Product Brochure

Microstream 20W / 40W Ka Wideband Block Upconverter

WBAK-020G01 / WBAK-040G01

Field-Proven Performance

Wavestream's Microstream 20W and 40W Ka Wideband GaN Block Upconverters (BUC) lead the Industry in linear power for a feedmount-ready package, ensuring the maximum available power at the feed flange.

These amplifiers provides the ability to cover multiple frequency bands with a switchable upconverter in an Industry-leading small, rugged, outdoor package. The Ka Wideband BUC offers 30 dB of step attenuation, discrete lines for Monitor and Control, and DC input power.

Features

- 40W Ka-band BUC providing >20W of linear power
- 20W Ka-band BUC providing >10W of linear power
- State of the art GaN Technology
- Ruggedized package weighing less than 2 lb (0.9 kg)
- Covers Commercial and Military Bands in 1000 MHz bands
- Designed for Embedded Applications

Wavestream Advantages

What sets Wavestream products apart from traditional amplifier solutions is the innovative Spatial advantEdge™ technology. This unique patented technology allows for generation of higher output power in more efficient, and more compact product packages that are more reliable. Wavestream products are optimized for Linear operation, drawing less power when backed off to help save valuable energy resources. They generate less heat, and have superior heat sinking ensuring a higher Mean Time Between Failures (MTBF) for greater reliability and lower lifecycle maintenance costs.

Benefits

- Higher output power with less energy usage
- Proven reliability and efficiency
- Reduced lifecycle maintenance costs
- Compact footprint to meet critical space and weight limitations

20W / 40W Ka Wideband Microstream BUC

Technical Specifications

RF Specifications	20W BUC	40W BUC
Saturated Output Power:	+43 dBm (nominal)	+46 dBm (nominal)
Linear Output Power - (Band 1,2, and 3):		
- Spectral Regrowth DVB-S2 waveform using 8PSK, symbol rate 5.0MSymb/sec with roll off of 25% @1.5 times the symbol rate: -25 dBc	> +40.0 dBm	> +43.0 dBm
Linear Output Power (Band 4), defined by MIL-STD-188-164:		
- Spectral Regrowth (For QPSK at 1.5x and OQPSK at 1.0x rate offset at 3 dB back-off from Saturated Output Power): -30 dBc	> +40.0 dBm	> +43.0 dBm
- Third Order Intermodulation: -30 dBc	> +40.0 dBm	> +43.0 dBm
AM/PM Conversion: (2 deg/dB)	> +40.0 dBm	> +43.0 dBm

RF Specifications

Transmit Frequency:
Band 1: 27.5 GHz - 28.5 GHz
Band 2: 28.25 GHz - 29.25 GHz
Band 3: 29.0 GHz - 30.0 GHz
Band 4: 30.0 GHz - 31.0 GHz
IF Frequency:
Band 1: 950 MHz - 1950 MHz
Band 2: 950 MHz - 1950 MHz
Band 3: 1000 MHz - 2000 MHz
Band 4: 1000 MHz - 2000 MHz
LO Frequency:
Band 1: 26.55 GHz
Band 2: 27.3 GHz
Band 3: 28.0 GHz
Band 4: 29.0 GHz
Frequency Reference (100 MHz on IF):
+2.5 to +5.5 dBm
Small Signal Gain:
62 dB
Gain Adjustment:
30 dB in 0.25 dB steps nominal

Gain Variation:
- Over frequency at fixed temp: 3.5 dB p-p over 1000 MHz
- Over temp at fixed frequency: 2 dB p-p over operating range

Phase Noise:
- 10 Hz: -33 dBc/Hz
- 100 Hz: -62 dBc/Hz
- 1 kHz: -73 dBc/Hz
- 10 kHz: -83 dBc/Hz
- 100 kHz: -95 dBc/Hz
- 1 MHz: -105 dBc/Hz
- 10 MHz: -112 dBc/Hz

Noise Power Density Transmit:
-83 dBm/Hz (maximum)
Noise Power Density Receive:
-130 dBm/Hz (maximum)
Output Spurious: -60 dBc

Power

DC Power:
+4.0 to 4.5 VDC, 1.5A max
-5.8 to -5.4 VDC, 200mA max
+6.8 to 7.2 VDC, 4A max
20W: +22.8 to 25.2 VDC, 5A max
40W: +22.8 to 25.2 VDC, 10A max

Interfaces

IF Input Connector:
SMA Female
IF Input Impedance: 50 Ohms
IF Input VSWR:
2:1 maximum
RF Output Connector: WR-28
RF Output VSWR:
1.5:1 maximum
DC Connector and M&C Connector:
37 Pin Male DC Connector
D-SUB (DCMM-37P-D-K87)
M&C Protocol:
Discrete Lines

Physical

Size: 5.21"L x 4.62"W x 1.56"H (13.3 x 11.8 x 4.0 cm)
Weight: 2.0 lbs (0.9 kg)
Operating Temperature (Ambient Air) :
-40°F to +140°F
(-40°C to +60°C)
NOTE: Unit needs customer furnished heatsink to meet this specification.
Relative Humidity:
100% Condensing
Shock & Vibration:
MIL-STD-810E, method 514-4
Altitude:
10,000 ft above sea level (operating)

Base Model

20W: WBAK-020G01
40W: WBAK-040G01

About Gilat Wavestream

Gilat Wavestream sets the standard in the design and manufacture of next generation high power solid state amplifiers. Wavestream's Family of Ka, Ku and X-band Solid State Power Amplifiers (SSPAs), Block Upconverters (BUCs) and transceivers provide systems integrators with field-proven, high performance solutions designed for ground mobile and fixed, gateway and airborne satellite communication systems worldwide.

These items are subject to the Export Administration Regulations (EAR), 15 C.F.R. Parts 730-774, and may not be exported or transferred to any non-U.S. person, except as authorized by the U. S. Department of Commerce.

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