ECClite

Ecotap Controller Configuration

Lite Edition

Version 1.4, 15-07-2024

[internal & external usage]

ecotap®

A brand of legrand®

1. Version History

Version	Date	Author
1.0	21-03-2024	Product Owner (R&D)
1.1	16-04-2024	Product Owner (R&D)
1.2	1-05-2024	Product Owner (R&D)
1.3	23-05-2024	Product Owner (R&D)
1.4	15-7-2024	Product Owner (R&D)
1.5	17-7-2024	Product Owner (R&D)

History of changes:

- Version 1.0:
  - Creation
  - Chapters 5 to 10 are based on content in the original ECC Manager manual, adapted and made relevant to ECClite.
- Version 1.1:
  - Add three table references, out of Jack de Veer's full EVC4 and EVC5 R&D Manuals to the JSON Parameters.
- Version 1.2:
  - Additional Parameters mentioned in OCPP Dictionary.
- Version 1.3:
  - Small corrections & Added table 7.
- Version 1.4:
  - Added note about OCPPInfo field.
- Version 1.5:
  - Removed content from the Chapter OCPP Connectivity and referred to separate OCPP Connection Configuration.PDF, for more elaborate OCPP Connectivity information.

2. Table of Contents

Inhoud

3. Introduction

This document serves as a guide for updating firmware and modifying configuration via the ECClite.

With the lite version you can configure settings regarding; Power, Load-management/Grid and internet connectivity.

The lite version also protects you from changing any configuration on the station that could permanently damage it. If you still use the full ECC Manager instead of the lite version, you will do that at your own risk of voiding warranty.

Using ECClite is described step by step and can be applied to the EVC4.x, EVC5.x and the ECC.x controller that run the V32Rx software.

The following topics are addressed in this manual:

- Required hardware, software and related files.
- Updating Firmware via the ECClite
- Sending selected parameters to the controller.

Important!

A) **Standard Factory settings .JSON files with selected parameters should always be supplied by Ecotap!**

B) **If the ECClite software is used in a way other than indicated in the manual, Ecotap cannot guarantee that the controller will work properly.**

4. Primary information- Ecotap Controller Configuration – Lite Edition

ECClite is an application dedicated for owners, installers and operators of charging stations. Everything that can be done on this software tool, must in principle be done via remote commands from your selected backend. As the Ecotap stations are made for convenient remote control, in batch by using OCPP compatible backend platforms. That is especially the case for all parameters needed to determine the power and grid settings that match your charging infrastructure.

In most cases Ecotap manufacturing will have preset all communication data as such the station will automatically make connection to the backend determined in the purchasing process. If you need to check, correct or modify the backend connectivity, or if you can't access the backend to configure power and grid settings. You will need to use ECClite.

This software toolkit works only on the windows platform and only if the firmware on supported controllers is on version V32RXX and up.

To download the latest version & the manual, click here: https://www.ecotap.nl/ecclite/

Generic information about Updating your Firmware:

To update the firmware, you will need the manufacturer advised .BIN file. You can find the latest published firmware and their release notes on the web page: https://www.ecotap.nl/ecclite/
Mind that you should always check the release notes to evaluate if that firmware file is compatible to your type of controller module.
An update of the firmware of your station is best done remotely and in batch by the charge point operator via his OCPP-backend access.
In cases you need to do it manually, you can use this software toolkit 'ECClite'.

WARNING: a firmware update is different from commonly known software updates. If you update the firmware in technical terms, you flash the chip memory. That means that it completely rewrites itself. If you interrupt this process by removing power or data cable. Your controller module can brick itself. And become useless. You lose your warranty and need to swap the controller module. If you don't know what you are doing, always first consult the manufacturer Ecotap/Legrand.

Unlike with OTA (over-the-air) software updates. With firmware, you as owner of the device decide whether or not you want to update your device to the manufacturer advised version.

If you have a stable version running on your charger, it is not advised to update. Only update if you read in the release notes that the update solves a problem hampers your charger operations. MIND that IT IS NOT possible to DOWNGRADE the firmware anymore. Project specific firmware on custom product should thus NEVER be upgraded!

OCPP Connectivity :

Because Ecotap Charging Stations are infrastructure objects, the OCPP connectivity to the selected backend platform is pre-configured in the factory. If connectivity is lost or connectivity settings are accidentally wiped and/or contracts with the backend provider are terminated and a switch to a new party is needed. You will need to reconfigure connectivity yourself.

To connect an OCPP backend platform, you will need receive information from the platform provider. Namely, the link to the backend. Called an Endpoint.

In most cases it will look like this:

Endpoint URL:

*"wss://devices.ecotap.com/registry/ocpp/NL*ECO*1000"*

For detailed information about how to configure this endpoint on the Ecotap Controller, we refer to a separate PDF named: OCPP Connection Configuration.PDF. That you can download from:

https://www.ecotap.nl/en/ecclite-ecotap-controller-configuration/

Under the button:

5. Required Setup

In order to use ECClite and its functionalities, there are several supplies that are required. Make sure these are present before proceeding.

5.1. Required Hardware

Product	Info
Computer (incl. 1x USB connection, type A)	To use the ECClite software tool.
USB to TTL cable	Cable to connect the controller with the computer (cable is proprietary to Ecotap). Article number: 3510019 Supplied by Ecotap.
Ecotap controller (EVC4.x / EVC5.x / ECC.x)	The controller inside the charging station to be programmed / configured.
12V DC power supply	Properly working power supply to power on the controller module inside the charging station.

5.2. Required Software

Name	Version	Info
ECClite	1.0.0 or later	Software for programming and changing configurations on the EVC4.x / EVC5.x / ECC.x controllers that at least have the V32 Firmware. This can be downloaded from the Ecotap Website: https://www.ecotap.nl/ecclite/

5.3. Required Files

Name	Version	Notes
Factory standard ".Json" file. (optional)	Unique per charger model	A file containing all (correct) standard settings for selected parameters. To fall back on if you want to go back to factory settings. This should be requested from Ecotap. Depending on the model of

		station you are using.
".bin" file (optional)	V32RXX or later	A file containing the (new) firmware. Required for updating firmware. This should be requested from Ecotap. Only the latest releases can be downloaded from the website: https://www.ecotap.nl/ecclite/ Older version / 'Legacy firmwares', can be requested at your technical advisors at Ecotap.

6. Preparing The Setup

The first step is to unzip the ECClite.EXE, to a folder on your PC or to a USB Stick.

Download the **ECClite.zip** file and save it to your computer. When doing so, choose a location that is easy to find on your PC.

Figure 5.1 - ECCmanager.zip file.

(The zip-file icon may look different)

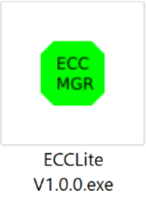
Right-click on the file and select **Extract All.**

An additional screen will now open, click extract again.

In the same location as the .zip file, there will now be a folder created with the same name.

Figure 5.2 - ECCmanager folder after unzipping zip file.

Open this folder and then double-click **ECClite.exe** to open the application.



ECCLite
V1.0.0.exe

Figure 5.3 - ECClite application.

ECClite will now start up and is ready to use.

As you can notice there is no installer needed. This software toolkit works as a pocket ‘lite’ version.

***Note:** when opening the application, it could occur that Microsoft Defender prevents the starting of it. If this is the case, see Chapter 9 on how to solve this easily.*

⚠ *Do **not** power on the module **yet**, during the following steps!*

Connect the USB to TTL cable with the controller.

