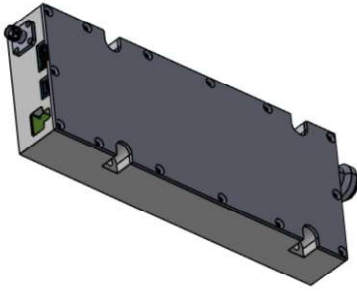
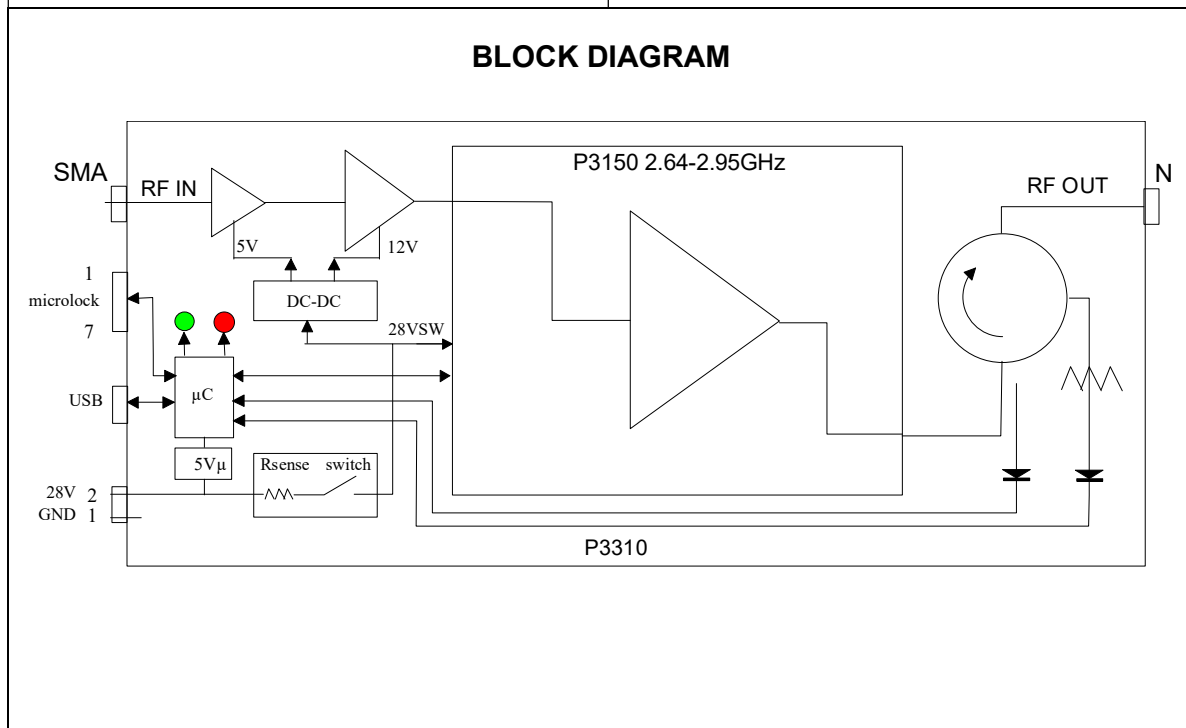


LPA Concepts

LINEAR POWER AMPLIFIER	LPA-AH11-050AB-2640M-2950M-28-00
P3310	
FEATURES ◆ 2640-2950MHz Gain 50dB ◆ LDMOS linearity ◆ Class AB; $P_{-1dB} = 50W$ ◆ 28V / 1.05A idle; 28V/4.2A at 25W ◆ LTE10, 5Wav , -45dBc ACLR, 32V/2.0A ◆ Fast On/Off, Internal ALC ◆ Output VSWR protection ◆ Overcurrent, Over temperature protection ◆ Visual status with LEDs ◆ USB monitoring & controls ◆ RoHS compliant	PACKAGE  APPLICATIONS ◆ Communications



Specifications and information are subject to change without notice

LPA Concepts

Electrical characteristics: 50 ohms; +28V; -25°C to +80°C (1, 2)

