Product Brochure

BlackRay Parabolic

SATCOM Systems for Large UAS

Airborne SATCOM for UAS

Tactical unmanned aircraft systems (UAS) are often capable of long endurance flights while carrying significant payload weight. Satellite communications fully leverage tactical UAS capabilities, supporting on-board intelligence, surveillance and reconnaissance (ISR) missions beyond line of sight (BLoS).

Gilat's BlackRay Parabolic UAS terminal utilizes commercial, geostationary satellite capacity to provide full-duplex satellite communication, linking the UAS to its ground control station. The forward link provides command and control capabilities, while the return link transfers sensor data. The terminal incorporates 3-axis gimbals eliminating keyhole effect when operating near the equator.

High-throughput Data BLoS

Gilat's BlackRay Parabolic terminal is a compact, lightweight, airborne SATCOM terminal. It comprises best-of-breed technologies, all developed and manufactured by Gilat, which can be tailored to the customer's needs.

BlackRay Parabolic enables high-throughput communication for medium to large UASs.

Main subassemblies are:

- Parabolic carbon fiber pointing antenna
- Power-efficient BUC/SSPA

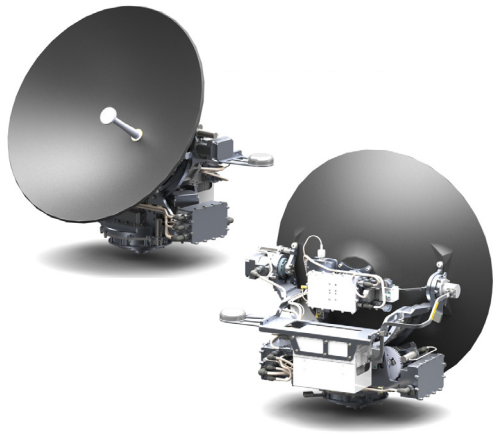
This system is ideally suited for high throughput BLoS applications. The high performance antenna provides efficient spectrum communications and transmission. The terminal can operate with MLT1000/ SkyEdge VSAT system or any 3rd party OpenAMIP certified modem.

Affordable, Customized Solutions

All critical technology building blocks are developed, manufactured, and integrated by Gilat, enabling high end-to-end performance and design flexibility. The antenna and modem may be installed as a unified unit or as separate components. Customized solutions are designed to customer specifications in short design cycles and at affordable prices.

Benefits

- Affordable satellite communications for UAS sensor data
- Enables BLoS operation
- High throughput
- Bandwidth efficient operation
- Built-in antenna controller
- Ruggedized, lightweight terminal
- Ku- and Ka-band operation
- OpenAMIP Protocol



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Technical Specifications

Elevation:
0–90 deg.
Azimuth:
360 deg. continuous
Pointing Accuracy:
0.2 deg.

Size

Dimensions:
Dimensions include default BUC excluding modem
Sweep Volume:
Height: 67.6 cm
Max. Diameter: 75.3 cm
Weight:
Antenna with BUC:
Ku Band: 22.4 kg (60W)
23.8 kg with the new WS BUC
Ka Band: 23 kg (40W)

Environmental

Temperature:
-40C to +60C deg.
Vibrations: Mil Std 810F

Power & Interface

Voltage:
22–32VDC
Power:
Ku Default BUC: 60W
Ka Default BUC: 40W
Consumption:
KU (60W) 360W nom.
KA (40W) 300W nom.
RF:
Receive: L-band 950–2150MHz
Transmit: L-band 950–2150MHz
OpenAmip Protocol

General Specifications

	Antenna Size	Frequencies Tx	Frequencies Rx	Polarization	EIRP	G/T
BRP60Ku	60cm	13.75–14.5 GHz	10.70–12.75 GHz	Linear	52.7 dBW (60W BUC)	14 dB/K (mid-band)
BRP60Ka	60cm	27.5 – 31GHz	17.7 – 21.2 GHz	Circular	57dBW (40W BUC)	15.8 dB/K (mid-band)

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