

InfoSOSA™ Series

IS731 Series Startup Guide

DMC Co., Ltd https://www.dush.co.jp/english/

Introduction

Thank you for purchasing DMC products.

This manual describes the features of the InfoSOSA IS731 Series, provides a tutorial, as well as explains functions unique to the InfoSOSA IS731 Series.

The InfoSOSA IS731 Series is referred to as both InfoSOSA and IS731 Series.

Target audience

- ✓ For those considering the IS731 Series.
- ✓ For those new to the IS731 Series.
- ✓ For those checking features of the IS731 Series.

Target Version

This manual describes the following versions of InfoSOSA.

Some operations may differ depending on the version.

Please refer to "InfoSOSA ReleaseNote" for details.

InfoSOSA Builder	2.7.1
IS7 Runtime	2.7.1

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Table of Contents

Intro	oducti	on		i
Tabl	e of C	onten	nts	ii
1. A			OSA	
	1.1 1.2		OSA Summaryfits of Installing InfoSOSA	
	1.3		ence Documents	
	1.4		t InfoSOSA Builder	
	1.5		I InfoSOSA Builder	
		1.5.1		
		1.5.2	Start Installation	
		1.5.3	Install .NET Framework	9
		1.5.4	Install InfoSOSA Builder	10
			Install Microsoft Visual C++ 2015 Runtime	
	1.6	PC Co	onnection	
		1.6.1	USB Cable Connection	
			Serial Cable Connection	
	1.7		al	
			Microcontroller specifications and implementation	
			Create InfoSOSA project	
		1.7.3		
		1.7.4	InfoSOSA Communication Settings	
		1.7.5		
		1.7.6	Check operations with InfoSOSA Simulator	39
		1.7.7	Download to InfoSOSA	40
		1.7.8	Connect the microcontroller and InfoSOSA	42
		1.7.9	Operation Check	43
2. IS			Function Details	
	2.1		Name and Function	
		2.1.1	IS731-3Q Series	
			IS731-4WQ Series	
		_	IS731-5V Series	_
	2.2	•	ation Mode	
		2.2.1	Normal mode	
	2.3		OSD modeload Tool	
	2.3		Download Tool	
		∠.∪. ו	DOWINGAG 1001	

	3.1	Inquiri	es	88
3. Ot	hers.			87
		2.6.2	Unable to download (Cause2: Damaged data)	83
			Unable to download (Cause1: Driver)	
	2.6	Troubl	leshooting	70
		2.5.5	System Information	69
		2.5.4	Setting	65
		2.5.3	USB Mode	63
		2.5.2	Project Download	62
		2.5.1	Function Table	62
	2.5	OSD r	mode details	62
		2.4.3	Extraction process	60
		2.4.2	Backup process	59
		2.4.1	Project backup	59
	2.4	Projec	ot backup	59
		2.3.3	Download	57
		2.3.2	Create Download Data	55

1. About InfoSOSA

Chapter Contents

1.1	InfoSOSA Summary	2
1.2	Benefits of Installing InfoSOSA	3
1.3	Reference Documents	1
1.4	About InfoSOSA Builder6	6
1.5	Install InfoSOSA Builder	7
1.6	PC Connection	3
1.7	Tutorial)

1.1 InfoSOSA Summary



InfoSOSA is an operator interface for the microcontroller.

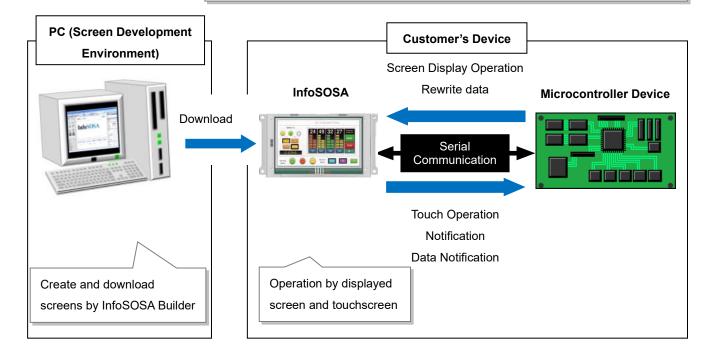
InfoSOSA and the microcontroller can be connected by using a single serial cable with no complicated wiring involved.

Also there is no complex screen processing to be done on the microcontroller since all processing will be done by InfoSOSA when displaying the screen. In addition, all screens displayed will be stored in the memory of InfoSOSA, so you will not have to prepare another memory for storing the screen on the microcontroller.

By sending simple commands to InfoSOSA from the microcontroller, you will be able to operate the screens stored in the InfoSOSA and read/write memories.

These operations can also be performed from the touchscreen of InfoSOSA.

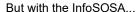
Screens stored in InfoSOSA can be created and downloaded by using the InfoSOSA Builder.



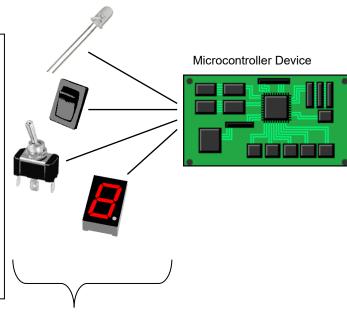
1.2 Benefits of Installing InfoSOSA

Generally microcontroller device and its operation display units have the following problems such as:

- Poor expressiveness of the display
- Microcontroller does not provide specifications to satisfy operations of high-performance display
- Takes considerable effort to draw programs to display device and is not easy to fix
- Since space of operation display panel is limited, only limit number of parts can be placed
- · Wiring tends to become complicated
- Responding flexibly, such as adding of parts, is difficult



- High brightness and high-definition LCD and touchscreen realizes rich expressiveness and reliable operability even on small units
- All drawing on screen is processed by display. Microcontroller only sends simple commands keeping stress to minimum.
- All screens are stored in memory of display device. No need for memory to save screen on microcontroller.
- Abundant parts and screens allow design and layout to be done freely.
- Choose from RS-232C, RS-422, and RS-485 for communication with the microcontroller.
 Complicated wiring is not required.
- Screen-making can be done simply and easily with dedicated development tool.
- Created screens can be tested beforehand by simulator. Debugging is possible without interfering actual operation.
- Screens stored on the display can be easily changed. Rewriting of screens takes only a few seconds to minutes, corresponding to speedy specification change.



InfoSOSA Microcontroller Device

1.3 Reference Documents

The IS731 Series includes the following documents. Refer to the manual that meets your purpose.

IS731 Series Startup Guide (this manual)

Refers to this document.

This is a manual for IS731 Series users.

Provides explanations on the features of the InfoSOSA IS731 Series, functions unique to the InfoSOSA IS731 Series, as well as a tutorial.

Target audience

- ✓ For those considering the IS731 Series.
- ✓ For those new to the IS731 Series.
- ✓ For those checking features of the IS731 Series.

InfoSOSA Reference Manual

This manual describes InfoSOSA functions and specifications.

Target audience

- ✓ For those checking details of InfoSOSA functions and specifications.
- ✓ For those checking communication specifications between InfoSOSA and microcontroller devices.

InfoSOSA Builder Operation Manual

This describess how to operate the InfoSOSA Builder.

Target audience

- ✓ For those setting up and operating InfoSOSA Builder.
- ✓ For those interested in convenient InfoSOSA Builder uses.

Host Communication Tester Manual

This manual describes host communication operations.

* Host Communication Tester is software for communicating with the InfoSOSA with a PC instead of a microcontroller device.

Target audience

- ✓ For those testing communication with InfoSOSA without a microcontroller device.
- ✓ For those debugging the microcontroller device and checking communication commands.
- ✓ For those setting up and operating the host communication tester.

InfoSOSA ReleaseNote

Differences depending on the version of InfoSOSA are described.

Target audience

✓ For InfoSOSA users who are considering upgrading to a newer version.

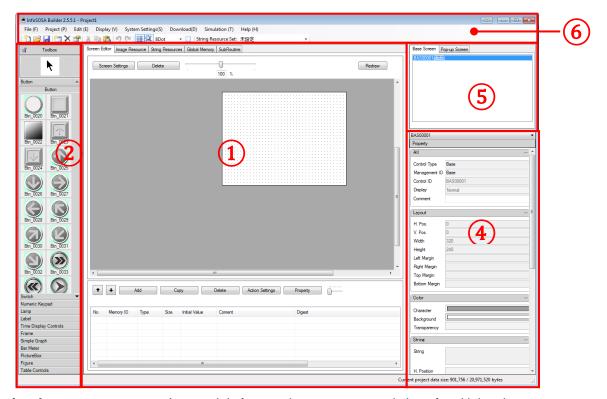
5

1.4 About InfoSOSA Builder

The InfoSOSA Builder is a software for creating screens to be displayed on the InfoSOSA unit.

Arrangements of parts and operation setting can be done with easy mouse operations such as "drag-and-drop" and selecting from pull-down menus. There are no complicated operations and you do not need to write program source for the setting.

InfoSOSA Builder is composed of the following screens.



① **Drawing Area** Area mainly for creating screens, consisting of multiple tabs.

We will be using the "Screen Editor" tab for this demo.

Please refer to the "Reference Manual" or the "Operation Manual" for

details of other tabs and how to operate them.

(2) **Toolbox Area** Parts that can be used for creating a screen are categorized.

You can arrange the parts in the drawing area by a simple "drag-and-drop".

(4) **Property Area** Property of the parts selected in the "Screen Editor" is displayed.

Variety of settings such as layout, size, and color of the parts can be set.

(5) Screen List Area The names of the screens being created are displayed.

Click on the name of the screen you want to work on.

(6) Menu Toolbar Area Call of setting screen and other operations such as saving and creating files

can be done here.

1.5 Install InfoSOSA Builder

This chapter describes the installation of the InfoSOSA Builder.

1.5.1 System Requirements

InfoSOSA Builder can run on a PC that satisfies the following conditions.

Make sure the PC you will be installing with the Builder satisfies the system requirements below.

Items	Contents
os	Microsoft® Windows® 10 (64 Bit)
	or
	Microsoft® Windows® 11 (64 Bit) *
Framework/	Microsoft® .NET Framework 3.5
Runtime	Microsoft® .NET Framework 4.7
	Microsoft® Visual C++ 2015 Runtime
Processor	1GHz or faster
RAM	4GB or more
	(Recommended: 8GB or more)
HDD	Empty space 850MB or more (Recommend:1GB or more)
Display	1024×768 dots or more, True Color (32bit) prefer
USB Port	For downloading project (screen data)
Serial port*	For downloading project (screen data)

- * Communication error may occur according to the output signal level of the serial port (COM) of the PC you will be using. Please use the USB-serial conversion cable if this is the case.
- * There is no warranty associated with operating in a virtual environment.
- * Windows 11 compatibility applies to version 2.7.1 and later.

