

400W S-Band Solid State Pulse Amplifier MODEL APRA-S4000A



Features

- Modular architecture
- Fast pulse rise/fall times (<75ns)
- Duty cycle up to 20%
- Minimal pulse droop (<1% @ 50 μ s)
- High stability (phase and amplitude)
- Gain compensation over temperature
- Remote monitor and control capability via RS485 and Ethernet
- Input and output sample monitor ports
- Power factor correction
- No rear access required for operation or maintenance

Overview

The Advantech Wireless Model APRA-S400A, S-Band solid-state pulse amplifier operates over the band of 2.9 – 3.1 GHz. The peak power at the output connector is 400W.

The design of the product is based on Advantech's tradition of high power and high efficiency line of amplifiers.

Built-in features such as duty cycle monitor and pulse width monitor ensure trouble free operation.

400W S-Band Solid State Pulse Amplifier

Technical Specifications			
Operating Frequency Range	2.9 – 3.1 GHz		
Peak Output Power	400W min (+56 dBm) @ 20% duty over the full band and operating temperature range		
Output Power Control	High Power mode +56 dBm / Low Power Mode +50 dBm		
Input Drive Level	0 dBm min.		
Gain Variation	2dB p-p over frequency range		
Duty Cycle	20% max		
Pulse Width	0.1 – 100 μ s		
Pulse Repetition Frequency	5 kHz max, \pm 5% staggering		
Pulse droop	<0.8dB max at 100 μ s		
T-rise/T-fall	<75 ns		
Harmonics	-60 dBc max		
Phase drift (within the pulse)	<10° max @ peak output		
Non-Harmonic Spur	-65 dBc		
Input / Output Impedance	50 Ohms		
Input / Output VSWR	1.5:1 Load VSWR up-to 2.5:1 with no damage		
Gain variation over frequency	2 dB p-p		
Gating Signal	TTL to precede RF pulse by 2 μ s active Low		
Decay Interval	Amplifier output will cease 2 μ s after loss of gating signal		
Monitor Output (optional)	Calibrated output sample loop with 50dB attenuation. SMA connector		
Power Requirements			
AC Input voltage	180 – 264 VAC (47 – 63 Hz)		
Power Consumption (nominal)	600W @ 20% duty cycle		
Mechanical Characteristics			
Panel Height/Width/Depth	3 RU / 19" rackmount chassis / 26" deep		
Weight	25 kg		
Cooling	Forced air . front intake		
Interfaces			
RF input	N-type (f) or TBD	RF output	N-type (f)
RF Output sample port	SMA(f)	Detected RF Power	BNC (f) pulsed DC
Monitor & Control	Ethernet	RJ-45	RS422/485 DB9 (f)
AC Line	IEC 120 or TBD		
Monitor & Control			
Operating Modes	Remote & Local with manual over-ride of remote operation (via toggle switch)		
Output Power Control	High Power Mode / Low Power Mode		
Parameters on display locally or remotely via Ethernet or Serial port:			
a- Forward & Reflected power	b- Duty Cycle	c- Elapsed time of transmitter operation	
d- Operating temperature	e- Output VSWR	f- Operating voltage & current	
Protection against damage:			
a- Over Temperature	b- Over current	c- Excess duty cycle	
d- RF input over drive	e- High Reflected power	f- over & under voltage conditions	
Environmental Conditions			
Operating temperature	0°C to +50°C	Storage temperature	-55OC to +85OC
Humidity	5% to 95%, non-condensing		
Altitude	10,000' AMSL, derated 2°C/1000' from AMSL		

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