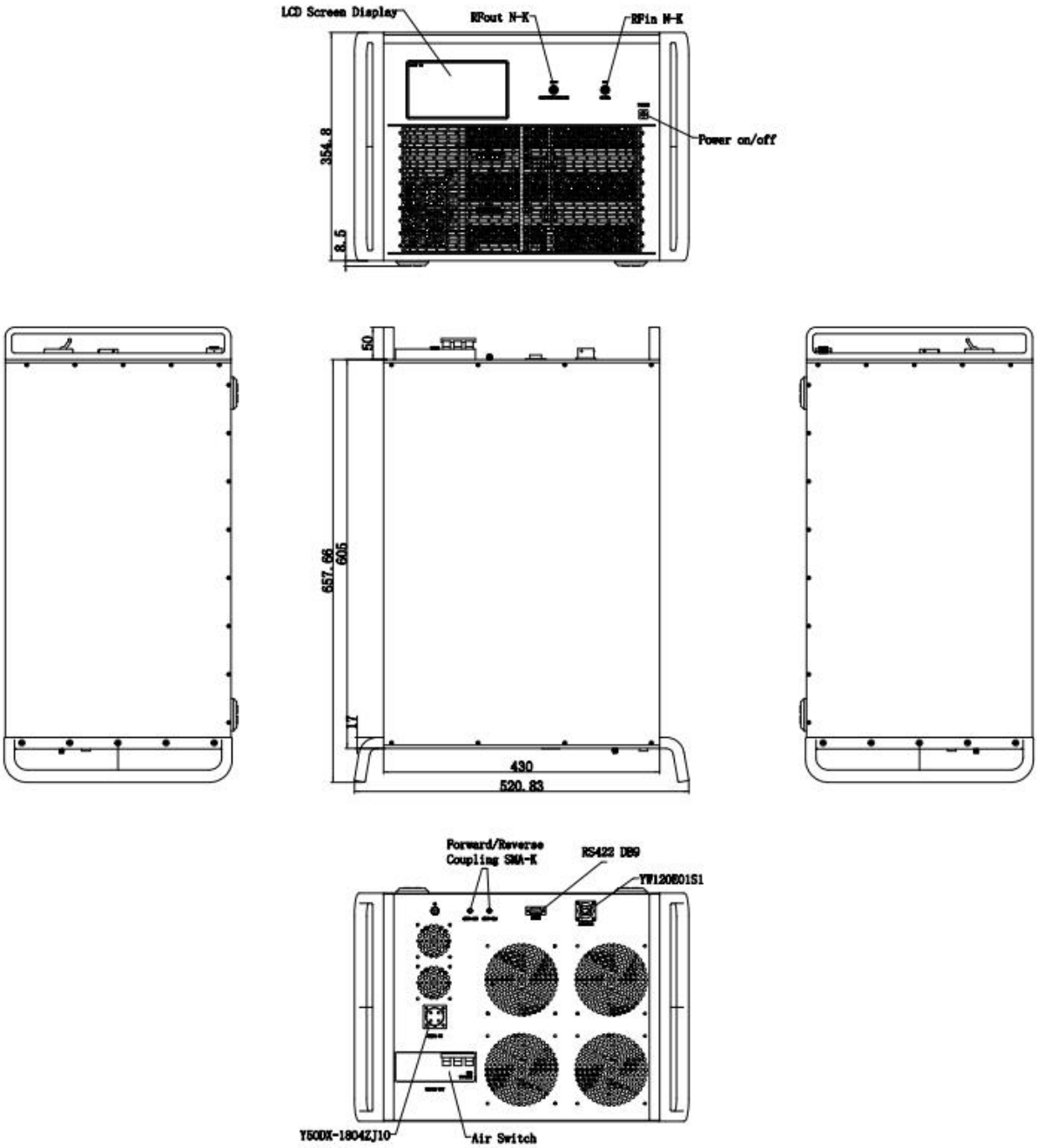
Optional items:

