

# HYN100+

## LTE Cat.1&GSM GPS tracker



HUIYE HYN100+ is an LTE Cat.1 & GSM GPS tracker with a high-precision positioning tracking feature, designed for location-based services such as Fleet Management, vehicle rental, vehicle tracking, and logistics monitoring applications, etc.

HYN100+ has multiple I/O interfaces that can be used for monitoring or controlling external devices, which achieve driving behavior monitoring, crash detection, jamming detection, motion detection, ignition detection, special alarms based on digital inputs, and other features.

### Driving Behavior Monitoring



Aggressive driving behavior detection, e.g. harsh acceleration, cornering, and braking.

### Special Alarm



Tow Alarm, Speeding Alarm, Idling Alarm. Special alarm based on the digital inputs.

### Crash Detection



Accident data collection for reconstruction and analysis

### Motion Detection



Motion alarm based on internal accelerometer

### Ignition Detection



Alerts for engine is switched on or off

### Jamming Detection



Alarm based on jamming detection

## Application



Vehicle Tracking



Vehicle Rental



Fleet Management



Logistics

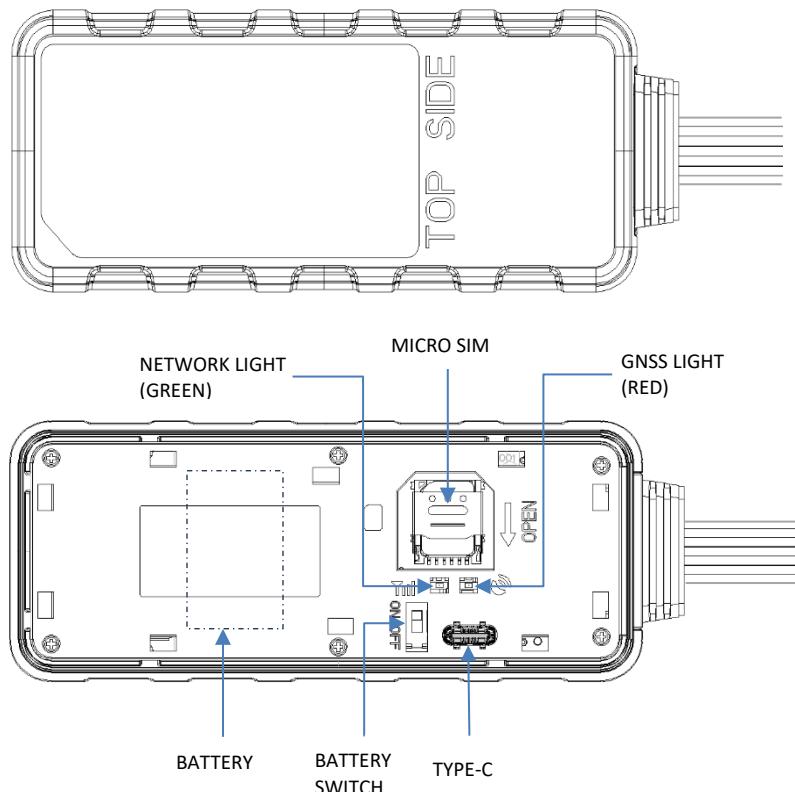
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## Product Information

Model name	HYN100+	
<b>GNSS Specifications</b>		
GNSS	BDS, GPS, GLONASS, Galileo, QZSS	
Tracking sensitivity	-165 dBm	
Position accuracy(CEP)	< 2m CEP	
Velocity accuracy	0.1m/s	
	Cold starts 26s	
TTFF (Time To First Fix)	Hot starts 1s	
	Reacquisition 2s	
<b>Network Specifications</b>		
Frequency Bands	EU	GSM: B2/B3/B5/B8 LTE FDD: B1/B3/B5/B7/B8/B20/B28
	LA	GSM: B2/B3/B5/B8 LTE FDD: B2/B3/B4/B5/B7/B8/B28/ B66
Data Transfer (Max)		LTE FDD (CAT 1): 10 Mbps (DL) / 5 Mbps (UL)
		GSM (GPRS): 85.6 Kbps (DL) / 85.6 Kbps (UL)
		GPRS: 85.6Kbps(DL),85.6Kbps(UL) (Option)
Data support	SMS (TEXT, PDU), Network protocols (TCP, UDP, TLS, MQTT)	
<b>General Specifications</b>		
Dimensions	43.2*106*13.5mm	
Weight	73g	
Input voltage range	10-90V DC +	
Operating temperature (without battery)	-40 °C to +85 °C	
Storage temperature (without battery)	-40 °C to +85 °C	
Ingress Protection Rating	IP54	
Back-up battery	190mAh/3.7V industrial-grade Li-Ion battery	
<b>Interfaces</b>		
Digital Inputs	1	
Digital Outputs	1	
Analog Inputs	1	
1-Wire	Option	
GNSS/Cellular antenna	Internal	
Type-C Interface	Support	
SIM	Nano-SIM	
Bluetooth	5.3	
LED indication	*2, Network and GPS	
<b>Features</b>		
Transmit Protocol	TCP, UDP, MQTT*, SMS	
Scheduled Report	Report position and status according to preset intervals.	
Geo-fences	Geo-fence alarm, support circular and polygon regions.	
Special Alarm	Special alarm based on the digital inputs.	
Sensors	Accelerometer	
FOTA	Support	
Configuration	Configure on the webpage, Driver-free	
Fuel level monitoring	Support	
Power mode	Multiple power-saving modes can be configured	
<b>Certifications</b>		
Certifications	RoHS\CE\FCC	

