



# IBUC 2G

## 100W / 125W GaN

### C-Band Intelligent Block Upconverter

#### IBUC Advantages

Integrated BUC/SSPA for higher performance and reliability.

GaN amplifier technology enables compact size and high efficiency.

Integral AC power supply.

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

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

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
- SNMP
- TELNET through TCP/IP
- FSK through TX IFL cable
- RS232/485 serial port
- Hand-held terminal



The revolutionary **IBUC 2G** has advanced features and a Gallium Nitride (GaN) amplifier for increased efficiency. **IBUC 2G** offers significant benefits:

- Low terminal cost
- Simple design and installation
- Superior RF performance
- Simplified 1+1 configuration
- Compact, light-weight package

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 2G** 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.

For additional information contact Terrasat Sales at +1 408-782-5911 or by Email: [Sales@Terrasatinc.com](mailto:Sales@Terrasatinc.com).  
315 Digital Drive, Morgan Hill, CA 95037 [www.terrasatinc.com](http://www.terrasatinc.com)

## IBUC 2G - 100W / 125W GaN C-Band Intelligent Block Upconverter

Frequency range	RF (MHz)	IF (MHz)	
Sense		Inverting	Non-Inverting
Band 1 Std C	5850 to 6425	950 to 1525	950 to 1525
Band 2 Palapa	6425 to 6725	975 to 1275	1125 to 1425
Band 3 INSAT	6725 to 7025	1150 to 1450	965 to 1265
Band 4 Ext C	5850 to 6650	950 to 1750	950 to 1750
Band 5 Full C	5850 to 6725	975 to 1850	950 to 1825

### 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	-55 to -20 dBm

### Gain

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

100W	81 dB min
125W	82 dB min
Attenuator range	30 dB variable in 0.1 dB steps

Gain flatness	Bands 1/2/3	Bands 4/5
Full band	3 dB p-p max	4 dB p-p max
36 MHz	1 dB p-p max	1.5 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-137G
VSWR	1.3:1 max

### Output Power

	Bands 1/2/4/5		Band 3	
	100W	125W	100W	125W
$P_{sat}$ (typ)	+50 dBm	+51 dBm	+49.5 dBm	+50.5 dBm
$P_{lin}$ (min)	+49 dBm	+50 dBm	+48 dBm	+49 dBm

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

Level stability with ALC	±0.5 dB
Output power detector range	Rated power to -20 dB
Power reading accuracy	± 1.0 dB max.

Spurious @  $P_{lin}$

In Band	-65 dBc
Out of Band	Complies with EN 301 443 and MIL-STD 188-164B

Harmonics @  $P_{lin}$  -50 dBc max.

Output Noise Power Density

TX	< -76 dBm/Hz
RX	< -145 dBm/Hz

SSB Phase Noise	External reference	IBUC 2G
10 Hz	-115 dBc/Hz	-54 dBc/Hz
100 Hz	-140 dBc/Hz	-79 dBc/Hz
1 kHz	-150 dBc/Hz	-89 dBc/Hz
10 kHz	-155 dBc/Hz	-94 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

Sense	Inverting	Non-inverting
Band 1	7375 MHz	4900 MHz
Band 2	7700 MHz	5300 MHz
Band 3	8175 MHz	5760 MHz
Band 4	7600 MHz	4900 MHz
Band 5	7700 MHz	4900 MHz

### IBUC Power Supply

Voltage	AC	100 to 240 VAC
---------	----	----------------

Power Consumption	$P_{sat}$	$P_{lin}$
100 W	520 VA	490 VA
125 W	560 VA	520 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	10.5 x 6 x 6.1 in. (not including isolator) 267 x 152 x 155 mm
Weight	13.5 lbs, 6.1 kg

Specifications are subject to change without notice.

IBUC 2G 100W / 125W C-Band Data Sheet 05/1/19



**315 Digital Drive, Morgan Hill, CA 95037**  
**Tel. +1 408-782-5911 Fax +1 408-782-5912**