Fⓔ Fuji Electric

MONITOUCH

Hardware Specifications
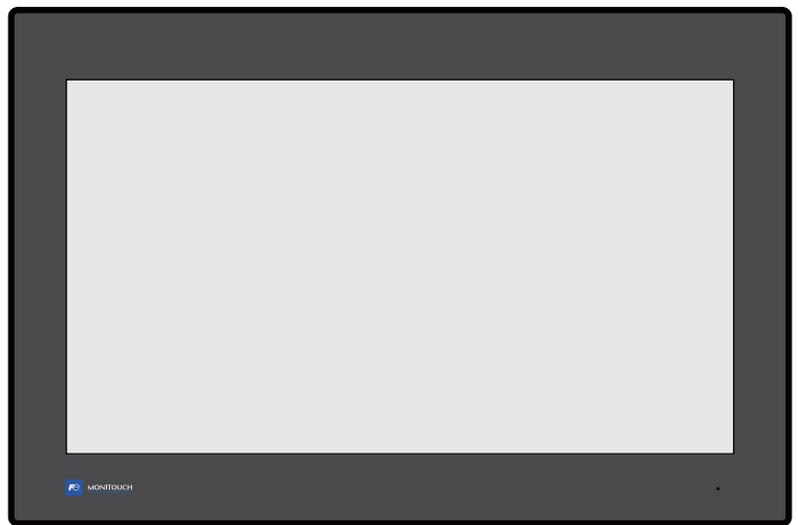
X1 Series

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	2024NE0	First edition
December, 2021	2024NE1	Second edition
October, 2022	2024NE2	Third edition

Preface

Thank you for selecting the MONITOUCH X1 series.
This manual describes operation procedures and errors of the X1 series in detail.
For correct use of the X1 series, you are requested to read through this manual to understand more about the product.
The manuals shown below are related manuals for the X1 series. Refer to them as necessary.

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

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 <u>imminently hazardous situation which, if not avoided, will result in death or serious injury.</u>

⚠ **CAUTION**	Indicates a <u>potentially hazardous situation which, if not avoided, may result in minor or moderate injury and could cause property damage.</u>

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. 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.
- 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 cause deformation, breakage, or malfunction of the touch switch, which may result in damage to the machine or an accident. Loose mounting screws may cause the unit to fall down, malfunction, or short-circuit.

⚠ 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, consult your local sales representative.
- 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.
- 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 into the X1 series unit. Failure to do so may lead to fire, damage, or malfunction.
- Do not attempt to repair, disassemble, or modify the X1 series unit yourself. Contact Hakko Electronics or the designated contractor for repairs.

⚠ CAUTION

- Do not repair, disassemble, or modify the X1 series. 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 technicians 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 to 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. Hakko Electronics does not guarantee the operation of apps installed by the customer. Make sure to thoroughly check the operation before actual use.
- Hakko 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/en-us/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.

Contents

1 Product Outline

1.1 Features

The MONITOUCH X1 series, a peripheral device for PLCs, is a programmable display unit equipped with program memory for controlling screen display, operation inputs, etc.
Screen display, operation inputs, and a function for communicating with the host controller can be easily configured on a computer using a dedicated tool, enabling configuration and operation tuned to user needs. This model is excellent for communications between the FA site and IT systems such as the office or cloud.

1. High-definition/resolution
   Offers a maximum of 16.77 million display colors and a wide high-resolution LCD, LED backlight, and capacitive touch switches are adopted.
2. Interface
   LAN connection (2 channels) supporting GbE, USB 3.0 and USB 2.0 (2 channels each), HDMI connection, serial connection (1 channel), and audio output are available by standard.
   There are also models that have built-in wireless LAN and Bluetooth (one channel each).
3. Improved performance
   High-speed processing and rapid rendering can be achieved through the adoption of a high-performance processor.
4. Software expandability
   By adopting a Window OS, various software can be used without interfering with the existing human-machine interface (HMI) function.
5. Vector rendering
   Instead of bitmap rendering, vector format rendering is now adopted thereby enabling high-quality rendering even when zooming in or out.
6. OPC Unified Architecture (UA) server/client
   OPC UA server and client functions are supported, enabling coordinated data communications with both upper-layer and lower-layer systems.
7. Message queuing telemetry transport (MQTT)
   The MQTT protocol for connection to a cloud service is supported. Data transmission with the Microsoft Azure cloud is possible.
8. System Configurator
   The "System Configurator" app is provided to enable the installation of applications via Explorer and facilitate various setting functions such as date/time settings and brightness settings.
9. Multi-Display Function
   By connecting a display to the X1 unit using an HDMI cable, the X1 unit and the display can both display screens and be operated the X1 app independently.
10. 2-Split Screen Display
    By splitting the screen of the X1 series unit in two, two X1 apps can be displayed and operated independently. In addition, a half of right side (or bottom side when portrait installation) can be displayed and operated as user application area.

1.2 Models and Peripheral Equipment

1.2.1 Model Naming Convention

The model name consists of the following information.

X1 ☐☐ 1 i S ☐ D

Power supply specification
D: 24 VDC type

Wireless LAN / Bluetooth
None: No wireless LAN or Bluetooth
R: With wireless LAN and Bluetooth

Model
S: Standard model

Ethernet
i: With built-in LAN port (2 channels)

Touch switch specification
1: Capacitive type

Screen size
15: 15.6-inch wide screen (1,920 × 1,080 dots)
12: 12.1-inch wide screen (1,280 × 800 dots)
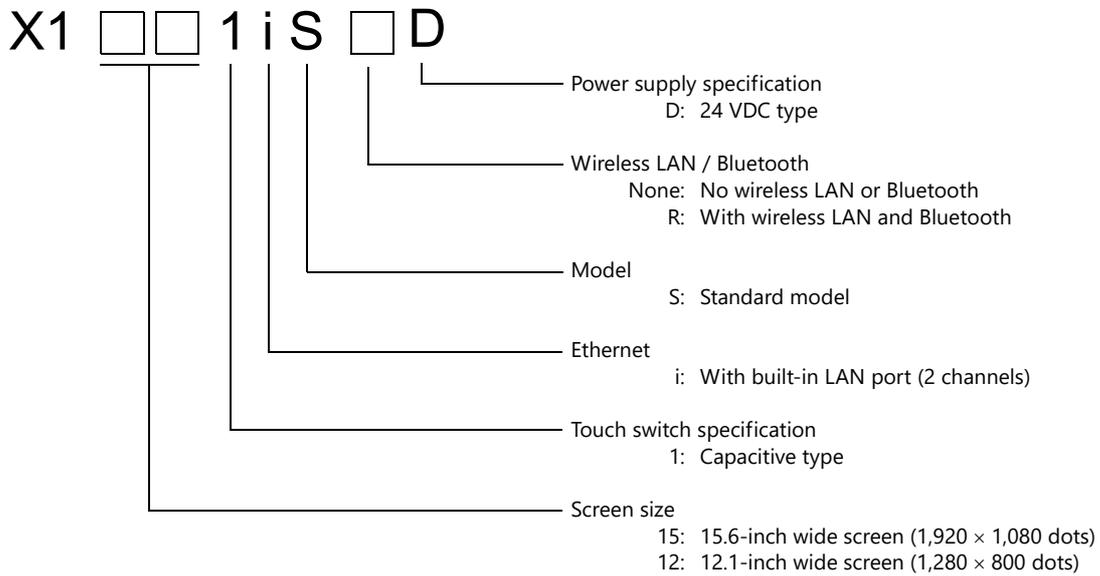
1.2.2 Lineup

Model	Screen Size	Touch Switch	External Interface		Wireless LAN	Bluetooth	Power Supply
X1121iSD	12.1-inch widescreen (1,280 × 800 dots)	Capacitive type (PCAP)	LAN port Serial port USB Ver.2.0 USB Ver.3.0 HDMI output AUDIO output	2CH 1CH 2CH 2CH 1CH 1CH	×	×	DC power supply
X1121iSRD					1CH	1CH	
X1151iSD	15.6-inch widescreen (1,920 × 1,080 dots)				×	×	
X1151iSRD					1CH	1CH	

1.2.3 Peripheral Equipment

Model	Description
V-SFT-6	Screen configuration software Application software for editing screen programs Supported OS: Windows Vista(32bit, 64bit) / 7(32bit, 64bit) / 8(32bit, 64bit) / 8.1(32bit, 64bit) / 10(32bit, 64bit) / 11(64bit) * Windows XP/XP64 Edition is not supported by V-SFT Ver. 6.1.6.0 or later.
X1-BT	Replacement battery dedicated to the X1 series
X1-SS	USB flash drive for setting up the X1 security function
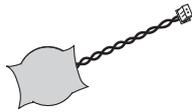
1.3   System Configuration
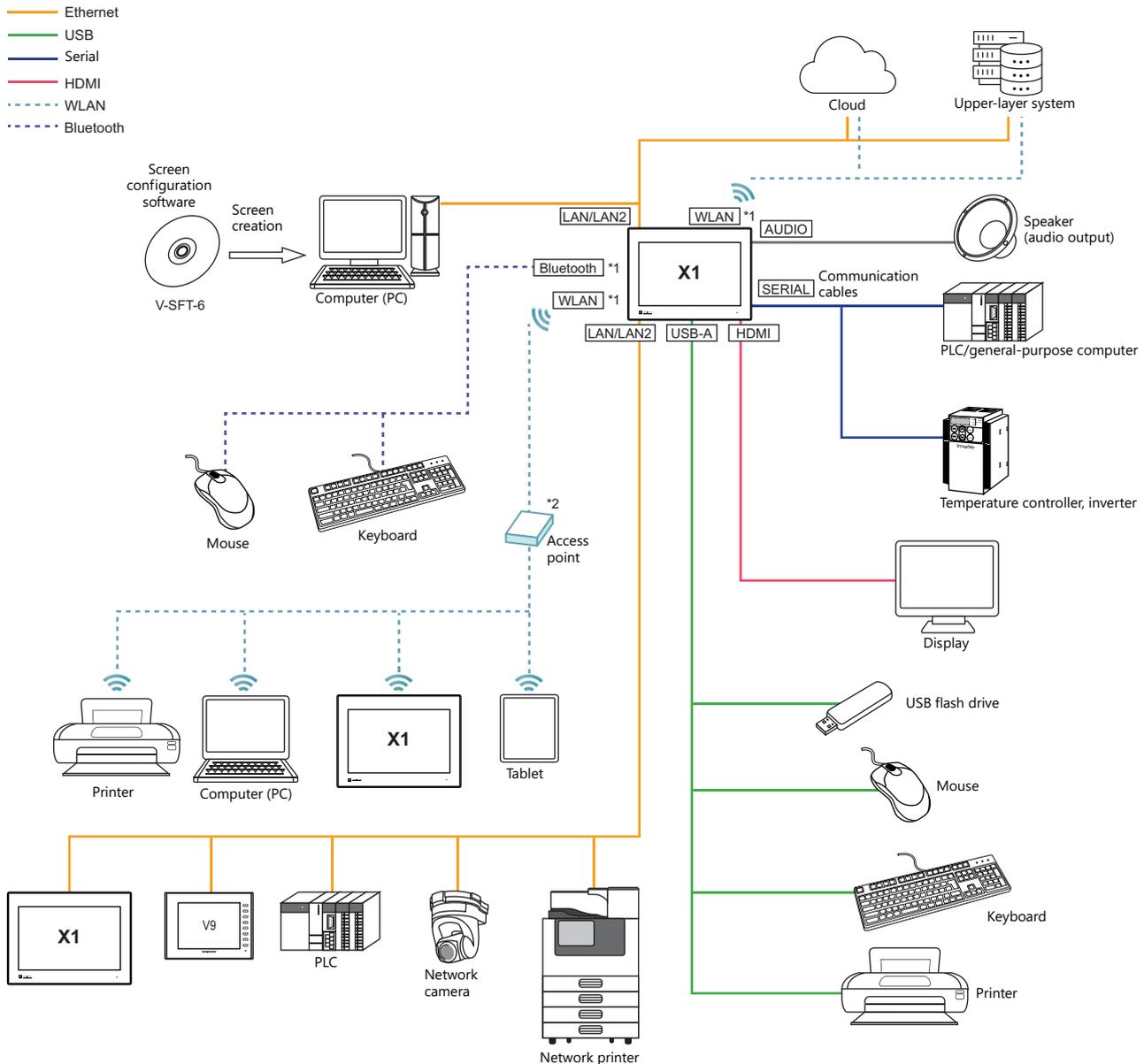
*1   Only for models with wireless LAN and Bluetooth
*2   An access point is necessary.

2 Specifications

2.1 Specifications

2.1.1 General Specifications

Item			X1121iSD	X1121iSRD	X1151iSD	X1151iSRD
Conformance Standards	CE Marking		EMC directive (2014/30/EU) EN61000-6-2, EN61000-6-4 RE directive (2014/53/EU) EN300 328, EN301 893, EN301 489-1, EN301 489-17, EN62311 RoHS directive			
	UL/cUL		UL61010-1, UL61010-2-201 (E313548) CAN/CSA-C22.2 No. 61010-1, CAN/CSA-C22.2 No. 61010-2-201			
	KC		Conforming			
	UKCA		Conforming Hardware version b or later.			
	Radio Law		Non-conforming	Japan: MIC USA: FCC Canada: ISED Europe: RED South Korea: KC Taiwan: NCC	Non-conforming	Japan: MIC USA: FCC Canada: ISED Europe: RED South Korea: KC Taiwan: NCC
Power Supply	Permissible Voltage Range		24 VDC ± 10 %			
	Permissible Momentary Power Failure		Within 1 ms			
	Power Consumption (Maximum Rating)		41 W or less		51 W or less	
	Rush Current		24 A or less, 6 ms (ambient temperature at 25 °C)			
	Withstand Voltage		DC external terminals to FG: 500 VAC for 1 minute			
Insulation Resistance			DC external terminals to FG: 500 VDC, 10 MΩ or higher			
Physical Environment	Operational Ambient Temperature		0 °C to +45 °C [1]			
	Storage Ambient Temperature		−10 °C to +60 °C [1]			
	Operational Ambient Humidity		85 % RH or less (without dew condensation) [1]			
	Storage Ambient Humidity		85 % RH or less (without dew condensation) [1]			
	Altitude		2000 m or less			
	Atmosphere		No corrosive gas, no excessive dust, and no conductive dust			
	Overvoltage Category [2]		Category II			
	Pollution degree [3]		2			
Mechanical Working Conditions	Vibration Resistance		JIS B 3502 (IEC61131-2) compliant Vibration frequency: 5 to 9 Hz Half-amplitude: 3.5 mm, Vibration frequency: 9 to 150 Hz Constant acceleration: 9.8 m/s^2 (1 G), 3 directions of X, Y, and Z: 10 times each			
	Shock Resistance		JIS B 3502 (IEC61131-2) compliant Peak acceleration: 147 m/s^2 (15 G), 3 directions of X, Y, and Z: 3 times each (18 times in total)			
Electrical Working Conditions	Noise Resistance		Noise voltage: 1000 Vp-p, Pulse width: 1 μs, Rising time: 1 ns (Measured using a noise simulator)			
	Static Electricity Discharge Resistance		Compliant with IEC61000-4-2, Contact: 6 kV, Air: 8 kV			
Installation Specifications	Grounding		100Ω or less, FG/SG connected			
	Protective Structure [4]	Panel Front Surface	Equivalent to IP66 (when waterproof gasket is installed)			
		Rear Case	Equivalent to IP20			
	Cooling System		Natural cooling			
	Mounting Method		Fitted into a mounting panel			
	Mounting Panel Thickness		1.5 to 4.0 mm [5]			
Weight			Approx. 3.2 kg		Approx. 3.9 kg	
Dimensions	External (W × H × D)		320.0 × 241.0 × 66.7 mm		406.0 × 271.0 × 68.2 mm	
	Panel cut-out (W × H)		309.0 $^{+0.5}_{-0}$ × 230.0 $^{+0.5}_{-0}$ mm		395.0 $^{+0.5}_{-0}$ × 260.0 $^{+0.5}_{-0}$ mm	
Case	Color		Black			
	Material		Front: PBT+GF30 resin		Rear: Sheet metal	

*1 Use the unit in an environment where the wet-bulb temperature is 39 °C or less; otherwise the unit may be damaged.

*2 This indicates the distribution section to which the unit is intended to be connected to within the path between the distribution of the public power network and machinery in the facility.
"Category II" applies to devices supplied with power from mains sockets or similar points. The withstand surge voltage is 500 V for devices rated up to 50 V.

*3 This is an index that expresses the degree of conductive pollution in the environment where the unit is used. "Pollution degree 2" indicates the condition where only non-conductive pollution occurs. However, due to condensation, temporary conductive pollution may occur.

*4 Protective structure for the front when the unit is mounted on a mounting panel.
While the protective structure has passed compliance testing, it is not guaranteed under all environments. Periodical checking of the tightening torque of fixtures is recommended to ensure stable protection.

*5 Even when the mounting panel thickness is within the specified range, the panel itself may warp depending on the material and size of the mounting panel. Use a panel that can withstand the forces of mounting.

2.1.2   Performance Specifications

Item		X1121iSD	X1121iSRD	X1151iSD	X1151iSRD
Hardware	Processor	Intel Atom® x5-E3940			
	Cores/Threads	4/4			
	Main Memory	4GB			
	Internal storage	SSD: 64 GB (Free space: 30 GB)[*1]			
Software	OS	Windows 10 IoT Enterprise 2019 LTSC			
Display	Display Device	TFT color			
	Screen Size	12.1-inch widescreen		15.6-inch widescreen	
	Dots (resolution)	1,280 × 800		1,920 × 1,080	
	Dot Pitch	0.068 × 0.204 mm		0.05975 × 0.17925 mm	
	Display Colors	16.77 million colors: "Picture" images, 3D parts 65,536 colors: All other items			
	Backlight	LED (Not replaceable by user)			
	Backlight Brightness Halftime [*2]	Approx. 50,000 hours			
	Backlight Auto OFF Function	Always ON, custom setting			
	Brightness Adjustment	System menu: 16 levels System Configurator: 128 levels Macro: 128 levels			
	Operation Surface Material	Glass			
	POWER Lamp	Lit green: Power on state			
Touch Switch	Type	PCAP (Projected-capacitive type)			
	Surface Treatment	Clear			
Clock	Backup Retention Period	3 years (ambient temperature at 25 °C)			
	Calendar Accuracy [*3]	Daily deviation of ±2 seconds (ambient temperature at 25 °C)			
	Replacement Battery [*4]	Coin-type lithium primary cell (X1-BT manufactured by Hakko Electronics)			

*1 Free space breakdown

Folder		Capacity
Included areas for write filters	• C:\UserProgramFiles	15GB
Excluded areas for write filters	• C:\MONITOUCH\X1\0 folder • C:\MONITOUCH\X1\1 folder • C:\MONITOUCH\X1\opcua folder • C:\UserData folder	15GB

*2 Time until the surface brightness becomes 50% of the initial value at an ambient termperature of 25 °C
The backlight life may be slightly extended by reducing the brightness from the system menu or with a macro command.

*3 When using the unit at an ambient temperature other than 25 °C, clock deviation may increase. Check and correct the clock periodically.

*4 A battery is already installed in the unit upon delivery. Note that calendar data may be lost through battery replacement. Refer to Battery Replacement page 3-7.

2.1.3 Interface Specifications

	Item	X1121iSD	X1121iSRD	X1151iSD	X1151iSRD
Ethernet	Number of Ports	2			
	Connector	RJ-45			
	Applicable Standards	IEEE802.3 compliant / IEEE802.3u compliant[*1] / IEEE802.3ab compliant			
	Baud Rate	10Mbps / 100Mbps / 1.0Gbps			
	Protocol	TCP/IP, UDP/IP			
	Function	Auto-MDIX, Auto-Negotiation			
	Recommended Cable	100 Ω STP (shielded twist-pair) cable, category 5e or above, max. 100-m long			
	Applications	Screen program transfer, PLC connection, upper-layer PC connection, printer connection, etc.			
SERIAL	Number of Ports	1			
	Connector	RJ-45			
	Communication Standard	RS-232C / RS-485 (2-wire connection)/ RS-422 (4-wire connection)			
	Synchronization	Asynchronous type			
	Data Length	7 / 8 bits			
	Parity	None / Even / Odd			
	Stop Bit	1 / 2 bits			
	Baud Rate	4800 / 9600 / 19200 / 38400 / 57600 / 76800 / 115200bps			
	Applications	PLC, temperature controller, etc.			
USB-A Ver.3.0	Number of Ports	2			
	Baud Rate	Low speed: 1.5 Mbps, Full speed: 12 Mbps, High speed: 480 Mbps, Super speed: 5.0 Gbps			
	Applications	Printer, USB flash drive, keyboard, mouse connection, etc.			
USB-A Ver.2.0	Number of Ports	2			
	Baud Rate	Low speed: 1.5 Mbps, Full speed: 12 Mbps, High speed: 480 Mbps			
	Applications	Printer, USB flash drive, keyboard, mouse connection, etc.			
Audio Output	Number of Ports	1			
	Connector	φ3.5 mm stereo mini jack			
Video Output	Number of Ports	1			
	Connector	HDMI Ver.1.4b			
	Output Resolution	1,280 × 800		1,920 × 1,080	
Wireless LAN	Number of Ports	-	1	-	1
	Wireless LAN Standards		IEEE802.11ac/a/b/g/n		IEEE802.11ac/a/b/g/n
	Frequency		2.4 GHz / 5.0 GHz band		2.4 GHz / 5.0 GHz band
	Modulation Method		DSSS / OFDM		DSSS / OFDM
	Baud Rate		11M / 54M / 300M / 867Mbps		11M / 54M / 300M / 867Mbps
	Operation Mode		Station		Station
	Usage Environment		Indoors		Indoors
Bluetooth	Number of Ports	-	1	-	1
	Supported Standards		V2.1+EDR V3.0+HS V4.0LE V4.1 V4.2 V5.0		V2.1+EDR V3.0+HS V4.0LE V4.1 V4.2 V5.0
	Supported Class		Class1		Class1
	Transfer Speed		Low Energy: 2 Mbps EDR:3Mbps		Low Energy: 2 Mbps EDR:3Mbps
	Frequency		2.402 to 2.480 GHz		2.402 to 2.480 GHz

*1 Jumbo frames not supported

2.1.4   Screen Configuration Environment

Item		Specification
Configuration Method		Dedicated configuration software
Configuration Tool	Dedicated Software Name	V-SFT-6
	OS[1] [2]	Windows 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) / 11 (64bit)
	CPU	Pentium 4, 2.0 GHz or above recommended
	Memory	1.0 GB or above (2.0 GB or above recommended)
	Hard Disk Capacity	At installation: Approx. 4.0 GB or more
	Optical Disc Drive	DVD-ROM drive
	Display	Resolution of 1,024 × 768 dots or more
	Display Colors	High color (16-bit) or higher
	Other	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.

*1   Administrator privileges are required for installation.
*2   Windows XP/XP64 Edition is not supported by V-SFT Ver. 6.1.6.0 or later.

2.1.5   Display Function Specifications

Item		Specification
Interface Language [1]		Japanese, English/Western Europe, Chinese (Traditional), Chinese (Simplified), Korean, Central Europe, Cyrillic, Greek, Turkish, and Baltic
Font Types		TrueType fonts, bitmap fonts, Windows fonts, gothic fonts, stroke fonts [2]
Character Properties	Display Properties	Normal, blink, bold, shadow, transparent, italic
	Color	65,536 colors (without blinking), 32,768 colors (with blinking)
Graphics	Lines	Line, continuous line, box, parallelogram, polygon
	Circles	Circle, arc, sector, ellipse, elliptical arc
	Other	Pattern, "picture" image, data display (graphics library, data sheets)
Graphic Properties	Line Type	6 types (thin, thick, dotted, chain, dashed, two-dot chain) Line thickness can be selected from 1 to 8 points (excluding thick lines).
	Tile	16 types (including 8 user-definable patterns)
	Display Properties	Normal, blinking
	Display Colors	65,536 colors (without blinking), 32,768 colors (with blinking)
	Color Selection	Foreground, background, boundary (line)

*1   For details, refer to the X1 Series Reference Manual 1.
*2   Stroke fonts are not supported. TrueType fonts will be used instead on the X1 unit.

2.1.6 Function Performance Specifications

Item		Specification
Screens		Max. 4,000
Screen Memory		SSD 64 MB
Switch		Max. 4,096 switches per screen[*1] (including slider switches and scroll bars)
Switch Actions		Set, reset, momentary, alternate, illuminated It is possible to press two switches on the display at the same time.
Lamp		Reverse, blinking, exchange of graphics Max. 4,096[*1] per screen
Graph		Pie, bar, panel meter and closed area graphs: Max. 4,096[*1] per screen Statistics and trend graphs: Max. 256 per layer[*2]
Data Setting	Numerical Data Display	Max. 4,096[*1] per screen
	Character Display	Max. 4,096[*1] per screen
	Message Display	Max. 4,096[*1] per screen Maximum number of characters per line: 127 one-byte characters
Message		Max. 32,768 lines
Macro Block		Max. 1,024
Graphic Library		Max. 2,560
Overlap Library		Max. 4,000
Screen Library		Max. 4,000
Data Block		Max. 1,024
Pattern		Max. 1,024
Data Sheet		Max. 1,024
Tag		Max. 65,536 lines
Page Block		Max. 2,048
Direct Block		Max. 1,024
Screen Block		Max. 1,024
Comment		Max. 32,767
Logging Server		Fixed cycle, trigger
Alarm Server		Real time, alarm, event
Recipes		Max. 256
Scheduler		Max. 64
MES Settings		Max. 256
Device Memory Map		Max. 32 × 8 (PLC1 to PLC8)
Time Display		Provided
Hard Copy		Provided
Buzzer		Provided, 3 sounds (short beep, long beep, continuous beep)
Auto OFF Function		Always ON, custom setting
Self-diagnostic Function		Touch switch test function Confirmation function that uses the status bar Network diagnostic function (network test)

*1 The maximum number of parts that can be placed on one screen is 4,096.

*2 Layer: 11 layers per screen (base screen and 10 overlap displays)

2.2 External Dimensions and Panel Cut-out Dimensions

2.2.1 X1121

- Front view

- Side view   (Unit: mm)

320.0

241.0

58.7

8.0

- Rear view

308.0

229.0

USB2.0 USB3.0 HDMI   LAN LAN2   AUDIO SERIAL 24VDC

- Bottom view

66.7

- Panel cut-out dimensions

309.0 +0.5 -0

230.0 +0.5 -0
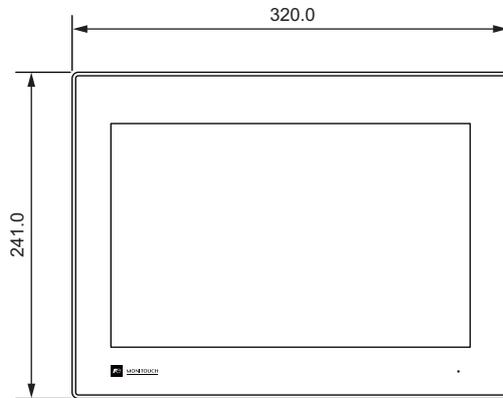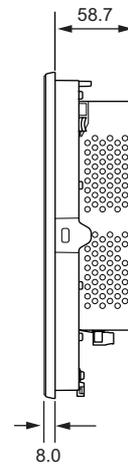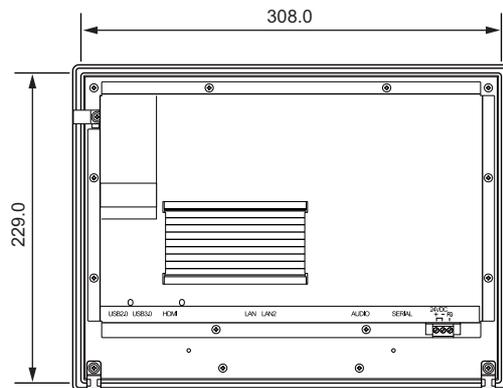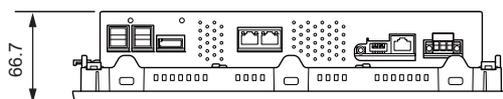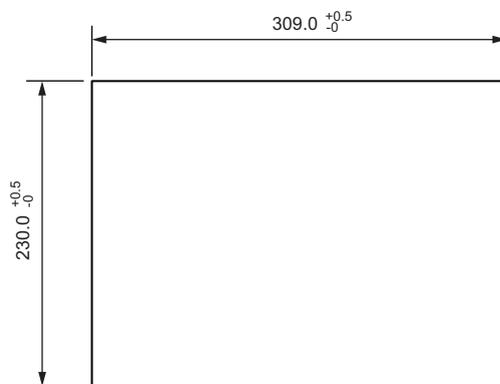
2.2.2   X1151

- Front view
- Side view   (Unit: mm)

406.0

271.0

60.2

8.0

- Rear view

394.0

259.0

USB2.0 USB3.0   HDMI   LAN LAN2   AUDIO   SERIAL   24VDC

- Bottom view

68.2

- Panel cut-out dimensions

395.0 $^{+0.5}_{-0}$

260.0 $^{+0.5}_{-0}$
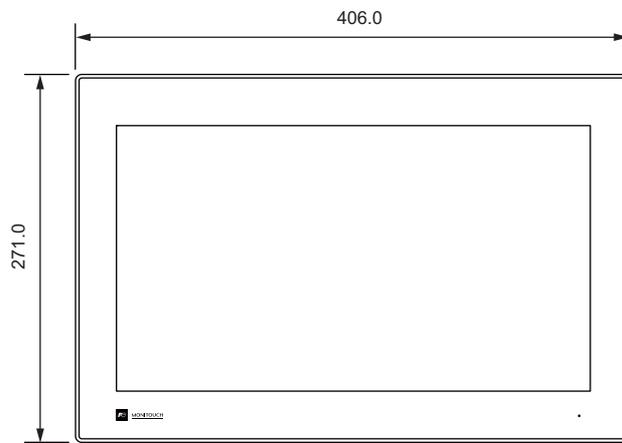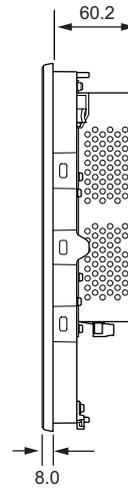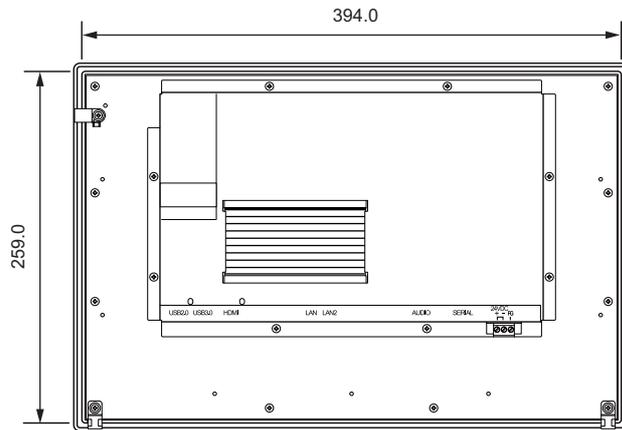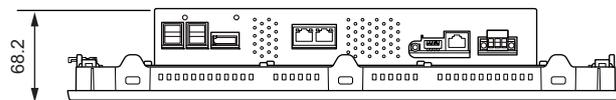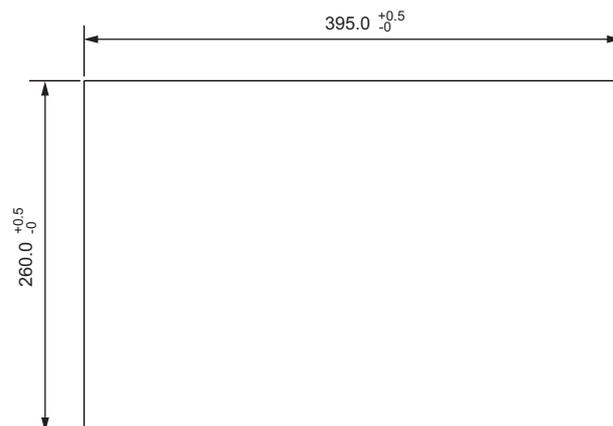
2.3 Names of Components
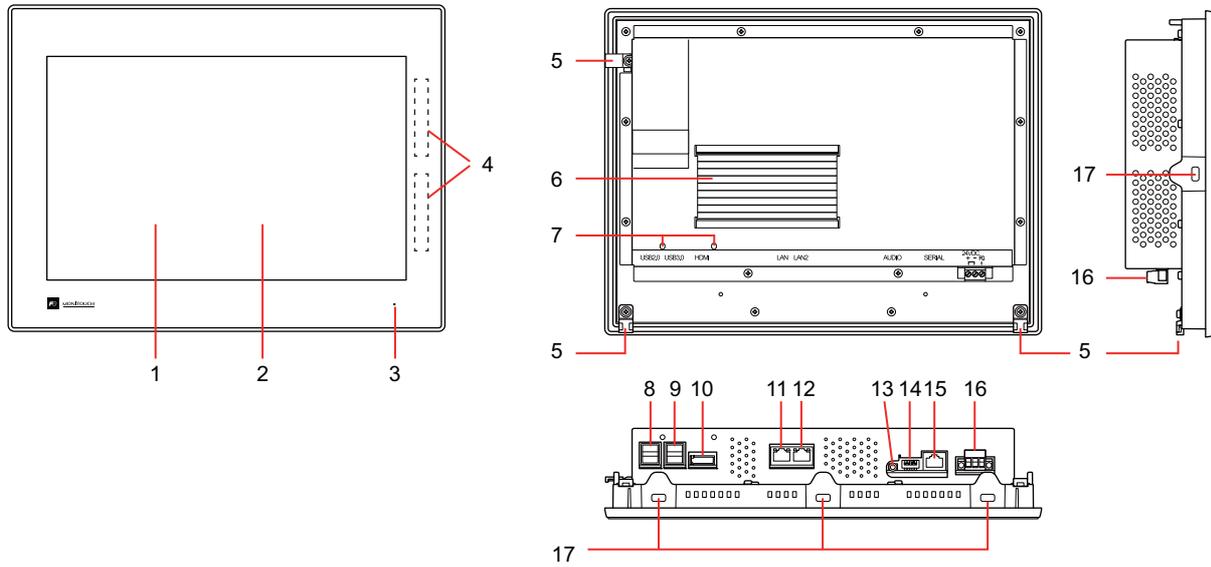
No.	Name	Description
1	Display	Display area
2	Touch Switch	Capacitive touch switch area
3	POWER Lamp	Lit green while power is ON
4	Wireless communication antenna	Two built-in antennas for wireless communication (only on models with built-in wireless LAN)
5	Fall prevention fixture	Fixtures to prevent the unit from falling when installed on a mounting panel
6	Heat sink	Heat sink for radiating heat. Do not touch because it becomes extremely hot.
7	Cable clamp hole	Used to fix USB and HDMI cables in place
8	USB 2.0	USB version 2.0 Type-A port, 2 channels
9	USB 3.0	USB version 3.0 Type-A port, 2 channels
10	HDMI	External monitor output port, 1 channel
11	LAN	Ethernet communication port
12	LAN2	
13	AUDIO	Audio output connector, 1 channel, for external speaker connection
14	DIP switches	Sets the terminating resistance for serial communication, etc. Refer to page 2-17.
15	SERIAL	Serial communication port
16	Power supply terminal	Terminal block for 24V power supply
17	Mounting holes	Holes for fitting mounting fixtures (8 positions). Refer to page 3-1.

2.4   Specifications of Components

2.4.1   LAN / LAN2

These connectors are used for Ethernet communication with an upper-layer PC and controllers.

Bottom view
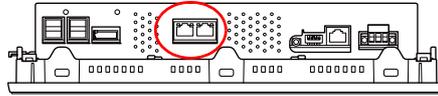
Specifications

Item	Specification
Number of Ports	2
Connector	RJ-45
Applicable Standards	IEEE802.3 compliant : 10BASE-T IEEE802.3u compliant : 100BASE-TX IEEE802.3ab compliant : 1000BASE-T
Baud Rate	10Mbps / 100Mbps / 1.0Gbps
Protocol	TCP/IP, UDP/IP
Function	Auto-MDIX[*1], Auto-Negotiation
Recommended Cable	100 Ω STP (shielded twist-pair) cable, category 5e or above, max. 100-m long
Applications	Screen program transfer, PLC connection, upper-layer PC connection, printer connection, etc.

*1   Both straight and cross cables are usable, irrespective of the presence or absence of a hub.

Pin numbers and signal names

LAN	Pin No.	10BASE-T / 100BASE-TX		1000BASE-T	
	1	TX+	Transmit signal +	BI_DA +	Transmit/receive data A+
	2	TX−	Transmit signal −	BI_DA −	Transmit/receive data A−
12345678	3	RX+	Receive signal +	BI_DB +	Transmit/receive data B+
	4	NC	Not used	BI_DC +	Transmit/receive data C+
	5	NC	Not used	BI_DC −	Transmit/receive data C−
	6	RX-	Receive signal −	BI_DB −	Transmit/receive data B−
	7	NC	Not used	BI_DD +	Transmit/receive data D+
	8	NC	Not used	BI_DD −	Transmit/receive data D−

LED

LAN	A: Activity LED	B: Speed LED	Status
	On	Off	10BASE link established / Data is being transmitted
A B	On	Lit green	100BASE link established / Data is being transmitted
	On	Lit orange	1000BASE link established / Data is being transmitted

Wiring

⚠️ • The SERIAL and LAN/LAN2 connectors are 8-pin modular jacks. Check the connector names on the unit and insert cables into the correct connectors.
   • Do not connect any peripheral device that will carry excess voltage to the LAN/LAN2 connector.

• Use a commercially available cable. Using a custom-made cable may cause an error in network connection.

2.4.2   SERIAL

This connector is used for serial connection with controllers.

Bottom view
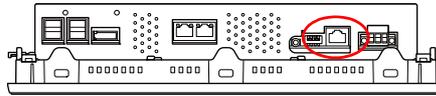
Specifications

Item	Specification
Number of Ports	1
Connector	RJ-45
Communication Standard	RS-232C / RS-485 (2-wire connection) / RS-422 (4-wire connection)[*1]
Synchronization	Asynchronous type
Data Length	7 / 8 bits
Parity	None / Even / Odd
Stop Bit	1 / 2 bits
Baud Rate	4800 / 9600 / 19200 / 38400 / 57600 / 76800 / 115200bps
Applications	PLC, temperature controller, etc.

*1   Select the signal level on the [Hardware Setting] window of the screen configuration software or local mode on the X1 series unit.
When selecting the RS-422 (4-wire connection) signal level for connection with a controller that supports both RS-485 (2-wire connection) and RS-422 (4-wire connection), select in the local mode on the X1 series unit. Refer to "Serial Setting" page 5-44.

Pin numbers and signal names

LAN	Pin No.	RS-232C		RS-485 (2-wire connection)		RS-422 (4-wire connection)	
	1	RD	Receive	+	Transmit/receive +	+SD	Transmit +
	2	NC	-	-	Transmit/receive −	-SD	Transmit −
12345678	3	NC	-	NC	-	NC	-
	4	NC	-	NC	-	NC	-
	5	SG	Signal ground	SG	Signal ground	SG	Signal ground
	6	SG	Signal ground	SG	Signal ground	SG	Signal ground
	7	SD	Transmit	NC	-	+RD	Receive +
	8	NC	-	NC	-	-RD	Receive −

*   The frame ground (FG) and signal ground (SG) are connected inside the unit.

Recommended cable

AWG 26 stranded wire, braided shield

*   Check the operation in advance in the usage environment.

2.4.3   USB-A

These connectors are used for connecting a printer, USB flash drive, keyboard, mouse, etc. There are USB version 2.0 and version 3.0 ports.

Bottom view

4 : Z drive   2 : X drive

3 : Y drive   1 : W drive

Enlarged view
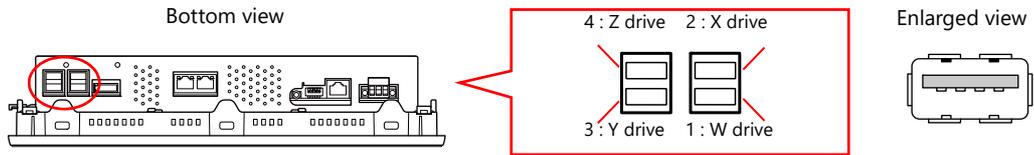
Specifications

Item	USB-A Ver.2.0	USB-A Ver.3.0
Number of Ports	2 (Port 3/ Port 4)	2 (Prot 1/Port 2)
Baud Rate	Low speed: 1.5 Mbps Full speed: 12 Mbps High speed: 480 Mbps	Low speed: 1.5 Mbps Full speed: 12 Mbps High speed: 480 Mbps Super speed: 5.0 Gbps
Current delivery	Max. 2.0 A in total	

Applications

Application		Setting	Location of Settings	Refer to
Printer connection		Required	System Configurator	"Printer Setting" page 5-76
			V-SFT-6[*1]	X1 Reference Manual 1
USB flash drive connection	Screen program transfer	Required	V-SFT-6[*1]	page 2-12, X1 Reference Manual 2
	Logging, Alarm, etc.			
Keyboard/numeric keypad connection		Required	V-SFT-6[*1], X1 local mode[*1]	page 2-11
Mouse connection		Not required	-	page 2-12

*1   For use with the X1 app

Keyboard/Numeric Keypad Connection

Numeric values and characters can be entered by connecting a keyboard or numeric keypad to the X1 series unit.

Connection example

X1

USB-A

Keyboard

Keypad
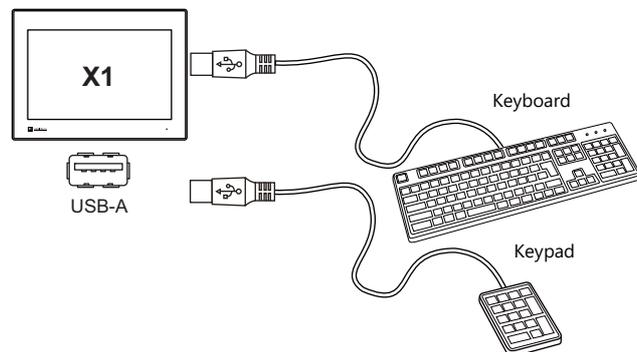
V-SFT version 6 settings

An [Entry] icon must be registered on the screen where the keyboard is to be used.
In addition, placement of numerical data or character display parts with [Entry Target] selected for [Function] is required.
For details, refer to the X1 Series Reference Manual 1.

USB Flash Drive Connection

Connection example

USB-A   USB flash drive
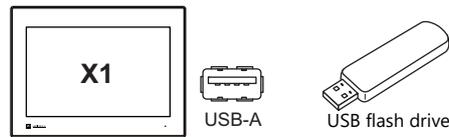
USB flash drive specifications

Item	Specifications
Capacity	32 GB or less
File System	FAT / FAT32 / exFAT / NTFS

Notes

⚠️

- USB flash drives that have a security function cannot be used.
- Do not turn off power to the unit when the USB flash drive is being accessed.
- Do not attempt removing a USB flash drive when it is being accessed.
- Periodically make a backup copy of the USB flash drive.
- If a disk error occurs and data read/write operation is disabled, execute ScanDisk on Windows and try to restore the disk. If the disk cannot be restored, format the storage device. Note that formatting will completely erase all stored data. (For information on executing ScanDisk on Windows, refer to the relevant Windows manual.)

V-SFT version 6 settings

- When using for screen program transfer: Automatically uploading
  Create the "DSPDEF\DSP\DSPDEF.bin" file and store it in the USB flash drive using Storage Manager.
- When using for screen program transfer: Storage transfer in the local mode
  - Select [System Setting] → [Other] → [Storage setting] → [External usb storage] and specify the USB storage connection drive.
  - Create the "X1_Storage\(access folder)\DSP\DSP0000.bin" file and store it in the USB flash drive using Storage Manager.
- When using as the external USB storage for each function (logging, alarm, etc.)
  Select [System Setting] → [Other] → [Storage setting] → [External usb storage] and specify the USB storage connection drive.
For details, refer to the X1 Series Reference Manual 2.

Mouse Connection

A mouse can be used for screen operations by connecting a mouse to the X1 series unit.
The screen of the multi-display function also can be operated.

Connection example

Mouse

USB-A
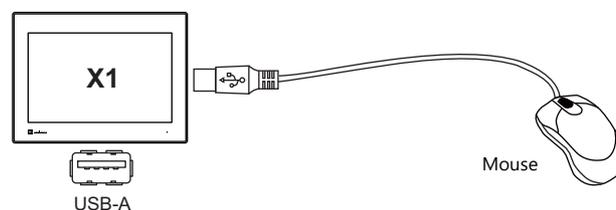
Mouse operations

Mouse Operation	Action
Move	Moving the mouse pointer
Left-click	Press a switch

2.4.4   HDMI

This connector is used to output images to an external monitor.
To show the different screens on the X1 application and external display, "Multi-Display Settings" must be configured in the screen program.
To show the same screen on both the X1 application and an external display (duplication), no screen data setting is required.

Bottom view
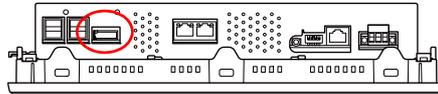
Specifications

Item	Specifications
Number of Ports	1
Connector	HDMI Ver.1.4b
Output Resolution	X1121iS: 1,280 × 800 X1151iS: 1,920 × 1,080
Max. cable length	5m

Notes

- Use a cable with ferrite cores attached on both ends. If a cable does not have ferrite cores, add them.
  Images may not be displayed normally if any cable without ferrite cores is used.
- Images may not be displayed normally if the cable length exceeds 5 meters.
- Use a device and cable that conforms to standard HDMI specifications.

2.4.5   Audio Output

This connector is used to output audio to an external speaker.

Bottom view
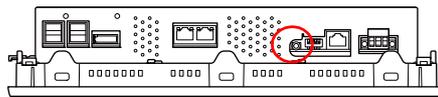
Specifications

Item	Specification
Number of Ports	1
Connector	φ3.5 mm stereo mini jack
File Format	WAV (PCM)
Sampling Frequency	8 / 16 / 32 / 48 / 96 / 192 kHz
Quantization Bit	8 / 16 / 24 bits
Audio Source	Monaural / Stereo
Volume Control	8 levels
Max. Output Voltage	1.2 Vrms (0 dB)
Connected Amplifier	Input impedance of 1 kW or more

2.4.6　WLAN

This interface is used to connect devices to the X1121iSRD and X1151iSRD via wireless LAN.

Front View

Built-in antenna

Specifications

Item	Specification
Number of Ports	1
Antenna	Two built-in antennas (2T2R)
Wireless LAN Standards	

Standard	Frequency*	Max. Baud Rate	Modulation Method
IEEE802.11b	2.4 GHz band	11Mbps	DSSS (DBPSK, DQPSK, CCK)
IEEE802.11a	5.0 GHz band	54Mbps	OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
IEEE802.11g	2.4 GHz band	54Mbps	OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
IEEE802.11n	2.4 GHz / 5.0 GHz band	300Mbps	OFDM (BPSK, QPSK, 16-QAM, 64-QAM)
IEEE802.11ac	5.0 GHz band	867Mbps	OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)

* 2.4 GHz band: 2.412 GHz to 2.484 GHz
5.0 GHz band (Outdoor use of the W52 and W53 bands is prohibited by radio law.)
W52: 5.150 GHz to 5.250 GHz
W53: 5.250 GHz to 5.350 GHz
W56: 5.470 GHz to 5.725 GHz

Item	Specification
Operation Mode	Station
Usage Environment	Indoor use only
Security	64/128bits WEP / WPA / WPA2 / 802.1x / 802.11i
Conformance Standards	Japan: MIC USA: FCC Canada: ISED Europe: RED South Korea: KC Taiwan: NCC

Notes on wireless LAN

• Antennas are built into the X1 series unit for wireless communication. (Wireless LAN communication is possible within 10 meters from the front face of the X1 series unit.)
Make sure to check that a stable wireless connection can be established beforehand if using the interface. Placing the access point within 10 meters is recommended for a stable connection.

• Radio waves used by wireless LAN pass through wood and glass, and therefore communication is possible even if floors and walls are made of wooden or glass material. However, radio waves cannot penetrate reinforcing rods, metal, or concrete, so if these materials are used, communication is not possible.
Signal intensity can be checked using the Received Signal Strength Indication (RSSI) as a guideline. Placing the access point in a position indicating a higher RSSI value will attain a more stable communication status.
A low RSSI value which cannot be improved by moving the access point indicates that the radio wave intensity is attenuated due to a long communication distance or physical obstructions.

Notes on Radio Waves

- The wireless LAN function of the X1 series corresponds to "radio equipment for radio stations (antenna power: 10 mW/MHz or less) of low-power data communication systems" defined by radio law, and therefore does not require a radio license.
- Depending on the peripheral environment or installation conditions, data transmission via wireless LAN may be unstable compared to wired connections and result in packet loss.
  Be sure to check the connection before actual use.
- Do not use the wireless LAN function in the following situations.
    1. Near a person who uses a cardiac pacemaker: The function may cause electromagnetic interference in cardiac pacemakers, leading to malfunctions.
    2. Near medical devices: The function may cause electromagnetic interference in medical devices, leading to malfunctions.
    3. Near microwaves: Microwaves may cause electromagnetic interference in wireless communications of the X1 series unit.
- Notes on using wireless LAN
  Models that support wireless LAN use the 2.4 GHz and 5.0 GHz frequency bands. These frequency bands are used for industrial, scientific, and medical equipment; on-site radio stations (requiring a radio license) and certain low-power radio stations (no radio license required) for identifying moving objects in production lines; and amateur radio stations (requiring a radio license).
    1. Before using the wireless LAN function, check that there are no on-site radio stations and certain low-power radio stations for identifying moving objects or amateur radio stations in use nearby.
    2. If ever the X1 series unit causes wave interference to an on-site radio station for identifying moving objects, immediately stop wireless LAN communication and ensure that waves are no longer emitted. Then take necessary actions to resolve the interference (e.g. changing frequencies, relocating, installing partitions).
    3. If the X1 series unit causes wave interference to a certain low-power radio station for identifying moving objects, or if any other problem occurs, contact your local sales representative.
    4. Communications conforming to IEEE802.11ac, IEEE802.11n or IEEE802.11a use the 5.0 GHz frequency band. Outdoor use of the 5.2 GHz (W52) and 5.3 GHz (W53) bands is prohibited by radio law.
- The wireless LAN function conforms to the radio standards in the following countries.
  Never use the X1 series unit outside of these countries.
  Australia, Belgium, Canada, Czech, Denmark, Finland, France, Germany, Great Britain, Greek, Hungary, Ireland, Italy, Japan, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Taiwan, United States of America

Notes on Security

A wireless LAN transmits data between a computer and a wireless LAN access point without using a LAN cable. Therefore, as long as radio waves are transmitted, LAN connection can be established whenever desired.
On the other hand, within a certain range, radio waves will pass through all obstructions (such as walls) and reaches the entire area. If security settings are not made, the following problems may occur.

Transmission contents can be eavesdropped on
- A malicious third party can eavesdrop on communication contents and steal identity such as your ID, password, and credit card numbers, or eavesdrop on email contents.

