



PI-SIGHT GPS RACER SOFTWARE

User Manual

caution

Be sure to check and follow the track regulations before using the product.

GPS Racer is an open source DIY project and comes with no warranties.

You must have a GPS module installed to use the software.

GPS signals are transmitted from satellites, so they may not be received indoors and may be blocked by the sky.

It must be used outdoors where there is no tongue.

The features of the software may be added or changed depending on the version, and the contents of this manual may also change.

You can.

To use receiver mode, you need an Android phone or tablet that supports connecting an external Bluetooth receiver.

requires a tablet.

1. Get a Raspberry Pi that matches your PC operating system from www.raspberrypi.com

Download and install the Imager program, then run it.

2. Connect the memory card, select Delete in the Operating System tab, and select Storage.

Click on the memory card in the tab and then click Write to format the memory card.

It is.

3. Download the img file of the desired software from vudev.net,

On the Operating Systems tab of the Raspberry Pi Imager, click Use Custom

After that, select the downloaded img file.

4. Select the memory card in the Storage tab and click Write to write to the memory card.

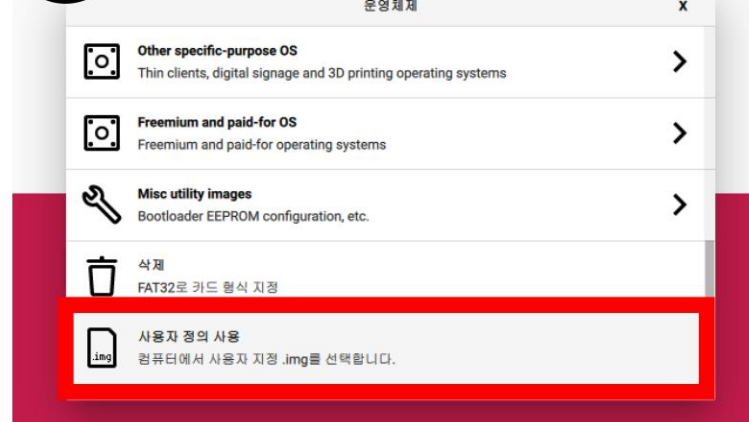
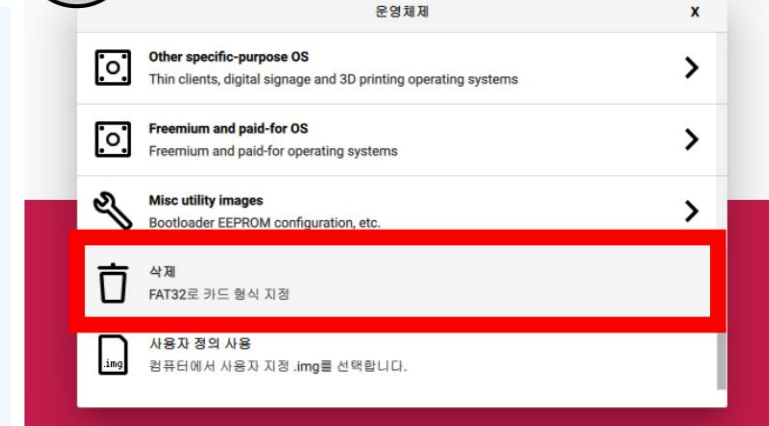
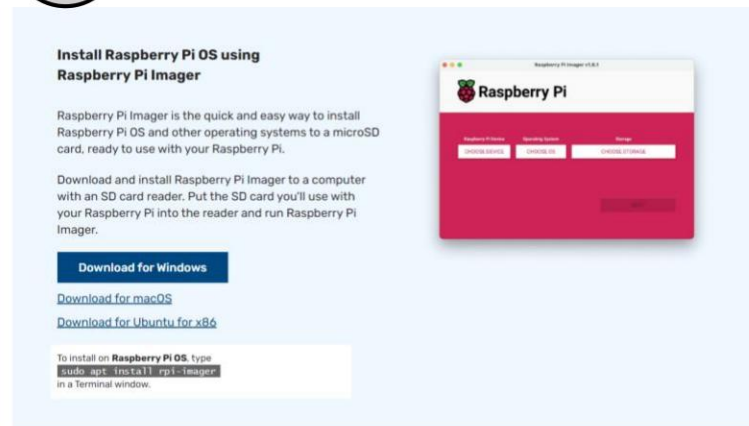
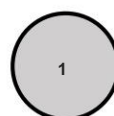
The software installation will begin. Once the installation is complete, insert it into the device.

Please use it.

If you remove the memory card during a write operation or terminate the program,

Format errors may occur. This can be resolved using methods such as diskpart.

there is.



GPS Racer software combines the Pysite with a GPS module to provide an external

A solution that allows you to use it as a GPS receiver or lap timer.

Connect the device to your Android smartphone via Bluetooth and use it as a 10Hz external GPS receiver.

I can use it as a lap timer that outputs and stores driving information on its own without connecting to an external device.

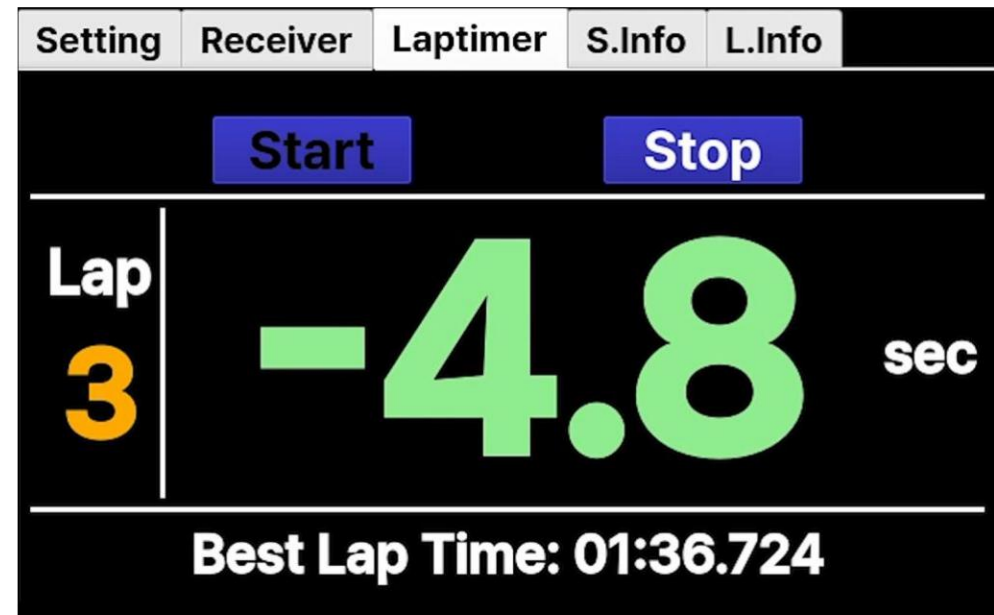
there is.

