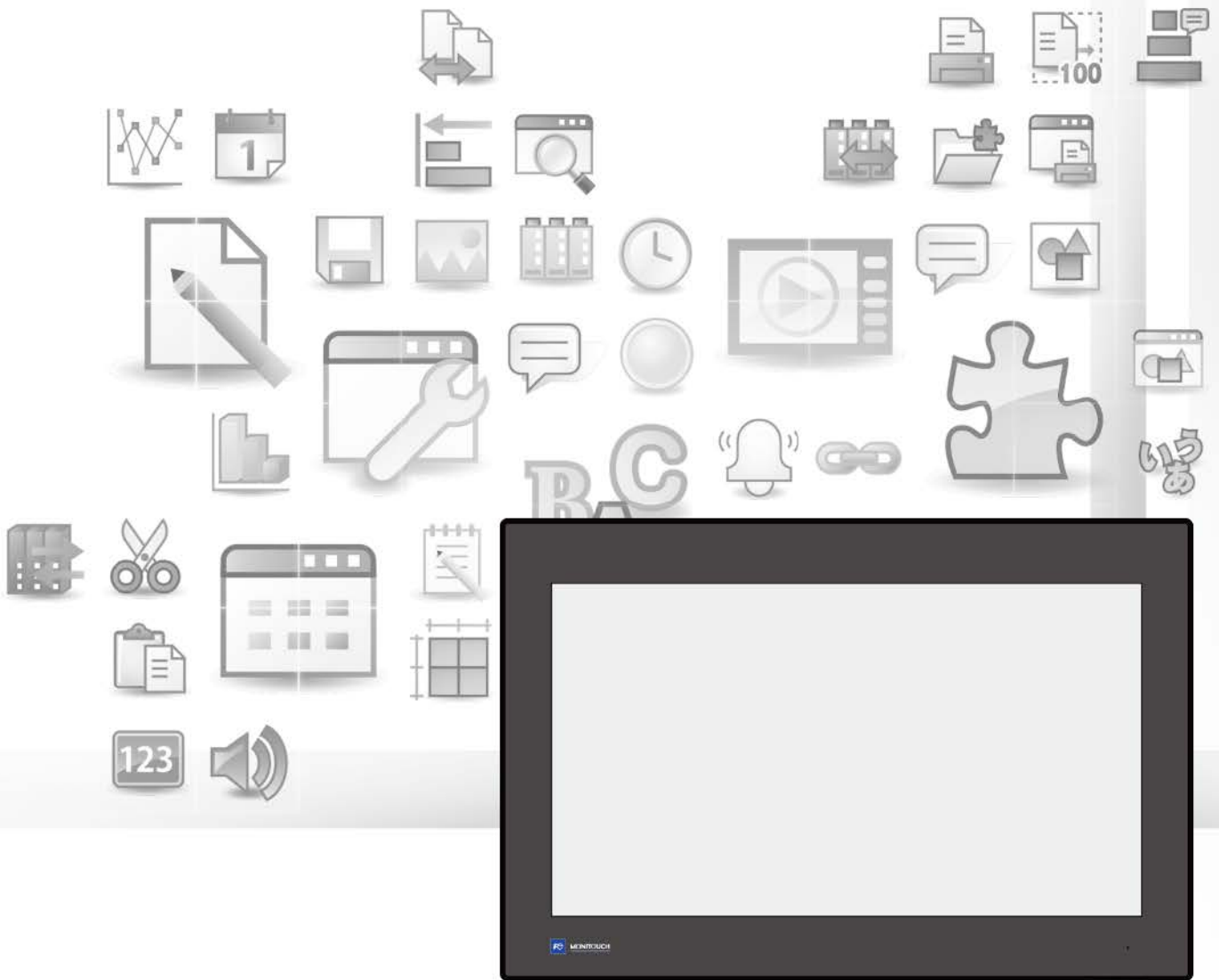


MONITOUCH

Setup Manual



X1 Series

Record of Revisions

Reference numbers are shown at the bottom left corner on the back cover of each manual.

Printing Date	Reference No.	Revised Contents
December, 2020	1092NE0	First edition
April, 2021	1092NE1	Second edition • Partial modifications

Preface

Thank you for selecting the MONITOUCH X1 series.

This manual provides an overview of the X1 series and describes the procedure for setting up a brand new X1 series unit for operation and transferring a created screen program.

For correct use of the X1 series, you are requested to read through this manual and understand the contents.

For details on other operating procedures for the X1 series, refer to the following related manuals.

Manual Name	Contents	Reference No.
X1 Series Reference Manual 1	Explains the functions and operation of the X1 series.	1090NE
X1 Series Reference Manual 2		1091NE
X1 Series Setup Manual (this manual)	Explains the X1 series setup procedure, the installation procedure of V-SFT version 6, the creation process of basic screen programs as well as how to transfer a created screen program using V-SFT version 6.	1092NE
X1 Series Hardware Specifications	Explains precautions for handling, hardware specifications and operating procedures and provides an error list for the X1 series.	2024NE
X1 Series Connection Manual 1	Explains the connection and communication parameters for the X1 series and controllers in detail.	2217NE
X1 Series Connection Manual 2		2218NE
X1 Series Connection Manual 3		2219NE

For details about controllers (PLCs, temperature controllers, etc.), refer to the manual issued by each controller manufacturer.

Notes:

1. This manual may not, in whole or in part, be printed or reproduced without the prior written consent of Hakko Electronics Co., Ltd.
2. The information in this manual is subject to change without prior notice.
3. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and other countries.
4. All other company names or product names are trademarks or registered trademarks of their respective holders.
5. This manual is intended to give accurate information about MONITOUCH hardware. If you have any questions, please contact your local distributor.

Notes on Safe Usage of MONITOUCH

In this manual, you will find various notes categorized under the following levels with the signal words "DANGER" and "CAUTION".



DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and could cause property damage.

Note that there is a possibility that items listed with  CAUTION may have serious ramifications.



DANGER

- Never use the output signal of the X1 series for operations that may threaten human life or damage the system, such as signals used in case of emergency. Please design the system so that it can cope with a touch switch malfunction. A touch switch malfunction may result in machine accidents or damage.
- Turn off the power supply when you set up the unit, connect new cables, or perform maintenance or inspections. Otherwise, electrical shock or damage may occur.
- Never touch any terminals while the power is on. Otherwise, electrical shock may occur.
- The liquid crystal in the LCD panel is a hazardous substance. If the LCD panel is damaged, do not ingest the leaked liquid crystal. If leaked liquid crystal makes contact with skin or clothing, wash it away with soap and water.
- Never disassemble, recharge, deform by pressure, short-circuit, reverse the polarity of the lithium battery, nor dispose of the lithium battery in fire. Failure to follow these conditions will lead to explosion or ignition.
- Never use a lithium battery that is deformed, leaking, or shows any other signs of abnormality. Failure to follow these conditions will lead to explosion or ignition.
- Switches on the screen are operable even when the screen has become dark due to a faulty backlight or when the backlight has reached the end of its service life. If the screen is dark and hard to see, do not touch the screen. Otherwise, a malfunction may occur resulting in machine accidents or damage.



CAUTION

- Check the appearance of the unit when it is unpacked. Do not use the unit if any damage or deformation is found. Failure to do so may lead to fire, damage, or malfunction.
- For use in a facility or as part of a system related to nuclear energy, aerospace, medical, traffic equipment, or mobile installations, please consult your local distributor.
- Operate (or store) the X1 series under the conditions indicated in this manual and related manuals. Failure to do so could cause fire, malfunction, physical damage, or deterioration.
- Observe the following environmental restrictions on use and storage of the unit. Otherwise, fire or damage to the unit may result.
 - Avoid locations where there is a possibility that water, corrosive gas, flammable gas, solvents, grinding fluids, or cutting oil can come into contact with the unit.
 - Avoid high temperatures, high humidity, and outside weather conditions, such as wind, rain, or direct sunlight.
 - Avoid locations where excessive dust, salt, and metallic particles are present.
 - Avoid installing the unit in a location where vibrations or physical shocks may be transmitted.
- Equipment must be correctly mounted so that the main terminal of the X1 series will not be touched inadvertently. Otherwise, an accident or electric shock may occur.
- Tighten the mounting screw on the fixtures of the X1 series to an equal torque of 7.08 lbf-in (0.8 N•m). Excessive tightening may distort the panel surface. Loose mounting screws may cause the unit to fall down, malfunction, or short-circuit.
- Check periodically that terminal screws on the power supply terminal block and fixtures are firmly tightened. Loosened screws or nuts may result in fire or malfunction.
- Tighten the terminal screws on the power supply terminal block of the X1 series to an equal torque of 4.43 to 5.31 lbf-in (0.5 to 0.6 N•m). Improper tightening of screws may result in fire, malfunction, or other serious trouble.
- The X1 series has a glass screen. Do not drop the unit or impart physical shocks to the unit. Otherwise, the screen may be damaged.
- Correctly connect cables to the terminals of the X1 series in accordance with the specified voltage and wattage. Overvoltage, overwattage, or incorrect cable connection could cause fire, malfunction, or damage to the unit.
- Always ground the X1 series unit. The FG terminal must be used exclusively for the X1 series unit with the level of grounding resistance being 100 Ω or less. Failure to do so may result in electric shock, fire, prevent correct touch operations or cause malfunctions.
- Prevent any conductive particles from entering the X1 series. Failure to do so may lead to fire, damage, or malfunction.

CAUTION

- Do not attempt to repair, disassemble, or modify the X1 series unit yourself. Contact Hakko Electronics or the designated contractor for repairs.
- Do not repair, disassemble, or modify the X1 series unit. Hakko Electronics Co., Ltd. is not responsible for any damages resulting from repair, disassembly, or modification of the unit that was performed by an unauthorized person.
- Do not use sharp-pointed tools to press touch switches. Doing so may damage the display unit.
- Only experts are authorized to set up the unit, connect cables, and perform maintenance and inspection.
- Lithium batteries contain combustible material such as lithium and organic solvents. Mishandling may cause heat, explosion, or ignition resulting in fire or injury. Read the related manuals carefully and correctly handle the lithium battery as instructed.
- Take safety precautions during operations such as changing settings when the unit is running, forced output, and starting and stopping the unit. Any misoperations may cause unexpected machine movement, resulting in machine accidents or damage.
- In facilities where the failure of the X1 series could lead to accidents that threaten human life or other serious damage, be sure that such facilities are equipped with adequate safeguards.
- When disposing of the X1 series, it must be treated as industrial waste.
- Before touching the X1 series, discharge static electricity from your body by touching grounded metal. Excessive static electricity may cause malfunction or trouble.
- There is a heat sink in the back side of the unit which becomes hot during operation. Take care not to touch during operation.
- Capacitive touch switches are used. Note the following limitations.
 - Use a safety extra-low voltage (SELV) power supply for 24 VDC models. Using the X1 series with an unstable power supply may result in incorrect touch switch activation.
 - Because capacitive touch switches are susceptible to the effects of conductors, do not place conductors, such as metal, near the panel screen or use the touch switch panel when the screen is wet. Otherwise, malfunctions may occur.
 - Calibration is performed upon turning the power on. Do not touch the screen for 10 seconds immediately after turning the power on. Otherwise, malfunctions may occur.

[General Notes]

- Never bundle control cables or input/output cables with high-voltage and large-current carrying cables such as power supply cables. Keep control cables and input/output cables at least 200 mm away from high-voltage and large-current carrying cables. Otherwise, malfunction may occur due to noise.
- When using the X1 series in an environment where a source of high-frequency noise is present, it is recommended that the FG shielded cable (communication cable) be grounded at each end. However, when communication is unstable, select between grounding one or both ends, as permitted by the usage environment.
- Be sure to plug connectors and sockets of the X1 series in the correct orientation. Failure to do so may lead to damage or malfunction.
- If a LAN cable is inserted into the serial communication connector, the device on the other end may be damaged. Check the connector names on the unit and insert cables into the correct connectors.
- Do not use thinners for cleaning because it may discolor the X1 series unit surface. Use commercially available alcohol.
- Clean the display area using a soft cloth to avoid scratching the surface.
- If a data receive error occurs when the X1 series unit and a counterpart unit (PLC, temperature controller, etc.) are started at the same time, read the manual of the counterpart unit to correctly resolve the error.
- Avoid discharging static electricity on the mounting panel of the X1 series. Static charge can damage the unit and cause malfunctions. Discharging static electricity on the mounting panel may cause malfunction to occur due to noise.
- Avoid prolonged display of any fixed pattern. Due to the characteristic of liquid crystal displays, an afterimage may occur. If prolonged display of a fixed pattern is expected, use the backlight's auto OFF function.
- The X1 series is identified as a class-A product in industrial environments. In the case of use in a domestic environment, the unit is likely to cause electromagnetic interference. Preventive measures should thereby be taken appropriately.
- The signal ground (SG) and frame ground (FG) are connected inside the X1 series unit. Take care when designing systems.
- The X1 series is equipped with a battery that contains lithium metal and therefore observance of transport regulations is necessary. Hakko Electronics ships X1 series units packed in accordance with transport regulations. If there is a need to transport an X1 series unit after it is once unpacked, transport the unit in accordance with the IATA Dangerous Goods Regulations, International Maritime Dangerous Goods (IMDG) Code, and transport regulations of the countries concerned. Ask your forwarding agent for details of transport regulations.

[Notes on the LCD]

Note that the following conditions may occur under normal circumstances.

- The response time, brightness, and colors of the X1 series may be affected by the ambient temperature.
- Tiny spots (dark or luminescent) may appear on the display due to the characteristics of liquid crystal.
- Unevenness in brightness and flickering may occur depending on the screen display pattern due to the characteristics of liquid crystal.
- There are variations in brightness and color between units.
- Display colors may vary depending on the viewing angle because a converging lens is used in the backlight unit.

[Notes on the Capacitive Touch Switch]

- Touch switches may be unresponsive if touched with dry fingers. In such a case, use a capacitive stylus pen.
- Touch switches are calibrated each time the power is turned on. Do not touch the screen for 10 seconds immediately after turning the X1 series on. Otherwise, malfunctions may occur.
- When a metal object is near a touch switch for 5 minutes or longer, the touch switch is calibrated to recognize that state as the default state. Note that after the metal object is removed, the touch switch will become inoperable.
- Water droplets or conductive material can cause the sensor to make a false detection and lead to malfunctions.
- When using multi-touch operations, points must be at least 3 cm apart. Points may not be recognized if in close proximity of each other.
- In an environment with excess noise, the responsiveness of touch switches may be lowered and the point that responds may deviate by up to 1 cm. Implement measures such as adding a filter to the input power supply.
- Periodically clean the touch panel surface for optimum touch operations.
When cleaning, take note of the following points.
<When cleaning>
 - The panel surface is made of glass. Be sure to clean the surface gently with a cloth or sponge. Otherwise, you may scratch or damage the glass.
 - Take care not to let cleaning detergent seep into the touch panel unit.
Do not directly apply or spray cleaning detergent on the panel surface.

[Notes on the Operating System (OS) and Scope of Operation Guarantee]

- The operating system (OS) used on this product is the Windows 10 IoT Enterprise LTSC by Microsoft. Therefore, Windows Update is not applicable to this OS. Also, the apps Cortana, Microsoft Edge, Microsoft Store, and UWP are not supported.
- Custom user apps for use on Windows can be used on this product. Hako Electronics does not guarantee the operation of apps installed by the customer. Make sure to thoroughly check the operation before actual use.
- Hako Electronics shall not be held responsible for dealing with trouble or liable for damages stemming from Microsoft products while using this product. When trouble occurs with a Microsoft product or there is a need to check the specifications, refer to the manual of the Microsoft product or contact Microsoft. Refer to the following website to contact Microsoft.
<https://support.microsoft.com/ja-jp/contactus/>

[Notes on Turning Power Off]

The System Configurator built into the X1 series unit provides a write filter function. When the write filter function is enabled, the power of the X1 series unit can be turned off suddenly without damaging system files. If the write filter function is disabled, the shutdown procedure is necessary. Perform the shutdown procedure on System Configurator and after waiting for at least 15 seconds from when the screen has gone out, turn the X1 series unit power off.

[Notes on the Built-in Solid-state Drive (SSD)]

- The X1 series unit has a built-in SSD (C drive). Do not change partitions or split the drive.
- 3D NAND is used in the built-in SSD of the X1 series unit. Keep in mind the service life of the SSD.

[Notes on the Battery]

The X1 series unit has a built-in battery which is used for backing up time data and BIOS settings (retention during power outage). The battery must be replaced within three years after the unit is purchased. Note that the X1 series unit can start up in the same way as usual even if time data and BIOS settings are lost. Time data is reset to the default value in such a case. Set again as necessary.

[Notes on Wireless LAN]

For details regarding supported wireless LAN standards, radio law certifications, and countries where wireless LAN can be used, refer to the "X1 Series Notes on Wireless LAN" manual provided with the X1 series unit at delivery.

[Notes on the Startup Time]

Since a Windows OS is used, the startup time differs depending on the devices that are connected and software that is additionally installed.
Carefully consider devices and software before use.

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1 Overview

1.1 Introduction

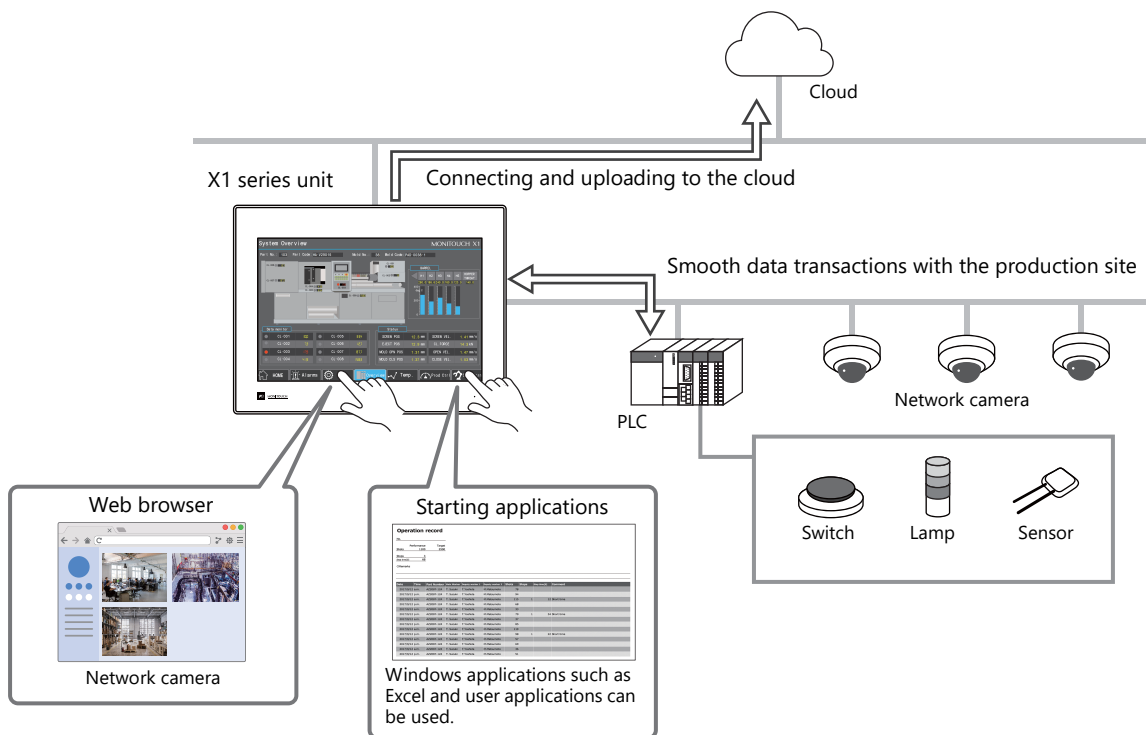
1.1.1 Features

The X1 series is equipped with a Windows operating system and features the connectivity and flexibility that is called for as an edge controller, which connects the FA site and IT systems.

