

# Beijer ELECTRONICS X2 Base V2 HMI Terminal with Touch Screen User Manual

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Image Manual X2 base v2

MAEN352,  
2021-01

## User's Guide for Image Manual X2 base v2

### 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.beijerelectronics.com>.

Order no: MAEN352

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## **Beij er Electronics, MAEN352**

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## **Introduction**

### **Safety Precautions**

Both the installer and the owner and/or operator of the operator panel must read and understand the manual.

### **Warning, Caution, Information, and Tip Icons**

This publication includes Warning, Caution, and Information where appropriate to point out safety-related or other important information. It also includes tips to point out useful hints to the reader. The corresponding symbols should be interpreted as follows:

	The electrical warning icon indicates the presence of a hazard which could result in electrical shock.
	The warning icon indicates the presence of a hazard that could result in personal injury.
	The caution icon indicates important information or warning related to the concept discussed in the text. It might indicate the presence of a hazard that could result in corruption of software or damage to equipment/property.
	Information icon alerts the reader to pertinent facts and conditions.
	Tip icon indicates advice on, for example, how to design your project or how to use a certain function.

## Trademarks

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Any additional trade names given in this documentation are trademarks of their corresponding owners.

## References

Name	Description
MAEN328	Installation Manual X2 base 5 v2
MAEN329	Installation Manual X2 base 7 v2
MAEN330	Installation Manual X2 base 7 v2 HP
MAEN331	Installation Manual X2 base 10 v2
MAEN332	Installation Manual X2 base 10 v2 HP
MAEN333	Installation Manual X2 base 15 v2 HP

The installation, technical data as well cutout and outline dimensions of the panels are described in the installation manual for each operator panel. Please refer to the Installation manuals and the iX Developer manual for further information.

## Note:

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

## Operating Systems

Panel family	Runtime Versions (licenses)	Description
X2 base v2 X2 base v2 HP	Windows Embedded Compact 2013 Runtime (General embedded)	Includes support of most €

## Boot

### Welcome Screen

1. Apply power to the operator panel.
2. Within 10–15 seconds, the Welcome Screen will appear.

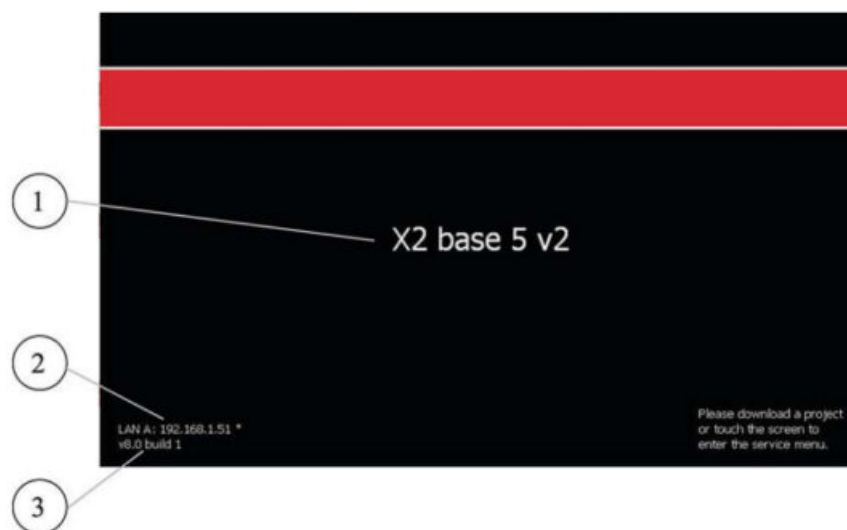
The following items about the operator panel are listed:

- Size of internal memory card, if applicable
- IP address
- Panel image version

If a project has been downloaded to the panel, it will be loaded automatically.

If there is no project in the panel, touching the screen will display the Service Menu.

If there is an SD card inserted into the panel, and the project on the SD card differs from what is saved in the operator panel, then the user is asked if the project and IP settings should be restored.



Position	Description
1	Panel type.
2	Network status. An attached network cable is indicated with an asterisk.
3	Panel image main version and build number.