Users can check various information such as speed, number of laps, real-time time difference compared to best lap record,

etc. through the display in front of their eyes, and it can be linked with measuring app such as Racechrono on smartphone.

This allows more accurate driving information to be stored.

3500mAh battery, can operate for about 5 hours at medium display brightness.



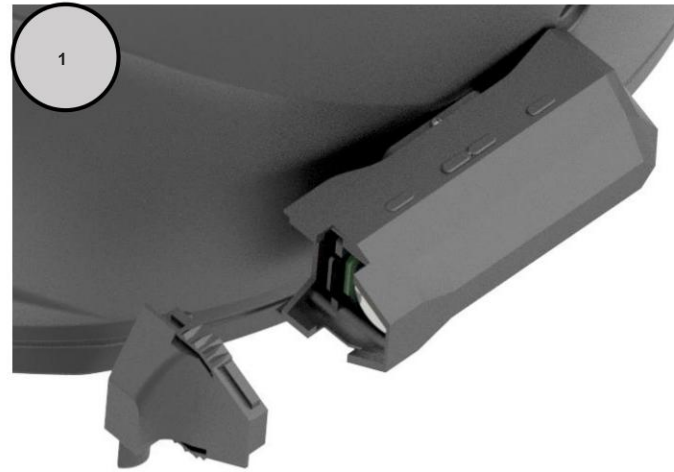
2. Using the GPS Racer Software – Installing the GPS Module

A GPS module is required to use the GPS Racer software.

1. Remove any other modules that were previously installed.

2. Install the GPS module. Make sure the module pins and body socket are aligned correctly.

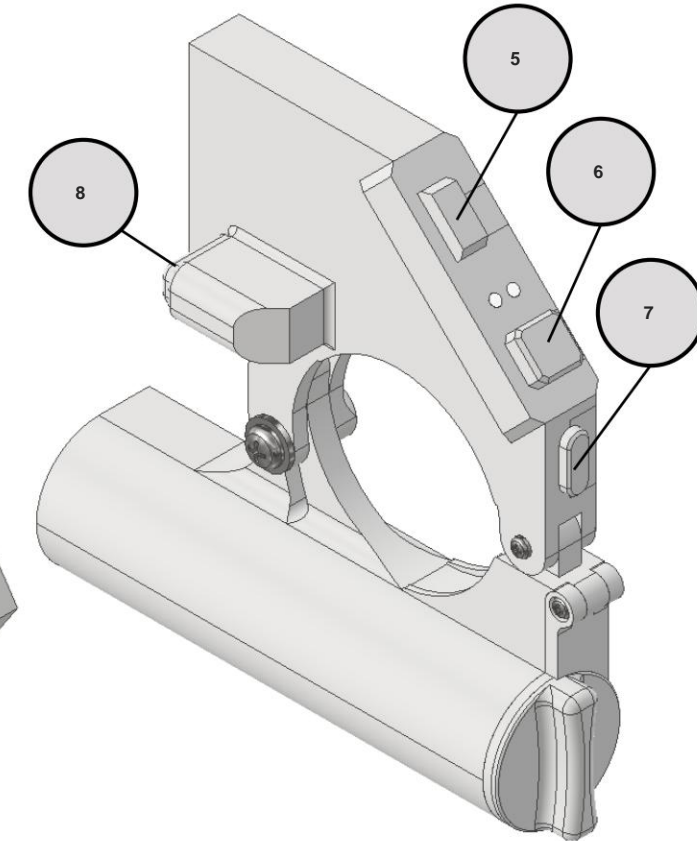
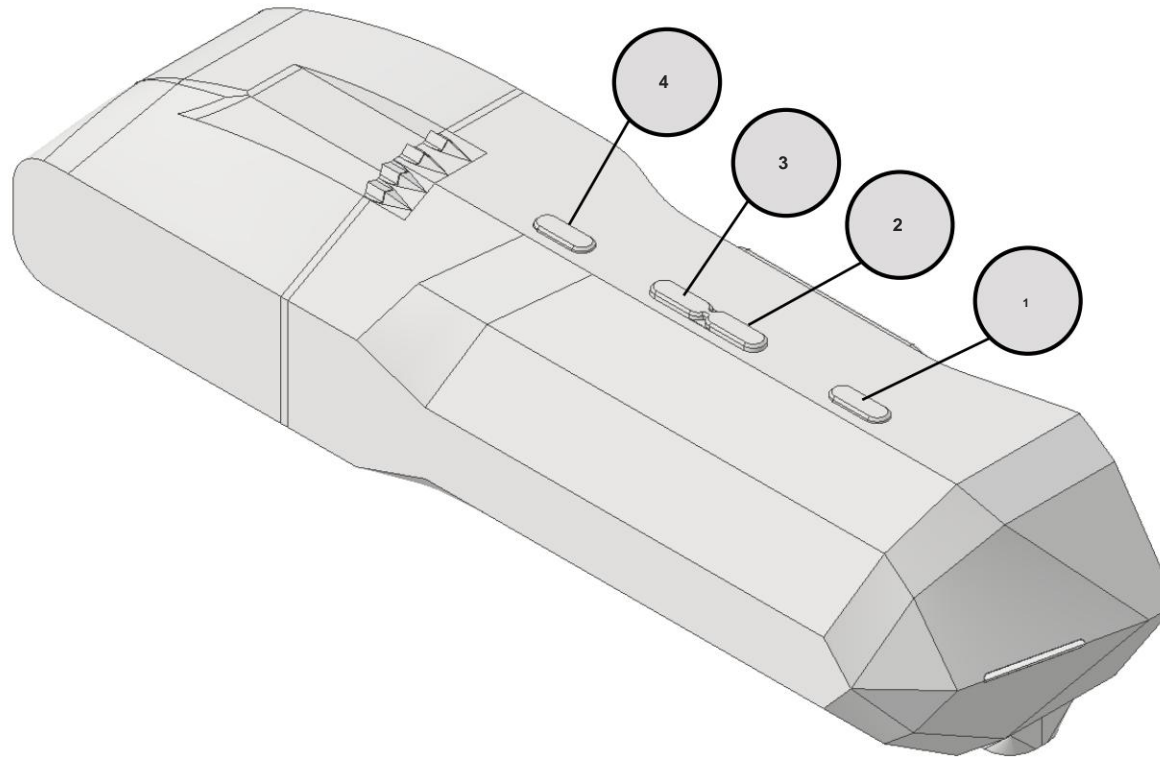
Be careful not to do so.



The pie mic is not used. The detached mic terminal is placed inside the helmet.

Oh, fix it.

1. Power on (press once) / Power off (press twice)
2. Reduce display brightness
3. Increase display brightness
4. Remote control pairing mode (press for more than 2 seconds)
5. Turn the remote control on/off
6. Up/Down/Left/Right/Confirm
7. Turn off the screen (long press)
8. No default designation function



2. Using the GPS Racer Software – Starting the Device and Pairing the Remote Control

1. Put the batteries in the remote control, turn it on by turning the power switch up, and the main body

Insert the battery and memory card correctly and press the power button once to turn on the device.

