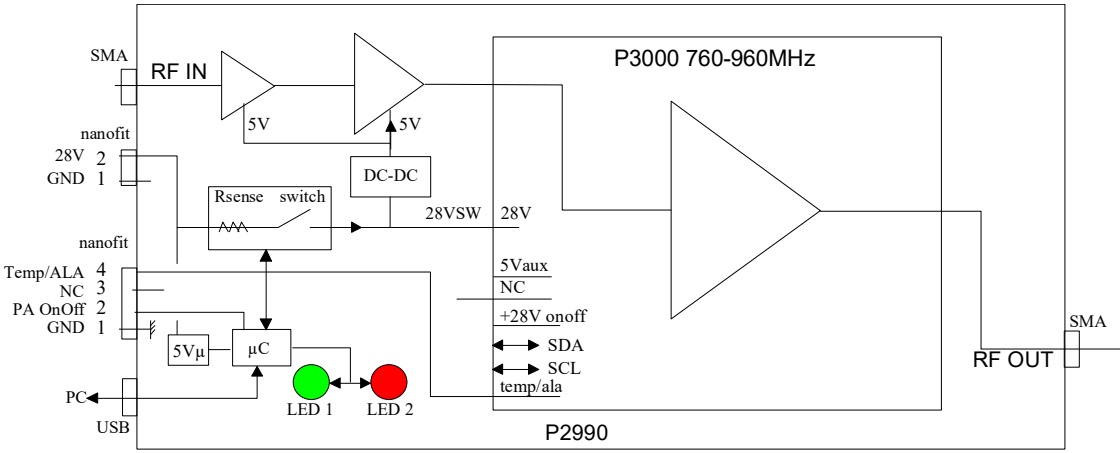


LPA Concepts

LINEAR POWER AMPLIFIER	LPA-AH1-020AA-0760M-0960M-28-00
P2990	
FEATURES ◆ 760-960MHz ◆ Gain : 46 dB ◆ Class A / OIP3 = +55 dBm ◆ 28V / 2.3A ◆ Temperature compensated gain ◆ Protection over/under voltage, current and temperature ◆ Visual status with LEDs ◆ USB monitoring & controls ◆ RoHS compliant	PACKAGE  APPLICATIONS ◆ Instrumentation
BLOCK DIAGRAM 	

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			760		960	MHz
2	Gain small signal	860 MHz; 50°C			46		dB
3	Gain variation vs frequency	760 MHz - 960 MHz				1.5	dBpp
4	Gain variation vs temperature	-25°C to +80°C	2		0.5		dB
5	Input return loss	50 ohms				-15	dB
6	Output return loss	50 ohms				-15	dB
7	Peak envelope power	IMD3 = -30 dBc, f=860 MHz	3		40		W
8	OIP3	IMD3 = -60 dBc, f=860 MHz	4	54	55		dBm
9	OIP3 Flatness	760 MHz - 960 MHz				3	dBmpp
10	Output Noise	760 MHz - 960 MHz			-121		dBm/Hz
11	Current consumption	28V ; <30dBm			2.3		A

1. Unless otherwise specified
2. Housing temperature
3. 2 CW tones 10W each, f1=855 MHz, f2=865MHz
4. 2 CW tones +25dBm each, f1=855 MHz, f2=865MHz

Maximum ratings

Ref	Parameter	Conditions	Note	Min	Nom	Max	Units
1	Operating temperature	Flange temperature		-40°C		+90	°C
2	Supply voltage			26	28	30	V
3	Voltage on Alarm pin					10	V
4	Input CW power		5			-3	dBm
5	Load VSWR	at 20W output	5			10:1	

5. This amplifier is intended to work in a linear mode. Although its peak power capability is 40W, its output power is limited to 20W CW.

Protections

Ref	Parameter	Description	Remarks
1	Overvoltage	Shut down if supply > 30 V	
2	Under voltage	Shut down if supply < 26 V	
3	Overcurrent	Shut down if current > 3.6 A	Output power > +44dBm CW
4	Temperature	Shut down if temp > 80°C	Auto recovery (at 70°C)

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	48V switches off
4			

USB Monitoring & controls (6)

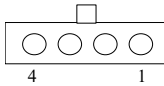
Ref	Characteristic	Description	Remarks
1	Temperature	Temperature of amplifier module	Digital sensor
2	Supply voltage	Voltage applied by user	
3	Current	Through sense resistor	Rsense=13.5 mohms
4	ON/OFF	Shut down amplifier	
5	Alarm	Provide state of amplifier	

6. Use Interface program PRSI25001V0.2.

Specifications and information are subject to change without notice

LPA Concepts

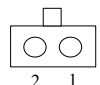
Communication DC Connector Molex NanoFit 105313-1104

Pin description			PINOUT
Pin 1 : GND		Mate with 105313-1104	
Pin 2 : PA ONOff			
Pin 3 : NC			
Pin 4 : Temperature /ALA	Open drain		

Communication USB

Pin description			PINOUT
Pin 1 : GND		Mini USB b	
Pin 2 : Data-			
Pin 3 : Data+			
Pin 4 : Vbus			

Power Supply DC Connector Molex NanoFit 105313-1102

Pin description			PINOUT
Pin 2 : Supply +28V		Mate with 105307-1202 with 105300-2100 inserts and AWG20-22 wires	
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....)