## Service Menu

The service menu for the operator panel can be accessed before a project is downloaded.

### **Service Menu in an Empty Panel**

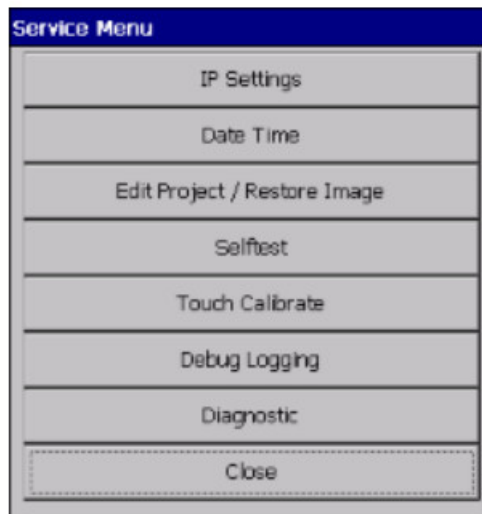
When no project is loaded in the panel memory, the panel will boot, displaying the Welcome screen.

- Press anywhere on the panel display to enter the service menu.

### **Service Menu in a Panel containing a project**

Perform the following steps to enter the service menu:

1. Apply power to the panel.
2. When the hourglass appears, press a finger on the screen and hold for approximately 20 seconds.
3. If the service menu is password-protected, you will be prompted for a pin code.  
Enter pin code.
4. The touch calibration screen will display the following message:  
“Tap anywhere on-screen or touch calibrate will start in 10 seconds.”
5. Press the screen once again to enter the service menu.



### **IP Settings**

The following parameters can be set:

1. IP address
2. Subnet mask
3. Default gateway
4. DNS settings for the Ethernet port on the operator panel

The default settings for LAN A is: IP address 192.168.1.1, Subnet mask 255.255.255.0

IP Settings

LAN A | LAN B

☐ Obtain an IP address via DHCP  
☒ Specify an IP address

IP Address: 192.168.1.1  
Subnet mask: 255.255.255.0  
Default Gateway:  
Primary DNS:  
Secondary DNS:

OK Cancel Apply

IP Settings

LAN A | LAN B

☒ Obtain an IP address via DHCP  
☐ Specify an IP address

IP Address: 192.168.11.53  
Subnet mask: 255.255.255.0  
Default Gateway: 192.168.11.1  
Primary DNS:  
Secondary DNS:

OK Cancel Apply

If the operator panel is equipped with two Ethernet ports, then a second tab is shown in the IP settings dialog. The default setting for LAN B is "Obtain an IP address via DCHP".

## Date / Time

Date/Time Settings

Time Zone  
[UTC-08:00] Pacific Time (US & Canada)

☒ Automatically adjust clock for daylight saving

Current Time  
04:17:30

Calendar view showing June 2016 with the 8th selected.

OK Cancel

The date/time settings dialog allows the setting of the Timezone, date, and time and also set automatic adjustment of the clock for daylight saving.

## Edit Project

Edit Project / Restore Image

Copy Project from External Memory  
Copy Project to SD Card  
Copy Project to USB Memory  
Delete Project from Panel  
Restore Panel to Previous Image  
Restore Panel to Factory Image

Back

The edit project/restore image dialog allows modifying the project in an operator panel and, if needed, restoring the panel image to the previous version.

## Copy Project from External Memory

This option enables the function to copy an iX Developer project from external memory, USB flash drive, or storage device connected to one of the operator panels' USB ports.

## Copy Project to SD Card

This option enables the function to copy the iX Developer project and all the files needed to run the application to an external SD Card.

