# QE for Segment LCD[RL78] V1.0.0

## Release Note

Thank you very much for using the QE for Segment LCD[RL78] V1.0.0.

This release note covers product installation, restrictions, and so on. Please read this document before using the product.

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# 1. About QE for Segment LCD[RL78]

## 1.1 Summary

QE for Segment LCD[RL78] is an assistance tool for segment LCD solution development which provides full-flow support to configure LCD pin setting, verify pin setting and wiring, design display patterns, and generate a sample application program. Using this tool makes the development of the segment LCD solution simple, quick, and efficient.

## 1.2 Functions

The main functions are listed below:

1. Create LCD components and configure COM and SEG pins for each segment.
2. Verify LCD wiring by blinking the target segment.
3. Prepare design patterns and pattern API to light on/off the patterns.
4. Generate a sample program that displays design patterns in each component one by one.

## 1.3 Supported Environment

- Windows 10 (64-bit version), Windows 11 (64-bit version)
- Renesas e$^2$ studio 2025-07 or later

## 1.4 Supported Emulators

- RL78 Family
  - E2 emulator
  - E2 emulator Lite

## 1.5 Supported Microcontrollers

- RL78 Family
  - RL78/L23

## 1.6 Supported Evaluation Board

- RL78/L23 fast prototyping board.
- Custom board.

# 2. Installation and Uninstallation

## 2.1 Installing This Product

Use either of the following procedures to install this product.

### 2.1.1 Install from the "Renesas software installer" menu of e² studio

1. Start e² studio.
2. Select the “Renesas Views” - “Renesas Software Installer” menu of e² studio to open the “Renesas Software Installer” dialog box.
3. Select the “Renesas QE” and click the “Next >” button
4. Select the “QE for Segment LCD (v1.0.0)” check box and click the “Finish” button.
5. Check that the “Renesas QE for Segment LCD[RL78]” check box is selected in the “Install” dialog box and click the “Next >” button.
6. Check that the “Renesas QE for Segment LCD[RL78]” check box is selected as the target of installation and click the “Next>” button.
7. After confirming the license agreements, if you agree to the license, select the “I accept the terms of the license agreements” radio button, and click the “Finish” button.
8. When the dialog box for selecting a trusted certificate appears, check the displayed certificate, and then click on the “Trust Selected” button to continue installation.
9. Restart the e² studio by following the instructions on the screen.
10. Start this product from the “Renesas Views” - “Renesas QE” menu of e² studio. For details about how to use this product, see the “Help” menu of e² studio.

### 2.1.2 Install using QE (zip file) downloaded from the Renesas website

1. Extract the downloaded zip file.
2. Start the e² studio.
3. Click on “Help”, and then click on the “Install New Software...” menu item to open the “Install” dialog box.
4. Click on the “Add...” button to open the “Add Repository” dialog box.
5. Click on the “Archive...” button, select the installation file (zip file under the QE-SegmentLCD folder) in the opened file selection dialog box, and then click on the “Open” button.
6. Click on the “Add” button in the “Add Repository” dialog box.
7. Expand the “Renesas QE” item shown in the “Install” dialog box, select the “Renesas QE for Segment LCD[RL78]” check box, and then click on the “Next>” button.
   *If you check off the “Contact all update sites during install to find required software” checkbox, you can shorten the installation time.
8. Confirm that the installation target is “Renesas QE for Segment LCD[RL78]”, and then click on the “Next>” button.
9. After checking the license, select the “I accept the terms of the license agreements” radio button if you agree it, and then click on the “Finish” button.
10. When the dialog box for selecting a trusted certificate appears, check the displayed certificate, and then click on the “Trust Selected” button to continue the installation.
11. Restart the e² studio by following the instructions on the screen.
12. Start this product from the “Renesas Views” - “Renesas QE” menu of the e² studio. For details about how to use this product, see the “Help” menu of e² studio.

## 2.2 Updating This Product

If you have already used this product, you can update it in the same way as the procedure for installation.

## 2.3 Uninstalling This Product

Follow the procedure below to uninstall this product.

1. Start the e² studio.
2. Select “Help -> About e² studio” to open the “About e² studio ” dialog box.
3. Click the “Installation Details” button to open the “e² studio  Installation Details” dialog box.
4. Select “Renesas QE for Segment LCD[RL78]” displayed on the “Installed Software” tabbed page and click on the “Uninstall...” button to open the “Uninstall” dialog box.
5. Check the displayed information and click on the “Finish” button.
6. Restart the e² studio  by following the instructions on the screen.

