

Command Line Updater

User Manual

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1. Table of Contents

1. Table of Contents	2
2. Introduction	3
3. Getting started	4
3.1. Opening a Terminal	4
4. Using the updater	5
4.1. --path (Selecting path to firmware)	6
4.2. --serial (Choosing which hub to update)	7
4.3. --type (Selecting the firmware type)	9
5. Additional information	10
5.1. Update stages	10
5.2. Bootloader	10
5.3. Errors	10
5.4. Daisy-chained hubs	11

2. Introduction

The command line updater is a stand-alone application for host computers connected to supported hardware, that provides the ability to update firmware that is released by Cambrionix. You can also update the firmware using our Cambrionix connect application which can be downloaded from the below link.

www.cambrionix.com/connect

This application simplifies the deployment of firmware, and the update experience whilst minimizing user interaction. This application can also be used to update firmware without the need for installing any software, supporting runtime libraries or changes to the Host operating system.

You can download the command line updater along with the latest User Manual from our website at the below link,

<https://www.cambrionix.com/firmware>

The download is a combined zip file and will have all necessary components for macOS®, Linux® and Microsoft Windows™. This also includes the latest firmware versions for all products, to see which firmware your hub requires please refer to your product's user manual.

www.cambrionix.com/product-user-manuals

You will also require a terminal program to be able to run the command line updater. A terminal is a text-based interface to the computer, this is included in most operating systems. You can use any terminal program to run the updater.

3. Getting started

Once you have downloaded the zipped file onto your host, you need to unzip the file into your desired location, you will then be able to run the command line updater. Before use you need to connect and power on the hubs that you wish to update, and have them visible on your OS.

If you require more information on connecting the hub please refer to the specific product user manuals.

3.1. Opening a Terminal

Microsoft Windows™

Open a terminal window in the location that you have unzipped the file. For example this can be done by holding down shift and right clicking on the folder and then opening with a terminal program (for example Windows PowerShell).

macOS®

Open a terminal window in the location that you have unzipped the file, this can be done by selecting the folder in finder and then control clicking which will then allow you to open a terminal window at the folders location.

You may need to trust the program on your Mac in order for it to run, you can do this by opening the macOS sub-folder in the command line updater fold and the control clicking on command-line-updater and selecting open, this will then prompt you to trust the program which will then allow the command line updater to run.

Linux®

Open a terminal window in the location that you have unzipped the file.

4. Using the updater

Once you have a terminal window open you can access the command line updater by entering the below command.

```
./command-line-updater.sh.sh
```

When you input the command you will receive a response with some information on how to use the updater

```
Cambrionix Command Line Updater 2.0.0:
  --path <path> | <filename>      The path to look for firmware files, or a
                                  specific firmware file to update the hub
                                  with. The default is to look in current
                                  directory and use the most recent firmware
                                  for each hub.
  --serial <device> [<device>...] The serial device (such as COM3) of the
                                  Cambrionix hub to update, or specify 'all' to
                                  find all hubs and update them. You may
                                  specify multiple serial devices. Without this
                                  option, a list of available hubs will be
                                  shown.
  --type <mode>                   What to update (charger | display | proxy |
                                  all). If unspecified, 'all' will be assumed.
                                  If a specific file is specified in the --path
                                  option, the type will be assumed from this
                                  file.
  --force                          Update the hub even if the existing firmware
                                  is the latest.
  --auto                           Same as --serial all --type all.
```

To update all available hubs to the latest firmware (which is supplied within the command line updater zip) you can send the command below, this is the default behaviour .

```
./command-line-updater.sh.sh --auto
```

If you wish to force a firmware update to take place, even if the hub already has the firmware on it you can finish the command with the below.

```
--force
```

The updater software will require access to the hub, so if you are running any software that is holding the connection to the hub then these will need to be closed or stopped before running the update. If the updater cannot access the serial port it will display an error message explaining this.

4.1. --path (Selecting path to firmware)

The first variable you can add onto the command is path to the intended firmware files. If you wish to use firmware versions that you have stored locally, then you will need to specify the filepath for the folder which contains the firmware files. When you download the command line updater folder from our site this will include the latest versions of the firmware.

The updater will automatically look in the unzipped folder for the firmware that is required for the connected hubs, so if you do not use this variable then that is where the updater will look.