## Copy Project to USB

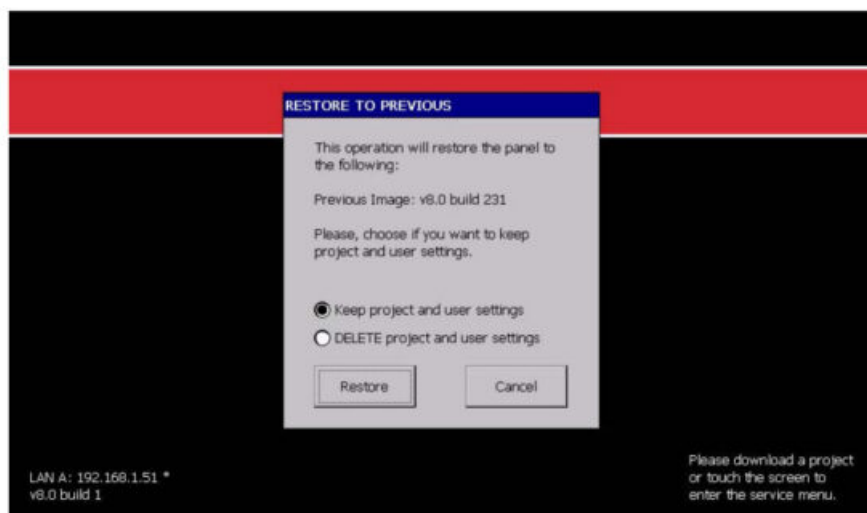
The iX Developer project and all the files needed to run the application are copied to an external USB flash drive or another USB-connected storage device. Make sure that the storage device is connected before trying this option.

## Delete Project

The iX Developer project and all its corresponding files are deleted from the operator panel. There is no way of undeleting a project, make sure that the project should be deleted before confirming the deletion.

## Restore Panel to Previous Image

The operator panel image can be restored to the panel image version the operator panel was using before a new panel image was loaded into the operator panel. This option is used to restore a panel to a known working condition.



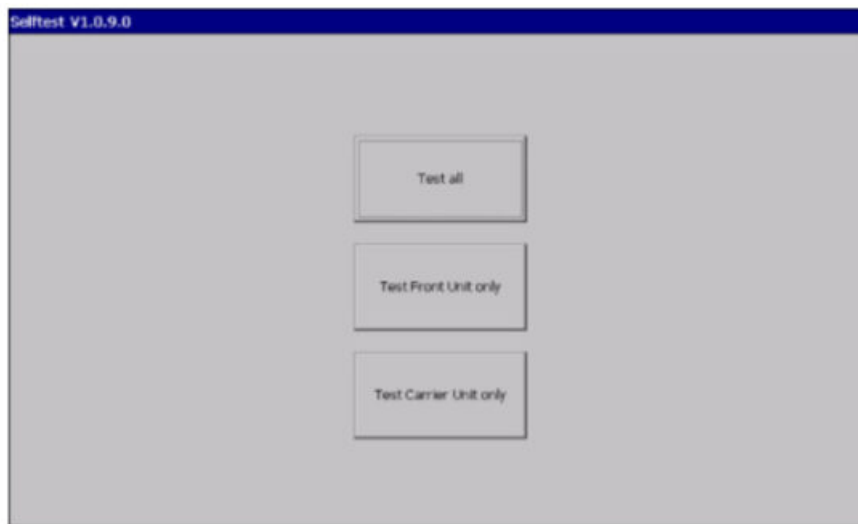
## Restore Panel to Factory Image

The operator panel image can be restored to the panel image version that the operator panel was shipped with from the factory. Use this option if all else fails, this will downgrade the operator panel to its initial state.

## Self Test

The self-test screen looks a little different depending on the operator panel type.

To be able to fully test the Carrier unit, a complete set of test plugs, SD-card, and a USB flash drive is needed.

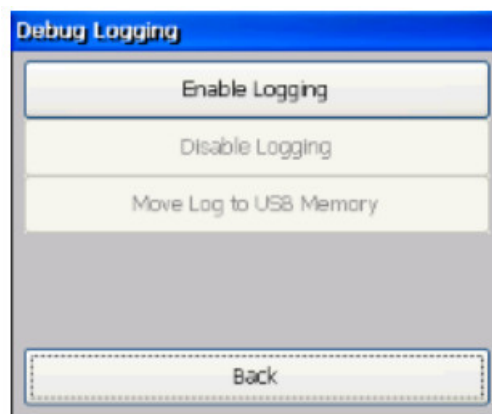


## Touch Calibrate

The touch calibration screen enables the function to recalibrate the touch screen.

