

# EtherSync

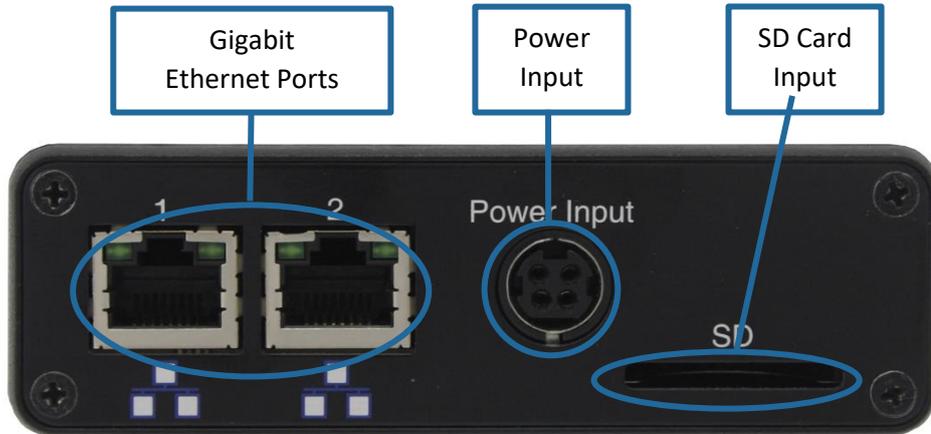
## USB over IP charger

USER GUIDE

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# 1 Labelled Diagram of EtherSync



LED may not be illuminated at its maximum brightness, this is normal, the brightness will increase as more devices are charged by EtherSync. It may also flicker which is normal. If it flashes a repetitive pattern there may be something wrong with EtherSync.

SD Card LED. Will illuminate when EtherSync has access to an SD card inserted into the slot.

Firmware Access LED. Will illuminate when EtherSync firmware accesses the internal charger Hardware



Power LED. Will flash a heartbeat pattern when EtherSync is powered.

Memory Access LED. Will light when EtherSync has access to the internal Memory.

Also used as the locator LED via the Webmin interface. This LED can be illuminated or made to blink to locate the EtherSync that is currently being used via the Webmin interface.

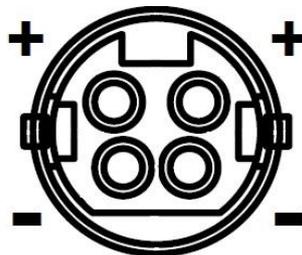
USB Port Status. Will flash once per second when in sync mode and twice per second when in Charge mode.

## 2 Technical Data

Power Supply	
Input Voltage:	100-240V~AC
Input Current:	1.8A
Input Frequency:	50 ~ 60 Hz
Input Connector:	C14
Output Voltage:	12V
Output Current:	8A
Output Power (Total):	96W
Output Connector:	4 pin Mini-DIN

EtherSync	
Input Voltage:	12V DC
Input Current:	8A
Input Connector:	4 pin Mini-Din
Output Voltage:	5.2V
Output Current:	2.1A Max per Port
Output Power (Total):	88W Maximum
Input/ Output Connectors:	8 x USB-A Receptacle, 2 x Gigabit RJ45 Ethernet ports, 1 x SD Card connector
Dimensions (approx.):	130 long x 105 wide x 40 high mm

The 4 pin Mini-DIN polarity required for use with EtherSync:



## 3 Items Required for Use

A 96W Power Supply (we recommend a FSP096-ANA2).



A C13 power cord with your desired plug type (e.g. a G type plug for the UK).



A standard RJ45 to RJ45 Ethernet cable.



EtherSync Connector Software downloadable from: <https://hub.cambrionix.com/pages/ethersync>

## 4 Connecting the Power Supply

- 1) Push the 4 pin Mini-DIN from the power supply into the EtherSync's power input.

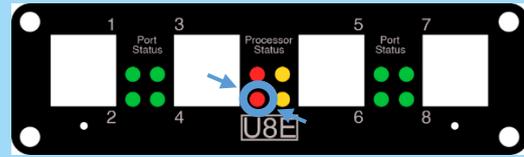


- 2) Insert the C13 connector into the C14 receptacle on the power supply.



- 3) Taking necessary precautions, turn on the mains power.