# 3. Notes / Restrictions

## 3.1 Usage Considerations

Please pay attention to the following items.

### 3.1.1 Notes on opening [Segment LCD Workflow (QE)] view

The workflow cannot be opened if WebView2 Runtime is not installed on your PC.

[Workaround]

Download and install WebView2 (x64 version) from the Microsoft web page. (FAQ: 3000670)

### 3.1.2 Notes on sample code license

The license applied to the sample code generated by this tool is BSD-3-Clause.

BSD 3-Clause License

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### 3.1.3 Notes on Renesas e$^2$ studio environment

If e$^2$ studio 2025-07 is used, the help contents of e$^2$ studio cannot be opened. So, you may not open the help guide with shown case below.

Case1：Select “Help -> Help Contents”, the help content may not open properly (Figure3-1).

Case2：Click the “Click to open help” link on LCD Setting dialog (Figure 3-2), the help content may not open properly (Figure3-1).

Case3：Click the help icons on Segment LCD Test (QE) view (Figure 3-3), the help content may not open properly (Figure3-1).

Case4：Click the “Click to open help” link on LCD Pattern Design dialog (Figure 3-4), the help content may not open properly (Figure3-1).

Case5：Click the help button on Show Sample Code dialog (Figure 3-5), the help content may not open properly (Figure3-1).

