



## Casio G'zOne Ravine 2 modification guide

## Introduction

This document describes all steps required to run BREW applications on Ravine 2. Please be aware, that Casio released four revisions of this device:

- C781
- C781H
- C781NC
- C781NCH

**This guide was written for C781 and C781H only.**

**It may or may not work with NC revisions. These devices were not tested.**

Probably every firmware version is supported, but devices with firmware **other** than WC781VWB885F.252 **must be restored to factory state using flashing application**. During this process a lot of device specific information **will be erased** (e.g. production date). Make sure to create a backup before proceeding!

Guide was based on research and information found in topic below:

<http://forum.allsiemens.com/viewtopic.php?t=62590>

Make sure to give thanks to **kraze1984** for hours spent on researching this device!

## Preparation

At the beginning make sure that battery is fully charged. **Do not continue otherwise - you will brick your device if your device will run out of charge during the process!** Once device will be fully charged, power it on. Go to MENU -> Settings & Tools -> 12. USB Mode and change the setting to Modem Mode. In newer firmware versions, this option will be called Charge Only.



Now you have prepared device to be detected correctly by your PC or laptop. Make sure they are running either Windows XP or Windows 7 - **other systems are either not tested or not supported.** **Windows 10 will not work!**

## Installing flashing application

BREW environment/system was designed to run applications which were signed specially for them. If application was not signed or signature was invalid for a device - it will not be opened. In order to run unsigned applications with any valid certificate, a special firmware version needs to be flashed to the device. By enabling **Modem Mode**, service port became available. Thanks to it, it is possible to flash modified firmware. Now connect your C781 to PC/laptop. After a few seconds new interfaces will be detected and system will ask for drivers. Use drivers from **C781\_drivers.zip** package attached to post below:

<http://forum.allsiemens.com/viewtopic.php?p=1119772#1119772>

System will detect three new interfaces.



Now, install two applications in following order:

- PT\_PST\_Framework\_Store\_NCMC\_v3.9\_70111.msi
- PT\_PST\_C781\_Store\_v1.4.5.1\_B0322.msi

Both applications and required firmware are available in following post:

<http://forum.allsiemens.com/viewtopic.php?p=1119806#1119806>

## Additional steps for new firmware versions

Before starting application, check firmware version which you have by going to **MENU -> Settings & Tools -> Phone Info -> SW/HW Version -> Software Version**. If you have firmware version WC781VWB885F.252, then you are ready to go. In case of any other firmware (especially WC781VWF211F.252), you will probably need to use patched **Download\_PST.dll**. You can find it on the link below (it's also available in previous link):

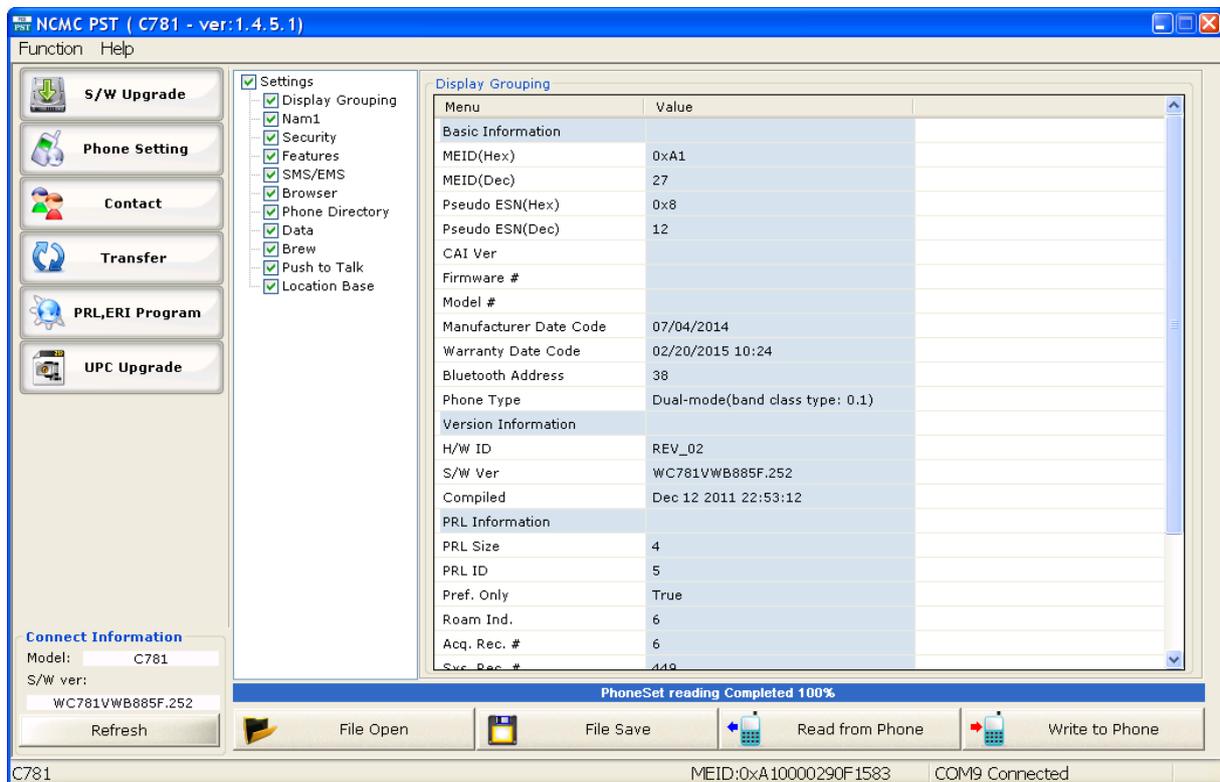
[https://mega.nz/file/iXJxVK4S#JJlx5wEgktJ5oM9\\_L1BEz6lfzq61V5PIU5qCKoFFSUA](https://mega.nz/file/iXJxVK4S#JJlx5wEgktJ5oM9_L1BEz6lfzq61V5PIU5qCKoFFSUA)

