

Based on GaN device technology, the SB50XOA series of GaN block upconverters utilizes proprietary RF techniques to provide high linear power and efficiency into small, lightweight, outdoor packages.

CPI Quality

Full-featured network and serial interfaces are provided to support monitoring and control of the BUC. This compact GaN BUC can be mounted directly at the antenna for maximum efficiency of operation.

Worldwide Support

Backed by over 40 years of satellite communications experience, and CPI's worldwide 24-hour customer support network that includes more than 20 regional factory service centers.



CPI 100 W GaN X-band BUCs, Model SB50XOA for **satellite uplink applications**

FEATURES:

- 50 watts linear output power
- Exceptional power efficiency
- 30 dB gain adjustment range
- Internal filtering included
- Weatherproof package
- Integrated network and serial M&C interfaces
- Designed to support SATCOM terminal certification per requirements set forth in MIL-STD-188-164B

Quality Management
System - ISO 9001:2015



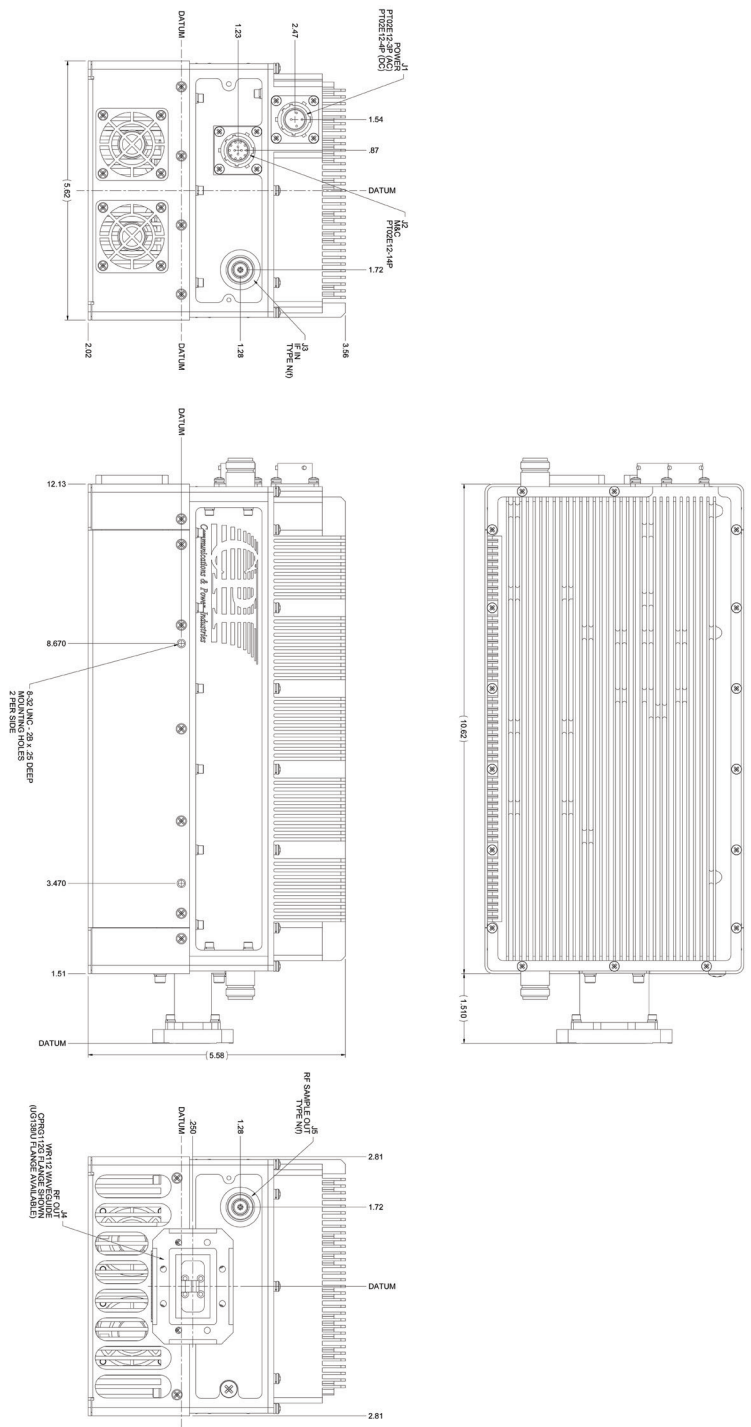
| Specifications | CPI 100 W GaN X-band Outdoor BUCs |
|---|--|
| IF Input Frequency | 950 to 1450 MHz |
| RF Output Frequency | 7.90 to 8.40 GHz (6.95 GHz LO) |
| External/Internal Reference Frequency | 10.0 MHz \pm 1 ppm/10.0 MHz (0.1ppm over -40°C to +60°C) |
| Phase Noise (SSB) @ 100 Hz offset @ 1 kHz offset @ 10 kHz offset @ 100 kHz offset @ 1 MHz offset | -63 max. dBc/Hz -73 max. dBc/Hz -83 max. dBc/Hz -93 max. dBc/Hz -103 max. dBc/Hz |
| Gain | 70 min. dB at min. attenuation |
| Gain Flatness | \pm 1.50 dB max. full band |
| Gain Slope | \pm 0.5 dB max. per 40 MHz |
| Gain Stability vs Temp. | \pm 1.5 dB |
| Gain Adjustment Range | 30 dB (0.5 dB steps through M&C interface) |
| P _{SAT} / P _{LINEAR} | +50.0 dBm typ; +47.0 dBm min. |
| Spectral Regrowth | -30 dBc max. |
| P _{LINEAR} (Two Carrier Intermodulation Distortion) | +47.0 dBm min, combined two-carrier output power |
