

Features

- Ultra Wide Band Bench Top Power Amplifier
- Small Signal Gain 50dB Typical
- Output Saturation Power 39dBm Typical
- Supply Voltage 110/220 VAC
- 50 Ohm Matched Input/Output
- Overcurrent Protection



Typical Applications

- Wireless Infrastructure
- 5G communication
- Test and measurement Instrument

RF Microwave & VSAT
Fiber Optics

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	18-26		26-40				GHz
Gain	48	55		45	50		dB
Gain Flatness		±5.0			±6		dB
Gain Variation Over Temperature (-30°C ~ +70°C)		±4.0			±4.0		dB
Input Return Loss		10			10		dB
Saturated Output Power (Psat)		39			39		dBm
Supply Current (AC110~220V)		470			470		mA
Input Max Power (No damage)	Psat – Gain						dBm

Weight	206 ounces (Max.)	Impedance	50ohms
Input /Output Connectors	2.92mm-Female	Material	Aluminum
Finish	Gray Painted		

QOTANA TECHNOLOGIES 10W Ultra Wide Band Bench Top Power Amplifier 18GHz-40GHz

Absolute Maximum Ratings

Operating Voltage	110VAC to 220VAC
RF Input Power (RFIN)	Psat – Large Signal Gain

Note: Maximum RF input power is defined to protect the amplifier from damage. Input power may be increased at the users own risk to achieve the full output power of the amplifier. Please reference gain and power curves and monitor the temperature.

Biassing Up Procedure

Step 1	Connect input and output with 50 Ohm source and load with in band return loss better than 10dB.
Step 2	Connect AC Plug
Step 3	Flip switch to "ON" position

Power OFF Procedure

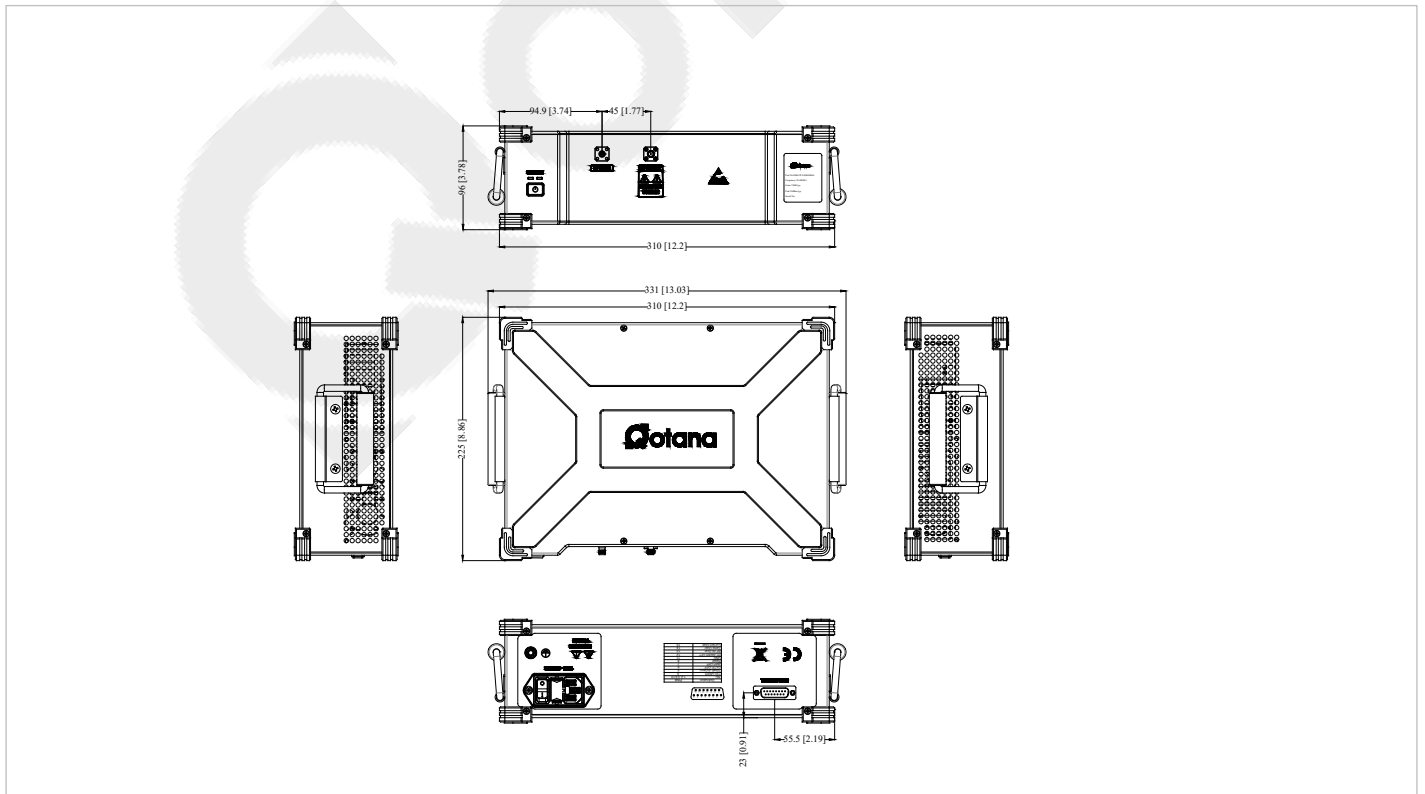
Step 1	Flip switch to "OFF" position
Step 2	Remove AC Plug
Step 3	Remove RF Connection