Copy it to following folder (if you haven't changed it during installation):

C:\Program Files\NCMC\PST\Store\C781

This file will alter flashing procedure, so **EFS2** partition will be **re-formatted**. All your data will be wiped. You may decide to not use this file and keep your data, but please be warned that **EFS2 partition will be corrupted** as the result. **Some applications will not work afterwards**.

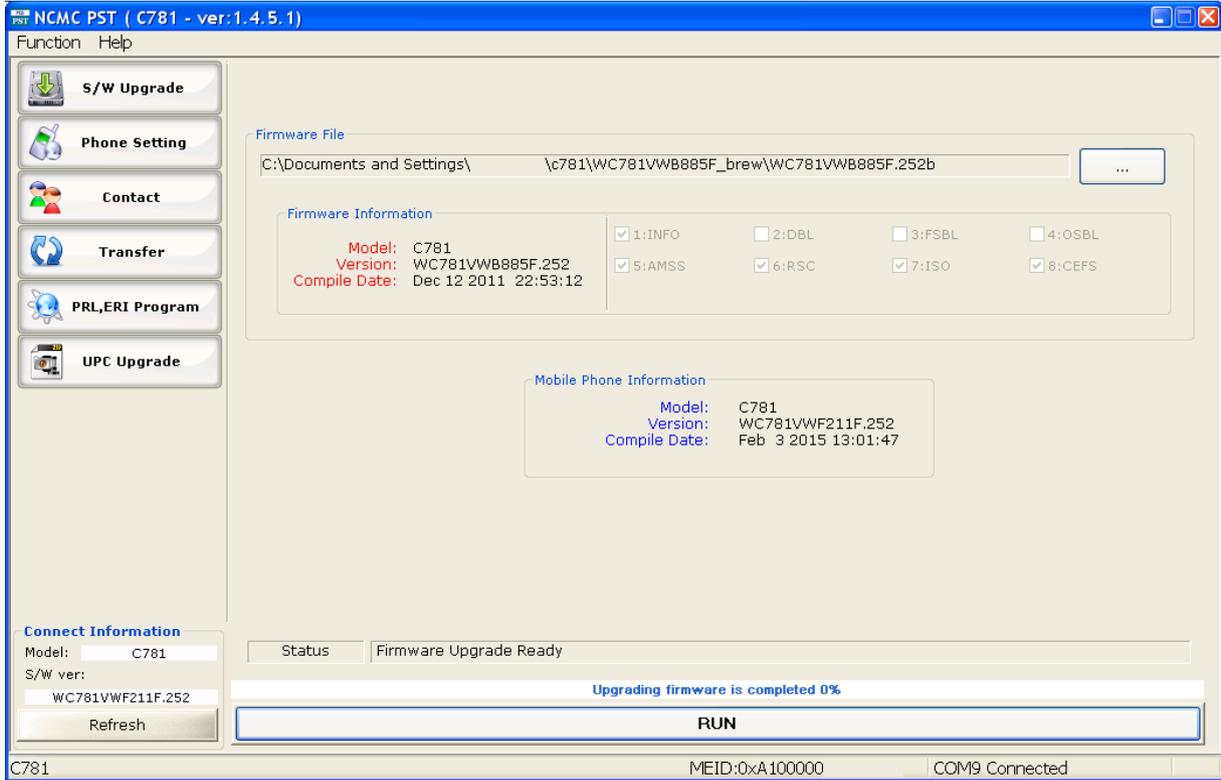
Some data like phone activation can be saved to a file using **PT NCMC PST** application. On the first run, application will ask which interface it should use to connect to the device. Please select **CASIO C781(UDP)** port. If application will not detect your phone, try other port. Once correct port will be selected, application will display information about your device. Now press the **Phone Setting** button. Please mark **Settings** box from the list - it will mark all available options. Finally, press the **Read from Phone** button to acquire all information from the device.



