TERRASAT Communications, Inc.

C-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.

C-Band IBUC Block Upconverter Specifications

L-Band Input

Frequency range		
Band 1	950 to 1525 MHz	
Bands 2 & 3	1150 to 1450 MHz	
Band 4	950 to 1750 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	16 dB variable in 0.1dB steps	
Gain flatness	5 W to 40 W	60W to 80W & Band 4
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 Standard C-Band	5850 to 6425 MHz	
Band 2 Palapa/ST-1	6425 to 6725 MHz	
Band 3 Insat	6725 to 7025 MHz	
Band 4 Extended C– Band	5850 to 6650 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/carrier)		-32 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 301 443	
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
Band 4	7600 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	4.5A@ 24VDC	2.0A @ 48VDC
20W	na	4.0A @ 48VDC
25W	na	4.5A @ 48VDC
40W	na	8.0A @ 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 W to 40 W	60W to 80W
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
5W, 10W	12.2"(L)x7.2"(W)x4.2"(H)	12 lbs
	310mm x 183mm x 107mm	5.5 kg
20-80W	12.2"(L)x7.2"(W)x8.4"(H)	17 lbs
	310mm x 183mm x 214mm	7.7 kg

Specifications are subject to change without notice

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