

## C-Band 6700 series BLOCK UP CONVERTER

### ➤ FEATURES AT A GLANCE

- Ideally suited to rapid deploy or offshore applications
- AC or DC power via separate connector for 40 W BUCs
- Separate AC power supplies available for DC powered BUCs
- 48 V DC power via IFL and external connector for 10/20 W LBUCs
- Available in single thread and 1+1 redundant configurations

The CPI/Codan C-Band 6700 series BUCs are purpose-built for satcom-on-the-move customers, while also offering benefits for fixed site and offshore applications.



C-Band BUCs

### Rugged & Reliable

- Design MTBF exceeds 100,000 hours
- IP67 rating that provides protection from water or dust storms
- Sealed to 34 kPa (5 Psi)

### Best RF Power Efficiency

- 10–40 W of power for <150 W of consumption DC powered LBUC
- 40 W of RF power for <300 W of consumption AC or DC powered LBUC
- 60 W of RF power for <575 W of consumption AC powered MBUC

### Specifically Designed

- Military applications
- Broadcast applications
- Size limited applications
- Highly mobile ground systems
- Remote area, install-and-forget applications
- Harsh environment operation

### Guaranteed Specifications

Guaranteed operation to specifications throughout the environmental operating range:

- Temperature (–40°C to +55°C)
- Humidity (100%)

### Most Comprehensive Monitor & Control

- RS232, RS422/485
- FSK and TCP/IP via FSK
- Dry-contact closure
- RF Power Meter

A large choice of management protocols are also built into the BUC.

### Configuration Options

- Standalone
- Redundant 1+1
- Optional AC Power Supplies

### Best Lead Times

- Typical availability under 2 weeks
- Ability to rapidly ramp up for larger requirements