Mechanical characteristics

Ref	characteristic	description	remarks
1	Housing dimensions	150mm x 78mm x 21mm	
2	Housing cover finish	Electroless nickel	
3	Mounting	8 M4 screws	
4	Input/output RF connectors	SMA	
5	DC supply connector	Molex 105313-1102	Male type
6	DC controls connector	Molex 105313-1104	Male type
7	USB connectors	Mini USB B	
8	Weight	460 grams	

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LPA Concepts

Package outline:



Part numbering:

LPA-AH1-020AA-0760M-0960M-28-00

Housing _____

Peak power (W)

Class of operation	
AA	Class A
AB	Class AB
DO	Doherty

Frequency band lower edge

Frequency band upper edge

Supply Voltage	
28	28V Supply
48	48V Supply

Other options

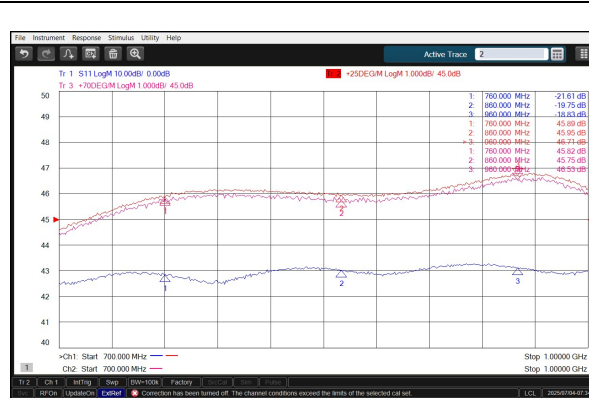
Support material:

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

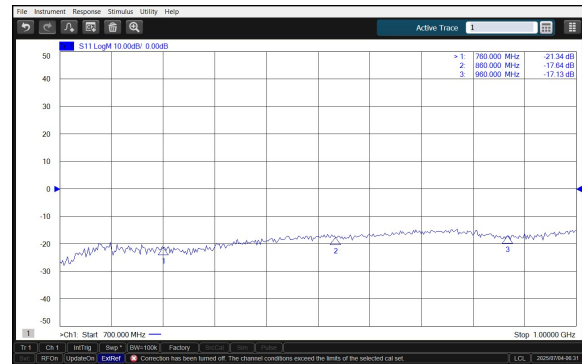
Specifications and information are subject to change without notice

LPA Concepts

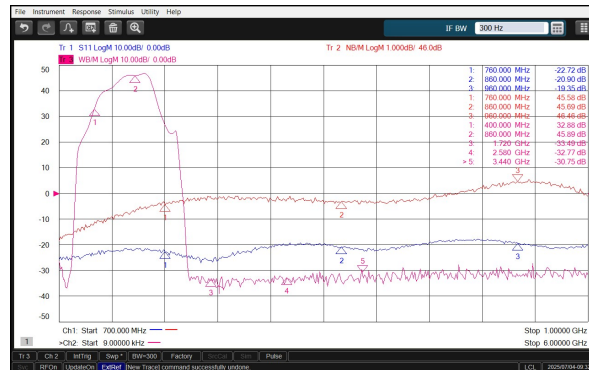
TYPICAL PERFORMANCE



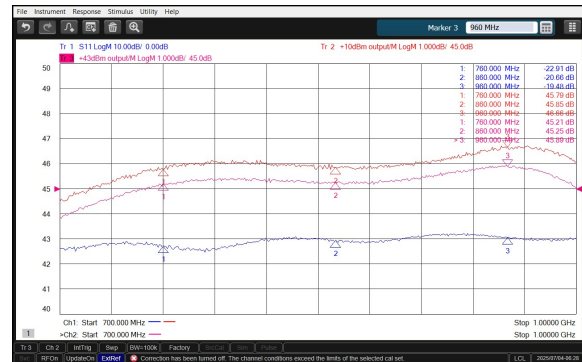
Gain / IRL vs frequency (25°C & 70°C)