1.5.2 Start Installation



Caution

Please make sure that there is enough free space (more than 850MB) in your PC's hard disk before the installation.



Caution

Please install with Administrator privileges.



Caution

Installation occurs for all users.



Caution

In case of builder version upgrade, please uninstall the builder on PC in advance.

- 1. Please execute "software\builder\InfoSOSABuilder*.*.*.*.exe " in the download data.
- **2.** A dialog for specifying the extraction destination is displayed. Click the [...] button, specify the extraction destination (desktop, etc.), and click the [Extract] button.



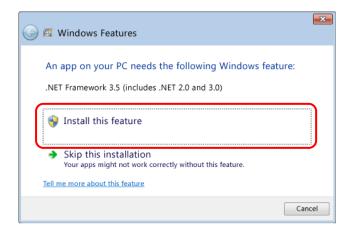
- 3. The "InfoSOSA Builder *. *. *. *" Folder is created in the extraction destination specified in 2. above.
- 4. Execute "Setup.exe" in the generated folder "InfoSOSABuilder *. *. *. *".

1.5.3 Install .NET Framework

To run InfoSOSA Builder, Microsoft® .NET Framework 3.5 or.NET Framework 4 is required. If the PC you are using does not have it installed, before installing InfoSOSA Builder install .NET Framework.

When the InfoSOSA Builder installation screen is displayed, run Install InfoSOSA Builder.

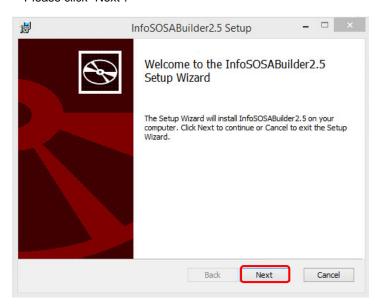
.NET Framework 4.7 comes standard. If .NET Framework 3.5 is not installed, when the installer for the builder starts up a dialog box as shown below will appear. Select [Install this feature] to install .NET Framework 3.5.



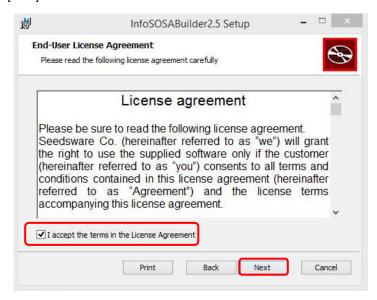
* As the .NET Framework installer uses Windows Update, an Internet connection is required.

1.5.4 Install InfoSOSA Builder

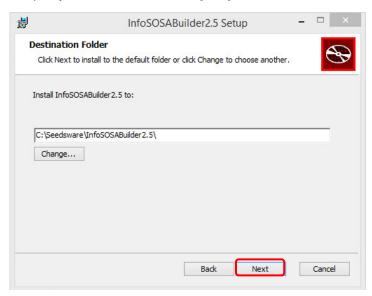
1. When you start installing, you will see a dialog as below. Please click "Next".



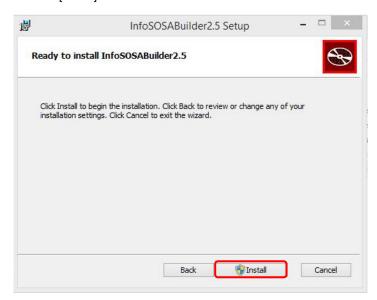
2. Check the license agreement, select the [I accept the terms in the License Agreement] check box and click [Next].



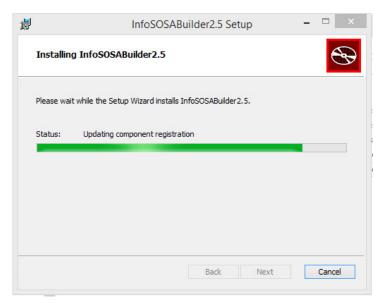
3. Specify the destination and click [Next].



4. Click [Install].



5. Installation will start.



6. Installation is complete.



After installation is complete, a shortcut



will appear on your desktop.

1.5.5 Install Microsoft Visual C++ 2015 Runtime

If you get an error that "mfc140u.dll" is not found, follow the steps below to install "Microsoft Visual C++ 2015 Redistributable Package".

1. Access Microsoft's download page.

https://learn.microsoft.com/en-us/cpp/windows/latest-supported-vc-redist?view=msvc-170

2. Download both "X86" and "X64" of Microsoft Visual C++ 2015 Runtime.

X86	https://aka.ms/vs/17/release/vc_redist.x86.exe
X64	https://aka.ms/vs/17/release/vc_redist.x64.exe

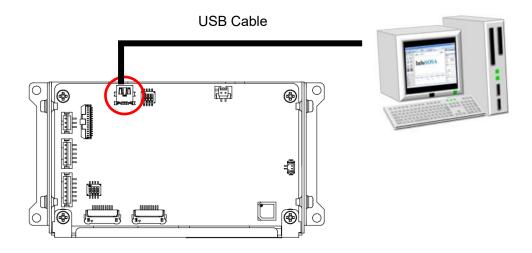
3. Execute the downloaded "VC_redist.x64.exe" and "VC_redist.x86.exe" respectively to install.

1.6 PC Connection

To download a project (screen data), connect the PC and InfoSOSA.

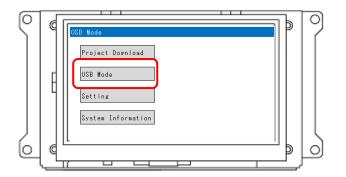
1.6.1 USB Cable Connection

Connect the USB cable to the PC's USB port and InfoSOSA USB device port.



Installation of USB device driver

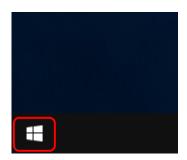
On first connection, you need to install the USB device driver. With the PC and InfoSOSA connected, turn on InfoSOSA. Then touch the "USB Mode" button.



Touch the "USB Mode" button.

Open Device Manager on your PC.

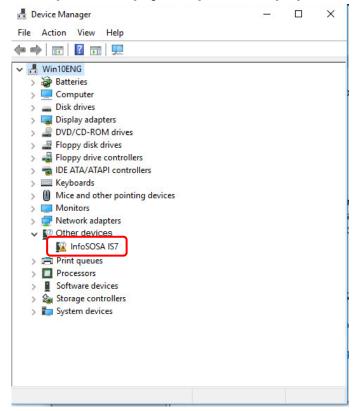
1. Right click on the start menu.



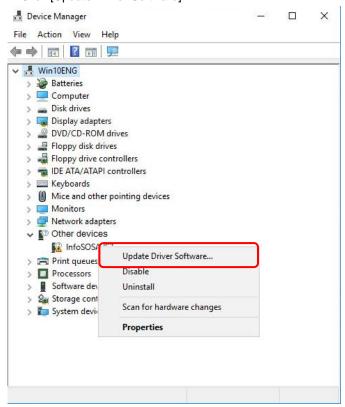
2. Click [Device Manager].



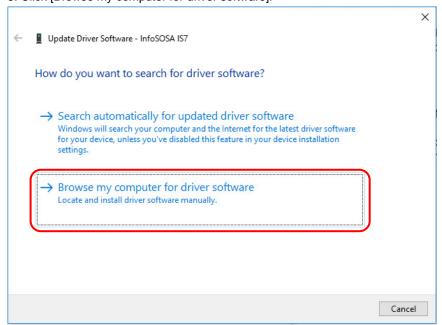
3. From [Other devices], right-click [InfoSOSA IS7] or [IS7 COMPOSITE COM].



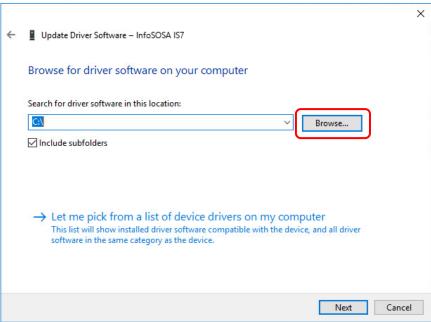
4. Click [Update Driver Software].



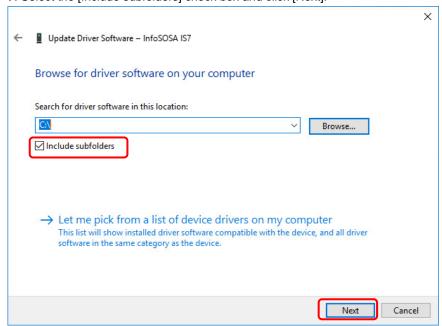
5. Click [Browse my computer for driver software].



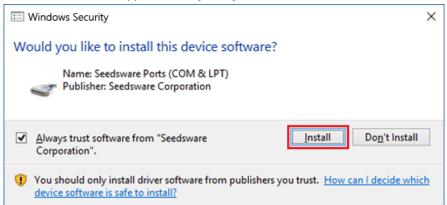
6. Click [Browse], and then specify the drive where the development kit disk is inserted, or specify the folder where the device driver is saved.



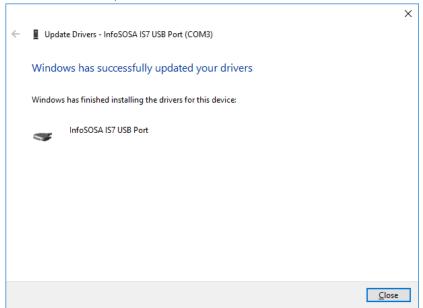
7. Select the [Include subfolders] check box and click [Next].



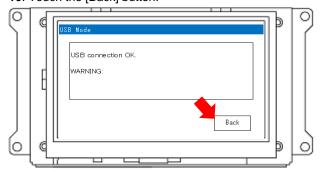
8. If the screen below appears, click [Install].



9. Installation is complete.



10. Touch the [Back] button.



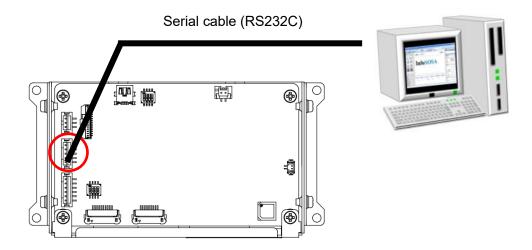
After installation has completed, return to the menu screen with [Back] button.

11. Turn off the power supply.

1.6.2 Serial Cable Connection

By using the serial cable to connect with the computer, you can download the project. Connect the PC's serial port and InfoSOSA serial interface (SIO1).

* You cannot download from the SIO2 serial interface.



