Overview

AheadX is aiming to create Inertial Navigation System and Attitude and Heading Reference System with high performance and reliability but smaller size and lower cost. These products could be applied in various high dynamic responses, such as UAV, robot, underwater vehicle, PTZ augmentation device, somatosensory equipment, games / film production, etc. So far, thousands of UAV and robots have been installed with AheadX navigation products.

Pluto Series is designed for geeks and robot enthusiasts. It is ultra-compact low-cost Attitude and Heading Reference System (AHRS), not only providing 2D navigation solution for UGV such as self-balancing scooters, but also 3D navigation solution for UAV and UUV application.

Pluto N1 is compact AHRS with high performance-price ratio. The output rate of N1 reaches 200HZ maximally, integrating triaxial gyro, triaxial accelerometer, triaxial magnetic meter as well as barometric altimeter and thermometer. Inertial sensor was temperature-compensated by -10℃ to 75 , it also provides data of barometric height and rising/falling speed besides ordinary AHRS. All the functions are integrated into a metal box dimensioned 30mm*27mm*9mm. Moreover, it is able to combine GPS/GLONASS to become GNSS/INS. Pluto provides complete solutions to either UGV or UAV.

Features:

-10℃-75℃ temperature compensation

Besides the normal AHRS functions, Pluto also output the data of barometric height/rising or falling speed.

The excellent barometric altimeter anti-jamming algorithm, could solve the problems caused by the inaccurate data due to the sudden airflow disturbance

Flexible protocol. Users could configure the output data from Pluto

Provide free protocol decoding source code with the product

User-friendly evaluation software

Metal shell with high shielding property, contains two M1.6 screw holes, easy to install

 Flexible way of installation via arbitrary angle.

It has been used in consumption level drones and self-balancing scooters, above 100 thousand of units have installed

Specifications

Physical features	Weight (g)	10.5
	Size　mm	30*27*9.25
	Temperature Compensation　℃)	-10-75 ℃
Electrical specification	Supply Voltage　V	4-6
	Power Consumption　mW	360
I/O	Data Output Rate　Hz	200Hz ajustable
	I/O	TTL /USB
	Baud Rate (bps)	115200
System parameters	Heading Angle Range　°	0-360
	Roll Angle Range　°	±180
	Pitch Angle Range　°	±90
	Dynamic Pitching/Rolling Accuracy　°	1
	Static Pitching/Rolling Accuracy　°	0.5
	Dynamic Heading Accuracy　°	2
	Static Heading Accuracy （°）	0.8
	Attitude Angle Resolution　°	0.1

