

[Released on the Web]

R20TS0271EJ0100

Solution Toolkit

Rev.1.00

Mar. 1, 2018

QE: Development Assistance Tool for Applications

QE for UART: Development Assistance Tool for UART

Technical Preview V1.0.0

Outline

We are releasing QE for UART V1.0.0 on the Web.

QE for UART is one of several solution toolkits which operate under the e² studio integrated development environment. QE for UART assists with initial settings of UART communication and debugging of communication processing for development of embedded systems using the UART communication function of the RX family.

For details on solution toolkits and QE (Quick and Effective tool solution), refer to the URL below.

<https://www.renesas.com/qe>

This product is available free of charge.

1. Features

- UART communication logs can be monitored without any special tools such as a communication line monitor.
- Settings required for UART communication can be checked at a glance.
- Errors that occur frequently during UART communication can be caught. Error causes can also be displayed.

Refer to the following description for details.

- **UART communication logs can be monitored without any special tools such as a communication line monitor.**

QE for UART can display UART communication logs immediately in just a normal development environment (emulator and integrated development environment) without using any special tools such as a communication line monitor. Transmission/reception data can be displayed separately, and ASCII or hexadecimal can be selected for notation. Additionally, QE for UART has a custom log decoding function which allows for efficient debugging of UART communication processing using the communication protocol specification.

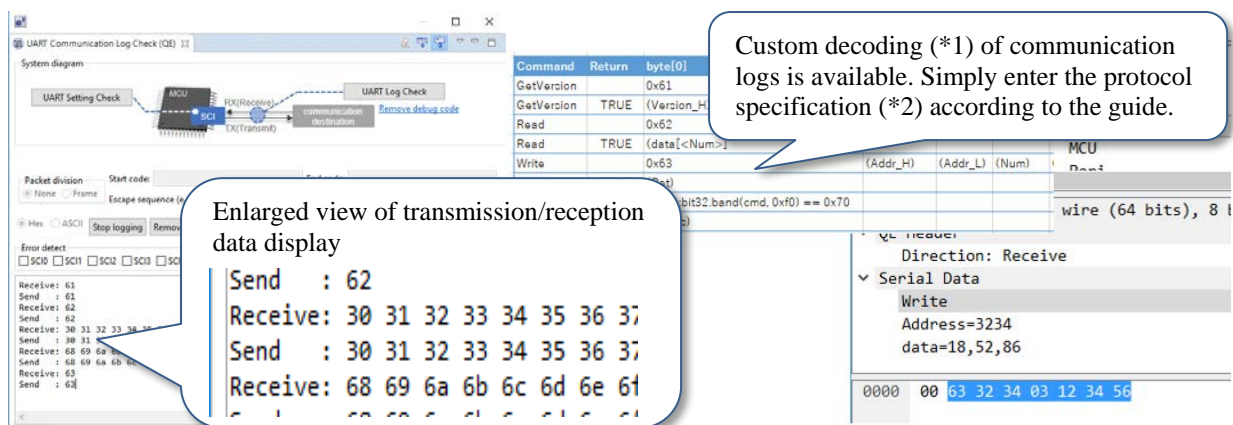


Figure 1. Left: Example of display of UART communication logs (QE)
Right: Example of communication log decoding

*1: "Wireshark®" (free software) must be installed separately to use the decoding function.

*2: "Microsoft® Excel®" must be installed separately to enter the protocol specification.

■ **Settings required for UART communication can be checked at a glance.**

Register values, such as the baud rate and data length, required for UART communication, and their descriptions, are displayed in a list.

A location with incomplete settings can be identified simply by comparing the setting values of the communication destination device with the values in this view.

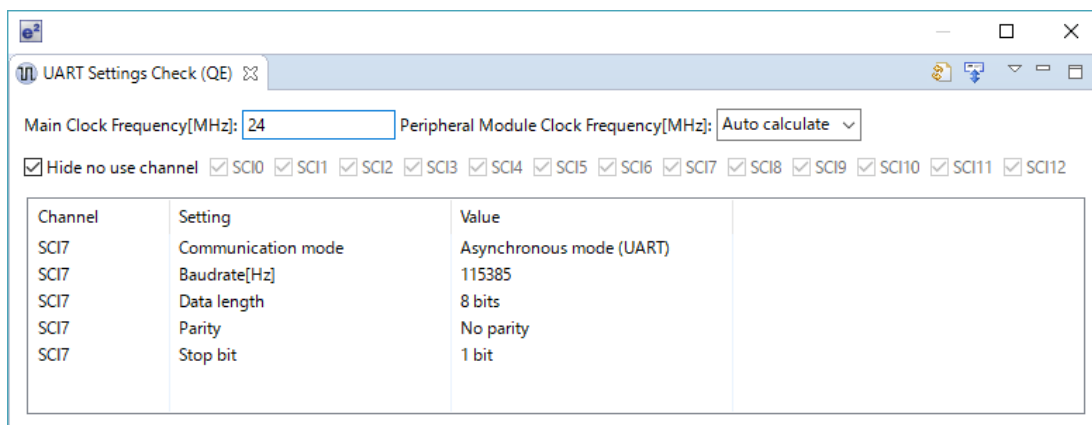


Figure 2. Example of display of the UART setting function (QE)