Ref	Parameter	Conditions	Note	Min	Typ	Max	Units
1	Bandwidth			2640		2950	MHz
2	Gain small signal	2800 MHz; 50°C			50		dB
3	Gain variation vs frequency	2640-2950 MHz				2	dBpp
4	Power gain	50W output			49		dB
5	Power gain vs frequency	50W output				2	dBpp
6	Input return loss	50 ohms				-15	dB
7	Output return loss	50 ohms				-15	dB
8	P saturation	CW			65		W
9	Peak envelope power	2 tone -30dBc IMD3			50		W
10	ACLR at 32V/2.0A	10MHz LTE PAR=9dB 5Wave				-45	dBc
11	Fast On/Off rise time	FAOO from 0V to 3V			2		µs
12	Fast On/Off fall time	FAOO from 3V to 0V			2		µs
13	Second harmonic	f1=2800MHz; 50W output			-50		dBc
14	Spurious during On	except harmonics				-30	dBm
15	Gain during Off state					-20	dB
16	Noise during Off state						
17	ALC rise time					300	µs
18	ALC hold time					3	ms
19	Current consumption Off state	28V ; Fast On/Off=0V			0.4		A
20	Current consumption On state	28V ; Fast On/Off=3V; idle			1.05		A
21	Current consumption On state	32V ; Fast On/Off=3V; 5W LTE			2.0		A
22	Current consumption On state	28V ; Fast On/Off=3V; 25W			4.2		A
23	Current consumption On state	28V ; Fast On/Off=3V; 50W			6		A

1. Unless otherwise specified
2. Hot spot temperature given by temp sensor close to final transistor

Maximum ratings

Ref	Parameter	Conditions	Note	Min	Nom	Max	Units
1	Operating temperature	Hot spot temperature	3	-25°C		+80	°C
2	Supply voltage			26	28	33	V
3	Voltage on Alarm pin					10	V
4	Input CW power	In band	5			+3	dBm
5	Maximum reverse power	>2s	4			50	W
6	Maximum reverse power	continuous				30	W

3. Shuts down at 80°C resume operation at 70°C
4. Will automatically shut down after 2s
5. Will shut down at I>7.8A (60W)

Protections

Ref	Parameter	Description	Remarks
1	Overvoltage	Shut down if supply > 33 V	
2	Under voltage	Shut down if supply < 20 V	
3	Overcurrent	Shut down if current > 7.8 A	Output power > +48dBm CW
4	Temperature	Shut down if temp > 80°C	Auto recovery (at 75°C)
5	Max reverse power	Shut down if Prev > 30W	Shuts down after 2s for Pout>30W

Analog monitoring & controls

Ref	Characteristic	Description	Remarks
1	Temperature	Analog output	-40°C to +100°C (TMP20)
2	Alarm	Open drain (0V on alarm)	Multiplexed with analog temp
3	PA On/Off	Amplifier Off when PAOO > 3V	28V switches off
4	Fast On/Off	Amplifier On when FAOO = 3V	

Specifications and information are subject to change without notice

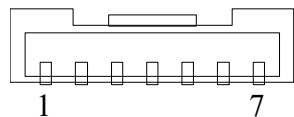
LPA Concepts

USB Monitoring & controls (6)

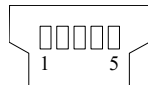
Ref	Characteristic	Description	Remarks
1	Temperature	Hot spot temperature	Digital sensor
2	Supply voltage	Voltage applied by user	
3	Current	Through sense resistor	
4	ON/OFF	Shut down amplifier	
5	Alarm	Provide state of amplifier	

6. Use Interface program PRSI25001V0.2.

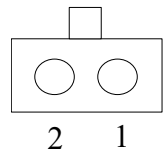
Communication DC Connector Molex Microlock Plus 505567 0771

Pin description			PINOUT
Pin 1 : Fast On/Off			7 circuits Pitch 1.25mm
Pin 2 : PA ONOff		Mate with 505565 0701 505431 crimp terminals AWG 26 wire	
Pin 3 : ALA			
Pin 4 : Temperature			
Pin 5 : Current sense			
Pin 6 : forward power			
Pin 7 : Gnd			

Communication USB 54819-0589

Pin description			PINOUT
Pin 1 : Vbus			Mini USB b
Pin 2 : Data-			
Pin 3 : Data+			
Pin 4 : NC			
Pin 5 : Gnd			

Power Supply DC Connector Molex Minifit Jr 172648-0102

Pin description			PINOUT
Pin 2 : Supply +48V		Mate with 39-01-4020 with 45750-3211 inserts and AWG16 wires	2ckts 4.2mm pitch
Pin 1 : Gnd			

LED significations

LED 1 (green)	LED 2 (red/orange)	Signification
OFF	OFF	Power supply not applied
ON	OFF	Amplifier ON
Blinking	OFF	Amplifier Muted by operator
ON	Orange	Temperature warning, amplifier ON
OFF	Red	Amplifier OFF (Under voltage, over voltage, over temp....)

