[Released on the Web]

RX Family RX Driver Package Ver.1.14

R20TS0291EJ0100
Rev.1.00
Apr. 1, 2018

Outline

Ver.1.14 of RX Family RX Driver Package is now released on the web.

This product now supports the general-purpose setting window for FIT modules and updated package modules (added to Ver.1.13 of RX Family RX Driver Package).

The product is supplied free of charge.

1. Features

(1) About the RX Driver Package

The RX Driver Package is a software package for using basic functions such as initializing MCUs, self-programming of flash memory, timer control, UART communications, and A/D conversion, and application functions such as USB and Ethernet. (For OS-less environment)

Contents of the product package

- FIT middleware modules
- FIT interface modules
- Device driver modules for FIT peripheral functions
- Board support package (BSP) module

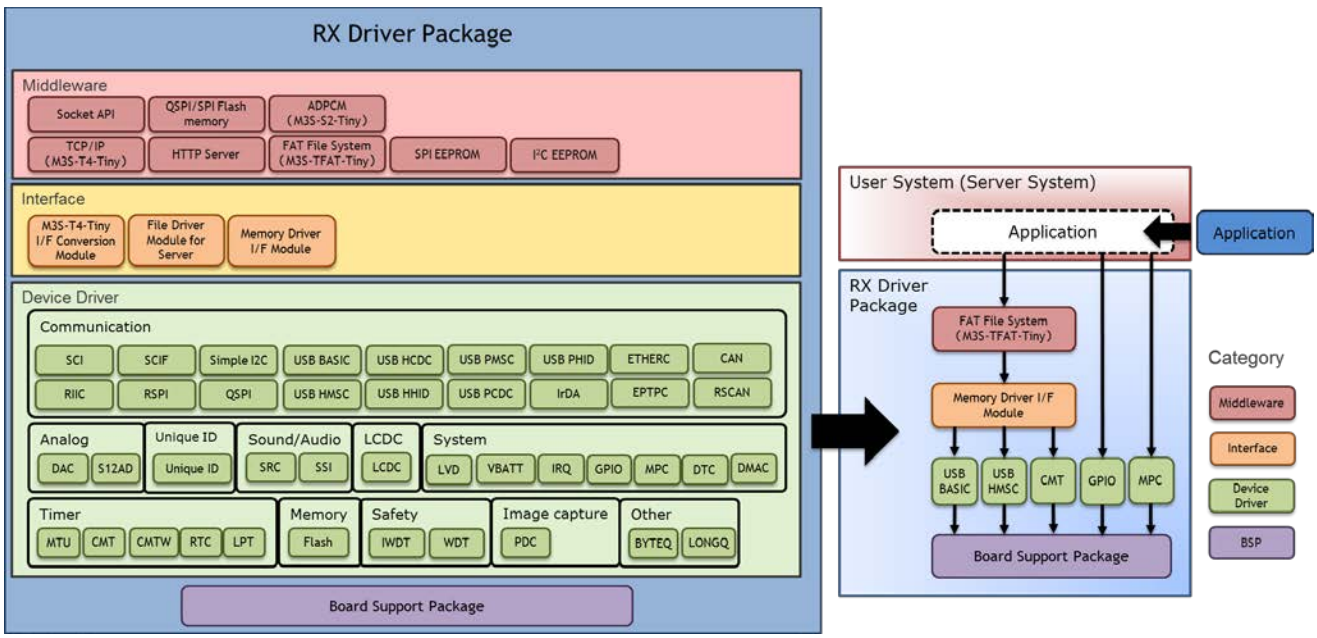


Figure 1. Construction image

(2) Major changes from Ver.1.13 to Ver.1.14 of RX Family RX Driver Package

- The general-purpose setting window is now supported for the following FIT modules:
  - Ethernet controller (ETHERC)
  - M3S-T4-Tiny module for embedding
  - USB Basic Firmware
  - USB Host Communication Device Class
  - USB HOST Communication Device Class
  - USB HOST Human Interface Device Class
  - USB Peripheral Mass Storage Class
  - USB Peripheral Communication Device Class
  - USB Peripheral Human Interface Device Class
- Periodic update of FIT modules

  After the release of RX Driver Package Ver. 1.13 (document number: R01AN3859*), many FIT modules were updated. Tables 1-1, 1-2, and 1-3 indicate whether each FIT module differs between Ver. 1.13 and Ver. 1.14 of RX Driver Package. For the meaning of the terms used in the Update from Ver. 1.13 column in the tables, see the table below.

