

## 6900 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 Ku-Band 6900 series RBUC is purpose-built for satcom-on-the-move customers, while also offering benefits for fixed site and offshore applications.

### 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

- 4–25 W of power for under 7 kg (15 lb) direct feed mount

### 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



*Ku-Band BUCs*

**SPECIFICATIONS**

Power Rating	4 W	8 W		16 W				25 W	
Platform	DC-powered	DC-powered		DC-Powered		AC-powered		DC-powered	AC-powered
Model numbers (Ni denotes Non-Inverting BUCs)	6904-W/E-24/IF-CE 6904-W/E-48/IF-CE	6908-W/S-48/IF 6908-W/S-48/IF-NI 6908-W/S-48/EX 6908-W/S-48/EX-NI	6908-W/E-48/IF-CE 6908-W/E-48/EX-CE 6908-W/E-48/IF-CE-NI 6908-W/E-48/EX-CE-NI	6916-W/S-48/IF 6916-W/S-48/EX 6916-W/S-48/IF-NI 6916-W/S-48/EX-NI	6916-W/E-48/IF 6916-W/E-48/EX 6916-W/E-48/IF-NI 6916-W/E-48/EX-NI	6916-W/S-AC/EX-CE	6916-W/E-AC/EX-CE	6925-W/S-48/EX	6925-W/S-AC/EX 6925-W/E-AC/EX
RF output connector	WR75, PBR120 flange with 4.2 mm through holes	WR75, PBR120 flange with 4.2 mm through holes		WR75, PBR120 flange with 4.2 mm through holes				WR75, PBR120 flange with 4.2 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		1.5:1 max	
RF output frequency range	13750 to 14500 MHz	14000 to 14500 MHz	13750 to 14500 MHz	14000 to 14500 MHz	13750 to 14500 MHz	14000 to 14500 MHz	13750 to 14500 MHz	14000 to 14500 MHz	13750 to 14500 MHz
Input frequency range	950 to 1700 MHz	950 to 1450 MHz	950 to 1700 MHz	950 to 1450 MHz	950 to 1700 MHz	950 to 1450 MHz	950 to 1700 MHz	950 to 1450 MHz	950 to 1700 MHz
RF output power @ 1 dB GCP	+36.0 dBm min	+39.0 dBm min	+39.0 dBm min	+42.0 dBm min	+41.5 dBm min	+41.7 dBm min	+41.0 dBm min	+43.4 dBm min	+43.0 dBm min
LO frequency (Ni denotes Non-Inverting BUCs)	15450 MHz	15450 MHz 13050 MHz in NI Models	15450 MHz 12800 MHz in NI Models	15450 MHz 13050 MHz in NI Models	15450 MHz 12800 MHz in NI Models	15450 MHz		15450 MHz	
Gain	67 dB nominal	70 dB nominal		73 dB nominal				74 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	±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		±2.0 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		±1.0 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	
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	
Reference frequency	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	
Reference frequency level	-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	
Frequency conversion	Spectrum inverting	Spectrum inverting Spectrum non-inverting in NI models		Spectrum inverting Spectrum non-inverting in NI models		Spectrum inverting		Spectrum inverting	
Output power meter range	15 dB	15 dB		15 dB		10 dB		10 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	
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	
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	
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	
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	
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 via external DC connector	+34 V to +60 V DC via transmit IF input or via external DC connector				+34 V to +60 V DC via external DC connector only	
Power supply minimum turn-on voltage @ 48 V	+41 V	+41 V		+41 V				+41 V	
Power supply voltage (AC-powered BUCs only)						94 to 275 V AC via Amphenol T 3110 000		94 to 275 V AC via Amphenol T 3110 000	
Power supply consumption	80 W max	130 W max		150 W max		300 W max		250 W max	375 W max
RF output IMD ratio with 2 carriers each @ 6 dB OPBO	-25 dBc min	-24 dBc min	-25 dBc min	-25 dBc min				-25 dBc min	
Volume (for waveguide output BUCs)	360 mm L x 182 mm W x 104 mm H	360 mm L x 182 mm W x 137 mm H		360 mm L x 182 mm W x 137 mm H		522 mm L x 182 mm W x 204 mm H		335 mm L x 182 mm W x 145 mm H	522 mm L x 182 mm W x 204 mm H
Weight	6.0 kg nominal	6.0 kg nominal		6.0 kg nominal		12.0 kg nominal		7 kg	12.0 kg nominal

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

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## COMMON SPECIFICATIONS

<b>IF input connector</b>	N-type
<b>IF input impedance</b>	50 $\Omega$
<b>IF input VSWR</b>	1.5:1 max
<b>Transmit attenuator steps</b>	0 dB to 12 dB in 4 dB steps
<b>Spurious output @ 3 dB OPBO</b>	-50 dBc max
<b>Harmonic output @ 3 dB OPBO</b>	-60 dBc max
<b>AC-powered BUC fault monitor connector</b>	Transmit IF input
<b>AC-powered BUC fault monitor polarity</b>	+ve on centre conductor
<b>AC-powered BUC fault monitor no fault state</b>	>23 mA @ 48 V DC
<b>AC-powered BUC fault monitor fault state</b>	<20 mA @ 48 V DC
<b>* Maximum phase noise (SSB) of reference frequency:</b>	
100 Hz	-135 dBc/Hz
1 kHz	-145 dBc/Hz
10 kHz	-155 dBc/Hz
100 kHz	-155 dBc/Hz
<b>Phase noise (SSB) of BUC with frequency reference defined above *:</b>	
100 Hz	-63 dBc/Hz
1 kHz	-73 dBc/Hz
10 kHz	-83 dBc/Hz
100 kHz	-93 dBc/Hz
<b>Group Delay</b>	
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
<b>AM/PM conversion</b>	2.0°/dB max @ 2 dB OPBO
<b>Monitor &amp; Control</b>	
FSK data format	User selectable
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	-3 dB nominal
FSK start tone time	10 ms minimum
FSK data receiver nominal frequency	650 kHz
FSK data receiver locking range	$\pm$ 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
<b>Operating temperature range</b>	-40 to +55°C
<b>Relative humidity</b>	100%
<b>Weatherproofing</b>	Sealed to 34 kPa

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