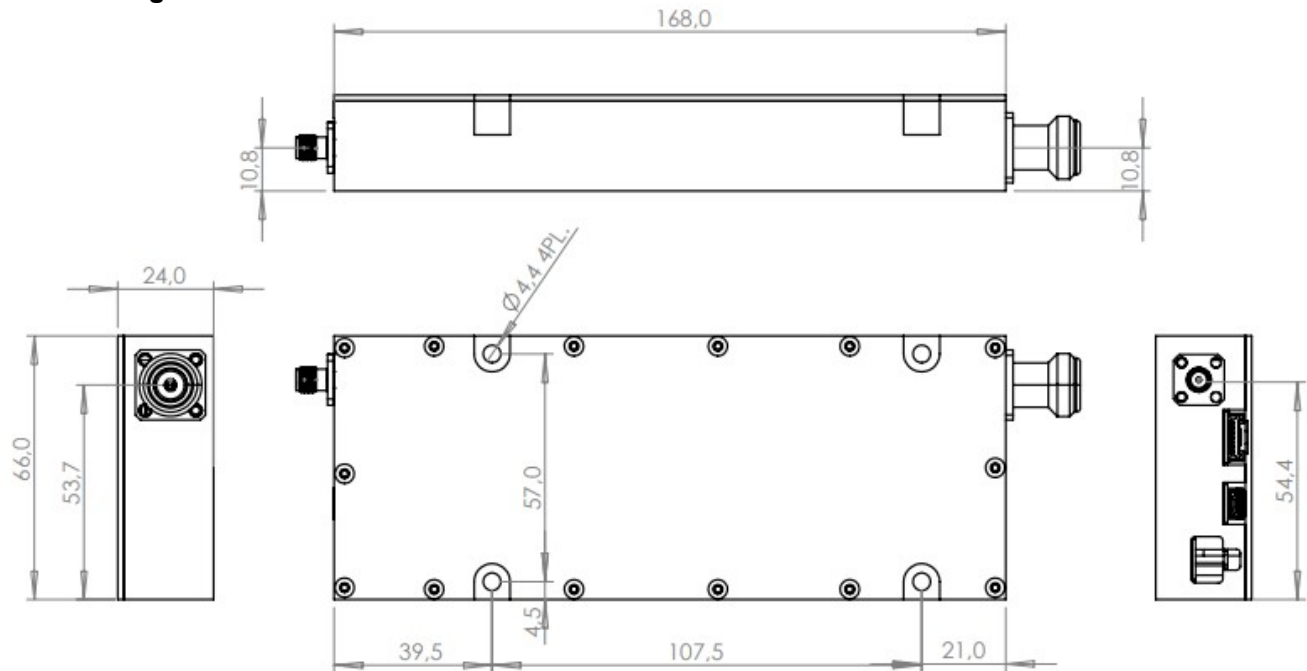
Specifications and information are subject to change without notice

LPA Concepts

Mechanical characteristics

Ref	characteristic	description	remarks
1	Housing dimensions	168mm x 66mm x 24mm	
2	Housing cover finish	Electroless nickel	
3	Mounting	4 M4 screws	It is recommended to use a thermal interface material under housing
4	Input RF connectors	SMA	female
5	Output RF connector	N	female
5	DC supply connector	Molex 172648-0102	Male type
6	DC controls connector	Molex 505567-0771	Male type
7	USB connectors	Mini USB B	
8	Weight	460 grams	

Package outline:



Specifications and information are subject to change without notice

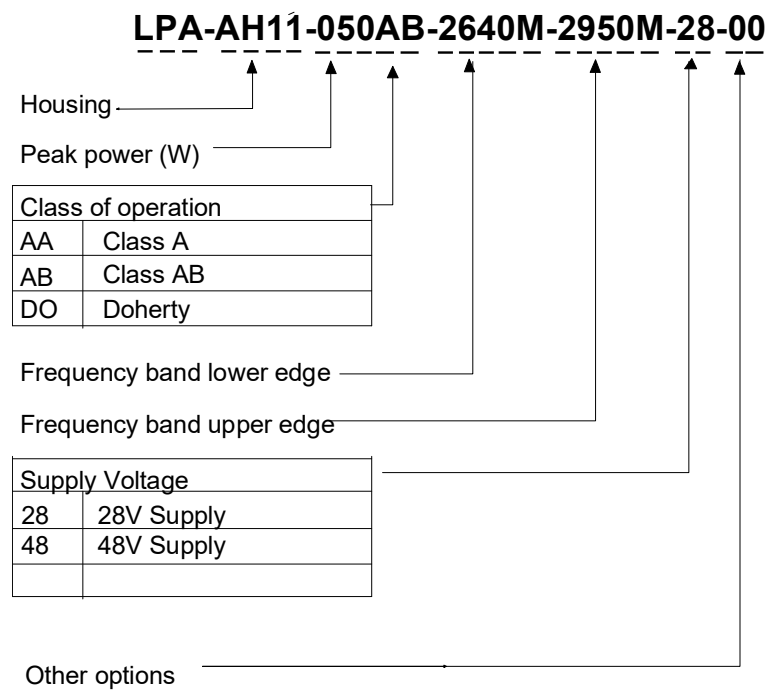
LPA Concepts

Thermal information

Ref	Parameter	temperature	Condition	Note
1	Temp sensor reading		Hot spot close to final transistor	
2	Housing temperature at 50W CW output	70°C (Shut down condition)	Temp sensor = 80°C (Shut down condition)	7

7. Housing attached to heatsink with thermal interface material

Part numbering:



Support material:

Ref	Document type	Document number	Title	Date
1	USB Cable		USB to mini USB B	
2	Interface program	PRSI25001 V0.2.		2025

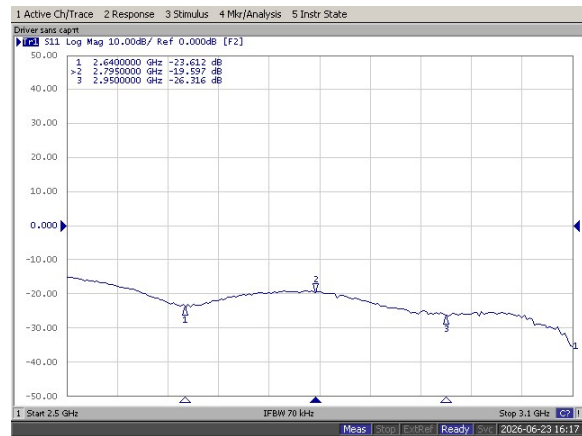
Specifications and information are subject to change without notice