Term	Meaning
Same	Same as the previous version.
Updated	The module is updated from the previous version. The details of update differ depending on the driver. Check the document of the relevant driver.
New	New module

*: Only the upper 9 digits are indicated.

- Board support package (BSP)

Table 1-1. Board Support Package (BSP)

Module Name	FIT Module Name	Rev.	Update from Ver. 1.13
Board Support Package (BSP)	r_bsp	3.71	Updated

- Device drivers

Table 1-2. Device drivers -1

Module Name	FIT Module Name	Rev.	Update from Ver. 1.13
Voltage Detection Circuit (LVD)	r_lvd_rx	2.31	Updated
Low Power Consumption (LPC)	r_lpc_rx	1.40	Same
Battery Backup (VBATT)	r_vbatt_rx	1.01	Same
Interrupt Controller (IRQ)	r_irq_rx	2.21	Updated
Data Transfer Controller (DTC)	r_dtc_rx	2.08	Same
DMA Controller (DMAC)	r_dmaca_rx	1.05	Same
I/O Ports (GPIO)	r_gpio_rx	2.31	Updated
Multi-Function Pin Controller (MPC)	r_mpc_rx	2.31	Updated
Compare Match Timer (CMT)	r_cmt_rx	3.21	Updated
Compare Match Timer W (CMTW)	r_cmtw_rx	1.31	Updated
Real-Time Clock (RTC)	r_rtc_rx	2.72	Updated
Low Power Timer (LPT)	r_lpt_rx	1.21	Updated
Independent Watchdog Timer (IWDT)	r_iwdt_rx	1.81	Updated
Watchdog Timer (WDT)	r_wdt_rx	1.20	Updated
Serial Communications Interface (SCI: Asynchronous/Clock Synchronous)	r_sci_rx	2.01	Updated
Serial Communications Interface with FIFO (SCIFA: Asynchronous/Clock Synchronous)	r_scif_rx	1.20	Same
Serial Communications Interface with FIFO (SCIFA: Device Driver for Serial Memory Control)	r_scifa_smstr_rx	1.09	Same
Serial Communications Interface (SCI: Simple I²C Bus)	r_sci_iic_rx	2.20	Same
I²C Bus Interface (RIIC)	r_riic_rx	2.20	Same
Serial Peripheral Interface	r_rspi_rx	1.70	Same
Serial Peripheral Interface (RSPI: Device Driver for Serial Memory Control)	r_rspi_smstr_rx	1.14	Same
Quad Serial Peripheral Interface (QSPI: Device Driver for Serial Memory Control)	r_qspi_smstr_rx	1.10	Same
USB Basic Firmware	r_usb_basic	1.23	Updated
USB Host Mass Storage Class	r_usb_hmsc	1.23	Updated
USB Host Communication Device Class	r_usb_hcdc	1.23	Updated
USB Host Human Interface Device Class	r_usb_hhid	1.23	Updated
USB Peripheral Mass Storage Class	r_usb_pmsc	1.23	Updated
USB Peripheral Communications Device Class	r_usb_pcdc	1.23	Updated
USB Peripheral Human Interface Device Class	r_usb_phid	1.23	Updated
USB Basic Firmware mini	r_usb_basic_mini	1.02	Same
USB Host Mass Storage Class mini	r_usb_hmsc_mini	1.02	Same
USB Host Communication Device Class mini	r_usb_hcdc_mini	1.02	Same
USB Host Human Interface Device Class mini	r_usb_hhid_mini	1.02	Same
USB Peripheral Mass Storage Class mini	r_usb_pmsc_mini	1.02	Same