- 4) The EtherSync is now switched on, the bottom red LED should be illuminated and pulsing a 'heart beat' pattern.



## 5 Using EtherSync

EtherSync has many more uses than those described below. In fact it is capable of performing almost all processes that can be done with a direct USB connection.

### 5.1 Using EtherSync

EtherSync comes with two RJ45 Ethernet ports. One is used to connect the EtherSync to the network; the other can be used to 'daisy-chain' several EtherSync units (described on page 13, section 5.3) or used as an Ethernet port to connect another device to the network e.g. a computer.

In its default configuration, EtherSync expects to be assigned an IP address by a DHCP server.

To connect the EtherSync to a network:

- 1) Insert the Ethernet cable into any one of the two RJ45 Ethernet ports.
- 2) Connect the other end to an Ethernet network with an active DHCP (Dynamic Host Configuration Protocol) server which will automatically assign an IP address to EtherSync.

#### NOTE

Depending on your network, you may need to configure the connection.

- 3) If you need to configure the parameters or host name of your network connection (the default hostname for EtherSync is EtherSync followed by the last 6 digits of its Mac address without the colons ":"), open the Webmin interface on `ethersyncXXYYZZ.local:10000` using a web browser from a computer on the same network. For example for EtherSyncfda01c connect to `http://EtherSyncfda01c.local:10000`

- 4) The default username is: **admin**  
The default password is: **Located underneath the EtherSync**  
The default hostname is: **EtherSyncXXYYZZ** (where XXYYZZ are the last 6 digits of the Mac address without the colons ":"), take care when entering the password to distinguish between 1, lower case L's and capital i's).  
The IP address, Subnet Mask and Gateway are all assigned by the DHCP server.

**Cambri**onix

Adapt S/N Ref..... AA99999/001  
Mac Address..... 99:A9:09:b7:fd:25  
Password..... cambiOn1x  
Cambriox Ref... PO9999 01/15

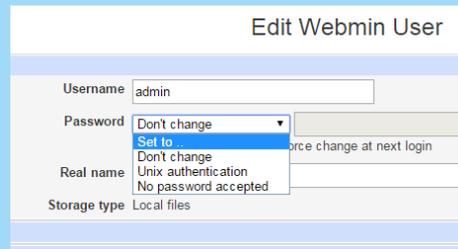
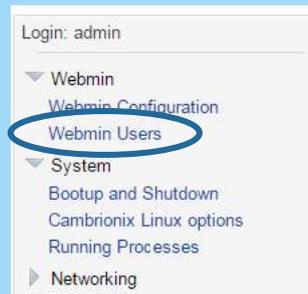
**Note**

The initial password is used for access to Webmin and LiveViewer.

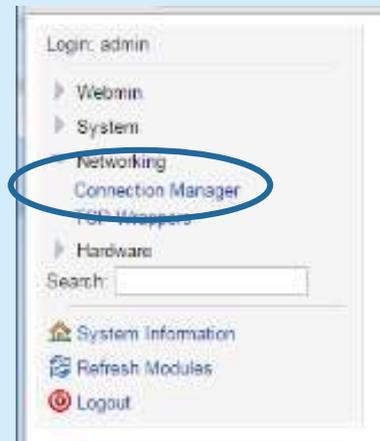
To change the password for Webmin go to Webmin Users and select the user for which you wish to change the password i.e admin. In this section the password can now be changed.

If you wish to leave the password blank, set the password with the password box empty, do not select 'No password accepted'.

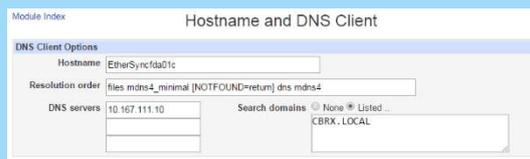
The password for LiveViewer will stay the same, i.e the initial password located on the back of the EtherSync.



- 5) From the left box select 'Networking' then 'Connection Manager'.

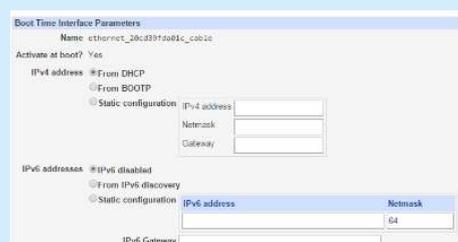


- 6) From here you can set up the address/ DHCP for network interfaces or select the Ethernet Port by selecting 'Network Interface' and give the EtherSync a host name by selecting 'Hostname and DNS Client'.



