40 W Ka-band BUC

CPI-Built RF Brick Inside

Robust CPI design and manufacturing, combined with plenty of thermal margin, results in a 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 and serial interface included as standard. Also contains digitally controlled attenuator. Redundant systems available.

Extended Band Operation

Provides 20 watts of linear power over selected bandwidth from 500 to 1000 MHz within the 29 to 31 GHz band. An optional 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 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.



Model B3KO-A
40 watt Ka-band BUC
for **satellite uplink applications**

OPTIONS

- Multiplexed 10 MHz reference
- Multi-band BUC: select from multiple factory-set frequency bands within Ka-band
- 1 RU remote control
- Other frequency ranges within Ka-band) contact CPI for details)
- AC option (requires external AC converter model 7580B
- 1:1 redundant switching
- Linearizer - delivers additional 1.5 dB of output RF power.
- Remove BUC

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40 W Ka-band BUC

Specification	Model B3K0-A
Frequency	Select any of 29.5 to 30.0 GHz, 29 to 30 GHz or 30 to 31 GHz (others available - contact CPI for details)
L-Band Input	950 to 1450 MHz, 950 to 1700 MHz, 1 to 2 GHz (others available)
Output Power (min.) Saturated (Psat, CW) Linear (P_{lin}) Linear (Plin) with linearizer	 40 watts (46 dBm) 15 watts (41.76 dBm) over temp. and freq. 21 watts (43.22 dBm) over temp. and freq.
Local Oscillator Frequency	28.05 GHz
Small Signal Gain	57 dB min.
Gain Stability Over temp, constant drive Over 24 hours, fixed temp.	 ±2.0 dB max. ±0.25 dB
Gain Slope	±0.04 dB/MHz max.
Gain Stability	±1.75 dB max. over full band; ±0.5 dB pk-pk max. over any 10 MHz
Gain Adjustment Range	20 dB
Input VSWR/Output VSWR	1.5:1 max. (50 ohms)/1.35:1 max./
Load VSWR	2.0:1 continuous operation; 1.5:1 full spec. compliance
Residual AM, max.	-80 dBc > 100 kHz from carrier
Intermodulation	-25 dBc max. with respect to each of two equal carriers 5 MHz apart, at 15 W output power
Reference	10/50 MHz auto-detect
Phase Noise External Reference	-125 dBc/Hz at 10 Hz; -150 dBc/Hz at 100 Hz; -160 dBc/Hz at 1 kHz; -165 dBc/Hz at 10 kHz; Level from -12 dBm (min) to +5 dBm (max.)
Output Phase Noise	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 linear power
Spurious Response at P(lin)	-60 dBc max. in band
Noise Power Density	<-150 dBW/4 kHz, receive band; <-70 dBW/4 kHz, passband
Group Delay	0.03 ns/MHz linear max, 0.003 ns/MHz^2 parabolic max, 1.0 ns pk-pk ripple max. in any 80 MHz band
Prime Power	48 VDC ±20% (AC optional)
Power Consumption	420 watts max. at P(lin)
Ambient Temperature	-40˚C to +50˚C operating in direct sunlight; -40˚C to +60˚C operating out of direct sunlight; -54˚C to +71˚C non-operating
Relative Humidity	100% condensing
Altitude (operating)	12,000 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-28 grooved waveguide flange
L-band Input Connection	Type N female
M&C Interface	RJ45 Ethernet connector; RS-232 and 422/485 serial interface; 12-10 circular MIL serial I/O (serial interface optional)
Remote Status	Transmit ON/OFF; Summary Fault Temp; Fault Identification; RF Inhibit (ON/OFF); Lock Detect
Remote Control	Transmit ON/OFF; Fault Reset; Attenuator Setting
Dimensions, L x W x H (not including connectors, isolator or top screws, contact CPI for outline drawing if needed)	12.50” x 6.43” x 6.30” (318 x 164 x 160 mm)
Weight	16 lbs (7.5 kg) typ, DC input version

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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