

IBUC **X-Band Intelligent Block Upconverter**

IBUC Advantages

Integrated BUC/SSPA for higher performance and reliability.

DC power can be supplied via IFL coax or separate DC connector for 5 W through 20 W models.

All models available with integral AC power supply or separate DC power supply.

Internal 10MHz reference option automatically switches to internal reference when external reference is not detected.

Guaranteed rated output power across the entire operating temperature range and frequency band.

Embedded Web pages provide management for small networks using any Web browser.

AGC or ALC circuits hold gain or output level constant.

16 dB User-adjustable gain in 0.1 dB steps preserves modem dynamic range.

Advanced user interfaces:

- TCP/IP HTTP with embedded Web pages
- SNMP
- TELNET through TCP/IP
- FSK through TX IFL cable
- RS232/485 serial port
- Hand-held terminal



The revolutionary **IBUC** has advanced features to take your network to new heights.

IBUC offers significant benefits:

- Low terminal cost
- Simple design and installation
- Superior RF performance
- Simplified 1+1 configuration

New interfaces connect you to extensive M&C facilities for network management or local access. This powerful new M&C enables:

- **Trouble-free commissioning** with easy, point-and-click installation/configuration
- Continuous **verification** of performance with time-stamped alarm history
- Simplified **monitoring** of terminal status

The **IBUC** comes with a complete set of diagnostic tools including:

- 10 MHz input detector
- Input voltage and current monitoring
- Transmit L-band input level detector
- Transmit RF output level detector
- User configurable thresholds and alarms

Unique to the **IBUC** are internal AGC and ALC functions that satisfy demanding applications with stringent specifications.

IBUC

X-Band Intelligent Block Upconverter

Frequency range	RF	IF
	7900 to 8400 MHz	950 to 1450 MHz

Input

VSWR / Impedance	1.5:1 max / 50 Ohm	
Input Connector	Type N female (50 Ohm)	
Input Connector options	Type F (75 Ohm), TNC (50 Ohm)	
Input power detector	-55 to -20 dBm	

Gain

Small Signal Gain (L-band to RF) with attenuator set to 0 dB

5 W	68 dB min	
10 W	71 dB min	
20 W	74 dB min	
25 W	75 dB min	
40 W	77 dB min	
50 W	78 dB min	
60 W	79 dB min	
80 W	80 dB min	

Attenuator range 16 dB variable in 0.1 dB steps

Gain flatness	<u>5 W to 50 W</u>	<u>60 W to 80 W</u>
Full band	3 dB p-p max	4 dB p-p max
36 MHz	1 dB p-p max	1 dB p-p max
1 MHz	0.25 dB p-p	0.25 dB p-p

Gain variation over temperature

Open loop	3 dB p-p max	4 dB p-p max
With AGC	1 dB p-p max	1 dB p-p max

RF Output

Interface	CPR-112G
VSWR	1.5:1 max

Rated output power (P1dB)

5 W	+37 dBm min
10 W	+40 dBm min
20 W	+43 dBm min
25 W	+44 dBm min
40 W	+46 dBm min
50 W	+47 dBm min
60 W	+47.8 dBm min
80 W	+49 dBm min

IMD3 (2 carriers, 3 dB TOBO) -27 dBc max

Level stability with ALC ±0.5 dB

Output power detector range Rated power to -20 dB

Power reading accuracy ± 1.0 dB max.

Spurious In band -65 dBc

Out of band Complies with MIL-STD 188-164B

Harmonics -60 dBc max.

Output Noise Power Density

TX Band	< -78 dBm/Hz
RX Band (with RX reject filter)	< -168 dBm/Hz

Mute -70 dBc max.

AM-PM Conversion < 3.0 deg/dB @ rated power

Group Delay	
Linear	0.03 ns/MHz
Parabolic	0.003 ns/MHz ²
Ripple	1 ns p-p over any 36 MHz

SSB Phase Noise	External refer-	IBUC
10 Hz	-115 dBc/Hz	-55 dBc/Hz
100 Hz	-140 dBc/Hz	-80 dBc/Hz
1 kHz	-150 dBc/Hz	-90 dBc/Hz
10 kHz	-155 dBc/Hz	-95 dBc/Hz
100 kHz	N/A	-100 dBc/Hz
1 MHz	N/A	-110 dBc/Hz

External Reference (multiplexed on TX IFL)

Frequency	10 MHz
Level	-12 to +5 dBm

Internal Reference - optional

Local Oscillator Frequency 6950 MHz

Sense Non-inverting

IBUC Power Supply DC AC

Voltage 48 ± 11 VDC 100 to 240 VAC

Option for 5 W, 10 W: 24 ± 4 VDC

DC via coax available on 5 W - 20 W

Power Consumption

5 W	72 W	85 VA
10 W	110 W	135 VA
20 W	168 W	200 VA
25 W	192 W	225 VA
40 W	350 W	400 VA
50 W	432 W	485 VA
60 W	450 W	530 VA
80 W	576 W	656 VA

Monitor and Control

Ethernet (HTTP, Telnet, SNMP),

RS232/485, Hand-held Terminal via MS-type connector,

FSK (multiplexed on TX IFL).

Environmental 5 W to 40 W 50 W to 80 W

Operating temperature -40°C to +60°C -40°C to +55°C

Relative humidity 100% condensing

Altitude 10,000 ft., (3,000 m) ASL

Mechanical DC powered AC powered

5 W - 10 W	12.2x7.2x4.2 in. 13 lbs	12.2x7.2x4.5 in. 14 lbs
20 W - 40 W	12.2x7.2x6.2 in. 18 lbs	12.2x7.2x6.5 in. 19 lbs
50 W - 80 W	12.2x7.2x6.7 in. 18.5 lbs	12.2x7.2x7.0 in. 19.5 lbs

Specifications are subject to change without notice.

IBUC X-Band Data Sheet 2/29/16



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