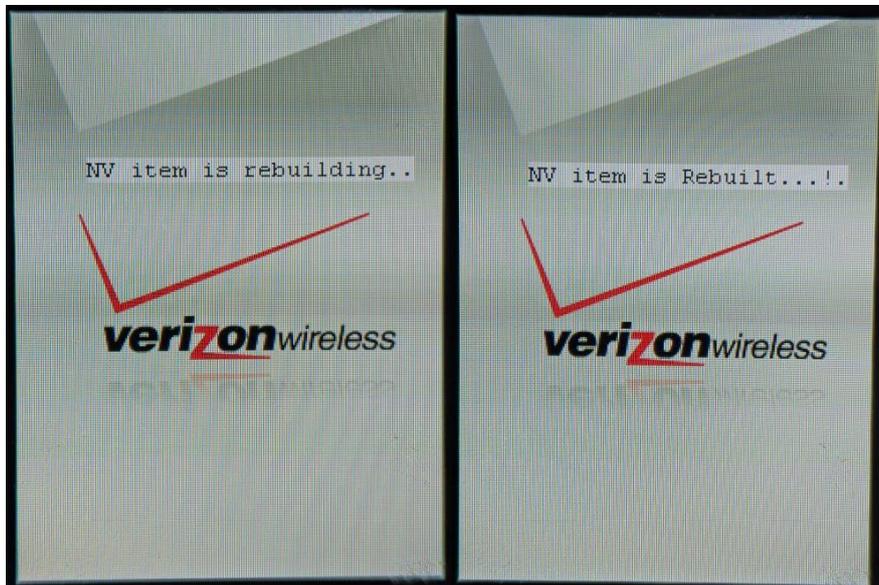
Once all fields will be populated, press the **File Save** button and save configuration in desired location. Now you can start flashing the firmware.

## Flashing the firmware

If you haven't done it already, open the **PT PST Store** application. On the first run, application will ask you for a correct interface to connect to the device. Please select **CASIO C781(UDP)**. If application will not be able to detect your device, please select other available port. If done correctly, application will detect your device and will display information about it. Press the [...] **button** to select firmware file (make sure to extract it first!). **CEFS** box will be marked only if patched DLL was used. Application will ask you for confirmation. If no errors will be reported, you can press **[RUN]** **button** to flash the firmware.



Process will take about 5 minutes. Do not disconnect or better not touch the device/cable until it will be completed. Device will reboot automatically once firmware will be flashed. If patched **Download\_PST.dll** was used, additional step will be displayed on phone's screen. Please wait till it will be done.



## Restoring backup

If your EFS2 partition was wiped, make sure to restore saved data. Re-configure **USB Mode** as described in **Preparation** section. Open **PT PST Store** application, go to **Phone Setting**, press the **File Open** and select previously saved configuration file. Press the **Write to Phone** button to restore the data. Phone will reboot once process will be completed. Now you are ready to continue.

## Checking if firmware was flashed correctly

This is an optional step, but will save a lot of time if some application will refuse to work. Go to **MENU -> Apps** and open **Mobile IM**.



If application will run normally, then you can proceed to next step. If nothing happens or device will simply restart, then your **EFS2** partition **became corrupted**. Go back to **Additional steps for new firmware versions** section and re-flash firmware using patched **Download\_PST.dll** file. Make sure to perform all following steps.

