Margate II ADS-B Receiver

Decode ADS-B Transmissions

FIPS 140-3™

Features

- ✈ **Supports 978 MHz UAT and 1090 MHz ADS-B**
- ✈ **Front panel GPS, RF antenna input connections**
- ✈ **1U rack mountable or table-top design**
- ✈ **10/100/1000 Ethernet**
- ✈ **Optional DC Powered Unit**

The Margate II ADS-B Receiver integrates Sunhillo's ADS-B technology into a small robust form factor with versatile mounting options. The Margate II ADS-B Receiver has an internal power supply and accepts and decodes 978 MHz UAT and 1090ES ADS-B. Sunhillo's ADS-B Receiver accepts the transmission directly into the module from a front panel TNC connector for the RF antenna feed. Additionally, the unit features a fully integrated GPS receiver with a front panel SMA Connector for the GPS input. Outputs include a variety of destinations and formats including ASTERIX CAT021 and FAA CAT033 over ethernet.

The Margate II ADS-B Receiver is positioned as a stand alone compact unit or optioned to fit in our slim 1U rack mountable chassis. The new chassis is designed to fit single or dual ADS-B Receivers or a combination of a RICI and a Margate II ADS-B Receiver in a single 1U solution.

When paired with the RICI in a single 1U chassis a variety of conversions can be performed including TPS75 to SGF-IP, as well as message format transformations between surveillance data in ECGP, CD-2, ASR, various ASTERIX categories, ADS-B, MAR, TPS75, Mode 4, ARTS, SGF, AIRCAT-500, Mode S, sync, Async serial and LAN formats.

The Margate II ADS-B Receiver is built upon FAA approved and deployed Sunhillo SureLine® Software providing sensor interfacing capabilities for the FAA STARS, TAMR, ASR11, as well as the military DASR program.

An optional DC powered Margate II ADS-B Receiver is well suited for vehicle mounted applications for military and mobile operations.

ADS-B Antenna and cable options are available for seamless integration. A standard ADS-B antenna is available with a 50', 100', or 200' length cable.

Sunhillo's Margate II ADS-B Receiver currently deployed to the US Air Force, US National Guard, US Army, US Marines, the National Aviation Research and Technical Park (NARTP), and the Mid Atlantic Aviation Partnership (MAAP) FAA UAS Test Site.

FIPS 140-3 Inside (certificate # 5003) The Margate II uses Sunhillo's FIPS 140-3 certified cryptographic module to provide validated cryptography for the protection of sensitive information where encryption is used (i.e., https, ssh).

Applications:

- ✈ UAS Operations
- ✈ Military Range Operations
- ✈ Wind Farms
- ✈ Redundant ADS-B coverage of a region
- ✈ Radar Validation
- ✈ Situational Awareness

Front and Rear Panels

DC Power (p/n 010-17-ADSB-S01)

AC Power (p/n 010-13-ADSB-S01)

Technical Specifications

Part Numbers	Description
010-13-ADSB-S01	Margate II ADS-B Receiver, AC Power
010-17-ADSB-S01	Margate II ADS-B Receiver, DC Power
030-U-AAC	ADS-B Antenna with 50’ Cable
030-U-AAC01	ADS-B Antenna with 100’ Cable
030-U-AAC02	ADS-B Antenna with 200’ Cable
030-U-GAC	GPS Antenna and Cable

Ethernet
- 10BASE-T, 100BASE-T, 1000BASE-T, IEEE-802.3

ADS-B Input
- Front Panel TNC Connector for ADS-B Antenna
- 978 MHz UAT and 1090 MHz ADS-B
- DF17, DF18 1090ES ADS-B

ADS-B Output Format
- ASTERIX CAT021 (v.23,v.26, v2.1, v2.4)
- ASTERIX CAT023/033 (FAA v3)
- XML SDO

Virtual Radar Output Format
- ASTERIX CAT048 (v1.18, v1.21, 1.23)
- ASTERIX CAT001 (v1.2, v1.4)
- FAA CD2/ASR9/MAR/TPS70/ARSR4/ASR11
- RDIF, CAA, AIRCAT500, CSV

ASTERIX CAT062 Output Format
- ASTERIX CAT062 (v1.16, v1.17, v1.18)

Front Panel LED Indicators
- ADS-B, UAT, GPS, Link, Power, Active

Power
- Power usage: 10.5W per unit
- 100-240 VAC, 2.0A Max, 50-60Hz
- Optional DC Version: 22-34VDC, 1.0A Max

USB
- Maintenance Console Connection

GPS
- Front Panel SMA Connector
- Fully Integrated GPS Receiver

MTBF
- 631,520 Hours at 30°C

Optional Rackmount Sleeve Kit (P/N 010-U-RMS)
- 1U rackmount for standard 19-inch racks
- Captive fasteners allow for fast removal and replacement
- Rackmount sleeve has space for up to two ADS-B Receivers or a combination of an ADS-B Receiver and a RICI

Dimensions
Single Margate II ADS-B Receiver:
- Height: 1.61 in / 41 mm
- Width: 7.31 in / 185.68 mm
- Depth: 9.17 in / 233 mm

Populated 1U Sleeve:
- Height: 1.75 in / 44.45 mm
- Width: 17 in / 431.8 mm
- Depth: 9.25 in / 234.95 mm

Weight (unpackaged)
- Single Margate II ADS-B Receiver: 3 lbs / 1.36 kg
- Empty Sleeve: 3 lbs / 1.36 kg
- Fully Populated Sleeve: 9 lbs / 4.08 kg

Environmental (Tested to MIL-STD-810G)
- Storage Temperature: -50°C to +60°C
- Operating Temperature: 0°C to +50°C
- Operating Relative Humidity Range: 10-95%, non-condensing
- Operating Altitude: -300 ft to 10,000 ft

Certifications and Compliance
- CE & UKCA Mark
- RoHS3 Directive EU 2015/863
- REACH
- FCC Part 15, Class B
- UL/CSA/IEC/EN 62368-1
- ETL for Canada and US, 3023031
- FAA-G-2100J: Power
- FIPS 140-3 Level 1 (certificate 5003)

ADS-B Cable Guidelines (See SUN2462 Hardware Users Guide for specific details)
- Max length without amplifier: 200 feet/61 meters (only use LMR600)
- Typical length: 50–100 feet/15–30 meters (only use LMR600)
- Less than 50 feet/30 meters (use LMR240 or LMR600)