Unauthorized intrusions
- A malicious third party may access personal or corporate networks without authorization and steal identity or confidential information (information leakage).
- An attacker can impersonate you and send out false information (impersonation).
- Communication contents can be intercepted and then manipulated before sending (manipulation).
- Data and systems can be destroyed using a computer virus (destruction).

Principally, models that support wireless LAN have security functions. If such functions are properly configured before use, any risks of sustaining the above attacks can be reduced.
We recommend configuring security functions before use at your own judgment and responsibility, and fully understand the problems that may occur if the X1 series unit is used without configuring security functions.

2.4.7 Bluetooth

This interface is used to connect Bluetooth devices to the X1121iSRD and X1151iSRD.

Front View

Built-in antenna
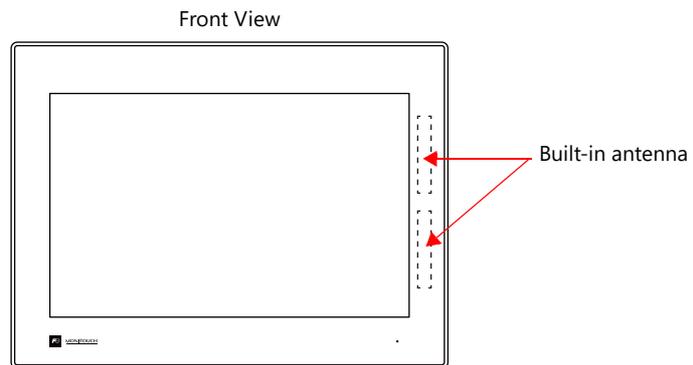
Specifications

Item	Specification
Number of Ports	1
Supported Standards	V2.1+EDR / V3.0+HS / V4.0LE / V4.1 / V4.2 / V5.0
Supported Class	Class1
Transfer Speed	Low Energy: 2 Mbps Enhanced data rate (EDR): 3 Mbps
Frequency	2.402 to 2.480 GHz
Applicable Antennas	Only the built-in antennas of the X1 series unit

2.4.8 DIP Switches

The unit is equipped with DIP switches 1 to 4. Turn off power to the unit before changing any DIP switches.
Upon delivery, all DIP switches are set to OFF.

Bottom view Enlarged view
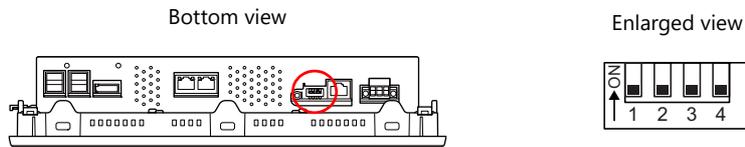
No.	Specifications
1 *1	Storage automatic upload
2 *1	Display of touch switch test screen
3	Terminating resistance of transmitting line for serial communcation RS-422 (4-wire connection) / RS-485 (2-wire connection)
4	Terminating resistance of receiving line for serial communication RS-422 (4-wire)

*1   The System Configurator is displayed if No. 1 and No. 2 are both set to the ON position.

DIPSW1: Storage Automatic Upload

A screen program can be automatically uploaded from a USB flash drive.
  *   This function is valid when HMI is selected as the startup mode on System Configurator.

Procedure

1.   Use the V-SFT-6 editor to load a screen program onto a storage device.
     (For the loading procedure, refer to the X1 Series Reference Manual 2.)
2.   Turn off the X1 series unit power and connect the USB flash drive.
3.   Set DIP switch 1 to the ON position.
4.   Turn ON the X1 series unit power. The screen program is automatically loaded into the flash memory of the X1 series unit.

  *   When not using automatic upload, always set DIP switch 1 to OFF.
      If DIP switch 1 is set to ON and the X1 series unit power is turned on without a storage device connected, the message "Insert Storage in X1" is displayed.

DIPSW2: Display of Touch Switch Test Screen

The touch switch test screen can be displayed.

The touch switch test screen can also be displayed by either of the following methods:
- X1 app Local mode → [I/O Check]
- System Configurator → [Touch operations check]

Procedure

1.   Turn off the X1 series unit power.
2.   Set DIP switch 2 to the ON position.
3.   Turn on the X1 series unit power. The touch switch test screen is displayed. Check if touch switches are functioning properly.

  *   Press the [Return] switch on the touch switch test screen to return to either the X1 app or System Configurator. Note that the touch switch test screen will be displayed again if the power is turned off and on again. When not using the touch switch test screen, always set DIP switch 2 to OFF.

DIPSW1, 2: System Configurator Display

The System Configurator can be displayed.

😊   The System Configurator can also be displayed from the X1 app Local mode → [Start Sys. Config.] switch.

Procedure

1. Turn off the X1 series unit power.
2. Set DIPSW1 and 2 to the ON position.
3. Turn on the X1 series unit power. System Configurator is displayed.

*   After completing settings on System Configurator, be sure to set DIP switch 1 and 2 to the OFF position.

DIPSW3, 4: Terminating Resistance Setting

Set the terminating resistance for serial communication.

- When connecting a controller via RS-422 (4-wire connection), set DIP switch 3 and 4 to the ON position.
- When connecting a controller via RS-485 (2-wire connection), set DIP switch 3 to the ON position.

⚠️   When connecting via RS-232C, be sure to set to the OFF position.

---

3   Installation

3.1 Installation

3.1.1 Mounting Method

1. Place the X1 series unit on a flat surface with the display screen facing down and insert the provided waterproof gasket into the groove around the unit.

⚠ The unit will not be waterproof if the waterproof gasket is not correctly inserted into the groove.

2. Fit the fall prevention fixtures on the bottom side of the X1 series unit on the bottom edge of the cut-out hole in the mounting panel (maximum thickness of 4.0 mm).
   * The unit can be mounted in the upright orientation only.

Front View   Rear View

Fall prevention fixtures
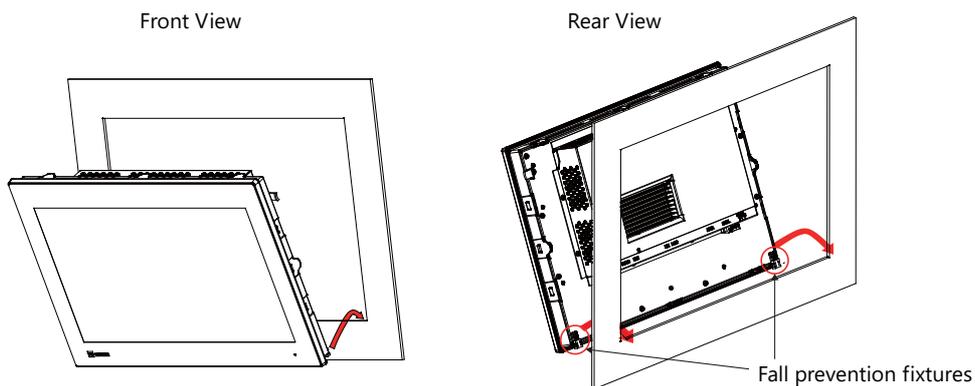
3. Looking from the front side, push up the upper right fall prevention fixture inward and then fit the X1 series unit in the panel cut-out hole. Check that the fixture is fitted on the panel and the X1 series unit does not fall out forward.

Front View   Rear View

Push up the fall prevention fixture inward.

After fitting, check that the fall prevention fixture is firmly holding the mounting panel.
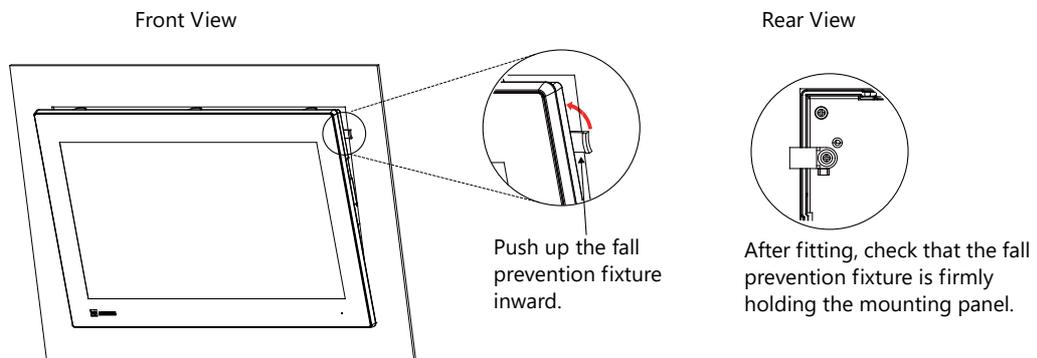
4. Fit the provided fixtures into the mounting holes on the X1 series unit (8 positions: three each on the top and bottom and one each on the left and right) and fix the unit in place with the tightening screws (tightening torque: 7.08 lbf-in (0.8 N·m)).
   * Ground the mounting panel to prevent any buildup of static electricity.

- Fixture dimensions (unit: mm)

9.6
9.0
22.0
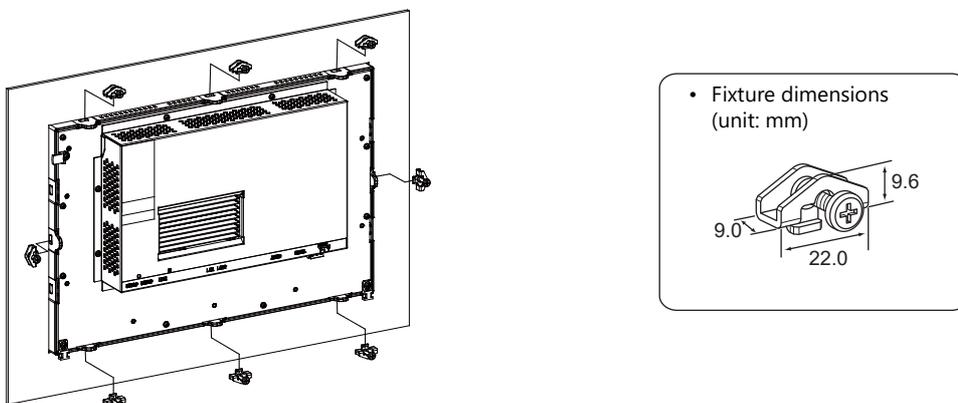
⚠ Failure to follow the above installation instructions and torque value may cause deformation, breakage, or malfunction of the touch switch, which may result in damage to the machine or an accident. Also loose mounting may cause dropping, short circuit, or malfunction.

3.1.2   Installation Conditions

Mounting Orientation

The X1 series can be mounted in the following orientation.

Upright

90° right
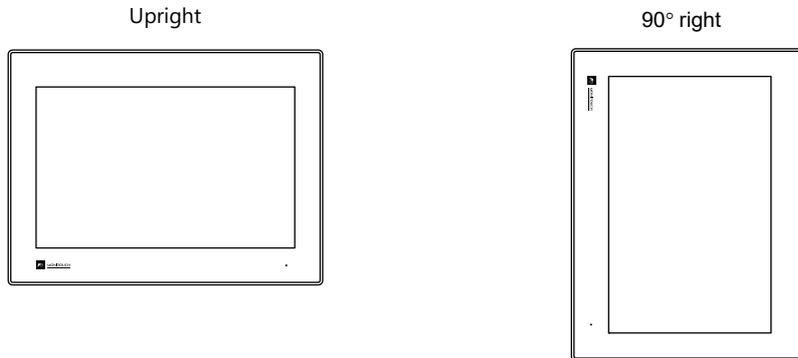
Mounting Angle

Install the unit within the following angle range.
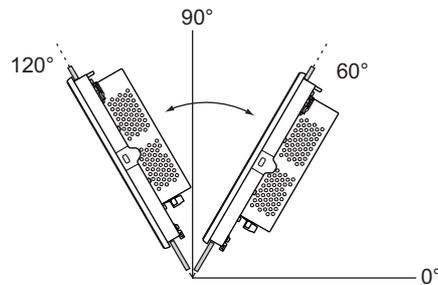
Panel Cut-out Dimensions
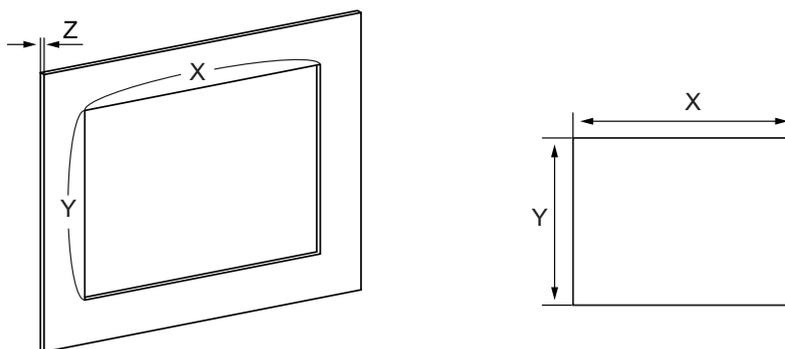
(Unit: mm)

Model	X	Y	Z (Panel thickness)
X1121iS	309.0 $^{+0.5}_{-0}$	230.0 $^{+0.5}_{-0}$	1.5 to 4.0
X1151iS	395.0 $^{+0.5}_{-0}$	260.0 $^{+0.5}_{-0}$	

Mounting Spatial Restrictions

Mount the X1 series unit with approximately 100 mm of space around the periphery of the unit.
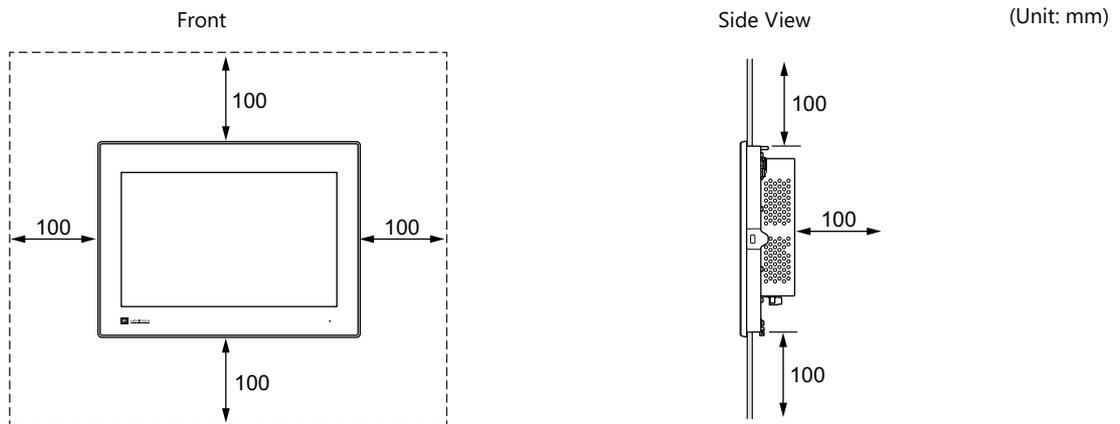
Ambient Temperature

Use the X1 series unit in an ambient temperature range of 0 °C to +45 °C (wet-bulb temperature of 39 °C or less).

3.2 Power Supply

3.2.1 Power Supply Cable Specifications

⚠️ • Do not solder the ends of wires. Doing so may lead to poor contact.
• When using stranded wire for cabling, make sure that the core is sufficiently twisted. Otherwise, stray wires may cause a short-circuit with neighboring electrodes.

Item	Specifications	
Cable	Solid wire	: 0.2 to 2.5 mm^2 (AWG24 to AWG14)
	Stranded wire	: 0.2 to 2.5 mm^2 (AWG24 to AWG14)
	Stranded wire with ferrule terminal (with insulation sleeve)	: 0.25 to 2.5 mm^2 (AWG22 to AWG14)
Core Length	7mm	
Tightening Torque	4.43 to 5.31 lbf-in (0.5 to 0.6 N·m)	

3.2.2 Power Supply Cable Connection

⚠️ • Electrical shock hazard. Shut the power off before connecting the power supply cable.
• Do not apply an excessive force on the power supply cable. A serious accident may result if the cable disconnects from the power supply terminal.

Connect the power supply cable to the terminal on the backside of the unit.

Bottom view
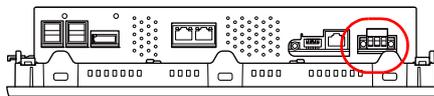
Terminal Block Wiring
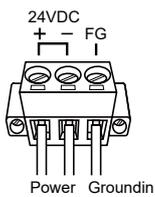
Tightening torque
4.43 to 5.31 lbf-in (0.5 to 0.6 N·m)

Mounting of Terminal Block
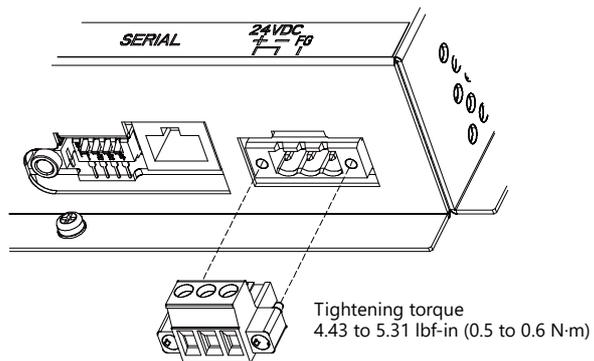
Tightening torque
4.43 to 5.31 lbf-in (0.5 to 0.6 N·m)

Notes on the power supply

• The power supply must be used within the allowable range of voltage fluctuation.
• Use a power supply with low noise between cables and between the ground and cables.
• In order to minimize drops in voltage, we recommend to use the thickest power supply cables possible and to twist the cables.
• Keep power supply cables away from high-voltage, large-current carrying cables.
• For use in compliance with UL standards, use a safety extra-low voltage (SELV) power supply for 24 VDC models.

3.2.3   Grounding

⚠️ Always ground the X1 series unit. (The level of grounding resistance should be 100 Ω or less.)

- Independent grounding must be used for the unit.
- Use AWG20 to AWG14 wire for the grounding cable.
- Set the grounding point near the unit to reduce the length of grounding cables.
- The signal ground (SG) and frame ground (FG) are connected inside the X1 series unit.

3
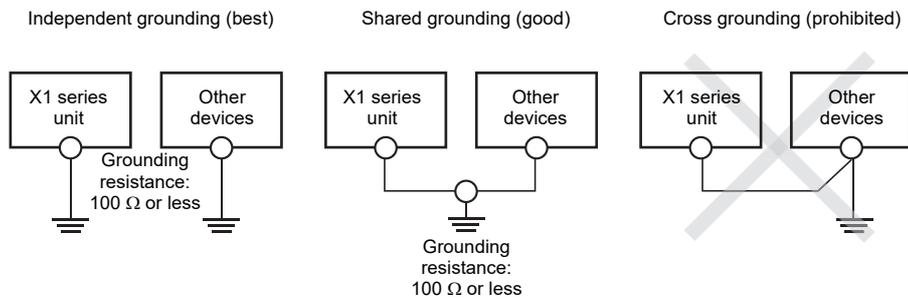
3.3   Securing USB and HDMI Cables

USB or HDMI cables may disconnect from the X1 series unit depending on the mounting conditions.
Use the cable ties provided with the unit to prevent disconnection.

3.3.1   Securing Cables

Example: USB cable

1. Pass a cable tie through the lower side upward as shown in the figure below.
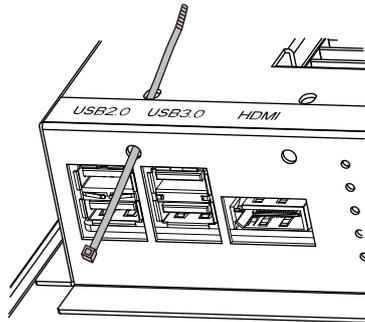
2. Connect a USB cable and secure it using the cable tie.
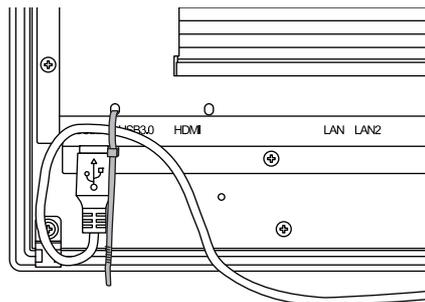
3.4 Battery

3.4.1 Role of the Battery

The battery is used for backing up time data and BIOS settings (retention during power outage). The service life of the battery is about 3 years from the date of manufacture.

> ⚠️ A battery is already installed upon delivery.

3.4.2 Battery Replacement

Replacement batteries are available.

Name	Model	Details
X1 replacement battery	X1-BT	• Coin-type lithium primary cell 1 pce • Instruction manual • Replacement date sticker 1 pce
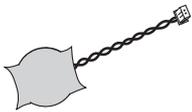
* Commercially available batteries cannot be used.

Cautions on handling batteries

Lithium batteries contain combustible material such as lithium and organic solvents. Mishandling may cause heat, explosion, or ignition resulting in fire or injury. To prevent accidents, pay attention to the following cautions when handling lithium batteries.

> ⚠️
> • The battery has polarity. Make sure to insert the battery in the correct orientation. Inserting the battery in the wrong orientation may cause the battery to burst or ignite.
> • Do not carry or store the replacement battery together with metal objects. Short-circuiting of the electrods may reduce battery capacity or cause the battery to burst or ignite.
> • Do not disassemble, incinerate, or heat batteries.
> • Never attempt to recharge batteries.

• Be sure to turn off the X1 series unit power and then replace the battery.
• Only experts with knowledge of battery replacement, Hakko Electronics personnel, or a person designated by Hakko Electronics are authorized to perform battery replacement.
• Be sure to discharge static electricity from your body before performing battery replacement.
• Use the designated battery for replacement.
• Rough handling of the battery may cause fire or chemical burns.
• Observe local and governmental regulations when disposing of waste batteries.
• Keep batteries out of reach of children. (If swallowed, immediately consult a doctor.)
• If a battery leaks or smells, leaking battery electrolyte may ignite. Keep away from heat or flame.
• Transportation of batteries containing lithium metal must observe the relevant transport regulations.

Battery replacement procedure

⚠️ Replace the battery with the X1 series unit power turned off. Note that calendar data may be lost through battery replacement. Set calendar data as necessary. For the calendar setting procedure, refer to "Time Settings" page 5-82.

1. Turn off the X1 series unit power.
2. Disconnect the power supply terminal block and all cables.
3. Remove the screws (8 locations) indicated in the figure below.

X1121   X1151
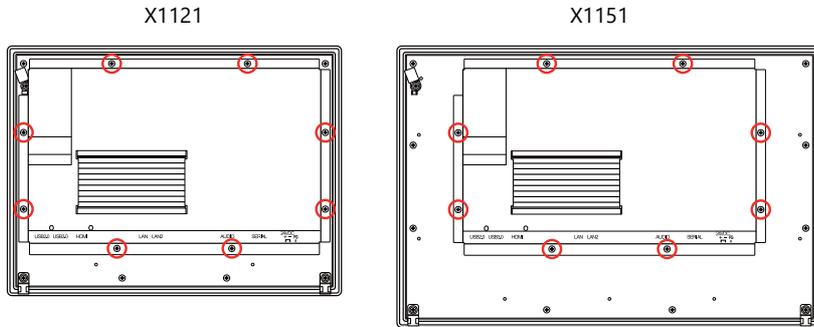
4. Dismount the cover by lifting up the upper edge.
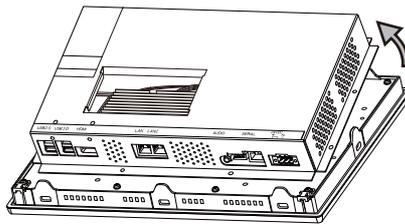
5. Pull out the battery from the battery holder and disconnect the connector.

Connector

Battery holder
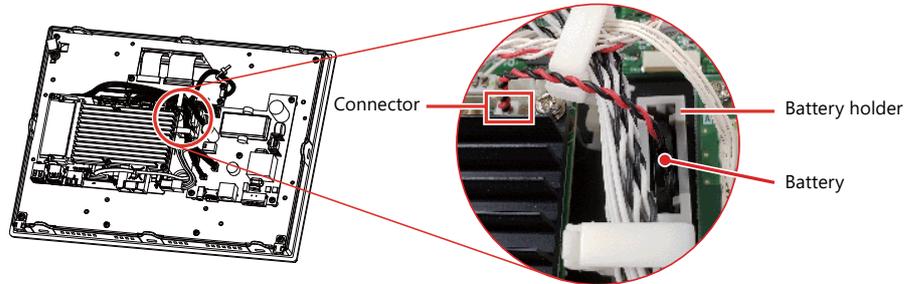
Battery

6. Insert the connector of the new battery onto the circuit board and fully insert the battery into the battery holder.

Connector
* Be careful of the orientation when inserting.

Bottom of battery
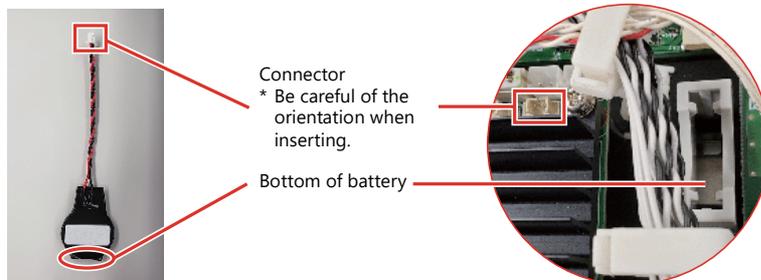
7. Mount the cover by first aligning the bottom edge and then setting the entire cover in place.
8. Attach the screws (8 positions) removed in step 3 at a tightening torque of 5.75 to 6.2 lbf-in (0.65 to 0.7 N·m).

9. Remove the replacement date sticker from the rear face of the X1 series unit. Write a date three years from the present date on a new replacement date sticker and attach the sticker.

Replacement date sticker
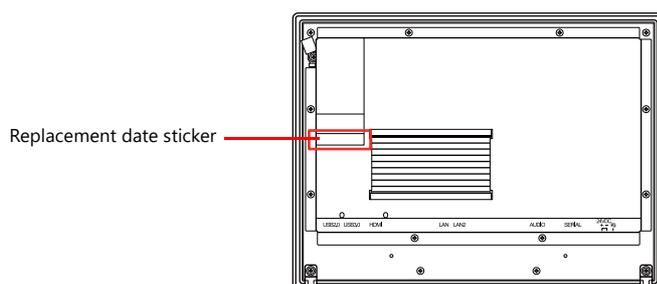
3.4.3 Notes on the Battery: EU Directive 2006/66/EC

In accordance with EU directive 2006/66/EC effective in EU countries, the package box of the X1 series unit and the packaging of the replacement battery have the marking shown to the right.

> • The marking shown above is effective only in EU countries.
> • The details on the marking are designated in Article 20 "Information for end-users" and ANNEX II in EU directive 2006/66/EC.
> • The marking indicates that the battery should be disposed of separately from general household waste.
> • If element symbols are indicated below the marking, it means that the battery contains the specified heavy metal at a concentration exceeding the control value.
>   The concentration control values are given below.
>   Hg: mercury (0.0005 %), Cd: cadmium (0.002 %), Pb: lead (0.004 %)
> • The EU has determined the separating program for used batteries.
>   Dispose of used batteries properly at your local waste-disposal/recycling center.

3.4.4 "Perchlorate Best Management Practices" Regulations of California State Law, USA

The X1 series is a product subject to the "Perchlorate Best Management Practices" regulations of California state law in the USA. The packaging of the X1 series unit indicates the statement shown below.

Perchlorate Material - special handling may apply.
See www.dtsc.ca.gov/hazardouswaste/perchlorate/.

If exporting a product with an embedded X1 series unit that contains the X1-BT battery to the State of California, the above statement must be indicated on the product's packaging.

3.4.5 Cautions on Transport

• The replacement X1-BT battery is a lithium metal battery (not contained in or packed with equipment) and classified as non-dangerous goods.
• Transportation of batteries containing lithium metal must observe the relevant transport regulations. Batteries are packed and shipped from Hakko Electronics in accordance with transport regulations. If there is a need to transport an X1 series unit that has been 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.

4 X1 Setup Procedures

4.1 Procedure before Operation

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

    ☞ For details, refer to "3 Installation".

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 "4.2 Setting Procedure (For a new unit)" page 4-2.

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

    ☞ For details, refer to "4.3 Setting Procedure (For an existing unit)" page 4-3.

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

    ☞ For details, refer to the X1 Series Setup Manual.

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

    ☞ For details on configuring screen programs, refer to the X1 Series Reference Manual.
    For details on transferring screen programs, refer to the X1 Series Setup Manual.

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 "6 Errors" and eliminate the cause of the error.

4

4.2 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.
For detailed setting procedures, refer to the X1 Series Setup Manual.

Turn power on.

System Configurator — "5.5 System Configurator" page 5-66

Write filter setting: Valid

Set [Write filter setting] to [Invalid].

"Write Filter Setting" page 5-75

Reboot

System Configurator

Language change — "5.5.8 Language Change" page 5-94

Time settings — "Time Settings" page 5-82

Write filter setting: Invalid

* Turn the power off and reboot after pressing the [Shutdown] button in System Configurator.

IP address setting — "IP Address Setting" page 5-69

Set [Startup settings (operation mode)] to [HMI].

"Startup Settings (Operation Mode)" page 5-81

Reboot

HMI app starts.

Write filter setting: Valid

4.3   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]
For detailed setting procedures, refer to the X1 Series Setup Manual.

Turn power on.

HMI app starts.

Local mode   "5.4.1 Switching to Local Mode" page 5-17

Check the IP address.
- [System Information] (LAN only) "MONITOUCH Information" page 5-21
- [LAN Setting] / [LAN2 Setting] "5.4.6 LAN Setting / LAN2 Setting" page 5-25
- Status bar "5.2.2 Status Bar" page 5-11

Using the IP address as is

Changing the IP address

Write filter setting: Valid

Start System Configurator.
"5.5 System Configurator" page 5-66

<Method 1>

<Method 2>

Set [Write filter setting] to [Invalid].
"Write Filter Setting" page 5-75

Set [Startup settings (operation mode)] to [System Configurator].
"Startup Settings (Operation Mode)" page 5-81

Reboot

System Configurator

Set [Write filter setting] to [Invalid].
"Write Filter Setting" page 5-75

Reboot

Reboot

HMI app starts.

System Configurator

Local mode   "5.4.1 Switching to Local Mode" page 5-17

IP address setting
"IP Address Setting" page 5-69

Start System Configurator.
"5.5 System Configurator" page 5-66

Set [Startup settings (operation mode)] to [HMI].
"Startup Settings (Operation Mode)" page 5-81

IP address setting
"IP Address Setting" page 5-69

Write filter setting: Invalid
* Turn the power off and reboot after pressing the [Shutdown] button in System Configurator.

Set [Write filter setting] to [Valid].
"Write Filter Setting" page 5-75

Reboot

Reboot

HMI app starts.

Write filter setting: Valid

Screen program transfer

*1   When [Write filter setting] is set to [Valid], some System Configurator settings cannot be changed.
      If a setting cannot be changed, set [Write filter setting] to [Invalid] and then change the intended setting. For details, refer to "Settings that Check the Write Filter Setting" page 5-79.

5 Operation Method

5.1   Overview

X1 Screen Modes

The X1 series has the following screen modes.

	Screen	Refer to
X1 App (RUN mode)	RUN mode screen for communicating with an upper-layer computer, PLC, etc. A screen program created using the V-SFT version 6 configuration software needs to be transferred to the X1 series unit to display this mode. 	page 5-15
X1 App (Local mode)	Communication with connected device is stopped. This mode screen shows various information about the X1 series unit, such as system information, screen program information, etc. 	page 5-16
System Configurator	For configuring Windows functions This app is used to display the File Explorer and configure items that are accessed frequently, such as IP address settings. When more advanced settings are necessary, press [Advanced mode] to switch to the Windows desktop and then configure settings. Note that any failure resulting from operations done via the Windows desktop are not covered by the operation guarantee. 	page 5-66
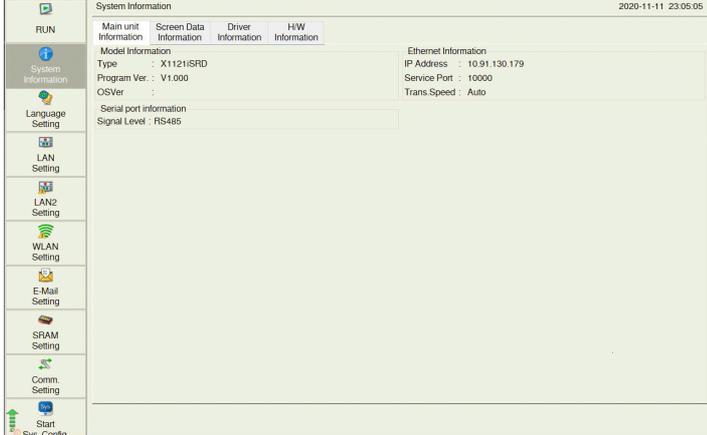
Switching between Screen Modes

1. or 2.

3. or 4.

X1 app (RUN mode)

X1 app (Local mode)

System Configurator *

5.   6.

7.   8.

9.

Windows desktop
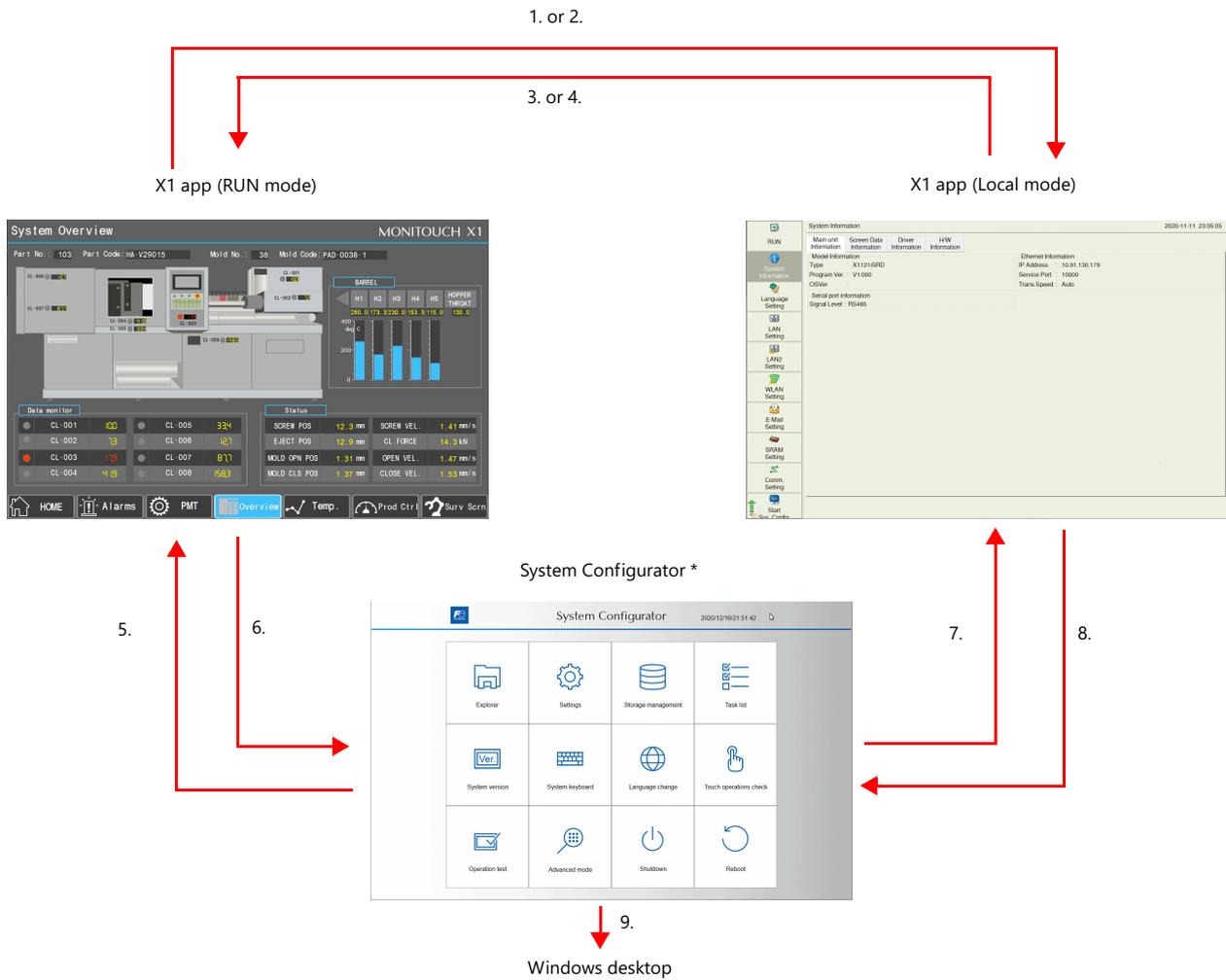
No.	Procedure	Remarks
1	System menu → [Local] switch	Local Display Security Operati Log
2	A V-SFT version 6 screen program switch wth [Function] set to [Switching to Local Mode]	
3	System menu → [RUN] switch	RUN Display Operation Log
4	Turn power off and back on again. 　* Only when System Configurator → [Settings] → [Startup settings] is set to [HMI]	Startup settings (operation mode)
5	[Operation test] → [Start HMI app]	Operation test
6	Turn power off and back on again. 　* Only when System Configurator → [Settings] → [Startup settings] is set to [System Configurator]	Startup settings (operation mode)
7	[Operation test] → [Exit System Configurator]	Operation test
8	[Start Sys. Config.] switch in the menu icons	Start Sys. Config.
9	[Advanced mode] → [Windows Desktop Display]	Windows Desktop Display

*   When the X1 series unit power is turned on with DIP switch 1 and 2 on the backside of the unit set to the ON position, System Configurator is displayed.

5.2   System Menu and Status Bar

5.2.1   System Menu

The system menu is used to switch between the RUN and Local modes of the X1 app and change the display brightness.

Display Method

RUN mode

Press two of the four corners of the X1 series unit screen one by one to display the system menu.
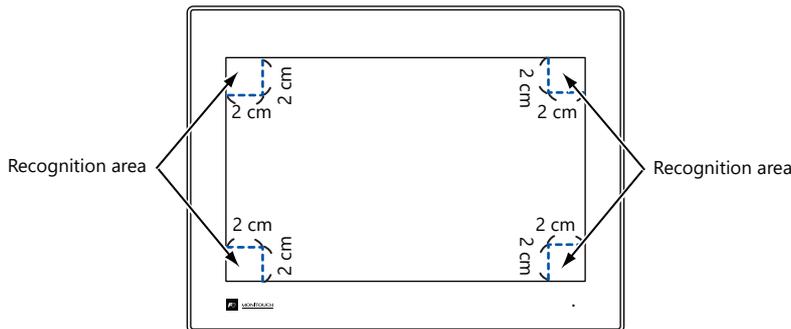
1.   Press one corner of the screen for at least 2 seconds and release your finger when there is a beep.

Press the upper left corner for at least 2 seconds.

2.   Then within one second, press a different corner and hold for at least 2 seconds to display the system menu.
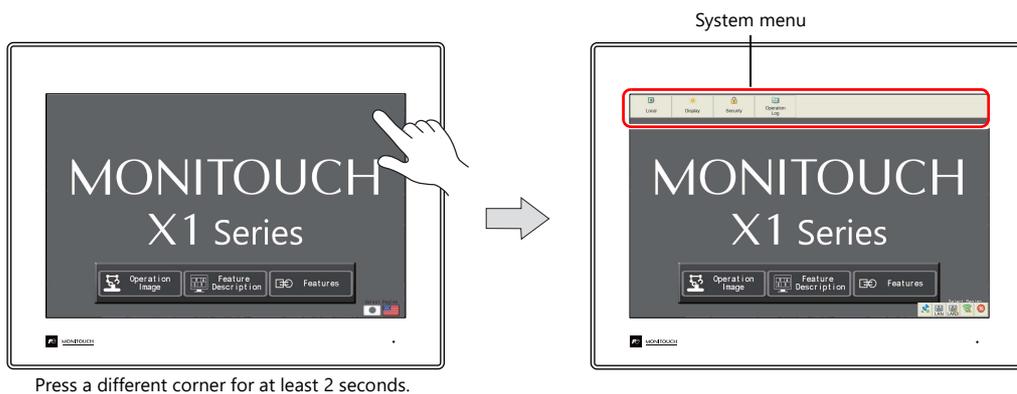
System menu

Press a different corner for at least 2 seconds.

*   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

Local mode

Press the [Display system menu] switch.

Precautions during system menu display

- Any switches that are hidden by the system menu are disabled while the system menu is displayed.

Switches behind the system menu are disabled. ⟶ ⟵ System menu
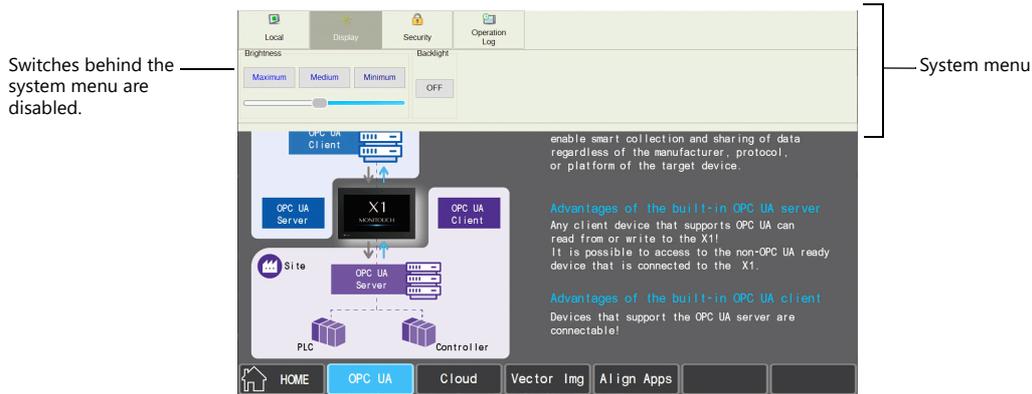
- The system menu has priority even over scrolling messages.

Timing for Hiding

The system menu is hidden five seconds after it is displayed.
However, the system menu remains displayed while the [Display] switch or the [Security] switch is selected.

System Menu Details

The following items are displayed on the system menu.

- System menu in RUN mode

- System menu in Local mode

Item		Description
Local RUN		Switches the operation mode between RUN and Local.
Display		Displays the brightness adjustment screen.[*1]
	Maximum/Medium/Minimum	Brightness adjustment is possible in 3 levels.[*2]
	Slider Switch	Brightness adjustment is possible in 16 levels.[*3]
Security		Displayed only when [Use security function] is selected at [System Setting] → [Other] → [Security Setting] using V-SFT version 6. For details on the security function, refer to the X1 Series Reference Manual 2.
	Login/Logout	Displays the login/logout screen.
	User Settings	Displays the administrator authentication screen. On the user list screen, a new user account can be added and the registered user accounts can be deleted or edited.[*4]
Operation Log		Displayed only when [Use operation log function] is selected at [System Setting] → [Other] → [Operation log Setting] using V-SFT version 6. This is used for displaying the operation log viewer. For details on the operation log function and operation log viewer, refer to the X1 Series Reference Manual 2.
Storage Removal		Displayed only when [External USB storage] is selected at [System Setting] → [Other] → [Storage Setting] using V-SFT version 6. This is used for stopping access to a connected storage device and reconnecting to a storage device.
	Connection status	Not connected (gray) Connected (blue): Removal Allowed Writing from the X1 app has stopped. The storage device can be removed. [*5] Connected (blue): Removal Not Allowed Writing from the X1 app is allowed. Do not remove the storage device.
	Remove/Reconnect	Removes a connected storage device or reconnects a disconnected storage device.

*1   When the brightness is reduced, the backlight life may be slightly extended.

*2   Brightness levels are equivalent to the BRIGHT macro command values of 126, 64, and 0.

*3   The brightness can be adjusted in 127 levels by using the BRIGHT macro command. For precautions on using a macro command, refer to "Display Brightness Setting" page 5-80.

*4   When configuring user settings in Local mode, refer to "User Settings" page 5-57.

*5   If using the macro commands [HDCOPY]/[HDCOPY2]/[HDCOPY3], be sure to check that $s1050-0 is turned off before removing the storage device. If using the macro commands [COPY_FILE]/[MOVE_FILE]/[DEL_FILE]/[READ_FILE]/[WRITE_FILE], be sure to check that $s1050-4 is turned off before removing the storage device. While the local mode screen is being displayed, there is no need to check the bit status.

Security

When the [Security] switch is pressed in the system menu, the security level can be changed (by logging in/out) and user names and their passwords for the security function can be registered.

Login/Logout

The security level can be changed.

Indicates the current security level.
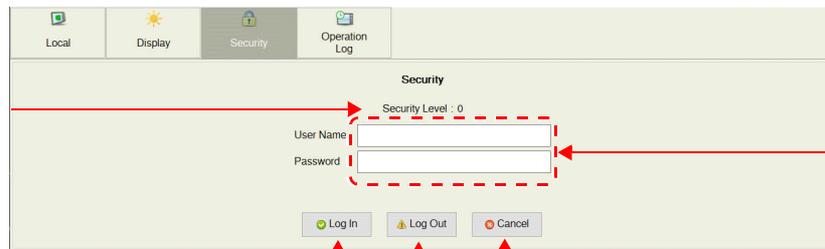
Pressing here displays the system keyboard.

Allows login by entering a specified user name and password.

Resets the security level to "0" and returns to the previous screen.

Returns to the previous screen.

- Login
  This section explains the login procedure for a user of security level 4.

  1. Display the system menu, press [Security] in the system menu and press the [Login/Logout] switch.

  ☞ For the system menu display method, refer to page 5-3.

  2. Enter a user name and a password, and press the [Log In] switch.
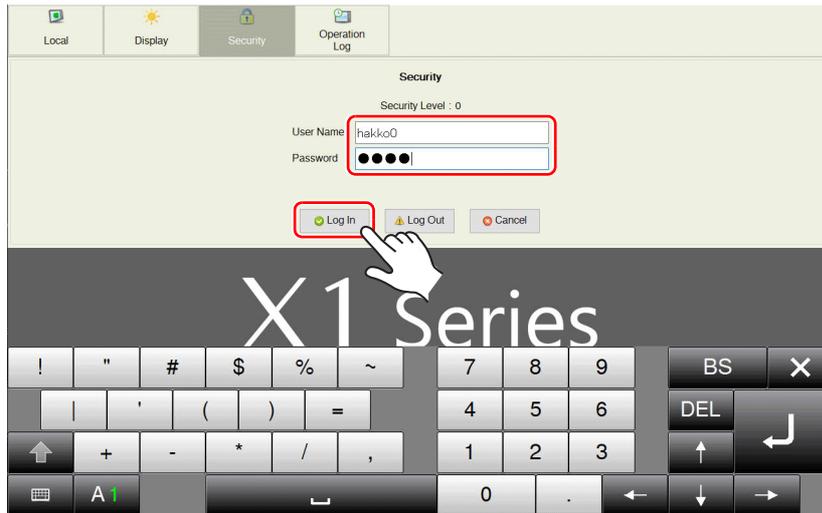
  3. The security level is set to "4" and the previous screen is displayed.
     * Login is prohibited for users with a security level lower than that of the currently displayed screen. If such an attempt is made, the message "Level does not match." appears.

- Logout
  This section explains the logout procedure for a user at security level 4.

  1. Display the system menu, press [Security] in the system menu and press the [Login/Logout] switch.

  ☞ For the system menu display method, refer to page 5-3.

  2. Press the [Log Out] switch.

  Current security level and user name

  * Password entry not required
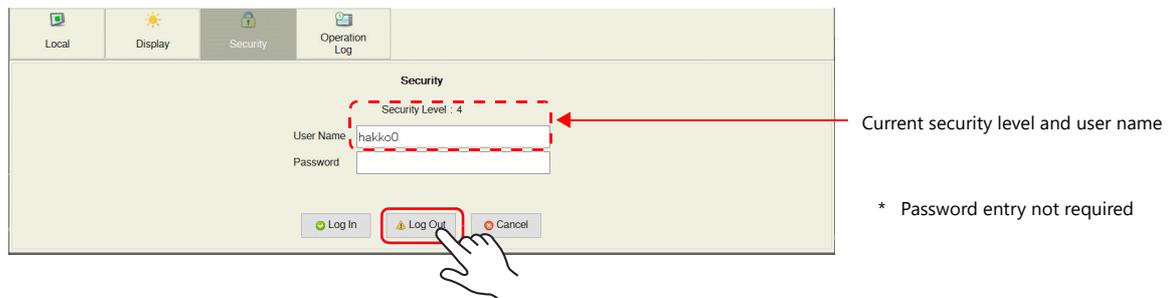
  3. The security level is reset to "0" and the previous screen is displayed.
     * When logout is executed, the security level is set to zero (0).
       Since the previous screen is displayed again, logout must be done on a lower-security screen.

User list

Users registered for the security function are displayed in list form. In this list, a new user account can be added and the registered user accounts can be deleted or edited.

☞   To display a list of all users in Local mode, refer to "User Settings" page 5-57.

😊   To display the user list by pressing [Security] in the system menu, a user with administrator privileges must log in (administrator authentication).

- Administrator Authentication
  Perform authentication to display the user list.

1. Display the system menu, press [Security] in the system menu and press the [User Settings] switch.
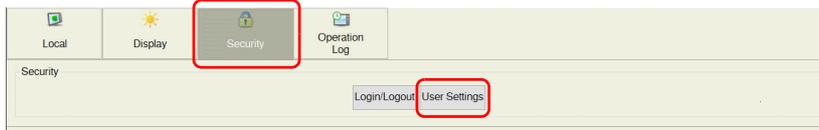
☞   For the system menu display method, refer to page 5-3.

2. The administrator authentication screen is displayed. Enter an administrator name and password, and press the [OK] switch.

Pressing each setting field brings up the system keyboard to be used for configuration.

3. Registered user accounts are listed as shown below.
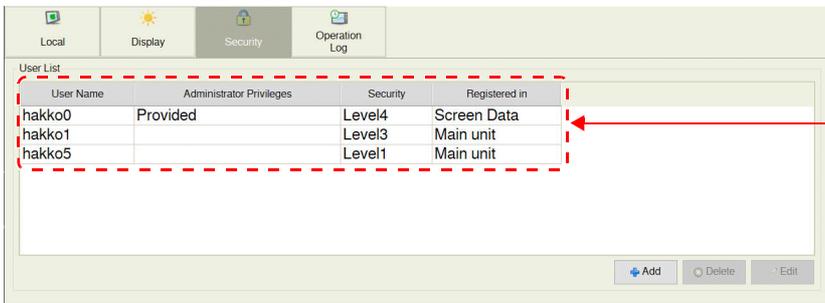
Registered user accounts are listed.

*   When the [Security] switch in the system menu is pressed, the system menu is hidden and administrator authentication is automatically cancelled.

- Adding a User Account
  This section explains how to add a new user account in the user list.
  A maximum of 32 accounts can be registered on the X1 series unit.

