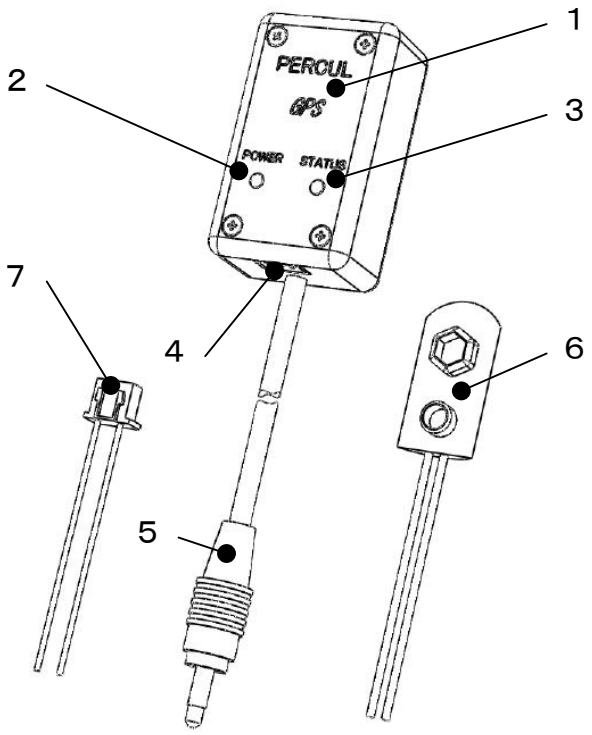
LAPCOM S SERIES
GPS RECEIVER

Instruction Manual

PERCUL CORPORATION

Names of Parts of GPS receiver



1. Built-in GPS antenna
GPS antenna is inside.

2. Power lamp(Blue)
The lamp illuminates when the power is on.

3. Status lamp(Red)
The lamp illuminates or flashes when receiving information from the satellite.

4. Power port
Insert the power connector.

5. Communication cable
Connected to the COM port of Lapcom unit.

6. Battery snap
Used for 9V square type battery.

7. Power connector
Connect to 12V power or 9V square type battery on the other side, and insert to the power port of the GPS receiver.

