



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.

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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	<u>5 W to 40 W</u>	<u>50 W to 80 W</u>		
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.	12.2x7.2x4.5 in.		
	13 lbs	14 lbs		
20 W - 40 W	12.2x7.2x6.2 in.	12.2x7.2x6.5 in.		
	18 lbs	19 lbs		
50 W - 80 W	12.2x7.2x6.7 in.	12.2x7.2x7.0 in.		
	18.5 lbs	19.5 lbs		

Specifications are subject to change without notice.

IBUC X-Band Data Sheet 2/29/16



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