Get started.

2. If the remote control is connected: The green Connected text appears in the Settings tab.

Okay, let's move on to the GPS signal reception process.

3. If the remote control is not connected: In the Settings tab, the red Disconnected

The text will be displayed or alternately with the green Connected text.

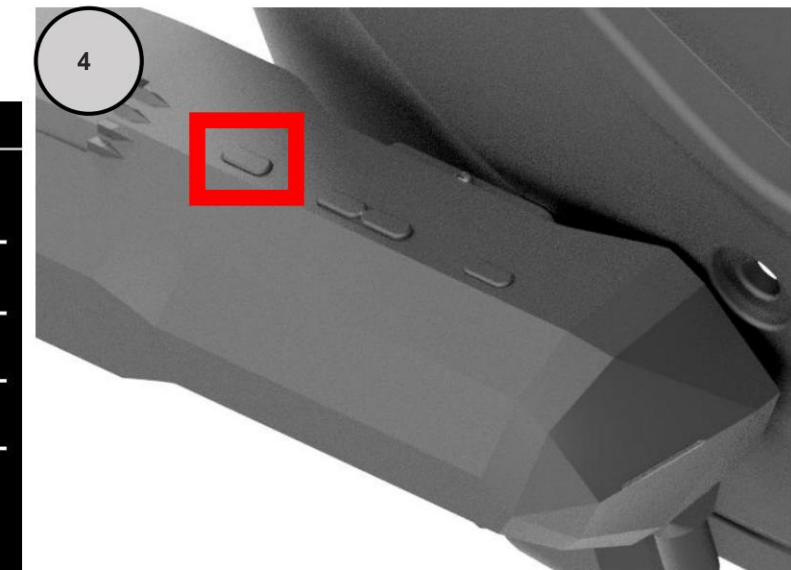
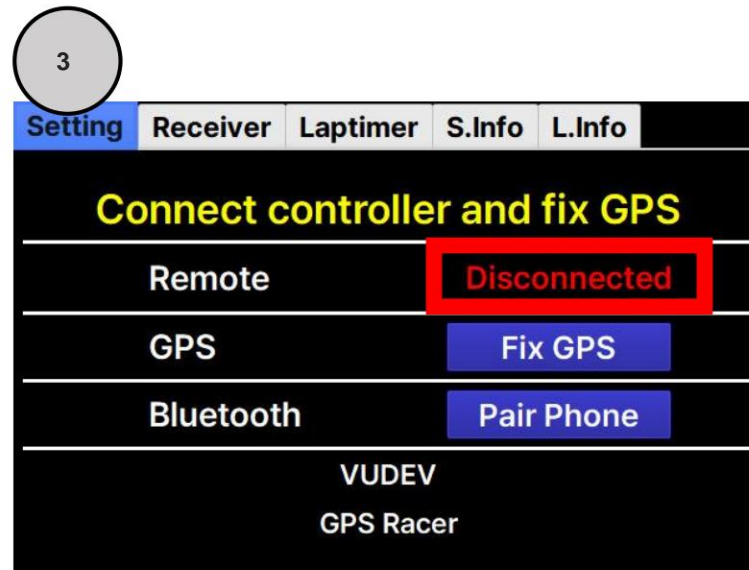
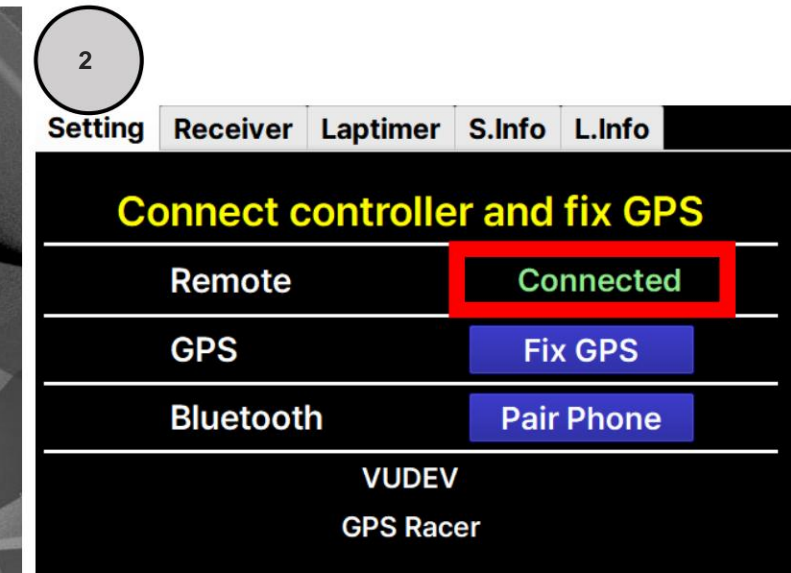
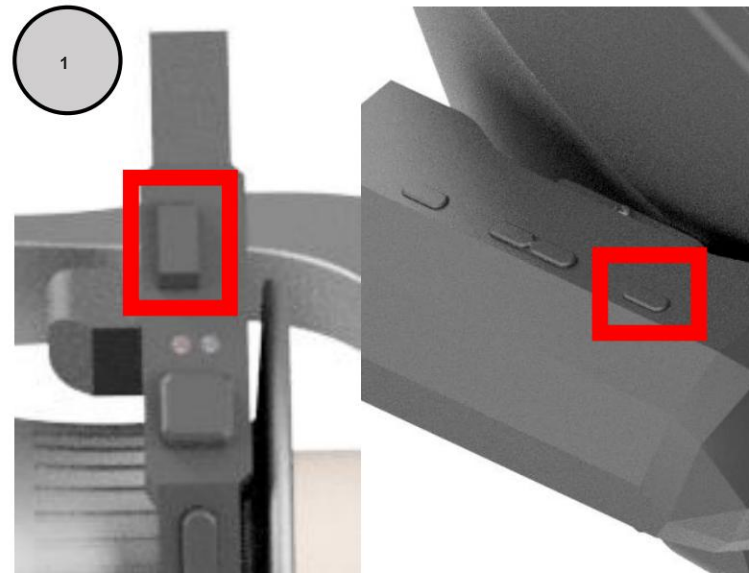
In this case, go to step 4 and pair the remote control again.

4. Remote control pairing: Place the remote control near the main body with the remote control turned on, and pair it with the main bar.

Press the Fn button on the device for 2 seconds to enter pairing mode. The device will

Wait a moment while it searches for nearby devices and automatically connects to the remote control.

If the connection is successful, proceed to step 2.



This is the process of receiving GPS signals and synchronizing software time.

1. Move the button focus with the joystick and press the Fix GPS button.

2. The text Waiting GPS will appear for a moment and the device will enter standby mode.

3. The system clock will be displayed in red and the receiving mode will remain on. At this time,

The displayed time is different from the actual time because it is before synchronization.