The features of the X1 series are as follows.

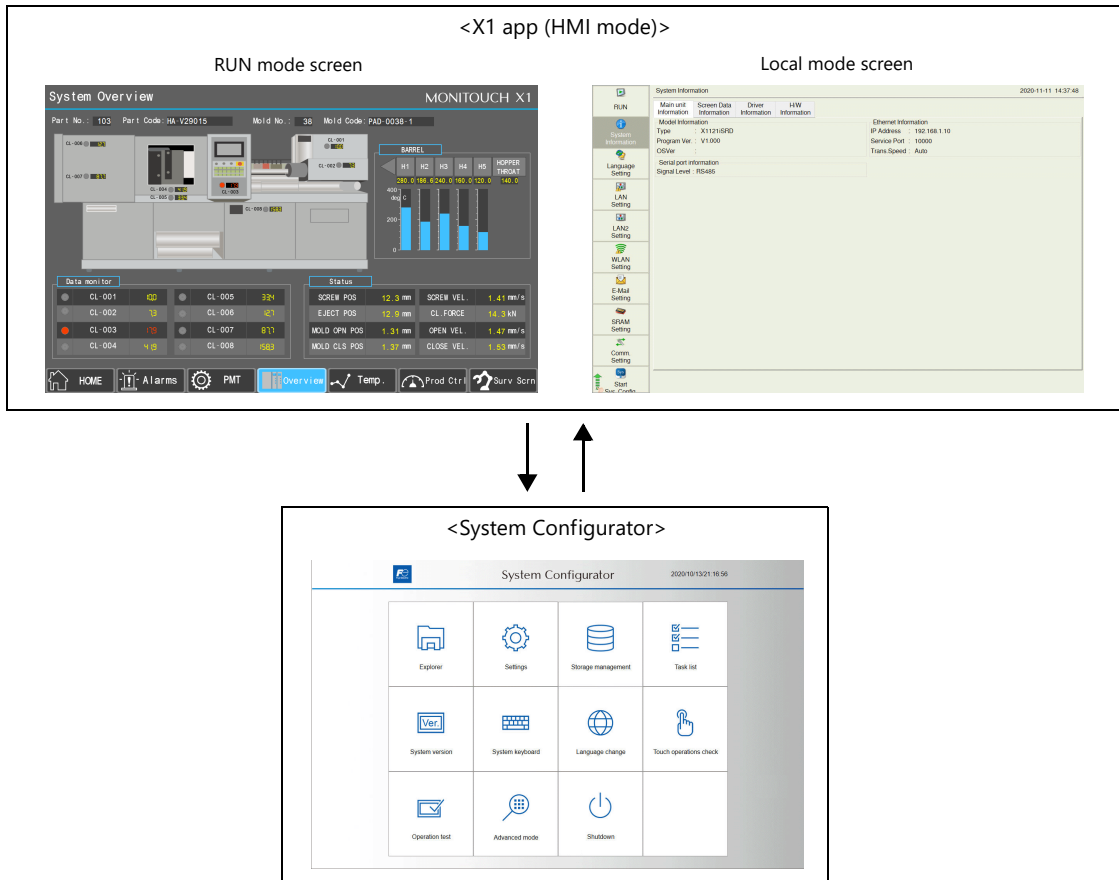
- In addition to the control functions as a human machine interface (HMI) for operating and monitoring equipment on the production site, the X1 series features OPC UA and MQTT connection functions and serves to link data of the FA site with an upper layer IT system and a cloud service.
- Improved visibility and operability are achieved by adopting a high speed CPU, high resolution LCD, and PCAP (projected capacitive) touch switches.
- Vector rendering is now supported to achieve high quality images even when zoomed in/out on parts.
- A Windows operating system is installed, enabling the use of Windows applications and user applications at the production site. Applications can be easily started by a switch placed on the HMI mode screen of the X1 series unit.
- Screen programs created for use on the V series can be converted and used on the X1 series.
The existing V-SFT version 6 screen configuration software is used to create programs.

Operation Scheme




1.1.2 Operation Modes

The X1 series features the X1 app (HMI mode) for operating and monitoring equipment and the System Configurator which is used to display Explorer and configure various Windows functions which are frequently accessed, such as IP address settings.



System Configurator starts when the power is turned on to a brand new X1 series unit. The X1 app can be started up upon power on by changing [Startup settings (operation mode)] setting to [HMI] in System Configurator.

 For details on setting up a brand new X1 series unit, refer to ["Setting Procedure \(For a new unit\)"](#) page 2-2.

1.1.3 Write-filter Function

The write-filter function prevents (filters) data writing operations in the system area of the X1 series unit internal storage. The X1 series is equipped with a Windows operating system, which primarily needs to be shut down before turning the power off.

By filtering the system area with the write-filter function, the X1 series can withstand a power off that occurs without performing the shutdown procedure in advance. The X1 series unit can start up normally again since the data and system are protected and not corrupted by the sudden power off.

By default, [Write-filter setting] is set to [Valid] (writing prohibited).

The [Write-filter setting] needs to be set to [Invalid] when writing to the system area is necessary, such as when displaying Explorer or changing IP address settings.

 For details, refer to ["Invalidating the Write Filter Setting"](#) page 2-3.



Shutdown operation


When [Write filter setting] is set to [Invalid], be sure to press the [Shutdown] switch in System Configurator. Turn the power off 15 seconds after the screen goes out.

When [Write filter setting] is set to [Invalid] and the power is turned off without pressing the [Shutdown] switch, the file system may become damaged and recovery may be impossible.


2 X1 Setup Procedures

2.1 Procedure before Operation

1. Mount and install the X1 series unit on the mounting panel, and perform wiring.

 For details, refer to the X1 Series Hardware Specifications.

2. Install peripheral devices, such as PLCs and temperature controllers, and perform wiring.

 For wiring and setting procedures, refer to the X1 Series Connection Manual.

3. Turn on the X1 series unit power.

4. If turning on the X1 series unit for the first time, configure the initial settings.

 For details, refer to ["2.2 Setting Procedure \(For a new unit\)" page 2-2](#).


If the X1 series unit has been used before, check and change the IP address as necessary.

 For details, refer to ["2.3 Setting Procedure \(For an existing unit\)" page 2-9](#).

5. If V-SFT version 6 is not installed on the computer, install it.

 For details, refer to ["3.1 About V-SFT Version 6" page 3-1](#).

6. Configure a screen program and transfer the program to the X1 series unit via Ethernet.

 For details on configuring screen programs, refer to ["3.2 Starting and Creating a New Screen Program" page 3-6](#).

For details on transferring screen programs, refer to ["4 Transfer" page 4-1](#).

7. Start operation.

When a connection with controllers has been established, the X1 series unit enters RUN mode.

* If the X1 series unit does not operate normally and shows an error message, refer to the X1 Series Hardware Specifications and eliminate the cause of the error.

2.2 Setting Procedure (For a new unit)

For a brand new X1 series unit, the sequence from power on up to transferring a screen program is as shown below.



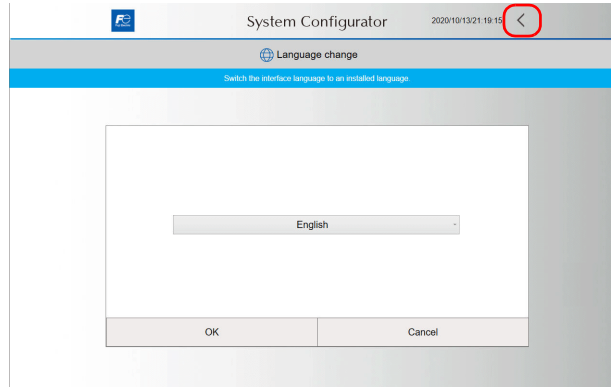
2.2.1 System Configurator

Invalidating the Write Filter Setting

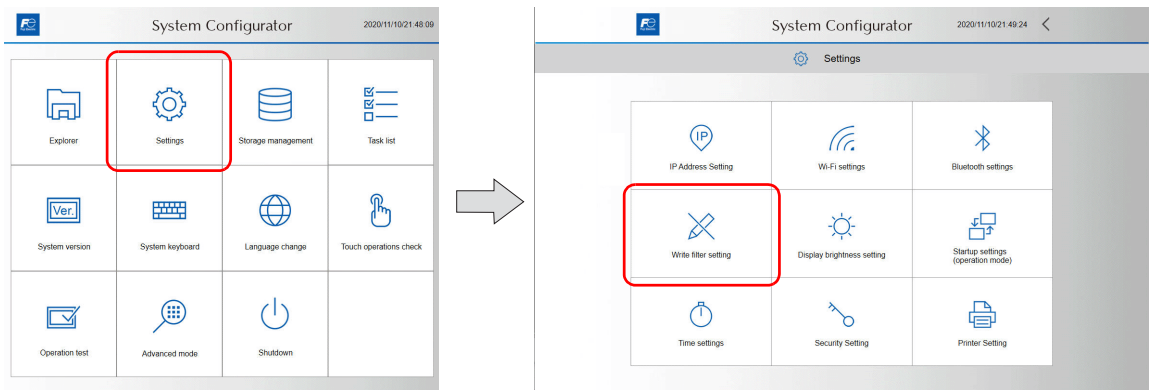
System Configurator starts when the power is turned on to a brand new X1 series unit.

When selecting the interface language or setting the IP address, [Write filter setting] needs to be set to [Invalid] beforehand. (Default: [Write filter setting] is set to [Valid].)

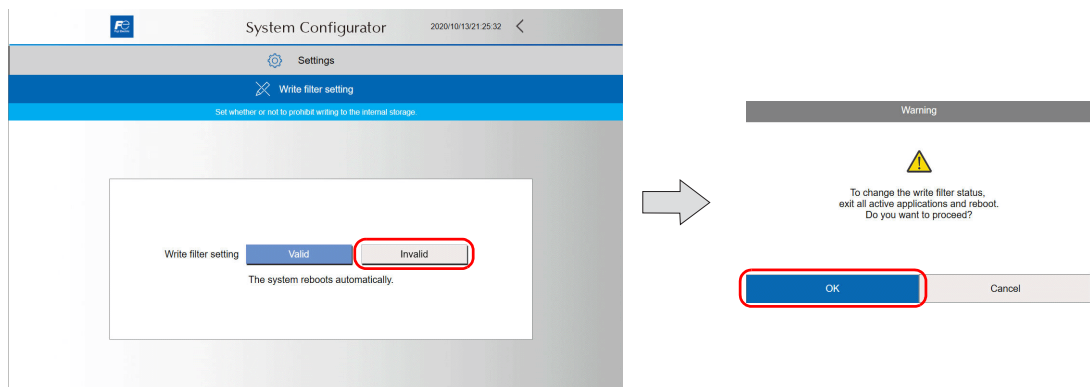
1. Turn ON the X1 series unit power. System Configurator starts and the language change screen is displayed. Press [<] at the top of the screen.



2. Press [Settings] → [Write filter setting].



3. Press [Invalid].
The following dialog appears. Press [OK] to reboot the X1 series unit.

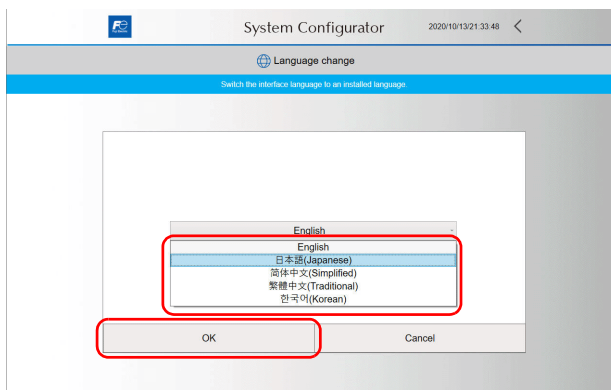


Language Change

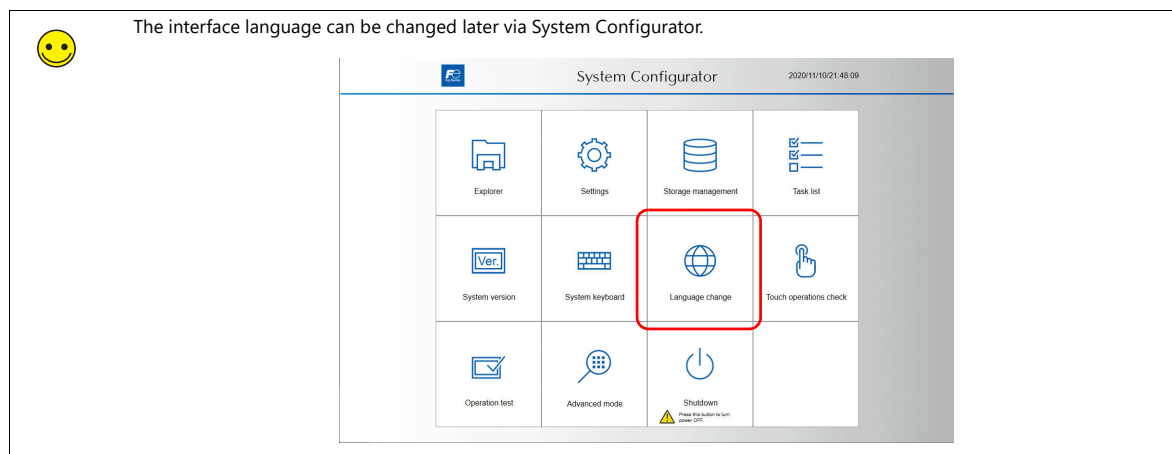
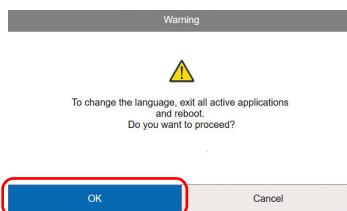


The setting cannot be changed when [Write filter setting] is set to [Valid].
Set [Settings] → [Write filter setting] to [Invalid]. Refer to “Invalidating the Write Filter Setting” page 2-3.

1. On the rebooted X1 series unit, System Configurator starts and the language change screen is displayed. Select the interface language and press [OK].



2. The following dialog appears. Press [OK] to reboot the X1 series unit.

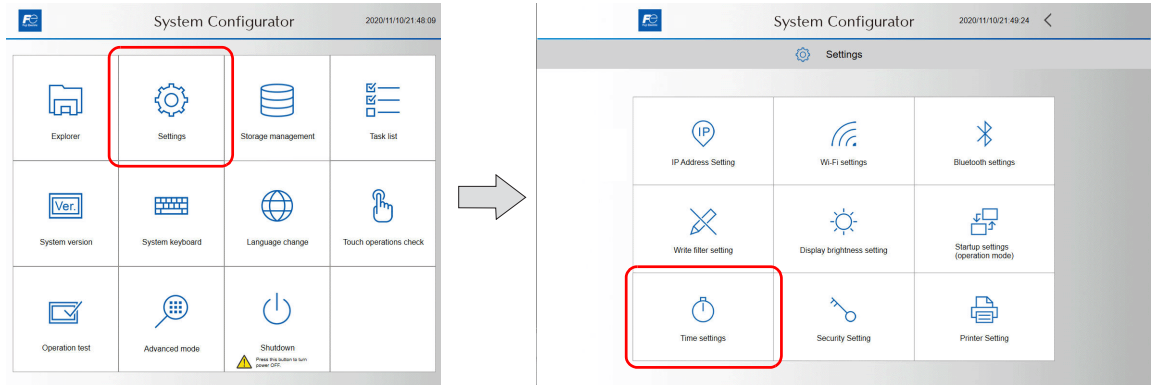


Time Settings

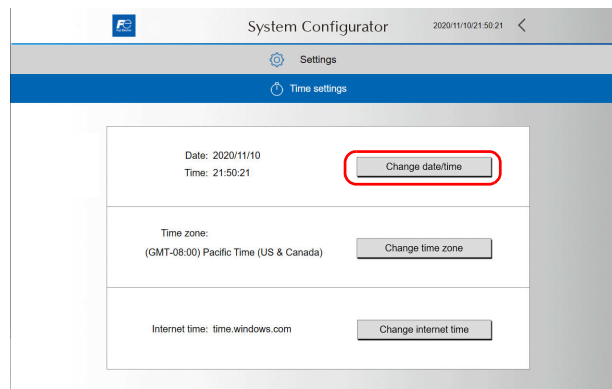


The setting cannot be changed when [Write filter setting] is set to [Valid].
Set [Settings] → [Write filter setting] to [Invalid]. Refer to “Invalidating the Write Filter Setting” page 2-3.

1. Press [Settings] → [Time settings].

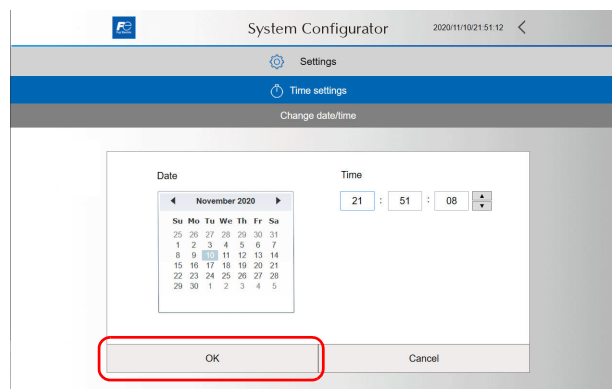


2. Press [Change date/time].

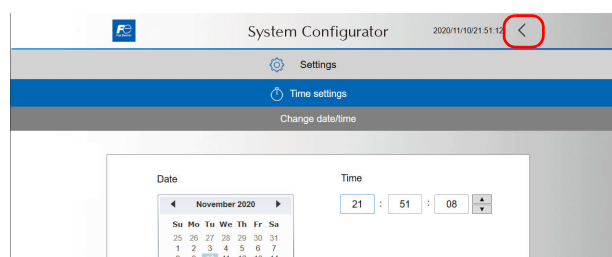


For details on the [Change time zone] and [Change internet time] switches, refer to the X1 Series Hardware Specifications.

3. Set the current date and time and press [OK].



4. Press [<] at the top of the screen twice to return to the home screen.



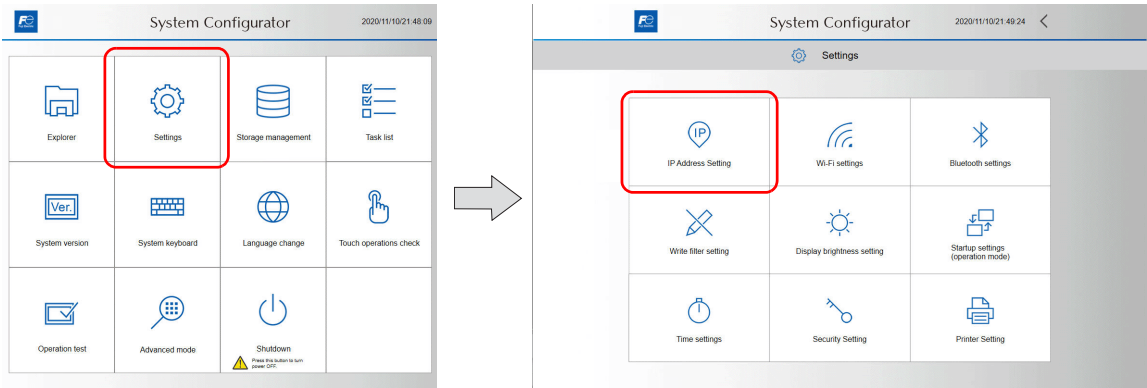
IP Address Setting

Set the IP address of the X1 series unit to enable screen program transfer via Ethernet.