**Note**

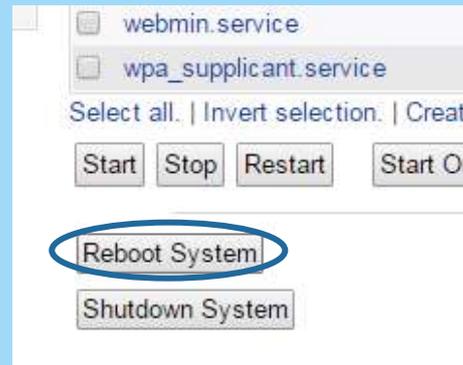
To select a Static IP change from DHCP to Static and enter the appropriate IPv4/ netmask/ gateway fields.



**Note**

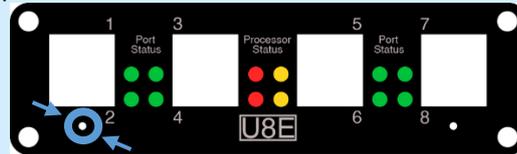
Hostname is not case-sensitive and must be unique. We recommend using a 'Friendly Name' appended with the mac address minus the colons, such as CambrionixXXYYZZ.

The host name will change after successful reboot, which is initiated at the bottom of the *Systems>>Boot up and Shutdown* section.



**Note**

To reset EtherSync back to the factory settings, switch on the power and insert a pin into the pin hole circled below. Hold the pin in the hole until the two red lights flash simultaneously, this could take up to ten seconds. After this turn the power off and on again, the settings should now be reset to factory settings. This means that the name, webmin username and password are as described above.



## 5.2 Using EtherSync Connector Software

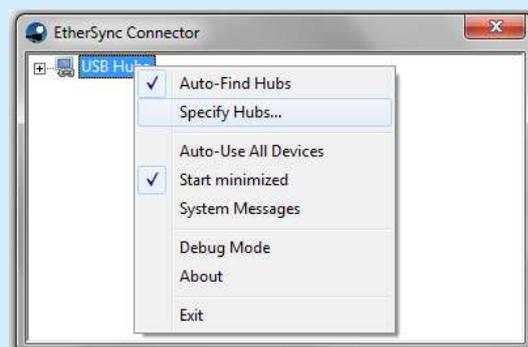
To download the EtherSync Connector Software go to <https://hub.cambrionix.com/pages/ethersync> and follow the on screen instructions. For OS X it is the .dmg file; for Windows it is either the 32 or 64 bit application depending on your system.

The application will not close if the 'X' is clicked. Instead, it will sit in the easy access tray. To display the application again, click on the item and select show; to close, select quit.

In order for EtherSync hubs to be displayed on the connector software both the EtherSync and host computer need to be on the same subnet. If they are not they will need to be specifically added as shown below.

### 5.2.1 Windows

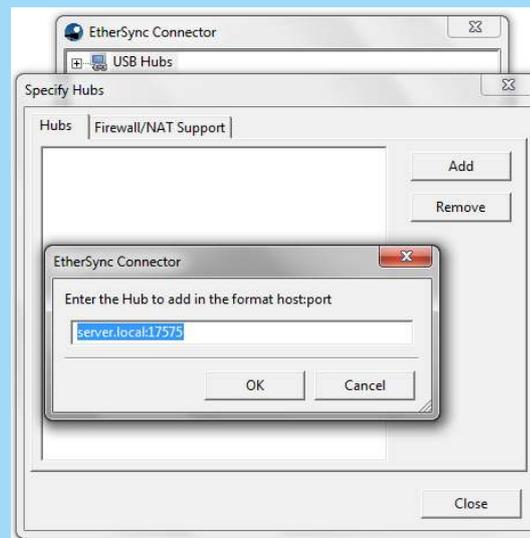
- 1) Open the EtherSync Connector application. Right click on 'USB Hubs' to bring up the menu and select 'Specify Hubs...'.  
Hubs...'