## AppManager installation

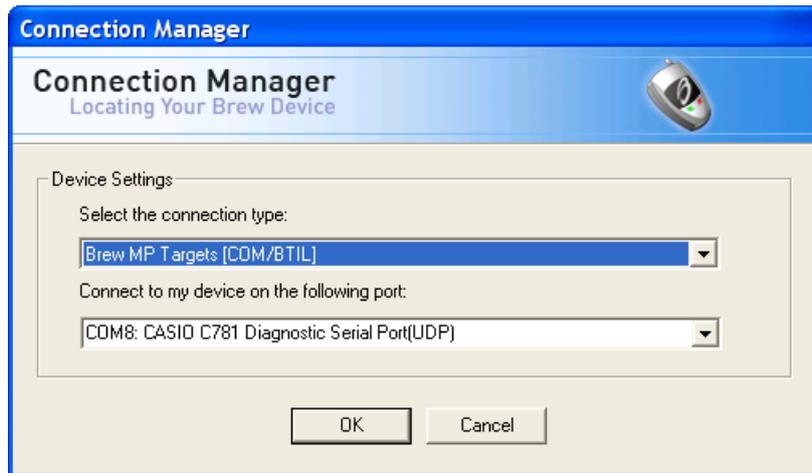
There is no installation wizard for BREW applications. All application files needs to be copied to a proper directories in the internal memory of the device. Otherwise system will not detect them. This is not safe method, as device detects new applications during booting phase. If application is unstable or incompatible, it may lead to a boot-loop. **There is no recovery method. If this happens to your device, then it will never boot again.** Because of this, there is a need to “install” **AppManager**, so applications can be opened directly from **SD card**. Thanks to it, if boot-loop happens you will simply need to remove **SD card** and delete faulty application.

**AppManager** can be found in the following topic:

<http://forum.allsiemens.com/viewtopic.php?t=62774>

Application needs to be copied to internal memory of the phone. This can be done using **IoE Development Tools**. Once tools are be installed, open **Loader** application. In the selection window

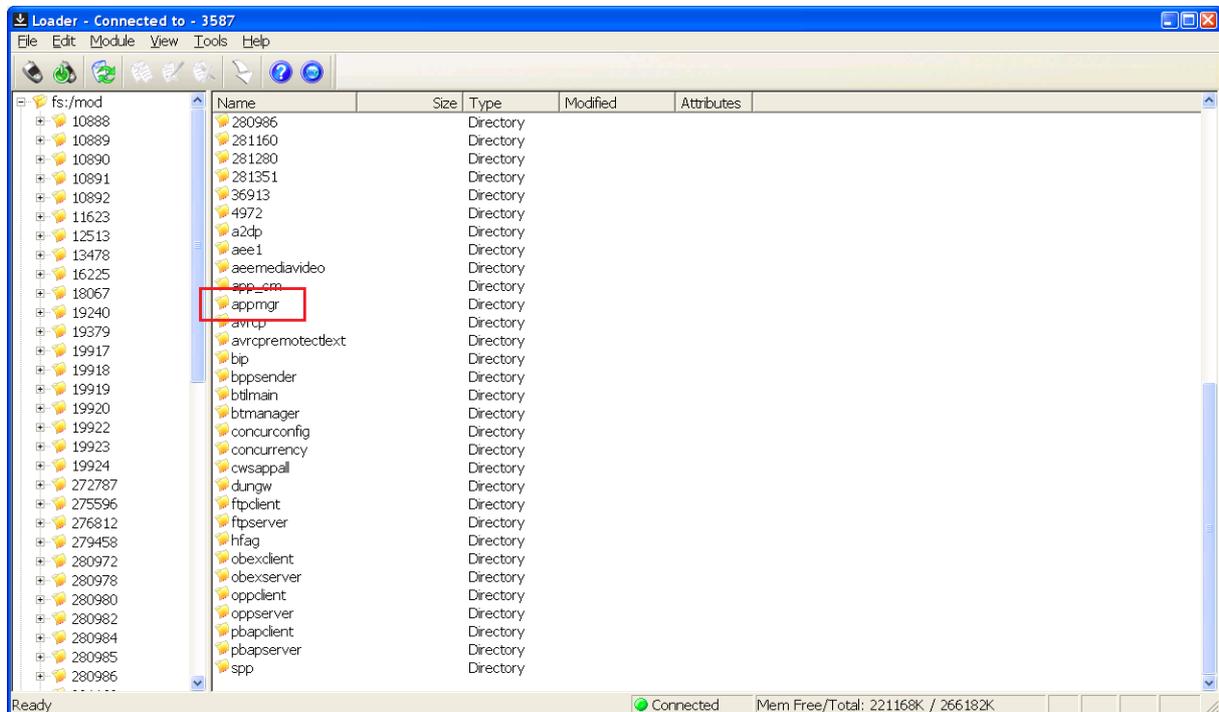
choose **Brew MP Targets [COM/BTIL]** and **CASIO C781 Diagnostic Serial Port(UDP)** (COM port number may be different!).



