NAX-9

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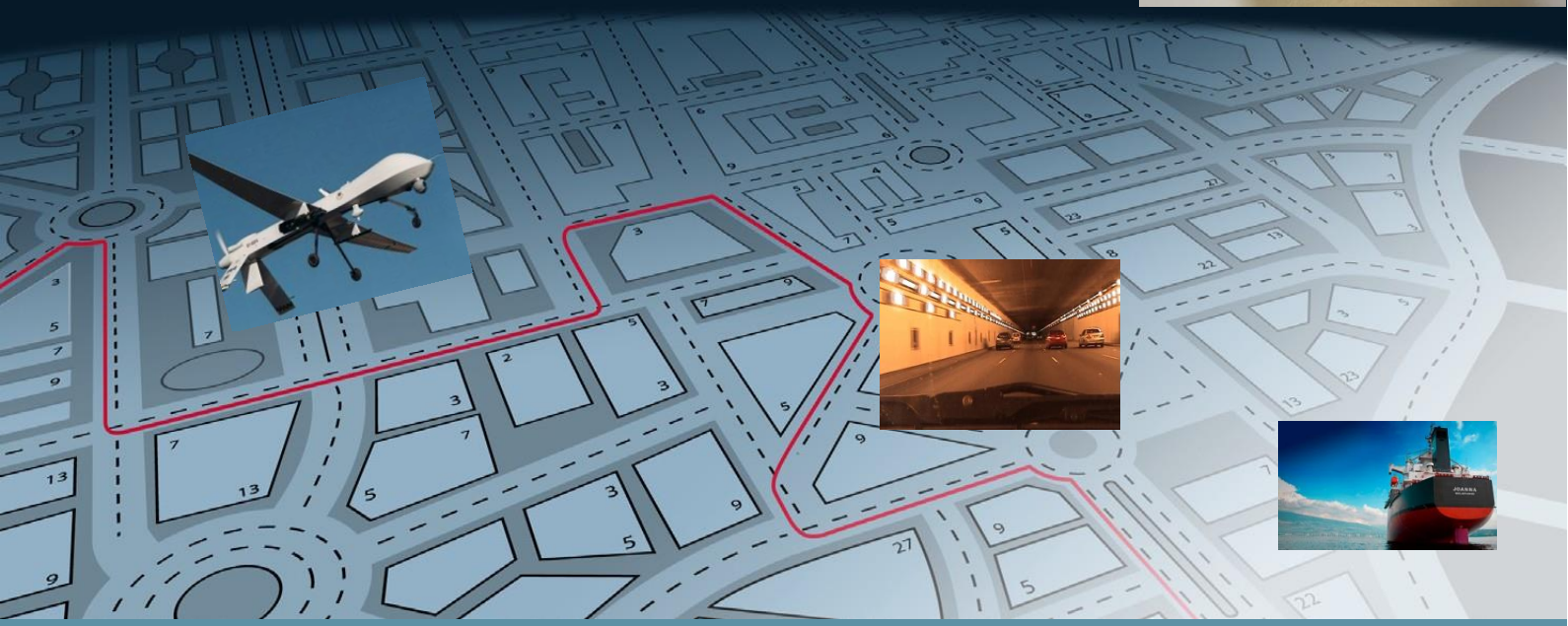
3D Attitude

0.1°
ACCURACY

Precise velocity

Continuous position



Precise inertial sensor technology on

MEMS inertial/GNSS integrated navigation system

NAX-9 new series of MEMS/GNSS integrated navigation products from NAVEXTECH, it is tiny in a 5.3 x 5.3 x 4.5cm space, of a weight 236gram. Built on NAX core data fusion technology, NAX-9 has excellent continuous navigation capability to fit your applications.

naVextech

NAX-9

Built on advanced NAX data fusion technology for MEMS/GNSS integrated navigation

0.1° attitude

Provide continuous position, velocity, and attitude of higher accuracy than GNSS only