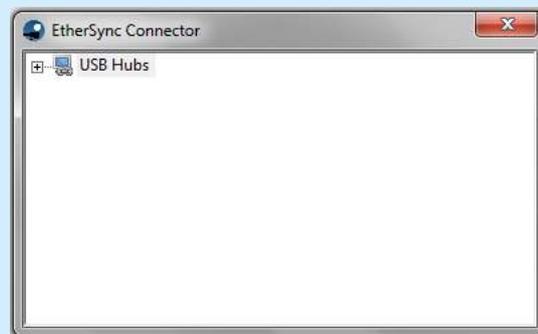
- 2) Click 'Add' and enter the correct location of the desired EtherSync. Other EtherSyncs specified can also be removed from this section by highlighting the desired EtherSync and clicking 'Remove'.

**Note**

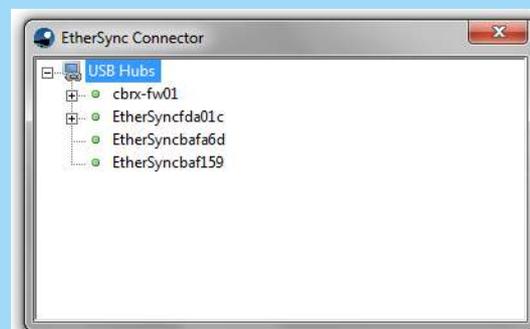
The TCP Port 17575 must be open to the remote subnet.



- 3) Ensure EtherSyncs are connected to the same subnet as the client computer and open the EtherSync Connector application.



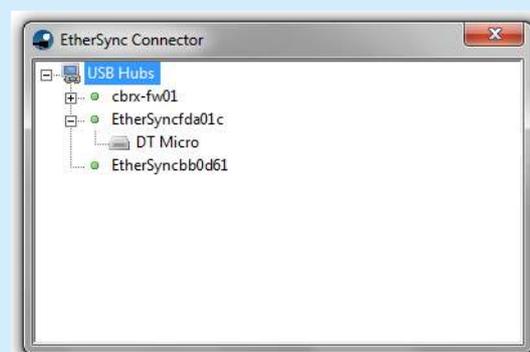
- 4) Click on the '+' symbol to expand the 'USB Hub' list displaying all EtherSyncs connected to the network.



- 5) Click the '+' sign next to the EtherSync called 'EtherSyncXXYYZZ' (where XXYYZZ are the last 6 digits of the Mac address) to display the devices connected to that EtherSync.

**Note**

It is possible to rename an EtherSync by right clicking on the desired EtherSync and selecting 'Rename'. However, this only renames the EtherSync on the connector application, not its host name as used on the Webmin Interface.

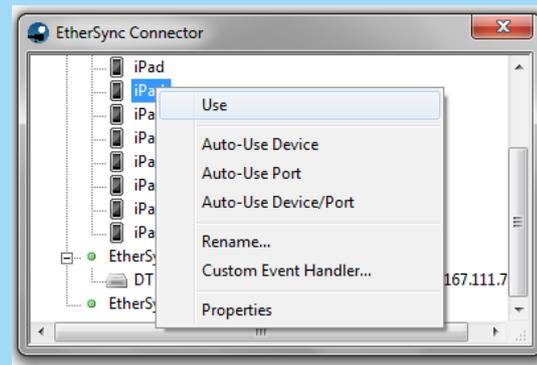


- 6) To use the device on the client computer, right click on the device and select 'Use' or any of the 'Auto-Use...' options.

Auto-Use Device - Automatically uses the device no matter what port it is connected to.

Auto-Use Port - Automatically uses the port no matter what device is connected to it.

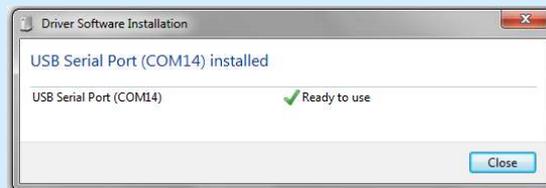
Auto-Use Device/Port - Automatically uses the port no matter what device is connected and automatically uses the device no matter what port it is connected to.



#### Note

All devices connected to an EtherSync can be automatically used by right clicking on the desired EtherSync and selecting 'Auto-Use Devices on Hub'.

- 7) The operating system will install the correct driver, if needed, for the device in 'Use'.