### Best Support

- 24x7 Customer Support line
- Worldwide Technical Support line

# C-Band 6700 series BLOCK UP CONVERTER

## Specifications

Power rating	10 W		20 W	25 W	40 W		60 W		
Platform	DC powered LBUC		DC powered LBUC	AC powered MBUC	AC or DC powered LBUC		AC powered MBUC		
<b>Model numbers</b>	6710-W/S-48/EX 6710-N/S-48/EX	6710-W/E-48/EX-CE 6710-N/E-48/EX-CE	6720-W/S-48/EX-CE 6720-N/S-48/EX-CE	6725-W/E-AC/EX-CE 6725-N/E-AC/EX-CE	6740-W/S-48/EX 6740-N/S-48/EX 6740-W/S-AC/EX-LB 6740-N/S-AC/EX-LB	6740-W/E-48/EX 6740-N/E-48/EX 6740-W/E-AC/EX-LB 6740-N/E-AC/EX-LB	6740-W/E-AC/EX-CE 6740-N/E-AC/EX-CE	6760-W/S-AC/EX-CE	
<b>RF output connector</b>	N-type or CPR137G with 5 mm through holes		N-type or CPR137G with 5 mm through holes	N-type or CPR137G with 5 mm through holes	N-type or CPR137G with 5 mm through holes		CPR137G with 5 mm through holes		
<b>RF output VSWR</b>	2.0:1 max	1.8:1 max	1.8:1 max	1.5:1 max	1.8:1 max	1.5:1 max	1.5:1 max		
<b>RF output frequency range</b>	<b>Std Band</b> 5850 to 6425 MHz	<b>Ext Band</b> 5850 to 6725 MHz	<b>Std Band</b> 5850 to 6425 MHz	<b>Ext Band</b> 5850 to 6725 MHz	<b>Std Band</b> 5850 to 6425 MHz	<b>Ext Band</b> 5850 to 6725 MHz	<b>Std Band</b> 5850 to 6425 MHz		
<b>Input frequency range</b>	950 to 1525 MHz		950 to 1525 MHz		950 to 1525 MHz		950 to 1525 MHz		
<b>LO frequency</b>	7300 MHz & 7375 MHz		7300 MHz & 7375 MHz		7300 MHz & 7375 MHz		7300 MHz & 7375 MHz		
<b>IF input power @ 1 dB GCP, CW and max gain</b>	-31 dBm nominal		-31 dBm nominal		-31 dBm nominal		-31 dBm nominal		
<b>RF output power @ 1 dB GCP, CW</b>	+40.0 dBm min		+43.0 dBm min		+46.0 dBm min		+47.8 dBm min		
<b>Gain @ 0 dB attenuation (max gain)</b>	71 dB nominal		74 dB nominal		77 dB nominal		79 dB nominal		
<b>Gain flatness over any 40 MHz band</b>	±1.50 dB max	±0.75 dB max	±1.50 dB max	±0.75 dB max	±1.50 dB max	±0.75 dB max	±0.75 dB max	±0.75 dB max	
<b>Gain flatness over full band</b>	±2.50 dB max		±2.50 dB max		±2.50 dB max		±2.0 dB max		
<b>Gain stability over any 50°C temperature range</b>	±1.50 dB max		±1.50 dB max		±1.50 dB max		±1.0 dB max		
<b>Gain stability over entire temperature range when frequency set</b>	±2.0 dB max		±2.0 dB max		±2.0 dB max		±2.0 dB max		
<b>Gain stability over entire temperature range when frequency not set</b>	±4.0 dB max	±3.0 dB max	±3.0 dB max	±3.0 dB max	±3.0 dB max	±3.0 dB max	±3.0 dB max	±3.0 dB max	
<b>Reference frequency (External)</b>	10 MHz		10 MHz		10 MHz		10 MHz		
<b>Reference frequency input (External)</b>	Multiplexed on N-type transmit IF input		Multiplexed on N-type transmit IF input		Multiplexed on N-type transmit IF input		Multiplexed on N-type transmit IF input		
<b>Reference frequency level</b>	-10 to +5 dBm		-10 to +5 dBm		-10 to +5 dBm		-10 to +5 dBm		
<b>Reference frequency connector</b>	Via N-type transmit IF input		Via N-type transmit IF input		Via N-type transmit IF input		Via N-type transmit IF input		
<b>Frequency conversion</b>	Spectrum inverting		Spectrum inverting		Spectrum inverting		Spectrum inverting		
<b>Output power meter range</b>	15 dB		15 dB		15 dB		15 dB		
<b>Output power meter absolute accuracy when compensation frequency set</b>	±1.0 dB max		±1.0 dB max		±1.0 dB max		±1.0 dB max		
<b>Output power meter absolute accuracy when compensation frequency not set</b>	±2.0 dB max		±2.0 dB max		±2.0 dB max		±2.0 dB max		
<b>Output power meter relative accuracy when compensation frequency set</b>	±0.5 dB max		±0.5 dB max		±0.5 dB max		±0.5 dB max		
<b>Output power meter relative accuracy when compensation frequency not set</b>	±1.0 dB max		±1.0 dB max		±1.0 dB max		±1.0 dB max		
<b>Power meter modes</b>	CW and burst (>100 uS) with adjustable threshold		CW and burst (>100 uS) with adjustable threshold		CW and burst (>100 uS) with adjustable threshold		CW and burst (>100 uS) with adjustable threshold		
<b>Power supply voltage</b>	+34 V to +60 V DC via transmit IF input and external DC connector		+34 V to +60 V DC via transmit IF input and external DC connector		94 to 275 V AC via Amphenol T 3110 000		AC LBUC: 94 to 275 V AC via Amphenol T 3110 000 DC LBUC: 34 V to 60 V DC (+ve or -ve earth) via external DC connector	94 to 275 V AC via Amphenol T 3110 000	94 to 275 V AC via Amphenol T 3110 000
<b>Power supply minimum turn-on voltage @ 48 V</b>	+41 V		+41 V		N/A		AC: N/A, DC: 41 V (+ve or -ve earth)		N/A
<b>Power supply consumption</b>	130 W max		150 W max		210 W max		300 W max		375 W max
<b>Volume (for waveguide output BUCs)</b>	335 mm L x 182 mm W x 137 mm H 13.2" L x 7.2" W x 5.4" H		335 mm L x 182 mm W x 137 mm H 13.2" L x 7.2" W x 5.4" H		497 mm L x 182 mm W x 204 mm H 19.6" L x 7.2" W x 8.0" H		335 mm L x 182 mm W x 150 mm H 13.2" L x 7.2" W x 5.9" H		497 mm L x 182 mm W x 216 mm H 19.6" L x 7.2" W x 8.5" H
<b>Weight</b>	6 kg (13 lbs)		6 kg (13 lbs)		12 kg (26.5 lbs)		7 kg (15.5 lbs)		12 kg (26.5 lbs)

