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

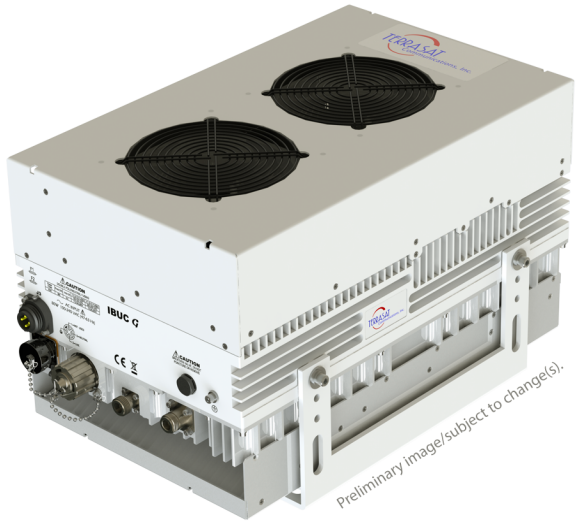
Ultimate Management & Control

» 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 «

Ka-Band | Tri-Band

IBUC G

125W & 160W GaN **IBUC** for
Multiband, Multi-Orbit, and Multicarrier application
Three Software Selectable Sub-Bands



Preliminary image/subject to change(s).

New Cyber Hardened Core version available | Multiband Selectable RF + IF | Multicarrier Application | 125W P_{Lin} 62.5W 160W P_{Lin} 80W | GaN Tech Amplifier | 3 Year Warranty

Applications

The new 160W Ka-Band **IBUC G** delivers the highest output power in the product line for high data rate Ka-Band applications. Excellent linearity & phase noise performance support higher order modulation satellite links. Ideal for applications such as telecom & network hubs. Multiple sensors & a new, high-capacity microprocessor provide tools to optimize terminal performance.

The Tri-Band version includes selectable multiband controls for multicarrier transmissions, deploying high versatility for your SATCOM terminals. Gallium Nitride amplifier technology enables smaller packaging for antenna mounting, eliminating losses in long waveguide runs. The greater power efficiency translates to an appreciable reduction in power consumption. The GaN **IBUC G** outperforms older TWTA's by providing the maximum linear output power, combining the best of solid-state reliability and advanced technology.

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
- WGS (Wideband Global SATCOM) compatible
- Cyber Hardened Core M&C

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

Tri-Band Ka-Band 125W & 160W **IBUC G**
For Multiband, Multicarrier Application

Frequency Range

	Software Selectable RF	Software Selectable IF
Three Software Selectable Sub-Bands	27.5 to 28.5 GHz	1.0 to 2.0 GHz
	28.25 to 29.25 GHz	
	29.0 to 30.0 GHz	950 to 1950 MHz

Note: Any RF can be software selected with any IF

Input

VSWR/ Impedance	1.5:1 / 50 Ohm	
Input Connector	Type N Female (50 Ohm)	
Input Connector Options	Type F (75 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

	Standard Version[1]	WGS Version[2]
125W	79 dB min	71 dB min
160W	79 dB min	72 dB min

[1]Terrasat's Standard Version has a higher gain to reduce the need for line amplifiers in long cable runs (IFL).

[2]The lower gain WGS Compatible Versions allow 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	for any Sub-Band
54 MHz	2 dB p-p max	

Gain Variation Over Temperature

Open Loop	4 dB p-p max	for any Sub-Band
With AGC	1 dB p-p max	

RF Output

Interface	WR28 UG Cover with Groove
VSWR	1.3:1 max

Output Power

	P_{sat} (typ)	P_{Lin} (min)
125W	+51 dBm	+48 dBm
160W	+52 dBm	+49 dBm

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

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	-60 dBc
Out of Band	-60 dBc
	Complies with ETSI EN 301 428/430 & MIL-STD 188-164C
Output Noise Power Density	Tx < - 73 dBm/Hz

SSB Phase Noise

	External Reference	IBUC G
10 Hz	-125 dBC/Hz	-43 dBc/Hz
100 Hz	-150 dBc/Hz	-63 dBc/Hz
1 KHz	-160 dBc/Hz	-73 dBc/Hz
10 KHz	-165 dBc/Hz	-83 dBc/Hz
100 KHz	-165 dBc/Hz	-93 dBc/Hz
1 MHz	N/A	-103 dBc/Hz

External Reference (Multiplexed on TX IFL)

Frequency: 10 MHz **Level**: -12 to +5 dBm

Internal Reference is an optional feature that includes auto-detection of External Reference

Local Oscillator Frequency

Sense	Non-Inverting
Sub-Band 1	26.50 GHz
Sub-Band 2	27.25 GHz
Sub-Band 3	28.00 GHz

IBUC Power Supply

	AC
Voltage	100 to 240 VAC
	50Hz/60Hz
Power Consumption	@ P_{Lin} / P_{Sat}
125W	800/1050 VA
160W	900/1150 VA

Monitor & Control - For Standard Units

Ethernet (HTTP, Telnet, SNMPv2c) via RJ45 Connector

RS232/485, **Handheld Terminal** via MS-Type Connector

Monitor & Control - For Cyber Hardened Core Versions (Optional)

Ethernet (HTTPS, SSHv2, Selectable SNMP V1, V2, V3 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.https://terrasatinc.com/terrasat-communications-launches-new-cyber-hardened-intelligent-bucs/

Environmental

Operating Temperature	
125W & 160 W	-40°C to +55°C
Relative Humidity	100% Condensing
Altitude	10,000 ft (3,000 m) ASL

Mechanical

	AC Powered
125W & 160W	16.2 x 10 x 10.2 in.
	411 x 254 x 259 mm
	45 lbs *20 kgs*

Specifications subject to change without notice.

Updated: March 13th, 2024

Request A Quote