Environmental Specifications

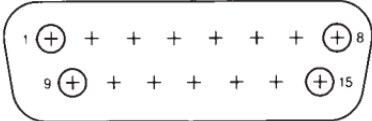
Operational Temperature	-30°C~+70°C
Storage Temperature	-50°C~+105°C
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35°C, 95%RH at 40°C
Shock	20G for 11msec half sine wave, 3 axis both directions

Outline Drawing:

All Dimensions in mm (inches) Tolerances ±2.5 (0.1)



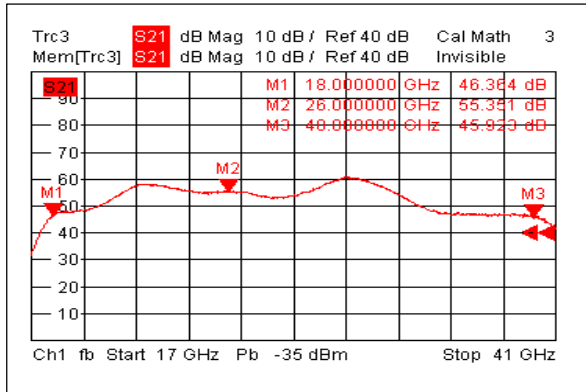
Protection Connector Table

Male D-Sub is on the housing The mating female part number: 51321000015					
Pin #	Name	Function	Initial State	Description	Applied
1,2,3,9,10	NC	NO	--	No Internal Connection	No
4	+5V-User	Power	+5V	+5V DC is supplied for reference(700mA)	Yes
5	Temp Signal	Indicator		PA carrier case temperature is represented by voltage	Yes
6	Gate Disable	Control	LOW	Applying logic HIGH disables gates of amplifiers	Yes
7	Drain Disable	Control	LOW	Applying logic HIGH disables Positive Supply Voltage of amplifiers	Yes
8	Reset	Control	HIGH	Resets PA when logic <u>LOW</u> is applied and released	Yes
11	GND	Ground	GND	Ground	Yes
12	Switch Disable	Control	HIGH	Applying logic <u>LOW</u> disconnects RF signal of amplifiers	Yes
13	RF IN Over	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when input signal is over limit	Yes
14	Temp Over	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when amplifier is driven over temperature	Yes
15	Current Over	Indicator	LOW	Pin will be latched to logic <u>HIGH</u> when drain current limit is reached	Yes

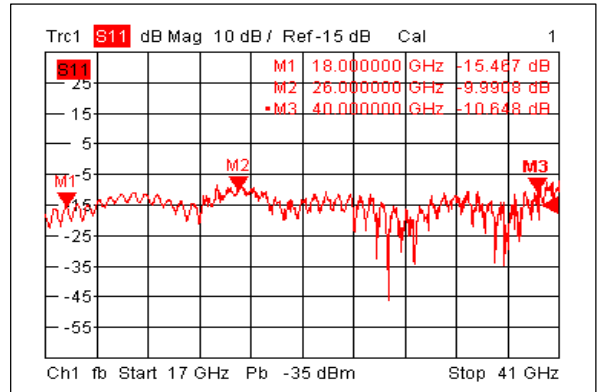
Notes:

- HIGH/LOW voltages are standard TTL signals 0.0V-0.8V = LOW. 2V-5V = HIGH. Input current is 10uA.
- Matching connector and cable will be shipped with the product.
- Applied=Yes means the feature is included. Applied=No means the feature is not included with this model.
- 5V reference supply can source 700mA.
- Indicator output signals can source 24mA.