**Figure 3-1 Help Content Can’t Open Properly**

**Figure 3-2 “Click to open help” on LCD Setting Dialog**

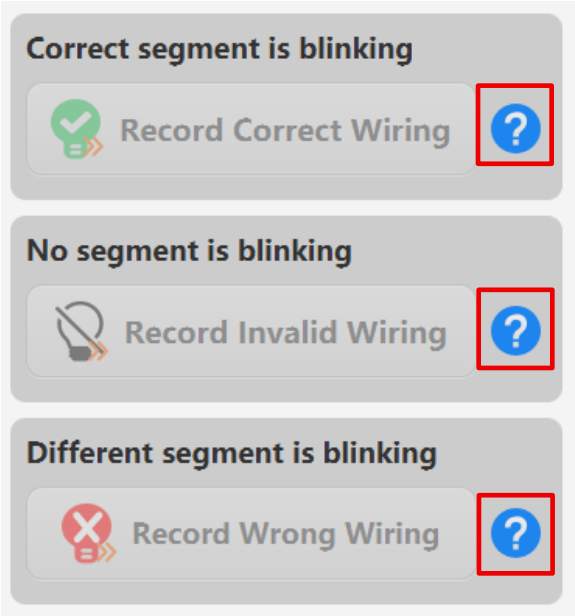


**Figure 3-3 Help Icons on Segment LCD Test (QE) View**

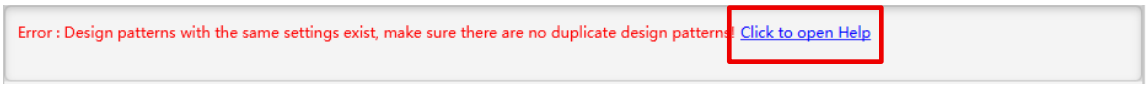


**Figure 3-4 “Click to open help” on LCD Pattern Design Dialog**

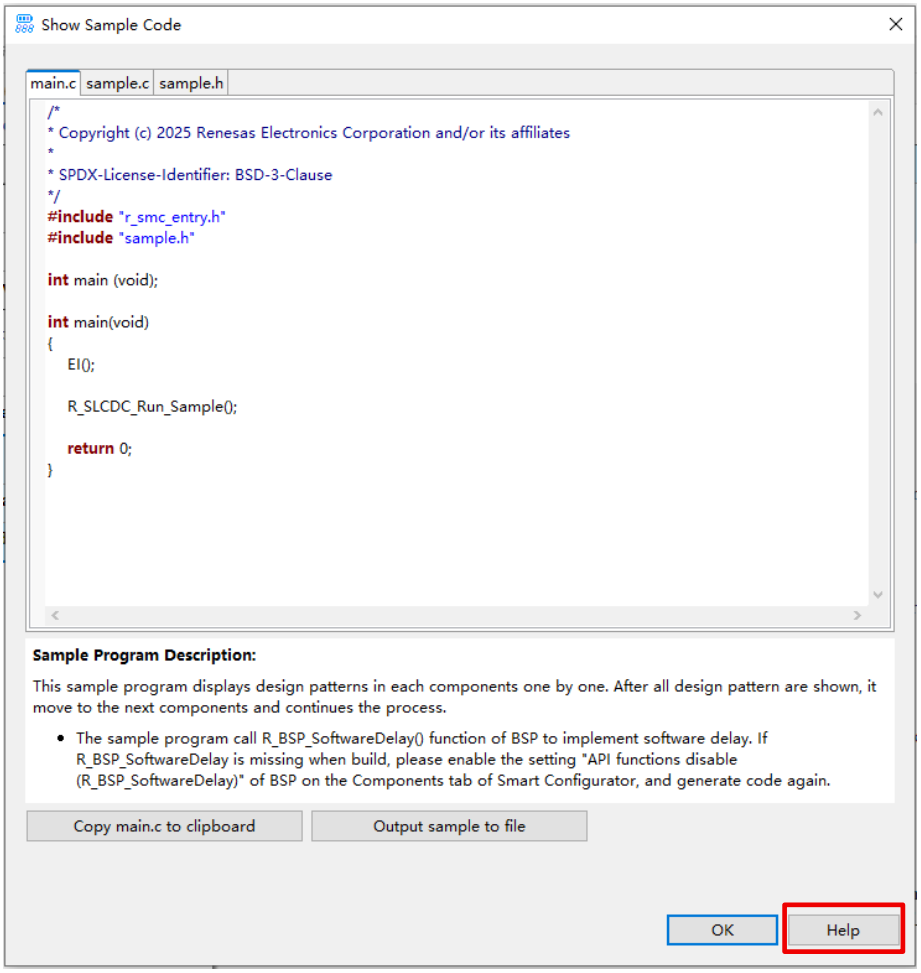


**Figure 3-5 Help Button on Show Sample Code Dialog**

[Workaround]

1. Start e$^2$ studio, click [Help] –> [Help Contents] menu. (Help cannot be opened at this time, and this step is required)

2. If there is an open welcome page or workflow view, close them and click [Help] --> [Help Contents] menu (Help can be opened normally at this time)

If there is no open welcome page or workflow view, click [Help] –> [Welcome] menu to open the welcome page, and then click [Help] --> [Help Contents] menu (Help can be opened normally at this time)

If clicking [Help] --> [Help Contents] menu opens help contents normally, other help contents entries can open the help contents normally.

This operation needs to be performed every time we start e$^2$ studio .

### 3.1.4 Notes on sample code build error

The sample code will have build error “undeclared function R_BSP_SoftwareDelay” if R_BSP_SoftwareDelay is disabled on BSP.

[Workaround]

Enable the setting "API functions disable(R_BSP_SoftwareDelay)" of BSP on the Components tab of Smart Configurator (Figure 3-6) and build the code again.

