

AUTOPILOT KIT

GPS Waypoint Navigation Development Platform

AgileX Autopilot Kit is a hardware and software solution that allows users to navigate by selecting GPS Waypoints, while also avoiding obstacles. It enables autonomous navigation and positioning, accurate route planning without the need for preloaded maps. Autopilot Kit is compatible with multiple high-performance AgileX chassis that provides outstanding off-road and climbing performance in scenarios such as agriculture, outdoor survey, construction and environmental monitoring, and perimeter security.

Autonomous obstacle avoidance with LiDAR	Auto navigation from point to point
CM-level RTK autonomous positioning	High-precision 3D mapping
Four-wheel independent suspension	Rich ROS simulation tutorials

*Chassis options



Scout Mini off-road version



Bunker



Scout2.0

Pixhawk 4 navigation and flight control

high-precision LiDAR

High-performance Industrial Personal Computer (IPC)

Four-wheel drive differential mobile chassis



Wireless WIFI communication

RTK-GPS receiving antenna

Binocular camera

Realsense camera

Specifications

Vehicle body			
Model	Scout Mini	L×W×H (mm)	627x549x248
Front/rear wheelbase (mm)	450	Vehicle weight (KG)	20
Max speed without load (km/h)	10.8	Min turning radius	Turnable in situ
Max climbing capacity	30°	Min ground clearance (mm)	107
Front/rear wheelbase (mm)	450		



Binocular camera

Model: Intel Realsense T265

Chip: Movidius Myraid2

FoV: Two fisheye lenses, combined with nearly hemispherical 163±5.

IMUB: BMI055 inertial measurement unit allows precision measurement of rotation and acceleration of equipment



Depth camera

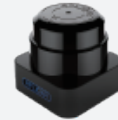
Model: Intel Realsense D435i

Depth technology: Active IR Stereo

Depth stream output resolution: Up to 1280*720

Depth stream output frame: Up to 90fps

Min depth distance: 0.1m



Laser radar

Model: Rplidar S1

Laser ranging technology: TOF

Measuring radius: ≤40m

Sampling speed: 9200 times/s

Measuring resolution: ≥1cm

Scanning frequency: 10Hz (8Hz-15Hz adjustable)



RTK-GPS module

Satellite signal Supported Types: GPS / BDS / GLONASS / QZSS

RTK positioning accuracy:

horizontal 10mm +1ppm/vertical 15mm +1ppm

Orientation accuracy (RMS): 0.2° / 1m baseline

Speed accuracy (RMS): 0.03m/s

Time accuracy (RMS): 20ns

Differential data: RTCM2.x/3.x CMR CMR+ /

NMEA-0183, BINEX

Data Format: Femtomes ASCII and Binary format

Data Update: 1Hz / 5Hz / 10Hz / 20Hz (optional)



Pixhawk 4 Autopilot

FMU processor: STM32 F765

IO processor: STM32 F100

Accel/Gyroscope : ICM-20699

ACMEL/Gyroscope: BMI055

Magnetometer: IST8310

Barometer: MS5611

Servo Guideway Input: 0~36V

Weight: 158g

Size: 44x84x12mm

GPS: ublox Neo-M8N GPS/GLONASS receiver; integrated Magnetometer IST8310



Onboard Computer

Model: X86

CPU: I7-8th Generation

Memory: 8G

Storage: 128G solid state

System: Ubuntu 18.04

ROS: melodic

*Compatible chassis: Scout Mini off-road version, Scout2.0 and Bunker chassis
 Science and Technology Industrial Park, Songshan Lake, Dongguan
 University Town, Xili, Shenzhen
 Tel: +86-769-22892150/19925374409 E-mail: sales@agilex.ai
 Official website: www.agilex.ai



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