HGLRC M100-5883 GPS
Manual

Parameters

Receiver Type： ■GPS/QZSS L1C/A■SBAS EGNOS、GAGAN、MSAS和WAAS
■GLONASS L1OF ■BDS B1I ■Galileo E1B/C

Sensitivity: Tracking and Navigation -166DBM, re-obtain -160dbm, cold start-148dbm

The first fix[1] time: Cold start 29s, hot start 1S

Horizontal positionaccuracy[2]: .02 m CEP

Accuracy of Time Mai Signal: RMS 30ns, 99% 60ns

Speed precision m: 0 m/s.05

Operating limits: Interaction ≤ 4 g, altitude 80,000 m, speed 500 m/s

Frequency of time pulse signal: 1Hz

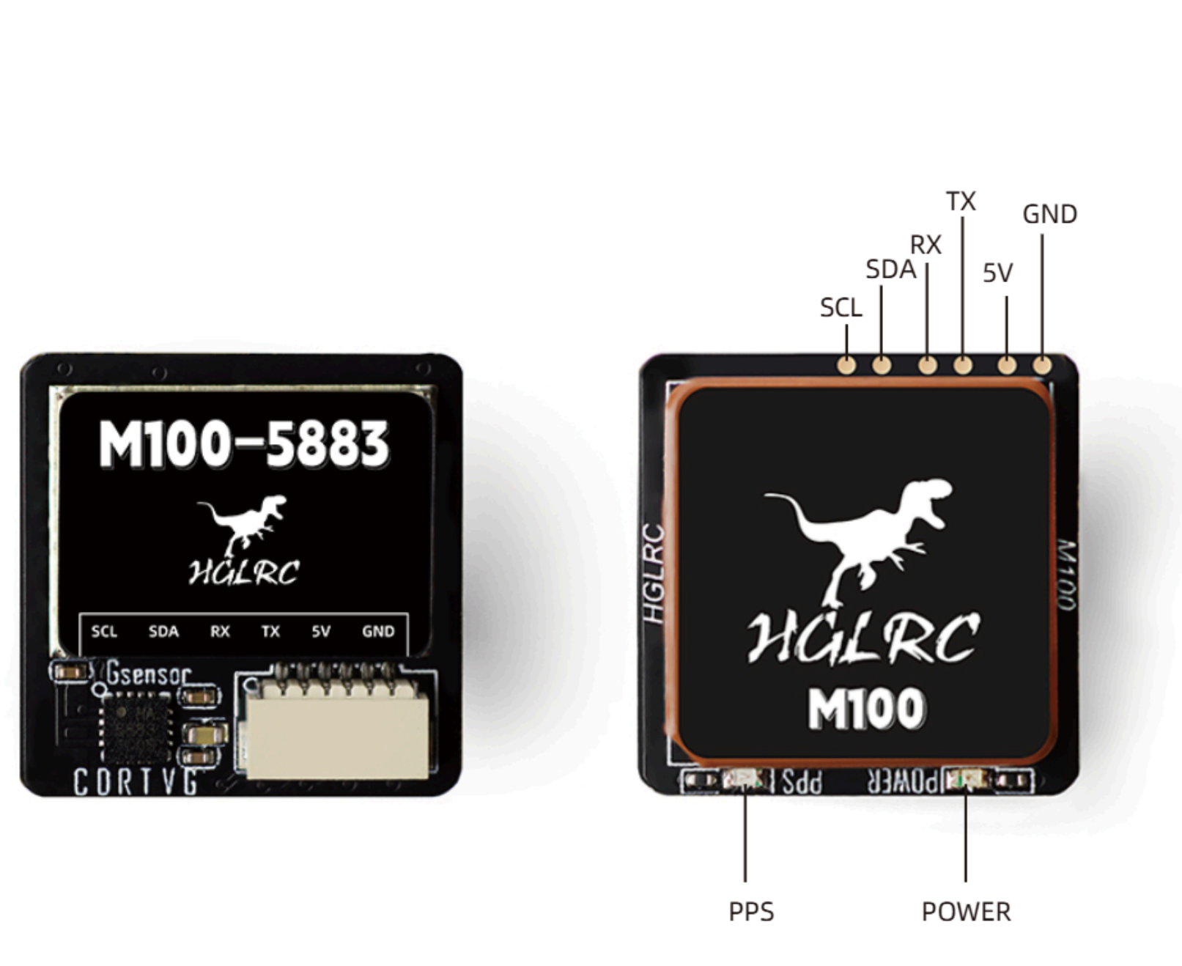
Potter rate: 9,600 -460800 BPS (default is 115200 bps)

