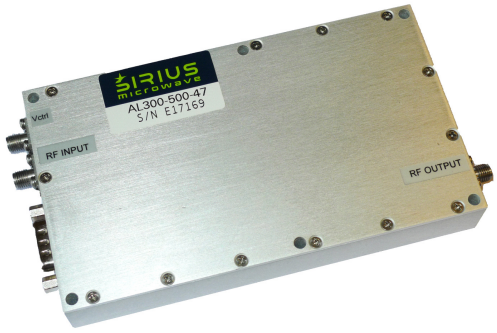
AL300-500-47P

Pulsed Solid State Power Amplifier AL300-500-47P Rev2

FEATURES:

Output Power 50W
Fast On-Off switching
Input Step Attenuator, 0 to 31dB
Input SPDT Switch
Input, output and reflected power monitoring
Temperature and current monitoring
Built-In u-controller with USB interface



Electrical specifications @ +24V_{dc}, +25°C, 50Ω system

Parameter	Unit	MIN	TYPICAL	MAX
Amplifier parameters				
Frequency	MHz	300		500
Output Power Psat	W		50	
Small Signal Gain	dB	45		50
Small Signal Gain Flatness	dB			+/-2
Input VSWR			1.5:1	2.0:1
Pulse width	us	13		100
Duty cycle	%			30
Output Power on/off isolation	dB	90		
PA on/off switching time(50% DC ctrl to 10 or 90% RF)	ns		200	
Spurious signals	dBc			-50
Supply voltage	V	24	28	
Current consumption @Pout 50W, 30%DC	A			2.5
Impedance	W		50	
ON Signal Voltage	V	2	2.4	5
OFF Signal Voltage	V	0	0.4	0.8
Attenuator parameters				
Attenuation range	dB	0		31.75
Attenuator stepsize	dB		0.25	
Attenuator switching time(50% DC ctrl to 10 or 90% RF)	ns		650	
Settling time(RF settled to 0.05dB of final value)	ns		4000	
Max switching frequency	KHz		25	
Power Monitoring Parameters				
Input power meter range	dBm	-20		+12
Output power meter range[1]	dBm	17		48

Protection

User settable temperature protection
Load mismatch protection
Supply current limited at 3A
[1] Pulsed power, 30% duty cycle

Mechanical specifications

Parameter	Unit	TYPICAL
RF Connectors Input, Output		SMA Female
On/Off signal Connector		SMA Female
Dimensions	mm	140x 80x20
Weight	gram	300
Cooling		External heatsink

