

Features

- Solid State Power Amplifier
- Small Signal Gain 45dB Typical
- Output Saturation Power 44.5dBm Typical
- Supply Voltage +28 VDC
- 50 Ohm Matched Input / Output



Typical Applications

- Wireless Infrastructure
- Test and measurement Instrument
- Fiber Optics

RF Microwave & VSAT

5G communication

Parameter		Min.	Typ.	Max.	Units
Frequency Range		18		26.5	GHz
Small Signal Gain		40	45		dB
Gain Flatness			± 5.0		dB
Gain Variation Over Temperature (-40°C to +70°C)			± 2.0		dB
Input Return Loss			15		dB
Output 1dB Compression Point (P1dB)			43		dBm
Saturated Output Power (Psat)		43.5	44.5		dBm
Supply Current (Vcc=+28V)			6	9	A
Power Added Efficiency (PAE)			10		%
Turn On/Off Speed (Switch Disable)	ON		100		ns
	OFF		100		ns
Turn On/Off Speed (Drain Disable)	ON		200		us
	OFF		250		us
Turn On/Off Speed (Gate Disable)	ON		500		us
	OFF		250		us

Weight	Net	72 Max. ounces	Impedance	50ohms
	Including Heat Sink	168 Max. ounces		
Input / Output Connectors		2.92mm-Female(Input) / WR42(Output) (H-Plane available with adapter)	Material	Copper
Finish	Nickel Plated	Package Sealing	Epoxy Sealed (Standard)	
			Hermetically Sealed (Optional)	

Absolute Maximum Ratings

Operating Voltage	+30VDC
RF Input Power (RFIN)	Psat – Large Signal Gain

Biassing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Connect +28V biasing

Power OFF Procedure

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

Environmental Specifications

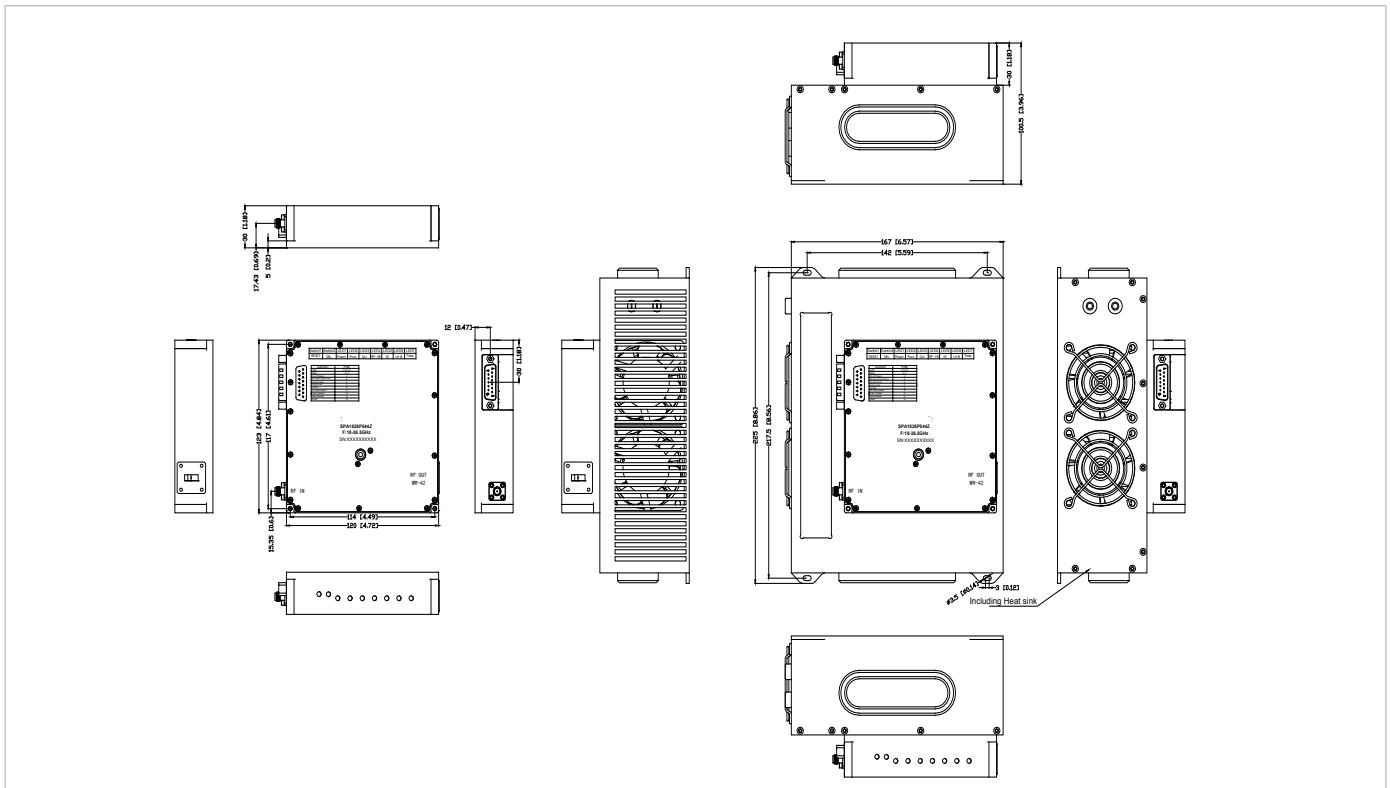
Operational Temperature	-40°C~+70°C(Case Temperature)
Storage Temperature	-50°C~+105°C
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100%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