Number	Parameter
1	LCD display touchscreen
2	Ingress protection grad
3	Customized operating temperature range
4	Built in Cooling system(air or liquid)
5	Types of RF,coupling and monitor&control interfaces

Outline Drawing:

Unit:mm

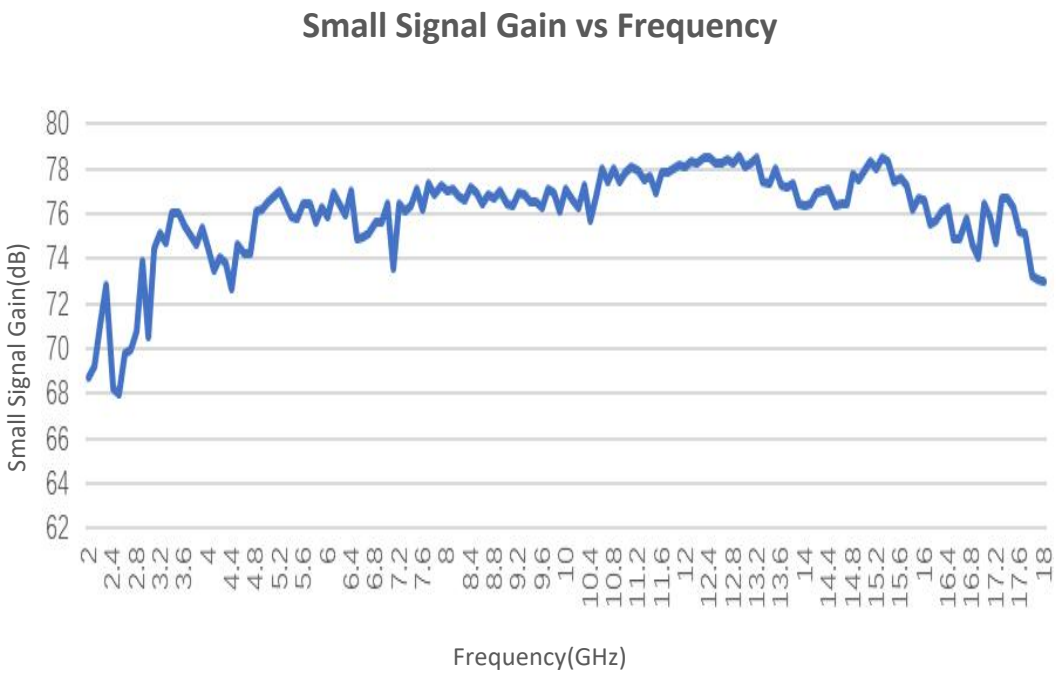
RPA-2G-18G-400-P



Outline Drawing:

Base Number	Description	Optional
RPA-2G-18G-400-P	High Power Amplifier, 2-18GHz, 400W Pulse, Built in air or liquid cooling, without LCD and IP grad.	Basic version
RPA-2G-18G-400-P-M	High Power Amplifier, 2-18GHz, 400W Pulse, Built in air or liquid cooling, with LCD.	Add LCD display touchscreen
RPA-2G-18G-400-P-IPxx	High Power Amplifier, 2-18GHz, 400W Pulse, Built in air or liquid cooling, with LCD and IP grad.	Add Ingress protection grad