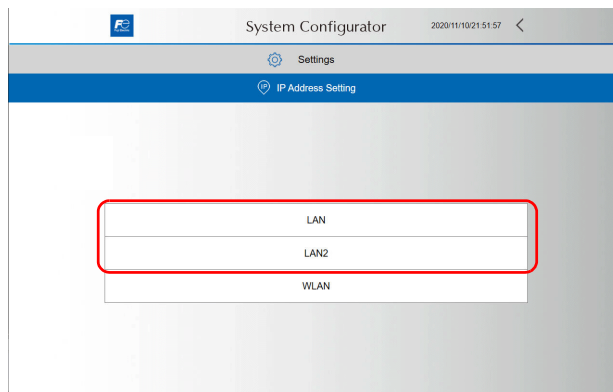


The setting cannot be changed when [Write filter setting] is set to [Valid]. Set [Settings] → [Write filter setting] to [Invalid]. Refer to “Invalidating the Write Filter Setting” page 2-3.

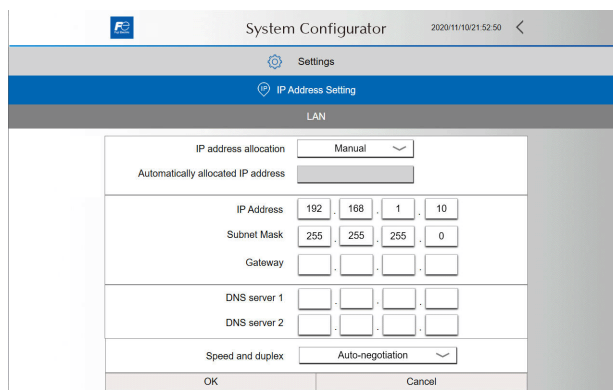
1. Press [Settings] → [IP Address Setting].



2. Press [LAN] or [LAN2].



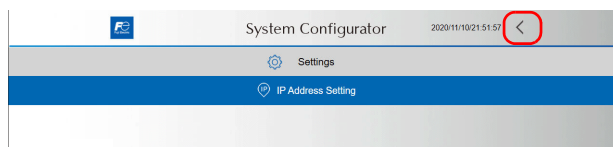
3. After configuring settings, press [OK] to confirm.*



For details on setting the IP address, refer to the X1 Series Hardware Specifications.

* In order to input numbers, either connect a USB keyboard or display the system keyboard on the X1 series unit. For details on the system keyboard, refer to “Displaying the system keyboard” page 2-7.

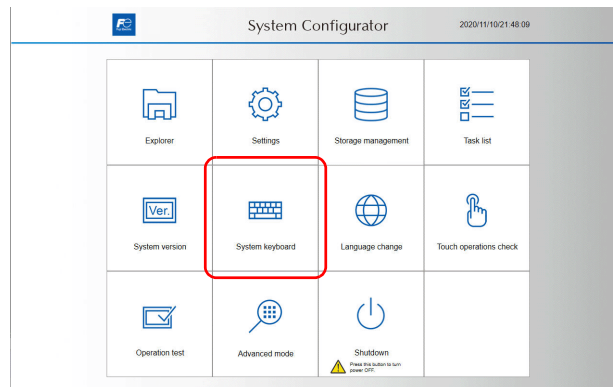
4. The IP address setting screen is displayed. Press [<] at the top of the screen twice to return to the home screen.



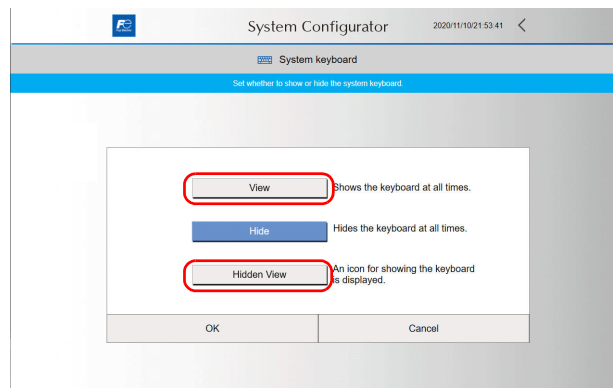
Displaying the system keyboard

The system keyboard can be used to input characters on System Configurator.
Display the system keyboard by the following procedure. (Default: System keyboard is hidden.)

1. Press [System keyboard].

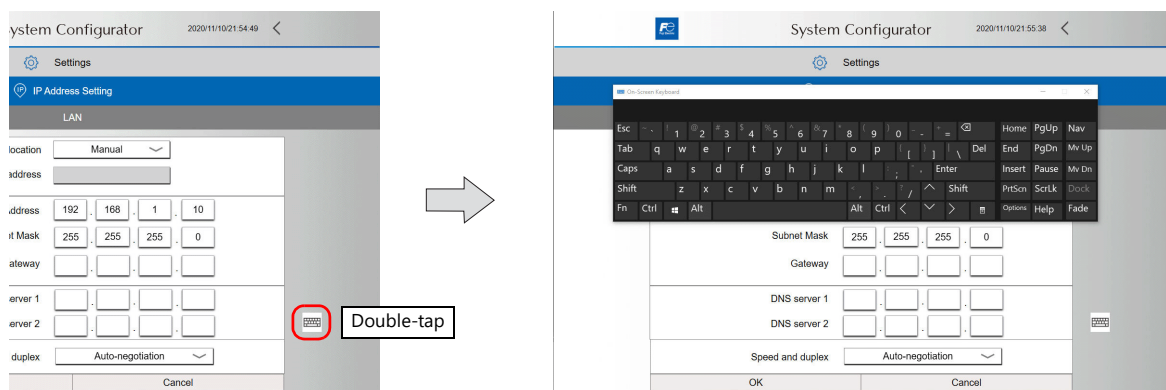


2. Press [View] or [Hidden View] and then press [OK].

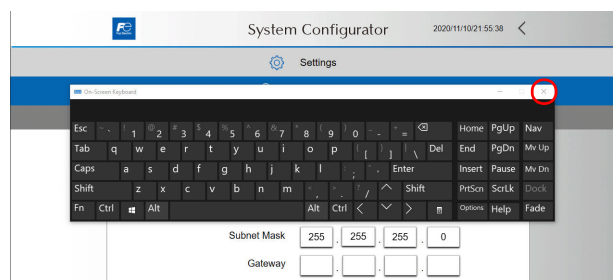


<Hidden view mode>

An icon is displayed as indicated below. Double-tap the icon to display the system keyboard.
The location of the icon can be changed by dragging.

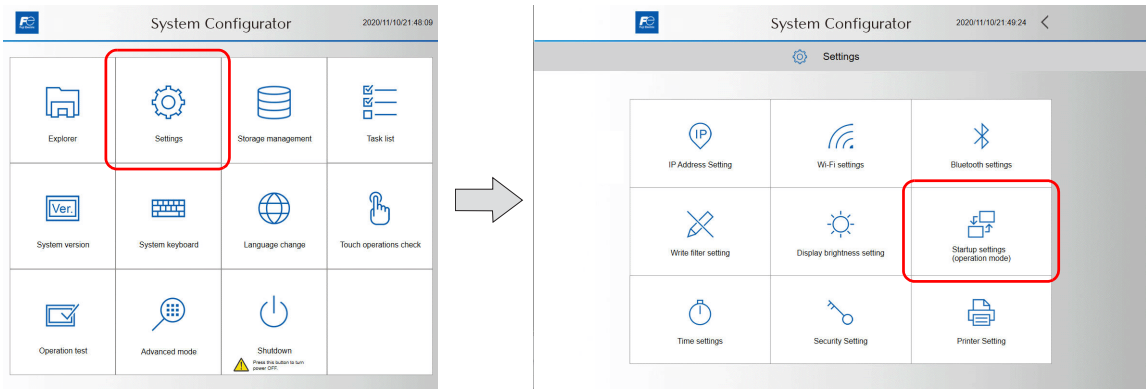


Hide the system keyboard by pressing [X] at the top right of the system keyboard.

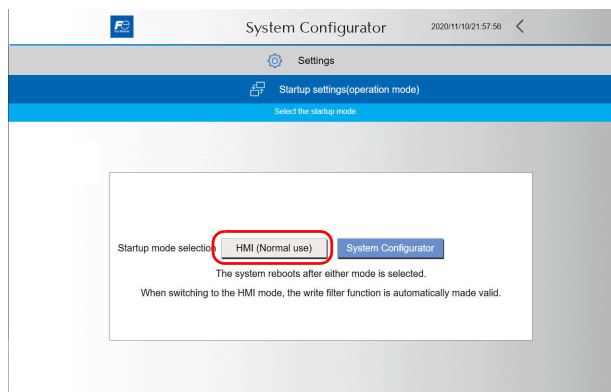


Changing [Startup settings (operation mode)] to [HMI (Normal use)]

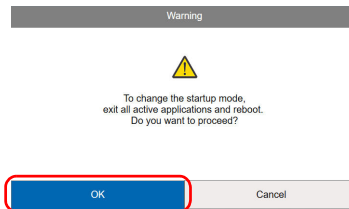
1. Press [Settings] → [Startup settings (operation mode)].



2. Press [HMI (Normal use)].



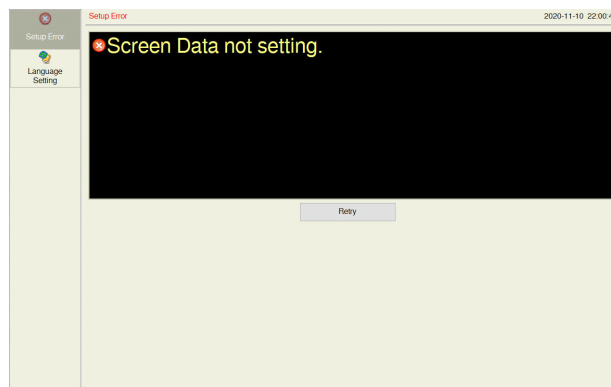
3. The following dialog appears. Press [OK] to reboot the X1 series unit.



When [Startup mode selection] is changed from [System Configurator] to [HMI (Normal use)] on the startup settings (operation mode) screen, the following occur.

- [Write filter setting] is automatically set to [Valid].
- The X1 app starts up from the next boot-up.

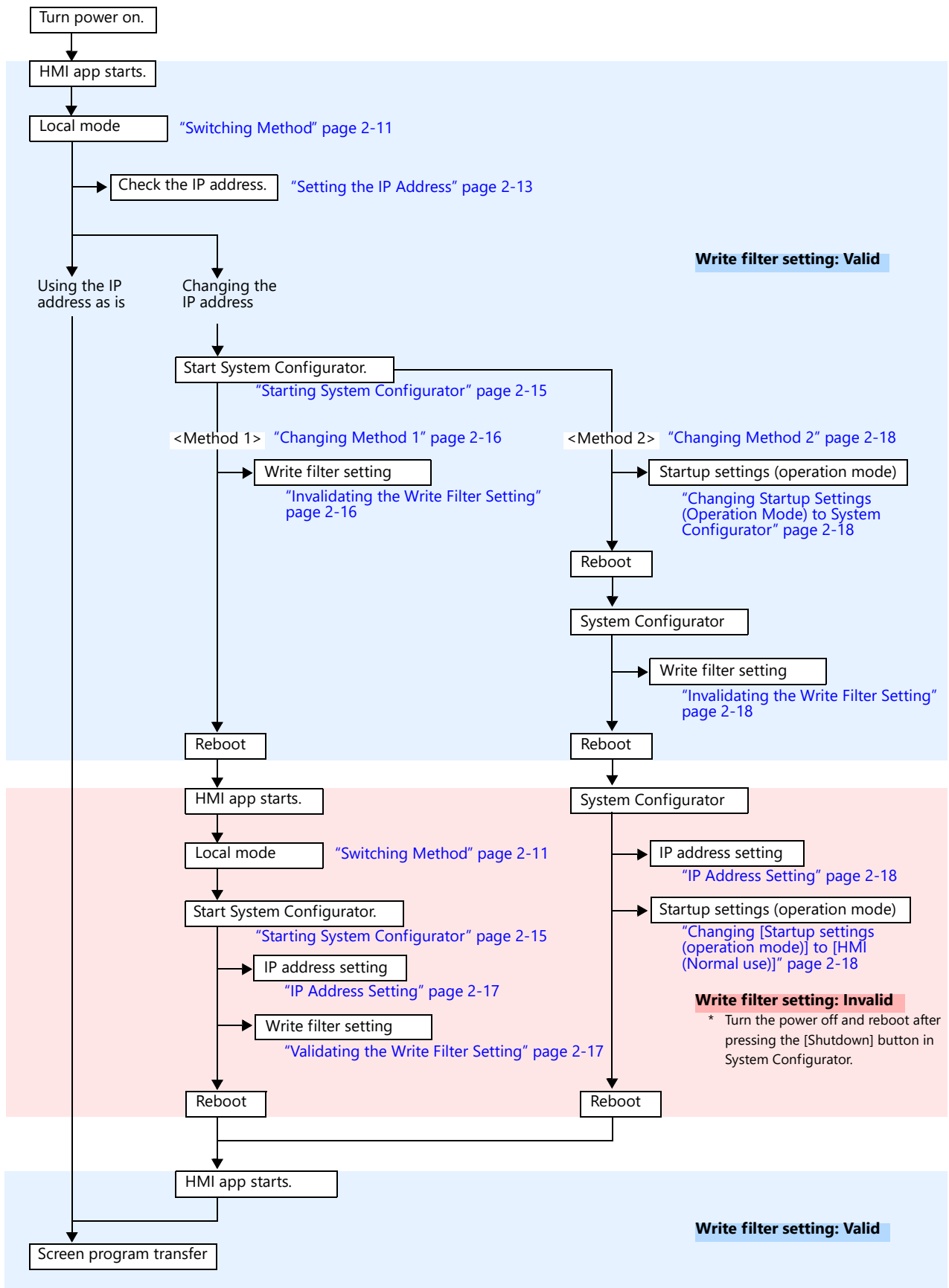
4. The X1 series unit reboots and the X1 app starts. The "Screen Data not setting" error is displayed.



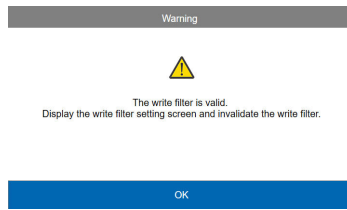
The screen program can now be transferred to the X1 series unit.

2.3 Setting Procedure (For an existing unit)

For an existing X1 series unit, the sequence from power on up to transferring a screen program is as shown below. The IP address can be changed by starting System Configurator from Local mode.*¹



- *1 When [Write filter setting] is set to [Valid] (writing prohibited), some System Configurator settings cannot be changed. If setting changes are attempted for such items with [Write filter setting] set to [Valid] (writing prohibited), the following warning is displayed. Change [Write filter setting] to [Invalid] (writing allowed) and then change the setting.

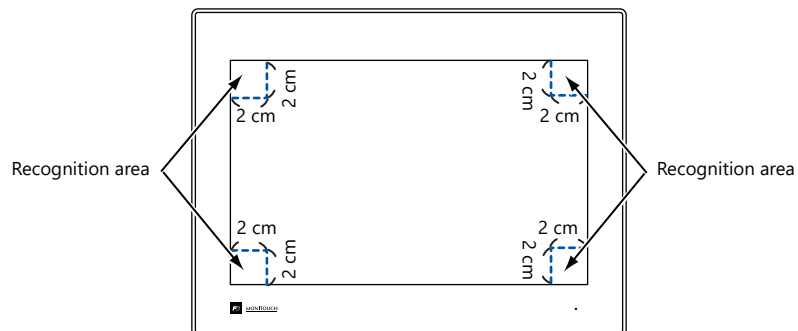


Item		Setting Change when [Write filter setting] is [Valid]	Supplementary Remarks	
Explorer		Disabled		
Settings	IP Address Setting	LAN LAN2 WLAN	Disabled	A warning is displayed when the [OK] switch is pressed.
	Wi-Fi settings	Station	Disabled	
	Bluetooth settings		Disabled	
	Write filter setting		Enabled	Reboot after setting change.
	Display brightness setting		Disabled	A warning is displayed when the [OK] switch is pressed.
	Startup settings (operation mode)		Enabled	
	Time settings	Calendar Time zone Internet time	Disabled	A warning is displayed when the [OK] switch is pressed.
	Security Setting		Disabled	
Printer Setting		Disabled		
Storage management	Internal storage capacity		Enabled	
Task list		Enabled		
System version		Enabled		
System keyboard		Enabled		
Language change		Disabled	A warning is displayed when the [OK] switch is pressed.	
Touch operations check		Enabled		
Operation test		Enabled		
Advanced mode	Uninstall		Disabled	
	Windows Desktop Display		Disabled	
Shutdown		Enabled		

2.3.1 Local Mode

Switching Method

Press two of the four corners of the X1 series unit screen one by one to display the system menu.

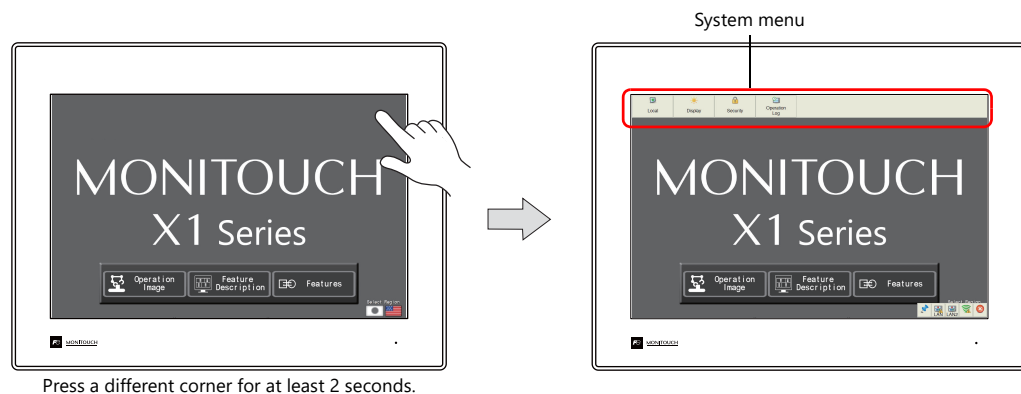


1. Press one corner of the screen^{*1} for at least 2 seconds and release your finger when there is a beep.

Press the upper left corner for at least 2 seconds.

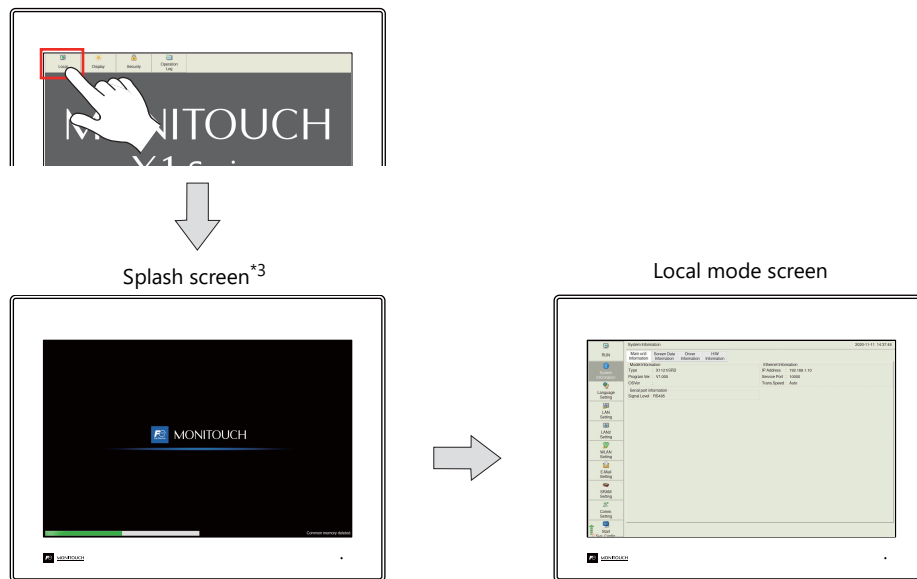


2. Then within one second, press a different corner^{*1} and hold for at least 2 seconds to display the system menu.



Press a different corner for at least 2 seconds.

