Atlans A7

Navigation grade INS for land and air georeferencing applications

Atlans A7 is a high performance all-in-one position & orientation system for both land and air applications. It benefits from smart coupling techniques between Exail Inertial Navigation Systems (INS) based on FOG (Fiber-Optic Gyroscope) and Septentrio GNSS receiver embedded. Atlans A7 is a robust and cost-effective north-finding inertial navigation solution that provides continuous data even in the most challenging applications.

FEATURES & BENEFITS

- Simplified integration with its all-in-one housing and single GNSS antenna setup
- Predefined vehicle modes: plane, car, train
- North-finding even in GNSS-denied environment
- Dynamic alignment with GNSS
- INS/GNSS smart coupling
- Compatible with Exail Delph INS post-processing software
- ROS driver available
- 24/7 worldwide technical assistance
- Free of ITAR Component

APPLICATIONS

- Asset management
- Land mobile mapping
- Aerial mobile mapping
- Pavement condition survey
- Tunnel mapping
- Railway survey
- Vehicle control and guidance
- Autonomous vehicles
- Ground truth
- Automotive
- Precision pointing

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TECHNICAL SPECIFICATIONS

Performance[1] | LAND APPLICATIONS (WITH DMI)

With GNSS

Correction type	SPS / Natural	SBAS	RTK*	PPK**
Position Horizontal (X,Y) (m)	1.200	0.600	0.006 + 0.5 ppm	0.006 + 0.5 ppm
Position Vertical (Z) (m)	1.900	0.800	0.010 + 1 ppm	0.010 + 1 ppm
Heading (deg)	0.050	0.030	0.015	0.012
Roll & Pitch (deg)	0.020	0.015	0.008	0.005

During GNSS outage (1 min / 2 min)

Correction type	SPS / Natural	SBAS	RTK*	PPK**
Horizontal position drift (m)	0.70 / 1.40	0.70 / 1.40	0.40 / 0.80	0.08 / 0.20
Vertical position dift (m)	0.50 / 1.00	0.50 / 1.00	0.40 / 0.80	0.06 / 0.15

AIR APPLICATIONS

With GNSS

Correction type	SPS / Natural	SBAS	RTK*	PPK**
Position Horizontal (X,Y) (m)	1.200	0.600	0.006 + 0.5 ppm	0.006 + 0.5 ppm
Position Vertical (Z) (m)	1.900	0.800	0.010 + 1 ppm	0.010 + 1 ppm
Heading (deg)	0.050	0.030	0.015	0.012
Roll & Pitch (deg)	0.020	0.015	0.008	0.005
Heading drift 10min straight line (deg)	0.008	0.008	0.008	0.008

During GNSS outage (1 min / 2 min)

Correction type	SPS / Natural	SBAS	RTK*	PPK**
Horizontal position drift (m)	1.80 / 3.60	1.80 / 3.60	1.10 / 2.20	0.15 / 0.50
Vertical position dift (m)	1.00 / 2.00	1.00 / 2.00	0.60 / 1.20	0.10 / 0.30

Characteristics

Weight	2.96 kg
Material	Aluminium
Dimensions (L x W x H)	160 mm x 160 mm x 113 mm
Power supply / consumption	24VDC (12 – 33V) / <22W
Operating temperature	–20°C to 55°C
Storage temperature	–40°C to 80°C
Logging capacity	48 hours (INS and GNSS data)
MTBF	Environmental 100,000 hours
Standard	IP 66
GNSS supported signals	GPS: L1 C/A, L1C, L2C, L2 P(Y), L5 GLONASS: L1 C/A, L2C/A, L3, L2P BeiDou : B1I, B1C, B2a, B2I, B2b, B3I GALILEO: E1, E5a, E5b, E6 QZSS: L1 C/A, L1 C/B, L2C, L5 NavIC: L5 SBAS: EGNOS, WAAS, GAGAN, MSAS, SDCM
RTCM Support	RTCM v2.2, 2.3, 3.0, 3.1 – NTRIP

Interfaces

Data output rate	0.1 Hz to 200 Hz
Latency	< 3ms
Serial	RS422 or RS232
Ethernet	UDP / TCP Client / TCP server
Inputs / outputs	Configurable 2i / 2o – predefined 2o – configuration port
Pulses	3i + PPS in*** / 2o + PPS out
Options & accessories	DMI (odometer) Delph INS (post processing software)
GNSS interface embedded	
Serial or Ethernet link to the embedded GNSS	

(1) Typical RMS performance
* RTK: Real-Time Kinematic, up to 40km from base stations
** PPK: Post processing Kinematic using Delph INS post-processing software (smart coupling of INS with GNSS in forward/backward)
*** PPS input for <100µs time synchronisation
All specifications subject to change without notice