1. Press the [Add] switch in the user list.
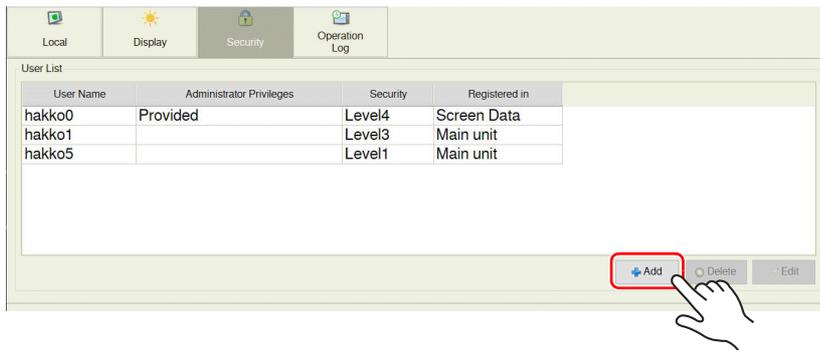
2. Input a user name and password to add, and select a security level.
   A maximum of eight one-byte alphanumeric characters (case sensitive) can be used for a user name or password.
   To grant administrator privileges, select the [Grant administrator privileges.] checkbox.
   * The user name must be unique.
   * The same password can be set for multiple users.
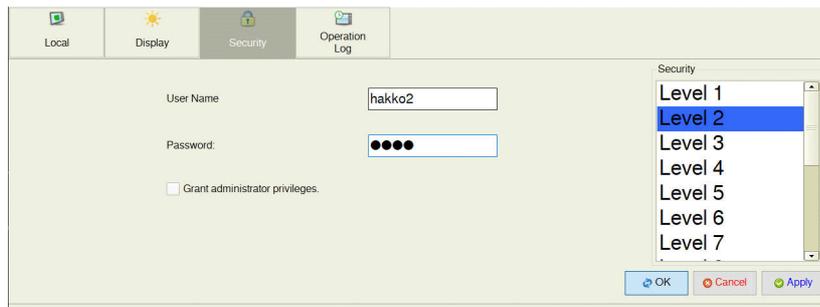
☺ Administrator privileges
Operations that can be performed on the X1 series unit differ depending on whether or not the user has administrator privileges.

User	With administrator privileges	Without administrator privileges
Addition of a new user account	Permitted	Not permitted
Deletion of a registered user account (page 5-9)		
Editing of a registered user account (page 5-10)		
Display of the user list from [Security] in the system menu *		

* Administer privileges are not required when displaying the user list from "User Settings" page 5-57 in Local mode.

3. Press the [OK] switch to add the user account to the list.
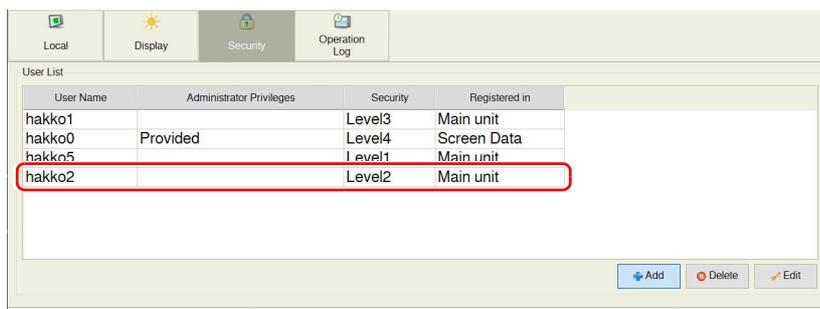
- Deleting a User Account
  This section explains how to delete a registered user account from the user list.

  1. Select a user account to delete from the user list and press the [Delete] switch.

:)
- Only accounts registered on MONITOUCH can be deleted.
  Accounts registered in the screen program cannot be deleted.
- Only the account of the user currently logged in (authenticated) as well as users with no administrator privileges granted can be deleted.
  Accounts of other administrator users cannot be deleted.
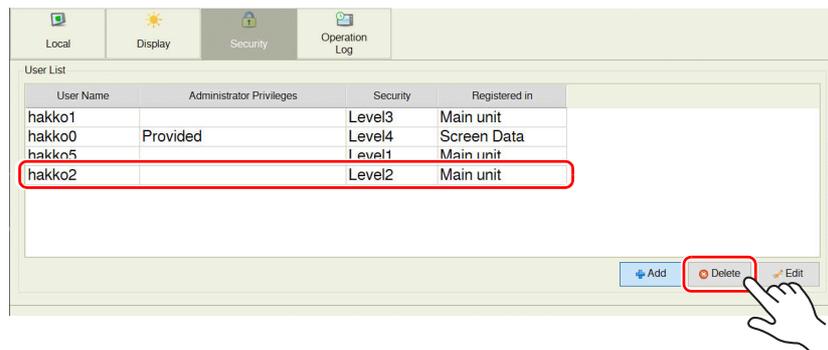
2. The confirmation dialog shown below is displayed. To delete, press the [OK] switch.
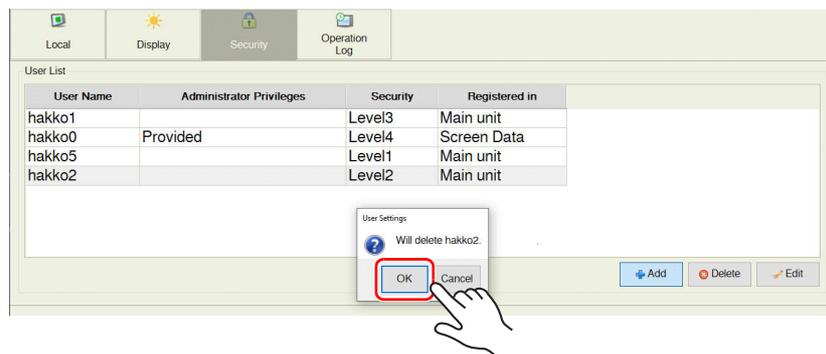
3. The selected user account is deleted from the list.
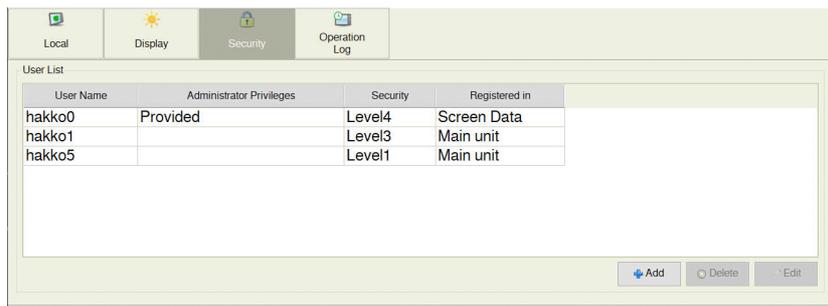
- Editing a User Account
  This section explains how to edit a registered user account in the user list.

  1. Select a user account to edit from the user list and press the [Edit] switch.

- Only accounts registered on MONITOUCH can be edited.
  Accounts registered in the screen program cannot be edited.
- Only the account of the user currently logged in (authenticated) as well as users with no administrator privileges granted can be edited.
  Accounts of other administrator users cannot be edited.

---
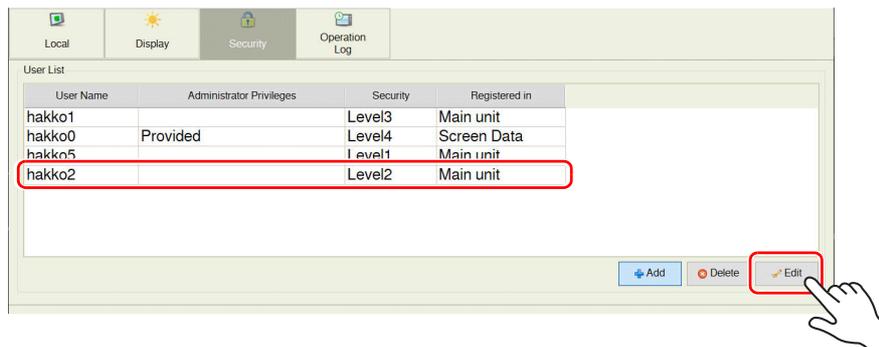
2. Change the settings.

3. After change, press the [Apply] or [OK] switch.
   The settings are updated.
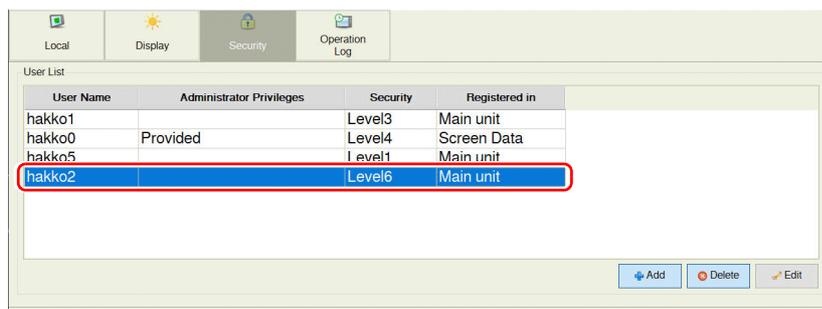
5.2.2   Status Bar

The status bar is displayed at the same time as the system menu in the bottom right of the screen. The status of communications with connected devices is indicated.

Display Method

RUN mode

Press two of the four corners of the X1 series unit screen one by one to display the status bar.
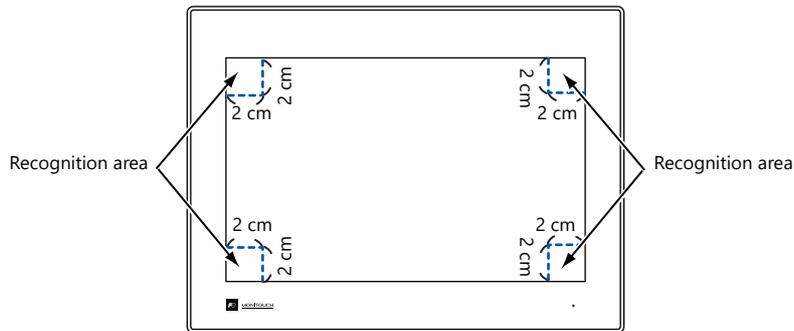
1. Press one corner of the screen for at least 2 seconds and release your finger when there is a beep.

Press the upper left corner for at least 2 seconds.

2. Then within one second, press a different corner and hold for at least 2 seconds to display the status bar.

Press a different corner for at least 2 seconds.

Status bar

* 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

Local mode

Press the [Display system menu] switch.

Display
system menu

Display Timing

RUN mode

- When the system menu is displayed
- When the status of communication with a connected device changes (normal → abnormal)
  If the status changes while the backlight is off, the backlight is forcibly turned on.

Local mode

- When the system menu is displayed

Timing for Hiding

- Upon pressing the [Close] icon at the right end of the status bar
- Upon the elapse of 15 seconds from when the status bar was displayed
  The status bar is not hidden if the push pin icon is pressed (always display) or when displaying detailed information.
- Upon recovery of communication with all communication equipment

Prohibiting the Status Bar

Display of the status bar can be prohibited by selecting the [Status Bar Prohibited] checkbox in the [System Setting] → [Unit Setting] → [System Display Setting] tab window.
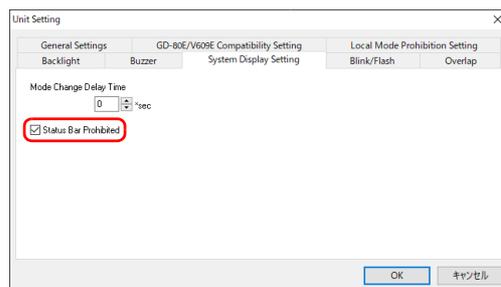
* The status bar will not be displayed in RUN mode, but can be displayed in Local mode.

Precautions during Status Bar Display

• Any switches that are hidden by the status bar and detailed status information are disabled while the status bar is displayed.

Detailed status information

Status bar

Switches behind the system menu are disabled.
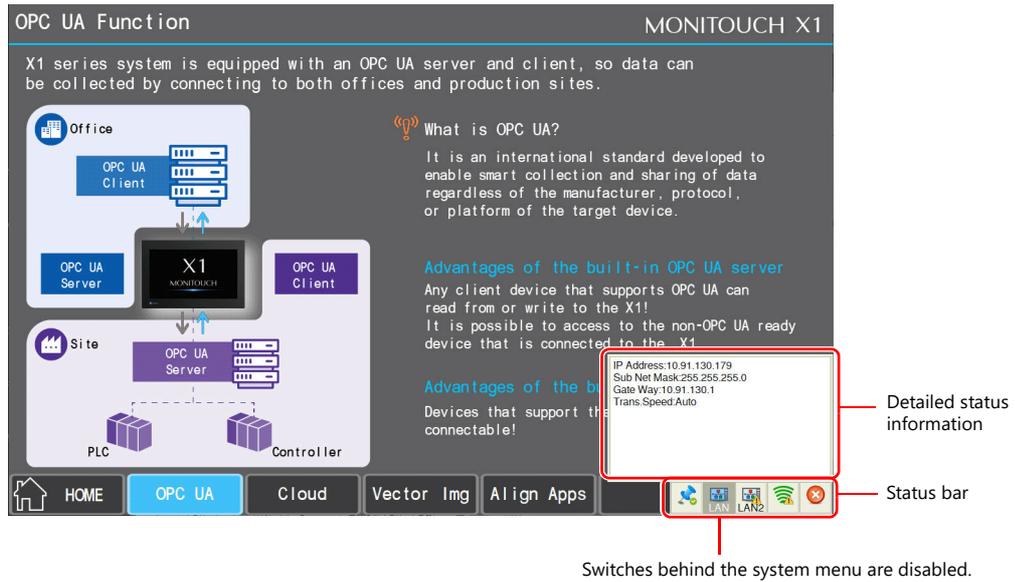
• The status bar has priority over scrolling messages displayed at the bottom of the screen.

Status bar

Scrolling messages
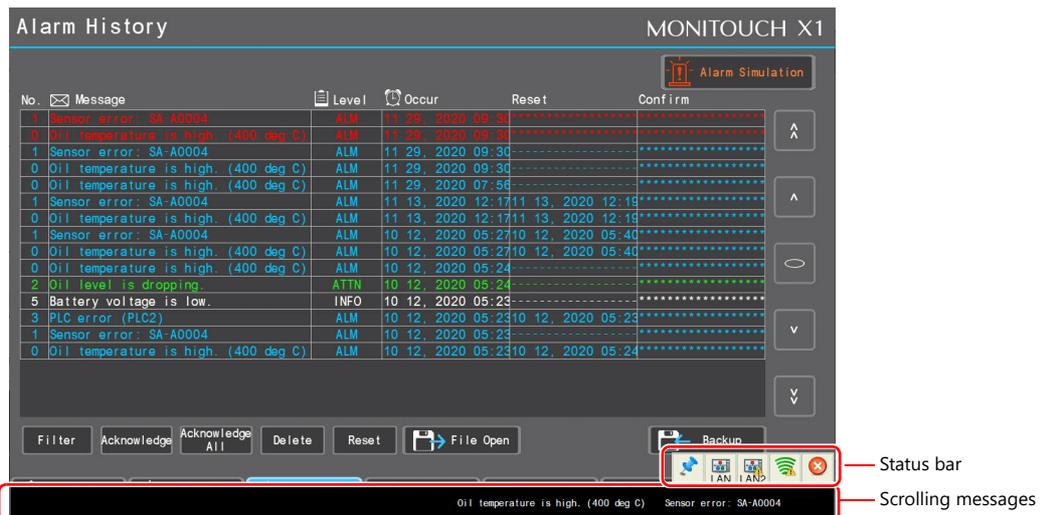
• The status bar and system keyboard cannot be displayed at the same time.
 The system keyboard, if displayed, will be hidden when the status bar is displayed.

5

Status Bar Details

The following items are displayed on the status bar.

- Close
- PLC 8WAY connection status
- Wireless LAN status (only for wireless LAN I/F models)
- LAN2 status (only for additional wired LAN I/F models)
- LAN status
- Display at all times valid/invalid

Item	Description
Always displayed	Select whether or not to display the status bar at all times. If valid, the status bar is displayed at all times even after the operation mode is switched over between RUN and Local. Display at all times: valid Display at all times: invalid
LAN LAN2	These icons indicate the link status of the LAN/LAN2 connection. Link established Cable disconnected or link not established When the icon is pressed, the following information is displayed. • IP address • Subnet mask • Gateway • Baud rate Each item can be configured on the System Configurator → [Settings] → [IP Address Setting] screen. Refer to page 5-69.
Wireless LAN status (only for models with wireless LAN)	This icon indicates the link status and signal strength of wireless LAN connection. Link established Cable disconnected or link not established When the icon is pressed, the following information is displayed. • IP address • Subnet mask • Gateway • SSID Each item can be configured on the System Configurator → [Settings] → [IP Address Setting] screen. Refer to page 5-69.
PLC 8WAY connection status	These icons indicate the status of communication with a connected device when [Comm. Error Handling: Disconnect] is selected. Link established Link not established When connected with the simulator*, the following icon is displayed instead. * For simulator details, refer to page 5-41. When the [PLC 8WAY Connection Status] icon is pressed with no link established, the detailed information can be viewed. The information is updated every five seconds. If the [PLC 8WAY Connection Status] icon is pressed with a link established, nothing is displayed. • Detailed information 	Item	Description | |------|-------------| 	Time	Displays the time when the communication error was detected. | 	Error message	Displays the contents of the communication error. Refer to "Communication Error" page 6-5. | 	Measure	Displays a countermeasure to the communication error.	
Close	Hides the status bar.

5.3   RUN Mode

The RUN mode is for communicating with an upper-layer computer, PLC, etc.
A screen program created using the V-SFT version 6 configuration software needs to be transferred to the X1 series unit to display this mode.

Example screen

5.4   Local Mode

In the Local mode, communication with connected device is stopped and the X1 series unit system information, screen program information, etc., is displayed.

Also, this mode functions as a system screen for transferring a screen program between a computer and the X1 series unit.
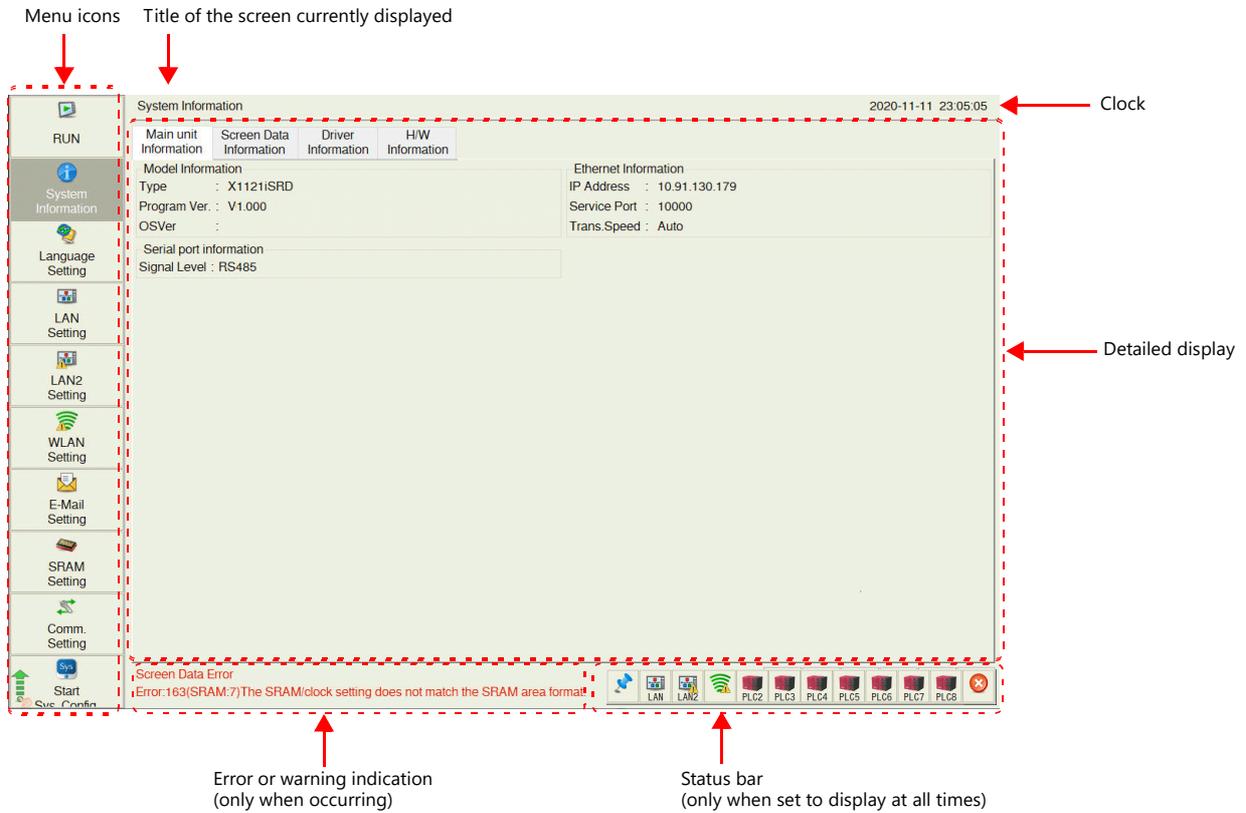
Menu icons can be scrolled up and down.

5.4.1   Switching to Local Mode

Switching from RUN mode to Local mode can be done by either of the following methods.

Method 1: system menu

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

Recognition area
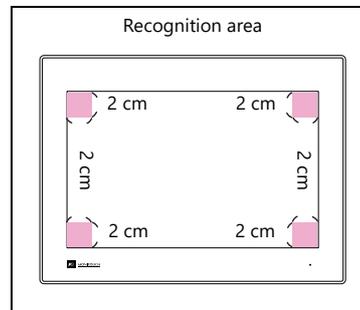
2.   Then within one second, press a different corner [*1] and hold for at least 2 seconds to display the system menu.
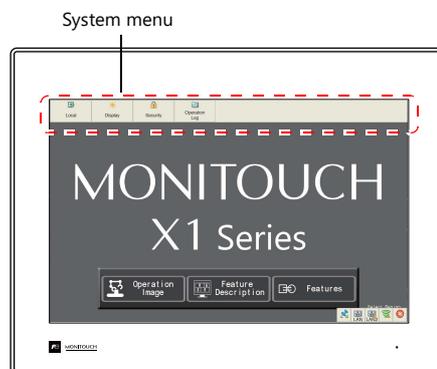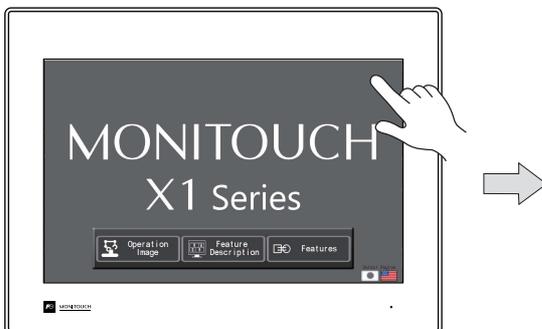
System menu

3.   Press the [Local] switch on the displayed system menu.
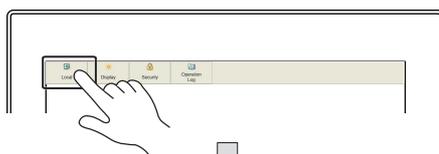
Splash screen [*2]

Local mode screen

Progress bar   Message
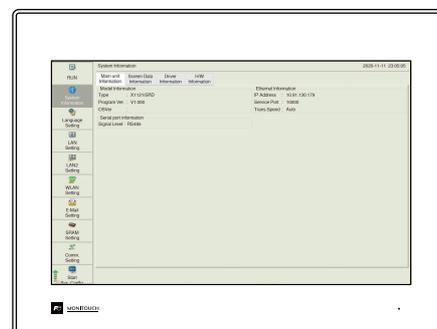
*1   If any of the items given below are placed in a corner on the screen, the system menu will not be displayed. Be sure to press a corner where none of the items are placed. If these items are placed in all four corners of the screen, switch the screen to one that has open corners and perform the above 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   The splash screen can be changed as desired. For details, refer to X1 Series Reference Manual 2.

Method 2: created switch

Press a switch with [Function] set to [Switching to Local Mode].
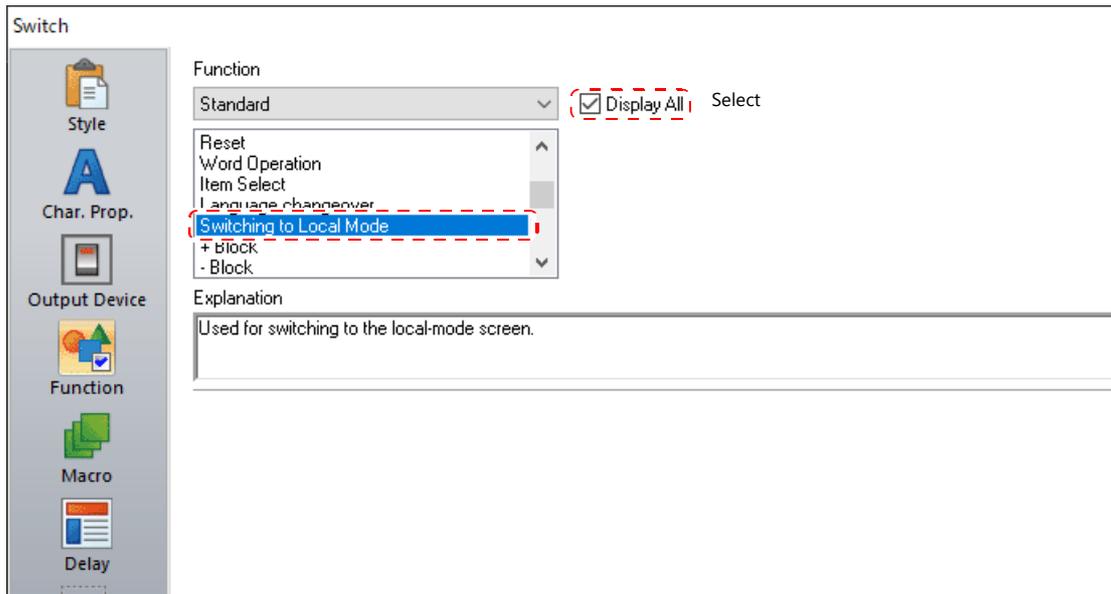
5.4.2   Composition of Local Mode Screens

The Local mode screens are configured as shown below:

Item		Refer to
RUN		page 5-20
System Information	Main unit Information	page 5-21
	Screen Data Information	page 5-22
	Driver Information	page 5-23
	H/W Information	page 5-23
Language Setting	Language Setting	page 5-24
LAN Setting LAN2 Setting	IP Setting	page 5-25
	Network Table Edit	page 5-27
	Option	page 5-27
WLAN Setting (only for models with wireless LAN)	IP Setting	page 5-28
	Option	page 5-29
E-Mail Setting [*1]	Connection Setting	page 5-30
	Option	page 5-31
SRAM Setting		page 5-34
Comm. Setting	Communication Parameter	page 5-38
	Connection Target Setting	page 5-39
	Individual Parameter	page 5-39
Start Sys. Config [*1]		page 5-40
Display system menu		page 5-40
Simulator Setting		page 5-41
System Setting [*1]	Buzzer Setting	page 5-43
	Backlight Setting	page 5-43
	Hard Copy Setting	page 5-43
	Serial Setting	page 5-43
Storage Transfer (Screen program transfer) [*1]		page 5-45
I/O Check	Touch switches and media [*1]	page 5-54
	Network Test	page 5-56
User Settings		page 5-57
Standards (only for models with wireless LAN)		page 5-62

*1   These menu are not displayed on sub app in the multi-display function.

5

5.4.3   RUN

Pressing [RUN] in the menu icons switches to RUN mode.

Menu icons

Splash screen [*1]

Progress bar   Message
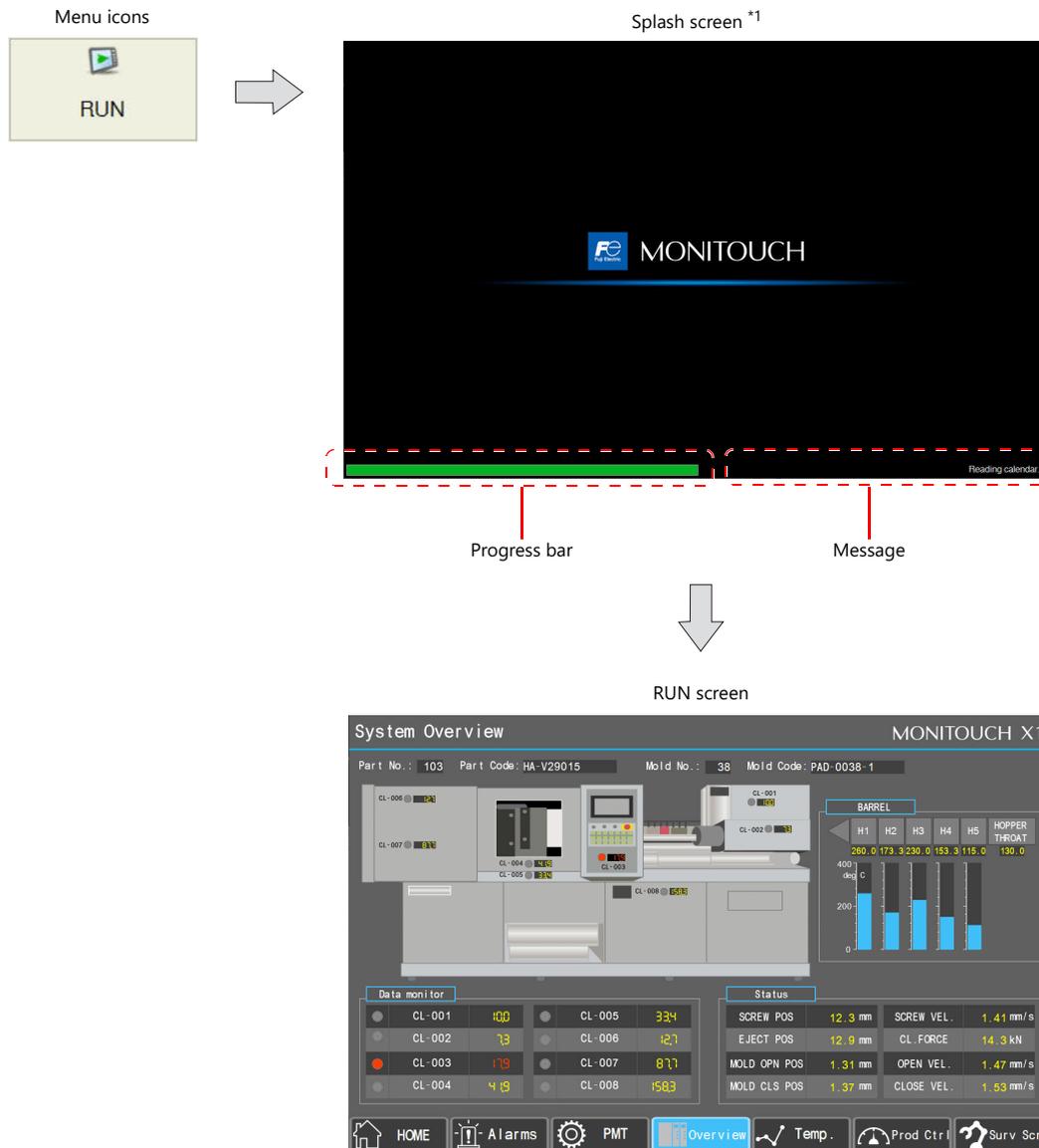
RUN screen

*1   The splash screen can be changed as desired. For details, refer to the X1 Series Reference Manual 2.

5.4.4   System Information

Pressing [System Information] in the menu icons brings up the System Information screen. This screen is used to view the information of the X1 series, screen program, etc.
This is the screen first displayed when the operation mode is switched from RUN to Local.

Menu icons   System Information screen
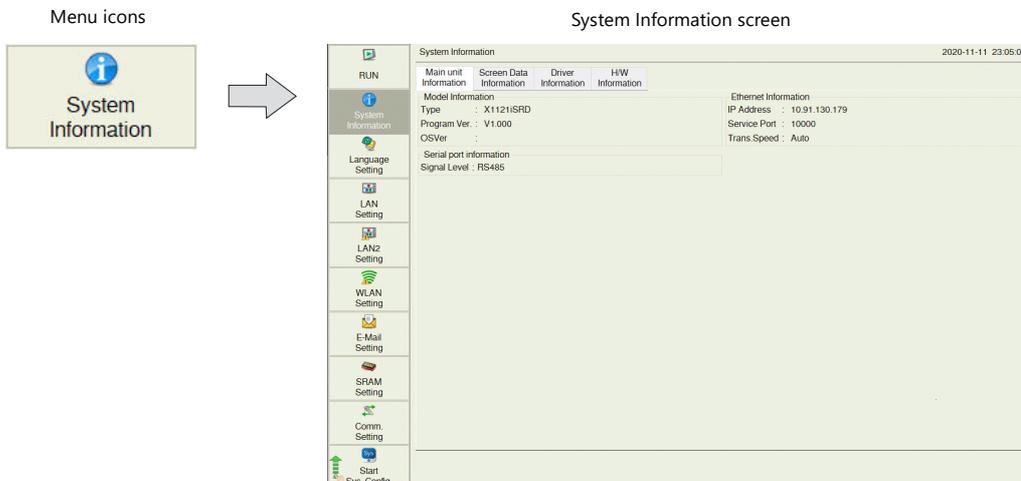
MONITOUCH Information

The [Main unit Information] tab window shows information of the X1 series unit.

[Main unit Information] tab window
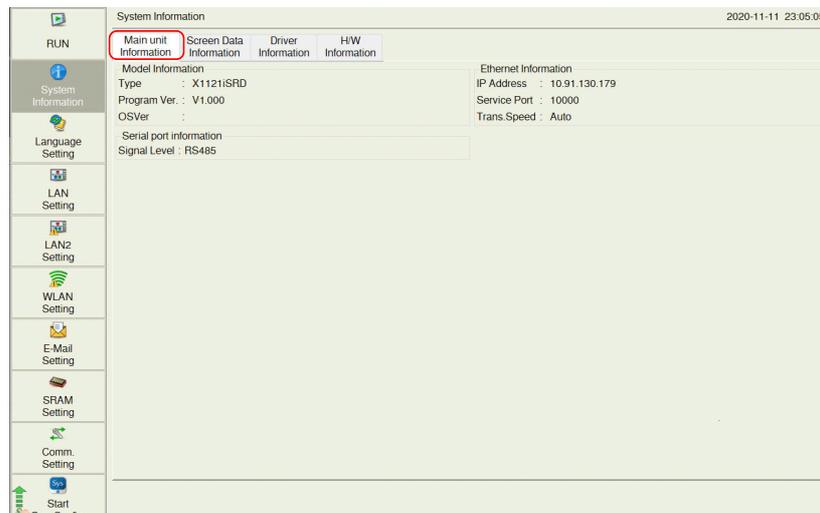
Item		Description
Model Information	Model	Indicates the model of the X1 series unit.
	Program Ver.	Indicates the program version.
	OSVer	Blank
Ethernet Information (LAN)	IP Address	Indicates the IP address of the LAN port.
	Service Port	Indicates the port number of the LAN port. This is used for the EREAD, EWRITE, SEND, and MES macro commands and Ethernet DLL functions.
	Trans. Speed	Indicates the baud rate of the LAN port.
Serial port information	Signal Level	Indicates the serial communication signal level.

Screen Data Information

The [Screen Data Information] tab window shows screen program information.

[Screen Data Information] tab window

Item		Description
Detailed Information	Display Color	Indicates the display color specified in the screen program.
	Editor Ver.	Indicates the version of the editor with which the screen program was created.
	Comment	Indicates file comments of the screen program.
Multi-Display Settings	None (duplicate)	If a display is connected, the duplicate X1 screen is displayed.
	Expand display screen	Displayed only when [Expand display screen] is selected at [System Setting] → [Other] → [Multi-Display Settings] using V-SFT version 6. Shows whether main or sub apps are displayed. 　Main app screen : X1 series unit 　Sub app screen (same as main app)[*1] : External Display 　Sub app screen (different from main app)[*1] : External Display
	Split the screen	Displayed only when [Split the screen] is selected at [System Setting] → [Other] → [Multi-Display Settings] using V-SFT version 6. Shows whether main or sub apps of 2-split screen display are displayed. 　Main app screen 　Sub app screen (same as main app)[*1] 　Sub app screen (different from main app)[*1]

*1　The local mode screen of sub app can be displayed when the main app is in RUN mode.
　　Example of 2-split screen
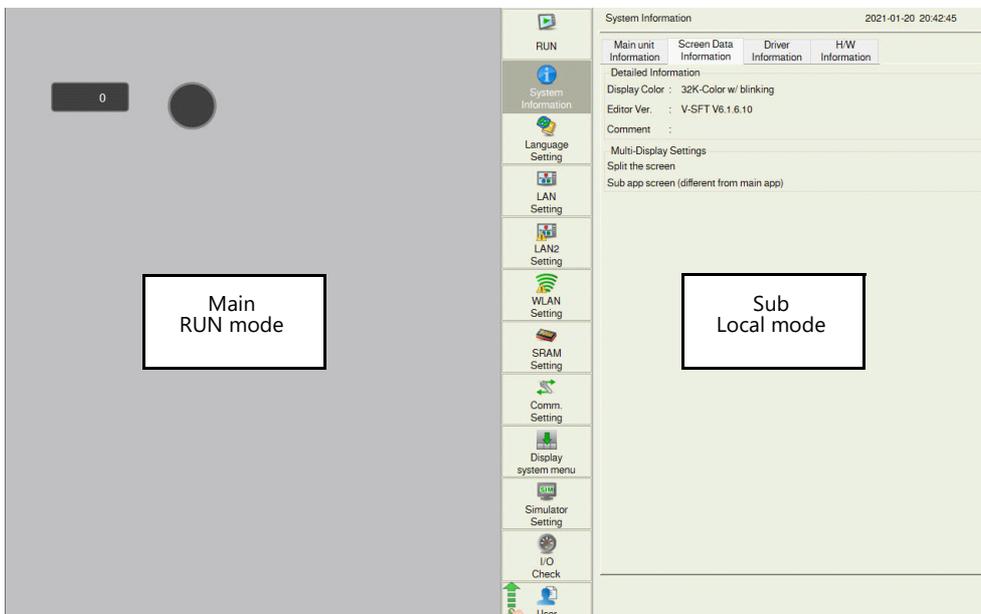
☞　　For details on Multi-Display Settings, refer to the X1 Series Reference Manual 2.

Driver Information

The [Driver Information] tab window shows information of connected device.

[Driver Information] tab window
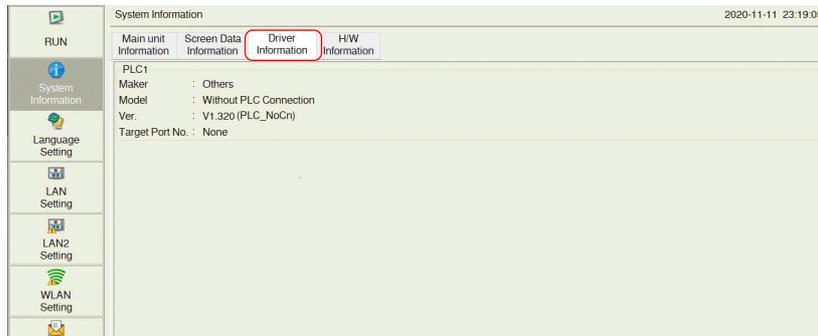
	Item	Description
PLC1 to 8	Maker	Indicates the manufacturer of the connected device.
	Model	Indicates the model name of the connected device.
	Ver. (driver file name)	Indicates the version of the communication I/F driver and its filename.
	Target Port No.	Indicates the set connection port.

H/W Information

The [H/W Information] tab window shows the hardware information of the X1 series unit.

[H/W Information] tab window
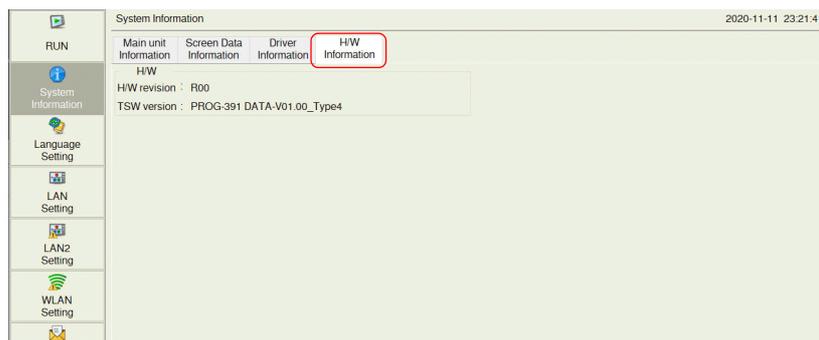
	Item	Description
H/W information	H/W revision	Indicates the hardware revision information.
	TSW version	Indicates the touch switch firmware version.

5.4.5   Language Setting

Pressing [Language Setting] in the menu icons brings up the Language Setting screen.
This screen is used to change the interface language for Local mode.

Menu icon   Language Setting screen
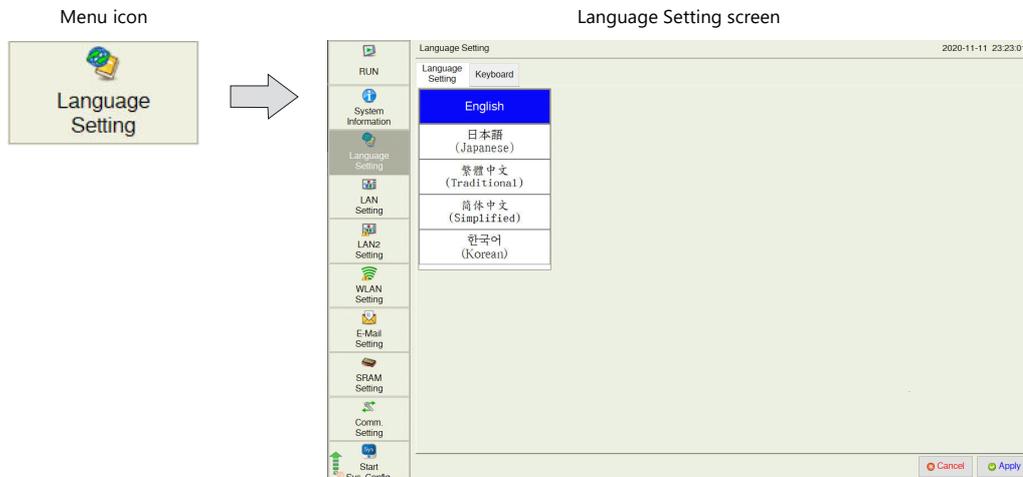
The Language Setting screen can be displayed when any of the following screens are displayed:

- Local mode
- Error screen

Language Setting

The [Language Setting] tab window is used to change the interface language of the Local mode screen.

[Language Setting] tab window

Select a desired language and press the [Apply] switch to confirm the setting.

Item	Description
Language Setting	Select an interface language. [English], [日本語 (Japanese)], [繁體中文 (Traditional)], [简体中文 (Simplified)], [한국어 (Korean)]

The language selected in the [Language Setting] tab window is applied to the following screens:

- Local mode
- System menu
- Status bar
- Messages at the bottom right of the splash screen
- Dialog box displayed during transfer
- Error screen

This setting does not apply to the interface language of System Configurator. The inferface language of System Configurator can be changed from System Configurator → [Language change]. For details, refer to "Language Change" page 5-94.

5.4.6   LAN Setting / LAN2 Setting

Pressing [LAN Setting] or [LAN2 Setting] in the menu icons brings up the LAN Setting or LAN2 Setting screen, respectively.
This screen shows the IP address of the X1 series unit set on System Configurator.

Menu icon   LAN Setting screen

When no LAN cable is connected or a link is not established, the indication of the [LAN Setting]/[LAN2 Setting] icon is changed as follows.

Link established   Cable disconnected or link not established
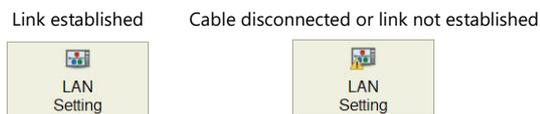
IP Setting

The [IP Setting] tab window shows the IP address and the port number setting of the X1 series unit.

[IP Setting] tab window

The IP address specified on System Configurator is displayed,

Pressing each setting field brings up the system keyboard to be used for input.

After changing any settings, press the [Apply] switch to confirm the settings.
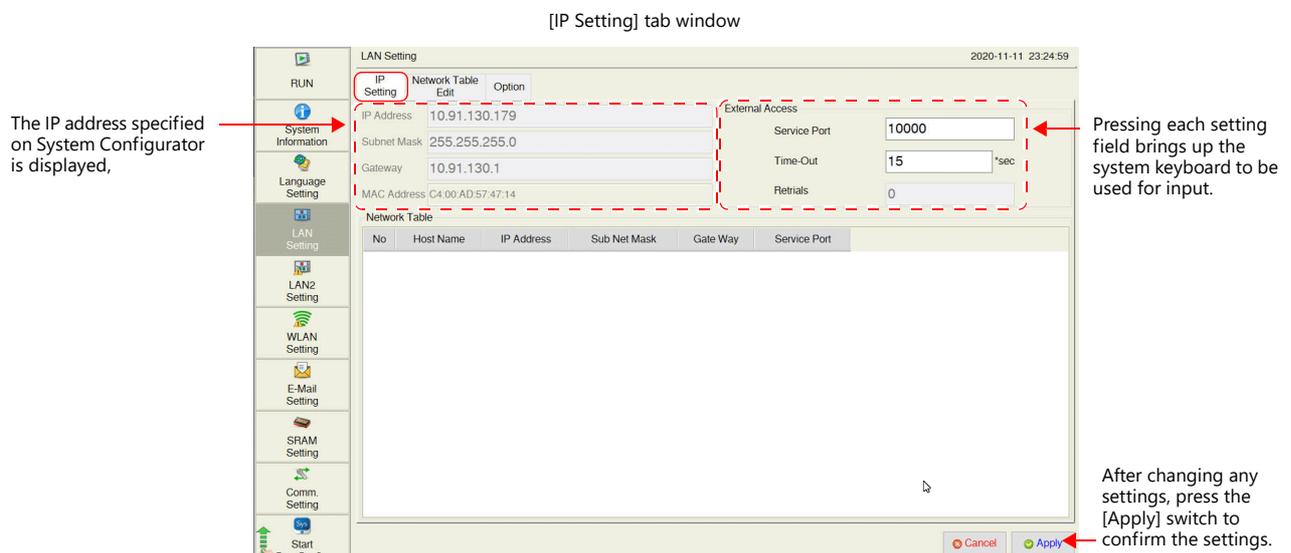
Item		Description
IP Address		Indicates the IP address of the LAN port.
Subnet Mask		Indicates the subnet mask of the LAN port.
Gateway		Indicates the default gateway of the LAN port.
MAC Address		Indicates the MAC address of the LAN port.
External Access	Service Port	Set the port number to be used for the EREAD, EWRITE, SEND, and MES macro commands and Ethernet DLL functions. No. 1024 to 65535 (excluding 8001)
	Time-Out	Set the timeout period to be used for the EREAD, EWRITE, SEND, and MES macro commands and Ethernet DLL functions.
	Retrials	Fixed to "0"

> • The IP address of the X1 series unit is set on System Configurator. Refer to .
> • Set an IP address of a different network group for each of the following:
>   [LAN Setting], [LAN2 Setting], and [WLAN Setting] (only for wireless LAN models).
>   If set in the same network group, the system will not operate correctly.
> • The gateway can be set for only one of the following:
>   [LAN Setting], [LAN2 Setting], and [WLAN Setting] (only for wireless LAN models).

IP Address

This is an address that is used for recognizing each node on the Ethernet and should be unique.
The IP address is 32-bit data which consists of the network address and the host address and can be classified into classes A to C depending on the network size.

Class A	0	Network address (7)	Host address (24)

Class B	1 0	Network address (14)	Host address (16)

Class C	1 1 0	Network address (14)	Host address (8)

<Notation>
Data consisting of 32 bits is divided into four segments in decimal notation and each segment is delimited with a period.
Example: The IP address in class C shown below is represented as "192.128.1.50".
11000000 10000000 00000001 00110010

<Unavailable IP addresses>
• "0" is specified for the first octet.
  Example: 0.x.x.x
• "127" is specified for the first octet (loop back address).
  Example: 127.x.x.x
• "224" or more is specified for the first octet (for multi-cast or experiment).
  Example: 224.x.x.x
• The host address consists of only "0" or "255" (broadcast address).
  Example: 128.0.255.255, 192.168.1.0

Port Number

Multiple applications are running on each node, and communications are carried out for each application between the nodes. Consequently, it is necessary to have a means to identify the application that data should be transferred to. The port number works as this identifier. Each port number is 16-bit data (from 0 to 65535).
The X1 series uses ports for screen program transfer (8001), PLC communication (as desired), and the simulator (8020). Set a unique number in the range of 1024 to 65535. For a PLC or a PC, set the port number in the range of 256 to 65535. It is recommended to set a greater number.

Default Gateway

A gateway and a router are used for communication between different networks.
The IP address of the gateway (router) should be set to communicate with the node(s) on other networks.

Subnet Mask

A subnet mask is used for dividing one network address into multiple networks (subnet).
The subnet is assigned by specifying a part of the host address in the IP address as a subnet address.

Class B	1 0	Network address (14)	Host address (16)

	255.	255.	255.	0
Subnet Mask	11111111	11111111	11111111	00000000
	Network address		Subnet address	Host address

<Unavailable subnet masks>
• All bits are set to "0".: 0.0.0.0
• All bits are set to "1".: 255.255.255.255

Network Table Edit

The [Network Table Edit] tab window is used to edit and add network tables.

[Network Table Edit] tab window
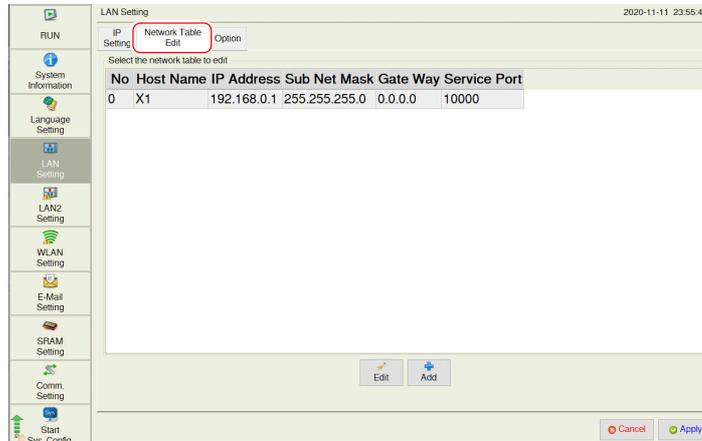
After changing any settings, press the [Apply] switch to confirm the settings.

Editing procedure

1. Press [LAN Setting]/[LAN2 Setting] in the menu icons and open the [Network Table Edit] tab window.
2. Select a network table to edit and press the [Edit] switch.
3. Press each item and input settings using the system keyboard. Then press the [Confirm] switch.
    * The network table number cannot be changed.
    * If a gateway is not used, leave the field blank.
4. Press the [Apply] switch to confirm the settings.

Adding procedure

1. Press [LAN Setting]/[LAN2 Setting] in the menu icons and open the [Network Table Edit] tab window.
2. Press the [Add] switch.
3. Press each item and input settings using the system keyboard. Then press the [Confirm] switch.
    * Be sure to register a network table number.
4. Press the [Apply] switch to confirm the settings.

Option

The [Option] tab window shows the Ethernet speed and DNS settings.

