



Easy Commissioning via SD Card & USB Drive

APPLICATION NOTE

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1 Preface

1.1 About This Document

The present document describes how to (pre)configure your eWON Flexy & eWON Cosy 131 thanks to an SD card or a USB drive.

For additional related documentation and file downloads, please visit www.ewon.biz/support.

1.2 Document History

Version	Date	Description
1.0	2016-01-08	First release
1.1	2016-01-27	Added content for T2M.txt section
1.2	2016-04-25	Added content for ewonfwr.(d)ebu section
1.3	2016-05-09	Added content backup.tar & comcfg.txt
1.4	2018-09-07	Added USB drive configuration

1.3 Related Documents

Document	Author	Document ID
Configure the Cellular Connection Through SD Card or USB Drive Commissioning	HMS	KB-0258-00
SD Card or USB Drive Commissioning to Connect through Ethernet with a Static WAN IP Address	HMS	KB-0259-00
SD Card or USB Drive Commissioning to Connect through Wi-Fi	HMS	KB-0260-00
SD Card Commissioning to Enable USB Ports	HMS	KB-0261-00
Flexy Family	HMS	RG-0008-00

1.4 Trademark Information

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2 Introduction

The eWON Flexy & eWON Cosy 131 integrate an SD card reader and USB port(s) (USB extension card for Flexy). They are used to configure your eWON in a simple way.

When talking about configuration, there are 3 possibilities:

Firmware upgrade/ downgrade or recovery	The user inserts an SD card / USB drive containing either a .edf file (such as ewonfwr.edf or dewonfwr.edf) or a .ebu file .
Restore a backup or apply communication settings	The user inserts an SD card / USB drive containing any of the followings: <ul style="list-style-type: none">• backup.tar• comcfg.txt
Talk2M autoregistration	The user inserts an SD card / USB drive with a T2M.txt file which contains the Talk2M Global Registration Key (GRK) used by Talk2M to automatically link this eWON to your Talk2M account.

3 Requirements

3.1 Devices

Only the eWON Flexy & eWON Cosy 131 with an integrated card reader and/or USB port(s) are able to use this feature. This means that it concerns:

- eWON Flexy: all models
- eWON Cosy 131: all models



The Flexy doesn't have embedded USB ports. You will need the FLB 3601 USB extension card to benefit from the USB commissioning.

3.2 Firmware

The SD commissioning is made possible as of firmware version 11.0s0.

The USB commissioning is made possible as of firmware version 13.1s0

3.3 SD Card / USB Drive

The SD card / USB drive needs the FAT32 format with a capacity of 128Gb maximum (only the first partition is used).

4 Configuration Procedure

Except for the `.(d)ebu` files, the configuration process can be summarized in 3 steps:

- The user inserts the SD card / USB drive in the eWON.
- The eWON processes the files.
- The user removes the SD Card / USB drive from the eWON which provokes the reboot.

4.1 SD Card / USB Drive Insertion

4.1.1 `.(d)ebu` Files

Because these types of file are considered only at boot time, the SD card / USB drive needs to be already inserted when powering on the eWON. See [ewonfwr.\(d\)ebu, p. 8](#) for more information.

4.1.2 Other Valid Formats

The SD card / USB drive can be inserted at any time even if your eWON is already powered on.

The insertion is detected in a very short period (5 seconds maximum). This detection is visualized by the quick orange blinking pattern of the “USR” LED.

The blinking pattern reflects a cycle that alternates the ON / OFF. In this case, the LED is powered on for 150msec then is powered off for 150msec.



Fig. 1 Commissioning — Insertion Pattern

If the SD card / USB drive is already inserted on the power up of the eWON but doesn't contain any firmware file type `.(d)edf / .(d)ebu`, the SD card / USB drive will be processed at the end of the boot phase.

4.2 File(s) Processing

The following blinking process occurs for these types of file only:

- `ewonfwr.edf`
- `dewonfwr.edf`
- `backup.tar`
- `comcfg.txt`
- `T2M.txt`

While the eWON processes the file(s), it displays a slow orange blinking pattern of the “USR” LED. It could last from 1 to 20 seconds depending on the number and size of the files that need to be processed.

The slow blinking is a cycle that alternates the “USR” LED by powering on for 1sec and powering off for 1sec.

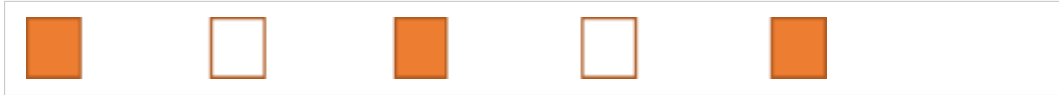


Fig. 2 Commissioning — Processing Pattern

Processing the files through SD card or USB drive is exactly the same as if you transfer those files by FTP. These files are copied on the eWON and immediately active.

As some communication parameters are effective only after a reboot, this one is automatically initiated when you remove the SD card or USB drive.

4.3 End Status

When the eWON has completed the processing of the SD card / USB drive, it will display the result on the “USR” LED:

- Solid green is a success.
- Solid red is a failure expressing an error that occurred during the processing.



The solid green/red LED will stay until the SD card / USB drive is removed.

4.4 SD Card / USB Drive Removal

In both cases, success or failure, at the end of the processing, you must remove the SD card / USB drive. When the SD card / USB drive has been removed and after a few seconds, the eWON reboots automatically.

If the T2M.txt file had to be processed, the eWON will automatically run its T2M wizard with the settings set by the T2M.txt file.

This wizard runs after the reboot produced by the SD card / USB drive removal and as soon as it catches an Internet connection. The catching phase can last for a minute depending on the communication media used to connect to the Internet.

5 Authorized Files

The eWON considers several different files on an SD card / USB drive. These files are processed in the strict order below:

1. ewonfwr.debu (firmware file)
2. ewonfwr.ebu (firmware file)
3. ewonfwr.edf (firmware file)
4. dewonfwr.edf (firmware file)
5. backup.tar (configuration file)
6. comcfg.txt (configuration file)
7. T2M.txt (configuration file)

If one of the firmware files is found, it will be processed first and separately. The other files available on the SD card / USB drive will be executed afterwards.

If there are only configuration files on the SD card / USB drive, these ones will be processed immediately and at the same time.

You can combine multiple files on the SD card / USB drive. This leads to two scenarios depending on the moment the SD card / USB drive is inserted:

- **The eWON is powered off**
At the startup, if a firmware file is available on the SD card / USB drive, it will be executed first. Once the firmware has been upgraded/downgraded, the other files will be processed.
- **The eWON is powered on**
The configuration files will be processed first. Once those files are processed, the eWON reboots. If a firmware file is available on the SD card / USB drive as well then it will be executed at this moment, when the eWON reboots.

It is recommended to insert the SD card / USB drive when the eWON is turned off if you need to perform an upgrade/downgrade while combining firmware & configuration files.



With a "backup.tar" file, the eWON is totally erased before copying the files from the backup.

5.1 ewonfwr.(d)ebu

The .(d)ebu files are used to perform a recovery when switching eWON firmware between major versions or when you are facing firmware issue:

- The .ebu file is used to upgrade while keeping your eWON's configuration intact.
- The .debu file is used to upgrade or downgrade with your eWON being completely erased.



You may not perform a downgrade to a firmware version lower than 11.

5.1.1 Procedure

The whole process, starting from the powering up of the eWON to its ready-to-use state, should take around 2,5 minutes.

Upgrade

Here's how to proceed when performing an upgrade:

1. At boot, the eWON checks if:
 - there is an SD card / USB drive,
 - there is a .(d)ebu file,
 - the version of the .(d)ebu is strictly higher than current firmware version.
2. If the .(d)ebu file is valid, the recovery process begins. The “USR” LED displays a solid orange. The expected time of this step is between 1 and 2 minutes.
3. When the recovery ends, the “USR” LED shows the result during 3 seconds:
 - Green light on success.
 - Red light on failure.
4. After a few seconds, the eWON continues its boot process. A reboot of the eWON is not necessary.



Because the firmware version is checked, the recovery will only happen once if you let the SD card / USB drive plugged in.