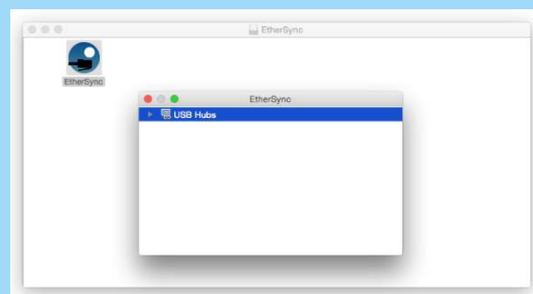


- 8) The devices connected to the EtherSync will now appear on the client computer as if they are connected directly.

## 5.2.2 OS X

- 1) Ensure EtherSyncs are connected to the same subnet as the client computer and open the EtherSync Connector application.

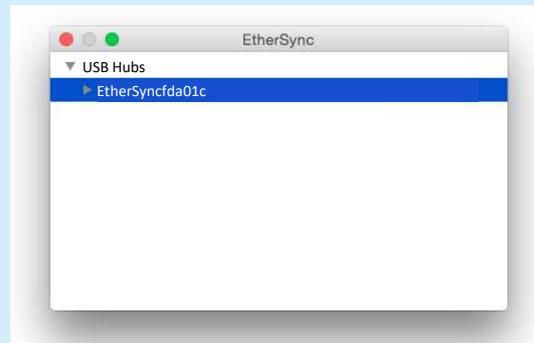
- 2) Click on the '▶' symbol to expand the 'USB Hub' list displaying all EtherSyncs connected to the network.



- 3) Click the '▶' sign next to the desired EtherSync to display the devices connected to the EtherSync.

Note

It is possible to rename an EtherSync by right clicking on the desired EtherSync and selecting 'Rename'. However, this only renames the EtherSync on the connector application, not its host name as used on the Webmin Interface.

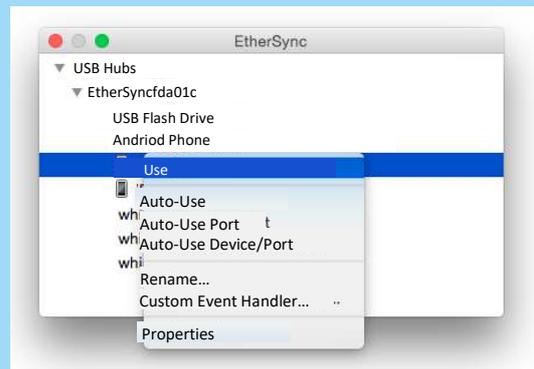


- 4) To use the device on the client computer, right click on the device and select 'Use' or any of the 'Auto-Use...' options.

Auto-Use Device - Automatically uses the device no matter what port it is connected to.

Auto-Use Port - Automatically uses the port no matter what device is connected to it.

Auto-Use Device/Port - Automatically uses the port no matter what device is connected and automatically uses the device no matter what port it is connected to.



Note

Auto-Use Port should be chosen when using Apple Configurator

All devices connected to an EtherSync can be automatically used by right clicking on the desired EtherSync and selecting 'Auto-Use Devices on Hub'.

- 5) The devices will now appear on the client computer as if they are connected directly.



By default EtherSyncs will appear on the Connector Software as EtherSyncXXYYZZ, where XXYYZZ are the last 6 digits of the Mac Address which can be found on the bottom of the EtherSync.

The 'Custom Event Handler...' option in the context menu of a device should only be used with the explicit direction of Cambrionix Technical Support. It allows for advanced control of devices which should not normally be needed.

## 5.3 ChaSync

Many smart devices, released in recent years, such as tablets and phones can take advantage of EtherSync's built in ChaSync feature which enables the devices to charge while syncing.

To synchronise devices, open the desired synchronising application and use it as if the devices are connected to the client computer *[It is recommended that you select "Auto-Use Port" when you are syncing*

iOS devices]. Once synchronisation is complete follow normal safety measures by ejecting the device first and then select stop using on the Connector software before unplugging the device.

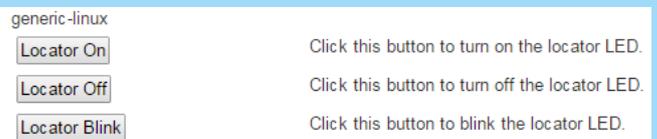
## 6 Advanced

### 6.1 Using the Locator LED

If many EtherSyncs are attached to a network it may be hard to find the specific unit. If this is the case the locator LED can be controlled to make finding the EtherSync easier.

