Technology
Accord’s RIGGS is an indigenously designed and developed multi Constellation Global Navigation Satellite System (GNSS) receiver capable of tracking up to 48 satellite signals including IRNSS, GPS, GLONASS and GAGAN. RIGGS accompanies with a rugged antenna capable of receiving signals in L1, L5 and S bands. RIGGS embeds state of the art anti-spoofing, anti-jamming and multipath mitigation techniques to provide improved performance.

Environmental
RIGGS is designed for rugged/medium dynamic applications without compromising on its ergonomics. RIGGS comes with a detachable 4.3” LCD module such that the sensor alone can be subjected for stringent environment tests depending upon the end application. RIGGS carries proven hardware/software architecture to withstand rigorous environmental requirements.

Communication Connectivity
RIGGS offers communication connectivity to the outside world through dedicated Ethernet and RS232 interfaces. Optional RS232 to USB converter cable is provided for accessing from modern PC’s and Laptops. RIGGS comes with a Windows™ based Graphical User Interface (GUI) for real time monitoring and control of the sensor.

Customization and Support
Specifications listed in this data sheet correspond to the receiver’s standard configuration only. For any customization of the sensor please contact Accord Software and Systems Pvt. Ltd.
Technical Specifications

Features

- GPS L1, GLONASS L1, IRNSS (dual frequency), GAGAN receiver
- 48 hardware correlator channels for simultaneous tracking
- Advanced interference mitigation techniques which includes digital pulse blanking
- Outputs dual frequency IRNSS code and carrier phase measurements
- Advanced RAIM techniques
- Flexible and rugged communication ports

Signals Tracked

<table>
<thead>
<tr>
<th>Constellation</th>
<th>Signals</th>
<th>Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS</td>
<td>L1</td>
<td>12</td>
</tr>
<tr>
<td>IRNSS</td>
<td>L5, S</td>
<td>11+11</td>
</tr>
<tr>
<td>GLONASS</td>
<td>L1</td>
<td>12</td>
</tr>
<tr>
<td>GAGAN</td>
<td>L1</td>
<td>2</td>
</tr>
</tbody>
</table>

Measurement Precision

- Code Phase\(^2\): 50 cm or better for C/N0 > 42 dB-Hz

Position Performance

- Stand alone: <10 m (RMS) <5m (dual frequency mode)
- Velocity accuracy: 0.1 m/s

Sensitivity

- Acquisition: 34 dB-Hz
- Tracking: 32 dB-Hz

Signal Dynamics\(^5\)

- Velocity: 515 m/s
- Acceleration: 4 g
- Jerk: 5 m/s\(^3\)

Time to First Fix (TTFF)

- Cold start\(^6\): 60 s
- Reacquisition: < 1 s

Maximum Data Rate

- Measurement data: 5 Hz
- Positioning data: 5 Hz

Power

- Input voltage: 9-36 VDC
- Power consumption: 10 W (Rx only), 12 W (Rx + Display)

Antenna LNA Power

- Output voltage: +5 VDC
- Maximum current: 200 mA

Dimension

- Rx only: 235 x 180 x 38 mm
- Rx + Display: < 2.5 kg
- < 3 kg

Weight

- Communication Ports

- Ethernet port: 10BaseT/100BaseT TCP/IP
- RS-232: 1 port up to 1.5 Mbps Reference Input/output
- 1 PPS: Reference input

Display

- View area: 95 x 53 mm
- Resolution: 480 x 272

Environmental

Temperature

- Operating: -20°C to +60°C
- Storage: -30°C to +85°C

Vibration

- Random: MIL STD 810E Method 514.4
- 5 to 50 Hz: 0.250 g /Hz
- 50 to 500 Hz: 0.012 g /Hz
- Duration: 2 Hours in each 3 axes

Humidity

- MIL STD 810E Method 507.3
- 24 Hours storage, 95 % RH @ 40°C followed by 4hrs operational, 95% RH @ 40°C

EMI/EMC

- MIL-STD-461E/CECC (EN61000)
- CE, CS, RS & RE

Shock

- MIL STD 810E Method 516.4
- 5 to 50: 0.250 g /Hz
- 50 to 500 Hz: 0.012 g /Hz
- Duration: 2 Hours in each 3 axes

Frequency

- 1176 ± 12 MHz
- 1590 ± 25 MHz
- 2492 ± 8.5 MHz

Passive Gain

- Peak: > +5 dBi
- RHCP

Axial Ratio

- < 3 dB
- < 1.5:1

VSWR

- < 1.5:1
- < 2.0 dB @ L Band
- < 2.0 dB @ S Band

LNA Gain

- > 28 dB @ L Band
- > 20 dB @ S Band

LNA Noise Figure

- < 2.0 dB

Impedance

- 50 ohms

DC Supply

- +5 to +18 V

Interface

- TNC (F)

Display Interface

- External 1-PPS reference input for precise time transfer
- 4.3" LCD display interface for receiver status monitoring
- Accord’s proprietary compact binary data output
- NMEA v2.30 output
- Windows™ based Graphical User Interface (GUI)
- Advanced RAIM techniques
- Outputs dual frequency IRNSS code and carrier phase measurements
- Flexible and rugged communication ports

Antenna

- Typical values under ideal conditions (no atmospheric errors, no multipath and no interference)
- Non-smoothed
- Depends on satellite geometry and dynamics
- Under moderate dynamic scenarios
- Under nominal signal strength of 40 dB-Hz and above
- Under nominal signal strength of 40 dB-Hz with no information available
- Does not include RF and antenna delay

Note: AC/DC Adopter and DC/DC adopters are available as optional accessories to accommodate for wide range of power sources. These adopters are compliant with the receiver environmental specifications.

**Accord reserves the right to upgrade this product. Please contact us for more information.**

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