

**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.**

### CPI Quality

Based on GaN device technology, the SA/SB46KOA series of GaN amplifiers utilizes proprietary RF techniques to provide high linear power and efficiency in small, lightweight, outdoor packages. This compact GaN HPA can be mounted directly at the antenna for maximum efficiency of operation. Full-featured network and serial interfaces are provided to support monitoring and control of the amplifier.

### MCC Technology™

With MCC technology, you can be sure that you'll get the most output power out of your HPA, regardless of how many carriers you are using. Without this feature, there would be no telling how far you'd have to back off your output power to achieve a linear signal.

### Global Applications

Perfect for LEO/MEO/GEO systems, Satcom on the Move, VSATs, and antenna-mount applications. Meets IEC/EN 61000-6-2, -6.4; FCC PART 15, SUBPART B, Class A; CISPR 32:2015+A1:2019/EN55032:2015+A11:2020, Class A; CISPR 35: 2016/EN 55035:2017+A11:2020; ISED CANADA ICES-003, ISSUE 7, Class A to satisfy worldwide requirements and is CE-marked.

### Worldwide Support

Backed by over 40 years of satellite communications experience and CPI's global customer support network, including regional factory service centers located worldwide.



CPI GaNLink™ 40 W Ka-band GaN SSPA / BUC,  
Model SA46KOA / SB46KOA

### FEATURES:

- 25 watts of linear output power using MCC technology.
- Exceptional power efficiency
- 25 dB gain adjustment range
- Weatherproof package
- Integrated network and serial M&C interfaces
- True RMS forward and reflected power metering
- Field-replaceable fan tray - hot swappable without service interruption
- Open BMIP and Keyline supported
- Overtemperature, overvoltage, overcurrent, reverse polarity, RF output overdrive and reflected power protection

### OPTIONS:

- Integrated wideband, single-, dual-, tri- and quad-band BUCs
- 100 MHz external reference (10 MHz standard)
- WR-34G output waveguide flange
- Redundancy switch systems
- Customized RF Testing: EVM [%] single- or multi-carrier; High-order MODCODs; up to 500 MHz per carrier BW
- Commercial and military band coverage in one unit

### ACCESSORIES:

- AC/DC power converter
- 3 RU controller

Quality Management  
System - ISO 9001:2015



## GaNLink™ 40 W Ka-band SSPA / BUC Specifications

	SSPA Model SA46KOA	BUC Model SB46KOA
<b>ELECTRICAL SPECIFICATIONS</b>		
RF Output Frequency	27.5 to 31.0 GHz or 27.5 to 30.0 GHz	Dual-, tri- or quad-band 27.5 to 31.0 GHz in switchable 1 GHz Bands; 27.5 to 30.0 GHz wideband; single band 30.0 to 31.00 GHz
Input Frequency	27.5 to 31.0 GHz or 27.5 to 30.0 GHz	950 to 1950 MHz; 1250 to 3750 MHz; 1000 to 2000 MHz
Gain	63 dB min; 69 dB max.	
Gain Stability over temp, constant drive over 24 hrs, constant temp	± 1.5 dB max.	±2.0 dB max.
	±0.25 dB max.	
Gain Flatness	any 40 MHz: 1 dBp-p max. any 100 MHz: 1.5 dBp-p max. any 250 MHz: 2.5 dBp-p max. any 1000 MHz: 3.5 dBp-p max.	
Small Signal Gain Slope	±0.04 dB/MHz max.	
Gain Adjustment Range	16 dB min., 0.1 dB steps	25 dB min., 0.1 dB steps
Input VSWR (50 Ω)	1.5:1 max. (J3)	
Output VSWR (WR28)	1.3:1 max. (J8)	
Load VSWR	2.0:1 max. continuous operation; 1.5:1 max. full spec. compliance	
Reference (MUX on IF)	N/A	10 MHz, -5 to +5 dBm (100 MHz option)
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	3 dB better than IESS 308/309 profile	
AM/PM Conversion	2°/dB max. up to Plin	
Spurious	-60 dBc max at Plin (excluding 2 MHz around carrier)	
Group Delay (per 80 MHz)	Linear: 0.03 ns/MHz; Parabolic: 0.003 ns/MHz²; Ripple: 1.0 ns pk-pk	
Noise Power Density Receive Band Passband	<-150 dBW/4 kHz MAX. up to 21.2 GHz	
	-77 dBW/4kHz max.	-71 dBW/4kHz max.
Prime Power	37 to 59 VDC; 48 VDC Nom.	
Power Consumption	250 VA max. at Pout=25Wrms; 25 VA max. in standby	260 VA max. at Pout=25Wrms; 25 VA max. in standby

