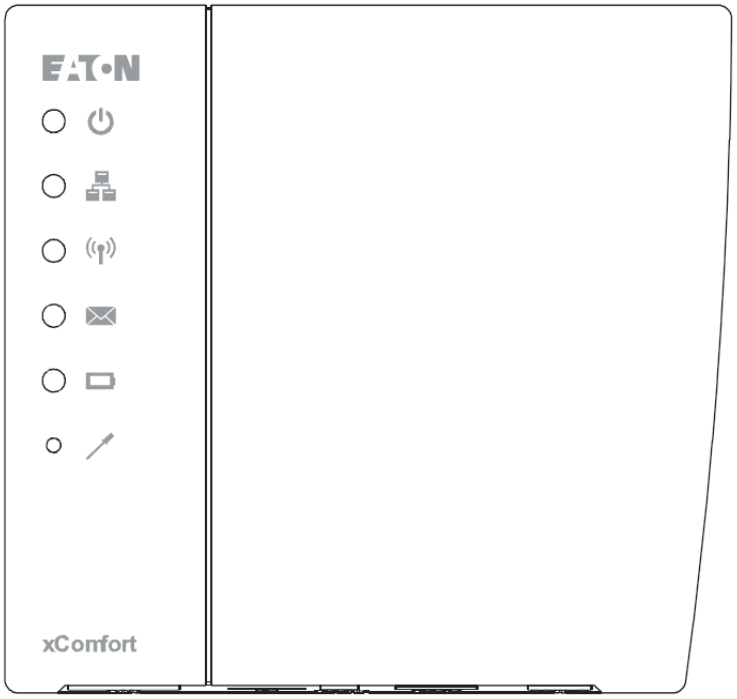
Smart Home Controller 2.0



Quick Installation Manual with MRF

Release 2.0.x version 1.3

Table of contents

1. Introduction

1.1. Safety instructions

This document contains important warnings and safety instructions which must be observed and followed by users. Failure to follow these warnings and safety instructions will put the fault-free operation of the Smart Home Controller at risk.

1.2. Intended use

xComfort products are designed for use in private homes and similar, fixed electrical installation systems. Applicable standards can be found in the CE declarations of conformity included in the mounting instructions supplied with each product.

1.3. About this document

This manual is intended for trained Installers only and describes the quick installation and configuration of new Smart Home Controller 2.x projects with MRF. Following this manual will ensure a successful installation

1.3.1. How to start

The Smart Home Controller 2.x configuration is simplified and integrated in MRF 2.42 or higher. The Smart Home Controller can be preconfigured in the MRF Project including the SHC Zones, SHC device names and functionality. Download the latest MRF version first. Always prepare and maintain the Smart Home Controller configuration in the MRF project.

1.3.2. Troubleshooting

In case of problems check chapter 4 Troubleshooting.

1.3.3. Feedback

Please feel free to support us with any suggestions or feedback. Please use the feedback form in Appendix B .

2. Quick installation

Follow the instructions in this chapter to create a MRF Project with the Smart Home Controller and initially setup the installation.

Main steps:

1. Install the Smart Home Controller.
2. Create SHC MRF Project and install the xComfort components.
3. Quick SHC setup.
4. Quick App setup (IOS iPhone example)
5. Save SHC Configuration in MRF Project.

2.1. Install Smart Home Controller

Find an appropriate location for the Smart Home Controller. This location must be dry and free of other electric equipment that could disturb the working of the Controller. Keep in mind that the SHC does have an internal antenna for the xComfort RF network.

⚠ **ATTENTION! Find an appropriate location for the SHC. The SHC does have an internal antenna for the xComfort RF module. Avoid disturbance from other equipment like WiFi routers. Minimum distance > 0,5m.**

Installation steps:

1. Use the mounting holes in the SHC to screw the SHC to the wall.
2. Connect the SHC to your home network using a network cable.
3. Connect the power adapter to the SHC and switch on the power.
4. Activate the SHC and check for software updates (Follow Appendix A Activate and check for updates).

2.2. Create SHC MRF Project

Use the MRF xComfort Network Configuration Tool to create and setup a new project or copy an existing project and replace devices (Project copy).

⚠ **ATTENTION! Use MRF tool version or higher: Eaton RF-System V2.42**

Good to know:

- Use the MRF Project-topology to define Rooms/Zones. This can be directly used to define the SHC Zones.
- Functionality in Zones are based on the installed Devices per Zone. Make a plan of the needed functionality and components per Zone.
  - ☐ Control your lights by Scene buttons.
  - ☐ Use the planner to control your lights by time.
  - ☐ Use Macros to control your lights by events and conditions.

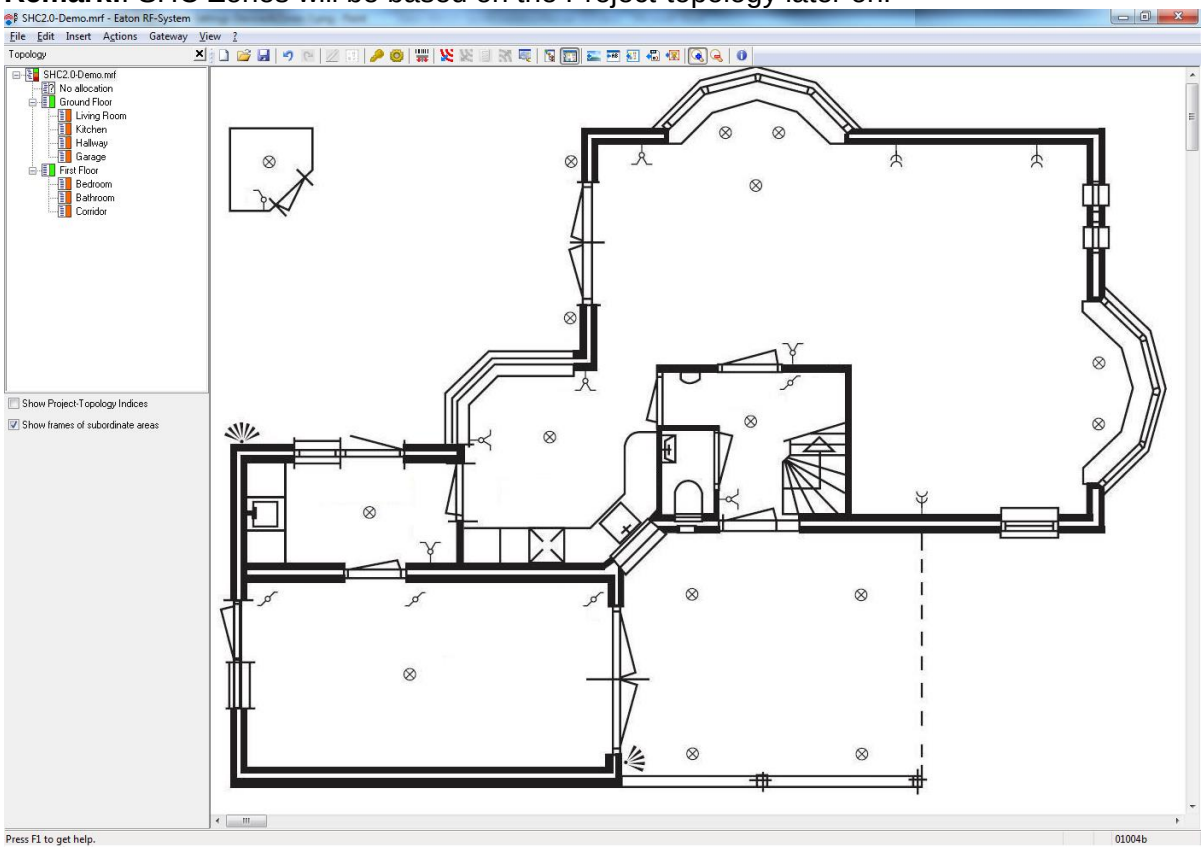
- ☐ Connect and control Shutters or Shading if present.
- ☐ Control the temperature of a room if possible.
- ☐ Make use of cameras if needed. Check which vendors are supported.

