



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 Ohn) | |
| 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: October 6th, 2023