3. Press the [Local] switch on the system menu. The Local mode screen is displayed.*2



- *1 If any of the items given below are placed in a corner on the screen, the system menu will not be displayed. Be sure to press a corner where none of the items are placed. If these items are placed in all four corners of the screen, switch the screen to one that has open corners and perform the above procedure to display the system menu.
Switches, data display parts with switches, display areas, scrolling messages, slider switches, scroll bars, and table data display parts
- *2 If the [Local] switch on the system menu is unresponsive, a mode change delay time may be set. In this case, hold down the [Local] switch.
- *3 The splash screen can be changed as desired. For details, refer to the X1 Series Reference Manual 2.

Setting the IP Address

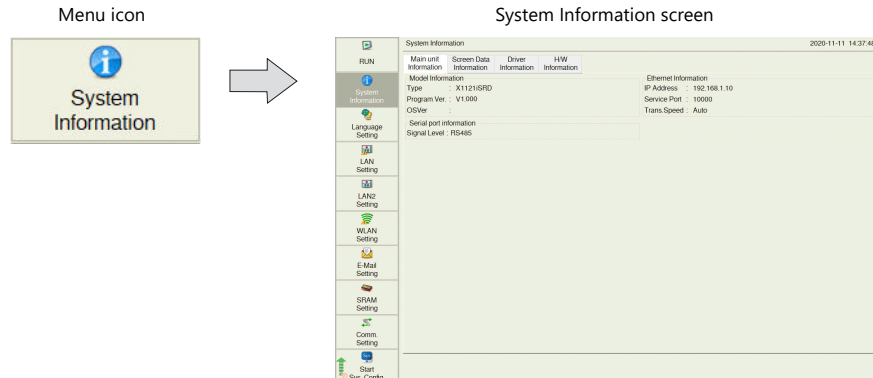
Check the IP address of the X1 series unit to enable screen program transfer via Ethernet.

Check by any of the following three methods.

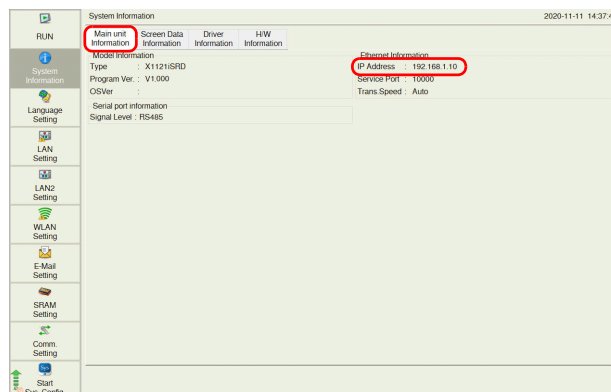
- System information (LAN only)
- LAN setting / LAN2 setting
- Status bar

System information (LAN only)

1. On the Local mode screen, press [System Information] in the menu icons to bring up the System Information screen.

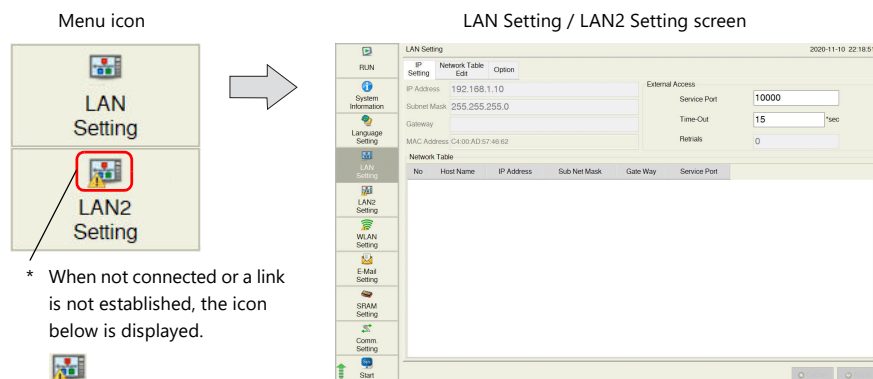


2. Check the IP address indicated under [Ethernet Information] on the [Main unit Information] tab window.

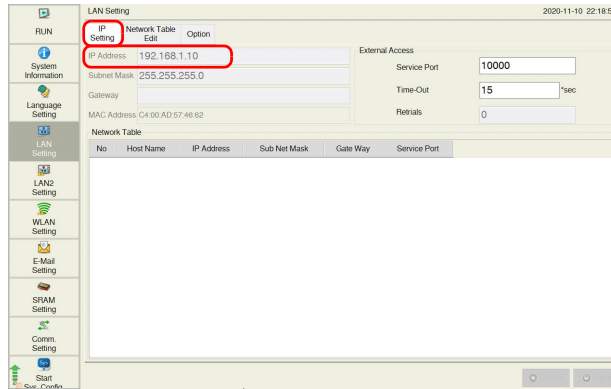


LAN setting / LAN2 setting

1. On the Local mode screen, press [LAN Setting] or [LAN2 Setting] in the menu icons to bring up the LAN Setting or LAN2 Setting screen, respectively.



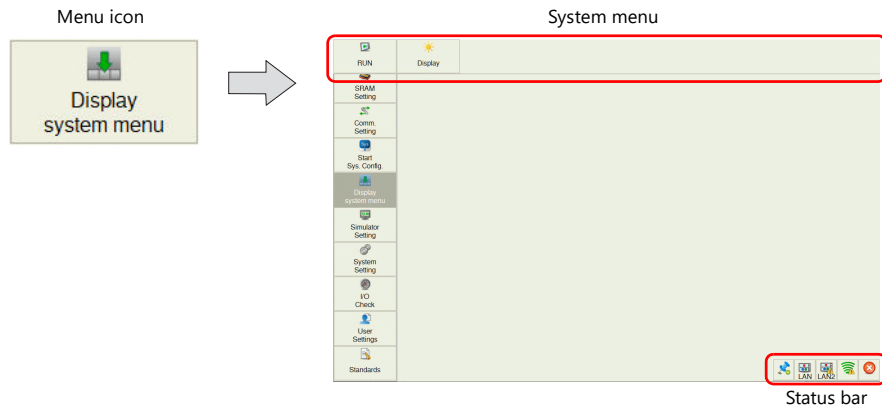
2. Check the [IP Address] field on the [IP Setting] tab window.



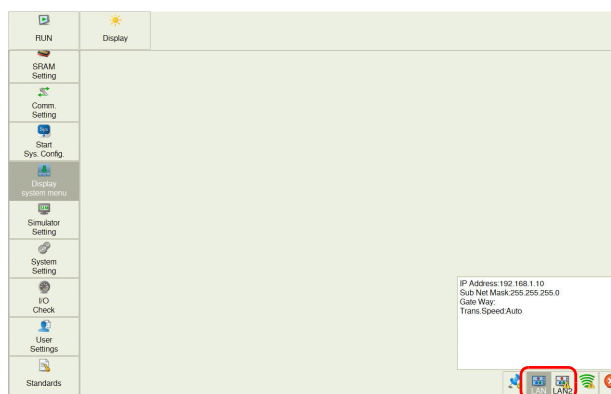
☺ The IP address can be checked on the LAN Setting and LAN2 Setting screens. To change the IP address, use System Configurator. For details, refer to step 3 and after in "IP Address Setting" page 2-6.

Status bar

1. Scroll the menu icons on the left side of the Local mode screen and press [Display system menu] to display the system menu and status bar.



2. Press the [LAN] or [LAN2] icon in the status bar and check the IP address.



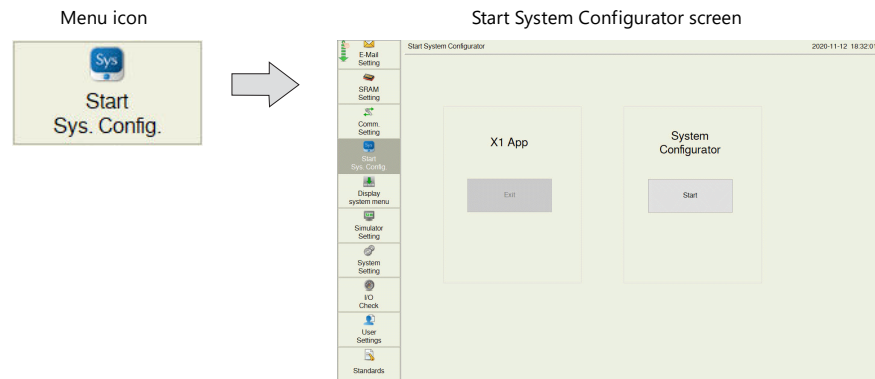
* When not connected or a link is not established, the icon below is displayed.



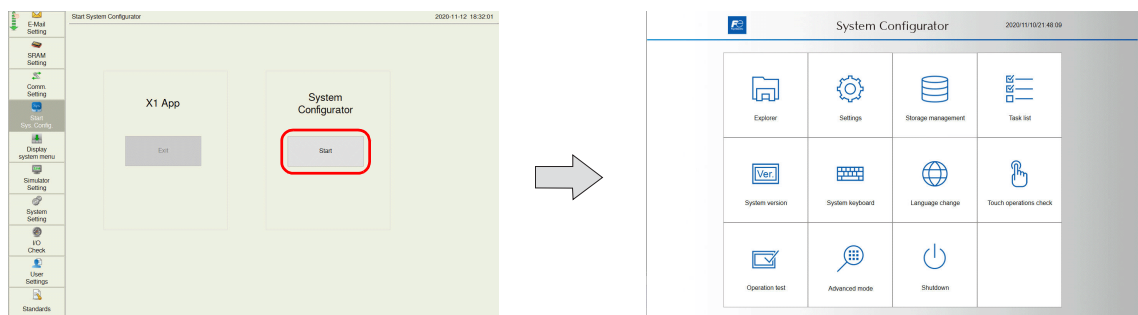
Starting System Configurator

The IP address can be changed using System Configurator.

1. Scroll the menu icons on the left side of the Local mode screen and press [Start Sys. Config.] to bring up the Start System Configurator screen.



2. Press the [Start] switch to start System Configurator.

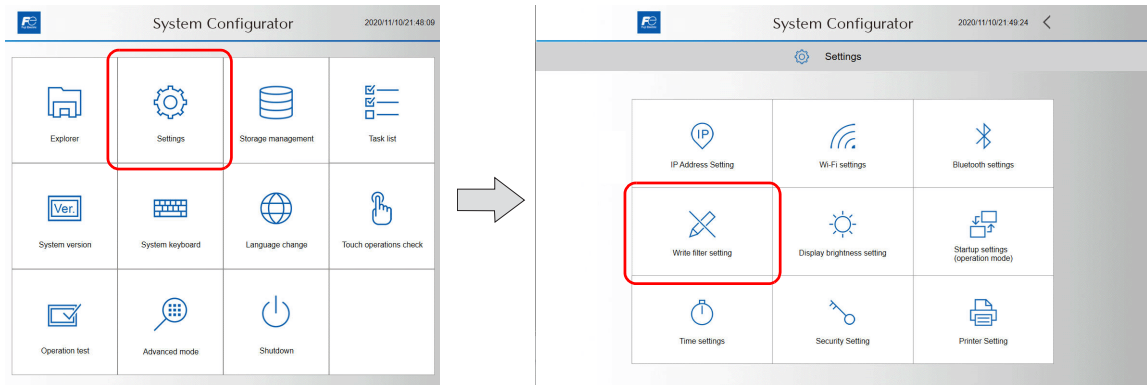


2.3.2 Changing Method 1

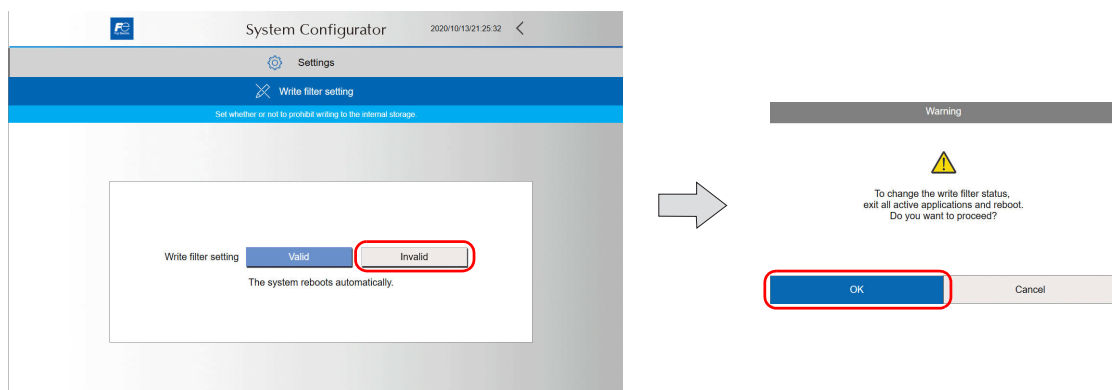
Invalidating the Write Filter Setting



When changing settings such as the IP address, [Write filter setting] needs to be set to [Invalid] beforehand.

1. Press [Settings] → [Write filter setting].




2. Press [Invalid].
The following dialog appears. Press [OK] to reboot the X1 series unit.



3. After the X1 series unit reboots, the HMI app starts. Switch to Local mode.
 For details, refer to [“Switching Method” page 2-11](#).
4. Start System Configurator from Local mode.
 For details, refer to [“Starting System Configurator” page 2-15](#).

IP Address Setting

Set the IP address of the X1 series unit to enable screen program transfer via Ethernet.

 For details, refer to step 3 and after in "IP Address Setting" page 2-6.

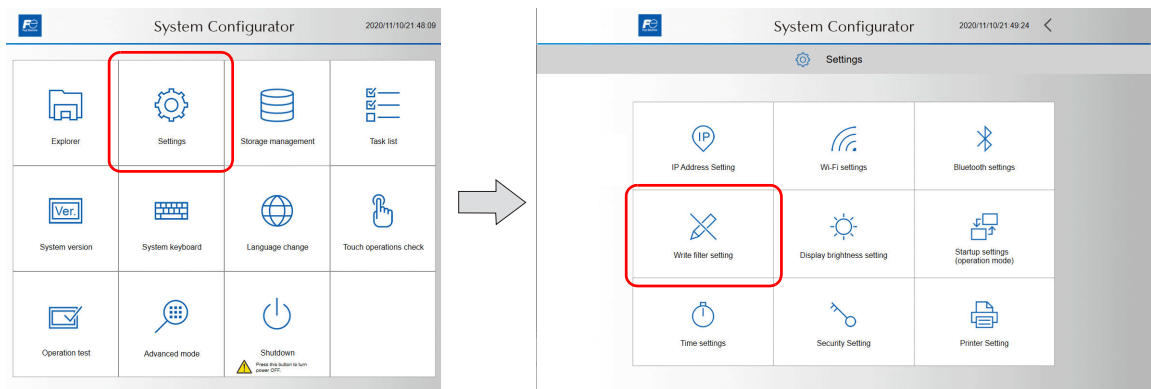


The setting cannot be changed when [Write filter setting] is set to [Valid].
Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Invalidating the Write Filter Setting" page 2-3.

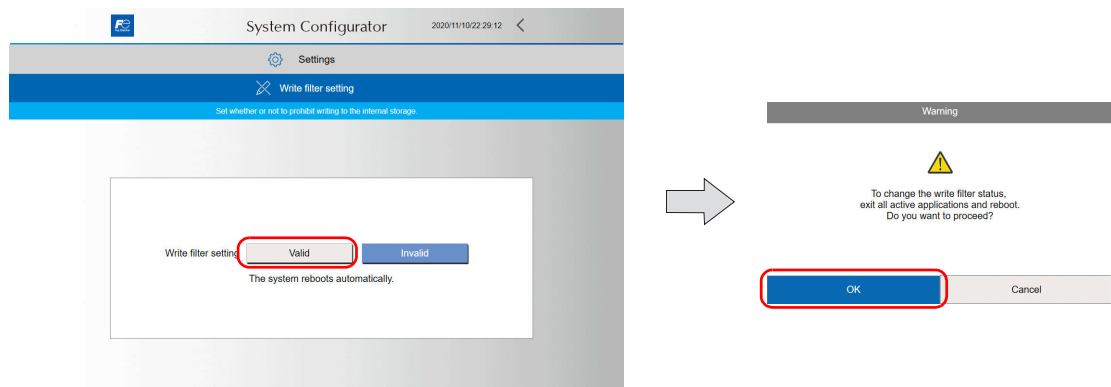
Validating the Write Filter Setting

After changing settings such as the IP address, [Write filter setting] needs to be set to [Valid].

1. Press [Settings] → [Write filter setting].



2. Press [Valid].
The following dialog appears. Press [OK] to reboot the X1 series unit.

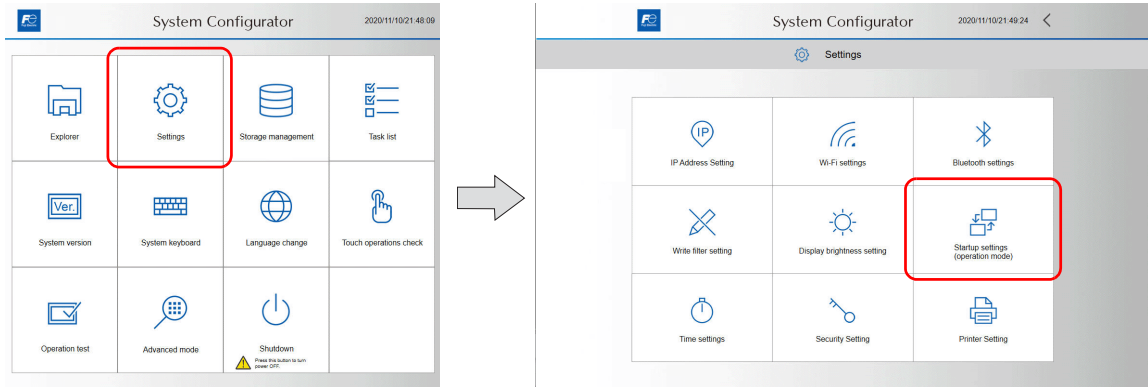


2.3.3 Changing Method 2

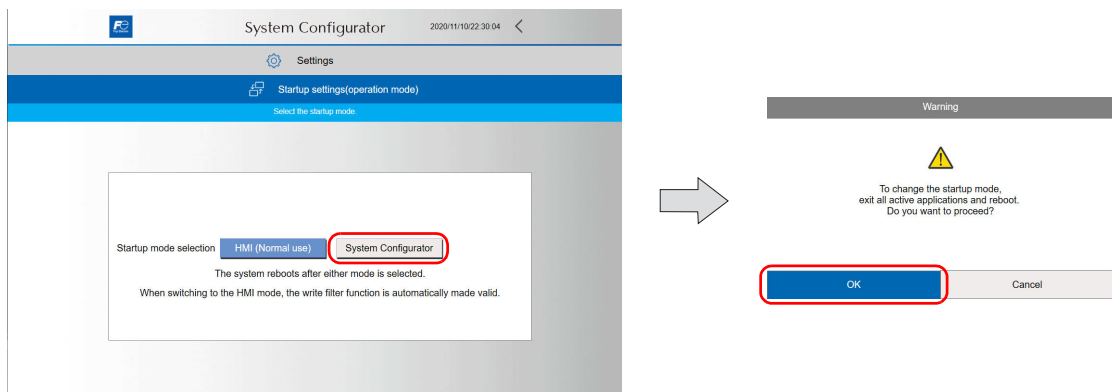
Changing Startup Settings (Operation Mode) to System Configurator

Set [Startup settings (operation mode)] → [Startup mode selection] to [System Configurator] so as to start System Configurator.

