Fiber Optic 3D Inertial Navigation System with embedded GPS/GNSS
Introducing TACNAV 3D Inertial Navigation System
The fiber optic gyro-based TACNAV 3D Inertial Navigation System provides full three-dimensional navigation and an embedded GNSS. Its modular tactical design and flexible architecture allow it to function as either a standalone inertial navigation solution or as the core of an expandable, multi-functional battlefield management system.

TACNAV 3D is the newest of KVH’s inertial navigation systems and has built upon the success of the battle-proven KVH TACNAV family of products. TACNAV 3D incorporates KVH’s breakthrough 1750 IMU which combines 3 axes of KVH’s compact high accuracy DSP-1750 Fiber Optic Gyro (FOG), with 3 axes of high performance MEMs accelerometers.

Ideal Navigation and Pointing Solution for the Digital Battlefield
Providing extremely accurate heading, dead reckoning navigation, and orientation, TACNAV 3D delivers 100% situational awareness in GNSS-denied environments with greater accuracy at a lower cost than competing navigational systems.

Key Features & Attributes
- Compact full 3-dimensional navigation
- 100% situational awareness with or without GPS/GNSS
- Modular design for expandability
- Embedded GNSS
- Multiple interfaces for ease of integration
- Ethernet connectivity
- CANbus
- Integrates with a variety of military GPS systems
- Built-in two-way Iridium satellite communications for messaging and secure position reporting

Applications
Navigation for:
- Light armored vehicles
- Wheeled or tracked armored vehicles
- Medium and heavy combat vehicles
- Main battle tanks

Easily Interfaces with:
- External GPS (in place of internal)
- Battlefield Management Systems (BMS)
- Laser Rangefinders (LRF)
- Laser Warning Receiver Systems (LWRS)
- Turret Angle Encoders
- Integrated Turret Data Systems
- KVH Universal Multilingual Display(s) – Night vision capable

Integrated Navigation & Pointing for the Digital Battlefield
Easily Integrates with Battlefield Management Systems (BMS)
TACNAV 3D provides reliable vehicle position, making it a vital component for effective battlefield management. Compact and lightweight, TACNAV 3D is designed for the close confines of turreted and non-turreted vehicles. With its compact size, low weight and low power consumption, it is the ideal navigation and pointing solution for the digital battlefield.

Built-in Communications Option
TACNAV 3D is fitted with an Iridium® transceiver to transmit and receive vehicle position, waypoint, and target location to or from a command center or other vehicles. In addition, TACNAV 3D can receive messages from the BMS to pass on to the command center via the Iridium short duration burst message function. TACNAV 3D can also receive and transmit Ethernet and CANbus signals, and RS-422.

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KVH’s TACNAV 3D is a perfect solution for both turreted and non-turreted vehicles.

148.6 mm x 203.2 mm x 101.6 mm (5.85”wx 8”x 4”) (h x w x d)
# Technical Specifications

## General Performance

<table>
<thead>
<tr>
<th>Positional Accuracy:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>With GNSS:</strong></td>
<td>2-3 meters RMS</td>
</tr>
<tr>
<td><strong>Without GNSS:</strong></td>
<td>±0.2% distance traveled for up to 2 hours continuous travel time</td>
</tr>
<tr>
<td></td>
<td>±0.5% distance traveled for up to 7 hours continuous travel time</td>
</tr>
<tr>
<td></td>
<td>±1.0% distance traveled for up to 20 hours continuous travel time</td>
</tr>
</tbody>
</table>

### Heading Accuracy (dynamic):

<table>
<thead>
<tr>
<th>GNSS Align Heading:</th>
<th>0.05°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without GNSS:</td>
<td>±0.20° after 3 hours of continuous travel</td>
</tr>
<tr>
<td></td>
<td>±0.90° after 16 hours of continuous travel</td>
</tr>
<tr>
<td></td>
<td>±0.90° beyond 16 hours of continuous travel: no further degradation of heading after 16 hours of continuous travel</td>
</tr>
</tbody>
</table>

### Start-up:

Store location at shutdown

### Location Format:

User Selectable: Over 200 grids and datums available

### Warm-up Time:

20 seconds

### Pitch and Roll Accuracy (dynamic):

| With GNSS: | 0.05° |
| Without GNSS: | 0.20° |

### Latitude Capability:

Latitude independent with GNSS

### GNSS:

Supports GPS, GLONASS (Beidou and Galileo optional)

## Interfaces

| **CANbus:** | J1939, CANopen |
| **Serial:** | RS-422 |
| **Ethernet:** | UDP, TCP-IP |

## Physical

### Input Voltage:

+28 VDC (18-36 VDC) MIL-STD-1275

### Power Consumption:

15 watts

### Dimensions:

148.6 mm x 203.2 mm x 101.6 mm (5.85” x 8” x 4”) (h x w x d) measurements include flanges

### Weight:

3.2 kg (7 lbs)

## Environmental

### Temperature:

MIL-STD-810-G: -32°C to +65°C (-26°F to 149°F)

### Altitude:

15,000 meters (50,000 feet)

### Environment:

MIL-STD-810G – Humidity, Salt Fog, Sand, Dust & Fungus

### Shock:

MIL-STD-810G

### EMI/RFI:

MIL-STD-461F Class A3, digital equipment

### Vibration:

MIL-STD-810G

### MTBF:

22,276 hours