Specification

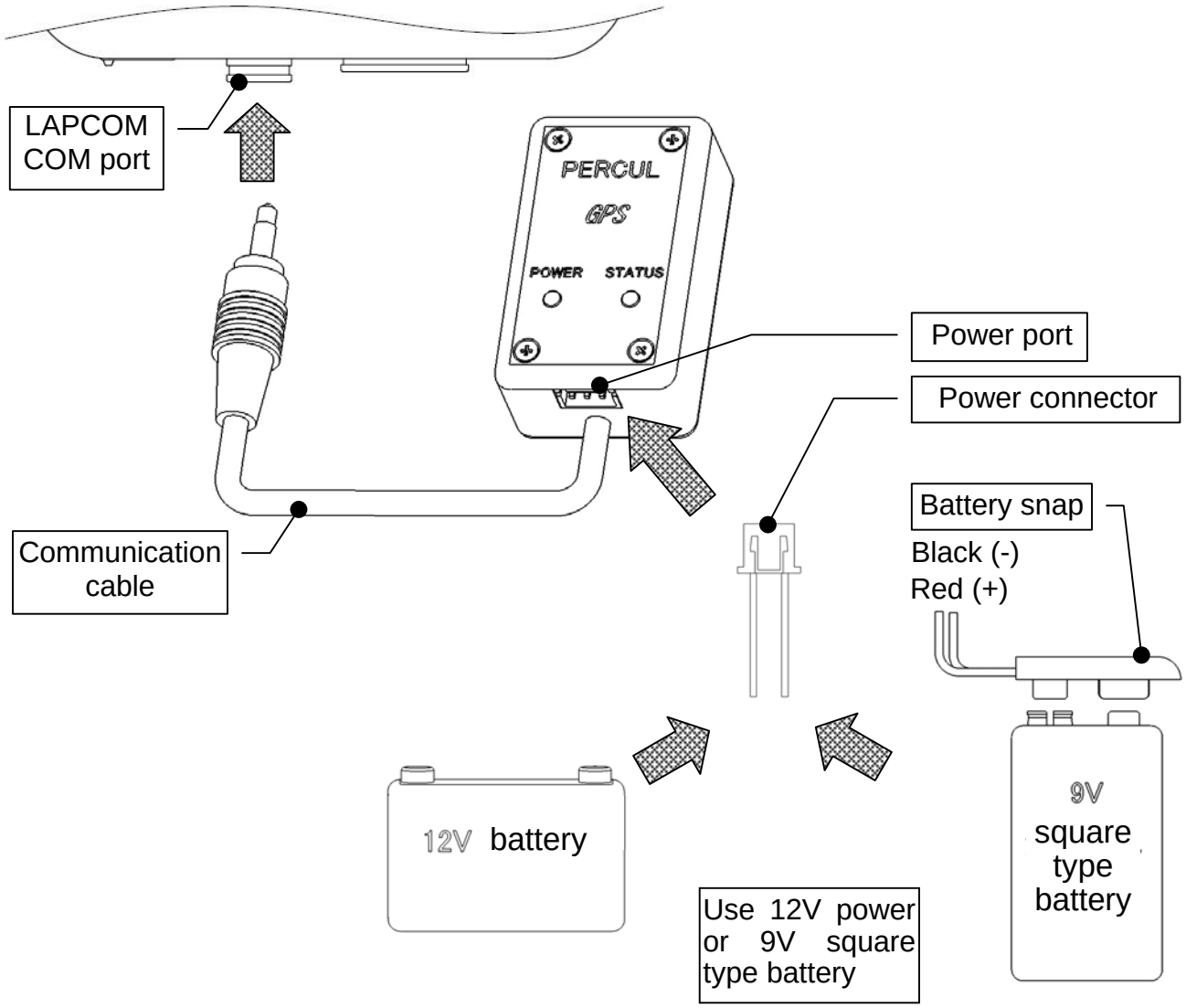
Size	50x30x20 mm
Available voltage	DC7.5 to DC14.5V
Consumption current	10mA
Hot start	1.0 sec
Cold start	35 sec

How to install GPS receiver

1. Put the top side with logo horizontally toward the sky on the location where the signal from the satellite can be received well.

2. Connect to 12V power battery or 9V square type battery on the other side of the power connector, and insert the connector to the power port of the receiver.
   * The power connector's red line is into the plus(+) of the 12V power battery or 9v square battery, the black line is into the minus(-).
   * Available voltage is DC7.5V to DC14.5V.

3. Connect the communication cable to the Lapcom COM port.



Installation for kart



Attach the GPS receiver’s top side with logo horizontally toward the sky on the front panel by two-sided tape or hook & loop fastener. Please provide the installation bracket as per your requirement.

Installation for motorbike



Attach the GPS receiver’s top side with logo horizontally toward the sky on the rear cowling by two-sided tape or hook & loop fastener.

Installation for car

Attach the GPS receiver’s top side with logo horizontally toward the sky on the dashboard by two-sided tape or hook & loop fastener. Some kinds of windscreens including heat-reflecting glass would be difficult to acquire the GPS satellite. In that case, please attach on the roof.

Caution for installation

- To avoid the noise from the engine ignition, put the receiver away from the engine, and do not fix the GPS receiver's cable together with other sensors' cables.