- The SHC Device Names, configurations and Interfaces (ECIs) can be directly configured in MRF (SHC Settings screen).

⚠ **ATTENTION! To maintain the correct status of (old) Actuators it is important to connect all xComfort Actuators directly to the Smart Home Controller or an ECI. In large installations the status of the (old) Actuators could still be wrong due to heavy RF traffic. Use the new generation Actuators with Extended Status Messaging support to increase the status reliability at hot spots.**

MRF Project installation steps:

1. Create the Project-topology. Insert a background graphic if this is useful.
   Remark!: SHC Zones will be based on the Project-topology later on.



2. Add Devices to Project:
   Remark!: Use one or both methods below:

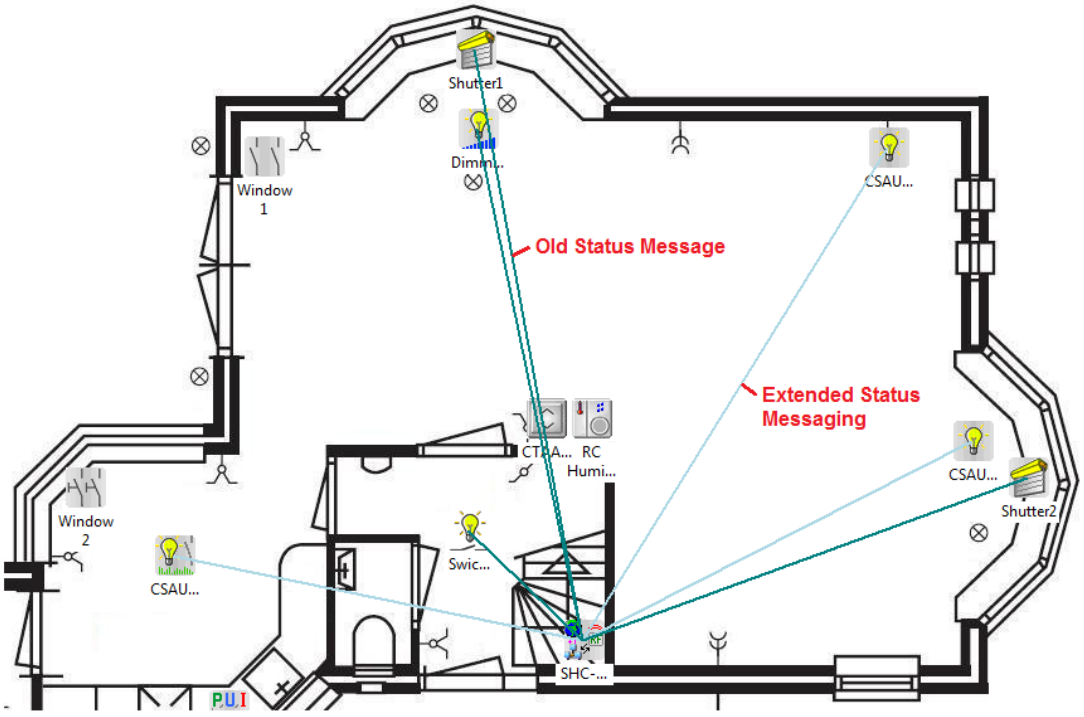
   A. Via Barcode Scanner: Click: 
      1. Scan Device barcode (or enter barcode number manually and click: **`Verify`**)
      2. Specify Device settings:
         - Name: Specify a clear name for the Device.
         - Topology area: Select a Room/Zone
         - Replaces device: Select Device to be replaced (In case of virtual or existing devices)
      3. Click: **`OK`**
      4. Install this Device directly or remember where this Device should be installed.
      5. Repeat the steps above for each Device.

6. Install the Devices and turn them On.

B. Via Device network scan:
   1. Install the Devices and turn them On.
   2. Scan the network for available devices: Click: 
   3. Specify a clear name for each Device.
   4. Move each Device into a Room/Zone in the Topology tree.

3. Configure the applicable Device Settings. For example:
   A. Door (Switch) Actuator: Function: Off / On with switch off delay.
   B. Shutter Actuator: Runtime.
   C. Dimming Actuator: Dimming time, Dimming limits, Memory function.
   D. Binary Inputs: Mode 2, Cyclic sending.
   E. Analog Inputs: 0 – 10V, Cyclic sending.
   F. Temperature Sensors: Send Temperature value, Cyclic sending. Per default the SHC Climate Function expects within every hour a temperature value. Set cyclic sending value to 55 minutes.
   G. Room Controller: Send Temperature value, Send Humidity value, Cyclic sending. ***Note!:*** Per default the SHC Climate Function expects within every hour a temperature value. Set the protection timeout in the SHC Climate Function to 6 hours.