Maximum navigation update rate: 10Hz (default 10 Hz, configuration)

*The default GPS+Galileo+QZSS+SBAS, BDS and Honor are not supported at the same time

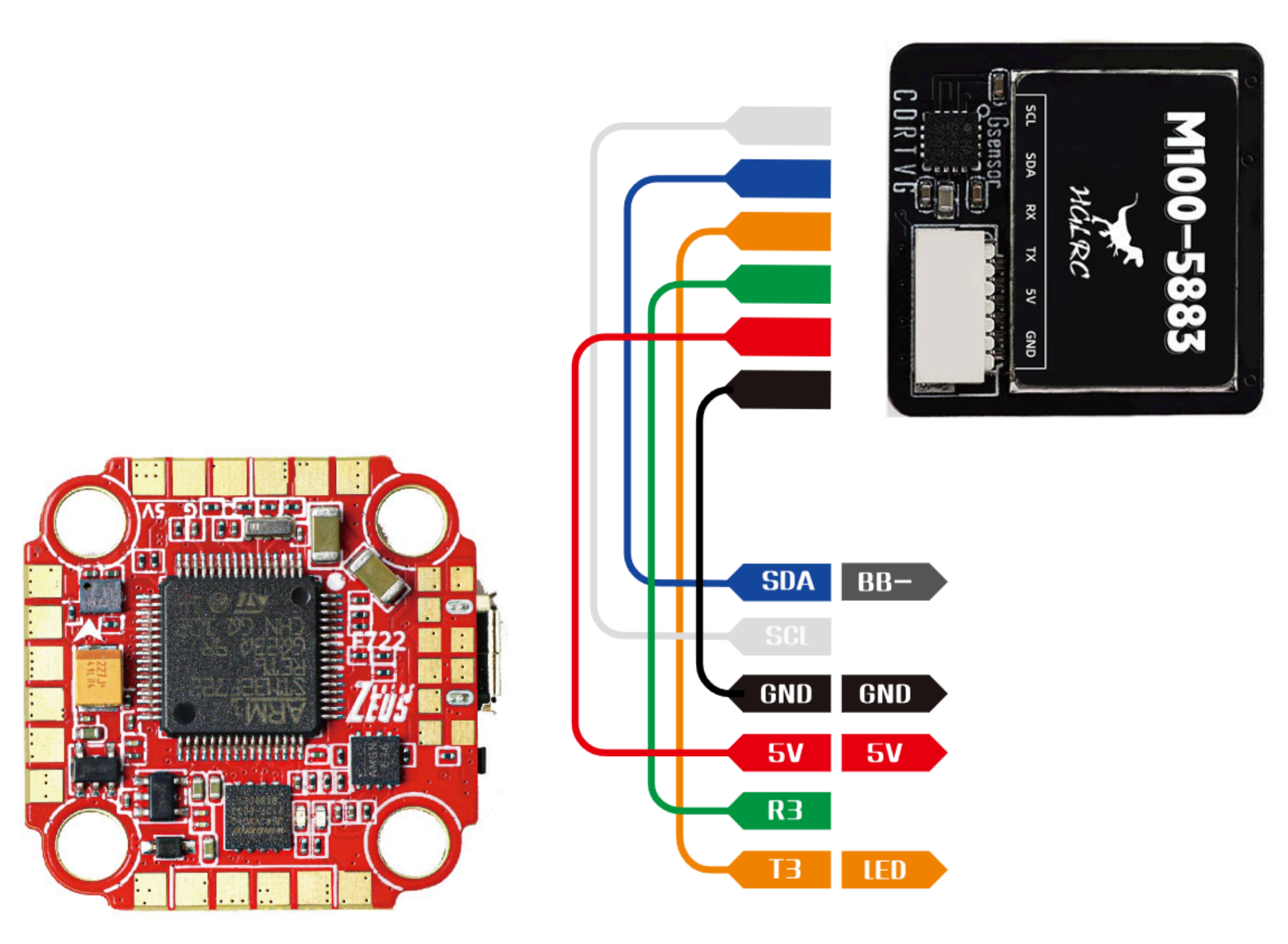
1. All satellites are ≥-130dBm
2. CEP 50%, 24 hours static, ≥-130dBm, > 6SVs
3. 50%, 30 m/s, dynamic operation
4. Assuming onboard < 4g platform

