

## Ku-Band IBUC Intelligent Block Upconverter

### IBUC Advantages

Integrated BUC/SSPA packaging for higher performance and reliability.

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.

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 gain or output level constant.

16dB User-adjustable gain in 0.1 dB steps preserves modem dynamic range.

Advanced customer interfaces:

- TCP/IP HTTP with embedded web pages.
- TELNET through TCP/IP
- 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.



The revolutionary **IBUC** has 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

New interfaces connect you to the **IBUC**'s extensive M&C facilities for network management or local access. This powerful new M&C enables:

- **Trouble free commissioning** with easy, point-and-click installation/configuration
- Continuous **verification** of performance with alarm history.
- Simplified **troubleshooting** of terminal faults.

**IBUC** comes with a complete set of diagnostic tools including:

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

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

The **IBUC** is manufactured in our modern Morgan Hill, CA facility 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.

For additional information contact Terrasat Sales at +1 408-782-5911 or by Email: [Sales@Terrasatinc.com](mailto:Sales@Terrasatinc.com).

## Ku-Band IBUC Block Upconverter Specifications

### L-Band Input

Frequency range		
Band 1	950 to 1450 MHz	
Band 2	950 to 1700 MHz	
VSWR / Impedance	1.5:1 max / 50 ohms	
Connector	Type N female	
Input power detector range	-55 to -20 dBm	
<b>Gain</b>		
Small Signal Gain (L-band to RF) with attenuator set to 0 dB		
4W	67 dB min	
8W	70 dB min	
12W	72 dB min	
16W	73 dB min	
20W	74 dB min	
25W	75 dB min	
30W	76 dB min	
40W	77 dB min	
Attenuator range	16 dB variable in 0.1dB steps	
Gain flatness	<u>4W to 25W</u>	<u>30W to 40W</u>
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	14.00 to 14.50 MHz	
Band 2	13.75 to 14.50 MHz	
Interface	WR75 UG cover with groove	
VSWR	1.5:1 max	
Rated output power (P1dB across temperature range and freq. band)		
4W	+36 dBm min	
8W	+39 dBm min	
12W	+40.8 dBm min	
16W	+42 dBm min	
20W	+43 dBm min	
25W	+44 dBm min	
30W	+44.8 dBm min	
40W	+46 dBm min	
IMD3 (2 carriers, 30 kHz apart, 9dB BO/carrier)	-30 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	Complies with EN 301 428	
<b>SSB Phase Noise</b>		
Offset	External reference	IBUC
10Hz	-120 dBc/Hz	-35 dBc/Hz
100Hz	-130 dBc/Hz	-65 dBc/Hz
1 kHz	-143 dBc/Hz	-75 dBc/Hz
10 kHz	-152 dBc/Hz	-85 dBc/Hz
100kHz	-155 dBc/Hz	-95 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	13050 MHz	
Band 2	12800 MHz	
Sense	Non-inverting	

### IBUC DC Supply

Multiplexed on TX IFL	4W, 8W	
Connector	MS3102R14S-6P	
Voltage / Current		
	+24 ± 4 VDC	+48 ± 11 VDC
4W	3.0A @ 24VDC	1.5A @ 48VDC
8W	5.0A @ 24VDC	2.5A @ 48VDC
12W	na	3.5A @ 48VDC
16W	na	5.5A @ 48VDC
20W	na	6.0A @ 48VDC
25W	na	8.0A @ 48VDC
30W	na	9.5A @ 48VDC
40W	na	12.0A @ 48VDC

### Monitor and Control

#### FSK (multiplexed on TX IFL)

<b>Transmitter</b>	
Frequency	650 kHz ± 5%
Deviation	± 60 kHz
Output Level	-5 to -15 dBm (50 ohms)
<b>Receiver</b>	
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
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#### 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** 4W to 25W      30W to 40W

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

Relative humidity 100% condensing

Altitude 15,000 ft (5,000m) ASL

#### Mechanical

	Size	Weight
4W/8W	12.2"(L)x7.2"(W)x4.2"(H) 310mm x 183mm x 107mm	12 lbs 5.5 kg
12-40W	12.2"(L)x7.2"(W)x8.4"(H) 310mm x 183mm x 214mm	17 lbs. 7.7 kg

Specifications are subject to change without notice



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