

SALUKI TECHNOLOGY 10W Ultra Wide Band Power Amplifier 18GHz~40GHz
Features

- Ultra Wideband Solid State Power Amplifier
- Gain: 45dB Typical
- Psat: 39dBm Typical
- Supply Voltage: +28V


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	40	45		40	45		dB
Gain Flatness		±6.0			±6.0		dB
Gain Variation Over Temperature (-40°C~+70°C)		±4.0			±4.0		dB
Input Return Loss		10			10		dB
*Saturated Output Power (Psat)	37	39		36	39		dBm
Isolation S12		-50			-50		dB
Supply Current (Vcc=+28V)		3	5		3	5	A
Power-Added Efficiency		10			10		%

Weight	Net	41.6 Max ounces	Impedance	50ohms
	Including Heat sink	97.6 Max ounces		
Input / Output Connectors		2.92mm-Female	Material	Copper
Finish	Nickel Plated		Package Sealing	Epoxy Sealed (Standard)
				Hermetically Sealed (Optional)

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Absolute Maximum Ratings

Operating Voltage	+30V
RF Input Power	Psat – Large Signal Gain

Note: 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.

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output with 50 Ohm source/load. (in band VSWR10dB return loss)
Step 3	Connect +28V

Power OFF Procedure

Step 1	Turn off +28V biasing
Step 2	Remove RF connection
Step 3	Remove Ground

Outline Drawing:

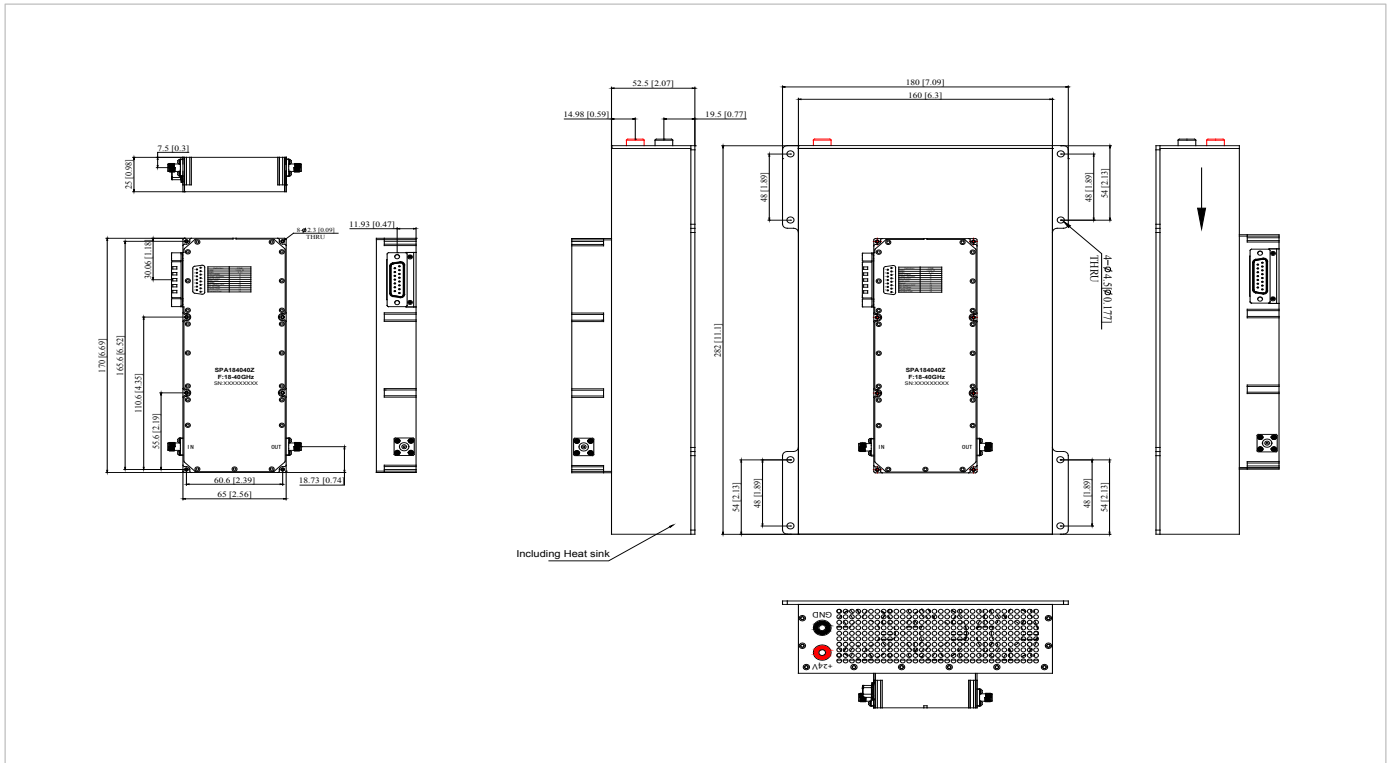
All Dimensions in mm (inches)
Tolerances $\pm 0.2(0.008)$
(Excl Heat Sink)