[Option] tab window
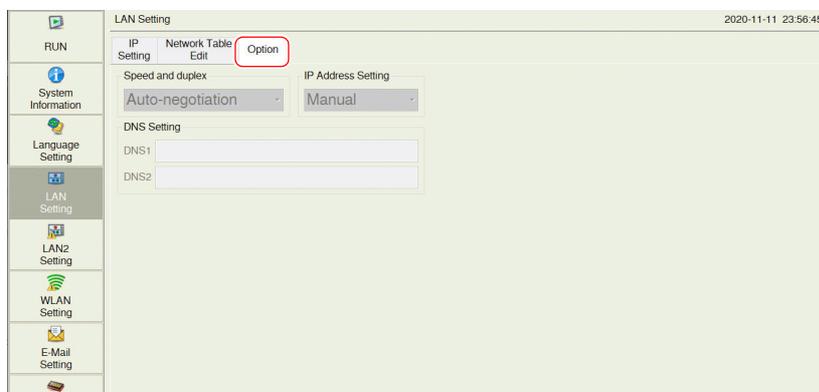
Item	Description
Speed and duplex	Indicates the settings configured on the System Configurator → [Settings] → [IP Address Setting] → [LAN/LAN2] screen.
IP Address Setting	
DNS Setting	

5.4.7   WLAN Setting (Only for Wireless LAN I/F Models)

Pressing [WLAN Setting] in the menu icons brings up the WLAN Setting screen.
This screen is used to configure wireless LAN settings for the X1 series unit.

☞   For general specifications and conformance standards of wireless LAN, refer to "WLAN" page 2-14.

Menu icons   WLAN Setting screen
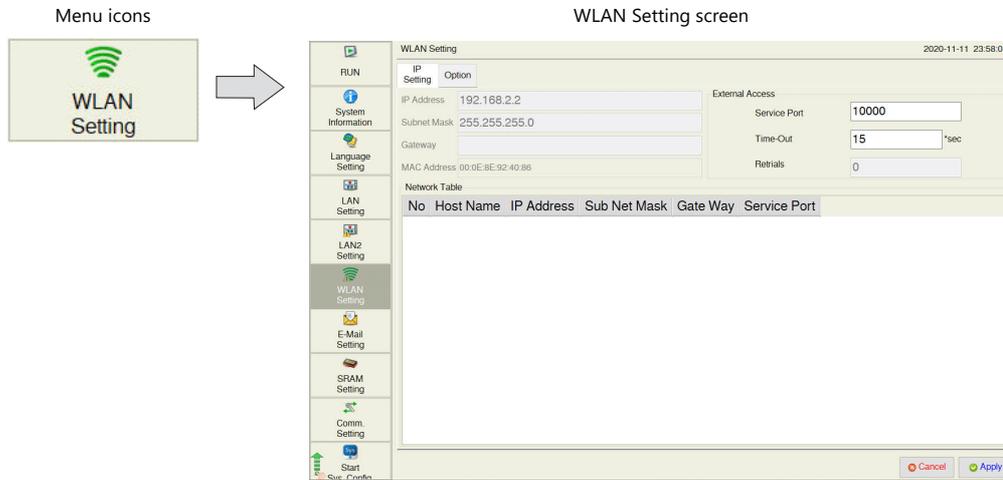
When the wireless LAN link is not established *, the [WLAN Setting] switch in the menu icons is changed as follows.

Link established   Link not established

*   A link is not established in the following states.
   -    The wireless LAN is turned off (disabled).
   -    The wireless LAN is turned on (enabled) but a link is not established.
   -    The wireless LAN is turned on (enabled) but not connected to the specified access point.

IP Setting

The [IP Setting] tab window shows the wireless LAN IP address of the X1 series unit.

[IP Setting] tab window

The IP address specified on System Configurator is displayed,

Pressing each setting field brings up the system keyboard to be used for input.

After changing any settings, press the [Apply] switch to confirm the settings.
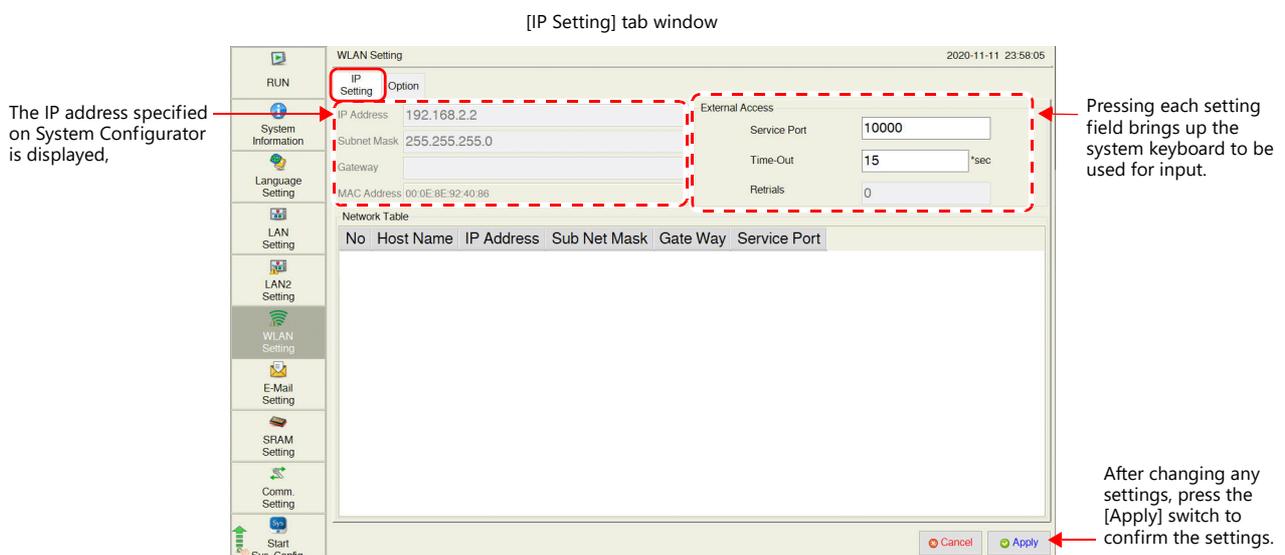
Item		Description
IP Address		Indicates the IP address of the WLAN port.
Subnet Mask		Indicates the subnet mask of the WLAN port.
Gateway		Indicates the default gateway of the WLAN port.
MAC Address		Indicates the MAC address of the WLAN port.
External Access	Service Port	Set the port number to be used for the EREAD, EWRITE, SEND, and MES macro commands and Ethernet DLL functions. No. 1024 to 65535 (excluding 8001)
	Time-Out	Set the timeout period to be used for the EREAD, EWRITE, SEND, and MES macro commands and Ethernet DLL functions.
	Retrials	Fixed to "0"

⚠️
- The IP address of the X1 series unit is set on System Configurator. Refer to .
- Set an IP address of a different network group for each of the following:
  [LAN Setting], [LAN2 Setting], and [WLAN Setting] (only for wireless LAN models).
  If set in the same network group, the system will not operate correctly.
- The gateway can be set for only one of the following:
  [LAN Setting], [LAN2 Setting], and [WLAN Setting] (only for wireless LAN models).

Option

The [Option] tab window shows the DNS settings, etc.

WLAN [Option] tab window
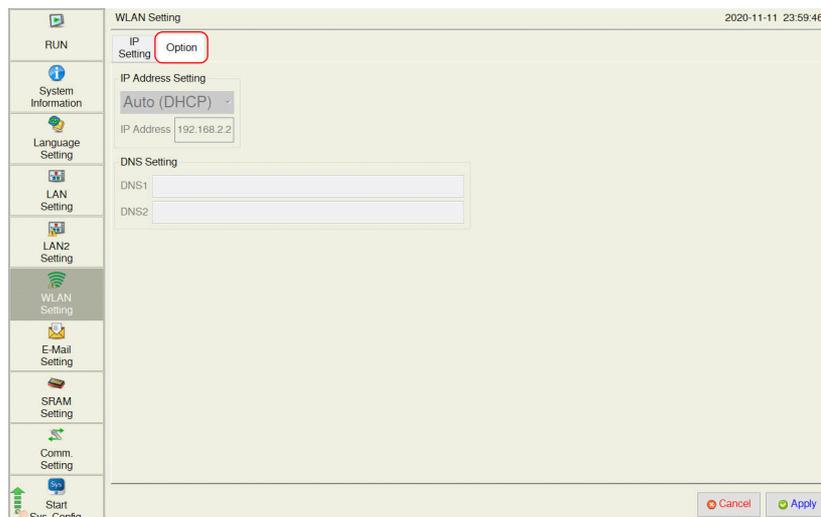
Item	Description
IP Address Setting	Indicates the settings configured on the System Configurator → [Settings] → [IP Address Setting] → [WLAN] screen.
DNS Setting	

5.4.8 E-Mail Setting

Pressing [E-Mail Setting] in the menu icons brings up the E-Mail Setting screen. This screen is used to view and configure connection settings and destination settings for sending e-mail notifications.

☞　For details on e-mail notifications, refer to the X1 Series Reference Manual 2.

Menu icons

E-Mail Setting screen

Press the [Apply] switch to confirm the setting.

Item	Description
Restore Screen Data Settings	Returns the e-mail settings made on the X1 series unit to those set in the screen program. When the [Restore Screen Data Settings] switch is pressed, settings made in the [Connection Setting] and [Mail Setting] tab windows are canceled, and those in the screen program are restored. 　*　When settings are restored, the changes made on the unit are cancelled. For the handling of a screen program changed in Local mode, refer to page 5-63.

Connection Setting

The [Connection Setting] tab window on the E-Mail Setting screen allows you to configure connection settings for sending e-mail notifications.
When e-mail settings have been configured using V-SFT version 6, the settings in the screen program are displayed.

[Connection Setting] tab window

Pressing each setting field brings up the system keyboard to be used for configuration.

After changing the setting, press the [Apply] switch to confirm the setting
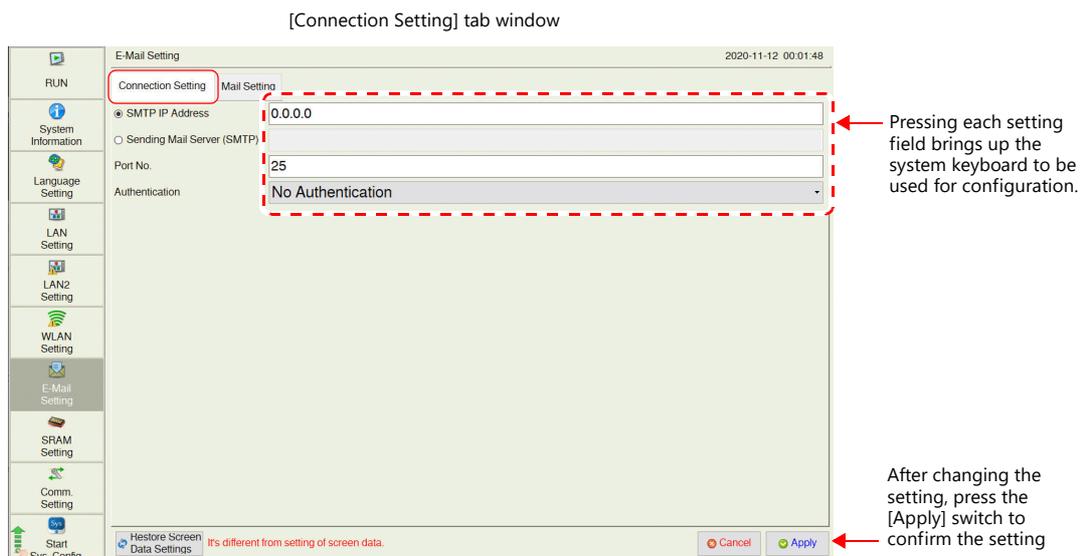
Item		Description
Mail server	SMTP IP Address	Set the network IP address of the mail server.
	Sending Mail Server (SMTP)	Set the server name of the mail server (within 255 one-byte alphanumeric characters and symbols). Setting of the DNS setting, which can be checked at [LAN/LAN2/WLAN Setting] → [Option] → [DNS Setting], is required as well.

Item		Description
Port No.		Set the SMTP port number. (Default: 25) When using SSL/TLS communication, set "465" for the port number.
Authentication	No Authentication	No authentication is performed.
	POP before SMTP	Authentication is performed with the POP3 server. Configure the following settings. • POP3 IP address • Account name (within 63 one-byte characters) • Password (within 63 one-byte characters)
	SMTP-AUTH	Authentication is performed with the SMTP server. Configure the following settings. • Selecting or deselecting the [Use SSL/TLS Communication] checkbox • Account name (within 63 one-byte characters) • Password (within 63 one-byte characters)
POP3 IP Address		Displayed when [Authentication: POP before SMTP] is selected. Set the POP3 IP address.
Use SSL/TLS Communication		Displayed when [Authentication: SMTP-AUTH] is selected. Select this checkbox when using SSL/TLS communications.
Account Name		Set an account name used for connecting to the POP3 server or SMTP server.
Password		Set a password used for connecting to the POP3 server or SMTP server.

Mail Setting

The [Mail Setting] tab window is used to specify destinations for sending e-mail notifications.
When e-mail settings have been configured using V-SFT version 6, the settings in the screen program are displayed.

[Mail Setting] tab window

Pressing each setting field brings up the system keyboard to be used for configuration.

After changing the setting, press the [Apply] switch to confirm the setting.

Item	Description
Sender's Mail Address	Set the sender's mail address. It is recommended to create a dedicated account for the X1 series unit on the mail server and to set its address here.
Sender's Name	Set the sender's name. A name can only consist of either one- or two-byte characters; not both. It is displayed in the "Sender" field in an incoming e-mail.
Subject	Set the subject. It is displayed in the "Subject" field in an incoming e-mail.
Recipient Mail Addresses	Max. 8 addresses Register all mail addresses to receive notifications from the X1 series unit.

Editing the recipient mail addresses

1. Press [E-Mail Setting] in the menu icons and open the [Mail Setting] tab window.
2. Select a mail address to edit and press the [Change] switch.
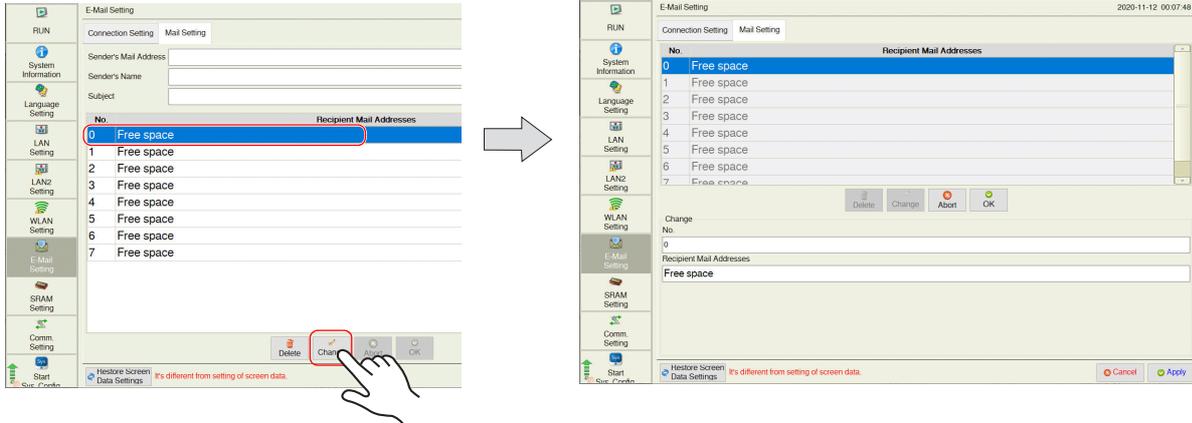
3. Pressing each setting field brings up the system keyboard to be used for configuration.
   Set the recipient mail address.
   When [No.] is changed, the set address is copied to the selected number.
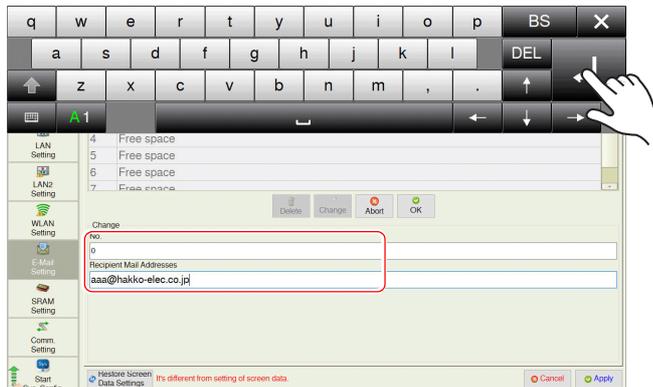
4. Press the [OK] switch and then the [Apply] switch. The changed address takes effect.
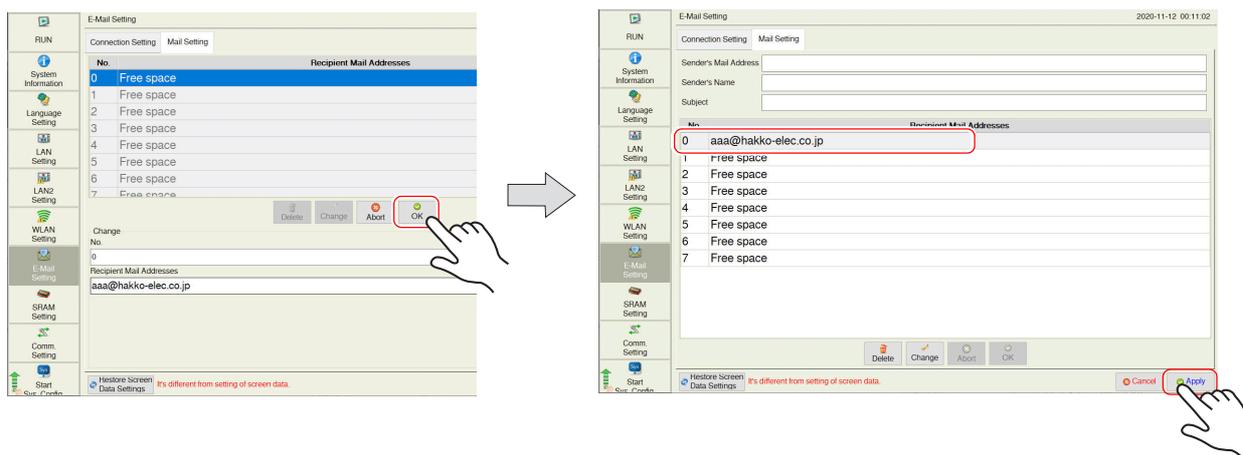
Deleting the recipient mail addresses

1.   Press [E-Mail Setting] in the menu icons and open the [Mail Setting] tab window.
2.   Select a mail address to delete and press the [Delete] switch.
3.   Press the [Apply] switch to confirm the setting.
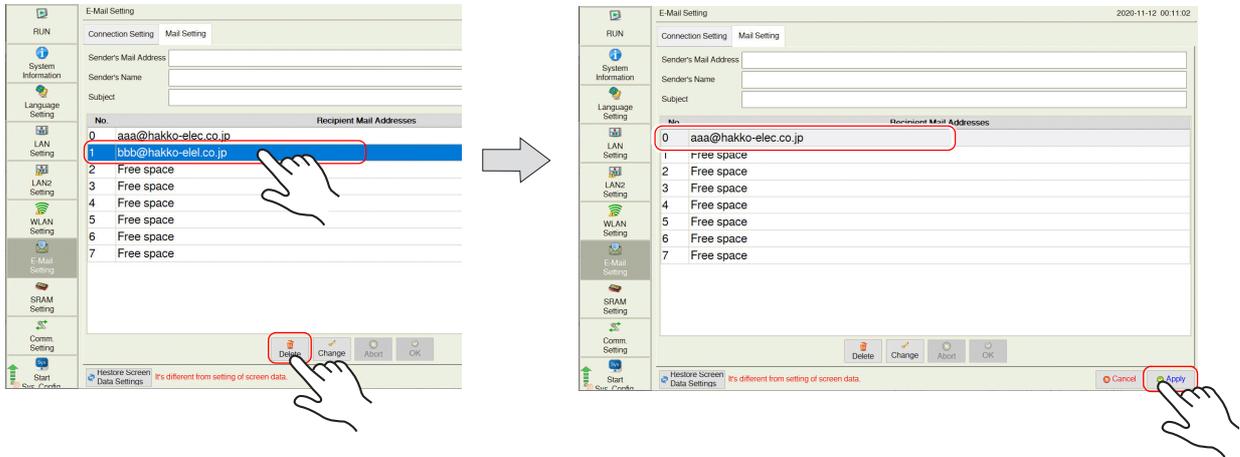
5.4.9 SRAM Setting

Pressing [SRAM Setting] in the menu icons brings up the SRAM Setting screen.
This screen is used to format the SRAM area in the X1 series unit.

The following area in the X1 series unit is the SRAM area.
C:\MONITOUCH\X1\0\work\sram

Menu icon   SRAM Setting screen
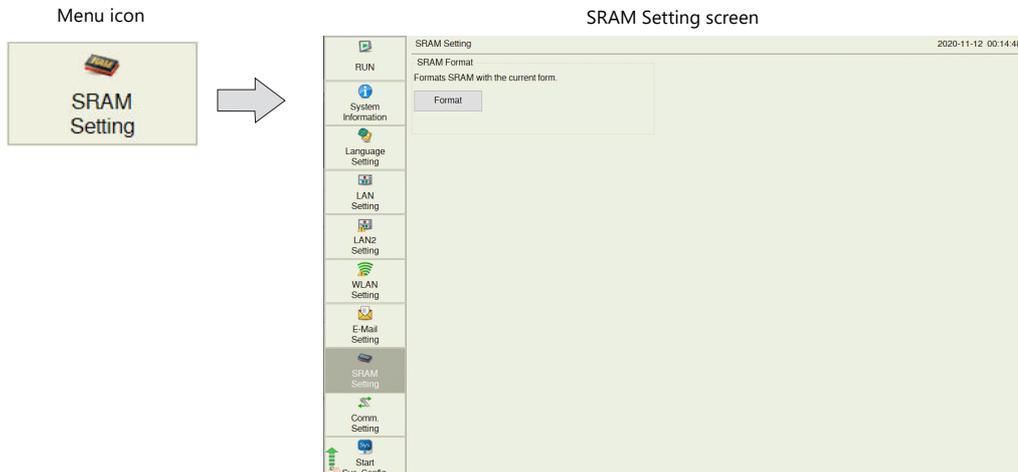
If the SRAM area allocated in the X1 series unit is different from the one configured in the [SRAM/Clock Setting] window of V-SFT version 6, the [SRAM Setting] menu icon is changed as shown below.

When the format matches: When the format differs:

SRAM Setting screen
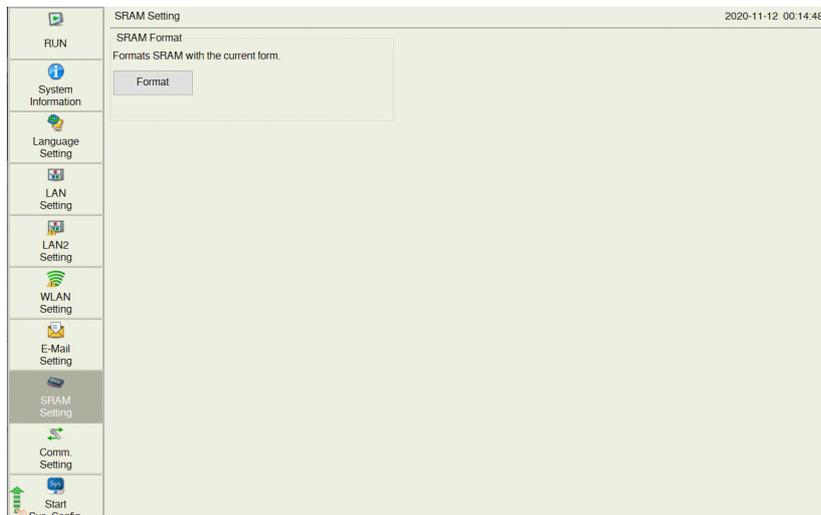
Item		Description
SRAM Format	Format	Formats the SRAM area. For the formatting procedure, refer to page 5-35.

SRAM formatting procedure

An SRAM area can be formatted.
When the SRAM area is formatted, any saved data (history data saved in SRAM, internal device memory $L, etc.) is completely cleared.
Double-check before formatting the SRAM.

1. Press [SRAM Setting] in the menu icons. The SRAM Setting screen is displayed.
2. Press the [Format] switch and the [Execute] switch.
   The SRAM area is formatted in the format specified in the current screen program.
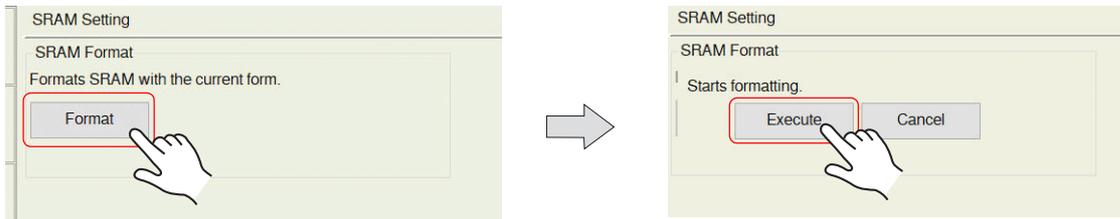
3. When formatting has been completed, the message "Format completed." is displayed.

5
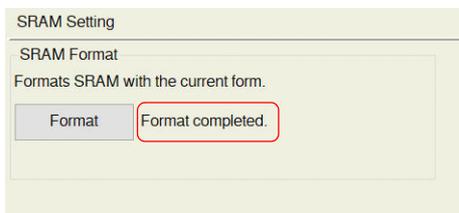
5.4.10 Communication Setting

Pressing [Comm. Setting] in the menu icons brings up the Communication Setting screen.
This screen is used to view and configure communication parameters.

Menu icons   Communication Setting screen

Communication Setting screen

Indicates the maker, model, and connection port of PLCx.

Changes over the display between PLC1 to PLC8.

Press to revert to the settings set in the screen program.

Press the [Apply] switch to confirm the settings.

Item		Description
PLC1 - PLC8 Communication Setting	Maker	Indicates the maker of the connected device.
	Model	Indicates the model of the connected device.
	Target Port No.	Indicates the specified connection port.
<<		Changes over the display of the communication settings between PLC1 to PLC8.
>>		If only PLC1 is used, the display cannot be changed over.
Restore Screen Data Settings		Restores communication settings that were changed on the X1 series unit to those set in the screen program. For details, refer to page 5-37. * When settings are restored, the changes made on the unit are cancelled. For details on data changed in Local mode, refer to page 5-63.

* The model and connection port cannot be changed on the X1 series unit.

Restoring settings in the screen program

This section explains how to restore the screen program settings after the communication settings were changed on the X1 series unit.

1. Press [Comm. Setting] in the menu icons. The Communication Setting screen is displayed.
2. To restore a specific communication parameter for PLCx, press [<<] and [>>] switches to select the connected device targeted for restoration.
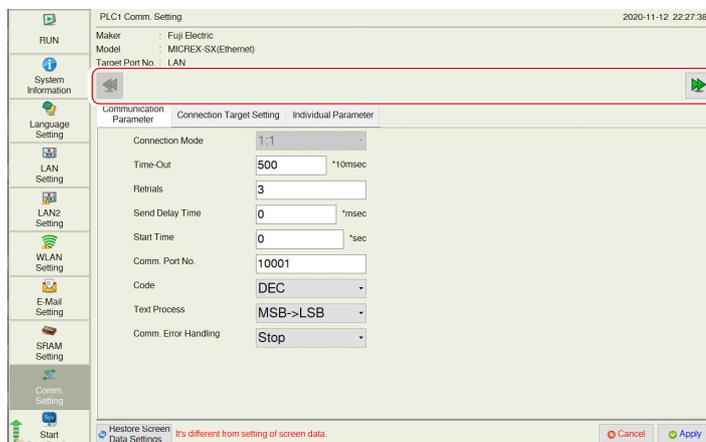
3. Press the [Restore Screen Data Settings] switch. The following dialog box appears.
   To restore the screen program settings for only the currently displayed PLCx, press the [Reset PLCx Only] switch. To restore for all PLCs 1 to 8, press the [Reset All] switch.
   * When restored, changes made on the X1 series unit are cancelled.
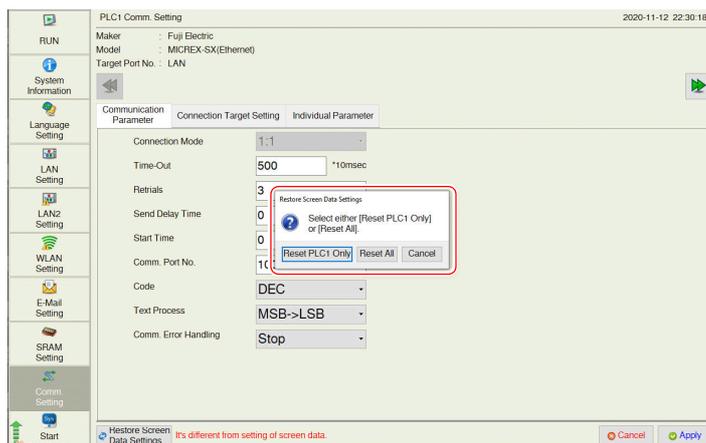
4. Communication settings are refreshed and the [System Information] screen is displayed.

Communication Parameter

The [Communication Parameter] tab window is used to check and set parameters for connected devices.

[Communication Parameter] tab window

Indicates communication parameters of PLCx. Pressing each setting field brings up the system keyboard to be used for configuration.

After changing the setting, press the [Apply] switch to confirm the setting.
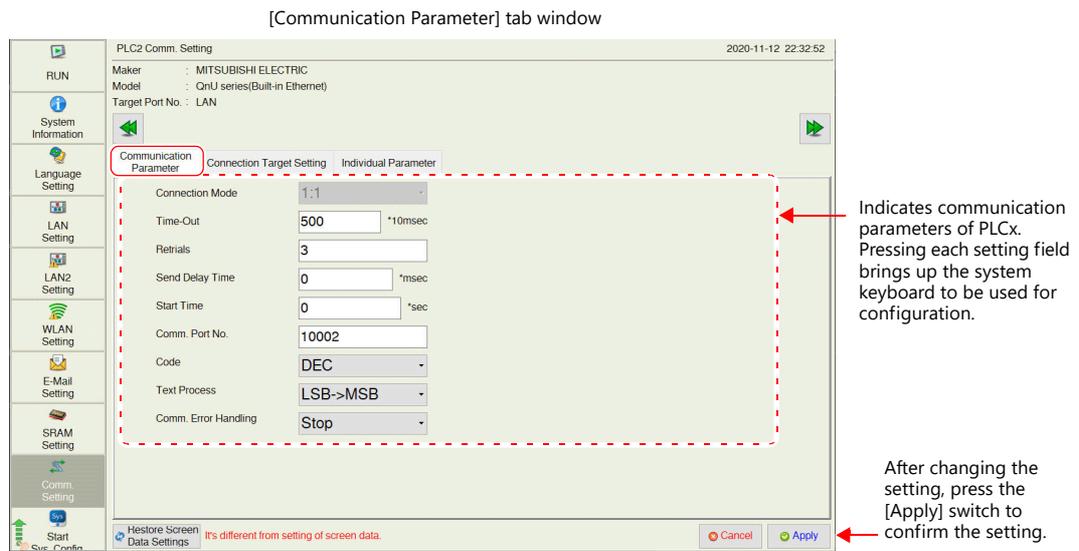
Item	Description
Connection Mode	Displays the communication parameters of PLCx.
Signal Level	Press an item to change the communication parameter on the X1 series unit. [*1]
Baud Rate	For details, refer to the X1 Series Connection Manual.
Data Length	
Parity	
Stop Bit	
Stat. No.	
Local Port No.	
Time-Out	
Retrials	
Send Delay Time	
Start Time	
Comm. Port No.	
Code	
Text Process	
Comm. Error Handling	
Recovery Condition	

*1 The connection mode cannot be changed on the X1 series unit.

Connection Target Setting

The [Connection Target Setting] tab window is used to check and change the IP address and port number of connected devices.

  * The [Connection Target Setting] tab window is displayed only when Ethernet connection is used.

[Connection Target Setting] tab window

Pressing each setting field brings up the system keyboard to be used for configuration.

After changing the setting, press the [Apply] switch to confirm the setting.
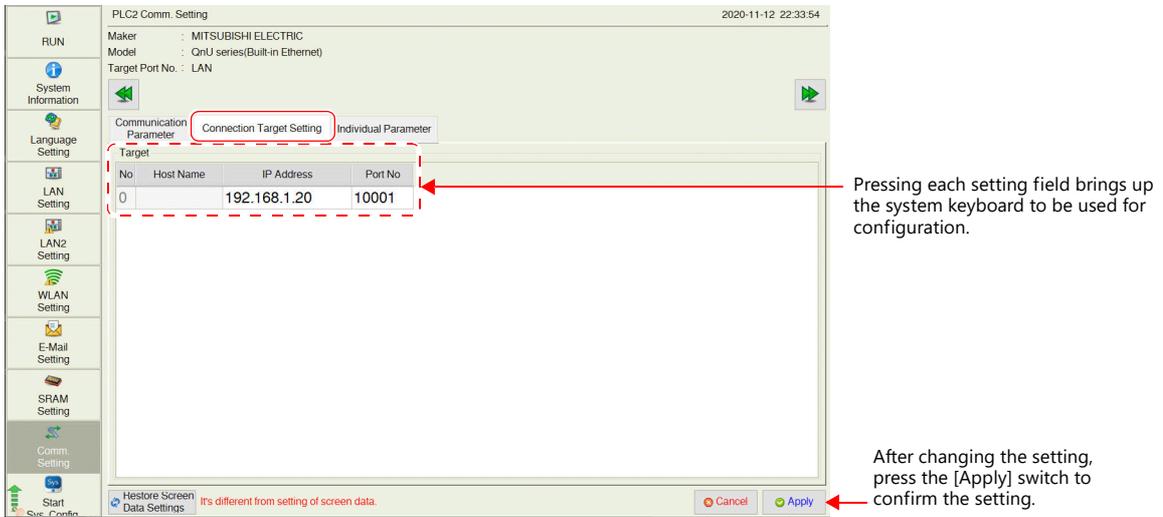
Item		Description
Target *1	No	Displays the number of the connection target. (Cannot be changed.)
	Host Name	Displays the station name set in the screen program. (Cannot be changed.)
	IP Address	Set the IP address for the connected device.
	Port No.	Set the port number of the connected device.

  *1   When the connection mode is 1:1, only the connected device is displayed.
       When it is 1:n, all devices set in the PLC table in V-SFT version 6 are displayed.
       Addition or deletion of a connected device is not possible.

Individual Parameter

The [Individual Parameter] tab window is used to set detailed communication settings.

  * [Use Port No. Table] and [Node Address] are not displayed.

[Individual Parameter] tab window

A setting menu is displayed for each PLC.

Pressing each setting field brings up the system keyboard to be used for configuration.

After changing the setting, press the [Apply] switch to confirm the setting.
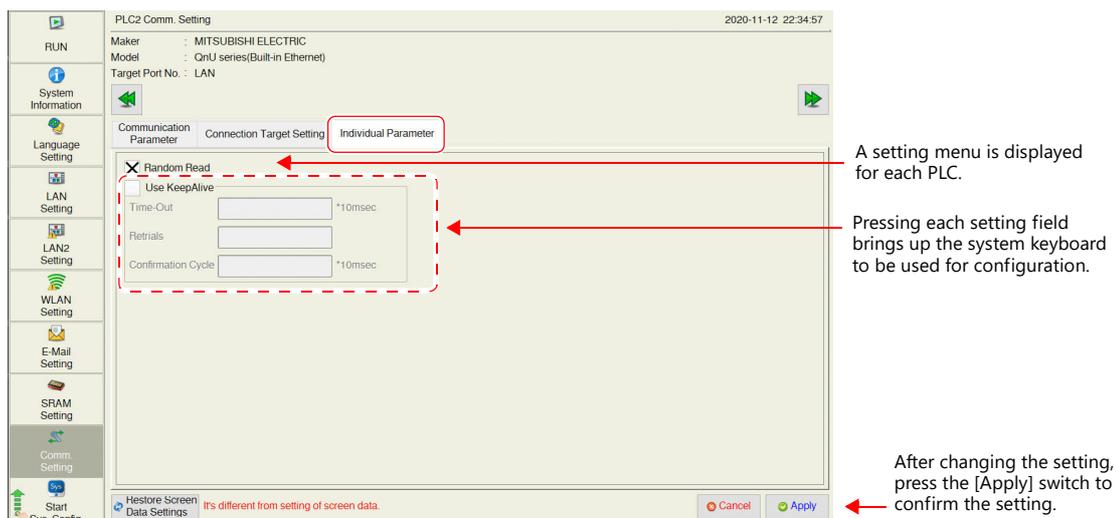
Item	Description
Transmission Mode Batch Readout of Multiple Blocks Random Read Series Selection etc.	A setting menu is displayed for each PLC. For details, refer to the individual manufacturer chapters in the X1 Series Connection Manual.
Use KeepAlive	This is displayed only for Ethernet communication. For details, refer to the X1 Series Connection Manual.

5.4.11 Start Sys. Config. / Exit X1 App

Pressing [Start Sys. Config.] in the menu icons brings up the Start System Configurator screen.
Pressing [Exit X1 App] brings up the Exit X1 Application screen.
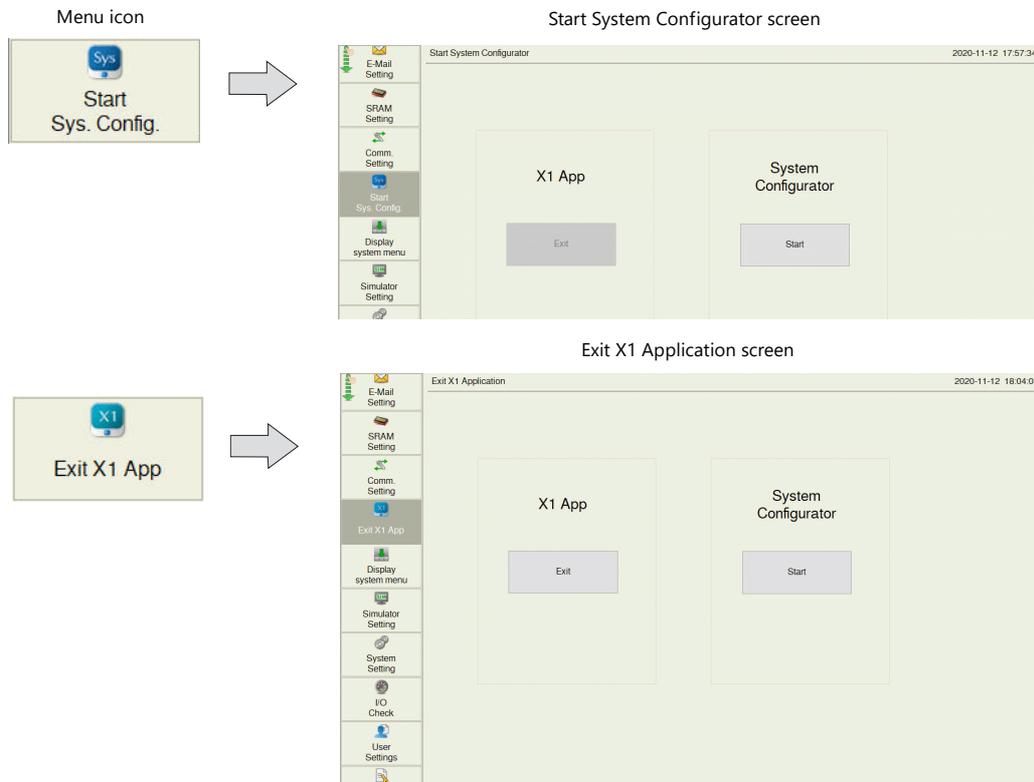
Item	Description	Remarks
X1 App: Exit	Exits the X1 app and displays System Configurator.	This switch is valid when the X1 series unit is started with System Configurator → [Startup mode selection] set to [System Configurator] and the X1 app is started from System Configurator → [Operation test].
System Configurator: Start	Starts System Configurator without exiting the X1 app.	This switch is valid when the X1 series unit is started with System Configurator → [Startup mode selection] set to [HMI].

5.4.12 Display System Menu

Pressing [Display system menu] in the menu icons brings up the system menu and the status bar.

☞ Refer to System Menu and Status Bar page 5-3
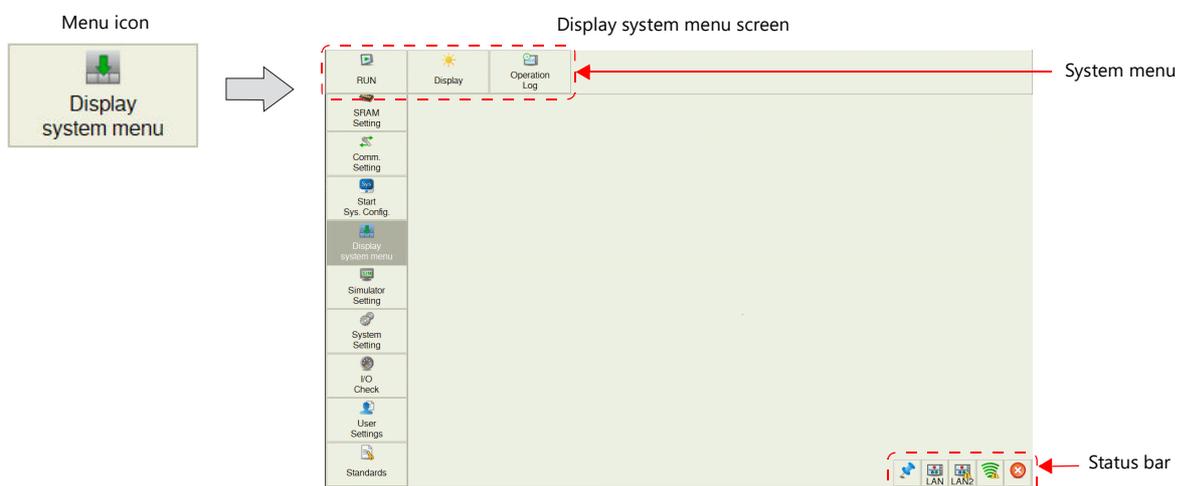
5.4.13 Simulator Setting

Pressing [Simulator Setting] in the menu icons brings up the Simulator Setting screen.
This screen is used to show the information of the simulator to use, and select whether or not to use the simulator.

Simulator
The simulator is a function used to check the operation of a screen program without connecting devices such as PLCs and temperature controllers.
The simulator is started on a computer via V-SFT version 6.

Menu icons   Simulator Setting screen

Simulator Setting screen

Pressing each setting field brings up the system keyboard to be used for configuration.

After changing the setting, press the [Apply] switch to confirm the setting.

Item		Description
Simulator Information	Simulator Version	Indicates the version of the simulator program.
	Comm. Mode	Simulator communication mode: Ethernet (UDP)
	IP Address	Set the IP address for the connected computer. (Default: 192.168.1.201)
	Service Port	Set the port number for the simulator. (Default: 8020) Set the same number as the one set for [File] → [Communication Setting] → [Port No.] in the [Simulator] window.
PLC1 to 8	Maker	Indicates the manufacturer of the connected device.
	Model	Indicates the model name of the connected device.
	Not Use (Actual Machine) / Use	Select whether or not to use the simulator as a substitute for the actual equipment. Not Use (Actual Machine): Performs communication with an actual machine. Use: Performs communication using the simulator.

5.4.14 System Setting

Pressing [System Setting] in the menu icons brings up the System Setting screen.
This screen is used to change the settings for the buzzer and backlight.

Menu icons   System Setting screen

System Setting screen

Press to revert to the
settings set in the
screen program.

Press the [Apply] switch
to confirm the setting.

Item	Description
Restore Screen Data Settings	Returns the buzzer or backlight settings made on the X1 series unit to those set in the screen program. When this switch is pressed while the [Buzzer Setting] or [Backlight Setting] tab window is open, settings in the current tab window are cancelled and those in the screen program are restored. * When settings are restored, the changes made on the unit are cancelled. For details on the handling of a screen program changed in Local mode, refer to page 5-63.

Buzzer Setting

The [Buzzer Setting] tab window on the System Setting screen is used to change the buzzer sound.

[Buzzer Setting] tab window

Press the [Apply] switch to confirm the setting.
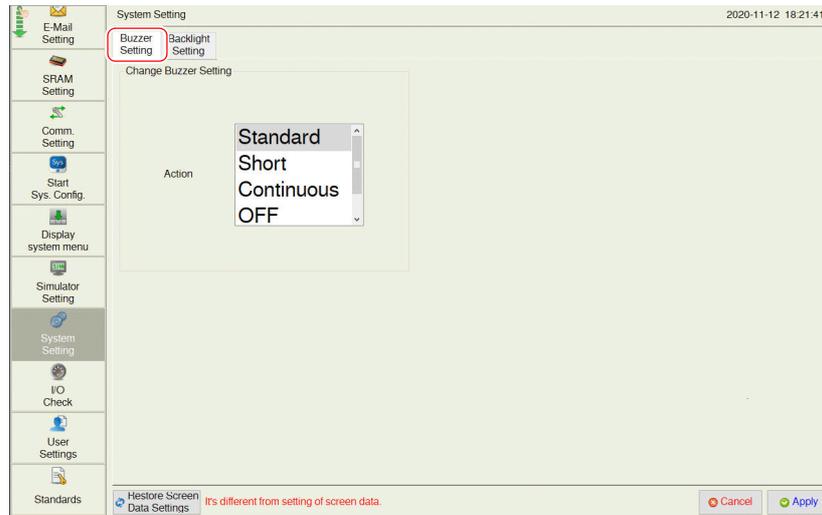
Item		Description
Change Buzzer Setting	Standard	Changes the buzzer sound.
	Short	
	Continuous	
	OFF	

Backlight Setting

The [Backlight Setting] tab window on the System Setting screen is used to change the backlight control setting.

[Backlight Setting] tab window

Press the [Apply] switch to confirm the setting.
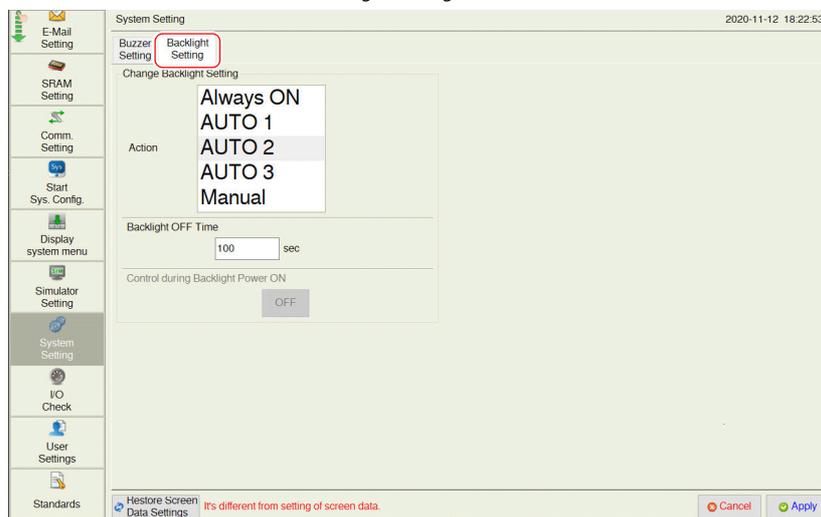
Item			Description
Change Backlight Setting	Action	Always ON	Changes the backlight control setting. For details on the difference between these actions, refer to the X1 Series Reference Manual 1.
		AUTO 1	
		AUTO 2	
		AUTO 3	
		Manual	
Backlight OFF Time			This item can be set only when [AUTO 1], [AUTO 2], or [AUTO 3] is selected. Set the time to elapse until the backlight is turned off.
Control during Backlight Power ON			This item can be set only when [Manual] is selected. Select the backlight status when the power is turned on and when the operation mode is changed from STOP to RUN.

5

Hard Copy Setting

The [Hard Copy Setting] tab window on the System Setting screen is used to change the hard copy setting.

[Hard Copy Setting] tab window

Press the [Apply] switch to confirm the settings.

Item		Description
Reversed Image	Unselected	Black and white are not inverted.
	Selected	Black and white are inverted.

Serial Setting

The [Serial Setting] tab window on the System Setting screen is used to set the signal level for serial communication (RS-422/RS-485). This setting is necessary when all of the following three conditions apply.
- The [Target Port No.] is set to [SERIAL] for PLCx in the [Hardware Setting] window of a screen program.
- The [Signal Level] setting is set to [RS-422/485] at either of the following locations:
  [Hardware Setting] → [PLCx Properties] in the screen program
  [Comm. Setting] → [Communication Parameter] in Local mode
- A connected device supports both RS-485 (2-wire connection) and RS-422 (4-wire connection) and RS-422 is used for connection.

[Serial Setting] tab window

Press the [Apply] switch to confirm the settings.

Item		Description
Specify signal level	Unselected	Automatic recognition • On models that support RS-485 (2-wire connection) only, RS-485 is used for connection. • On models that support RS-422 (4-wire connection) only, RS-422 is used for connection. • On models that support both RS-485 (2-wire connection) and RS-422 (4-wire connection), RS-485 is used for connection.
	Selected	Select either RS-485 (2-wire connection) or RS-422 (4-wire connection).

This setting is invalid when [Signal Level] is set to [RS-232C].

5.4.15 Storage Transfer

Pressing [Storage Transfer] in the menu icons brings up the Storage Transfer screen.
This screen is used to transfer data such as screen programs between the X1 series unit and the USB storage device.

☞   For details on how to store the data in the USB storage device and automatic upload function,, refer to the X1 Series Reference Manual 2.

Menu icon   Storage Transfer screen
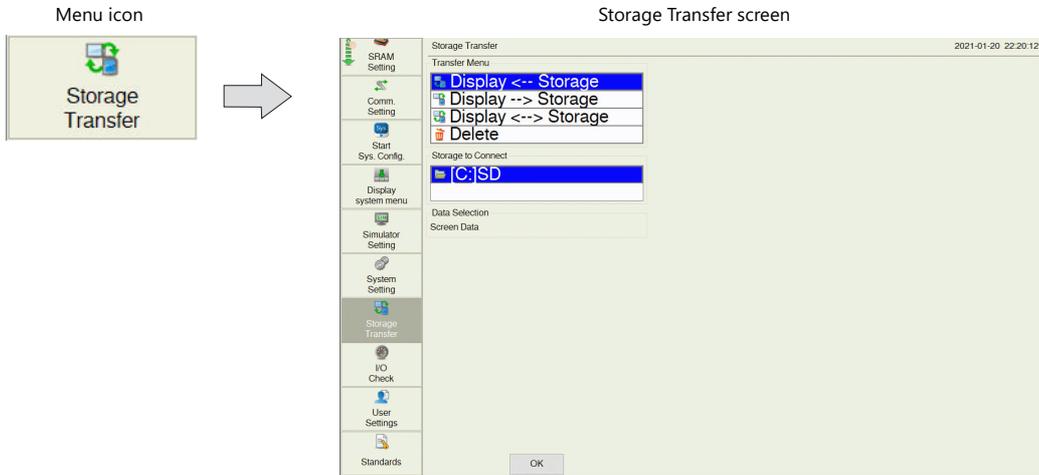
Item		Description
Transfer Menu	Display <-- Storage	Transfers data from a storage device to the X1 series unit.
	Display --> Storage	Transfers data from the X1 series unit to a storage device.
	Display <--> Storage	Compares stored data between the X1 series unit and a storage device.
	Delete	Deletes data from a storage device.
Storage to Connect	[C:] SD	Access the "C:\MONITOUCH\X1\0\work\strage\sd\EXT0000[*1]\DSP" folder of the X1 series unit.
	[C:] USB	Access the "C:\MONITOUCH\X1\0\work\strage\usb\EXT0000[*1]\DSP" folder of the X1 series unit.
	[W:] USB[*2]	Port 1 Access the "X1_Storage\EXT0000*1\DSP" folder of W drive.
	[X:] USB[*2]	Port 2 Access the "X1_Storage\EXT0000*1\DSP" folder of X drive.
	[Y:] USB[*2]	Port 3 Access the "X1_Storage\EXT0000*1\DSP" folder of Y drive.
	[Z:] USB[*2]	Port 4 Access the "X1_Storage\EXT0000*1\DSP" folder of Z drive.
Data Selection	Screen Data	Only screen program can be transferred. The X1 app program and the I/F driver are stored in the X1 unit.