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.

Outline Drawing:

All Dimensions in mm (inches)
Tolerances ±0.1 (0.004)

S15 cable is configured for power connection port by default
Heat Sink required during operation(Sold Separately)



Packing List

ID	Description	QTY
1	Fig a. Fan adapter	1
2	Fig b. S15 cable	1



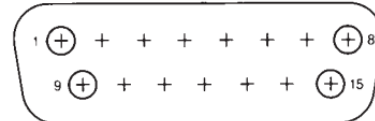
Fig a.



Fig b.

Protection Connector Table

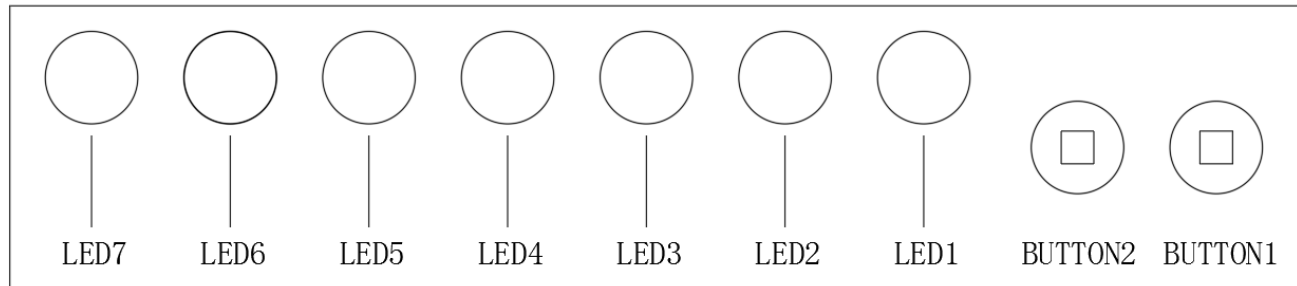
Male D-Sub is on the housing
The mating Female part number: 172-E15-203R001



Pin #	Name	Function	Initial State	Description	Applied
1,2,9,10	VDC	Power Supply	+28V	+28V DC Supply Voltage	Yes
3,11	GND	Ground	GND	Ground	Yes
4	PA Off Alarm	Indicator	LOW	Pin will be latched to logic HIGH when any of the protection limit is reached	Yes
5	RF Input Over Drive	Indicator	LOW	Pin will be latched to logic HIGH when input signal is over limit	Yes
6	Current Over	Indicator	LOW	Pin will be latched to logic HIGH when drain current limit is reached or current imbalance	Yes
7	Temp Over	Indicator	LOW	Pin will be latched to logic HIGH when amplifier is driven over temperature	Yes
8	VSWR	Indicator	LOW	Pin will be latched to logic HIGH when output reflection is over limit	No
12	RF Input Switch	Control	LOW	Applying logic HIGH turns OFF RF front-end switch to terminator	Yes
13	Drain Disable	Control	LOW	Applying logic HIGH disable drains of amplifiers	Yes
14	Gate Disable	Control	LOW	Applying logic HIGH disable gates of amplifiers	Yes
15	Reset	Control	HIGH	Resets PA when logic LOW is applied and released	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.
- Indicator output signals can source 24mA.

