

## 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 **IBUC 2** is a compact integrated Intelligent Block Upconverter/GaAs SSPA designed for higher performance & reliability. Block Upconverters based on linear GaAs amplifier technology require minimal output power backoff. 24-48-hour environmental chamber testing guarantees  $P_{1\text{dB}}$  output power over frequency and temperature range.

Multiple sensors & a new, high-capacity microprocessor provide tools to optimize terminal performance. The **IBUC 2** is a popular choice for medium-high power Satcom terminals in telecom, defense, air traffic control, government & other demanding network applications.

### Options

- 1+1 Transmit Redundancy
- High Stability Internal 10 MHz Reference with Auto-Detection
- Several Factory Select Bands
- AC or DC Input Models
- Mounting Brackets
- Optional Type N, F-Type, or TNC Input Connectors
- Waveguide or Type N Output
- Handheld Terminal
- Cyber Hardened
- WGS (Wideband Global SATCOM) compatible

## C-Band IBUC 2

Smaller, lighter models with RJ45 interface.



New Cyber  
Hardened  
version  
available

Multicarrier  
Application

5W  
to  
80W

GaAs  
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)

## C-Band IBUC 2

Frequency Range	RF (MHz)	IF (MHz)	
Sense		Inverting	Non-Inverting
Band 1 Std C	5850 to 6425	950 to 1525	950 to 1525
Band 2 Palapa	6425 to 6725	975 to 1275	1125 to 1425
Band 3 INSAT	6725 to 7025	1150 to 1450	965 to 1265
Band 4 Ext C	5850 to 6650	950 to 1750	950 to 1750
Band 5 Full C	5850 to 6725	975 to 1850	950 to 1825

### 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	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>
5W	68 dB min	57 dB min
10W	71 dB min	60 dB min
15W	72.8 dB min	61.8 dB min
20W	74 dB min	63 dB min
25W	75 dB min	64 dB min
30W	75.8 dB min	64.8 dB min
40W	77 dB min	66 dB min
50W	78 dB min	67 dB min
60W	79 dB min	68 dB min
80W	80 dB min	69 dB min

Attenuator Range 30 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 max	0.25 dB p-p max

Gain Variation Over Temperature	Bands 1/2/3	Bands 4/5
Open Loop	3 dB p-p max	4 dB p-p max
With AGC	1 dB p-p max	1 dB p-p max

<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>WGS Compatible Versions have lower gain allow operations to drive the IF signal up to 0 dBm.

### RF Output

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

### Output Power

	P <sub>1dB</sub>
5W	+37 dBm min
10W	+40 dBm min
15W	+41.8 dBm min
20W	+43 dBm min
25W	+44 dBm min
30W	+44.8 dBm min
40W	+46 dBm min
50W	+47 dBm min
60W	+47.8 dBm min
80W	+49 dBm min

Note: For 40W & Above, Output Power in Bands 4 & 5 is Reduced by 0.5 dB

P<sub>Lin</sub> is the maximum linear power as defined by MIL STD 188-164C

IMD3 (2 Carriers, 3 dB TOBO)	-26 dBc max
Level Stability with ALC	± 0.5 dB
Output Power Detector Range	Rated Power to -20 dB
Power Reading Accuracy	± 1.0 max
Spurious	
In Band	-65 dBc
Out Band	Complies with EN 301 443 & MIL STD 188-164C
Harmonics	-50 dBc max
Output Noise Power Density	TX <- 78 dBm/Hz RX <- 145 dBm/Hz

### SSB Phase Noise

	External Reference	IBUC 2
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	Non-Inverting
Band 1	7375 MHz	4900 MHz
Band 2	7700 MHz	5300 MHz
Band 3	8175 MHz	5760 MHz
Band 4	7600 MHz	4900 MHz
Band 5	7700 MHz	4900 MHz

### IBUC Power Supply

Voltage	DC	48 ± 11 VDC
	AC	100 to 240 VAC   50 Hz / 60 Hz
Options for 5W, 10W	24 ± 4 VDC	
DC via coax available on 5W to 25W units		

Power Consumption	DC	AC
5W	60W	75 VA
10W	85W	120 VA
15W	125W	150 VA
20W	154W	200 VA
25W	168W	210 VA
30W	188W	220 VA
40W	300W	330 VA
50W	320W	350 VA
60W	360W	400 VA
80W	N/A	540 VA

### Monitor & Control

Ethernet (HTTP, Telnet, SNMPv2e) 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/](http://www.terrasatinc.com/products/)

### Environmental

	5W-50W	60W/80W
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
5W-10W	10.5 x 6 x 3.8 in. 267 x 152 x 97 mm 9.3 lbs (4.2 kgs)	10.5 x 6 x 4.2 in. 267 x 152 x 107 mm 10.5 lbs (4.8 kgs)
15W-30W	10.5 x 6 x 5.2 in. 267 x 152 x 132 mm 10.8 lbs (4.9 kgs)	10.5 x 6 x 5.6 in. 267 x 152 x 142 mm 11.7 lbs (5.3 kgs)
40W-80W	10.5 x 6 x 5.7 in. 267 x 152 x 145 mm 11.5 lbs (5.2 kgs)	10.5 x 6 x 6.1 in. 267 x 152 x 155 mm 12.4 lbs (5.6 kgs)

Specifications subject to change without notice.

Updated: September 21st 2023