## Know your device

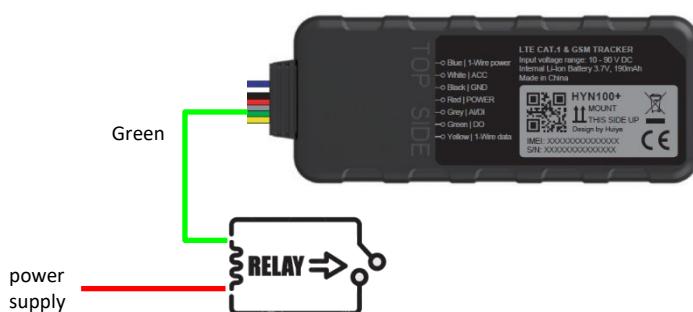


## PIN out

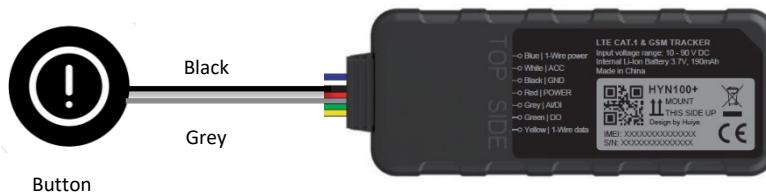
PIN	DESCRIPTION
Blue   1_PWR	The power supply pins (3.3 V- 4.2V) of the external device are connected to GND.
Green   DO	1 digital output with internal latch circuit, open-drain, 200mA max drive current
Grey   AI/DI	Analog Input / Digital Input (Oil circuit sensor / Button)
Red   POWER	Positive terminal of the power supply(10V-90V)
Black   GND	Ground wire terminals
White   ACC	1 positive trigger input for ignition detection
Yellow   1WIRE	Signal pins for external devices

## Wiring scheme

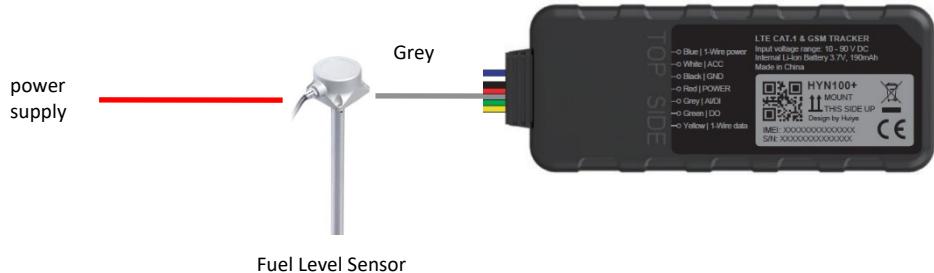
(Green) is the relay port of HYN100+, it is an open drain type, and the maximum drain current is 200mA.



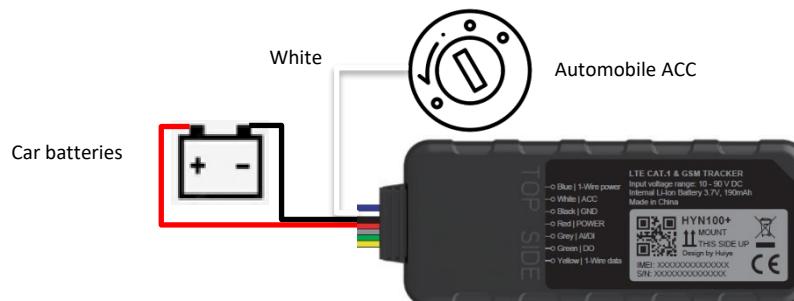
(Grey) is Analog Input / Digital Input port. Connect the oil circuit sensor or use the button



, only one of the two methods can be chosen.