Output return loss vs frequency



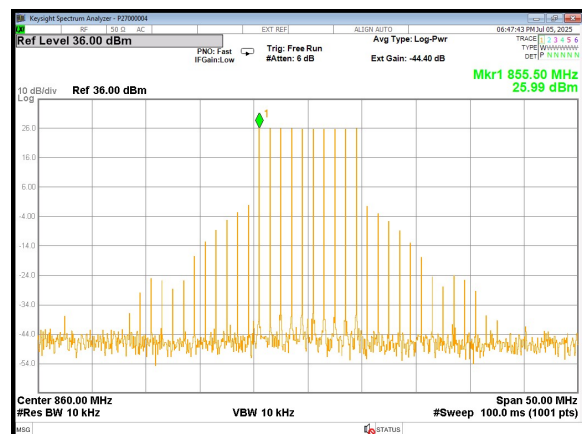
Wideband response (0-6GHz)



Gain at 10mW & 20W output



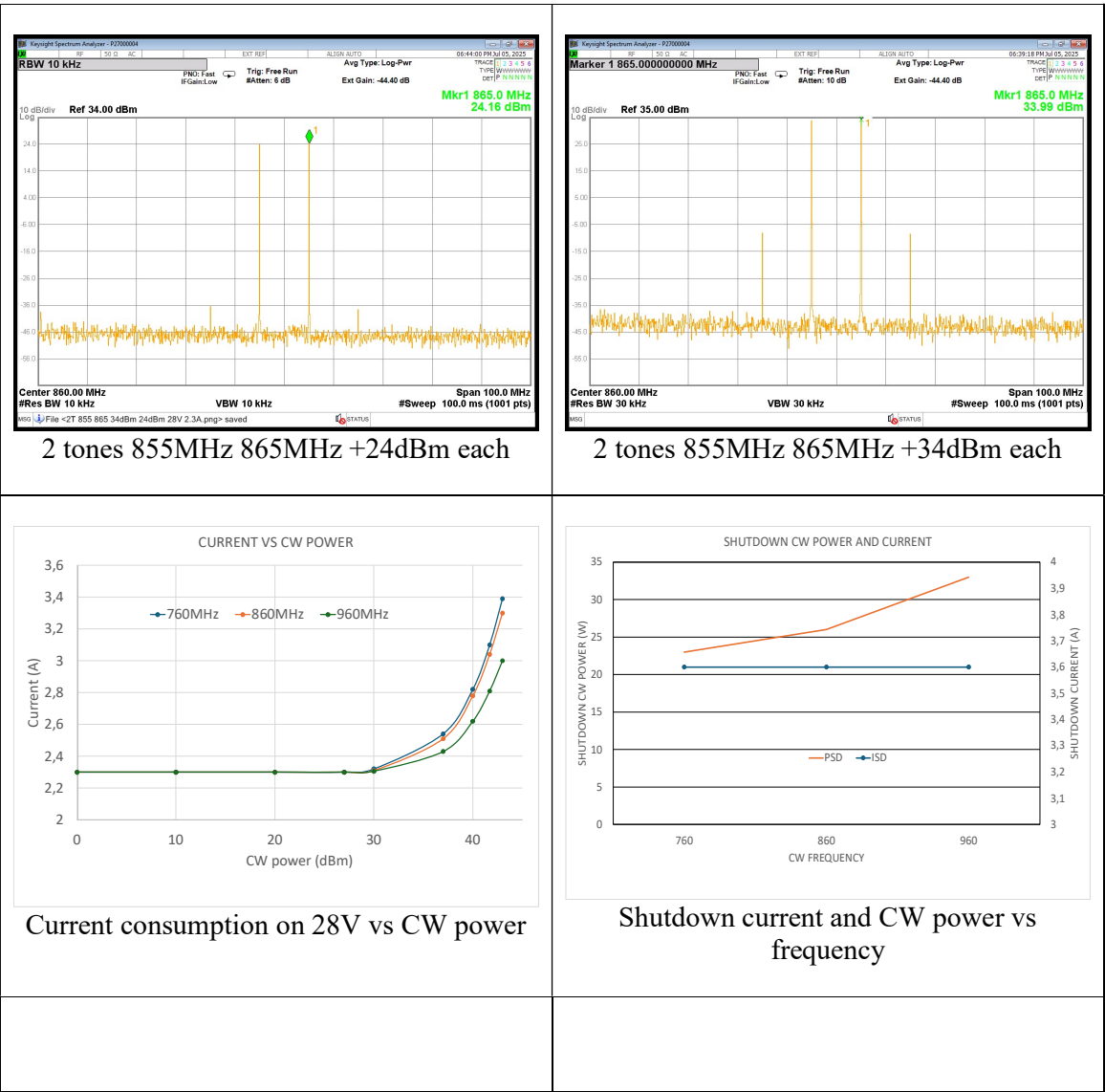
10 tones, 20 W peak, f=860MHz, peaked phases



10 tones, 40 W peak, f=860 MHz, peaked phases

Specifications and information are subject to change without notice

TYPICAL PERFORMANCE (continued)



Specifications and information are subject to change without notice