

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 new 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 Quad-Band version includes selectable multiband controls for multicarrier transmissions, deploying high versatility for your SATCOM terminals, and universal range in the Ka-Band spectrum. 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

- 2+1 Transmit Redundancy
- 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
- WGS (Wideband Global SATCOM) compatible
- Cyber Hardened Core M&C

Ka-Band | Quad-Band **IBUC G**

100W & 125W GaN **IBUC** for
Multiband, Multi-Orbit, and Multicarrier application
Four Software Selectable Sub-Bands

Universal Ka-Band
Range



New Cyber
Hardened
Core version
available

Multiband
Selectable
RF + IF

Multicarrier
Application

100W
 $P_{1dB, 50W}$
125W
 $P_{1dB, 62.5W}$

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

Quad-Band Ka-Band 100W & 125W IBUC

For Multiband, Multicarrier Application

Frequency Range	Software Selectable	
	RF	IF
Four Software Selectable Sub-Bands	Sub-Band 1	27.5 to 28.5 GHz
	Sub-Band 2	28.25 to 29.25 GHz
	Sub-Band 3	29.0 to 30.0 GHz
	Sub-Band 4	30.0 to 31.0 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
100W	79 dB min	70 dB min
125W	79 dB min	71 dB min

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

²The 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	for any Sub-Band

Gain Variation Over Temperature

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

RF Output

Interface	WR28 UG Cover with Groove
VSWR	1.3:1 max

Output Power

	P _{sat} (typ)	P _{Lin} (min)
100W	+50 dBm	+47 dBm
125W	+51 dBm	+48 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 301 360
	- ETSI EN 301 459
	- MIL-STD 188-164C
AM/PM Conversion	< 2 Deg/ dB @ P _{Linear}
Output Noise Power Density	Tx < - 74 dBm/Hz

SSB Phase Noise	External Reference	IBUC 
	Minimum Specifications	
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	Non-Inverting
	IF: 1.0 to 2.0 GHz	IF: 950 to 1950 MHz
Sub-Band 1	26.50 GHz	26.55 GHz
Sub-Band 2	27.25 GHz	27.30 GHz
Sub-Band 3	28.00 GHz	28.05 GHz
Sub-Band 4	29.00 GHz	29.05 GHz

IBUC Power Supply

AC	
Voltage	100 to 240 VAC (50Hz/60Hz)
Power Consumption	@ P _{Lin} / P _{Sat}
100W	800/1050 VA
125W	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

Network Protocols IPv4 and IPv6 Compatible

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

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

Mechanical

AC Powered	
100W & 125W	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: September 16th, 2025