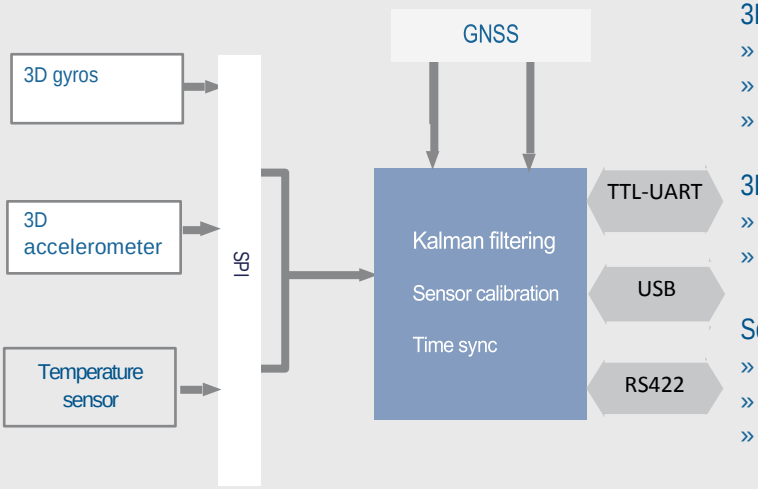
- Ultra fast startup in 2s
- Ultra fast alignment
- Stable attitude solution in 360°

Features

- » Accurate attitude in dynamics
- » Continuous and smooth velocity
- » Continuous navigation during GNSS outages
- » Start navigation output in 2s after powered on
- » Ultra-rapid alignment on the fly

Integrated high sensitive GNSS and MEMS inertial sensors, NAX-9 can provide excellent continuous navigation upon NAX core data fusion technology

- » Start attitude output in 2s w/o need of wait for GNSS TTFF
- » Support multiple alignment modes – manual input, stored heading, and on-the-fly
- » Stable attitude solution in all angle range, even in the singular Euler zone
- » Enclosed in a tiny aluminum box weighted 236gram



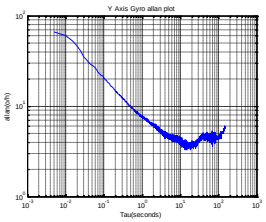
3D attitude
- » Euler
- » DCM
- » Quaternion

3D navigation
- » 3D velocity
- » 3D position

Sensor data
- » Angular rate
- » Acceleration
- » Temperature

NAX-9 consists of,
- » 3-axial MEMS gyroscope and accelerometer;
- » Support GPS and Beidou, of 72 tracking channels;
- » NAX core data fusion technology

Professional sensor calibration



NAX-9 has operation temperature in [-40, +85]degC. The inertial sensors have been calibrated in terms of the bias, scale factor, linearity, orthogonality in the factory.

Applications

Upon advanced NAX core data fusion technology, NAX-9 provides excellent continuous navigation for your applications under poor or denied GNSS reception environments

- » UAVs
- » Autonomous vehicles
- » Sports
- » Antenna controls
- » Precise agriculture

Reliability under vibrations

NAX-9 can work reliably under vibration environments. The NAX algorithm can obtain precise solution from the noisy data to capture the host platform's movement.

Parameters	Modes		Comments
Specs	Real-time	Post-proc	
Roll/Pitch	0.1˚	0.08˚	GNSS valid
Heading (Dynamic)	0.3°	0.2˚	GNSS valid
Speed(RMS)	<0.05m/s	<0.03m/s	GNSS valid
Position(SEP)	<2 m	< 1.0 m	GNSS valid
Range	360˚ in 3 axes，no installation limits		
Inertial	Accelerometer	Gyroscope	
Range	±50g	±300°/s	
Non-linearity	<0.1%	<0.1%	All range
Bias instability	127ug	3°/h	All range
Scale factor	20000/*g*	10000/°/s	room temperature
Random walk	34ug/√h	0.12°/√h	
Scale factor variation	--	±73ppm	-40°C to +85°C
G sensitivity	--	8°/h/g	
Output rate	100Hz	100Hz	

GNSS		
Features	L1,C/A,72 channels,GPS+Beidou	
Warm start	< 1s	stored ephemeris valid
Cold start	< 26s	stored ephemeris invalid
Sensitivity	-167dBm	

Communication		
Output	Position, velocity, attitude, acceleration, angular rate	Configurable in NAXB protocol
Updating rate	100Hz	100Hz continuous output
Port	RS422, TTL serial, USB	Output in NAXB protocol

Physics	
Size	5.3 x 5.3 x 4.5cm；
Weight	236g
Temperature	-40 ~ 85°C
Input power	5 ~ 18V
Consumption	1W