

Configuration and Image Manual

X2 web

MAEN341
2023-09



Foreword

The information in this document is valid for the latest versions of the panel images at the time the document was released. For information and updates, see <https://www.bejerelectronics.com>.

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1. Introduction

1.1. Safety Precautions

Both the installer and users of the HMI panel must read and understand this manual.

1.2. References

Name	Description
MAEN215	Installation Manual X2 control/motion 7 - B2
MAEN221	Installation Manual X2 control/motion 10 - B2
MAEN225B	Installation Manual X2 control/motion 15 - B2
MAEN251B	Installation Manual X2 extreme 7 HP
MAEN256B	Installation Manual X2 extreme 12 HP
MAEN261B	Installation Manual X2 extreme 15 HP

The installation, technical data, as well as cutout and outline dimensions of the panels, are described in the Installation Manual for each HMI panel. Please refer to the Installation Manual for further information.



NOTE

Current documentation and software updates can be found on <https://www.beijerelectronics.com>

1.3. Open Source Software Notice

To obtain the source code under GPL, LGPL and other open source licenses that are contained in this product, please contact opensource@beijerelectronics.com. In addition to the source code, all referred license terms, warranty disclaimers and copyright notices may be disclosed upon request.

2. Boot

1. Apply power to the HMI panel.
2. Within 15-20 seconds, the **Browser** will appear.

If a start address is defined in the configuration, it will be loaded automatically. Otherwise, you will be directed to the configuration.

The X2 web is pre-configured from factory with a URL to a HTML5 demo page.

2.1. First Time Boot

Configuring Linux root password and Config user PIN

When powering up the X2 web device, first time from delivery, and given you chose to accept the EULA, first activity is to decide the Linux root password. The root user provides customers to login to the device operating system via a ssh terminal. Make sure to choose a strong password, with at least one digit and one letter.

After deciding the root password, a dialog is shown in order to change the default Configtool user password, or PIN. The procedure is as follows:

1. At **Login as ConfigTool User**, input the factory default PIN (The default password from factory is 1234).
2. In the subsequent step, it is required to input the **Admin password**. This password is an additional password, similar to the PUK code on a mobile phone SIM card. The Admin password is printed on the flyer, included in the shipment.



NOTE

The admin password can later be changed in the Settings.

3. With correctly stated Admin password, input the new PIN/Configtool User password, two times consecutively.

The PIN/Configtool User password is now changed.

3. Navigation

To reach the **right-click context menu**, tap the touch surface and keep it pressed for at least 1.5 seconds. A drop-down menu will show with navigation commands.

The following commands are currently implemented:

- Back
- Forward
- Reload

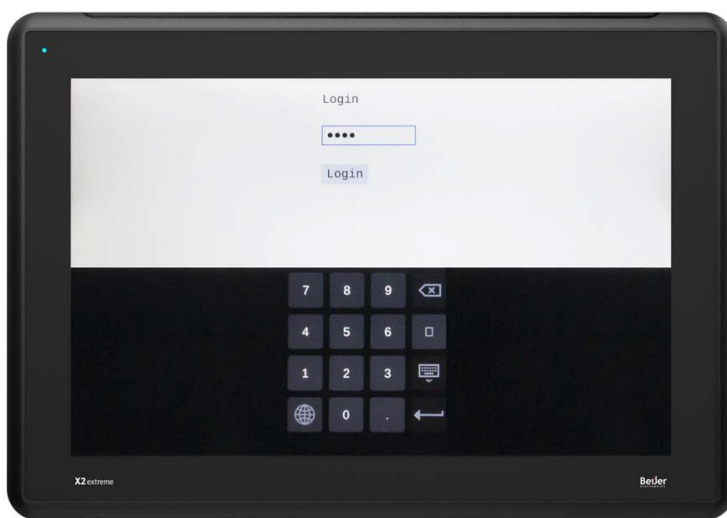
The **right-click context menu** can be disabled or enabled from the **Settings**.