For operations on the Builder application, please refer to the "InfoSOSA Builder Operation Manual".

*CAUTION

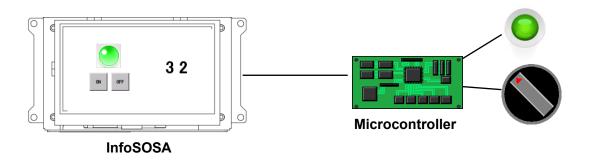
In Ver2.5, the project execution application is not updated when downloading (SIO / LAN). If you are using InfoSOSA Builder Ver2.5, the first download must be done by download (USB). (After Ver2.6, the project execution application is updated even with download (SIO).)

1.7 Tutorial

Summary

Steps on using the IS731 Series to create the following system are provided.

- Touch the ON/OFF button on the LCD screen (InfoSOSA) to turn a lamp on the screen on or off.
- Touch the ON/OFF button on the LCD screen (InfoSOSA) to turn the LED on the microcontroller on or off.
- Run operations on the microcontroller volume to change values on the LCD screen (InfoSOSA).



Development Flow

No.	Items	Contents
1	Microcontroller specifications and	Create program operations on the microcontroller.
	implementation	
2	Create InfoSOSA project	In the builder application create the file that stores
		the screens and communication settings.
3	Create the InfoSOSA screens	Draw the buttons and set up operations in the
		builder application.
4	InfoSOSA Communication Settings	Set up the communication settings with the
		microcontroller.
(5)	Save the InfoSOSA project	Save the settings.
6	Checking operations with InfoSOSA	Check operations on the PC.
	Simulator	
7	Download to InfoSOSA	Transfer project (screen data) to InfoSOSA.
8	Connect the microcontroller and	Connect the microcontroller and InfoSOSA.
	InfoSOSA	
9	Operation Check	Test if it operates as specified.

1.7.1 Microcontroller specifications and implementation

Create and implement microcontroller program specifications.

This tutorial uses the following specifications.

Memory

The following two memories are defined

Memory ID	Туре	Value range	Contents
GM_LED01	Boolean	0 or 1	LED status
GM_VOL01	Byte	0 to 100	Volume status

In Builder, users can create InfoSOSA memory. You can notify the microcontroller of the memory value to run a microcontroller process, or send commands from the microcontroller to change the memory value which in turn changes the InfoSOSA display.

LED Specifications

Operation Overview

When InfoSOSA receives communication commands such as those below, turn the microcontroller LED on or off.

Example notification command (turn ON)

{STX}00e10000028**PA04**,BAS00001.BTN00001.PRESS,**GM_LED01=1**{CR}0BC6{ETX}

Example notification command (turn OFF)

{STX}00e20000028PA04,BAS00001.BTN00002.PRESS,GM_LED01=0{CR}0BC7{ETX}

Communication command specifications

Data	Contents	
PA04	Indicates a notification command.	
GM_LED01=1	Indicates the value in memory ID "GM_LED01" is 1.	
GM_LED01=0	Indicates the value in memory ID "GM_LED01" is 0.	

^{*} For more information or of other locations, please refer to the separate "Reference Manual".

Switch specifications

Operation Overview

Monitors the value of the microcontroller volume every 200 ms and when the value changes, sends a communication command to InfoSOSA as follows.

Example property setting command

{STX}00C0000001FPA01,@GLBMEM.GM_VOL01.VALUE,50{CR}0A08{ETX}

Communication command specifications

Data	Contents
PA01	Indicates a property setting command.
@GLBMEM.GM_VOL01.VALUE	Indicates the setting target.
	(Property for value of Global Memory GM_VOL01)
50	Indicates the setup value.

^{*} For more information or of other locations, please refer to the separate "Reference Manual".

Communication specifications

InfoSOSA serial communication specifications are as follows.

Items	Value
Communication Speed	19200bps
Parity Bit	None
Flow Control	None

1.7.2 Create InfoSOSA project

Using InfoSOSA Builder, create a project.

Before proceeding, install InfoSOSA Builder.

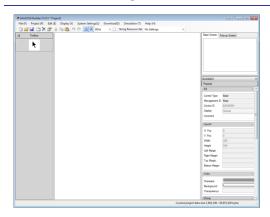
Please refer to 1.5 Install InfoSOSA Builder for installation.

NOTE

◆ About Projects

A project is the file that saves screens created with InfoSOSA Builder and saves communication settings with the host.

Start the InfoSOSA Builder

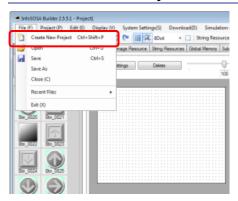


Start up the InfoSOSA Builder by clicking the icon on the desktop, or from the Windows Start menu click [Seedsware] - [InfoSOSA Builder*.*].

* "*.*" is the version number.

When you start the Builder, a screen as shown to the left will appear.

Create a New Project



Click "Create New Project" from the "File" menu in the upper left of the Builder.



A dialog box as shown to the left will appear.

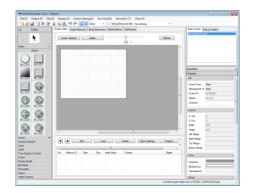
Select the product to be used.

After selecting, enter the project name, click [Create] and create a new project.

* Project will be created in the location selected in "Save As".

NOTE

You can set the project name and location.



A screen as shown to the left will appear when a new project is created.

1.7.3 Create an InfoSOSA screen

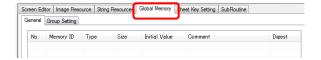
Set up parts and memory.

Set up Global Memory

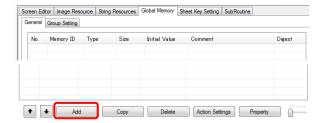
Create InfoSOSA memory.

Memory is something that saves a value in the InfoSOSA.

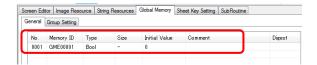
Create Memory



Select the [Global Memory] tab.



Click [Add].



The memory is created.

NOTE

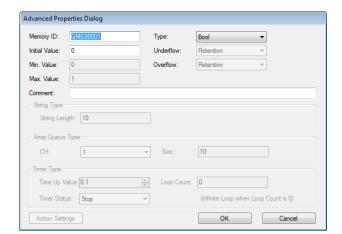
Memory Type

Global Memory, whose value is always accessible and saved while the power is on. Screen Memory, whose value is only accessible when specific screens are displayed. When displaying a different screen, its value is initialized.

Property Settings



Select memory, then click [Property].



Change the properties as per the table.

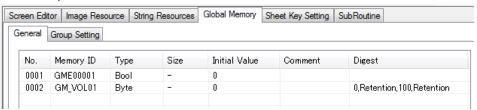
Property	Value	Property description
Memory ID	GM_LED01	ID that identifies memory.
Туре	Boolean	Memory Type
Initial value	0	Initial value at power on

Create second memory

Follow the same procedure to create another memory. Set the properties of the second memory as follows.

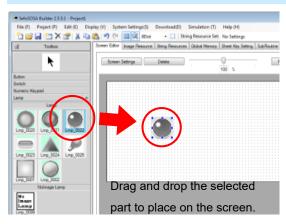
Property	Value	Property description
Memory ID	GM_VOL01	ID that identifies memory.
Туре	Byte	Memory Type
Initial value	0	Initial value at power on
Min. Value	0	Minimum value in the memory.
Max. Value	100	Maximum value in the memory.
Underflow	Retention	Operation when a value less than the
		minimum value is set in the memory.
Overflow	Retention	Operation when a value greater than
		the maximum value is set in the
		memory.

After setup, the list is as follows.



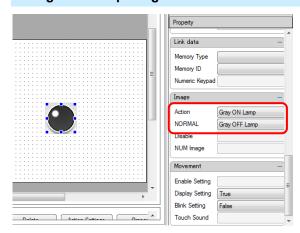
Set up Lamp

Arrangement of the Lamp



Select "Lamp" from the Toolbox at the left of the Builder and drag and drop "LMP_00022" on to the screen.

Change the Lamp image



While the placed lamp is selected and active, set the "Image" in the Property area at the right side of the Builder

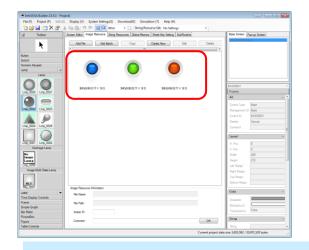
Set the "NORMAL" and "Action" and change the image of the lamp of the images can be changed.

"Action" will set the image of the lamp when it is ON and "NORMAL" will set the image of the lamp when it is OFF. In this tutorial, set up as follows.

• Action: Green ON

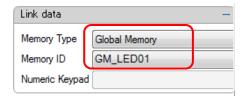
• NORMAL: Green OFF

The image of bit map parts can be changed as above.



By importing the image file to the Image Resources, you can create a lamp image that is included in the default images.

Lamp Link Setting



Create an association between the lamp and Global Memory. With the link setting, the Normal image is displayed when the associated Global Memory value is 0, and the Action image is displayed when the value is 1.

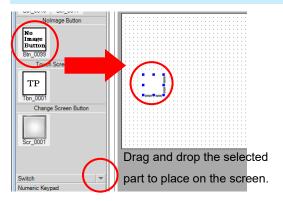
In this tutorial, set up as follows.

· Memory Type: Global Memory

· Memory ID: GM_LED01

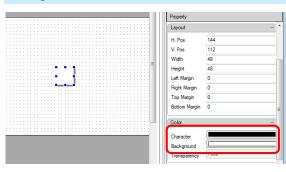
Set up Button

Arrangement of the Button



Select "Button" from the Toolbox at the left side of the Builder and drag and drop "Btn_0099" on to the screen. If you cannot see it, scroll down with ▼.

Change Color of Button



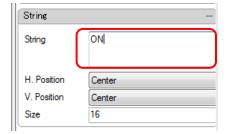
While the placed button is selected and active, set the "color" in the Property area at the right side of the Builder.

Click the "Background" under "Color" to display the color pallet as below and change the color of the button.



Nolmage parts color can be changed as above.

Change Text on the Button



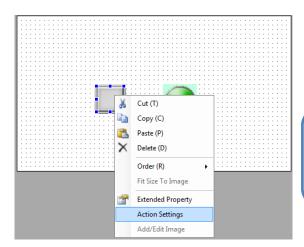
By changing the String property, you can display text on the button.

In this tutorial, set up as follows.

• String: ON

Action Settings 1

Set the action of the button so that the lamp on the screen turns on when the button is pressed.

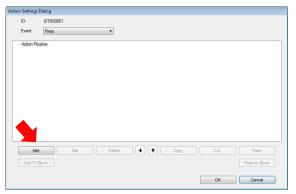


To set the action, right-click on the button placed on the screen and click "Action Settings".

