



# IBUC 2G 100W GaN X-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 modern 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.

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## IBUC 2G - 100W GaN X-Band Intelligent Block Upconverter

<b>Frequency range</b>	RF	IF	<b>SSB Phase Noise</b>	External refer-	IBUC
X-Band	7900 to 8400 MHz	950 to 1450 MHz	10 Hz	-115 dBc/Hz	-55 dBc/Hz
<b>Input</b>			100 Hz	-140 dBc/Hz	-80 dBc/Hz
VSWR / Impedance	1.5:1 max / 50 Ohm		1 kHz	-150 dBc/Hz	-90 dBc/Hz
Input Connector	Type N female (50 Ohm)		10 kHz	-155 dBc/Hz	-95 dBc/Hz
Input Connector options	Type F (75 Ohm), TNC (50 Ohm)		100 kHz	N/A	-100 dBc/Hz
Input power detector	-55 to -20 dBm		1 MHz	N/A	-110 dBc/Hz
<b>Gain</b>			<b>External Reference</b> (multiplexed on TX IFL)		
Small Signal Gain (L-band to RF) with attenuator set to 0 dB			Frequency	10 MHz	
100W	81 dB min		Level	-12 to +5 dBm	
Attenuator range	30 dB variable in 0.1 dB steps		Internal Reference - optional		
Gain flatness			<b>Local Oscillator Frequency</b>		
Full band		3 dB p-p max		6950 MHz	
36 MHz		1 dB p-p max	Sense	Non-Inverting	
1 MHz		0.25 dB p-p	<b>IBUC Power Supply</b>		
Gain variation over temperature			Voltage	AC	100 to 240 VAC
Open loop		3 dB p-p max	Power Consumption		$P_{sat}$ $P_{lin}$
With AGC		1 dB p-p max	100 W		520 VA 440 VA
<b>RF Output</b>			<b>Monitor and Control</b>		
Interface	CPR-112G		<b>Ethernet</b> (HTTP, Telnet, SNMP), via RJ45 connector,		
VSWR	1.3:1 max		<b>RS232/485, Hand-held Terminal</b> via MS-type connector,		
Output power 100W			<b>FSK</b> multiplexed on TX IFL.		
$P_{sat}$ (typ)	+50 dBm		<b>Environmental</b>		
$P_{lin}$ (min)	+47 dBm		Operating temperature	-40°C to +55°C	
$P_{lin}$ is the maximum linear power as defined by MIL STD 188-164B			Relative humidity	100% condensing	
Level stability with ALC	±0.5 dB		Altitude	10,000 ft., (3,000 m) ASL	
Output power detector range	Rated power to -20 dB		<b>Mechanical</b>		
Power reading accuracy	± 1.0 dB max.		Size	10.5 x 6 x 6.1 in. (not including isolator)	
Spurious @ $P_{lin}$				267 x 152 x 155 mm	
In Band	-65 dBc		Weight	13.5 lbs, 6.1 kg	
Out of Band	Complies with MIL-STD 188-164B				
Harmonics @ $P_{lin}$	-60 dBc max.				
Output Noise Power Density					
TX	< -77 dBm/Hz				
RX	< -77 dBm/Hz without receive reject filter				

Specifications are subject to change without notice.

IBUC 2G 100W X-Band Data Sheet 2/29/16



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