Introduction



Indicator light	PPS (blue light))	Power (red light)
Normal start	normal bright	normal bright
Real position accuracy	Flickering	normal bright

Wiring diagram



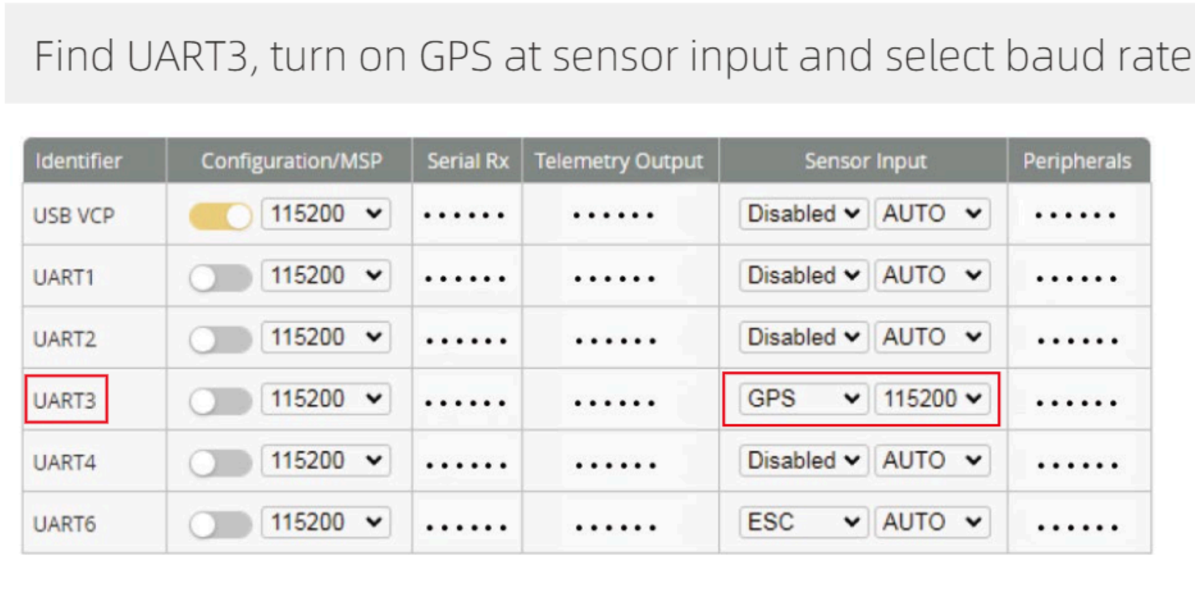
Connect the GPS to any port of the flight controller according to the wiring diagram, and use UART3 as a demonstration

(Note: Be sure to connect to a free serial port or a dedicated GPS serial port)

Betaflight settings

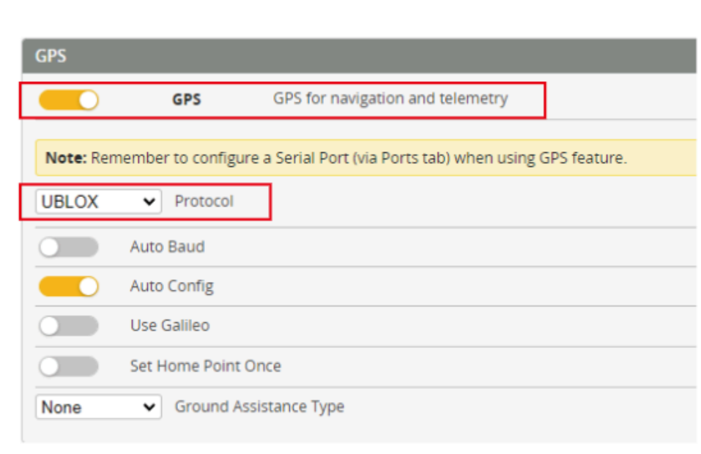
Open the port page of Betaflight, set the sensor input type to GPS, and the baud rate to 115200

Find UART3, turn on GPS at sensor input and select baud rate 115200



Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	115200	......	......	Disabled AUTO	......
UART1	115200	......	......	Disabled AUTO	......
UART2	115200	......	......	Disabled AUTO	......
UART3	115200	......	......	GPS 115200	......
UART4	115200	......	......	Disabled AUTO	......
UART6	115200	......	......	ESC AUTO	......