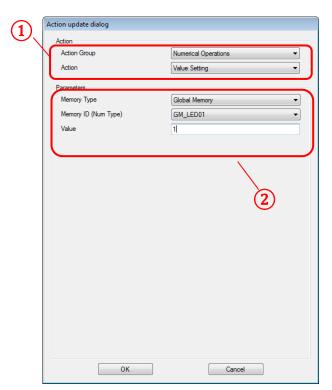
NOTE

◆ What is an "Action"?

[Action] refers to the operation of parts on the screen.



Select "Add" on the bottom left of the "Action Setting Dialog" and open "Add Action Dialog".



The following items can be set with "Add Action Dialog".

1 Action

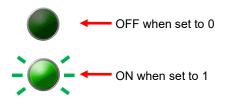
- Action Group
 - => Select the category of action you want to use.
- Action
 - => Select the action you want to use.

2 Parameters

=> Set on which screen, to which part you want to set the action to, and to what value.

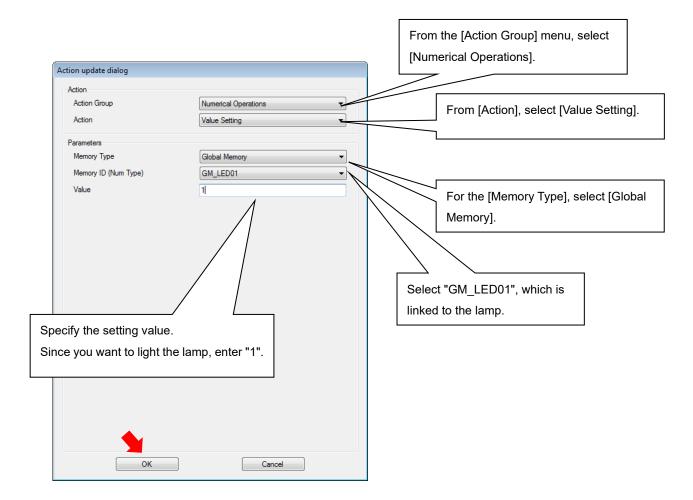
Items such as "Screen ID", "Parts ID" and "Setting Value" can be set.

However, items that can be set will vary according to the action that you choose.



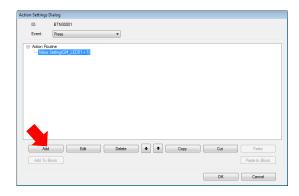
This time we will set the action "Turn on lamp." When 0 is set to the linked memory of the lamp, it turns OFF. When 1 is set to the linked memory, it turns ON.

The action setting to make the lamp light is as shown below:



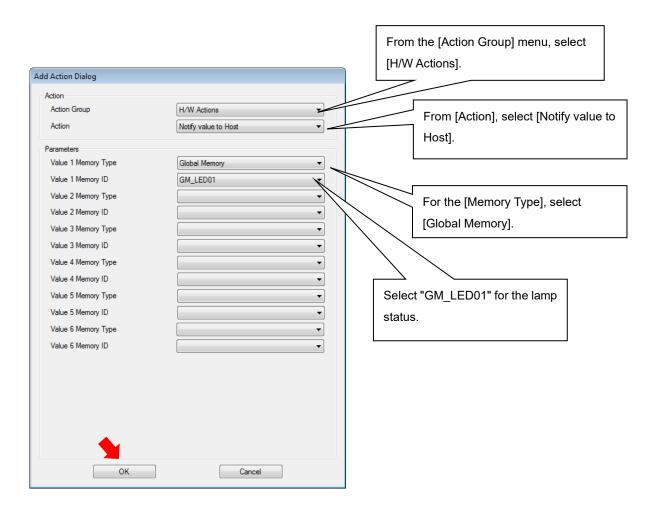
Action Settings 2

Set up a notification operation that sends the memory value to the microcontroller (host) when a button is pressed.



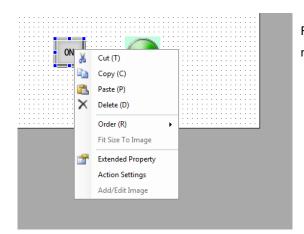
At the bottom left of the dialog box select [Add] and open [Add Action Dialog].

The action setting to notify the microcontroller (host) of the memory value is as shown below:



Create second button

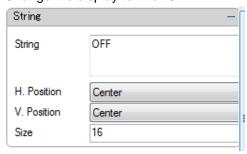
Create a button to turn off the lamp.



Right-click the ON button, select [Copy] from the shortcut menu, then right-click again and select [Paste].

The ON button is copied and you only have to set the changes.

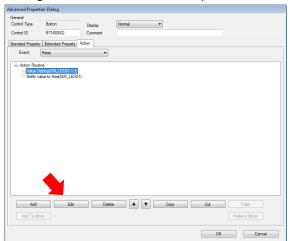
Change the display text to "OFF"



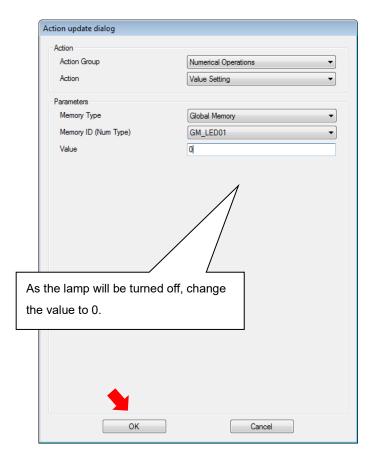
String Property OFF

String: OFF

Change the action to turn the lamp off

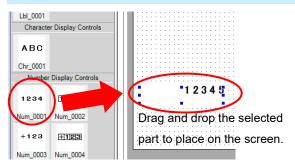


While the action to turn on the lamp is selected, at the bottom left of the dialog box select [Edit] and open [Action update dialog].



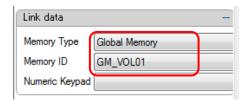
Set up Number Display Controls

Draw a Numeric Display



Select "Label" from the Toolbox at the left of the Builder and drag and drop "Num_0001" on to the screen.

Numeric Display Link Setting



Create an association between the Number Display Controls and Global Memory. When link is set, the associated Global Memory value is displayed.

In this tutorial, set up as follows.

- · Memory Type: Global Memory
- · Memory ID: GM_VOL01

Edit the display digits for the Numeric Display

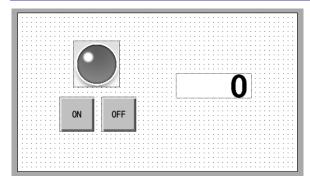


Set up the number of digits to display.

In this tutorial, set up as follows.

· Display Digit: 3

Adjust the position and size of each part

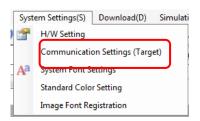


Use the mouse to adjust the position and size of parts.

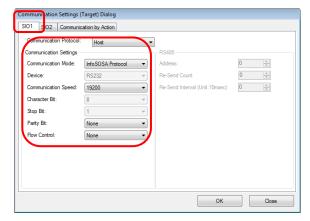
You can change the size of a part by dragging the edge of the part.

1.7.4 InfoSOSA Communication Settings

Sets up InfoSOSA and microcontroller communication settings. Set to match communication specifications on the microcontroller.



From the menu bar select [System Settings] - [Communication Settings (Target)].



In the [SIO1] tab, set the following.

Communication Protocol: Host

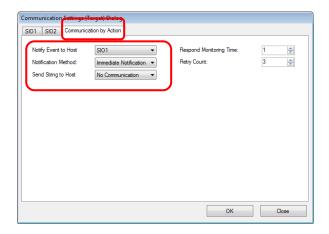
Communication Mode: InfoSOSA Protocol

Communication Speed: 19200bps

Parity Bit: None Flow Control: None

Communication on the SIO1 port runs using these

settings.



In the [Communication by Action] tab, set the following.

Notify Event to Host: SIO1

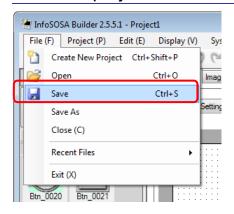
Notification Method: Immediate Notification

When the [Notify value to Host] action is executed, a transmission is sent on the SIO1 port.

1.7.5 Save the InfoSOSA project

Saving Project

Save the project



Saving Project

Click "File" in the upper left of the Builder and select "Save" to save the project. You can also save with the "save button" in the tool bar.

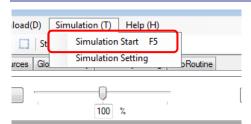


*When saving the project with a different name, click "Save As".

1.7.6 Check operations with InfoSOSA Simulator

With the simulator, check the operation of the project you have created.

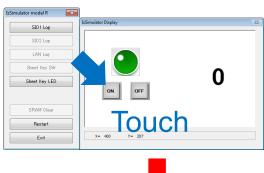
Start Up the Simulator

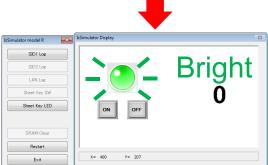


You can use the PC to check operations of the project you created.

To start up the simulator, click "Simulation" and choose "Simulation Start" from the menu.

Operation Check with Simulator





The screen created is displayed on the simulator.

Check if the action set actually works by clicking the button displayed on the simulator.

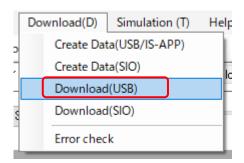
If the action is set correctly, the lamp will light up. If the lamp lights, simulation is complete.

Next, to check communication with the microcontroller, download the screens to the InfoSOSA unit.

1.7.7 Download to InfoSOSA

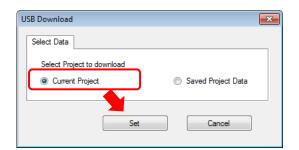
Download the project you created to InfoSOSA.

Download



Download (transfer) screens to the InfoSOSA unit.

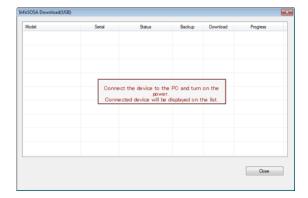
To transfer screens, from the [Download] menu, select [Download (USB)].



Select the [Current Project] check box, and click [Set].



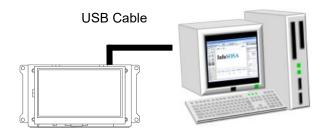
Create download data. Click [Save]. To change the save location of download data, click [Browse] and edit the destination folder.



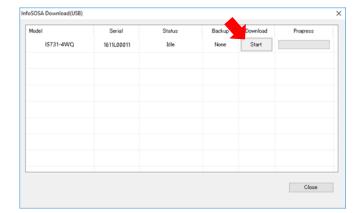
InfoSOSA connection wait screen.