Notes:

DB15 cable is configured for power connection port by default
Heat Sink required during operation(Sold Separately)

Environmental Specifications

Operational Temperature	-40°C~+70°C(Case Temperature)
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



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Packing List

ID	Description	QTY
1	Fig a. Fan adapter	1
2	Fig b. DB15 cable (51321000015)	1



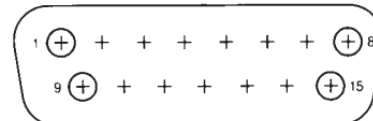
Fig a.



Fig b.

Protection Connector Table

Male D-Sub is on the housing
The mating Female part number: 172-E15-203R001



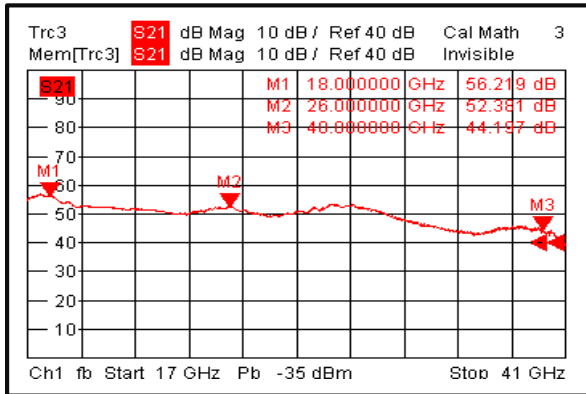
PIN #	NAME	FUNCTION	Initial State	Description	Applied
1,2,9,10	VDD	Power Supply	+28V	+28V DC is supply Voltage	Yes
3,11	GND	Ground	GND	Ground	Yes
4	+5V_USER	Power Supply	+5V	+5V DC is supplied for reference(200mA)	Yes
5	TEMP_SIGNAL	Indicator	Voltage	Display temperature signal	Yes
6	GATE_OFF	Control	LOW	Applying logic HIGH disables gates of amplifiers	Yes
7	AMP_OFF	Control	LOW	Applying logic HIGH disables Positive Supply Voltage of amplifiers	Yes
8	RESET	Control	HIGH	Resets PA when logic LOW is applied and released (Internally Pulled-High +5V)	Yes
12	RF_Switch_OFF	Control	HIGH	Applying logic LOW disconnect RF signal of amplifiers	Yes
13	RF IN Over	Indicator	LOW	Pin will be latched to logic HIGH when input signal is over limit	Yes
14	Temp Over	Indicator	LOW	Pin will be latched to logic HIGH when drive over Temperature	Yes
15	Current Over	Indicator	LOW	Pin will be latched to logic HIGH when Current Limit is reached	Yes

Notes:

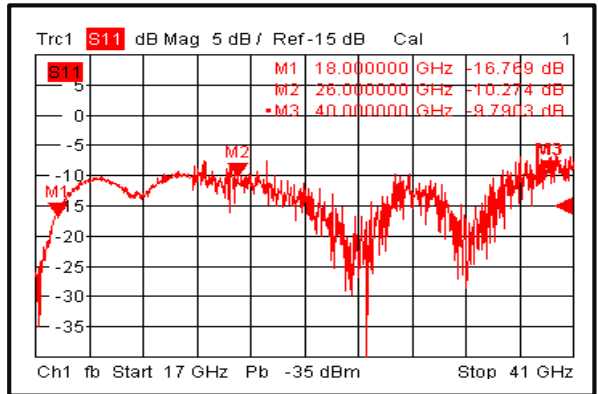
- HIGH/LOW voltages are standard TTL signals 0V to 0.8V = LOW. 2.8V to 5V = HIGH. Input current is 10uA.
- Matching connector and cable will be shipped with the product.
- Applied=Yes means the feature is included. Applied=No means the feature is not included with this model.
- 5V reference supply can source 200mA.
- Indicator output signals can source 24mA.