LPA Concepts

TYPICAL PERFORMANCE



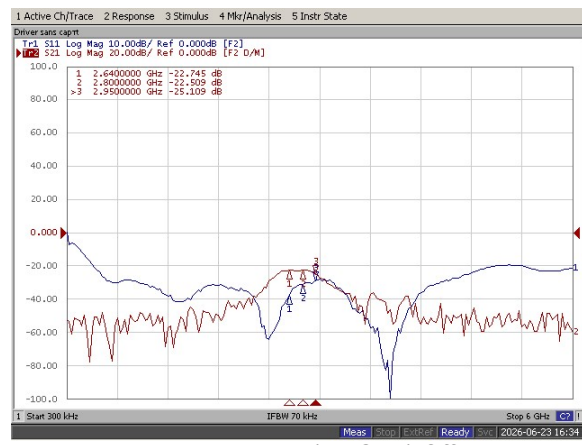
Gain / IRL vs frequency



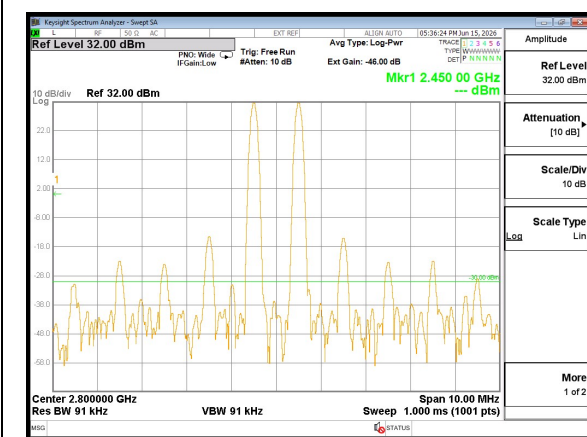
Output return loss vs frequency



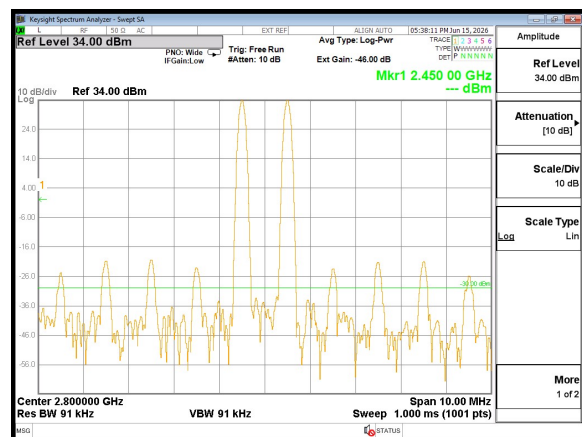
Wideband response (0-6GHz) On state



Wideband response (0-6GHz) Off state



2 tones 2800MHz 1MHz spacing +32dBm each
28V/1.8A

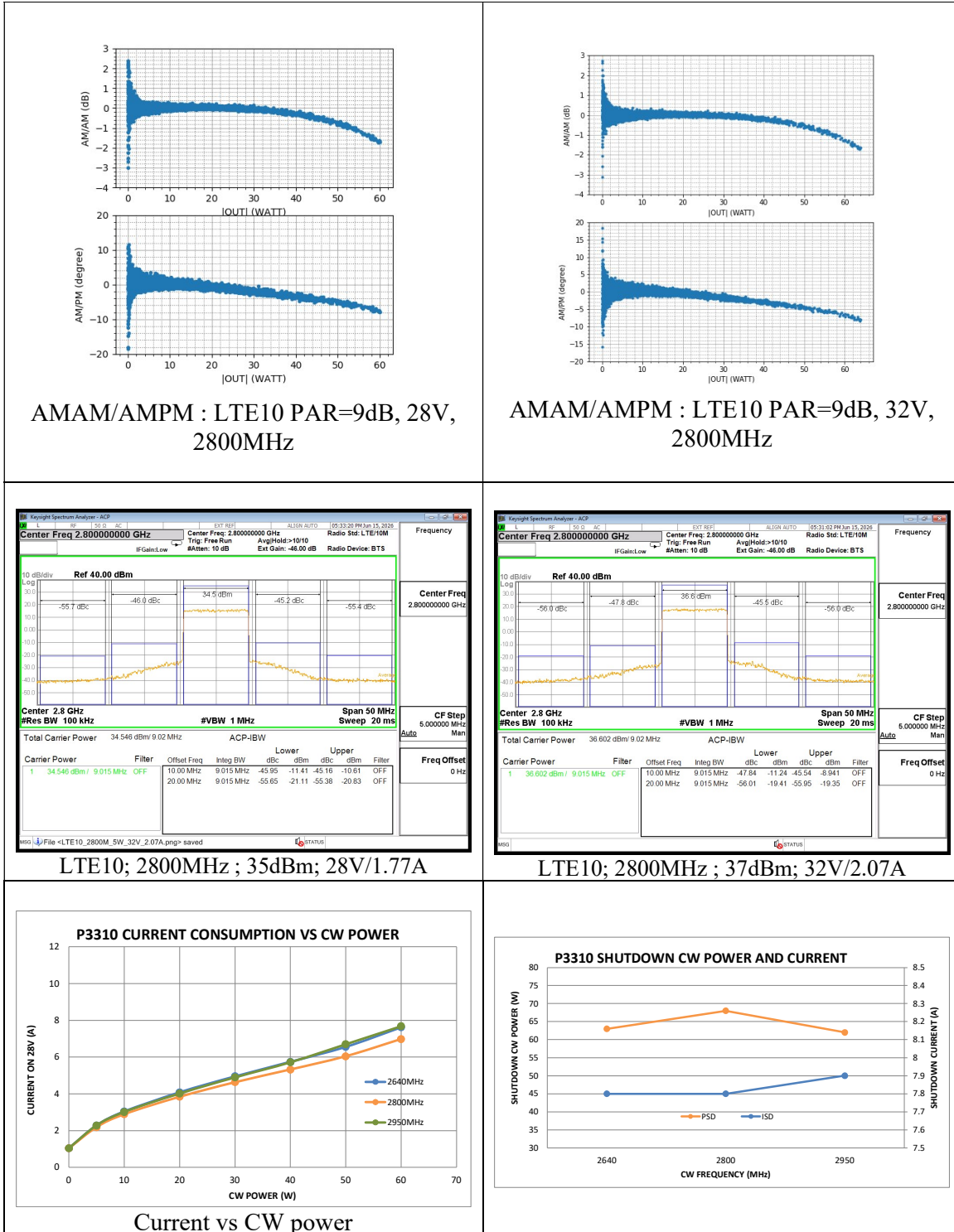


2 tones 2800MHz 1MHz spacing +34dBm each
32V/2.12A

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LPA Concepts

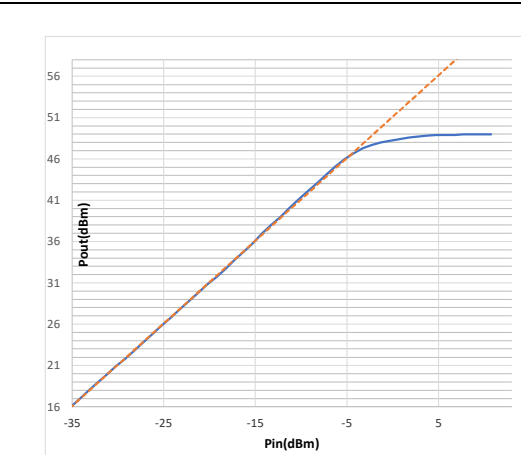
TYPICAL PERFORMANCE (continued)



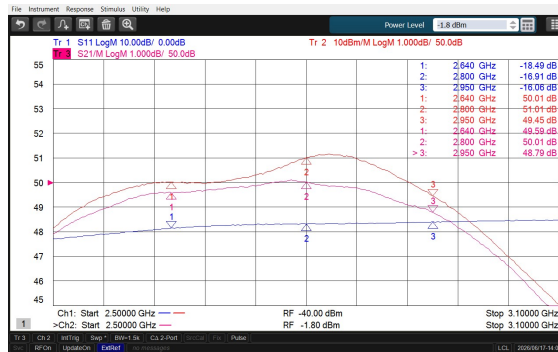
Specifications and information are subject to change without notice