Table 1-2. Device drivers -2

Module Name	FIT Module Name	Rev.	Update from Ver. 1.13
USB Peripheral Communications Device Class mini	r_usb_pcdc_mini	1.02	Same
USB Peripheral Human Interface Device Class mini	r_usb_phid_mini	1.02	Same
PTP Module for the Ethernet Controller (EPTPC)	r_ptp_rx	1.14	Same
EPTPC Light Module	r_ptp_light_rx	1.11	Same
Ethernet Controller (ETHERC)	r_ether_rx	1.14	Updated
CAN Module (CAN)	r_can_rx	2.12	Same
CAN Module (RSCAN)	r_rscan_rx	1.10	Same
IrDA Interface (IrDA)	r_irda_sci_rx	1.01	Same
Parallel Data Capture Unit (PDC)	r_pdc_rx	2.01	Same
SD Host Interface (SDHI)	r_sdhi_rx	2.01	Updated
SD Slave Interface (SDSI)	r_sdsi_rx	2.00	Same
12-Bit A/D Converter (S12AD)	r_s12ad_rx	2.30	Same
D/A Converter (DAC)	r_dac_rx	3.11	Updated
Flash Memory (On-Chip Flash Memory Programming)	r_flash_rx	3.30	Updated
Sampling Rate Converter (SRC)	r_src_api_rx	1.11	Same
Serial Sound Interface (SSI)	r_ssi_api_rx	1.21	Same
LCD Controller/Driver (LCDC)	r_lcdc_rx	1.00	Same
Graphic LCD Controller (GLCDC)	r_glcdc_rx	1.00	Same
Unique ID Read	r_uid_rx	1.10	Updated
Byte Queue Buffer (Data Management)	r_byteq	1.60	Same
Long Queue Buffer (Data Management)	r_longq	1.60	Same
Event Link Controller (ELC)	r_elc_rx	1.20	Same

- Middleware/interface modules

Table 1-3. Middleware/interface modules

Module Name	FIT Module Name	Rev.	Update from Ver. 1.13
M3S-T4-Tiny Module for Embedding(*1), (*2)	r_t4_rx	2.07	Updated
Interface Conversion Module for Ethernet Driver and TCP/IP M3S-T4-Tiny for Embedding	r_t4_driver_rx	1.06	Same
System Timer Module	r_sys_time_rx	1.00	Same
Clock Synchronous Control Module for EEPROM Access	r_eeprom_spi	2.34	Same
Clock Synchronous Control Module for Serial Flash Memory Access	r_flash_spi	2.34	Same
I2C Bus Interface (RIIC) Module for EEPROM Access	r_eeprom_riic_rx	1.40	Same
Simple I2C Module for EEPROM Access	r_eeprom_sci_iic_rx	1.30	Same
JPEG Decoder Module	r_jpegd_rx	2.06	Same
JPEG Encoder Module	r_jpege_rx	1.01	Same
M3S-S2-Tiny Module (Sound Recording/Playback System (Original ADPCM Codec))	r_s2_rx	3.04	Same
Open-Source FAT File System M3S-TFAT-Tiny Module	r_tfat_rx	3.03	Same
M3S-TFAT-Tiny Memory Driver Interface Module	r_tfat_driver_rx	1.03	Same

*1: This package includes M3S-T4-Tiny (TCP/IP protocol stack library) of the evaluation version. For details on the commercial version, refer to the URL below.
https://www.renesas.com/mw/t4

*2: Check the Tool News regarding the notes on using the M3S-T4-Tiny module. (Document number: R20TS0287EJ0100)

2. Supported MCUs

RX110, RX111, RX113, RX130, RX210, RX230, RX231, RX23T, RX24T, and RX24U groups

RX63N, RX64M, RX65N, RX651, and RX71M groups

3. Operating Environment

The following shows the main operating environment. For details, refer to the application notes* for this product.

- Integrated development environment: e^2 studio V6.2.0 and later versions

- Cross tool: V2.08.00 of C/C++ Compiler Package for RX Family

- Emulators: E1, E2, E20, and E2 emulator Lite

*: Refer to Chapter 4 for information on how to obtain the application notes.

4. Obtaining the Application Notes

Use one of the following methods to obtain Ver. 1.14 of RX Family RX Driver Package containing the application note to be used for e² studio:

- Starting e² studio and using the Smart Configurator*
- Starting e² studio and using the FIT Configurator*

*: You can obtain the application note from e² studio without accessing the Renesas website.

