

Solid State High Power Amplifier Systems

0.03-1GHz/45dB Gain/45dBm Psat/220V AC

Model: TLPA30M1G-45-45-BC

TLPA30M1G-45-45-BC is a solid state high power amplifier systems provides high output power and high gain across the 30MHz to 1GHz frequency range. The amplifier features a built-in 220V power supply, making it easy to use in most lab environments. This model features thermal self protection, preventing damage to the amplifier and providing added reliability.

Features:

- Frequency range: 30MHz-1GHz
- Gain: 45dB Min
- Psat Output Power: 45dBm Min
- Protection: Over TEM, over voltage, over current, over VSWR protection
- 50 Ohm Matched Input / Output



Electrical Characteristics:

Parameter	Symbol	Min	Typ	Max	Units
Frequency range	BW	30MHz-1GHz			
Power Gain	GP	45	47		dB
Gain flatness	Δ GL		± 2	± 3	dB
Gain adjust Range	Δ GR		30		dB
Gain adjust Step	Δ GS		0.5		dB
Output P1dB	P1dB		42		dBm
Output Psat	Psat	45	46		dBm
Spurious	Spur			-60	dBc
Harmonics	HAM			-10	dBc
Input VSWR	VSWR _{in}		1.5	2	:1
AC Voltage	V _{ac}	110	220		V AC
AC Supply Current	I _{ac}		1.5		A
Impedance	I/O-IMP	50			Ohms

Mechanical Specifications:

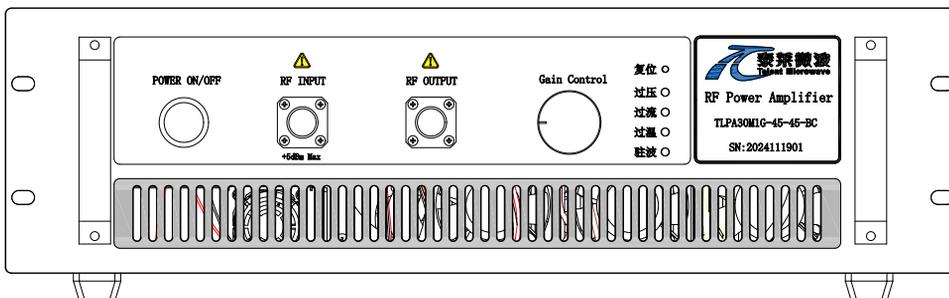
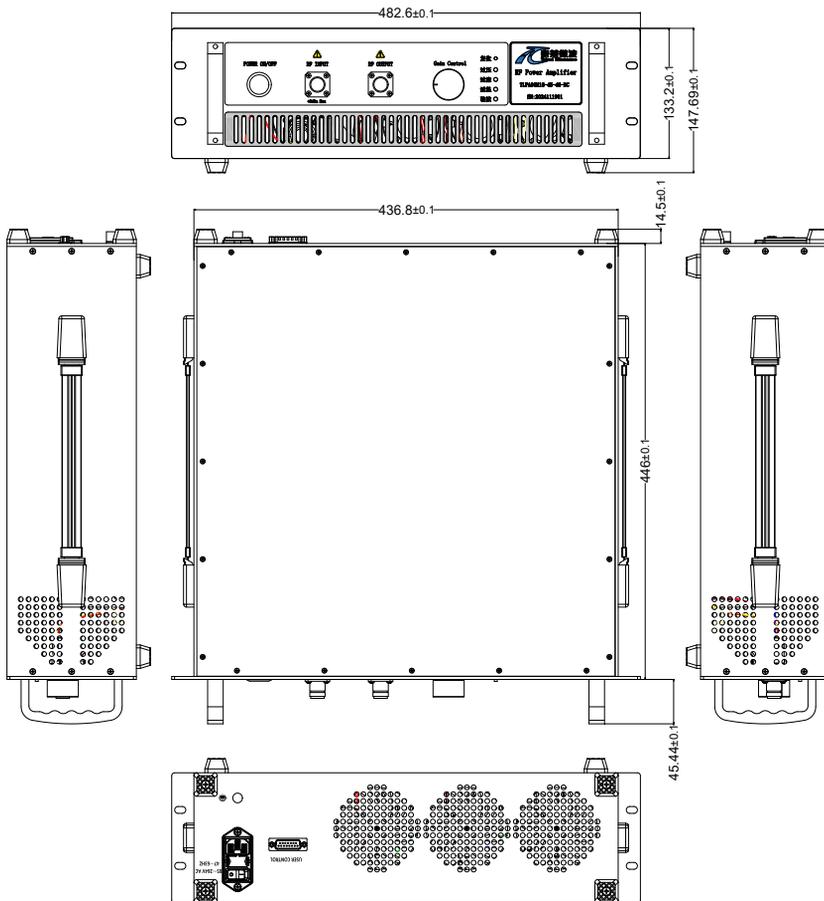
Parameter	Value	Units
Input /Output Connector	N Female/N Female	
Size	3U*500	
Weight	≤35	