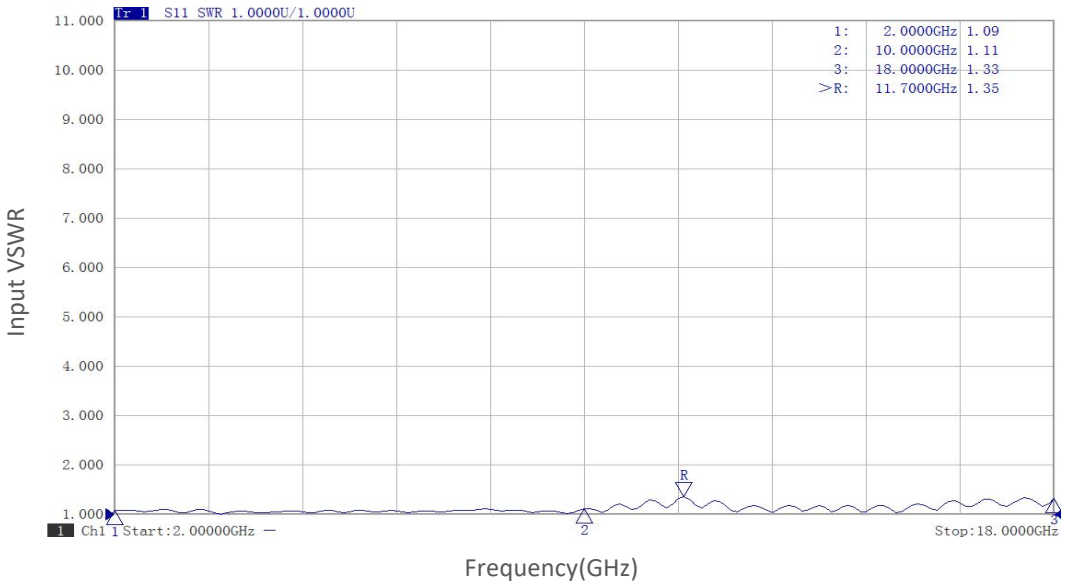
Typical Performance Data:



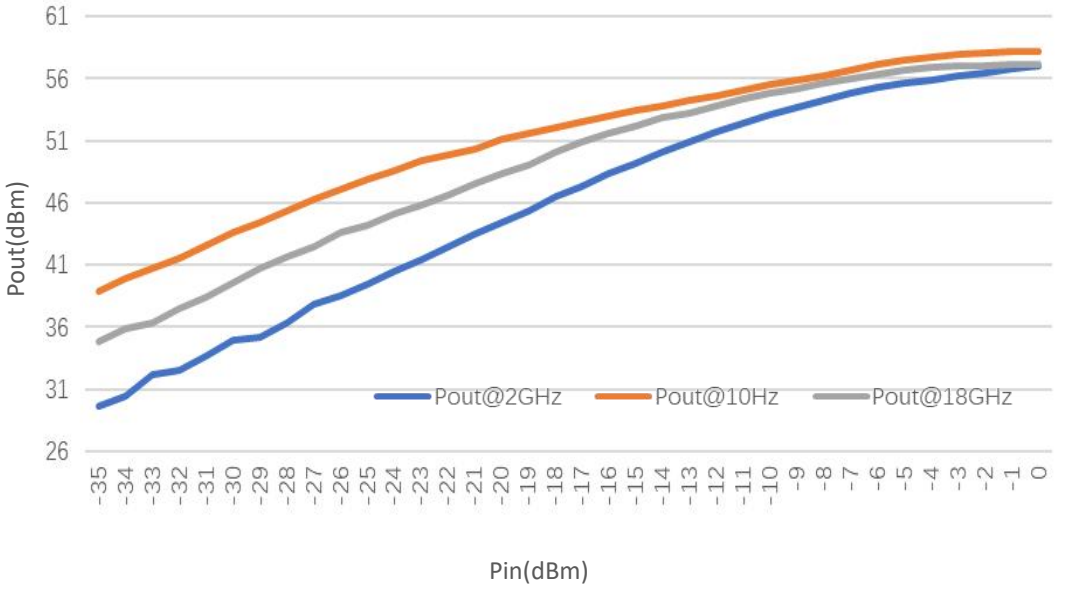
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