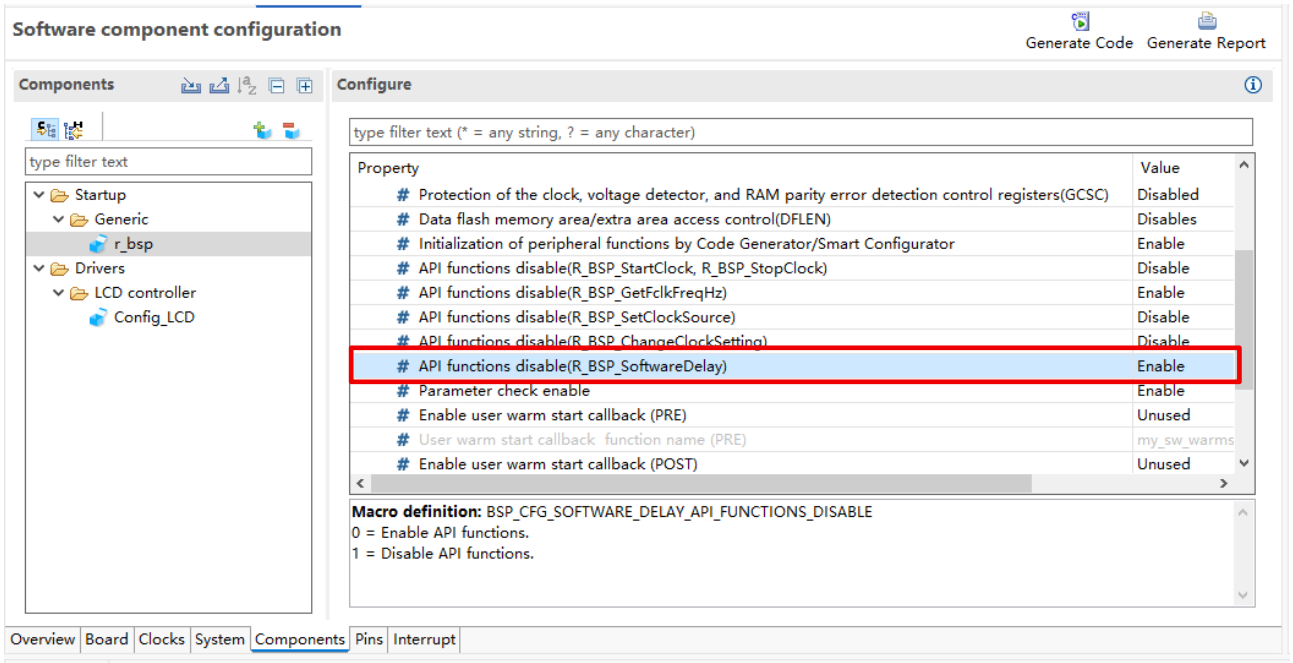


**Figure 3-6 Enable R_BSP_SoftwareDelay function**

## 3.2 Functional Restrictions

There is no restriction in QE for Segment LCD[RL78] V1.0.0.

## Revision History

| Rev. | Date | Description | |
|---|---|---|---|
| | | Page | Summary |
| 1.00 | Aug.27.2025 | - | First edition issued. |

# General Precautions in the Handling of Microprocessing Unit and Microcontroller Unit Products

The following usage notes are applicable to all Microprocessing unit and Microcontroller unit products from Renesas. For detailed usage notes on the products covered by this document, refer to the relevant sections of the document as well as any technical updates that have been issued for the products.

1. Precaution against Electrostatic Discharge (ESD)
   A strong electrical field, when exposed to a CMOS device, can cause destruction of the gate oxide and ultimately degrade the device operation. Steps must be taken to stop the generation of static electricity as much as possible, and quickly dissipate it when it occurs. Environmental control must be adequate. When it is dry, a humidifier should be used. This is recommended to avoid using insulators that can easily build up static electricity. Semiconductor devices must be stored and transported in an anti-static container, static shielding bag or conductive material. All test and measurement tools including work benches and floors must be grounded. The operator must also be grounded using a wrist strap. Semiconductor devices must not be touched with bare hands. Similar precautions must be taken for printed circuit boards with mounted semiconductor devices.
2. Processing at power-on
   The state of the product is undefined at the time when power is supplied. The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the time when power is supplied. In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the time when power is supplied until the reset process is completed. In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the time when power is supplied until the power reaches the level at which resetting is specified.
3. Input of signal during power-off state
   Do not input signals or an I/O pull-up power supply while the device is powered off. The current injection that results from input of such a signal or I/O pull-up power supply may cause malfunction and the abnormal current that passes in the device at this time may cause degradation of internal elements. Follow the guideline for input signal during power-off state as described in your product documentation.
4. Handling of unused pins
   Handle unused pins in accordance with the directions given under handling of unused pins in the manual. The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of the LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible.
5. Clock signals
   After applying a reset, only release the reset line after the operating clock signal becomes stable. When switching the clock signal during program execution, wait until the target clock signal is stabilized. When the clock signal is generated with an external resonator or from an external oscillator during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Additionally, when switching to a clock signal produced with an external resonator or by an external oscillator while program execution is in progress, wait until the target clock signal is stable.
6. Voltage application waveform at input pin
   Waveform distortion due to input noise or a reflected wave may cause malfunction. If the input of the CMOS device stays in the area between $V_{IL}$ (Max.) and $V_{IH}$ (Min.) due to noise, for example, the device may malfunction. Take care to prevent chattering noise from entering the device when the input level is fixed, and also in the transition period when the input level passes through the area between $V_{IL}$ (Max.) and $V_{IH}$ (Min.).
7. Prohibition of access to reserved addresses
   Access to reserved addresses is prohibited. The reserved addresses are provided for possible future expansion of functions. Do not access these addresses as the correct operation of the LSI is not guaranteed.
8. Differences between products
   Before changing from one product to another, for example to a product with a different part number, confirm that the change will not lead to problems. The characteristics of a microprocessing unit or microcontroller unit products in the same group but having a different part number might differ in terms of internal memory capacity, layout pattern, and other factors, which can affect the ranges of electrical characteristics, such as characteristic values, operating margins, immunity to noise, and amount of radiated noise. When changing to a product with a different part number, implement a system-evaluation test for the given product.

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