1) Log onto the Webmin interface as described on page 6.

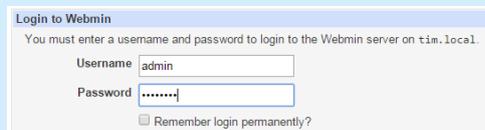
2) Go to *Hardware*>>*LED Control*. To turn on the LED select 'Locator On' or 'Locator Blink'. To turn off the Locator LED select 'Locator Off'.



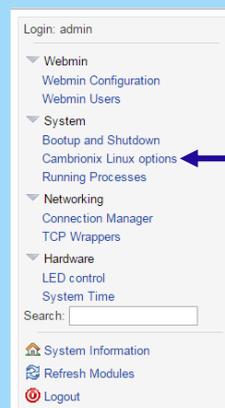
### 6.2 Updating EtherSync Software

Cambrionix periodically releases updates to the firmware which is used on all current Cambrionix products. To update EtherSync:

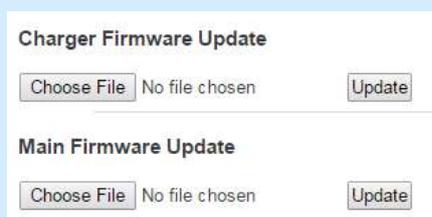
1) Open the Webmin interface and logon using the details listed in section 4.1.



2) Click the 'System' tab on the left of the window, then 'Cambrionix Linux options'.



3) To update the 'Charger Firmware' select choose file and select the correct .enfir file. This is most likely the firmware downloaded with the Cambrionix Updater app and will be located where Updater was installed. Once the file is selected click the update button.



- 4) To update the 'Main Firmware' select 'Choose File' to find the correct .tar file. Once selected click the 'Update' button. Please check the instructions provided with the update when it is downloaded from Cambrionix's website as an alternative procedure may be used such as using an SD card.



The screenshot shows a web interface for firmware updates. It has two sections: 'Charger Firmware Update' and 'Main Firmware Update'. Each section contains a 'Choose File' button, the text 'No file chosen', and an 'Update' button.

- 5) A successful update will automatically reboot the EtherSync, however this can be done manually by going to the bottom of *System>>Boot up and Shutdown*. Once this has happened it is ready to use.

## 6.3 'Daisy-Chaining' EtherSync units

The 2<sup>nd</sup> Gigabit Ethernet port allows extension of the network in a 'daisy-chain' to other devices, such as additional EtherSyncs or computers. This is especially useful in situations where EtherSync is to be inserted into an existing networked location or if more than one EtherSync is being used in close proximity.

EtherSync can also be connected to other Cambrionix products. *[Please note the daisy chaining of hubs requires additional power supplies]*. For more information on this please contact [support@cambrionix.com](mailto:support@cambrionix.com)

Items required to 'daisy-chain' several EtherSyncs:

- 2 or more EtherSync units
- 2 or more RJ45 to RJ45 Ethernet cables
- 2 or more Power Supplies *[each EtherSync will need its own power supply]*

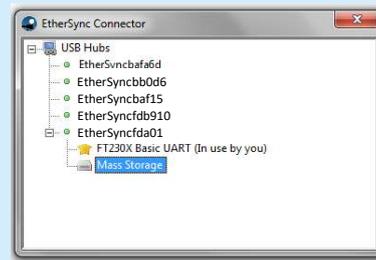
- 1) Connect the power to all EtherSyncs required in the 'chain'.
- 2) Connect the first EtherSync to the network via the RJ45 to RJ45 Ethernet cable.
- 3) Connect another EtherSync using a second RJ45 Ethernet cable by inserting one end into the first EtherSync and the other end into the second EtherSync. You can repeat this step with a third and subsequent EtherSyncs.

### NOTE

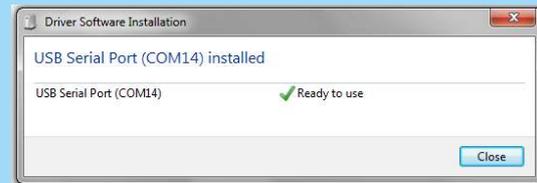
Do not form a loop of EtherSyncs by connecting the last EtherSync in the chain to the network port.