Connect your PC and the InfoSOSA with a USB Cable.

Please refer to <u>1.6.1 USB Cable Connection</u> for connecting with the PC.



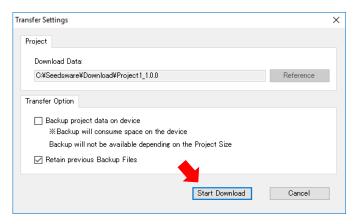
After connecting to the PC, turn ON the power of InfoSOSA.



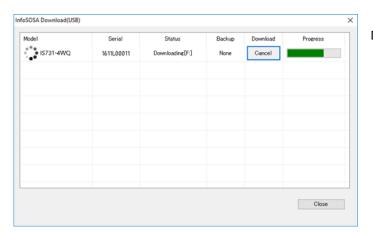
The connected InfoSOSA is displayed. Click the [Start Download] button.

If multiple InfoSOSA are connected to your PC, they will each be displayed in the list. Click the [Start Transfer] button for the InfoSOSA you want to download.

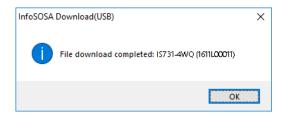
- * The number of devices that can be transferred at the same time varies depending on your PC environment. If a transfer error occurs, reduce the number of connections. The maximum is 10 devices.
- * If you use a USB hub, the device may not be recognized correctly, depending on the hub.



Click the [Start Download] button.



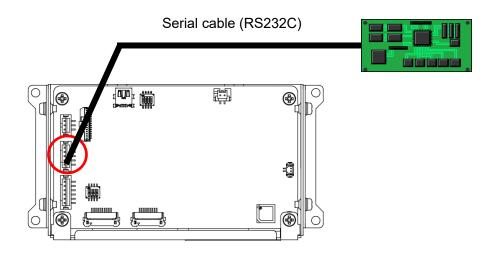
Download is executed.



Download is completed.

1.7.8 Connect the microcontroller and InfoSOSA

Connect to the microcontroller with a serial cable (RS232C). Connect the microcontroller serial port and InfoSOSA SIO1 port.

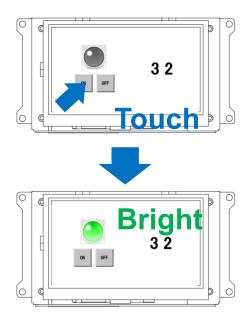


1.7.9 Operation Check

Connect InfoSOSA to the microcontroller and test if they operate as specified.

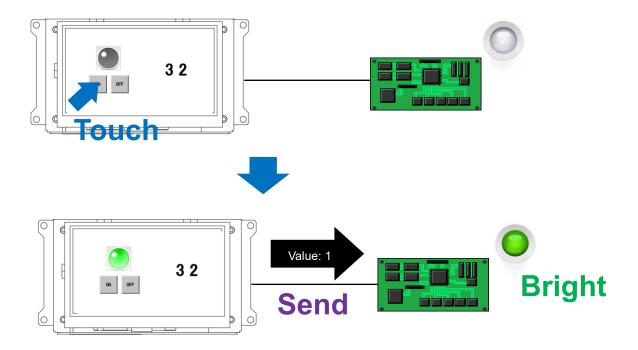
Touch a button on the screen to turn a lamp on the screen on or off

Touch the ON/OFF button on the LCD screen (InfoSOSA) to turn a lamp on the screen on or off. Without communication, InfoSOSA uses an action to change the value in its memory GM_LED01 (inside InfoSOSA). As there is a change in value of memory GM_LED01, the lamp associated with the link setting turns on.



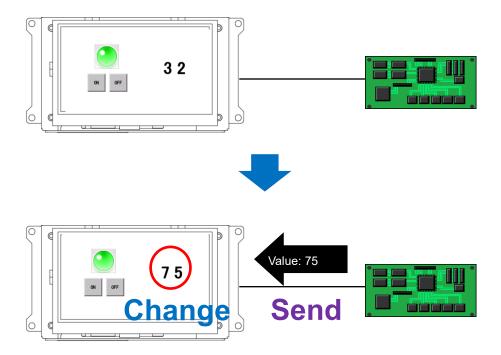
Touch the button on the screen to turn the LED on or off

Touch the ON/OFF button on the LCD screen (InfoSOSA) to turn the LED on the microcontroller on or off. When the button is pressed, InfoSOSA uses communication to send the value of memory GM_LED 01 to the microcontroller. The microcontroller analyzes the notification command from InfoSOSA, and turns the LED either on or off.



Run operations on the microcontroller volume to change values on the screen

Run operations on the microcontroller volume and values change on the LCD screen (InfoSOSA). The microcontroller uses communication to send a command to write a value to InfoSOSA memory GM_VOL01. As there is a change in value of memory GM_VOL01, the number display control associated with the link setting is also changed.



2. IS731 Series Function Details

Chapter Contents

2.1	Part Name and Function	.47
2.2	Operation Mode	.53
2.3	Download Tool	.55
2.4	Project backup	.59
2.5	OSD mode details	.62
2.6	Troubleshooting	.70

2.1 Part Name and Function

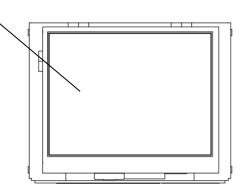
Descriptions of part names and functions on the IS731 Series

2.1.1 IS731-3Q Series

■ Front

Display portion, Touch screen

Displays the screen and runs touch screen inputs.



■ Back

USB device port

For connecting to a PC. For downloading screen data.

Prohibited use

These are the default factory settings.

Do not change these settings as it could result in equipment failure.

Prohibited use

Do not use. Do not connect.

Battery interface

Connects to the battery.

Power Connector

For connecting the power cable.

Serial interface (SIO2) For RS422/485

communication.
Use the SIO2 Interface Dip
Switch to toggle between
RS422 and RS485
communication.

SIO2 Interface Dip Switch

Changes the SIO2 interface.

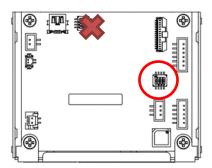
Serial interface (SIO1)

For RS232C communication.

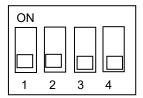
SIO2 Interface Dip Switch

When changing the SIO2 Interface Dip Switch, set up the change dip switch.

* There are multiple DIP switches. Be careful not to change other switches.



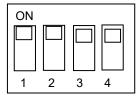
RS422



To set RS422, set dip switches 2 to 4 to OFF.

When dip switch 1 is ON, enables termination resistance;
when OFF, there is no termination resistance.

RS485



To set RS485, set dip switches 2 to 4 to ON.

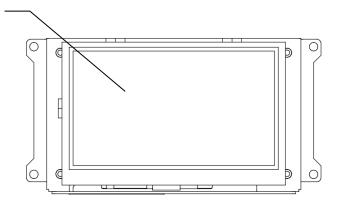
When dip switch 1 is ON, enables termination resistance; when OFF, there is no termination resistance.

2.1.2 IS731-4WQ Series

■ Front

Display portion, Touch screen

Displays the screen and runs touch screen inputs.



■ Back

Prohibited use

Do not use. Do not connect.

Serial interface (SIO1)

For RS232C communication.

Serial interface (SIO2)

For RS422/485

communication.

Use the SIO2 Interface Dip

Switch to toggle between

RS422 and RS485

communication.

SIO2 Interface Dip Switch

Changes the SIO2 interface.

USB device port

For connecting to a PC. For downloading screen data.

Prohibited use

These are the default factory settings. Do not change these settings as it could result in equipment failure.

Power Connector

For connecting the power cable.

Battery interface

Connects to the battery.

Sheet key interface (Switch)

Connects tail of the design sheet key's switch.

Sheet key interface

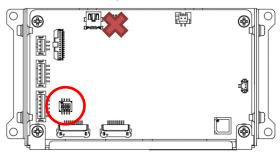
(LED)

Connects tail of the design sheet key's LED.

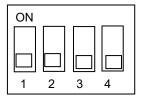
SIO2 Interface Dip Switch

When changing the SIO2 Interface Dip Switch, set up the change dip switch.

* There are multiple DIP switches. Be careful not to change other switches.



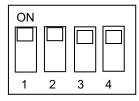
RS422



To set RS422, set dip switches 2 to 4 to OFF.

When dip switch 1 is ON, enables termination resistance; when OFF, there is no termination resistance.

RS485



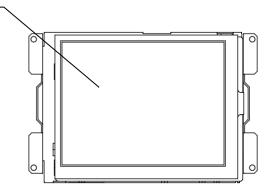
To set RS485, set dip switches 2 to 4 to ON. When dip switch 1 is ON, enables termination resistance; when OFF, there is no termination resistance.

2.1.3 IS731-5V Series

■ Front

Display portion, Touch screen

Displays the screen and runs touch screen inputs.



■ Back

Prohibited use

Do not use. Do not connect.

Serial interface (SIO1)

For RS232C communication.

Serial interface (SIO2)

For RS422/485

communication.

Use the SIO2 Interface Dip

Switch to toggle between

RS422 and RS485

communication.

SIO2 Interface Dip Switch

Changes the SIO2 interface.

USB device port

For connecting to a PC. For downloading screen data.

Prohibited use

These are the default factory settings. Do not change these settings as it could result in equipment failure.

Power Connector

For connecting the power cable.

Battery interface

Connects to the battery.

Sheet key interface (Switch)

Connects tail of the design sheet key's switch.

Sheet key interface

(LED)

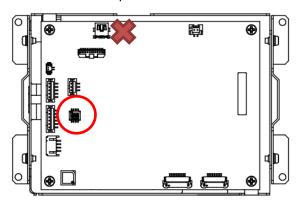
⊕

Connects tail of the design sheet key's LED.

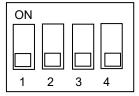
SIO2 Interface Dip Switch

When changing the SIO2 Interface Dip Switch, set up the change dip switch.

* There are multiple DIP switches. Be careful not to change other switches.



RS422

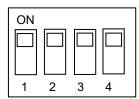


To set RS422, set dip switches 2 to 4 to OFF.

When dip switch 1 is ON, enables termination resistance;

when OFF, there is no termination resistance.

RS485



To set RS485, set dip switches 2 to 4 to ON.

When dip switch 1 is ON, enables termination resistance;

when OFF, there is no termination resistance.

2.2 **Operation Mode**

The IS731 Series includes the following operation modes. Change to suit your application.

2.2.1 Normal mode

Mode that runs the project (screen) created in Builder.

