Radiolink SE100

(M8N GPS)

User Manual

Compatible with APM and PIXHAWK

INTRODUCTION

Thank you for purchasing RadioLink M8N GPS SE100.

Suggestion: In order to fully enjoy the benefits of this GPS, please read the manual carefully and set up the device as described below.

Please refer to the manual or call our after-sales (+86-0755-88361717) or log in https://www.facebook.com/Radiolink-1455452961436694/ to check the issues related answer to questions if you have any questions.

Due to unforeseen changes in production procedures, the information contained in this manual is subject to change without notice.

More information please check our website as below:

http://www.radiolink.com

Support and Service:

It is recommended to have your RadioLink equipment serviced annually during your hobby's "off season" to ensure safe operation.

Please be sure to regularly visit the Service and Support website at www.radiolink.com. This page includes extensive programming, use, set up and safety information.

Any technical updates and manual corrections will be available on this web pages. If you do not find the answers to your questions there, please see the end of our contact area for information on contacting us via email for the most rapid and convenient response.

FOR AFTER-SALES SERVICE:

Please start here for getting more service.

www.radiolink.com

Phone:+86-755-88361717

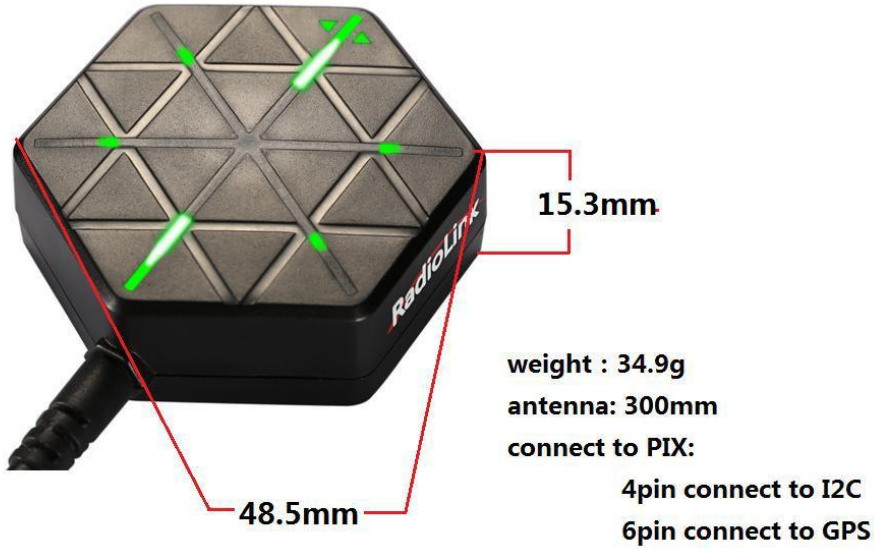
Email: after_service@radiolink.com.cn

M8N GPS SE100

RadioLlink M8N GPS SE100, benefits from 15 years of professional wireless experiences of RadioLink engineers, exceed the limitation of IC sensitivity index from circuit schematic design to PCB placement.

50 centimeter position accuracy. Positioning 20 satellites in 6 seconds at open ground. Industry-leading valley station-keeping ability.

SE100 is suitable for all the open-source flight controller such as PIXHAWK, APM, NAZE32 and so on.



RadioLink M8N GPS SE100 Configuration

GPS decoder chip: RadioLink M8N GPS SE100 use the best receiving chip of first GPS brand u-blox UBX-M8030(M8), 72-channel, MMIC BGA715L7 from Infineon, is much better than single GNSS 7N.

Concurrent reception of GPS/QZSS L1 C/A,GLONASS L10F, BeiDou B1, two GNSS working at the same time.

SBASL1 C/A: WAAS, EGNOS, MSAS

Geomagnetic: HMC5983 from Honeywell

Antenna: 2.5dbI high gain and selectivity ceramic antenna

Power amplify IC: MMIC BGA715L7 from Infineon

Double Filter: SAWF (Surface acoustic wave filter) form Murata

Parameter

1) Positional Accuracy: 50 centimeter precision when working with concurrent GNSS.

