

# 40 W Ku-band GaN BUC

## 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, 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 2014/30/EU 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.



## Model 4940L

40 watt Ku-band GaN BUC  
for **satellite uplink applications**

### OPTIONS

- Internal or multiplexed 10 MHz reference
- Multi-band BUC: select from multiple factory-set frequency bands within Ku-band
- 1:1 Redundant Switching
- DC option



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## 40 W Ku-band GaN BUC

Specification	Model 4940L
Frequency	14.00 to 14.50 GHz or 13.75 to 14.50 GHz
L-Band Input	950 to 1450 MHz or 950 to 1700 MHz
Output Power (min.) Saturated (P <sub>sat</sub> , CW) Linear (Plin1) Linear (Plin2) P1dB Equivalent	Note: Plin1 is the RF output power at the specified intermodulation. Plin2 is the RF output power at specified spectral regrowth. 40 watts (46.0 dBm) 20 watts (43.0 dBm) 25 watts (44.0 dBm) 35 watts (45.5 dBm)
Intermodulation	-25 dBc max. with respect to each of two equal carriers 5 MHz apart
VSWR	Input: 14 dB return loss, 1.5:1; Output: 19 dB return loss, 1.3:1
Spectral Regrowth	<-30 dBc @ 1.0x symbol rate, 1024 kbps, QPSK 7/8 Vit
Local Oscillator Frequency	13050 MHz (with extended band option user may select 13050 or 12800 MHz)
Gain at 0 dB Attenuation	77 dB ±2.0 dB
Gain Stability	±1.5 dB max. (over any 50°C range, frequency set) ±2.0 dB max. (over temp, frequency set) ±0.25 dB (fixed temperature and constant drive, over 24 hours)
Gain Flatness	±1.50 dB max. over full band; ±0.75 dB max. over 40 MHz
Reference (internal or external)	10 MHz
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	-40 to -10 dBm, ±2.0 dB
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 1 dB steps
AM/PM Conversion	2.0°/dB max. at 2 dB output backoff
Output Power Meter Range	15 dB
Output Power Meter Absolute Accuracy Relative Accuracy	±1 dB max. when compensation frequency compensation set ±0.5 dB max. when compensation frequency compensation set
Output Power Meter 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, 0.001 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 (36 to 60 VDC optional)
Power Consumption	280 watts typ. at Plin, 400 watts max.
Ambient Temperature	-40°C to +60°C operating, -40°C to +70°C non-operating
Relative Humidity	100% condensing
Weatherproofing	IP67 rating that provides protection from water or dust storms; Sealed to 34 kPa
Altitude (operating)	Up to 5000 m (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-75 PBR120 flange with 4.2 mm through-holes
L-band Input Connection	Type N female
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 Connections	AC Connector: LTW PWF-04PMMS-SC7001; AC Mating Connector: C016 20D003 110 12 (provided); Optional DC Connector: 97B 3102R 16-11P-622; Optional DC Mating Connector: 97B 3106F 16-11S-622
Dimensions, L x W x H	220 L x 151 W x 134 H mm (8.7" L x 5.9" W x 5.3" H), not including connectors, isolator or top screws - contact CPI for outline drawing if needed
Weight	4.5 kg DC (9.9 lbs), 4.9 kg AC (10.8 lbs)

## 40 W Ku-band GaN BUC

**Configure your 4940L GaN BUC**

Configuring your BUC is easy. For this product, most of the configuration is predetermined. All that is left is to indicate which frequency range is needed, what type of operating voltage is required, and whether the internal reference option is required. Instructions follow:

Box 2: Frequency range (within Ku-band)

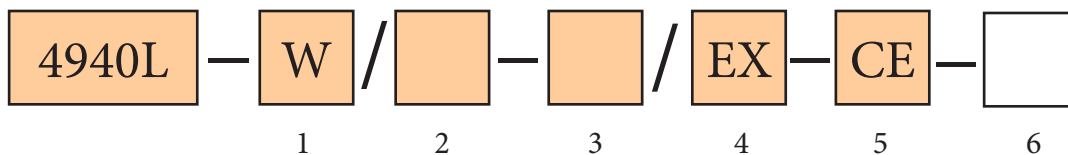
- Enter "S" for 14.00 to 14.50 GHz
- Enter "E" for 13.75 to 14.50 GHz

Box 3: Operating Voltage

- Enter "48" for 36 to 60 V DC powered
- Enter "AC" for AC powered

Box 6: Internal reference

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



Examples: 4940L-W/S-AC/EX-CE-R indicates a BUC with a frequency range of 14.0 -14.5 GHz, AC powered and with internal reference.

4940L-W/E-48/EX-CE indicates a BUC with a frequency range of 13.75 to 14.5 GHz, with 48 V DC input and no internal reference.

Notes: Box 1 indicates a waveguide RF output connection. Box 4 indicates that power is fed via a dedicated connector. Box 5 indicates that this product is CE marked.