

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 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 Single-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 or F-Type Input Connectors
- Handheld Terminal
- WGS (Wideband Global SATCOM) compatible
- Cyber Hardened Core M&C

Ka-Band | Single-Band **IBUC G**

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



New **Cyber
Hardened
Core** version
available

Multiband
Selectable
RF + IF

Multicarrier
Application

125W
 P_{1dB} 62.5W
160W
 P_{1dB} 80W

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

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

Frequency Range

	Software Selectable	Software Selectable
	RF	IF
Band 1	29.0 to 30.0 GHz	1.0 to 2.0 GHz
Band 2	29.5 to 30.0 GHz	1.0 to 1.5 GHz
Band 3	30.0 to 31.0 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
125W	79 dB min	71 dB min
160W	79 dB min	72 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	

Gain Variation Over Temperature

Open Loop	4 dB p-p max
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 301 360
	- ETSI EN 301 459
	- MIL-STD 188-164C
AM/PM Conversion	<2 Deg/dB @ P _{Linear}
Output Noise Power Density	Tx < - 73 dBm/Hz

SSB Phase Noise

	External Reference	IBUC G
10 Hz	-130 dBc/Hz	-43 dBc/Hz
100 Hz	-155 dBc/Hz	-63 dBc/Hz
1 KHz	-166 dBc/Hz	-73 dBc/Hz
10 KHz	-173 dBc/Hz	-83 dBc/Hz
100 KHz	-175 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
Band 1	28.0 GHz
Band 2	28.5 GHz
Band 3	29.0 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.terrasatinc.com/products/ or at the [Cyber Hardened webpage on](http://www.terrasatinc.com/terrasat-communications-launches-new-cyber-hardened-intelligent-bucs/)

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Environmental

Operating Temperature

125W & 160 W	-40°C to +55°C
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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: Aug 26th, 2024

PART NUMBER CONFIGURATION | OPTIONS AVAILABLE FOR:

Ka-Band 80W to 160W GaN IBUCs - Single Band / Single Conversion

Cyber Hardened Option Part Number

Example/Std Offer: IBB300310-4NA160QKWW-0000

IBB	XXXXXX	-	X	X	A	XXXX	K	W	W	-	XXXX
						Power Output					Optional Specs & Features
						080U 80W					0000 Std Options and Std Specs
						100U 100W					0218 WGS Compatibility Option
						125Q 125W					
						160Q 160W					
						Power Supply					
						A AC Powered					
						IF Input Connector					Color
						N N-Type					W Std Terrasat Inc Color (White)
						F F-Type					X Other Colors (Please, Provide Color Specs)
						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					
						290300 RF: 29.0-30.0 GHz IF: 1.0-2.0 GHz					
						295300 RF: 29.5-30.0 GHz IF: 1.0-1.5 GHz					
						300310 RF: 30.0-31.0 GHz IF: 1.0-2.0 GHz					
						275300 RF: 27.5-30.0 GHz IF: 1.25-3.75 GHz (Wide Conversion)					

Std M&C Option Part Number

Example/Std Offer: IBR290300-4NA161WW-0019

IBR	XXXXXX	-	X	X	X	XXX	W	W	-	XXXX
						Power Output				Optional Specs & Features
						081 80W				0019 Std (X-Band) unit with Multicarrier compatibility only
						101 100W				2018 WGS Compatibility Option + Multicarrier
						126 125W				
						161 160W				
						Power Supply				Color
						A AC Powered				W Std Terrasat Inc Color (White)
						5 DC Powered				X Other Colors (Please Provide Color Specs)
						IF Input Connector				
						N N-Type				
						F F-Type				
						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				
						290300 RF: 29.0-30.0 GHz IF: 1.0-2.0 GHz or 950-1950 MHz				
						295300 RF: 29.5-30.0 GHz IF: 1.0-1.5 GHz				
						300310 RF: 30.0-31.0 GHz IF: 1.0-2.0 GHz or 950-1950 MHz				
						275300 RF: 27.5-30.0 GHz IF: 1.25-3.75 GHz (Wide Conversion)				