The recalibration consists of five steps, where a crosshair on the screen is pressed and held. Take care and try to do this as precisely as possible, an incorrect calibration makes it hard to use the operator panel.

## Debug Logging



The Debug Logging dialog enables the function to enable and disable the debug logging on the operator panel. It also enables the function to move a previously created set of debug log files from the operator panel to a USB flash drive.

Option	Description
Enable Logging	The operator panel will start or continue to store additional debug log information in log file panel's internal memory. If the log files are filled to the limit, the oldest file will be overwritten. This function should only be used for a limited time, as it will continuously write data to the
Disable Logging	The operator panel stops storing debug log data. The data will remain in the operator panel's internal memory.
Move Log to USB Memory	Moves the debug log files in the operator panel to an external USB storage device.

## Diagnostic

Diagnostics		
<b>DIAGNOSTICS:</b> Boot count: 864 Running time: 850.1 h Backlight time: 706.5 h CPU temperature: 50°C CPU temp. range: -72°C to 83°C Board temperature: 40°C Board temp. range: -71°C to 60°C CPU overtemp. time: 0.0 h Board overtemp. time: 0.0 h Image restore count: 1 Flash memory life used: 0% - 10% Battery status: GOOD  <b>IMAGE/BOOT LOADER INFORMATION:</b> Factory image: v8.0 build 249 Previous image: v8.0 build 249 Current image: v8.0 build 249 Current boot loader: v8.0 build 249  <b>PANEL INFO:</b> Hardware ID: 95 Hardware version: N/A Brand ID: 8 Brand name: IX Panel Brand type: X2 base 15 v2 MP Product ID: 0 OS version: 8 Device type: 6 OEM ID: 0 Serial number: 123456-00014 Thing ID: XX-XXXX-XXXX-XXXX-16B2		
<b>SYSTEM BOARD:</b> Type: T15F3EXT (9) Variant: High Performance (1) BvRevisions: 2 CPU type: AM3352 (4) Feature bits: 0x001F Mbrd. Serial-#: 1009194473  <b>DISPLAY CARD:</b> Panel resolution: 1360x768 px  <b>SELFTEST:</b> CPU prod.temp. range: 49°C to 79°C Board prod.temp. range: 41°C to 80°C Front test: [PASSED] Display [PASSED] Touch [PASSED] Backlight [PASSED] EEPROM  <b>System board test</b> [PASSED] RS232 [PASSED] RS422 [PASSED] RS485 [PASSED] USB [PASSED] Ethernet 1 [PASSED] SD Card [PASSED] Configuration  <b>Summary</b> [PASSED] RS232		
Settings	License	Save to USB memory Close

Category	Description
Diagnostics	Shows how many times the operator panel has been started, how long the operating panel has been running, measured temperatures, and the wear of the flash memory.
Image Information	Displays a list of the panel images available on the operator panel.
Panel Information	Shows the make, model, and revision of the operator panel.
System Board	Shows hardware information of the System board in the operator panel.
Display Card	Shows hardware information of the Display card in the operator panel.
Selftest	Shows the result of the last self-test.

Diagnostics

[PASSED] RS422  
[PASSED] RS485  
[PASSED] RAM/NVRAM  
[PASSED] Real Time Clock  
[PASSED] EEPROM  
[PASSED] Core temperature  
[PASSED] Touch  
[PASSED] Backlight  
[PASSED] Display  
[PASSED] USB  
[PASSED] Ethernet 1  
[PASSED] SD Card  
[PASSED] Configuration

IP address: N/A  
IP mask: N/A  
Gateway: N/A  
DHCP: Enabled  
MAC address: 00-50-6C-0F-82-92

SERIAL PORTS:  
COM1: [ RS232 ] [None]  
COM2: [unknown] [None]  
COM3: [ RS485 ] [None]  
COM4: [ RS232 ] [None]  
COM5: [unknown] [None]  
COM6: [ RS485 ] [None]

