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 | X-Band | Ku-Band | Ka-Band

LNB 1:1 Protection System

New RxR - Receive Redundant System

The New **RxR** Advantage

Terrasat`s **LNB 1:1 Receive Redundant Systems** are equipped with cutting-edge intelligent technology. The compact equipment integrates **3 products in 1 solution**:

- Rx 1:1 Redundant System
- LNB Multiband Control Integrated (Quad-band)
- Redundant Internal 10 MHz Reference

Other advantages included:

- Innovative Hot Standby Mode. Simplicity using system intelligence - No external logic controller
- User-configurable alarm thresholds
- Includes Eco-mode option for warm standby, reducing energy consumption
- Pre-assembled option available with your choice of LNB
- Independent from IBUC switching

New **Cyber Hardened** version available | Multi-Orbit Compatible | Compact Integrated Solution | Embedded Quad-Band Control | 3 Year Warranty

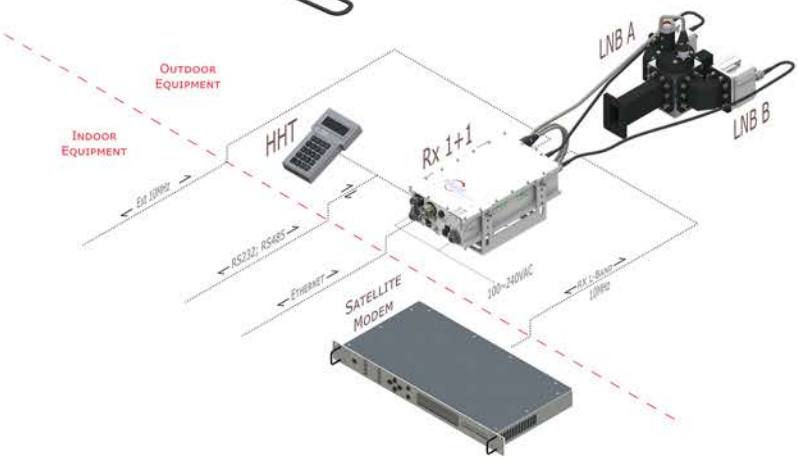
System Features

Extended monitoring/alarm indication of LNB parameters:

- Composite input power level
- LNB current
- Supply voltage
- 10 MHz reference level
- Multiband LNB control:
  - 4 Voltages
  - Tone

User-configurable alarm thresholds & switching criteria enable optimization for site conditions. Multiple options for local and remote M&C:

- SNMP Selectable Versions
- RS232/485
- Handheld Terminal
- AC or DC power options
- Multi-function LEDs
- Manual override switch
- TCP/IP with embedded web pages



Applications

The new Rx 1:1 System adds multiband LNB control & redundant Internal 10MHz Reference to its extensive features. Terrasat's Receive 1:1 Redundancy System complements the IBUC Transmit Redundancy System. It is a complete outdoor-mounted package including Rx 1:1 interface box, waveguide switch, & interconnecting cables. The receive redundancy switching function is entirely independent from the transmit system so that the operator is not encumbered with a chain-switching situation. An SNMP-compliant Ethernet interface enables local and remote monitoring & management.

New LNB 1:1 Protection System

RX 1:1 Interface Module

L Band

Frequency Range	950 to 2150 MHz (950 to 2750 MHz Optional)
Insertion Loss	4 dB Max
Flatness	
Any 36 MHz Band	1 dB p-p Max
Full Band	2 dB p-p Max
Input/Output VSWR	2:.0:1 Max
	N-Type (F), F-Type (F) Optional

10 MHz Reference

From External Demodulator
From External Reference Oscillator

Single Internal 10 MHz Reference Oscillator (Optional)
Redundant Internal 10 MHz Reference Oscillator (Optional)
Auto-detection of External Reference with seamless transition

Sensors

A and B L-Band Input Composite Level

10 MHz Reference Level Detectors for:

- External demodulator
- External reference
- Internal reference (single or dual)

