GAJR© GNSS Anti-Jamming Receiver

All in one device with GNSS Receiver and Antenna Array

Industry-leading, advanced GLONASS/GPS/BieDou/Galileo/NavIC anti-jam/anti-spoof antenna electronics. Designed to meet evolving threats for mission-critical needs of all manned and unmanned land, sea and airborne platforms.
At OU IDATRADING, our advanced defence technology protects people and national security, and keeps critical information and infrastructure secure.

Benefits

- GNSS Receiver integration and Antenna Array
- Low cost jammer protection for all manned and unmanned air/sea/land platforms Ideal for retrofitting
- Provides anti-jam protection in dynamic multi jammer scenarios
- Digital interface with UAV System

Features

- GLONASS L1/L2 + GPS L1/L2 + BeiDou B1/B2 + Galileo E1/E5 + NavIC L5/S satellite system calculating
- All-in-view navigation using proven, GLONASS/GPS/BeiDou/Galileo/NavIC signal processor
- Standalone Position Accuracy < 2.0 m
- Up to 110 dB of additional anti-jamming protection
- Adaptive digital nulling

Intelligent Transportation Systems (ITS), Network Time Protocol Servers and Autonomous Vehicles make extensive use of GNSS (Global Navigation Satellite System including GLONASS/GPS/Galileo/BeiDou/NavIC) technology and this dependence will only grow in the future. It’s not just that GNSS has become ubiquitous in our daily life, but many critical infrastructures worldwide have some sort of reliance on it. GNSS plays a significant role in synchronization in the power grid, high frequency trading operations, and synchronization of distant wireless communications towers. This growing dependence on GNSS within critical (and non-critical) infrastructures has posed some concerns on the potential vulnerabilities of GNSS. As a consequence, there is a need for protecting GNSS against intentional and unintentional interference sources since disruption of GNSS can lead to catastrophic consequences.
The jamming threat, a specific form of intentional interference, is real and its occurrence has been documented in many occasions. Jamming devices are illegal in most (not all) countries, yet they are very easy and cheap to buy. Simple jammers can disrupt GNSS-based services in wide geographical areas (even in several kilometers), a fact that has certainly triggered research into anti-jamming techniques. Not only is jamming a threat, but other sources of unintentional interference can severely compromise GNSS performance. The jamming of signals and frequencies seems so farfetched, even in today’s world, that many don’t understand the importance of this kind of technology. GNSS has become integral to the navigation and planning systems of many military and civilian devices. There exists technology today that can prevent devices from receiving GNSS signals from the satellites. In a military situation and unmanned ground vehicles or UAV, this can mean everything, as so many vehicles are equipped with GNSS devices that will not run without receiving the signal from the GLONASS/GPS/Galileo/BeiDou/NavIC.

Also, the use of anti-jamming systems and technology with GNSS receivers and antennas helps prevent the jamming of signals. Therefore, the high demand for GPS and GNSS devices in military applications is driving the growth of the anti-jamming market for GPS.

Comparative Analysis of GNSS Anti-Jamming Systems

<table>
<thead>
<tr>
<th>Type</th>
<th>BAE Systems &amp; Mayflower Communications Company</th>
<th>Rockwell Collins</th>
<th>THALES</th>
<th>NovAtel &amp; QinetiQ</th>
<th>COBHAM</th>
<th>OU IDATRADING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simultaneous GNSS protection</td>
<td>SAS Anti-Jam Module</td>
<td>DIGAR-300</td>
<td>TopShield</td>
<td>GAJT-700ML</td>
<td>DACU (Type 7-6005)</td>
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<tr>
<td>Position accuracy (CEP)</td>
<td>GPS L1/L2</td>
<td>GPS L1/L2</td>
<td>GPS L1/L2</td>
<td>GPS L1/L2</td>
<td>GPS L1/L2</td>
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<tr>
<td>Power (28VDC)</td>
<td>30 W</td>
<td>45 W</td>
<td>35 W</td>
<td>20 W</td>
<td>23 W</td>
<td>2.0 m</td>
</tr>
<tr>
<td>Anti-Jam Performance</td>
<td>90 dB J/S (State 5 tracking)</td>
<td>105 dB J/S</td>
<td>90 dB J/S</td>
<td>90 dB J/S</td>
<td>85 dB J/S</td>
<td>110 dB J/S</td>
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</tbody>
</table>

The best protected on the market

The key elements of the system are the GAJR-3©, the GNSS Receiver and the Adaptive Antenna Array. A 4-element Adaptive Antenna Array allows gain pattern shapes to be changed in response to interference. Provides 3 independent nulls.
Adaptive Antenna Array + GNSS Receiver

GNSS Signals: GPS L1/L2 + GLONASS L1/L2 + Galileo E1B/E1C/E5b + BeiDou B1/B2 + NavIC * (India) L5
Interference Rejection: Wide band suppression 50 dB
Controlled radiation pattern antennas (CRPA): number of elements - 4
Anti-Jam Performance (20 MHz broadband jammer): 110 dB J/S
Standalone Position Accuracy: 2.0 m and horizontal - 3 m
PPS time Accuracy: 50 nanoseconds
Power: 7W @ 28VDC
Input voltage: +20 to 28 VDC
Interfaces: RS-422
Dimensions: 200 x 200 x 65 mm
Weight: 2800 g
Temperature (operating): - 40° C to + 71° C
Temperature (storage): - 55° C to + 85° C
Connectors: D38999/24WB35PN compliant
EMC: MIL-STD-8109
MTBF: 15,000 hours (MIL-HDBK-217+)

Specifications subject to change without notice. [ * - Minimum order of 5 pieces ]