

## The IBUC Advantage

All IBUCs are equipped with cutting-edge intelligent technology:

- Highest quality & exacting performance guaranteed through individual unit testing over temperature
- Superior linearity for maximum useable output power
- Amplifier overdrive protection
- User-selectable AGC/ALC for optimal performance & compatibility with modem adaptive coding
- New high capacity microprocessor & extended M&C functions
- Weatherized RJ45 Ethernet interface for simplified connection

### ULTIMATE MANAGEMENT & CONTROL

- » Local Web Interface & NMS-Friendly SNMP «
- » 70+ User Configurable Thresholds & Alarms «
- » Upgraded Event Log with 1,000 Sensor Readings «
- » Performance Trend Analysis Tools & Statistical logs «
- » Embedded Web Pages for Universal Web Browser Access «

## Applications

The **IBUC 2G** now supports multicarrier transmission across the full C-band spectrum. The product is a full-featured Intelligent Block Upconverter with Gallium Nitride amplifier technology. GaN advantages include higher power in a smaller outdoor enclosure & low power consumption. Terrasat's unique implementation maximizes useable output power. The **IBUC 2G** requires only 2 dB of output power backoff from  $P_{Sat}$  to  $P_{Linear}$ . Designed for long lifetime performance in demanding environments.

Multiple sensors & a new, high-capacity microprocessor provide tools to optimize remote terminal performance. The **IBUC 2G** is a popular choice for satcom uplinks for telecom, government, defense and other demanding applications.

### Options

- 1+1 Transmit Redundancy with Eco-Mode
- High Stability Internal 10 MHz Reference with Auto-Detection
- Mounting Brackets
- N-Type, F-Type or TNC Input Connectors
- Handheld Terminal
- Cyber Hardened
- WGS (Wideband Global SATCOM) compatible.
- Several Factory Select Bands

## C-Band IBUC 2G

100W/125W Compact GaN IBUC for multicarrier application.



New Cyber  
Hardened  
version  
available

Multicarrier  
Application

100W  
 $P_{Lin}$  63W  
&  
125W  
 $P_{Lin}$  80W

GaN  
Tech  
Amplifier

3  
Year  
Warranty

**Note:** Since not all the optional features can be combined, please, contact our sales team for further info at: [Sales@Terrasatinc.com](mailto:Sales@Terrasatinc.com)

# C-Band 100W/125W IBUC 2G for Multicarrier Application

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 / 50 Ohm
Input Connector	Type N Female (50 Ohm)
Input Connector Options	Type F (75 Ohm), TNC (50 Ohm)

Input Power Detector Range options:	
Standard Version	WGS Version
-55 to -20 dBm	-35 to 0 dBm

## Gain

Small Signal Gain (L-band to RF) with attenuator set to 0 dB options:			
	Standard Version	WGS Version	
100W	81 dB min	70 dB min	
125W	82 dB min	71 dB min	

Attenuator Range	30 dB variable in 0.1 dB steps
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## 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 max	0.25 dB p-p max

## Gain Variation Over Temperature

	Bands 1/2/3	Bands 4/5
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

	100W		125W	
	Bands 1/2/4/5	Band 3	Bands 1/2/4/5	Band 3
at P <sub>Sat</sub> (typ)	+50 dBm	+49.5 dBm	+51 dBm	+50.5 dBm
at P <sub>Lin</sub> (min)	+48 dBm	+47.5 dBm	+49 dBm	+48.5 dBm
19 dB min of NPR (Noise Power Ratio) at:	45 dBm	44.5 dBm	46 dBm	45.5 dBm

P<sub>Lin</sub> is the maximum linear power as defined by MIL STD 188-164C  
Two-tone measured at 5MHz and 150 MHz spacing

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 <sub>Lin</sub>	
In Band	-65 dBc
Out of Band	Complies with EN 301 443 & MIL-STD 188-164C
Harmonics @ P <sub>Lin</sub>	
	-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 & Level	10 MHz	-12 to +5 dBm
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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
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## Power Consumption

	100W	125W
P <sub>Sat</sub>	520 VA	560 VA
P <sub>Lin</sub>	450 VA	490 VA

## Monitor & Control - For Standard Versions

Ethernet (HTTP, Telnet, SNMPv2c) via RJ45 Connector  
RS232/485, Handheld Terminal via MS-Type Connector  
FSK multiplexed on TX IFL

## Monitor & Control - For Cyber Hardened Versions

Ethernet (HTTPS, SSHv2, SNMPv3 with USM and VACM) via RJ45 Connector  
RS232 via MS-Type Connector

XSS (Cross Site Scripting)

Two NTP Servers Providing Redundancy

FIPS 140-2 compatible.

The Cyber Hardened versions have embedded new high-end Cyber Security features, from hardware to software, including a new controller board and the new firmware. For further details, refer to the Cyber Hardened IBUCs' datasheet at [www.terrasatinc.com/products/](http://www.terrasatinc.com/products/)

## Environmental

Operating Temperature	-40°C to +55°C
Relative Humidity	100% Condensing
Altitude	10,000 ft (3,000 m) ASL

## Mechanical

Weight	13.5 lbs 6.1 kg
Size	10.5 x 6.0 x 6.1 in. 267 x 152 x 155 mm

(Dimensions not including isolators)