It is a poem.

4. When GPS reception is complete, the system time turns green and the current time is displayed.

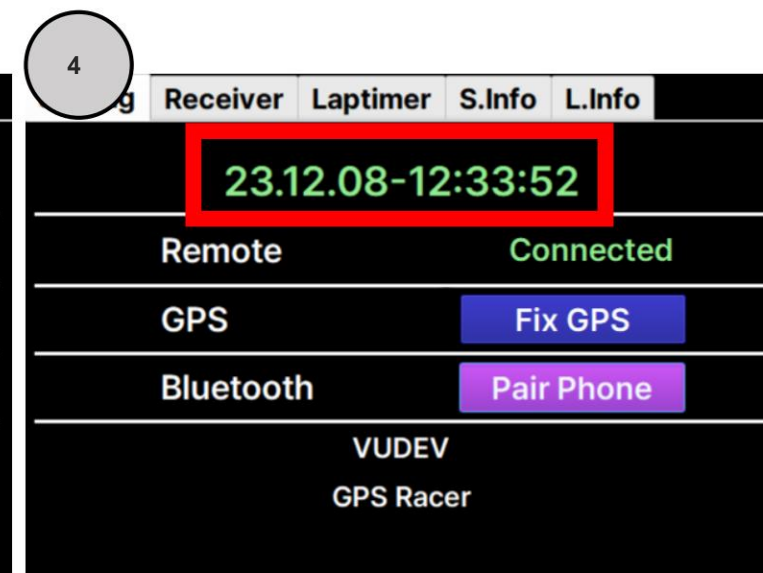
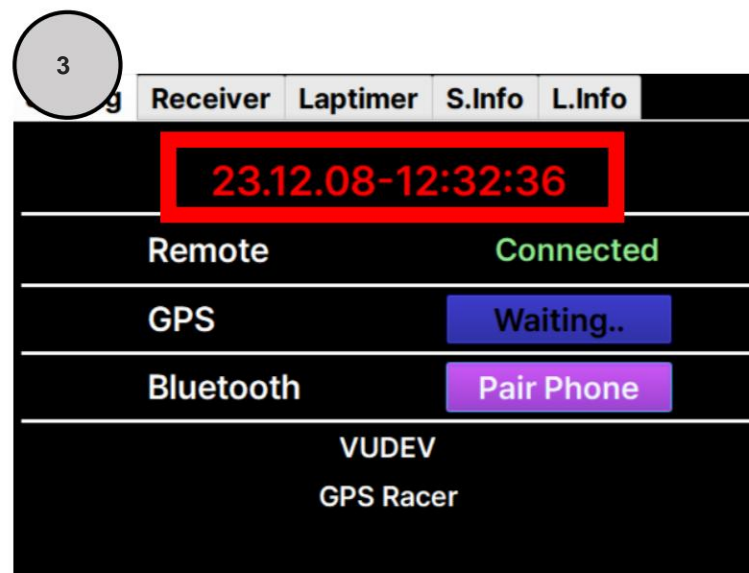
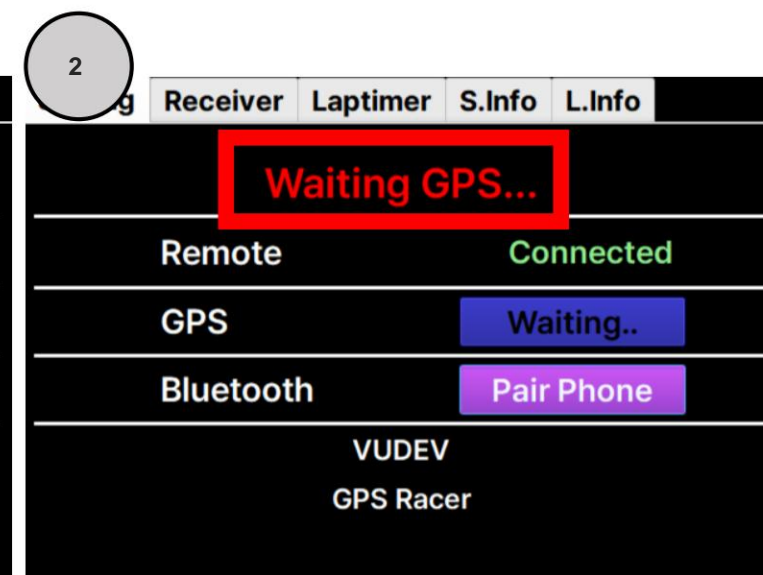
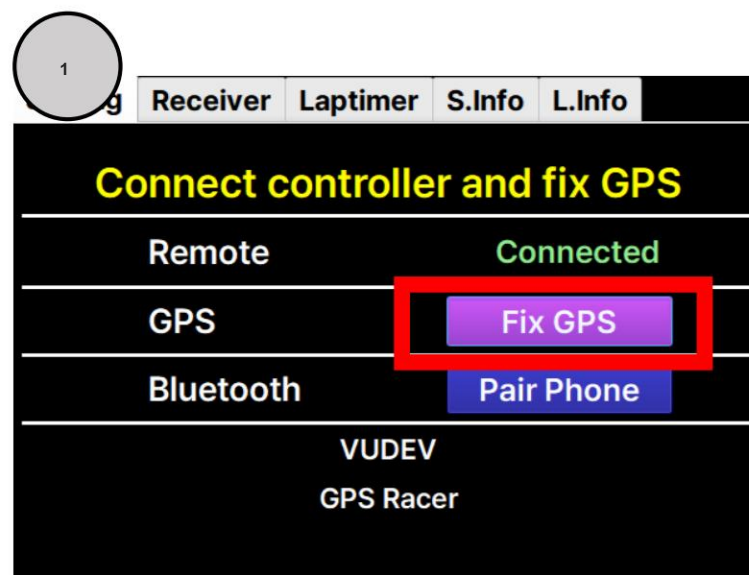
They are synchronized identically.

* For use outdoors where the ceiling is not obstructed.

GPS based on the location and time the device was previously turned on, current surrounding radio environment, and weather

It can take anywhere from 3 seconds to 12 minutes to receive a signal.

all.



2. Using the GPS Racer Software – Setting the Bluetooth GPS Receiver Mode

Connect the Pysite and smartphone via Bluetooth, for example, the Racechrono app

This is the process of adding a device in .

1. Move the button focus using the joystick and press the Pair Phone button.

Clear the list of previously paired smartphones and turn on Bluetooth for 30 seconds.

Enter pairing mode.

2. Turn on Bluetooth on your smartphone and pair it with the pi-sight device.

Oh. (It is normal for it not to connect after pairing.)

