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 «

Ku-Band IBUC G

100W Compact GaN **IBUC** for muti-carrier application

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

Applications

The **IBUC G** is a full-featured Intelligent Block Upconverter with 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 G** is a popular choice for satcom uplinks for telecom, government, defense and other demanding applications.

Options

- 1+1 Transmit Redundancy
- High Stability Internal 10 MHz Reference with Auto-Detection
- Three Factory Select Bands (Low, Std, and Full Ku-Bands)
- Mounting Brackets
- Optional Type-N, F-Type, or TNC Input Connectors
- Handheld Terminal
- Cyber Hardened Core M&C
- WGS (Wideband Global SATCOM) compatible

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

Ku-Band **IBUC G** 100W

Frequency Range	RF	IF
Band 1 Std Ku-Band	14.00 to 14.50 GHz	950 to 1450 MHz
Band 2 Full Ku-Band	13.75 to 14.50 GHz	950 to 1700 MHz
Band 3 Low Ku-Band	12.75 to 13.25 GHz	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 Ohn)

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

	Standard Version[1]	**WGS Version[2]**
100W (All Bands)	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	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	WR75 Cover with Groove
VSWR	1.3:1 max

Output Power

	All Bands 100W
P_{Sat} (typ)	+50 dBm
P_{Lin} (min)	+47 dBm

P_{Lin} is the maximum linear power as defined by MIL STD 188-164C.

Two Tone measured at 5 MHzand 150 MHz spacing.

19 dB min of NPR (Noise POwer Ratio) at 3 dB B.O from $P_{Lin.}$

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 301 428/430 & MIL-STD 188-164C

Harmonics @ P_{Lin} -60 dBc max.

Output Noise Power Density

Tx < - 75 dBm/Hz

Rx <- 145 dBm/Hz

SSB Phase Noise	External Reference	**IBUC G**
10 Hz	-115 dBC/Hz	-50 dBc/Hz
100 Hz	-140 dBc/Hz	-75 dBc/Hz
1 KHz	-150 dBc/Hz	-85 dBc/Hz
10 KHz	-155 dBc/Hz	-90 dBc/Hz
100 KHz	N/A	-95 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

Sense	Non-Inverting
Band 1	13050 MHz
Band 2	12800 MHz
Band 3	11800 MHz

IBUC Power Supply

Voltage	AC	
	100 to 240 VAC	50 Hz / 60 Hz

Power Consumption	P_{Sat} / P_{Lin}
100W (All Bands)	650VA / 550VA

Monitor & Control

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	12.2 x 7.2 x 6.8 x in. *310 x 183 x 173 mm*
Weight	*19.5 lbs* *8.8 kg*

(Dimensions not including isolators)

Specifications subject to change without notice.

Updated: November 18th 2024

TERRASAT Communications, Inc. Engineered to Endure.

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PART NUMBER CONFIGURATION | OPTIONS AVAILABLE FOR:

Ku-Band 100W GaN IBUC

Cyber Hardened Option Part Number

Example/Std Offer: IBB137145-2NA100UKWW-0000

IBB XXXXXX - X X A 100 U K W W - XXXX

Power Output

100	100W

Optional Specs & Features

0000	Std Options and Std Specs
0218	WGS Compatibility Option

Power Supply

A	AC Powered

Color

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

IF Input Connector

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

Spectral Sense and 10MHz Reference

0	Non-Inverting + External 10MHz
2	Non-Inverting + Internal 10MHz Std (30ppb stability)
4	Non-Inverting + Internal 10MHz High Stability (5ppb)

RF Frequency Plan

140145	14.000-14.500 GHz (Std Ku-Band)
137145	13.750-14.500 GHz (Full Ku-Band)
127132	12.750-13.250 GHz (Low Ku-Band)

Std M&C Option Part Number

Example/Std Offer: IBR137145-2NA101WW-0019

IBR XXXXXX - X X A 101 W W - XXXX

Power Output

101	100W

Optional Specs & Features

0019	Std product with Multicarrier compatibility only
2018	WGS Compatibility Option + Multicarrier

Color

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

Power Supply

A	AC Powered

IF Input Connector

N	N-Type IF Input Connector
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0	Non-Inverting + External 10MHz
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