LBC-4000
Up/Down Converter ystem

Converters

verview

The LBC-4000 L-Band IF to 70 MHz IF (140 MHz optional) indoor converter is a 1RU 19-inch chassis with G two front panel accessible up converter or down converter modules. It contains two diode "OR-ed" internal G power supplies, for increased reliability and microprocessor-based Monitor & Control (M&C) functions. G

The LBC-4000 up converter module translates a 70 MHz IF input signal (140 MHz optional) up to a user-G selected frequency at L-Band (950 to 2000 MHz). The L-Band output can drive the input of the Comtech G EF Data MBT-4000 block up converter or other RF equipment with an L-Band input. G

The LBC-4000 down converter module translates an L-Band (950 to 2000 MHz) IF input signal down to a G user selected frequency in the 70 MHz (140 MHz optional) IF band. The LBC-4000 can be locked to an G internal reference or an external 5 or 10 MHz reference signal. The LBC-4000 is an excellent choice for G interfacing legacy 70 or 140 MHz equipment to quad-band or tri-band block converters. G

Typical Users

- Earth Stations G
- Governmental G Organizations G

Common Applications

- Match legacy 70/140 MHz G systems with L Band G based RF G

Features

- Meets or exceeds MIL-STD-188-164A G
- Low phase noise G
- 1 kHz step size G
- Field selectable spectral inversion G
- 50 dB gain adjustment G
- 70 ±18 MHz IF (140 ± 36 MHz optional) G
- Flexible configuration G
- Auto band sensing capability G
- Redundant option available G

Installation

The LBC-4000 is rack mounted in a standard 19-inch equipment G rack. External equipment, such as a modem, is connected to each G internal converter module by a low-cost coaxial cable. A coaxial G cable is also used to connect the output of each module to RF G equipment either in the same location or at the antenna location. G

MBT-4000 Multi-Band F Transceiver

A companion to the LBC-4000 is Comtech EF Data's Multi-Band RF Transceiver (MBT-4000), which is designed to perform C-, X-, or Ku-G Band RF to L-Band down conversion and L-Band to C-, X-, or Ku-Band RF up conversion. The MBT-4000 features: G

- RF Band switching in minimal time without requiring tools G
- Automatic band identification for the BUC, BDC, and antenna feed (if the feeds provide an identifying connector) G
- Easy system status verification via LEDs located behind a removable cover G
- Flexible configuration: G
  - 2 ups G
  - 2 downs G
  - 1 up and 1 down G
- Minimal cost for a complete system including spares G
- Easy expansion for providing a redundant system or other frequency bands G
- Rugged construction for mobile and transportable applications G

Please refer to the MBT-4000 datasheet for additional information. G

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Specifications r

BC-4000 L-Band Down Converter IDU v

Input Frequency Range D	950 to 2000 MHz, 1 kHz steps D
Output Frequency D	70 + 18 MHz (140 + 36 MHz optional) D
Input/Output Impedance D	50 Ω
Input Return Loss D	15 dB minimum D
Output Return Loss D	20 dB minimum D
Input Connector D	Type N, Female D
Out ut Connector D	BNC, Female D
Gain D	35 dB nominal at min. attenuation D
Ripple D	± .5 dB over any ± 18 MHz for 70 MHz IF D units D ± .5 dB over any ± 36 MHz for 140 MHz IF D units D
Slope D	.05 dB/MHz D
User Attenuation Range D	0 to 40 dB, in 0.10 dB steps D
Output Power P1dB D	+13 dBm minimum D
Third Order Intercept D	+23 dBm minimum D
Carrier Spurious D	-60 dBc D
Non-Carrier Spurious D	-60 dBm D
Stability Over Time D	± 1 x 10⁻⁹/Day D
Stability Over Temp D	± 1 x 10⁻⁸ 32° to 122°F (0° to 50°C) D

