

Dual-band ADSB Receiver

Specification and Installation Instructions

Rev1.0

May 2026

Models

- ADSB-01



Note: ADSB-01 is non-TSO certified part.

Credits

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Revision History

Below is the document's revision history.

Revision #	Revision Date	Comments
Rev 1.0	May 12, 2026	Initial Release of this document

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1. Introduction

The 360 Avionics ADSB-01 is a compact dual-band ADS-B receiver designed specifically for experimental and homebuilt aircraft. The unit simultaneously receives both 978 MHz UAT and 1090 MHz ADS-B traffic and weather data, providing pilots with real-time situational awareness directly on compatible EFIS systems and mobile applications. Designed as a permanently installed aviation device, the ADSB-01 combines dedicated high-performance RF receiver hardware, advanced signal processing, and reliable aviation-grade design into a lightweight and easy-to-install package. The receiver supports wireless Wi-Fi connectivity and industry-standard GDL90 data output over both Wi-Fi and RS232, allowing seamless integration with 360 Avionics EFIS systems as well as many third-party avionics and flight applications. By combining traffic, FIS-B weather, METARs, TAFs, radar imagery, NOTAMs, and other uplink weather products into a single integrated receiver, the ADSB-01 significantly enhances pilot awareness and overall flight safety.

2. General Description

The 360 Avionics ADSB-01 is an integrated dual-band ADS-B receiver intended for use in experimental aircraft. The unit continuously monitors both 978 MHz UAT and 1090 MHz ADS-B frequencies to receive nearby traffic broadcasts and FIS-B weather information in real time. Received data is decoded internally and transmitted using the GDL90 protocol through RS232 serial ports and built-in Wi-Fi connectivity for compatibility with EFIS displays, tablets, and aviation applications. The ADSB-01 is designed for reliable operation in demanding aviation environments and features dedicated RF front-end circuitry optimized for maximum reception performance and stability. The compact module operates directly from the aircraft electrical system and provides a simple, lightweight, and maintenance-free solution for ADS-B traffic and weather reception.

3. Technical Specifications

Description	VICS Module
Input voltage	+10 to +28 Volts
Power consumption	Typical 3–5 W, peak approximately 6 W
ADS-B Bands	978 MHz (UAT) and 1090 MHz (Mode S / ADS-B ES)
Receiver Sensitivity	1090 and 978 MHz: better than -95 dBm
Dynamic Range	Greater than 60 dB
Connectivity	CAN bus, Wi-Fi, RS-232
Data Output	Simultaneous GDL90 streaming over Wi-Fi and RS-232
Operating Temperature	-20°C to +70°C
Operation Humidity	25% to 90% non-condensing
Cooling	Passive cooling, no fans
Installation Type	Permanent aircraft installation

4. General functionality and Installation description

The ADSB-01 Receiver is designed as a permanently installed dual-band ADS-B traffic and weather receiver for experimental and homebuilt aircraft. The unit connects directly to the aircraft electrical system and continuously monitors both 978 MHz UAT and 1090 MHz ADS-B frequencies simultaneously. Received traffic and weather data are internally decoded and transmitted through CAN bus, RS-232 serial output, and integrated Wi-Fi connectivity using the industry-standard GDL90 protocol.

When connected to a compatible ELM EFIS system, the ADSB-01 provides real-time traffic display, weather products, and wireless communication with supported mobile applications. The integrated Wi-Fi interface allows multiple simultaneous device connections for tablets, smartphones, and compatible avionics applications. The receiver is intended strictly as an ADS-B IN device for traffic and weather awareness and does not transmit ADS-B OUT data.

The ADSB-01 is designed for simple remote installation inside the cockpit or behind the instrument panel. The module should be securely mounted in a dry location protected from excessive heat, moisture, vibration, and direct exposure to fluids. Adequate ventilation and wiring clearance should be provided during installation. The receiver operates directly from the aircraft electrical system and should be connected through an appropriately rated aircraft circuit breaker or fuse in accordance with standard aircraft wiring practices.

For optimal reception performance, proper installation and positioning of the 978 MHz and 1090 MHz antennas are important. Antennas should be installed with adequate separation from high-power RF transmitters and other potential interference sources whenever possible. All wiring should be properly secured and routed in accordance with accepted aircraft installation practices. The ADSB-01 contains no user-serviceable internal components and requires no routine maintenance during normal operation.

4.1 Connections

All electrical connections to the ADSB-01 Receiver are made through a single D-SUB connector located on the side of the unit. This connector provides all required power, communication, and interface connections including aircraft power input, CAN bus, RS-232 serial communication, and additional interface signals. To interface the ADSB-01 with the aircraft wiring harness, the appropriate mating D-SUB connector must be used on the aircraft side. Ensure the connector is properly assembled, strain-relieved, and securely fastened to provide reliable electrical contact and long-term operation in the aircraft environment. Detailed connector pinout information is provided in the following section.

The ADSB-01 Receiver also includes two SMA female RF antenna connectors located on the side of the unit. One SMA connector located in the center is used for the supplied Wi-Fi antenna, while the second SMA connector located on the side is used for the external ADS-B antenna covering both 978 MHz UAT and 1090 MHz ADS-B frequency bands. For best reception performance, 360 Avionics recommends the use of an external aircraft-mounted ADS-B antenna similar in style and installation to a standard transponder antenna. Proper antenna installation and placement are important to achieve maximum reception range and reliable operation.



