

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** is a full-featured Intelligent Block Upconverter with Gallium Nitride amplifier technology. Its new versions now support multicarrier transmission across the entire Ku-band spectrum. 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.

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
- Three Factory Select Bands (Low, Std, and Full Ku-Bands)
- AC or DC Input Models
- Mounting Brackets
- Optional Type N, F-Type, or TNC Input Connectors
- Handheld Terminal
- Cyber Hardened Core M&C
- WGS (Wideband Global SATCOM) compatible

Ku-Band IBUC 2G

50W | 60W | 80W Compact GaN IBUC for multicarrier application



New Cyber
Hardened
version
available

Multicarrier
Application

50W $P_{lin,25W}$
60W $P_{lin,30W}$
80W $P_{lin,40W}$

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

Ku-Band 50W | 60W | 80W IBUC 2G for Multicarrier Application

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 Ohm)	
Input Power Detector	Standard Version¹	WGS Version²
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:

Version	Standard Version ¹	WGS Version ²
50W	78 dB min	67 dB min
60W	79 dB min	68 dB min
80W	80 dB min	69 dB min

¹Terrasats Standard Version has a higher gain to reduce the need for line amplifiers in long cable runs (IFL).

²WGS 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

	<u>50W</u>	<u>60W</u>	<u>80W</u>
at P _{Sat} (typ)	47 dBm	48 dBm	49 dBm
at P _{Lin} (min)	44 dBm (25W)	45 dBm (30W)	46 dBm (40W)
19 dB min of NPR (Noise Power Ratio) at:	41 dBm	42 dBm	43 dBm

P_{Lin} 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 at P _{Lin}	
In Band	-65 dBc
Out of Band	Complies with ETSI EN 301 428/430 & MIL-STD 188-164C
Harmonics at P _{Lin}	-60 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	-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	DC	AC
	37 to 60 VDC	100 to 240 VAC
		50 Hz / 60 Hz
Power Consumption	at P _{Lin} / P _{Sat}	at P _{Lin} / P _{Sat}
50 W	260 W / 300 W	275 VA / 325 VA
60 W	350 W / 420 W	375 VA / 450 VA
80 W	N/A	475 VA / 570 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](https://www.terrasatinc.com/terrasat-communications-launches-new-cyber-hardened-intelligent-bucs/) 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

Weight	13.5 lbs
	6.1 kg
Size	10.5 x 6 x 6.1 x in.
	267 x 152 x 155 mm

(Dimensions not including isolators)

Specifications subject to change without notice.

Updated: October 6th, 2023