

## Ultra-broadband Spatially Combined Power Amplifier

### CHPA0618-1-G45



The CAP Wireless CHPA0618-1-G45 ultra-broadband power amplifier incorporates gallium arsenide (GaAs) monolithic microwave integrated circuit (MMIC) technology into its revolutionary, patented (#7215220) Spatium™ broadband spatial combining technology to achieve outstanding solid state power levels across an extended 6-18 GHz frequency range. This compact, affordable, reliable, solid state alternative to traveling wave tube amplifiers (TWTAs) is uniquely positioned to meet the demanding specifications of applications such as electronic counter measures (ECM), laboratory instrumentation, and electromagnetic compatibility/electromagnetic interference (EMC/EMI) test, as well as narrower band applications like radar, microwave imaging, and satellite communications. The multiple element architecture provides protection from single point failures and facilitates even, dispersive, three-dimensional (3D) heat dissipation.

#### Typical Applications

- TWTA replacement
- Electronic warfare
- Multi-band communication
- Tri-band satellite communications
- Instrumentation and test equipment

#### Key Features

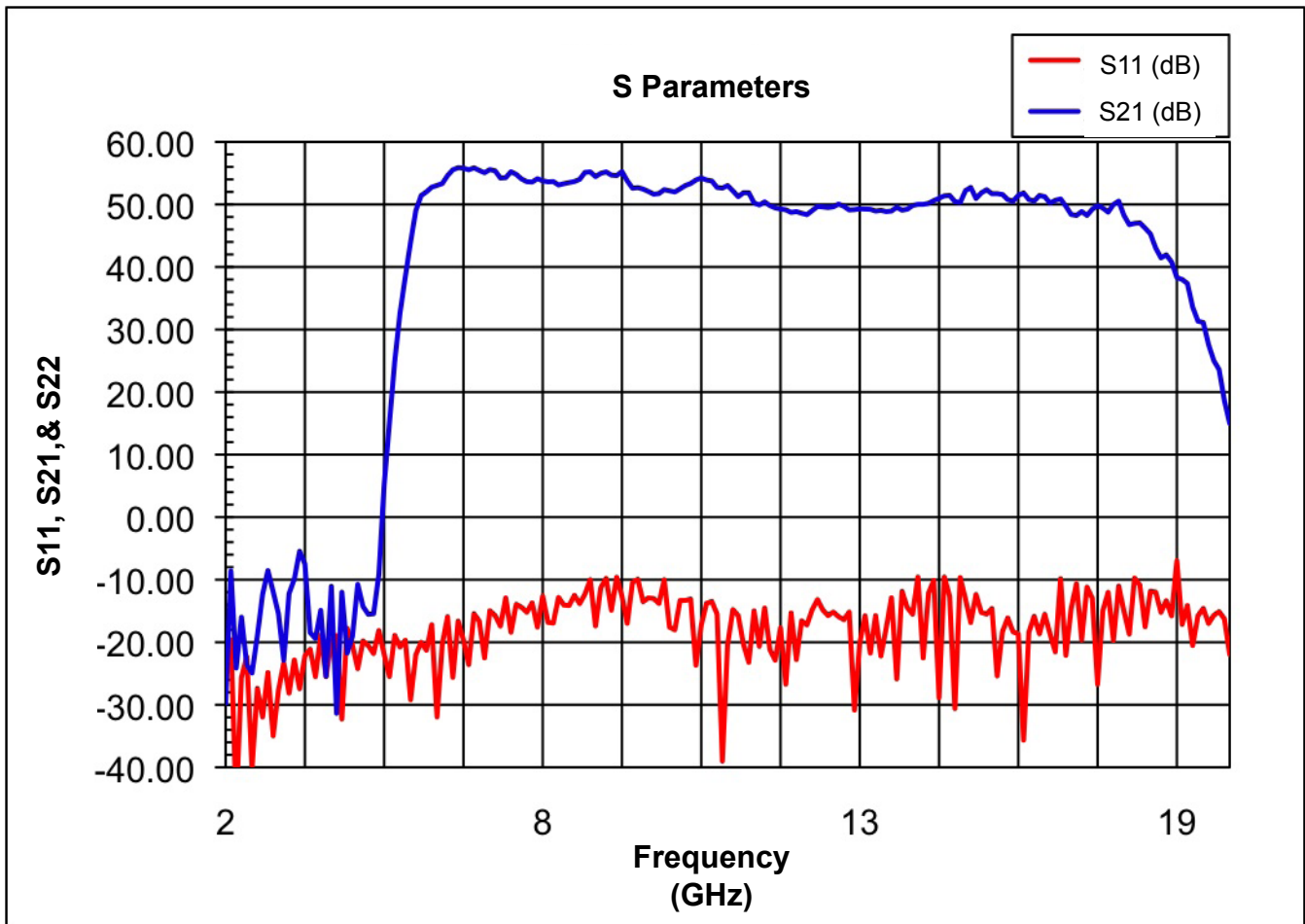
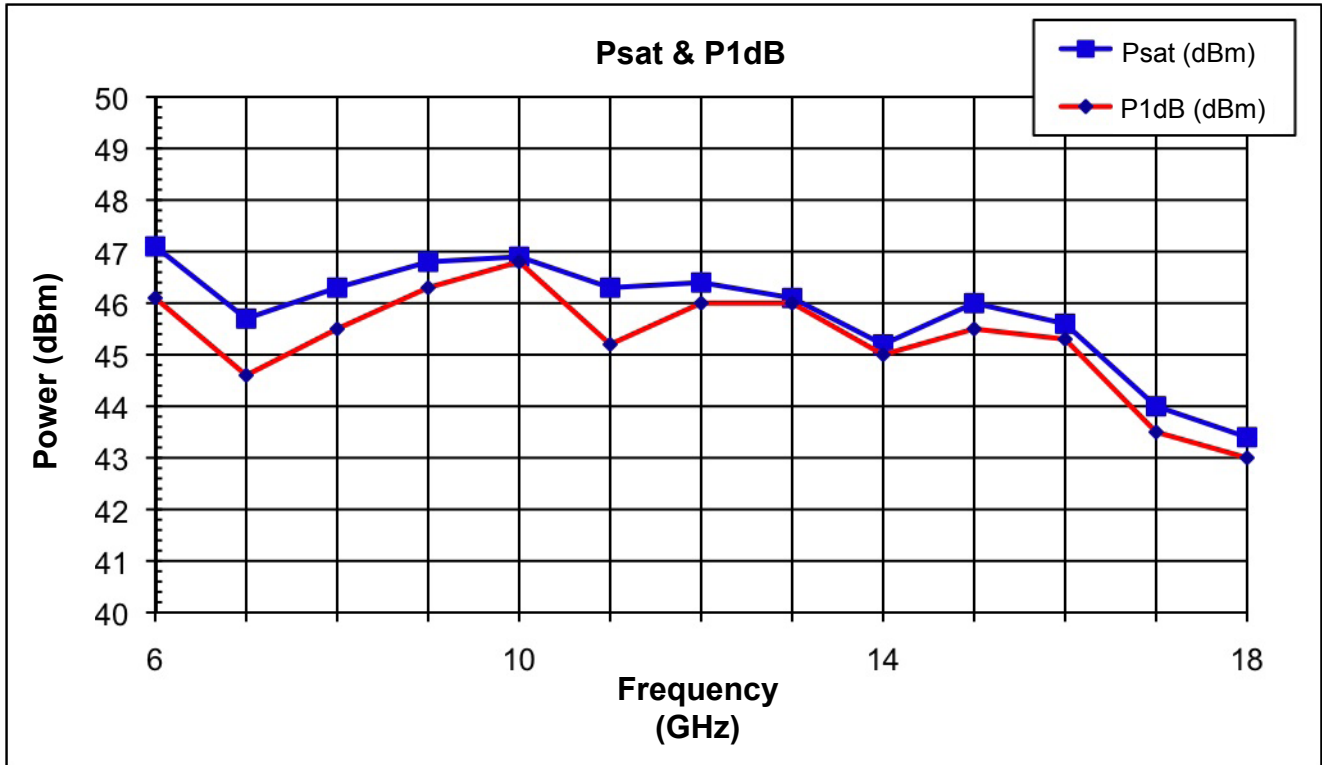
- Ultra-broad 5.85-18.4 GHz bandwidth
- 40 watts typical saturated power
- Exceptional reliability and MTBF
- Graceful degradation (soft-fail) in the event of device failure
- Low voltage primary power
- Low intermodulation and harmonic distortion
- Flat gain without equalization
- Low noise figure
- Low phase noise and spurious
- Infinite load VSWR without damage
- No warm-up or turn-on delay
- Unlimited altitude