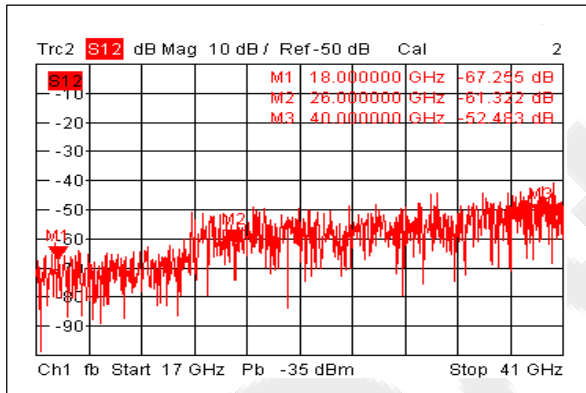
Gain@+25°C



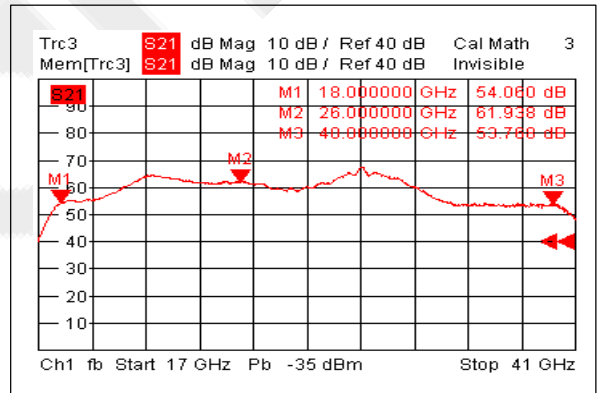
Input Return Loss@+25°C



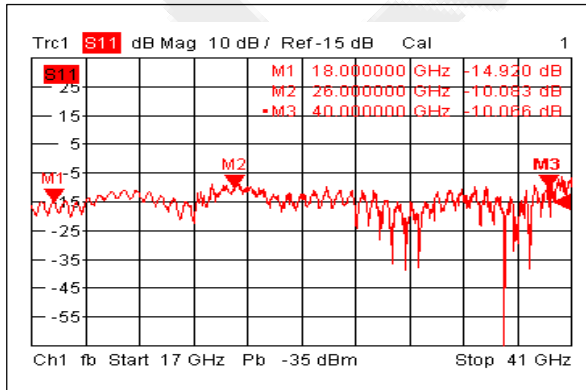
Isolation@+25°C



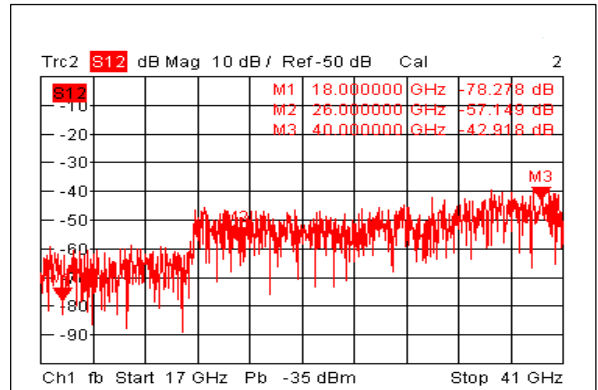
Gain@-30°C



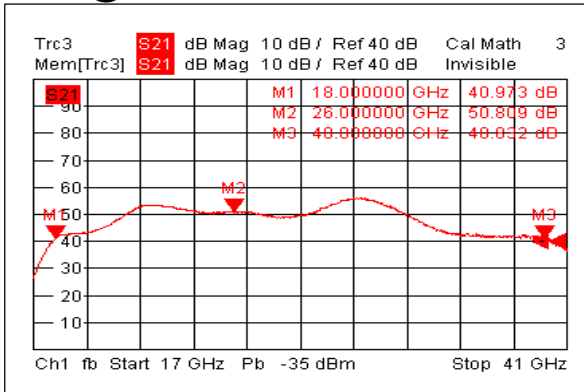
Input Return Loss@-30°C



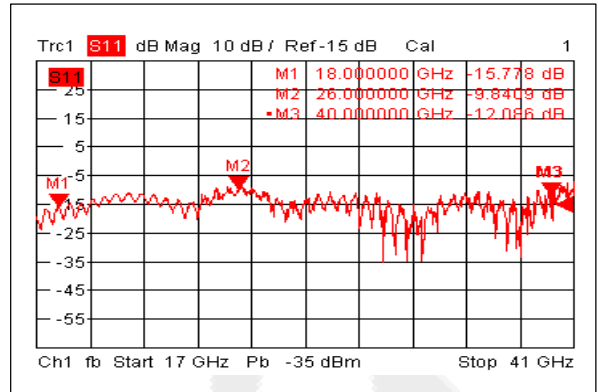