Absolute Maximum Ratings:

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

Outline Drawing:

Unit:mm



D-SUB,15-Pin,Female:

Parameter	Function	Description
1	RESET	Resets PA when logic LOW is applied and released (Internally Pulled-High)
2	Over Voltage	TTL Logic High (5V) = Fault (Internally Pulled-Low)
3	Over Current	TTL Logic High (5V) = Fault (Internally Pulled-Low)
4	Over Temperature	TTL Logic High (5V) = Fault (Internally Pulled-Low)
5	Over VSWR	TTL Logic High (5V) = Fault (Internally Pulled-Low)
6	EN	Amplifier Enable: TTL High (5V) (Internally Pulled-High)
7	GND	Ground
8-15	NC	No Connection

Key Features:

Parameter	Advantages
Control functions	1, Power setting On/Off
Protection functions	1,Over TEM 2,Over voltage 3,Over current 4,Over VSWR
Cooling system	Built in Cooling system,forced air cooling

Environmental Conditions:

Parameter	Min	Typ	Max	Units
Operating Temperature*	-20		+50	°C
Non-operating Temperature*	-30		+60	°C
Relative humidity		95		%
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			

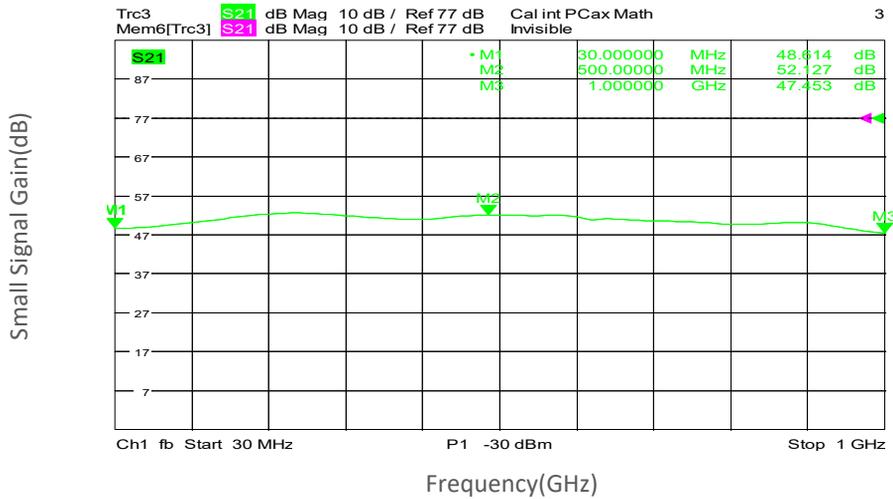
*Note: For a wider temperature range, please consult the manufacturer.

Ordering Information:

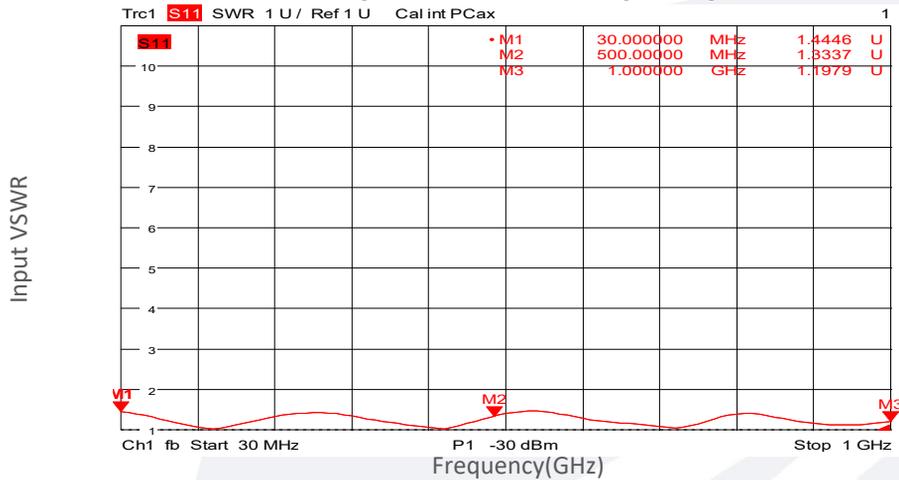
Base Number	Description	Revision
TLPA30M1G-45-45-BC	Solid State High Power Amplifier Systems 30MHz-1GHz, Gain:45dB, Psat:45dBm, 220V AC, Built in Fan Cooling	Rev.1.1