4. Settings

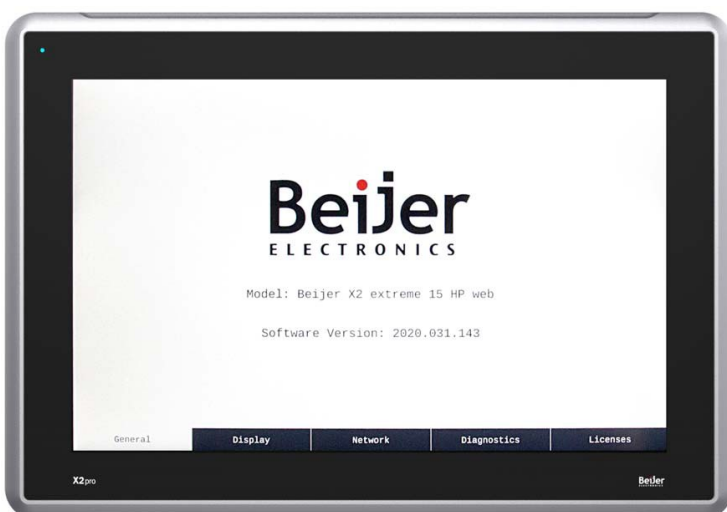
Normally, the X2 web device will browse the default URL on startup.

To access the device settings:

1. Touch the upper, approximately one centimeter area, of the display, and hold it for at least 1.5 seconds.
2. After holding the touch for 1.5 seconds, a button will appear in the upper central part of the screen.
3. Tap/Click on the button to go to **Settings**. Tap/Click outside the button to make the **Settings** button disappear again.



X2 extreme 15 web



X2 pro 15 web

- Default gateway
- DNS settings for the Ethernet port on the HMI panel
- LAN A / LAN B - One config per port (separate tabs in the top of the UI)
 - Method - DHCP or Static.
 - IP
 - Net mask
 - Gateway
 - DNS 1
 - DNS 2
 - Save - Saves the new settings.

The default setting is DHCP.

4.2.2. Diagnostics

Displays the following list of parameters for the panel:

- CPU load
- System uptime
- Memory total
- Memory usage
- SysData usage
- AppData usage

4.3. Settings - Tabs

4.3.1. General

- Model - Model name of the device model.
- Software Version - Currently installed software version.
- Open source license info.

4.3.2. Settings

Tab	Description
URL	Start page
Load page	Makes the browser go to the URL.
Default scale fullscreen	Controls the zoom level and stretching of the web application. This is workaround for known issues in, for instance, Codesys WebVisu. If there are issues with the graphics, setting or resetting this parameter may help solve the problem.
Brightness	Brightness setting for the display (scale 0-100).
Screensaver timeout	Set time before screen saver activates, 30 sek - 10 min.
Activate	Start the screen saver immediately.

Tab	Description
Calibrate touchscreen	Will initialize the calibration of the touch. The touch calibration screen enables the function to recalibrate the touch screen. The recalibration consists of nine steps, where a crosshair on the screen is pressed and held. Take care and try to do this as precise as possible, an incorrect calibration makes it hard to use the HMI panel.
Change password	Click button to change passwords/PIN.
Disable context menu	When checked, the long-press context menu in the browser is disabled.
Certificate Util/ Allowlist	Utility to control white listed URL's as well as adding server certificates from either USB or SD-card.
Ping	Configure firewall to allow for Ping (ICMP) calls.
SSH	Configure firewall to allow for terminal connection over SSH.
Docker	Enable or disable Docker runtime.
Docker Config	Utility menu for Docker, like pruning unused containers etc.
Touch mouse emulation	Emulate touch as mouse input. When enabled, this feature changes the behavior of the touch and only allows for tap/click, i.e., no scrolling or gestures.
Logout	Logout or change current user.
Save button	Saves the URL, your brightness and screen time out.

**NOTE**

Depending on the size of the screen, users may have to scroll down to find all setting parameters in the Display tab.

4.3.3. Apps

With Apps, the X2 web device can be extended with new functionality, providing more than just being a web client. Apps is a packaging format, of one or several containers, that run in the X2 web Docker runtime environment. With Apps, it is simple to deploy and distribute various application solutions that run "under the hood" on the X2 web hardware. Apps requires Docker to be enabled on the X2 web device.

Apps
Add/remove X2 Web apps.

Add apps



No apps installed

Insert USB with the application to install app

General

Settings

Apps

Network

Diagnostic

Installing apps

Apps are distributed as .bapp files, which is a file package, containing manifested information, app icon and other applicable data necessary for the app to install and run.