Isolation@-30°C



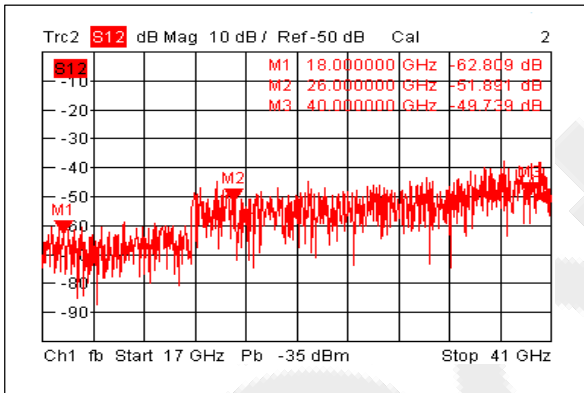
Gain@+70°C



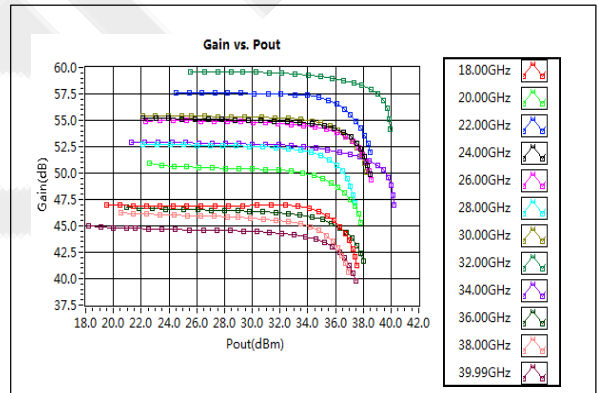
Input Return Loss @+70°C



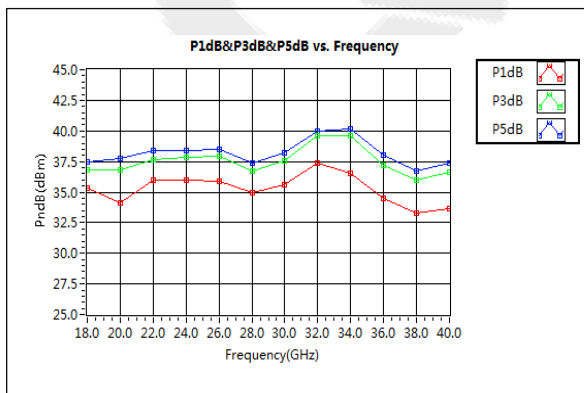
Isolation@+70°C



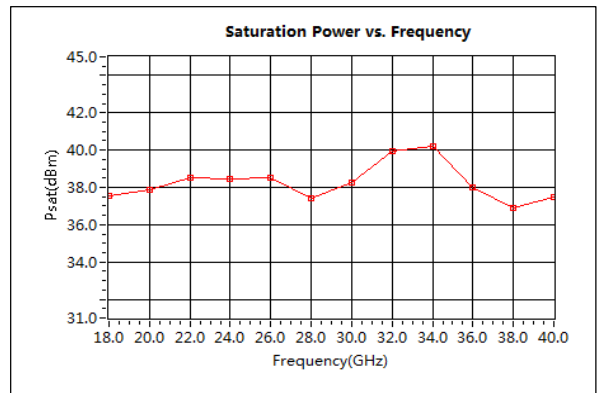
Gain vs. Output Power



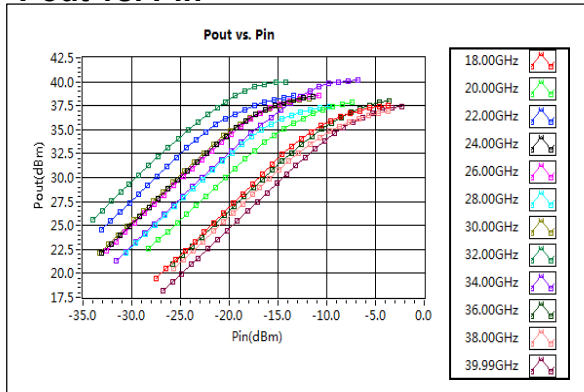
P1dB vs. Frequency