2) Velocity precision: 0.1m/s Max update rate: up to 10Hz

3) Max height: 50000m Max speed: 515m/s

4) Max acceleration: 4G

5) Sensitivity

Tracking & Nav: -167dBm, Capture signal: -163dBm, Cold start: -151dBm, Hot start: -159dBm.

6) Time to first fix: Cold start: 26s, Hot start:1s.

7) Connect ports

Power supply: voltage 5V DC+-5%, current 50~55mA

8) Ports

A. GPS UART interface, baud rate: 1.2K/4.8K/9.6K/19.2K/38.4K/57.6K/112.5K

B. Geomagnetic I2C interface

Positioning Indicate

Humanized positioning green LED indicate. After power-on, the indicators near the antenna are always on; when the satellite is found, the indicators near the antenna are always on, and the other indicators are blinking.

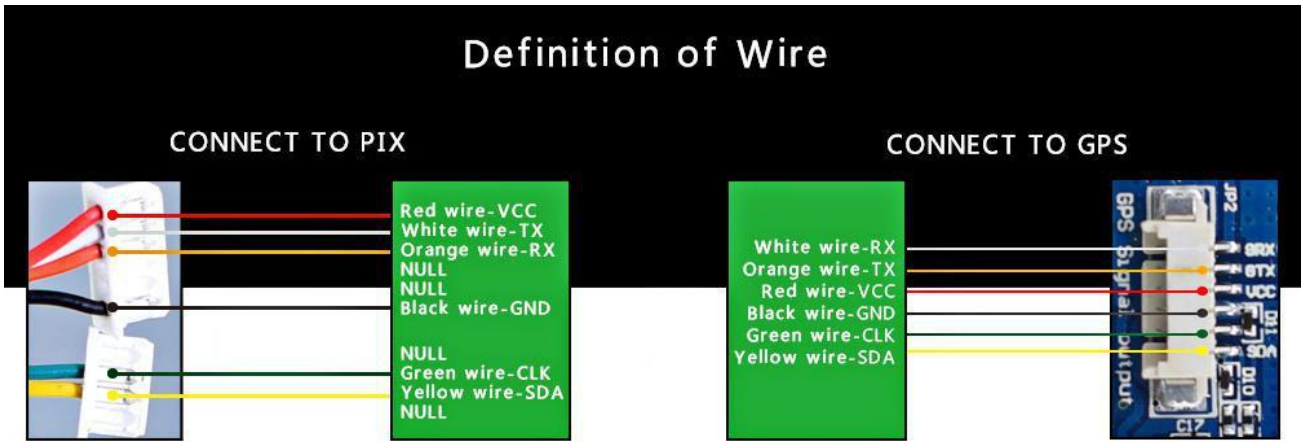
the green LED near antenna will on when SE100 power on

the LED near antenna always on and other LED flicker when SE100 have positioning

Definition of Connector

Connect to PIX: Red wire-VCC, White wire-TX, Orange wire-RX, Black wire-GND, Green wire-CLK, Yellow wire-SDA

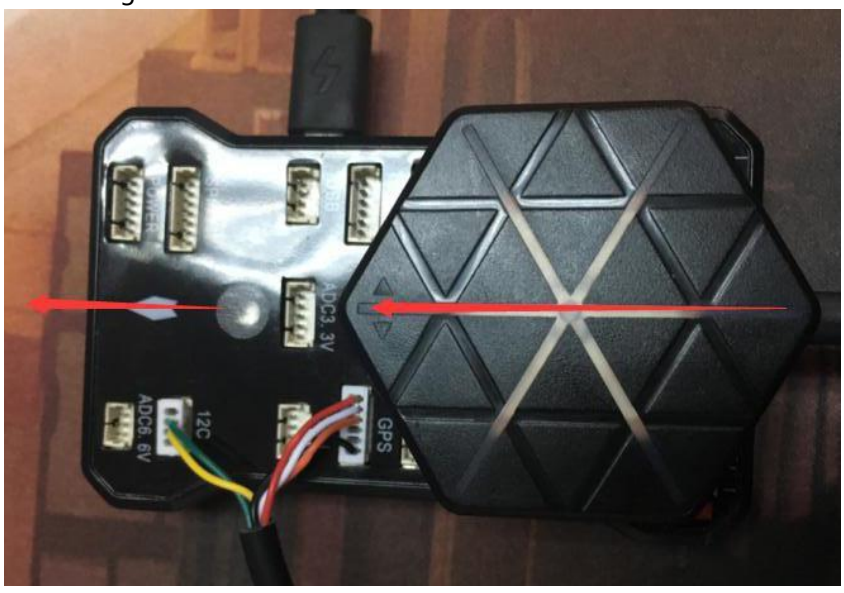
GPS Mainboard: White wire-RX, Orange wire-TX, Red wire-VCC, Black wire-GND, Green wire-CLK, Yellow wire-SDA