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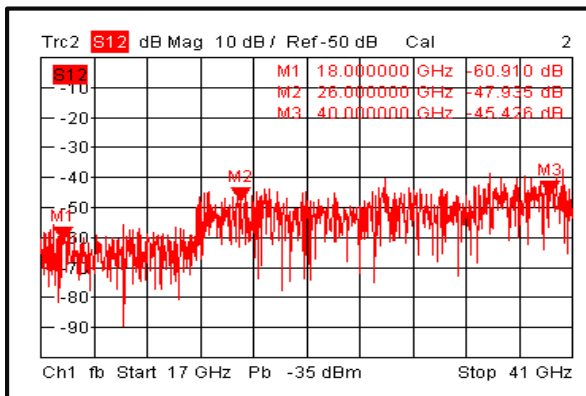
Gain@+25°C



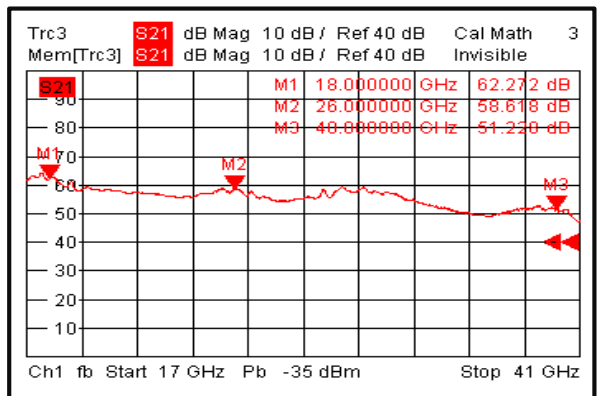
Input Return Loss @+25°C



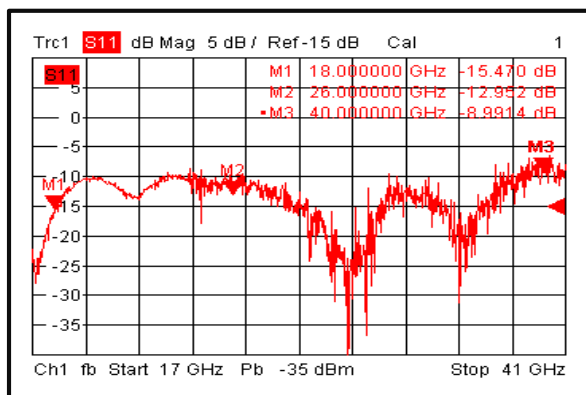
Isolation@+25°C



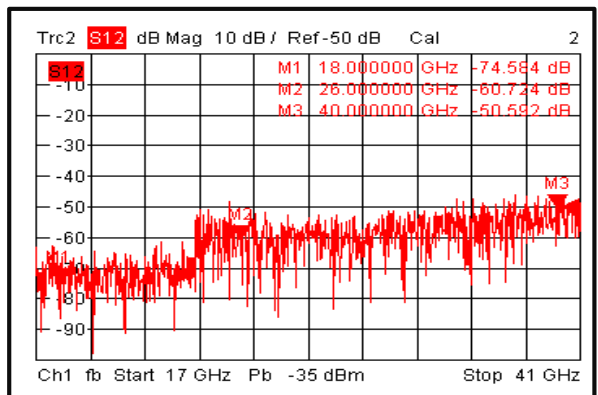
Gain@-40°C



Input Return Loss @-40°C

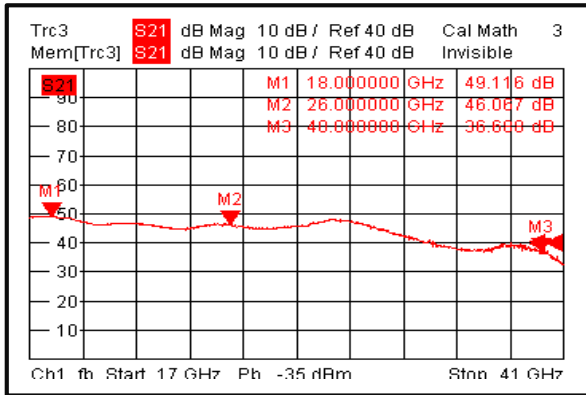


Isolation@-40°C

