

40W Ku-Band Aerostream™ Transceiver

WTUE-040A01

Field-Proven Performance

Gilat's AeroStream™ Transceiver offers unmatched efficiency and performance for the challenging airborne environment. AeroStream™ products meet the requirements of RTCA/DO-160G, for commercial aircraft as well as MIL-STD requirements for military aircraft. AeroStream™ incorporates Gilat's next generation Spatial Power Advantage™ technology to provide high power output with greater efficiency and reliability for airborne satellite communications system applications.

Features

- Airborne Qualified for Commercial and Military Applications
- Designed for inside the aircraft installations
- Transceiver Available in 40W Transmit Output and Full Ku-band Receive
- Designed for backward compatibility with heritage modems.
- Supports next generation modems utilizing high performance references.

Gilat Advantages

What sets Gilat 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 biased for Class AB operation, drawing less power when backed off to help save valuable energy resources. They generate less heat, ensuring a higher Mean Time Between Failures (MTBF) for greater reliability and lower lifecycle maintenance costs.

Benefits

- Higher output power with less energy usage
- Industry leading reliability with field proven 30,000+ hours of MTBF
- Qualified for both line-fit and retrofit installations
- Compact footprint to meet critical space and weight limitations



40W Ku-Band Aerostream™ Transceiver

Technical Specifications

RF Specifications

Transmit Frequency:

13.75 GHz – 14.5 GHz

IF Frequency:

950 MHz – 1700 MHz (Extended)

IF Input VSWR:

1.5:1

Small Signal Gain:

52 dB (nominal)

Gain Adjustment:

20 dB

Gain Variation:

–Over frequency at fixed temp:

4 dB p-p over full band

–Over temp at fixed frequency:

6 dB p-p over operating range

Saturated Output Power (P1dB):

46 dBm

Linear Output Power, defined as:

–Intermodulation (Third order intermodulation product relative

to combined power of two

carriers at 3 dB total power back

off from Saturated Output

Power): –25 dBc

–Spectral Regrowth (For QPSK at

1.5x and OQPSK at 1.0x rate offset

at 2 dB back-off from Saturated

Output Power):

–30 dBc

AM/PM Conversion:

(up to Linear Output Power): 2

deg/dB

RF Output VSWR:

2:1

Phase Noise:

– 1 kHz: –69 dBc/Hz

– 10 kHz: –69 dBc/Hz

– 100 kHz: –90 dBc/Hz

– 1 MHz: –100 dBc/Hz

– 10 MHz: –122 dBc/Hz

Noise Power Density Transmit:

–69 dBW/4 kHz

Noise Power Density Receive:

–60 dBm/MHz (maximum)

Output Spurious:

–60 dBc

Interfaces

Input Power: 3-pin MIL Circular

Ethernet: 4-pin MIL Circular

ACU Discrete: 6-pin MIL Circular

TX IF: TNC

RX IF: TNC

Reference Output: TNC

TX Output: WR-62 Waveguide,

Type N (Optional)

RX Input: Type N

M & C Protocol: Ethernet

Power

AC Power: 115 AC; 360–800 Hz

AC Power Draw (at Rated

Output Power):

350W (nominal)

AC Power (at 3dB back-off

from Rated Output Power):

245W

Receive Specification

Receive Frequency:

Band A: 10.7 GHz – 11.7 GHz

Band B: 11.7 GHz – 12.75 GHz

IF Frequency:

950 – 2000 MHz

Small Signal Gain:

20 dB (nominal)

Gain Variation:

Over frequency at fixed temp:

3 dB p-p over full band

Over temp at fixed frequency:

2.4 dB p-p over

operating range

Intermodulation Products

(Third Order Intercept):

0 dBm (minimum)

Noise Figure: 13.5 dB (max)

Image Rejection:

40 dB (minimum)

Group Delay (linear):

± 1 ns over 36 MHz

Output Spurious:

–88 dBm (maximum) in band

–84 dBm (maximum) out

of band

Phase Noise:

– 10 Hz: –30 dBc/Hz

– 100 Hz: –56 dBc/Hz

– 1 kHz: –72 dBc/Hz

– 10 kHz: –80 dBc/Hz

– 100 kHz: –90 dBc/Hz

– 1 MHz: –120 dBc/Hz

– 10 MHz: –120 dBc/Hz

Physical

Size: 17.75" L x 13.6" W x 2.6" H (45 x 34.5 x 6.6 cm)

Weight: 21 lbs (9.5 kg)

Operating Temperature

(Ambient Air):

5°F to +131°F

(15°C to +55°C)

Relative Humidity:

100% Condensing

Shock & Vibration:

D6–36440, DO–160G, ABD 513,

MIL-STD–810

Altitude:

35,000 ft above sea level

(operating)

Frequency Reference

10 MHz Internal Reference

Accuracy: 0.03 PPM at 25° C

Stability: 0.03 PPM first year, 0.12

PPM over 20 years

Output Level: ± 7 dBm

(nominal)

10 MHz or 50 MHz External

Reference (Switchable)

Base Model

WTUE–040A01

*Requires selection of appropriate IDU part number

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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