■ **Errors that occur frequently during UART communication can be caught. Error causes can also be displayed.**

By monitoring the operation of the UART driver, QE for UART can detect common communication errors (such as overrun or framing errors). Additionally, QE for UART has a function to stop the program when an error occurs, which makes it easy to identify the location to be corrected.

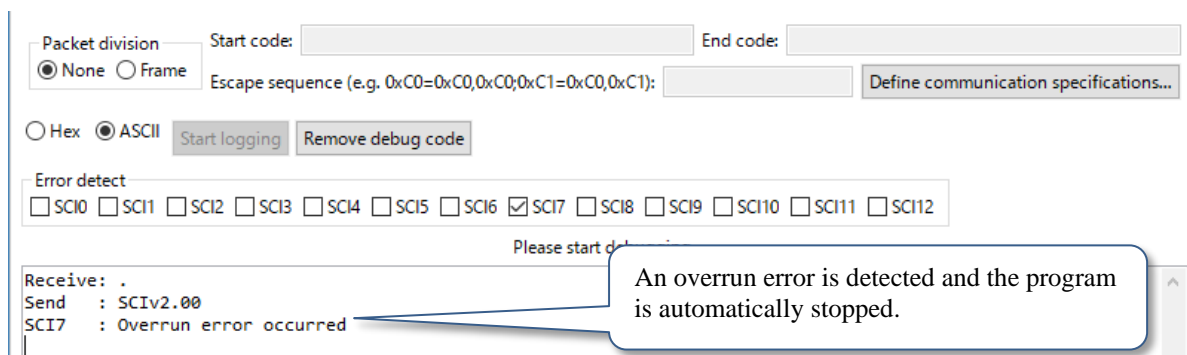


Figure 3. Example of display when an error occurs during UART communication

2. System Configuration of QE for UART

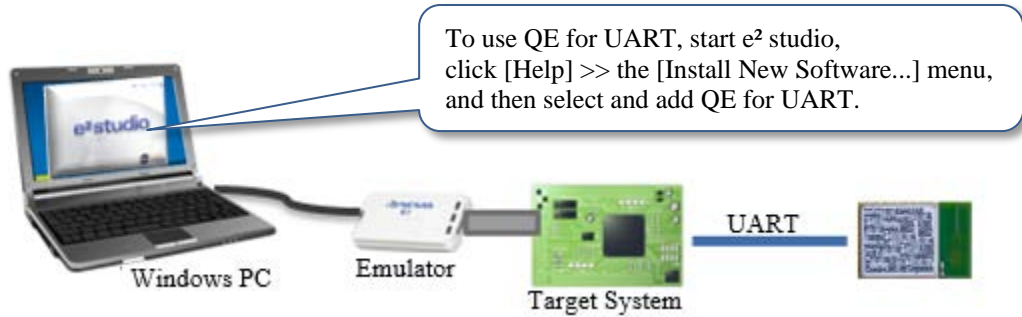


Figure 4. Example of system configuration

3. Supported MCUs

- RX family

* The baud rate display function is only supported by the following groups:
RX113, RX130, RX231, RX230, RX65N, RX651, RX64M, RX71M

4. Operating Environment

- e² studio integrated development environment V5.4.0 and later versions
- The SCI (UART) driver can be obtained by either of the following methods:
 - FIT module r_sci_rx Rev.2.00
 - Code generator SCI (SCIF) asynchronous mode ver.1.0.0
(component of the Smart Configurator)

Even if the above driver is not used, you can use the functions by manually adding the debug code.

5. Obtaining the Product

Obtain the product from the URL below. The product will be available from March 5.

<https://www.renesas.com/qe-uart#downloads>

QE for UART V1.0.0 [technical preview version]

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Mar. 1, 2018	-	First edition issued

TOYOSU FORESIA, 3-2-24 Toyosu, Koto-ku, Tokyo 135-0061 Japan
 Renesas Electronics Corporation

■Inquiry

<https://www.renesas.com/contact/>

Renesas Electronics has used reasonable care in preparing the information included in this document, but Renesas Electronics does not warrant that such information is error free. Renesas Electronics assumes no liability whatsoever for any damages incurred by you resulting from errors in or omissions from the information included herein.

The past news contents have been based on information at the time of publication. Now changed or invalid information may be included.

The URLs in the Tool News also may be subject to change or become invalid without prior notice.

All trademarks and registered trademarks are the property of their respective owners.