LPA Concepts

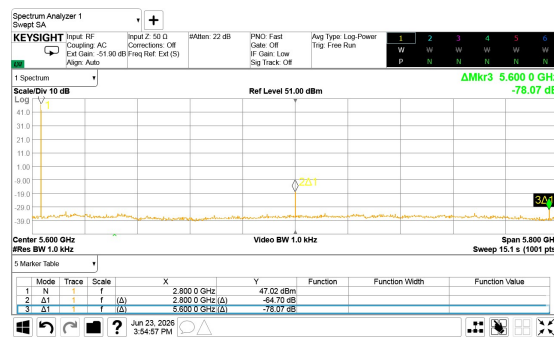
TYPICAL PERFORMANCE (continued)



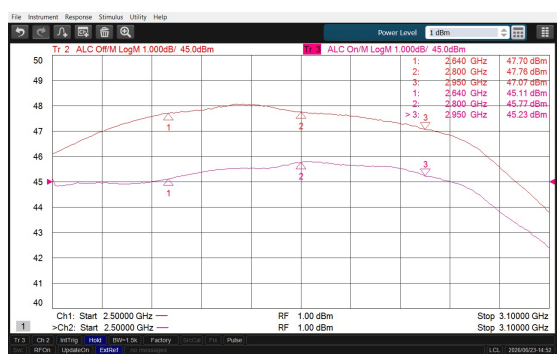
P1dB (pulse width : 1ms, pulse period 10ms)



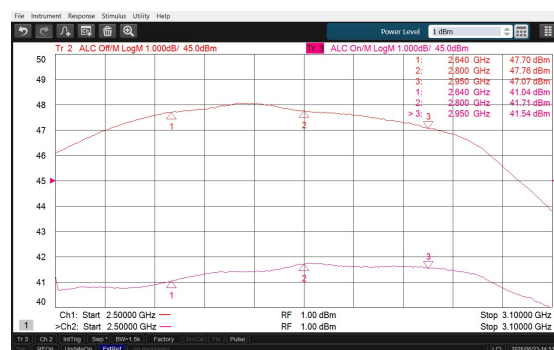
Gain compression @56W output
pulse width : 1ms, pulse period : 10ms



2nd and 3rd Harmonics at 50W output



ALC level set at 46dBm, Pout=45.8dBm
(47.8dBm with ALC Off)



ALC level set at 42dBm, Pout=41.7dBm
(47.8dBm with ALC Off)



ALC rise time on the first pulse
ALC level set at 37dBm (Pout with ALC Off : 47dBm)
Pulse width : 1ms, pulse period : 3ms

Specifications and information are subject to change without notice

TYPICAL PERFORMANCE (continued)

