



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 GaN **IBUC 3G** versions support multicarrier transmission across the entire Ku-band spectrum. Gallium Nitride amplifier technology facilitates higher power in a smaller outdoor enclosure – just what is needed for the **IBUC 3G**. Specially designed for mobility, the **IBUC 3G** is a full-featured IBUC in a new, smaller & lighter package. An excellent fit with very small aperture or flat panel antennas where size & weight are key considerations.

Yet, all of the IBUC performance & manageability advantages remain. The included web interface enables terminal optimization during installation & provides a suite of trouble-shooting tools. An auto-ranging DC power supply is accessed via external power connector or IFL cable.

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)
- Mounting Brackets
- N-Type, F-Type, or TNC Input Connectors
- Handheld Terminal
- Cyber Hardened Core M&C
- WGS (Wideband Global SATCOM) compatible.

Ku-Band **IBUC 3G**

25W | 30W | 40W Compact GaN **IBUC** for multicarrier application



New **Cyber
Hardened**
version
available

Multicarrier
Application

25W P_{in} 12.5W
30W P_{in} 15W
40W P_{in} 20W

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 25W | 30W | 40W IBUC 3G 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 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 options:

	Standard Version ¹	WGS Version ²
25W	75 dB min	64 dB min
30W	76 dB min	65 dB min
40W	77 dB min	66 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 max

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

	25W	30W	40W
at P _{Sat} (typ)	44 dBm	45 dBm	46 dBm
at P _{Lin} (min)	41 dBm (12.5W)	42 dBm (15W)	43 dBm (20W)

19 dB min of NPR
(Noise Power Ratio) at: 38 dBm 39 dBm 40 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 < - 79 dBm/Hz
	Rx <- 145 dBm/Hz

SSB Phase Noise	External Reference	IBUC 3G
10 Hz	-125 dBc/Hz	-45 dBc/Hz
100 Hz	-145 dBc/Hz	-65 dBc/Hz
1 KHz	-160 dBc/Hz	-80 dBc/Hz
10 KHz	-165 dBc/Hz	-85 dBc/Hz
100 KHz	N/A	-90 dBc/Hz
1 MHz	N/A	-115 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
	38 to 76 VDC
Power Consumption	at P _{Lin} / P _{Sat}
25 W	150 W / 205 W
30 W	180 W / 235 W
40 W	205 W / 265 W

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	6.5 lbs 3 kg
Size	7 x 5 x 4 in. 178 x 127 x 102 mm

(Dimensions not including isolators)

Specifications subject to change without notice.

Updated: November 18th, 2024

PART NUMBER CONFIGURATION | OPTIONS AVAILABLE FOR:

Ku-Band 25W to 40W GaN IBUC 3G

Cyber Hardened Option Part Number

Example/Std Offer: IBH137145-2N5040TKWW-0000

IBH	XXXXXX	-	X	X	5	XXX	T	K	W	W	-	XXXX
						Power Output				Optional Specs & Features		
						025	25W			0000 Std Options and Std Specs		
						030	30W			0218 WGS Compatibility Option		
						040	40W					
						Power Supply				Color		
						5	DC Powered			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: IBA137145-2N5040TKWW-0000

IBA	XXXXXX	-	X	X	5	XXX	T	K	W	W	-	XXXX
						Power Output						Optional Specs & Features
					025	25W						0000 Std Options and Std Specs
					030	30W						0218 WGS Compatibility Option
					040	40W						
						Power Supply						Color
					5	DC Powered				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)						
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Note: Consult Terrasat Communications Inc for more options.