Virtual COM ports (FTDI) [serial no]:  
COM7: [A105Q304]

FOLDERS:  
Path Size Free Free  
\\ 127.77 MiB 127.51 MiB 99%  
\\FlashDrive 3.26 GiB 3.26 GiB 99%

MEMORY:  
RAM: 275.53 MiB 252.29 MiB 91%

NETWORK INTERFACES:  
Adapter name: LAN A  
IP address: 192.168.1.51  
IP mask: 255.255.255.0  
Gateway: N/A  
DHCP: Not enabled  
MAC address: 00-50-6C-0F-82-92  
  
Adapter name: LAN B

Settings License Save to USB memory Close

Category	Description
Selftest cont.	Shows the result of the last self-test.
Summary of flash drive storage	Shows a summary of the flash drive storage status.
Network adapters	Shows IP configurations and MAC addresses for the network adapters in the operator panel.

#### Note:

The information (layout and number of screens) on the diagnostic screen pages appear differently depending on screen size. The screenshots above are taken from an X2 base 15 v2 **HP** operator panel.

#### Export Diagnostic Information

Click Save to USB memory to export the diagnostic information to an external USB flash drive or another USB-connected storage device. Make sure that the storage device is connected before trying this option.

#### Image Update

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

iX Runtime can be updated via Ethernet using a PC.

The Image Loader utility is used to create Image Loader SD cards and USB sticks or to transfer a panel image to an operator panel over Ethernet.

External Memory

Copies necessary files to a external memory. When ready, insert in panel and cycle power to initiate the update.

Select drive:

▼

Create

☐ Make Recovery SD Card

Note: SD recovery should only be used under special circumstances, see Manual. Updating the EBOOT is normally not needed and special care must be taken when doing this update to ensure that power is uninterrupted.

Ethernet

Sends the update through Ethernet. Panel will reboot automatically when the transfer is finished.

Target IP:

192.168.99.150

Update

0 %

Ready

The IML can be updated in the following ways:

Update method	iX Developer project remains	IP address remains
Ethernet	X	X
USB	X	X
SD	X	X
Recovery SD Card	—	—

If you want a complete system update, choose Make Recovery SD Card. The iX Developer will then be set to default settings, except for touch.

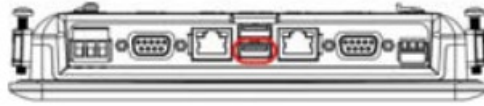
#### Updating the Panel Image using USB or SD-Card

##### preferred way

Using a USB flash drive or SD card to update the image in an operator panel is the preferred method of updating the panel. This makes it possible to upgrade the panel image without the use of a PC.

##### Note:

It is only the primary USB port that can be detected during start-up and therefore this USB port must be used. For HP models this is the port closest to the display. See figure.



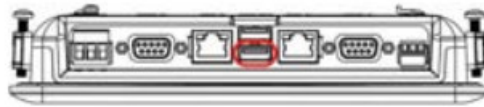
### Image + New iX Developer Project

It is possible to upgrade both the panel image and the iX Developer project on an operator panel. This is done in two steps:

1. Create a panel image USB flash drive or SD-card using the Image Loader utility.
2. Export the iX Developer project from within iX Developer, to that same USB flash drive or SD card.

#### **Note:**

It is only the primary USB port that can be detected during start-up and therefore this USB port must be used. For HP models this is the port closest to the display. See figure.



### Updating the Panel Image over Ethernet

The Image Loader utility can be used to upgrade the panel image over Ethernet.

#### **Note:**

Before trying to update the panel over Ethernet, make sure that your PC is on the same IP subnet as the operator panel. If your panel has an IP address of 192.168.1.1, and a netmask of 255.255.255.0, then your PC has to have an IP address in the range of 192.168.1.2 – 192.168.1.254 and a netmask of 255.255.255.0, in order to be able to communicate with the panel.

To enter the update mode on an iX TxA or X2 base, press a finger on the screen and apply power to the panel.