## 6.4 Updating Firmware on a Connected Cambrionix Product (Windows and OS X)

- 1) With all the boards powered on and connected to EtherSync, click 'Use' for the desired connected USB hubs.



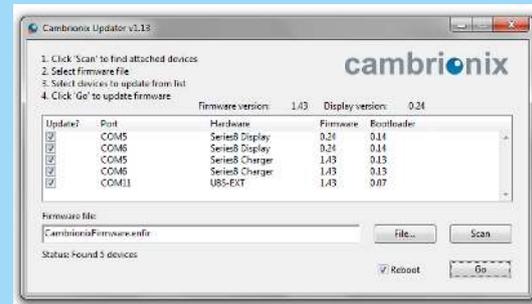
- 2) If needed, wait for the drivers to install. This needs to be done for all connected hubs.



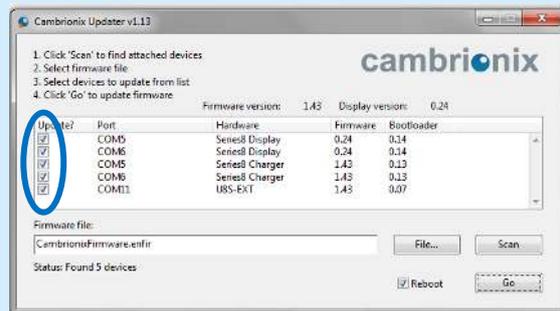
- 3) Open the Cambrionix Updater app for your operating system which can be downloaded from:  
<https://hub.cambrionix.com/pages/updater>.



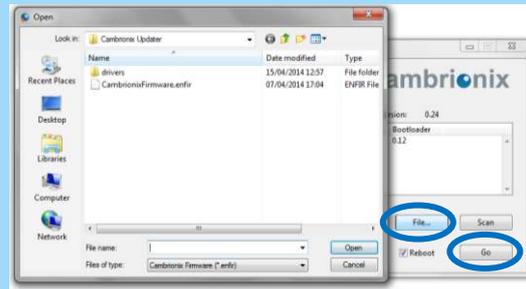
- 4) The connected hubs should now be displayed on the middle of the window. If they are not, click the 'Scan' button. The application should find all connected hubs.



- 5) Tick the boxes next to the hubs that need their firmware upgrading *[If more than one hub is connected un-tick the box next to the boards that do not require a firmware update]*.



- 6) Click the 'Go' button to install the latest firmware.  
If a particular firmware is required, click on the 'File...' button to bring up an open file window. Navigate to your desired file and select it in the normal way. Once selected, click 'Go'.  
Ensure the 'Reboot' box is ticked so that the hub reboots once the desired firmware is updated.



- 7) Wait for the old firmware to be erased and the new firmware to be written.
- 8) Once the green bar has disappeared, the hubs have been updated and are ready to use.

#### NOTES

Once a successful update has been performed the number in the firmware column will match the firmware version listed above the white section of the window.

If the connected mobile device still does not work after the update contact [support@cambrionix.com](mailto:support@cambrionix.com).

This process is the same for OS X. For more details on how to use Cambrionix Updater go to <https://hub.cambrionix.com/pages/updater> and select the user guide for Mac.

Full instructions for downloading and upgrading the firmware can be found at <https://hub.cambrionix.com/pages/updater> for both Mac and Windows users.

## 7 Troubleshooting

Cambrionix products are extremely reliable but it is still possible that either a hardware or operational problem may occur. In the first instance you should take a look at our trouble shooting guide which can be found at <http://www.cambrionix.com/returns-policy/>. This is a guide to some of the simple issues that may occur.

Since EtherSync is more complex than other USB hubs there may be something else causing a problem. If the above solutions do not help, please see below. In all instances listed below, if a problem persists after these solutions, contact [support@cambrionix.com](mailto:support@cambrionix.com) with as much information as possible; including set up, mobile devices being used, applications used, solutions tried and anything else that could be relevant. Your email will then be assigned in our support system and, we generally aim to answer within 48 hours.

