

# HI71 SERIES

## Tactical MEMS-IMU/VRU/MRU/AHRS/INS



The HI71 series is an IMU/VRU/MRU/AHRS/INS sensor system based on tactical-grade MEMS-IMU, featuring proprietary adaptive Extended Kalman Filter, IMU noise dynamic analysis algorithm, carrier motion state analysis algorithm, and GNSS fusion algorithm to provide users with precise position, attitude, heave and velocity information.

### FEATURES

- Compact size, tactical grade
- Multiple communication interfaces: UART/CAN (external transceiver required)
- Temperature compensation and turntable calibration
- Precise IMU/VRU/AHRS/INS with Extended Kalman Filter fusion
- Precise synchronization signals, supporting PPS and GPRMC time synchronization
- High accuracy maintained under high vibration conditions
- Heave 5cm/5%

### APPLICATIONS

UAV  
USV  
Robot  
Active Wave Compensation (AWC)

## SPECIFICATIONS

### Model

| P/N            | IMU | VRU | MRU | AHRS | Barometer | INS |
|----------------|-----|-----|-----|------|-----------|-----|
| HI71T2-MI0-000 | √   | √   | ×   | ×    | ×         | ×   |
| HI71T4-MI0-000 | √   | √   | ×   | √    | √         | ×   |
| HI71M4-MI0-000 | √   | √   | √   | √    | √         | ×   |
| HI71N4-MI0-000 | √   | √   | √   | √    | √         | √   |

### Fusion Accuracy

|               |            |
|---------------|------------|
| Accelerometer | Calibrated |
| Gyroscope     | Calibrated |
| Pitch/Roll    | 0.05°      |
| Heading(VRU)  | 0.1°       |
| Quaternion    | Supported  |
| Heave         | 5cm/5%     |

### Gyroscope

|                  |                  |
|------------------|------------------|
| Range            | ± 320° /s        |
| Bias Instability | 0.3° /h          |
| Bias Stability   | 0.5° /h          |
| Noise Density    | 0.0006° /s/ √ Hz |
| Bandwidth(3dB)   | 235Hz            |

### Accelerometer

|                  |                |
|------------------|----------------|
| Range            | ± 16g          |
| Bias Instability | 0.01mg         |
| Bias Stability   | 0.03mg         |
| Noise Density    | 0.085 mg/ √ Hz |
| Bandwidth(3dB)   | 210Hz          |

### Interface

|                  |                           |
|------------------|---------------------------|
| Communication    | UART/CAN                  |
| Protocols        | Binary/CANopen/J1939/NMEA |
| Output Frequency | Up to 1000Hz              |
| SYNC             | SYNC_IN、SYNC_OUT          |

Note1: CAN requires an external CAN transceiver, such as the TJA1044

### Physical & Environmental

|                   |                   |
|-------------------|-------------------|
| Input Voltage     | 3.6-5V            |
| Power Consumption | <370mW            |
| Dimension         | 24X24X14mm        |
| Weight            | 13g               |
| Certification     | Supports Rohs CE  |
| Temperature       | Supports -40-85°C |

### Software Suite

|         |  |
|---------|--|
| GUI     | CHCenter   |
| SDK     | C、STM32、Matlab、Python、Ros                          |
| Support | User manuals<br>Data sheet<br>Online communication |

## QUICK START



The HI71 series evaluation board can be connected to the PC GUI via USB cable, allowing users to quickly evaluate the product through the graphical interface.

## HiPNUC SERVICE

We provide complimentary technical support and lifetime firmware upgrades. All HI71 products include a 2-year warranty

### 1.Email

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