1. Press [Settings] → [Startup settings (operation mode)].



2. Press [System Configurator].
The following dialog appears. Press [OK] to reboot the X1 series unit.



Invalidating the Write Filter Setting

Change [Write filter setting] to [Invalid] to change settings such as the IP address.

For details, refer to [“Invalidating the Write Filter Setting”](#) page 2-16.

IP Address Setting

Set the IP address of the X1 series unit to enable screen program transfer via Ethernet.

For details, refer to step 3 and after in [“IP Address Setting”](#) page 2-6.



The setting cannot be changed when [Write filter setting] is set to [Valid].
Set [Settings] → [Write filter setting] to [Invalid]. Refer to [“Invalidating the Write Filter Setting”](#) page 2-3.

Changing [Startup settings (operation mode)] to [HMI (Normal use)]

After changing settings such as the IP address, set [Startup settings (operation mode)] → [Startup mode selection] to [HMI (Normal use)].

After rebooting, [Write filter setting] is automatically set to [Valid].

For details, refer to [“Changing \[Startup settings \(operation mode\)\] to \[HMI \(Normal use\)\]”](#) page 2-8.

3 Screen Program Configuration

3.1 About V-SFT Version 6

3.1.1 Operating Environment

Make sure that your system meets the following system requirements before starting V-SFT version 6.

Computer	PC/AT compatible computer for Windows
OS*	Windows XP / XP64 Edition / Vista (32-bit, 64-bit) / 7 (32-bit, 64-bit) / 8 (32-bit, 64-bit) / 8.1 (32-bit, 64-bit) / 10 (32-bit, 64-bit)
CPU	Pentium 4, 2.0 GHz or above
Memory	1 GB or more (2 GB recommended)
Hard disk	At installation: 4.0 GB or more for version 6, 3.0 GB or more for version 5
Optical Disc Drive	DVD-ROM drive
Display resolution	1024 × 768 dots (XGA) or higher
Display colors	High color (16-bit) or higher
Others	Microsoft .NET Framework 4.0 or 4.5 (If a PC does not have .NET Framework 4.0 or 4.5 installed, Framework 4.0 will be automatically installed on the PC.)

* Administrator privileges are required for installation.

Software Copyrights

- The software as well as its copyright and any other copyrights and rights related to the software are property of Hakko Electronics Co., Ltd.
- The software may not be used or copied, whether in whole or in part, without permission of Hakko Electronics Co., Ltd.
- The specifications and components of the software are subject to change without prior notification.
- Hakko Electronics Co., Ltd. bears no responsibility for any results of using the software.
- You must purchase one set of software per computer in principle.
- Windows is a registered trademark of Microsoft Corporation in the United States.
- All other product names are trademarks or registered trademarks of their respective holders.

Notes on Usage

- The software may not be correctly installed if resident programs and applications such as an antivirus program are running. Be sure to close all applications before installing the software.
- The face of the DVD-ROM is the side with the product name printed on it. The blank side is the data side.
- If the DVD-ROM is scratched with a sharp object, it may be read incorrectly. Touching the data side and leaving fingerprints may lead to a malfunction because the computer reads data from the data side. Handle both sides of the DVD-ROM with care.
- When placing the DVD-ROM in the DVD-ROM drive, pay attention to the orientation of the disc and place the disc in the drive as instructed in the instruction manual of your computer.
- If free memory space becomes insufficient while the configuration software is running, Windows may forcefully terminate the software.
In order to prevent losing data from a forced termination, save the screen program regularly.

Version Supported by the X1 Series

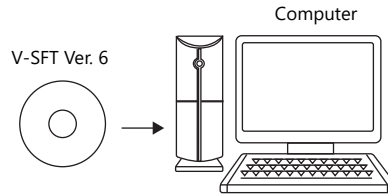
V-SFT version 6.1.0.0 or later

3.1.2 Installation Procedure

Installing Newly

Example: Windows 10

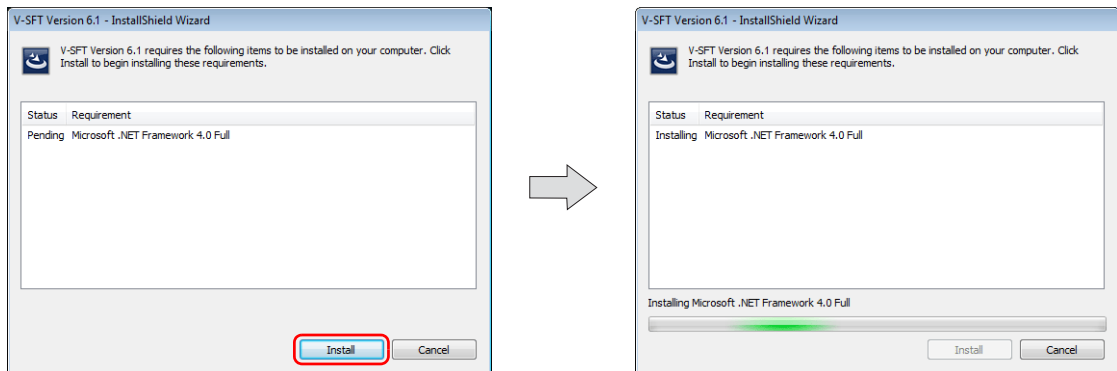
1. Startup Windows and place the "V-SFT Ver. 6" DVD-ROM in the DVD-ROM drive.



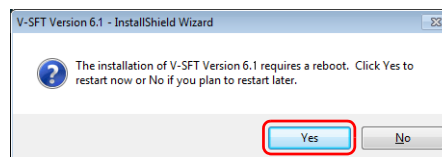
2. The following installation window is automatically displayed. Click [Ver. 6 Install].



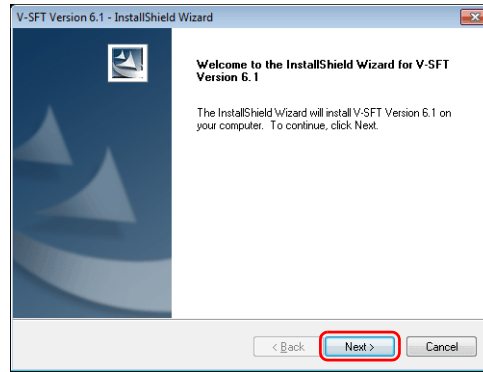
3. When Microsoft .NET Framework 4.0 or 4.5 is not installed on the computer, the following dialog box is displayed. Click [Install]. Installation of .NET Framework 4.0 automatically starts.



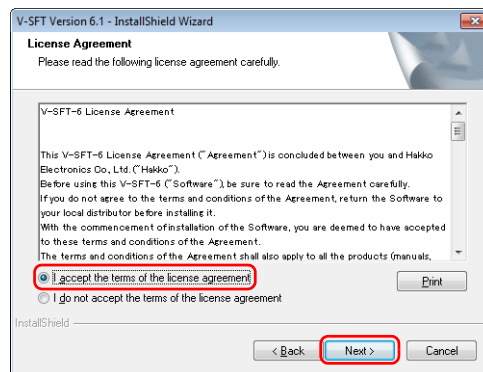
After installation of .NET Framework 4.0, a message prompting you to reboot the computer may be displayed. If displayed, be sure to reboot the computer.



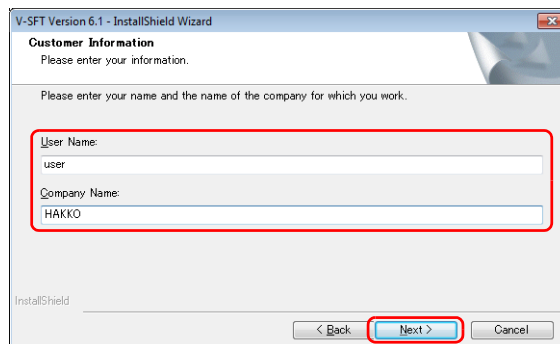
4. The following dialog box is displayed. Click [Next].



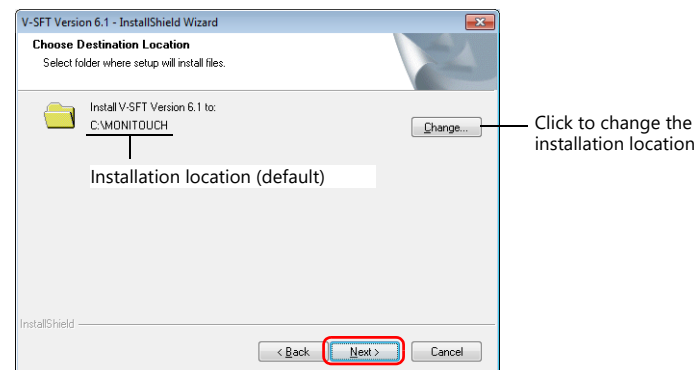
5. The [License Agreement] dialog box is displayed. Read the contents carefully, select [I accept the terms of the license agreement], and then click [Next].



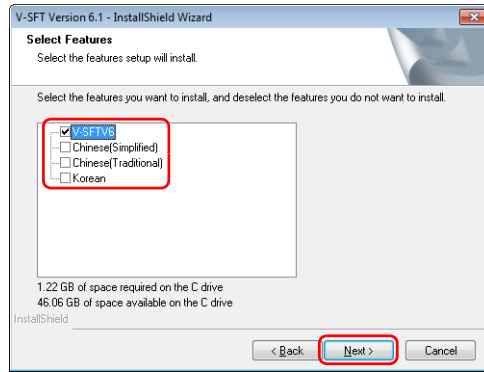
6. The [Customer Information] dialog box is displayed. Enter your [User Name] and [Company Name], and then click [Next].



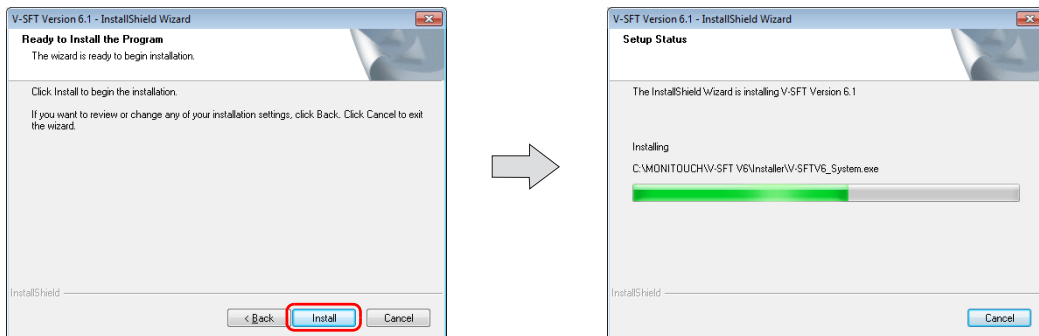
7. The [Choose Destination Location] dialog box is displayed. Click [Next].



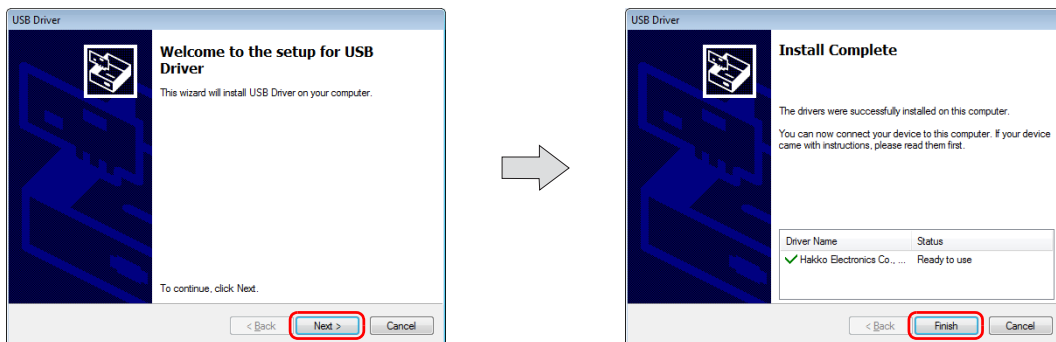
8. The following dialog box is displayed. Select a display language(s) to use on the V-SFT editor, and then click [Next].



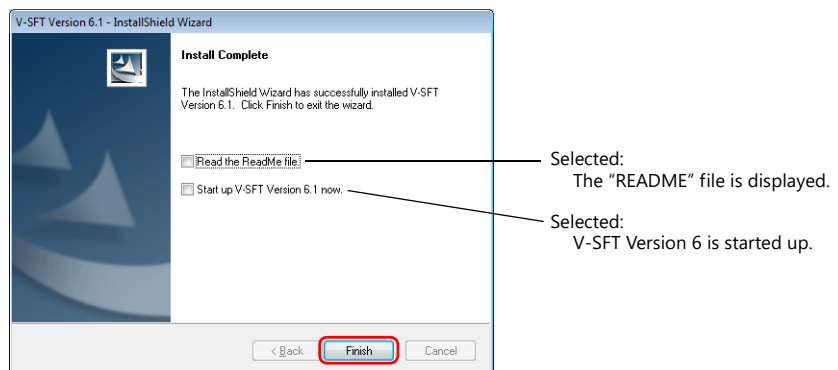
9. The following dialog box is displayed. Click [Install]. Installation automatically starts.



10. When installation of V-SFT version 6 is complete, the [Welcome to the setup for USB Driver] dialog box is displayed. Click [Next] to install the USB driver.



11. After all installation processes are complete, the [Install Complete] dialog box is displayed. Click [Finish].



This completes the installation procedure.

When V-SFT Ver.5 or Ver. 6 is Already Installed

Programs for the X1 series can be created using V-SFT version 6.1.0.0 or later.

Download update programs from our website and update to the latest V-SFT version 6.

- * The detailed update procedure is described on our website at [Home] → [Support] → [Download] → [V-SFT Ver.6 Update Procedure].

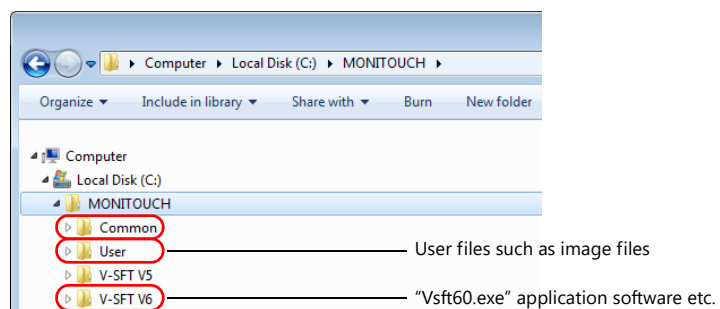
3.1.3 Configuration of Installation Folder

The default installation location is as follows:

C:\MONITOUCH

“Common”, “User”, and “V-SFT V6” subfolders are created inside the “MONITOUCH” folder.

The “Vsft60.exe” application software is located in the “V-SFT V6” folder.



3.2 Starting and Creating a New Screen Program

The procedures for starting the V-SFT and creating a new screen program are described.

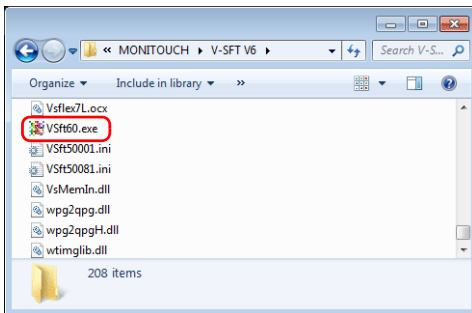
3.2.1 Starting

1. Start V-SFT version 6 by any of the following methods.

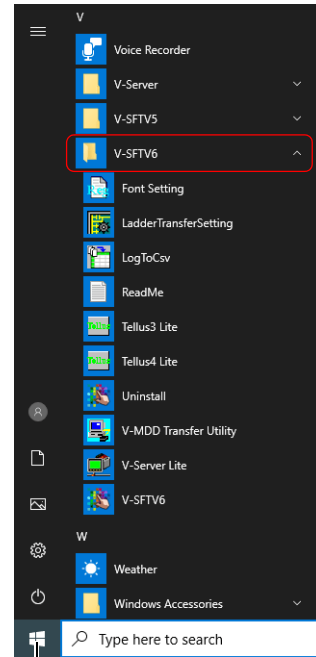
- Double-click the shortcut on the Desktop.



- Double-click "Vsft60.exe" located in the installation folder.
Example: C:\MONITOUCH\V-SFT V6\VSft60.exe

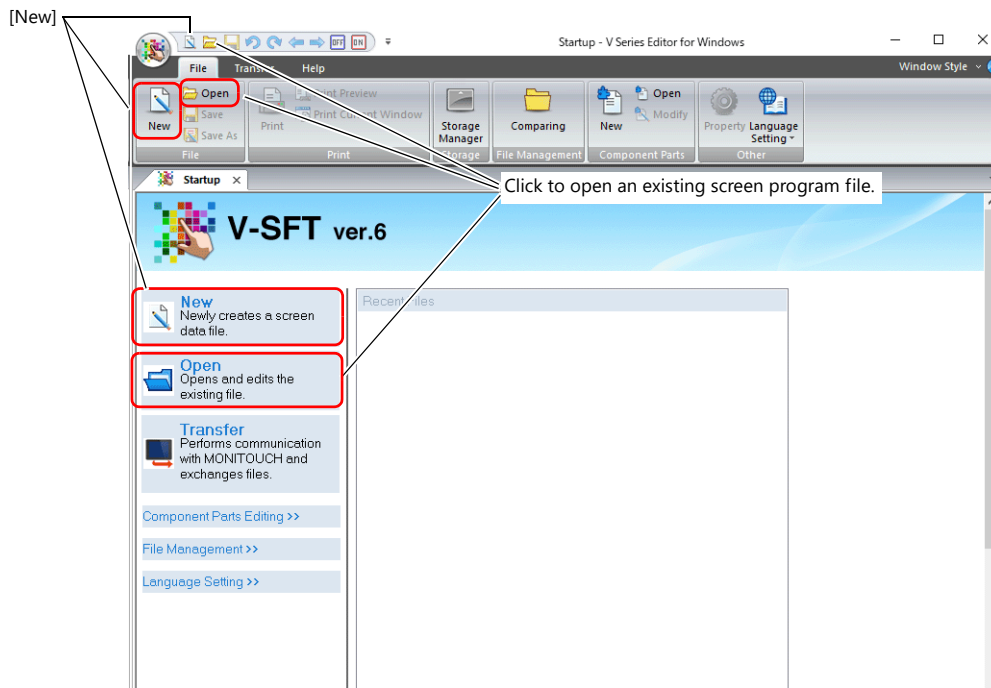


- Click "V-SFTV6" in the Start menu.