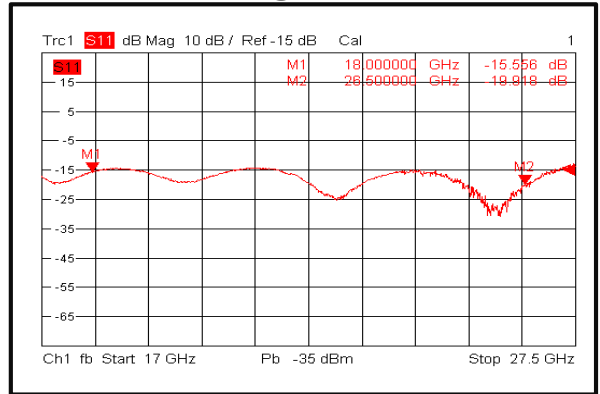
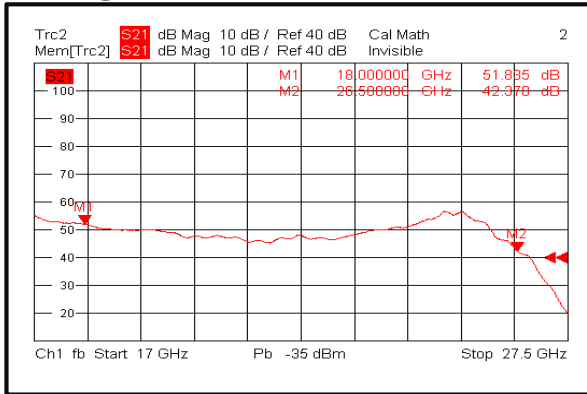
Alarm Status Panel


	Name	Function	Initial State	Description	Applied
BUTTON 1	Reset	Control		Manual reset button to reset PA	Yes
BUTTON 2	Calibration	Control		Manual calibration button to correct PA	Yes
LED 1	Power	Indicator	GREEN Color	Power supply normal indicator*	Yes
LED 2	RF ON/OFF	Indicator	GREEN Color	RF output status indicator. PA will shut down and latch this LED to a <u>RED</u> color when any protection is triggered*	Yes
LED 3	Calibration State	Indicator	GREEN Color	Calibration status indicator. The red light indicates that calibration is required. The indicator will flash during calibration*	Yes
LED 4	RF Input Over Drive	Indicator	GREEN Color	PA will shut down and latch this LED to a <u>RED</u> color when input signal is over limit *	Yes
LED 5	Over Current	Indicator	GREEN Color	PA will shut down and latch this LED to a <u>RED</u> color when current limit is reached *	Yes
LED 6	ID-Balance	Indicator	GREEN Color	PA will shut down and latch this LED to a <u>RED</u> color when an imbalance in the drain current of the combining branches occurs *	Yes
LED 7	Over Temp	Indicator	GREEN Color	PA will shut down and latch this LED to a <u>RED</u> color when driven over temperature *	Yes

*LED needs to be manually reset to initial state by pressing RESET button

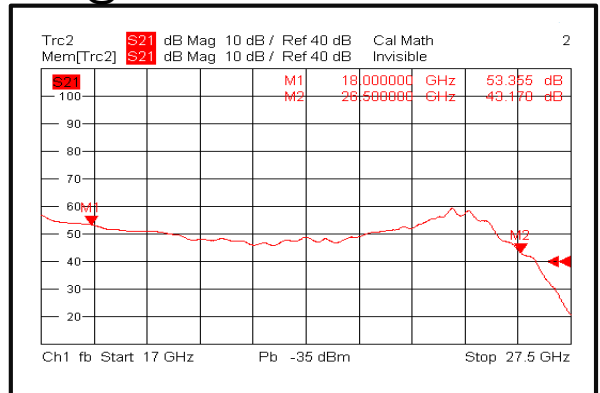
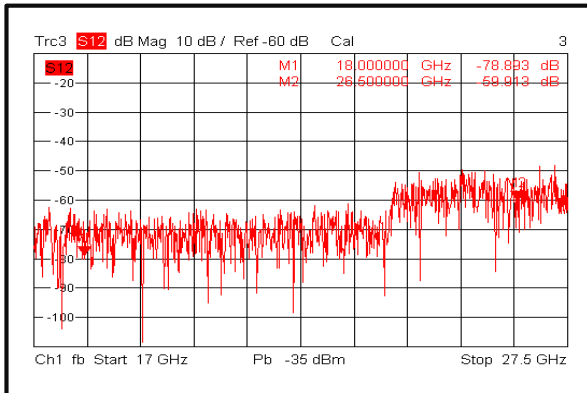
SALUKI TECHNOLOGY INC.
Gain @ +25°C

