

## 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 entire Ku-band spectrum. The **IBUC G** delivers the highest available output power, making it an ideal solution for high data rate applications such as maritime, broadcast and network hubs. Terrasat's unique implementation is designed for long lifetime performance in demanding environments.

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 (Low, Std, and Full Ku-Bands)
- Mounting Brackets
- N-Type, F-Type or TNC Input Connectors
- Handheld Terminal
- Cyber Hardened
- WGS (Wideband Global SATCOM) compatible.

## Ku-Band IBUC G

300W & 400W GaN IBUC for multicarrier application



New Cyber  
Hardened  
version  
available

Multicarrier  
Application

300W  $P_{lin, 150W}$   
&  
400W  $P_{lin, 200W}$

GaN  
Tech  
Amplifier

3  
Year  
Warranty

# Ku-Band 300W | 400W IBUC

## 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 Ohm) |              |
| Input Power Detector Range options: |                               | WGS Version  |
| Standard Version                    |                               | -35 to 0 dBm |
| -55 to -20 dBm                      |                               |              |

### Gain

|   |                  |             |
|---|------------------|-------------|
| Small Signal Gain (L-band to RF) with attenuator set to 0 dB options: |                  |             |
|   | Standard Version | WGS Version |
| 300W  | 83 dB min        | 75 dB min   |
| 400W  | 83 dB min        | 76 dB min   |

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                       | 4 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                                | 300W     | 400W     |
|---|----------|----------|
| at P <sub>Sat</sub> (typ)                   | 54.8 dBm | 56.0 dBm |
| at P <sub>Lin</sub> (min)                   | 51.8 dBm | 53.0 dBm |
|   | (150W)   | (200W)   |
| 19 dB min of NPR<br>(Noise Power Ratio) at: | 48.8 dBm | 50.0 dBm |

P<sub>Lin</sub> 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 <sub>Lin</sub>  |  |
| In Band                       | -65 dBc  |
| Out of Band                   | Complies with ETSI EN 301 428/430 & MIL-STD 188-164C |
| Harmonics at P <sub>Lin</sub> |  |
|                               | -60 dBc max.   |
| Output Noise Power Density    |  |
|                               | Tx < - 73 dBm/Hz                                     |
|                               | Rx < - 145 dBm/Hz                                    |

| SSB Phase Noise | External Reference | IBUC        |
|-----------------|--------------------|-------------|
| 10 Hz           | -115 dBc/Hz        | -50 dBc/Hz  |
| 100 Hz          | -140 dBc/Hz        | -75 dBc/Hz  |
| 1 KHz           | -150 dBc/Hz        | -85 dBc/Hz  |
| 10 KHz          | -155 dBc/Hz        | -90 dBc/Hz  |
| 100 KHz         | N/A                | -95 dBc/Hz  |
| 1 MHz           | N/A                | -110 dBc/Hz |

### External Reference (Multiplexed on TX IFL)

|                   |        |               |
|-------------------|--------|---------------|
| Frequency & Level | 10 MHz | -12 to +5 dBm |
|-------------------|--------|---------------|

Internal Reference - Optional

### Local Oscillator Frequency

|        |               |
|--------|---------------|
| Sense  | Non-Inverting |
| Band 1 | 13050 MHz     |
| Band 2 | 12800 MHz     |
| Band 3 | 11800 MHz     |

### IBUC Power Supply

|                     |    |                |             |
|---------------------|----|----------------|-------------|
| Voltage             | AC | 200 to 240 VAC |             |
| Power Consumption   |    | <u>300W</u>    | <u>400W</u> |
| at P <sub>Sat</sub> |    | 2750 VA        | 3100 VA     |
| at P <sub>Lin</sub> |    | 2250 VA        | 2500 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.

### Environmental

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

### Mechanical

|        |                      |
|--------|----------------------|
| Weight | 83 lbs               |
|        | 38 kg                |
| Size   | 29 x 15 x 10.1 x in. |
|        | 737 x 381 x 257 mm   |

Specifications subject to change without notice.

Updated: May 3<sup>rd</sup>, 2022