Turn on GPS and enable UBLOX protocol



GPS

GPS — GPS for navigation and telemetry

Note: Remember to configure a Serial Port (via Ports tab) when using GPS feature.

UBLOX — Protocol

Auto Baud

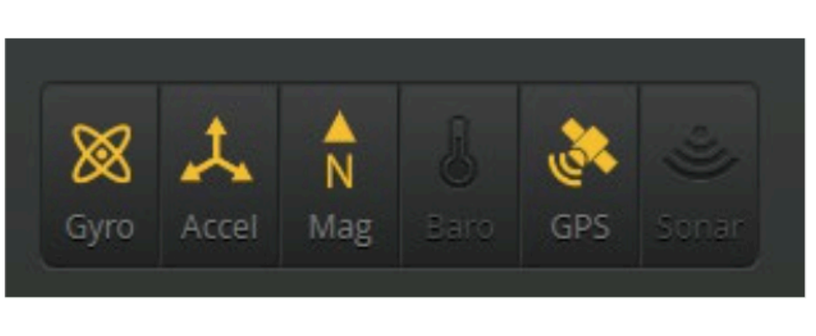
Auto Config

Use Galileo

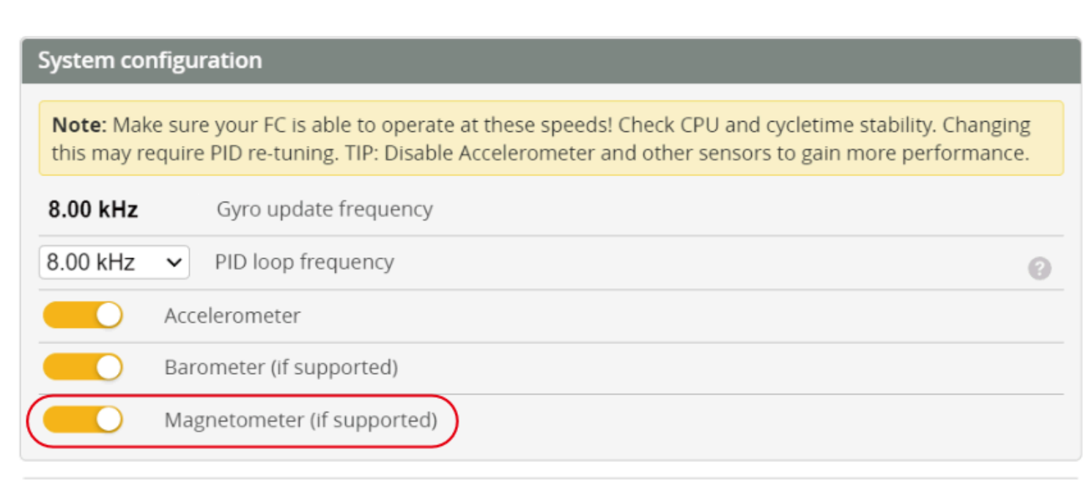
Set Home Point Once

None — Ground Assistance Type

Power on the aircraft, the indicator light will be on when the GPS is working normally, and the GPS logo on the top of Betaflight will be on



Compass direction



System configuration

Note: Make sure your FC is able to operate at these speeds! Check CPU and cycletime stability. Changing this may require PID re-tuning. TIP: Disable Accelerometer and other sensors to gain more performance.