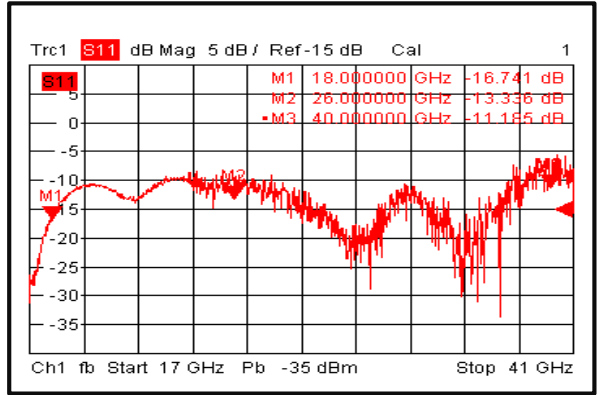


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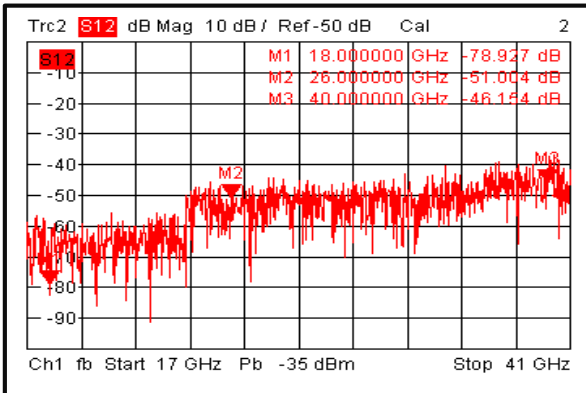
Gain@+70°C



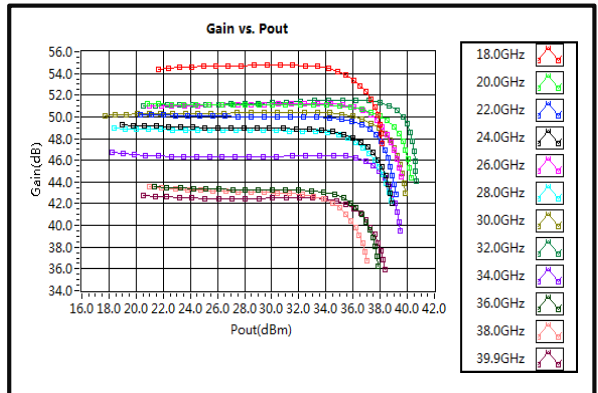
Input Return Loss @+70°C



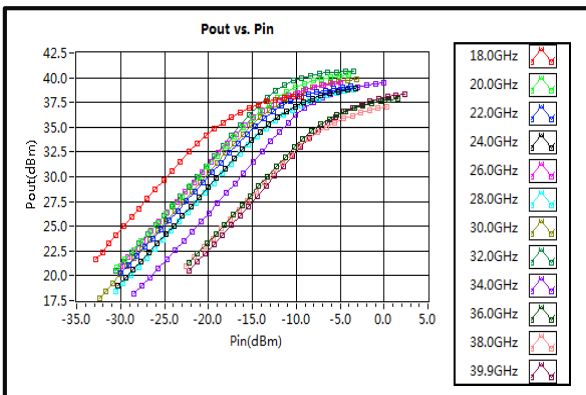
Isolation@+70°C



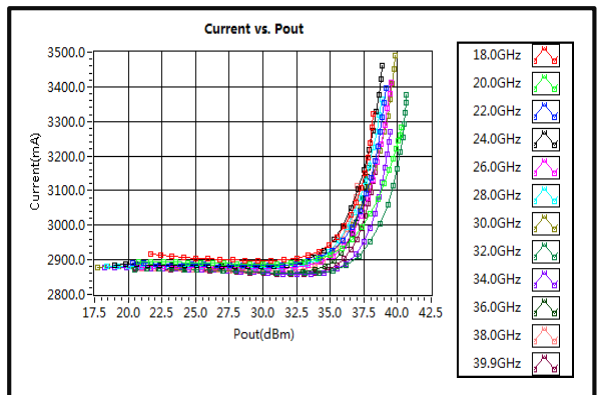
Gain vs. Output Power (CW Power)



Pout vs. Pin (CW Power)