*1   The access folder name can be changed at [Access folder name] in [System Setting] → [Others] → [Storage Setting] using V-SFT version 6.
     For details on files in the Access folder, refer to the X1 Series Reference Manual 2.
*2   Only the drive selected at [External USB Storage] in [System Setting] → [Others] → [Storage Settings] using V-SFT version 6 will be displayed.
     The drive names of USB ports are fixed.

| 1: W drive | 3: Y drive |
| 2: X drive | 4: Z drive |
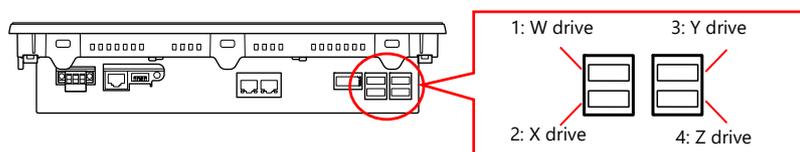
Procedure

This section explains how to transfer data with a USB storage inserted into the USB port 1(W drive) on the X1 series unit.

1. USB storage insertion
    Insert a USB storage into the USB port 1 on the back of the X1 unit.

1: W drive	3: Y drive
2: X drive	4: Z drive
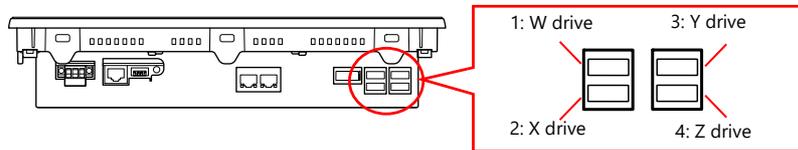
2. Storage Transfer screen display
    Switch to Local mode and press [Storage Transfer] in the menu icons. The Storage Transfer screen is displayed.
    *   Do not remove and reinsert the USB storage from this point on.
3. Target storage device selection
    Select [[W:] USB] under [Storage to Connect].
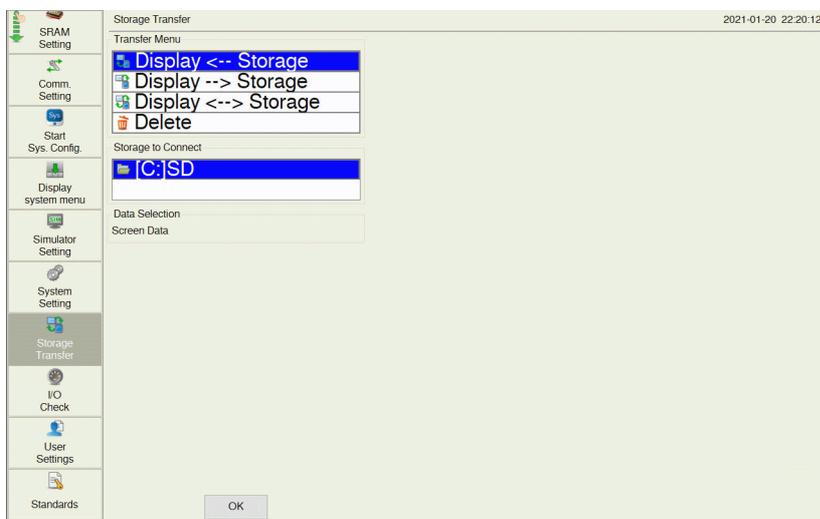
If [[W:] USB] is not displayed, make the following settings in the screen program.

Select the [External USB storage: W drive] at [System Setting] → [Other] → [Storage Setting].

4. Transfer operation selection
    Select the transfer operation and press the [OK] switch.
    -   Refer to "When [Display <-- Storage] Is Selected:" page 5-47
    -   Refer to "When [Display --> Storage] Is Selected:" page 5-49
    -   Refer to "When [Display <--> Storage] Is Selected:" page 5-51
    -   Refer to "Deleting Data from Storage:" page 5-52

When [Display <-- Storage] Is Selected:

1. When [Display <- Storage] is selected, the following screen appears.

Information of the folder currently selected

Free space in the storage
Folder name currently selected

Used for checking or changing folder names.

Starts transfer.

Returns to the previous screen.
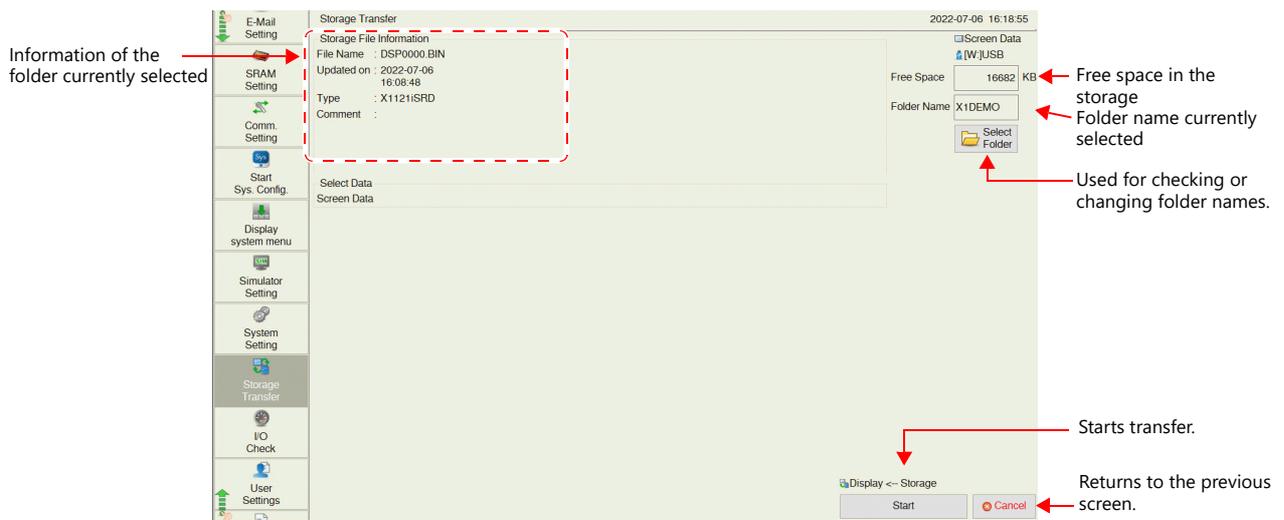
* The access folder name that is set in the screen program is displayed as default. If there is no screen program in the X1 series unit, "EXT0000" is displayed.

2. Access folder confirmation
Check the storage information, free space on the storage device, and the folder name. When the selected folder is all right, proceed to step 4. To change the folder, proceed to step 3.

3. Access folder change (showing folders in the storage)
To change the access folder to another folder, press the [Select Folder] switch. The following screen appears. Select the desired folder and press the [OK] switch.
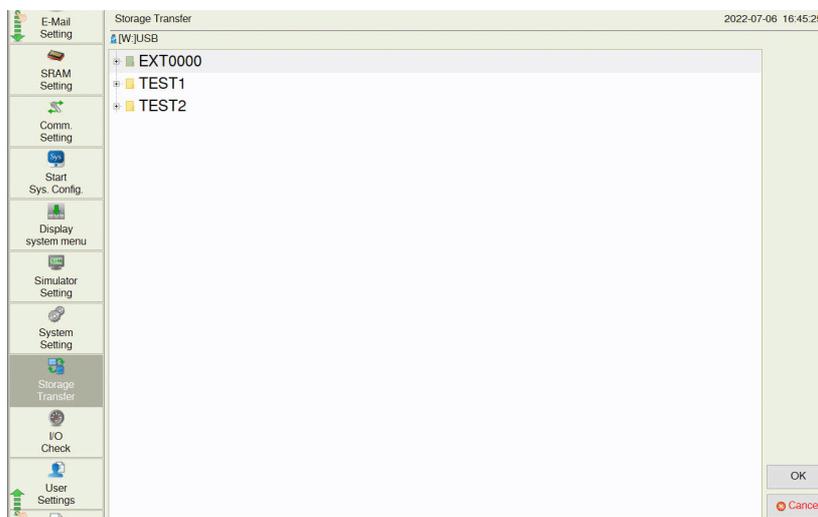
Pressing on the screen shows the contents of the folder.

4. Data transfer start
   Press the [Start] switch. The [Transferring data... (Storage)] dialog is displayed during transfer.
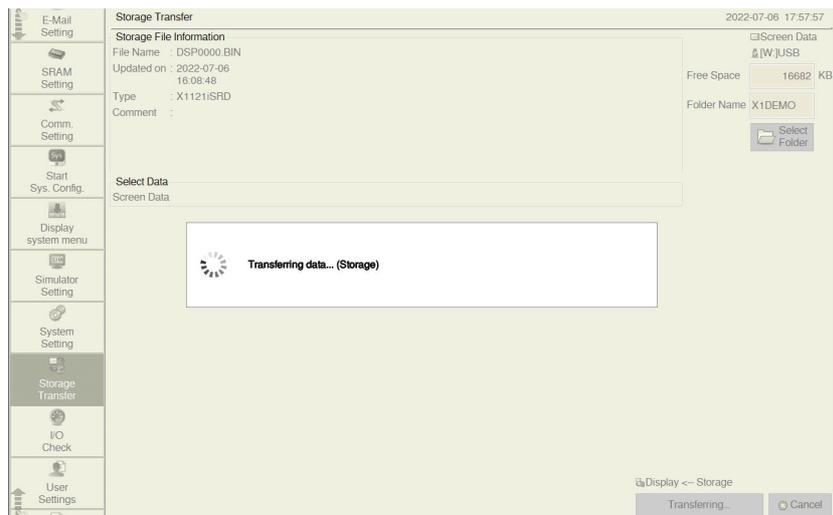
5. Data transfer completed
   When the data has been transferred successfully, the following message dialog is displayed. Press the [OK] switch.
   The System Information screen is automatically displayed on completion of data transfer.

   * If any other message is displayed, refer to "Message Dialog Displayed during Data Transfer" page 5-53.

When [Display --> Storage] Is Selected:

1.   When [Display -> Storage] is selected, the following screen appears.

Information of the folder currently selected

Free space in the storage

Folder name currently selected

Starts transfer.

Returns to the previous screen.
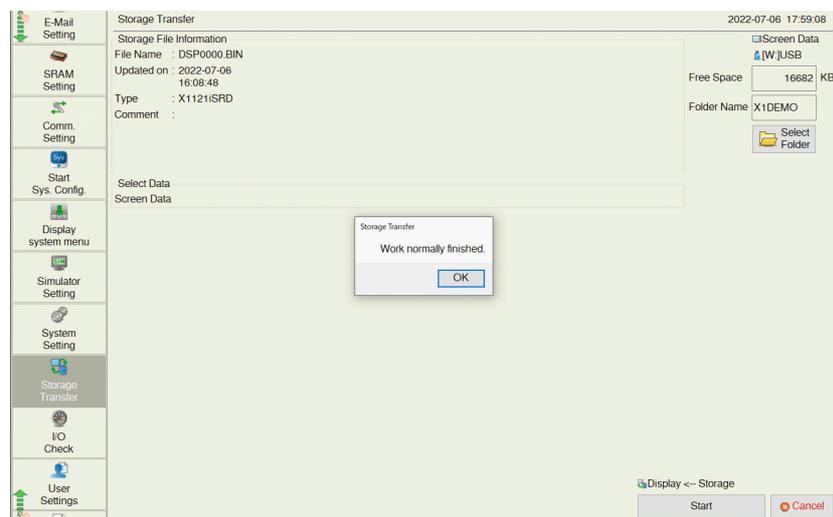
When selecting [Use Password When Transferring Screen to storage from Display] in [System Setting] → [Other] → [Storage Setting] using V-SFT version 6, the following screen is displayed before the screen explained in step 1 is displayed. Enter password, and press the [OK] switch.
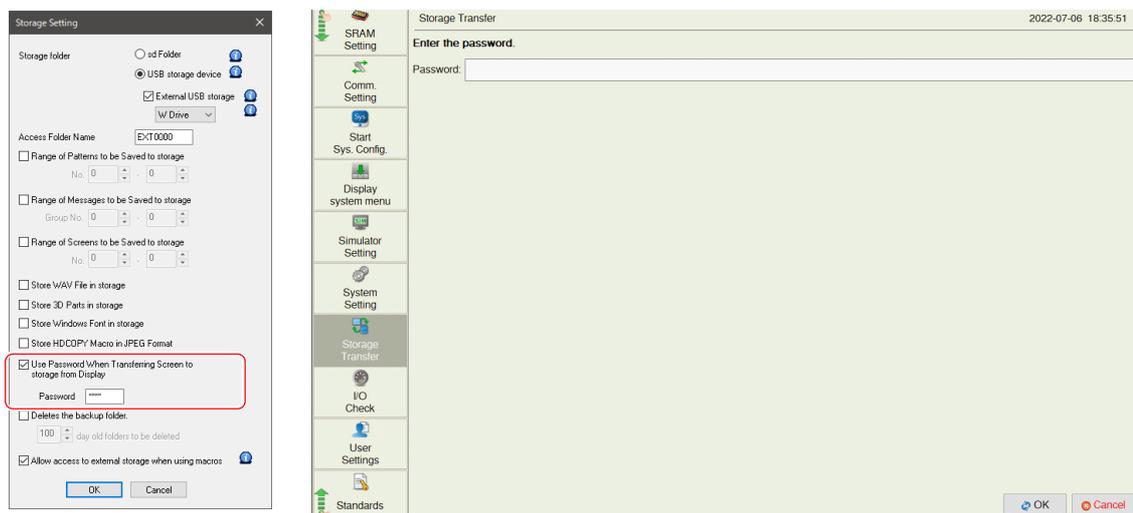
2.   Data transfer start
     Check the storage information and press the [Start] switch.

   * If the access folders of the screen program and those in the USB storage are named the same, data in the USB Storage will be overwritten. If the [Storage File Information] field is blank, a new file "DSP0000.BIN" will be created in the DSP folder under the access folder.

5

3. During data transfer to data transfer completed
   During data transfer, the [Start] switch changes to [Transferring] and the [Transferring data...(Storage)] dialog is displayed.
   On successful completion, the [Work normally finished] dialog is displayed. Press the [OK] switch.

Transferring

Data transfer completed

   * If any other message is displayed, refer to "Message Dialog Displayed during Data Transfer" page 5-53.

When [Display <--> Storage] Is Selected:

1.   When [Display -> Storage] is selected, the following screen appears.

Information of the folder currently selected

Free space in the storage

Folder name currently selected

Starts transfer.

Returns to the previous screen.
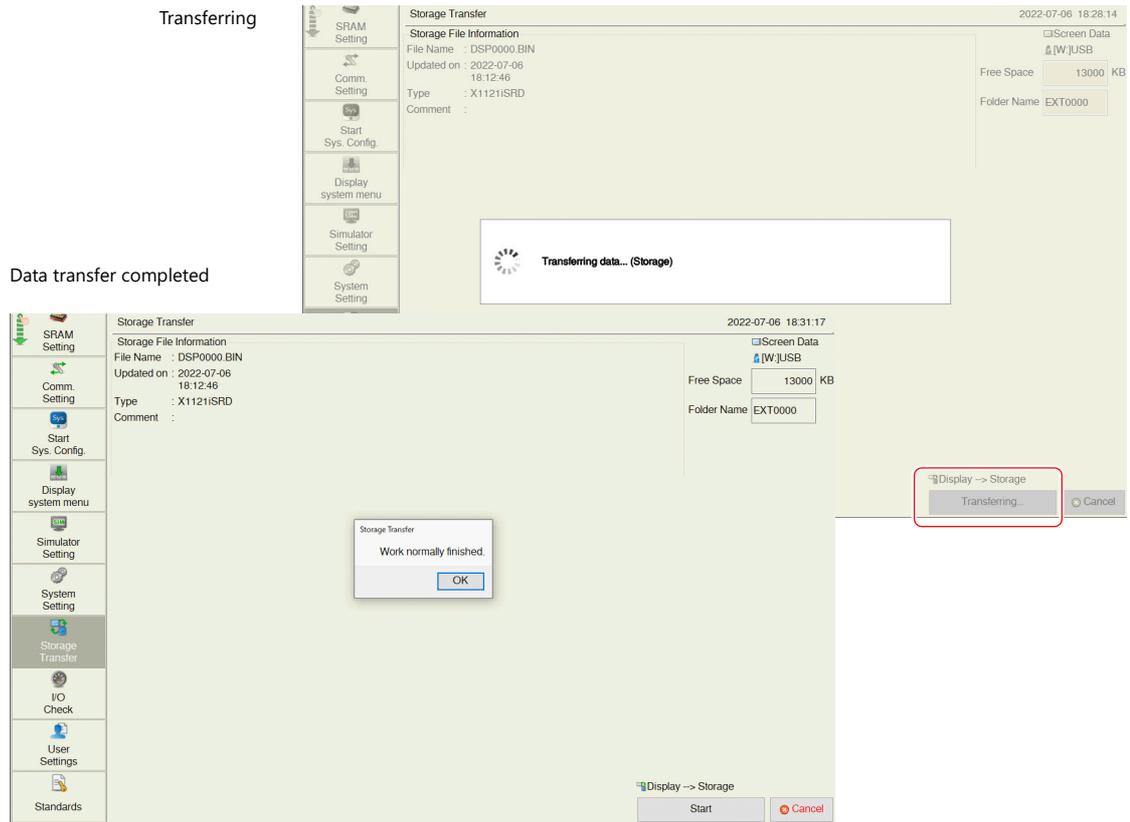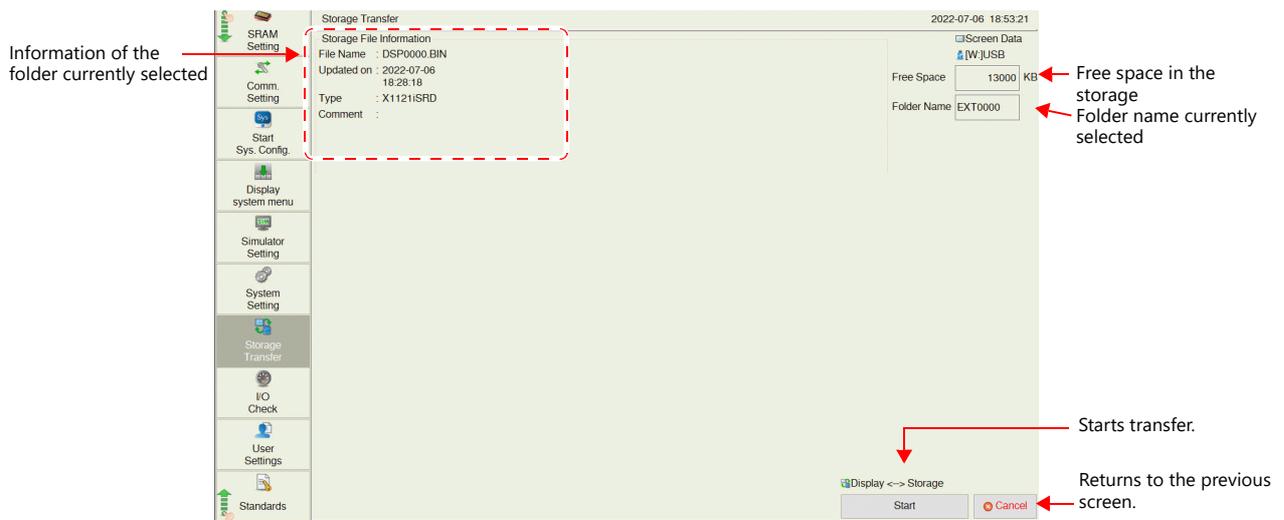
2.   Data comparison start
Press the [Start] switch.

3.   During data comparison to end of data comparison
During data comparison, the [Start] switch changes to [Transferring] and the [Transferring data...(Storage)] dialog is displayed.
On successful completion, the [Work normally finished] dialog is displayed. Press the [OK] switch.

Transferring

Data transfer completed

*   If any other message is displayed, refer to "Message Dialog Displayed during Data Transfer" page 5-53.

5
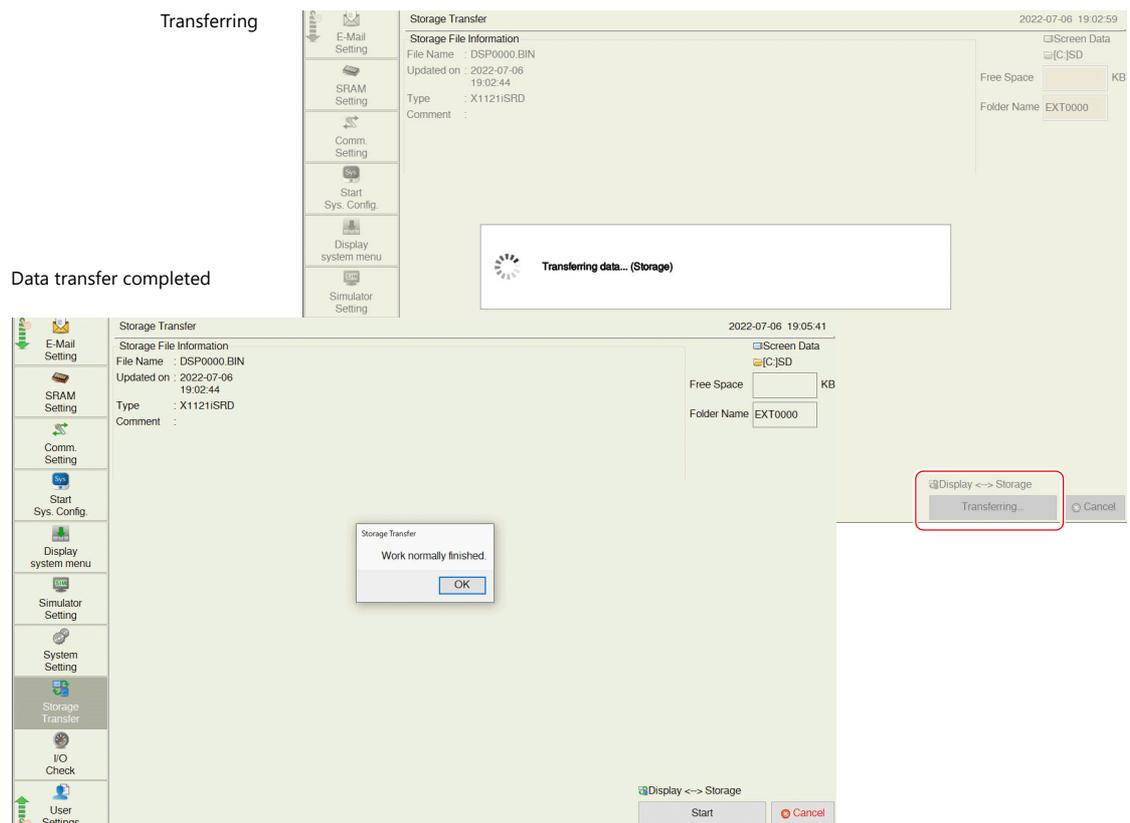
Deleting Data from Storage:

1. When [Delete] is selected, the following dialog is displayed.
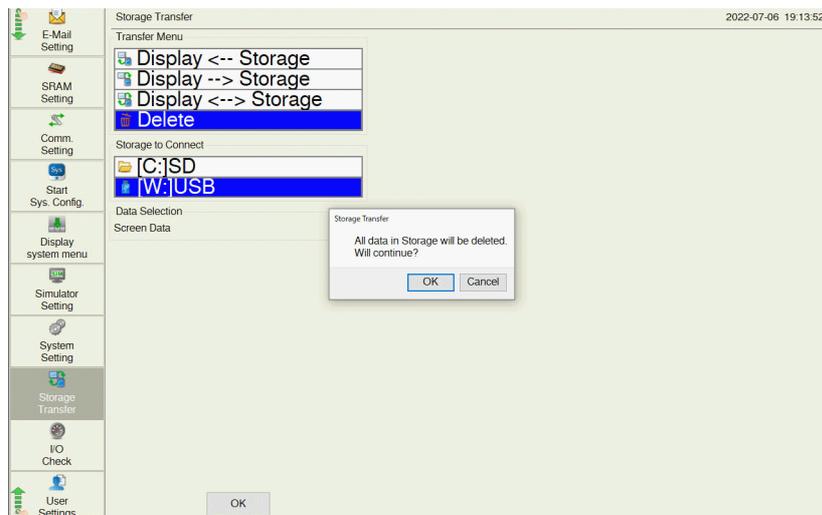
2. Execution of data delete to during execution
   Press the [OK] switch if deleting all data from storage.

3. Data deletion completed
   When the data has been completely deleted, the message "Work normally finished." is displayed.
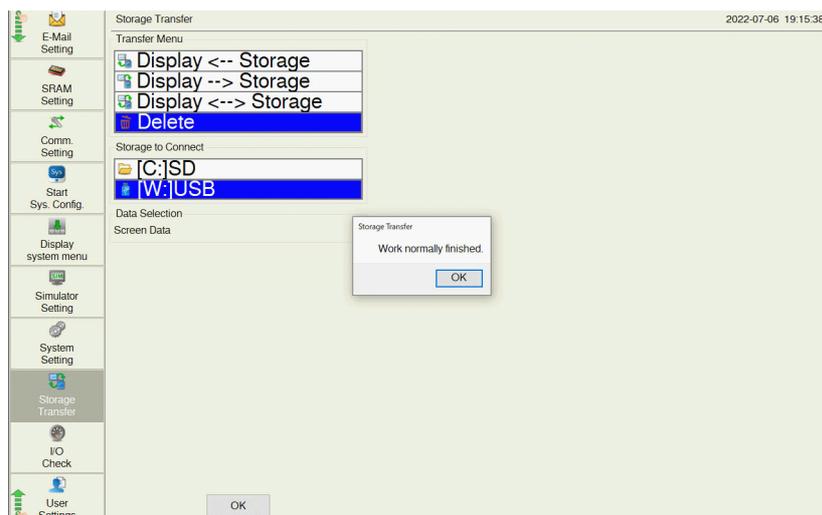
Data is completely deleted.

Message Dialog Displayed during Data Transfer

If an error occurs during data transfer, the message dialog is displayed on the X1 series unit.

Messages and their contents are shown below.

Messages	Description
Work normally finished.	The specified operation has been concluded normally.
Storage is not connected	Storage is not connected
Storage Capacity over	Cannot write data to a storage device because the data size in the X1 series unit is larger than the capacity of the storage device.
Selected data does not exist.	The data does not exist in the reading target.
Selected data cannot be read.	Data in the storage device cannot be read.
Reading Error occurred.	An error occurred during writing to the flash ROM of the X1 series unit, comparing data, or reading storage information.
Data discrepant	Data comparison found a discrepancy between the storage device and the X1 series unit.
Undefined Error occurred.	The USB storage is write protected.

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5.4.16 I/O Check

Pressing [I/O Check] in the menu icons brings up the I/O Check screen.
This screen is used for testing touch switch operations and the connection of the network.

Menu icon   I/O Check screen
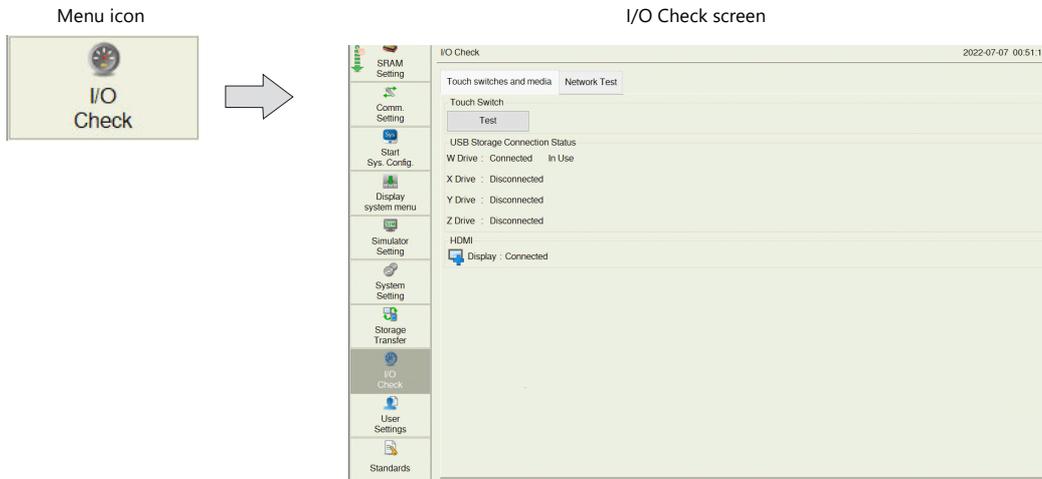
Touch switches and media

The [Touch switches and media] tab window on the I/O Check screen is used to test touch switch operations and to check the connection status of the USB storage / external display.

[Touch switches and media] tab window

Moves to the touch switch test screen.(page 5-55)

Item		Description
Touch Switch	Test	Switches to the touch switch test screen. For the test procedure, refer to page 5-55.
USB Storage Connection Status	W/X/Y/Z drive [*1]	Indicates the connection status of each USB port. Disconnected: Storage disconnected Connected: Storage connected Connected In Use [*2]: Storage connected
HDMI	Display	Indicates the connection status of the external display. Status updates every 5 seconds. Disconnected: External display disconnected Connected: External display connected ("Connected" is displayed even when power is not supplied to the external display.)

*1   The drive names of USB ports are fixed.

1: W drive   3: Y drive

2: X drive   4: Z drive
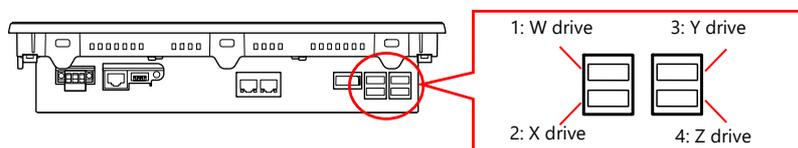
*2   "In Use" is displayed on the drive specified at [External USB storage] in [System Setting] → [Other] → [Storage Setting] using V-SFT version 6.

Touch switch test procedure

1. Press [I/O Check] in the menu icons and open the [Touch Switch] tab window.
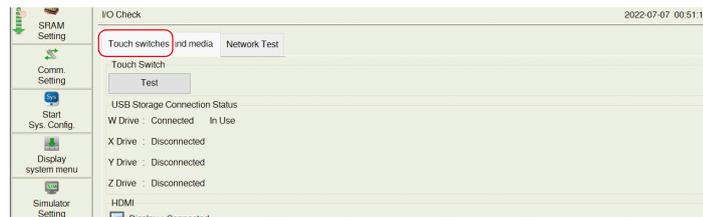
2. Press the [Test] switch. Grids appear on the screen as shown below.
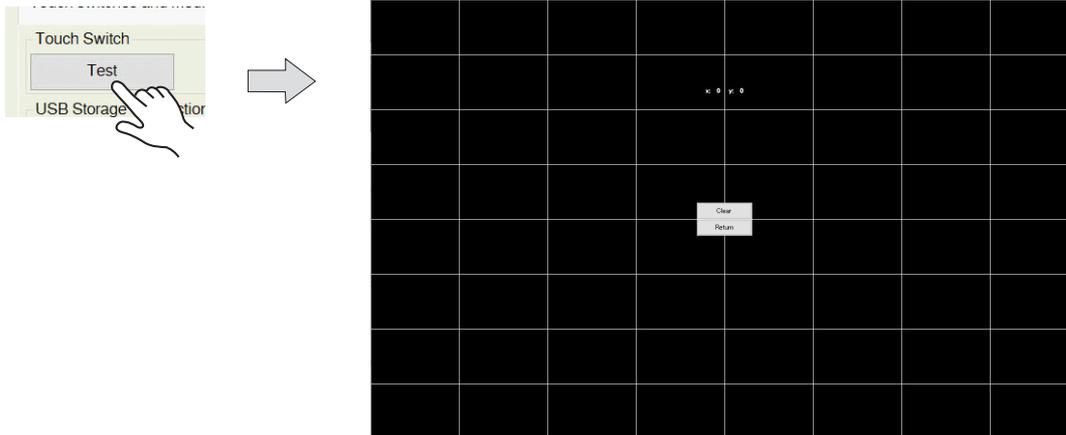
3. Checking the switch output state:
    Press a position on the screen, and check if the pressed position turns white. If the pressed position turns white, the switch is operating correctly.
    Press the [Clear] switch to clear all white sections and the [Return] switch to return to the [Touch Switch] tab window.
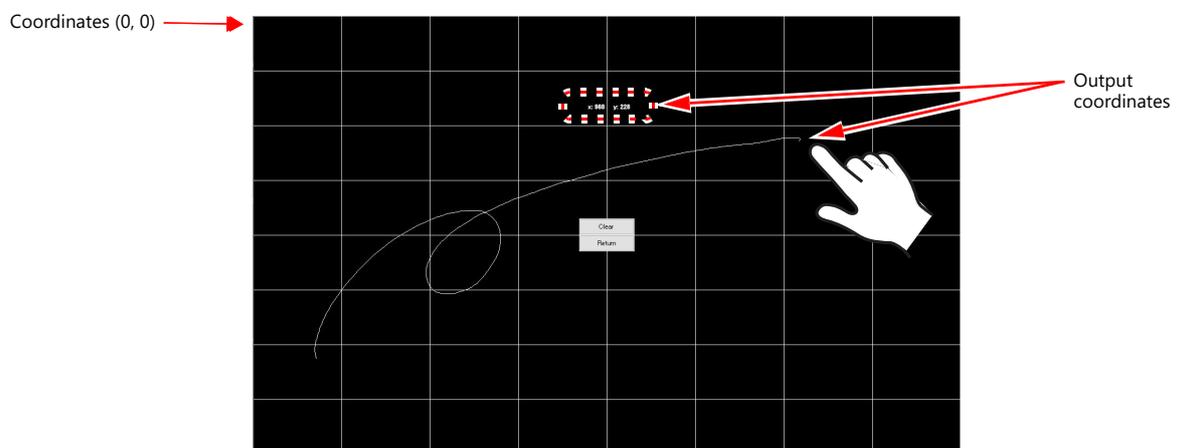
Network Test

The [Network Test] tab window is used to test the connection of the network.

[Network test] tab window
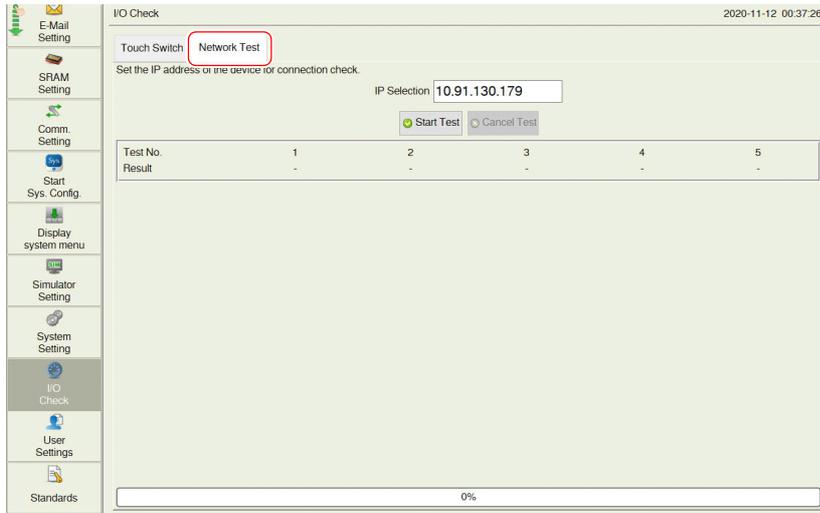
Network test procedure

1. Press [I/O Check] in the menu icons and open the [Network test] tab window.
2. Press the [IP Selection] field. The system keyboard appears. Enter the IP address of the counterpart device targeted for a connection test.
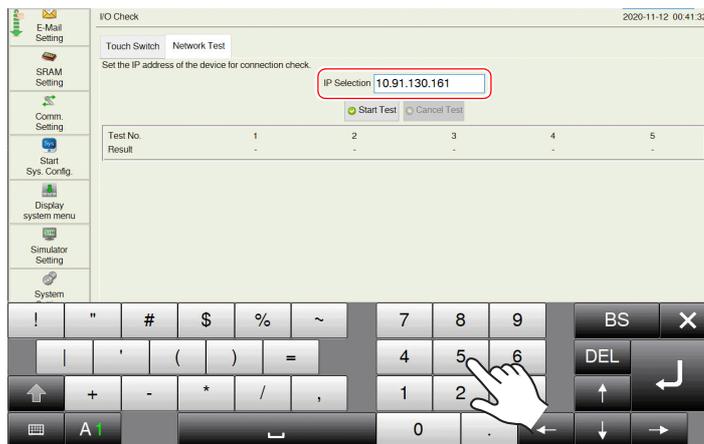
3. Press the [Start Test] switch. The test is repeated five times and the result is shown.
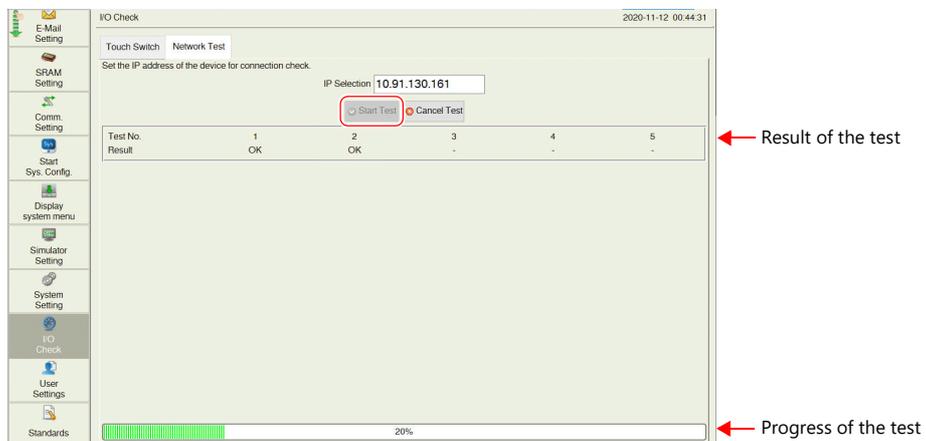
5.4.17 User Settings

Pressing [User Settings] in the menu icons brings up the User Settings screen. When using the security function, this screen lists all users and is used to add, delete, and edit user accounts.

☞   For details on the security function, refer to the X1 Series Reference Manual 2.

Menu icons   User Settings screen
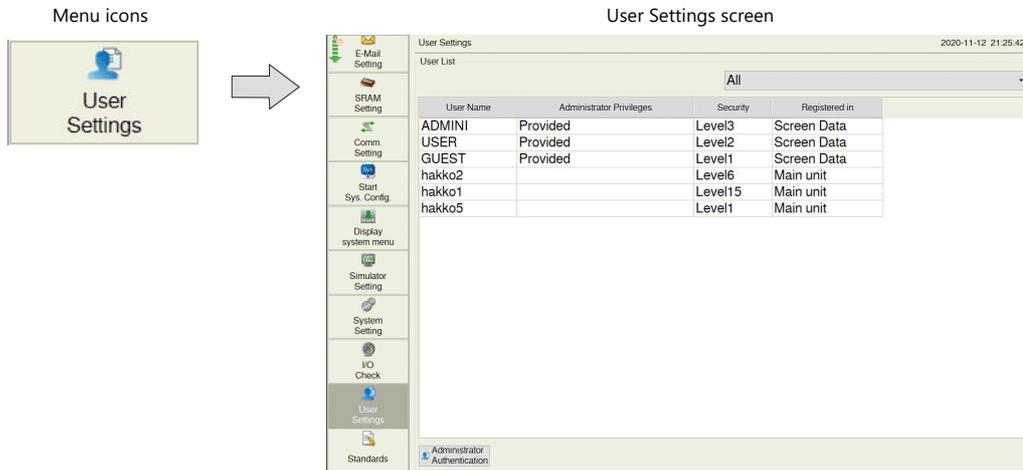
User Settings screen

When there is no user account registered:
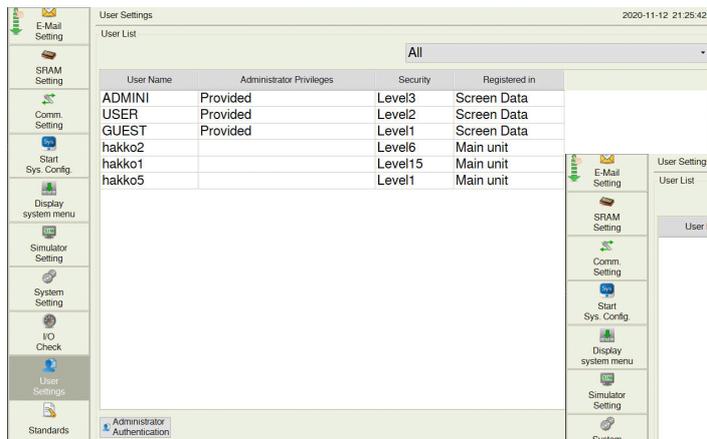
When there is any user account registered:
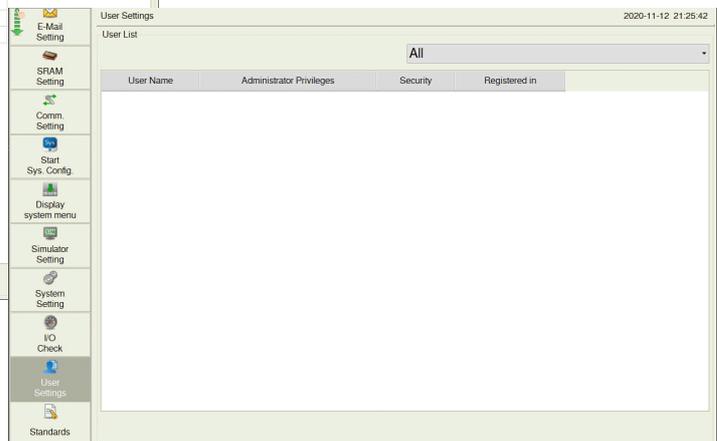
| Item	Description
User List	Displays the users with user settings configured (with a user name and password registered).

All
Security Only
	Select a criterion to display specific users in the user list.
	    All: All user names are listed.
	    Security Only: Only users who are granted security privileges (with a security level set) are listed.

Add	Adds a new user account. For details, refer to page 5-59.
Administrator Authentication	Displays the administrator authentication screen. Authentication of administrator privileges is required before adding a new user account or deleting/editing a registered user account, if any. For details, refer to page 5-58.

Administrator Authentication

Authentication of administrator privileges is required before adding a new user account or deleting/editing a registered user account, if any.

⚠️ Without administrator privileges, no account can be added, deleted, nor edited.

Addition, deletion and editing of a user account possible

Addition, deletion and editing of a user account impossible

1. Press [User Settings] in the menu icons and press the [Administrator Authentication] switch.
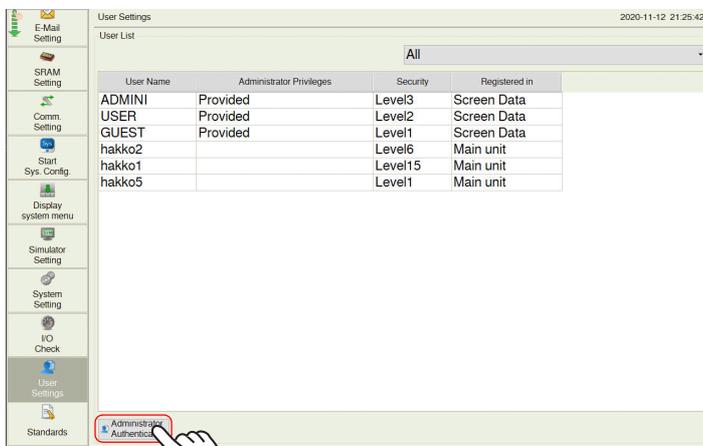
2. The screen for administrator authentication is displayed. Enter an administrator name and password, and press the [OK] switch. "Administrator Mode" is displayed on the screen.

*	If the User Settings screen is switched to other screens after authentication, administrator authentication is automatically cancelled.

Adding a user account

This section explains how to add a new user account in the administrator mode.
A maximum of 32 user accounts can be registered on the X1 series unit.

1. Press the [Add] switch.
    Enter a user name and password to add.
    A maximum of 8 one-byte alphanumeric characters (case sensitive) can be used for a user name or password.
   *   The user name must be unique.
    *   The same password can be set for multiple users.

    To grant administrator privileges, select the [Grant administrator privileges.] checkbox.

    ☞   For details on administrator privileges, refer to page 5-58.
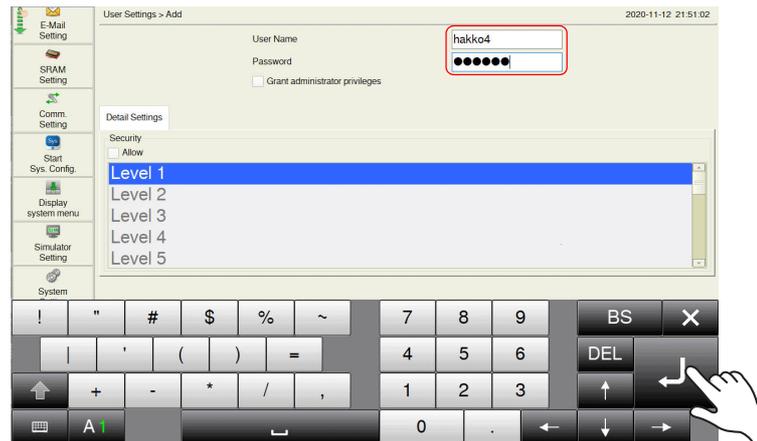
2. In the [Detail Settings] tab window, select the [Security: Allow] checkbox and select the security level.
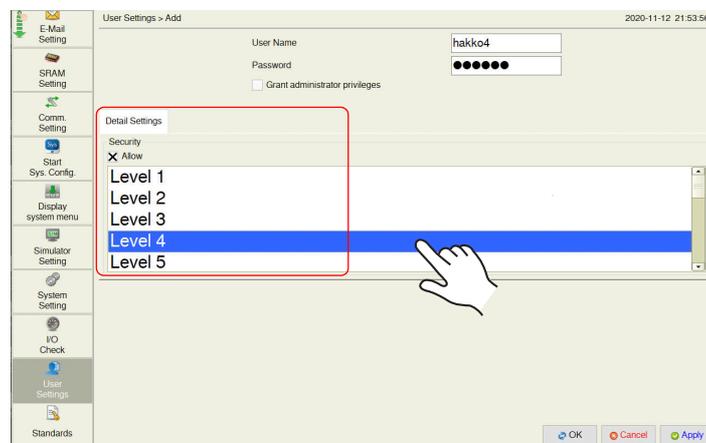
3. Press the [OK] switch. The set user account is added to the user list.
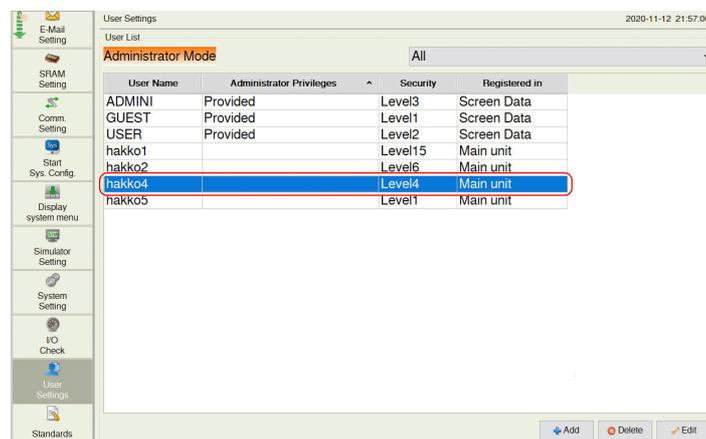
Deleting a user account

This section explains how to delete a registered user account in the administrator mode.

1. Select a user account to delete from the user list and press the [Delete] switch.
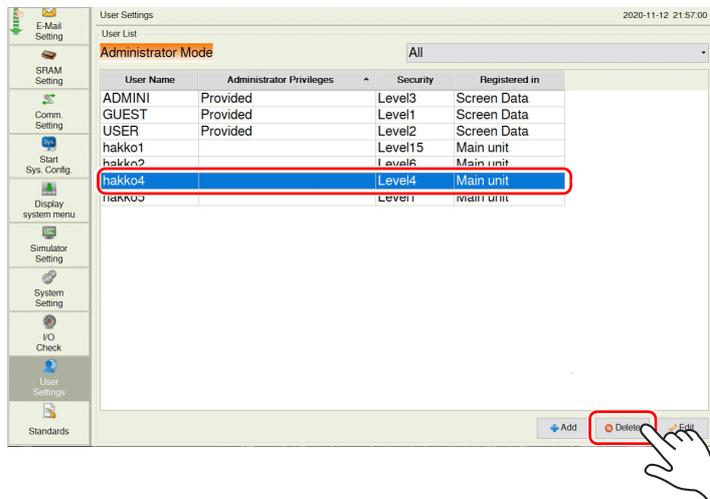
⚠️ • User accounts that can be deleted
   - The account of an administrator user that is currently logged in
   - User accounts which were registered on MONITOUCH ([Registered in: Main unit]) and are not granted administrator privileges
   • User accounts that cannot be deleted
   - The account of users granted administrator privileges (other than the administrator user that is currently logged in)
   - User accounts which were registered in the screen program ([Registered in: Screen Data])

Example: When administrator "hakko5" is logged in:
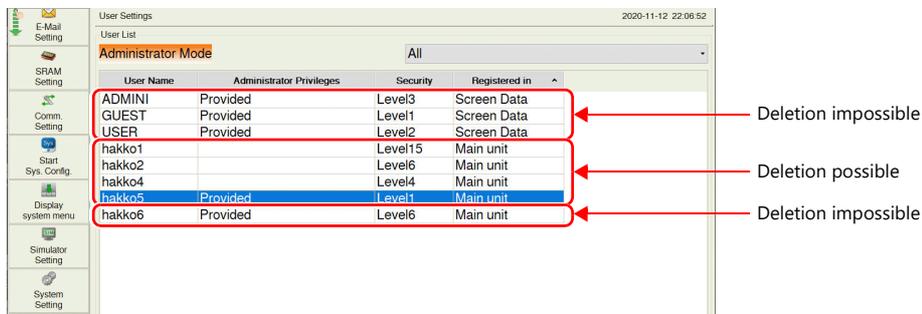
2. The confirmation dialog shown below is displayed. To delete, press the [OK] switch.
   The selected user account is deleted from the list.
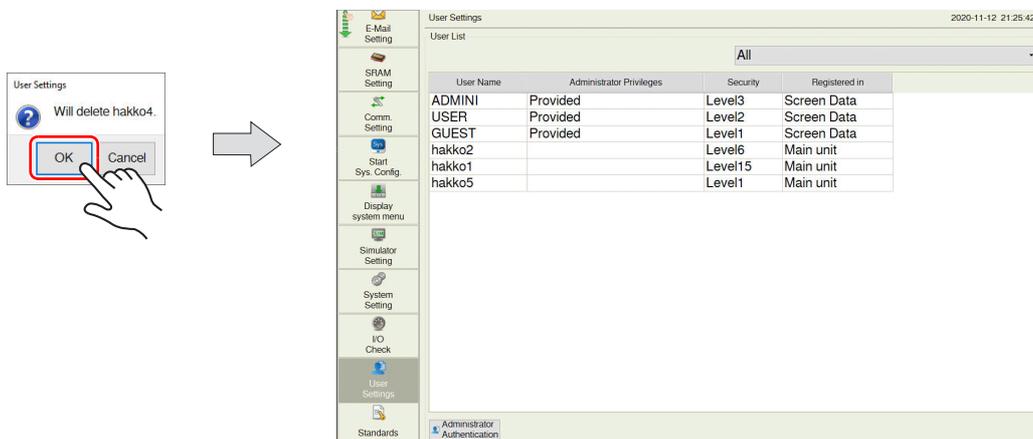
Editing a user account

This section explains how to edit a registered user account in the administrator mode.

