



Product Brochure

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

WAAK-400/250/160

Field-Proven Performance

Gilat Wavestream's PowerStream 400/250/160W Ka Wideband Solid State Amplifier (SSPA) 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 Wideband SSPA has the ability to cover multiple frequency bands simultaneously in an industry-leading small, rugged, outdoor package. The Ka Wideband 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 GaN Technology
- 400W Ka-band Amp providing > 200W multicarrier linear power
- Ruggedized package weighing less than 55 lbs (25 kg)
- Covers All Commercial and Military Ka Frequency Bands
- Drop-In Replacement for Existing TWTAs

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



Powerstream 400W Ka-Wideband Amplifier

Technical Specifications

RF Specifications

RF Output Frequency:

27.5 GHz – 31.0 GHz

RF Input Frequency:

27.5 GHz – 31.0 GHz

Wavestream can design to customer specific frequency plans with an optional Upconverter

DIFI-Compliant Digital Interface Options:

10 GigE Copper (10 GBase-t)

10/100 GigE Fiber

Peak Envelope Power:

WAAK-400G01: 56 dBm (400 W)

WAAK-250G01: 54 dBm (250 W)

WAAK-160G01: 52 dBm (160 W)

Linear Output Power:

(per MIL-STD-188-164C)

WAAK-400G01: 53 dBm (200 W)

WAAK-250G01: 51 dBm (125 W)

WAAK-160G01: 49 dBm (80 W)

AM/PM Conversion:

AM/PM Conversion:

<1.75 degree/dB up to Linear

Power

Small Signal Gain:

70 dB (Nominal)

Wavestream can designed

to customer-specific gain

requirements

Gain Adjustment:

30 dB in 0.1 dB linear steps

(nominal)

Gain Variation:

- Over any 1 GHz band at fixed

temp: <2.5 dB

-Over any 60 MHz band at fixed

temp: <0.80 dB

- Over temp and fixed frequency:

2.5 dBp-p

Phase Noise (with optional upconverter):

• 10 Hz: -50 dBc/Hz

• 100 Hz: -80 dBc/Hz

• 1 kHz: -90 dBc/Hz

• 10 kHz: -100 dBc/Hz

• 100 kHz: -110 dBc/Hz

• 1 MHz: -120 dBc/Hz

• 10 MHz: -130 dBc/Hz

Noise Power Density

In Tx Band:

-88 dBW/4kHz

(at Linear Output Power)

All Output Spurious and

Products: < 60 dBc

Interfaces

Input Connector:

Analog Input: K-Type (2.92mm)

Female (50 Ohms)

Optional - DIFI Input: RJ-45 or

optical fiber

IF Input Impedance (Analog

Input): 50 Ohms

IF Input VSWR (Analog Input):

1.5:1

RF Output Connector:

WR-28

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/WebGUI

Physical

Envelope Size:

22.0" L x 10.25" W x 9.5" H

(55.9 x 26.0 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.):

WAAK-400G01: 2 kW

WAAK-250G01: 1.25 kW

WAAK-160G01: 800 W

AC Power Factor: 0.95 typical

(meets EN61000-3-2)

Base Model

WAAK-400G01: (400 W)

WAAK-250G01: (250 W)

WAAK-160G01: (160 W)

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.

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