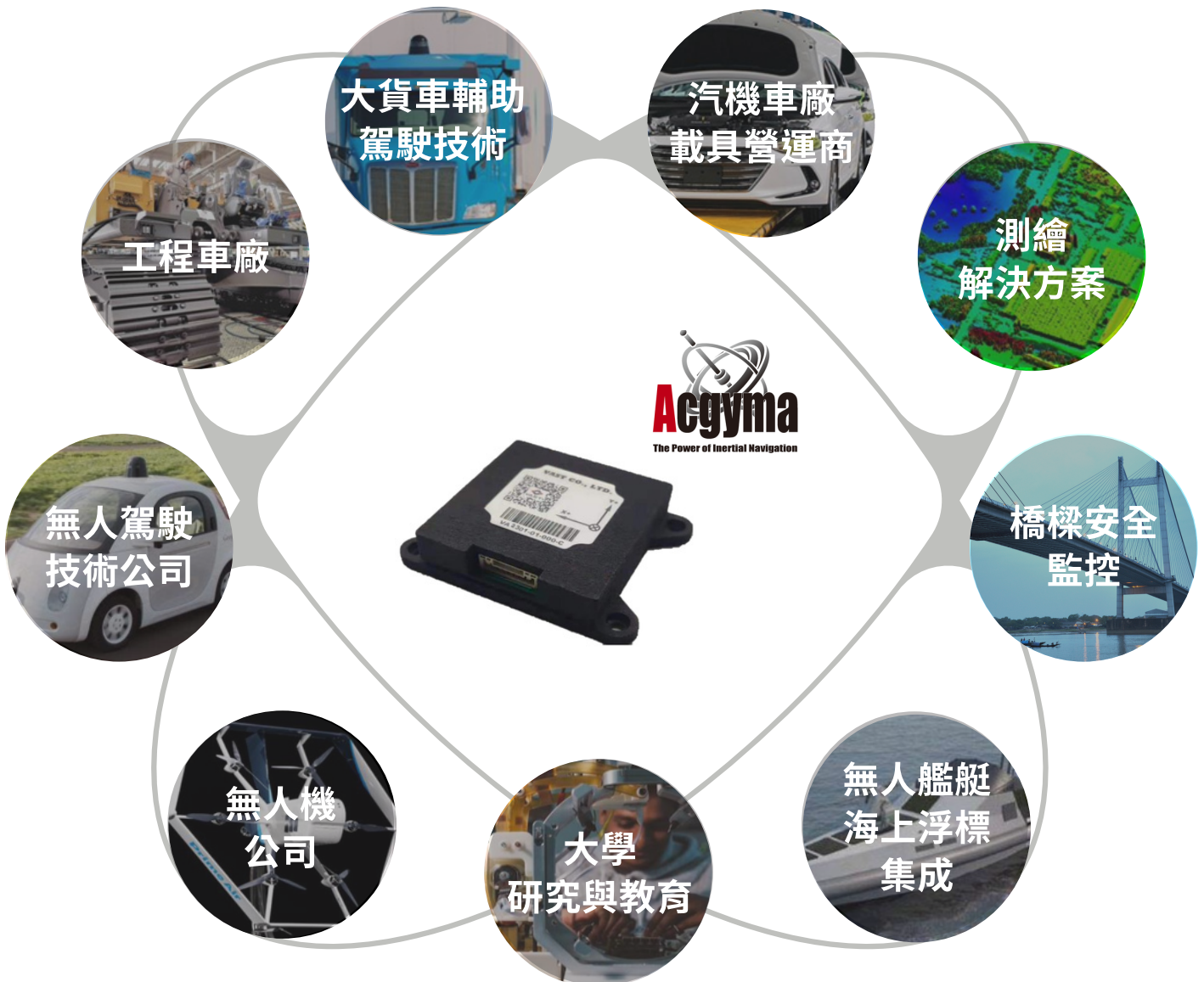




IMU/AHRS-5501 工業級航姿參考系統

航空級性能，工業級價格! 精準、快捷的慣性導航解決方案，易於集成



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IMU/AHRS-5501 工業級航姿參考系統

高精度 X 高可靠性

Acgyma AHRS-5501 是一種 MEMS 高性能航姿參考系統，本旨在滿足包括自動駕駛、無人機、ROV、自主地面車輛、通用航空、工業設備、機器人、勘測/測繪、風機、水下監測、靜態橋隙試驗、穩定平台和運輸平台等應用需求。

AHRS-5501 集成 MEMS 高性能三軸陀螺儀、三軸加速度計和三軸磁力計，使用牛頓最深搜索時變 (Newton deep search time varying) 控制演算法，擴展卡爾曼濾波 (extended Karman filter) 和自我調整濾波 (self-adaptive filter) 演算法。此外 AHRS-5501 內部隔離設計能抑制外界環境干擾，同時擁有自主研發的信號濾波系統，所有感測器出廠前進行全溫域校準，並配置特殊動態補償演算法，保證輸出準確的姿態資訊，確保產品滿足最苛刻使用者的需求。

AHRS-5501 具有眾多可選配的工業標準通信介面和寬廣的輸入電壓範圍，因此易於集成到各種系統中，同時擁有體積小、功耗低、精度高的特點，是大多數高精度車載、移動載具慣導系統應用需求的理想選擇。

ACGYMA 慣性感測元件產品特點:

- 全球領先的濾波、自動校準與補償演算法
- 產品已經進行各項測試，性能可靠
- 體積小、功耗低、精度高、超長壽命和優異的一致性
- 介面協定選擇:RS-485、RS422、CAN-OPEN 和 SPI
- 本裝置具有一系列使用者可配置的選項，可選擇輸出資料速率
- 適用的應用包括:工農業準化、移動載具、測量、平台控制和運動補償等領域
- 本 MEMS-AHRS 係 ITAR-FREE

AHRS-5501 技術規格

基本電機特性	範圍
陀螺儀工作範圍	-500°to +500°/sec
加速計量程	-16 g to + 16 g
磁力計量程	500 毫高斯
體積	12.6 cm ³
尺寸大小	35 x 38.5 x 9.5 (mm)
重量	小於 25 克 (0.05 磅)
功耗	小於 0.5 瓦
工作溫度範圍	-40 °C to + 85 °C
輸出資料速率	50 Hz to 400(300)Hz
供電電壓	+5.0 VDC
頻寬	50-120Hz
非同步串列傳輸速率	50 to 400Hz

AHRS-5501 性能

航姿角性能	精度
靜態(橫滾角/俯仰角)漂移	± 0.3° / 小時
靜態(航向角)漂移	± 0.3° / 小時
動態(橫滾角/俯仰角)漂移	± 1.0°
動態(航向角)漂移	± 2.0°
(航向角)相對運動精度	360 ± 2.0°
(橫滾角/俯仰角/航向角)量程	(±180, ±85, ±180)°
陀螺儀零偏穩定性	~1.0° / hr
加速計零偏穩定性	< 60µg
陀螺儀零偏重複性	< 0.015°/sec
加速計零偏重複性	< 100µg
陀螺儀隨機遊走係數	< 0.15°/√hr
加速計隨機遊走係數	< 0.012m/s/√hr
航姿角解析度	0.0055°



IMU/AHRS-5501 INDUSTRIAL GRADE AHRS

AVIATION PERFORMANCE, INDUSTRIAL PRICE, ACCURATE SOLUTION, EASY INTEGRATION



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IMU/AHRS-5501 INDUSTRIAL GRADE AHRS

HIGH PRECISION X HIGH RELIABILITY

AHRS-AGM5501 is a high-performance navigation attitude reference system (AHRS) based on the technology of micro-electro-mechanical system (MEMS). The product is designed for drones, robots, autonomous vehicles with the requirement of not being affected by magnetic field. This feature is particularly important in applications such as autonomously guided flying objects, moving drones, ROV, unmanned ground vehicles, aircraft avionics, industrial robotics, survey mapping drones, underwater monitoring robots, static bridge gap/tilt monitoring, stability platform and road evenness monitoring when carrying out an autonomous task.

The AHRS-AGM5501 contains a high-performance 3-axial gyroscope, 3-axial accelerator and 3-axial magnetometer, using Newton's deepest search time-varying control algorithm, extended Kalman filtering and robust adaptive filtering algorithms for its utmost reliability and accuracy. In inertial control, guidance and navigation applications, AHRS-AGM5501's internal isolation design and independent signal filtering system greatly inhibits the interference of external environment factors. All sensors in the system, before full temperature domain calibration, configure special dynamic compensation algorithms, ensuring an output accurate attitude information, and making the product that meets most of the critically demanding users.

FEATURES OF ACGYMA AHRS:

- The world's leading filtering, automatic calibration and compensation algorithms
- The product has been tested, and the performance is reliable
- Small volume, low power consumption, high accuracy, super long life and excellent consistency
- Optional RS-485 / RS-422, CAN-OPEN, and UART interface protocols
- The device has a range of user-configurable options to select the output data rate
- Applicable applications include industrial and agricultural precision, vehicle, measurement, platform control and motion compensation

AHRS-5501 TECHNICAL SPECIFICATIONS

Basic motor features	Scope
Gyro Operating Range	-500°to +500°/sec
Accelerometer Operating Range	-16 g to + 16 g
Magnetometer Operating Range	500 m-Gauss
Volume	12.6 cm ³
Size	35 x 38.5 x 9.5 (mm)
Weight	< 25 g (0.05 lb)
Power Consumption	< 0.5 Watts
Operating Temperature Range	-40 °C to + 85 °C
Data Rate (Output Freq)	50 Hz to 400(300)Hz
Supply Voltages	+5.0 VDC
Bandwidth	50-120Hz
Asynchronous Baud Rate	50 to 400Hz

AHRS-5501 PERFORMANCE

Attitude Angle performance	Accuracy
Static (roll angle / pitch angle) drift	± 0.3° / hr
Static (heading angle) drift	± 0.3° / hr
Dynamic (roll / pitch angle) accuracy	± 1.0°
Dynamic (heading angle) precision	± 2.0°
(Direction angle) Relative motion accuracy	360 ± 2.0°
(Roll / pitch / heading) Range	(±180, ±85, ±180)°
Gyro instrument with zero-bias stability	~1.0° / hr
Accelerometer zero-bias stability	< 60µg
Gyro, with zero-bias repeatability	< 0.015°/sec
Accelerometer zero-bias repeatability	< 100µg
Gyroscope random walk coefficient	< 0.15°/√hr
Accelerometer random walk coefficient	< 0.012m/s/√hr
Attitude Angle resolution	0.0055°