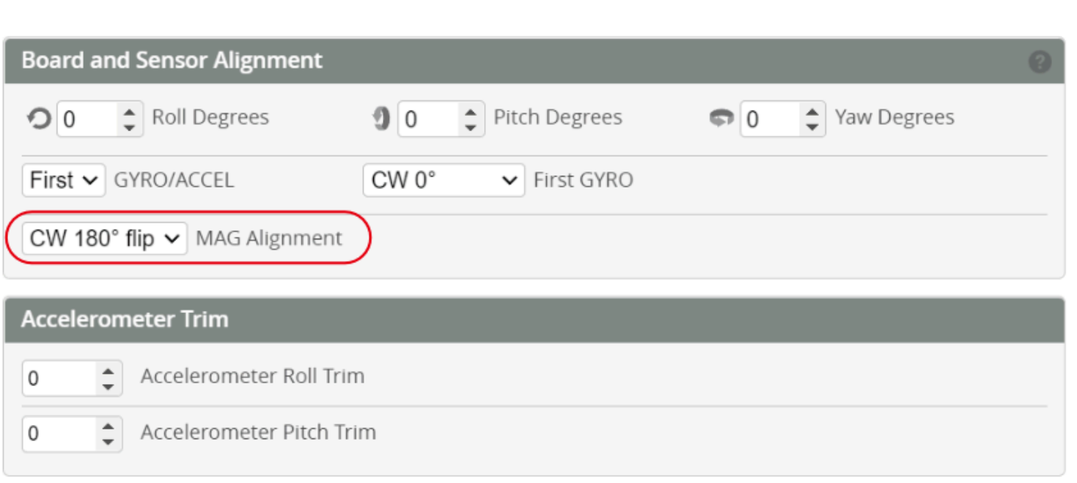
8.00 kHz — Gyro update frequency

8.00 kHz — PID loop frequency

Accelerometer

Barometer (if supported)

Magnetometer (if supported)



Board and Sensor Alignment

0 Roll Degrees — 0 Pitch Degrees — 0 Yaw Degrees

First — GYRO/ACCEL — CW 0° — First GYRO

CW 180° flip — MAG Alignment

Accelerometer Trim

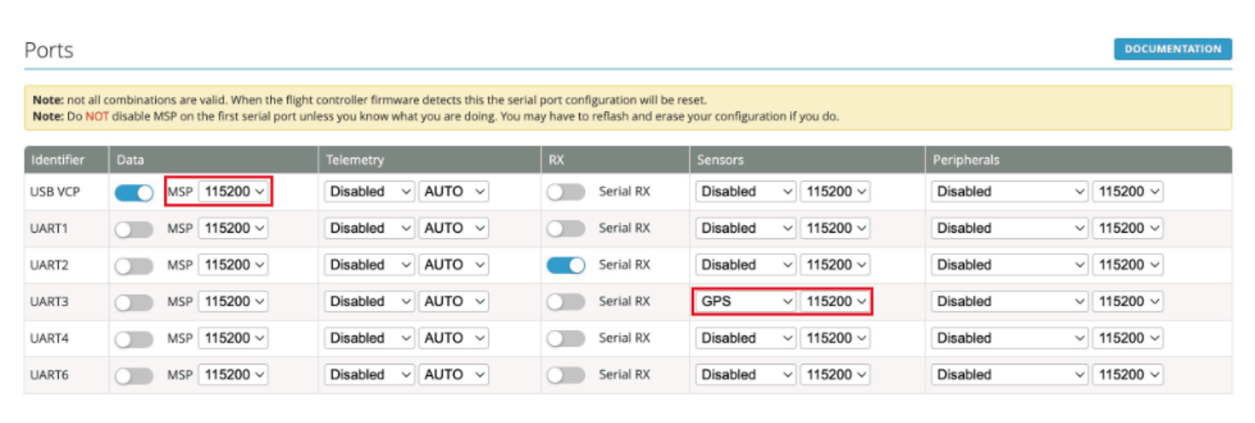
0 — Accelerometer Roll Trim

0 — Accelerometer Pitch Trim

INAV settings

Open the configuration page of INAV, set the sensor input type to GPS, and the baud rate to 115200

Find UART3, turn on GPS at sensor input and select baud rate 115200



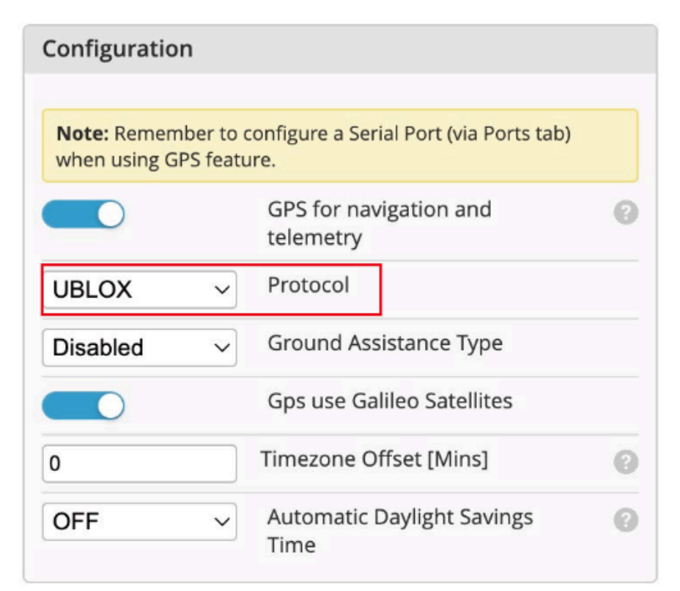
Ports

DOCUMENTATION

Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do NOT disable MSP on the first serial port unless you know what you are doing. You may have to reflash and erase your configuration if you do.