Values noted are typical at 25°C. Equipment descriptions and specifications are subject to change without notice or obligation.

# C-Band 6700 series BLOCK UP CONVERTER

## Common Specifications

IF input connector	N-type
IF input impedance	50 $\Omega$
IF input VSWR	1.7:1 max
Transmit attenuator steps	0 dB to 12 dB in 4 dB steps
RF output IMD ratio with 2 CW carriers each @ 6 dB OPBO	-25 dBc max
Spurious/harmonic output @ 3 dB OPBO	-50 dBc max
Harmonic output @ 3 dB OPBO	-60 dBc max
AC-powered BUC fault monitor connector	Transmit IF input
AC-powered BUC fault monitor polarity	+ve on centre conductor
AC-powered BUC fault monitor no fault state	>23 mA @ 48 V DC
AC-powered BUC fault monitor fault state	<20 mA @ 48 V DC
Maximum phase noise (SSB) of reference frequency:	
100 Hz	-135 dBc/Hz
1 kHz	-145 dBc/Hz
10 kHz	-155 dBc/Hz
100 kHz	-155 dBc/Hz
Phase noise (SSB) of BUC with reference frequency defined above:	
100 Hz	-63 dBc/Hz
1 kHz	-73 dBc/Hz
10 kHz	-83 dBc/Hz
100 kHz	-93 dBc/Hz
Group delay	
Linear (over any 10 MHz band)	2 nsec <sub>pp</sub> max
Parabolic (over any 80 MHz band)	0.00025 nsec/MHz <sup>2</sup> <sub>pp</sub> max
Ripple (over full band)	1 nsec <sub>pp</sub> max
AM/PM conversion	2.0°/dB max @ 2 dB OPBO
Monitor & Control	
Digital data format RS232	9600 bps, 8 bits, no parity, 1 stop bit, ASCII protocol
Digital data format RS485	User selectable
Digital connector	MIL-C-26482 12-14S socket
FSK data format	User selectable protocols
FSK data transmitter frequency	650 kHz $\pm$ 1%
FSK data transmitter deviation	$\pm$ 60 kHz $\pm$ 1%
FSK data transmitter sense	+60 kHz=mark; -60 kHz=space
FSK output level	-8 dB nominal
FSK start tone time	10 ms min
FSK data receiver nominal frequency	650 kHz
FSK data receiver locking range	$\pm$ 30 kHz
FSK data receiver input sensitivity	-15 dBm min
Operating temperature range	-40 to +55°C
Non-operating/storage temperature range	-40 to +70°C
Relative humidity	100%
Weatherproofing	Sealed to 34 kPa



### Americas (Head Office)

CPI  
Satcom Products  
Palo Alto, CA USA

T: +1 (650) 846-3803  
F: +1 (650) 424-1744

### Europe, Middle-East Asia-Pacific & Africa

CPI International Inc.  
Cham, Switzerland  
T: +41 (41) 560 7550  
F: +41 (41) 560 755

CPI Europe Limited  
Surrey, England  
T: +44 (1932) 256 930  
F: +44 (1932) 241 271

CPI Asia Inc.  
Singapore  
T: +65 6225 0011  
F: +65 9620 5200

[www.cpii.com/satcomsales](http://www.cpii.com/satcomsales)  
[satcommarketing@cpii.com](mailto:satcommarketing@cpii.com)