Electrical Parameters	Units	Min.	Typ.	Max.
@ 9.5 V, 25°C ambient				
Frequency	GHz	6		18
Gain	dB	45	48	
Gain variation 6-18 GHz	±dB		4	5
Gain variation, over operating temp.	±dB			
Input VSWR (50 ohms)			2.0:1	
Output VSWR (50 ohms)			2.5:1	
Efficiency	%		15	
Output power, saturated	watts		35	
Output power, 1 dB compressed	watts		30	
Spurious	dBc			
Current	amps		21 <sup>1</sup>	30 <sup>2</sup>
Voltage	volts	9		10
<b>Environmental Parameters</b>				
Temperature, operating	°C	0		50
Temperature, storage	°C	-20		85
Cooling	Fan forced convection			
Altitude, operating	K feet		50	
<b>Physical Parameters</b>				
Dimensions	in.	17.08x9.93x5.81		
RF connectors in/out			SMA (F)	
DC connectors			DA15 Male (Pin)	
DC Pin Configuration		1-6	+9.5 VDC	
		8	Module fault out (TTL high indicates fault)	
		9-14	Return	

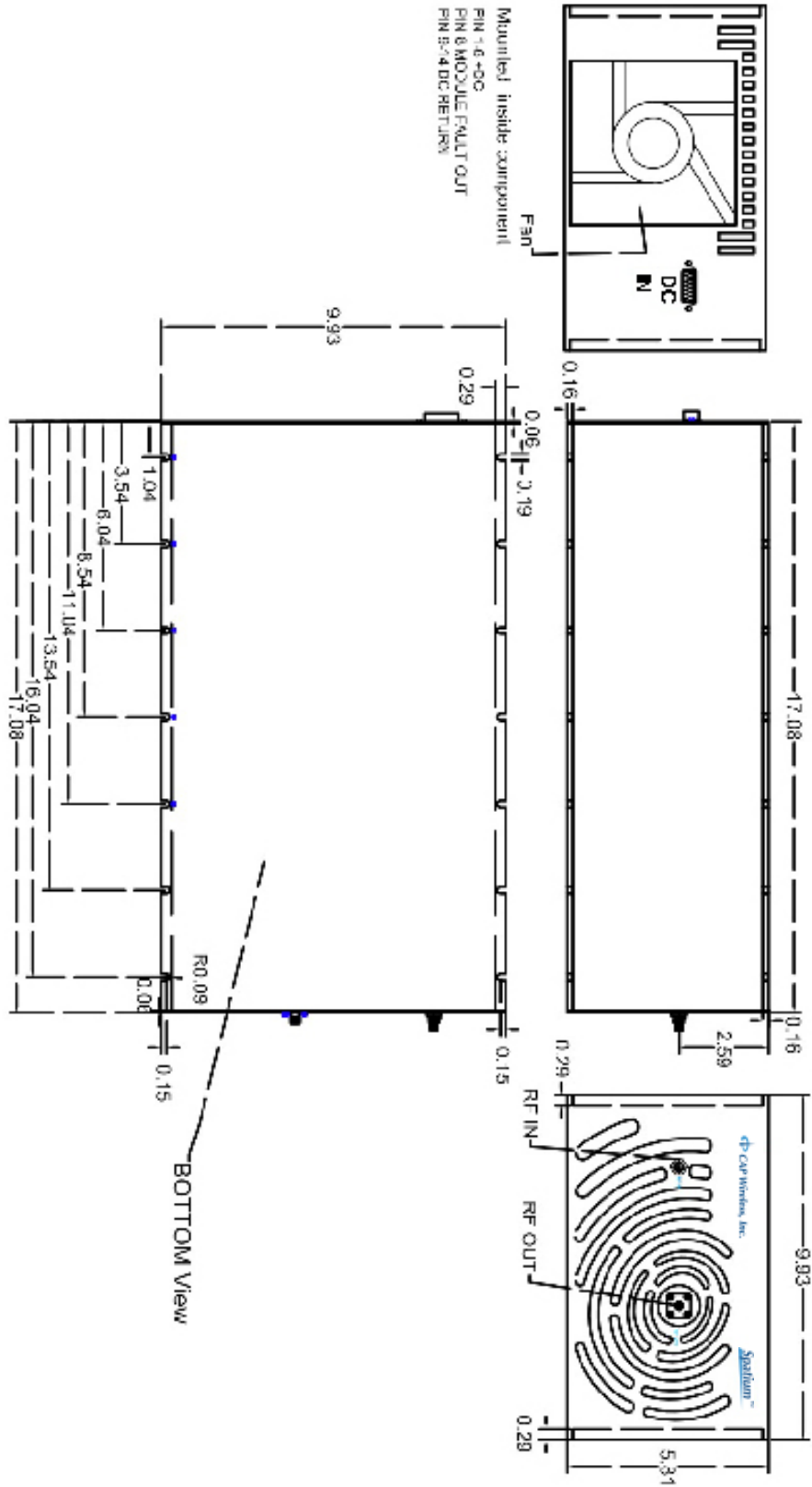
<sup>1</sup>Quiescent

<sup>2</sup>@Max pout

# Typical Performance Data



# Outline



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