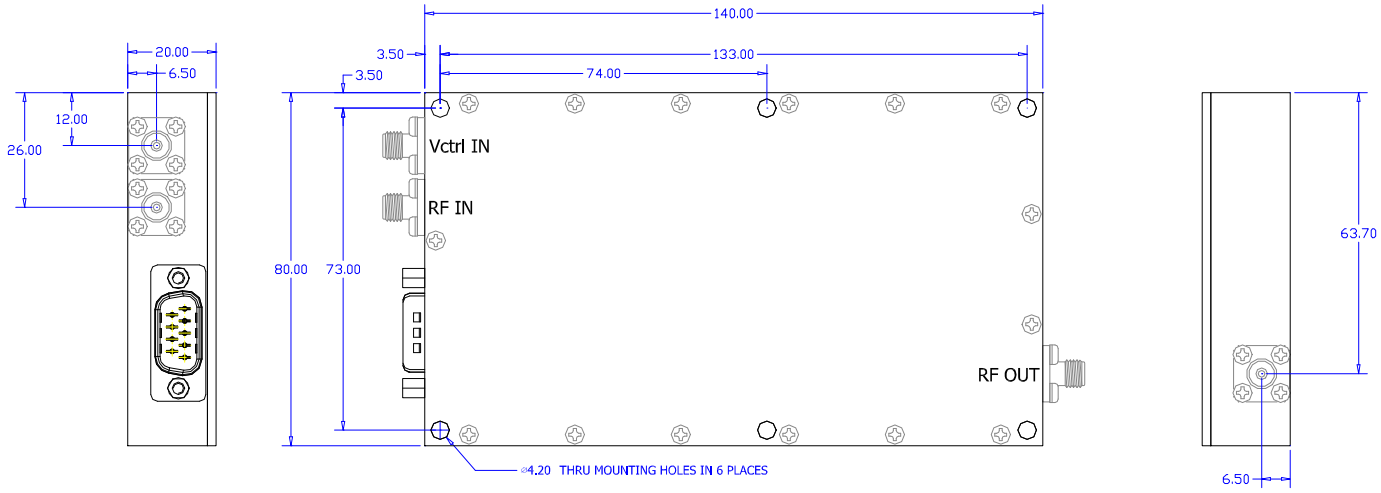
Absolute Maximum ratings

Parameter	Unit	min	Max
RF Input Power	dBm		+15
Supply Voltage	V		40
Voltage at any digital input	V	-0.3	+5.8
Operating temperature	°C	-20	+60
Storage temperature	°C	-65	+125

D-Sub Interface Pin-out

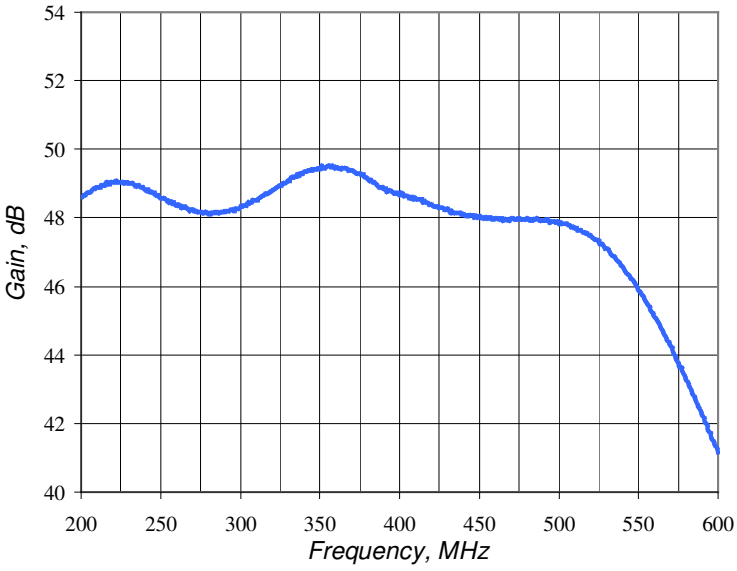
Pin #	Description
1	No connection
2	Controller Restart(leave open)
3	Reserved for programming
4	Ground
5	Supply Voltage
6	Ground
7	Reserved for programming
8	USB data+
9	USB data-