Wide Band Solid State Power Amplifier 18GHz-26.5GHz
Input Return Loss@+25°C



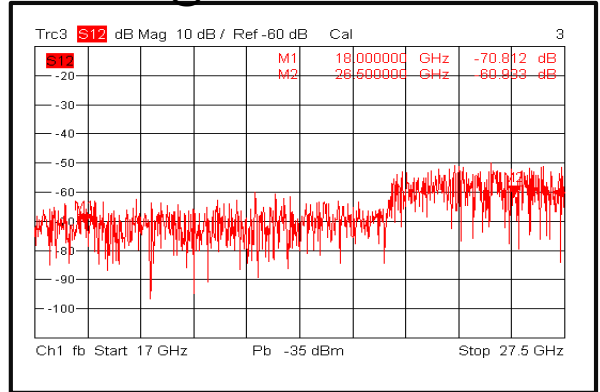
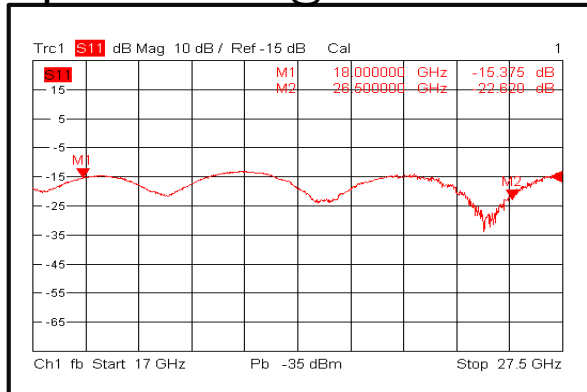
Isolation @ +25°C

Gain @ -40°C



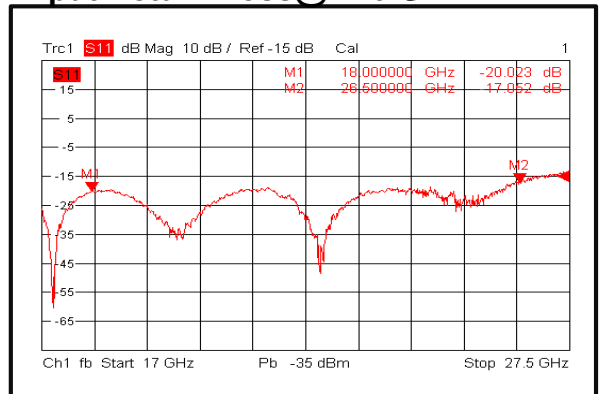
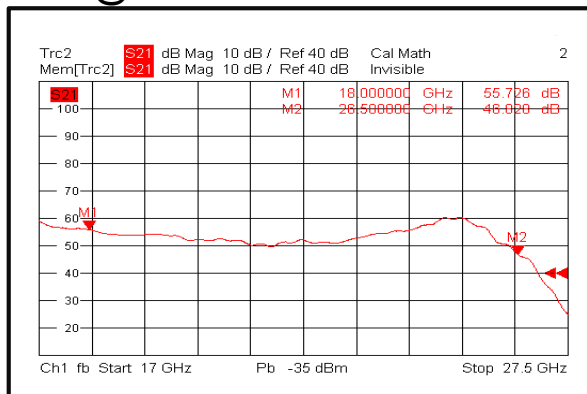
Input Return Loss@ -40°C