Direction Indicate

Arrows shows the front, point to the same direction as the flight controller.

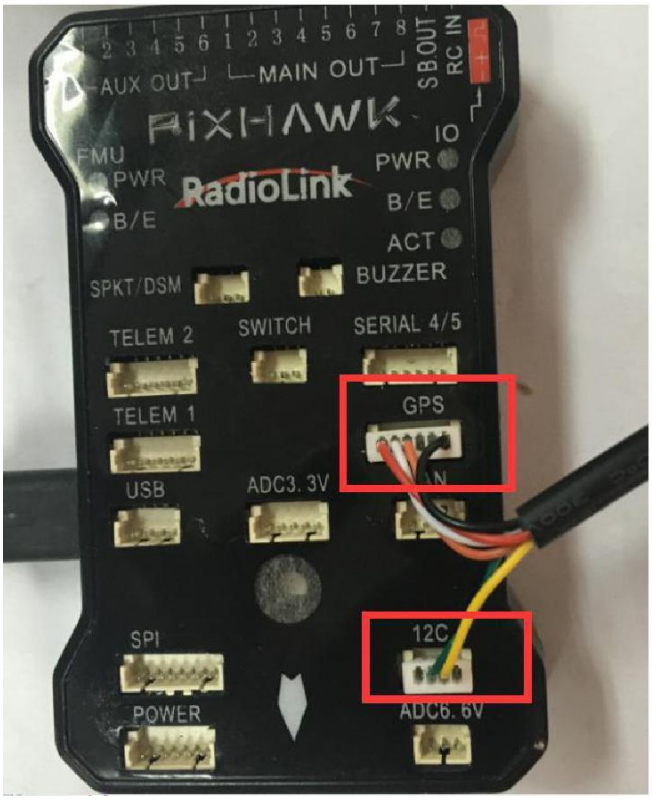
Keep the same direction with flight controller.

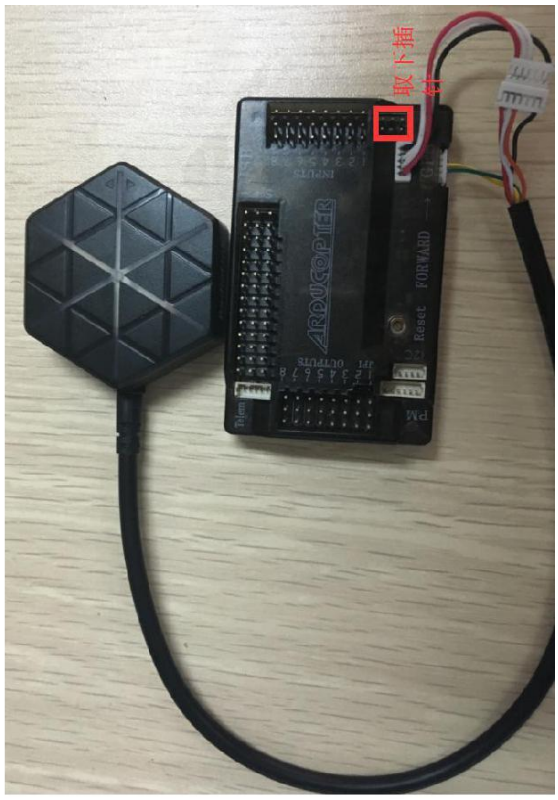


GPS connect to PIXHAWK **Connect to APM**

6pin for GPS connect port： Pay attention to the installation direction, the GPS direction is consistent with the flight control direction;