Identifier	Data	Telemetry	RX	Sensors	Peripherals
USB VCP	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	Disabled 115200
UART1	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	Disabled 115200
UART2	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	Disabled 115200
UART3	MSP 115200	Disabled AUTO	Serial RX	GPS 115200	Disabled 115200
UART4	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	Disabled 115200
UART6	MSP 115200	Disabled AUTO	Serial RX	Disabled 115200	Disabled 115200

Turn on GPS and enable UBLOX protocol



Configuration

Note: Remember to configure a Serial Port (via Ports tab) when using GPS feature.

GPS for navigation and telemetry

UBLOX — Protocol

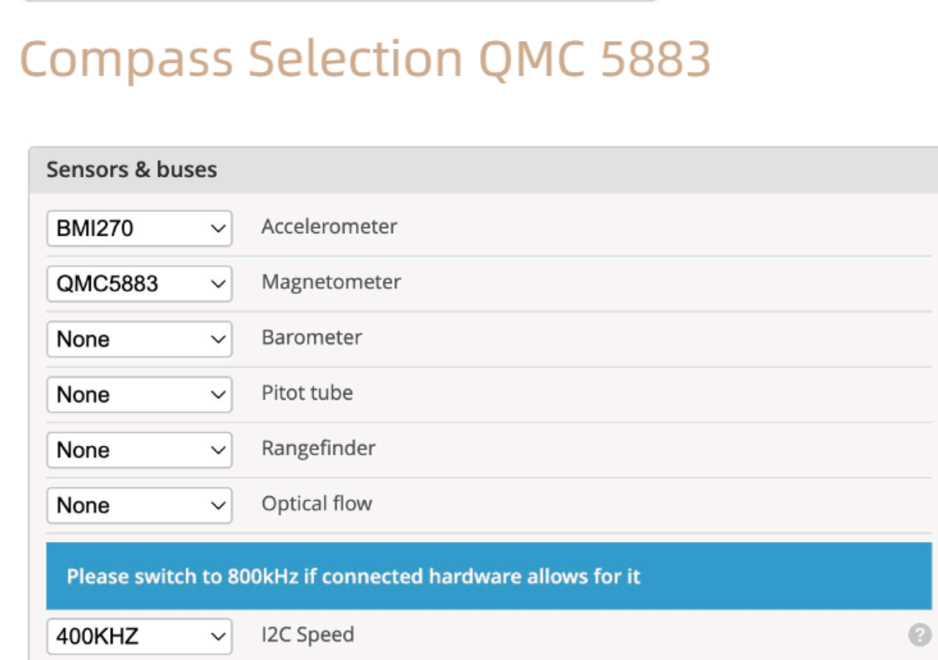
Disabled — Ground Assistance Type

Gps use Galileo Satellites

0 — Timezone Offset [Mins]

