

# GLOBAL SATELLITE

leading provider of  
satellite communication  
solutions



## GL-KU20W-FL

the Fan-less 20W Ku-Band BUC is a high-performance Block Upconverter engineered for satellite communication applications.

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## Product Overview:

The GL-KU20W-FL is a high-performance Block Upconverter engineered for satellite communication applications. This compact and robust device ensures reliable and efficient transmission of signals in Ku-Band frequencies without the need for active cooling, making it ideal for various deployment scenarios.



# GL-KU20W- FL

**THE WORLD'S SMALLEST GL-KU20W-FL**

## FEATURES:

- **Hyper-Light Package Design Only 4.2lbs (1.9kg)**
- **Extreme Stability, Reliability and Performance**
- **Built-in HPA Overdrive Circuit Protection**
- **Built-in Optimized Linearization**
- **Built-in Receive Band Reject Filter**
- **Built-in Anti Vibration Technology**
- **Built-in DC Input Noise Suppression Filter**
- **Extreme GaN Linearity and Efficiency**
  - **Exceeds ALL IESS-308/309 Phase Noise Standards**
- **Triple protection sealed waveguide output**
- **Fan-less Design**
- **Fully Assembled and Rigorously Tested in the USA**
- **3 Year Warranty**

## DESIGN OVERVIEW:

The "FANLESS BRICK" series Extended (13.75 - 14.5GHz), Standard (14.0 - 14.5GHz) and Dual (13.75 - 14.5GHz | 14.0 - 14.5GHz) Frequency 20W Ku-Band BUCs are the next generation of the World's Smallest feed-horn & boom-arm mountable BUCs in the industry, weighing-in only at 4.2lbs (1.9kg) and working at high temp up to 60°C.

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## PERFORMANCE SPECIFICATIONS:

<b>Operating RF Frequency</b>	AFKS 14.0 - 14.5 GHz
	AFKU 13.75 -14.5GHz
	AFKD 13.75 -14.5   14.0 - 14.5 GHz
<b>Operating IF frequency</b>	950 to 1450 MHz   950 - 1700 MHz
<b>Local Oscillator</b>	11.80 GHz   13.05 GHz   12.80 GHz
<b>Rated Output Power PSAT</b>	20W 43.0 dBm
<b>Linear Power SR @ -26dBc PLIN</b>	16W 42.0 dBm
<b>IMD3 (two tones) 3dB Back Off</b>	-25 dBc max. 2 signal 5MHz apart at P-LINEAR
<b>Spectral Regrowth at PLINEAR</b> (QPSK at 1.5x and OQPSK at 1.0x symbol rate offset with 2dB back-off from rated power)	-30 dBc
<b>10MHz External Ref. (Internal High Stability Optional)</b>	10MHz Ref. Level: 0dBm +/- 5dBm Internal Ref. Stability +/- 0.1 ppm

## PROTECTION

VOLTAGE	OVERTEMP	VSWR
SMART ALARMS IN THE M&C	MICROPHONIC	CURRENT

## SPURIOUS & PHASE NOISE

<b>In-Band/Out-band Spurious</b>	-60dBc max.	
<b>Group Delay</b>	Ripple 1 nsec point to point max.	
<b>AM/PM Conversion</b>	1.0*/dB max. at 3 dB output backoff	
<b>Noise Power Density (TX)</b>	-85dBm/Hz	
<b>Noise Power Density (RX)</b>	-155dBm/Hz (10.95 - 12.75 GHz)	
<b>Phase Noise (Up Converter) (Ext. Ref.)</b>	-55 dBc/Hz @ 10 Hz	-115dBc/Hz
	-65 dBc/Hz @ 100 Hz	-135dBc/Hz
	-75 dBc/Hz @ 1 kHz	-150dBc/Hz
	-85 dBc/Hz @ 10 kHz	-155dBc/Hz
	-95 dBc/Hz @ 100 kHz	-160dBc/Hz