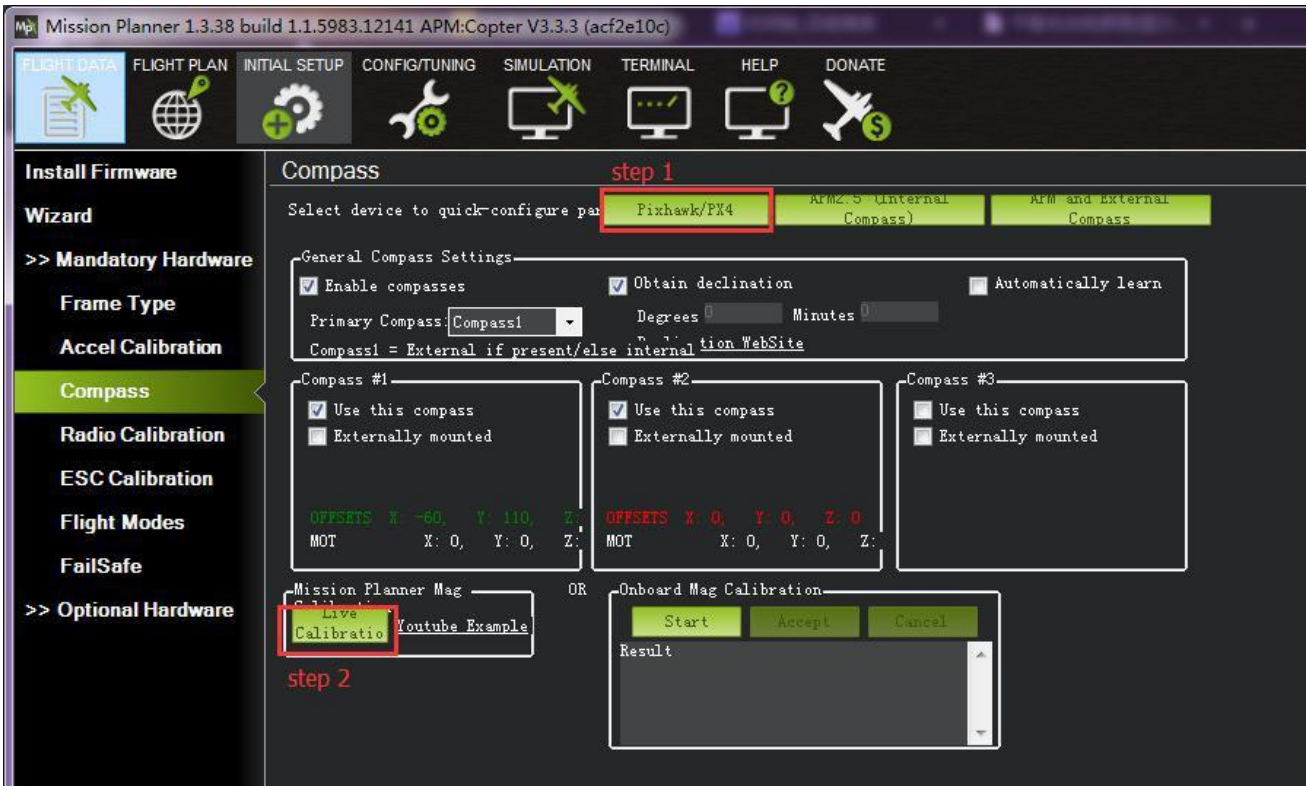
4pin for I2C connect port: Take off the internal compass of APM. Otherwise, there is no data even if the GPS compass is plugged in.



