

Wideband 300W Solid State Power Amplifier 6-18GHz



Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

Product Description

RFLUPA0618GG is a wideband EMC power amplifier with wide frequency range of 6 to 18GHz, with DC power supply.

Features

1. Small Signal Gain 90dB Typical
2. Digital Control Attenuator 31.5dB max, 0.5db step
3. Psat 55dBm Typical
4. Power supply: VDC
5. 50 Ohm Matched Input/Output
6. Protection Functions:
 - Over temperature
 - Over current
 - Current imbalance
 - RF input over drive protection
 - VSWR protection
7. Amplifier Automatic Calibration Function
8. RF Output Power Display
9. RF Output Enable Function
10. High Maximum RF Input Power Handling, 10W max
11. Ethernet Remote Control
12. 5-inch LCD Front Panel Display Screen

Electrical Specifications (T_A=+25°C)

Parameter	Min	Typ	Max	Units
Frequency Range		6 – 18		GHz
Small Signal Gain		90		dB
Gain Flatness		+/-10		dB
Gain Variation Over Temperature (-30°C to +50°C)		+/-5		dB
Input Return Loss		-18		dB
*Output 1dB Compression Point (P1dB)		51		dBm
*Saturated Output Power (Psat)		55		dBm
Supply Current (+48V VDC)		40	120	A
IM3		-30		dBc
RF ON and OFF Speed		80/2500		us
Power Added Efficiency (PAE)		20		%
Weight		90/40.8		Lbs/KG
Impedance		50		Ohms
Input / Output Connectors		N-Type Female		
Package		5U Please see the detail mechanical drawing		

* P1dB, P3dB and Psat power test signal: 200µs pulse width with 10% duty cycle.

Absolute Maximum Ratings

Parameter	Rating
Supply Voltage Range	19 ~ 72 VDC
*RF Input Power (RFIN)	Psat – Large Signal Gain

Bias Up Procedure

1. Connect input and output with 50 Ohm source/load. (In band VSWR < 1.9:1 or >10dB return loss.)
2. Connect Power Cable
3. Turn On Back Panel AC Power Supply Air Breaker
4. Press Front Panel Power Switch to Power Display

Bias Down Procedure

1. Press Front Panel Power Switch to Power Off Display
2. Turn Off Back Panel Power Supply Breaker
3. Remove Power Cable (If Moving Equipment)
4. Disconnect input and output with 50 Ohm source/load. (In band VSWR < 1.9:1 or >10dB return loss.)

Environmental Specifications and Test Standards

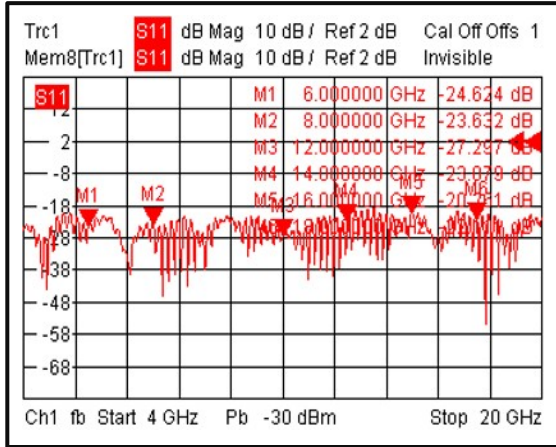
Parameter	Description
Operational Temperature	-30°C to +50°C (Case Temperature)
Storage Temperature	-55°C to +125°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85°C for 72 Hours
Shock	1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883 (For Hermetically Sealed Units)

*Maximum RF input power is set to assure safety of amplifier. Input power may be increased at own risk to achieve full power of amplifier. Please reference gain and power curves.

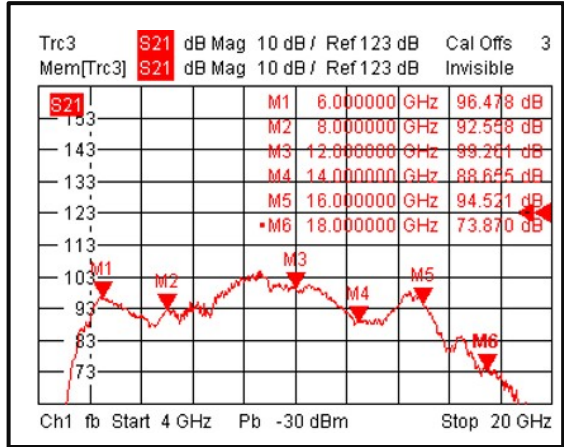
**For vibration testing details please see additional information section.

