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

X-Band IBUC R

Mid-High power multi-carrier IBUC unit.

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 «

New **Cyber Hardened** version available | Multicarrier Application | 80W to 175W | GaAs Tech Amplifier | 3 Year Warranty

Applications

The **IBUC R** is an integrated BUC/GaAs SSPA designed for higher performance & reliability. Intelligent Block Upconverters based on GaAs amplifier technology deliver superior performance in terminals transmitting multiple carriers due to their inherent high linearity & minimal backoff requirements.

Multiple sensors & a new, high-capacity microprocessor provide tools to optimize terminal performance. The **IBUC R** is an excellent choice for higher power defense Satcom terminals operating in demanding applications.

Options

- 1+1 Transmit Redundancy with Eco-Mode
- High Stability Internal 10 MHz Reference with Auto-Detection
- Three Factory Select Bands (Low,Std, and Full Ku-Bands)
- AC or DC Input Models
- Mounting Brackets
- Optional Type N, F-Type, or TNC Input Connectors
- Handheld Terminal
- Cyber Hardened Core M&C
- WGS (Wideband Global SATCOM) compatible
- Extended Waveguide Rx Reject Filter

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

X-Band IBUC R

Frequency Range

	RF (MHz)	IF(MHz)
	7900 to 8400	950 to 1450

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	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]
80W	80 dB min	69 dB min
100W	81 dB min	70 dB min
125W	82 dB min	71 dB min
150W	83 dB min	72 dB min
175W	83 dB min	72 dB min

[1]Terrasats 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 allowing 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
36 MHz	1.5 dB p-p max
1 MHz	0.25 dB p-p max
Gain Variation Over Temperature	
Open Loop	3 dB p-p max
With AGC	1 dB p-p max

RF Output

Interface	CPR-112G
VSWR	1.5:1 max

Output Power

	P1dB
80W	+49 dBm min
100W	+50 dBm min
125W	+51 dBm min
150W	+51.8 dBm min
175W	+52.4 dBm min

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	-65 dBc
Out Band	Complies with MIL-STD 188-164C
Harmonics	-60 dBc max.
Output Noise Power Density	
	TX <- 75 dBm/Hz
	RX (with RX Reject Filter) <- 165 dBm/Hz
Mute	-70 dBc max.
AM-PM Conversion	< 3.0 deg/dB @ Rated Power
Group Delay	
Linear	0.03 ns/MHz
Parabolic	0.003 ns/MHz^2
Ripple	1 ns p-p Over Any 36 MHz

SSB Phase Noise

	External Reference	IBUC R
10 Hz	-115 dBC/Hz	-55 dBc/Hz
100 Hz	-140 dBc/Hz	-80 dBc/Hz
1 KHz	-150 dBc/Hz	-90 dBc/Hz
10 KHz	-155 dBc/Hz	-95 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 feature includes auto-detection of External Reference

Local Oscillator Frequency

X-Band	6950 MHZ
Sense	Non-Inverting

IBUC Power Supply

Voltage	DC	42 V min, 60 V max		
	AC	100 to 240 VAC	80W to 125W	50 Hz/ 60Hz
		200 to 240 VAC	150W to 175W	

Power Consumption	DC	AC
80W	576 W	656 VA
100W	770 W	850 VA
125W	880 W	950 VA
150W	1100 W	1250 VA
175W	1200 W	1300 VA

Monitor & Control

Ethernet (HTTP, Telnet, SNMPv2c) 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/ or at the Cyber Hardened webpage on https://www.terrasatinc.com/terrasat-communications-launches-new-cyber-hardened-intelligent-bucs/

Environmental

Operating Temperature	-40°C to +55°C
Relative Humidity	100% Condensing
Altitude	10,000 ft (3,000 m) ASL

Mechanical

	DC Powered	AC Powered
80W	12.2 x 7.2 x 6.5 in. *310 x 183 x 165 mm.*	12.2 x 7.2 x 6.8 in. *310 x 183 x 173 mm.*
	18.5 lbs *8.4 kgs*	19.5 lbs *8.9 kgs*
100W-175W	16.2 x 10 x 7.2 in. 412 x 254 x 183 mm.	16.2 x 10 x 7.4 in. 412 x 254 x 188 mm.
	32 lbs *14.5 kgs*	33 lbs *14.9 kgs*

(Dimensions not including isolators)

Specifications subject to change without notice.

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Questions? Contact Us

+1 (408) 782 5911
Sales@Terrasatinc.com

315 Digital Drive
Morgan Hill, CA 95037
www.Terrasatinc.com