TERRASAT Communications, Inc.
Engineered to Endure

IBUC
The Intelligent Block UpConverter

Superior RF Performance | Ultimate Reliability | Complete Feature Set | Multiprotocol Management & Diagnostics

www.terrasatinc.com

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 «

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

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 $P_{1\,dB}$ 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

Note: Since not all the optional features can be combined, please, contact our sales team for further info at: Sales@Terrasatinc.com

C-Band **IBUC 2**

Frequency Range

Sense	RF (MHz)	IF (MHz) Inverting	IF (MHz) 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[1]**	**WGS Version[2]**
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[1]	WGS Version[2]
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

[1]Terrasat's Standard Version has a higher gain to reduce the need for line amplifiers in long cable runs (IFL).
[2]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_{1dB}
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

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/

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: January 8th 2025

TERRASAT Communications, Inc. Engineered to Endure

PART NUMBER CONFIGURATION | OPTIONS AVAILABLE FOR:

C-Band 5W to 80W GaAs IBUC 2

Cyber Hardened Option Part Number — Example/Std Offer: IBB058064-3NA080DSWW-0000

IBB XXXXXX - X X X XXX D S W W - XXXX

RF Frequency Plan

058064	5.850-6.425 GHz (Std C-Band)
058066	5.850-6.650 GHz (Ext C-Band)
058067	5.850-6.725 GHz (Full C-Band)
064067	6.425-6.725 GHz (Palapa C-Band)
067070	6.725-7.025 GHz (Insat C-Band)

Spectral Sense and 10MHz Reference

0	Non-Inverting + External 10MHz
1	Inverting + External 10MHz
2	Non-Inverting + Internal 10MHz Std (30ppb stability)
3	Inverting + Internal 10MHz Std (30ppb stability)
4	Non-Inverting + Internal 10MHz High Stability (5ppb)
5	Inverting + Internal 10MHz High Stability (5ppb)

IF Input Connector

N	N-Type IF Input Connector
F	F-Type IF Input Connector

Power Supply

A	AC Powered
2	DC Powered, With Power Thru Coax, 24 ± 4 VDC (Valid for 5W and 10W IBUCs only)
4	DC Powered, With Power Thru Coax, 48 ± 11 VDC (Valid for 15W to 25W IBUCs only)
5	DC Powered, No Power Thru Coax, 48 ± 11 VDC (Valid for 30W to 60W IBUCs only)

Power Output

005	5W
010	10W
015	15W
020	20W
025	25W
030	30W
040	40W
050	50W
060	60W
080	80W

Color

W	Std Terrasat Inc Color (White)
X	Other Colors (Please, Provide Color Specs)

Optional Specs & Features

0000	Std Options and Std Specs
0218	WGS Compatibility Option

Std M&C Option Part Number

Example/Std Offer: IBR058064-3NA080WW-0919

IBR XXXXXX - X X X XXX W W - XXXX

Power Output

005	5W
010	10W
015	15W
020	20W
025	25W
030	30W
040	40W
050	50W
060	60W
082	80W

Optional Specs & Features

0919	Std (C-Band) unit with Multicarrier compatibility only
1818	WGS Compatibility Option + Multicarrier

Color

W	Std Terrasat Inc Color (White)
X	Other Colors (Please Provide Color Specs)

Power Supply

A	AC Powered
2	DC Powered, With Power Thru Coax, 24 ± 4 VDC (Valid for 5W and 10W IBUCs only)
4	DC Powered, With Power Thru Coax, 48 ± 11 VDC (Valid for 5W to 25W IBUCs only)
5	DC Powered, No Power Thru Coax, 48 ± 11 VDC (Valid for 5W to 60W IBUCs only)

IF Input Connector

N	N-Type IF Input Connector
F	F-Type IF Input Connector

Spectral Sense and 10MHz Reference

0	Non-Inverting + External 10MHz
1	Inverting + External 10MHz
2	Non-Inverting + Internal 10MHz Std (30ppb stability)
3	Inverting + Internal 10MHz Std (30ppb stability)
4	Non-Inverting + Internal 10MHz High Stability (5ppb)
5	Inverting + Internal 10MHz High Stability (5ppb)

RF Frequency Plan

058064	5.850-6.425 GHz (Std C-Band)
058066	5.850-6.650 GHz (Ext C-Band)
058067	5.850-6.725 GHz (Full C-Band)
064067	6.425-6.725 GHz (Palapa C-Band)
067070	6.725-7.025 GHz (Insat C-Band)

ESATCOM INC

ESATCOM INC.
3628 Francis Lewis Blvd.
Flushing, NY 11358
www.esatcom.com
Tel: 718.799.0084
Email: sales@esatcom.com