| Third Order Intermodulation Distortion | -25 dBc max, relative to the combined power of two carriers with 1.6 MHz spacing |
| Group Delay (per 40 MHz) | 0.05 ns/MHz, linear; 0.002 ns/MHz ² parabolic; 1.0 ns ripple |
| AM-PM Conversion | 2.0°/dB max. at P _{LINEAR} |
| Output Noise Power Density 7.9 - 8.4 GHz 7.25 - 7.75 GHz | -75 dBm/Hz max. -125 dBm/Hz max. |
| VSWR (Input/Output) | 1.25:1 typ, 1.5:1 max; 1.25:1 typ, 1.35:1 max. |
| Overdrive | 0 dBm max, max. input level (no damage) |
| Spurious, Signal Related | -60 dBc max, at rated P _{LINEAR} within output band |
| Spurious, Signal Independent | -60 dBm max, outside band |
| Harmonics | -60 dBc max, second harmonic, at P _{LINEAR} |
| LO Leakage | -60 dBm max. (6.95 GHz) |
| DC Power Option Input Voltage | 40-60 VDC |
| AC Power Option Input Voltage | 90-264 VAC (47-63 Hz) |
| Power Consumption | 90 W at no signal / 260 W typical at P _{lin} |
| M&C Interface | Serial Network RS232/422/485 Ethernet, 10/100 Base T |
| Size and Weight | Refer to outline drawing on page 3; 12.51" x 5.62" x 5.58" (L x W x H); 11.5 lbs (AC); 10.5 lbs (DC) |
| Finish | White epoxy paint (NATO green or desert tan optional) |
| Connectors IF Input/Ext Ref, RF Sample RF Output Power M&C | Type N female WR112 Waveguide CPR112G or UG-138/U flange PT02E12-3P (AC); PT02E12-4P (DC) PT02E12-14P |
| Operating Temperature | -40°C to +60°C |
| Humidity | 100% Condensing |



SMP Division
Satcom Products
tel: +1 669-275-2744
email: satcommarketing@cpii.com
web: 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.

© 2020 Communications & Power Industries LLC. Company proprietary; use and reproduction is strictly prohibited without written authorization from CPI.



SB50XOA Series Outline Drawing 12506, rev 3, dated 18 April 2018.

Please consult CPI before using this drawing for system design in order to ensure that the latest revision is used. Specifications and drawings are subject to change without notice.