# 1090 MHz ADS-B In Receiver

Accord’s 1090 MHz ADS-B In receiver is an Automatic Dependent Surveillance – Broadcast (ADS-B) receiver unit at 1090 MHz ADS-B data-link with in-built GNSS satellite receiver best suitable for ADS-B base-station installations.

## 1090 MHz ADS-B In receiver

- Receives the transmissions from aircraft equipped with 1090 MHz ADS-B transponder and reports it through Ethernet and serial link.

## ADS-B Base Station Receiver for Strategic & Civilian Applications

### Complies with RTCA DO-260B, A1S receive standards

- In-built GPS-SBAS Receiver
- GPS-GLONASS-GAGAN-IRNSS Receiver (Optional)
- Easy software-upgrade feature without disturbing it’s installation
- Additional capability of Accepting Position, Velocity, Time from external GNSS position source
- Accepts time from external NTP server

### Completely indigenous

- Generates UTC time labelled report
- Interactive GUI for Windows based computer
- Built-In-Self Test and fault indication
- Mean Time Between Failure greater than 5000Hrs
- MIL qualification for environmental specifications
- Available in two installation-configurations
- Rugged-MIL box & Rugged 2U 19” Rack
- Complete Installation support

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## Performance Characteristics

### Conformity

| RTCA       | DO 260B Class A3S |

### General

| Frequency of operation | 1090 MHz +/- 5 MHz |
| Dynamic range          | -84 dBm to 0 dBm |
| Detection range        | 250 NM Note 1 |
| Detecting messages     | DF-17 and DF-18 |
| Message throughput     | > 400 messages (i.e. > 400 targets) per second |
| ADSB Message update rate | 1Hz |
| Position source        | In-built GNSS receiver |

### Protection against unauthorized use

Password protection for all configuration changes in Graphical User Interface against unauthorized use

### Software upgrade

Easy software upgrade feature without disturbing the unit from its installation

### External position feed (S/W Upgradable)

Position feed through Ethernet or RS-232 port

### External time-mark feed

Accepts time from external NTP time server through Ethernet

### Embedded GNSS Receiver Specifications for Internal time Stamping & synchronization

**GNSS Satellite Constellations**

- By-default - GPS+SBAS
- Optional - GPS+ SBAS+ GLONASS + IRNSS

**Frequencies** Note 3

- GPS L1, GAGAN L1, GLONASS L1, IRNSS L5

**Position Accuracy** Note 2

- Horizontal: 5 m (1 sigma)
- Vertical: 10 m (1 sigma)
- Time: 100 ns (1 sigma)

### Electrical Characteristics

- **Power input to the unit**: 9 - 36 Vdc
- **AC Adapter (Provided as accessories for MIL-box)**: 230V AC, 50Hz (Typical)
- **Power consumption**: < 10 W
- **GNSS Antenna power**: 5 Vdc, 100 mA (Max)

### Environmental Characteristics

- **Operating temperature**: -40°C to +60°C
- **Humidity**: Up to 95%
- **Environmental tests**:
  - EMI/EMC : As per MIL-STD-461E
  - Temperature: JSS55555
  - Altitude : JSS55555
  - IP: 66

### Antenna Specification

- **GPS Antenna**: Standard GNSS active patch antenna.
- **ADS-B Antenna**: Standard Omni-directional L band 1090 MHz ADS-B antenna

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Note 1: Depends on the transmitter power, antenna-make & its installation location, available Line-of-Sight for a particular location and also on other standard conditions like rain, fog, or path attenuations etc.

Note 2: The one sigma GPS-SBAS or GPS+GLONASS+GAGAN+IRNSS combined accuracy is measured for a static user. Typical Values at 1Hz and at nominal signal strength. Performance specifications are subject to change due to the selected constellation characteristics, DOP, time of measurement, U.S. DOD operational degradation, ionosphere and tropospheric conditions, and multipath effects.

Assumes SA OFF.

Note 3: Frequency of operation depends on the chosen GNSS constellation upgradation.

Note 4: 2U rack mount enclosure meets the environmental specification and MIL box is designed to meet the requirement and is under qualification process.