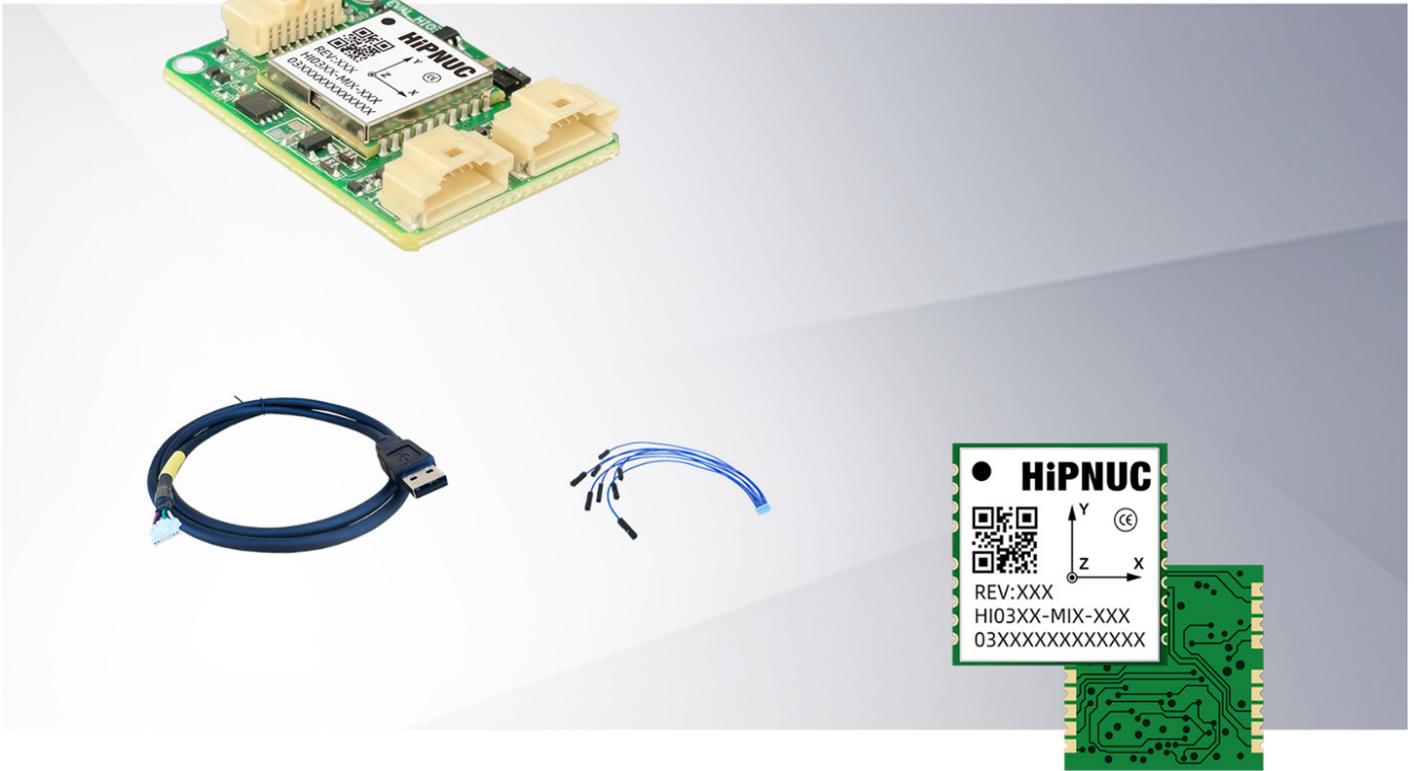


HI03 SERIES

High-Performance MEMS-IMU/VRU/AHRS



The HI03 series is an IMU/VRU/AHRS sensor based on MEMS-IMU technology. It is equipped with self-developed adaptive extended Kalman filtering, IMU noise dynamic analysis, and carrier motion state analysis algorithms, providing users with highly accurate acceleration, angular rate, and attitude information.

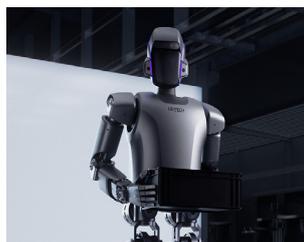
FEATURES

- Compact size, high performance
- Multiple communication interfaces: 3xUART+CAN+I2C+SPI+Synchronized triggering, output up to 1000 Hz.
- Temperature compensation and turntable calibration
- Extended Kalman Fusion for precise IMU/VRU/AHRS
- Accurate synchronization signal, supports PPS + RMC sync
- Maintains high accuracy under high vibration conditions

APPLICATIONS



AGV/AMR



Humanoid Robots



Lawn Mowers



Inspection Robots

PRODUCT LINE

P/N	IMU	VRU	AHRS	Barometer	INS
HI03R2-MI1-000	√	√	×	×	×
HI03R3-MI1-000	√	√	√	×	×

 MI1 has a CAN transceiver, MI0 does not.

SPECIFICATIONS

Gyroscope

Range		Max ± 2000° /s
Bias Instability	X	1.5° /h
	Y Type 1σ	1.9° /h
	Z	1.7° /h
Bias Stability 10s	X	5.5° /h
	Y Type 1σ	7.5° /h
	Z	5.5° /h
Bias Repeatability	X	11.5° /h
	Y Type 1σ	15° /h
	Z	9.5° /h
Angular Random Walk	X	0.3° / √ h
	Y Type 1σ	0.4° / √ h
	Z	0.2° / √ h
Noise Density	47Hz	0.008 ° /s/ √ Hz
Bandwidth(3dB)		Max 200Hz

Fusion Accuracy

Pitch/Roll Static	Before SMT	0.1°
	After SMT	0.3°
Pitch/Roll Dynamic	Before SMT	0.2°
	After SMT	0.4°
Heading(AHRS)		2°
Heading Static Drift(6DoF)		0.2°
Heading Dynamic Drift(6DoF)		±5°
Heading Rotation Error(6DoF) 100° /s	Before SMT	0.1°
	After SMT	0.5°

 For detailed specifications, refer to the datasheet.

Physical & Environmental

Input Voltage	3.3-5V
Power Consumption	<240mW
Dimension	15x15x2.6mm
Weight	<1.5g
Certification	RoHS/CE/Halogen
Temperature	-40-85°C

Accelerometer

Range		Max ± 24g
Bias Instability	X	0.015mg
	Y Type 1σ	0.012mg
	Z	0.015mg
Bias Stability 10s	X	0.06mg
	Y Type 1σ	0.055mg
	Z	0.05mg
Bias Repeatability	X	0.127mg
	Y Type 1σ	0.09mg
	Z	0.07mg
Random Walk	X	0.055m/s/ √ h
	Y Type 1σ	0.055m/s/ √ h
	Z	0.055m/s/ √ h
Noise Density	47Hz	0.1mg/ √ Hz
Bandwidth(3dB)		Max 200Hz

Magnetometer

Range	Max ± 20 Gauss
Total RMS Noise	450nT
Nonlinearity	20uT

Interface

Communication	3XUART/CAN/I2C/SPI
Trigger	Sync_In/Sync_out/PPS
Protocols	Binary/Modbus/J1939/CANopen
Output Frame Rate	Max 1KHz

Software Suite

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

QUICK START



The HI03 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 HI03 Series comes with a 2-years warranty for worry-free operation.

1.Email:overseas1@hipnuc.com

2.Web:www.hipnuc.com

