

Revision 1.0 Release Date October 30 2006
Revision Notes - Initial Release, preliminary

This document includes models 4360, 4462

Technical Specifications Summary

Frequency Range: 0.5 - 525 MHz
P1dB: 2 Watts CW
Class: A
Supply Voltage: 28.0V

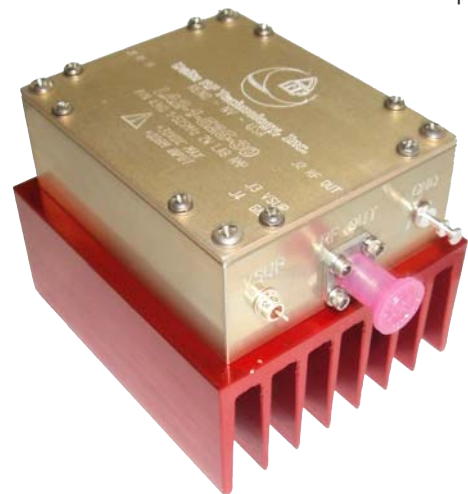
Gain: 30dB
Efficiency: 14%
Temperature Range: 0 to 50°C
Max VSWR: ∞ : 1

Amplifier General Description

The LA2-1-525-30 laboratory amplifier is a true class A amplifier that covers 500kHz - 525MHz and features a minimum of 1.7W CW. Using third generation ultra-reliable gold metallized LD MOSFET, this unit outperforms any laboratory amplifier in its class!

Requiring only a modest heatsink, which is available as a factory option, this laboratory amplifier will give you years of service in any application. Designed for general purpose bench work, and used in antenna measurements, EMR testing, signal generator boosting, amplifier testing, this lab amp is the unit every bench should have!

Amplifier Picture



Shown with Heatsink, A12 option
Standard heatsink black, colors optional



Delta RF Technology, Inc.

High Power RF Amplifiers and Accessories

350 South Rock Boulevard • Reno • NV • 89502 • USA

Phone +1.775 DELTA RF [775 335 8273]

Fax +1.775 DELTA FX [775 335 8239]

website: <http://www.drft.com>

email: sales@drft.com

Parameter	Min	Typ	Max	Units	Notes
Frequency	0.5		525	MHz	
P1dB	1.5	2.5		W, CW	
Psat		4		W, CW	
IMD3		-26		dBc	For 2 tones, 10kHz spacing, 2 W PEP
Power Input	0	1.5	3	dBm,CW	For 2W output
Gain	30	31.5		dB	2W
Vsupply	24	28	30	V, DC	
Drain Current	0.45	0.5	0.6	A, DC	
Input VSWR		1.2:1	1.5:1		
Insertion Phase Variation		±5		°	Unit to unit
Gain Variation		±1.2	±1.5	dB	2W
F2 Second Harmonic		-20	-15	dBc	2W
F3 Third Harmonic		-25	-20	dBc	2W
Baseplate Operating Temperature	0		50	°C	

Physical Dimensions

2.35" x 2.95" x 1.2" / 60mm x 75mm x 33mm

All specifications valid for output impedance 50 Ω , $V_{sup} = +28VDC$, $I_{dq} = 0.5A$

Absolute Maximum Ratings

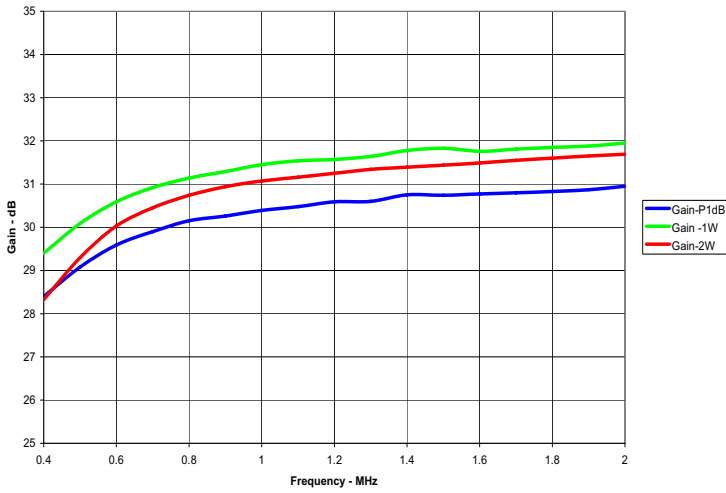
Parameter	Value	Units	Notes
Maximum Operating Voltage	30	V,DC	
Stable Operating Voltage	24 - 30	V,DC	
Maximum Bias Current, Q100	0.5	A,DC	Factory set 0.5A
Maximum Drain Current	0.6	A, DC	
Load Mismatch Survival	∞ : 1		
Storage Temperature	-40 to +85	°C	
Maximum Operating Baseplate Temp	50	°C	

