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 2G

5W to 50W Compact GaN **IBUC** for
Multiband, Multi-orbit, and Multicarrier application
Three Software Selectable Sub-Bands

New Cyber Hardened Core version available | Multiband Selectable RF + IF | Multicarrier Application | 5W P_{Lin}25W to 50W P_{Lin}25W | GaN Tech Amplifier | 3 Year Warranty

Applications

The **IBUC 2G** delivers proven superior performance in high data rate, & higher order modulation satellite links. With its rugged, compact design, the Ka-band **IBUC 2G** is suitable for both mobile & long-term fixed satcom terminals. GaN advantages include higher power in a smaller outdoor enclosure and low power consumption. Terrasat's unique implementation is designed for long lifetime performance in demanding environments.

The Tri-Band version includes selectable multiband controls for multicarrier transmissions, deploying high versatility for your SATCOM terminals. 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 or F-Type Input Connectors
- Handheld Terminal
- AC or DC Input Models
- 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 5W to 50W **IBUC 2G**
For Multiband Multicarrier Application

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

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]
5W	68 dB min	57 dB min
10W	71 dB min	60 dB min
16W	73 dB min	62 dB min
20W	74 dB min	63 dB min
25W	75 dB min	64 dB min
40W	77 dB min	66 dB min
50W	78 dB min	67 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)
5W	+37 dBm	+34 dBm
10W	+40 dBm	+37 dBm
16W	+42 dBm	+39 dBm
20W	+43 dBm	+40 dBm
25W	+44 dBm	+41 dBm
40W	+46 dBm	+43 dBm
50W	+47 dBm	+44 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 < - 74 dBm/Hz

SSB Phase Noise

	External Reference	IBUC 2G
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

	DC	AC
Voltage	37 to 60 VDC	100 to 240 VAC 50Hz/60Hz
Power Consumption	@ P_{Lin} / P_{Sat}	@ P_{Lin} / P_{Sat}
5W	65/80 W	70/90 VA
10W	80/110 W	90/120 VA
16W	130/175 W	140/180 VA
20W	135/180 W	150/200 VA
25W	150/200 W	170/220 VA
40W	270/360 W	300/400 VA
50W	330/440 W	360/480 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	
5W to 10W	-40°C to + 60°C
16W to 50W	-40°C to + 55°C
Relative Humidity	100% Condensing
Altitude	10,000 ft (3,000 m) ASL

Mechanical

	DC Powered	AC Powered
5W to 10W	10.5 x 6 x 4.2 in.	10.5 x 6 x 4.6 in.
	267 x 152 x 107 mm	267 x 152 x 117 mm
	9.5 lbs 4.3 kgs	10.5 lbs 4.8 kgs
16W to 50W	10.5 x 6 x 6.1 in.	10.5 x 6 x 6.5 in.
	267 x 152 x 155 mm	267 x 152 x 165 mm
	11.5 lbs *5.2 kgs*	12.8 lbs *5.8 kgs*

Specifications subject to change without notice.

Updated: March 13th 2024

TERRASAT Communications, Inc. Engineered to Endure

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