40W Solid State BUC

CPI Solid Inside and Out

Ka-Band

Model B3KO-A

40 W Ka-band SSPA with Block Upconverter - environmentally sealed in a compact package for outdoor operation

CPI-Built RF Brick Inside

With CPI-built RF brick inside and plenty of thermal margin, this SSPA is rock-solid, highly efficient and easy to maintain.

High Linearity

Excellent AM/PM, phase noise and spectral regrowth performance.

Simple to Operate

User-friendly microprocessor-controlled logic with Ethernet computer interface (serial interface optional). Also contains digitally controlled attenuator. Redundant systems available.

Extended Band Operation

Provides 20 watts of linear output power over a 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.

Worldwide Support

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

Ka-Band

40 W Solid State BUC

Communications & Power Industries

satcom products

811 Hansen Way
P.O. Box 51625, Palo Alto, CA 94303

tel: +1 (650) 846-3803
fax: +1 (650) 424-1744

e-mail: satcommarketing@cpii.com
www.cpii.com/satcom

SPECIFICATIONS, 40 W Ka-Band Outdoor Solid State BUC (Model B3KO-A)

Electrical

Frequency	Select any one of 29.5 to 30.0 GHz, 29 to 30 GHz or 30.0 to 31.0 GHz*

**Other frequency ranges available. Contact CPI for details*

L-Band Input	950 to 1450 MHz or 1.0 to 2.0 GHz
Output Power	
Saturated (Psat)	40 W (46 dBm)
Linear (Plin)	20 W (43 dBm) with optional linearizer
Linear (Plin)	10 W (40 dBm) without linearizer
Local Oscillator Frequency	28.05 GHz or 29.0 GHz
Small Signal Gain	57 dB min.
Gain Stability	
Over temp., constant drive	±2.0 dB over oper. temp. range
Over 24 hours, fixed temp.	±0.25 dB
Gain Slope	±0.04 dB/MHz max.
Small Signal Gain Variation	
Across any 10 MHz band	±0.5 dB pk-pk max.
Across the full band	±1.75 dB
Gain Adjustment Range	20 dB
Input VSWR	1.5:1 max. (50 ohms)
Output VSWR	1.35:1 max.
Load VSWR	
Continuous operation	2.0:1
Full spec compliance	1.5:1
Residual AM, max.	-80 dBc > 100 kHz from carrier
Reference	10/50 MHz autodetect
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)
Phase Noise, max.	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 Plin	-60 dBc max. in band
Noise Power Density	<-150 dBW/4 kHz, receive band <-70 dBW/4 kHz, passband
Intermodulation Distortion	-25 dBc with two equal carriers at total output power of 15 W (rated linear power)
Group Delay (in any 80 MHz band)	0.03 ns/MHz linear max. 0.003 ns/MHz^2 parabolic max. 1.0 ns pk-pk ripple max.
Prime Power	48 VDC ±20% (AC optional)
AC Option	100 - 240 VAC ±10%, 47-63 Hz (requires additional external converter module - contact CPI for details)

Electrical Specifications, continued

Power Consumption	420 W @ Plin, max.
Spectral Regrowth	-30 dBc at 1 symbol rate w/ OQPSK modulation

Monitor and Control

Remote Control	Transmit ON/OFF Fault Reset Attenuator Setting
Computer/Network Interface	Ethernet (RS-232C and 422/485 optional)
Remote Status	Transmit ON/OFF, Summary Fault Temperature, Fault Identification RF Inhibit (ON/OFF), Lock Detect

Environmental

Ambient Temperature	-40°C to +50°C operating in direct sunlight; -40°C to +60°C operating out of direct sunlight; -50°C to +85°C non-operating
Relative Humidity	100% condensing
Altitude	12,000 ft. with standard adiabatic derating of 2°C/1000 ft., operating; 50,000 ft., 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.

Mechanical

RF Output Connection	WR-28 grooved waveguide flange
L-Band Input Connection	Type N female
M&C Connection	RJ45 Ethernet Connector; 12-10 Circular MIL Serial I/O
Dimensions (not including connectors)	
width	6.43" (164 mm)
height	6.3" (160 mm)
length	12.50" (318 mm)
Weight	16 lbs (7.5 kg) typ. (DC input version)

OPTIONS:

- *Internal or Multiplexed 10 MHz reference*
- *Multi-band BUC: select from multiple factory-set frequency bands within Ka-band*
- *1 RU Remote Control Panel*
- *1:1 Redundant Switching*
- *Other frequency ranges are available (contact CPI for details)*
- *Full Ethernet Interface*
- *AC Option (requires external converter module - contact CPI for details)*
- *Integral Linearizer*
- *Remove BUC*

ISO 9001 Certificate Number: 30515

For more detailed information, please refer to the corresponding CPI Technical Description.

Note: *Specifications may change without notice as a result of additional data or product refinement.*

Please contact CPI before using this information for system design.

MKT 275, ISSUE X1 MAR 14 PDF

Communications & Power Industries

satcom products