

X-Band IBUC ***Intelligent Block Upconverter***

IBUC Advantages

X-Band IBUC power levels 2 W through 80 W.

Integrated BUC/SSPA for higher performance and reliability.

DC power can be supplied via IFL coax or separate DC connector for 2 W to 20 W models.

All models available with integral AC power supply.

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.

Customer-selectable gain makes it possible to compensate for cable and terminal losses.

Advanced customer interfaces:

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

1+1 switching logic built into IBUC eliminates expensive external controller.



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 the **IBUC**'s 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 alarm history
- Simplified **troubleshooting** of terminal faults

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
- Alarm history

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

For additional information contact Terrasat Sales at +1 408-782-5911 or by Email: Sales@Terrasatinc.com.

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X-Band IBUC Block Upconverter Specifications

L-Band Input

Frequency range	950 to 1450 MHz
VSWR / Impedance	1.5:1 max / 50 ohms
Connector	Type N female
Input power detector range	-55 to -20 dBm
Max. input power without damage	+10 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 0.1dB steps
Gain flatness	<u>5 W to 50 W</u> <u>60 W to 80 W</u>
Full band	3 dB p-p max 4dB p-p max
36 MHz	1dB p-p max 1dB 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

Noise figure 10 dB max. @ min attenuation

RF Output

Frequency range	7900 to 8400 MHz
Interface	CPR-112G
VSWR	<1.3:1

Rated output power (P1dB across temperature and frequency range)

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, 30 kHz apart, 9dB BO/carrier) -32 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.

Harmonics @ rated power -50 dBc max

Spurious @ rated power -65 dBc max

Output Noise Power

TX band	< -80 dBm/Hz
RX band (with RX reject filter)	< -140 dBm/Hz
RX band (w/o RX reject filter)	< -80 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

Offset	External reference	IBUC
10 Hz	-120 dBc/Hz	-35 dBc/Hz
100 Hz	-130 dBc/Hz	-70 dBc/Hz
1 kHz	-143 dBc/Hz	-80 dBc/Hz
10 kHz	-152 dBc/Hz	-90 dBc/Hz
100 kHz	-155 dBc/Hz	-100 dBc/Hz
1 MHz	-155 dBc/Hz	-110 dBc/Hz

External Reference (multiplexed on TX IFL)

Frequency	10 MHz
Level	-12 to +5 dBm

Local Oscillator

LO Frequency	6950 MHz
Sense	Non-Inverting

IBUC Power Supply

Voltage / Current	100 to 240 VAC or 48 ± 11 VDC
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Power Consumption

5 W	72 W
10 W	96 W
20 W	168W
25 W	192 W
40 W	384 W
50 W	432 W
60 W	480 W
80 W	576 W

Monitor and Control

FSK (multiplexed on TX IFL)
RS232/485

Hand-held Terminal

TCP / IP	Telnet, HTTP
UDP	SNMP

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. ASL	

Mechanical (without receive reject filter)

	Size	Weight
5W, 10W	12.2"(L) x 7.2"(W) x 4.2"(H) 310 mm x 183 mm x 107 mm	12 lbs 5.4 kg
20-80W	12.2"(L) x 7.2"(W) x 7.0"(H) 310 mm x 183 mm x 178 mm	18 lbs 8 kg

Specifications are subject to change without notice



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