4. Setup RF network:
   A. Connect needed xComfort Devices to the Smart Home Controller (or ECIs).
   B. Create additional switching groups if needed.
   C. Scan reception quality of all devices. Calculate and check all connections.
   D. **Important!:** Check if the Old Status Message is directly connected to the SHC or ECI! Use new generation Actuators and Routers if the status is still not reliable.
   Select: View -> Status-Connections (F8):



   E. Load the configuration into the devices.

5. ***Optional for ECI***: For each ECI create datapoint file:
   A. Right click on the ECI Icon and select: **`Create datapoint-file`**
   B. Select Transmission: **`download by RF`**
   C. Click: **`OK`**

6. ***Optional for ECI***: SHC ECI settings:
   A. Right click on the SHC Icon and select: **`Settings`**

B. Select Tab: **Interfaces**

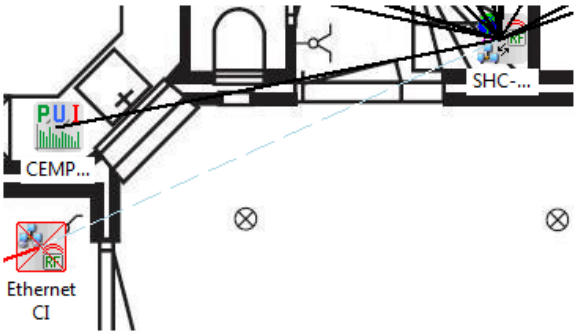
C. Activate needed ECIs and check their IP addresses:

Interfaces:

Active	ID	device	IP-Address	serial number	Number of connections
☑	0	SHC-98028401004b		5148320 (0x004e8ea0)	27
☑	1	Ethernet CI	192.168.2.121	196608 (0x00030000)	2

D. Click: **OK**

ECIs connected to the SHC are indicated by a light blue dashed line:



7. SHC settings:

A. Right click on the SHC Icon and select: **Settings**

B. Select Tab: **Devices & Zones**

C. Import the Project-Topology as SHC Zones and remove Zones not used.

Zones:

Nr	Name	Number of connections
1	Ground Floor	0
2	First Floor	0
3	Living Room	10
4	Kitchen	11
5	Hallway	1
6	Garage	1
7	Bedroom	0
8	Bathroom	0

Add Zone | Remove Zone | Rename Zone

Re-Import the Zones from the Project-Topology

D. Add additional Zones if needed and add the applicable Devices to each Zone (in example below not all devices are shown):

☑	SHC	9	<=	Energy sensor	CEMP-01/11	Energy
☑	SHC	10	<=	Energy sensor	CEMP-01/11	Power
☑	SHC	11	<=	Energy sensor	CEMP-01/11	Current
☑	SHC	12	<=	Energy sensor	CEMP-01/11	Voltage
☐	SHC	13	<=	RC Humidity	RC Humidity	temperature, adjusting wheel
☐	SHC	14	<=	RC Humidity	RC Humidity	Air humidity

☐ Only show connections of the selected Zone

Zones:

Nr	Name	Number of connections
3	Living Room	10
4	Kitchen	11
5	Hallway	1
6	Garage	1
7	Bedroom	0
8	Bathroom	0
9	Corridor	0
10	Energy	6

Add Zone | Remove Zone | Rename Zone

E. Per Device set the parameters if needed:

Connection list:

in select. Zone	Name in SHC	Function	Extra (1)	Extra (2)	Extra (3)	assigned Zone(s)
	CEMP-01/11 Energy	Consumption				Kitchen; Energy
	CEMP-01/11 Power					Kitchen; Energy
	CEMP-01/11 Current					Kitchen; Energy
	CEMP-01/11 Voltage					Kitchen; Energy
	RC Temperature					Living Room
	RC Humidity					Living Room
	Window 1 (Channel B)	Window	Contact-type: Make contact	Custom ON: Close	Custom OFF: Open	Living Room
	Window 1 (Channel A)	Window	Contact-type: Make contact	Custom ON: Close	Custom OFF: Open	Living Room
	Window 2 (Channel A)	Window	Contact-type: Make contact	Custom ON: Close	Custom OFF: Open	Kitchen
	Window 2 (Channel B)	Window	Contact-type: Make contact	Custom ON: Close	Custom OFF: Open	Kitchen
	CSAU-01/01-10 (Actuator input)	Light				Living Room
	CSAU-01/01-16 (Actuator input)	Heating				Living Room
	CSAU-01/01-16IE (Actuator input)	Light				Kitchen
	CSAU-01/01-16IE (Binary input)			Custom ON:	Custom OFF:	Kitchen
	CSAU-01/01-16IE (Energy)	Consumption				Kitchen; Energy

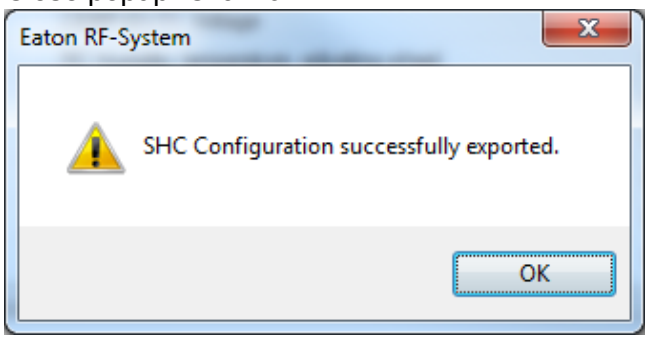
Parameters:

1. Name: End-user meaningful device name used in SHCs user interfaces (Per default: Name in MRF)
2. Function: Light, Heating, Window, Door, Consumption, …
3. Extra (1): Contact-type, Unit, …
4. Extra (2): Custom ON (System default if not set: ON, CLOSED, MOTION, …)
5. Extra (3): Custom OFF (System default if not set: OFF, OPENED, NO-MOTION, …)

F. Click: **`Export Configuration`**

G. Define proper File Name, select location and Click: **`Save`**

H. Close popup. Click: **`OK`**



I. Save SHC settings and close screen. Click: **`OK`**

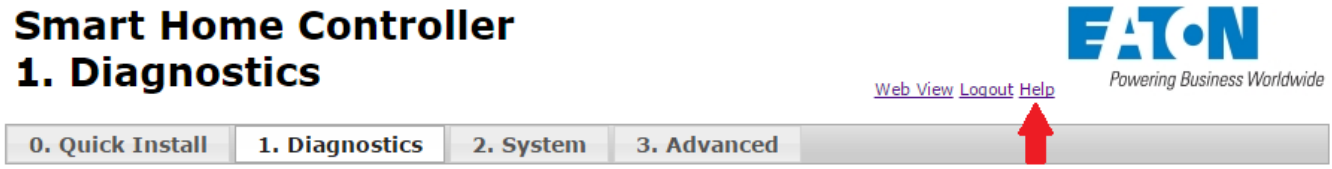
8. Save project.

2.3. Quick SHC setup

Follow the instructions in this section to do a quick setup of the Smart Home Controller with the MRF SHC Configuration created in the previous section.

