

7700 & 7900 series **Block Up Converter**

➤ FEATURES AT A GLANCE

- Ideally suited to rapid deploy or offshore applications
- Includes entire feature set of existing BUC families
- Uniquely designed cooling system
- DC power via separate connector
- Separate power supplies available for AC power applications
- Available in single thread and 1+1 redundant configurations

Codan's new RBUCs are purpose-built for satcom-on-the-move customers, while also offering benefits for fixed site and offshore applications.



40 W Ku-Band BUC 7900 series

Rugged & Reliable

- Design MTBF exceeds 100,000 hours
- IP67 rating that provides protection from water or dust storms
- Dual cooling fans for redundant fan operation
- Sealed to 34 kPa (5 Psi)

Specifically Designed

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

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
- Ethernet (webpage server, Telnet and SNMP)

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

Unique Thermal Design

Unique billet aluminium casing that offers:

- Reduced weight with a machined, lighter casing
- Highly efficient cooling fins in "sandwich" design
- Huge increase in thermal efficiency

SPECIFICATIONS

	Ku-Band			C-Band			
	25 W		40 W	100 W		100 W	
RF power rating	25 W		40 W	100 W		100 W	
Platform	DC-powered			DC-powered		AC-powered	
Model numbers	7925-W/S-48/EX-NI (Std Band) 7925-W/E-48/EX-NI (Ext Band)		7940-W/S-48/EX-NI (Std Band)*	7710H-W/S-48/EX (Std Band)	7710H-W/E-48/EX (Ext Band)	7710H-W/S-AC/EX (Std Band)	7710H-W/E-AC/EX (Ext Band)
RF output connector	WR75, PBR120 flange			CPR137G flange		CPR137G flange	
RF output VSWR	1.5:1 max			1.5:1 max		1.5:1 max	
RF output frequency range	Std Band 14.0 to 14.5 GHz	Ext Band 13.75 to 14.5 GHz	Std Band 14.0 to 14.5 GHz	Std Band 5.85 to 6.425 GHz	Ext Band 5.85 to 6.725 GHz	Std Band 5.85 to 6.425 GHz	Ext Band 5.85 to 6.725 GHz
Input frequency range	0.95 to 1.45 GHz	0.95 to 1.7 GHz	0.95 to 1.45 GHz	0.95 to 1.525 GHz	0.95 to 1.75 GHz	0.95 to 1.525 GHz	0.95 to 1.75 GHz
RF output power @ 1 dB GCP	+43.4 dBm min	+43.0 dBm min	+46.0 dBm min	+50.0 dBm min	+49.5 dBm min	+50.0 dBm min	+49.5 dBm min
LO frequency	13.05 GHz	12.8 GHz	13.05 GHz	7.3 & 7.375 GHz	7.3, 7.375, 7.6 & 7.675 GHz	7.3 & 7.375 GHz	7.3, 7.375, 7.6 & 7.675 GHz
Transmit attenuator steps	0 dB to 15 dB in 1 dB steps			0 dB to 15 dB in 1 dB steps		0 dB to 15 dB in 1 dB steps	
Gain	74 dB nominal		77 dB nominal	80 dB nominal		80 dB nominal	
Gain flatness over any 40 MHz band	±1.50 dB max			±1.50 dB max		±1.50 dB max	
Gain flatness over full band	±2.50 dB max			±2.50 dB max		±2.50 dB max	
Gain stability over any 50°C temperature range when frequency set	±1.50 dB max			±1.50 dB max		±1.50 dB max	
Gain stability over entire temperature range when frequency set	±2.0 dB max			±2.0 dB max		±2.0 dB max	
Gain stability over entire temperature range when frequency not set	±3.0 dB max			±4.0 dB max	±3.0 dB max	±4.0 dB max	±3.0 dB max
Reference frequency	10 MHz			10 MHz		10 MHz	
Reference frequency 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	
Reference frequency connector	Via transmit IF input			Via transmit IF input		Via transmit IF input	
Frequency conversion	Non-inverting			Inverting		Inverting	
Power supply voltage @ 48 V	+36 V to +72 V DC via external DC connector			+36 V to +72 V DC via external DC connector		N/A	
Power supply minimum turn-on voltage @ 48 V	+41 V			+41 V		N/A	
Power supply voltage (AC-powered BUCs only)	N/A	N/A	N/A	N/A		95 to 275 V AC via Amphenol T 3110 000	
Power supply consumption	350 W max		500 W max	500 W max		800 W max	
Volume (for waveguide output BUCs)	317 mm L x 182 mm W x 150 mm H		360 mm L x 182 mm W x 150 mm H	490 mm L x 198 mm W x 160 mm H		490 mm L x 198 mm W x 160 mm H	
Weight	7 kg max			12 kg max		12 kg max	

* 7940-W/E-48/EX-NI (Extended Band) Coming Soon

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

COMMON SPECIFICATIONS

IF input connector	N-type
IF input impedance	50 Ω
IF input VSWR	1.7:1 max
RF output IMD ratio with 2 carriers each @ 9 dB OPBO	-31 dBc min
Spurious/harmonic output @ 3 dB OPBO	-50 dBc max
* 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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Configuration Options

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

Complementary Range of BUCs

- 4, 8 and 16 W Ku-Band BUCs
- 5, 10, 20 and 40 W C-Band BUCs
- Identical mounting and accessories

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 team



RBUC boom-mounted



6582 Toroidal Power Supply



40 W Ku-Band RBUC & 7580 Switch Mode Power Supply boom-mounted



100 W C-Band RBUC (Left), 7586 Controller (Centre), and 7580 Switch Mode Power Supply (Right)

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