3. Open the Racechrono app on your smartphone and enter the settings menu.

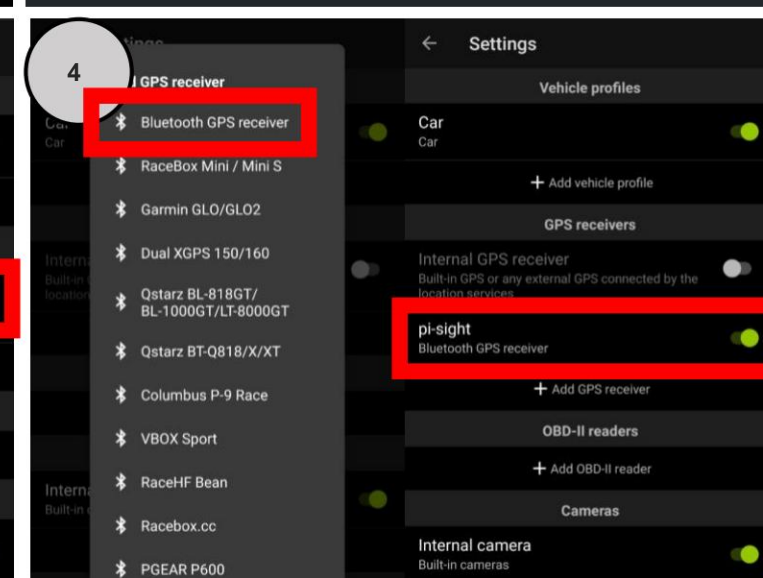
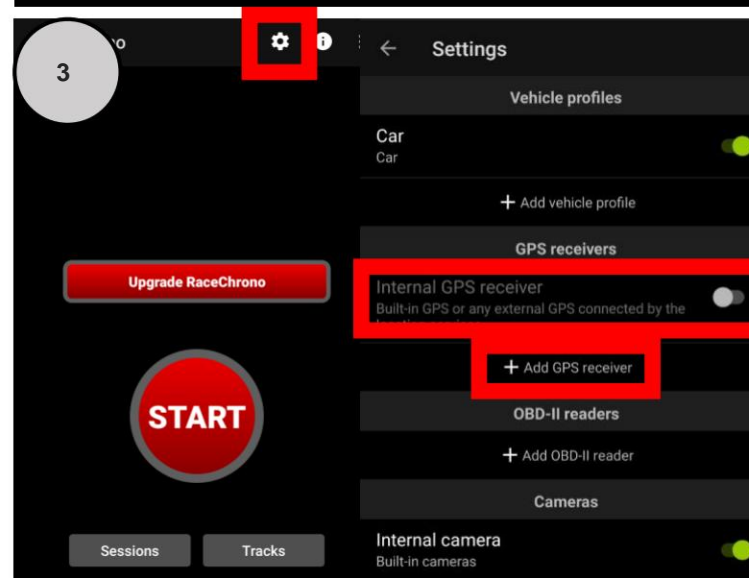
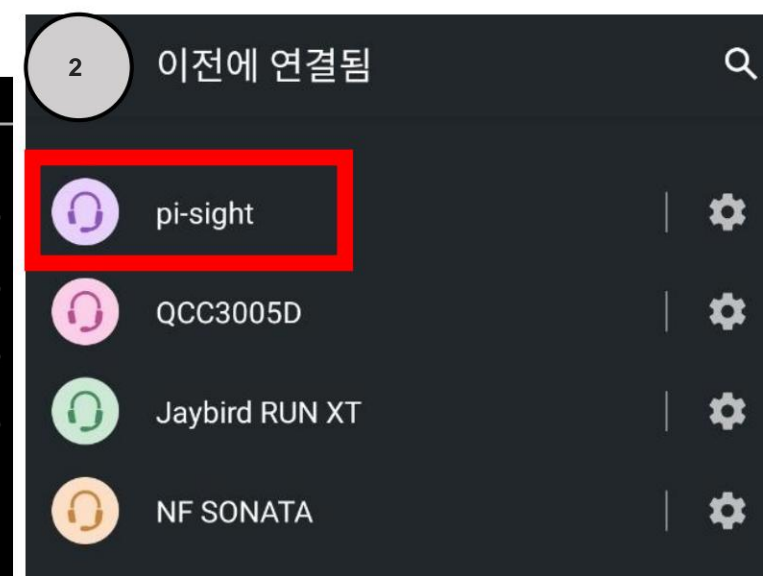
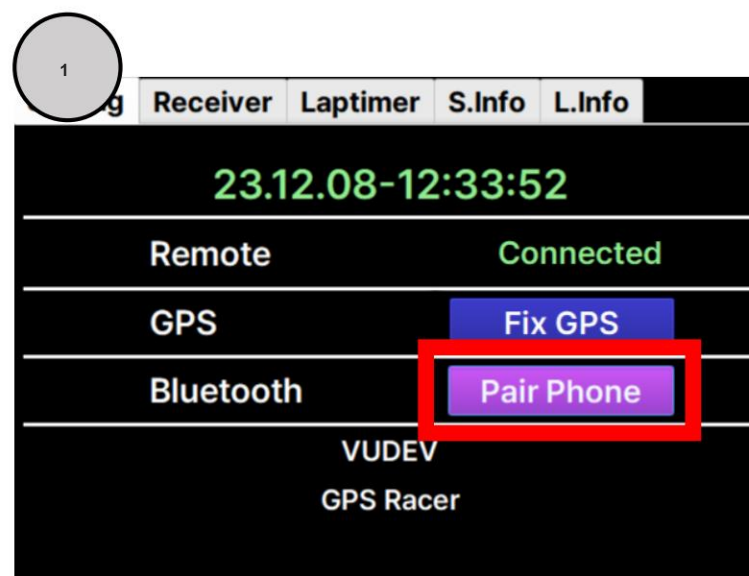
Turn off the Internal GPS receiver switch, and then +Add GPS below.

Press the receiver.

4. Press Bluetooth GPS receiver ÿ pi-sight ÿ OK in order to external

Add as receiver.

This process only needs to be done once during initial setup and you will not need to do it again.



Please refer to the app's manual for app settings such as track designation.

1. Turn on your smartphone's Bluetooth and go to the Receiver tab on Pysite.

When you press the Start button, the Pysite will start transmitting GPS signals.

Wait.