Attach the USB side of the cable to one of the computer's USB ports. At the other end of the cable, attach the green connector (to which the black, orange and yellow wires are connected) directly to the module. When doing so, make sure the connector is attached to the pins of the **RFID2 reader,** see the sticker with I/O layout on the controller:

For the EVC4.x controller:

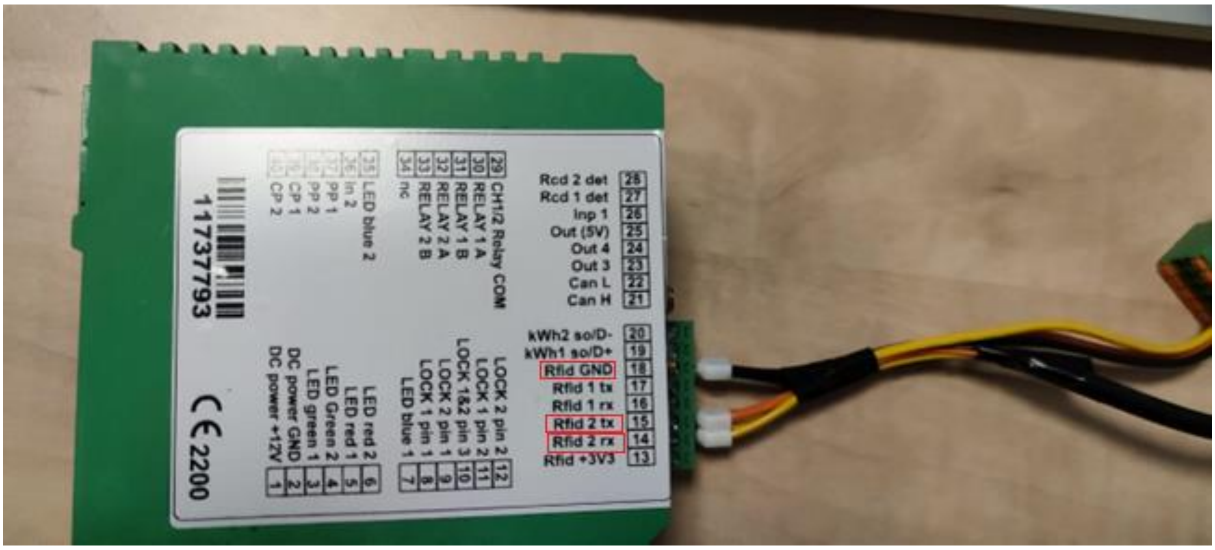


Figure 5.4 - Connecting the USB to TTL cable to the controller (EVC 4.x).

For the EVC5.x/ECC.x controller:

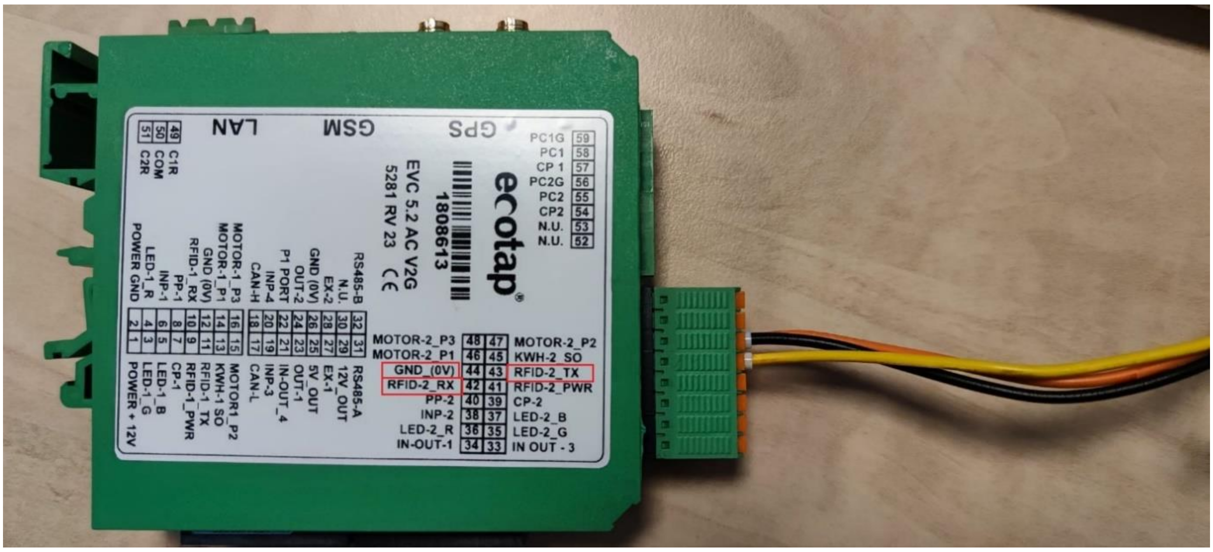


Figure 5.5 - Connecting the USB to TTL cable to the controller (EVC 5.x).

7. Establish Communication with the Module.

Before changing the configuration, find out which COM port is used for serial communication. If the USB is not already connected to the computer and/or to the controller, do so first (see chapter 5).

Once the USB to TTL cable is connected to the computer, use the following key combination on the keyboard: ⊞ + **X**

This will reveal the following screen.

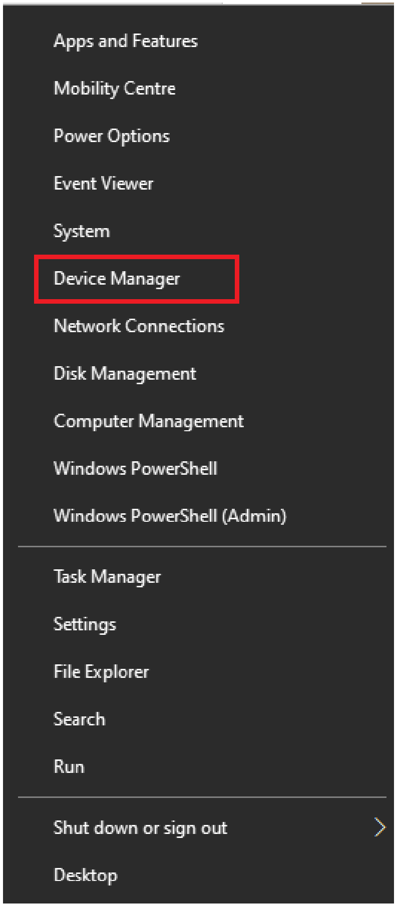
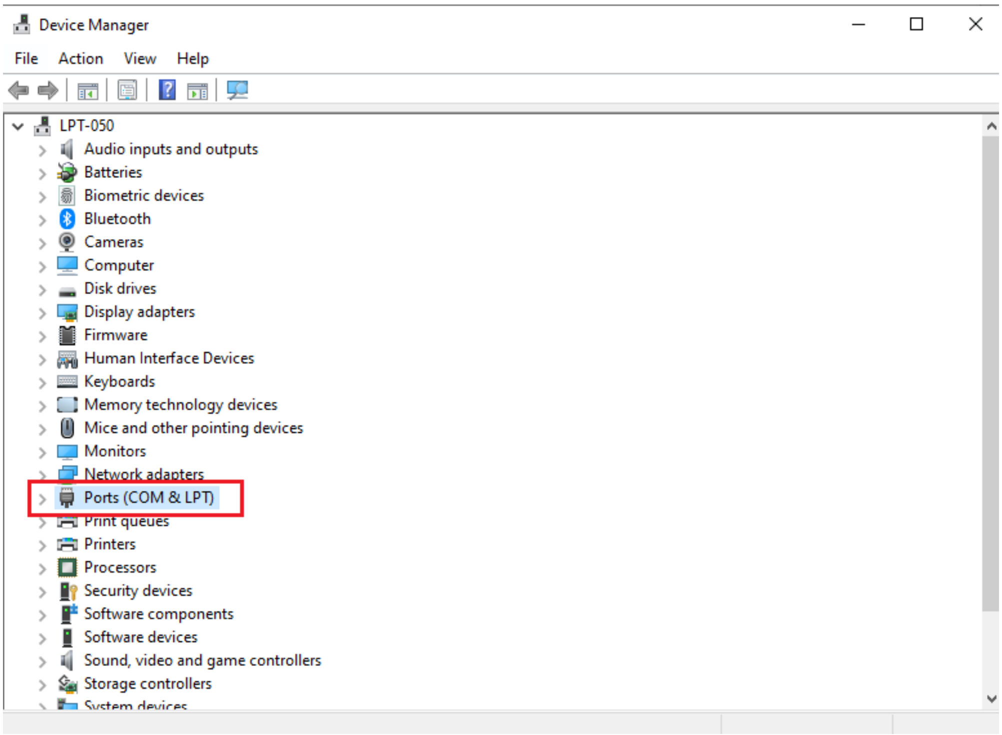


Figure 6.1 - Pop-up window after clicking [Windows + X] key combination.

