world's best RF subsystems.
SATELLITE COMMUNICATIONS

CODAN

6700 series **Block Up Converter**

↗ FEATURES AT A GLANCE

- Ideally suited to rapid deploy or offshore applications
- DC power via separate connector
- Separate power supplies available for AC power applications
- Available in single thread and 1+1 redundant configurations

Codan's 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

- 5–40 W of power at P1dB for under 7 kg (15 lb)
- 40 W of RF power for <300 W of consumption DC powered
- 60 W of RF power for <575 W of consumption AC powered

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
- 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

6700 series **Block Up Converter**

SPECIFICATIONS

Power rating	**5 W**	**10 W**		**20 W**	**25 W**	**40 W**			**60 W**
Platform	**DC-powered**	**DC-powered**		**DC-powered**	**AC-powered**	**DC-powered**		**AC-powered**	**AC-powered**
Model numbers	6705-W/S-48/IF 6705-N/S-48/IF 6705-W/S-24/IF 6705-N/S-24/IF	6710-W/S-48/IF 6710-N/S-48/IF	6710-W/E-48/IF-CE 6710-N/E-48/IF-CE 6710-W/E-48/EX-CE 6710-N/E-48/EX-CE	6720-W/S-48/IF-CE 6720-N/S-48/IF-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/E-48/EX 6740-N/E-48/EX	6740-W/E-AC/EX-CE 6740-N/E-AC/EX-CE	6760-W/S-AC/EX-CE
RF output connector	N-type female 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	N-type or CPR137G with 5 mm through holes			CPR137G with 5 mm through holes
RF output VSWR	2.0:1 max	2.0:1 max	1.8:1 max	1.8:1 max	1.5:1 max	1.8:1 max	1.8:1 max	1.5:1 max	1.5:1 max
RF output frequency range	5850 to 6425 MHz	5850 to 6425 MHz	5850 to 6725 MHz	5850 to 6425 MHz	5850 to 6725 MHz	5850 to 6425 MHz	5850 to 6725 MHz	5850 to 6725 MHz	5850 to 6425 MHz
Input frequency range	950 to 1525 MHz	950 to 1525 MHz	950 to 1750 MHz	950 to 1525 MHz	950 to 1750 MHz	950 to 1525 MHz	950 to 1750 MHz	950 to 1750 MHz	950 to 1525 MHz
RF output power @ 1 dB GCP	+37.0 dBm min	+40.0 dBm min		+43.0 dBm min	+43.4 dBm min	+46.0 dBm min			+47.8 dBm min
LO frequency	7300 MHz & 7375 MHz	7300 MHz & 7375 MHz	7300 MHz, 7375 MHz, 7600 MHz & 7675 MHz	7300 MHz & 7375 MHz	7300 MHz, 7375 MHz, 7600 MHz & 7675 MHz	7300 MHz & 7375 MHz	7300 MHz & 7375 MHz	7300 MHz, 7375 MHz, 7600 MHz & 7675 MHz	7300 MHz & 7375 MHz
Gain	68 dB nominal	71 dB nominal		74 dB nominal	74 dB nominal	77 dB nominal			79 dB nominal
Gain flatness over any 40 MHz band	±1.50 dB max	±1.50 dB max	±0.75 dB max	±1.50 dB max	±0.75 dB max	±1.50 dB max	±1.50 dB max	±0.75 dB max	±0.75 dB max
Gain flatness over full band	±2.50 dB max	±2.50 dB max	±1.50 dB max	±2.50 dB max	±2.0 dB max	±2.50 dB max	±2.50 dB max	±2.0 dB max	±2.0 dB max
Gain stability over any 50°C temperature range	±1.50 dB max	±1.50 dB max		±1.50 dB max	±1.0 dB max	±1.50 dB max	±1.50 dB max	±1.0 dB max	±1.0 dB max
Gain stability over entire temperature range when frequency set	±2.0 dB max	±2.0 dB max		±2.0 dB max	±2.0 dB max	±2.0 dB max			±2.0 dB max
Gain stability over entire temperature range when frequency not set	±4.0 dB max	±4.0 dB max	±3.0 dB max	±3.0 dB max	±3.0 dB max	±3.0 dB max			±3.0 dB max
Reference frequency	10 MHz	10 MHz		10 MHz	10 MHz	10 MHz			10 MHz
Reference frequency input	Multiplexed on transmit IF input	Multiplexed on transmit IF input		Multiplexed on transmit IF input	Multiplexed on transmit IF input	Multiplexed on transmit IF input			Multiplexed on transmit IF input
Reference frequency level	–10 to +5 dBm	–10 to +5 dBm		–10 to +5 dBm	–10 to +5 dBm	–10 to +5 dBm			–10 to +5 dBm
Reference frequency connector	Via transmit IF input	Via transmit IF input		Via transmit IF input	Via transmit IF input	Via transmit IF input			Via transmit IF input