2. Open the Race Chrono app on your smartphone and press the START button to start driving.

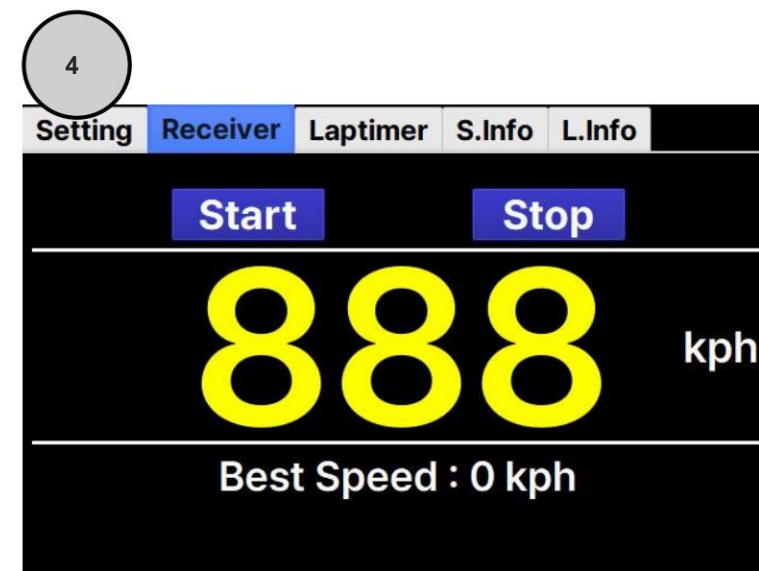
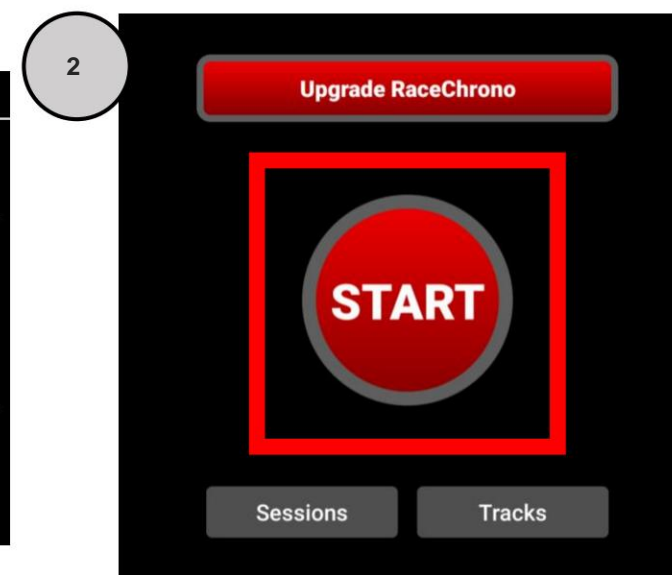
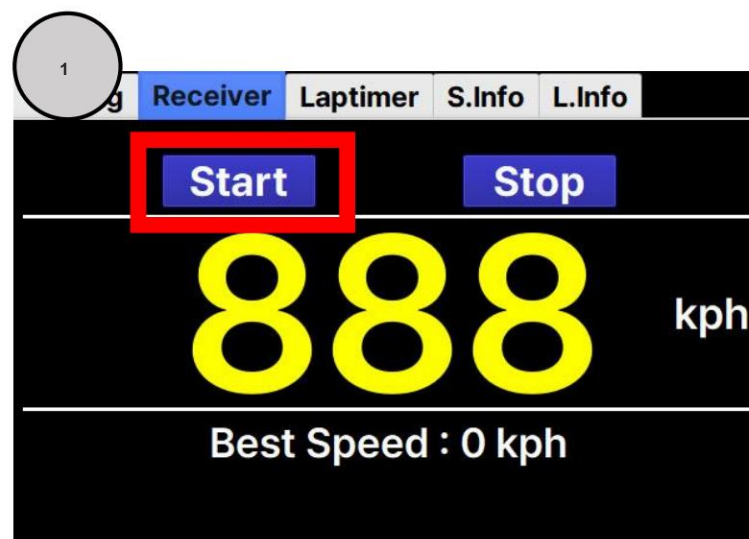
Start recording the data.

3. 10Hz GPS data received from Pysite within the RaceChrono app

You can check the data.

4. Current speed and maximum speed are displayed while driving, and to exit receiver mode,

Press the Stop button.



The GPS racer's lap timer mode records the track finish line location stored on the memory card.

It works based on information. Basically, the track information below is stored.

Yes.

korea

1. AMG Everland Speedway
2. Now Speedium
3. Yeongam KIC F1/Permanent/Kart
4. Taebaek Speedway
5. Paju Speed Park
6. Pocheon Raceway

If you want to add a location other than the tracks that are saved by default,

Please add it by following the steps below.

1. Connect the memory card to the PC and enter VUDEV – tracks.
2. Copy another track file and change the name to [file name] as desired.
3. Open the file and enter [system track name, display track name, finish line coordinates].
Save it.
4. Open `_init_.py` in the Tracks folder and type [from tracks import file name].
Add and add [file name, system track name,] to the Track List item below.
Please do it.

1

config tracks _init_.py

2

base.py map_1.py map_2.py
map_5.py portland_internal_raceways.py taebaek_speedway.py

3

```

"""Taebaek Speedway."""
from tracks import base

TaebaekSpeedway = base.Track(
    name='Taebaek Speedway',
    start_finish=(37.0827622, 129.0183219),
    turns=tuple())
  
```

4

```

from tracks import map_5
from tracks import taebaek_speedway
from tracks import portland_internal_raceways

TRACK_LIST = (
    map_1.Map1,
    map_2.Map2,
    map_3.Map3,
    map_4.Map4,
    map_5.Map5,
    taebaek_speedway.TaebaekSpeedway,
    portland_internal_raceways.PortlandInternationalR
  
```

2. Using GPS Racer Software – Using Lap Timer Mode

1. Go to the Laptimer tab and press the Start button.

2. The Lap number is 0, the bottom lap time is displayed as 01:01, and the GPS signal is

The closest track to the track stored on the memory card

Explore .

3. Once the settings are complete and ready, select the track closest to you and press Lap

The number changes to 1 and the bottom lap time is reset to 0 seconds. Now the track is