Turn on the power and typically you enter normal mode.

Downloading a project via a serial cable is run in normal mode.



2.2.2 OSD mode

Mode for downloading a project (screen data) via an USB cable, changing the backlight brightness, and so on.

The following directions describe how to start up in OSD mode.

- Power ON while connected to PC with USB Cable
- Run Action [Restart in OSD mode]
- Run the host communication command RS03 (Restart in OSD mode)

Please refer to 1.6.1 USB Cable Connection for connecting with the PC.

Please refer to the separate "Reference Manual" for actions and host communication commands.



The following functions are in OSD mode.

For more information, refer to <u>2.5 OSD mode details</u>.

Items	Contents
Project Download	Function for connecting with InfoSOSA Builder and downloading
	a project.
USB Mode	Function for connecting InfoSOSA to the PC as a storage device.
Communication Settings	Edit the communication settings on the microcontroller board.
LCD Settings	Change the backlight brightness and auto-off time.
RTC Setting	Changes the time setting.
Touch Screen Calibration	Calibrate the touch screen.
Display System Version	Displays the system software version.
Display Model Name	Displays the unit's model name.
Display Serial No.	Displays the unit's serial number.

2.3 **Download Tool**

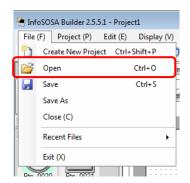
In addition to InfoSOSA Builder, the IS731 Series includes its own download tool.

2.3.1 Download Tool

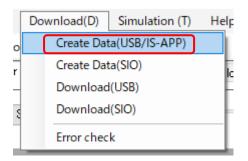
The Download Tool is for transferring download data already prepared on Builder. As this tool does not allow you to edit, it is most suitable for downloading in large numbers for a mass-produced product after the project (screen data) is complete.

2.3.2 Create Download Data

To use the download tool, you need to prepare the download data beforehand in Builder.



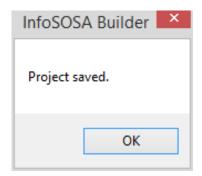
Open the project for which you want to create the download data.



From the [Download] menu, select [Create Data(USB/IS-APP)].



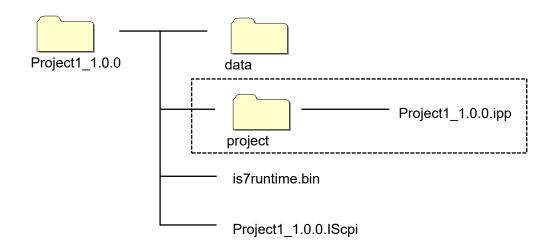
Click [Save]. To change the save location of download data, click [Browse] and edit the destination folder.



After the data is created, the save destination folder opens.

The download data is structured as follows. All files are necessary for download, so save all folders.

* If you do not perform the project backup described later, you do not need the "project" folder.

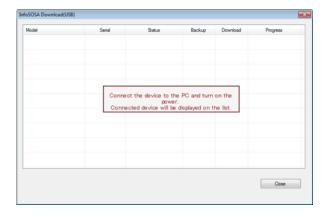


2.3.3 Download

The download tool is installed at the same time you install the Builder. In the installation folder, run the file "InfoSOSAUsbDL.exe".

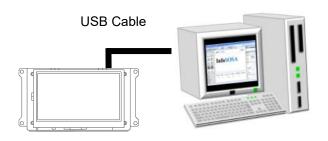
- * The default installation folder is "C:\Seedsware\InfoSOSABuilder*.*".
- * "*.*" is the version number.

Run InfoSOSAUsbDL.exe to display the following screen.

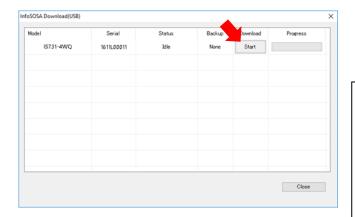


Create the InfoSOSA waiting to connect screen Connect your PC and the InfoSOSA with a USB Cable.

Please refer to <u>1.6.1 USB Cable Connection</u> for connecting with the PC.



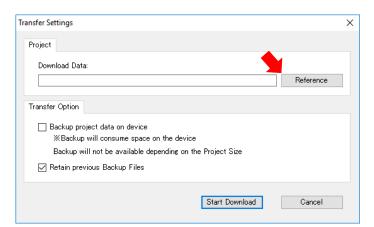
After connecting to the PC, turn ON the power of InfoSOSA.



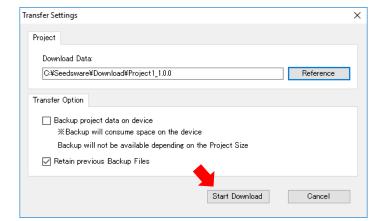
The connected InfoSOSA is displayed. Click the [Start] button.

If multiple InfoSOSA are connected to your PC, they will each be displayed in the list. Click the [Start Transfer] button for the InfoSOSA you want to download.

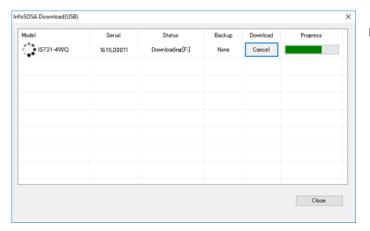
- * The number of devices that can be transferred at the same time varies depending on your PC environment. If a transfer error occurs, reduce the number of connections. The maximum is 10 devices.
- * If you use a USB hub, the device may not be recognized correctly, depending on the hub.



Click the [Browse] button and select the management file (extension .IScpi) for the download data that was previously prepared.



Click the [Start] button.



Download is executed.



Download is completed.

2.4 Project backup

The IS731 Series has a function for backing up the project onto the unit.

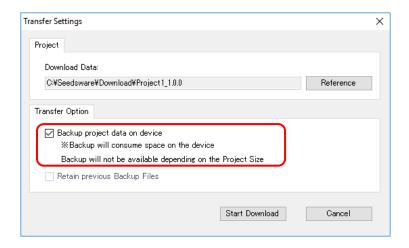
2.4.1 Project backup

On downloading to InfoSOSA, project backup saves to the unit the project file created in Builder. Backing up the project onto the unit makes it possible for you to extract and edit the project.

2.4.2 Backup process

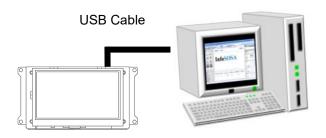
In the download Transfer Options, if the [Backup project data] check box is selected, on download a backup is saved on the InfoSOSA unit.

Backup will consume space on the device.
 Backup may not be possible, depending on the screen data size.



2.4.3 Extraction process

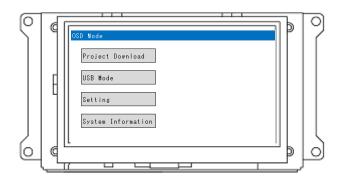
You can extract the project backed up to the unit with the following steps.



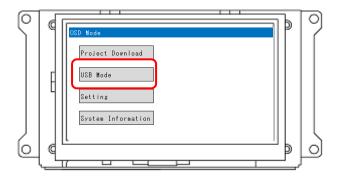
Connect a USB Cable between your PC and the InfoSOSA unit with the project backup.

Please refer to <u>1.6.1 USB Cable Connection</u> for connecting with the PC.

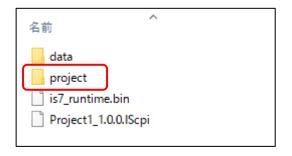
After connecting, turn ON the power of InfoSOSA.



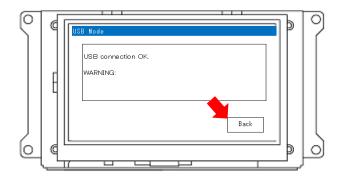
If you turn on the power when connected to the PC, the unit starts up in OSD mode.



Touch the [USB Mode] button.



You can use the PC to check the data saved on InfoSOSA. The backed up project is saved in the "project" folder. Use Explorer to copy the file.



*CAUTION

While connected to the PC, disconnecting the USB cable or turning off the power could damage the data.

Follow the instructions below when disconnecting from the PC.

- On the PC, run [Safely Remove Hardware]
- Touch the [Back] button.

For more information, please refer to $\underline{\textbf{2.5.3}}$

Detachment process.

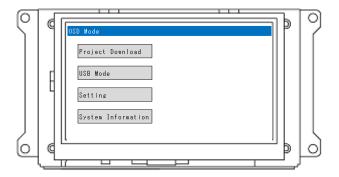
2.5 OSD mode details

Details on OSD mode functions are outlined here.

2.5.1 Function Table

The menu screen displays when you start OSD mode.

Please refer to 2.2.2 OSD mode on the startup method.



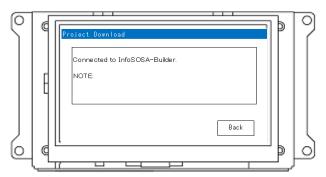
Items	Contents
Project Download	Standby function for downloading project (screen data).
	Starting the download is run from the builder.
USB Mode	Function for connecting InfoSOSA to the PC as storage.
Setting	Function for changing settings on the InfoSOSA unit.
System Information	Function for checking information on the InfoSOSA unit.

2.5.2 Project Download

Standby function for downloading project (screen data).

Starting the download is run from the builder.

* You can also start download from the menu screen. When downloading starts, it automatically changes to this screen.

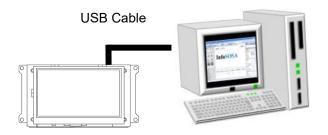


2.5.3 USB Mode

Function for connecting InfoSOSA to the PC as a storage device.

Use when you want to extract the backup project.

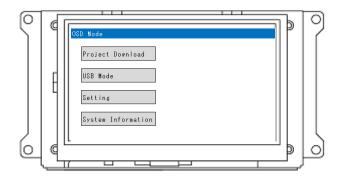
Connection method



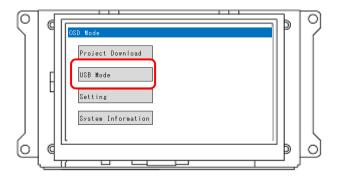
Connect a USB Cable between your PC and the InfoSOSA unit.

Please refer to <u>1.6.1 USB Cable Connection</u> for connecting with the PC.

After connecting, turn ON the power of InfoSOSA.



If you turn on the power when connected to the PC, the unit starts up in OSD mode.



Touch the [USB Mode] button.



The InfoSOSA is recognized as a storage device.

* Although it is recognized as "F drive" here, the drive name varies depending on your environment.