Outline Drawing

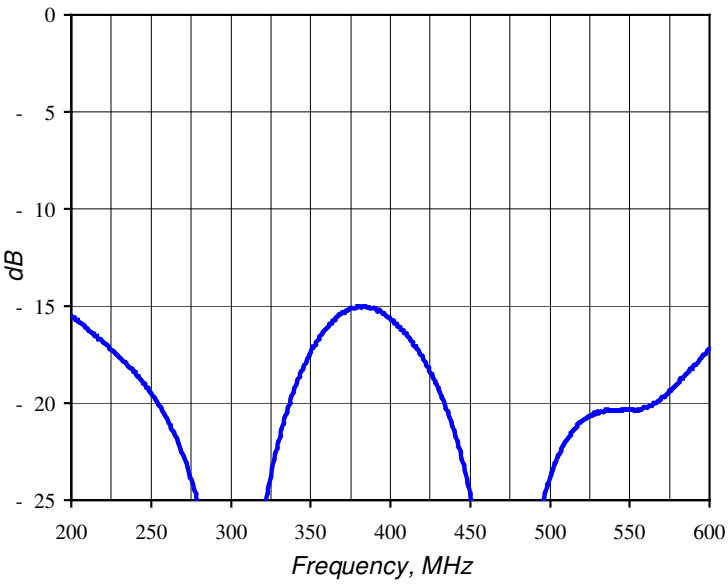


Typical Performance Plots

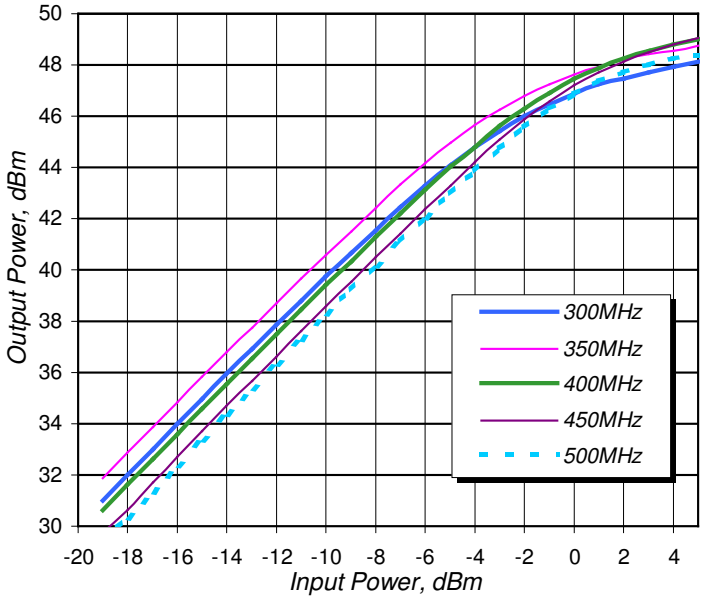
Plot no. 1. Small Signal Gain, Pin=-20dBm CW, Att=0dB



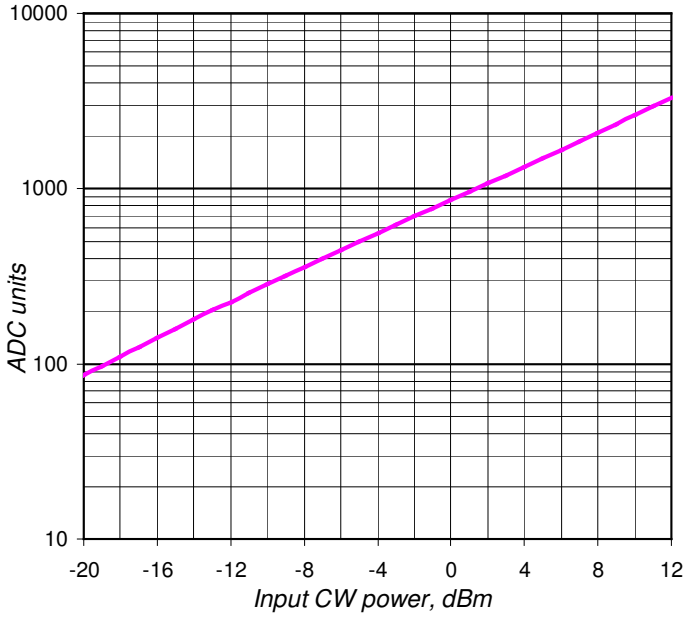
Plot no. 2. Input Return Loss, Pin=-20dBm CW, Att=0dB



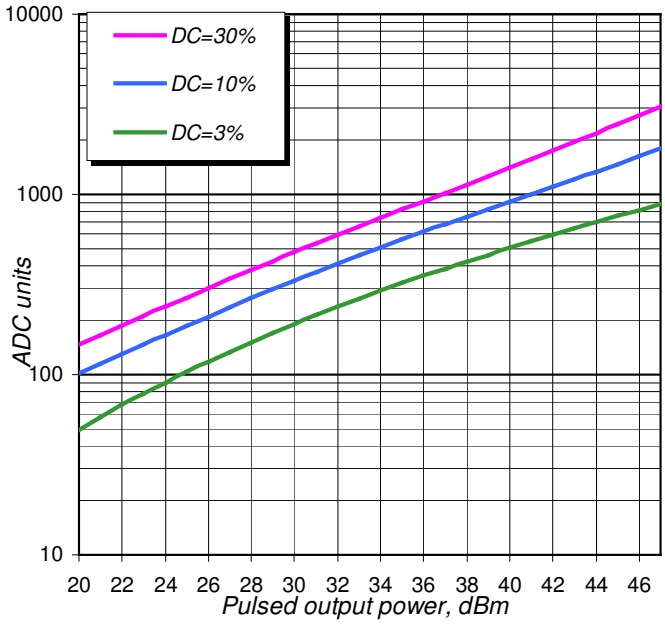
Plot no. 3. Output Power vs. Input Power, pulsed 30% DC, Att=0dB



Plot no. 4. Input Power Detector @400MHz, CW



Plot no. 5. Ouput Power Detector @400MHz



Plot no. 6. Output Power Detector @47dBm vs. Frequency