To install an App,

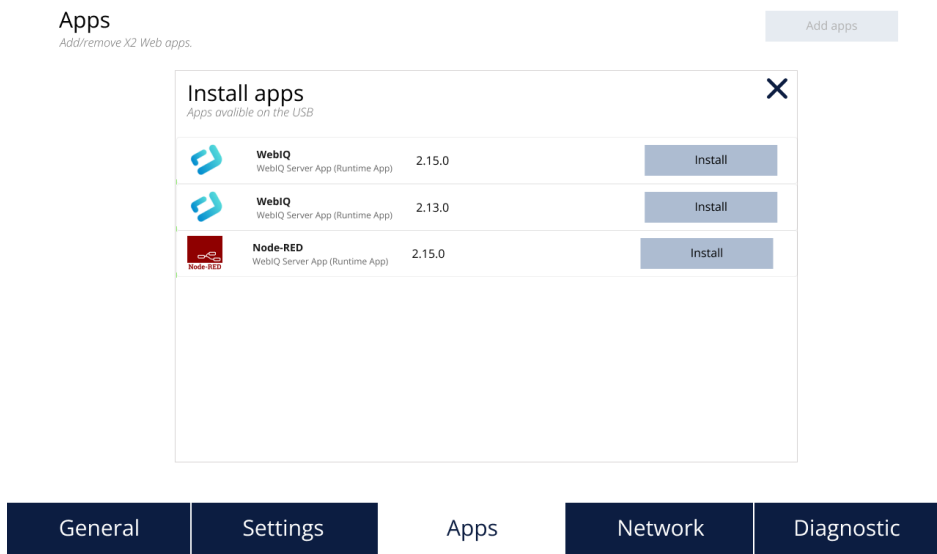
1. Add the .bapp file to a USB flash drive, stored in a folder, "papps", residing on the root of the USB memory.

File path examples

Linux: `/media/[linux-user]/[usb-name]/papps/webiq.bapp`

Windows: `D:\papps\webiq.bapp`

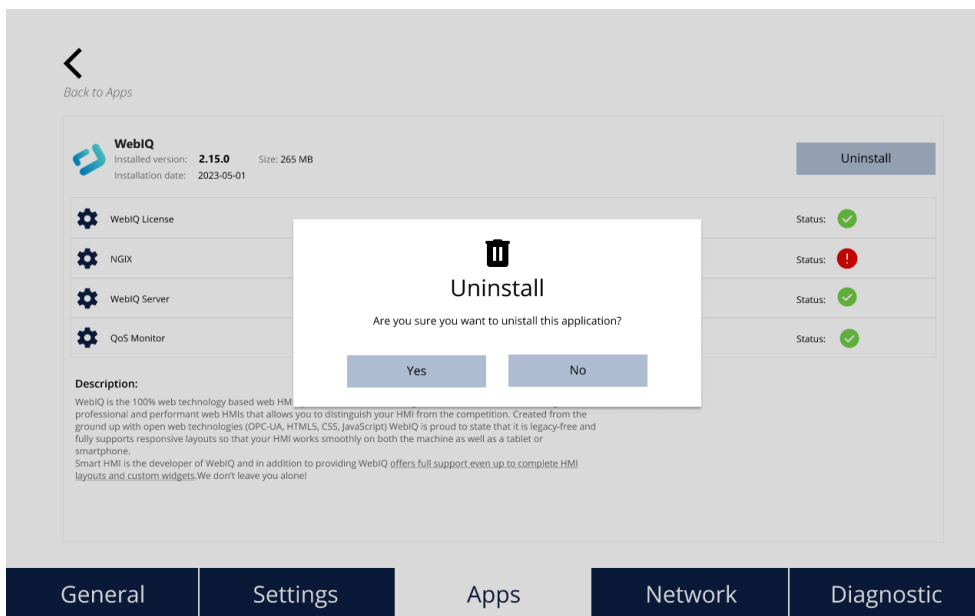
2. Attach the USB memory stick to the X2 web device and login to the device as Admin.
3. From the Apps tab, select **Add app** button and select the App to install by clicking on the **Install** button.



