TERRASAT Communications, Inc.

# IBUC 2
## Ku-Band Intelligent Block Upconverter

### IBUC Advantages

Integrated BUC/SSPA for higher performance and reliability.

High linearity.

DC power can be supplied via IFL coax or separate DC connector for 4 W through 16 W models.

All models available with integral AC power supply or separate DC power supply.

Internal 10MHz reference option automatically switches to internal reference when external reference is not detected.

Low phase noise better than IESS308/309 requirements by a minimum of 5 dB.

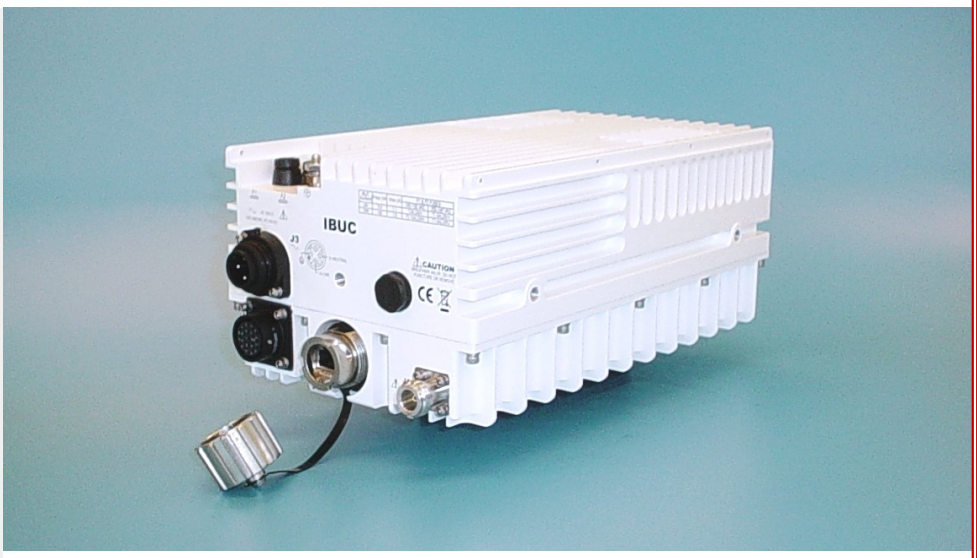
Embedded Web pages provide management for small networks using any Web browser.

AGC or ALC circuits hold gain or output level constant.

30 dB User-adjustable gain in 0.1 dB steps preserves modem dynamic range.

Advanced user interfaces:

- TCP/IP HTTP with embedded Web pages via RJ-45 connector.
- SNMP
- TELNET through TCP/IP
- FSK through TX IFL cable
- RS232/485 serial port
- Hand-held terminal




The latest evolution of the **IBUC** has all of the advanced features and reliability of the original **IBUC** in a new, more compact package.

**IBUC 2** offers significant benefits:

- High performance in a compact, cost effective package
- Simple design and installation
- Simplified 1+1 configuration

New interfaces connect you to extensive M&C facilities for network management or local access. This powerful M&C enables:

- ***Trouble-free commissioning*** with easy, point-and-click installation/configuration
- Continuous ***verification*** of performance with time-stamped alarm history
- Simplified ***monitoring*** of terminal status

The **IBUC 2** comes with a complete set of diagnostic tools including:

- 10 MHz input detector
- Input voltage and current monitoring
- Transmit L-band input level detector
- Transmit RF output level detector
- User configurable thresholds and alarms

Unique to the **IBUC** are internal AGC and ALC functions that satisfy demanding applications with stringent specifications.

**For additional information contact Terrasat Sales at +1 408-782-5911 or by Email: Sales@Terrasatinc.com.**
**315 Digital Drive, Morgan Hill, CA 95037 www.terrasatinc.com**

# IBUC 2
## Ku-Band Intelligent Block Upconverter

| **Frequency range** | RF | IF |
|---|---|---|
| Band 1 Std Ku | 14.00 to 14.50 GHz | 950 to 1450 MHz |
| Band 2 Full Ku | 13.75 to 14.50 GHz | 950 to 1700 MHz |
| Band 3 Low Ku | 12.75 to 13.25 GHz | 950 to 1450 MHz |