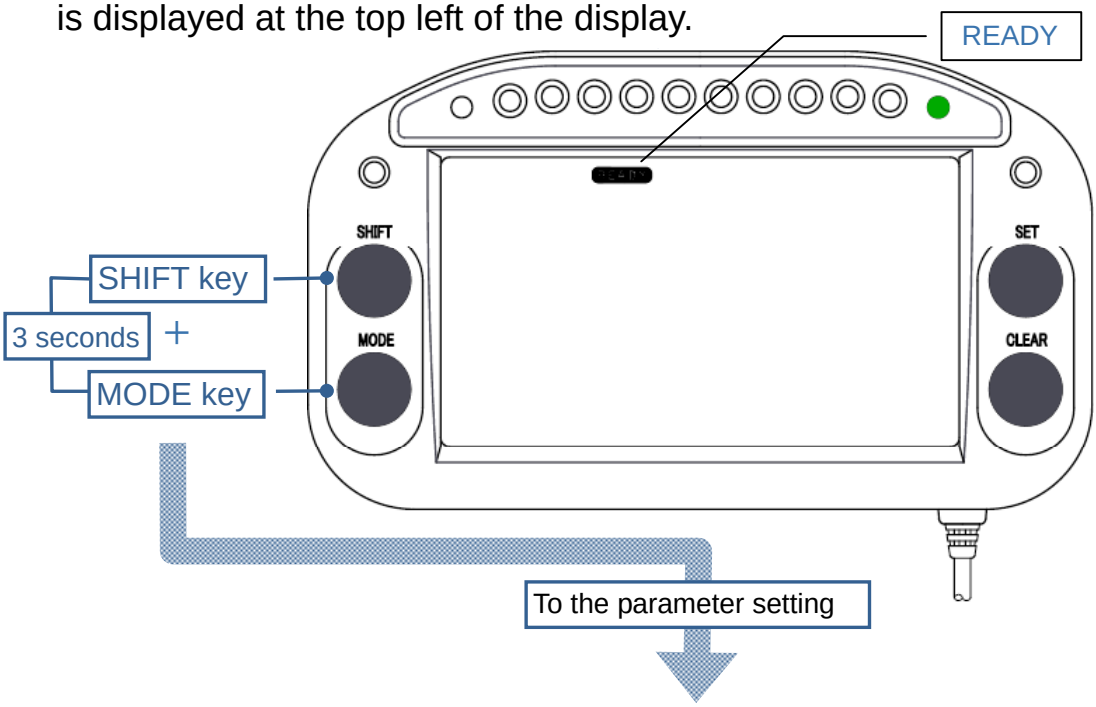
- If the GPS receiver is subjected to strong vibration, malfunction may occur. Place low-repulsion urethane (sponge or similar) around the sensor to absorb vibration.

- If using the GPS receiver in the rain, wrap it with plastic bags so as not the receiver and cables wet.