Detachment process

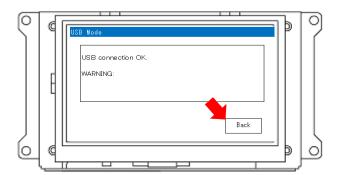
*CAUTION

While connected to the PC, disconnecting the USB cable or turning off the power could damage the data. Follow the instructions below when disconnecting from the PC.

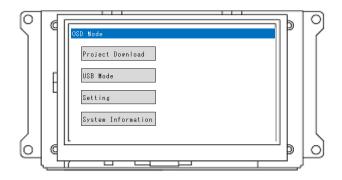


For the InfoSOSA recognized as a storage device, run [Safely Remove Hardware].





After detachment is complete, touch the [Back] button.



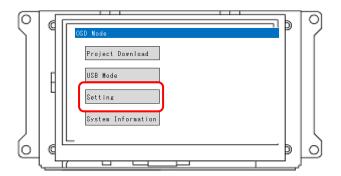
Detach the USB cable or turn the power off only after checking the menu screen is displayed.

2.5.4 Setting

Function for changing settings on the InfoSOSA unit.

From the menu screen, touch the [Setting] button.

* If you run project download, values are updated with the settings from the project.



Items	Contents
SIO1	Change the SIO1 port settings.
SIO2	Change the SIO2 port settings.
LCD	Change the backlight brightness and auto-off time settings.
RTC	Sets up the clock on the InfoSOSA unit.
T/P Calibration	Runs touch screen calibration.

SIO1

You can change the SIO1 port settings. This setting is retained even when the power is turned off.

Items	Contents
Baud Rate	Setting for the communication speed. Select from the following.
	9600, 19200, 38400, 57600, or 115200 bps
Char Bit	Setting for character bits. Fixed to 8.
Stop Bit	Setting for the stop bit. Fixed to 1.
Parity	Setting for the parity bit. Select from the following.
	None, Odd, or Even.
Flow Ctrl	Setting for the flow control.
	None or RTS-CTS.

SIO2

You can change the SIO2 port settings. This setting is retained even when the power is turned off. Touch the [RS485/RS422] button to check the setting for the [SIO2 Interface Dip Switch].

Items	Contents
Baud Rate	Setting for the communication speed (bps). Select from the following. 9600, 19200, 38400, 57600, or 115200 bps
Char Bit	Setting for character bits. Fixed to 8.
Stop Bit	Setting for the stop bit. Fixed to 1.
Parity	Setting for the parity bit. Select from the following. None, Odd, or Even.
RS485 Addr	Unique ID for the InfoSOSA unit. Select from the following. 1 to 31 * Enabled only when the [SIO2 Interface Dip Switch] is RS485.

LCD

You can change the LCD backlight setting. This setting is retained even when the power is turned off.

Items	Contents
Brightness	Setting for brightness of the backlight. Select from the following.
	1 (dark) to 8 (bright)
Auto Off Time	Setting for the time that elapses before the backlight is turned off.
	Select from the following.
	0 to 1440 (minutes)
	* If you set a value of 0, the backlight auto off function is disabled.
	* The backlight auto off function works only in normal mode.

RTC

You can set the real-time clock.

This setting is saved only when the battery is connected. The battery is sold separately. If the battery is not connected during powering on, the clock is reset to January 1, 2000, 00:00:00

Valid Range
January 1, 2000, 00:00:00 to December 31, 2037, 23:59:59

* If the time goes outside the valid range, its behavior is unknown. Use the clock within the valid range.

T/P Calibration

Runs touch screen calibration. This setting is retained even when the power is turned off.

Implementation procedure

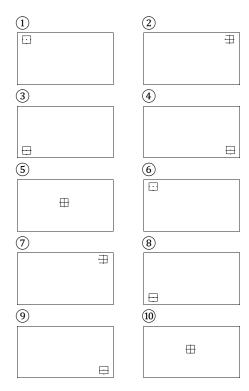
Run calibration with a touch pen.

Touch the center of the cross for 1 second or more until you hear a confirmation beep.

The mark moves as shown in the following order. Touch the cross at every position.

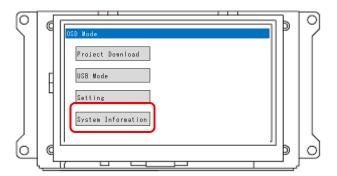
If the operation does not complete within a specified period of time, it will fail.

There are two beeps if the operation failed. Run calibration again.



2.5.5 System Information

Function for checking information on the InfoSOSA unit. From the menu screen, touch [System Information] button.



The following information is displayed.

Items	Contents
System Version	It is displayed in the form of "A / B".
	A: System software version (OSD mode version)
	B: Project execution application (Runtime version)
	* B is displayed when the system software version is 2.6.2.1 or
	later.
	* If a "project execution application" that does not support version
	display is installed, will be displayed.
Model	Displays the InfoSOSA model name.
Serial	Displays the InfoSOSA serial number.

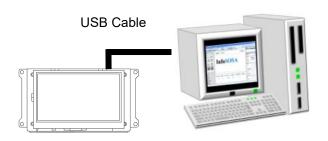
2.6 Troubleshooting

Describes how to resolve problems that may occur.

2.6.1 Unable to download (Cause1: Driver)

If InfoSOSA is not recognized correctly by the PC that executes the download, the download to InfoSOSA cannot be performed normally. Follow the steps below to confirm that InfoSOSA is properly recognized on your PC.

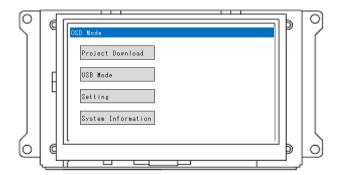
Operation check of USB device driver



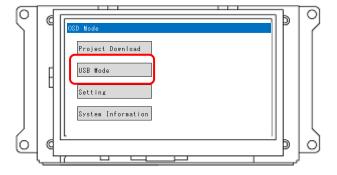
Connect a USB Cable between your PC and the InfoSOSA unit.

Please refer to <u>1.6.1 USB Cable Connection</u> for connecting with the PC.

After connecting, turn ON the power of InfoSOSA.



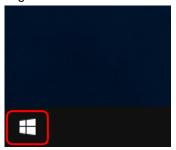
If you turn on the power when connected to the PC, the unit starts up in OSD mode.



Touch the [USB Mode] button.

Open Device Manager on your PC.

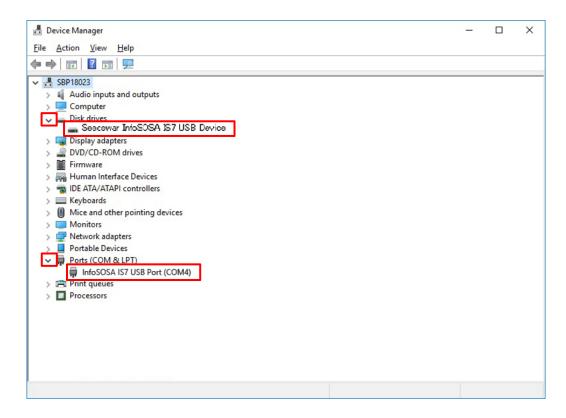
Right click on the start menu.



Click [Device Manager].



Check the following in Device Manager.



Expand the "Disk drives" tree and confirm that "Seedswar InfoSOSA IS7 USB Device" is displayed. Expand the "Ports (COM & LPT)" tree and confirm that "InfoSOSA IS7 USB Port (COM *)" is displayed.

If the above two devices are not displayed correctly, the download to InfoSOSA cannot be performed properly.

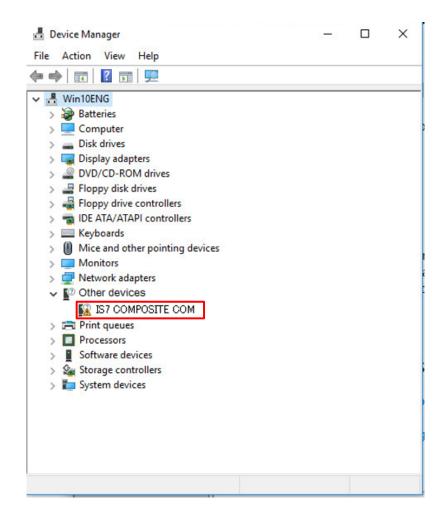
Check the solution on the next page.

Solutions when a device is not displayed normally

The action depends on the status of the device manager.

Driver not installed

If "AIS7 COMPOSITE COM" is displayed in the "Other devices" tree



[Cause]

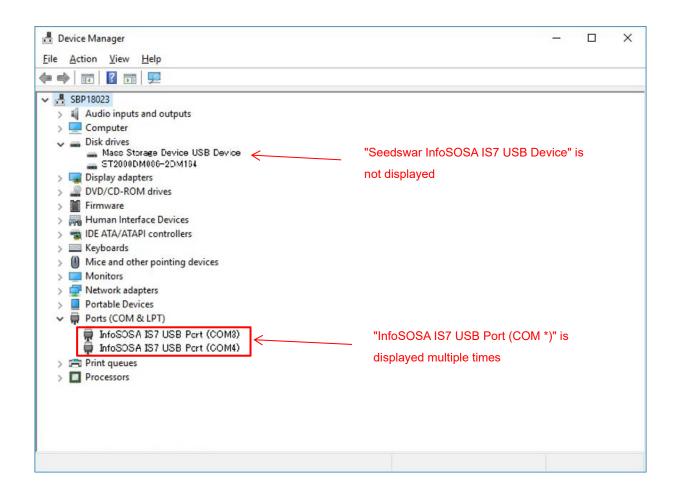
USB device driver is not installed.

[Solution]

Install the USB device driver according to "<u>1.6.1 USB Cable Connection -- Installation of USB device driver</u>"

Driver not recognized properly

If "Seedswar InfoSOSA IS7 USB Device" is not displayed in the "Disk drives" tree, or if "InfoSOSA IS7 USB Port (COM *)" is displayed multiple times in the "Port (COM & LPT)" tree



[Cause]

USB device driver is not recognized properly.

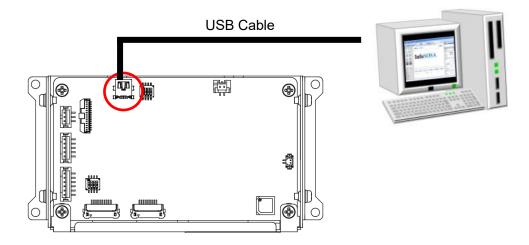
[Solution]

Reinstall the USB device driver according to the procedure on the next page.

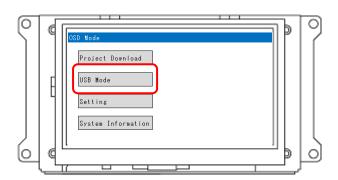
Reinstall USB device driver

This section describes how to reinstall the USB driver when the IS731 USB driver is not operating properly.