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## POWER CONSUMPTION

20W 43.0 dBm PSAT	95W
16W 42.0 dBm PLIN	75W

## COMPLIANCE INFORMATION

MIL - STD - 188/164C	MIL - STD - 461	ROHS, REACH, WEEE
MIL - STD - 810E	DO - 160 G	

## ENVIRONMENT SPECIFICATIONS

Environmental MIL-STD	Compliant with MIL-STD810E
Vibration MIL-STD	MIL-STD810F, Method 514.5 C-2 Transport
Operating Temperature Range	- 40° C to + 60° C
Storage Temperature Range	- 60° C to + 85° C
Humidity	100% Condensing, IP67 Rated
Shock	20 g peak, 11 msec, 1/2 sine
Altitude	21,500ft, 6,500m

## INPUT|OUTPUT INTERFACE

IF Connector	N-type (50 Ohm)   F-type (75 Ohm)
Universal Prime Power via IF or MS/M&C Connector (7.0 A Current Limit Protection Through Coax)	+ 18 - 55 VDC
Output VSWR	1.3:1
Output Interface	WR75 Sealed & Grooved
Input VSWR	1.5:1
10MHz External Ref. (Internal High Stability +/- 0.1ppm Option Available)	10MHz Ref. Level: 0dBm +/- 5dBm Internal Ref. Stability +/- 0.1 ppm



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## M&C INTERFACE

Advanced Monitor & Control	Ethernet Web Page Based, SNMP, RS232/485, FSK (opt.)
ALARMS	PLL LOCK, HPA, VSWR, MUTE, TX
Stealth PLin Operation Mode	LED Shut-Off   Silenced fans

## MECHANICAL SPECIFICATIONS

Dimensions (DC Powered)	6.54" x 4.72" x 3.10" (166x120x79 mm) Without Connectors
Weight (DC Powered)	4.2lbs (1.9kg )

## GAIN

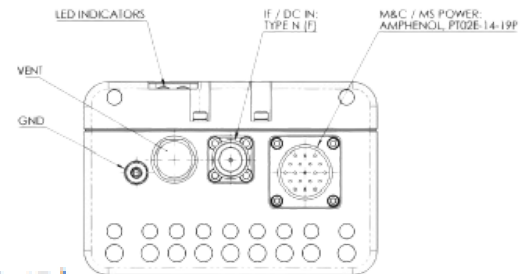
Gain (Temperature Compensated)	64dB(min) 68 dB(typ.)
TX Gain Flatness	± 0.75 dB max. over 40 MHz
TX Gain variation 50MHz	± 0.5 dB
TX Gain variation 500MHz	± 1.5 dB
Built-in Receive Reject Filter	Suppression by +50dB (min)

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## PART NUMBERING SYSTEM

- AF - "FAN-LESS BRICK" MODEL SERIES
- KU - Universal Ku-Band 13.75 - 14.50 GHz
- KS - Standard Ku-Band 14.0 - 14.50 GHz
- KL - Low Ku-Band 12.75 - 13.25 GHz
- KD - Dual Ku-Band 13.75 - 14.50 GHz | 14.0 - 14.50 GHz
- 16 | 20 Rated Power in Watts
- N | F - 50 Ohm or 75 Ohm IF Input Connector Type
- M - Full M&C Option RS232/485, SNMP, Ethernet
- R - 10 MHz Ref. Auto Sense | Internal Reference
- K - FSK Option
- U - Universal Mounting Bracket
- J - Weatherproof DC/RJ45 Cable Dongle
- C xxxx - Custom RAL Color Code
- L - Custom Language
- P - Custom Part number
- B - Custom Label
- G - Custom Logo
- T - Redundancy Ready
- H - High Gain (+79dB - 82dB)
- W - Weatherproof Pelican Style Case
- O - Other Custom Option
- X- Custom Cable



WR75 SEALED WAVEGUIDE OUTPUT