1. Enter the panel target IP address in the dialog and click on Update to start the update.

**External Memory**  
Copies necessary files to a external memory. When ready, insert in panel and cycle power to initiate the update.

Select drive:

☐ Make Recovery SD Card

Note: SD recovery should only be used under special circumstances, see Manual. Updating the EBOOT is normally not needed and special care must be taken when doing this update to ensure that power is uninterrupted.

**Ethernet**  
Sends the update through Ethernet. Panel will reboot automatically when the transfer is finished.

Target IP:

Ready

2. Make sure that the IP address of the panel matches the actual panel that you want to upgrade.

Do you want to update?

This will update the panel at 192.168.99.150.

**Make sure the power to the panel is not interrupted during the update!**

3. The dialog shows the currently installed image and the new image the panel will be updated to after the upgrade. Click on Update now! to confirm the update.

Version information

Installed version: v8.0 build 1

New version: v8.0 build 449

4. The progress bar shows the upgrade status. When the upgrade is done, the panel will restart.

### External Memory

Copies necessary files to a external memory. When ready, insert in panel and cycle power to initiate the update.

Select drive:

▼

Create

☐ Make Recovery SD Card

Note: SD recovery should only be used under special circumstances, see Manual. Updating the EBOOT is normally not needed and special care must be taken when doing this update to ensure that power is uninterrupted.

### Ethernet

Sends the update through Ethernet. Panel will reboot automatically when the transfer is finished.

Target IP:

192.168.99.150

Update

37947/70645 kB 2037 kB/s

53 %

Sending files...

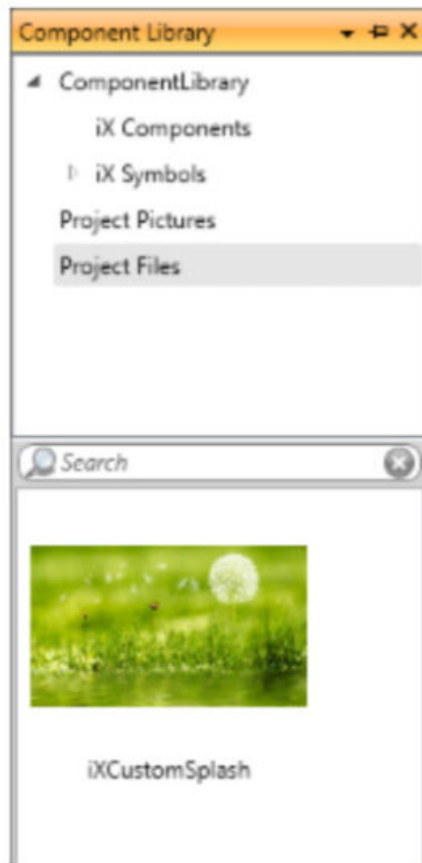
### iX Developer Project Status after Panel Image Update

On X2 base v2 the iX Developer project is unchanged after a panel image update is performed. If the panel image upgrade is made over Ethernet, an additional dialog will pop up to confirm an erasing of the current iX Developer project. The default setting is not to erase the iX Developer project.

### Creating a custom Welcome Screen

The default Welcome Screen on an X2 operator panel, with the exception of the X2 base, can be replaced with a custom picture.

- Create a start-up picture with the following characteristics:
  - Size: The exact same resolution as the panel the picture will be used in
  - Name: iXCustomSplash.bmp
  - Picture format: .bmp
- Create an iX Developer project for the panel you want to replace the Welcome Screen on.
- Add the picture to the project's **Project Files**.



4. Download the project to the operator panel.
5. Reboot the panel to load the new Welcome Screen.


**Tip:**

To check the panel resolution, start iX Developer, and in the wizard select the correct panel type, and then check the technical data displayed for the operator panel.



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## Documents / Resources

	<p><a href="#">Beijer ELECTRONICS X2 Base V2 HMI Terminal with Touch Screen</a> [pdf] User Manual          X2 Base V2 HMI Terminal with Touch Screen, X2, Base V2, HMI Terminal with Touch Screen</p>
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## References

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