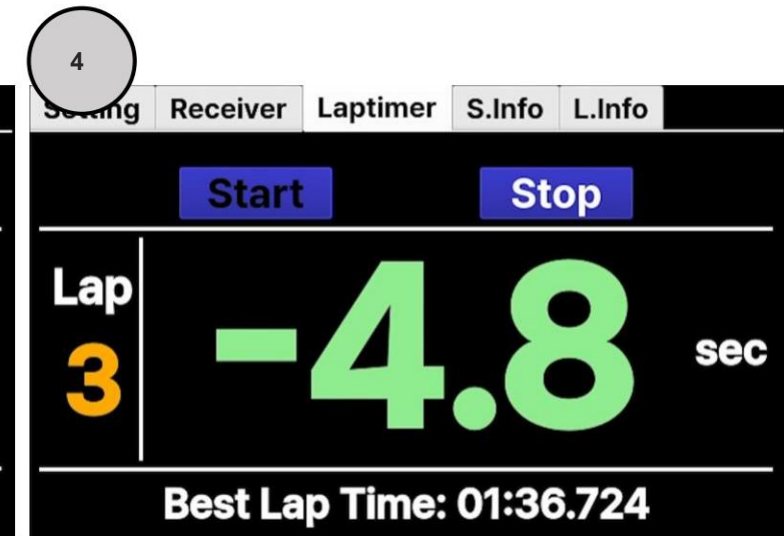
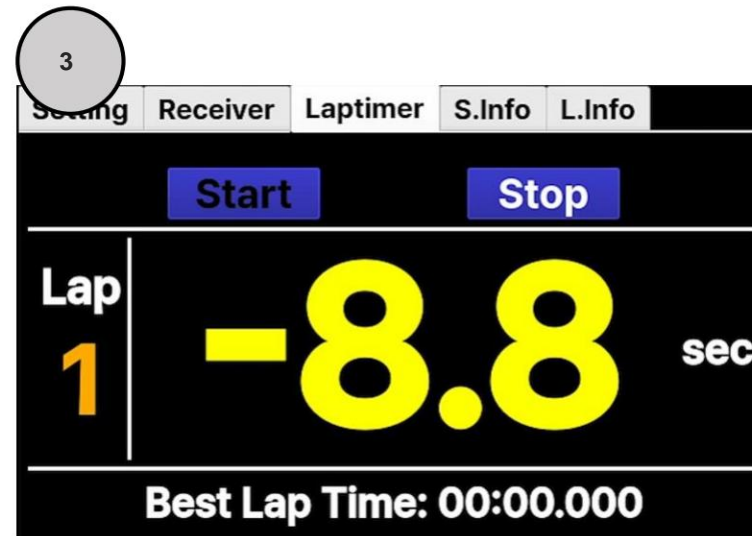
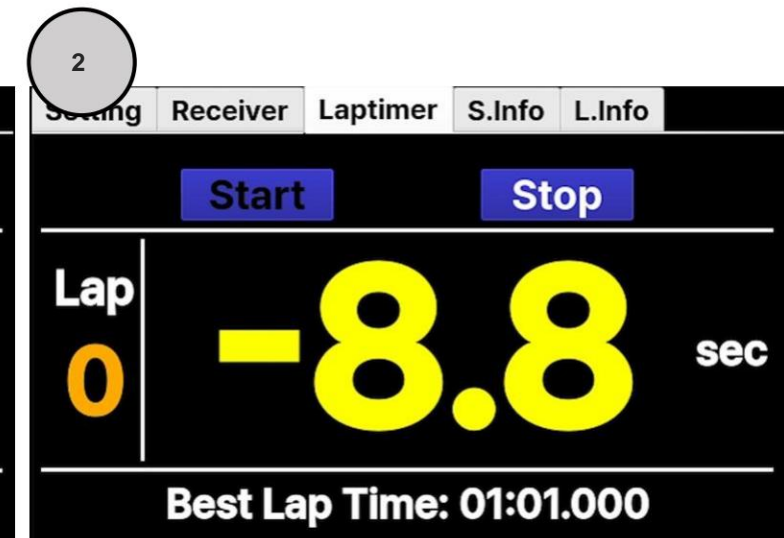
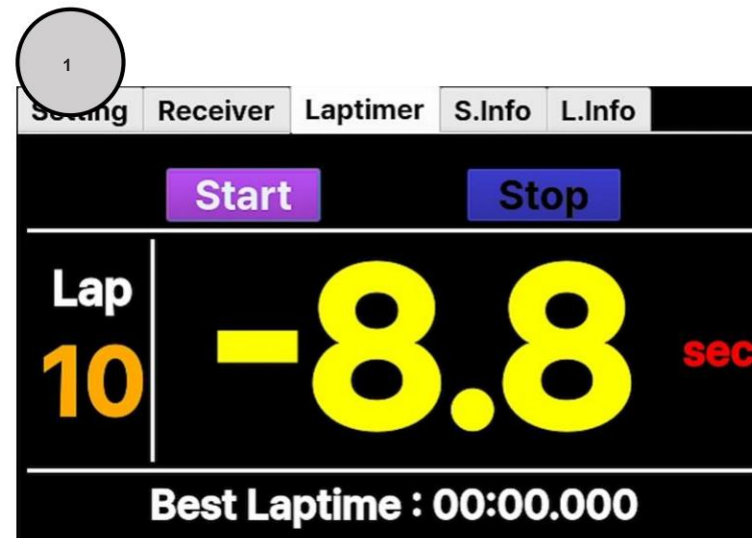
Start a row.

4. When driving 1st and 2nd laps, the Lap number on the left increases and the best lap time is displayed.

Yes. From the 3rd lap, you can compare your best lap with the best lap in the current session.

Here it displays in real time how many seconds fast/slow it is at the moment. Driving

When you are done, press the Stop button to exit the lap timer mode.



1. Go to the S.info tab to check the current session information.

2. When the lap timer mode is started and the track is set, the track and start time are displayed.

During the drive, the number of laps, best lap time, and top speed are updated.

When you press Stop in lap timer mode, the end time is displayed.

You can capture the S.info screen and save it to the memory card by pressing the Save button.

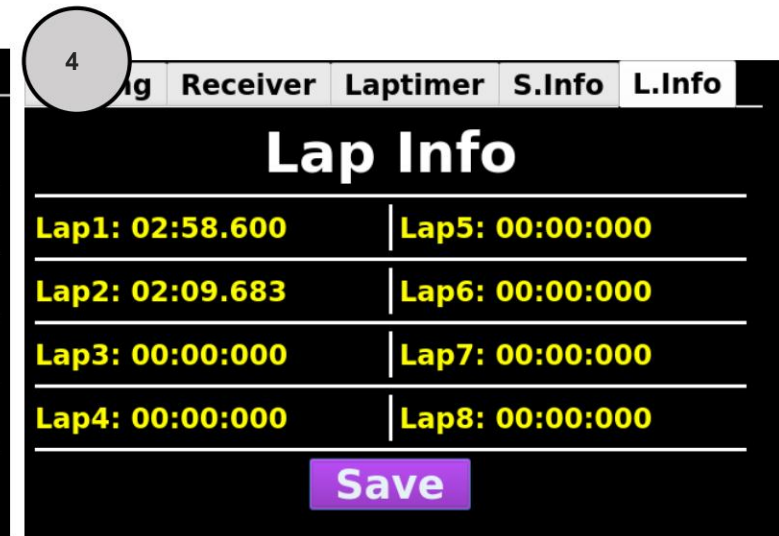
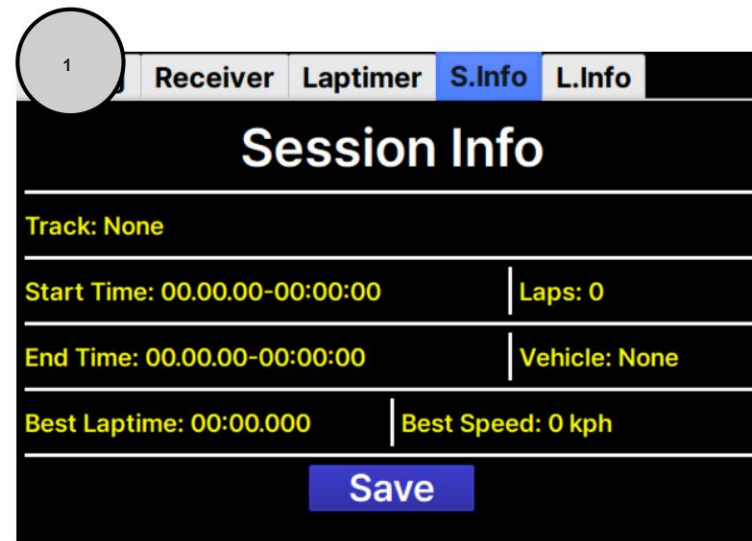
there is.