Start menu

2. The startup menu is displayed.

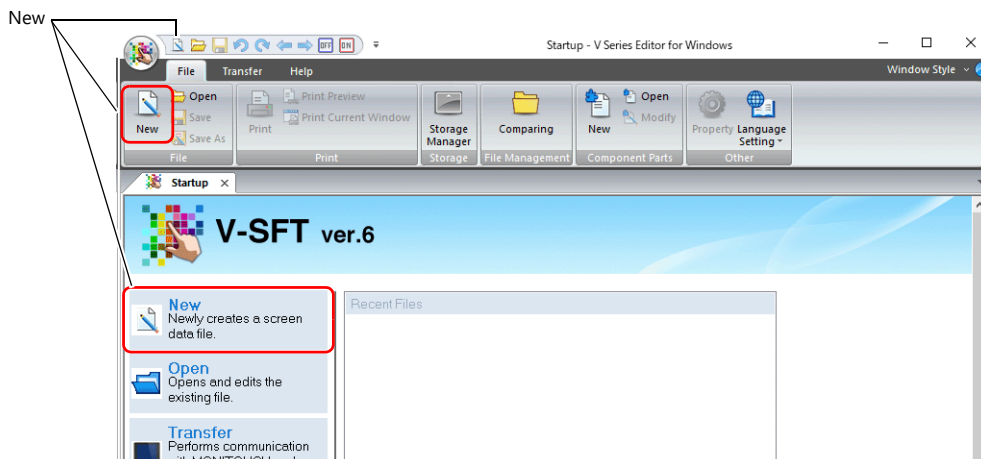


When opening an existing screen program file, either click on [Open] in the Startup menu, or double-click on the relevant screen program file.

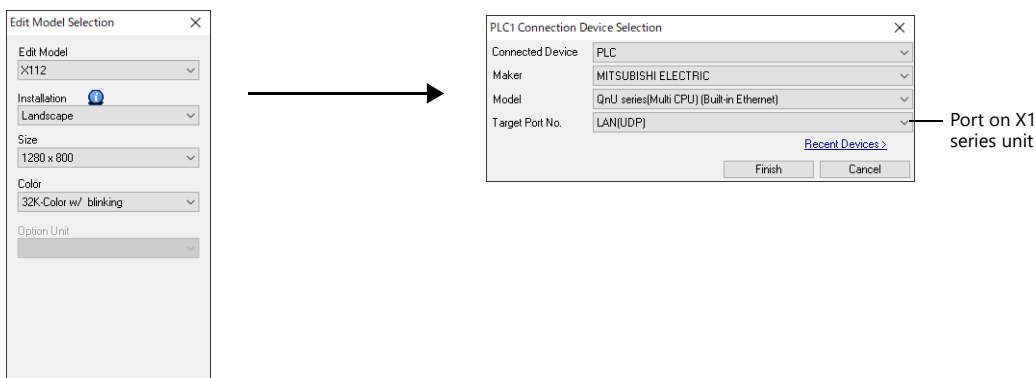


3.2.2 Creating a New Screen Program

1. Click [New].

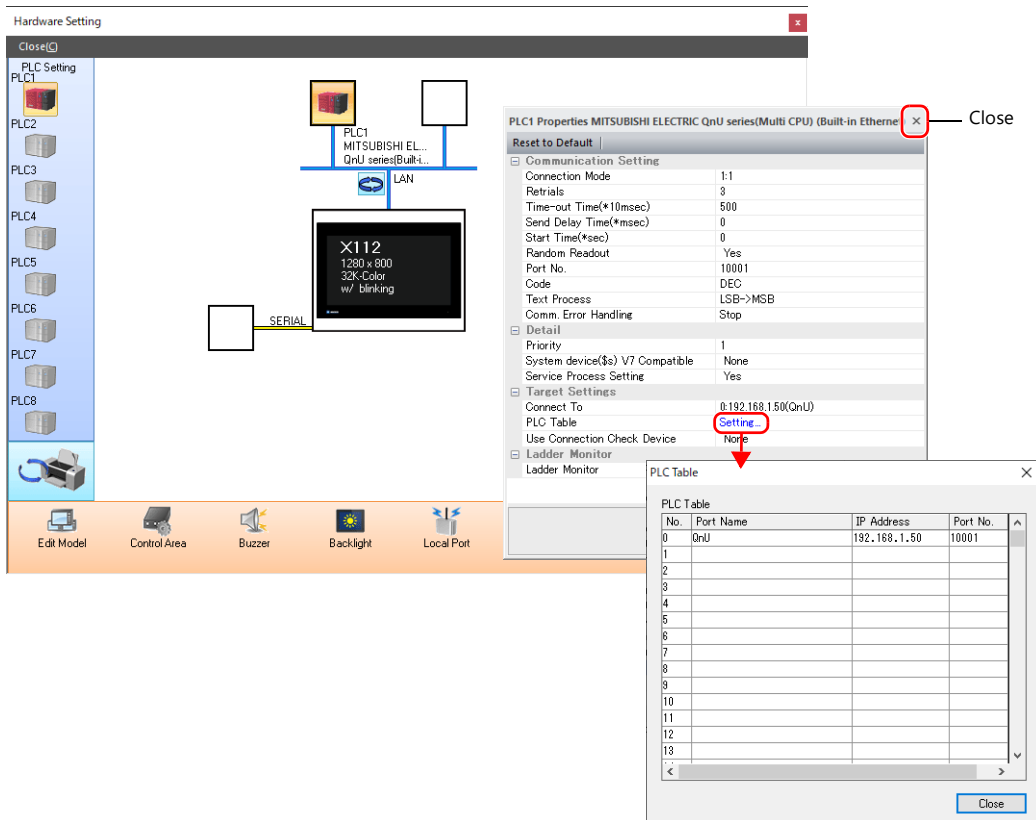


2. Select the model for editing and device to connect and click [Finish].

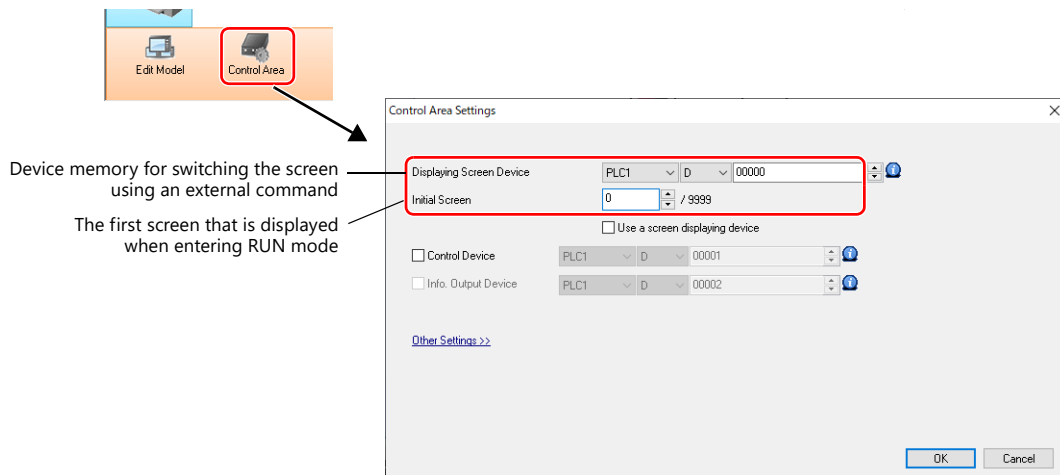


3. The hardware settings and PLC properties are displayed. Configure the communication settings in the PLC properties window and then close the PLC properties window. (Example: PLC1, Mitsubishi Electric QnU series (Built-in Ethernet))

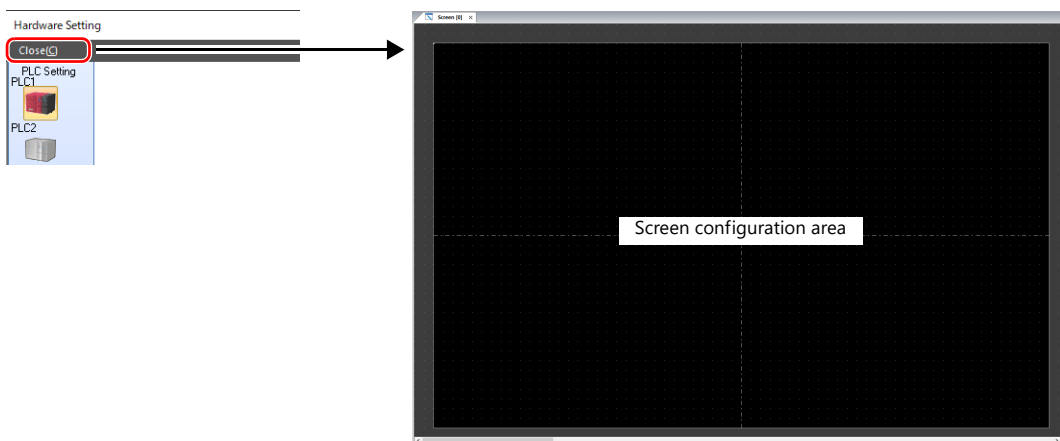
* For connection via Ethernet, PLC table settings are required. For details, refer to the X1 Series Connection Manual.



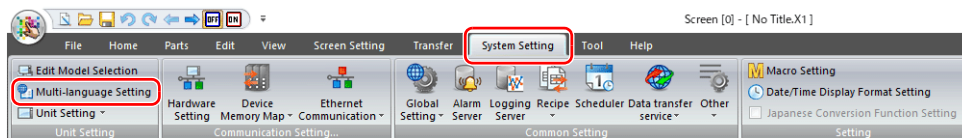
4. Click [Control Area] in the [Hardware Setting] window and configure the following settings.



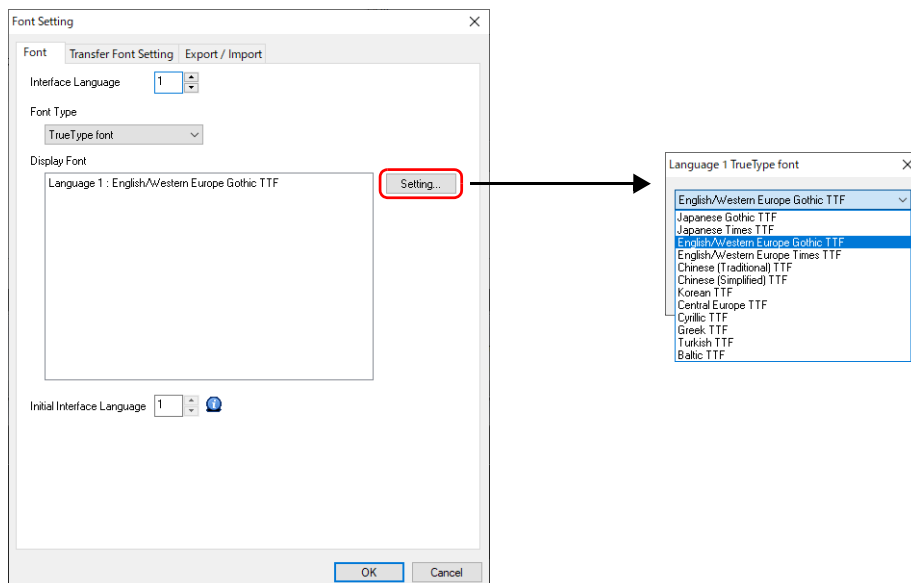
5. Click the [Close] button to close the [Hardware Setting] window. The [Screen [0]] tab window is displayed.



6. Click [System Setting] → [Multi-language setting].



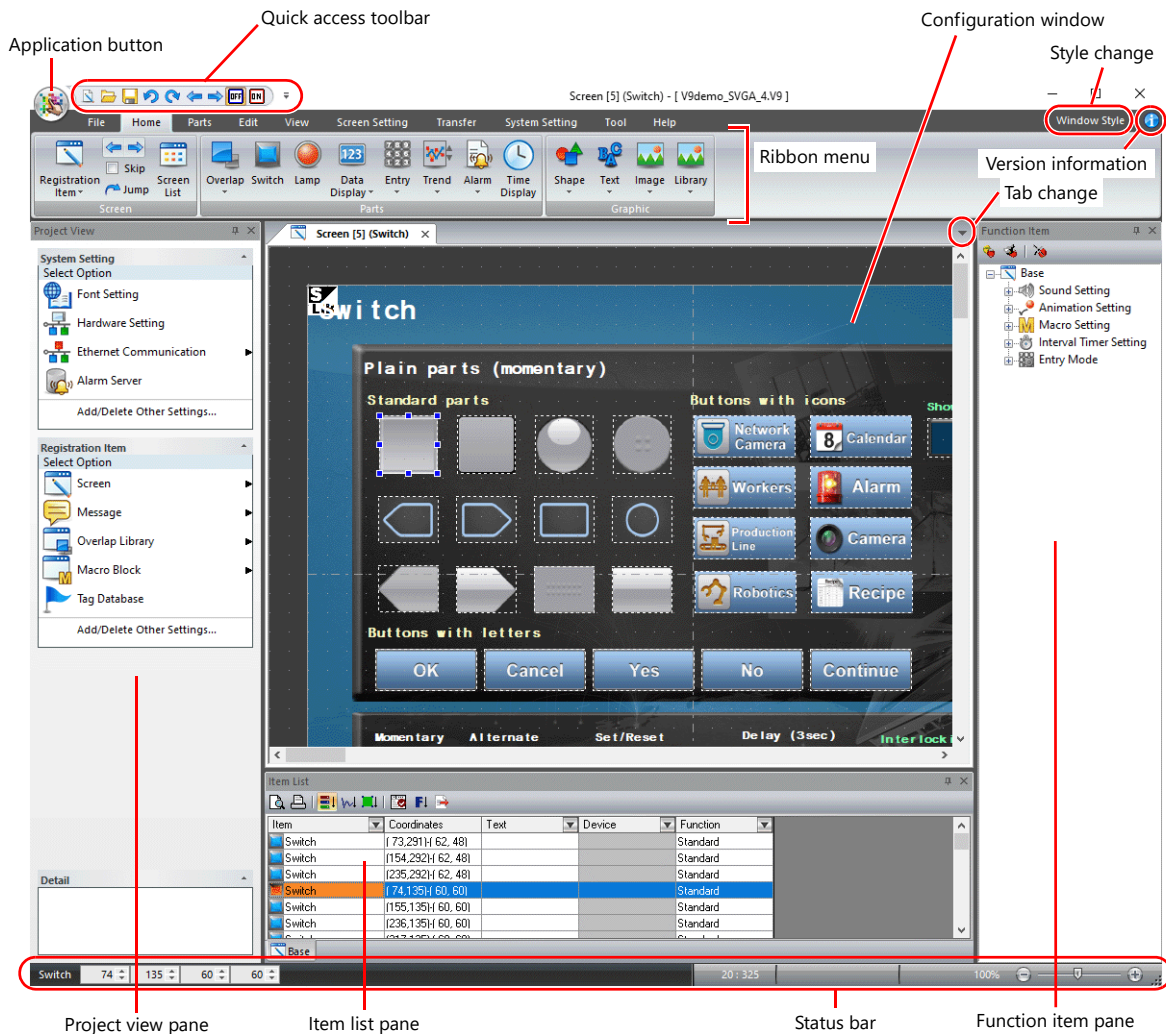
7. The [Font Setting] window is displayed. Press the [Setting] button and set the font. Then click [OK] to close the window.



This completes the settings required to create a new screen program.

3.3 Layout of V-SFT Ver. 6

The layout of the V-SFT editor is shown below.



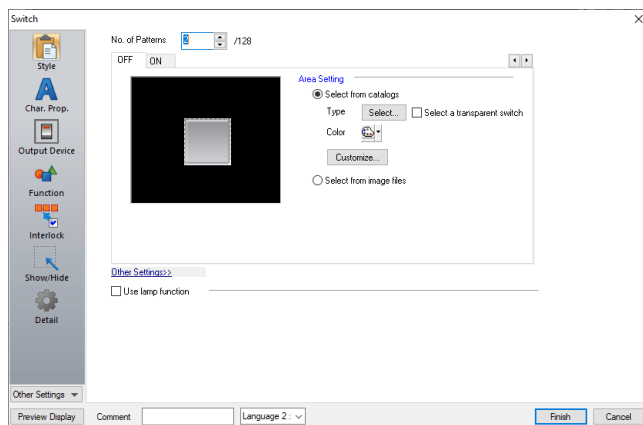
Project view pane

Item list pane

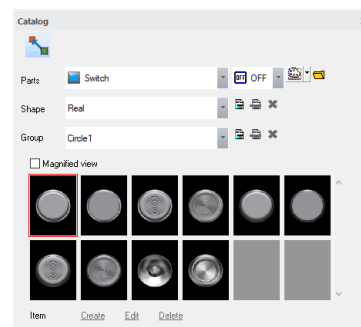
Status bar

Function item pane

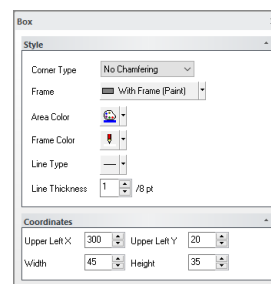
Item setting window (parts such as switches and lamps)



Catalog pane



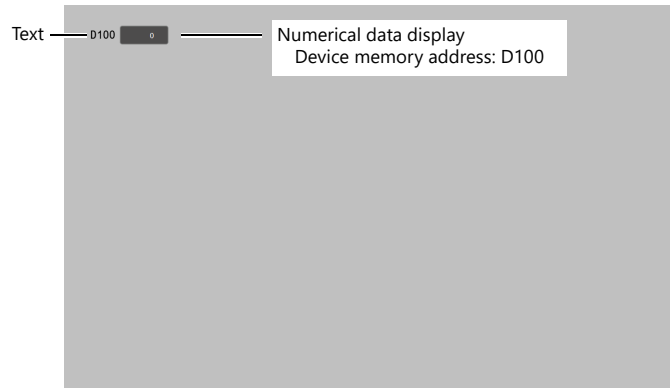
Item pane (shapes such as rectangles and lines)



3.4 Screen Example

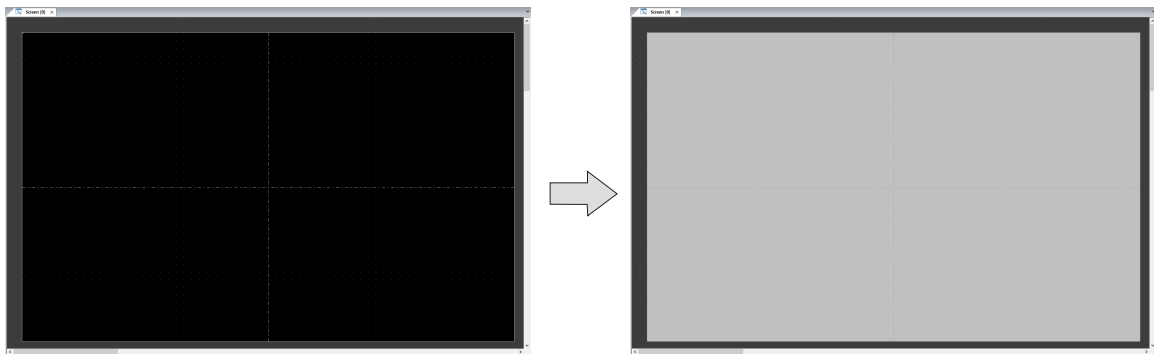
This section explains how to create a screen for monitoring PLC device memory.