Typical Performance Plots

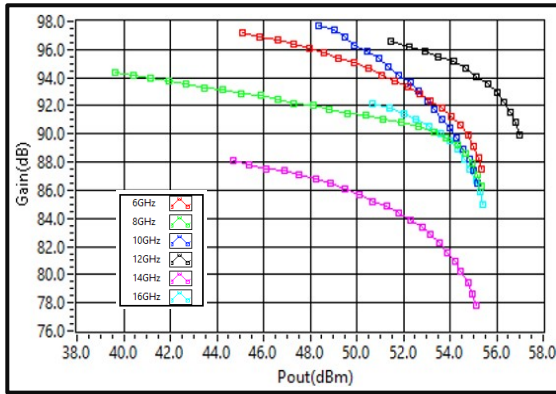
Input Return Loss @+25°C



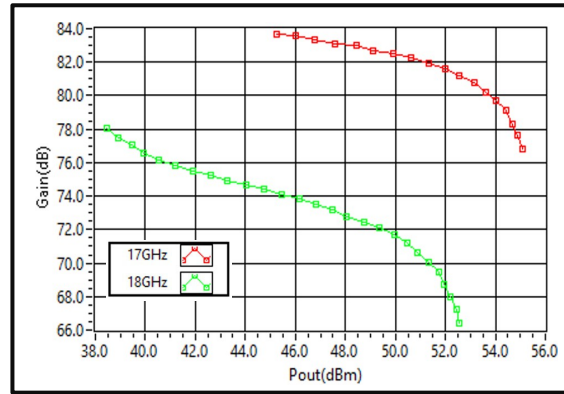
Gain vs. Frequency @+25°C



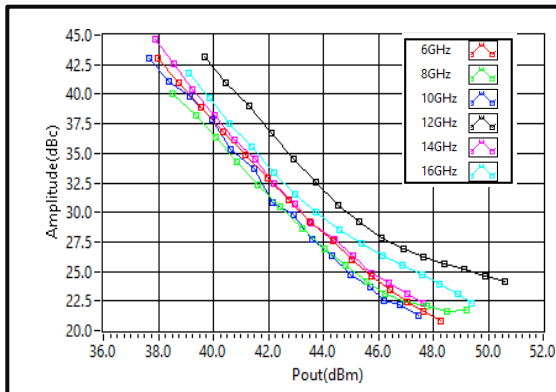
Gain vs. Output Power @+25°C



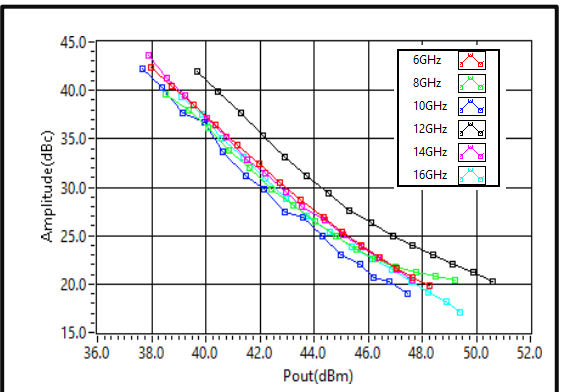
Gain vs. Output Power @+25°C



Right IM3 @+25°C



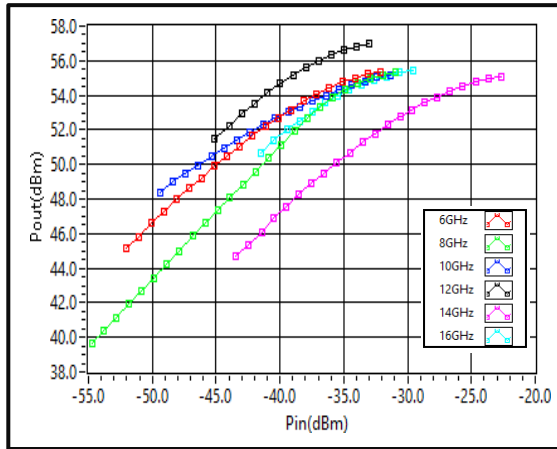
Left IM3 @+25°C



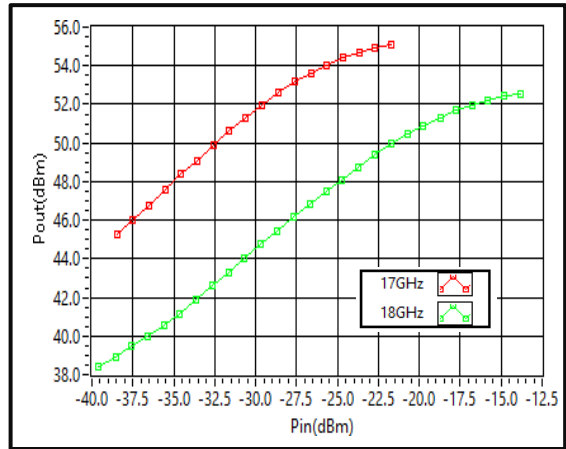
Note: Small signal VNA measurements include attenuators to protect equipment