3. Go to the L.info tab to check the lap time of the current session.

4. When you start the lap timer mode, the lap time is updated as you pass each lap.

You can do this by pressing the Save button to capture the L.info screen and save it to the memory card.

It can be extended.



2. Using GPS Racer Software – Customizing

1. There is a GPS Racer software code inside the VUDEV folder of the boot disk.

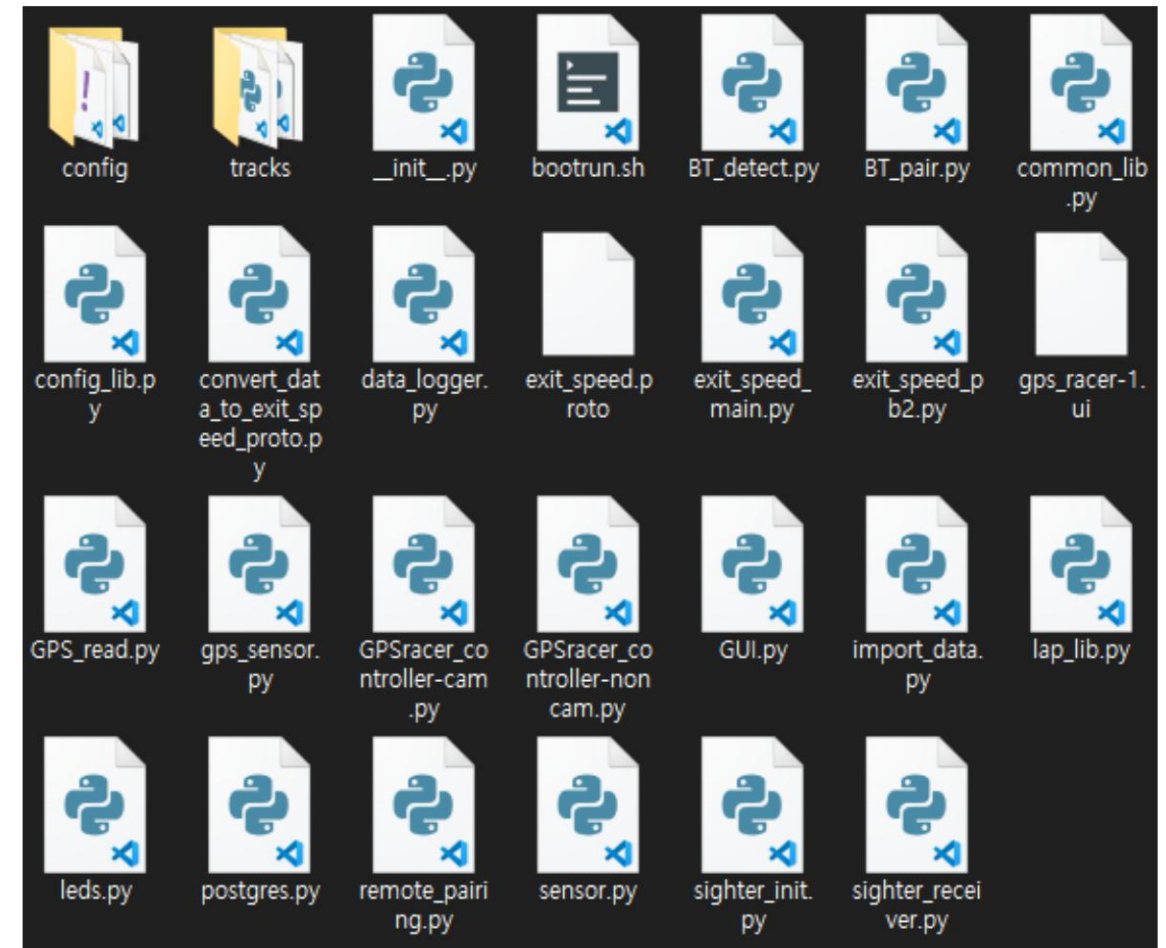
2. The functions of each code are as follows:

- GPSracer_controller_cam/noncam.py: Key mapping, camera
- Sighter_init.py: Fix GPS button – Receive GPS signal, synchronize time • BT-pair.py:
Pair Phone button – Pairing mode with smartphone
- sighter_receiver.py: Bluetooth GPS receiver mode • remote_pairig.py:
Remote control pairing • exit_speed_main.py:
Lap timer mode
- GUI.py: screen layout, connecting all functions
- Bootrun.sh: Automatically execute code

3. You can freely modify many parts such as GUI, key mapping, etc. by modifying the file. For more details,

For more information, see vudev.net.

Back up the original file and make changes to it for restoration in case of problems.



3.1 Main body operation problem

- If the battery gauge light comes on but the display does not work, check the main body and the display.

Check the connection of the splay terminal.

- If the battery gauge light comes on but the boot screen does not appear, the memory card is not working properly.

Make sure it is inserted into .

- If the battery gauge light does not come on, check that the batteries are properly inserted.

Please do it.

3.2 Remote control connection problems

- When you turn on pairing mode on the main body, another remote control is turned on and connected nearby.

If it is not Tae, a remote control other than your own may be connected. Main body

When pairing mode is activated, make sure there are other PI-SIGHT remote controls nearby.

3.3 Remote control charging light problem

- When the remote control is turned on and the battery is fully charged, the red and blue lights turn on at the same time,

An alternating on and off phenomenon may occur, but this is normal operation.

3.4 Fix GPS not completing issue

- Make sure the GPS module is properly installed and proceed outdoors with a clear view of the sky.

oh.

- When the rear camera is turned on, interference with the GPS may occur and the signal may not be received properly.

Because of this, the camera is disabled by default.

3.5 Smartphone and Bluetooth connection issues

- After completing the Bluetooth pairing between the Pisite and your smartphone, set the Bluetooth settings on your smartphone.

If you select raspberrypi in GPS receiver mode, the connection may not be made.

In this case, since it communicates using the RFCOMM protocol, it is connected in the basic settings window of the smartphone.

It is normal for it not to work, and it is not compatible with the protocol communication, such as a lap timer app or a serial terminal app.

You can connect via apps that support .

3.6 Lap Timer Mode Issues

- If you turn on the rear camera while driving after the lap timer is in operation, the GPS signal may interfere with the location.

There may be differences in time difference data compared to best lap.

3.7 Format notification when connecting memory card to PC

- When you connect the memory card to your PC, a notification may appear asking you to format the memory card.

This is a normal notification caused by differences in memory formats. Click Cancel to ignore it.