If your firmware files are stored somewhere else on your host system then this will need to be specified in your command, use quotation marks when specifying long filenames or paths with spaces for example:

```
./command-line-updater.sh.sh --path "C:\ProgramData\Cambrionix\firmware\firmwarefiles"
```

After you have specified the location of where the firmware files are stored you would like the updater to run the rest of the variables on defaults then you would need to finish the command with the auto command as the below example.

```
./command-line-updater.sh.sh --path "C:\ProgramData\Cambrionix\firmware\"--auto
```

If you wish to use firmware versions other than the latest versions these can be downloaded from our website at the below link.

www.cambrionix.com/software-archive

4.2. --serial (Choosing which hub to update)

The second variable that can be added to the command is the hub you wish to update. The way you determine the device will vary depending on the OS you are using. The updater will also scan the USB devices and can provide a list of all available devices. So if you send the below you will be provided with a list of available hubs.

```
./command-line-updater.sh
```

Once you have obtained the hub information for the devices you wish to update you can add them to the command, if you wish to update multiple devices you can put a space between each device, as below.

```
./command-line-updater.sh --serial com7 com9
```

If you do not put any other variables in place then the updater software will use the defaults, which is to update to the latest available charging hub firmware.

You can also discover the hubs for each OS by using the following methods.

macOS®

If your host system is using macOS® you can get a list of physical hubs by running the below command

```
ls /dev/tty.*usb*
```

This will return something like the below example.

```
/dev/tty.usbserial-DN004ANJ
```

Microsoft Windows™

If your host system is using Microsoft Windows™ then you will need to specify the COM port, the COM port can be found through device manager.

Linux®

If your host system is using Linux® then you can get a list of the hubs by running the below commands.

For the Supersync15 you will need to send the below.

```
/dev/ttyACM*
```

For all other products you will need to send the below.

```
/dev/ttyUSB*
```


4.3. --type (Selecting the firmware type)

Some products will use multiple firmwares, in order to update the specific firmwares the type variable must be input. The updater software will default to updating the charger type of firmware, so if this variable is left blank that is how it will default.

The different types can be seen in the table below.

type	Description
charger	Update the charging hub firmware
display	Update the display firmware
proxy	Update the proxy firmware (such as motor control)
all	Update all firmwares present on a product

An example of updating the motor control software for our ModIT products would look like the below. To use the default values of all other variables then finish the command with --auto.

```
./command-line-updater.sh --type proxy --auto
```

5. Additional information

5.1. Update stages

When the firmware updates it will run through the below stages. The stage value will be displayed along with a progress bar in the terminal window.

Update stage	Description
Connecting	Connecting to the hub
Initialising	The update is initialising
Erasing	Erasing current firmware
Updating	New firmware is being installed
Verifying	Checking that the firmware has installed correctly
Complete	The update has completed
Skipped	Firmware update has been skipped on this hub

5.2. Bootloader

The bootloader is a separate piece of firmware which allows the hub to load new firmware and to update it. The bootloader is loaded onto the board when it is manufactured and cannot be changed. You can view the bootloader version of your hub through our Cambrionix connect software or by sending the "id" command through the CLI. There is information on the CLI in the user manual which can be downloaded from our website.

www.cambrionix.com/cli

5.3. Errors

There are several reasons why an update may fail to take place, the updater software will relay back why an error has taken place through the terminal.

If there has been an error updating a hubs firmware it may get stuck in bootloader mode, to remedy this you will need to push a further firmware update to the hub to get it back into a usable state.

An example error is below.

```
COM7: PP15S (000000) Firmware update failed. Device may now be unusable,  
and may need re-flashing. caused by Device is not  
responding
```

5.4. Daisy-chained hubs

Updating daisy-chained hubs simultaneously may fail (or appear to fail) because the updater tool loses connection to the hubs further down the USB tree when the parent hub reboots. In this case you may get a 'Device is not responding' error. Re-run the tool for these cases (without the --force option) to verify the state.

Licensing

The use of Command Line Updater is subject to the Cambrionix Licence agreement, the document can be downloaded and viewed using the following link.

<https://downloads.cambrionix.com/documentation/en/Cambrionix-Licence-Agreement.pdf>

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