### LINEAR OUTPUT POWER, PLIN

Plin1 (27.5-30 GHz): 44 dBm (25.0 W)	Plin1: 8PSK, -30 dBc Regrowth at 1.0 SR and 1.5 SR offset, 5 Msps, Alpha=0.25
Plin2, Plin3 (30-31 GHz): 44 dBm (25.0 W)	Plin2: OQPSK, -30 dBc Regrowth at 1 SR Offset, 5MSps Plin3: QPSK, -30 dBc Regrowth at 1.5 SR Offset, 5MSps
Plin4 (30-31 GHz): 43 dBm (20.0 W)	Plin4: 2-Tone, -25 dBc IMD3, Per MIL-STD-188-164B
Plin5 (27.5-31.0 GHz): 42 dBm (16.0 W)	Plin5: Noise Power Ratio (NPR), -19 dBc, 30,001 Tones, Random Phase, Pedestal BW: 19.8 MHz, Notch BW: 2% = 396 kHz, Tone Spacing 660 Hz



**Power Electronics:  
Amplifier Products**  
tel: +1 (905) 877-0161  
email: [satcommarketing@cpii.com](mailto:satcommarketing@cpii.com)  
web: [www.cpii.com/satcom](http://www.cpii.com/satcom)

For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.

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## GaNLink™ 40 W Ka-band SSPA / BUC Specifications

	SSPA Model SA46KOA	BUC Model SB46KOA
<b>MECHANICAL SPECIFICATIONS</b>		
Dimensions	10.0" L X 5.0" W X 4.0 H" (254 mm X 127 mm X 102 mm)	10.0" L X 5.0" W X 4.25 H" (254 mm X 127 mm X 108 mm)
Weight	9.1 lbs. (4.1 kg) max.	10 lbs. (4.6 kg) max.
DC Power Input Connection	(J1) Amphenol C016 10C006 000 12	
RF Input Connection	(J3) 2.9 mm female	(J3) Type N female
RF Output Connection	(J8) WR28 grooved waveguide flange (WR-34G option)	
M&C Interface Ethernet Serial Interface	(J2) RJ45 (J4) RS-485, RS-232	
<b>ENVIRONMENTAL SPECIFICATIONS</b>		
Ambient Temperature Operating Non-Operating	-40°C to +60°C (Full specification compliance guaranteed after 30 minutes of continuous operation) -40°C to +85°C	
Relative Humidity	Up to 100% RH condensing	
Altitude	Operating: up to 10,000 feet (3,048 m) above sea level, derated 2°C for every 1,000 feet above sea level (305 m); Non-operating: up to 50,000 feet (15,240 m) above sea level	
Cooling	Forced air	
Shock Non-Operating	MIL-STD-810H method 516.8, Procedure I, 10G 11 msec half sine, 20G 11 msec sawtooth MIL-STD-810H method 516.8, Procedure IV, Table 516.8-IX (Transit drop) in shipping container MIL-STD-810H method 516.8 Procedure VI, Bench Handling	
Vibration Operating Non-Operating	IEC 60068-2-64 Category 2 MIL-STD-810H method 514.8 Annex C 5-500 Hz, 1.17 Grms (Common carrier) in shipping container	
Weatherproofing	IP66	
Sand and Dust	Will operate in dry and dusty environments typical of arid locations	
Salt Spray	Will withstand salty environments typical of coastal locations	



**Power Electronics:  
Amplifier Products**  
tel: +1 905-877-0161  
email: [satcommarketing@cpii.com](mailto:satcommarketing@cpii.com)  
web: [www.cpii.com/satcom](http://www.cpii.com/satcom)

For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.

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