Isolation @ -40°C



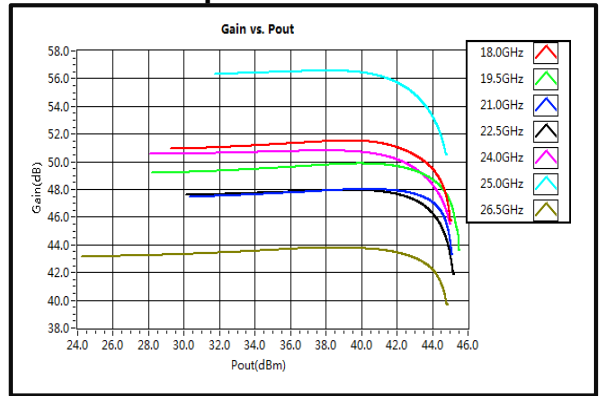
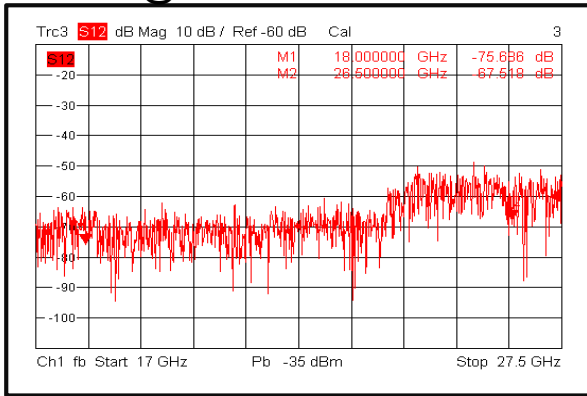
Gain @ +70°C

Input Return Loss@ +70°C

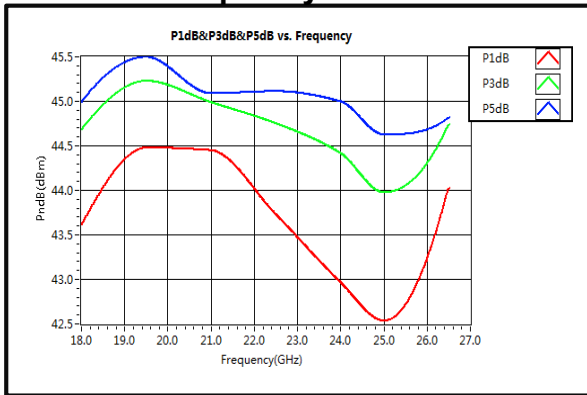


SALUKI TECHNOLOGY INC.
Isolation@+70°C

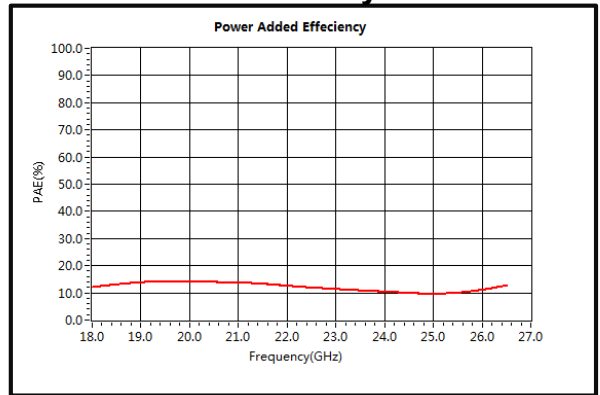
Wide Band Solid State Power Amplifier 18GHz-26.5GHz
Gain vs. Output Power CW