Typical Performance Data:

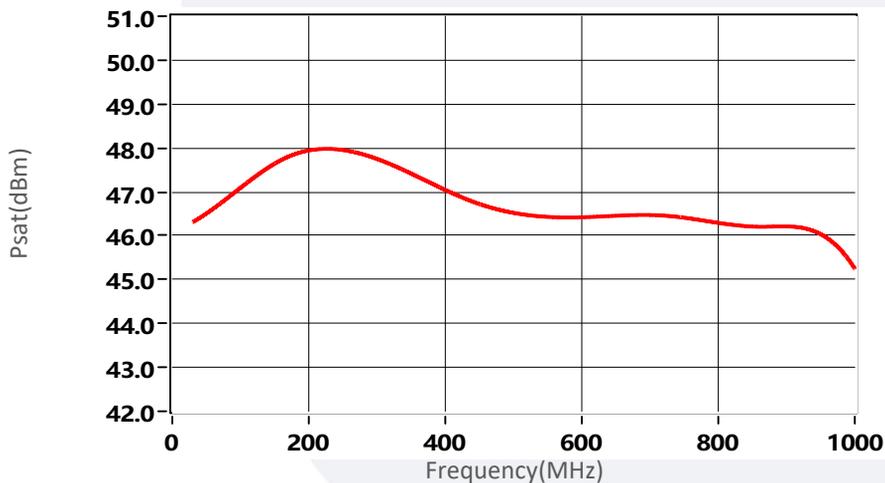
Small Signal Gain vs Frequency



Input VSWR vs Frequency



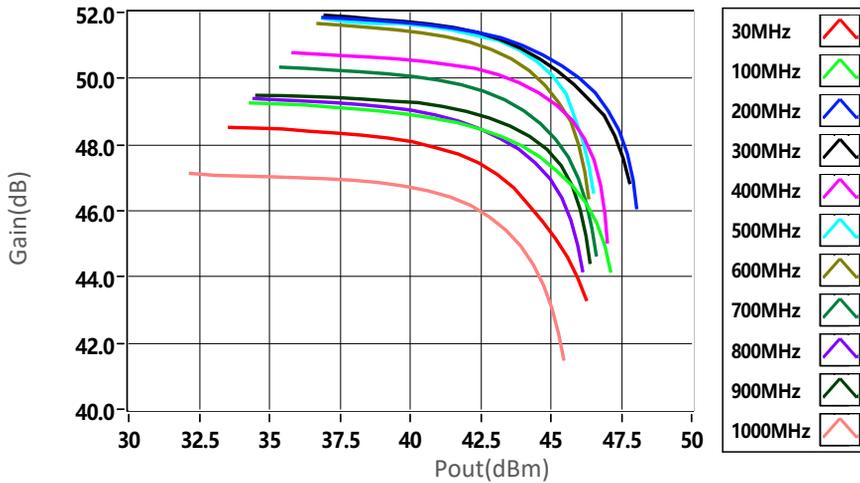
Psat vs Frequency



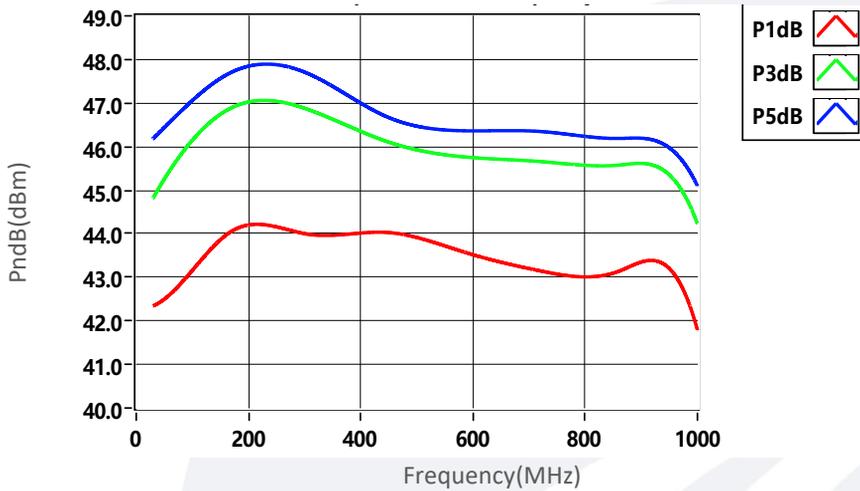
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating and other factors like material lots etc.