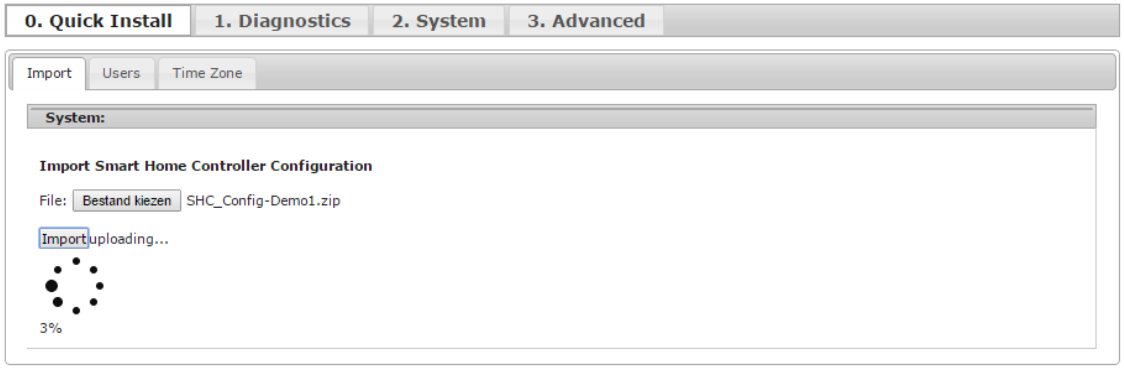
ATTENTION! The Smart Home Controller should already been activated and checked for updates. If not follow Appendix A Activate and check for updates.

Find also detailed information in the SHC Help file:

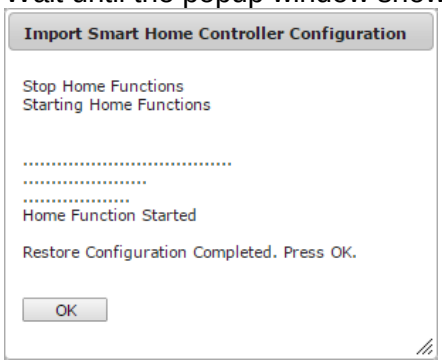


SHC Setup steps:

1. Login into the Web Admin Console
   (See section 4.7 Ways to connect to the SHC Web Admin Console)
2. Select Tab: **`Import`** (from Main Tab: **`0. Quick Install`**)



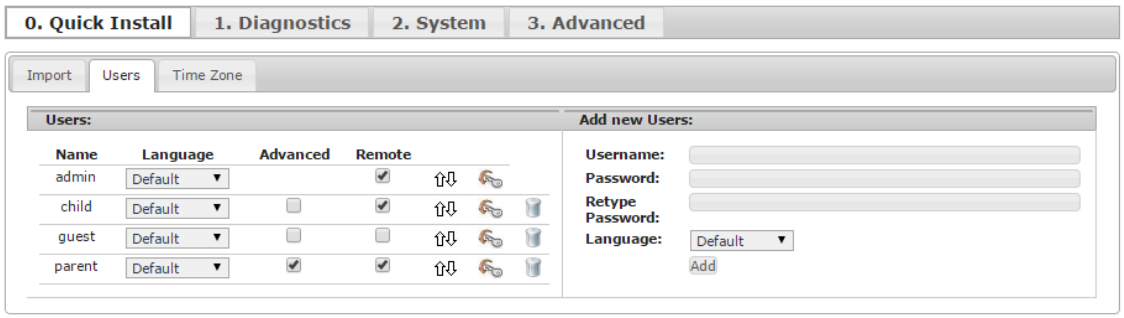
   A. Click: **`Choose File`**
   B. Select the MRF SHC Config file generated in Step 7.G previous section 2.2 Create SHC MRF Project
   C. Click: **`Import`**
   D. Wait until the popup window shows the OK button:



   E. Click: **`Ok`**

3. Select Tab: **`Users`**

Remark!: Change always the admin password the first time:

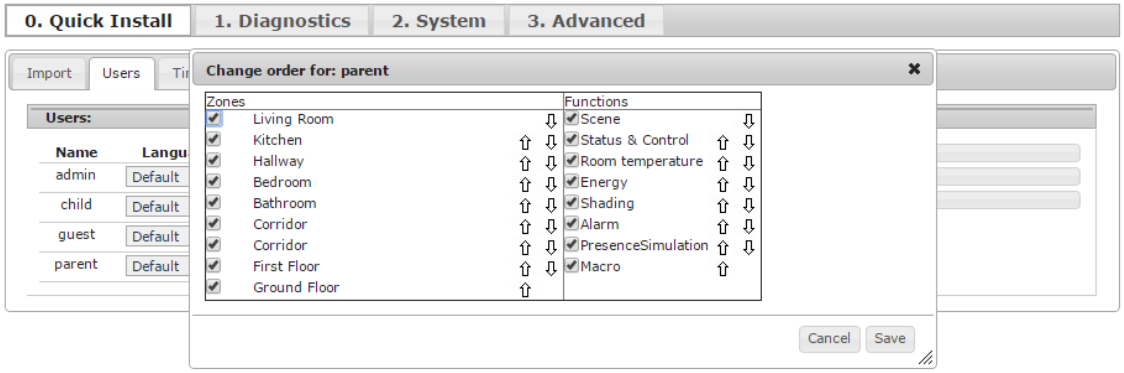


A. Specify User credentials (right side):
   - Username: **`<Username>`**
   - Password: **`<Password>`**
   - Retype Password: **`<Password>`**

B. Select: **`Language`**
C. Click: **`Add`**
D. The new User is shown in the list of Users on the left side
E. For Advanced User check option: **`Advanced`**
F. To enable remote access*, check option: **`Remote`**

*Remote access is only possible when 'Global Remote Access' is enabled (See Appendix A section A.1 step 5 Enable: **`Global Remote Access`**).

