

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 80W & 100W 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. A good choice for applications such as telecom & network hubs. Multiple sensors & a new, high-capacity microprocessor provide tools to optimize terminal performance.

Gallium Nitride amplifier technology enables smaller packaging for antenna mounting, eliminating the losses in long waveguide runs. And the greater power efficiency translates to an appreciable reduction in power consumption. Comparing favorably with earlier technology TWTAs, the GaN IBUC **G** delivers maximum linear output power with the reliability of solid state.

Options

- 1+1 Transmit Redundancy with Eco-Mode
- High Stability Internal 10 MHz Reference with Auto-Detection
- Three Factory Select Bands
- Type N, F-Type, or TNC Input Connectors
- Handheld Terminal
- Cyber Hardened Core M&C
- WGS (Wideband Global SATCOM) compatible

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

80W & 100W GaN IBUC for multicarrier application



New **Cyber
Hardened**
version
available

Multicarrier
Application

100W
 P_{Lin} 50W
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

Ka-Band 80W & 100W IBUC G For Multicarrier Application

Frequency Range Options

	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

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
80W	79 dB min	69 dB min
100W	79 dB min	70 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		
54 MHz	2.0 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)
80W	+49 dBm	+46 dBm
100W	+50 dBm	+47 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 & Level	10 MHz	-12 to +5 dBm
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Internal Reference: Optional feature 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 50 Hz / 60 Hz
Power Consumption	@ P _{Lin} / P _{Sat}
80W	450/575 VA
100W	500/600 VA

Monitor & Control

Ethernet (HTTP, Telnet, SNMPv2c) via RJ45 Connector
 RS232/485, Handheld Terminal via MS-Type Connector

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 Redundacy

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 https://www.terrasatinc.com/terrasat-communications-launches-new-cyber-hardened-intelligent-bucs/](https://www.terrasatinc.com/terrasat-communications-launches-new-cyber-hardened-intelligent-bucs/)

Environmental

Operating Temperature	
80W & 100W	-40°C to +55°C
Relative Humidity	100% Condensing
Altitude	10,000 ft (3,000 m) ASL

Mechanical

	AC Powered
80W & 100W	12.2 x 7.2 x 6.8 in.
	310 x 183 x 173 mm
	19.5 lbs
	8.8 kgs

Specifications subject to change without notice.

Updated: February 13th, 2025

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)				

Note: Consult Terrasat Communications Inc for more options.