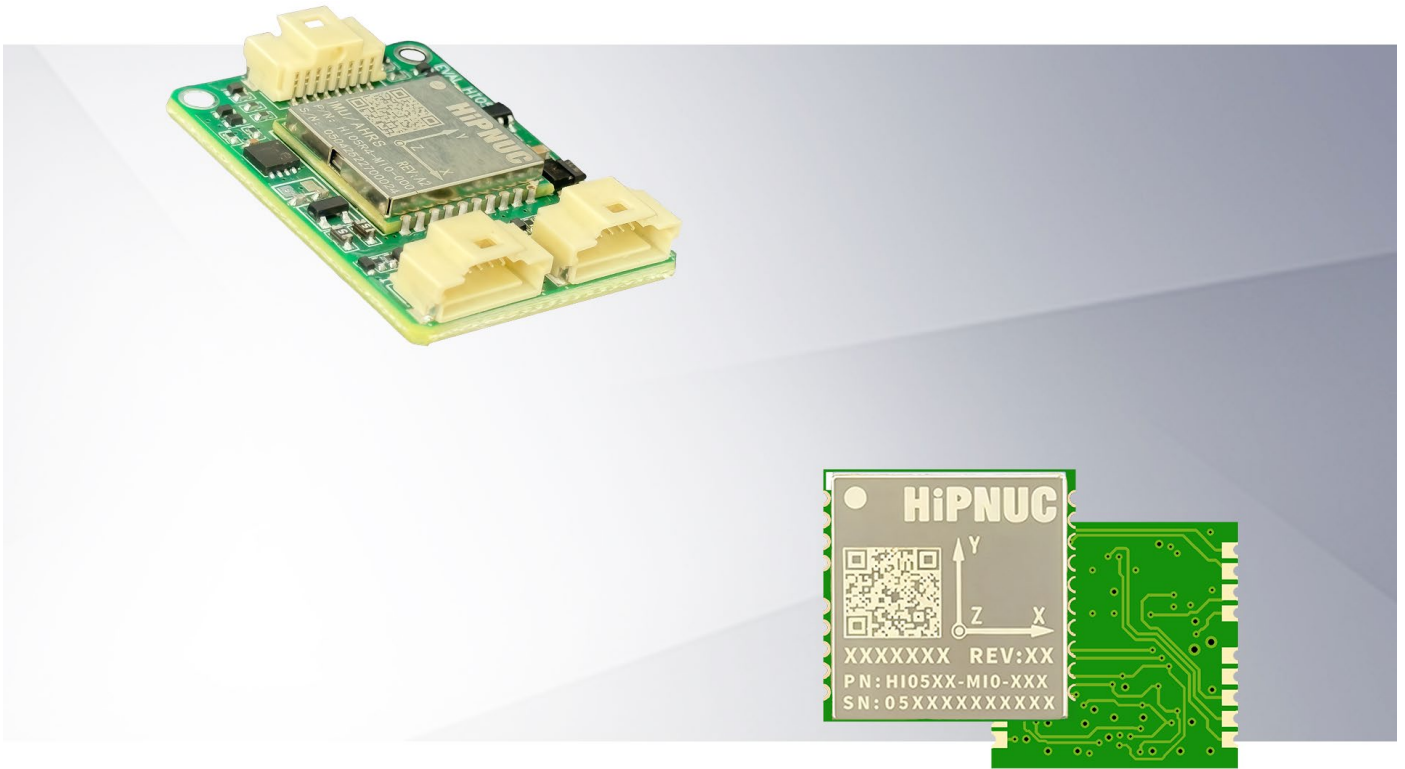


HI05 SERIES

Compact Size, High-Performance MEMS-IMU/VRU/AHRS/INS

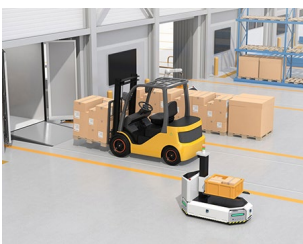


The HI05 Series integrates MEMS-IMU technology to form IMU/VRU/AHRS/INS sensors. Equipped with proprietary Adaptive Extended Kalman Filter, IMU Noise Dynamic Analysis Algorithm, Carrier Motion State Analysis Algorithm, and GNSS Fusion Algorithm, it delivers precise position, attitude, and velocity information.

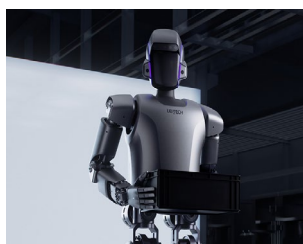
FEATURES

- Compact size, high performance, full functionality
- UART/CAN/I2C
- Temperature compensation and turntable calibration
- Extended Kalman Fusion for precise IMU/VRU/AHRS/INS
- Accurate synchronization signal, supports PPS and UTC time sync
- Maintains high accuracy under high vibration conditions

APPLICATIONS



AGV/AMR



Humanoid Robots



Lawn Mowers



Inspection Robots

SPECIFICATIONS

Model

P/N	IMU	VRU	AHRS	Barometer	INS
HI05M2-MI0-000	√	√	×	×	×
HI05R2-MI0-000	√	√	×	×	×
HI05R4-MI0-000	√	√	√	√	×
HI05N5-MI0-000	√	√	√	√	√

Fusion Accuracy

Accelerometer	Calibrated
Gyroscope	Calibrated
Pitch/Roll	0.15°
Heading(VRU)	0.3°
Heading(AHRS)	2°
Quaternion	Support

Note1: Above values may vary after customer SMT, refer to actual performance

Gyroscope

Range	Up to ± 4000° /s
Bias Instability	HI05MX 2.5° /h HI05RX 1.7° /h
Bias Stability	HI05MX 10° /h HI05RX 4° /h
Noise Density	HI05MX 0.04 ° /s/ √ Hz HI05RX 0.025 ° /s/ √ Hz
Bandwidth(3dB)	Up to 400Hz

Accelerometer

Range	Up to ± 32g
Bias Instability	HI05MX 0.018mg HI05RX 0.012mg
Bias Stability	HI05MX 0.03mg HI05RX 0.015mg
Noise Density	HI05MX 0.03 m/s √ Hz HI05RX 0.018 m/s √ Hz
Bandwidth(3dB)	Up to 400Hz

Interface

Communication	UART/CAN/I2C
Protocols	Binary/Modbus/CANopen
Output Frequency	Up to 1000Hz
SYNC	SYNC_IN、SYNC_OUT

Note1: CAN communication for H105XX-MI0 requires an external transceiver (e.g., TJA1044).

Magnetometer

Range	Up to ± 20 Gauss
Total RMS noise	450nT
Nonlinearity	20uT

Barometer

Range	300-1200hPa
Resolution	0.006hPa
Relative accuracy	±0.06hPa

Physical & Environmental

Input Voltage	3.3-5V
Power Consumption	<205mW
Dimension	15X15X2.6mm
Weight	<1.5g
Certification	Supports Rohs CE
Temperature	Supports -40-85°C

Software Suite

GUI	CHCenter
SDK	C、STM32、Matlab、Python、Ros
Support	User manuals Data sheet Online communication

QUICK START



The HI05 Series evaluation board connects to the PC GUI via USB cable, enabling rapid product assessment.

HIPNUC SERVICE

We provide free technical support and lifetime firmware upgrades. The H105 Series comes with a 2-year warranty for worry-free operation.

1.Email:sales@hipnuc.com

2.Web:www.hipnuc.com

3.Website qr code