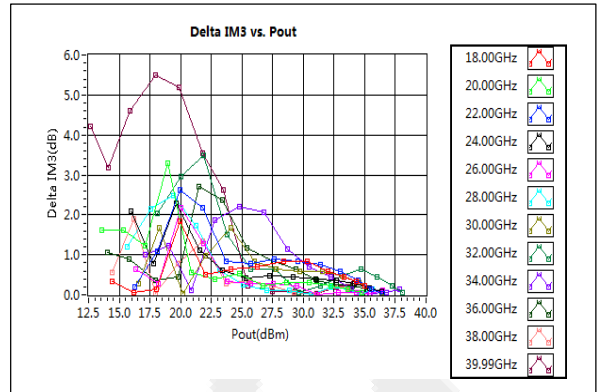
Saturated Power vs. Frequency



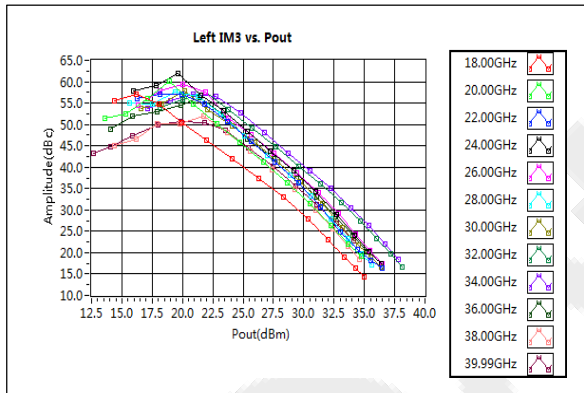
Pout vs. Pin



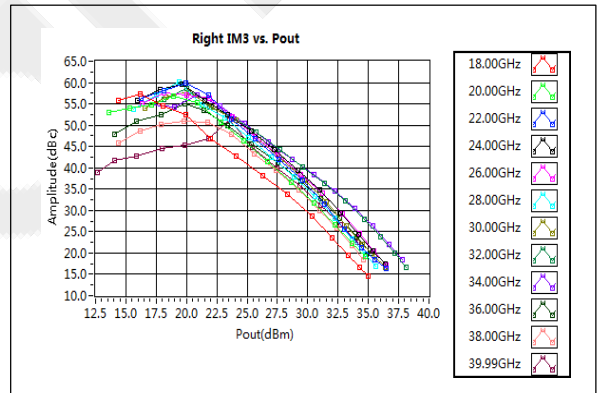
Delta IM3 vs. Pout



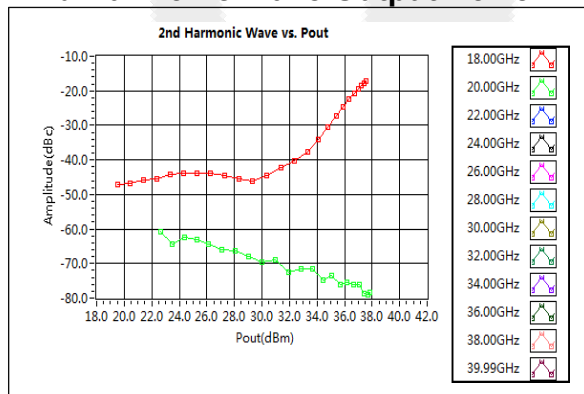
Left IM3 vs. Pout



Right IM3 vs. Pout



2nd Harmonic Wave Output Power



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