



# Terrasat **IBUC G**

**GaN, 400W**

## **X-Band Intelligent Block Upconverter**

### **IBUC Advantages**

Integrated BUC/SSPA for higher performance and reliability.

Integral AC power supply.

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

Low phase noise better than IESS308/309 requirements by a minimum of 10dB.

NMS-friendly interfaces enable remote management of your earth station RF.

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

AGC or ALC circuits hold gain or output level constant.

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

Output sample port included.

Advanced user interfaces:

- TCP/IP HTTP with embedded Web pages via RJ45 user interface connector
- SNMP
- TELNET through TCP/IP
- FSK through TX IFL cable
- RS232/485 serial port
- Hand-held terminal



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

**IBUC G** 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 G** 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.

# Terrasat IBUC G - GaN

## 400W 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 range	-50 to -15 dBm

### Gain

Small Signal Gain (L-band to RF) with attenuator set to 0 dB	82 dB min
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Attenuator range	30 dB variable in 0.1 dB steps
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### Gain flatness

Full band	4 dB p-p max
36 MHz	1.5 dB p-p max
1 MHz	0.25 dB p-p

### Gain variation over temperature

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

### RF Output

Interface	CPR-112G
VSWR	1.3:1 max

### Output power 400W

$P_{sat}$ (typ)	+56 dBm
$P_{lin}$ (min)	+53 dBm

$P_{lin}$  is the maximum linear power as defined by MIL STD 188-164B

Level stability with ALC	$\pm 0.5$ dB
Output power detector range	Rated power to -20 dB
Power reading accuracy	$\pm 1.0$ dB max.
Spurious @ $P_{lin}$	

In Band	-65 dBc
Out of Band	Complies with MIL-STD 188-164B

Harmonics @ $P_{lin}$	-60 dBc max.
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### Output Noise Power Density

TX	< -75 dBm/Hz
RX (with RX reject filter)	< -165 dBm/Hz
Mute	-70 dBc max.
AM-PM Conversion	< 3.0 deg/dB @ $P_{lin}$

### Group Delay

Linear	0.03 ns/MHz
Parabolic	0.003 ns/MHz <sup>2</sup>
Ripple	1 ns p-p over any 36 MHz

SSB Phase Noise	External reference	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

Voltage	AC	200 to 240 VAC
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### Power Consumption

at $P_{lin}$	1800 VA
at $P_{sat}$	2200 VA

### Monitor and Control

**Ethernet** (HTTP, Telnet, SNMP) via RJ45 connector,  
**RS232/485, Hand-held Terminal** via MS-type connector,  
**FSK** multiplexed on TX IFL.

### Environmental

Operating temperature	-40°C to +55°C
Relative humidity	100% condensing
Altitude	10,000 ft., (3,000 m) ASL

### Mechanical

Size	24 x 10 x 7.4 in. 610 x 254 x 188 mm
Weight	40 lbs, 18 kg

Specifications are subject to change without notice.

IBUC G X-Band Data Sheet 8/20/15