Input VSWR vs Frequency

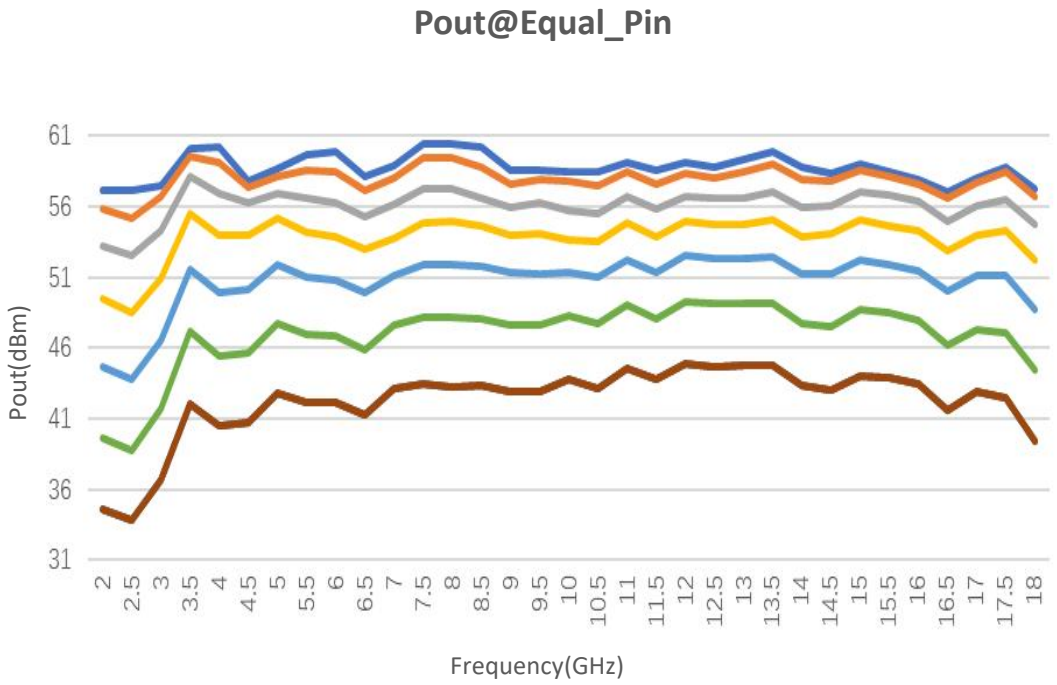


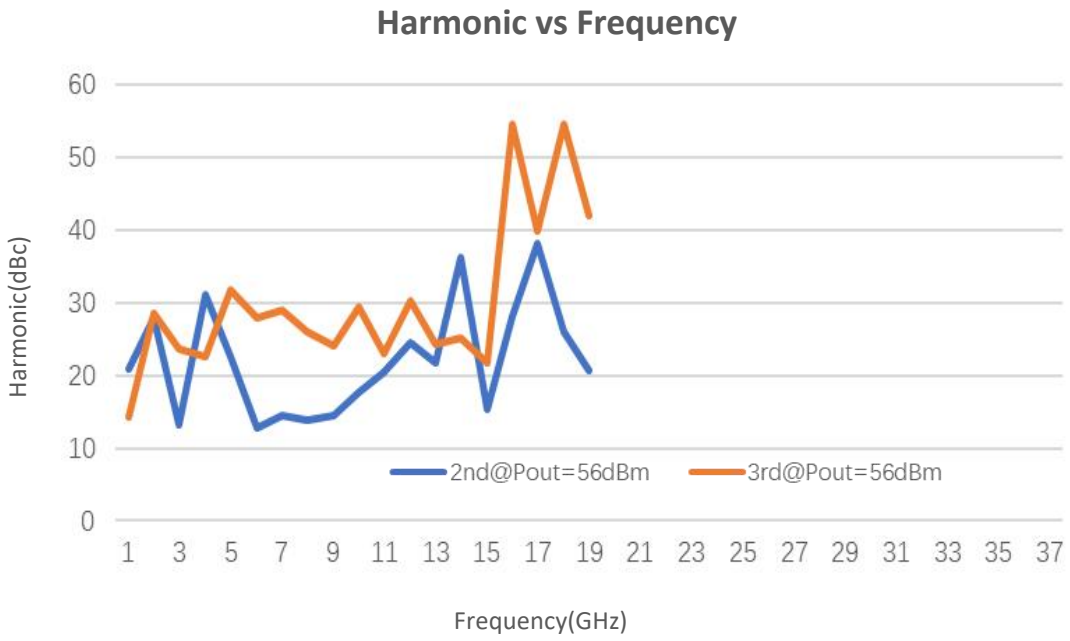
Pout@Pin



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:

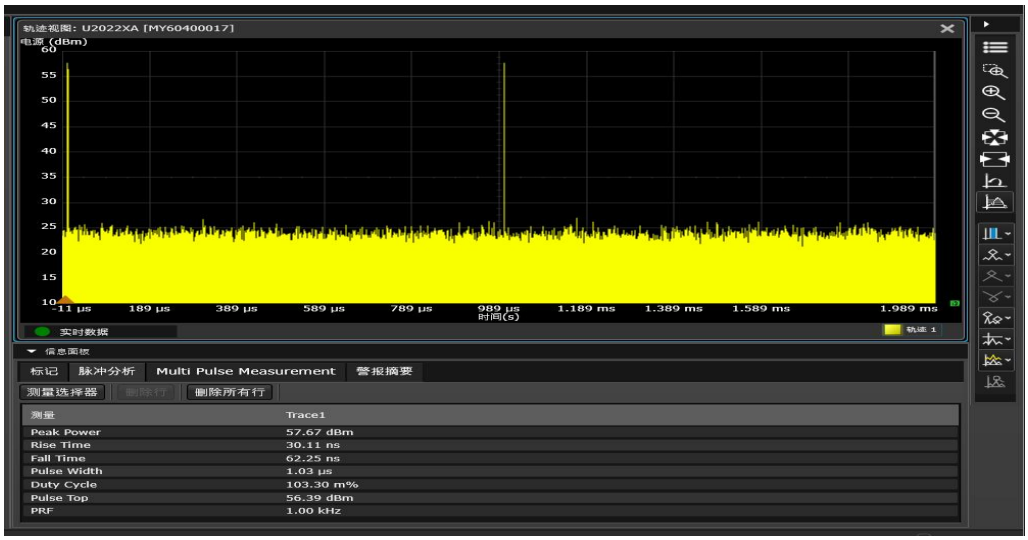




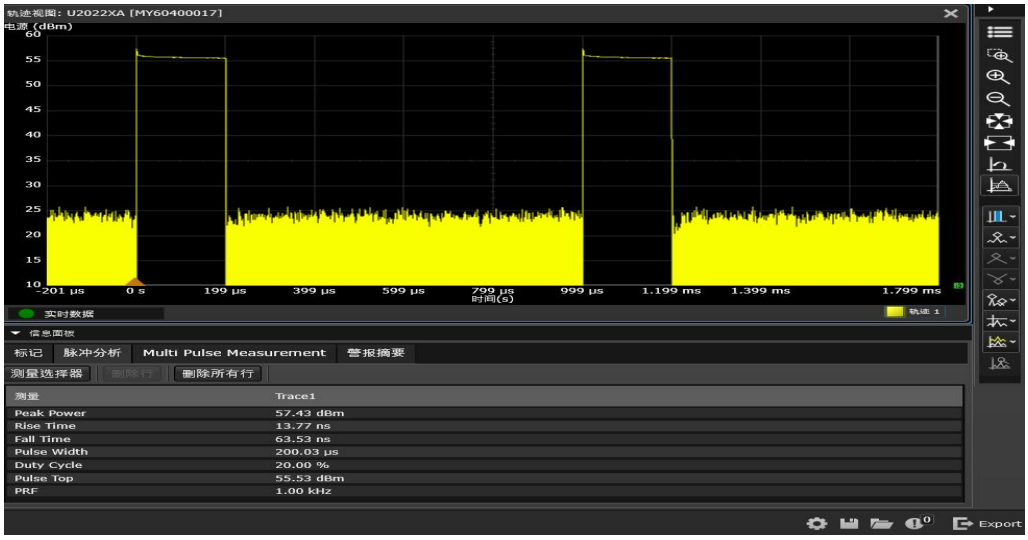
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

Rise/Fall Time @1KHz_0.1% Duty Cycle



Rise/Fall Time @1KHz_20% Duty Cycle



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:

