

## 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 Ka-Band **IBUC G** delivers high output power 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 Quad-Band version includes selectable multiband controls for multicarrier transmissions, deploying high versatility for your SATCOM terminals, and universal range in the Ka-band spectrum. 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

- 2+1 Transmit Redundancy
- 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 | Quad-Band **IBUC G**

60W & 80W GaN **IBUC** for  
Multiband, Multi-Orbit, and Multicarrier application  
Four Software Selectable Sub-Bands

Universal Ka-Band  
Range



New Cyber  
Hardened  
Core version  
available

Multiband  
Selectable  
RF + IF

Multicarrier  
Application

60W  
P<sub>lin</sub> 30W  
80W  
P<sub>lin</sub> 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](mailto:Sales@Terrasatinc.com)

# Quad-Band Ka-Band 60W & 80W IBUC

## For Multiband, Multicarrier Application

| Frequency Range                                   | Software Selectable |                    |
|---------------------------------------------------|---------------------|--------------------|
|                                                   | RF                  | IF                 |
| Four Software Selectable Sub-Bands                | Sub-Band 1          | 27.5 to 28.5 GHz   |
|                                                   | Sub-Band 2          | 28.25 to 29.25 GHz |
|                                                   | Sub-Band 3          | 29.0 to 30.0 GHz   |
|                                                   | Sub-Band 4          | 30.0 to 31.0 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> |
| 60W                                                          | 78 dB min                     | 67 dB min                |
| 80W                                                          | 79 dB min                     | 70 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                   | for any Sub-Band |

### Gain Variation Over Temperature

|           |              |                  |
|-----------|--------------|------------------|
| Open Loop | 4 dB p-p max | for any Sub-Band |
| With AGC  | 1 dB p-p max | for any Sub-Band |

### 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) |
| 60W | +48 dBm                | +45 dBm                |
| 80W | +49 dBm                | +46 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 < - 74 dBm/Hz                |

### SSB Phase Noise

| External Reference | Minimum Specifications | IBUC  |
|--------------------|------------------------|------------------------------------------------------------------------------------------|
| 10 Hz              | -125 dBc/Hz            | -43 dBc/Hz                                                                               |
| 100 Hz             | -150 dBc/Hz            | -63 dBc/Hz                                                                               |
| 1 KHz              | -160 dBc/Hz            | -73 dBc/Hz                                                                               |
| 10 KHz             | -165 dBc/Hz            | -83 dBc/Hz                                                                               |
| 100 KHz            | -165 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: Optional feature includes auto-detection of External Reference |                      |

### Local Oscillator Frequency

| Sense      | Non-Inverting      | Non-Inverting       |
|------------|--------------------|---------------------|
|            | IF: 1.0 to 2.0 GHz | IF: 950 to 1950 MHz |
| Sub-Band 1 | 26.50 GHz          | 26.55 GHz           |
| Sub-Band 2 | 27.25 GHz          | 27.30 GHz           |
| Sub-Band 3 | 28.00 GHz          | 28.05 GHz           |
| Sub-Band 4 | 29.00 GHz          | 29.05 GHz           |

### IBUC Power Supply

| AC                |                                       |
|-------------------|---------------------------------------|
| Voltage           | 100 to 240 VAC<br>(50Hz/60Hz)         |
| Power Consumption | @ P <sub>Lin</sub> / P <sub>Sat</sub> |
| 60W               | 470 VA/660 VA                         |
| 80W               | 520 VA/700 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 Versions (Optional)

Ethernet (HTTPS, SSHv2, Selectable SNMP V1, V2, V3 with USM and VACM) via RJ45 Connector

Network Protocols IPv4 and IPv6 compatible

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/](https://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 | 60W & 80 W              | -40°C to +55°C |
| Relative Humidity     | 100% Condensing         |                |
| Altitude              | 10,000 ft (3,000 m) ASL |                |

### Mechanical

| AC Powered |                      |
|------------|----------------------|
| 60W & 80W  | 12.2 x 7.2 x 7.2 in. |
|            | 310 x 183 x 18d 3 mm |
|            | 19.5 lbs             |
|            | 8.8 kgs              |

Specifications subject to change without notice.

Updated: September 16th, 2025