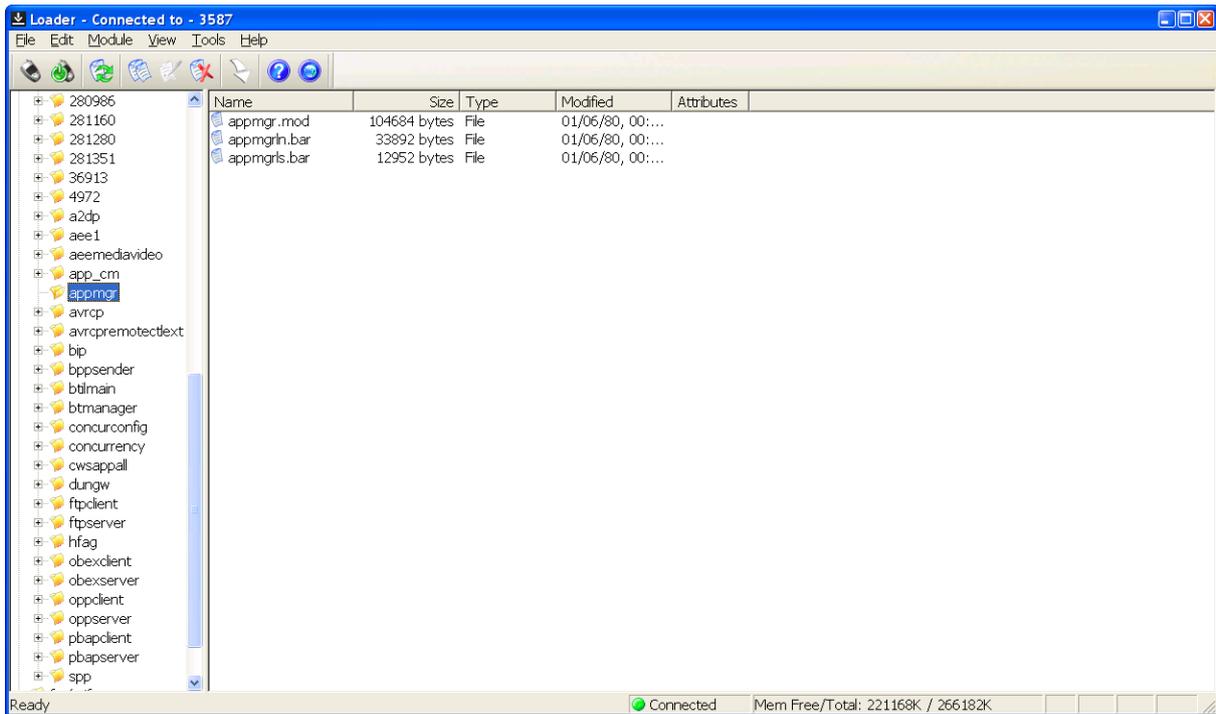
At the first connection application will ask you for the certificate. You can find one in following topic: <http://forum.allsiemens.com/viewtopic.php?p=490737#490737>

If everything was done correctly, catalogue tree will be displayed. Now copy whole **appmgr** folder to **fs:/mod** directory including all files:

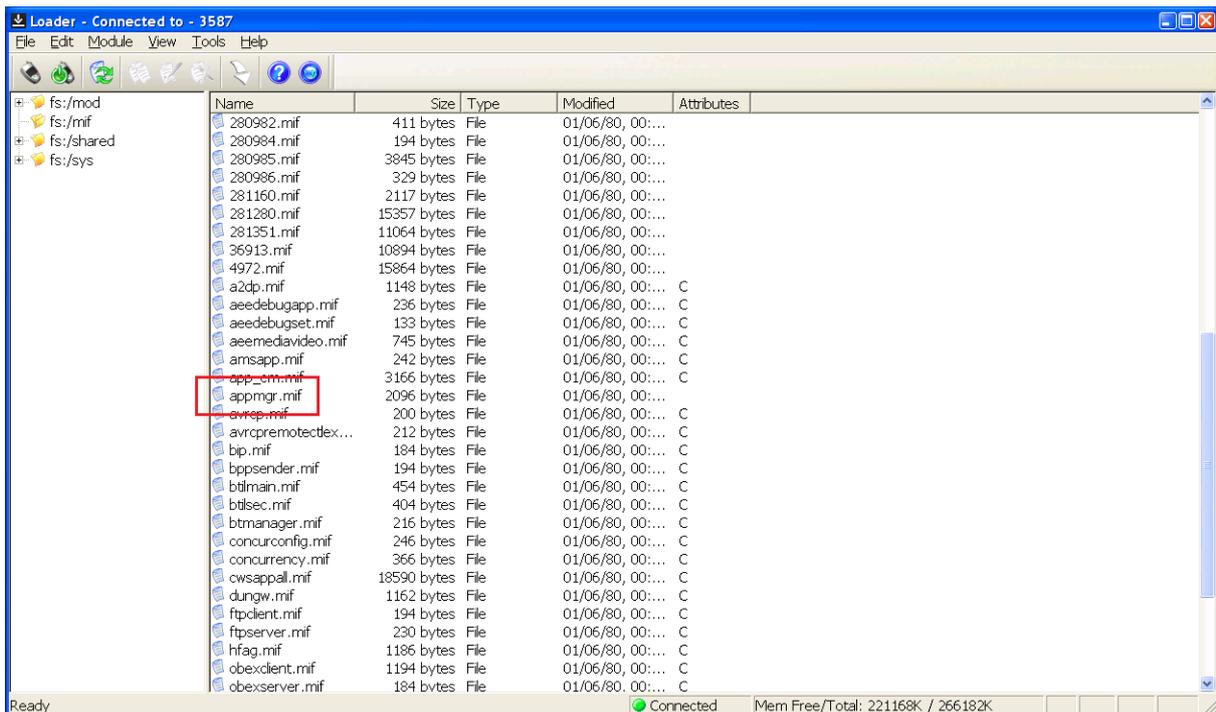
- appmgr.mod
- appmgrln.bar
- appmgrls.bar



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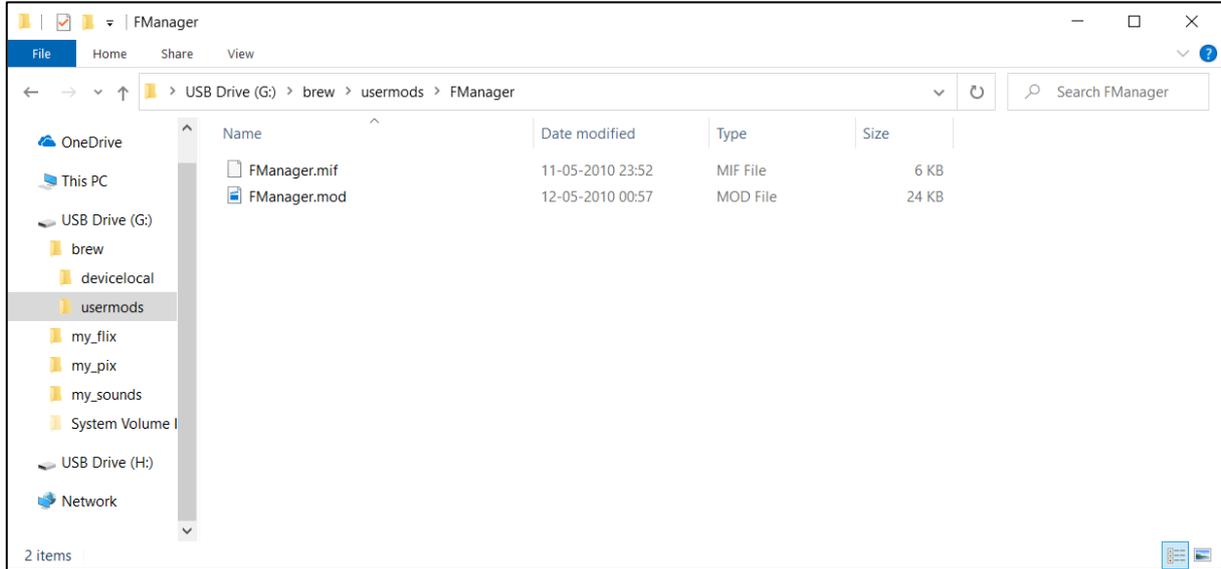
Once done, go to **fs:/mif** and copy there the **appmgr.mif** file.



