TERRASAT Communications, Inc.
Engineered to Endure

IBUC

The Intelligent Block UpConverter

Superior RF Performance | Ultimate Reliability | Complete Feature Set | Multiprotocol Management & Diagnostics

www.terrasatinc.com

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 «

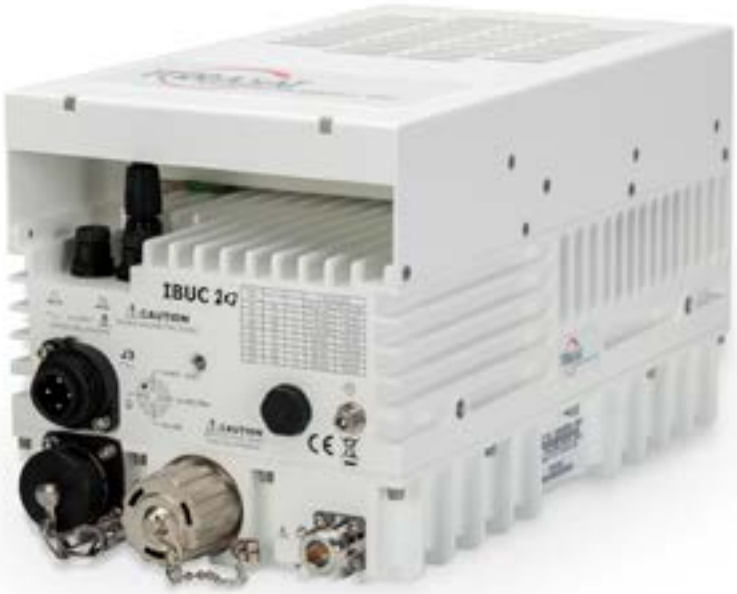
» Performance Trend Analysis Tools & Statistical logs «

» Embedded Web Pages for Universal Web Browser Access «

X-Band

IBUC 2G

100W Compact GaN **IBUC** For Multicarrier Application



New Cyber Hardened version available | Multicarrier Application | 100W P_{Lin} 50W | GaN Tech Amplifier | 3 Year Warranty

Applications

The **IBUC 2G** is a full-featured Intelligent Block Upconverter that now supports multicarrier transmission across the X-band spectrum and uses Gallium Nitride amplifier technology. GaN advantages include higher power in a smaller outdoor enclosure and low power consumption. 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 perfect solution for mobile defense terminals operating in demanding environments.

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 Core M&C
- WGS (Wideband Global SATCOM) compatible
- External Waveguide Rx Reject Filter

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

X-Band 100W **IBUC 2G** - For Multicarrier Applications

Frequency Range

	RF (MHz)	IF (MHz)
X-Band	7900 to 8400 MHz	950 to 1450 MHz

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	**Standard Version[1]**	**WGS Version[2]**
Range options:	-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[1]	**WGS Version[2]**
81 dB min	70 dB min

[1]Terrasats Standard Version has a higher gain to reduce the need for line amplifiers in long cable runs (IFL).
[2]WGS Compatible Versions have lower gain allowing operations to drive the IF signal up to 0 dBm.

Attenuator Range 30 dB variable in 0.1 dB steps

Gain Flatness

Full Band	3 dB p-p max
36 MHz	1 dB p-p max
1 MHz	0.25 dB p-p max

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

at P_{Sat} (typ)	+50 dBm
at P_{Lin} (min)	+47 dBm

P_{Lin} is the maximum linear power as defined by MIL STD 188-164C
Two-tone measured at 5MHz and 150 MHz spacing

19 dB min of NPR (Noise Power Ratio) at +44 dBm.

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 MIL-STD 188-164C

Harmonics @ P_{Lin} -60 dBc max.

Output Noise Power Density

Transmit	**Receive**
Tx < - 76 dBm/Hz	Rx < - 76 dBm/Hz (Without Receive Reject Filter) Rx < - 166 dBm/Hz (With Optional Rx Reject Filter)

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^2
Ripple	1 ns p-p Over Any 36 MHz

SSB Phase Noise

External Reference	**IBUC 2G**
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 feature includes auto-detection of External Reference

Local Oscillator Frequency

X-Band	6950 MHz
Sense	Non-Inverting

IBUC Power Supply

Voltage	AC	100 to 240 VAC	50 Hz / 60 Hz
Power Consumption		P_{Lin}	P_{Sat}
100W		440 VA	520 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/ or at the Cyber Hardened webpage on https://www.terrasatinc.com/terrasat-communications-launches-new-cyber-hardened-intelligent-bucs/

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 x in. *267 x 152 x 155 mm*
Weight	13.5 lbs *6.1 kg*

Specifications are subject to change without notice. Updated: July 23rd, 2023

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Questions? Contact Us

+1 (408) 782 5911
Sales@Terrasatinc.com

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PART NUMBER CONFIGURATION | OPTIONS AVAILABLE FOR:
X-Band 100W GaN IBUCs

Cyber Hardened Option Part Number Example/Std Offer: IBB079084-2NA100DCWW-0000

IBB 079084 - X X A 100 D C W W - XXXX

- **0000** Std Options and Std Specs
- **0218** WGS Compatibility Option

- **N** N-Type IF Input Connector
- **F** F-Type IF Input Connector

- **W** Std Terrasat Inc Color (White)
- **X** Other Colors (Please, Provide Color Specs)

- **0** Non-Inverting + External 10MHz
- **2** Non-Inverting + Internal 10MHz

Std M&C Option Part Number Example/Std Offer: IBR079084-2NA101WW-0919

IBR 079084 - X X A 101 W W - XXXX

- **0919** Std (X-Band) unit with Multicarrier compatibility only
- **1818** WGS Compatibility Option + Multicarrier

- **N** N-Type IF Input Connector
- **F** F-Type IF Input Connector

- **W** Std Terrasat Inc Color (White)
- **X** Other Colors (Please Provide Color Specs)

- **0** Non-Inverting + External 10MHz
- **2** Non-Inverting + Internal 10MHz

Note: Consult Terrasat Communications Inc for more options.

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