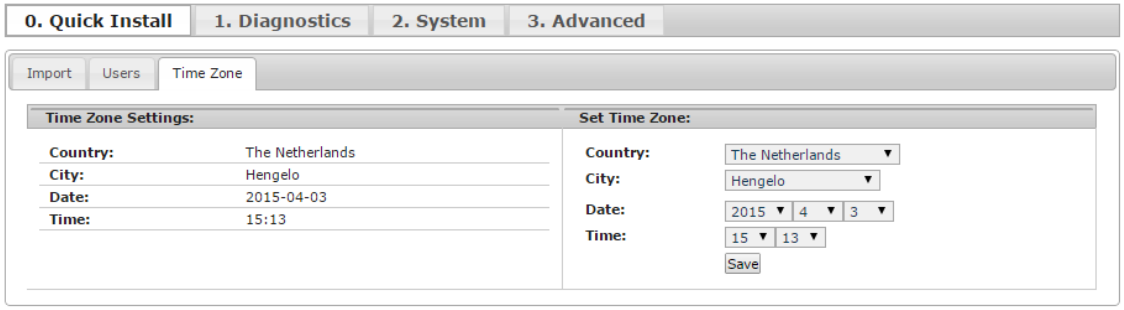
4. ***Optional***: Change User permissions and Order if needed: ⇧⇩



A. Make the necessary changes per user:
   - Hide Zones by unchecking the checkboxes
   - Hide Functions by unchecking the checkboxes
   - Change order of Zones (Use drag and drop or the arrow buttons)
   - Change order of Functions (Use drag and drop or the arrow buttons)

B. Click: **`Ok`**

5. Select Tab: **`Time Zone`**



F. Select: **`Country`**
G. Select: **`City`**
H. Select: Date and Time
I. Save settings: **`save`**

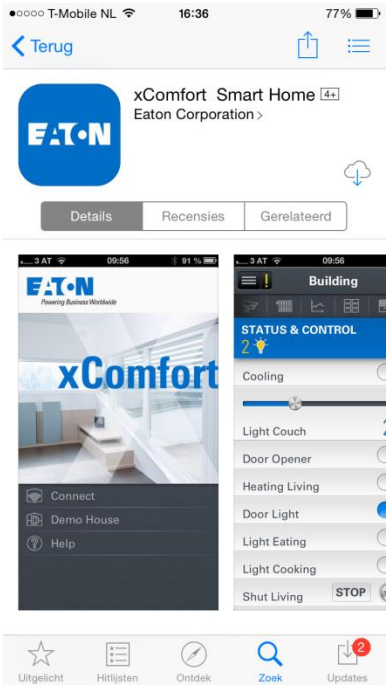
6. Now the main functionality is already available and usable.
   Check the SHC Help file to enable some additional features like:
   A. Create some lights, shading control and main scenes. If needed add switches to trigger manually some scenes. Put main Scenes on the Main Dashboard.
      (See help file: 5.3.1. Scenes)
   B. Create a macro for the Night Orientation.
      (See help file: 5.3.2. Macros)
   C. Create some planner events to switch the lights automatically.
      (See help file: 5.1. Tab: Planner)
   D. Enable and configure the Alarm Function if needed.
      (See help file: 5.2. Tab: Alarm)
   E. Add some Cameras if needed:
      (See help file: 4.8. Tab: Cameras)
   F. Enable additional Info-Tiles on the Main Dashboard.
      (See help file: 1.2. After the update)
   G. Activate the Smart Home Controller:
      See section A.1 Activate the Smart Home Controller.
7. Save all additional configuration like Macros, Planner programs, Cameras and System configurations in the MRF project.
   See chapter 3 Save SHC Configuration in original MRF Project

2.4. Quick App setup (IOS iPhone example)

2.4.1. Download and connect the App

This example is based on the iPhone.

Figure 1: Download App

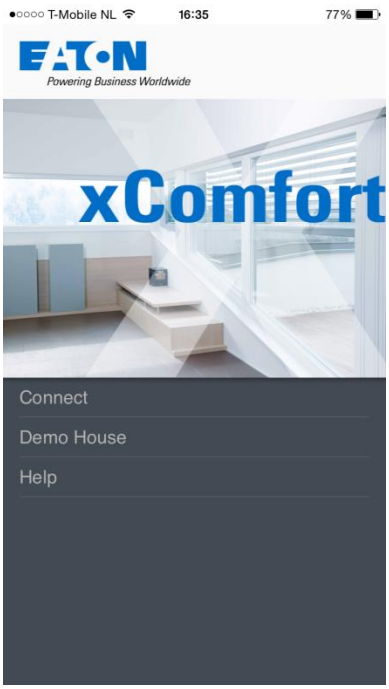


Open the App Store:

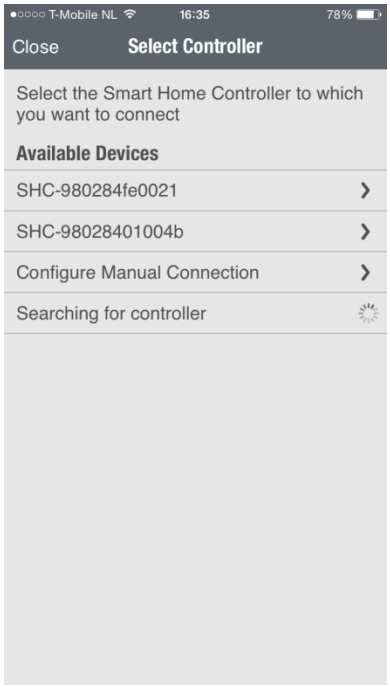
Search for: **`Eaton`**

Install and open the App

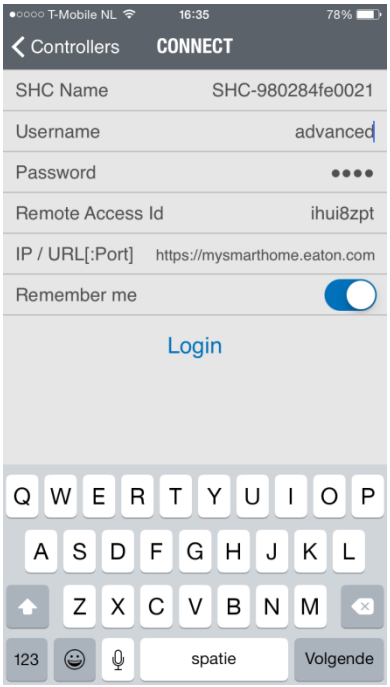
Figure 2: Connect to Smart Home Controller when in the same local network (LAN) the first time