Features, Auxillary Functions

- ◆ Optional Disable Function

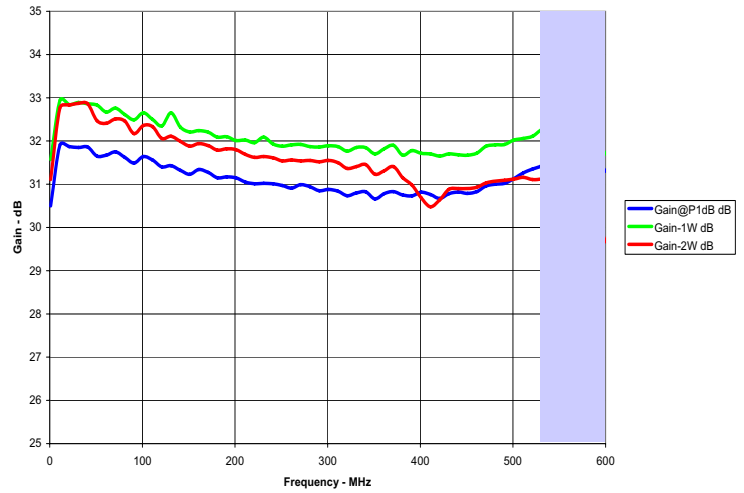


Gain - Low Frequency

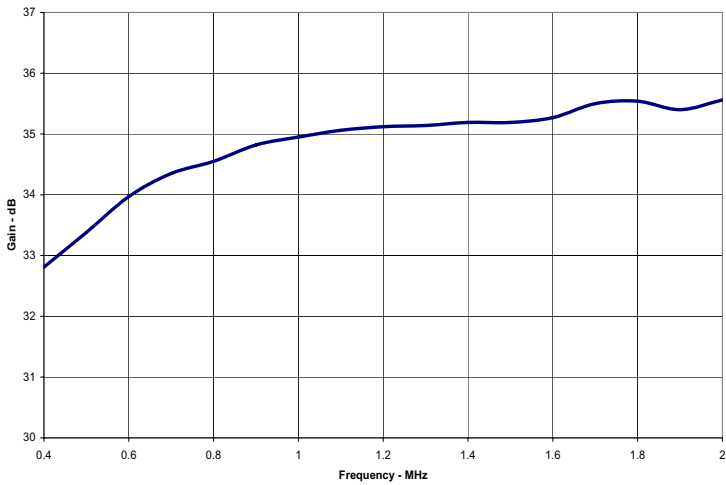


Graph 1. Gain
P1dB

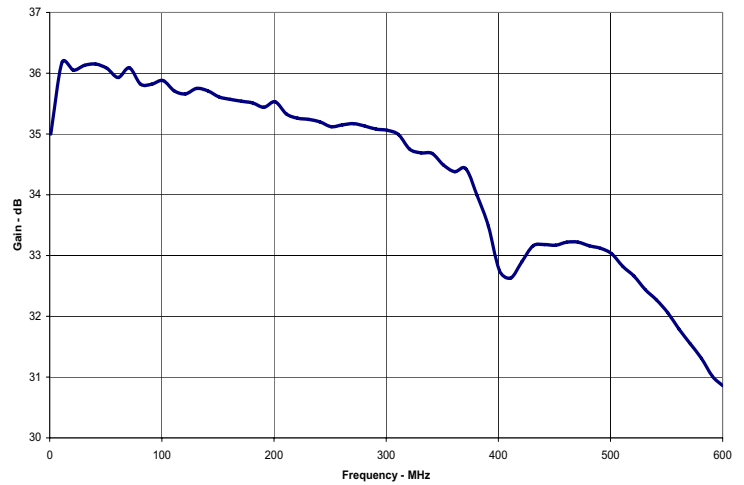
Gain Plots



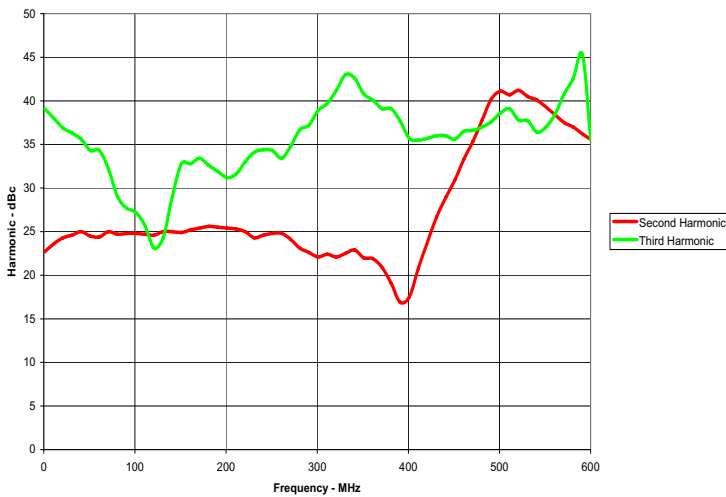
Graph 2. Gain
P1dB



Graph 3. P1dB
Harmonics



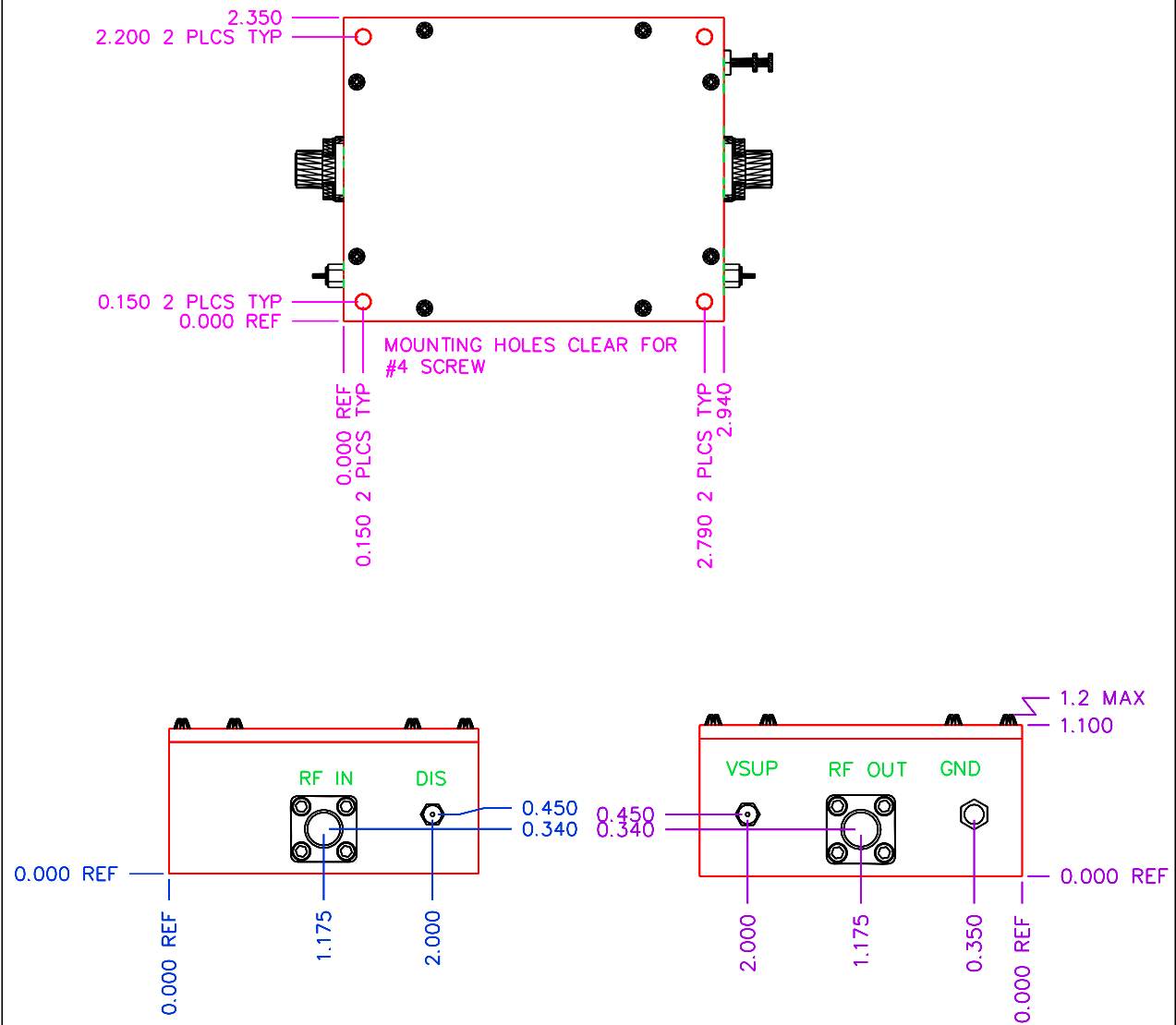
Graph 4. P1dB



Graph 5. Harmonics



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
A		INITIAL RELEASE	06-05	SJK



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	Mechanical Specifications			
Tolerances, unless otherwise specified. All dimensions in inches. x.x ±0.050 angle ±1° x.xx ±0.010 x.xxx ±0.005	SIZE A	FSCM NO. 2538	DWG NO. 2538	REV A
SCALE NOT		SJK 6-28-05	SHEET 1 of 1	



Attach LA2-1-525-30 to an appropriate heatsink using #4 or equivalent hardware. Use a thin layer of heat sink compound, such as Wakefield 120 series or equivalent (thin layer means there will not be gobs of heatsink compound under the unit, but a thin 0.001 - 0.002" even layer applied). Apply heat sink compound to one surface, mate, then torque screws. The unit is designed to dissipate 14W under normal conditions and heatsink must have adequate capacity. Connect ground and Vsup at connections on the right side of amplifier. Use of teflon wire is highly recommended, at least 22G wire.

