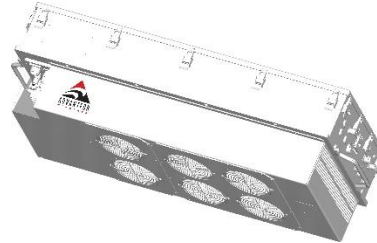


800W Ku-Band BUC/ SSPB/ SSPA Second Generation GaN Technology

SSPA	AWMAg-K	5200-SapphireBlu™ series
SSPB (BUC)	SSPBMg-K	5200-SapphireBlu™ series



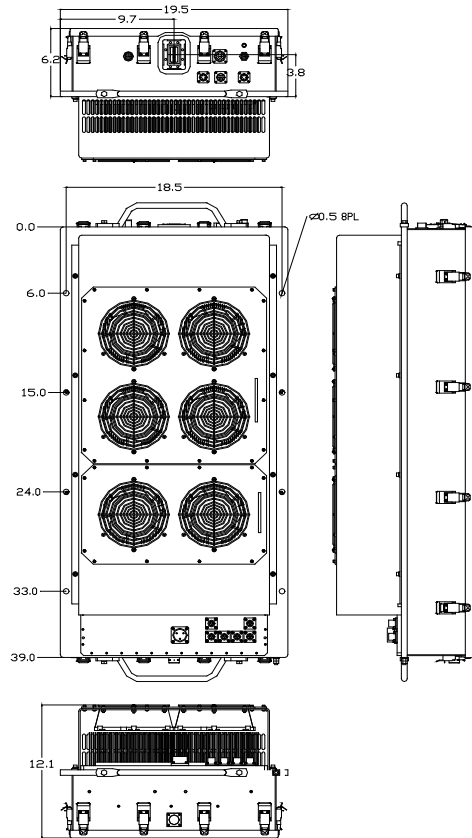
1:2 Redundant Version

UltraLinear™ SapphireBlu™

- High power density in a compact, rugged, weatherproof package
- UltraLinear™, designed for Multi Carrier Operations
- High Performance GaN Technology SSPA Outdoor design concept
- High Reliability, High Linearity, Low Energy Consumption

The Ultimate Solution for Direct to Home TV

- Save 8 to 10 dB power compared to Indoor Klystron
- Save Millions of dollars in Energy Cost, Satellite Bandwidth, CAPEX
- Can cover multiple transponders, full DVB-S2 enabled
- Rugged, Weatherproof Outdoor Package,
- MIL-STD-188-164A Compliant
- Redundant Ready, Power Expandable to
- 3 kW by phase combining



- Exceeds all barriers between Klystrons, TWTs and SSPAs
- We can now saturate all transponders of an entire satellite and obtain maximum bandwidth/power efficiency (using modular RF concept)
- 2 years warranty, due to increased GaN Technology reliability
- Backed by over 25 years of Outdoor SSPA design and manufacturing

800W Ku-Band BUC/ SSPB/ SSPA Second Generation GaN Technology

Specifications		KS / KX	
Operating Frequency	14.0 – 14.5 GHz (KS) / 13.75 – 14.5 GHz (KX)		
L-Band input (BUC)	950 – 1450 MHz (KS) / 950 – 1700 MHz (KX)		
Output Power	800W		
PSAT, PA Module	+59.0 dBm nominal		
PSAT, at Flange	+58.0 dBm nominal		
P _{LINEAR}	+55.5 dBm minimum		
	P _{LINEAR} is the power at which the IMD=-25 dBc for two CW signals 5 MHz apart versus total power, and the spectral regrowth is <-30 dBc @ 1.0 x symbol rate for a single QPSK/OQPSK/8PSK signal.		
Gain	SSPA SSPB (BUC)	68 ± 3 dB 78 ± 3 dB	
Gain adjustment range	20 dB in 1.0 dB steps		
Gain flatness over full band	SSPA 2dB p-p max SSPB (BUC) 4 dB p-p max (KS); 4dB p-p (KX)		
Gain slope over 40 MHz	± 0.3 dB max SSPB (BUC) ± 0.5 dB max		
Gain variation over temperature	± 1.5 dB max		
Input Impedance and VSWR	50 Ω	SSPA 1.3:1	SSPB (BUC) 1.4:1
Output VSWR	1.3:1		
Noise power density	-70 dBm/Hz in Transmit Band, -145 dBm/Hz in Receive Band (10.95 GHz – 12.75 GHz)		
Spurious at P _{LINEAR}	SSPA: -65 dBc max SSPB (BUC): -55 dBc max		
Harmonics	-50 dBc @ P _{LINEAR}		
AM/PM conversion	<1.0°/dB P _{LINEAR}		
Third order intermod (two tones)	-25 dBc two signals 5 MHz apart at total +56 dBm Plinear		
Group delay	Ripple	1 nsec p-p max over any 40 MHz band	
Residual AM Noise	0 – 10 kHz	-45 dBc	
	10 kHz – 500 kHz	-20 (1.25 + log F) dBc F = Frequency in kHz	
	500 kHz – 1 MHz	-80 dBc	
SSPB (BUC)			
Local Oscillator freq.	13.05 GHz (KS) / 12.8 GHz (KX)		
Internal Reference frequency (optional)	10 MHz	Aging/day	±2 × 10 ⁻¹⁰
		Aging/year	±5 × 10 ⁻⁸
		Stability	±2 × 10 ⁻⁸ over temp range
Phase Noise	-53 dBc/Hz at 10Hz -63 dBc/Hz at 100Hz -73 dBc/Hz at 1000Hz	-83 dBc/Hz at 10 kHz -93 dBc/Hz at 100 kHz	
External Reference Frequency phase noise (max)	10 MHz -120 dBc/Hz at 10Hz -135 dBc/Hz at 100Hz -150 dBc/Hz at 1000Hz	-155 dBc/Hz at 10 kHz -160 dBc/Hz at 100 kHz	
Weight & Dimensions			
Dimensions	L x W x H 39.00" x 18.50" x 12.10" (990 x 470 x 307 mm)		
Weight	176 lbs (80 kg)		
AC input voltage	190 – 265 VAC (47-63 Hz)		
Power consumption	3.5kW at 53 dBm	5kW at P _{LINEAR}	6.0kW at P _{SAT}
Interfaces	Input (RF or L-Band) - N type female Output Sample Port - N type female RS485/Ethernet	AC line - MS3102 type RF output - WR75 Cover MS3112 type	
Environmental	Temperature	Operating -30°C to +55 °C Storage -55°C to +85 °C	Option 1 -40°C to +55 °C Option 2 -50°C to +50 °C
	Humidity	100% condensing	
	Altitude	10,000' AMSL, derated by 2 °C/1000' from AMSL	

Ref.: PB-SAPPH-2G-Ku-800W-19016

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