Click: **`Connect`**



Select your controller

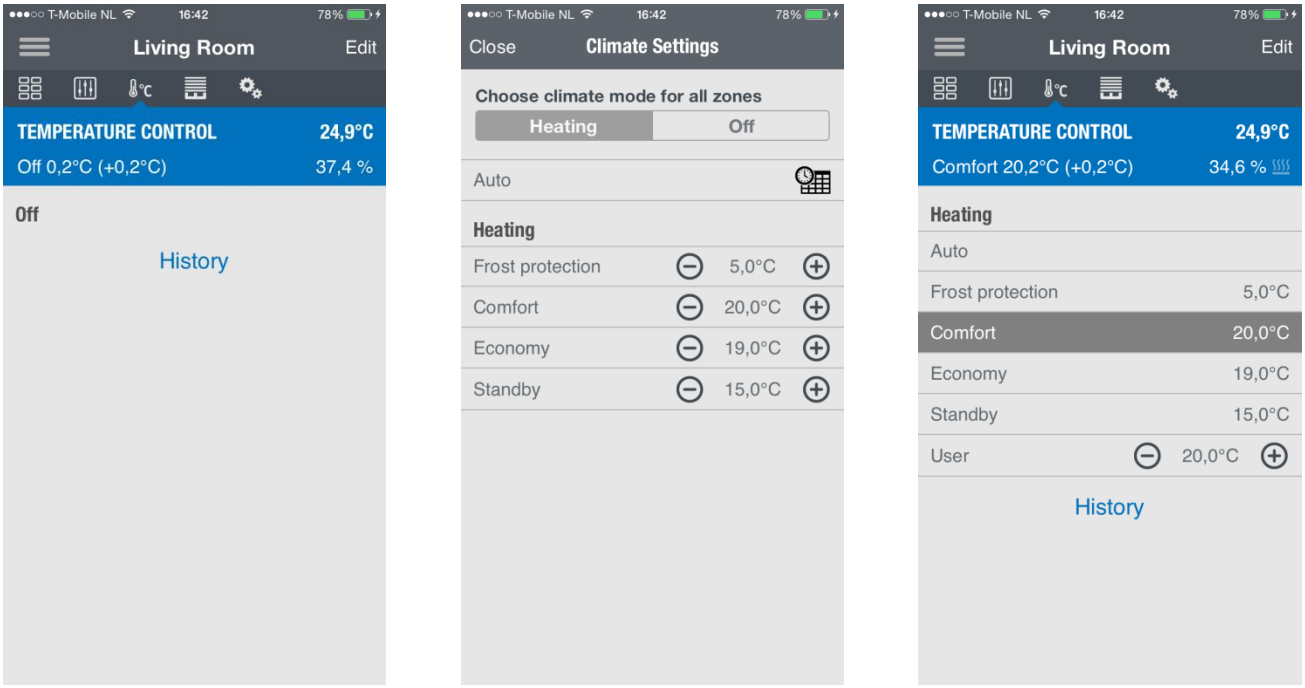


Login as advanced User

2.4.2. Start the Temperature Control

Select the Climate Function

Figure 3: Start the Temperature Control



Click: **`Edit`**

Select: **`Heating`**

And: **`Close`**

Select a predefined mode

The question mark indicates that no temperature value has been received yet.
Start the Temperature Control in every Zone with a Climate Function.

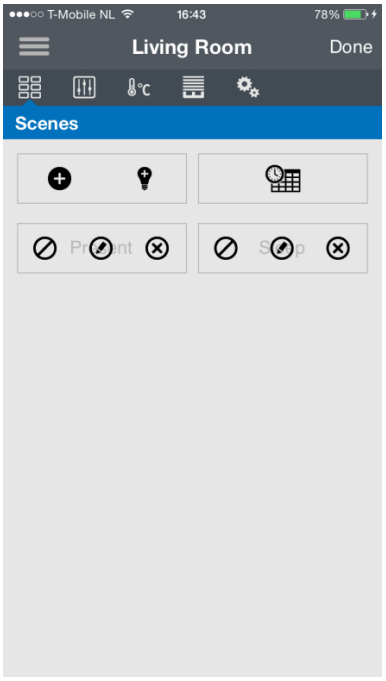
2.4.3. Create Light Scenes

To create a Light Scene, select the Status & Control Function to set the preferred light settings.

Figure 4: Create a Light Scene 1

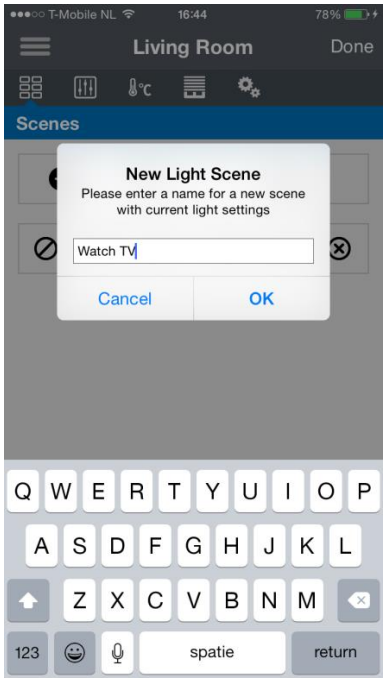
Select Status & Control
Set preferred Lights

Select Scene Function
And click: **Edit**



Click: 

Figure 5: Create a Light Scene 2



Define a Scene name
And click: **OK**

Check light settings
And return to Zone

Button created

3. Save SHC Configuration in original MRF Project

Note!: The original MRF project is the MRF project which is currently active for the configuration. Normally this project is created during the initial installation of the SHC and maintained after that.

Follow the next steps to synchronize the SHC configuration with the original used MRF Project. The configuration includes Zones, devices, Macros, Planner programs, Cameras and System configurations, etc.

1. Export the SHC Configuration (Always keep this file to be able to restore the SHC configuration).
2. Open the original used MRF Project for your SHC in the new **MRF V2.42** or higher.
3. Right-click on the Smart Home Controller and select: **Scan Device new**
   (Only necessary if RF-Module firmware has been updated as well).
4. Right-click on the SHC Icon and select: **Settings**
5. Navigate to **Devices & Zones** and click: **Import Configuration**
6. Select the just exported SHC Configuration file (step 1) and click: **Open**
7. The SHC configuration is imported and you should see the zones and changes in device names and functions.
8. Click OK and Save the MRF Project. The SHC Configuration is now in synch with the MRF project.

Remark: Use now the MRF Project to make changes to SHC Zones and Device configurations, export it and import it into the SHC.

4. Troubleshooting

A good working xComfort Smart Home Controller System depends on the xComfort Installation itself, the MRF Configuration, the SHC setup and the SHC Configurations. In most cases possible issues can be recognized and also solved very easily.

Find in this chapter information and instructions to solve problems. Consult also the latest FAQ to find answers to questions www.eaton.eu/xcomfort

4.1. First check (Most important)

Besides the SHC should be powered and connected to the internet. Always update to the latest release before starting to investigate issues, since new releases includes solved known issues. Always make a backup of the configuration and history file first!

