TERRASAT Communications, Inc.

# IBUC
## C-Band Intelligent Block Upconverter

### IBUC Advantages

Integrated BUC/SSPA for higher performance and reliability.

DC power can be supplied via IFL coax or separate DC connector for 5 W through 25 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.

Guaranteed rated output power across the entire operating temperature range and frequency band.

Low phase noise exceeds IESS308/309 requirements by a minimum of 10 dB.

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

AGC or ALC circuits hold gain or output level constant.

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

Advanced user interfaces:

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


The revolutionary **IBUC** has advanced features to take your network to new heights.

**IBUC** offers significant benefits:

- Low terminal cost
- Simple design and installation
- Superior RF performance
- Simplified 1+1 configuration

New interfaces connect you to extensive M&C facilities for network management or local access. This powerful new 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** 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
## C-Band Intelligent Block Upconverter

| **Frequency range** | RF | IF |
|---|---|---|
| Band 1 Std C-Band | 5850 to 6425 MHz | 950 to 1525 MHz |
| Band 2 Palapa/ST-1 | 6425 to 6725 MHz | 975 to 1275 MHz |
| Band 3 Insat | 6725 to 7025 MHz | 1150 to 1450 MHz |
| Band 4 Ext. C-Band | 5850 to 6650 MHz | 950 to 1750 MHz |
| Band 5 Full C-Band | 5850 to 6725 MHz | 975 to 1850 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

| | |
|---|---|
| 5 W | 68 dB min |
| 10 W | 71 dB min |
| 20 W | 74 dB min |
| 25 W | 75 dB min |
| 40 W | 77 dB min |
| 50 W | 78 dB min |
| 60 W | 79 dB min |
| 80 W | 80 dB min |

Attenuator range 16 dB variable in 0.1 dB steps

| Gain flatness | Bands 1/2/3 | Bands 4/5 |
|---|---|---|
| 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 | 4 dB p-p max |
| With AGC | 1 dB p-p max | 1 dB p-p max |

**RF Output**

| | |
|---|---|
| Interface | CPR-137G or N(f) |
| VSWR | 1.5:1 max |

Rated output power (P1dB)

| | |
|---|---|
| 5 W | +37 dBm min |
| 10 W | +40 dBm min |
| 20 W | +43 dBm min |
| 25 W | +44 dBm min |
| 40 W | +46 dBm min |
| 50 W | +47 dBm min |
| 60 W | +47.8 dBm min |
| 80 W | +49 dBm min |

Note: for 40 W and above, output power in bands 4 & 5 is reduced by 0.5 dB.

| | | |
|---|---|---|
| IMD3 (2 carriers, 3 dB TOBO) | | -27 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 | -70 dBc |
| | Out of Band | Complies with EN 301 443 and MIL-STD 188-164B |
| Harmonics | | -50 dBc max. |
| Output Noise Power Density | | |
| | TX | < -78 dBm/Hz |
| | RX | < -145 dBm/Hz |

| **SSB Phase Noise** | External refer- | IBUC |
|---|---|---|
| 10 Hz | -115 dBc/Hz | -54 dBc/Hz |
| 100 Hz | -140 dBc/Hz | -79 dBc/Hz |
| 1 kHz | -150 dBc/Hz | -89 dBc/Hz |
| 10 kHz | -155 dBc/Hz | -94 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

**Local Oscillator Frequency**

| Sense | Inverting |
|---|---|
| Band 1 | 7375 MHz |
| Band 2 | 7700 MHz |
| Band 3 | 8175 MHz |
| Band 4 | 7600 MHz |
| Band 5 | 7700 MHz |

| **IBUC Power Supply** | DC | AC |
|---|---|---|
| Voltage | 48 ± 11 VDC | 100 to 240 VAC |
| Option for 5 W, 10 W: | 24 ± 4 VDC | |
| DC via coax available on 5 W - 25 W | | |
| Power Consumption | | |
| 5 W | 72 W | 85 VA |
| 10 W | 96 W | 120 VA |
| 20 W | 154 W | 200 VA |
| 25 W | 168 W | 211 VA |
| 40 W | 330 W | 363 VA |
| 50 W | 360 W | 400 VA |
| 60 W | 432 W | 490 VA |
| 80 W | 552 W | 600 VA |

**Monitor and Control**

**Ethernet** (HTTP, Telnet, SNMP),
**RS232/485, Hand-held Terminal** via MS-type connector,
**FSK** (multiplexed on TX IFL).

| **Environmental** | 5 W to 40 W | 50 W to 80 W |
|---|---|---|
| Operating temperature | -40°C to +60°C | -40°C to +55°C |
| Relative humidity | 100% condensing | |
| Altitude | 10,000 ft., (3,000 m) ASL | |

| **Mechanical** | DC powered | AC powered |
|---|---|---|
| 5 W - 10 W | 12.2x7.2x4.2 in. | 12.2x7.2x4.5 in. |
| | 13 lbs | 14 lbs |
| 20 W - 50 W | 12.2x7.2x6.2 in. | 12.2x7.2x6.5 in. |
| | 18 lbs | 19 lbs |
| 60 W - 80 W | 12.2x7.2x6.7 in. | 12.2x7.2x7.0 in. |
| | 18.5 lbs | 19.5 lbs |





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