1. Select a user account to edit from the user list and press the [Edit] switch.
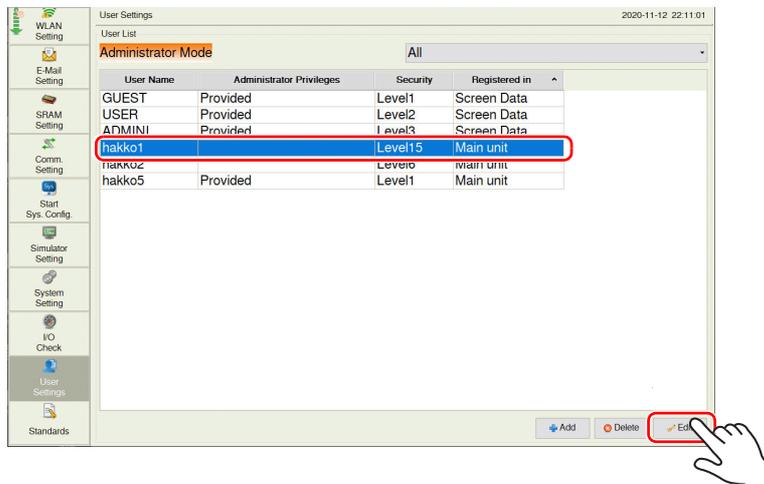
⚠️   • User accounts that can be edited
   - The account of an administrator user that is currently logged in
   - User accounts which were registered on MONITOUCH ([Registered in: Main unit]) and are not granted administrator privileges
   • User accounts that cannot be edited
   - The account of users granted administrator privileges (other than the administrator user that is currently logged in)
   - User accounts which were registered in the screen program ([Registered in: Screen Data])

   The user account which has been registered on MONITOUCH with no administrator privileges granted can be edited.
   User accounts registered in the screen program and other administrators cannot be edited.

   Example: When administrator "hakko5" is logged in:
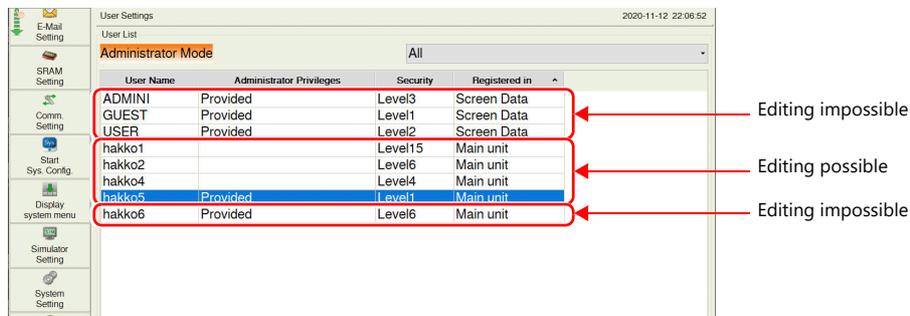
2. After changing the settings, press the [Apply] or [OK] switch. The settings are updated.
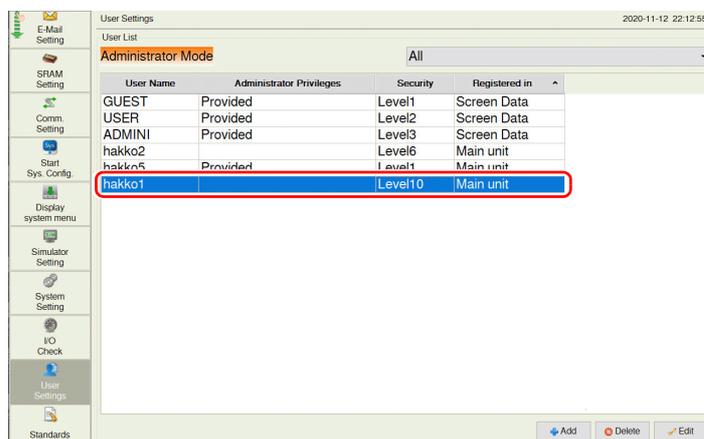
5.4.18 Standards (Only for Wireless LAN I/F Models)

Pressing [Standards] in the menu icons brings up the Standards screen.
This screen is for viewing certification information of wireless LAN for the X1 series.

Menu icons   Standards screen
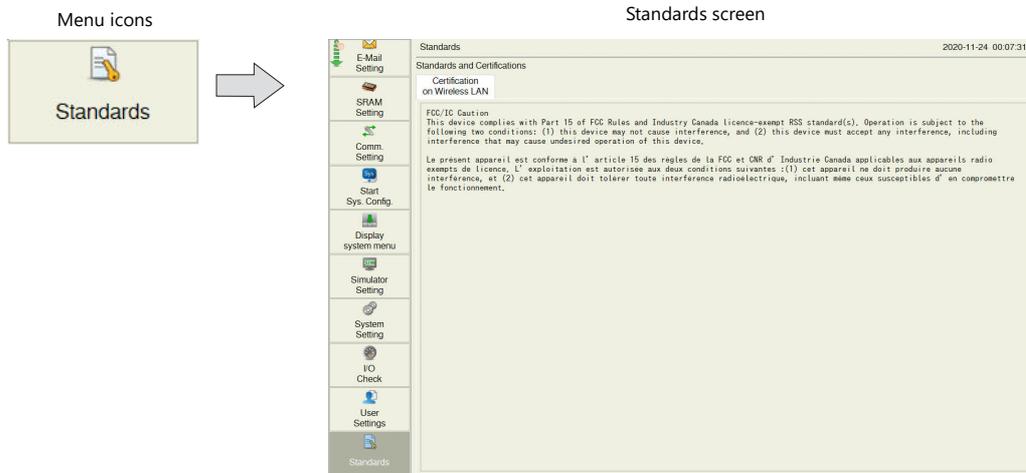
Certification on Wireless LAN

FCC / IC Caution
This device complies with Part 15 of FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device.

Le présent appareil est conforme à l'article 15 des règles de la FCC et CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :(1) cet appareil ne doit produire aucune interférence, et (2) cet appareil doit tolérer toute interférence radioélectrique, incluant même ceux susceptibles d'en compromettre le fonctionnement.

5.4.19 Handling Data Changed in Local Mode

The following items set in the screen program can be changed in Local mode on the X1 series unit.

Item	Setting in Local Mode *1	Setting in V-SFT Version 6
Network table	LAN Setting LAN2 Setting	[System Setting] → [Ethernet Communication] → [Network Table]
Service Port Time-Out		[System Setting] → [Ethernet Communication] → [Local Port]
E-Mail Setting	[E-Mail Setting] (page 5-30)	[System Setting] → [Ethernet Communication] → [E-Mail]
Communication Parameter	[Comm. Setting] (page 5-36)	[System Setting] → [Hardware Setting] → PLC1 to PLC8
Buzzer Setting	[System Setting] (page 5-42)	[System Setting] → [Unit Setting] → [Buzzer]/[Backlight]
Backlight Setting		
Serial Setting		None
User Settings	[User Settings] (page 5-57)	Security [System Setting] → [Other] → [Security Setting]

*1 Settings can be made to prohibit changes in Local mode. For details, refer to page 5-64.

Settings Changed in Local Mode

- The screen program will not be overwritten. In any case where the X1 series unit is replaced such as due to a failure, the settings need to be changed again in Local mode.
- The settings changed in Local mode are retained even if the power to the X1 series unit is turned off.
- If a setting is changed in Local mode, the Local mode setting takes priority.
  To restore the settings of the screen program, press the [Restore Screen Data Settings] switch on the respective Local mode screen.
- When writing the screen program into the X1 series unit using V-SFT version 6, you can select whether to retain or clear the settings changed on the unit (INI file).

<How to clear the INI file using V-SFT version 6>

1) Cable connection
   Connect the X1 series unit to a computer using a LAN cable.

2) Starting V-SFT version 6
   Start V-SFT version 6 on the computer and open the screen program.

3) Displaying the [Transfer] window
   Click [Transfer] → [Download]. The [Transfer] window is displayed.

4) Selecting data to transfer
   Select [Screen Data] for [Transfer Data].
   Check the [Clear IniFile] in the [Option] window and click [OK].
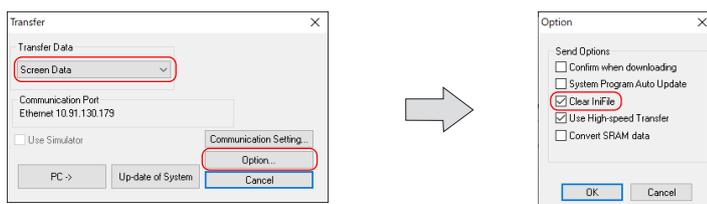
5) Start downloading to the X1 series unit
   Click [PC →]. Screen program transfer starts.
   When the following dialog is displayed, click [Yes].
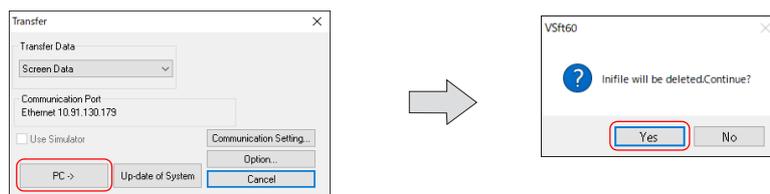
Prohibition of Setting Change in Local Mode

Some settings that can be configured in Local mode can be prohibited from being changed on the X1 series unit.

Setting in V-SFT version 6

Select [System Setting] → [Unit Setting] → [Local Mode] → [Local Mode Prohibition Setting], and select the [Prohibit Setting] checkbox.
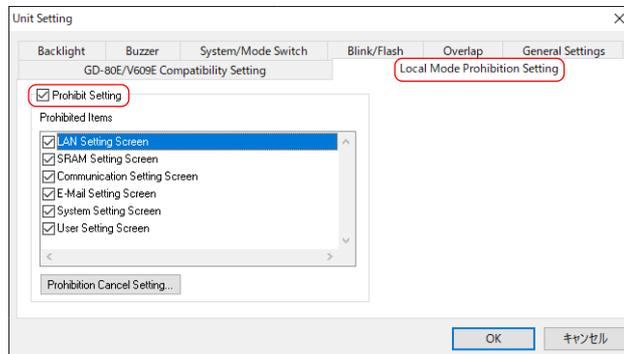
When the [Prohibit Setting] checkbox is selected, you can select items to be prohibited from being changed in Local mode.
* When the [LAN Setting Screen] checkbox is selected, both the LAN Setting screen and LAN2 Setting screen will be prohibited.

To enable cancellation of all prohibition settings at once on the X1 series unit, register a password for cancellation.
Click [Prohibition Cancel Setting] and select the [Request a password to cancel the prohibition] checkbox, and register a password (maximum of 16 one-byte alphanumeric characters).
* If no password is registered, the prohibition setting cannot be cancelled on the X1 series unit even if the [Request a password to cancel the prohibition] checkbox is selected.
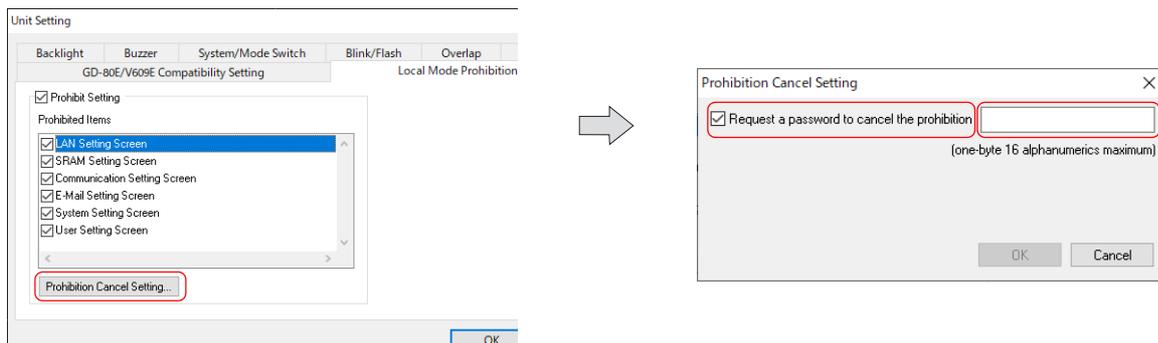
X1 series local mode

When the Local-mode prohibition setting has been made in V-SFT version 6, the menu icon displayed in Local mode on the X1 series unit is changed as follows:

Example: [Comm. Setting] menu icon

Without prohibition setting   With prohibition setting

"🚫" is shown at the bottom right on the menu icon of the prohibited item.

Communication Setting screen [Communication Parameter] tab window
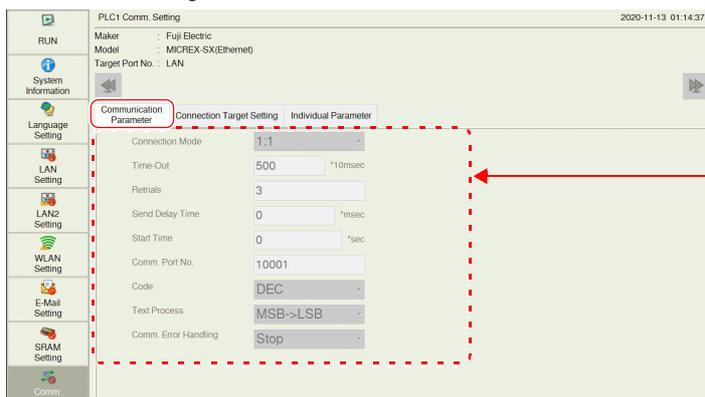
Grayed out and no setting can be changed.

If a password has been registered in the [Prohibition Cancel Setting] window in V-SFT version 6, the list of password-protected settings is displayed in the [Screen Data Information] tab window of the System Information screen in Local mode.

To cancel all prohibition settings at once, follow the procedure described below.

1. Press [System Information] in the menu icons and open the [Screen Data Information] tab window on the System Information screen. Press anywhere on the area enclosed in the following figure. Then the system keyboard appears. Enter the password.
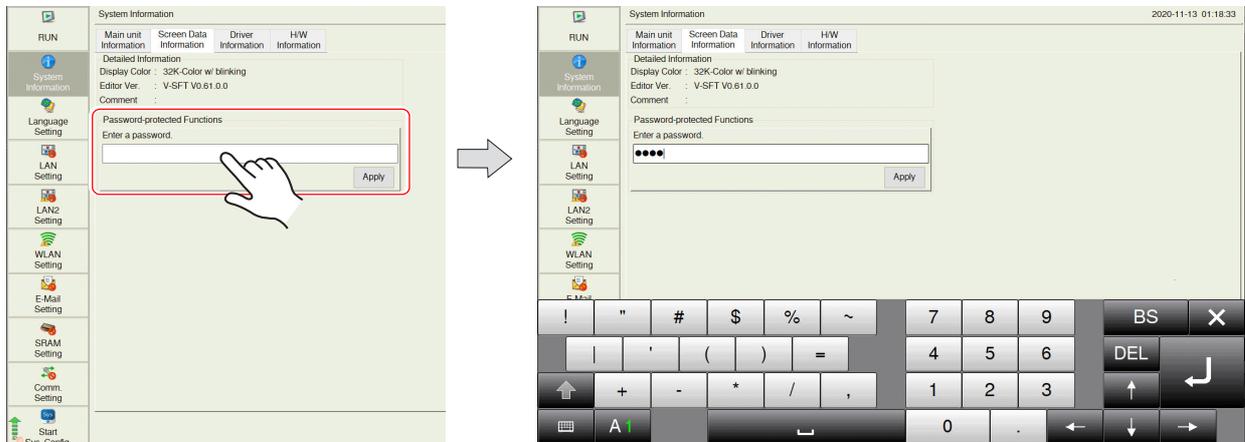
2. Press the [Apply] switch. The following confirmation dialog appears. Press the [OK] switch.
   All items that were prohibited in Local mode become unprotected.
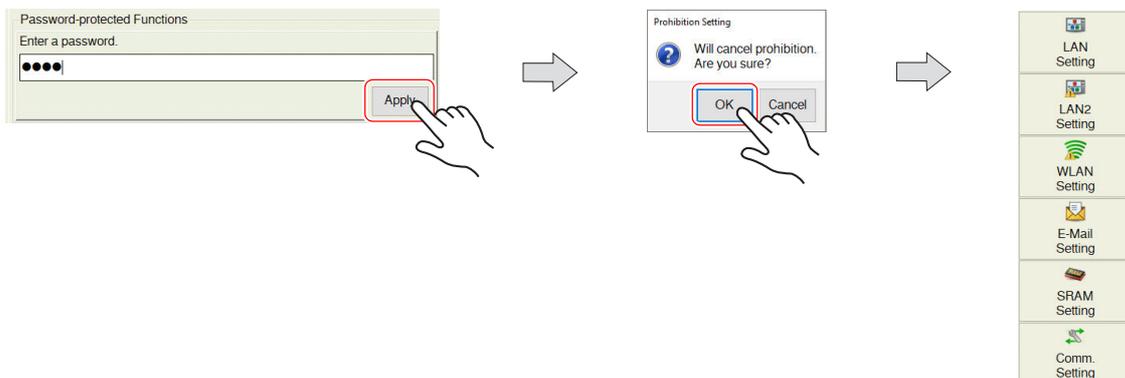
3. To validate the Local-mode prohibition setting again, open the [System Information] → [Screen Data Information] tab window, and press the [Relock] switch.
   The following confirmation dialog appears. Press [OK].

   * The prohibition setting is also validated again after the power is turned off and back on again or a screen program with Local-mode prohibition settings is transferred.
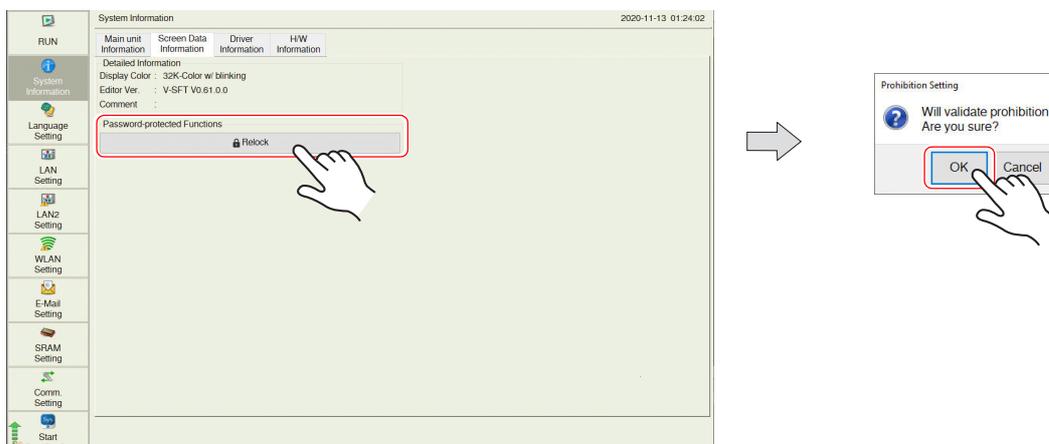
Notes

• When a screen program is transferred without selecting the [Prohibit Setting] checkbox in the [System Setting] → [Unit Setting] → [Local Mode] → [Local Mode Prohibition Setting] tab window in V-SFT version 6, the Local-mode prohibition setting becomes invalid (cancelled).

5.5　System Configurator

5.5.1　System Configurator

System Configurator is used to set the startup mode, IP addresses, etc.

Item			Refer to
Explorer			page 5-67
Settings	IP Address Setting	LAN LAN2 WLAN	page 5-69
	Wi-Fi settings	Station	page 5-71
	Bluetooth settings		page 5-73
	Write filter setting		page 5-75
	Display brightness setting		page 5-80
	Startup settings (operation mode)		page 5-81
	Time settings	Calendar Time zone Internet time	page 5-82
	Security Setting		page 5-84
	Printer Setting		page 5-88
	Sound Settings		page 5-90
Storage management	Internal storage capacity		page 5-90
Task list			page 5-91
System version			page 5-92
System keyboard			page 5-93
Language change			page 5-94
Touch operations check			page 5-95
Operation test			page 5-97
Advanced mode	Uninstall		page 5-99
	Windows Desktop Display		page 5-100
Shutdown			page 5-101
Reboot			page 5-102

5.5.2   Explorer

This function is used to view the folder configuration and files of public areas within the X1 series unit internal storage and USB flash drive. Copying of files is possible as well.

⚠ Displaying and setting changes are not possible when [Write filter setting] is set to [Valid]. Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Write Filter Setting" page 5-75.
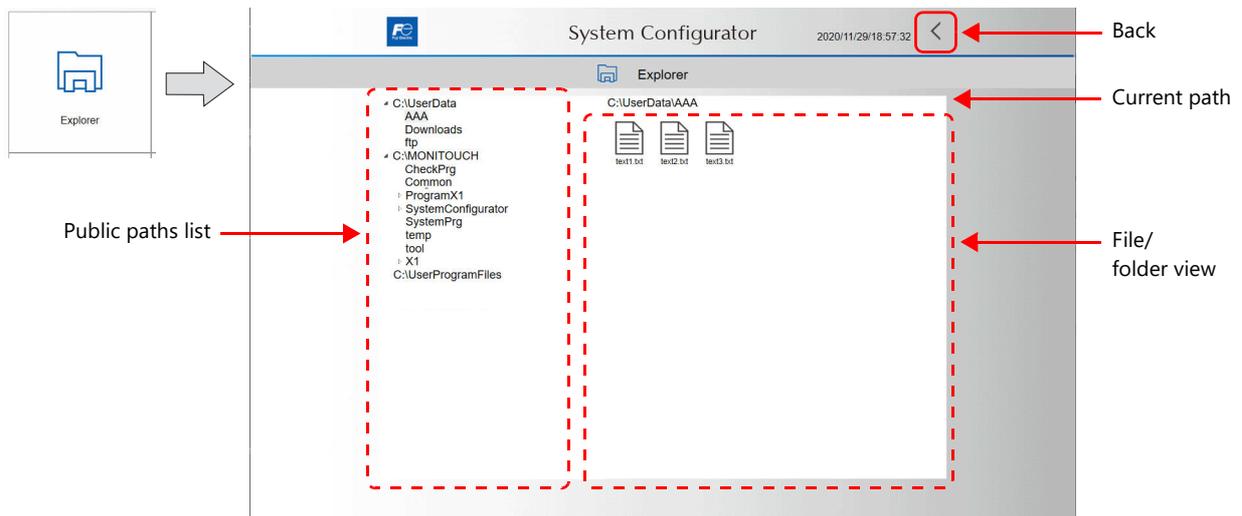
Public Paths List

The following areas are public.

Public Path			Description
C drive	C:\Userdata		An area that is available to the user for using freely The following two folders are provided in advance.
		Downloads	A directory for storing files that are downloaded via the network
		ftp	The FTP server ROOT directory
	C:\MONITOUCH		The area for storing X1 system files Example: Data storage destination for the storage function (alarm, logging, recipe, etc.) C:\MONITOUCH\X1\0\work\strage
	C:\UserProgramFiles		Directory for installing user apps
W drive	USB port 1		The USB flash drive connected to the X1 series unit (Refer to page 2-11)
X drive	USB port 2		
Y drive	USB port 3		
Z drive	USB port 4		

* Operations involving private areas are possible through [Advanced mode] → [Windows Desktop Display].
  For details on the Windows desktop display function, refer to page 5-100.

Operation Method

Expanding/collapsing

Press the triangle mark to the left of a folder name on the public paths list to expand/collapse the folder.
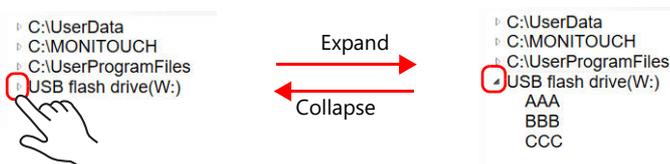
Opening a folder/file

Double-tap a folder in the file/folder view to display the contents of the folder.
Double-tap a file to open the file.
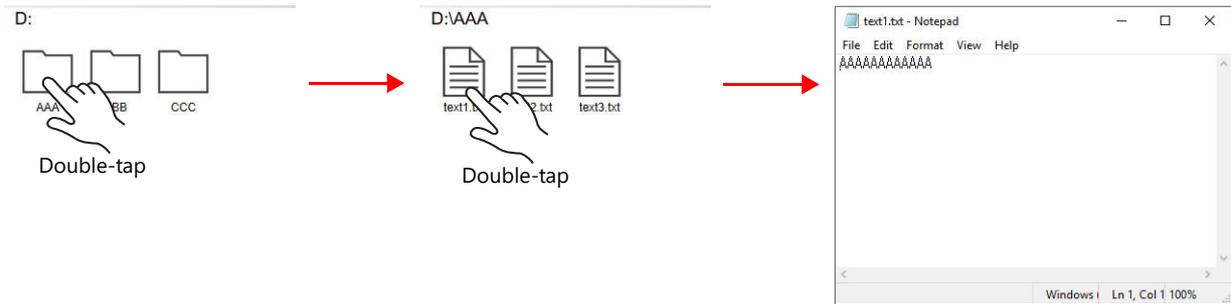
Cutting/copying/deleting/renaming

Hold down a folder/file icon in the file/folder view. A pop-up menu will be displayed.
If [Delete] is selected, a confirmation window appears.
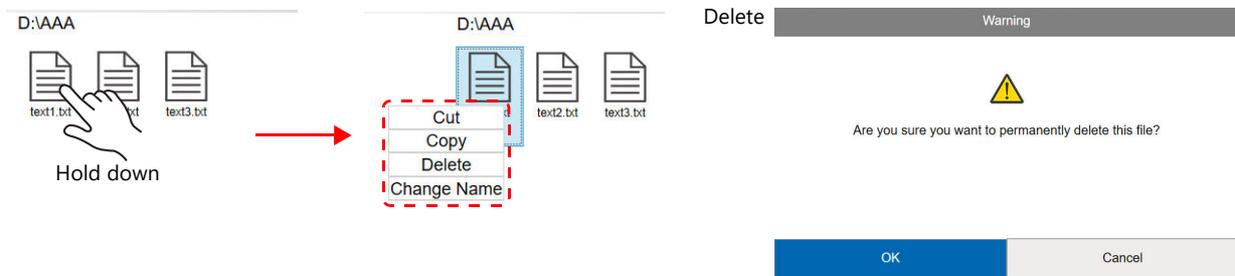
Methods for inputting numbers and text

- Use the System Configurator → [System keyboard]. Refer to page 5-93.
- Connect a USB keyboard.

Sorting / pasting / undoing / redoing / creating a new folder

Hold down an area in the file/folder view other than a folder or file icon. A pop-up menu will be displayed.

If a file or folder with a duplicate name exists in the paste destination, a confirmation window appears.
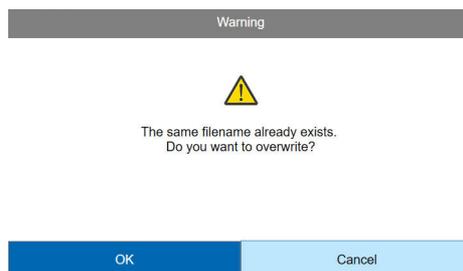
5.5.3   Settings

This function is used to configure Windows system settings.

Back

Next page
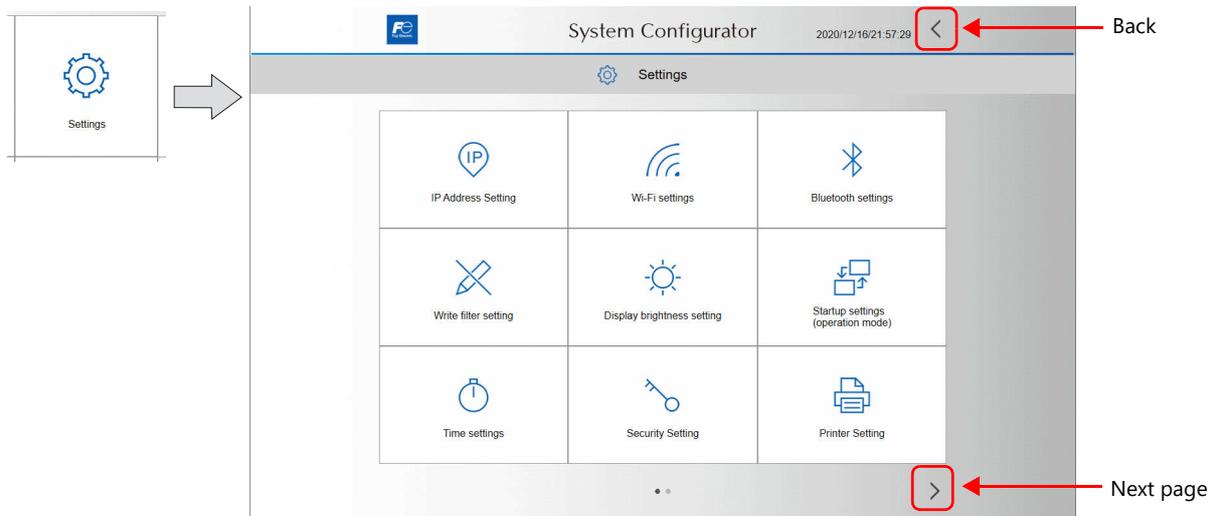
IP Address Setting

This screen is used to set and check the IP address of the LAN, LAN2, and WLAN ports.

⚠ Settings cannot be changed when [Write filter setting] is set to [Valid].
Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Write Filter Setting" page 5-75.

Back

LAN / LAN2 / WLAN

Manual

Back

Auto
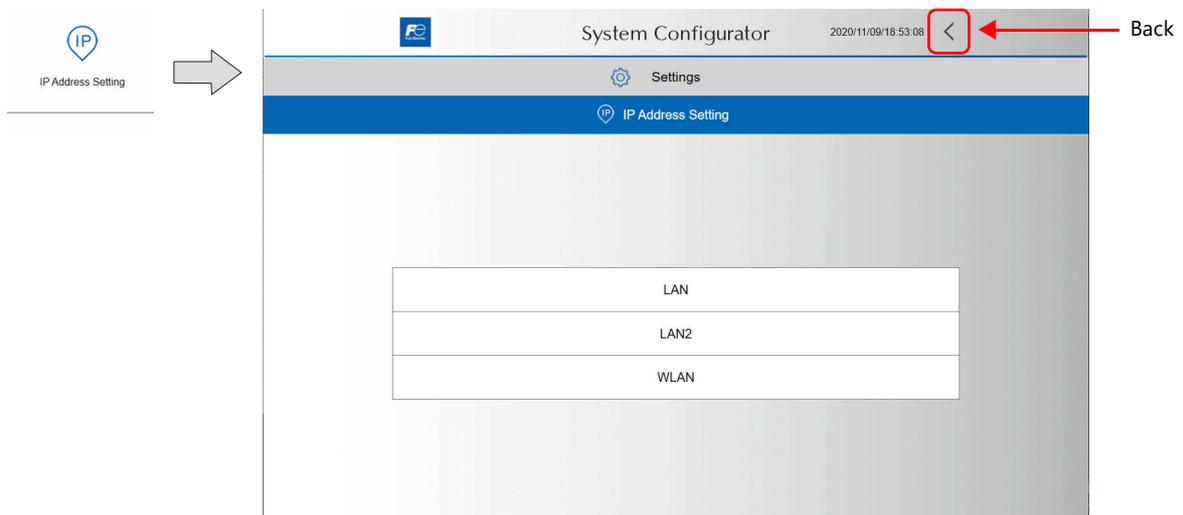
Item	Description	
IP address allocation	Select the method for setting the IP address. 　　Manual:　Input the IP address on this screen. 　　Auto:　　Press the [OK] switch and an IP address is automatically allocated by the DHCP server.	
	Auto	Manual
Automatically allocated IP address	Indicates the IP address allocated by the DHCP server.	-
IP Address	-	Set the IP address. Default 　　LAN: 192.168.0.100 　　LAN2: 192.168.1.100 　　WLAN: 192.168.10.100
Subnet Mask	-	Set the subnet mask.
Gateway *1	-	Set the gateway.
DNS server 1	Set the address of the preferred DNS server.	
DNS server 2	Set the address of the alternate DNS server.	
Speed and duplex	Set the speed and duplex mode. 　　Auto-negotiation (default): Automatic setting through correspondence with the connected device 　　10 Mbps half duplex:　　　　10 Mbps, bidirectional transmission, one direction at a time 　　10 Mbps full duplex:　　　　　10 Mbps, bidirectional transmission, simultaneous 　　100 Mbps half duplex:　　　　100 Mbps, bidirectional transmission, one direction at a time 　　100 Mbps full duplex:　　　　100 Mbps, bidirectional transmission, simultaneous 　　1.0 Gbps full duplex:　　　　　1.0 Gbps, bidirectional transmission, simultaneous	

*1　The X1 series unit can have only one gateway. The gateway cannot be set for multiple ports.

⚠ After changing the IP address, be sure to set [Settings] → [Write filter setting] to [Valid].
If you exit System Configurator with the setting set to [Invalid], the [LAN], [LAN2] and [WLAN] settings on the X1 app will not be updated.

☺ Methods for inputting numbers and text

- Use the System Configurator → [System keyboard]. Refer to page 5-93.
- Connect a USB keyboard.

Wi-Fi Settings

This screen is for configuring Wi-Fi settings. The X1 series unit operates in station mode.

> ⚠️   • Displaying and setting changes are not possible when [Write filter setting] is set to [Valid].
>   Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Write Filter Setting" page 5-75.
>   • X1121iSD and X1151iSD do not support Wi-Fi.
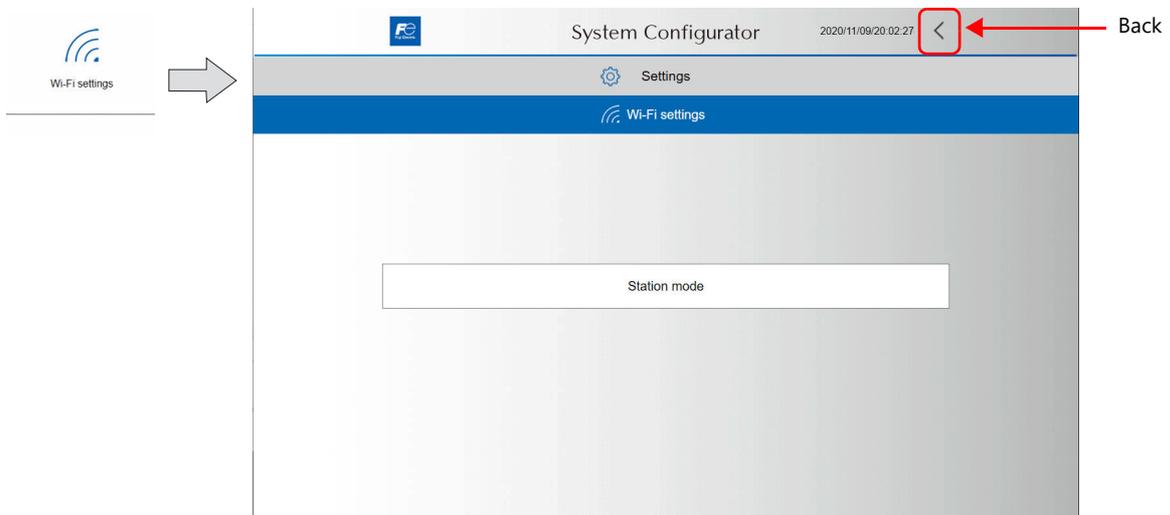
Station Mode

The Windows Wi-Fi setting menu is used.

1.   Set [WLAN] to [On].
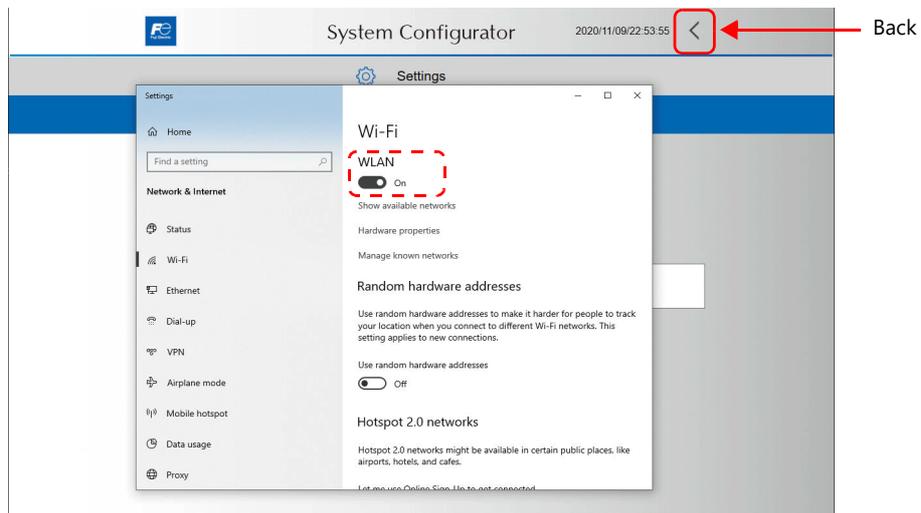
2. Press [Show available networks], select the respective SSID and then press [Connect].
3. Input the security key.
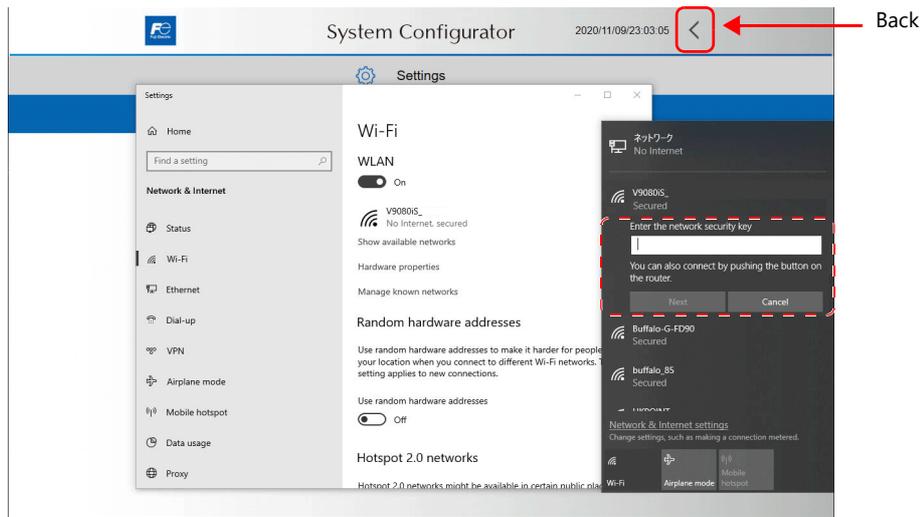
Back

Methods for inputting numbers and text

- Use the System Configurator → [System keyboard]. Refer to page 5-93.
- Connect a USB keyboard.

Setting is complete when a connection is established.

Back
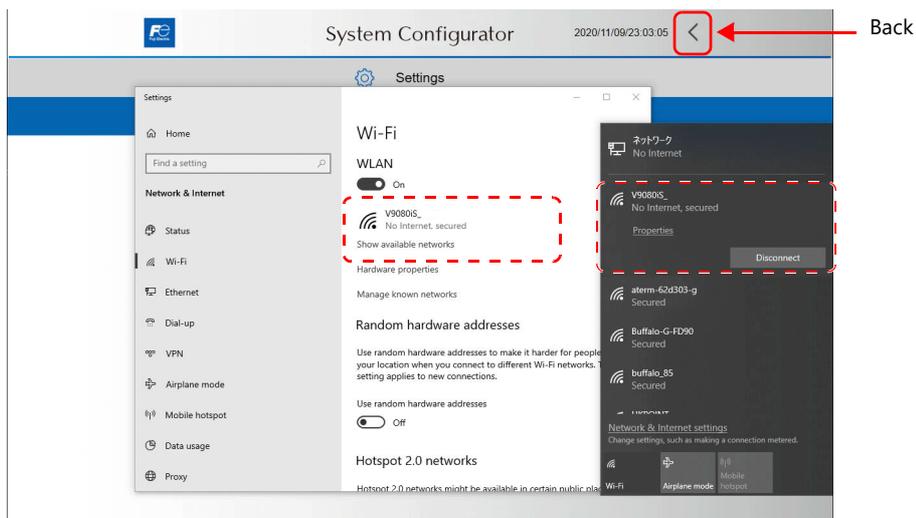
Bluetooth Settings

This screen is for configuring Bluetooth settings. The Windows [Bluetooth & other devices] menu is used.

⚠️   • Displaying and setting changes are not possible when [Write filter setting] is set to [Valid].
        Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Write Filter Setting" page 5-75.
      • X1121iSD and X1151iSD do not support Bluetooth.

Registering a Device for Pairing

1. Turn on Bluetooth on the device to connect (smart device).
    For the operation method of a smart device, refer to the operation manual of the device.
2. Display the Bluetooth settings screen on the X1 series unit.
3. Set [Bluetooth] to [On].
4. Select [Add Bluetooth or other device].

Back
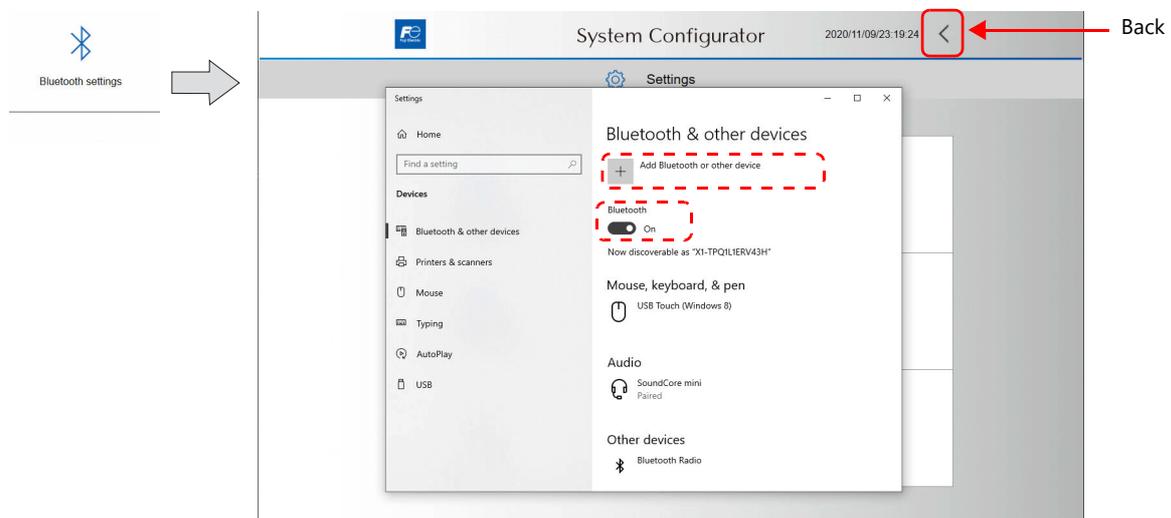
5. Select [Bluetooth].

5
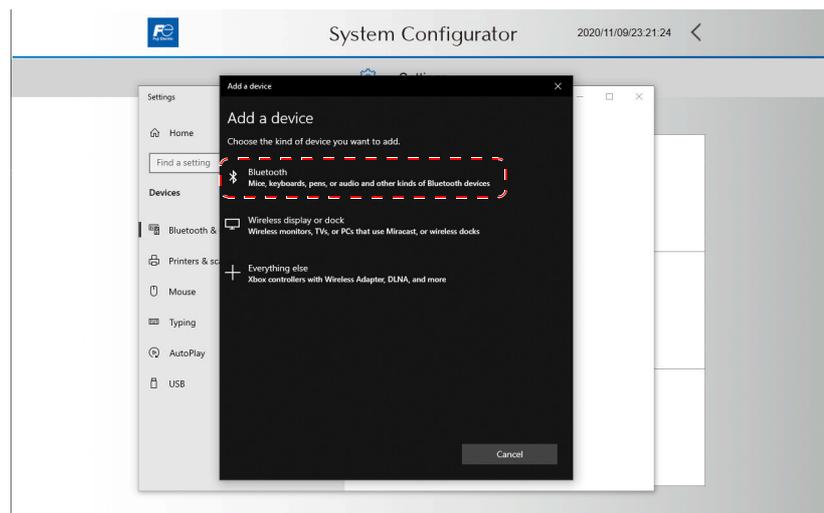
6. Select the device for pairing from the list of detected devices.
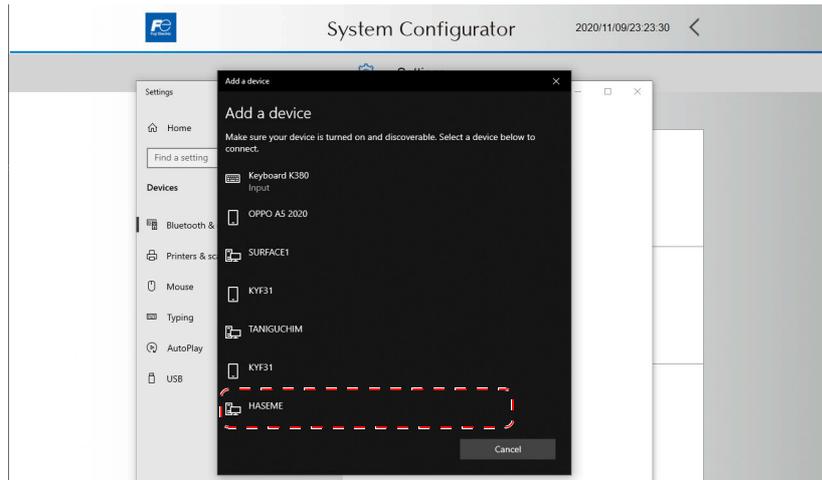
7. When a connection is established, the message "Your device is ready to go!" is displayed. Press [Done] to return to the System Configurator screen.
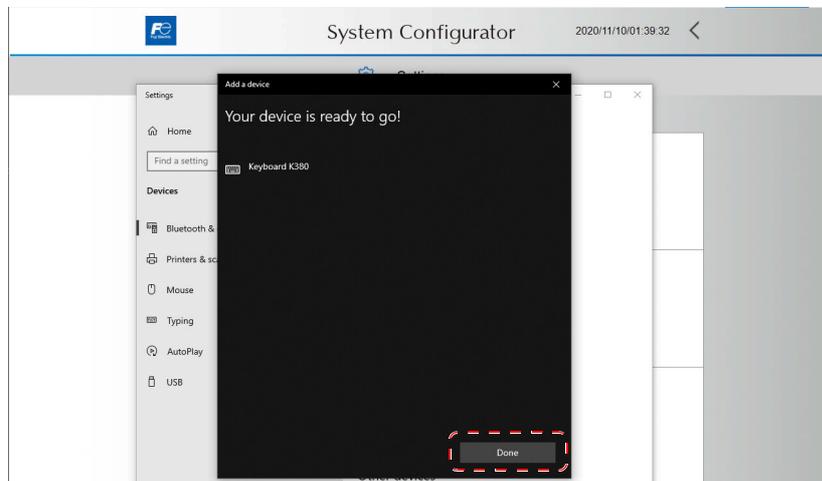
Connecting with a Registered Device

A smart device registered for pairing will automatically be connected by turning Bluetooth on.

Notes

• Only one smart device can connect with the X1 series unit at a time. The device that is connected first takes priority.

Write Filter Setting

This screen is for checking and changing the write filter setting.

Function of the Write Filter

Since the X1 series uses a Windows operating system, a sudden power off may damage files and system recovery may be impossible.
By setting the [Write filter setting] to [Valid] (writing prohibited) for the system area, files can be protected even if the power is suddenly turned off.

Changes to system settings are done with the [Write filter setting] set to [Invalid] (writing allowed).
The following warning is displayed if setting changes are attempted with [Write filter setting] set to [Valid] (writing prohibited).

Warning
⚠️
The write filter is valid. Display the write filter setting screen and invalidate the write filter.
OK

Write Filter Setting

Back

The current status is indicated in blue.

Item		Description
Write filter setting		This setting is used to prohibit writing to the internal storage of the X1 series unit. The writing prohibited area is set at [Advanced setting] → [Filter area settings].
	Valid (default)	Data writing prohibited (read only) Power off: Possible at all times Indication of System Configurator → [Shutdown]:
	Invalid	Data writing enabled Power off: Requires pressing the [Shutdown] switch in System Configurator Indication of System Configurator → [Shutdown]:
Advanced settings		This setting is used to set the area to write filter and to check the available overlay capacity. Refer to "Advanced settings" page 5-77.

⚠️ 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.

Changing the Setting

The X1 series unit automatically reboots when the setting is changed.
After rebooting, the X1 app or System Configurator is displayed depending on the System Configurator → [Setting] → [Startup settings].

Warning
⚠️
To change the write filter status, exit all active applications and reboot. Do you want to proceed?
OK   Cancel

Processing ...

Advanced settings

Back

The current status is indicated in blue.

Item		Description
Area to filter		This setting is displayed when [Write filter setting: Invalid] is selected. Set the writing prohibited area.
	System area (default) System area All areas	Prohibits writing in the system area. Some areas are excluded. Excluded areas (reading/writing enabled at all times) • C:\MONITOUCH\X1\0 folder • C:\MONITOUCH\X1\1 folder • C:\MONITOUCH\X1\opcua folder • C:\UserData folder
	All areas System area All areas	Prohibits writing to all areas of the internal storage. * All areas of the internal storage are writing prohibited when [Write filter setting: Valid] is selected. Even if you change the screen program or update the file, the X1 will return to the state before the change by turning the power off and back on again, or rebooting.
Available overlay capacity		This setting displayed when [Write filer setting: Valid] is selected. You can check the available overlay capacity. Max.1 GB
	Refresh available overlay capacity	Refreshes the display of available overlay capacity.

Overlay
Overlay is a mechanism to write to a RAM area instead of a write-protected area when writing occurs in that area. The overlay capacity is 1 GB, and X1 will not operate properly if there is no remaining capacity. Turn the power off and back on again, or reboot before remaining capacity reaches "0".