A and B LNB supply voltage detector

A and B LNB supply current detector

LED Indicators

Power	Ethernet Activity
A and B Online	
A and B Alarm	Normal/ Emergency Mode

Multiband LNB Control

Voltages

13 V (11.5 to 13.9 V)
15 V (14.2 to 16.3 V)
18 V (16.6 to 20.0 V)
24 V (20.3 to 26.0 V)

Tone

Frequency	22 kHz +/- 4 kHz
Amplitude	600 mV +/- 200 mV
Duty Cycle	40 to 60 %

WG Switch Control

Manual / Auto	Controller pulses WG switch
Emergency	Toggle triggers pulse for WG switch

WG Switches

	C-Band	X-Band
Frequency	3.3 - 4.9 GHz	7.05 - 10.00 GHz
VSWR	1.05:1 Max	1.10:1 Max
Insertion Loss	0.02 dB Max	0.05 dB Max
Isolation	80 dB min	80 dB min
Switching Time	200 ms Max	100 ms Max
Waveguide	WR229	WR112

WG Switches Continued

	Ku-Band	Ka-Band
Frequency	10.0 - 15.0 GHz	26.5 - 40.0 GHz
VSWR	1.10:1 Max	1.15:1 Max
Insertion Loss	0.05 dB Max	0.15 dB Max
Isolation	75 dB min	55 dB min
Switching Time	80 ms Max	80 ms Max
Waveguide	WR75	WR28

Phase Noise

	10 MHz Internal Reference
10 Hz	-125 dBc/Hz
100 Hz	-150 dBc/Hz
1 KHz	-160 dBc/Hz
10 KHz	- 165 dBc/Hz
100 KHz	- 165 dBc/Hz

Power Supply

DC Supply Option

Connectc	MS3102R10SL-4P
Input Voltage	20 to 60 VDC

Current (Excluding LNBs & WG Switch Pulses)

@ 24 V	300 mA Max
@ 48 V	150 mA Max

AC Supply Option

Connectors	C016 20C003 100 12
Input Voltage	100-240 VAC @ 800 mA max

M&C Interface - For Standard Versions

Ethernet
RS232/485
Handheld Terminal

Connectors	RJ-45
	PT02E-14-19S
Summary Alarm	A and B Form-C Relays

Monitor & Control - For Cyber Hardened Versions (Optional)

Ethernet (HTTPS, SSHv2, Selectable SNMP V1, V2, V3 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

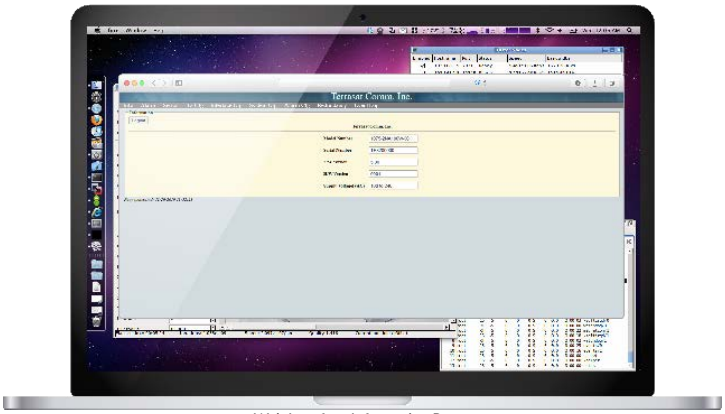
The Cyber Hardened versions have embedded new high-end Cyber Security features, from hardware to software, including a new controller board and the new firmware.
For further details, refer to the Cyber Hardened IBUCs' datasheet at www.https://terrasatinc.com/terrasat-communications-launches-new-cyber-hardened-intelligent-bucs/

Environmental

Operating Temperature	-40°C to +60°C
Relative Humidity	100% Condensing
Altitude	10,000 ft (3,000 m) ASL

Mechanical

	AC	DC
Size, Interface Box	12.2 x 7.2 x 3.8 in.	12.2 x 7.2 x 2.7 in
	310 x 183 x 96.5 mm	*310 x 183 x 68.6 cm*
Weight, Interface Box	*10 lbs*	*7 lbs*
	4.5 kgs	*3.2 kgs*



Web Interface Information Page

Specifications subject to change without notice.

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