EPub-InkPlate - An EPub Reader for the InkPlate-6 device

Installation Guide

(This is a draft version. It will be adjusted to add information for installation from an MS Windows platform)

Here is the installation procedure for the EPub-InkPlate application. This procedure can be adapted depending on your requirements.

The installation consists of

- Preparing an SD-Card with the appropriate information.
- Uploading the application to the InkPlate-6 device.

The last version of the binaries for the Inkplate-6 are located in release bundles that you will find with the application GitHub project: "https://github.com/turgu1/EPub-InkPlate". This procedure shows how to install it using the *esptool* upload tool. This is the simplest way to install EPub-InkPlate as it does not require to have a full development environment (VSCode + PlatformIO + ESP_IDF) to install the binary version.

(You can also compile and upload the result within a VSCode/PlatformIO development environment. The supplied `platformio.ini` file is already set up such that once the project is loaded into the IDE, you can launch the builder and the uploader.)

Prerequesite

The *esptool* is a Python program that is used to upload an application to an ESP32 (or ESP8266) device. It must be installed on your computer. It is compatible with both *Python* versions 2 and 3. Verify that you have *Python* and *pip* installed on your computer (The following link may be useful: "https://wiki.python.org/moin/BeginnersGuide/Download"). Then, to install esptool, the following command must be executed (in a shell window):

```
$ pip install esptool
```

You then must retrieve the release from the Github repository. Look at this location on GitHub: "https://github.com/turgu1/EPub-InkPlate/releases". The file to download is **release.VX.X.zip**. It is located in the `assets`, down under the description text. Extract its content. You will get two folders: `bin` and `SDCard`, the installation and user's guide documents in markdown format.

Preparing the SD-Card

The SD-Card must be formatted with a FAT32 (or MS-DOS or VFAT) partition. This is usually the case with brand new cards. The release's `SDCard` folder contains everything required to initialize the card's content. Simply copy the content of the folder (including the sub-folders) to the card as is.

The file `config.txt` located in the card's root folder may be edited to identify your wifi parameters (`wifi_ssid`, `wifi_pwd`) (as these parameters contain text information, they are not editable through the EPub-InkPlate application). This file is loaded at startup. This will allow for accessing the

InkPlate-6 from a Web browser to manage the list of books present on the card. This is optional as it's always possible to update the SD-Card content by inserting it into your computer.

Once done, insert the card into the device.

Uploading the application program

The release's `bin` folder contains the application, the bootloader, and the partitions binaries that must be downloaded to the device. To do so connects the device to a USB port, turn it on, change your current directory to that folder, and execute the following command (in a shell window):

```
$ sh upload.sh
```

Here is an example output of the execution:

```
$ sh upload.sh
esptool.py v3.0
Serial port /dev/ttyUSB0
Connecting......
Chip is ESP32-D0WDQ6 (revision 1)
Features: WiFi, BT, Dual Core, 240MHz, VRef calibration in efuse, Coding Scheme None
Crystal is 40MHz
MAC: fc:f5:c4:1b:4e:cc
Uploading stub...
Running stub...
Stub running...
Changing baud rate to 230400
Changed.
Configuring flash size...
Auto-detected Flash size: 4MB
Compressed 25136 bytes to 15148...
Wrote 25136 bytes (15148 compressed) at 0x00001000 in 0.7 seconds (effective 297.9 kbit/s)
Hash of data verified.
Compressed 3072 bytes to 143...
Wrote 3072 bytes (143 compressed) at 0x00008000 in 0.0 seconds (effective 2244.8 kbit/s)..
Hash of data verified.
Compressed 1086128 bytes to 554716...
Wrote 1086128 bytes (554716 compressed) at 0x00010000 in 24.9 seconds (effective 348.5 kbi
Hash of data verified.

Leaving...
Hard resetting via RTS pin...
$
```

Once the upload is complete, the device will automatically reboot. The first task done would be the page location computation for all books present in the SD-Card `books` folder. This is a relatively long process that will take between 1 and 3 minutes per book. The duration depends on book size and the SD-Card access speed. Once the computation is completed, the application will show the list of books present on the device, allowing the user to select a book to read.

Some options on the esptool command may have to be modified depending on your computer:

- The USB device connected to the InkPlate-6 is expected to be named `/dev/ttyUSB0` (That is the case on Linux Mint and Ubuntu). If it's not the case, you must find it and modify the `upload.sh` script accordingly.

- Another issue you may have is the download speed that is too high for your computer. Again, you may change it in the `upload.sh` script. The speed (baud rate) is **230400** in the file. You can change it to **115200** baud or lower.