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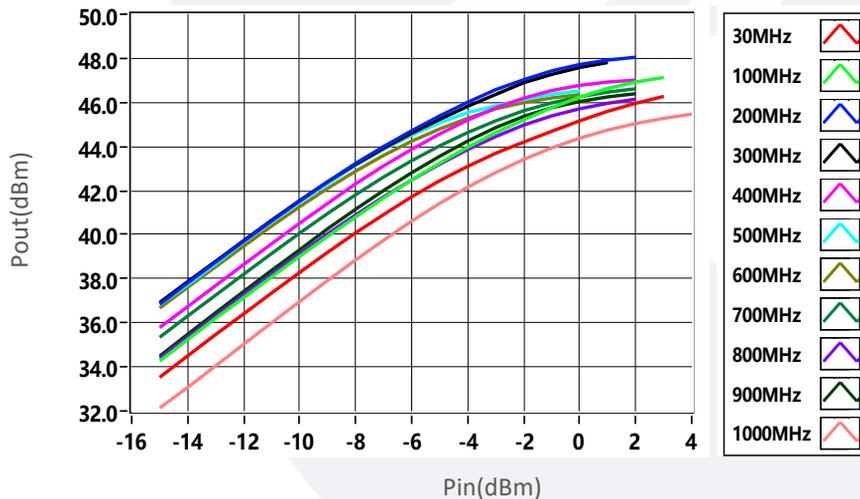
Gain vs Output Power



PndB vs Frequency

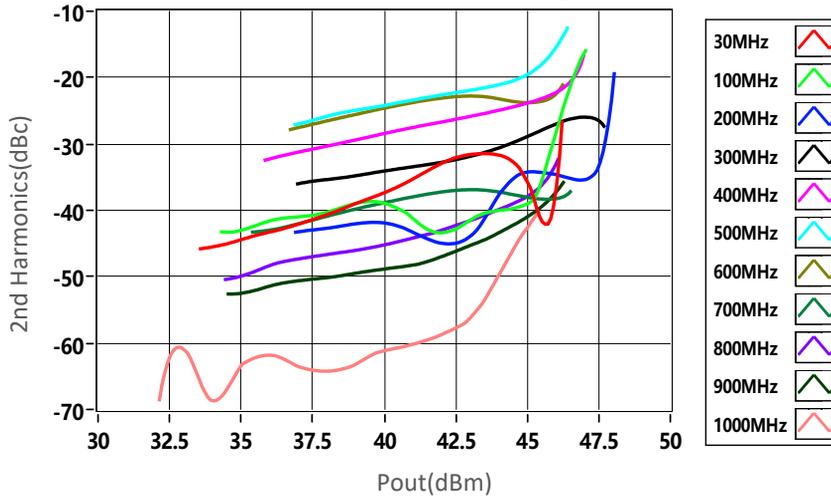


Pout vs Pin

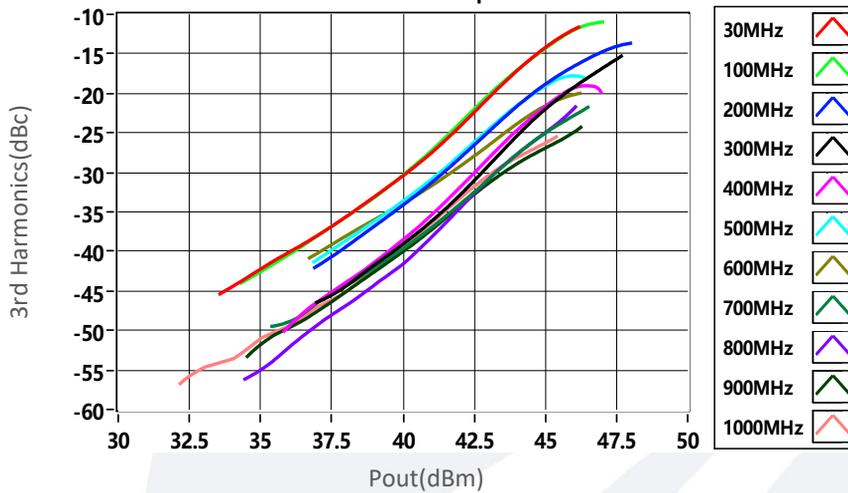


Typical Performance Data:

2nd Harmonics vs Output Power



3rd Harmonics vs Output Power



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