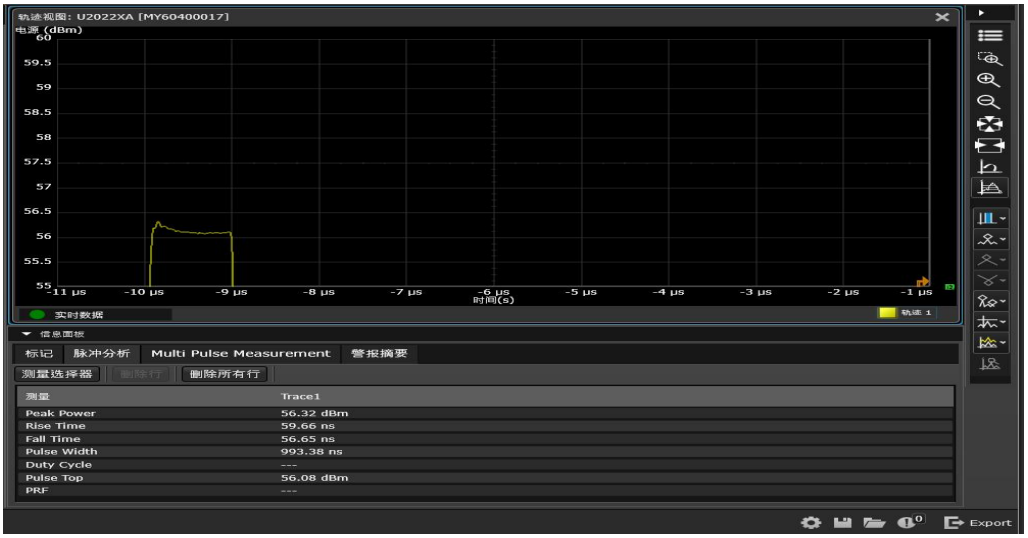
Rise/Fall Time @100KHz_3% Duty Cycle

Rise/Fall Time @100KHz_10% Duty Cycle

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:

