

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 IBUC **G** now supports multicarrier transmission across the full X-band spectrum. The **IBUC G** delivers the highest available output power, making it an ideal solution for high data rate multicarrier applications such as maritime, broadband, broadcast and network hubs.

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

X-Band IBUC **G**

400W GaN IBUC For Multicarrier Application



New Cyber
Hardened
version
available

Multicarrier
Application

400W
 P_{Lin} 200W

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

X-Band 400W IBUC G - For Multicarrier Applications

Frequency Range	RF (MHz)	IF (MHz)
X-Band	7900 to 8400 MHz	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
	82 dB min	76 dB min

¹Terrasat's 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

Gain Variation Over Temperature

Open Loop	3 dB p-p max
With AGC	1 dB p-p max

RF Output

Interface	CPR-112G
VSWR	1.3:1 max

Output Power

at P_{Sat} (typ) +56 dBm

at P_{Lin} (min) +53 dBm

P_{Lin} is the maximum linear power as defined by MIL STD 188-164C

Two-tone measured at 5MHz and 150 MHz spacing

19 dB min of NPR (Noise Power Ratio) at +50 dBm.

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 -65 dBc

Out of Band Complies with MIL-STD 188-164C

Harmonics @ P_{Lin} -60 dBc max.

Output Noise Power Density

Transmit

Receive

Tx < - 75 dBm/Hz

Rx < - 75 dBm/Hz (Without Receive Reject Filter)

Rx < - 166 dBm/Hz (With Optional Rx Reject Filter)

Mute -70 dBc max

AM-PM Conversion < 3.0 deg/dB @ P_{Lin}

Group Delay

Linear	0.03 ns/MHz
Parabolic	0.003 ns/MHz ²
Ripple	1 ns p-p Over Any 36 MHz

SSB Phase Noise	External Reference	IBUC G
10 Hz	-115 dBc/Hz	-55 dBc/Hz
100 Hz	-140 dBc/Hz	-80 dBc/Hz
1 KHz	-150 dBc/Hz	-90 dBc/Hz
10 KHz	-155 dBc/Hz	-95 dBc/Hz
100 KHz	N/A	-100 dBc/Hz
1 MHz	N/A	-110 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

X-Band	6950 MHz
Sense	Non-Inverting

IBUC Power Supply

Voltage	AC	200 to 240 VAC		50 Hz / 60 Hz
Power Consumption		P_{Lin}		P_{Sat}
		400W		1800 VA
				2200 VA

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

Mechanical

Size	24 x 10 x 7.4 x in. 610 x 254 x 188 mm
Weight	40 lbs 18 kg

Specifications are subject to change without notice.

Updated: August 8th 2024



PART NUMBER CONFIGURATION | OPTIONS AVAILABLE FOR:

X-Band 400W GaN IBUCs

Cyber Hardened Option Part Number

Example/Std Offer: IBB079084-2NA400SCWW-0000

IBB 079084 - X X A 400 S C W W - XXXX

0000 Std Options and Std Specs

0218 WGS Compatibility Option

N N-Type IF Input Connector

F F-Type IF Input Connector

W Std Terrasat Inc Color (White)

X Other Colors (Please, Provide Color Specs)

0 Non-Inverting + External 10MHz

2 Non-Inverting + Internal 10MHz

Std M&C Option Part Number

Example/Std Offer: IBR079084-2NA401WW-0919

IBR 079084 - X X A 401 W W - XXXX

0919 Std (X-Band) unit with Multicarrier compatibility only

1818 WGS Compatibility Option + Multicarrier

N N-Type IF Input Connector

F F-Type IF Input Connector

W Std Terrasat Inc Color (White)

X Other Colors (Please Provide Color Specs)

0 Non-Inverting + External 10MHz

2 Non-Inverting + Internal 10MHz

Note: Consult Terrasat Communications Inc for more options.