#	✎	Check	Action
1	☐	Is the Power LED green?	Power LED is red: Power-off the SHC for 5 minutes Power LED stays red: Replace the SHC! Power LED is off or unstable: Replace the power adapter Power LED is orange: Wait until the SHC is started (> 1hours) Power LED stays orange after one hour: Replace the SHC!
2	☐	Diagnostics: Is the Network Icon green?	Network Icon is green: Eaton Server connected. Go to step 4 Network Icon is orange: Internet ok. Activate SHC. Go to step 3 Network Icon is red: Solve the internet connection (local network have no internet access)
3	☐	Is the (Global) Remote Access enabled?	Enable Global Remote Access: Menu: Diagnostics – System Status Enable the Remote for User admin: Menu: System - Users
3a	☐	Initial Activation Key is: SHC-980284010000?	Replace the SHC!
4	☐	Is the SHC software version up-to-date?	Update button is available: click update (after update actualize the browser screen e.g. press F5)
5	☐	Is the OS version up-to-date?	Update button is available: click update
6	☐	Is the RF Module firmware version up-to-date?	Update button is available: click update
6a	☐	Diagnostics: Is the RF Icon green?	RF Icon is red: Power-off the SHC for 5 minutes RF Icon stays red: Replace the SHC! RF Icon is green: Go to Basic Health Check

4.2. Basic Health check

Follow this checklist until the problem is solved. Always make a backup of the configuration and history file first!

#	✎	Check	Action
1	☐	MRF: Are all changes loaded into the Devices?	Click the Icon “Load changes” in the top menu bar
2	☐	MRF: Is the datapoint file loaded into the ECI(s)?	ECI(s): Create datapoint-file -> download by RF
3	☐	Problem with devices connected to an ECI?	If not go to step 4
3a	☐	ECI(s) correctly powered?	Check if each ECI is powered
3b	☐	ECI(s) correctly connected to the network?	Check if each ECI is available on the network
3c	☐	ECI(s) correctly configured in the SHC?	Check each ECI interface configuration (e.g. IP address)
4	☐	SHC: Is the latest MRF SHC Config imported?	If not, import the MRF SHC Config file

5	☐	Problems started after configuration changes?	Restore previous configuration
6	☐	Is your question answered by the SHC FAQ - check www.eaton.eu/xcomfort ?	Provide the Smart Home Controller Issue report (contact your supplier or the local Eaton organization)

4.3. LED Indicators on the Smart Home Controller Box

Power LED:

- Green: Power ON, the System is operational.
- Orange: The System is booting.

Network Connection LED:

- Green: Remote Server Connection.
- Orange: Internet connection. The SHC is not activated yet.
- Red: No Internet connection. Check your internet connection via a PC or laptop.

RF Traffic LED:

- Blinking Green: RF traffic.

System Message LED:

- Green: There are no new messages in the Mailbox.
- Yellow: New Warning Message in the Mailbox.
- Red: New Error Messages in the Mailbox.

Battery Status LED

- Green: All batteries are OK.
- Yellow: At least one battery is weak. Consider to replace batteries.
- Red: At least one battery one battery is very weak or empty. Replace batteries.

4.4. How to restore the default admin password

This symbol indicates the recovery button on the Smart Home Controller Box.
Use a small pin to access this button.

Press the button on the Smart Home Controller for 15 seconds (power LED flashes green and will finally change to orange), system will reboot. Wait until the LED is green. Also the network settings will be set to DHCP.

4.5. How to restore the SHC network settings

This symbol indicates the recovery button on the Smart Home Controller Box. Use a small pin to access this button.

Press the button on the Smart Home Controller for 15 seconds (power LED flashes green and will finally change to orange), system will reboot. Wait until the LED is green. Also the admin password is set to default.

4.6. Ways to recover the SHC

The Smart Home Controller can be recovered in the following ways:

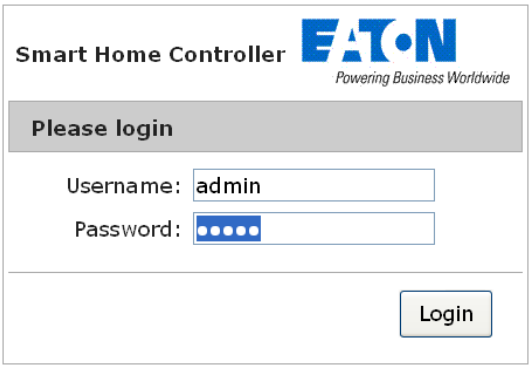
- Power Off the System by removing the power plug for 1 minute and reconnect.
- Reboot the Smart Home Controller via the Web Admin Console.
- Set the Smart Home Controller back to factory settings. Reconfigure everything.
- Reset internal RF Module password and datapoint list. Use MRF to reprogram.

Admin Console navigation: **`1. System -> Firmware`**

4.7. Ways to connect to the SHC Web Admin Console

4.7.1. Directly via a browser and IP address

1. Open a browser
2. Open the login page: **`http://<SHC IP address>`**:



3. Login with:
   - Username: **`admin`**
   - Password: **`admin`**
4. The Web Admin Console is available

4.7.2. Via Bonjour (MAC)

1. Open: Safari
2. Click the Bookmark icon: 
3. Select Bonjour: 
4. Double click Bookmark: Smart Home Controller
5. The browser opens with the login page

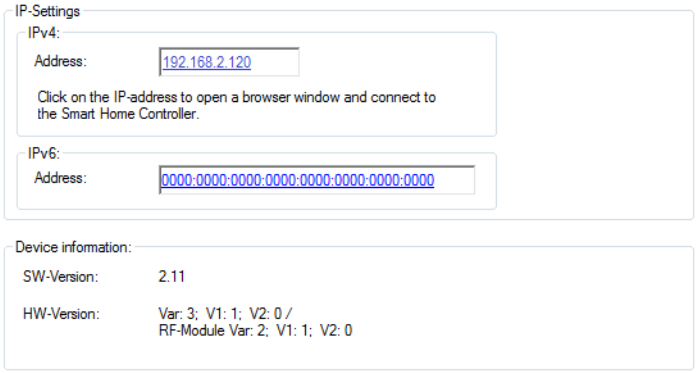
4.7.3. Via UPnP (Windows)

1. Open My Network Places: 
2. Double click link: Smart Home Controller
3. The browser opens with the login page

4.7.4. Via MRF

1. Open MRF and right-click on the SHC: 

2. Right click on the SHC Icon and select: **`Settings`**
3. Select Tab: **`General`**
4. Click on the Address



5. The browser opens with the login page

4.8. Default admin password?

The default password for admin is admin. Please change this password directly after the setup.