4.2 DSUB 15-pin Main connector pinout:

- 1 – PWR IN + (Input)
- 10 – CAN Bus LOW
- 11 – CAN Bus HIGH
- 12 – RS232 RX1
- 13 – RS232 TX1
- 15 – GND Input

It is recommended to use 20–22 AWG aircraft-grade wire for all primary power and ground connections to the ADSB-01 Receiver. All wiring should use high-quality MIL-spec or equivalent aviation wire suitable for aircraft environments to ensure long-term reliability, vibration resistance, and mechanical durability. For CAN bus, RS-232, and other low-current signal connections, 22–24 AWG wire is generally acceptable.

The ADSB-01 Receiver interfaces with the aircraft electrical system, compatible ELM EFIS systems, and optional third-party avionics through the rear D-SUB connector. All wiring should be properly secured, strain-relieved, and routed in accordance with accepted aircraft wiring practices. Care should be taken to avoid routing signal wiring near high-current power cables, ignition systems, alternators, strobe power supplies, or other potential sources of electrical interference.

Aircraft power input should be connected to a properly protected avionics or main electrical bus through an appropriately rated aircraft circuit breaker or fuse. The ADSB-01 is designed to operate directly from standard aircraft electrical systems within the specified operating voltage range.

The CAN bus lines should be connected directly to the compatible ELM EFIS CAN bus network in accordance with standard CAN bus installation practices. Proper CAN bus termination and wiring topology should be maintained throughout the aircraft installation to ensure reliable communication between avionics devices.

The RS-232 serial output provides standard GDL90 traffic and weather data output for interfacing with compatible avionics systems, displays, and external devices. Depending on the installation configuration, RS-232 may be connected directly to an EFIS, external display, tablet interface device, or other compatible avionics equipment supporting GDL90 protocol input.

The ADSB antenna connector should be connected using high-quality 50-ohm coaxial cable suitable for aviation RF installations. For best performance, 360 Avionics recommends using an externally mounted aircraft ADS-B antenna similar in style and installation to a

standard transponder antenna. Proper antenna grounding and installation practices should be followed to maximize reception range and signal quality.

The supplied Wi-Fi antenna should be connected to the dedicated SMA Wi-Fi connector on the unit. The Wi-Fi antenna should not be mounted directly adjacent to high-power RF transmitters or antenna cables whenever possible.

Ensure all wiring, coaxial cables, connectors, and mounting hardware are properly secured and protected from vibration, abrasion, heat, and moisture before aircraft operation.



5. EFIS Configuration

When using the ADSB-01 Receiver with a compatible ELM EFIS system, open the EFIS Settings menu and navigate to Settings → ADSB.

Ensure that Use CAN Bus is set to Enabled. This allows the EFIS to receive all ADS-B traffic and weather data directly over the aircraft CAN bus network. When CAN bus communication is enabled, there is no need to connect the RS-232 GDL90 output from the ADSB-01 Receiver directly to an EFIS serial port.

If you plan to use tablet-based aviation applications such as ForeFlight or other compatible Electronic Flight Bag applications over Wi-Fi, ensure that the AHRS Feed option is also set to Enabled within the EFIS ADSB configuration menu. This allows the EFIS to provide AHRS attitude and flight data wirelessly to connected devices.

For normal operation, the Wi-Fi Mode setting should be configured to Unicast. This mode provides reliable communication and optimized network performance for most standard aircraft installations and connected mobile devices.

After configuration is completed, verify proper ADS-B traffic reception, weather data reception, and Wi-Fi connectivity during system startup before flight operations.

For additional EFIS setup options, advanced configuration details, and wireless application integration procedures, refer to the applicable ELM EFIS product manual.

6. Operation Limitations

- Information from airplane's POH is always supersedes information provided in this manual
- This unit is non-TSO certified and cannot be installed on the certified airplane unless special permission is obtained from regulatory agency/airplane manufacturer.

7. Warranty coverage and limitations

360 Avionics company provides the warranty for this product against defects in materials and workmanship for the duration of 24-month (2 calendar years) from the date of retail purchase of this product by end user ("Warranty Period"). If a hardware defect arises and a valid claim is received within the Warranty Period, at its option and as the sole and exclusive remedy available to Purchaser, 360 Avionics company will either (1) repair the hardware defect at no charge, using new or refurbished replacement parts, or (2) exchange the product with a product that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original product, or, at its option, if (1) or (2) is not possible (as determined by 360 Avionics company in its sole discretion), (3) refund the purchase price of the product. Prior a refund is given, the product for which the refund should be provided must be returned to 360 Avionics and becomes 360 Avionics's property.

This Limited Warranty applies only to hardware products manufactured by 360 Avionics company that have the "360 Avionics"

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12. TSO approval and Liability limitations

This product does not yet have any TSO approvals as a flight instrument. 360 Avionics company as a manufacturer of this product will not help and responsibility for any sort of damage or destruction which can be caused by use of this product to any part of airplane caused by operation of this product.

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