QE for USB V1.2.0 [Technical Preview Edition]

Release Documentation

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Rev.1.00
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Thank you for using QE for USB V1.2.0 (technical preview edition), which is an application-specific tool QE (Quick and Effective tool solution) product from the Renesas solution toolkits.

Be sure to read the descriptions in this release note for the method of installation and requirements of this product.

Contents

1. QE for USB

1.1 Summary

This product is one of several planned solution toolkits operating within the e^2 studio integrated development environment. The tool is for developing embedded software that supports functions specific to the development of RX- or RL78-family-based systems that include USB capability (details of the supported devices are given below).

1.2 Operating Environments

Windows 7, Windows 8.1, and Windows 10 (32-bit and 64-bit Japanese and English editions)

1.3 Supported MCUs

RX111, RX231, RX62N, RX621, RX63N, RX631, RX64M, RX71M,

RL78/G1C, and RL78/L1C

1.4 Supported USB Firmware

*The software only supports the USB peripheral functions listed below.

MCU	Firmware	Rev.
RX231, RX111	USB Basic Mini Host and Peripheral Driver (USB Mini Firmware) Firmware Integration Technology	1.02
	USB Peripheral Mass Storage Class Driver for USB Mini Firmware Firmware Integration Technology	1.02
	USB Peripheral Communications Device Class Driver for USB Mini Firmware Firmware Integration Technology	1.02
	USB Peripheral Human Interface Device Class Driver for USB Mini Firmware Firmware Integration Technology	1.02
	USB Peripheral Mass Storage Class Driver for USB Mini Firmware Using Firmware Integration Technology Modules	1.02
	USB Peripheral Communications Devices Class Driver for USB Mini Firmware Using Firmware Integration Technology Modules	1.02
	USB Peripheral Human Interface Devices Class Driver for USB Mini Firmware Using Firmware Integration Technology Modules	1.02
RX63N, RX631, RX64M, RX71M	USB Basic Host and Peripheral Driver Firmware Integration Technology	1.11
	USB Peripheral Mass Storage Class Driver (PMSC) Firmware Integration Technology	1.11
	USB Peripheral Communications Device Class Driver (PCDC) Firmware Integration Technology	1.11
	USB Peripheral Human Interface Device Class Driver Firmware Integration Technology	1.11
	USB Peripheral Mass Storage Class Driver(PMSC) Using Firmware Integration Technology Modules	1.11
	USB Peripheral Communications Device Class Driver(PCDC) Using Firmware Integration Technology Modules	1.11
	USB Peripheral Human Interface Devices Class Driver Using Firmware Integration Technology Modules	1.11
RX63N, RX631, RX62N, RX621	Renesas USB MCU and USB ASSP USB Basic Host and Peripheral firmware	2.10
RX62N, RX621	Renesas USB MCU and USB ASSP USB Peripheral Mass Storage Class Driver(PMSC)	2.20
	Renesas USB MCU and USB ASSP USB Peripheral Communications Device Class Driver(PCDC)	2.20
	Renesas USB MCU and USB ASSP Peripheral Human Interface Devices Class Driver(PHID)	2.20
RL78/G1C, RL78/L1C	USB Host and Peripheral Basic Mini Firmware	2.15
	USB Peripheral Mass Storage Class Driver (PMSC) using Basic Mini Firmware	2.15
	USB Peripheral Communications Device Class Driver (PCDC) using USB Basic Mini Firmware	2.15

	USB Peripheral Human Interface Devices Class Driver (PHID) using Basic Mini Firmware	2.15

Only the revision numbers of the following firmware listed below are supported.

MCU	Firmware	Rev.
RX63N, RX631	Renesas USB MCU and USB ASSP USB Peripheral Mass Storage Class Driver(PMSC)	2.10
	Renesas USB MCU and USB ASSP USB Peripheral Communications Device Class Driver(PCDC)	2.10
	Renesas USB MCU and USB ASSP Peripheral Human Interface Devices Class Driver(PHID)	2.10

1.5 Cautionary Notes

Note the following points when using QE for USB.

1. Use Wireshark version 1.12.10, since this operates with QE for USB.

   This product has a function to start the free protocol-analysis software, Wireshark. However, Wireshark 2.0 and later versions and USBPcap provided with them will not start from QE for USB, since the interface for operating with QE for USB does not work in that environment.

   Install USBPcap version 1.0.0.7 for use with Wireshark.

2. Correctly set the frequency of the main clock that is specified when the emulator is connected.

   If the setting for the frequency of the main clock differs from the actual frequency, errors in the programming of flash memory will occur. If a software break is used in the [USB State Chart] view, the debugger may be stopped and indicate an error at the time the chart is drawn (the time of the break).