Downgrade

There is just one difference with the upgrade process: you need to press the RESET button while powering on the eWON until the “USR” LED becomes solid orange.

This disables the firmware version verification that checks if the .(d)ebu version is higher than the one currently running in the eWON.



If you want to force a recovery with the same firmware version as the one currently running, simply follow the downgrade procedure (so, with RESET button pressed) with a .ebu version equal to the one already in the eWON.

5.2 (d)ewonfwr.edf

There are two scenarios possible for the .edf file :

- The ewonfwr.edf file performs a firmware upgrade.
- The dewonfwr.edf file performs a firmware downgrade.



All settings of the eWON are erased during a firmware downgrade procedure.

5.3 backup.tar

The backup.tar erases the whole configuration of the eWON, then applies the configuration parameters sent inside the backup.tar file.

It can be an entire backup file of an eWON (containing all configuration parameters) but it can also be a custom backup containing only a few parameters created by yourself.

5.4 comcfg.txt

The comcfg.txt file is used to configure the communication parameters of the eWON.

Same as the backup file, you can use an entire comcfg.txt file or just create a comcfg.txt file containing some of the configuration parameters.

See also the example section at the end of this document.

5.5 T2M.txt

The T2M.txt consists of a text file containing 2 keys used to do the Talk2M auto registration with the Global Registration Key (GRK):

- T2MKey: KEY_VAL (prefixed 128 bits GUID)
- T2MNote: NOTE_VAL (140 ASCII chars note)

The T2MKey is the Global Registration Key (GRK) found in the Account properties of eCatcher software (as of eCatcher version 6).



For security reasons, the eWON doesn't process the T2M.txt file if it's already linked to a Talk2M account. The GRK can only be used on a eWON that has not been registered on Talk2M.

You will need to first remove it, in eCatcher, from the current account it is linked to, then only will you be able to perform the auto registration with the SD card or USB drive.

If the T2M.txt file had to be processed, the eWON will automatically run its T2M wizard with the settings set by the T2M.txt file.

This wizard runs after the reboot produced by the SD card / USB drive removal and as soon as it catches an Internet connection. The catching phase can last for a minute depending on the communication media used to connect to the Internet.

Example 1: T2M.txt

```
T2MKey:A01-6BB884ABCDEFGHJKLMNOPQRSTUVWXYZ
T2MNote:Message copied in eCatcher during registration
```

6 Disable the Configuration by SD Card / USB Drive

The configuration by SD card / USB drive feature is controlled by the parameter **SDConfigEnable** for the SD card and **USBConfigEnable** for the USB drive. These parameters are located in the comcfg.txt file.

By default, this feature is enabled. These parameters are only checked at boot time.

If a user wants to disable this feature, he must set the parameters to 0 and reboot the eWON.

Example 2: Commissioning Parameters

```
SDConfigEnable:1  
USBConfigEnable:1
```

7 Events.txt Messages

When you perform a configuration by SD card / USB drive (with a T2M.txt file), the eWON will put some traces in your events.txt file.

For example:

```
"14:40:00";"bkz-The SD device has been inserted";"udevmon";79347;1073779147
"14:40:05";"bkz-Successfully load SD file (T2M.txt)";"esyncitf";79337;1073779149
"14:41:05";"System Booting, FWR: 11.0s0b11 (11.0), SN: 1524-0071-21 [EF0000]";...
"14:41:06";"Reboot reason: SD device removed";"wd";79308;1073762140
```

If an SD card / USB drive with no valid files is inserted, you can find the following traces:

```
"14:48:52";"bkz-The SD device has been inserted";"udevmon";79347;1073779147
"14:49:17";"bkz-The SD device has been removed";"udevmon";79347;1073779148

"14:48:52";"bkz-The USB device has been inserted";"udevmon";79347;1073779147
"14:49:17";"bkz-The USB device has been removed";"udevmon";79347;1073779148
```



No reboot is done when invalid configuration files are processed.

8 File Examples

Different documents have been created to help you (pre)configure your eWON with different configurations. Check the [Related Documents, p. 3](#).