**Input**

| | |
|---|---|
| VSWR / Impedance | 1.5:1 max / 50 Ohm |
| Input Connector | Type N female (50 Ohm) |
| Input Connector options | Type F (75 Ohm), TNC (50 Ohm) |
| Input power detector | -55 to –20 dBm |

**Gain**

Small Signal Gain (L-band to RF) with attenuator set to 0 dB

| | |
|---|---|
| 4 W | 67 dB min |
| 8 W | 70 dB min |
| 12 W | 72 dB min |
| 16 W | 73 dB min |
| 20 W | 74 dB min |
| 25 W | 75 dB min |
| 30 W | 76 dB min |
| 40 W | 77 dB min |

| | |
|---|---|
| Attenuator range | 30 dB variable in 0.1 dB steps |

| Gain flatness | Band 1 & 3 | Band 2 |
|---|---|---|
| Full band | 3 dB p-p max | 4 dB p-p max |
| 36 MHz | 1 dB p-p max | 1.5 dB p-p max |
| 1 MHz | 0.25 dB p-p | 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 | WR75 cover with groove |
| VSWR | 1.5:1 max |

| Rated output power | $P_{1dB}$ | $P_{linear}$ |
|---|---|---|
| 4 W | +36 dBm min | 34.5 dBm |
| 8 W | +39 dBm min | 37.5 dBm |
| 12 W | +40.8 dBm min | 39.3 dBm |
| 16 W | +42 dBm min | 40.5 dBm |
| 20 W | +43 dBm min | 41.5 dBm |
| 25 W | +44 dBm min | 42.5 dBm |
| 30 W | +44.8 dBm min | 43.3 dBm |
| 40 W | +46 dBm min | 44.5 dBm |

$P_{linear}$ is the maximum linear power as defined by MIL-STD-188-164B.

| | | |
|---|---|---|
| IMD3 (2 carriers, 3 dB TOBO) | | -25 dBc max |
| Level stability with ALC | | ±0.5 dB |
| Output power detector range | | Rated power to –20 dB |
| Power reading accuracy | | ±1.0 dB max |
| Spurious | In Band | -65 dBc |
| | Out of Band | Complies with EN 301 428/430 and MIL-STD 188-164B |
| Harmonics | | -50 dBc max |
| Output Noise Power Density | | |
| | TX | < -79 dBm/Hz |
| | RX | < -145 dBm/Hz |

| **SSB Phase Noise** | External refer- | 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 | 10 MHz |
| Level | -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** | DC | AC |
|---|---|---|
| Voltage | 48 ± 11 VDC | 100 to 240 VAC |
| Option for 4 W, 8 W: | 24 ± 4 VDC | |

DC via coax available on 4 W - 16 W

| Power Consumption | | |
|---|---|---|
| 4 W | 77 W | 85 VA |
| 8 W | 80 W | 115 VA |
| 12 W | 125 W | 158 VA |
| 16 W | 168 W | 200 VA |
| 20 W | 200 W | 225 VA |
| 25 W | 250 W | 270 VA |
| 30 W | 270 W | 300 VA |
| 40 W | 380 W | 420 VA |

**Monitor and Control**

**Ethernet** (HTTP, Telnet, SNMP) via RJ-45 connector,

**RS232/485, Hand-held Terminal** via MS-type connector,

**FSK** multiplexed on TX IFL.

**Environmental**

| | |
|---|---|
| Operating temperature | |
| 4W - 25W | -40°C to +60°C |
| 30W - 40W | -40°C to +55°C |
| Relative humidity | 100% condensing |
| Altitude | 10,000 ft., (3,000 m) ASL |

| **Mechanical** | DC powered | AC powered |
|---|---|---|
| 4 W - 8 W | 10.5 x 6 x 3.8 in.<br>9.3 lbs | 10.5 x 6 x 4.2 in.<br>10.5 lbs |
| 12 W - 20 W w/fan | 10.5 x 6 x 5.2 in.<br>10.9 lbs | 10.5 x 6 x 5.6 in.<br>11.9 lbs |
| 25 W - 40 W w/fan | 10.5 x 6 x 5.7 in.<br>12.3 lbs | 10.5 x 6 x 6.1 in.<br>13.5 lbs |



TERRASAT Communications, Inc.

315 Digital Drive, Morgan Hill, CA 95037
Tel. +1 408-782-5911 Fax +1 408-782-5912
www.terrasatinc.com