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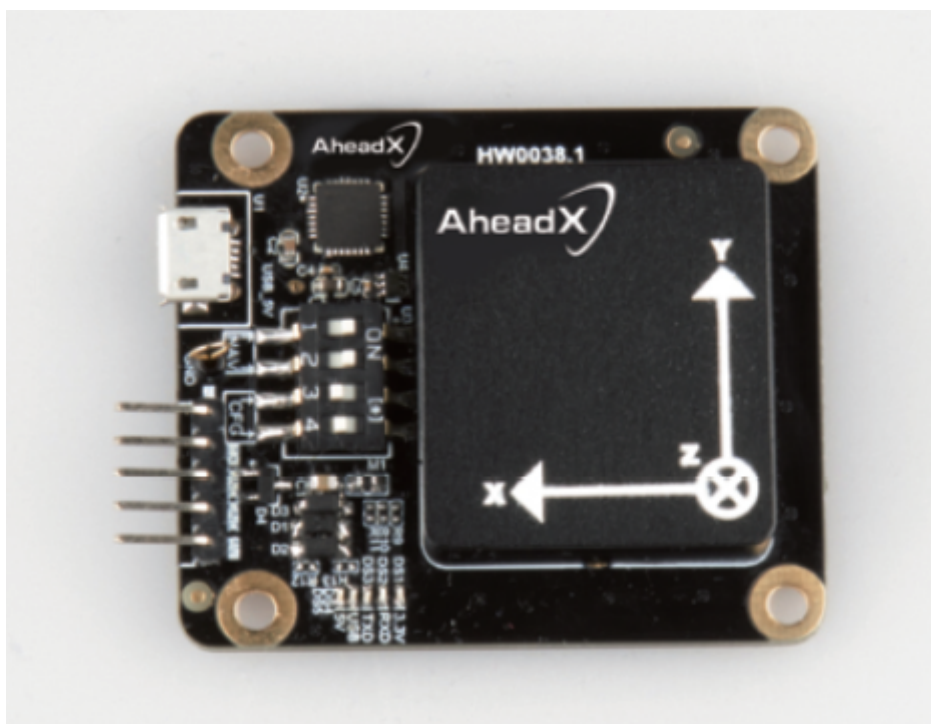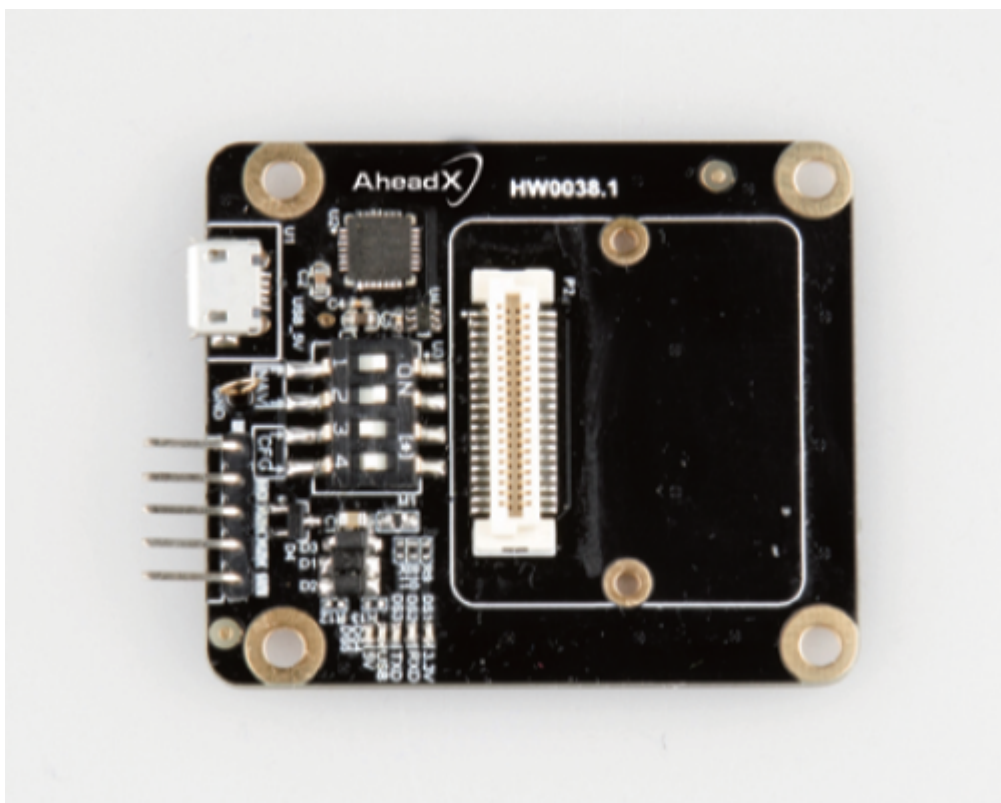|		
	Quaternion Output	support
	3D Angular Rate Range °/sec	±500 or ±2000(optional)
	Rising/Falling Speed Accuracy (m/s)	0.02
	3D Acceleration Range(g)	±16
	Barometer Height Accuracy (m)	0.2
	Fusion Height Accuracy (m)	0.1

Pluto Size
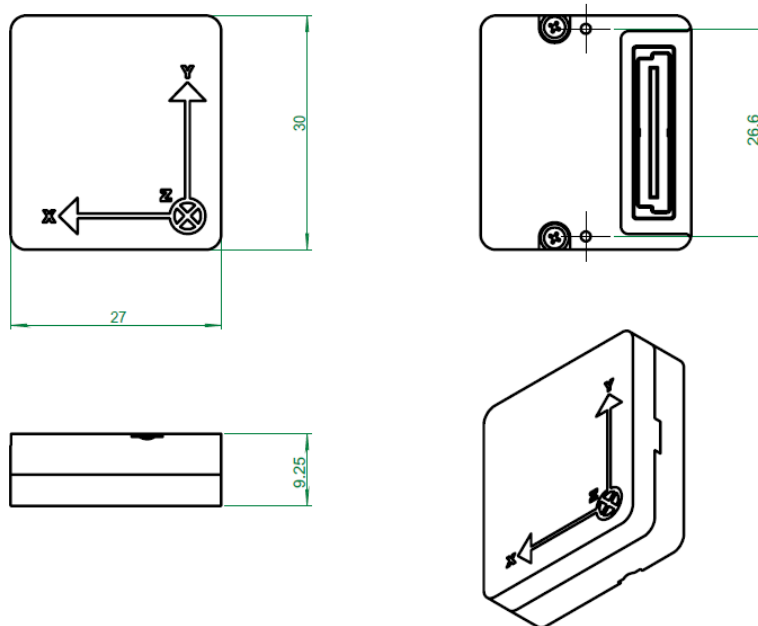
单位：mm

Ddevelopment kits

Pluto navigation products use TTL serial output of the motion data of the carriers in real time. We design