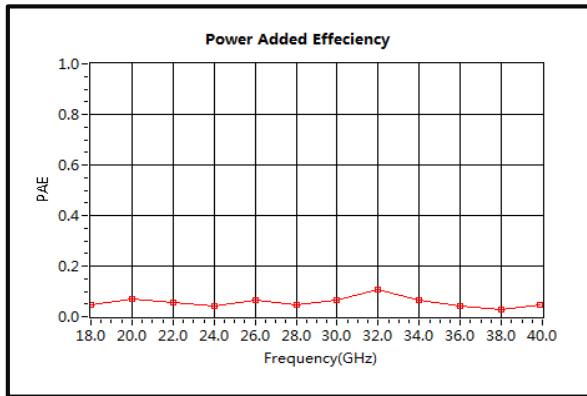


Current vs. Pout (CW Power)

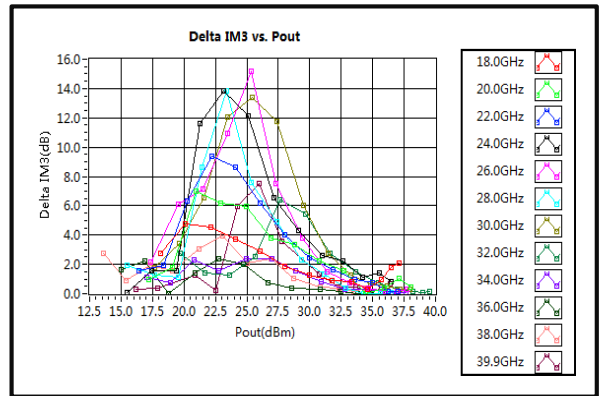


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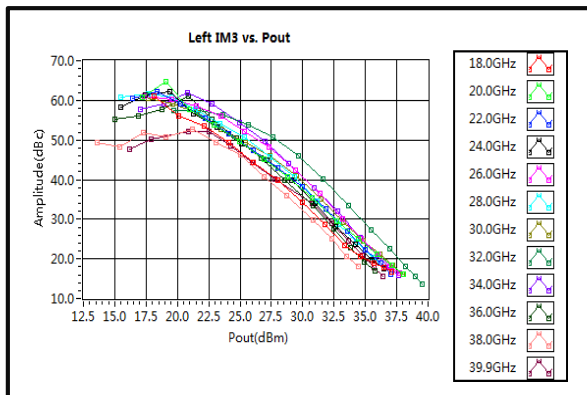
Power Added Efficiency (CW Power)