Typical Performance Plots

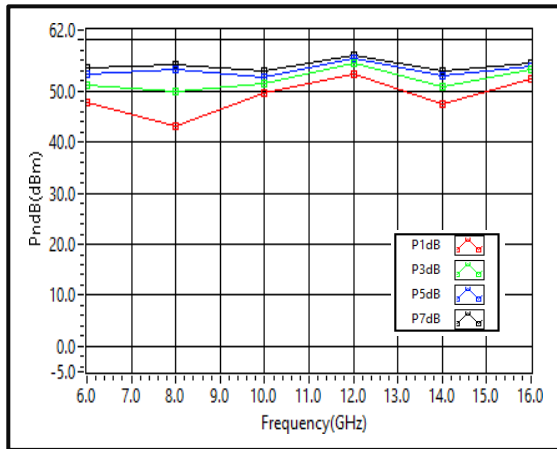
Output Power vs. input Power @+25°C



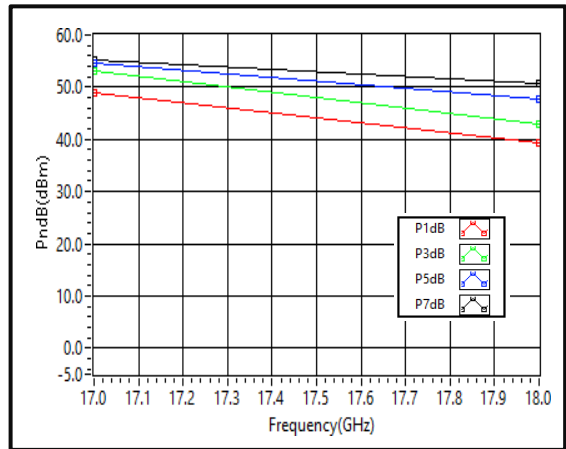
Output Power vs. input Power @+25°C



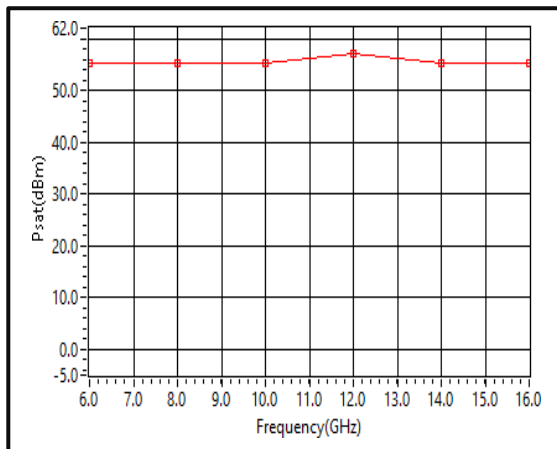
PndB vs. Frequency @ +25°C



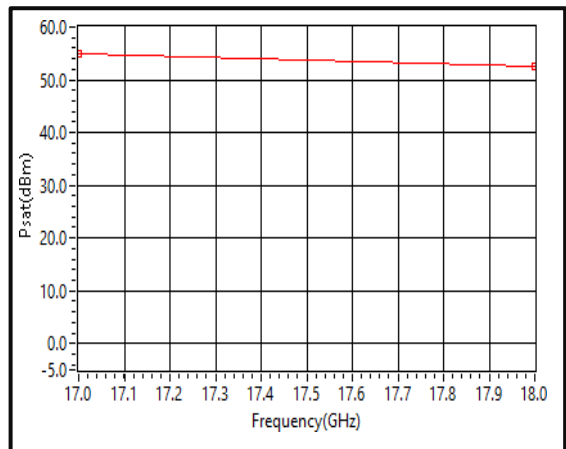
PndB vs. Frequency @ +25°C



Psat vs. Frequency @ +25°C



Psat vs. Frequency @ +25°C



Note: Small signal VNA measurements include attenuators to protect equipment