

2,500W Ku-Band Modular BUC/ SSPB/ SSPA Second Generation GaN Technology

SSPA
SSPB (BUC)

AWMg-K
SSPBMg-K

7000-SapphireBlu™ Series
7000-SapphireBlu™ Series

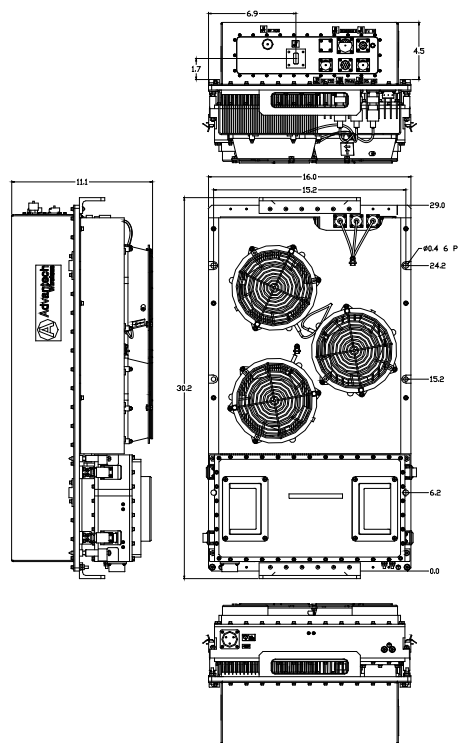


UltraLinear™ SapphireBlu™

- 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
- Built in Redundancy, Field replaceable RF or Power Supplies Modules



- The Highest Linear Power Available. Exceeds all barriers between Klystrons, TWTs and SSPAs
- We can now saturate all transponders of an entire satellite and obtain maximum bandwidth/power efficiency
- 2 years warranty, due to increased GaN Technology reliability
- Backed by over 25 years of Outdoor SSPA design and manufacturing

2500W Ku-Band Modular BUC/ SSPB/ SSPA Second Generation GaN Technology

Specifications		KS/ KX/ KL		
Operating Frequency		14.0 – 14.5 GHz (KS)	13.75 – 14.5 GHz (KX)	12.75 – 13.25 GHz (KL)
L-Band input (BUC)		950 – 1450 MHz (KS)	950 – 1700 MHz (KX)	950 – 1450 MHz (KL)
Output Power		2500W		
PSAT, PA Module		+64.0 dBm nominal		
P _{SAT} , at Flange		+63.5 dBm nominal		
P _{LINEAR}		+60.5 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 0.1 dB steps		
Gain flatness over full band		SSPA 2dB p-p max	SSPB (BUC) 4 dB p-p max (KS/KL);	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 versus total power (60.5 dBm Plinear)		
Group delay		Ripple	1 nsec p-p max over any 40 MHz band	
Residual AM Noise		0 – 10 kHz 10 kHz – 500 kHz 500 kHz – 1 MHz	-45 dBc -20 (1.25 + log F) dBc F = Frequency in kHz -80 dBc	
SSPB (BUC)				
Local Oscillator freq.		13.05 GHz (KS)	12.8 GHz (KX)	11.8 GHz (KL)
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 81.00" x 63.00" x 47.00" (206 x 160 x 120 mm)		
Weight		1320 lbs (600 kg)		
AC input voltage		190 – 265 VAC (47-63 Hz)		
Power consumption		20,000W at P _{LINEAR} 25,000W 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-2500W-18158

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