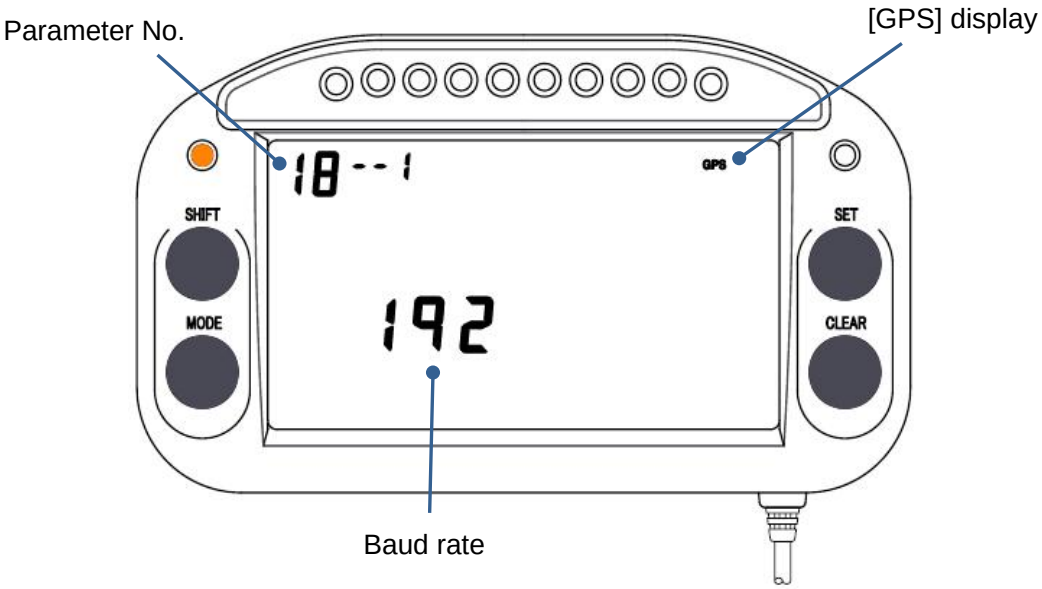
Parameter setting of the Lapcom unit

Set the communication speed between GPS receiver and Lapcom unit.

1. Verify that [READY] is displayed on the display screen. If [READY] is not displayed, press the CLEAR key to display it.
2. Press and hold the SHIFT key and MODE key at the same time for 3 seconds to change to the parameter setting screen. The parameter number is displayed at the top left of the display.



3. Press the CLEAR key and display parameter No. 18.
4. There is a flashing hyphen or number on the right side of the parameter No. Press the SET key and enter “1” to display [GPS].
5. Press the SHIFT key and move the flashing digit to the baud rate, then press the SET key and select “192(19200bps)”.
6. Press the CLEAR key to move to the next parameter setting. To exit the setting, press and hold the CLEAR key for 3 seconds.



7. Confirm the following parameter setting to log the driving data properly. Press and hold the CLEAR key for 3 seconds to exit the setting.

Parameter No. 3: Number of Segments
Parameter No. 4: Sensor Off Timer
Parameter No. 5: Speed Pulse Length
Parameter No. 7: Logging start/stop condition

* Please refer to each model's instruction manual for the parameter setting.
* It is necessary to measure speed.

8. Insert a SD card into the Lapcom main unit, and confirm the SD card mark is shown on the display.

LED and Display indication

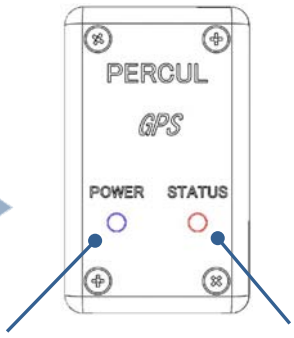
LED and the display indication of each status are as follows;

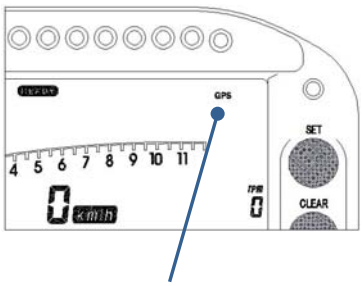
Acquiring GPS satellite



POWER (Blue) **illuminate**
STATUS (Red) **flash**

Completed GPS satellite acquisition





POWER (Blue) **illuminate**
STATUS (Red) **illuminate**
GPS or DGPS **illuminate**

NOTICE POINTS

COLD START:

The first start after purchasing the GPS receiver, or the start after remaining unused for a long period.

Please notice COLD START will take longer time to acquire the GPS satellite, like about 35 seconds.

Turn on the power of the device 15-30 minutes before driviing in a open place to the sky.

Please notice that aquiring the GPS satellite would be difficult in the following place;

- In doors or behind a building
- Between tall buildings
- Near the object that generates magnetism like high-voltage electrical power lines
- On the narrow road between dense trees or buildings
- When operating the GPS receiver through heat reflecting glass

To acquire the GPS satellite properly

- Acquire the GPS satellite in a open place to the sky.
- Keep the receiver’s top side with logo horizontally toward the sky.
- Do not move the place 15 to 30 minutes until completing the acquisition.