

# 80 and 100 W C-band GaN BUCs

## Compact and Lightweight

Designed and built with VSAT stabilized antenna platforms and other similar satcom-on-the-move customer applications in mind.

## Highly Efficient

CPI has incorporated state-of-the-art Gallium Nitride (GaN) HEMT technology into its popular and field-proven Mini-BUC packaging. 30% to 50% more efficient than comparable GaAs-based products.

## Comprehensive M&C Functionality

Accessible anytime, anywhere via Internet or mobile phone. Integrate with SNMP to NMS. Enables effective operational management and minimizes network outage. Allows change of IP address without serial cable. Dual LO, serial and LAN interface.

## Internal Self-Resetting Protection

Protects against high temperatures, open/short/overdrive RF output conditions (forward and reverse), INT/EXT reference 10 MHz conditions, prime power fluctuations. RF output overdrive protection prevents damage from higher than rated input power.

## Global Applications

Meets Electromagnetic Compatibility Directive 2004/108/EC to satisfy worldwide requirements and is CE-marked.

## 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.



## Models 4780 and 4710H

80/100 watt C-band GaN BUCs for **satellite uplink applications**

### OPTIONS

- Internal or multiplexed 10 MHz reference
- Multi-band BUC: select from multiple factory-set frequency bands within C-band
- 1:1 Redundant Switching
- Auto-sensing, high stability internal 10 MHz OCXO reference
- Future option: DC power (contact CPI if required)



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## 80 and 100 W C-band GaN BUCs

Specification	Model 4780	Model 4710H
Frequency	5.850 to 6.425 GHz, or 5.850 to 6.725 GHz	
L-Band Input	950 to 1525 MHz or 950 to 1825 MHz	
Output Power (min.)	<i>Note: Plin1 is the output power at the specified intermodulation. Plin2 is output power at specified spectral regrowth.</i>	
Saturated (P <sub>sat</sub> , CW)	80 watts (49 dBm)	100 watts (50 dBm)
Linear (Plin1)	40 watts (46 dBm)	50 watts (47 dBm)
Linear (Plin2)	50 watts (47 dBm)	63 watts (48 dBm)
Local Oscillator Frequency	4900 and 4975 MHz (with extended band option user may also select 5200 and 5275 MHz)	
Gain at 0 dB Attenuation	77 dB ±2.0 dB	
Gain Stability	Over any 50°C range, freq. set ±1.5 dB max. Over temp, frequency set ±2.0 dB max. Over 24 hours ±0.25 dB (fixed temperature and constant drive)	
Gain Flatness Over Any 40 MHz	±1.0 dB max.	
Gain Flatness Over Full Band	±2.0 dB max.	
Intermodulation	-25 dBc max. with respect to each of two equal carriers 5 MHz apart	
VSWR	Input and Output: 14 dB return loss, 1.5:1	
Spectral Regrowth	<-30 dBc @ 1.0x symbol rate, 1024 kbps, QPSK 7/8 VIT	
Reference Frequency	10 MHz (internal reference option available)	
RF output VSWR	1.5:1 max.	
Reference Freq. Input (external)	Multiplexed on N-type transmit IF input	
Reference Freq. Level (external)	-10 to +5 dBm	
Ref. Freq. Level Meter	Yes, via M&C	
IF Input Level Meter	-5 to -45 dBm, ±2.0 dBm	
Output Phase Noise	-65 dBc/Hz at 100 Hz, -75 dBc/Hz at 1 kHz, -85 dBc/Hz at 10 kHz, -95 dBc/Hz at 100 kHz	
Transmit Attenuator	0 to 20 in 0.25 dB steps	
AM/PM Conversion	2.0°/dB max. at 2 dB output backoff	
Output Power Meter	Range: 15 dB; Absolute Accuracy: ±1 dB max. when compensation frequency compensation set; Relative Accuracy: ±0.5 dB max. when compensation frequency compensation set; Modes: CW and burst with adjustable threshold	
Spurious/Harmonic Output	-55 dBc max. at linear output power	
Group Delay	0.03 ns/MHz linear max, 0.01 ns/MHz <sup>2</sup> parabolic max, 1.0 ns pk-pk ripple max. in any 36 MHz band	
Prime Power	95 to 265 VAC (Future option: 36 to 60 VDC with min. 40 VDC turn-on optional)	
Power Consumption	280 watts typ. Plin, 400 watts max.	300 watts typ. at Plin, 420 watts max.
Ambient Temperature	-40°C to +60°C operating, -40°C to +70°C non-operating	
Relative Humidity	100% condensing	
Altitude	5000 m operating (16,400 ft)	
Shock and Vibration	20 g peak, 11 msec, 1/2 sine; 2.1 g <sub>rms</sub> , 5 to 500 Hz	
RF Output Connection	WR-137G with 5 mm through-holes	
M&C Interface	FSK, RS-232, RS485/422, LAN	
M&C Protocols	ASCII, NDSatcom v1, SABus, Codan packet, Telnet, SNMP v1, WEB GUI	
Prime Power Connectors	AC Connector: LTW PWF-04PMMS-SC7001; AC Mating Connector: C016 20D003 110 12; (future option: DC Connector : 97B 3102R 16-11P-622; DC Mating Connector: 97B 3106F 16-11S-622)	
Dimensions, L x W x H	250 x 151 x 134 mm (9.8" x 5.9" x 5.3") Note: does not include connectors, contact CPI for outline drawing if needed.	
Weight	4.9 kg (10.8 lbs) typ.	

## 80 and 100 W Ku-band GaN BUCs

## Configure your 4700 Series GaN BUCs

Configuring your BUC is easy. Much of the configuration is already predetermined. All that is left is to indicate output power level, whether LAN interface is required, which frequency range is needed, which type of prime power is required, and whether the internal reference option is required. Instructions follow:

Box 1: Output Power Level/Model Number

- Enter "4780" for 80 W model
- Enter "4710H" for 100 W model

Box 2: LAN Option placeholder

- Enter "L" for BUCs with LAN option selected
- LEAVE BLANK if the LAN option is not selected

Box 4: Output frequency range (within the C-band)

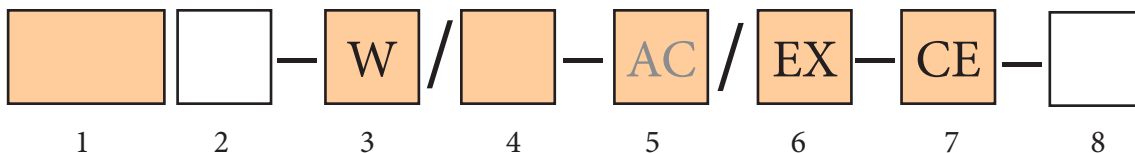
- Enter "S" for 5.850 to 6.425 GHz
- Enter "E" for 5.850 to 6.725 GHz

Box 5: Input power

- Enter "AC" for AC power
- Future Option: Enter "48" for 36-60 V DC input power (contact CPI if required)

Box 8: Internal reference

- Enter "R" only if internal reference option is selected
- LEAVE BLANK if internal reference option is not selected



Examples: 4710HL-W/S-AC/EX-CE-R indicates a BUC with a frequency range of 5.850 - 6.425 GHz, with LAN, AC input power and internal reference. 4780-W/E-AC/EX-CE indicates a BUC with a frequency range of 5.850 - 6.725 GHz, without LAN, with AC input power and no internal reference.

Notes: Box 3 indicates a waveguide RF output connection. Box 6 indicates that power is fed via an external connector. Box 7 indicates that this product is CE marked.