

160 W Ka-band Outdoor GaN SSPA/BUC

CPI-Built RF Brick Inside

Robust CPI design and manufacturing, combined with plenty of thermal margin, results in a GaN SSPA/BUC that is rock-solid, highly efficient and easy to maintain.

Highly Linearity

Excellent AM/PM, phase noise and spectral regrowth performance.

Simple to Operate

User-friendly microprocessor-controlled logic with Ethernet computer interface (serial interface optional). Also contains digitally controlled attenuator. Redundant systems available. Web server interface with SNMP v2 or v3.

Extended Band Operation

Provides 100 watts of aggregate power over the 27.5 to 31.0 GHz band (or over 1 or 2 GHz with optional BUC, depending on selection). Multi-band BUC is available that allows the user to switch among pre-selected frequency bands.

Global Applications

Perfect for Satcom on the Move, Micro Flyaway Systems, VSATs, and antenna-mount applications. Meets Electromagnetic Compatibility Directive 2014/30/EU to satisfy worldwide requirements and is CE-marked. SNMP V1 and V2 are standard, as well as serial interface.

Worldwide Support

Backed by over 35 years of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes more than 20 regional factory service centers.



Model B5K0

160 watt Ka-band GaN SSPA/BUC for **satellite uplink applications**

OPTIONS

- L-band to Ka-band block upconverter, with multiplexed 10 MHz and 50 MHz reference
- Multi-band BUC: select from multiple factory-set frequency bands within Ka-band
- Simultaneous Multiple BUC: transmit two channels at once using factory-set frequency bands (contact CPI for specifications and dimensions)
- Remote control Panel
- Integral 1:1 redundant switching
- High linearity option



811 Hansen Way, PO Box 51625
Palo Alto, CA 94303 USA
tel: +1 (650) 846-3803
fax: +1 (650) 424-1744
e-mail: satcommarketing@cpii.com
website: www.cpii.com/satcom

160 W Ka-band GaN SSPA (with BUC option)

Specification	Model B5K0 SSPA	Model B5K0 BUC (added as option)
Output Frequency	27.5 to 31.0 GHz	Up to 1 GHz within the 27.5 to 31.0 GHz frequency band (multi-band BUC is available, enabling user to select from multiple factory pre-set frequency bands)
L-Band Input (BUC option only)	N/A	950 to 1450 MHz or 1000 to 1500 MHz, 500 MHz option; 950 to 1950 MHz or 1000 to 2000 MHz, 1000 MHz option
Output Power (min.) Saturated (P _{sat} , CW) Linear (P _{lin})	160 watts (52.0 dBm) typical (128 W 30 to 31 GHz) 100 watts (50.0 dBm) min. (80 W 30 to 31 GHz)	
Gain	64 dB min, 70 dB max. at small signal	70 dB min.
Gain Stability Over temp, constant drive Over 24 hours, fixed temp. Across 500 MHz Across 2500 MHz	±1.5 dB max. ±0.25 dB 2.0 dB max. 3.5 dB max.	±1.5 dB max. ±0.25 dB 3.0 dB max. 4.5 dB max.
Small Signal Gain Slope	±0.04 dB/MHz max.	
Gain Adjustment Range	30 dB	
Input VSWR/Output VSWR	1.5:1 max. (50 ohms)/1.30:1 max.	
Load VSWR	2.0:1 continuous operation; 1.5:1 full spec. compliance	
Intermodulation	-25 dBc at 2.5 dB backoff from P _{sat} with regard to each of two carriers	
Intermodulation	-25 dBc at 1.6 dB backoff from P _{sat} with regard to the sum of both carriers	
Spectral Regrowth	-30 dBc max. @1.0 S.R. with QPSK modulation at 4.0 dB backoff from P _{sat}	
Spectral Regrowth	-25 dBc max. @1.0 S.R. with QPSK modulation at 2.0 dB backoff from P _{sat}	
Noise Power Ratio (NPR)	19 dB min. at 4.0 dB backoff from P _{sat} ; 25 dB min at 7.3 dB backoff from P _{sat}	
Note on Linear Power Specs.	Performance improves with high linearity option	
Reference	N/A	10/50 MHz auto-detect
Phase Noise External Reference	N/A	-120 dBc/Hz at 10 Hz; -140 dBc/Hz at 100 Hz; -145 dBc/Hz at 1 kHz; -150 dBc/Hz at ≥10 kHz
Single Sideband Phase Noise	N/A	-33 dBc at 10 Hz offset; -63 dBc at 100 Hz offset; -73 dBc at 1 kHz offset; -83 dBc at 10 kHz offset; -93 dBc at 100 kHz offset; -103 dBc at 1 MHz offset; -113 dBc at ≥10 MHz offset (3 dB better than MIL-STD-188-164A)
AM/PM Conversion	2.0°/dB max. for a single carrier at rated linear power	
Harmonic Output	-60 dBc max. at rated power	
Spurious Response at P _{lin}	-60 dBc max. at rated power	
Noise Power Density	<-150 dBW/4 kHz, receive band; <-65 dBW/4 kHz, passband (<-60 dBW/4 kHz, passband with high linearity option)	
Prime Power	100 to 264 VAC single phase, 47 to 63 Hz	
Power Consumption	1200 VA max (1000 VA typ. at rated power)	
Ambient Temperature	-40°C to +55°C operating; -54°C to +71°C non-operating	
Relative Humidity	100% condensing	
Altitude (operating)	10,000 feet with standard adiabatic derating of 2°C/1000 feet, operating; 50,000 feet, non-operating	
Cooling	Integral forced air	
Shock and Vibration	20 g peak, 11 msec, 1/2 sine; 2.1 g _{rms} , 5 to 500 Hz	
RF Output Connection	WR-34 grooved waveguide flange, (WR-28 grooved optional)	
Input Connection	2.9 mm female	Type N female (L-band input)
M&C Interface	RJ45 Ethernet connector (serial interface optional)/SNMP enabled	
Dimensions, L x W x H	17.5" x 9.5" x 8.7" (445 x 242 x 221 mm), not including connectors, isolator or top screws (contact CPI for outline drawing)	17.5" x 12.5" x 8.7" (445 x 318 x 221 mm), not including connectors, isolator or top screws (contact CPI for outline drawing)
Weight	47 lbs (21.4 kg) typ.	50 lbs (22.7 kg) typ.