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

C-Band IBUC R

Mid-High power multi-carrier IBUC unit.

New Cyber Hardened version available | Multicarrier Application | 100W to 400W | GaAs Tech Amplifier | 3 Year Warranty

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 R** is an integrated Intelligent Block Upconverter/GaAs SSPA designed for higher performance & reliability. 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 Satcom terminals in telecom, defense, maritime, broadcast, & other demanding 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

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 R

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 max/ 50 Ohm
Input Connector	Type N Female (50 Ohm)
Input Connector Options	Type F (75 Ohm), TNC (50 Ohm)

Input Power Detector Range		**Standard Version[1]**	**WGS Version[2]**
Range Options:	80W-200W	-55 to -20 dBm	-35 to 0 dBm
	400W	-50 to -15 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]**
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
200W	84 dB min	73 dB min
400W	82 dB min	76 dB min

Attenuator Range 30 dB Variable in 0.1 dB Steps

Gain Flatness	**Bands 1/2/3/4/5**
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	**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]The lower gain WGS Compatible Versions allow operations to drive the IF signal up to 0 dBm.

RF Output

Interface	CPR-137G
VSWR	1.3:1 max

Output Power

	P1dB
100W	+50 dBm min
125W	+51 dBm min
150W	+51.8 dBm min
175W	+52.4 dBm min
200W	+53 dBm min
400W	+56 dBm min

Note: Output Power in Bands 4 & 5 is reduced by 0.5 dB

P_{Lin} is the maximum linear power as defined by MIL STD 188-164C

IMD3 (2 Carriers, 3 dB TOBO)	-26 dBc max (80W-200W) -25 dBc max (400W)
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 Band	Complies with EN 301 443 & MIL-STD 188-164C
Harmonics	-50 dBc max.
Output Noise Power Density	TX <- 74 dBm/Hz RX <- 145 dBm/Hz

SSB Phase Noise

	External Reference	IBUC R
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	42 V min, 60 V max	
	AC	100 to 240 VAC 50Hz / 60Hz	100W, 125W
		200 to 240 VAC 50Hz / 60Hz	150W to 400W

Power Consumption	**DC**	**AC**
100W	700 W	800 VA
125W	800 W	900 VA
150W	1056 W	1200 VA
175W	1100 W	1250 VA
200W	1150 W	1300 VA
400W	N/A	2350 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/

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
100W - 200W	16.2 x 10 x 7.4 in. *411 x 254 x 188 mm.* 32 lbs *14.5 kgs*	16.2 x 10 x 7.6 in. *411 x 254 x 193 mm.* 33 lbs *14.9 kgs*
400W	N/A	29 x 15 x 10.1 in *737 x 381 x 257 mm.* 83 lbs *37.6 kgs*

(Dimensions not including isolators for 100W to 200W models)

Specifications subject to change without notice.

Updated: September 4th, 2024

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Questions? Contact Us

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PART NUMBER CONFIGURATION | OPTIONS AVAILABLE FOR:
C-Band 100W to 400W GaAs IBUC R

Cyber Hardened Option Part Number

Example/Std Offer: IBB058064-3NC400NSWW-0000

IBB XXXXXX - X X X XXXX S W W - XXXX

Power Output	
100Q	100W
125Q	125W
150Q	150W
175Q	175W
200Q	200W
400N	400W

Optional Specs & Features	
0000	Std Options and Std Specs
0218	WGS Compatibility Option

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

Power Supply	
A	AC Powered (Valid for 100W to 200W IBUCs)
C	AC Powered (Valid for 400W IBUCs only)
5	DC Powered, No Power Thru Coax (Valid for 100W to 200W 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)

Std M&C Option Part Number

Example/Std Offer: IBR058064-3NC400WW-0919

IBR XXXXXX - X X X XXX W W - XXXX

Power Output

100	100W
125	125W
150	150W
175	175W
200	200W
400	400W

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 (Valid for 100W to 200W IBUCs)
C	AC Powered (Valid for 400W IBUCs only)
5	DC Powered, No Power Thru Coax (Valid for 100W to 200W 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)

Note: Consult Terrasat Communications Inc for more options.

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