BC-4000 L-Band Up Converter IDU v

Input Frequency D	70 ± 18 MHz (140 ± 36 MHz optional) D
Output Frequency D	950 to 2000 MHz, 1 kHz steps D
Input/Output Impedance D	50 Ω D
Input Return Loss D	18 dB minimum D
Output Return Loss D	15 dB minimum D
Input Connector D	BNC, Female D
Output Connector D	N Female D
Gain D	25 ± 1 dB nominal at minimum attenuation D
Ripple D	± .5 dB over any ± 18 MHz for 70 MHz IF D units D ± .5 dB over any ± 36 MHz for 140 MHz IF D units D
Slope D	.05 dB/MHz D
User Attenuation Range D	0 to 50 dB, in 0.10 dB Steps
Input Power Level D	To +10 dBm, maximum D
Output Power P1dB D	+10 dBm minimum D
Third Order Intercept D	+20 dBm minimum D
Carrier Spurious D	-60 dBc D
Non-Carrier Spurious D	-75 dBm D
Transmit Phase Noise D	Exceeds MIL-STD-188-164A D
Stability Over Time D	± 1 x 10⁻⁹/Day D
Stability Over Temp D	

Phase Noise v

Frequency r Offset r	Up Converter r (Guaranteed / ypical) r	Down Converter r (Guaranteed / ypical) r
100 Hz D	-76/-79 dBc/Hz D	-75/-78 dBc/Hz D
1000 Hz D	-79/-82 dBc/Hz D	-76/-79 dBc/Hz D
10000 Hz D	-86/-89 dBc/Hz D	-87/-90 dBc/Hz D
100000 Hz D	-107/-110 dBc/Hz D	-110/-113 dBc/Hz D
1 MHz D	-122/-125 dBc/Hz D	-126/-129 dBc/Hz D

Physical & Environmental v

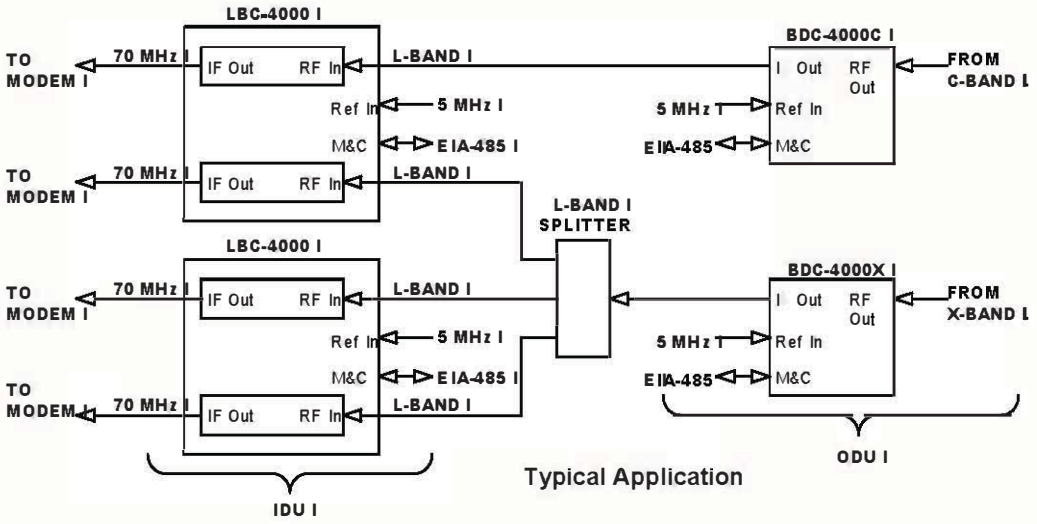
Operating Temperature D	-0° to +50°C (32° to 122°F)
Operating Altitude D	10,000 ft above sea level D
Operating Humidity D	5 to 95 non-condensing D
Non-Operating Temperature	58° to 160°F (-50° to +70°C)
Dissipation D	60 W typical D
Prime Power	90 to 260 VAC, 47 to 63 Hz D
Dimensions (1RU) D (height x width x depth) D	1.75" x 19" x 22" D (4.45 x 48.30 x 55.90 cm) D
Weight D	25 lbs (11.34 kg) maximum D

External Reference v

Input Frequency D	5 or 10 MHz, Auto detect D
Input Level D	± 5 dBm D
Input Impedance D	50 Ω D

onitor & Control v

Ethernet M&C/Connector D	Ethernet, Telnet, SNMP/RJ-45 D
Serial M&C/Connector D	TIA/EIA-232, TIA/EIA-485, 4-wire, D 9-pin D, Female D
Alarm Contacts D	3 Form C summary D
Alarm Connector D	9-pin D Female D



Typical Application