



IBUC 2G 40W GaN

Ka-Band Intelligent Block Upconverter

IBUC Advantages

Integrated BUC/SSPA for higher performance and reliability.

GaN amplifier technology enables compact size and high efficiency.

Integral AC power supply.

Internal 10MHz reference option automatically switches to internal reference when external reference is not detected.

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

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.

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

Output sample port included.

Advanced user interfaces:

- TCP/IP HTTP with embedded Web pages
- SNMP
- TELNET through TCP/IP
- FSK through TX IFL cable
- RS232/485 serial port
- Hand-held terminal



The revolutionary **IBUC 2G** has advanced features and a Gallium Nitride (GaN) amplifier for increased efficiency.

IBUC 2G offers significant benefits:

- Low terminal cost
- Simple design and installation
- Superior RF performance
- Simplified 1+1 configuration
- Compact, light-weight package

New interfaces connect you to 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 time-stamped alarm history
- Simplified **monitoring** of terminal status

The **IBUC 2G** 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
- User configurable thresholds and alarms

Unique to the **IBUC** are internal AGC and ALC functions that satisfy demanding applications with stringent specifications.

IBUC 2G - 40W GaN Ka-Band Intelligent Block Upconverter

Frequency range	RF	IF
29 to 30 GHz		1.0 to 2.0 GHz
29.5 to 30.0 GHz		1.0 to 1.5 GHz
30 to 31 GHz		1.0 to 2.0 GHz
30.5 to 31.0 GHz		1.0 to 1.5 GHz

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	-55 to -20 dBm

Gain

Small Signal Gain (L-band to RF) with attenuator set to 0 dB
40W 77 dB min

Attenuator range 30 dB variable in 0.1 dB steps

Gain flatness

Full band	4 dB p-p max
36 MHz	1.5 dB p-p max

Gain variation over temperature

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

RF Output

Interface	WR28 UG cover with groove
VSWR	1.3:1 max

Output power 40W

P_{sat} (typ)	+46 dBm
P_{lin} (min)	+43 dBm

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

Level stability with ALC	± 0.5 dB
Output power detector range	Rated power to -20 dB
Power reading accuracy	± 1.0 dB max.

Spurious @ P_{lin}

In Band	-60 dBc
Out of Band	-60 dBc

AM/PM Conversion < 2 deg/dB @ P_{linear}

Output Noise Power Density, TX < -75 dBm/Hz

SSB Phase Noise	External refer-	IBUC
10 Hz	-115 dBc/Hz	-43 dBc/Hz
100 Hz	-140 dBc/Hz	-68 dBc/Hz
1 kHz	-150 dBc/Hz	-78 dBc/Hz
10 kHz	-155 dBc/Hz	-83 dBc/Hz
100 kHz	N/A	-92 dBc/Hz
1 MHz	N/A	-102 dBc/Hz

External Reference (multiplexed on TX IFL)

Frequency	10 MHz
Level	-12 to +5 dBm
Internal Reference - optional	

Local Oscillator Frequency

Sense	Non-inverting
29 to 30 GHz	28000 MHz
29.5 to 30 GHz	28500 MHz
30 to 31 GHz	29000 MHz
30.5 to 31 GHz	29500 MHz

IBUC Power Supply

	DC	AC
Voltage	48 \pm 11 VDC	100 to 240 VAC
Power Consumption	@ P_{linear}/P_{sat} 270/360 W	@ P_{linear}/P_{sat} 300/400 VA

Monitor and Control

Ethernet (HTTP, Telnet, SNMP), via RJ45 connector,
RS232/485, Hand-held Terminal via MS-type connector,
FSK multiplexed on TX IFL.

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
Size (not including isolator)	10.5 x 6 x 5.7 in.	10.5 x 6 x 6.1 in.

Weight 11.5 lbs 12.8 lbs

Specifications are subject to change without notice.

IBUC 2G 40W Ka-Band Data Sheet 2/29/16



315 Digital Drive, Morgan Hill, CA 95037
Tel. +1 408-782-5911 Fax +1 408-782-5912
www.terrasatinc.com