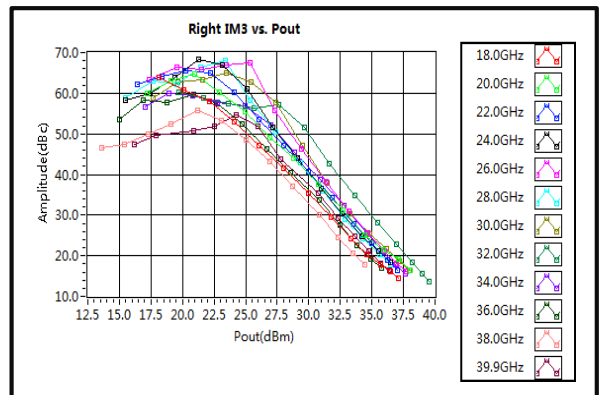
Delta IM3 vs. Pout



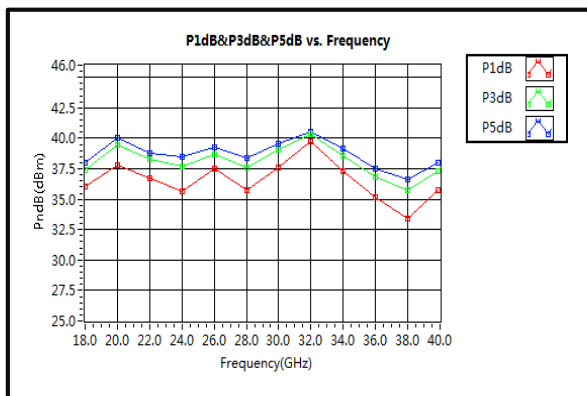
Left IM3 vs. Pout



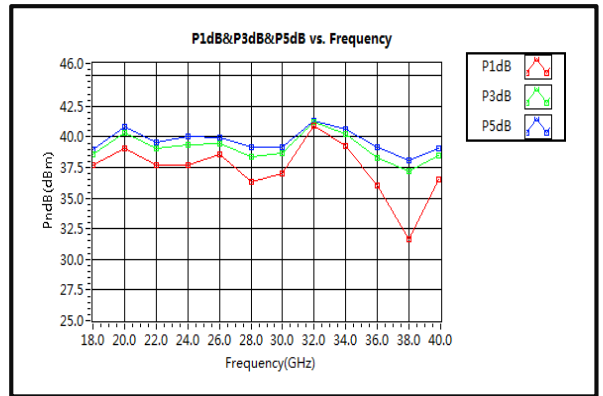
Right IM3 vs. Pout



P1dB – P5dB vs. Frequency (CW Power) @+25°C

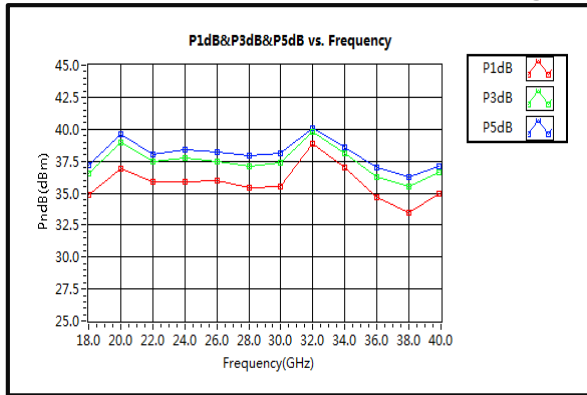


P1dB – P5dB vs. Frequency (CW Power) @-40°C

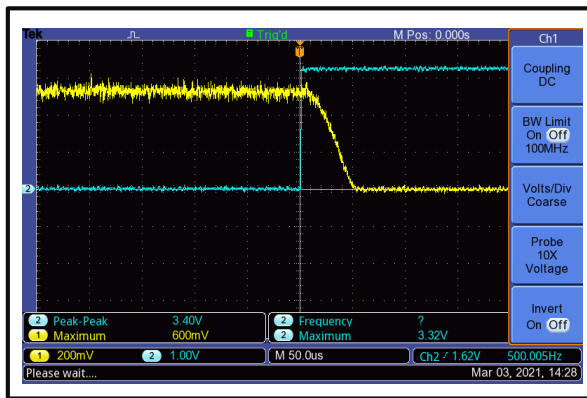


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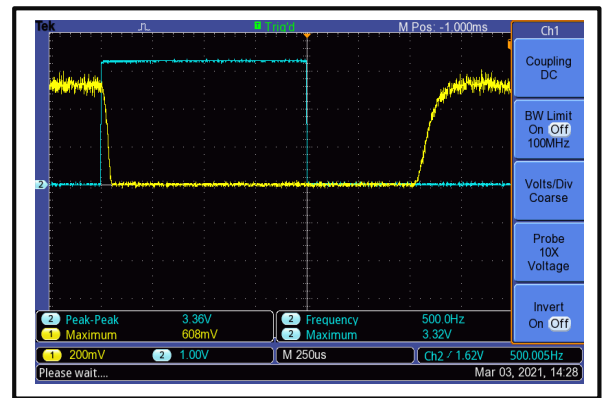
P1dB – P5dB vs. Frequency (CW Power) @+70°C



The TDD Enable Time is 50 us @+25°C



The TDD Disable Time is 600 us @+25°C

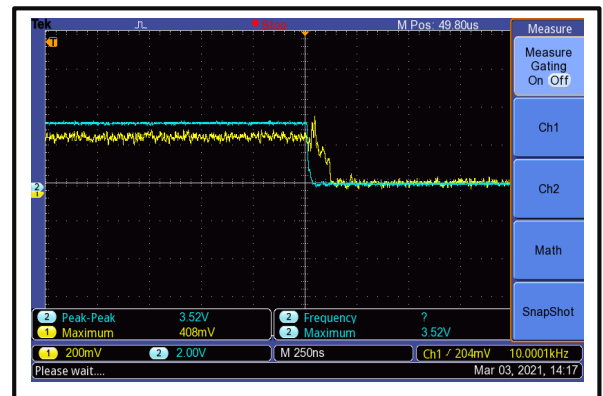


TDD control port: D-sub 15 PIN #6 (GATE_OFF).
The blue curve is the TDD control signal, the yellow curve is RF output envelope.

The Switching Rise Time is 200 ns @+25°C



The Switching Fall Time is 200 ns @+25°C



Switch control port: D-sub 15 PIN #12(RF_Switch_Off).
The blue curve is the TDD control signal, the yellow curve is RF output envelope.

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