Next, click on **Device Manager.**

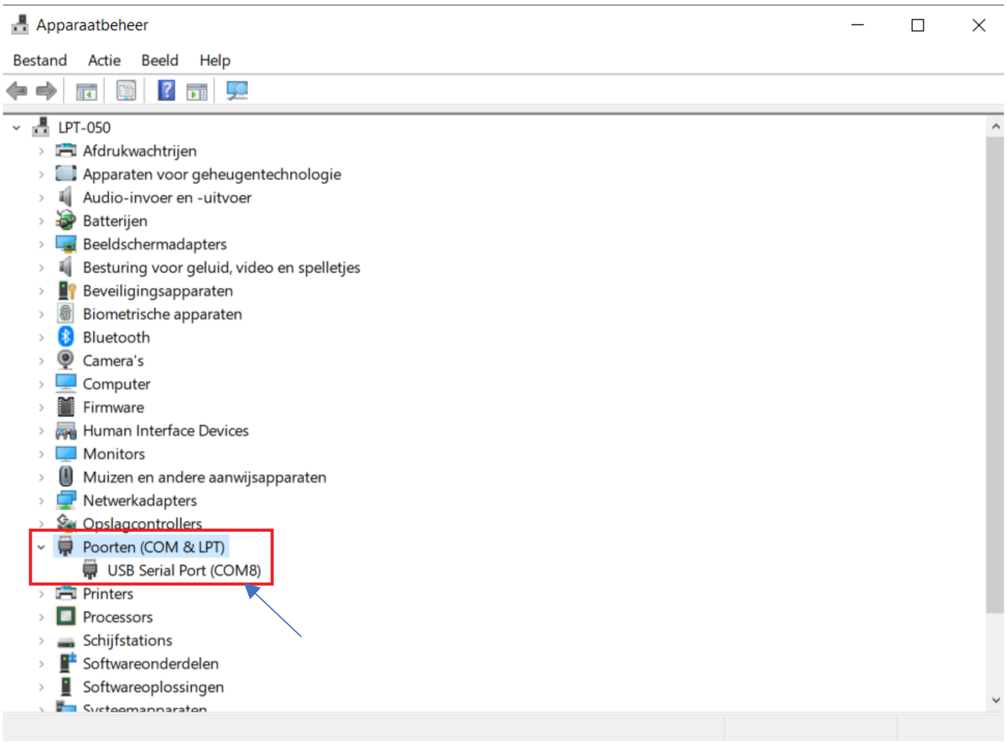
Look for the **Ports (COM & LPT)** heading and 'double-click' on it (or once on the arrow to the left of the name).

⚠ *The visual representation of the menu's depends on the operating system that is used, and therefore can differ.*



LPT-050
Audio inputs and outputs
Batteries
Biometric devices
Bluetooth
Cameras
Computer
Disk drives
Display adapters
Firmware
Human Interface Devices
Keyboards
Memory technology devices
Mice and other pointing devices
Monitors
Network adapters
Ports (COM & LPT)
Print queues
Printers
Processors
Security devices
Software components
Software devices
Sound, video and game controllers
Storage controllers
System devices

Figure 6.2 - Device manager overview



LPT-050
Afdrukwachtrijen
Apparaten voor geheugentechnologie
Audio-invoer en -uitvoer
Batterijen
Beeldschermadapters
Besturing voor geluid, video en spelletjes
Beveiligingsapparaten
Biometrische apparaten
Bluetooth
Camera's
Computer
Firmware
Human Interface Devices
Monitors
Muizen en andere aanwijsapparaten
Netwerkadapters
Opslagcontrollers
Poorten (COM & LPT)
USB Serial Port (COM8)
Printers
Processors
Schijfstations
Softwareonderdelen
Softwareoplossingen
Systeemapparaten

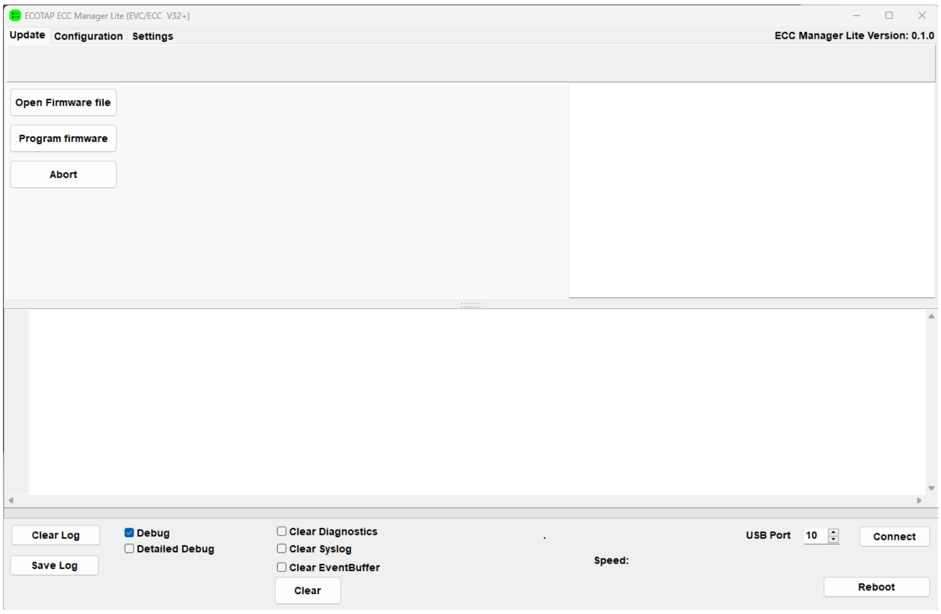
Figure 6.3 - Display active ports on the PC.

⚠ *In case more than one “USB Serial Port (COMx)” are displayed, you can check which port is used for the controller. Simply disconnect the USB to TTL cable from your PC, and re-connect it: the COM port that disappears and appears again is the correct one.*

In the example above, only one USB to TTL cable has been connected to the computer. So here, the COM port we are looking for is **COM8.** Note that the COM port may vary depending on the following (so always check the COM port first):

- The USB to TTL cable (with controller) is connected to another computer.
- A different USB to TTL cable is used.

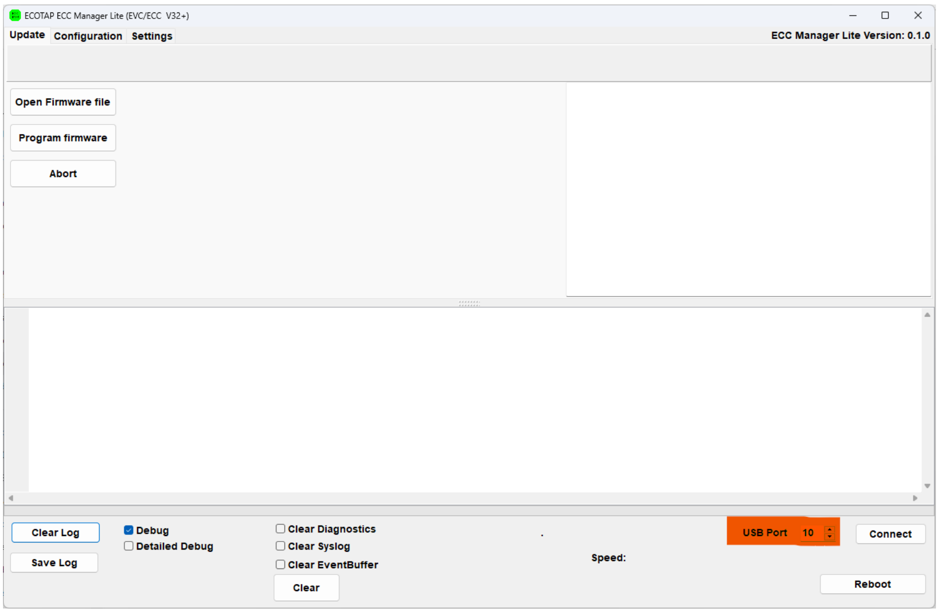
Open **ECClite.**



☑ Debug
□ Detailed Debug
□ Clear Diagnostics
□ Clear Syslog
□ Clear EventBuffer
USB Port 10

Figure 6.4 - ECClite.

Enter the COM number, which we looked up earlier, in the field next to **USB port.** So, in the case of this example, we enter **10** here.



☑ Debug
□ Detailed Debug
□ Clear Diagnostics
□ Clear Syslog
□ Clear EventBuffer
USB Port 10

Figure 6.5 - Entering the correct COM port.

Now click on the **Connect** button at the bottom right of the ECC Manager, and then make sure the checkmark for **Debug** is checked (at the bottom left of the ECC Manager).