Pulse Drop @100KHz_10% Duty Cycle

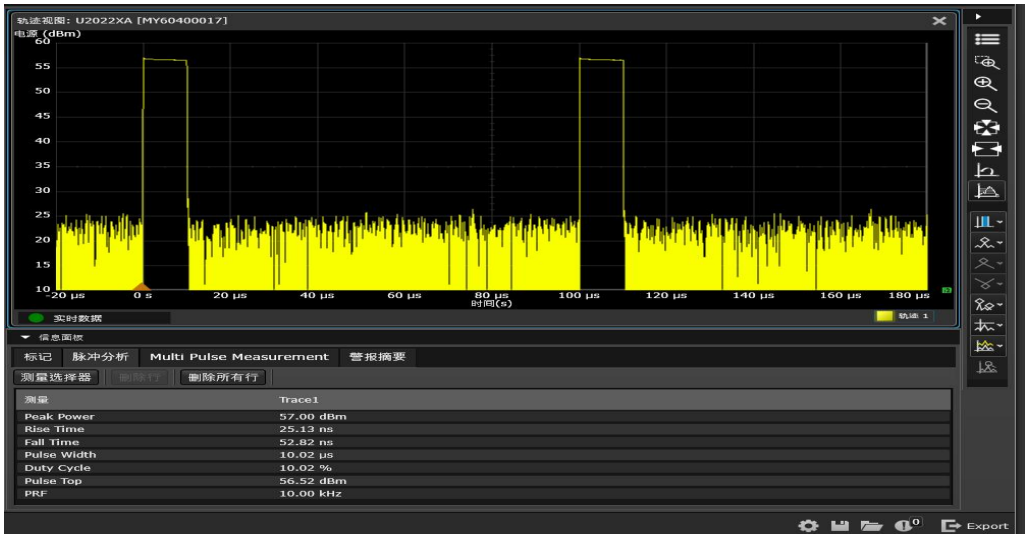


Rise/Fall Time @100KHz_20% Duty Cycle

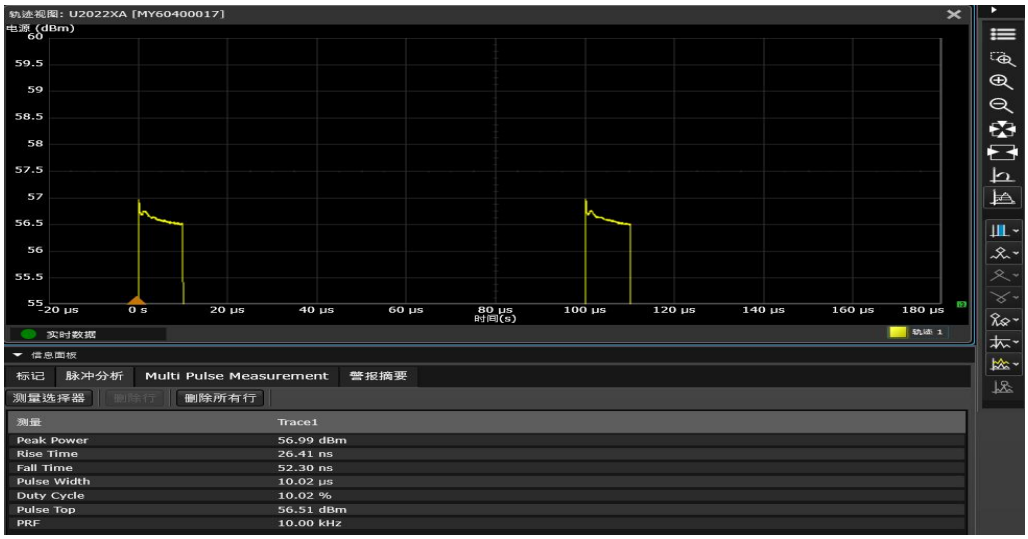
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

Rise/Fall Time @10GHz_10KHz_10% Duty Cycle



Pulse Drop @10GHz_10KHz_10% Duty Cycle

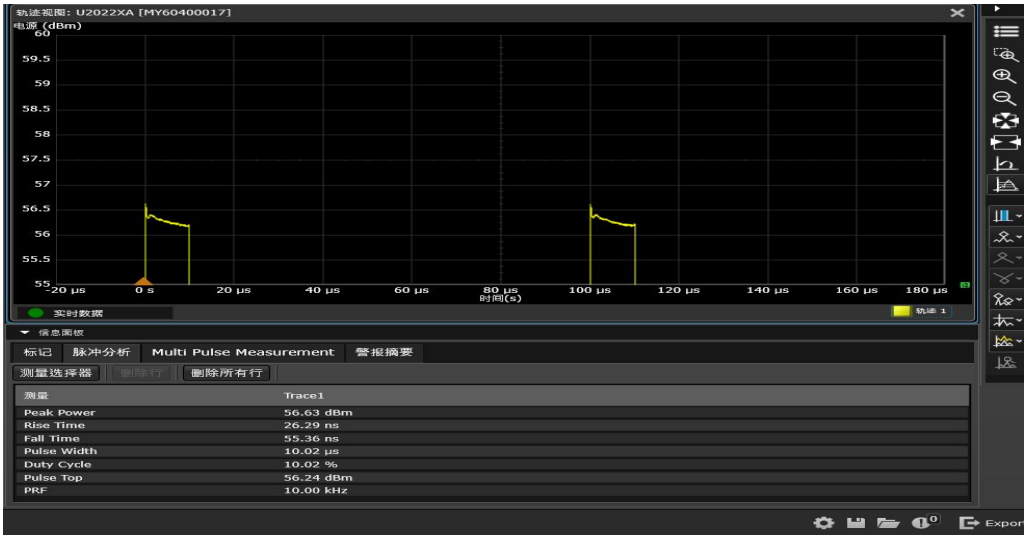


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

Rise/Fall Time @18GHz_10KHz_10% Duty Cycle

Pulse Drop @18GHz_10KHz_10% Duty Cycle



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.