3. If the message [The function that this view uses is not found.] is displayed in the [USB State Chart] view, disconnect QE for USB from the debugger and check the settings of the optimization options for the compiler.

   If a symbol required for drawing the USB state transition diagram is not found, the message [The function that this view uses is not found.] is displayed in the [USB State Chart] view. However, this message does not disappear even if the project is changed, rebuilt, and downloaded so that the symbol can be found with QE for USB connected to the debugger. If the setting is changed with QE for USB connected to the debugger, reset the CPU and re-open the [USB State Chart] view.

   For required symbols, refer to [USB State Transition Diagram (QE) View] - [Conditions for using the USB state chart] in the help system.

2. Installation

2.1 Installing This Product

Use the following procedure to install this product.

<Preparation for Installation>

Install the e^2 studio integrated development environment (e^2 studio V4.0.0 and a later version for most products, but e^2 studio V4.0.2 and a later version for the RX231).

<How to Install This Product>

1. Start e^2 studio.
2. From the [Help] menu, select [Install New Software...] to open the [Install] dialog box.
3. Click the [Add...] button to open the [Add Repository] dialog box.
4. Click the [Archive] button, select the zip file for installation in the opened dialog box, and click the [Open] button.
5. Click the [OK] button in the [Add Repository] dialog box.

6. Select the [Renesas QE for USB] and [Renesas QE common] check boxes displayed in the [Install] dialog box and click the [Next] button.
7. Check that [Renesas QE for USB] and [Renesas QE common] are selected as the target of installation, and click the [Next] button.
8. After confirming the license agreements, select the [I accept the terms of the license agreements] radio button, and click the [Finish] button.
9. A security warning message will appear; click the [OK] button to continue installation.
10. If the dialog of the trust certificate is displayed, check that certificate and click the [OK] button to continue installation.
11. When prompted to restart e^2 studio, restart it.

2.2 Uninstalling This Product

Use the following procedure to uninstall this product.

1. Start e^2 studio.
2. From the [Help] menu, select [Installation Details] to open the [e^2 studio Installation Details] dialog box.
3. Select [Renesas QE for USB] and [Renesas QE common] displayed on the [Installed Software] tabbed page and click the [Uninstall...] button to open the [Uninstall] dialog box.
4. Check the displayed information and click the [Finish] button.
5. When prompted to restart e^2 studio, restart it.

3. Regarding the Questionnaire about the Technical Preview Edition

3.1 Positioning of This Product

QE for USB V1.2.0 is a technical preview edition. We aim to improve the product in response to feedback from our customers.

3.2 Request to Fill out the Questionnaire after Using This Product

In order to help us improve the product, please give us your comments and requests regarding this product.

Contact the following E-mail address:

qe_feedback@lm.renesas.com

[Questionnaire] *Please fill out the following as far as you can.

- ✓ Name:
- ✓ Company and department names:
- ✓ Purpose of use:
- ✓ MCU you are using:
  [RX111, RX231, RX62N or RX621, RX63N or RX631, RX64M, RX71M, RL78/G1C, RL78/L1C]
- ✓ We intend to develop a full version of QE for USB with enhanced features in response to feedback from our customers.
  Did you think that you will want to use the full version? [Yes / No]
- ✓ Comments and requests: (e.g. “Using the xxx functionality is not easy because yyy.”, or “It would be further improved if zzz.”, etc.)
- ✓ Applications other than USB for which you would be interested in seeing a QE: (e.g. BLE, TCP/IP, audio playback, etc.)

Website and Support

Renesas Electronics Website
http://www.renesas.com/

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Revision History

		Description	
Rev.	**Date**	**Page**	**Summary**
1.00	Mar. 29, 2016	All	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. 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 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. Unused pins should be handled as described under Handling of Unused Pins in the manual.

2. Processing at Power-on

   The state of the product is undefined at the moment 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 moment 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 moment 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 moment when power is supplied until the power reaches the level at which resetting has been specified.

3. Prohibition of Access to Reserved Addresses

   Access to reserved addresses is prohibited.

   — The reserved addresses are provided for the possible future expansion of functions. Do not access these addresses; the correct operation of LSI is not guaranteed if they are accessed.

4. Clock Signals

   After applying a reset, only release the reset line after the operating clock signal has become stable. When switching the clock signal during program execution, wait until the target clock signal has 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. Moreover, 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.

5. Differences between Products

   Before changing from one product to another, i.e. to a product with a different part number, confirm that the change will not lead to problems.

   — The characteristics of Microprocessing unit or Microcontroller unit products in the same group but having a different part number may differ in terms of the 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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