The app installation process will download Docker images from the web, i.e., the X2 web device requires Internet access. The downloading and installation progress is showed while installing the App. Downloading a Docker image for the first time may require several minutes, depending on image size and Internet bandwidth

Remove apps

To remove an app, open the installed app detailed view and click in **Uninstall**. Confirm the uninstall by clicking **Yes** on the subsequent dialog.



4.3.4. Network

The following parameters can be set:

- IP address

- Subnet mask
- Default gateway
- DNS settings for the Ethernet port on the HMI panel
- LAN A / LAN B - One config per port (separate tabs in the top of the UI)
 - Method - DHCP or Static.
 - IP
 - Net mask
 - Gateway
 - DNS 1
 - DNS 2
 - Save - Saves the new settings.

The default setting is DHCP.

4.3.5. Diagnostics

Displays the following list of parameters for the panel:

- CPU load
- System uptime
- Memory total
- Memory usage
- SysData usage
- AppData usage

4.3.6. Licenses

Shows a full table of all the licenses used in the software in terms of:

- Package
- Version
- License

5. Image Update

The HMI panel comes pre-loaded on delivery with an image.

5.1. Updating the Panel Image Using USB/SD Card

To update the image in an HMI panel, use a USB flash drive or an SD card, formatted as FAT32. This makes it possible to upgrade the panel image without the use of a PC.

Do the following:

1. Download the *system-beijer.raucb* file and store it in the root on a USB flash drive or SD card.
2. Attach the USB flash drive or SD card to the device, a dialog will show to install the new version.
3. A dialog will notify when the update is finished.
4. Detach the USB flash drive or SD card and reboot the device.
5. Check the new version number in the **Settings**.



NOTE

The X2 web allows updating either from USB, SD card or via file transfer and manual install, using the command ``rauc install system-beijer.raucb``.

6. Certificate Utility and Allowlist

Connecting the X2 web browser to a server over TLS, which lacks a CA root authority signed SSL certificate is prohibited. To bypass X2 web from blocking, either the URL can be added to a whitelist or users can install the server certificate on the X2 device as a valid server certificate. If a user connects to a web server, where the server lacks a valid certificate, the user will be notified by a message on the screen, 'Insecure Page'. The notifier will be displayed for 10 seconds.

6.1. Adding Certificate From File

In order to add certificates from a file, the following has to apply:

- The USB flash drive or SD card is either vfat or ext3 formatted.
- The USB flash drive or SD card contains a folder with *.crt files. The folder name and location must be /certificates on the USB/SD.

Attach the USB flash drive or SD card to the X2 web device and go to the **Certificate Util/Allowlist** dialog. All certificates found on the drive will be listed in the upper list. Select which certificate to be added, followed by clicking on the **Add** button. If the operation succeeded, the browser will restart. If the operation failed, users will be notified.

6.2. Add Current URL to the Allow List

To add the current URL address to the allow list, simply check the **Add current URL to allowlist** checkbox, followed by clicking the **Add** button. White-listed URL domain addresses are listed in the lower list box. Existing, white-listed, URLs can be removed by selecting it and clicking the **Remove** button.

7. Device reset

A device reset will restore the operating system to a factory-like state, but to the latest updated version. If the device has been continuously following the release cadence, and being updated whenever Beijer Electronics has released a new version of the X2 web OS image, the reset will restore the software to the latest upgraded version - as if it had been installed in the factory. This means all changes of settings parameters, Docker containers, SSH keys, etc., will be removed. Also, the root user password will be reset and required to be recreated after rebooting the device.

As a security measure, the reset will only execute given the device serial number has been stated. The device serial number is printed on a label, on the back of the X2 web device.

The Device reset procedure can be reached from either the Settings, with Administrator authorization, or from a cold reboot while simultaneously keeping the touch display pressed during startup.

7.1. Resetting the device from Settings

1. Login to the Settings as Administrator,
2. Go to Settings and scroll down and press the button **Device reset**,
3. Follow the procedure in the subsequent menu.

7.2. Resetting the device from cold boot

1. Power off the X2 web device,
2. Press down the touch panel with at least one finger, while simultaneously power up the device,
3. Keep the touch pressed until the Device reset menu appears,
4. Continue the device reset procedure following the instructions.