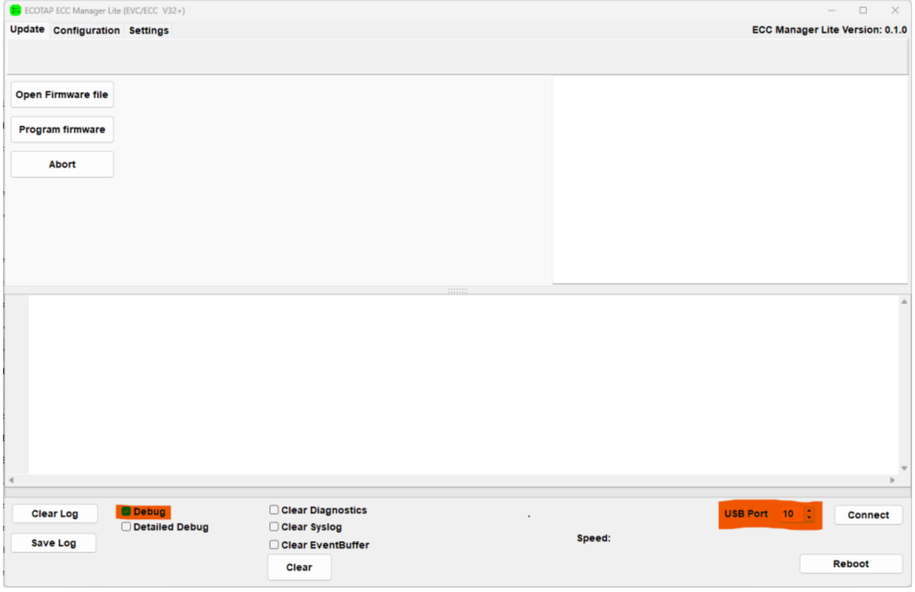
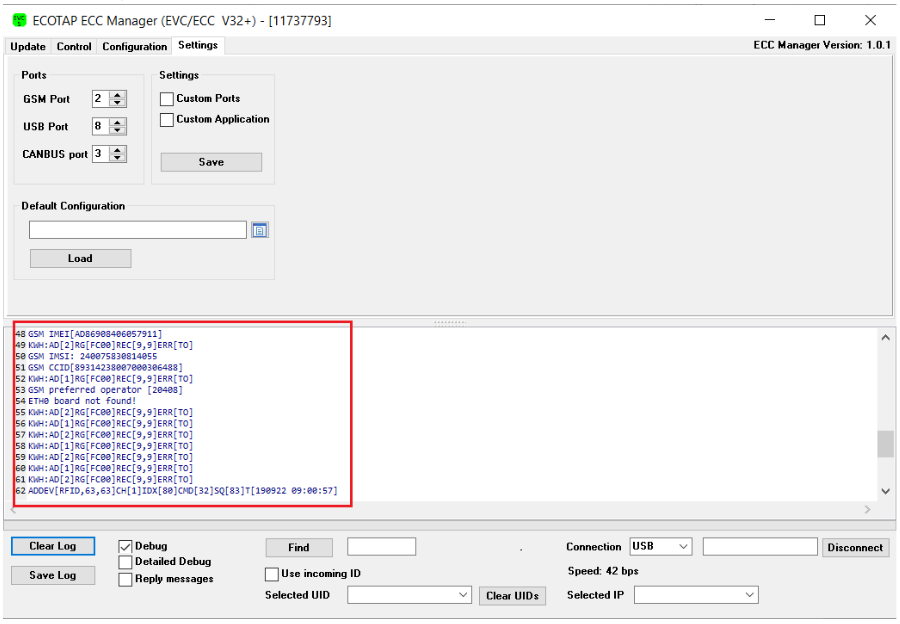


Figure 6.6 - Connect to the controller & check debug.

Connect the 12V+ pin of the controller, to the 12V+ of the DC power supply. Connect the "DC power GND pin" on the controller to the ground of the DC power supply.

Next, power on the controller.

After a couple of seconds, logging will appear in the lower display of the ECClite (lines of blue text).



GSM Port 2
USB Port 8
CANBUS port 3
Connection USB
Speed: 42 bps

```
48 GSM IMEI[AD86908406057911]
49 KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
50 GSM IMSI: 240075830814055
51 GSM CCID[89314238007000306488]
52 KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
53 GSM preferred operator [20408]
54 ETH0 board not found!
55 KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
56 KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
57 KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
58 KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
59 KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
60 KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
61 KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
62 ADDEV[RFID,63,63]CH[1]IDX[80]CMD[32]SQ[83]T[190922 09:00:57]
```

Figure 6.7 – Communication with the controller on similar software ECCManager (heavy version).

If you don't see blue text, remove power from the module, wait 10 seconds, and turn the power back on. Now the blue text should still become visible.

8. Firmware Update

This section describes how to update the controller's firmware via ECClite.

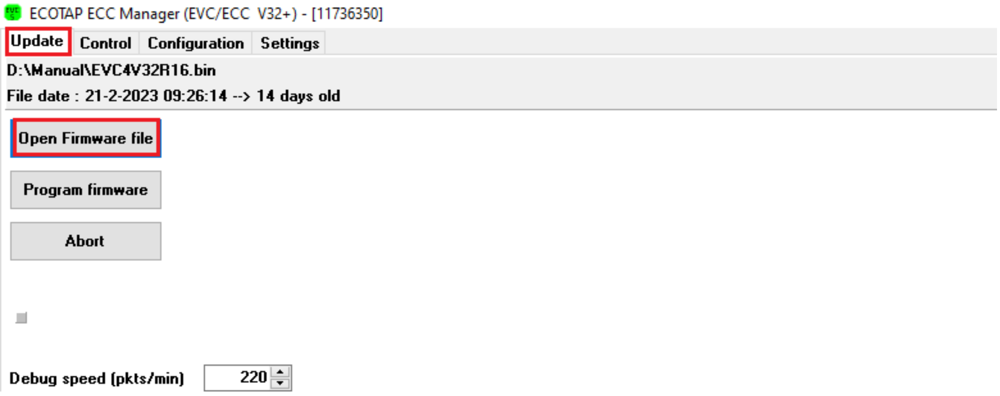
⚠ *It is important that, during the update process, the USB to TTL cable remains connected to the PC and/or controller and that the controller is continuously powered-on (provided by the 12V DC supply)!*

<u>Pre-requisites:</u>

A. Download the ".bin" file and save it to an easily retrievable place on the PC.
B. Make sure there is communication with the module, see chapter 6 (blue log text).

Only continue when the pre-requisites are met.

1. Open ECClite Click the "Update" tab and then "Open Firmware file".



ECOTAP ECC Manager (EVC/ECC V32+) - [11736350]

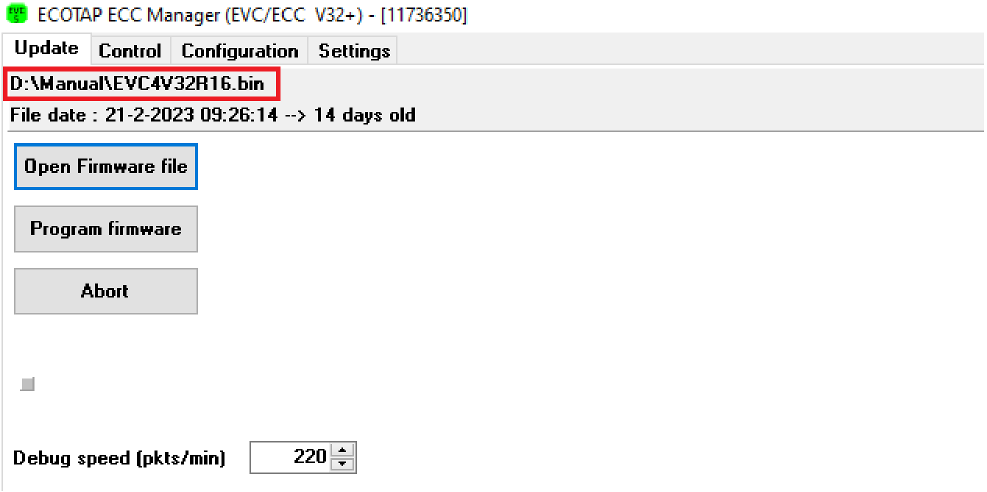
D:\Manual\EVC4V32R16.bin

File date : 21-2-2023 09:26:14 --> 14 days old

Debug speed (pkts/min) 220

Figure 7.1 - Open firmware file (picture is from the heavy program but looks the same on the portable version 'ECClite').

2. Look-up the .bin file and open it.
3. Check that the software version name matches the name of the .bin file, as now displayed in ECClite (see image below). In this example, the module will be updated to the V32R16 firmware.



D:\Manual\EVC4V32R16.bin

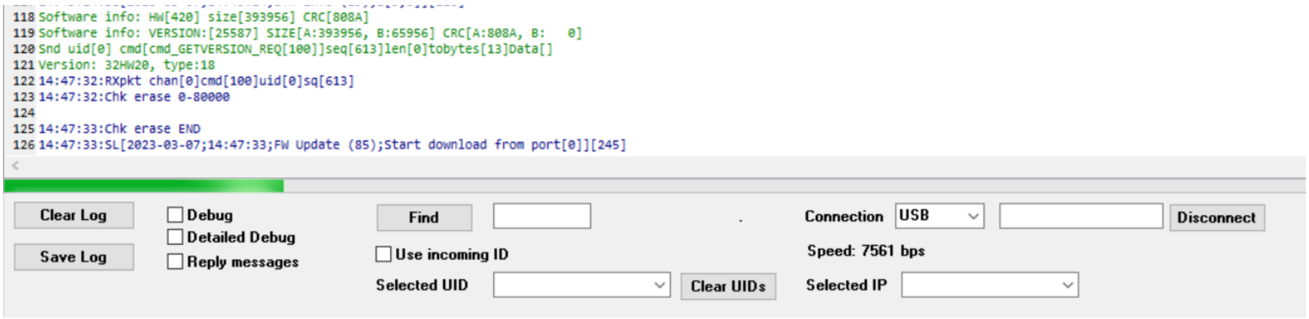
File date : 21-2-2023 09:26:14 --> 14 days old

Debug speed (pkts/min) 220

Figure 7.2 - Check the name of the opened bin file.

4. Click on "Program firmware".

Now software info (in green) will appear in the logging. Also, a progress bar at the bottom of ECClite will start running. This indicates how far the update has progressed. Wait for it to fill up.



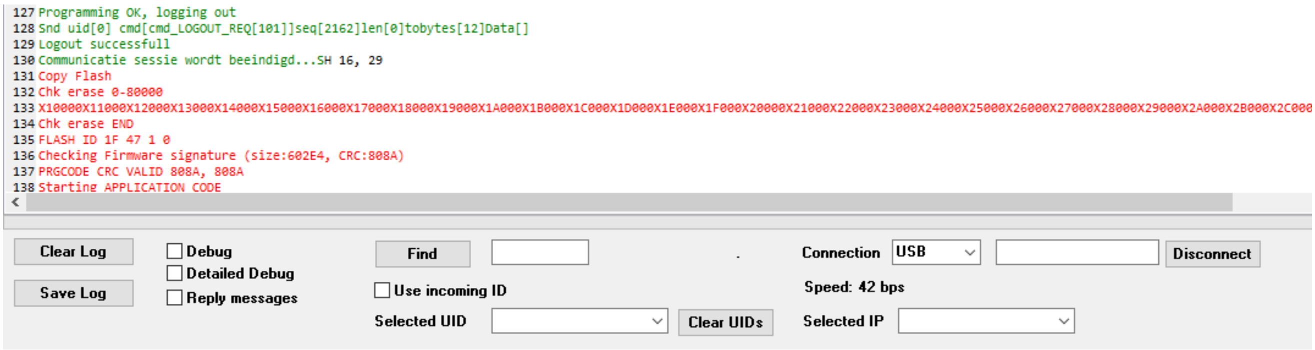
```
118 Software info: HW[420] size[393956] CRC[808A]
119 Software info: VERSION:[25587] SIZE[A:393956, B:65956] CRC[A:808A, B:   0]
120 Snd uid[0] cmd[cmd_GETVERSION_REQ[100]]seq[613]len[0]tobytes[13]Data[]
121 Version: 32HW20, type:18
122 14:47:32:RXpkt chan[0]cmd[100]uid[0]sq[613]
123 14:47:32:Chk erase 0-80000
124
125 14:47:33:Chk erase END
126 14:47:33:SL[2023-03-07;14:47:33;FW Update (85);Start download from port[0]][245]
```

Connection USB

Speed: 7561 bps

Figure 7.3 - Firmware update in progress.

When the progress bar is completed, green text is displayed again followed by a piece of red text. This is internal info of the module, characterized by ‘copy flash’ and ‘erase’ remarks in the logging.



```
Programming OK, logging out
Snd uid[0] cmd[cmd_LOGOUT_REQ[101]]seq[2162]len[0]tobytes[12]Data[]
Logout successfull
Communicatie sessie wordt beeindigd...SH 16, 29
Copy Flash
Chk erase 0-80000
X10000X11000X12000X13000X14000X15000X16000X17000X18000X19000X1A000X1B000X1C000X1D000X1E000X1F000X20000X21000X22000X23000X24000X25000X26000X27000X28000X29000X2A000X2B000X2C000
Chk erase END
FLASH ID 1F 47 1 0
Checking Firmware signature (size:602E4, CRC:808A)
PRGCODE CRC VALID 808A, 808A
Starting APPLICATION CODE
```

□ Debug
□ Detailed Debug
□ Reply messages
□ Use incoming ID

Connection USB

Speed: 42 bps

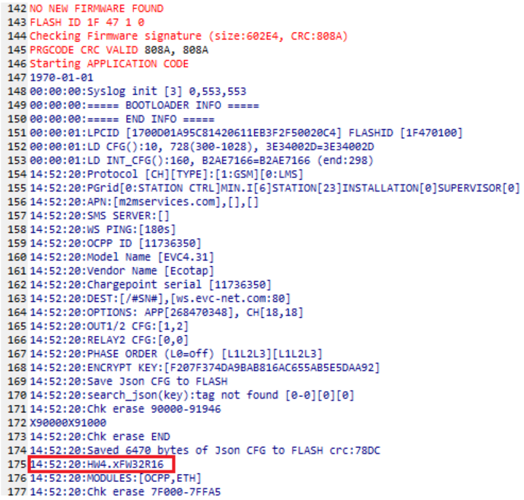
Selected UID

Selected IP

Figure 7.4 - Firmware update is complete.

5. Verify the controller’s firmware version.

It can be found in the application's startup information (blue text), after about 20 lines. See image below (based on an EVC 4.31 controller).



```
NO NEW FIRMWARE FOUND
FLASH ID 1F 47 1 0
Checking Firmware signature (size:602E4, CRC:808A)
PRGCODE CRC VALID 808A, 808A
Starting APPLICATION CODE
1970-01-01
00:00:00:Syslog init [3] 0,553,553
00:00:00:===== BOOTLOADER INFO =====
00:00:00:===== END INFO =====
00:00:01:LPCID [1700D01A95C81420611EB3F2F50020C4] FLASHID [1F470100]
00:00:01:LD CFG():10, 728(300-1028), 3E34002D=3E34002D
00:00:01:LD INT_CFG():160, B2AE7166=B2AE7166 (end:298)
14:52:20:Protocol [CH][TYPE]:[1:GSM][0:LMS]
14:52:20:PGrid[0:STATION CTRL]MIN.I[6]STATION[23]INSTALLATION[0]SUPERVISOR[0]
14:52:20:APN:[m2mservices.com],[],[]
14:52:20:SMS SERVER:[]
14:52:20:WS PING:[180s]
14:52:20:OCPP ID [11736350]
14:52:20:Model Name [EVC4.31]
14:52:20:Vendor Name [Ecotap]
14:52:20:Chargepoint serial [11736350]
14:52:20:DEST:[/#SN#],[ws.evc-net.com:80]
14:52:20:OPTIONS: APP[268470348], CH[18,18]
14:52:20:OUT1/2 CFG:[1,2]
14:52:20:RELAY2 CFG:[0,0]
14:52:20:PHASE ORDER (L0=off) [L1L2L3][L1L2L3]
14:52:20:ENCRYPT KEY:[F207F374DA9BAB816AC655AB5E5DAA92]
14:52:20:Save Json CFG to FLASH
14:52:20:search_json(key):tag not found [0-0][0][0]
14:52:20:Chk erase 90000-91946
X90000X91000
14:52:20:Chk erase END
14:52:20:Saved 6470 bytes of Json CFG to FLASH crc:78DC
14:52:20:HW4.xFW32R16
14:52:20:MODULES:[OCPP,ETH]
14:52:20:Chk erase 7F000-7FFA5
```

Figure 7.5 - Check that the controller boots with the correct firmware.

During boot of the application, the V32R16 is shown in the logging; it has been successfully installed.

⚠ *It is important that, during the update process, the USB to TTL cable remains connected to the PC and/or controller and that the controller is continuously powered-on (provided by the 12V DC supply).*

9. Load and Send Configuration to the Module.

A configuration that is incorrect or incorrectly set, can permanently damage the controller and Ecotap cannot be held responsible for this. When in doubt, always contact Ecotap up front.

Download the factory standard .json file provided by Ecotap, for the exact station model you have at hand. Save it somewhere on the PC, where the file can be found easily. As an example in this manual, we will use *"test.json".* **Again, only use the <u>factory standard .json</u> file provided by Ecotap specifically for <u>that</u> station model!**

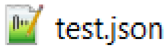


Figure 8.1 - .json file (provided by Ecotap)

(The icon of the .json file may look different)

In ECClite, go to the **Settings** tab, and then click the button.

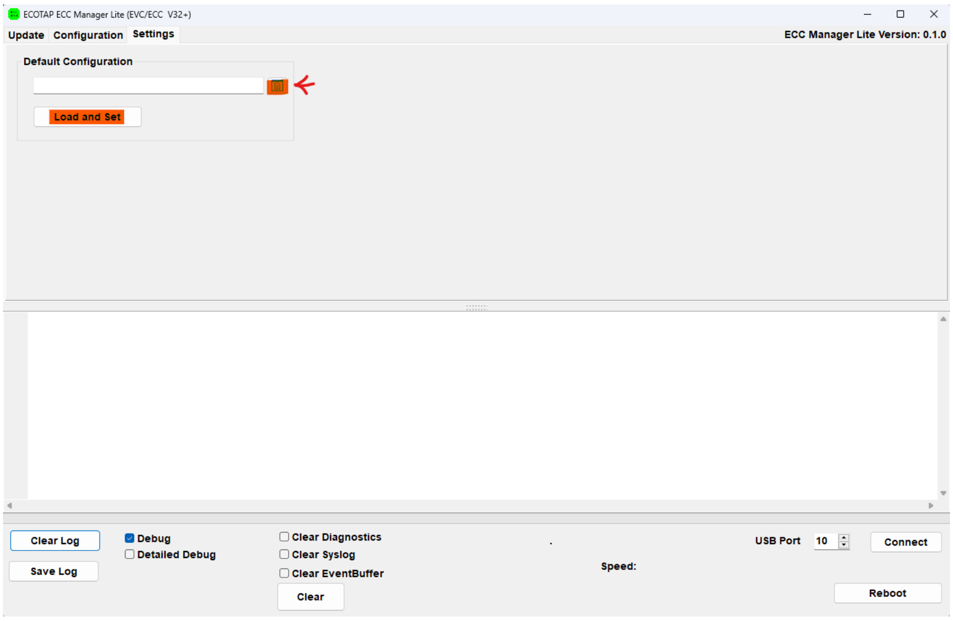
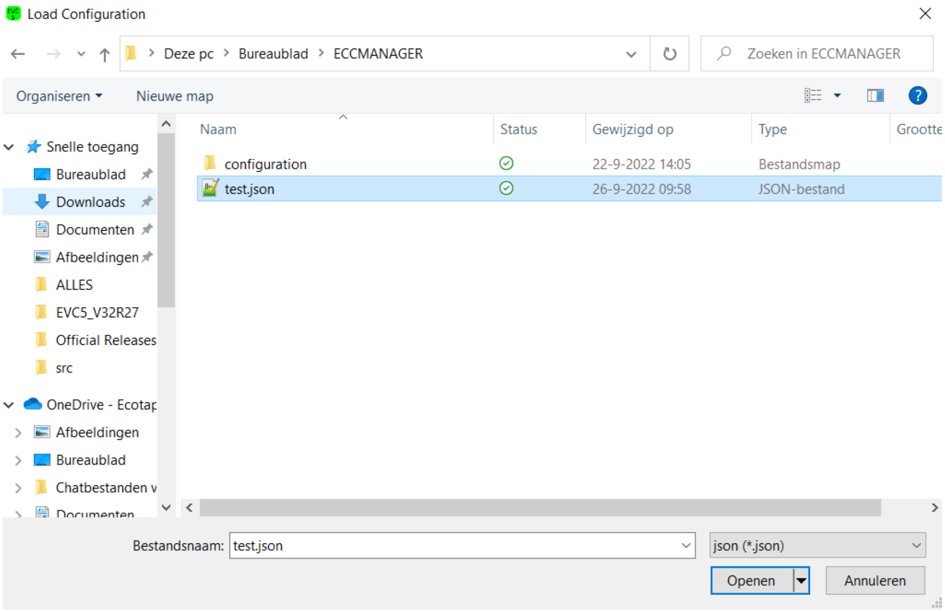


Figure 8.2 - Loading the configuration.

Now the explorer will open. On your PC, search for the location where the .json file was placed earlier.

Next, click on the file and click **Open**.



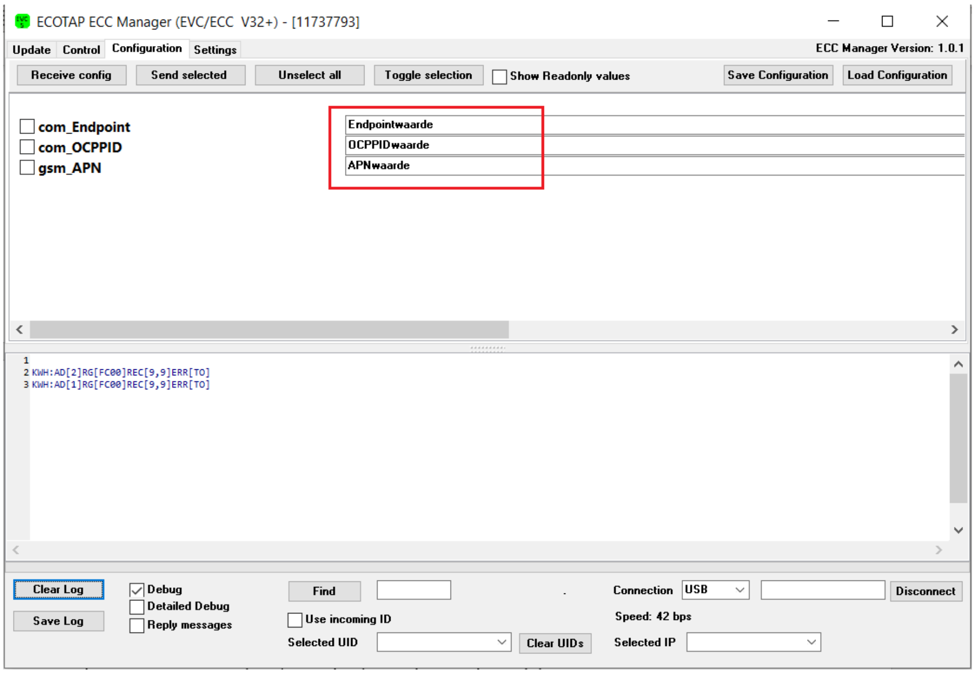
Naam	Status	Gewijzigd op	Type	Grootte
configuration	✓	22-9-2022 14:05	Bestandsmap	
test.json	✓	26-9-2022 09:58	JSON-bestand	

Bestandsnaam: test.json

json (*.json)

Figure 8.3 - Loading the .json file.

It will show a selection of parameters that Ecotap has specified for you within the Json file. For these selected configuration keys, you can adjust the values. Below an example is given with dummy values.



☐ com_Endpoint — Endpointwaarde
☐ com_OCPPID — OCPPIDwaarde
☐ gsm_APN — APNwaarde

```
KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
```

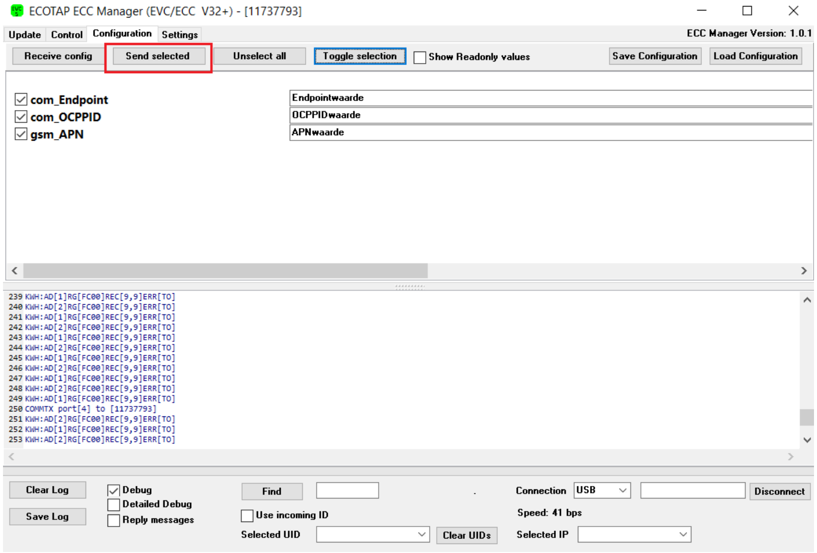
☑ Debug
☐ Detailed Debug
☐ Reply messages
☐ Use incoming ID
Selected UID
Connection USB
Speed: 42 bps
Selected IP

Figure 8.4 - Entering parameter values

Adjust the values of these parameters, if applicable. When in doubt, always contact Ecotap!

When the values are entered correctly, click the **Select All** button.
This selects the parameters, identified by the checked box to the left of the parameter names.

Then click the **Send selected** button, which sends these parameters with their values to the module.



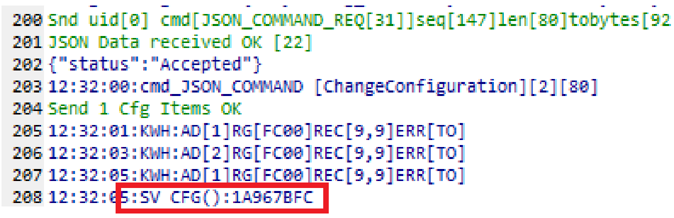
☑ com_Endpoint Endpointwaarde
☑ com_OCPPID OCPPIDwaarde
☑ gsm_APN APNwaarde

```
KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
COMMTX port[4] to [11737793]
KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
```

Connection USB
Speed: 41 bps
Selected IP

Figure 8.6 - Sending parameters to controller.

Now check the logging again, for the specific code line "SV CFG()". This indicates that the configuration change has successfully been accepted.



```
Snd uid[0] cmd[JSON_COMMAND_REQ[31]]seq[147]len[80]tobytes[92
JSON Data received OK [22]
{"status":"Accepted"}
12:32:00:cmd_JSON_COMMAND [ChangeConfiguration][2][80]
Send 1 Cfg Items OK
12:32:01:KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
12:32:03:KWH:AD[2]RG[FC00]REC[9,9]ERR[TO]
12:32:05:KWH:AD[1]RG[FC00]REC[9,9]ERR[TO]
12:32:05:SV CFG():1A967BFC
```

Figure 8.7 – SV CFG(): message to verify the configuration changes.

Next, to validate if the configuration has changed. **Reboot** the controller. Wait a couple of seconds, then proceed to **Select all**, again and **Receive config**.

If the parameters are set correctly, the correct values will be read out of the controller module.

Under chapter 11 you will find a dictionary of parameters available for you to modify based on your chargers differing installation situations. Any other parameters that need to be changed should be done remotely from the connected OCPP Back-Office platform.

10. Troubleshooting

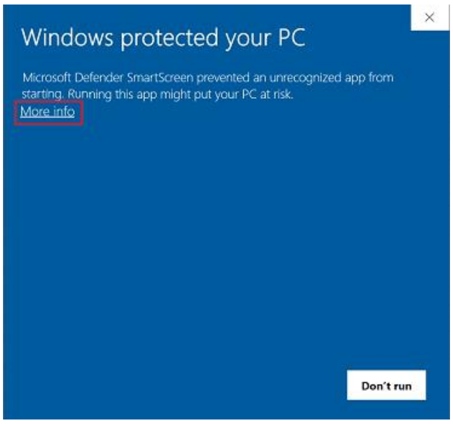
Should any problems arise while following the manual, a possible solution to fix the problem can be found in this section.

10.1. 'Windows protected your PC' message.

It is possible that you might end up with this screen when trying to open ECClite software.

This is a message from Microsoft Defender to protect your computer from malicious software. In this case the software is not malicious but unknown to Microsoft Defender.

To go further with this, click on **More info**.

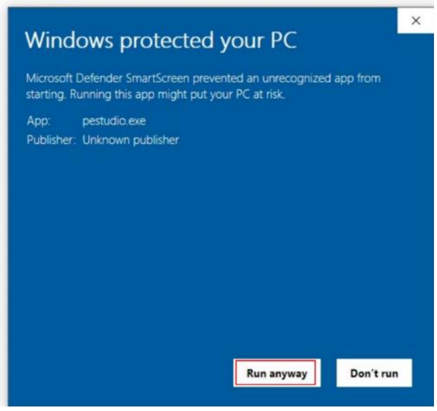


Windows protected your PC

Microsoft Defender SmartScreen prevented an unrecognized app from starting. Running this app might put your PC at risk.

Figure 7.1 - Microsoft Defender window.

This will show you more info about the application that you want to run. Because we know this software is not malicious you can click on the **Run anyway** button. After this, the application will start as expected.



Windows protected your PC

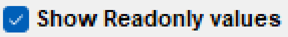
Microsoft Defender SmartScreen prevented an unrecognized app from starting. Running this app might put your PC at risk.

App: pestudio.exe
Publisher: Unknown publisher

11. JSON Configuration Dictionary

ECClite supports JSON Get and Set configuration. The configuration items consist of OCPP parameters and Ecotap proprietary parameters and can be set via OCPP (Open Charge Point Protocol). The OCPP parameters can be found in the appropriate OCPP standard. Below you will find Ecotap's implementation of these parameters.

Mind that in the input value of these parameters, if you have a comma " , ". That means that after that comma will be the next input value. So, with the *chg_RatedCurrent* = [16,16]. That means left channel is on 16 amps and the right channel is on 16 amps as well. Keep that in mind.

Parameters under  ☑ Show Readonly values in ECCLite, can and must only be changed by the CPO via it's connected Backend Platform / Central System!

Configuration Key	R/W	Description
authorizationKey	WO	Here the authorization for a secure WebSocket must be entered. The key can only be written to and cannot be read out for security reasons. The option 'useTLS' must be set to use the key. The firmware uses Basic Authentication for HTTPS connections and hence the key must be entered as follows: Format: <username>:<password> <username> Username as known by the Central System <password> Password as known by the Central System *Example Authorization Key:* ECOTAP-1802500:9N8gGyS8Un7g4lY9dRICK
chg_Debug	RW	Set debug logging options. (CSL) See Table 1: Debug options and levels for the allowed options and their levels. The value of an option must be entered as a bitmask where each bit represents a debug level. The following levels are implemented: 0 = Off 1 = Level 1 2 = Level 2 4 = Level 3 8 = Level 4 16 = Level 5 To enable multiple levels add them together e.g.: to enable Level 1 and Level 3 enter the value 5 = 1 +4 *Example of a debug configuration:* warn=1,error=1,date=1,syslog=0,gsm=1,events=1,com=0,ocpp=0,eth=0,grid=0,ctrl=3,general=3, sensors=0,fw=0,modbus=0,canbus=0,sys=0
chg_KWH1 **chg_KWH2** **chg_KWH3**		Energy meter configuration for channel 1, channel 2 and the utility meter (KWH3) Format: <type>,<address>,<speed>,<parity>,<stop-bits> where <type> Energy meter type & brand *(Only the meters compatible to the applied Ecotap Firmware version)* <address> Modbus address in case of a Modbus meter <speed> Modbus meter: Baudrate Pulse meter: Number of pulses per kWh <parity> (N)one, (E)ven, (O)dd (Only for Modbus meters) <stop-bits> 1 or 2 (Only for Modbus meters) *Example for utility meter:* EASTR_SDM72D,3,9600,N,1
chg_Reader1 **chg_Reader2**	RW	Token Reader type (CSL) The ECC supports one reader per channel and each reader can be set to support channel 1, channel 2 or any of those channels. When set to any, the ECC will check which channel gets a valid PP or CP signal and then assigns the token reader to that channel. Hence only one reader is needed.. Format: <type>,<channel> where

