

Powerstream™ 400/250/160W Ka-Wideband Amplifier

WAAK-400/250/160 / WBAK-400/250/160

Field-Proven Performance

Gilat Wavestream's Powerstream™ 400/250/160W Ka SSPA Amplifier leads the industry in linear power for a feedmount-ready package, ensuring the maximum available power at the feed flange for multiple carrier inputs.

This amplifier has an industry-leading small, rugged, outdoor package. The Ka SSPA Amplifier offers forward power monitoring, 30 dB of hitless step attenuation, serial RS-232, RS-485, or Ethernet control interface, and AC input power.

Features

- State of the art Solid State GaN Technology
- 400W Ka band Amp providing > 200W multicarrier linear power
- Ruggedized package weighing less than 55 lbs (25 kg)
- Covers the Commercial and Military Ka Band
- Optional Upconverter available
- Optional DIFI™-Compliant Digital Interface

Wavestream Advantages

What sets Gilat Wavestream's products apart from traditional amplifier solutions is the innovative Spatial advantEdge™ technology. This unique patented technology allows generation of higher output power in lighter, more compact product packages that use less energy and are more reliable.

Gilat 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



Powerstream™ 400W/250W/160W Ka Wideband Amplifier

Technical Specifications

RF Specifications

Peak Envelope Power (PEP):

Linear Output Power, per (MIL-STD-188-164C):

Linear Output Power, per -20 dB NPR:

AM/PM Conversion (up to PEP - 3 dB):

400W BUC

+56.0 dBm

(nominal)

> +53.0 dBm (200W)

> +52.2 dBm (165W)

< 1.75 deg/dB

250W BUC

+54.0 dBm

(nominal)

> +51.0 dBm (125W)

> +50.2 dBm (105W)

< 1.75 deg/dB

160W BUC

+52.0 dBm

(nominal)

> +49.0 dBm (80W)

> +48.2 dBm (65W)

< 1.75 deg/dB

RF Specifications

RF Output Frequency:

27.5 GHz – 31.0 GHz

RF Input Frequency:

27.5 GHz – 31.0 GHz

IF Input Frequency (with optional upconverter):

950 – 2000 MHz

Phase Noise (with optional upconverter):

– 10 Hz: –35 dBc/Hz

– 100 Hz: –65 dBc/Hz

– 1 kHz: –75 dBc/Hz

– 10 kHz: –85 dBc/Hz

– 100 kHz: –97 dBc/Hz

– 1 MHz: –115 dBc/Hz

– 10 MHz: –120 dBc/Hz

DIFI™-Compliant Digital Interface Options:

10 GigE Copper (10 GBase-t)

10/100 GigE Fiber

Small Signal Gain:

70 dB (Nominal)

Custom gain settings available.

Contact Factory.

Gain Adjustment:

30 dB in 0.1 dB linear steps

(nominal)

Gain Variation:

– Over any 1 GHz band at fixed temp: <3.0 dBp-p

– Over any 120 MHz band at fixed temp: <1.3 dBp-p

– Over any 10 MHz band at fixed temp: <0.40 dBp-p

– Over temp and fixed frequency: 2.5 dBp-p

Noise Power Density

In Tx Band:

–88 dBW/4kHz

(at Linear Output Power)

All Output Spurious and

Products: < 60 dBc

Physical

Envelope Size:

22.0"L x 11.0"W x 9.5"H

(55.9 x 28.0 W x 24.1 H cm)

Weight:

<55.1 lbs (25 kg)

Operating Temperature

(Ambient Air):

–40°C to + 60°C

(–40°F to + 140°F)

Relative Humidity:

Up to 100%

Shock & Vibration:

IEC 60068-2

Altitude:

10,000 ft above sea level

(operating)

Power

AC Power: 90 to 265 VAC

AC Input Power Draw (typ.) at PEP – 3dB:

WAAK/WBAK-400G02: 2000 W

WAAK/WBAK-250G02: 1250 W

WAAK/WBAK-160G02: 800 W

AC Power Factor:

0.95 typical

(meets EN61000-3-2)

Interfaces

Analog IF/RF Input:

WR-34 (optional: WR-28 or

K-Type (2.92mm) Female

IF/RF Input VSWR (Analog Input): 1.5:1

Digital IF Input (optional):

DIFI™: RJ-45 or optical fiber

RF Output Connector:

WR-34 (WR-28 Optional)

RF Output VSWR:

3:1 maximum

AC Connector and M&C

Connector:

MIL Circular

M&C Protocol: Serial RS-485/

RS-232 (SA-bus) or Ethernet

(Software field upgradeable w/ Ethernet)

M&C Protocol Ethernet:

TCP/UDP/SNMP v3/WebGUI

Options

Upconverter

Input Interfaces (WR-28 or Coax)

DIFI Interfaces

WR-28 Output Waveguide

Base Model

400W: WAAK/WBAK-400G02

250W: WAAK/WBAK-250G02

160W: WAAK/WBAK-160G02

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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