

ESP-IDF GPS LOGGER MANUAL

Device parameters

Storage space: SD card (suggested Kingston Canvas Select Plus 32GB MicroSD HC)

GPS: Beitian BE-220/Be-280(Ublox M10), BK-220/BK-280(Ublox M9)

Processor: 240MHz Espressif ESP32

Flash Memory: 4MB

Display

Conf1: Display: 2.13-inch 250x122 pixel EPD, SSD1680 driver.

Conf2: Display: 1.54-inch 200x200 pixel EPD, SSD1681 driver.

Usage

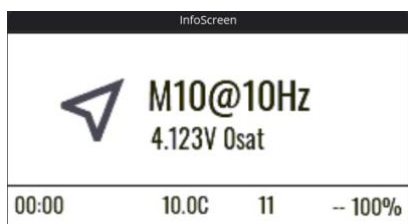
GPS Logger has two modes: GPS and WIFI (also GPS sub mode Settings).

GPS Function

Main Window for GPS mode is Speed. Stats window will be shown only when there are **stats** available.

In GPS Init Window there can see device parameters like GPS **model** and GPS configured **Frequency**.

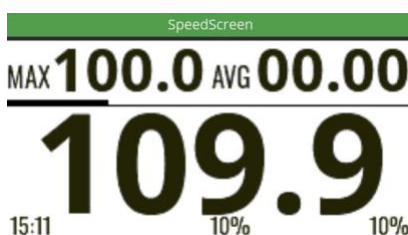
1) Gps init



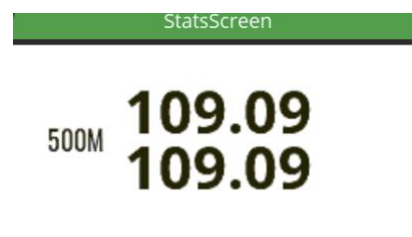
2) Stats

Screen1			
AVG	123.90	10S	109.09
AVG	123.90	10S	109.09
AVG	123.90	10S	109.09

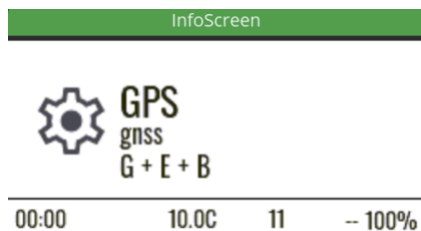
1) Speed



3) Record

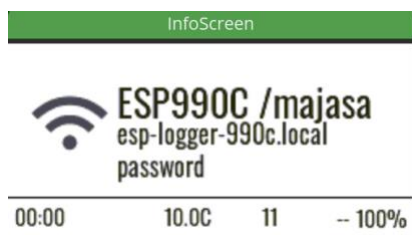


Config sub mode



In configuration mode there is GPS and Screen settings viewable and changeable. Change appears only by rotating values. It can be done with button triple click. Settings submenu is changeable with 2second long button click.

WIFI mode



WIFI mode will display **device network name: esp-logger-xxxx.local**, for device connect from web browser, also WIFI Access Point **SSID** (ESP23XXXX) / Wifi Station SSID (configurable from web interface). WIFI Access Point password is “password”, Wifi Station password depends on connection settings.

Firmware auto update sub mode



This mode will activate when device setting fw_auto_update is enabled, and device is connected to WIFI network Window will be shown when from server can be found newer firmware than device has. We offer two Update channels: stable and unstable, later is for those who like to test newest software features. When push button 2 seconds, firmware Update executed. Update can be delayed 1 hour or 24 hours by selecting submenu item by single click and activating by long press. Also Update will be skip just ignoring this message.

Push button

Button functions

- 1) **One click:**
 - a. Change Speed window upper row views when Speed window active
 - b. Change Stats window views when Stats window active
- 2) **Double click:** working when Ground Speed is less than 3,6km/h. Circle windows in GPS mode: Init, Speed, Stats.
- 3) **Triple click:**
 - a. In config mode rotates setting values, every change will be saved.
 - b. In other modes rotates screen clockwise.
- 4) **Long Press 2sec:**
 - a. In configuration mode change submenus.
 - b. In other modes shut down device.
- 5) **Long Press 5sec:** change mode: GPS – WIFI
- 6) **Long Press 10sec:** restart device.

Computer connectivity

Connect device to computer

For connect device to computer using WIFI connection following steps required

- 1) Switch device to WIFI mode (hold down push button for 5sec).
- 2) Connect computer WIFI card to device Access point SSID (ESP23XXXX).
- 3) Open address <http://esp-logger-xxxx.local/> where xxxx are mac characters displayed on device screen.

Download device data

GPS Logger can log data in formats like UBX, SBP, GPX and GPY. UBX and SBP are more known. Log formats can be configured from Web Browser “Settings” view.

To download data there should be computer connected to device network (Connect device to computer).

Then select menu “Files” from Web Browser and click file for download.

Device configuration

Device can be configured via WIFI network from computer Web Browser.

To configure device there should be computer connected to device network (Connect device to computer).

Then select menu “Files” from Web Browser and change values as needed. Every field will save after change and hit “enter” for text fields or select item from dropdown menus.

Firmware update

Firmware update can be uploaded to device from computer Web Browser.

To upload firmware device there should be computer connected to device network (Connect device to computer).

Then select menu “Firmware update” from Web Browser, upload firmware file (extension .bin) from computer via file select field and Upload button. After firmware upload and restart there is new version of firmware up and running.