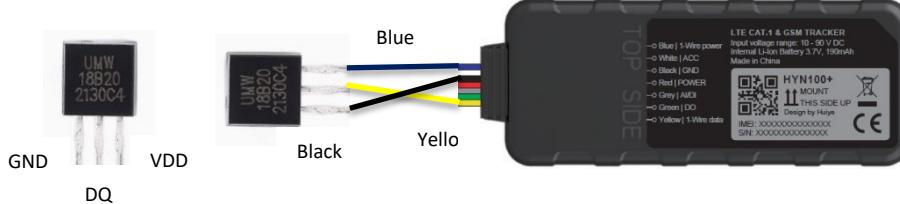


(White) is used to detect the ignition signal, this pin is to be connected to the starting position of the car's ignition switch, as shown in Figure . Another way to connect to the ignition is to find a non-permanent power source that is available while the vehicle is running. For example, broadcast power supplies. The ACC signal can be configured to send information to the back-end server when the ignition is on, and the device enters power-saving mode when the ignition is off.



(Blue&Yellow) is the power cable and signal cable connected to the 1WIRE device. GND (Black) cable is required.

1 WIRE temperature sensor chip

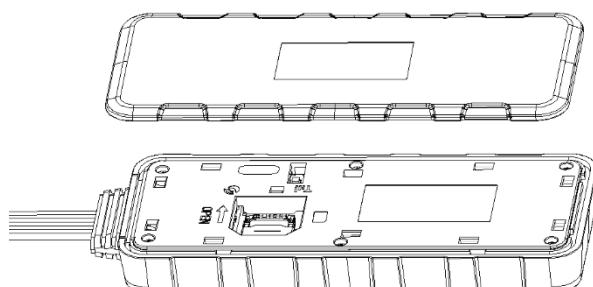


## Set up your device

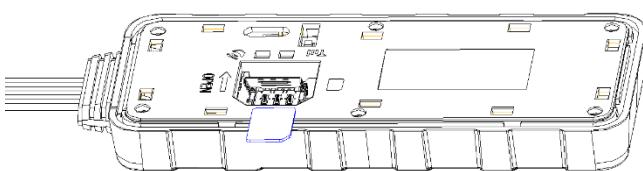
Open the back cover along the side seams to install the SIM card.



Side seams



Open the SIM card slot cover



Toggle open the SIM card slot cover according to the direction indicated by the arrow, install the SIM card, close the card slot cover tightly according to the direction indicated, then turn the power switch to the ON position, close the back cover and fasten it, and you can hear the clicking sound after fastening.

## PC connection (Windows)

1. Power-up HYN100+ with DC voltage (10 – 90 V) power supply using power wires. LED's should start blinking, see "LED normal operating mode (LED ON)"

2. Connect device to computer using TYPE-C cable connection:

- Using TYPE-C cable
- You will need to install USB drivers, see "How to install USB drivers (Windows)"

3. You are now ready to use the device on your computer.

## How to install USB Driver (Windows)

1. For the serial port driver, please refer to the instructions provided with the configuration tool.

2. Download and run CH341SER.EXE.

3. Click install in driver installation window.

4. Eventually the confirmation window will appear. Click Finish to complete the setup.

(In windows 10 or later, the CH340 serial port driver is automatically updated.)

## LED normal operating mode (LED ON)

LED scenarios are divided into network signal light (referred to as green light) and GPS signal light (referred to as blue light).

Green light	The LED flashes quickly when searching for a network (on for 500ms, off for 1s)
	The LED flashes slowly when registered on the network (on for 500ms, off for 15s)
	The LED remains on in the unlocked state
Red light	The GPS is turned off, LED remains off
	The GPS is in the searching state, LED flashes quickly (on for 500ms, off for 1s)
	The GPS positioning is successful, LED remains on

## Configuration

HYN100+ After connecting the PC with the TYPE-C serial cable, the shortcut key “win + x” enters the menu and selects Device Manager (M). Check for a “USB-SERIAL CH340” port in the Device Manager Ports menu.

•Open the online configuration tool “[Config tool](#)”. (Please contact the salesperson for information about the tool account.)

•Click “Start” to connect the device, “select port” to select the serial port number, and click Connect.

•After the prompt is displayed, enter the default password HYN100, and click Next.

•If the prompt is displayed indicating that the operation is successful and the verification is successful, the configuration interface will be displayed after confirming the connection

 Read All	loads configuration from device.	 Disconnect	Disconnect the currently connected device (currently connected)
 Write All	saves configuration to device.	 Connect	Reconnect the last device (currently the device is disconnected)
 Load Config	loads configuration from file.	 Setup Wizard	The Reload device selection page is displayed
 Save Config	saves configuration to file.		

Parameter Settings are based on the latest protocol. Update the document in time.