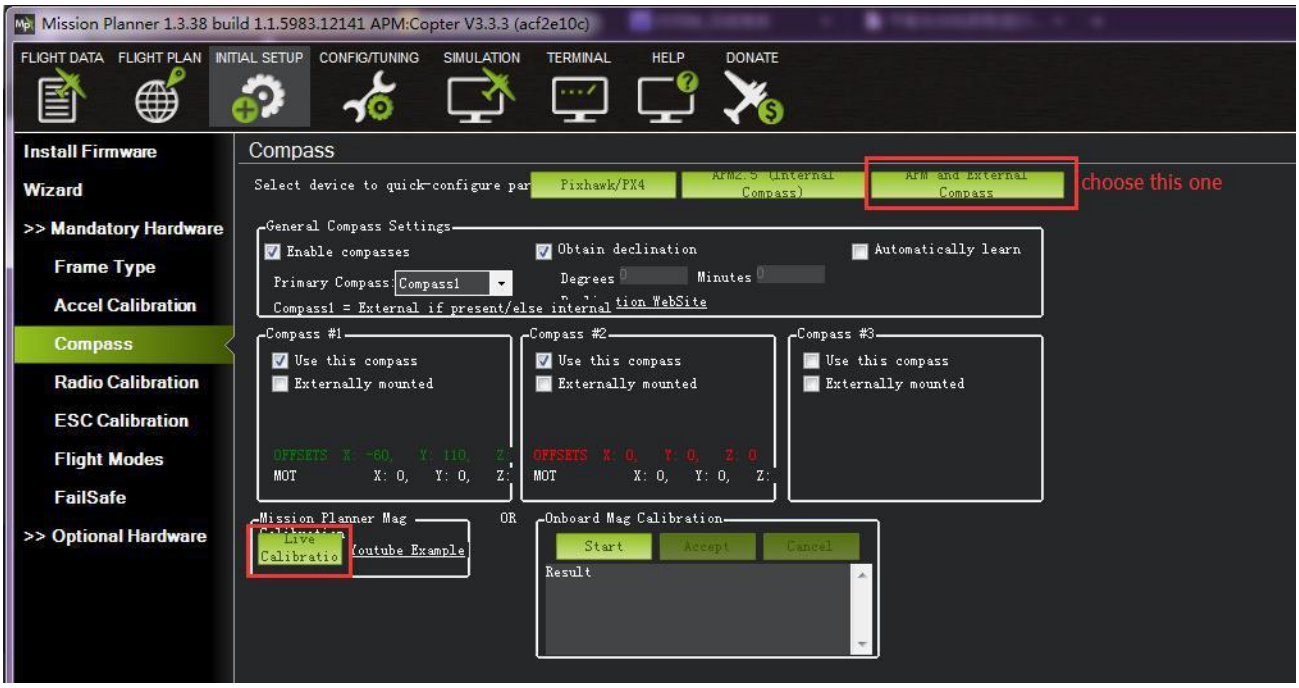


Compass calibrate (calibrate with APM mission planner)