⚠️ When [Write filter setting: Valid] and [Filter area settings: All areas] are selected, all areas of the internal storage are writing prohibited and a "Warning" appears at the bottom of the local mode screen.

The following settings will return to the state before the change by turning the power off and back on again or by rebooting.

If retaining the changes, change the settings while the state is [Write filter setting: Invalid] or [Filter area settings: System area], and then change the state to [Write filter setting: Valid].

Function		Access	Retention using external USB storage
Screen program transfer to the X1 series unit	Editor*1	Internal storage	Disabled
	Storage Transfer*2		Disabled
	Automatic Upload*3		Disabled
Local Mode	Change of settings	Configuration file	Disabled
System menu	Security User Settings	Configuration file	Disabled
Hard copy macro	HDCOPY HDCOPY2 HDCOPY3	Storage folder	Enabled
Recipe		Storage folder	Enabled
JPEG	File Delete	Storage folder	Enabled
Memo Pad		Storage folder	Disabled
None volatile device	$L/$LD	Storage folder	Disabled
Alarm		Storage folder	Enabled (data before saving to USB storage is disabled)
Logging		Storage folder	Enabled (data before saving to USB storage is disabled)
Operation log setting		Storage folder	Enabled (data before saving to USB storage is disabled)
Data sheet	PDF output	Storage folder	Enabled
Wav macro	SAVE_VOLUME	Configuration file	Disabled
File setting macros	COPY_FILE MOVE_FILE DEL_FILE WRITE_FILE	Storage folder	Enabled
Add/edit/delete file in the internal storage		Storage folder	Enabled

*1 The warning window appears when transferring screen program. Click [Yes] to force the transfer.
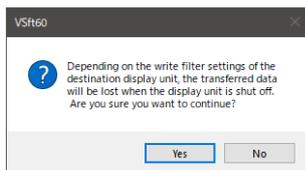
*2 The warning window appears when transferring screen program. Click [OK] to force the transfer.
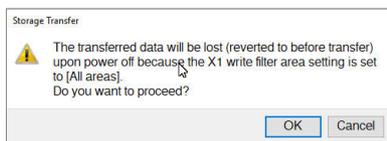
*3 The error window appears when automatic uploading is performed. The screen program can not be transferred. Press [RUN] to display the operation screen.

When changing the setting

When the setting is changed, X1 will reboot automatically and change to [Write filter setting: Valid].
After rebooting, the X1 app or the System Configurator screen will start up according to the settings in [System Configurator] → [Settings] → [Startup settings].
When changing from [Filter Area Setting: System Area] to [Filter Area Setting: All Areas], the following warning window will appear. Press [OK] to reboot.
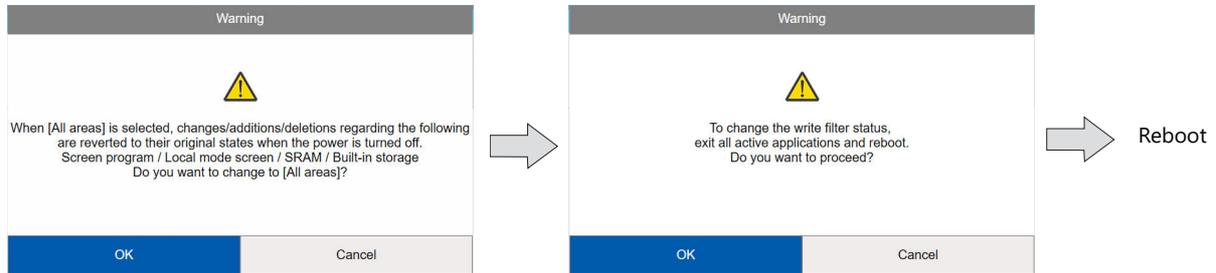
Settings that Check the Write Filter Setting

The following table shows whether settings can or cannot be changed when [Write filter setting] is set to [Valid]. A warning will be displayed if a setting change is attempted for an item that cannot be changed. For such items, change [Write filter setting] to [Invalid] and then change the setting.

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

Display Brightness Setting

This screen is used to set the brightness of the screen.

> ⚠️ The setting cannot be changed when [Write filter setting] is set to [Valid].
> Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Write Filter Setting" page 5-75.
>
> The setting can also be changed by displaying the system menu in RUN/Local mode and pressing the [Display] switch.
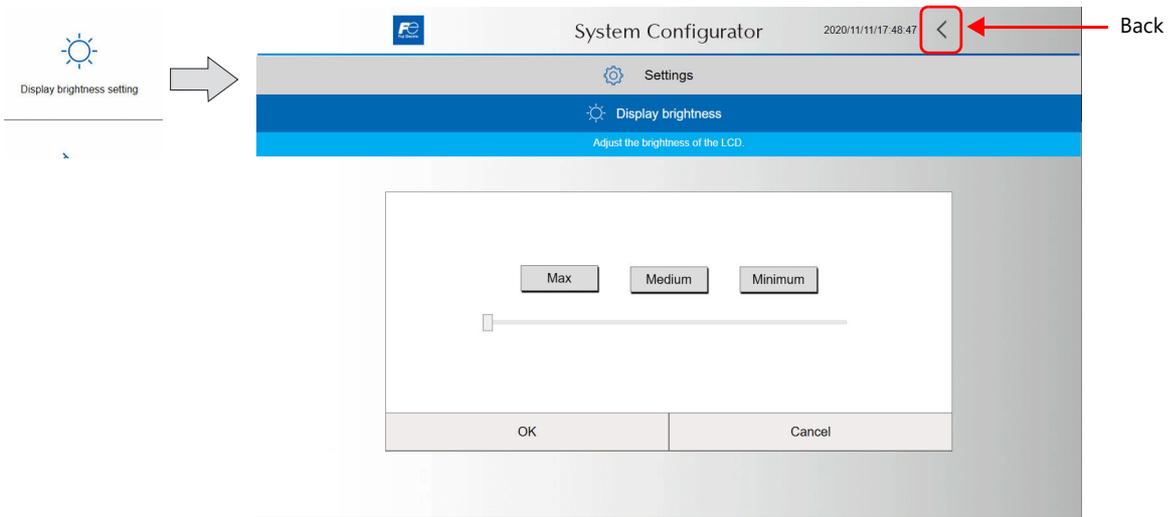
Item	Description	Supplementary Remarks
Max/Medium/Minimum	Brightness adjustment is possible in 3 levels.[*1]	Brightness levels are equivalent to the BRIGHT macro command values of 0, 64, and 126. The brightness level of [Minimum] is about 3% the level of [Max].
Slider Switch	Brightness adjustment is possible in 128 levels.[*2]	

*1　When the brightness is reduced, the backlight life may be slightly extended.
*2　The brightness can be adjusted in 128 levels by using the BRIGHT macro command. For details, refer to the V9 Series Macro Reference Manual.
The brightness setting is retained internally by the X1 series unit and is retained even if the power is turned off. Note, however, that brightness is retained in 10 levels and therefore the screen brightness may change after rebooting.

X1 Series Unit	BRIGHT Macro Command	Brightness	Remarks
0	0 to 25	Bright	Max
1	26 to 38		
2	39 to 50		
3	51 to 63		
4	64 to 76		Medium
5	77 to 88		
6	89 to 101		
7	102 to 114		
8	115 to 126		Minimum
9	127	Dark	Note that the screen is completely dark with no visibility.

Startup Settings (Operation Mode)

This screen is used to change the startup setting for when the power is turned on. After the setting is changed, the X1 series unit automatically reboots.

Back

The current status is indicated in blue.
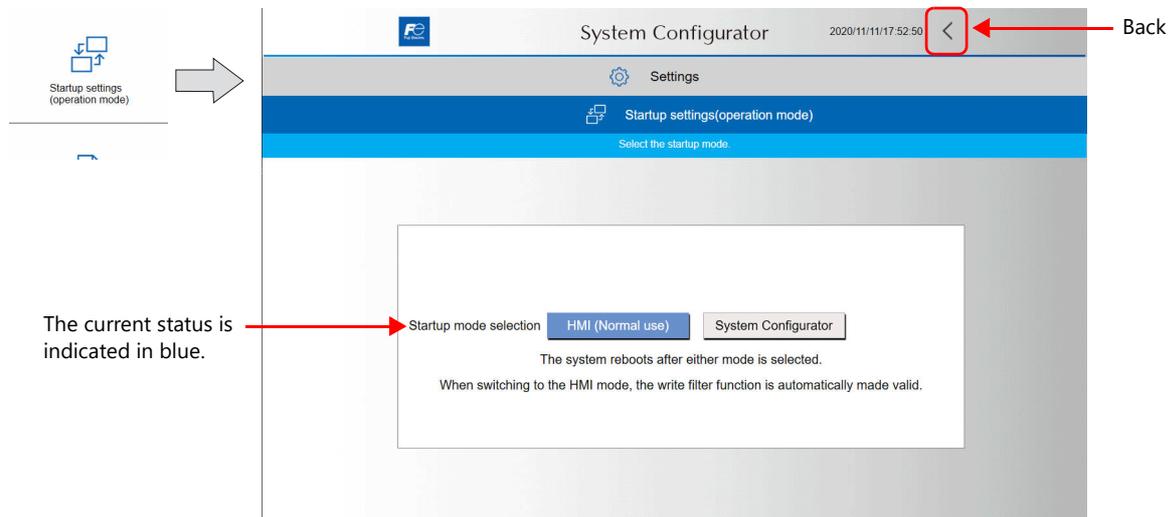
Item	Description
Startup mode selection	Set the mode for starting when the power is turned on.
HMI (Normal use)	The HMI RUN mode starts.
System Configurator	System Configurator starts.

Changing the setting

The X1 series unit automatically reboots when the setting is changed. The mode specified here starts after rebooting.
When the setting is changed from [System Configurator] to [HMI], the [Write filter setting] is automatically changed to [Valid].
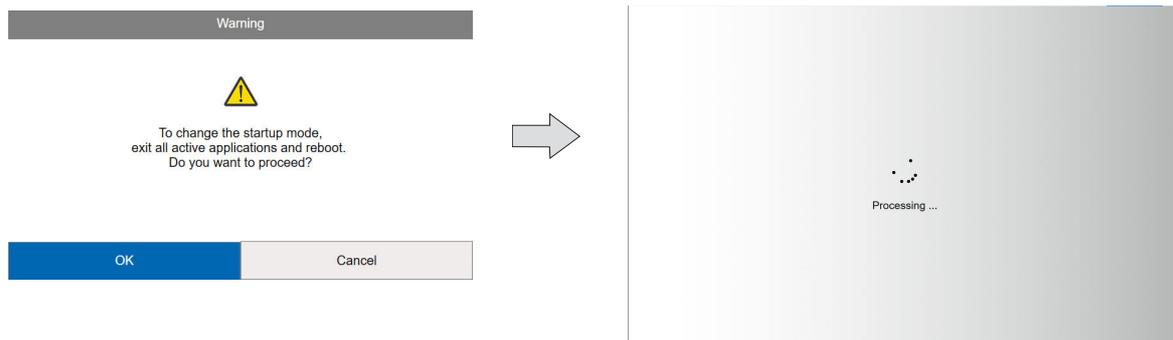
Time Settings

This screen is for checking and changing the time settings.

⚠️ Settings cannot be changed when [Write filter setting] is set to [Valid].
Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Write Filter Setting" page 5-75.

Item		Description
Date/Time		Indicates the current time.
	Change date/time	Manually change the date and time setting. Refer to page 5-82.
Time zone		Indicates the time zone.
	Change time zone	Specify a time zone. The time is automatically set according to the selected time zone. Refer to page 5-83.
Internet time		Indicates the internet time setting. Valid: Acquires time from an internet time server. Invalid: Time is not acquired from an internet time server.
	Change internet time	Change the internet time setting. Refer to page 5-83.

Change Date/Time

Manually change the date and time setting.

Change Time Zone

Change the time zone setting by selecting from a list. If a time zone that practices daylight savings time is selected, the [Adjust according to daylight savings time] menu is also displayed.
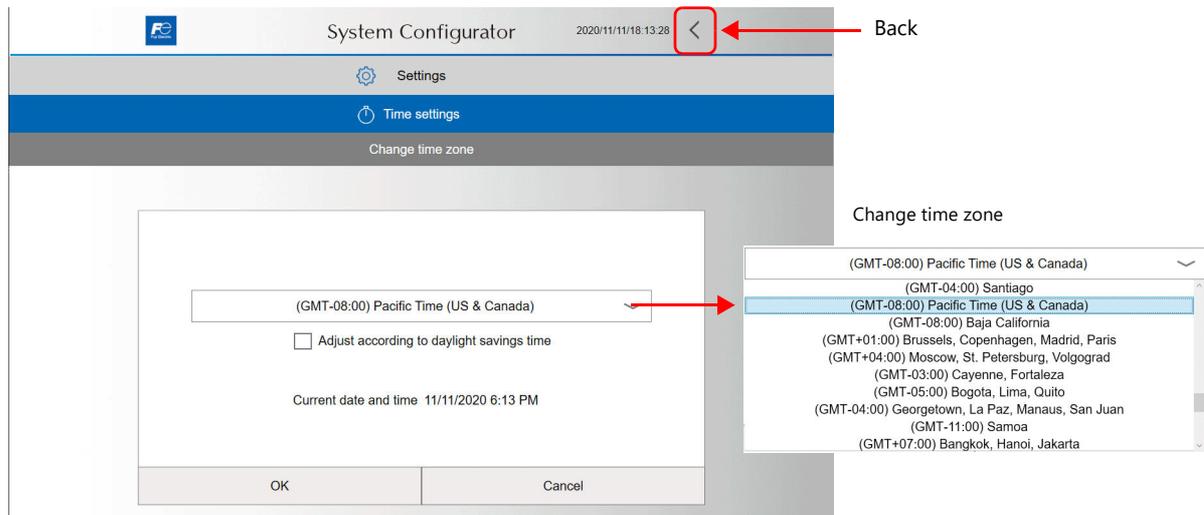
Change Internet Time

Automatically set the time by synchronizing with an NTP server via the Internet upon turning the X1 series unit power on.
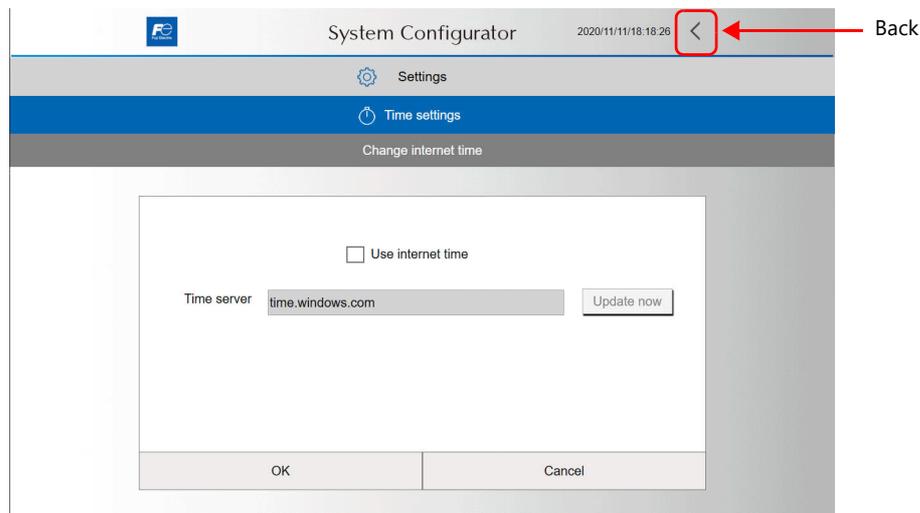
Item	Description
Use internet time	Select to acquire the time from an internet time server.
Time server	Input the computer name or IP address of the NTP server for synchronizing the time. Default: time.windows.com
Update now	The time is synchronized with the specified time server and updated. Synchronization will fail and an error will occur if not connected to the Internet or blocked by a firewall.

Methods for inputting numbers and text

- Use the System Configurator → [System keyboard]. Refer to .
- Connect a USB keyboard.

Security Setting (Optional)

This screen is for configuring security settings.
The screen is available when the optional X1 Security Software (X1-SS) is purchased and installed.

⚠️ Settings cannot be changed when [Write filter setting] is set to [Valid].
Set [Settings] → [Write filter setting] to [Invalid]. Refer to *"Write Filter Setting" page 5-75*.
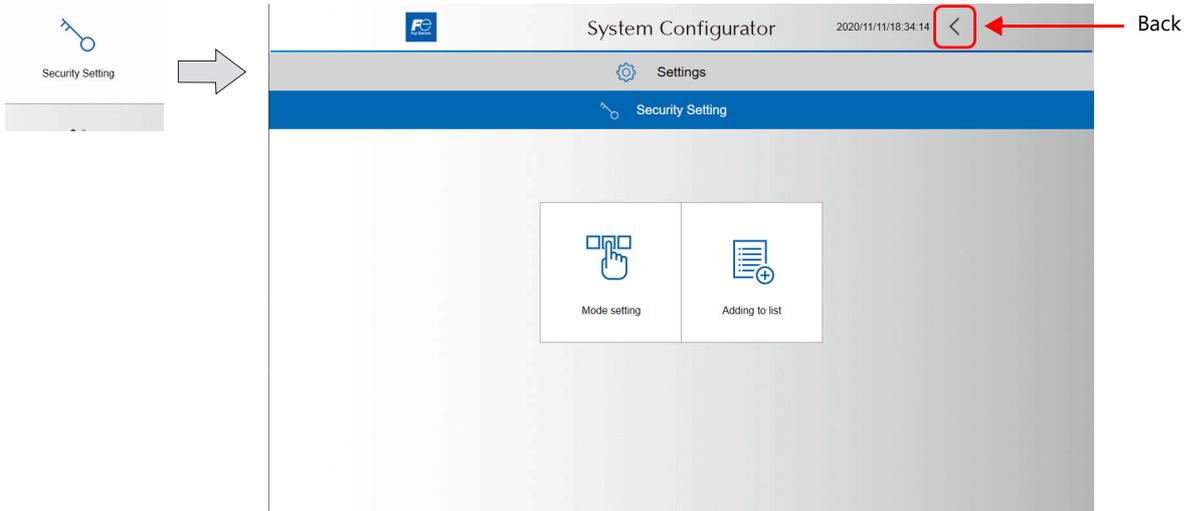
Item	Description
Mode setting	Set the operation mode of the security function.
Adding to list	Register applications to a whitelist.

The following message is displayed if the security function cannot be used. Purchase and install the X1-SS.

Setting is not possible because function is not supported.
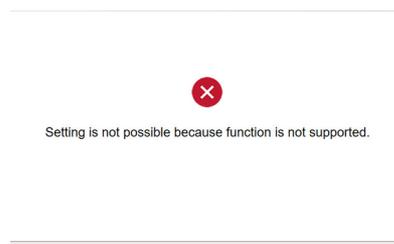
Security Setting

The X1 Security Software (X1-SS) is a whitelisting[*1] software that limits the execution of applications to those that are registered to a whitelist in advance.

*1 Whitelisting
This is a security method that utilizes a whitelist to define the programs that a user can run on a computer.
All applications other than those that have been confirmed to be safe by the administrator are blocked.
The opposite method is called blacklisting, in which malicious codes are listed. Any code on the list is automatically blocked if detected.
The drawback of blacklisting is that the list constantly needs to be updated.

Mode Setting

Set the operation mode of the security function.

Item	Description
Invalid mode (default)	The system security function is disabled. All files can be executed.
Valid mode	The system security function is enabled. Only applications that are on the whitelist can be executed.
Updating mode	The system security function is disabled. An application installed in this state is automatically added to the whitelist. The list is updated once every 30 minutes. To immediately update the list, press the [Security Setting] → [Adding to list] → [Update list] switch. After updating is finished, switch to [Valid mode] and operate. X1 application and System Configurator updates are executed in updating mode.

⚠ The whitelist is stored in the write filter area.
If updating of this list is attempted with [Write filter setting] set to [Valid], updating may fail and the X1 series unit may malfunction after rebooting.

When adding to or updating the list, be sure to set [Write filter setting] to [Invalid].

When the mode is changed, a message for confirming rebooting is displayed. Press the [OK] switch to reboot.

5
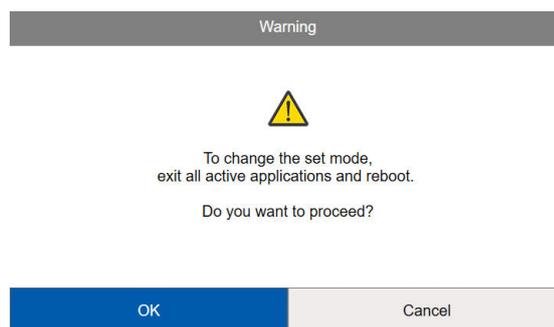
Adding to List

Add applications to the whitelist.

> ⚠️ Adding to the list takes time. In addition, all other operations are disabled during the process. Execute list addition after completing all other system settings.

Back
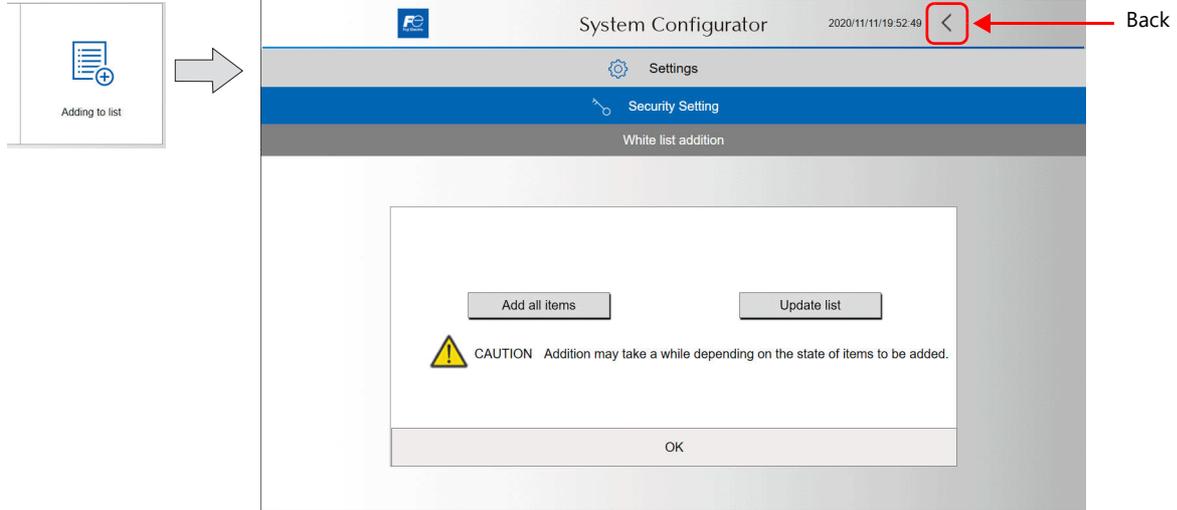
Item	Description
Add all items	Adds all programs and systems installed on the X1 series unit to the list. This takes about an hour.
Update list	Adds items to the existing list. Set [Mode setting] to [Updating mode] and then press this switch. The time taken changes depending on the applications that are added.

Press [OK] on the following window. Addition starts and [Processing...] is displayed on the screen while addition is in progress. While in progress, all other operations are disabled.
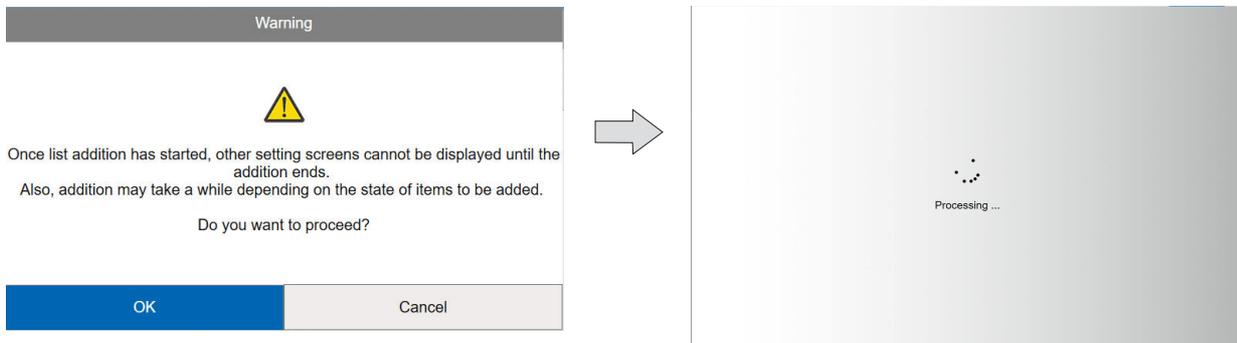
When addition is completed, the screen returns to the White list addition screen and the execution result is displayed.

Execution result
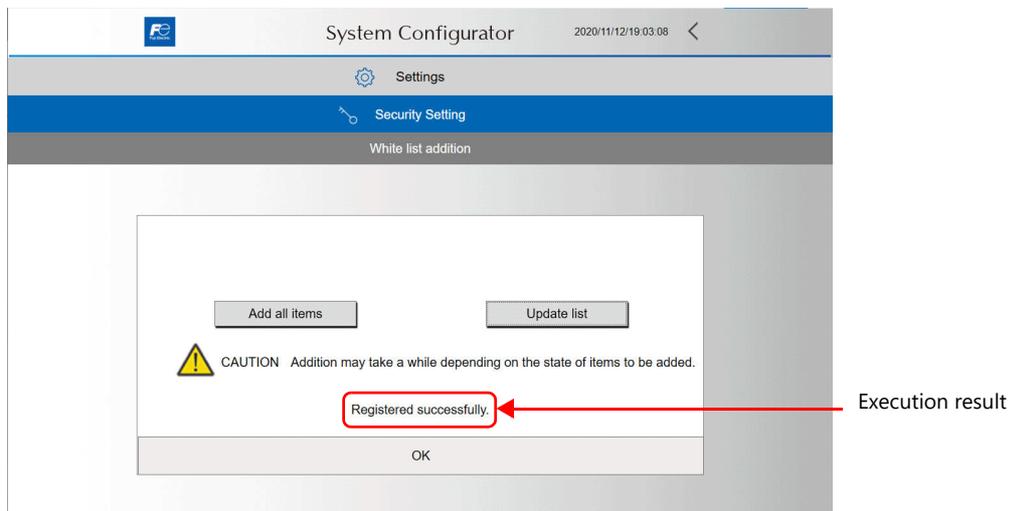
Setting Procedure

Initial setting

1. Set [Write filter setting] to [Invalid]. The X1 series unit automatically reboots.

    ☞   For details on the write filter setting, refer to page 5-75.

2. Install the X1-SS security software.

    ☞   Refer to the X1-SS instruction manual for the installation procedure.

3. Install and configure settings for user applications.

    ☞   • Install user applications via Explorer. Refer to "Explorer" page 5-67.
            • For details of settings, refer to "Settings" page 5-69.

4. Press [Security Setting] → [Adding to list] → [Add all items] switch. Files in the X1 series unit are added to the whitelist.

    ⚠   Do not turn off the power while addition is in progress.

5. Press [Security Setting] and then set [Mode setting] to [Valid mode]. The X1 series unit automatically reboots.
6. Set [Write filter setting] to [Valid]. The X1 series unit automatically reboots.

    ☞   For details on the write filter setting, refer to page 5-75.

Updating X1 application during operation / Adding user application

1. Set [Write filter setting] to [Invalid]. The X1 series unit automatically reboots.

    ☞   For details on the write filter setting, refer to page 5-75.

2. Set [Startup setting (Operation Mode)] to [System Configurator]. The X1 series unit automatically reboots.
3. Press [Security Setting] and then set [Mode setting] to [Updating mode]. The X1 series unit automatically reboots.
4. Install the user application.
5. Press [Security Setting] → [Adding to list] → [Update list]. The application is added to the whitelist.

    ⚠   Do not turn off the power while addition is in progress.

6. Press [Security Setting] and then set [Mode setting] to [Valid mode]. The X1 series unit automatically reboots.
7. Set [Startup setting (Operation Mode)] to [HMI (Normal use)]. The X1 series unit automatically reboots.
    The write filter setting is automatically changed to [valid].

    ☞   For details on the write filter setting, refer to page 5-75.

Printer Setting

Configure the printer settings.

Printing of such as hard copies is possible by installing[*] the Windows printer driver on the X1 series unit.

If multiple printer drivers are installed, display the Windows [Printers & scanners] menu and specify the default printer.

   * Copy the printer driver exe file or data from the CD supplied with the printer to a USB flash drive and install via Explorer (refer to "5.5.2 Explorer" page 5-67).
     For details on installation, refer to the instruction manual of the printer.

⚠   Settings cannot be changed when [Write filter setting] is set to [Valid].
          Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Write Filter Setting" page 5-75.

Back
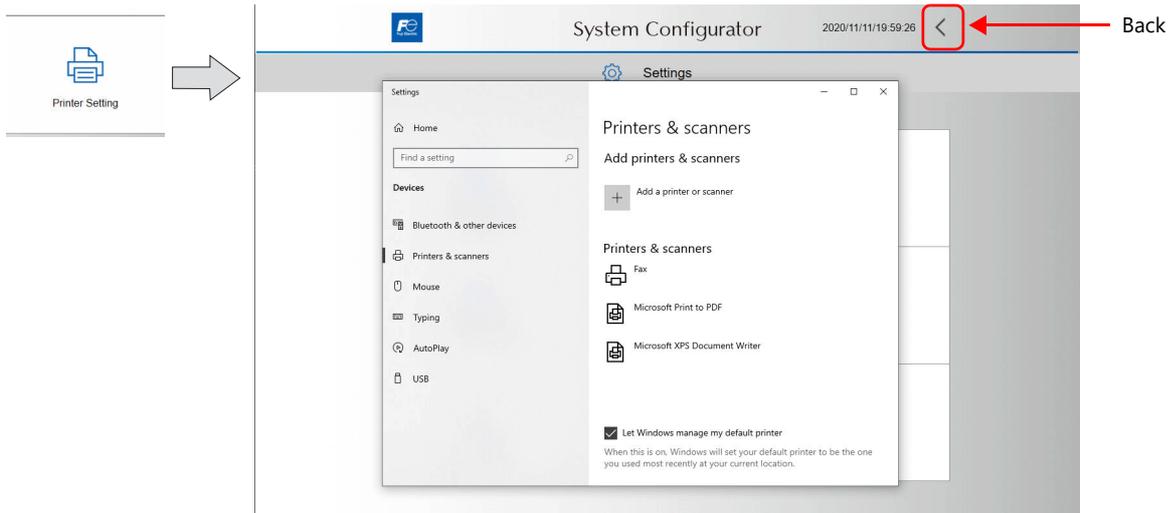
Setting the Default Printer

1. Display the [Printers & scanners] menu and deselect [Let Windows manage my default printer].
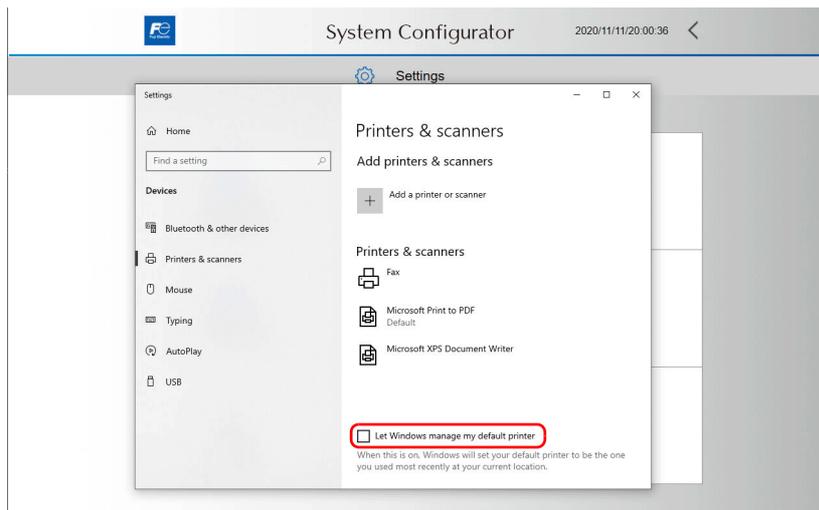
2. Select the printer to set as default from the printers & scanners list and press [Manage].
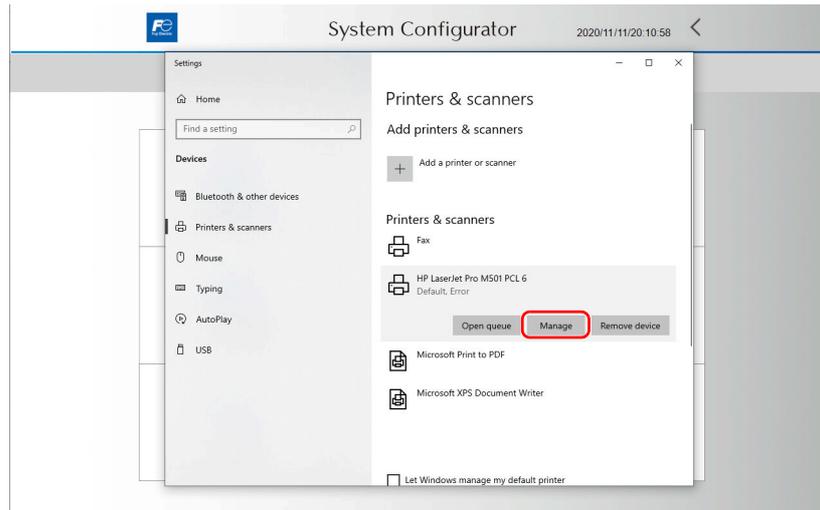
3. Press [Set as default].
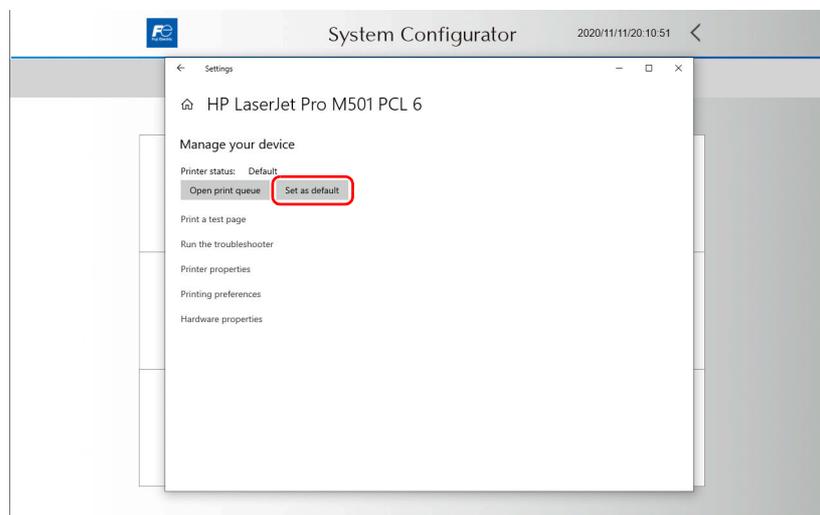
Sound Settings

Configure the sound settings in the Windows [Sound] menu. The output device can be selected when connecting an external speaker.

⚠️ Settings cannot be changed when [Write filter setting] is set to [Valid].
Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Write Filter Setting" page 5-75.
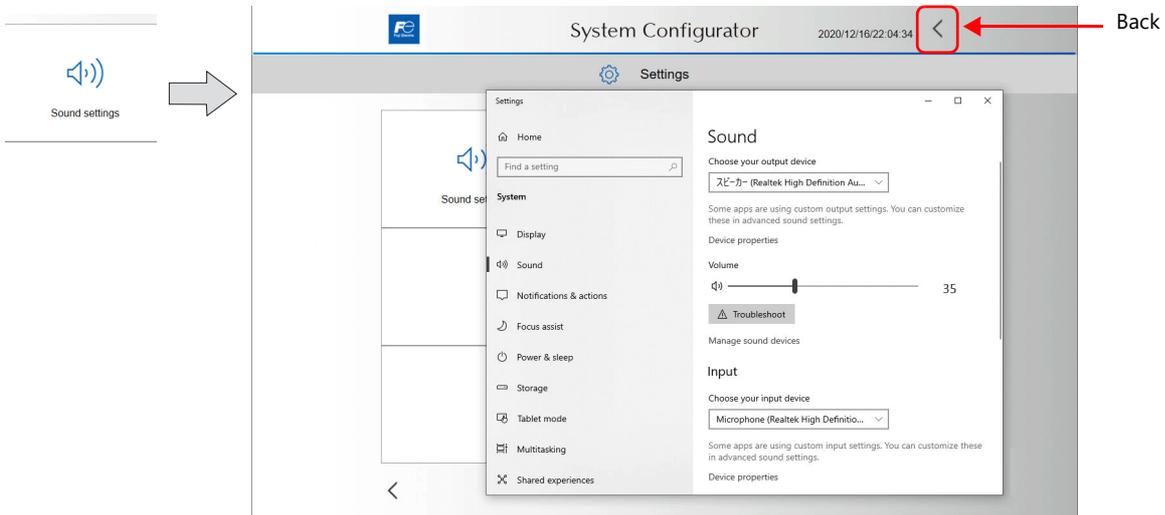
5.5.4 Storage Management

This screen shows the capacity of the internal storage (SSD).
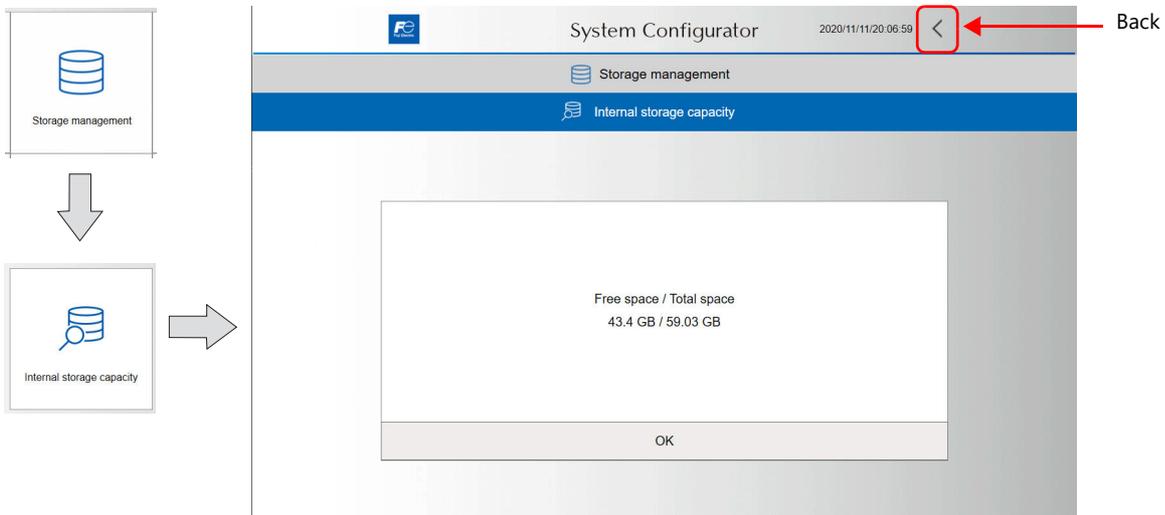
5.5.5 Task List

This screen is used to set the task list service setting.
When simultaneously using the X1 app and a user application, the user application cannot be viewed since the X1 app is displayed in full screen. By showing the task list icon, a list of applications can be displayed, from which the screen can be switched to the desired application.

The current status is indicated in blue.

Back

Item		Description
Task list service		Set whether to show or hide the task list icon.
	View	Shows the task list icon in the foreground at all times. The icon is also displayed while the X1 app is displayed. Double-tap the icon to display a list of applications.
	Hide	Hides the task list icon. If user applications are not used, we recommend hiding the icon.

The application list can be displayed by pressing the switch placed in the X1 app or by setting the control device memory bit to ON.

Switch
or
Control device memory bit: ON

Switch/Control device memory operation is valid even when [Hide] is selected in System Configurator.
For details, refer to the "X1 Series Reference Manual 2" 8 Convenient Functions.

5.5.6　System Version

This screen indicates the X1 system version.
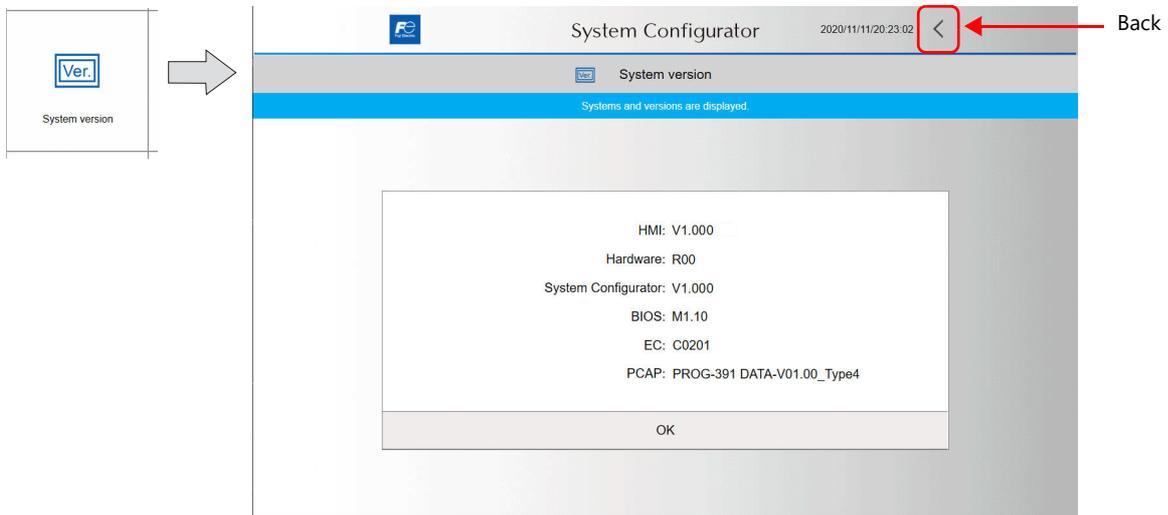
Item	Description
HMI	Indicates the HMI program version.
Hardware	Indicates the hardware revision.
System Configurator	Indicates the System Configurator version.
BIOS	Indicates the BIOS version.
EC	Indicates the version of the Embedded Controller.
PCAP	Indicates the version of the touch switch firmware.

5.5.7   System Keyboard

This screen is used to specify how the Windows system keyboard is displayed. The keyboard changes according to the selected language.
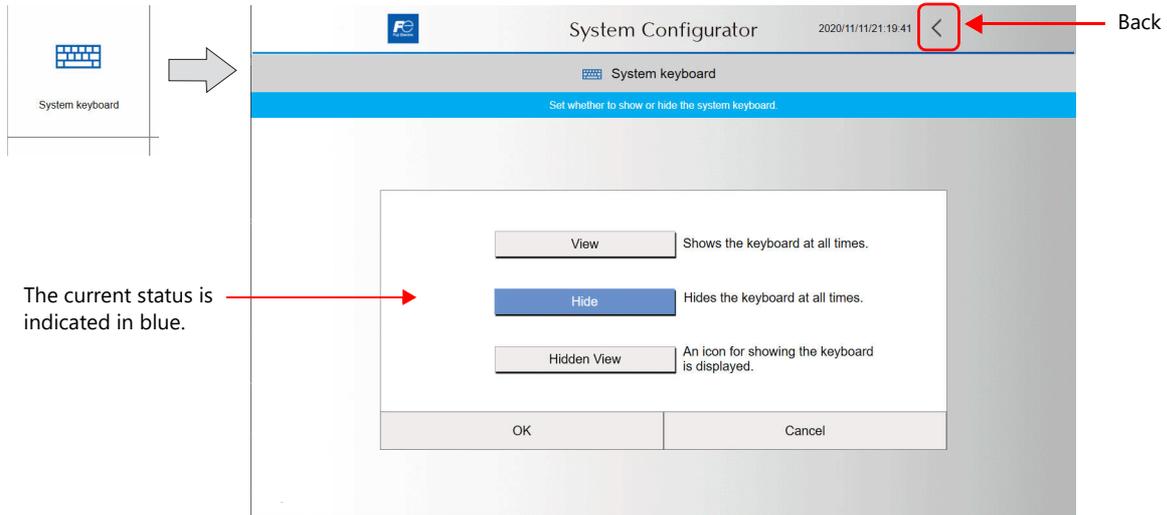
Item	Description
View	The keyboard is displayed in the foreground at all times. It automatically reappears even if it closed with the [x] button.
Hide	The keyboard is hidden at all times. The system keyboard cannot be used with this setting.
Hidden View	A keyboard icon is displayed. The icon is also displayed while the X1 app is displayed. The system keyboard is displayed in the foreground by double-tapping the icon. Pressing [x] returns the keyboard display to an icon.
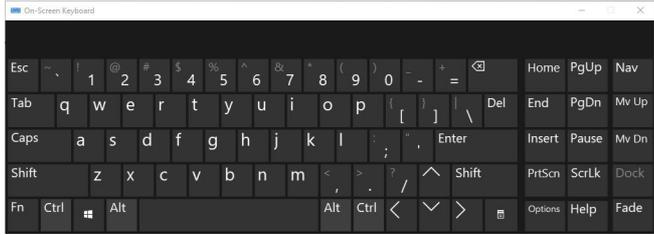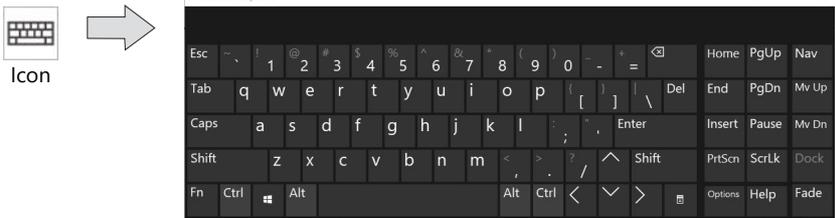
- Text can also be entered by connecting and using a USB keyboard instead of the screen keyboard.
- The screen keyboard can be displayed by pressing the switch placed in the X1 app or by setting the control device memory bit to ON.

Switch/Control device memory operation is valid even when [Hide] is selected in System Configurator.
For details, refer to the "X1 Series Reference Manual 2" 8 Convenient Functions.

5.5.8 Language Change

This screen is used to specify the interface language of System Configurator. Select a language from the preinstalled.

| ⚠ | Settings cannot be changed when [Write filter setting] is set to [Valid].
Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Write Filter Setting" page 5-75. |

| ☺ | This setting does not apply to the HMI screen. The interface langauge of the HMI screen can be changed in Local mode.

However, for a brand new X1 series unit, this setting also applies to the HMI screen. |
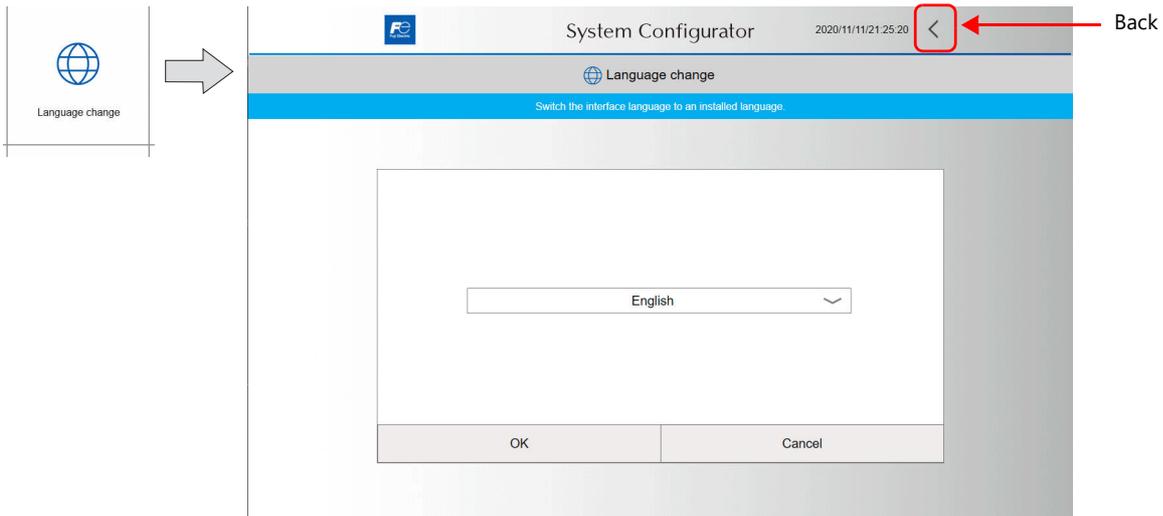
Preinstalled Languages

Item	Description
Japanese	Microsoft-Windows-Client-Language-Pack_X64_ja-jp.cab
English	Microsoft-Windows-Client-Language-Pack_X64_en-us.cab
Traditional Chinese (Taiwan)	Microsoft-Windows-Client-Language-Pack_X64_zh-tw.cab
Simplified Chinese (China)	Microsoft-Windows-Client-Language-Pack_X64_zh-cn.cab
Korean	Microsoft-Windows-Client-Language-Pack_X64_ko-kr.cab

5.5.9   Touch Operations Check

This screen is used to check and calibrate touch switch operation.

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Item	Description
Operation check	Displays a screen for checking that the touch switches operate properly. The same screen can also be displayed by the following methods. • Local mode → [I/O Check] → [Touch Switch] • Power on option: Turning the power on with DIP switch 2 set to the ON position
Calibration	Performs calibration.
Touch Display Selection	Select a display supporting touch operation. This setting is configured when the touch operation of the external display is not recognized automatically. In addition, the following settings must be configured in the screen program. [System Setting] → [Other] → [Multi-Display settings] → [Expand display screen] For details on the multi-display settings, refer to the X1 Series Reference Manual 2.

Operation Check

Press a position on the screen, and check if the pressed position turns white. When the pressed position turns white, the switch is activated normally.
If a position different from the pressed position turns white, press the [Calibration] switch.
Press the [Clear] switch to clear all white sections and the [Return] switch to return to the touch operations check screen.

Coordinates (0, 0)

Output coordinates
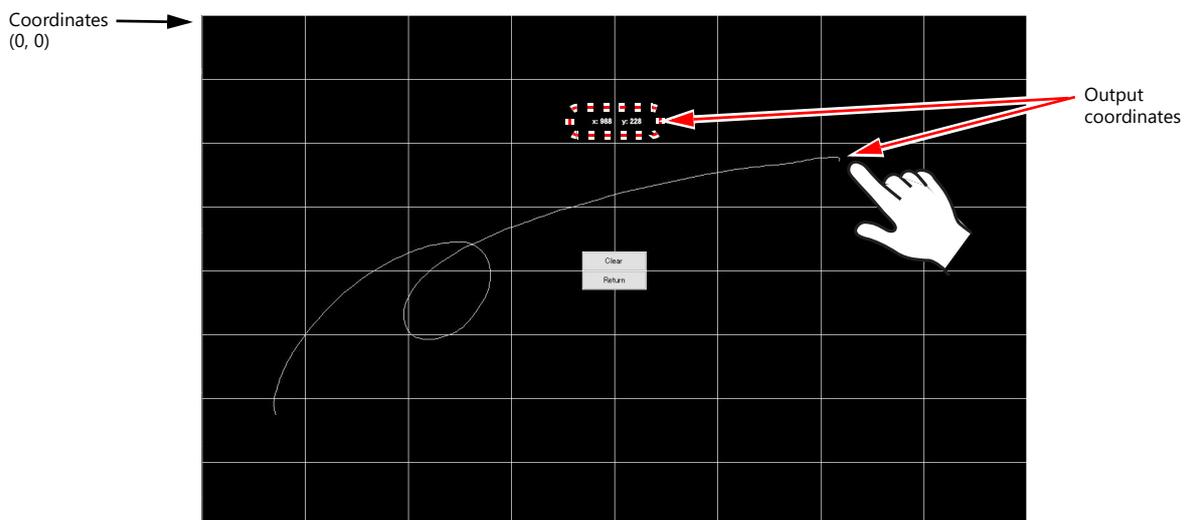
Calibration

Perform calibration when touch switches are not responding or do not respond well. While executing calibration, "Processing…" is displayed on the screen.
After executing, check operations from the [Operation check] switch.

