[Notification]

RL78/G1D Solutions and Development Tools

for Embedded Devices

Incorporating Near-Field Wireless Communications

Outline

This news is to introduce solutions and development tools for RL78/G1D Bluetooth® low energy MCUs. The tools support the development of products incorporating Bluetooth® low energy communications.

1.   Bluetooth® Low Energy MCUs RL78/G1D

RL78/G1D MCUs support Bluetooth® low energy and draw very little current in RF transmission (4.3 mA in the output of 0 dBm) and RF reception (3.5 mA), the lowest levels in the industry. The circuitry required for connecting an antenna is included, easing the design process by eliminating the need to design this, and reducing the costs of products by reducing the need for external parts. The software stack supports the updating of software by wireless communications, for greater efficiency in software maintenance.

For technical information on Bluetooth® low energy, refer to the URL below.
https://www.renesas.com/solutions/proposal/bluetooth-low-energy.html

For details of the RL78/G1D MCUs, refer to the URL below.
https://www.renesas.com/products/microcontrollers-microprocessors/rl78/rl78g1x/rl78g1d.html

2.   Renesas: Supporting Your Development of Products Incorporating Bluetooth® Low-Energy Communications

We offer solutions for the RL78/G1D which support Bluetooth® low-energy technology, along with various development tools. Try our solutions and development tools which will assist you in wireless characteristics evaluation and communications operation throughout the process from initial evaluation to product development.

Our support for Bluetooth® low-energy-based products will be increasing in step with the growth of the IoT market.

Refer to table 1 for the solutions and development tools for the RL78/G1D.

Table 1 Solutions and development tools for the RL78/G1D

(1/2)

Solution or development tool	Outline
URL	
RL78/G1D Evaluation Board	You can use this board to evaluate the RL78/G1D with reference to the quick start guide. Connected to an E1 emulator, the board can also be used in developing applications utilizing Bluetooth® low-energy communications.
Bluetooth® Low-Energy Protocol Stack (BLE software)	[Free of charge] This stack is verified to implement Bluetooth® v4.2 on the RL78/G1D.
Bluetooth® Low-Energy Protocol Stack GUI tools	[Free of charge] This GUI is for controlling the BLE software from a PC. The tools make it easy to control BLE communications without having to write a program.
https://www.renesas.com/solutions/proposal/bluetooth-low-energy.html You can check the details of and download each of these products from the menu item "Development Environment".	
RL78 Family C Compiler Package (with IDE)	This is the RL78 Family Compiler Package (CC-RL), which includes the CS+ integrated development environment and simulators. This product contains the basic software tools which are necessarily for developing software in a single package. You can start running it immediately after installation. The package also supports advanced debugging when used in combination with the E1 on-chip debugging emulator. * A free evaluation edition is available.
https://www.renesas.com/cs+ The product below can be downloaded from the [Downloads] tabbed page. [Free evaluation edition] CS+ Integrated Development Environment for CC V4.01.00 (batch download)	
E1 emulator	The E1 emulator is an on-chip debugging emulator for the major MCUs from Renesas. This emulator provides basic debugging functions at an affordable price, and is also usable as a flash programmer.
https://www.renesas.com/e1	
Flash programming software Renesas Flash Programmer	This is a dedicated product for the programming of data to the on-chip flash memory of MCUs from Renesas. By selecting the data to be written, a program can be written in a single operation, even in cases where the program is divided into multiple sets of data. *A free-of-charge edition is available.
https://www.renesas.com/rfp The product below can be downloaded from the [Downloads] tabbed page. [Free-of-charge edition] Renesas Flash Programmer	

You can select the type of license for RL78 Family C Compiler Package (with IDE) that suits your style and scope of development. Refer to the following URL for details of the compiler licenses.
https://www.renesas.com/compiler_licenses

Solution or development tool	Outline
URL	
e² studio integrated development environment	[Free of charge] This product supports Smart Utilities, which make development more efficient. Smart Utilities ease the embedding of middleware and of drivers for peripheral modules, and include facilities for the checking of documents and information on MCU registers required in development and for the downloading of sample code. The IDE also provides assistance in optimization for code size, and various open source plug-ins which are convenient for development are available.
https://www.renesas.com/e2studio The product below can be downloaded from the [Downloads] tabbed page. e² studio 5.2 installer (on-line)	
RL78 Family C Compiler (CC-RL)	On the assumption that the objective of development is ROMization for embedding, the compiler also provides various extended specifications, such as optimization for efficiency in terms of code size or the speed of program execution. * A free evaluation edition is available.
https://www.renesas.com/rl78_c The product below can be downloaded from the [Downloads] tabbed page. [Free evaluation edition] RL78 Family C Compiler Package V1 (without IDE)	
QE for BLE Technical Preview	[Free of charge] This product is a development assistance tool especially for systems incorporating Bluetooth®. It makes testing Bluetooth®-specification communications easy. It runs within the e²studio.
https://www.renesas.com/qe_ble	
Self-Programming Library for the RL78 Family CC-RL Compiler	[Free of charge] Using the BLE software requires the following three libraries.* - Code-flash library - Data-flash library - EEPROM emulation library
- Code-flash library: https://www.renesas.com/flash_libraries/self_prg - Data-flash library: https://www.renesas.com/flash_libraries/data_flash *: Refer to the following document for the details of the libraries required to use the BLE software. https://www.renesas.com/search/keyword-search.html#q=r01an2767&genre=document Bluetooth® Low Energy Protocol Stack Quick Start Guide	

You can select the type of license for RL78 Family C Compiler Package (CC-RL) that suits your style and scope of development. Refer to the following URL for details of the compiler licenses.
https://www.renesas.com/compiler_licenses

Revision History

		Description	
Rev.	**Date**	**Page**	**Summary**
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