- Screen 0

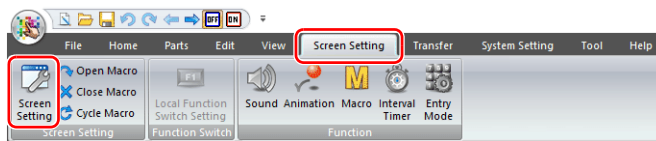


3.4.1 Registering Screen Comments and Changing the Background Color

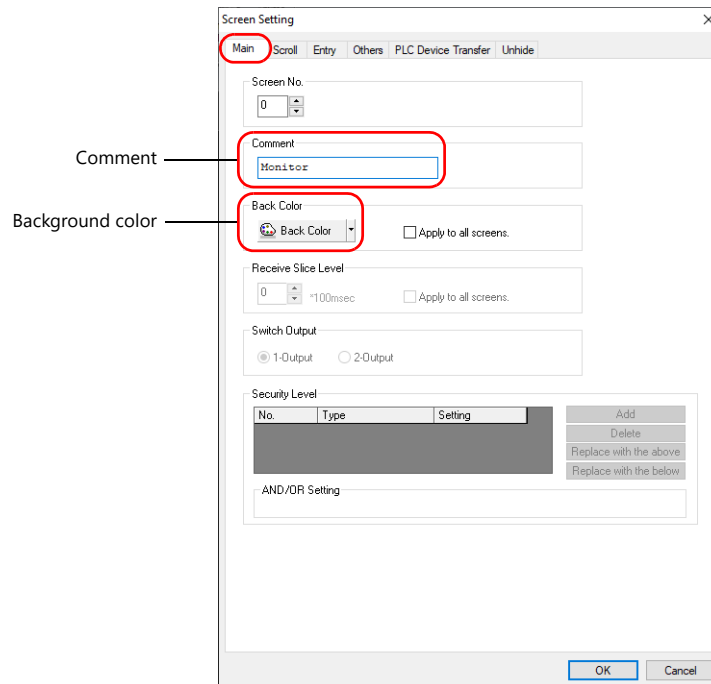
Add a comment to the screen and change the background color.



1. Click [Screen Setting] → [Screen Setting].

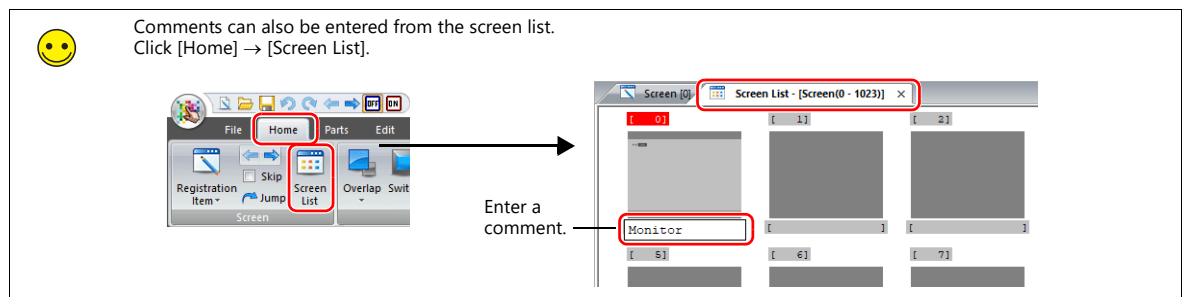


2. Add a comment and change the background color on the [Main] tab window.



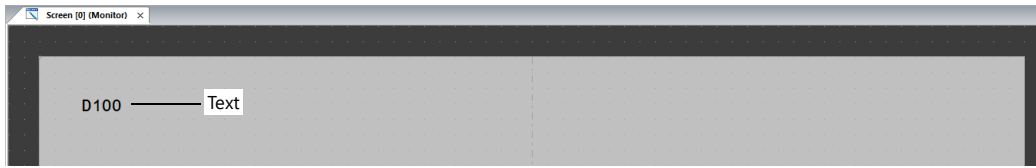
3. Click [OK].

This completes the settings.

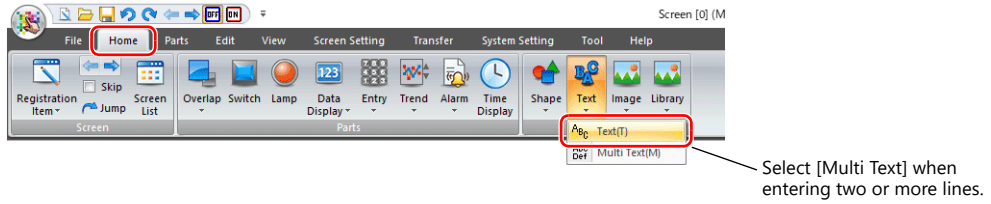


3.4.2 Creating Text

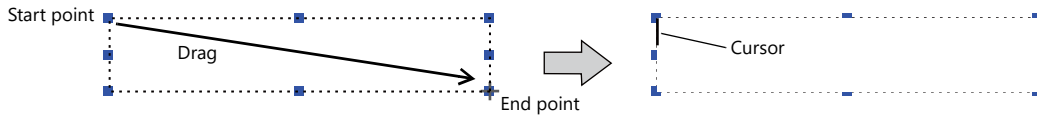
Create the following part.



1. Click [Home] → [Text] → [Text]. The mouse cursor changes to a crosshair.



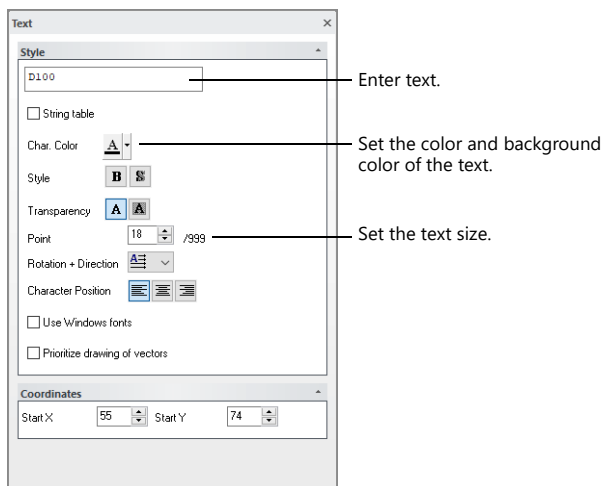
2. Drag from the start point to the end point on screen using the mouse. The specified area and a blinking cursor are displayed on screen.



3. Enter text.



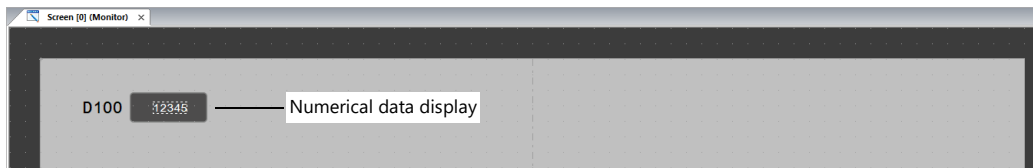
4. Click a location on the screen other than the text to accept the text entry.
5. Click the text to display its settings window. Change the text color and text size properties.



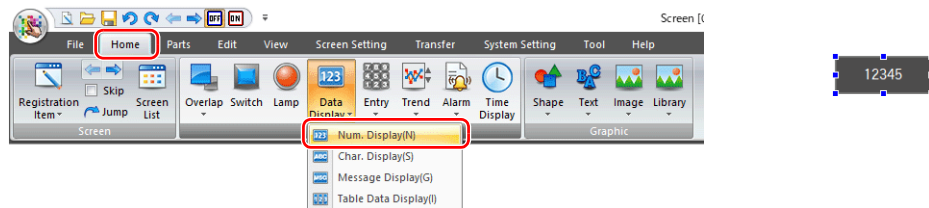
This completes the text creation process.

3.4.3 Creating a Numerical Data Display

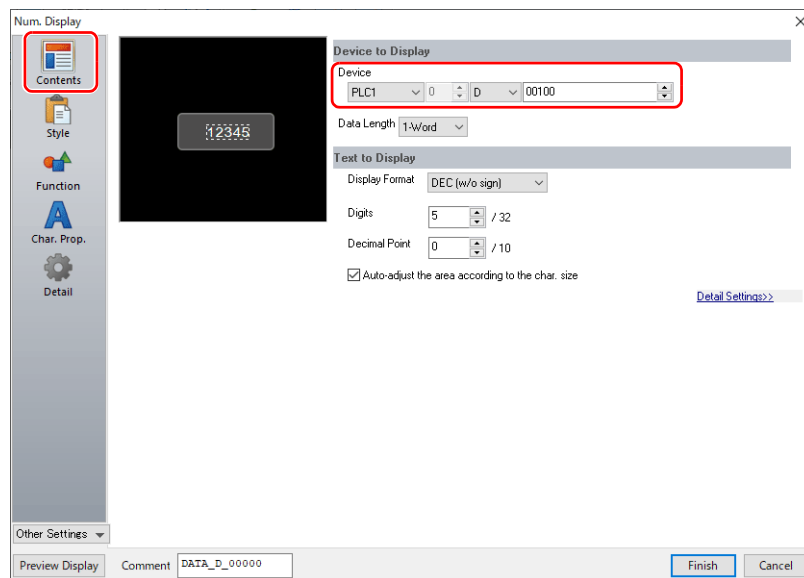
Create the following part.



1. Click [Home] → [Data Display] → [Num. Display] and place a numerical data display part on the screen.



2. Double-click on the numerical data display part to display its settings window. Configure the [Contents] settings as shown below.



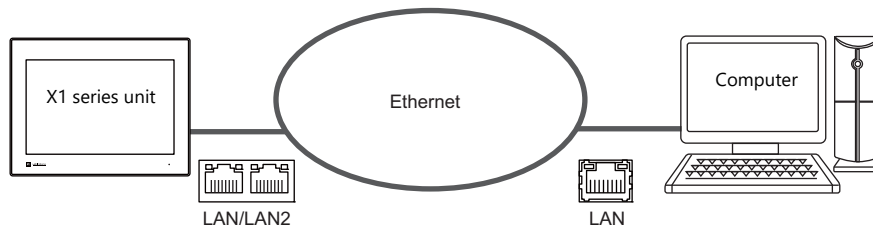
3. Click [Finish] to exit settings.

This completes the process.

4 Transfer

4.1 Overview

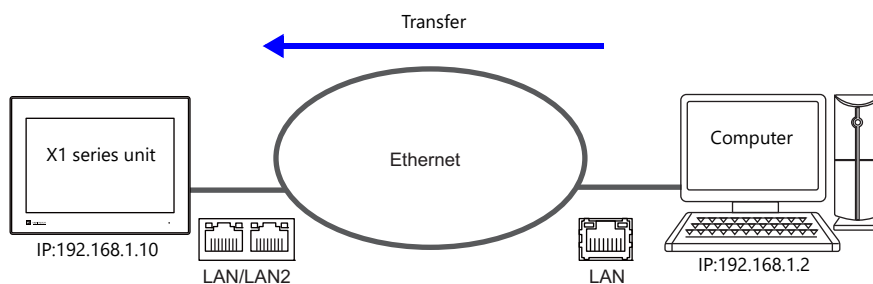
This section describes the procedure for transferring a screen program via Ethernet.
Connect the X1 series unit (LAN or LAN2 port) to the computer using a LAN cable.



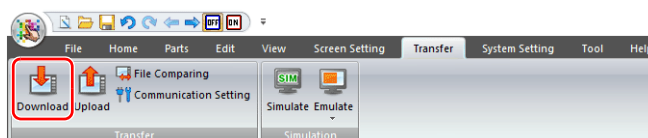
4.2 Transfer Procedure (From PC to X1 Series Unit)

4.2.1 Writing (PC to X1 Series Unit)

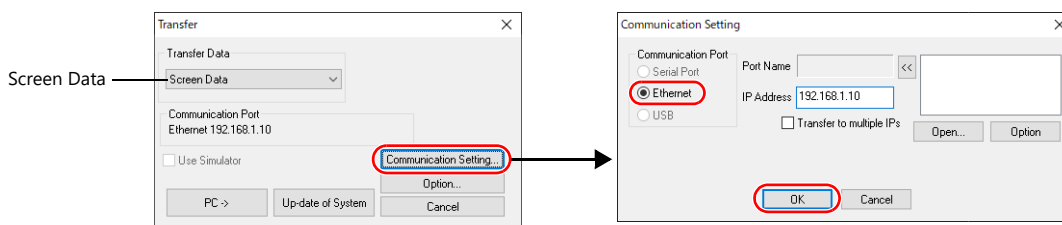
Transfer a screen program from the computer to the X1 series unit.
In this example, the IP address of the X1 series unit is "192.168.1.10" and that of the computer is "192.168.1.2".



1. Click [Transfer] → [Download] to display the [Transfer] window.



2. Configure the following settings.



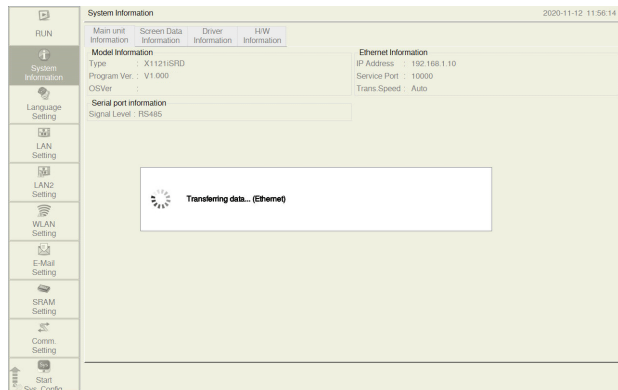
3. Click [PC →].


A screen program is transferred and written to the X1 series unit. The following screens are displayed respectively during transfer.

Computer (V-SFT)



X1 series unit (Local mode)

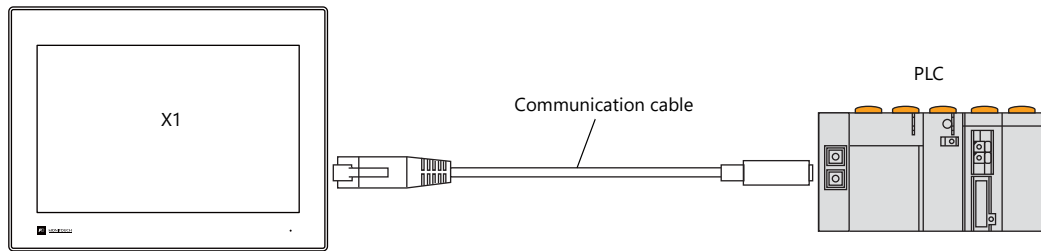


 A screen program can also be automatically uploaded from a USB flash drive upon turning on the X1 series unit power. For details, refer to the X1 Series Reference Manual 2.

4.3 Connecting to a PLC

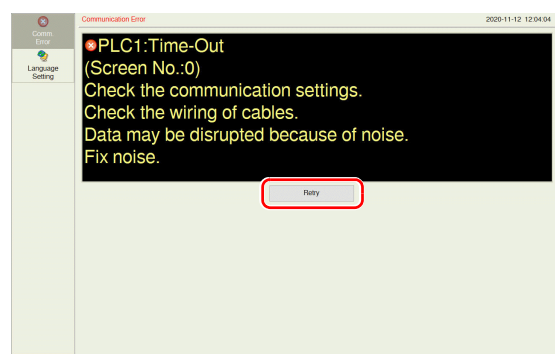
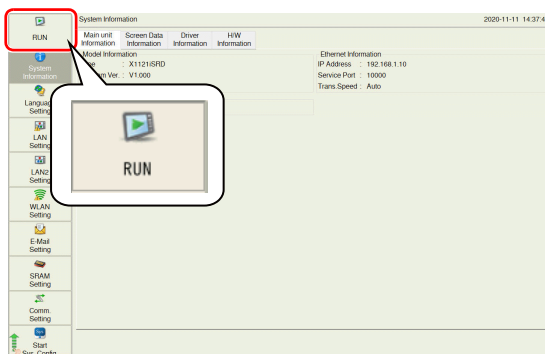
Connect the X1 series unit with a PLC and switch to RUN mode.

1. Connect the X1 series unit with a PLC using a communication cable.



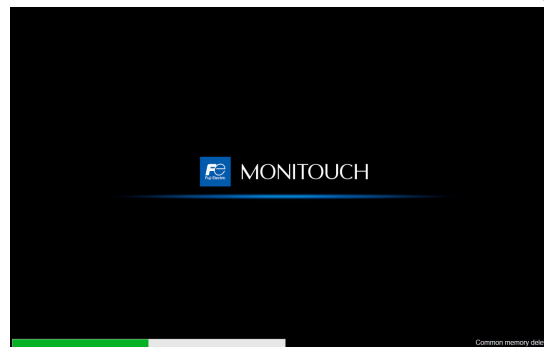
For details on wiring, refer to the X1 Series Connection Manual.

2. If communication is established, the created screen program is displayed (in RUN mode).
If the Local mode screen is displayed, press the [RUN] switch. If a communication error screen is displayed, press the [Retry] switch to change to RUN mode.



The X1 series unit will switch to RUN mode once the cause of the error is resolved.

* For details on errors, refer to the X1 Series Hardware Specifications.



Checking connection with PLC
(A splash screen can be set by preference.*)

* For details, refer to the X1 Series Reference Manual 2.



The created screen program is displayed.

This completes the necessary settings.


4.4 Network Test

The following two methods can be used to check whether there is a problem with the Ethernet connection.

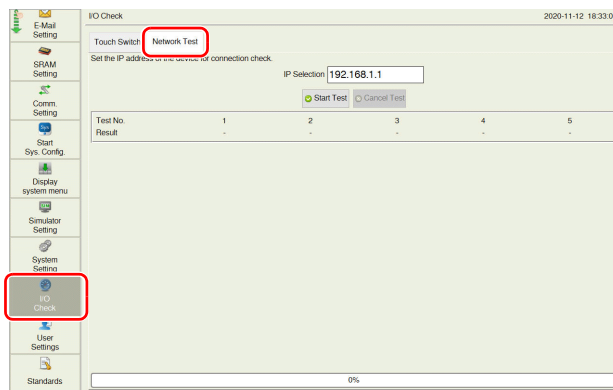
- Testing in Local mode on the X1 series unit
- Testing using the PING command on the computer

4.4.1 Testing in Local Mode on the X1 Series Unit

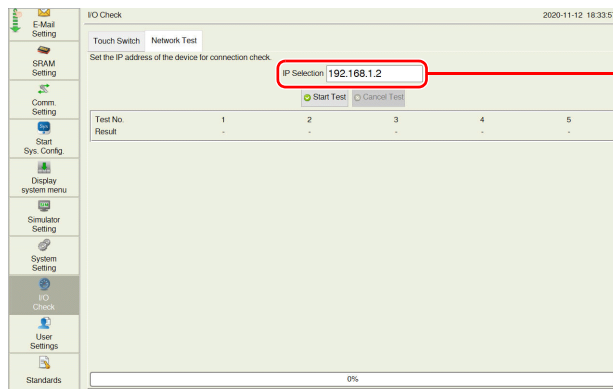
Test whether communication is established with connected devices on the Local mode screen of the X1 series unit.

 For details on switching to Local mode, refer to “Local Mode” page 2-11.

1. Select [I/O Check] → [Network Test].



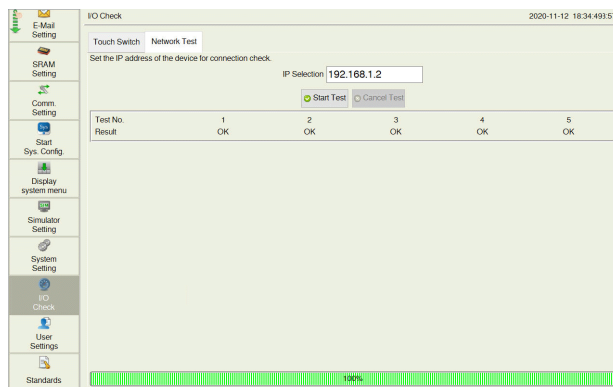
2. Set the IP address of the connected device to [IP Selection] and press the [Start Test] switch.



Set the IP address of the connected device.

3. The test results are displayed.

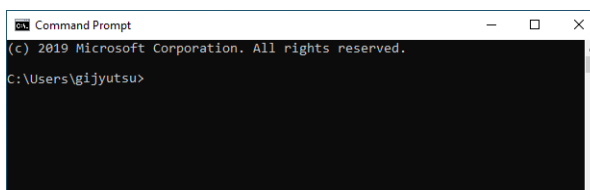
When the test result is “NG”, check the IP address of the X1 series unit and connected device as well as the connection cable.s



4.4.2 Testing using the PING command on the computer

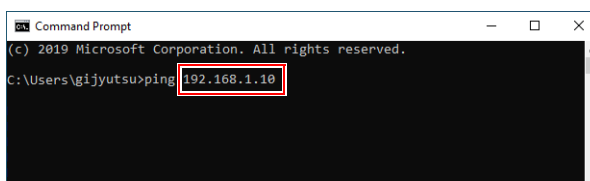
Example: Check the connection state from the computer when the IP address of the X1 series unit is "192.168.1.10".