the evaluation software GI-Center to bring more convenience to users, from which users are able to observe the motion data of the object directly. GI-Center provides output data configuration, magnetic calibration, installation calibration, etc. it could also record the output data from Pluto for data analysis.
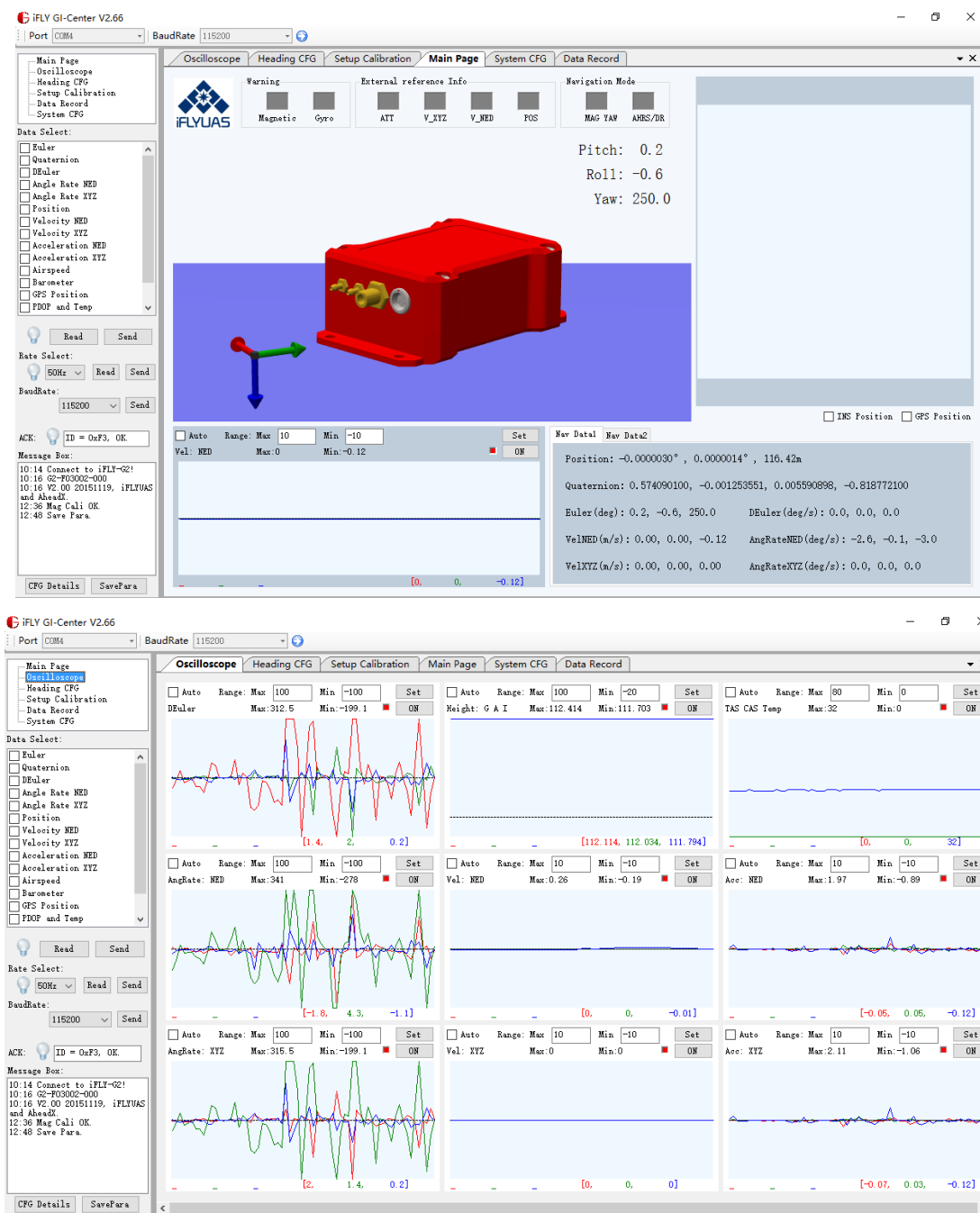
Furthermore, the communication protocol of Pluto and decoding source code in C-language will be provided to users. For Pluto, there is an evaluation baseboard with the product extra, it will help users to apply Pluto in their applications much easier.

Typical Developing Diagram