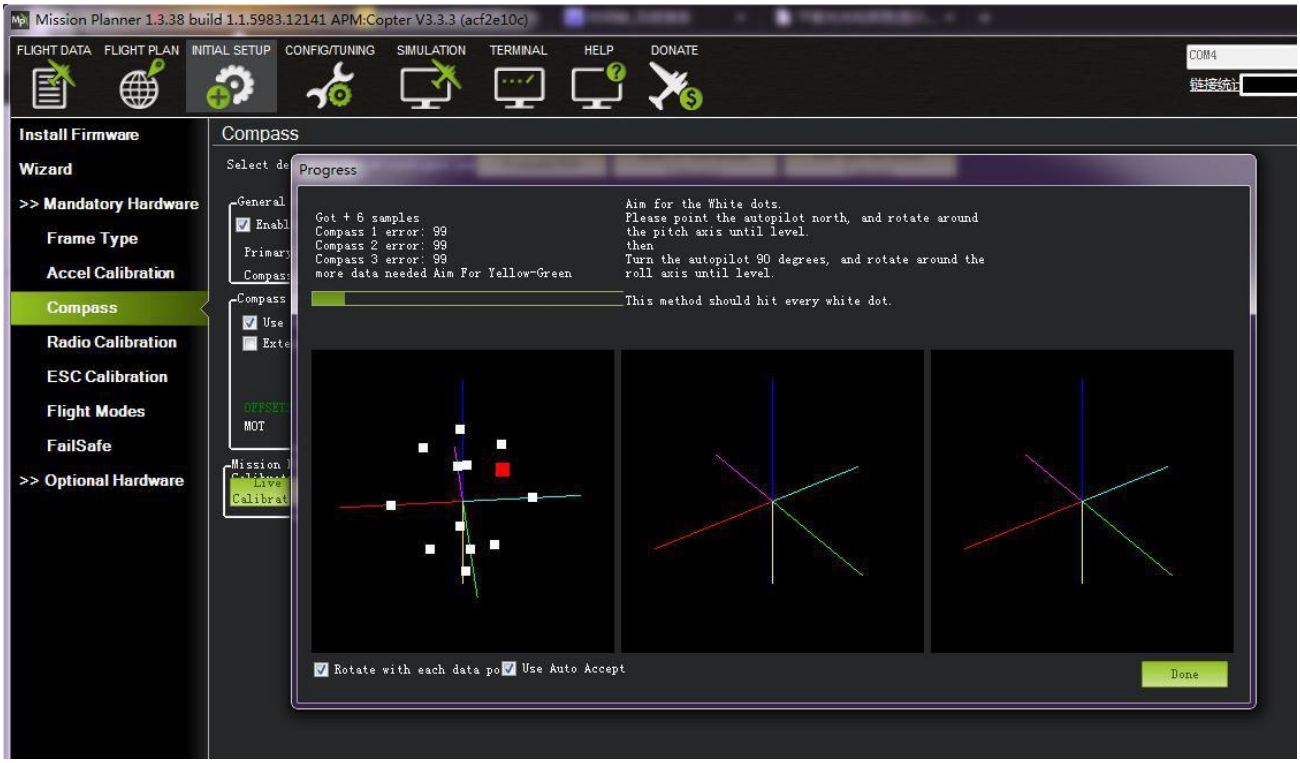
Compass calibrate（Using version 1.3.39 of Mission planner），please choose Pixhawk/PX4 if you use with PIXHWAK.

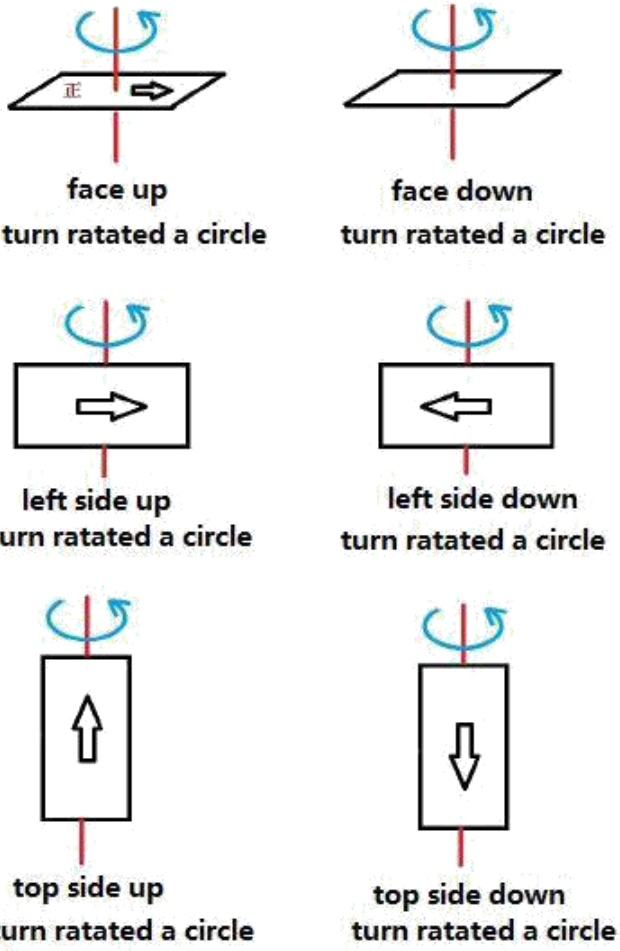


If you use with flight controller APM, please choose APM and External Compass and then click Live Calibration to calibrate the compass.



Calibrate like this picture shows, click Done to finished the calibrate. Click OK to save the settings.





If $\sqrt{X^2+Y^2+Z^2}$ < 600, please try to cancel Compass #1 or Compass #2.