	RW	<type> Reader type See Table 5: Supported Token Reader <channel> Channel. Set to either *CH1* or *CH2* or *any* *Example for a charger with two readers:* chg_Reader1: sl032,CH1 chg_Reader2: sl032,CH2 *Example for a charger with a shared reader:* chg_Reader1: sl032,any chg_Reader2: none,CH2
chg_MinChargingCurrent	RW	The minimal current allowed to charge an EV. (CSL) Value is the current per phase for all phases in amps. Range = 0...63 *Example for a standard charger :* 6
chg_RatedCurrent	RW	The rated current for a channel (CSL) This is the rated current of the channel in amps as determined by the wiring and other hardware of the charger and will normally be the same as the MCD for this channel. The current delivered to the EV will never be higher than this value. *Example for a standard charger:* 16,16
chg_StationMaxCurrent	RW	The maximum current that a charger may consume in total per phase for all phases in amps. The value of this setting may not exceed the maximum current allowed by the wiring of the charger model. However, when the connection to the utility grid has a fuse with a smaller rating, the value of this rating must be used. This often happens for public chargers which can carry up to 32A but are fused with 25A. *Example for a public charger fused with 25A:* 25
chg_Ch1Options **chg_Ch2Options**	RW	Charger options for a channel. (CSL) See Table 6: Charger Channel Options for the allowed options. 0 = Option disabled, 1 = Option enabled. *Example:* PlugAndCharge=0,OvercurrentSens=0,StopOnChargeComplete=0, OfflineStopOnDisconnect=0, StopOnLowCosphi=0, Rel2OnLowCosphi=0
com_Options	RW	Communication Options (CSL) See Table 7: Communication options for all allowed options. 0 = Option disabled, 1 = Option enabled *Example for a standard charger:* Events=1,BlockBeforeBoot=1,Wdt=0,updSendInIdle=0,blockLgFull=0,useTLS=0,comMaster=0
com_Endpoint	RW	Endpoint for the central system In the definition of the endpoint the user may define two variables: #SN# Replaced by the serial number of the controller module #OSN# Replaced by the OCPP ID of the controller module *Example:* ws.evc.net:80/#SN#
com_OCPPID	RW	OCPP Identification ID (Maximum length = 25 characters) When the ID is changed the charger will restart after 60 seconds. *Example:* EcotapTestID
com_OCPPInfo	RW	Other info needed for the OCPP Protocol (CSL) See Table 3: Additional OCPP vendor information for the allowed fields. *Example:* modelname=ECC-AC,vendorname=Ecotap,CpSn=G48229*1
com_ProtCh	RW	Communication channel for the Central System *Example for a standard charger,* connection via the modem*:* GSM *Example for a standard charger where* Ethernet interface is used*:* ETH

com_ProtType	RW	Communication protocol for the Central System See Table 2: Supported communication *Example for a standard charger:* OCPP1.6J
eth_cfg	RW	Ethernet Interface configuration (CSL) Format: type=<type>,ip=<ip>, netmask=<netmask>,dns=<dns>,gw=<gw> where <type> IP address type Enter ‘static’ or ‘dhcp’ <ip> IPV4 address of the EVC4 <netmask> IPV4 netmask <dns> IPV4 address of the domain name server <gw> IPV4 address of the gateway *Example:* Type=dhcp,ip=0.0.0.0,netmask=0.0.0.0,dns=0.0.0.0,gw=0.0.0.0
grid_InstallationMaxcurrent	RW	The maximum current allowed for a master/slave grid (per phase for all phases) in amps. Range 0...9999 This option must be set on a master to the value for that master/slave grid. This option must be set on a supervisor to the current available for all grids. *Example:* 250
grid_InstallationSaveCurrent	RW	The maximum current allowed for a master/slave grid (per phase for all phases) in amps when the master loses communication with the supervisor. Range 0...9999 Must be set on a master and is only used there.. *Example:* 100
grid_Role	RW	Operation mode in a local power grid See Table 4: Grid roles for the allowed roles. *Example for a standard charger:* Station_ctrl
gsm_APN	RW	GSM APN Information Format: <APN name>,<APN user>,<APN password> The name is limited to 39 characters while the user and password are limited to 24 characters. *Example for a standard charger:* m2mservices,,
gsm_Oper	RW	GSM Preferred Operator for the mobile network Set to 0 (default) if automatic selection is preferred otherwise it should be formatted as LLLXX, where LLL is the country code and XX is the provider code. For the Netherlands possible values are 20404 (Vodafone NL), 20408 (KPN NL), 20416 9T-Mobile NL) *Example for a standard charger:* 0
gsm_Options	RW	GSM options (CSL) 0 = Disabled, 1 = Enabled The following options are allowed: **Option** **Description** noSmsChk If enabled allows all originating numbers to send SMS commands If disabled only the number set in parameter ‘gsm_SMS’ may send SMS commands. AutoAPN Only present to prevent errors with older configurations. Now obsolete. 3G4G Only present to prevent errors with older configurations. Now obsolete. *Example for standard grid:* noSmsChk=0,AutoAPN=0,3G4G=0
gsm_SigQ	RO	GSM signal quality(0..99). Must be greater than 8 to have a valid GSM connection. A value of 99 means that no strength could be determined.

		Example for a standard charger: 15

Chg_Debug Levels :

Option	Levels	Description
warn	1	Show warnings. Default set to level 1
error	1	Show errors. Default set to level 1
date	1	Show data and time before each line.
syslog	1	Log syslog entries
gsm	1...3	Log mobile communication
events	1...4	Log event system info
com	1...4	Log communication info
ocpp	1...3	Log OCPP info
eth	1...3	Log ethernet info
grid	1...4	Log power grid info
ctrl	1...3	Log charger control
general	1...2	Log general events
sensors	1...2	Log sensors
fw	1...2	Log firmware update info
modbus	1...2	Log Modbus info
canbus	1...3	Log CAN-bus info
sys	1...3	Log sys info

Table 1: Debug options and levels

Com_ProtType :

Option	Description
LMS	Proprietary LMS protocol. (Deprecated. Only still used for Master/Slave grids)
OCPP1.5J	OCPP Versie 1.5 JSON. (Deprecated)
OCPP1.6J	OCPP Versie 1.6 JSON.
Clear	Clear all events in the event buffer without changing the current protocol. Used to clear old events before switching to a new protocol to prevent protocol errors on the Central System. Recommended to use when switching from LMS to OCPP and vice versa.

Table 2: Supported communication protocols.

Com_OCPPInfo :

Option	Description	Maximum Length
modelname	Charge point model name	25 characters
vendorname	Charge point vendor name	25 characters
CpSn	Charge point serial number	25 characters

Table 3: Additional OCPP vendor information

Grid_Role :

Option	Description
No_ctrl	The controller module disables the internal power manager
Station_ctrl	The controller module uses the internal power manager for the station only. The configuration key 'chg_StationMaxCurrent' will be used to limit the maximum power
Slave	The controller module will function as a slave that will connect to a master/supervisor. The configuration key 'chg_StationMaxCurrent' will be used to limit the maximum power
Master	The controller module uses the internal power manager for control of the power on the master and the connected slaves. The configuration key 'grid_InstallationMaxcurrent' defines the total current for this master/slave grid

Table 4: Grid roles

Chg_Reader :

Option	Description
none	No reader connected
sl032	SL032/SL031 reader or twn4 reader emulating a sl032 reader
Shared	Shared reader Only used for split systems.

Table 5: Supported Token Reader types.

Chg_ChOptions :

Option	Description
PlugAndCharge	Enable Plug & Charge
OvercurrentSens	Enable over-current sensing
StopOnChargeComplete	Stops the transaction when the EV stops charging
OffLineStopOnDisconnect	If the connection with the central system is lost, stop the transaction as soon as the cable is disconnected from the EV
StopOnLowCosphi	Stop charging when the cosine ϕ goes low (<0.7)
Rel2OnLowCosPhi	Switch from relay 1 to relay 2 output when the cosine ϕ goes low (<0.7)

Table 6: Charger Channel Options

Option	Description
Events	Enable status updates (events) to be send to the Central System
BlockBeforeBoot	Block the charger until the boot notification message has been sent
Wdt	Enable Master/Slave communication watchdog. Only supported by Slaves in a Master/Slave Grid. Should be disabled otherwise.
updSendInIdle	Send meter value updates when the charger is idle
blockLgFull	Block the charger when the Transaction Event Log is full
UseTLS	Secured web socket connection with the Central System using TLS
comMaster	Set this module to be the master and actively put all connected ECCs to slave mode. This option is obsolete and is only present to prevent errors with older configurations.

Table 7: Communication options