Finally you can restart your device. While not recommended, you can install other applications in the same way. Instruction how to use **AppManager** is located in **Running applications** section.

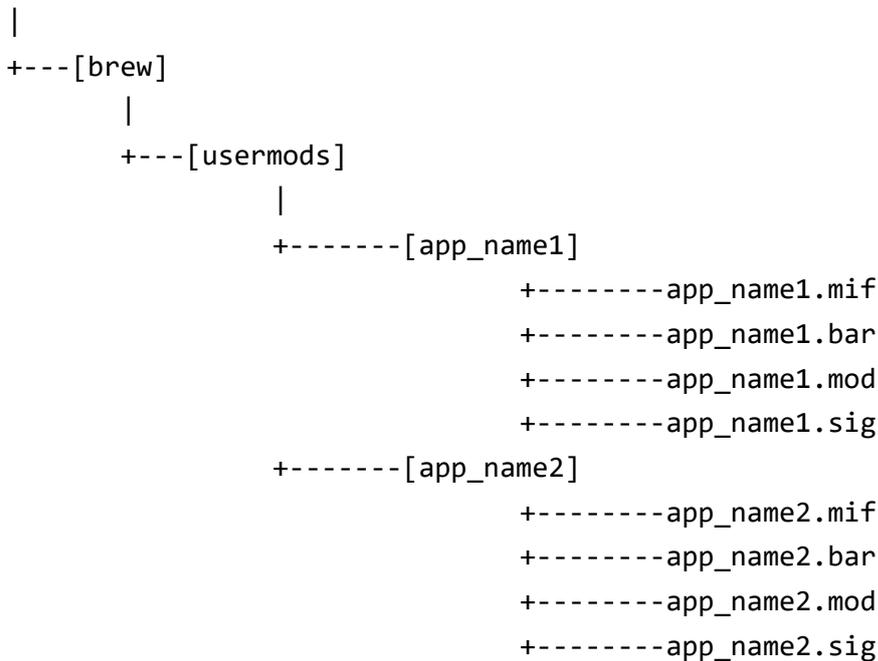
## Application installation on the SD card

In order to run applications from the **SD card** a proper folder structure is necessary. On the **root directory** of SD card create a **brew** directory (case sensitive!). Inside **brew** directory create **usermods** folder (case sensitive!). For each application, you need to create a **separate** folder inside **usermods**. In this folder you should put all application files (including **MIF file**). Below an example from **FManager**:



In general, structure looks like this:

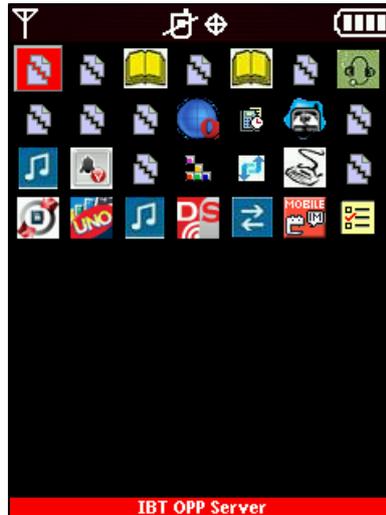
[Root directory]



Please be aware, that **folder**, **.BAR**, **.MOD** and **.SIG filenames** usually must be the same (case sensitive!). You can use build-in **Mass Storage** feature to copy files without removing **SD card** from the device. Be aware, that in that case new applications will be detected **after device reboot**. If you decide to remove **SD card** and copy files using **external SD card reader**, then new applications will be detected without reboot - after **SD card** will be inserted back to the device.

## Running applications

Once AppManager was installed, it will take place of stock App application. In order to open it, go to MENU -> Apps.



Use the joystick and select application which you would like to run and then press the button in the center to open it.