If disable option is ordered with amplifier, disable pin should be open circuit for normal operation. Ground to disable. An open collector output is suggested.

Amplifier is designed to operate into a 50 ohm load, but will drive any load, any phase angle. Care should be taken not to touch the RF output pin of the amplifier when energized as significant RF energy may be present and can cause shock / burns.

Important operating note - do not exceed temperatures listed in specifications. When used with factory supplied heat sink (-A12 option), note the maximum ambient temperature is 40 °C.

Please consult the factory with any additional questions or concerns.



Ordering Information:

Order Code	Description	DRFT Reference
LA2-1-525-30	2W, 0.5 - 525 MHz, 30dB Gain Laboratory Amplifier	4360
LA2-1-525-30-A1	2W, 0.5 - 525 MHz, 30d Gain Laboratory Amplifier with Shutdown	4462

Options

-A12	Heat Sink Option	0202
-A13	Heat Sink Option with DC Fan, pre wired	0203
-A14	Ruggedized for vibration	0204
-T2	Extended Burn In	0271
-T3	Extended Data Collection	0272

Standard Amplifier Options:

Heat Sink - aluminum extruded heat sink, black anodized. Amplifier will be bolted to heatsink. Customer will be required to provide adequate airflow.

Heat sink with fan - aluminum extruded heat sink as above, with included fan bolted to push air through the heat sink. Depending on heat requirements, a second fan may also be provided on the output of the unit.

Ruggedized - all screws have threadlocking compound applied, and all flying components are staked and attached to base. Designed to withstand MIL-STD-810E 514.4 Category 8.

Testing Options:

Standard - includes power test and brief burn - in under laboratory conditions. Printed test report gives graph of Gain and Input Return Loss at rated P1dB and Voltage Conditions. Report shows pass/fail criteria. All amplifiers include this test.

Extended burn in - 8-hour burn in at P1dB with standard test run at completion. Unit is monitored during test and any discrepancy reported. Standard test data is included.

Extended data collection - Standard data is run and included. Detailed data is taken point by point giving the customer 25 - 70 frequency points, depending on the amplifier model. For each frequency point, data is generated to include gain, input power, input return loss, current, second harmonic, third harmonic, efficiency, audio distortion.

Other tests available - Vibration, Temp cycling, Shock. Please inquire.

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