## Mobile application

At present, the mobile application can send AT configuration instructions, support the import of configuration files, local upload upgrade package automatic upgrade, still in the research and development stage, early access can download the test version [HYiot Link](#).

Stay tuned...

## Default configuration settings

MOVEMENT AND IGNITION DETECTION:



VEHICLE MOVEMENT  
will be detected by accelerometer



IGNITION WILL BE DETECTED  
by ACC state is ON

DEVICE MAKES A RECORD ON MOVING IF ONE OF THESE EVENTS HAPPEN:



30  
seconds passes



VEHICLE TURNS  
30 degrees

THE PERIODIC REPORT WILL BE EXTENDED IF:



1 HOUR REPORT  
while vehicle is stationary and ignition  
is off

THE REPORT WILL NOT BE REPORTED IF:

DEVICE LOCATION FAILURE  
The generated periodic report is discarded and not  
reported

At present, HYN100+ has been connected to the [wialon](#)  platform, and can be configured and used at any time. Select the product name HYN100 during configuration.

## Mounting recommendations

CONNECTING WIRES

- Wires should be fastened to the other wires or non-moving parts. Try to avoid heat emitting and moving objects near the wires.
- The connections should not be seen very clearly. If factory isolation was removed while connecting wires, it should be applied again.
- If the wires are placed in the exterior or in places where they can be damaged or exposed to heat, humidity, dirt,

etc., additional isolation should be applied.

- Wires cannot be connected to the board computers or control units.

#### CONNECTING POWER SOURCE

- Be sure that after the car computer falls asleep, power is still available on chosen wire. Depending on car, this may happen in 5 to 30 minutes period.
- When module is connected, measure voltage again to make sure it did not decrease.
- It is recommended to connect to the main power cable in the fuse box.
- Use 3A, 125V external fuse.

#### CONNECTING IGNITION WIRE

- Be sure to check if it is a real ignition wire i. e. power does not disappear after starting the engine.
- Check if this is not an ACC wire (when key is in the first position, most of the vehicle electronics are available).
- Check if power is still available when you turn off any of vehicle's devices.
- Ignition is connected to the ignition relay output. As alternative, any other relay, which has power output when ignition is on, may be chosen.

#### CONNECTING GROUND WIRE

- Ground wire is connected to the vehicle frame or metal parts that are fixed to the frame.
- If the wire is fixed with the bolt, the loop must be connected to the end of the wire.
- For better contact scrub paint from the spot where loop is going to be connected.

#### Safety information

This message contains information on how to operate HYN100+ safely. By following these requirements and recommendations, you will avoid dangerous situations. You must read these instructions carefully and follow them strictly before operating the device!

- The device uses SELV limited power source. The nominal voltage is +12 V DC. The allowed voltage range is +10...+90V DC.
- To avoid mechanical damage, it is advised to transport the device in an impact-proof package. Before usage, the device should be placed so that its LED indicators are visible. They show the status of device operation.
- When connecting the connection (1x5) cables to the vehicle, the appropriate jumpers of the power supply of the vehicle should be disconnected.
- Before dismounting the device from the vehicle, the 1x5 connection must be disconnected.
- The device is designed to be mounted in a zone of limited access, which is inaccessible to the operator. All related devices must meet the requirements of EN 62368-1 standard.
- The device HYN100+ is not designed as a navigational device for boats.



Do not disassemble the device. If the device is damaged, the power supply cables are not isolated or the isolation is damaged, DO NOT touch the device before unplugging the power supply.



All wireless data transferring devices produce interference that may affect other devices which are placed nearby.



The device must be connected only by qualified personnel.



The device must be firmly fastened in a predefined location.



The programming must be performed using a PC with autonomic power supply.



Installation and/or handling during a lightning storm is prohibited.



The device is susceptible to water and humidity.

## Warranty

We guarantee our products 12-month warranty

All batteries carry a 12-month warranty period.

Post-warranty repair service for products is not provided.

If a product stops operating within this specific warranty time, the product can be:

- Repaired
- Replaced with a new product
- Replaced with an equivalent repaired product fulfilling the same functionality
- Replaced with a different product fulfilling the same functionality in case of EOL for the original product

Additional agreement for an extended warranty period can be agreed upon separately.

## Warranty disclaimer

- Customers are only allowed to return products as a result of the product being defective, due to order assembly or manufacturing fault.
- Products are intended to be used by personnel with training and experience.
- Warranty does not cover defects or malfunctions caused by accidents, misuse, abuse, catastrophes, improper maintenance or inadequate installation – not following operating instructions (including failure to heed warnings) or use with equipment with which it is not intended to be used.
- Warranty does not apply to any consequential damages.
- Warranty is not applicable for supplementary product equipment (i. e. PSU, power cables, antennas) unless the accessory is defective on arrival.

FCC Caution.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.