Frequency conversion	Spectrum inverting	Spectrum inverting		Spectrum inverting	Spectrum inverting	Spectrum inverting			Spectrum inverting
Output power meter range	15 dB	15 dB		15 dB	10 dB	15 dB			15 dB
Output power meter absolute accuracy when compensation frequency set	±1.0 dB max	±1.0 dB max		±1.0 dB max	±1.0 dB max	±1.0 dB max			±1.0 dB max
Output power meter absolute accuracy when compensation frequency not set	±2.0 dB max	±2.0 dB max		±2.0 dB max	±2.0 dB max	±2.0 dB max			±2.0 dB max
Output power meter relative accuracy when compensation frequency set	±0.5 dB max	±0.5 dB max		±0.5 dB max	±0.5 dB max	±0.5 dB max			±0.5 dB max
Output power meter relative accuracy when compensation frequency not set	±1.0 dB max	±1.0 dB max		±1.0 dB max	±1.0 dB max	±1.0 dB max			±1.0 dB max
Power meter modes	CW and burst with adjustable threshold	CW and burst with adjustable threshold		CW and burst with adjustable threshold	CW and burst with adjustable threshold	CW and burst with adjustable threshold			CW and burst with adjustable threshold
Power supply voltage @ 24 V	+17 V to +35 V DC via transmit IF input								
Power supply minimum turn-on voltage @ 24 V	+19 V								
Power supply voltage @ 48 V	+34 V to +60 V DC via transmit IF input	+34 V to +60 V DC via transmit IF input	+34 V to +60 V DC via transmit IF input or external DC connector	+34 V to +60 V DC via transmit IF input or external DC connector	N/A	+34 V to +60 V DC via external DC connector		N/A	N/A
Power supply minimum turn-on voltage @ 48 V	+41 V	+41 V		+41 V		+41 V			
Power supply voltage (AC-powered BUCs only)	N/A	N/A		N/A	94 to 275 V AC via Amphenol T 3110 000	N/A	N/A	94 to 275 V AC via Amphenol T 3110 000	94 to 275 V AC via Amphenol T 3110 000
Power supply consumption	60 W max	130 W max		150 W max	210 W max	300 W max	300 W max	375 W max	575 W max
RF output IMD ratio with 2 carriers each @ 6 dB OPBO	–26 dBc min	–26 dBc min		–26 dBc min	–25 dBc min	–26 dBc min	–26 dBc min	–25 dBc min	–25 dBc min
Volume (for waveguide output BUCs)	335 mm L x 182 mm W x 104 mm H	335 mm L x 182 mm W x 137 mm H		335 mm L x 182 mm W x 137 mm H	497 mm L x 182 mm W x 204 mm H	335 mm L x 182 mm W x 137 mm H	335 mm L x 182 mm W x 137 mm H	497 mm L x 182 mm W x 204 mm H	497 mm L x 182 mm W x 216 mm H
Weight	6.0 kg nominal	6.0 kg nominal		6.0 kg nominal	12.0 kg nominal	7.0 kg nominal	7.0 kg nominal	12.0 kg nominal	15 kg nominal

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

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COMMON SPECIFICATIONS

IF input connector	N-type
IF input impedance	50 Ω
IF input VSWR	1.5:1 max
Transmit attenuator steps	0 dB to 12 dB in 4 dB steps
Spurious 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 frequency reference 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 $nsec_{pp}$ max
Parabolic (over any 80 MHz band)	0.00025 $nsec/MHz^2{}_{pp}$ max
Ripple (over full band)	1 $nsec_{pp}$ max
AM/PM conversion	2.0°/dB max @ 2 dB OPBO
Monitor & Control	
FSK data format	User selectable
FSK data transmitter frequency	650 kHz ±1%
FSK data transmitter deviation	±60 kHz ±1%
FSK data transmitter sense	+60 kHz=mark; –60 kHz=space
FSK output level	–3 dB nominal
FSK start tone time	10 ms minimum
FSK data receiver nominal frequency	650 kHz
FSK data receiver locking range	±30 kHz
FSK data receiver input sensitivity	–15 dBm minimum
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
Operating temperature range	–40 to +55°C
Relative humidity	100%
Weatherproofing	Sealed to 34 kPa

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