

## 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.

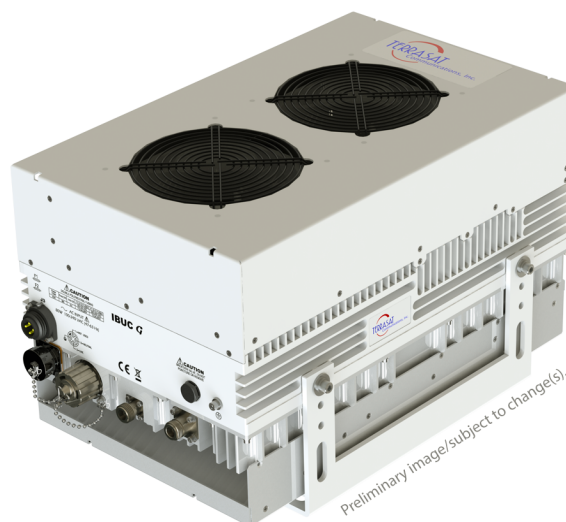
The Single-Band version includes selectable multiband controls for multicarrier transmissions, deploying high versatility for your SATCOM terminals. Gallium Nitride amplifier technology enables smaller packaging for antenna mounting, eliminating losses in long waveguide runs. The greater power efficiency 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<sub>1dB</sub> 62.5W  
160W  
P<sub>1dB</sub> 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](mailto:Sales@Terrasatinc.com)

# Single-Band Ka-Band 125W & 160W IBUC G

## For Multiband, Multicarrier Application

### Frequency Range

	Software Selectable RF	Software Selectable 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 <sup>1</sup>	WGS Version <sup>2</sup>
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 <sup>1</sup>	WGS Version <sup>2</sup>
125W	79 dB min	71 dB min
160W	79 dB min	72 dB min

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

<sup>2</sup>The 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 <sub>sat</sub> (typ)	P <sub>Lin</sub> (min)
125W	+51 dBm	+48 dBm
160W	+52 dBm	+49 dBm

P<sub>Lin</sub> 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 <sub>Lin</sub>	
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 <sub>Linear</sub>
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

	Non-Inverting
Sense	
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 <sub>Lin</sub> / P <sub>Sat</sub>
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/](http://www.terrasatinc.com/products/) or at the [Cyber Hardened webpage on](http://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

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

## Questions? Contact Us

+1 (408) 782 5911

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[www.Terrasatinc.com](http://www.Terrasatinc.com)



**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			
						<b>Power Output</b>						<b>Optional Specs &amp; Features</b>		
						080U	80W						0000	Std Options and Std Specs
						100U	100W						0218	WGS Compatibility Option
						125Q	125W							
						160Q	160W							
						<b>Power Supply</b>								
						A	AC Powered							
						<b>IF Input Connector</b>						<b>Color</b>		
						N	N-Type						W	Std Terrasat Inc Color (White)
						F	F-Type						X	Other Colors (Please, Provide Color Specs)
						<b>Spectral Sense and 10MHz Reference</b>								
						0	Non-Inverting + External 10MHz							
						2	Non-Inverting + Internal 10MHz Std (30ppb stability)							
						4	Non-Inverting + Internal 10MHz High Stability (5ppb)							
						<b>RF Frequency Plan</b>								
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			
						<b>Power Output</b>					<b>Optional Specs &amp; Features</b>		
						081	80W					0019	Std (X-Band) unit with Multicarrier compatibility only
						101	100W					2018	WGS Compatibility Option + Multicarrier
						126	125W						
						161	160W						
						<b>Power Supply</b>					<b>Color</b>		
						A	AC Powered					W	Std Terrasat Inc Color (White)
						5	DC Powered					X	Other Colors (Please Provide Color Specs)
						<b>IF Input Connector</b>							
						N	N-Type						
						F	F-Type						
						<b>Spectral Sense and 10MHz Reference</b>							
						0	Non-Inverting + External 10MHz						
						2	Non-Inverting + Internal 10MHz Std (30ppb stability)						
						4	Non-Inverting + Internal 10MHz High Stability (5ppb)						
						<b>RF Frequency Plan</b>							
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.

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