

### IBUC Advantages

NMS-friendly interfaces enable remote management of your earth station RF.

Embedded web pages provide management for small networks using any web browser.

AGC or ALC circuits hold output power or level constant.

Customer-selectable gain makes it possible to compensate for cable and terminal losses.

Advanced customer interfaces:

- TCP/IP HTTP with embedded web pages.
- FSK through TX IFL cable.
- RS232/485 serial port.
- Handheld terminal

1+1 switching logic and drivers built into the IBUC eliminate expensive external switching controller.

Extensive diagnostics displayed as web pages for faster setup and troubleshooting.

Guaranteed rated output power across the entire operating temperature range and frequency band.

Low phase noise exceeds IESS308/309 requirements by a minimum of 10dB.

Integrated BUC/SSPA packaging for higher performance and reliability.



The revolutionary **IBUC** (Intelligent Block Upconverter) incorporates advanced features to take your network to new heights.

Compared to traditional 70 MHz solutions, the **IBUC** offers significant benefits:

- Lower terminal cost
- Simpler design and installation
- Superior RF performance
- Simplified 1+1 configuration

Unique in the **IBUC** are internal AGC and ALC functions to satisfy demanding applications with stringent specifications. As always, the **IBUC** carries Terrasat's guarantee of rated output power across the operating band and specified temperature range.

New interfaces connect you to the **IBUC**'s extensive M&C facilities for network management or local access. The **IBUC** presents M&C information on embedded web pages via a TCP/IP connection. Serial RS232 and RS485 interfaces are also standard. The handheld terminal interface provides convenient local access to the **IBUC** M&C.

Other BUCs leave you with no way to verify the unit's performance. In contrast, the **IBUC** comes with a complete set of diagnostic tools to assist you with terminal analysis including:

- 10 MHz input detector
- Input voltage and current monitoring
- Transmit L-band input level detector
- Transmit RF output level detector
- Alarm history

The **IBUC** not only supports 1+1 protection – it redefines it. Instead of relying on a separate switching logic unit with its expense, we built the switching logic and drivers into the **IBUC** itself. Protected units make the decision and initiate the command to switch without the need for an external device. The **IBUC** cloning feature enables uncomplicated 1+1 setup. Terrasat's 1+1 solution is a complete package with available dual-**IBUC** mounting bracket for convenient installation.

The **IBUC** is manufactured in our modern Morgan Hill, CA facility according to the same exacting quality processes as our PowerPlus series and OEM microwave products. Each unit undergoes rigorous testing, burn-in at elevated temperature, BER, and final testing over temperature so that you are assured of a high quality, reliable product.

# C-Band IBUC Block Upconverter Specifications

## L-Band Input

Frequency range	
Band 1	950 to 1525 MHz
Bands 2 & 3	1150 to 1450 MHz
VSWR / Impedance	1.5:1 max / 50 ohms
Connector	Type N female
Input power detector range	-55 to -20 dBm

## Gain

Small Signal Gain (L-band to RF) with attenuator set to 0 dB

5W	68 dB min	
10W	71 dB min	
20W	74 dB min	
25W	75 dB min	
40W	77 dB min	
60W	79 dB min	
80W	80 dB min	
Attenuator range	10 dB variable in 0.1dB steps	
Gain flatness	5 W to 40 W	60W to 80W
Full band	3 dB p-p max	4dB p-p max
36 MHz	1dB p-p max	1.5 dB p-p max
1 MHz	0.25 dB p-p	0.25 dB p-p

Gain variation over temperature

Open loop	3 dB p-p max	4 dB p-p max
With AGC	1 dB p-p max	1 dB p-p max

## RF Output

Frequency range	
Band 1	5850 to 6425 MHz
Band 2	6425 to 6725 MHz
Band 3	6725 to 7025 MHz
Interface	CPR-137G or N female, 50 ohm
VSWR	1.5:1 max

Rated output power (P1dB across temperature range and freq. band)

5W	+37 dBm min
10W	+40 dBm min
20W	+43 dBm min
25W	+44 dBm min
40W	+46 dBm min
60W	+47.8 dBm min
80W	+49 dBm min

IMD3 (2 carriers, 30 kHz apart, 9dB BO) -30 dBc max

Level stability with ALC ± 0.5 dB

Output power detector range Rated power to -20 dB

Spurious Complies with EN 301 443

SSB Phase Noise

Offset	External reference	IBUC
10Hz	-120 dBc/Hz	-35 dBc/Hz
100Hz	-130 dBc/Hz	-70 dBc/Hz
1 kHz	-143 dBc/Hz	-80 dBc/Hz
10 kHz	-152 dBc/Hz	-90 dBc/Hz
100kHz	-155 dBc/Hz	-100 dBc/Hz
1MHz	-155 dBc/Hz	-110 dBc/Hz

## External Reference (multiplexed on TX IFL)

Frequency	10 MHz
Level	-8 to +3 dBm

## Local Oscillator

LO Frequency	
Band 1	7375 MHz
Band 2	7875 MHz
Band 3	8175 MHz
Sense	Inverting

## IBUC DC Supply

Multiplexed on TX IFL	5W, 10W	
Connector	MS3102R14S-6P	
Voltage / Current		
	+24 ± 4 VDC	+48 ± 11 VDC
5W	3.0A @ 24VDC	1.5A @ 48VDC
10W	5.0A @ 24VDC	2.5A @ 48VDC
20W	na	4.5A @ 48VDC
25W	na	5.5A @ 48VDC
40W	na	7.5A @ 48VDC
60W	na	9.5A @ 48VDC
80W	na	11.5A @ 48VDC

## Monitor and Control

FSK (multiplexed on TX IFL)

Transmitter	
Frequency	650 kHz ± 5%
Deviation	± 60 kHz
Output Level	-5 to -15 dBm (50 ohms)

Receiver

Nominal frequency	650 kHz
Locking range	± 32.5 kHz
Input sensitivity	-15 dBm

Interfaces (RS232, RS485, TCP/IP and Handheld Terminal)

Connector	MS3112E-14-19S
RS232/485	
Data Rate	Selectable 1.2 to 115.2 kbps
Data Format	8 bits, no parity, 1 stop bit, ASCII
Handheld Terminal data rate	9600 bps
TCP / IP	Telnet, HTTP

**Environmental** 5-40W 60-80W

Operating temperature -40°C to +60°C -40°C to +55°C

Relative humidity 100% non-condensing

## Mechanical

	Size	Weight
5W, 10W	12.2"(L)x7.2"(W)x4.2"(H)	12 lbs
	310mm x 183mm x 107mm	5.4 kg
20W, 25W	12.2"(L)x7.2"(W)x8.5"(H)	18 lbs
	310mm x 183mm x 216mm	8.2 kg
40W, 60W, 80W	12.2"(L)x7.2"(W)x9.1"(H)	19 lbs
	310mm x 183mm x 231mm	8.5 kg