⚠️   Do not touch the screen during calibration.
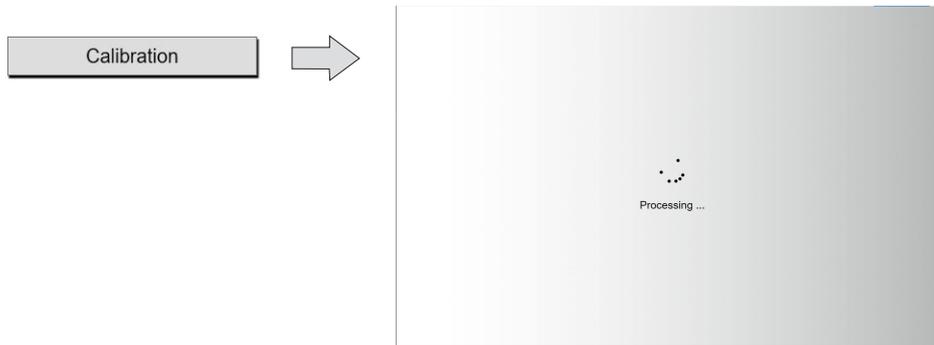
Touch Display Selection

If a display that supports touch operations is connected via the HDMI port but the touch operations of the display are not recognized, configure settings on the following screen.

⚠️
- A keyboard is required for these settings. Be sure to connect a keyboard.
- If the external display does not support touch operations, these settings are not necessary.

1. Tap [Tablet PC Settings] → [Setup].
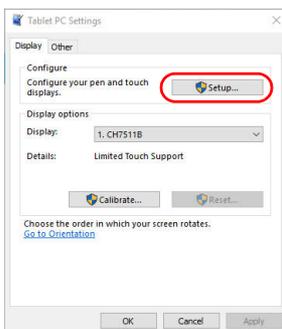
2. The following window is displayed on the X1 series unit. Press the [Enter] key on the keyboard to proceed.
3. The same screen is displayed on the external display. Tap the screen according to the displayed instructions. The next window is displayed. Press the [Enter] key on the keyboard to complete settings.

Tap this screen with a single finger to identify it as the touchscreen.

If this is not the Tablet PC screen, press Enter to move to the next screen. To close the tool, press Esc.

Displayed on X1: Press [Enter] or [Esc]
Displayed on the external display: Tap the screen

Press Enter to proceed to the next step to complete your configuration
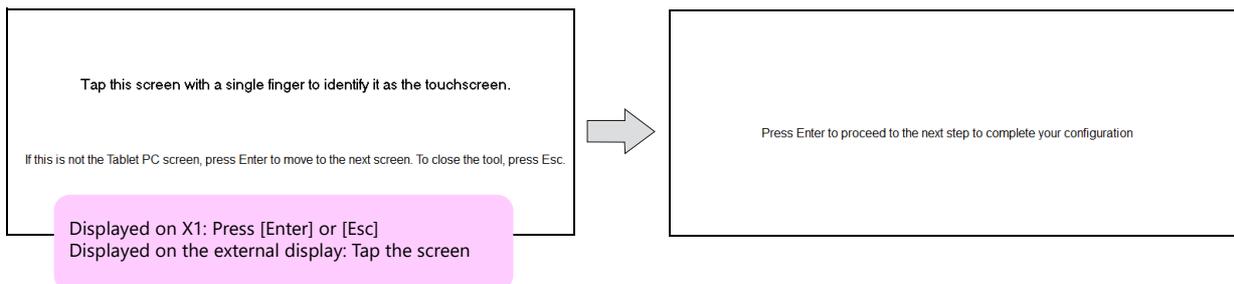
4. Tap [Tablet PC Settings] → [OK] to return to the System Configurator screen.

5.5.10 Operation Test

This screen is used to start the HMI app temporarily from System Configurator for checking operation.
Also, in cases where System Configurator was displayed from the X1 Local mode, a switch is provided for exiting System Configurator.
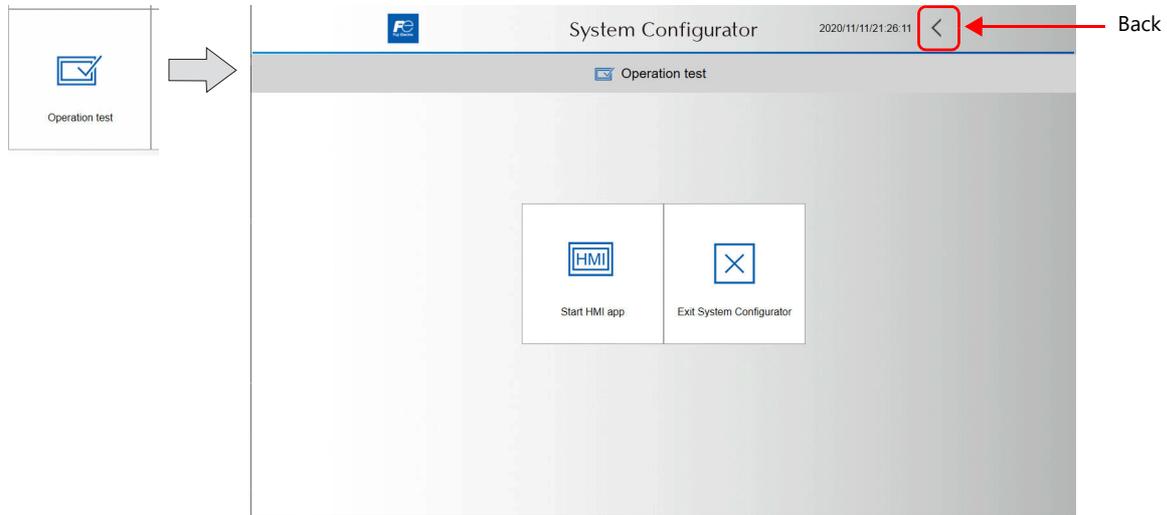
Item	Description
Start HMI app	Displays the X1 Local mode screen without exiting System Configurator.
Exit System Configurator	This switch is available when [Settings] → [Startup settings] → [Startup mode selection] is set to [HMI] and System Configurator is displayed from the X1 Local mode. Press this switch to exit System Configurator and return to the X1 Local mode screen.

Start HMI App

Press this switch to display the X1 Local mode screen without exiting System Configurator.
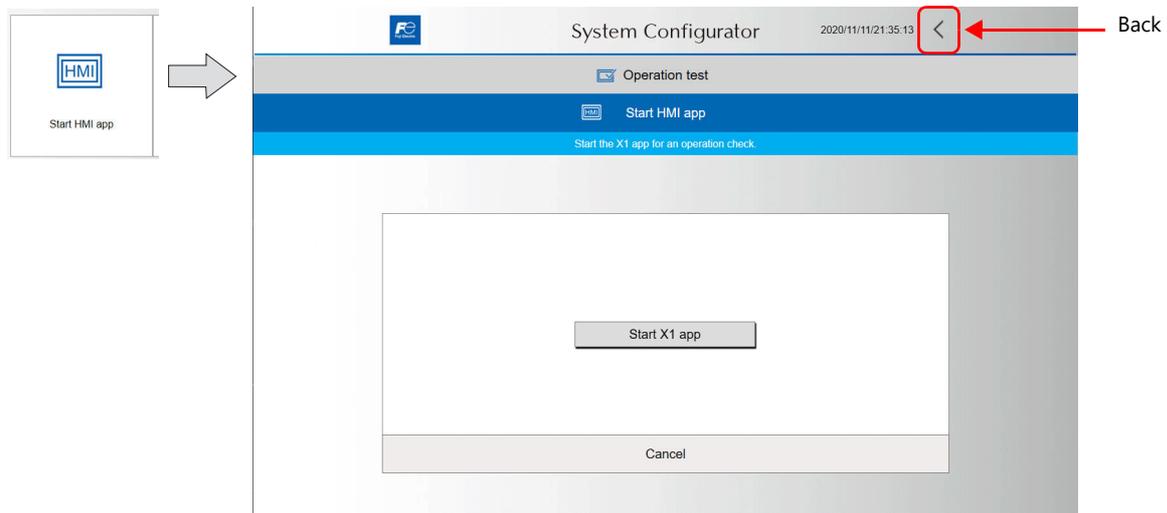
Exit System Configurator

Press this switch to exit System Configurator and return to the X1 Local mode screen.

⚠ This switch is disabled when [Settings] → [Startup settings] → [Startup mode selection] is set to [System Configurator].
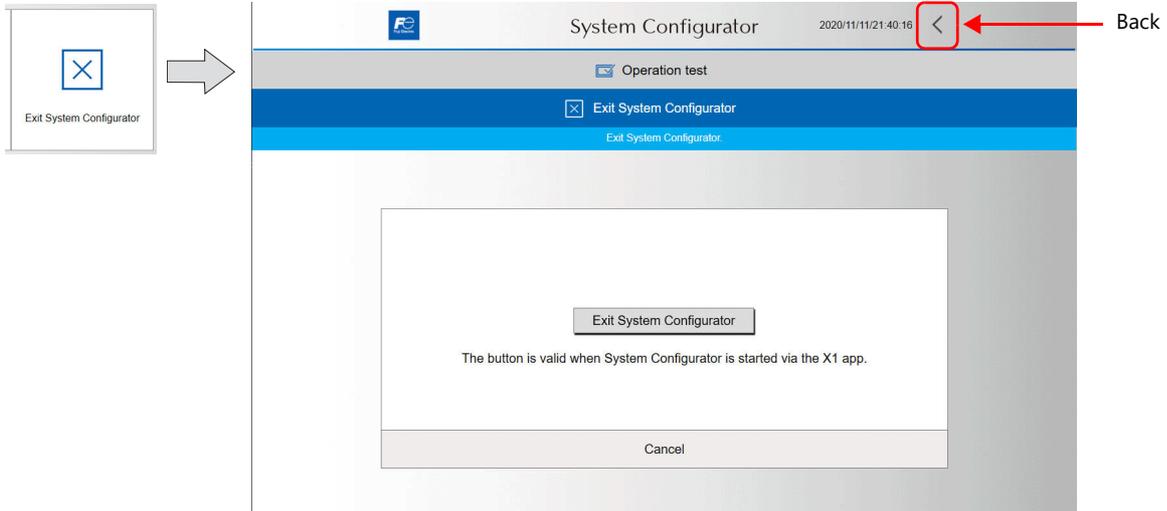
5.5.11 Advanced Mode

This screen is used to display Windows and configure advanced settings.

⚠️ The setting cannot be changed when [Write filter setting] is set to [Valid].
Set [Settings] → [Write filter setting] to [Invalid]. Refer to "Write Filter Setting" page 5-75.

Any failure resulting from operations done in advanced mode are not covered by the operation guarantee.
Note that the X1 series unit may malfunction if operations are inappropriate.
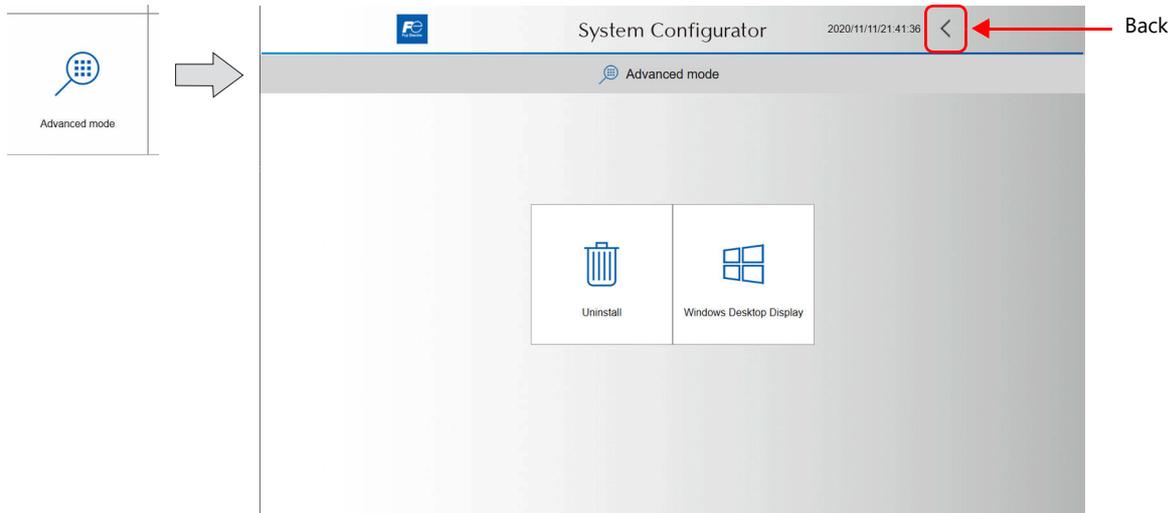
Item	Description
Uninstall	Used to uninstall applications.
Windows Desktop Display	Displays the Windows desktop.

Uninstall

This switch displays the [Control Panel] → [Programs and Features] window. Select a program and uninstall it.

⚠️ Note that uninstalled programs cannot be restored.
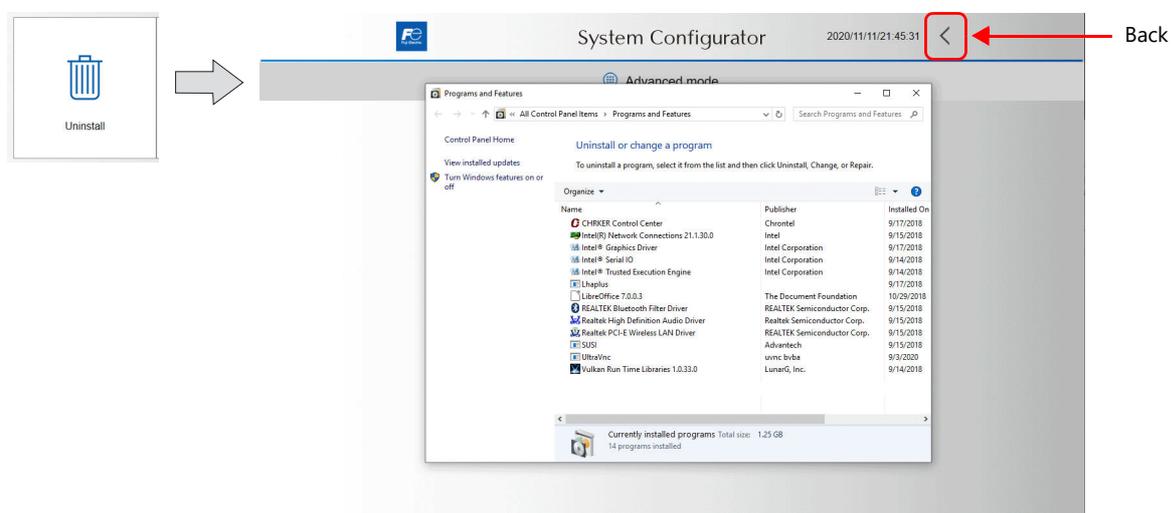
Windows Desktop Display

This switch displays the Windows desktop.

⚠️ Any failure resulting from operations done via the Windows desktop are not covered by the operation guarantee. Note that the X1 series unit may malfunction if operations are inappropriate.
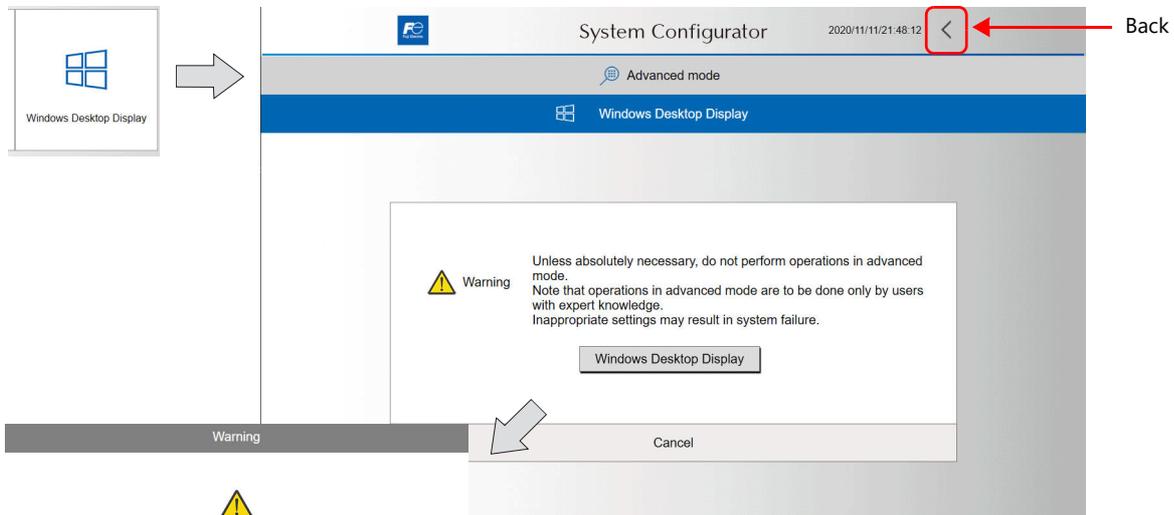
Exiting the Windows Desktop Display and Rebooting

Execute the [Reboot] shortcut on the desktop to automatically reboot the X1 series unit.
After rebooting, the X1 app or System Configurator is displayed depending on the System Configurator → [Setting] → [Startup settings].

Exiting the Windows Desktop Display

Run the [Shutdown] shortcut on the desktop to shut down the X1 operating system.
The power lamp remains lit and the screen goes out. Turn the power off after 15 seconds elapse in this state.

5.5.12 Shutdown

Shutdown the system before turning the X1 series unit power off.

 Be sure to press the [Shutdown] switch if [Write filter setting] is set to [Invalid].
If the power is turned off without pressing the [Shutdown] switch, the file system may become damaged and recovery may be impossible.
Refer to "Write Filter Setting" page 5-75

[Write filter setting] set to [Valid]
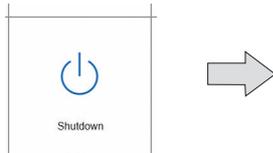
[Write filter setting] set to [Invalid]
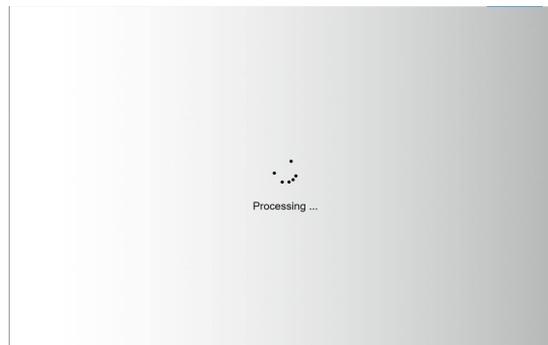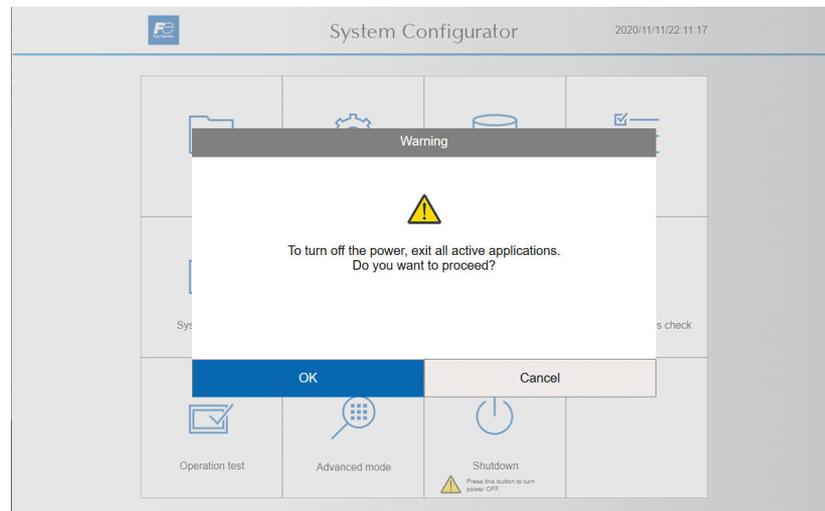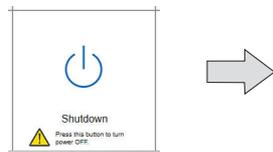
The power lamp remains lit and the screen goes out.

Turn the power off 15 seconds after the screen goes out.

5.5.13 Reboot

Reboot the X1 series unit.
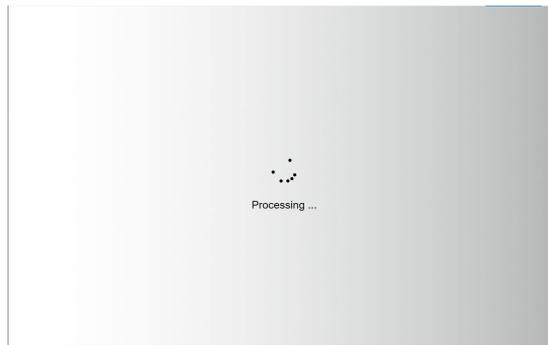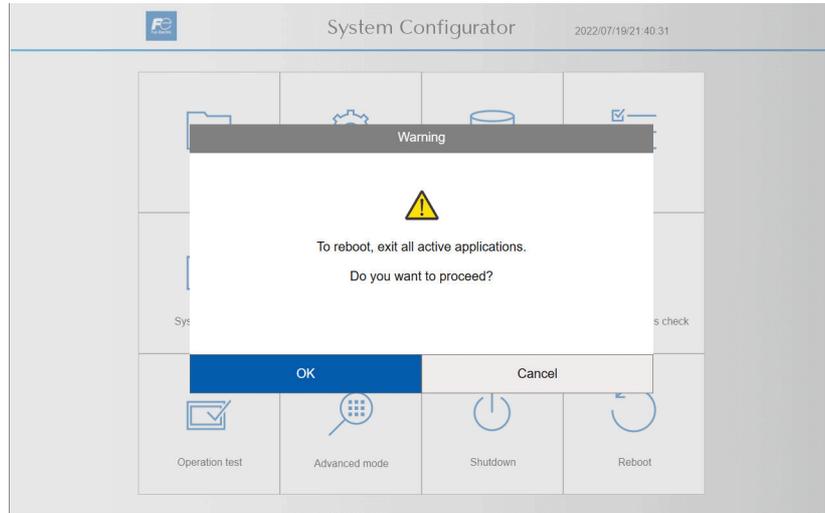
RUN screen or System Configurator

6 Errors

6.1   Errors

There are three kinds of error messages displayed on the X1 series:
• Setup error (page 6-1)
• Screen program error (page 6-1)
• Communication error (page 6-5)

6.1.1   Setup Error

When no screen program is present or no system program has been transferred, the following message is displayed on the X1 series unit. Solve the error according to the error message.
When the [Retry] switch is pressed, the operation mode switches to RUN mode.
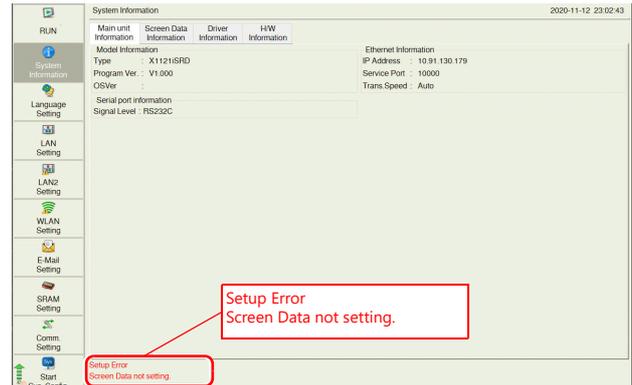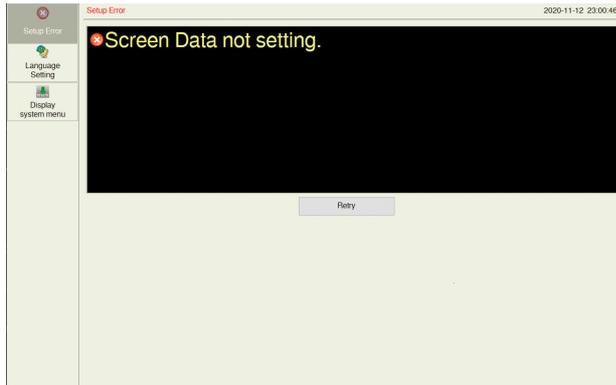
*   The error is also displayed in Local mode.

6.1.2   Screen Program Error

When an error is found in the screen program, the following message is displayed on the X1 series unit.
For details on error numbers, refer to page 6-7.
When the [Retry] switch is pressed, the operation mode switches to RUN mode.
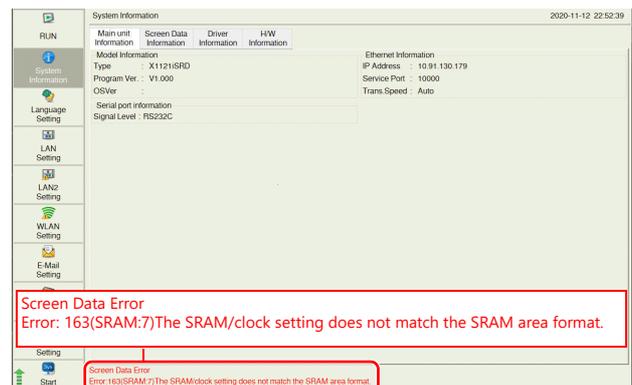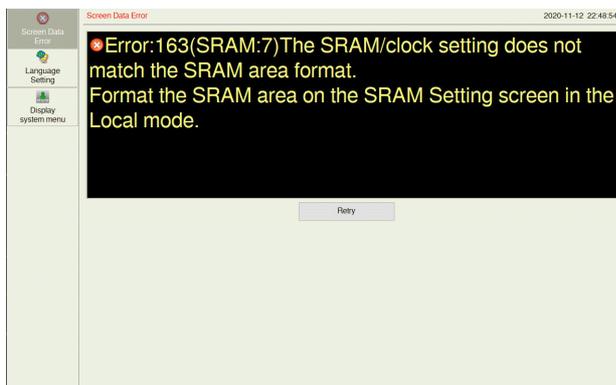
*   The error is also displayed on the Local mode screen.

Error Numbers

Check the contents of the error (= error number) according to the item name and sub-item number, and remove the error.

Error: xxx (Item name: Sub-item number)

Screen number: Refer to page 6-4.
Error location
Error number: Refer to the table below.
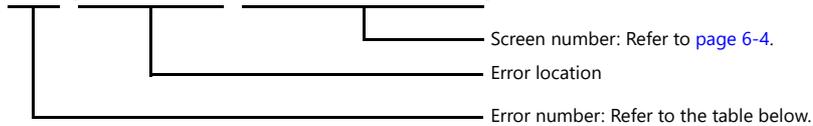
Error No.	Contents	Solution
3	The screen program version does not match the X1 series unit system program version.	Update the X1 app version. If the problem persists, check the editor version and the system program version of the X1 series unit, and contact your local distributor.
11	The PLC model set in the screen program does not match the I/F driver.	
13	The I/F driver version does not match the version of the X1 series unit system program.	Check the I/F driver version and the system program version of the X1 series unit, and contact your local distributor.
15	The interface language on MONITOUCH does not match the language set in the screen program.	Check the MONITOUCH model and the language set in the created program.
20	The maximum capacity of the logging server has been exceeded.	The capacity of DRAM specified under [Internal Storage Setting] in the [Logging Server] window has exceeded the maximum available capacity. Reduce the number set for [Number of Data to Save].
22	The logging/alarm block number specified for a trend or alarm part has not been set.	Select [System Setting] → [Logging Server] or [Alarm Server], and set the corresponding block number again.
27*	An error was found in the logging server or alarm server.	Contact your local distributor.
36*	ITEM error	
38*	Component error	
41*	Recognition flag error	
42*	Function ITEM error	
44*	Group ITEM end error	
46	An unavailable device memory address is set or the available device memory range is exceeded.	Check the device memory setting. For a system with an Ethernet connection, check the settings at [Hardware Setting] → [Target Settings] → [PLC Table].
47	IDs of the items having setting limitations in the screen library are duplicated on a screen.	Check the IDs and keep them unique.
49*	Group ITEM error	Contact your local distributor.
50*	Link ITEM error	
52	The overlap ID is incorrect and must be a value from "0" to "9".	Check the overlap ID and set correctly.
53	An overlap library number with no part registered is specified in the call-overlap setting.	Specify an overlap library number with a part registered.
56*	Graphic undefined command error	Contact your local distributor.
59*	Switch function error	
61*	Statistic graph % display No. exceeding	
64*	Data display element No. error	
65	The scale or graph is not set correctly in the trend part settings.	Correct the settings for [Scale Max. Value] and [Scale Min. Value] or [Graph Max. Value] and [Graph Min. Value] in the [Detail] window.
66*	Internal circle radius is "0".	Contact your local distributor.
67*	The number of points to display is equal to or smaller than zero.	
69	A pattern or frame larger than the screen size has been specified.	Re-set the pattern or frame.
74	An animation part is placed in the area other than the base screen (screen library, etc.).	Place the animation part on the base screen.
77*	Expanded graphic ITEM error	Contact your local distributor.
78*	Expanded function ITEM error	
80*	Macro: Undefined command error	Contact your local distributor.
81	Macro: The numbers of FOR and NEXT commands are not the same. FOR-NEXT commands are nested beyond 8 levels.	Correct the FOR-NEXT commands.
82	Macro: There are two different commands for the same label number.	Macro: Re-set the label.
83	Macro: There is no destination label for the jump.	Macro: Change or set the destination label.
84	Macro: Incorrect use of device memory	Change the macro command.

Error No.	Contents	Solution
85*	Macro: Undefined system call	Contact your local distributor.
90	Unregistered screen library is used.	Check the screen library number.
91	Bitmap data for a switch or lamp is not registered.	Check the following points: No bitmap name is designated. The part size is too large. There is no bitmap file in the [Parts] folder located under [MONITOUCH] → [User].
94*	Multi-language selection string number error	Contact your local distributor.
100	Universal serial: GD-80 compatible entry mode is set.	Deselect [GD-80 Compatible] from the entry mode part.
101	Universal serial: System device memory setting error	Check whether or not access to the outside of the specified device memory address is attempted, such as by macro indirect designation.
132	Ethernet: The connection target is not registered or is different.	Check the settings in [PLC Table] under [Hardware Setting] → [Target Settings].
133	Ethernet: IP address No. error	Check the IP address in the network table edit window.
137	The Ethernet port number of the I/F driver is not unique.	Set a unique port number for the I/F driver.
140	The I/F driver version of MONITOUCH does not match the version of the MONITOUCH system program.	Update the X1 app version. If the problem persists, check the editor version and the system program version of the X1 series unit, and contact your local distributor.
143	The device memory map number is not set in the [Logging Server] window.	Check the device memory map settings, and set correctly.
155	FROM data unregistered	The "default.dtm" file has not been transferred although the [Use Internal Flash ROM as Back-up Area] checkbox is selected in the [System Setting] → [Unit Setting] → [General Settings] tab window. Storage destination: C:\MONITOUCH\X1\0\work\extends As another possibility, no station number table is found although [Yes] is selected for [Use Port Number Table] under [Communication Setting] in the [Hardware Setting] window.
156	"Backup area" and "station number table" cannot be used at the same time.	[Use Internal Flash ROM as Back-up Area] is selected in the [System Setting] → [Unit Setting] → [General Settings] tab window although [Yes] is selected for [Use Port Number Table] under [Communication Setting] in the [Hardware Setting] window. It is not possible to use both functions at the same time. Deselect either function, and transfer the screen program again.
160	The SRAM area size exceeds the available range.	Check the settings in the [System Setting] → [Unit Setting] → [SRAM/Clock Setting] window.
161	The SRAM area is not formatted.	Format the SRAM area on the SRAM Setting screen in Local mode.
162	Data in the SRAM area does not match the MONITOUCH system program version.	Check the MONITOUCH system program version, and contact your local distributor.
163	The SRAM/clock setting does not match the SRAM area format.	Format the SRAM area on the SRAM Setting screen in Local mode.
192*	I/F driver setting error	Contact your local distributor.
196	Data stored in the storage device is different.	This error may be relevant to the operation for storing data (screen, 3D parts, etc.) in a storage device. Correctly store the data in the X1 storage folder (C:\MONITOUCH\X1\0\work\strage).
301	Recipe setting error	Check the recipe settings. The specified value is outside the permissible range, or there is a problem with the record name specification method.
302	The maximum capacity of the alarm server has been exceeded.	The capacity of DRAM specified under [Internal Storage Setting] in the [Alarm Server] window has exceeded the maximum available capacity. Reduce the number set for [Number of Monitoring Alarms] or [Number of Data to Save].
310	An alarm type is not specified for the alarm server.	Check the alarm type setting of monitored alarms for the relevant alarm block number at [System Setting] → [Alarm Server].
311	Error among multiple show/hide conditions	Check the show/hide settings.
400	Vector parts cannot be used because vector rendering is not allowed.	Vector rendering is not allowed when the following items are selected at [System Setting] → [Unit Setting] → [General Setting]. • Retain the previous picture in graphic mode (V8 compatible) • Drawing process (V8 compatible) • Draw background when switching screen (V8 compatible) • XOR drawing of switch/lamp • Graph drawing (V8 compatible)
401	A vector part for a switch or lamp is not registered.	Check the settings of the switch or lamp.
402	Settings that prioritize vector rendering cannot be used because vector rendering is not allowed.	Vector rendering of text is not allowed when the following items are selected at [System Setting] → [Unit Setting] → [General Setting]. • Retain the previous picture in graphic mode (V8 compatible) • Drawing process (V8 compatible) • Draw background when switching screen (V8 compatible) • XOR drawing of switch/lamp • Graph drawing (V8 compatible)

Error No.	Contents	Solution
403	The PLC No. and model do not match between the main and sub app settings. (sub-screen only)	Make the PLC No. and model settings match in [Hardware Setting].
404	[Multi-Display Settings] is set to "None", or [Multi-Display Settings] is set to "Yes" and the data specified for [Editing Screen: Main] is being transferred to the sub app. (sub-screen only)	Transfer to the main app at [Transfer] -> [Communication Setting] -> [Option] -> [Port No. 8001]. When transferring to the sub app, transfer the data specified for [Multi-Display Settings] -> [Editing Screen: Sub].
405	The PLC model specified for SERIAL does not support multi-display. (main-screen, sub-screen)	Check the model specified for SERIAL. Refer to the X1 Series Reference Manual for models that support the function.

* Error numbers with an asterisk (*) do not occur under ordinary circumstances.
If any of these errors are displayed, contact your local distributor (specified on the back cover).

Sub-item number

The sub-item number indicates the number of the screen where the error was detected.

For items that are not assigned screen numbers, the following numbers are indicated.

Item Name	Sub-item Number
Logging server Alarm server	Block No. 0 to 11
Message	Message group No. 0 to 127
Graphic Library	Graphic group No. × 256 + No. in the group
Device Memory Map	xyy (x = PLC1 to 8, yy = table No.)
I/F driver	1 to 8: PLC1 to 8 9: Simulator

6.1.3   Communication Error

When communication is not established between a X1 series unit and a controller, or any abnormality (noise etc.) is detected, the communication error screen is displayed on the X1 series unit.
The display of an error differs depending on the option selected for [Comm. Error Handling].

  *   The setting for [Comm. Error Handling] can be checked and changed in Local mode on the X1 series unit.
      For details, refer to "5.4.10 Communication Setting" page 5-36.

When [Comm. Error Handling: Stop] is selected:

Communication will be stopped entirely and the communication error screen will be displayed. The [Retry] switch is available for attempting reestablishment of communication.
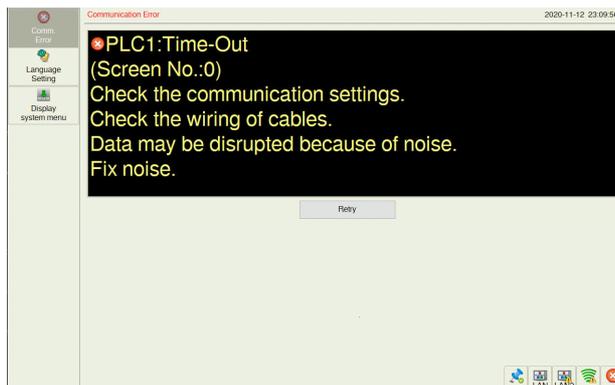
When [Comm. Error handling: Continue] is selected:

The communication error message will be displayed at the center of the screen. The same communication will continue until restoration, and screen operation is not allowed then. When communication has been returned to a normal state, the message disappears and screen operation is allowed.

When [Comm. Error handling: Disconnect] is selected:

The status bar appears without displaying any error messages, and indicates the icon for "link not established" for PLC 8WAY connection (page 5-14). When a time-out error is detected, communication is discontinued and the next communication is attempted.

  *   Recovery confirmation can be executed for the device for which communication has been discontinued.
      For details, refer to the X1 Series Connection Manual.

The ⚠ icon appears at the top right corner of the part that monitors the device memory of a device in which a time-out error was detected.

Error Messages

Error Messages	Contents	Solution
Time-Out	Although a request to send is given to a controller, no answer is returned within the specified time.	1. Check the settings in the [Hardware Setting] → [PLC Properties] window. Check that the cable is correctly connected.
		2. Data may be disrupted because of noise. Take measures against noise.
Parity	An error occurred in parity check.	1. Check that the cable is correctly connected.
		2. Data may be disrupted because of noise. Take measures against noise.
Framing	Although the stop bit must be "1", it was detected as "0".	1. Check the settings in the [Hardware Setting] → [PLC Properties] window. Check the cables and wiring.
		2. Data may be disrupted because of noise. Take measures against noise.
Overrun	After receiving one character, the next character was received before internal processing was completed.	1. Check the settings in the [Hardware Setting] → [PLC Properties] window.
		2. Data may be disrupted because of noise. Take measures against noise.
Check code error	The check code in the controller response was not correct.	1. Check the settings in the [Hardware Setting] → [PLC Properties] window.
		2. Data may be disrupted because of noise. Take measures against noise.
Error code received	An error code was sent by a controller. (NAK)	Examine the controller error code and solve the problem.
Breakage detected	The controller's SD remains at the low level.	Examine the connection between the controller's SD and the X1's RD.
Invalid memory (Mitsubishi CPU, or other equipment)	An address outside the permissible range of the connected PLC was specified.	Check the type and range of the specified device memory.
Format	The code of the received data was different from the specified code.	1. Confirm link unit settings. (After making settings, turn off the power to each controller.) On the V-SFT version 6 editor, select [System Setting] → [Hardware Setting], and check the settings.
Compare (Hitachi HIDIC-S10)	Transmitted data and received data were inconsistent.	
NAK	The X1 series unit judged that communication is impossible.	
Transaction Error (Allen-Bradley PLC)	Transmitted transaction data and received transaction data were inconsistent.	2. If errors only occur from time to time, data may be disrupted because of noise. Take measures against noise.
Count error (Mitsubishi CPU/Sharp CPU)	The expected data amount was different from the count value.	
Command error (Mitsubishi CPU)	The response code was different from the expected code.	
Invalid Cassette (Mitsubishi ACPU)	There is no memory cassette that corresponds to the cassettes currently supported.	Contact your local distributor.
CPU Type Error (Mitsubishi CPU)	Unsupported CPU type (incorrect password)	Check whether or not the X1 series unit supports this CPU.
Unsupported CPU (Siemens S5)	Unsupported CPU type	
Invalid DB (Siemens S5)	The corresponding DB cannot be found in the CPU.	Check if the corresponding DB exists using the ladder tool. If the DB does not exist, create it using the ladder tool.

* If the above error messages are displayed on the X1 series unit without establishing communication between X1 and PLC, test the solution "1". If the error occurs suddenly during communication, test the solution "2".

Ethernet-specific errors

Error Messages	Description	Solution
Send Error	The UDP socket port cannot be allocated.	Check that the setting on the target station is consistent with the network table setting.
Failed to create a TCP socket.	The TCP socket cannot be created.	Turn the power off and back on again, or check the communication settings, for example, duplication in port numbers.
The number of TCP connections exceeded the limit.	The maximum number of connections (256) has been established, and no more connections are allowed.	Check the communication lines.
Cannot establish TCP connection.	Connection cannot be established.	Check the communication lines, or turn the power off and back on again.
TCP Communication Error	TCP communication has failed.	Check the communication lines.
The connected device has shut down the TCP connection.	The TCP connection is disconnected by the connected device.	Check the connected device and communication lines.
Link Down	The Ethernet cable is not connected to the X1 series unit.	Connect the Ethernet cable to the X1 series unit. Check the link check LED on the hub. If not lit, check the cable wiring and connection status as well as the port settings in the PLC table.
MAC address not registered.	The MAC address is not registered.	Repair is necessary.
Undefined Error	An unknown communication error was detected.	Turn the power off and back on again. If the problem persists, a fault is suspected. Contact your local distributor.

* The current status of Ethernet communication is stored in system device memory $s518 (LAN), $s1657 (LAN2), and $s1658 (WLAN).
   0:     Normal
   801: Link not established

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6.2   Troubleshooting

6.2.1   In the Event of an Error

Perform the steps below:

1. If the current error matches a symptom in the following table, correct it by following the instructions provided.
2. If the error does not match the symptoms in the table, contact your local distributor (specified on the back cover).
   Please provide the distributor with the detailed information, such as a MONITOUCH model, serial number, symptom of the error and error message displayed on MONITOUCH.

6.2.2   Probable Symptoms

Symptoms	Causes	Solutions

MONITOUCH is connected to controllers; however, communication fails. "Communication Error: Time-Out" appears on the screen.	1) Cables are not connected correctly or any cable is disconnected.
	
	2) Parameter settings in the controller are not correct or disagree with the X1-series settings.
	
	3) If the error occurs suddenly during normal communication, data may be disrupted because of noise.
	
	4) MONITOUCH is faulty.
		1) Check the cable connection.
		
		2) Recheck the parameter settings in the controller.
		
		3) Check if appropriate measures are taken against noise.
		
		  Example:
		  • Check if communication cables are bundled together with power cables.
		  • Try to attach a ferrite core to the communication cable.
		  • Try to attach a noise filter to the power supply, etc.
		
		4) Return MONITOUCH to your local distributor.

"Communication Error: Error Code received" appears on the screen.	The error code denotes a controller error (NAK). 1) When the error code appears only on a certain screen, a device memory address that does not exist on the controller may be set on the X1-series screen. 2) When the error code appears at power-on, the device memory address that does not exist in the controller may be specified for an area commonly used by all screens, such as a control area ([System Setting] → [Hardware Setting] → [Control Area]), logging server, alarm server and initial macro specified in V-SFT version 6.	 1) Check if any address outside the permissible range of the controller device memory is specified on the screen. 2) Check if any address outside the permissible range of the controller device memory is specified for an area commonly used by all screens, such as a control area ([System Setting] → [Hardware Setting] → [Control Area]), logging server, alarm server and initial macro specified in V-SFT version 6.

Communications have been successful. However, "Communication Error: Parity" or "Communication Error: Framing" suddenly occurs.	Noise may cause the error.	Check if appropriate measures are taken against noise.
		
		  Example:
		  • Check if communication cables are bundled together with power cables.
		  • Try to attach a ferrite core to the communication cable.
		  • Try to attach a noise filter to the power supply, etc.

"Communication Error: Simulator: Time-Out" appears on the screen.	Simulator communications between X1 and PC is not successful.	1) For communication with a PLC
		   Select [Not use] on the Simulator Setting screen in Local mode (page 5-41).
		
		2) For communication with simulator
		   Select the [Use (Simulator)] checkbox on the Simulator Setting screen in Local mode (page 5-41).

"Insert Storage in X1" is displayed on the screen.	No USB flash drive is connected to the X1 series unit although a setting is made to automatically upload a screen program from a USB flash drive when the X1 series unit power is turned on.	1. When enabling automatic upload
		   Check that the USB flash drive is correctly connected.
		   Check that data files to be uploaded automatically are stored in the USB flash drive.
		   For details on automatic upload, refer to the X1 Series Reference Manual 2.
		
		2. When disabling automatic upload
		   Turn the X1 series unit power off and set DIP switch 1 (on the back of the unit) to the OFF position.

Symptoms	Causes	Solutions
The screen becomes dark or black.	1. Touching the screen restores it to the previous illuminated state. ↓ The backlight is operating automatically as specified. 2. Touching the screen does not restore it. But the power lamp is lit. ↓ The X1 operating system may be shut down. Reboot the unit. ↓ If the screen is not restored by rebooting, the backlight may have reached the end of its service life or the X1 series unit may have failed.	1. Change the time to turn off the backlight. The backlight can be controlled using the V-SFT version 6 or on the X1 series unit (refer to page 5-43). 2. Return the unit to your local distributor.
Switches do not work.	1. Switches do not work in RUN mode. A beep sounds. ↓ The switch interlock is enabled. Switch settings are incorrect. 2. Switch activation position is wrong. On the touch switch test screen, a position different from the pressed position responds. Touch switch test screen display methods - Local mode: refer to page 5-55 - DIP switch: refer to page 2-17 - System Configurator: refer to page 5-95 ↓ The switch activation position may be misaligned. 3. Switches do not work even in Local mode. No part of the touch switch test screen in Local mode (refer to page 5-55) is activated when pressed. ↓ The switch itself may be faulty.	1. Check the settings of switch functions, etc., on V-SFT version 6. 2. Execute [Touch operations check] → [Calibration] in System Configurator. Refer to page 5-96. 3. Return the unit to your local distributor.
The screen program cannot be transferred.	There may be problematic Ethernet settings.	Check that the IP address set on V-SFT version 6 is the same as the one set on the X1 series unit. Check that the computer and the X1 series unit are on the same network hierarchy.s Also check if any error due to Ethernet connection occurs on the X1 series unit.
The system menu cannot be displayed in RUN mode.	Any of the following parts are placed in the corners of the screen. Switches, data display parts with switches, slider switches, scroll bars, and table data display parts The display area of a scrolling message part is in the corner of the screen.	Be sure to press a corner where none of the items given on the left are placed. If items are placed in all four corners of the screen, switch the screen to one that has open corners and perform the procedure to display the system menu.
The RUN mode cannot be switched to Local mode even by pressing the [Local] switch on the system menu.	The changeover time is specified in the screen program.	Hold down the [Local] switch on the system menu for the specified changeover time (max. 30 seconds).
The status bar cannot be displayed in RUN mode.	[Status Bar Prohibited] is selected.	Deselect [Status Bar Prohibited] in the [System Setting] → [Unit Setting] → [System/Mode Switch] tab window in V-SFT version 6.

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7 Inspection and Maintenance

7.1   Inspection and Maintenance

⚠️ Always turn OFF the power before conducting inspection or maintenance. Failure to do so could cause an electric shock or damage to the unit.

7.1.1   Daily Inspection

- Check that the screws on the X1 series unit are tightened firmly.
- Check that the connectors and terminal screws used for connection with other devices are tightened firmly.
- If the display surface or frame is dirty, wipe it with a soft cloth soaked in commercially available alcohol.
- Conduct periodical inspection once or twice a year. The number of inspections may be increased as necessary if facilities are relocated or modified, or the environment is hot, humid, or dusty.

7.1.2   Periodical Inspection

Inspect the following points periodically.

- Are the ambient temperature and humidity appropriate?
  0 to +45 °C, 85 %RH or less
- Are the environmental conditions appropriate?
  No excessive dust and no conductive dust
- Is there corrosive gas in the atmosphere?
- Is the source voltage in the allowable range?
- Are the X1 series mounting screws tightened firmly?
- Are the connectors and terminal screws used for connection with other devices tightened firmly?
- Has the coin-type lithium battery passed its replacement date?
  Within about 3 years from the date of manufacture

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7.2 Warranty Policy

7.2.1 Inquiries about Failure

Please direct inquiries about failure or repair to your local distributor.
Please provide information including the MONITOUCH model, serial number, symptoms of the failure, error messages (if shown), etc.

An inquiry form is provided on the final page of this chapter. This form may be used for inquiries.

7.2.2 Warranty Period

The product is under warranty for one year after the date of purchase or delivery to the specified place.
On the assumption that the maximum stock period of the product after manufacture is 6 months, the warranty period is limited to 18 months (checked by the serial number) after manufacture. When a warranty period is specified in the contract, however, the period in the contract takes precedence.

7.2.3 Free-of-charge Repair

If the product fails before the expiry of the warranty, it will be repaired free of charge.
However, repair of any failure resulting from the causes below will be chargeable even within the warranty period.

- Breakage of or damage to the appearance (case), touch switches, LCD, or other components due to dropping, impact, or mishandling
- End of service life of the LCD or backlight
- Fusion of a printed circuit board pattern associated with connection to external devices, or fusion of a pattern in the terminal block or connector section of a printed circuit board caused by short-circuiting of an external load circuit.
- Overvoltage or different voltage applied due to wiring mistakes (power supply terminal, external communication terminal, or other terminal blocks)
- Failure caused by a lightning surge
- Failure due to the entry of conductive substances, water, solvent, particles, etc. under inappropriate environmental conditions
- Failure due to inappropriate environmental conditions (e.g. corrosive gas or high humidity)
- Failure due to vibration or impact exceeding the specified level
- Disassembly and modification by the customer or failure obviously resulting from improper handling by the customer

7.2.4 Chargeable Repair

Any failure that occurs after the expiry of the warranty or that does not satisfy the requirements for free-of-charge repair will be repaired on a chargeable basis.

⚠️ Operating System (OS) and Operation Guarantee
- The OS used on this product is the Windows 10 IoT Enterprise 2019 LTSC by Microsoft Corporation in the United States. Hakko Electronics shall not be responsible for dealing with trouble or liable for damages stemming from Microsoft products while using this product. To deal with trouble or check specifications, check the manual of the Microsoft product or contact Microsoft.
- Custom user apps for use on Windows can be used on this product. Hakko Electronics does not guarantee the operation of apps installed by the customer. Make sure to thoroughly check the operation before actual use.

Inquiry Form

Your name				
Company name				
Contact	TEL		FAX	
	Email			
Model code *1			Ser. No. *1	
MONITOUCH version *2	Program version:			
Driver information *2	Maker, model name:		Version:	
Purchased from: (Distributor)				
Sales representative			Date of purchase	

Symptoms
(Please describe the symptoms of the failure and also include any displayed error messages.)

*1   See the label on the back of the unit for the model code and serial number (nine digits plus one letter of the alphabet).
*2   Enter the version if it can be verified.
  The version is displayed by selecting [System Information] in the Local mode of the X1 series unit.
  For information on the Local mode, refer to "Local Mode" page 5-16.

Ser No.: xx xx xxxxx x

Hardware version
Serial number
Month of manufacture
Year of manufacture
(Last two digits of the year)