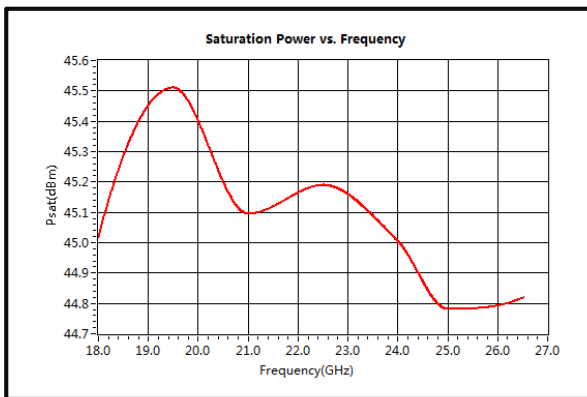
PndB vs. Frequency CW



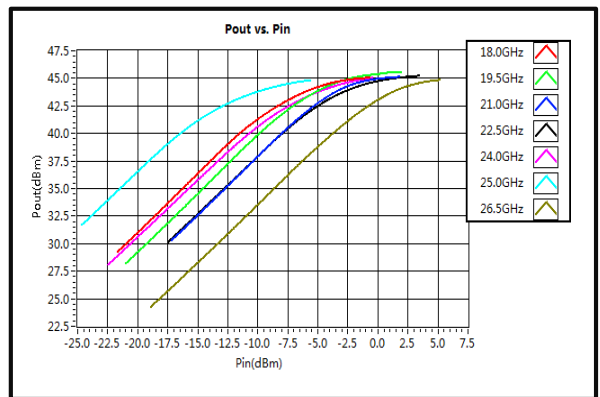
Power Added Efficiency CW



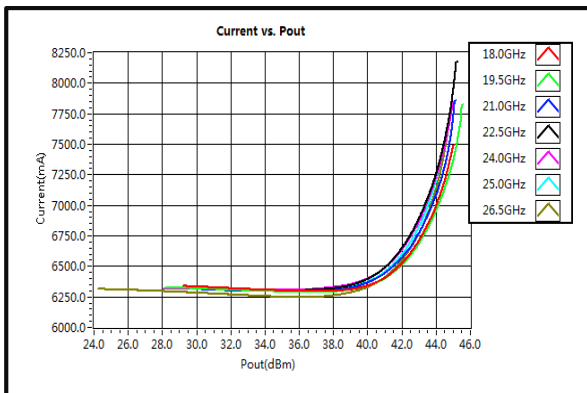
Saturation Power vs. Frequency CW



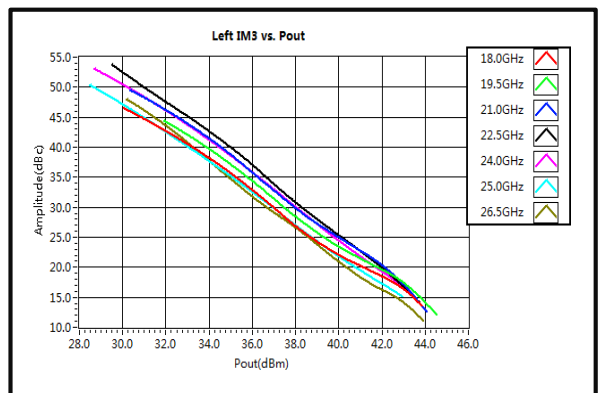
Pout vs. Pin

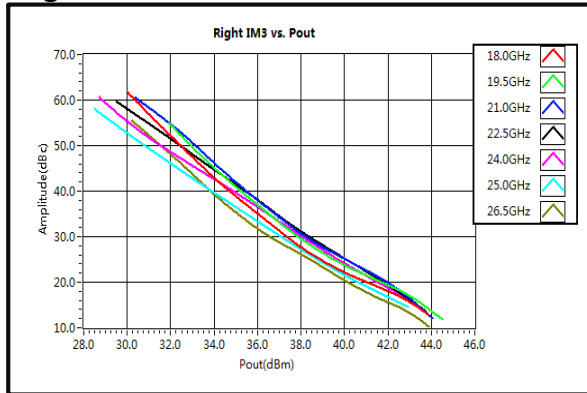
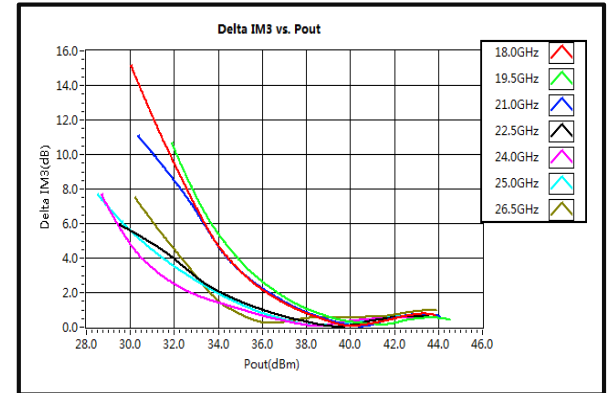


Current vs. Pout



Left IM3 vs. Pout



Right IM3 vs. Pout

Delta IM3 vs. Pout


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