If EtherSync is connected and powered on the Power LED should be pulsing a heartbeat pattern and the Gigabit Ethernet port green LEDs should be flashing on the rear of the EtherSync.

- If the Power LED is not on but there is evidence that EtherSync is powered up, there may be an issue with the Linux Operating System which EtherSync runs.
- If the Power LED is not flashing a heartbeat pattern and is, instead, flashing a Morse code message, a fatal error has occurred within EtherSync. If this is the case we ask users to record the entire code and send this along with a description of your setup to [support@cambrionix.com](mailto:support@cambrionix.com)
- If the green LEDs on the Gigabit Ethernet ports are not flashing a new Ethernet cable may need to be used. If this doesn't solve it try to use the second port on EtherSync and/or another Ethernet port to connect to the desired subnet.

EtherSync does not charge the connected mobile device, the first thing to do is download our LiveViewer application from <https://hub.cambrionix.com/pages/liveviewer-app>, the user guide is also found here. Use this and connect to the desired EtherSync using the password on the bottom of your unit regardless of whether the password has been changed on the Webmin interface, to see if your device is registering as connected and is charging at the correct current.

- If the device is not charging properly or connection to the device keeps cutting out try to use the original manufacturer's USB cable that came with the mobile device.
- If using configurator or any other Mobile Device Management (MDM) software select 'Auto-Use Port' for the device. This ensures that if the device name changes it will stay connected throughout the process.
- EtherSync's software may need updating, please refer to section 5.2 and update the charger firmware. After EtherSync has rebooted, if the device still does not charge, the device connected may not be USB chargeable. If this is the case, contact the original manufacturer.

EtherSync is switched on and charging correctly and connected to a network but is not displayed in the EtherSync Connector application.

- Make sure 'Auto-Find Hubs' is selected from the contextual menu in the EtherSync Connector application.
- Ensure that the desired EtherSync is connected to the same subnet as the host computer or set up a network connection to the desired EtherSync as described in section 4.2.
- Download the most up to date Connector application from <https://hub.cambrionix.com/pages/ethersync>
- Install the latest EtherSync firmware onto EtherSync as described in section 5.2.

EtherSync is working as expected but can't log on to LiveViewer or the Webmin Interface.

- Ensure that the correct password is being used for each application, taking care when typing capital i's, lower case L's and 1's (ones).
- The LiveViewer password is always the one listed on the bottom of the EtherSync units.
- To log on to the Webmin interface, ensure the correct login is being used and that the password is correct.
- If the password has been forgotten or lost please contact your sales manager.

Apple Configurator is not updating iPads correctly.

- Auto-Use Port should be chosen when using Apple Configurator as iPads will lose connection when the iPads are renamed.

Renaming the EtherSync does not work.

- You may be using invalid characters in your chosen host name. Valid hostnames need to start with a letter and have 63 characters or fewer, it can contain letters, number or hyphens.
- Try renaming the chosen EtherSync using these points.

## 8 Safety Messages

- Do not spill liquids onto the unit.
- Do not drill into the unit as this could damage the circuitry inside the PCB.
- Failure to follow the operation and installation instructions may result in unit failure.
- The plug on the power cord is considered the 'disconnect device' and as such the mains outlet should be located near the EtherSync and should be easily accessible in case the power supply needs to be isolated from the mains power for whatever reason.
- The power cord should not be attached to a building surface nor run through walls, ceiling, floors and similar openings in the building structure.
- When installing the EtherSync, measures must be taken to avoid physical damage to the power supply cord, including proper routing of the power supply cord and provision of a mains outlet near the EtherSync, or repositioning of the EtherSync near a mains outlet.
- Ensure the unit has sufficient space around it. This means that nothing should be placed on top of the unit, or if there is ensure that the bottom of the unit isn't covered. This is to avoid overheating the unit.

## 9 Certification and Standards



### **CE Certification**

This product complies with the relevant standards required for CE EN60950 compliance.



### **UL Listed**

This product complies with the relevant safety standards to be C-UL-US Listed.  
File number: E346549



### **Waste Electrical and Electronic Equipment Directive – WEEE (2002/96/EC)**

When this product is no longer required, if it cannot be re-used, we ask our customers not to dispose of it as unsorted municipal waste but to appropriately recycle the product or return it to Cambrionix Ltd. for correct disposal.



### **Full FCC statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.