OFF — Automatic Daylight Savings Time

Compass Selection QMC 5883



Sensors & buses

BMI270 — Accelerometer

QMC5883 — Magnetometer

None — Barometer

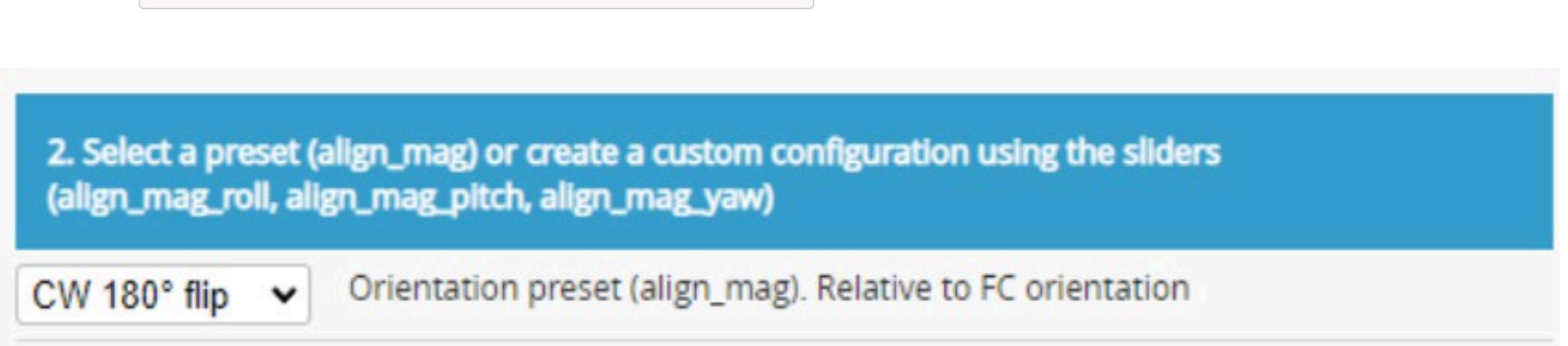
None — Pitot tube

None — Rangefinder

None — Optical flow

Please switch to 800kHz if connected hardware allows for it

400KHZ — I2C Speed

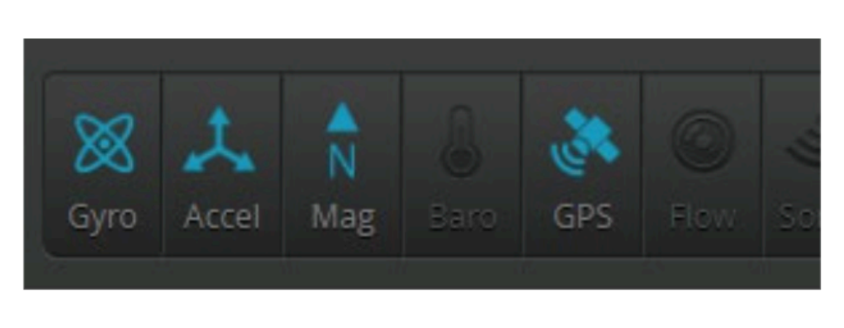


2. Select a preset (align_mag) or create a custom configuration using the sliders (align_mag_roll, align_mag_pitch, align_mag_yaw)

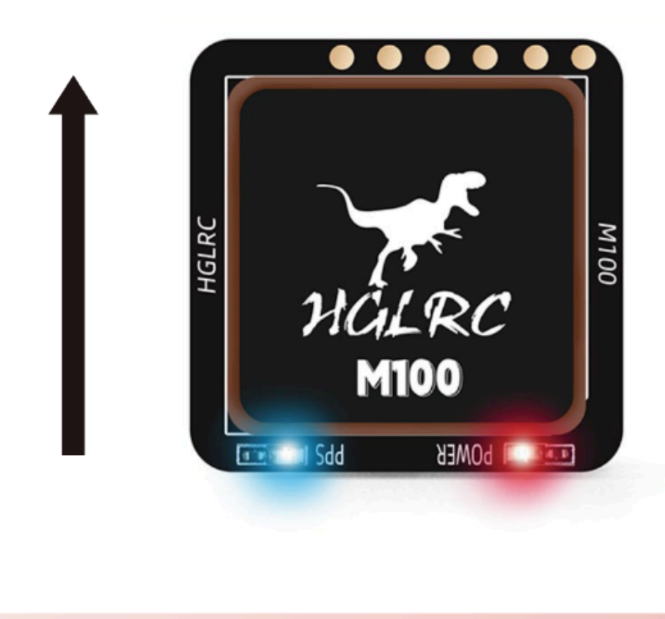
CW 180° flip — Orientation preset (align_mag). Relative to FC orientation

Magnetometer — Element to show: Magnetometer model or axes

Power on the aircraft, the indicator light is on when the GPS is working normally, and the GPS and compass lights on the top of the inav are on



Compass direction



Precautions

1. After turning on the compass, please calibrate it before using it.
2. Please supply power to GPS according to the voltage within the specified range.
3. Please carefully solder according to the wiring diagram to avoid short-circuiting and burning the GPS.
4. Please use BF4.3.0 or above firmware (too low version does not recognize the 10th generation chip).
5. GPS must be installed with the antenna facing up and away from motors, power lines and other interfering parts

Contact us

Sincerely thanks for everyone trust! Welcome to choose HGLRC products

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