NAX-10

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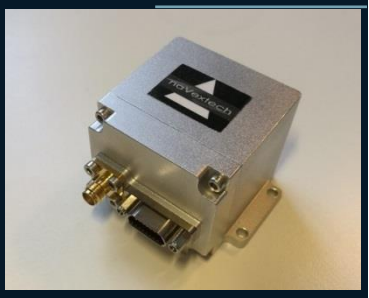
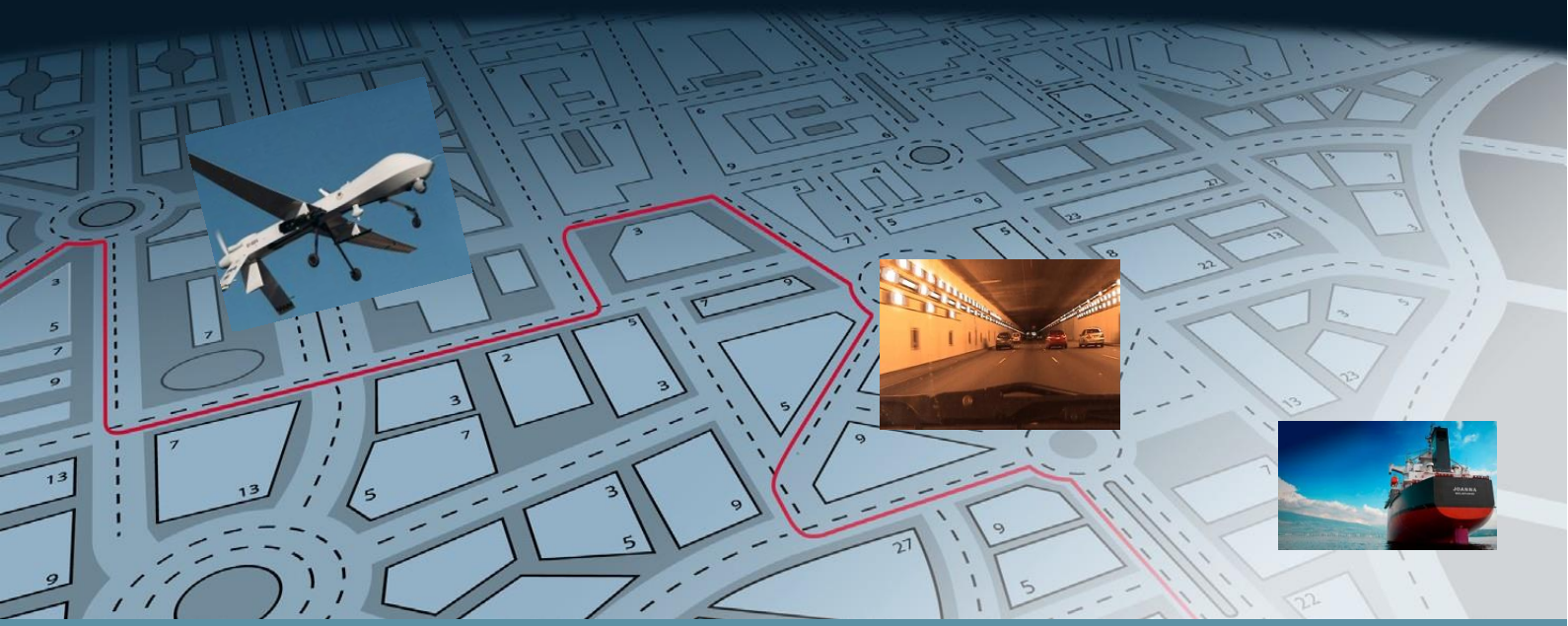
3D Attitude

0.3°
ACCURACY

Precise velocity

Continuous position





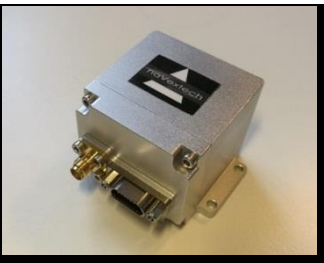
Performance and cost balanced choice on

MEMS inertial/GNSS integrated navigation system

NAX-10 new series of MEMS/GNSS integrated navigation products from NAVEXTECH, it is tiny in a 4.4 x 5.6 x 3.9cm space, of a weight 144gram. Built on NAX core data fusion technology, NAX-10 has excellent continuous navigation capability to fit your applications.

NAX-10

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



0.3° attitude

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

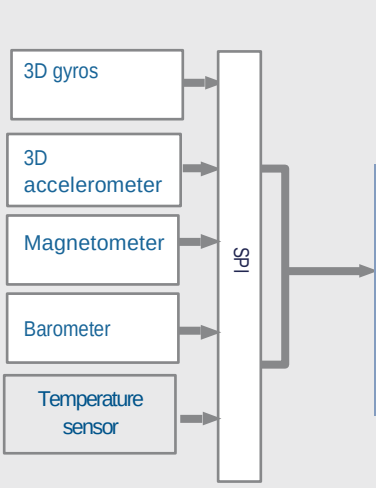
- Ultra fast startup in 2s
- Ultra fast alignment
- Stable attitude solution in 360°

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-10 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 144gram



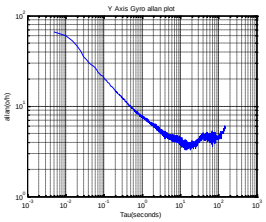
3D attitude
» Euler
» DCM
» Quaternion

3D navigation
» 3D velocity
» 3D position

Sensor data
» Angular rate
» Acceleration
» Temperature

NAX-10 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-10 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-10 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-10 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	0.3˚	0.2˚	GNSS valid
Heading (Dynamic)	0.6°	0.4˚	GNSS valid
Speed(RMS)	<0.1m/s	<0.05m/s	GNSS valid
Position(SEP)	<2 m	< 1.0 m	GNSS valid
Range	360˚ in 3 axes，no installation limits		
Inertial	Accelerometer	Gyroscope	
Range	±18g	±350°/s	
Non-linearity	0.1%	0.025%	All range
Bias instability	200ug	27°/h	All range
Initial Bias	50mg	3°/s	1σ
Random walk	0.2m/s/√h	2.0°/√h	
Temperature variation	±120ppm/°C	±250ppm°C	-40°C to +85°C
VCC sensitivity	2.5mg /√Hz	0.32°/s/√Hz	VCC=4.75 ~ 5.25V
Output noise	9mg	0.9°/s	RMS

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	RS232, RS422	Output in NAXB protocol

Physics	
Size	4.4 x 5.6 x 3.9cm；
Weight	144g
Temperature	-40 ~ 85°C
Input power	7 ~ 18V
Consumption	1W