First, connect the IS731 series unit and the PC with an USB cable, then turn on the IS731 series unit.



Then touch the "USB Mode" button.



Open Device Manager on your PC.

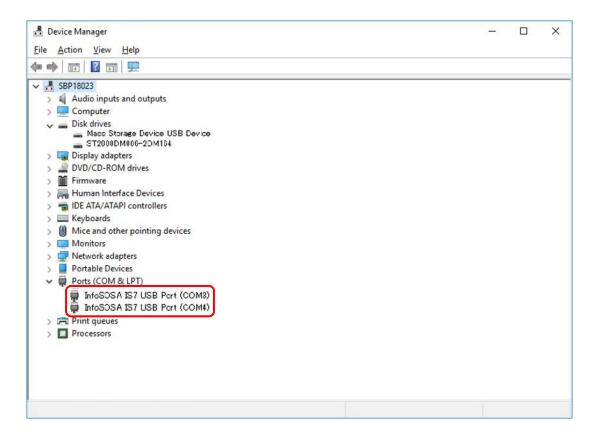
1. Right click on the start menu.



2. Click [Device Manager].



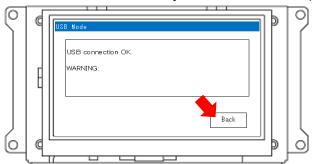
- 3. From [Ports (COM and LPT)], right-click [InfoSOSA IS7 USB Port (COM*)].
 - * If there is more than one [InfoSOSA IS7 USB Port (COM *)], delete devices one by one according to the procedure of 3. to 5.



- 4. Click [Uninstall Device] or [Delete].
- 5. Check to [Delete the driver software for this device.] and click Uninstall.



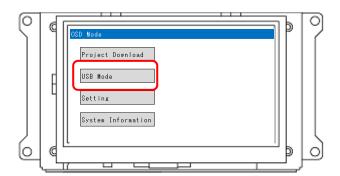
6. Touch the Back button with all [InfoSOSA IS7 USB Port (COM *)] uninstalled.



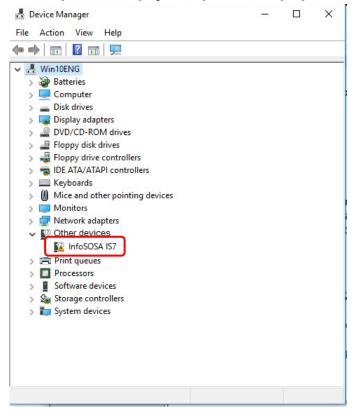
- 7. From the [Port (COM and LPT)] another [InfoSOSA IS7 USB Port (COM*)] will be displayed, right-click [InfoSOSA IS7 USB Port (COM*)].
- 8. Click [Uninstall Device] or [Delete] to uninstall.

Uninstallation is completed by the above operation. Continue to reinstall.

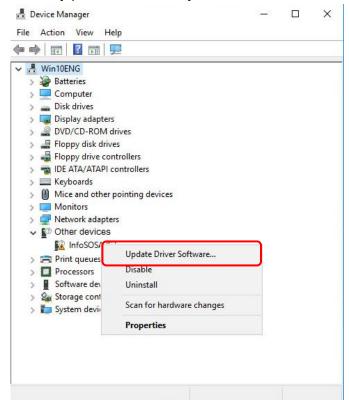
- 9. Connect the IS731 series unit and the PC with an USB cable, then turn on the IS731 series unit again (OFF -> ON).
- 10. Touch the "USB Mode" button.



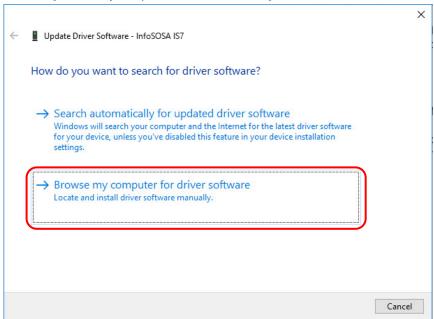
11. From [Other devices], right-click [InfoSOSA IS7] or [IS7 COMPOSITE COM].



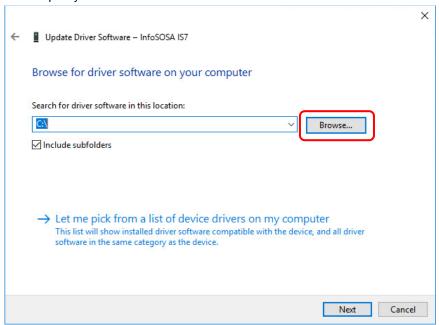
12. Click [Update Driver Software].



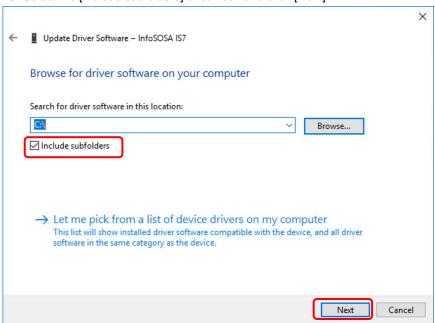
13. Click [Browse my computer for driver software].



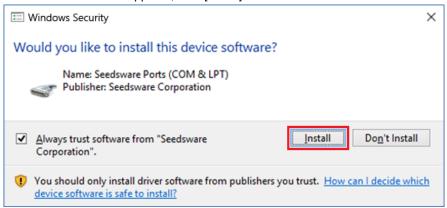
14. Click [Browse], and then specify the drive where the development kit disk is inserted, or specify the folder where the device driver is saved.



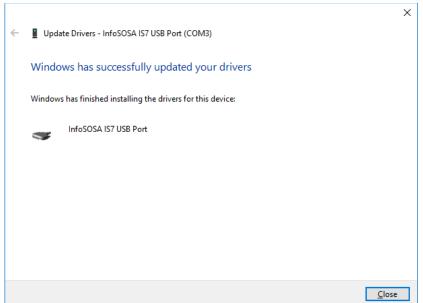
15. Select the [Include subfolders] check box and click [Next].



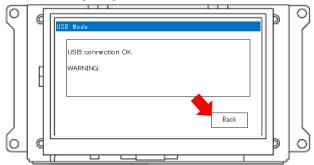
16. If the screen below appears, click [Install].



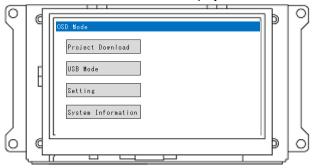
17. Installation is complete.



18. Touch the [Back] button.



19. Wait until the menu screen is displayed.



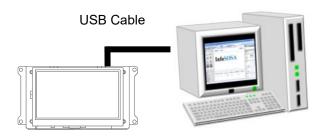
20. Turn off the power supply.

Reinstallation of the USB driver is completed.

2.6.2 Unable to download (Cause2: Damaged data)

In the middle of a download, turning off the power or disconnecting the cable could damage the data. If data is damaged, you may not be able to download anymore. If that happens, format the storage area.

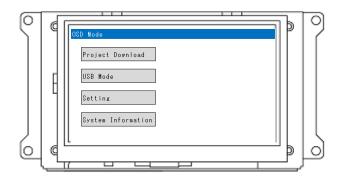
Formatting the storage area



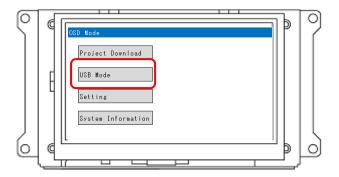
Connect a USB Cable between your PC and the InfoSOSA unit.

Please refer to <u>1.6.1 USB Cable Connection</u> for connecting with the PC.

After connecting, turn ON the power of InfoSOSA.



If you turn on the power when connected to the PC, the unit starts up in OSD mode.

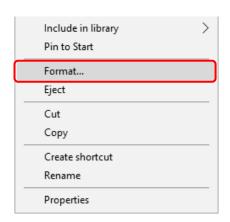


Touch the [USB Mode] button.

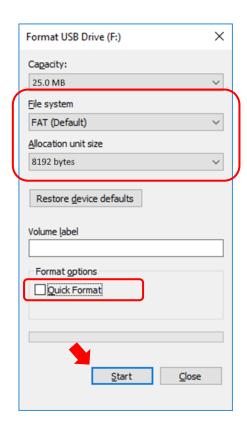


Start Explorer and right-click the InfoSOSA which was recognized as a storage device.

* Although it is recognized as "F drive" here, the drive name varies depending on your environment.



Select [Format].

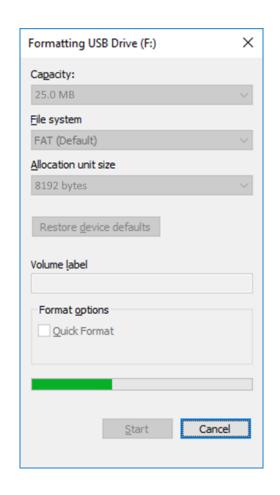


Set up the following, and click the [Start] button.

Items	Setting
File system	FAT
Allocation unit size	8192 bytes
Quick Format	Do not check

*CAUTION

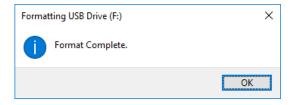
Formatting will erase the project file (including backup) that you may have downloaded to InfoSOSA.



Formatting.

*CAUTION

Do not turn OFF the power of InfoSOSA in the middle of formatting.



Format is complete.

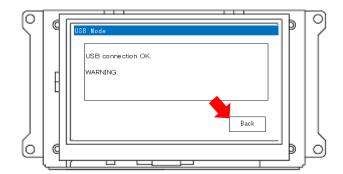


For the InfoSOSA recognized as a storage device, run [Safely Remove Hardware].

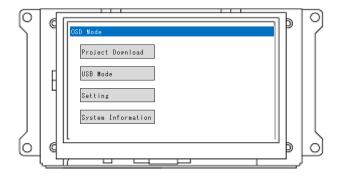
Safe To Remove Hardware The 'USB Drive (F:)' device can now be safely removed from the computer. Windows host process (Rundll32)

*CAUTION

It may take a few minutes for the safely remove hardware operation to complete. If you proceed before it is complete, it may result in corrupted data.



Touch the [Back] button.



After checking the menu screen is displayed, run download again from InfoSOSA.

*CAUTION

It may take a few minutes until the menu is displayed. If the power is turned OFF before the menu displays, it may result in corrupted data.

3. Others

Chapter Contents

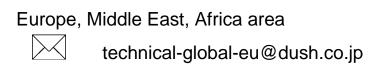
3.1	Inquiries	88
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3.1 Inquiries

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technical-global-asia@dush.co.jp



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