1. Open a [Command Prompt] window on the computer.



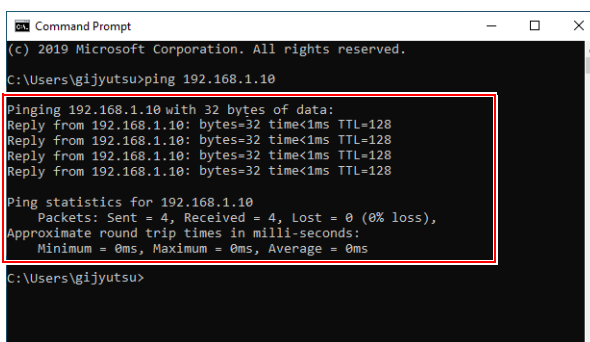
```
Command Prompt
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\gijyutsu>
```

2. Enter "ping 192.168.1.10" on the command line using the keyboard and press the [Enter] key.
One-byte space



```
Command Prompt
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\gijyutsu>ping 192.168.1.10
```

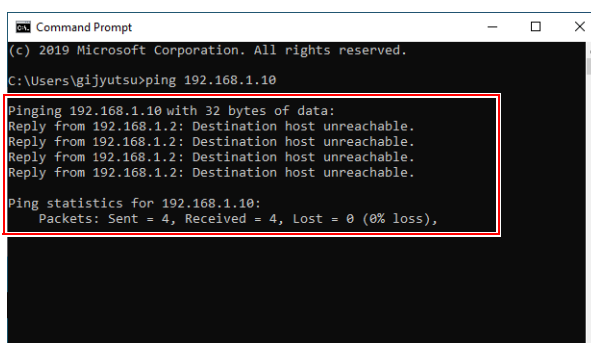
3. The following result is displayed if the unit is connected.



```
Command Prompt
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\gijyutsu>ping 192.168.1.10
Pinging 192.168.1.10 with 32 bytes of data:
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.1.10
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\Users\gijyutsu>
```

Connection OK

4. The following result is displayed if the unit is disconnected.



```
Command Prompt
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\gijyutsu>ping 192.168.1.10
Pinging 192.168.1.10 with 32 bytes of data:
Reply from 192.168.1.2: Destination host unreachable.
Reply from 192.168.1.2: Destination host unreachable.
Reply from 192.168.1.2: Destination host unreachable.
Reply from 192.168.1.2: Destination host unreachable.
Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
C:\Users\gijyutsu>
```

Disconnected

Check the IP address of the X1 series unit and computer as well as the connection cable.

5 Updating the X1 App

5.1 Overview of Updating

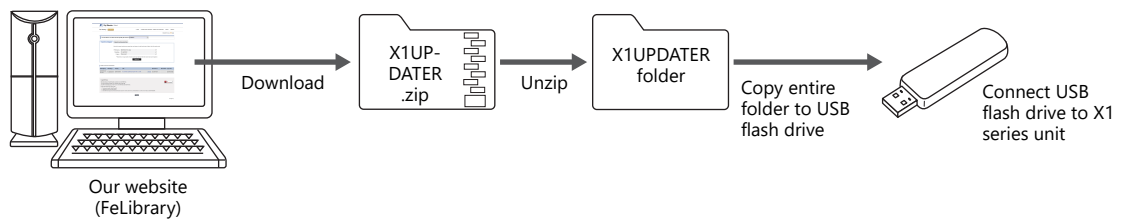
Update programs are provided for the X1 series via our website when functions of the X1 app are enhanced or when bugs are fixed. The X1 app can be updated by saving such update programs to a USB flash drive and running them on the X1 series unit.

Items to Prepare

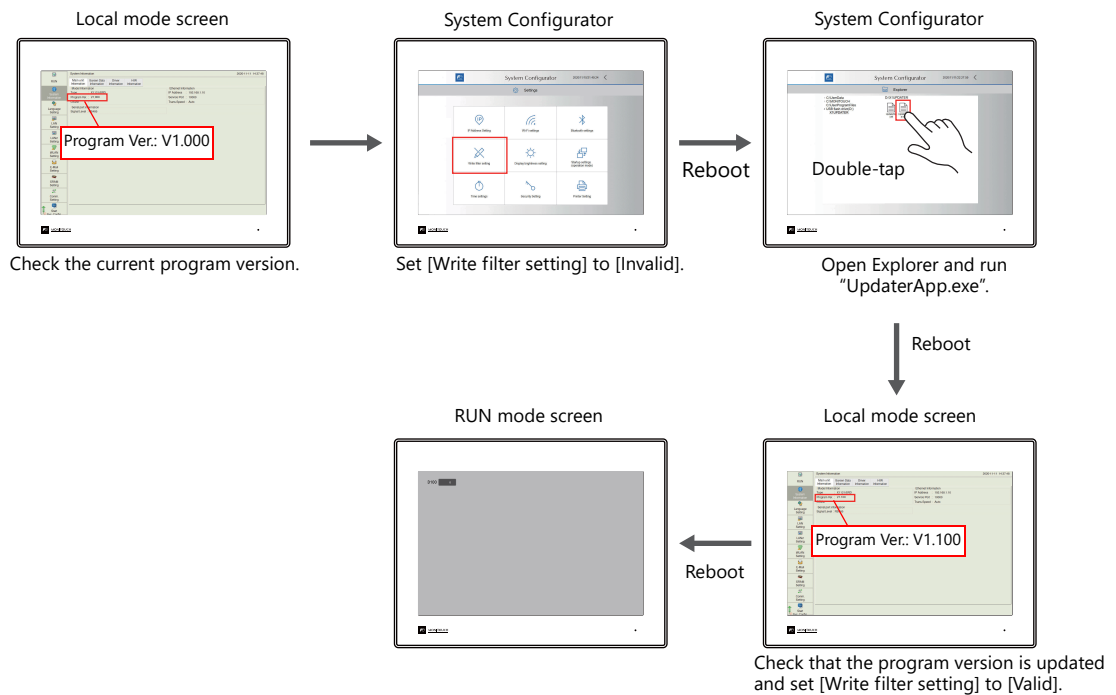
- X1 series unit
- Update program file (downloaded from our website)
- USB flash drive

Schematic of Updating

- Preparing the update program (Refer to [page 5-3](#).)



- Operations on the X1 series unit (Refer to [page 5-3](#).)



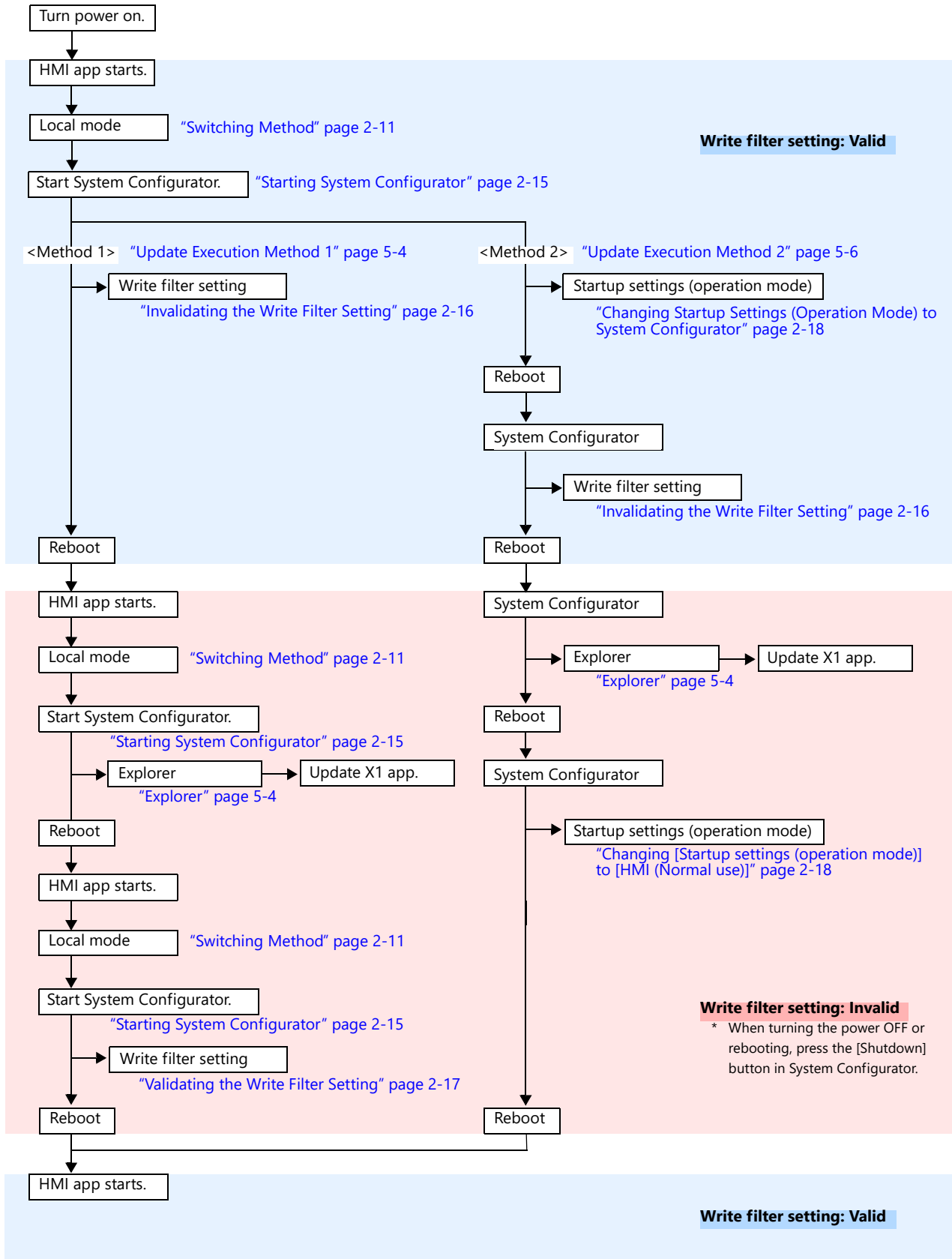
- * The X1 app cannot be updated via V-SFT version 6. Be sure to update the X1 app by downloading an update program from our website and running that program directly on the X1 series unit.
- * When using the [Security Setting] (optional) of System Configurator, the X1 app cannot be updated while [Mode setting] is set to [Valid mode]. Change [Mode setting] to [Invalid mode] and then update. For details on configuring the security setting, refer to the X1 Series Hardware Specifications.

5.2 Updating Procedure

This section explains the procedure for updating the X1 app.

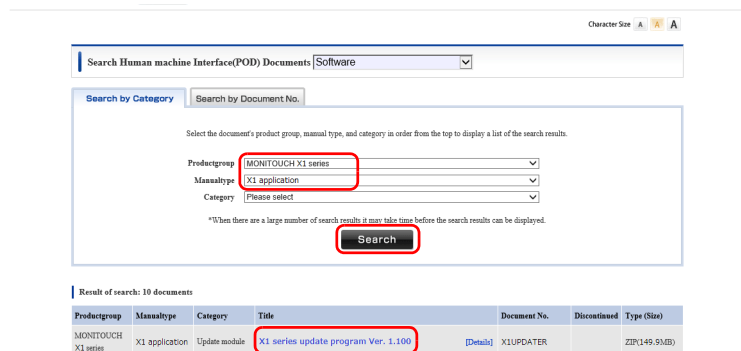
Download the X1 update program from our website in advance.

The sequence from turning on the X1 series unit power up to updating the X1 app is as shown below.



5.2.1 Preparing the Update Program

1. Download the X1 update program (X1UPDATER.zip) from our website (FeLibrary) and unzip it.
 - * Member registration and logging in is required to download.



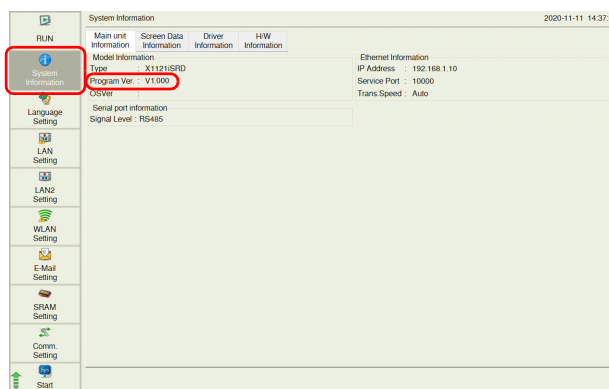
2. Copy the entire "X1UPDATER" folder unzipped in step 1 to a USB flash drive.
3. Connect the USB flash drive to the X1 series unit.

5.2.2 Checking the Current Version and Starting System Configurator

1. Switch to Local mode on the X1 series unit.

For details, refer to "Switching Method" page 2-11.

2. Check the current program version on the System Information screen.



3. Start System Configurator from Local mode.

For details, refer to "Starting System Configurator" page 2-15.




4. Execute the update program using Explorer via System Configurator.

There are two methods for execution.

For details on method 1, refer to "Update Execution Method 1" page 5-4.
 For details on method 2, refer to "Update Execution Method 2" page 5-6.

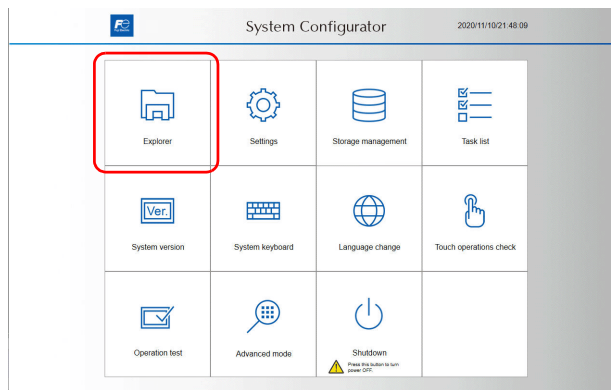
5.2.3 Update Execution Method 1

Invalidating the Write Filter Setting

1. Set [Write filter setting] to [Invalid].
 -  For details, refer to "Invalidating the Write Filter Setting" page 5-4.
2. After the X1 series unit reboots, the HMI app starts. Switch to Local mode.
 -  For details, refer to "Switching Method" page 2-11.
3. Start System Configurator from Local mode.
 -  For details, refer to "Starting System Configurator" page 2-15.

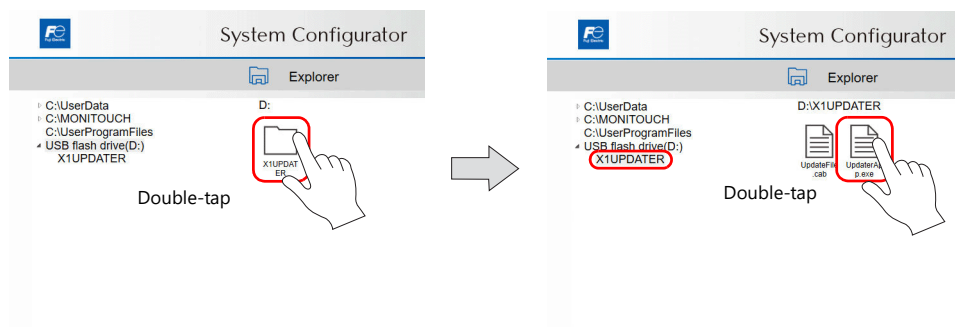
Explorer

1. Press [Explorer].

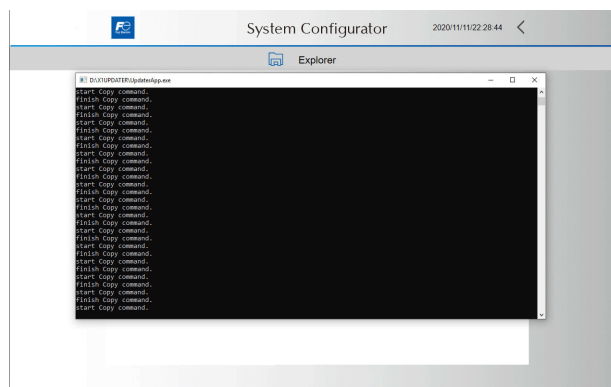


2. Open the "X1UPDATER" folder in the "USB flash drive (D:)"* by double-tapping. Then double-tap "UpdaterApp.exe" to run the program.

* The drive name of the USB flash drive may differ depending on your use environment.



3. After running the .exe file, the X1 series unit reboots.

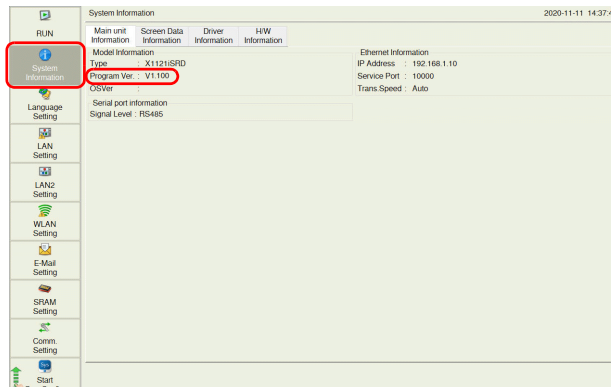


Validating the Write Filter Setting

1. Switch to Local mode on the X1 series unit.

 For details, refer to [“Switching Method”](#) page 2-11.

2. Check that the program version has been updated on the System Information screen.



3. Start System Configurator from Local mode.

 For details, refer to [“Starting System Configurator”](#) page 2-15.

4. Set [Write filter setting] to [Valid].

 For details, refer to [“Validating the Write Filter Setting”](#) page 2-17.

5.2.4 Update Execution Method 2

Changing Startup Settings (Operation Mode) to System Configurator

Change [Startup settings (operation mode)] to [System Configurator].

 For details, refer to [“Changing Startup Settings \(Operation Mode\) to System Configurator”](#) page 2-18.


Invalidating the Write Filter Setting

Set [Write filter setting] to [Invalid].

 For details, refer to [“Invalidating the Write Filter Setting”](#) page 5-4.

Explorer

Run “UpdaterApp.exe” via Explorer.

 For details, refer to [“Explorer”](#) page 5-4.

Changing [Startup settings (operation mode)] to [HMI (Normal use)]

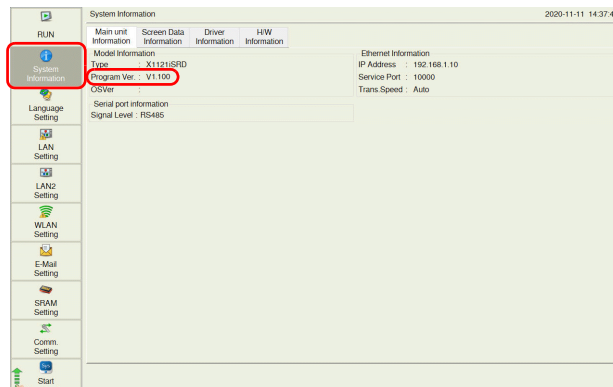
1. Change [Startup settings (operation mode)] to [HMI (Normal use)]. After rebooting, [Write filter setting] is automatically set to [Valid].

 For details, refer to [“Changing \[Startup settings \(operation mode\)\] to \[HMI \(Normal use\)\]”](#) page 2-18.

2. Switch to Local mode on the X1 series unit.

 For details, refer to [“Switching Method”](#) page 2-11.

3. Check that the program version has been updated on the System Information screen.



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