Gilat Wavestream

Product Brochure

Terrastream™ 40W / 80W Ka-Wideband Block Upconverter

WBAK-040G01 / WBAK-080G01

Field-Proven Performance

Wavestream's Terrastream™ 40W/80W Ka-Wideband Deck Block Up-Converter (BUC) is the next generation of the world's most widely deployed solid state amplifier built at this power level. Gilat enables a full 20 or 40W Watts of linear power into the feed with a rugged unit that can be mounted directly onto the feed arm of medium aperture antennas.

The Terrastream™ 40W/80W Ka-Wideband Deck BUC is designed to operate in the most extreme environments, and offers field-proven reliability to support the most demanding satellite communications applications. The Terrastream™ 40W/80W Ka-Wideband Deck BUC includes L-band to Ka-band upconversion, serial / Ethernet monitor and control, adjustable attenuation and forward and reverse output power monitoring.

Weighing just 13.2 pounds, this compact unit provides the same power as its previous generation but with 52% less volume and a 60% reduction in weight.

Features

- 20W/40W Linear Power for Higher Data Rate Capability
- Rugged; Mounts on Feed for Simple Integration
- High Reliability
- Supports Multiple Commercial Ka Bands
- 52% decrease in volume
- 60% decrease in weight

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

- Operates on GEO, MEO, and LEO Ka-Band Satellites
- Field proven reliability and efficiency
- Higher output power with less energy usage
- Reduced life cycle maintenance costs

Terrastream™ 40W/80W Ka-Wideband BUC

Technical Specifications

RF Specifications	40W BUC	80W BUC
Saturated Output Power:	+46 dBm (nominal)	+49 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	> +43.0 dBm (20W)	> +46.0 dBm (40W)
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	> +43.0 dBm (20W)	> +46.0 dBm (40W)
- Third Order Intermodulation: -30 dBc	> +43.0 dBm (20W)	> +46.0 dBm (40W)
AM/PM Conversion: (2 deg/dB)	> +43.0 dBm (20W)	> +46.0 dBm (40W)

RF Specifications

Transmit Frequency:
27.5-28.5 GHz
28.25-29.25 GHz
29.0 GHz-30.0 GHz
IF Frequency:
950 MHz - 1950 MHz
Frequency Reference (10 MHz on IF): 0 dBm ± 5 dB
Small Signal Gain:
62.5 dB ± 2.5 dB (nominal)
Gain Adjustment:
30 dB in 0.25 dB steps (nominal)
Gain Variation:
- Over frequency at fixed temp: 3 dB p-p (max) over 1000 MHz
- Over temp at fixed frequency: 3 dB p-p (max) over operating range

Phase Noise:
- 10 Hz: -32 dBc/Hz
- 100 Hz: -62 dBc/Hz
- 1 kHz: -72 dBc/Hz
- 10 kHz: -82 dBc/Hz
- 100 kHz: -92 dBc/Hz
- 1 MHz: -102 dBc/Hz
- 10 MHz: -112 dBc/Hz

Noise Power Density Transmit:
-75 dBm/Hz (maximum)
Noise Power Density Receive:
-156 dBm/Hz (maximum)
Output Spurious: -60 dBc

Physical

Size:
12.0" L x 7.0" W x 6.5" H
(30.5 x 17.8 x 16.5 cm)
Weight: 13.2 lbs (6 kg)
Operating Temperature (Ambient Air):
-40°F to +140°F
(-40°C to +60°C)
Relative Humidity:
100% Condensing
Shock & Vibration:
MIL-STD-810E, method 514-4
Altitude:
10,000 ft above sea level (operating)

Interfaces

IF Input Connector:
Type N Female
IF Input Impedance: 50 Ohms
IF Input VSWR:
1.67:1 maximum
RF Output Connector:
WR-28
RF Output VSWR:
1.25:1 maximum

DC Connector:
ITT Cannon
CIR030FP-20A-9P-F80-20
M&C Connector:
Amphenol RJF21B
M&C Protocol:
Serial RS-485 (SA-bus)
or Ethernet (SNMP)

Power

DC Power:
20 - 56 VDC
DC Power Draw:
40W Version: 360W maximum (at Linear Output Power)
80W Version: 720W maximum (at Linear Output Power)

Base Model

40W: WBAK-040G01
80W: WBAK-080G01

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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