4.9. Diagnostics Status bar: Indicators and colors

In the top bar the following status indicators are shown:


SHC status:

- Green: Smart Home Controller is up and running
- Yellow: Smart Home Controller is starting, please wait


Network status:

- Green: Connected to the Remote Server
- Yellow: Connected to Internet
- Red: No Internet connection


RF Interface status:

- Green: All configured Interfaces are up (DataPoints tab)

- Red: One or more Interfaces are down

New Messages available in the System Log:

- Green: No new messages after the last check
- Yellow: New Warning messages
- Red: New Error messages

Battery status battery powered Devices:

- Green: All batteries are good
- Yellow: One or more batteries are weak
- Red: One or more batteries are empty

Appendix A Activate and check for updates

A.1. Activate the Smart Home Controller

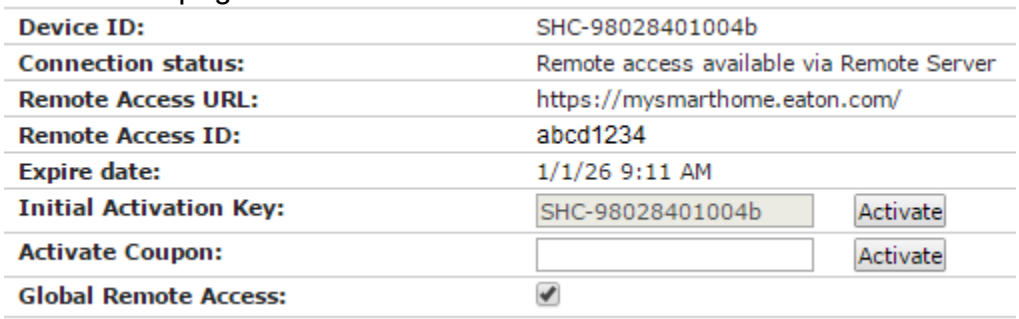
Activate the SHC for remote access and new software updates.

Admin Console navigation:
SHC Software version 1.x: **`1. System -> Remote Access`**
SHC Software version 2.x: **`1. Diagnostics -> System Status`**
Steps:

1. Check if there is Internet Access:

2. Click: **`Activate:`**

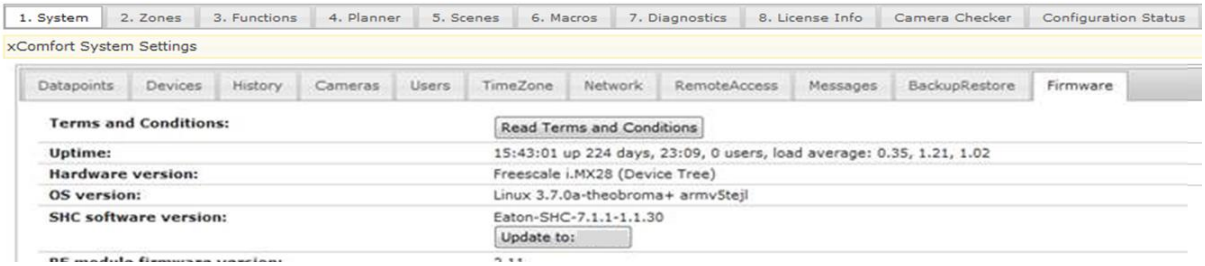
3. Read and Accept the Terms And Conditions: **`Accept`**
4. Please wait until the popup disappears.
5. Enable: **`Global Remote Access`**
6. Refresh the page to check the connection status:



7. Please make a note of the received Remote Access ID to connect remotely
8. In case of SHC Software version 1.x: Follow next chapter to update to 2.x.

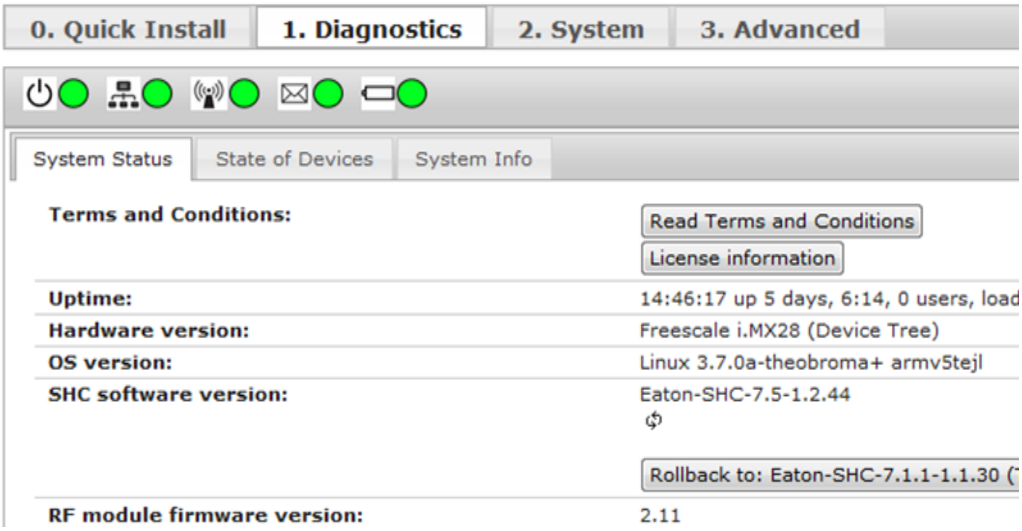
A.2. Update the SHC 1.x to 2.x

1. In case the SHC is activated and a newer SW release is available an Update button will become visible:



   a. Open Tab: **1. System -> *Firmware (SHC 1.1)***
   b. Be sure the Backup of the History Data and System Configuration is done
   c. Click: **Update to: <version>**

   d. Please wait until the popup shows the process is ready! The download and update could take *more than 30 minutes* based on size of the project and the download speed.
   e. Click: **OK**
2. After the SHC 2.x SW update a new version of the RF module firmware should become available. Always install the new firmware in this case the Update button is available:
   a. Open Tab: **1. Diagnostics -> System Status (SHC 2.0 menu)**
   b. Click: **Update to: <version>** ***2.11***
   c. Please wait until the popup shows the process is ready!
   d. Click: **OK**
3. Check if the Linux OS version is up-to-date.
   Always install the new OS in case a Update button is available.
   Linux 3.7.0a-theobroma+ armv5tejl



Appendix B Feedback form

Use this feedback form below to send us your comments. We read all feedback carefully, but please note that we cannot respond to the comments you submit.

Please send your feedback to your local sales contact.

Name: ……..

Email Address: ……..

Used Smartphone, Tablet and browsers:

☐ iPhone App iOS Version:……

☐ iPad App iOS Version:……

☐ Andoid Phone App Android Version:……

☐ Andoid Pad App Android Version:……

☐ Safari Browser Version:……

☐ Google Chrome Browser Version:……

☐ Mozilla Firefox Browser Version:……

☐ Internet Explorer Browser Version:……

☐ Other: ……..

Feedback Type:

☐ Bug Report

☐ Design/Ease of Use

☐ Connectivity/Remote Server

☐ Language-Specific Bug/Issue

☐ Missing/New Functionality

☐ Configurability

Small description of the installation and building:

Comments:
