GeneSys

Sensor Systems, Service & Smiles

ADMA-Slim v35

Mini GNSS/inertial system: If size and weight matters

The new full-fledged ADMA-Slim GNSS/inertial system has been specially developed for applications with space or weight restrictions. It is smaller, lighter and more compact, without limitations in functionality or quality of measurement data. ADMA-Slim is the perfect choice for applications in motorcycles, overrunnable platforms for GSTs (Guided Soft Targets) or VRUs (Vulnerable Road Users such as pedestrians or cyclists), for example.

ADMA-Slim is based on the proven ADMA technology for centimeter accuracy in positional data acquisition. It delivers precise, smooth and consistent signals even when GNSS reception is poor.

0.01 m	0.04 km/h	0.05 °	0.02 °	< 1 ms	1 kHz
Position accuracy (1σ)*2	Velocity accuracy (RMS)*3	Heading accuracy (1σ)*3	Roll/Pitch accuracy (1σ)*3	Data latency	Data output rate

APPLICATIONS

The ADMA-Slim is a state-of-the-art device designed for precise data measurement in various applications. With its advanced strap-down technology, it guarantees stability and resistance to unwanted vibrations, ensuring accurate and reliable results.

One of the key advantages of the ADMA is its excellent suitability for installation on overrunable platforms. Unlike many other inertial devices, the ADMA does not require a lengthy initialization process. The stability of the Kalman filter guarantees reliable results without the need for reinitialization even after an overrun of the platform.

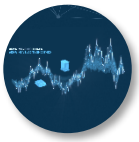
Additionally, the ADMA system is also suitable for all other testing applications, such as VD (vehicle dynamics) or ADAS (Advanced Driver Assistance Systems) testing. Its robust design and stable performance make it a versatile tool for various testing scenarios.

ADMA ADD-ONS AND OPTIONS

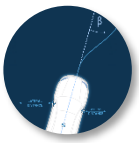
Meet new measurement and testing requirements with Add-Ons and Options.

The new generation of ADMA 3.5 devices now allows our customers to meet their new and changing needs. Our focus is on straight-forward use and increased productivity. The Add-Ons and Options can be activated quickly and conveniently by entering a license key. This is possible at any time without modifications to the hardware. A high degree of flexibility is thus ensured.

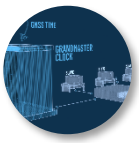
Add-On DELTA 1:5
Relative data calculation via WiFi in real-time for multi-vehicle operation



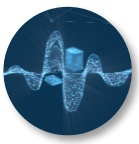
Add-On Smoothing
Define maximum step size for the GNSS signal



Add-On LATDEV
Real-time calculation of the lateral deviation



Add-On PTP
Time synchronization with generalized Precision Time Protocol (gPTP)



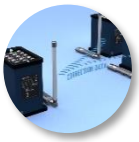
Add-On FILTER
Option for online signal filtering

Add-On BRAKING
Real-time calculation of brake performance data according to international regulations

Option RTK2
High-precision position measurement using correction data

Option Multi-GNSS
Multi-GNSS: Use of multiple satellite systems such as GPS, GLONASS, Galileo, BeiDou

Option Dual-Ant
Two GNSS antenna option

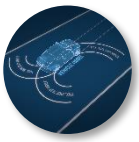


Option DGNSS Correction Data
Correction data reception via Ethernet

Option GNSS-Raw Data
Raw data output via Ethernet for post-processing

Option 1kHz
Data output rate of 1 kHz via CAN or Ethernet interface

Option Multi-CAN
Data output via several CAN channels simultaneously



Option Vehicle Model
2D vehicle model predicts vehicle behavior, supports IMU & adapts to conditions

Option Internal Memory
Storing ADMA measurement data in internal memory

TECHNICAL DATA

Complete system	
GNSS constellations	GPS L1, L2 GLONASS L1, L2 BeiDou[*1] B1, B2 Galileo[*1] E1, E5
Dual antenna	Optional
Position accuracy (1σ)[*2]	0.01 / 0.20 / 0.60 / 1.20 / 1.50 m
Angle Measurement range roll / pitch / yaw	60 ° / 60 ° / ± 180 °
Angle Measurement accuracy roll & pitch (1 σ) / yaw (1 σ) / sideslip (RMS)	0.02 / 0.05 / 0.15 °
Angle resolution	0.005 °
Velocity accuracy (RMS)[*3]	0.04 km/h
Position error after 10 / 30 / 60 sec GNSS outage (RMS)[*3]	0.4 / 5.0 / 40.0 m
Velocity error after 10 / 30 / 60 sec GNSS outage (RMS)[*3]	0.06 / 0.5 / 1.5 m/sec
Roll / Pitch angle error after 10 / 30 / 60 sec GNSS outage (RMS)[*3]	0.05 / 0.15 / 0.30 °
Heading angle error after 10 / 30 / 60 sec GNSS outage (RMS)[*3]	0.05 / 0.15 / 0.30 °
Data output rate	50 / 100 / 200 / 250 / 500 Hz / (1000 Hz)[*1]
Calculation latency	1 msec

Sensors - Gyros	
Sensor Technology	3 MEMS gyros
Measurement range	± 450 °/s
Data output resolution	0.0001 °/s
Bias repeatability typ. (1 σ)	0.2 °/s
In-run-bias typ.	6 °/h
Noise (random walk) typ.	0.3 °/√h
Scale factor	0.2 %
Sensor bandwidth	330 Hz

Sensors - Accelerometers		
Sensor Technology	3 MEMS accelerometers	
Measurement range	± 5 g	± 15 g[*1]
Data output Resolution	0.0001 g	0.0001 g
Bias repeatability typ.	4 mg	16 mg
In-run-bias typ. (1 σ)	32 µg	70 µg
Noise (random walk) typ.	50 µg /√Hz	63 µg /√Hz
Scale factor (1 σ)	0.2%	0.2 %
Sensor bandwidth	330 Hz	330 Hz

Interfaces	
Ethernet	1x 1 Gbit Data input/output, configuration and firmware update, driving robot data output, optional for relative data calculation and DGNSS routing.
CAN	1x CAN 2b, 1 Mbit Data output, input[*1]
Serial	1x RS232 GNSS Receiver; DGNSS correction data input 1x RS232 GNSS Receiver; GPGGA Log output, IPS (Indoor Positioning System)
Digital/Analog Input	up to 4x Digital / Analog (16 bit) e.g. Frequency, Brake trigger, ...
Digital Output	up to 4x Digital TTL e.g. PPS, Frequency, PPD Pulse per distance, ...
Connector type	Lemo; SC; Samtec
GNSS	2x SMA GNSS Antenna connectors

Hardware / Miscellaneous	
Ordering Variants	Lemo, SC, OEM,
Internal Memory	up to 64 GB
Power supply	9 to 32 VDC typ. 15 W
Dimensions (W x L x H)	Lemo Version 130 x 186 x 47 mm SC Version 130 x 194 x47 mm OEM Version 125 x 148 x 31 mm
Weight	1.5 kg
Operating temperature	-20 to +60 °C
Protection class	Lemo Version*4 IP 65 SC Version IP 67 OEM Version IP 20

*1 Optional

*2 Depending on GNSS conditions, correction data and license model.

*3 Typical values according to internal test standards with settled Kalman filter.

*4 The housing is protected against dust and water jets in accordance with IP65. Please note that not all plug connections and cables are fully sealed in accordance with the IP standard. The cable is therefore not intended for use in permanently wet or damp environments.

For any further questions: support@genesys-offenburg.de