The following describes the download procedure. The display examples use e² studio V6.2.0.

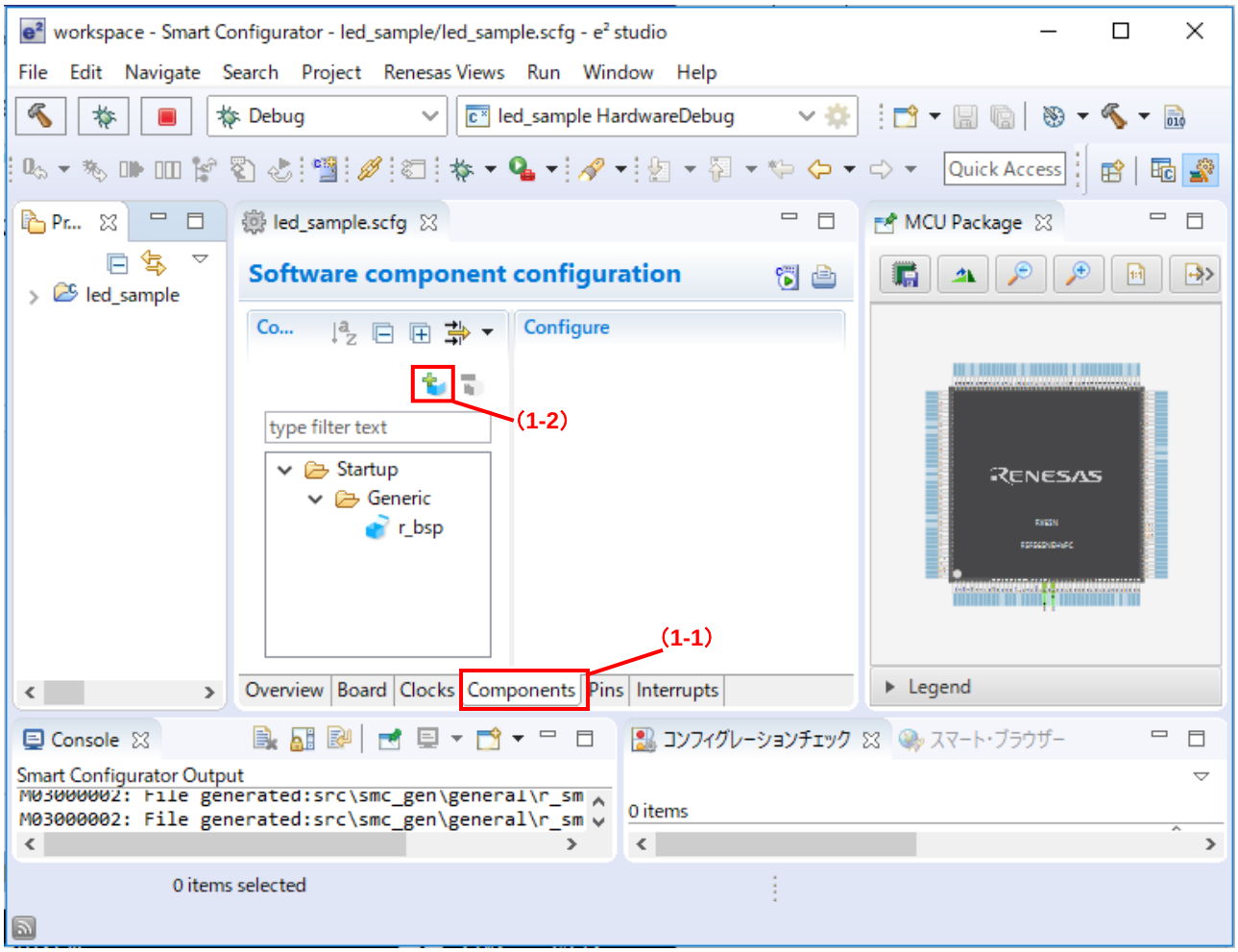
4.1 Using the Smart Configurator

Use e² studio to create a new project, and then proceed with the project creation processing until the Software Component Selection page appears.

(1) On the Software component configuration page, specify the following settings:

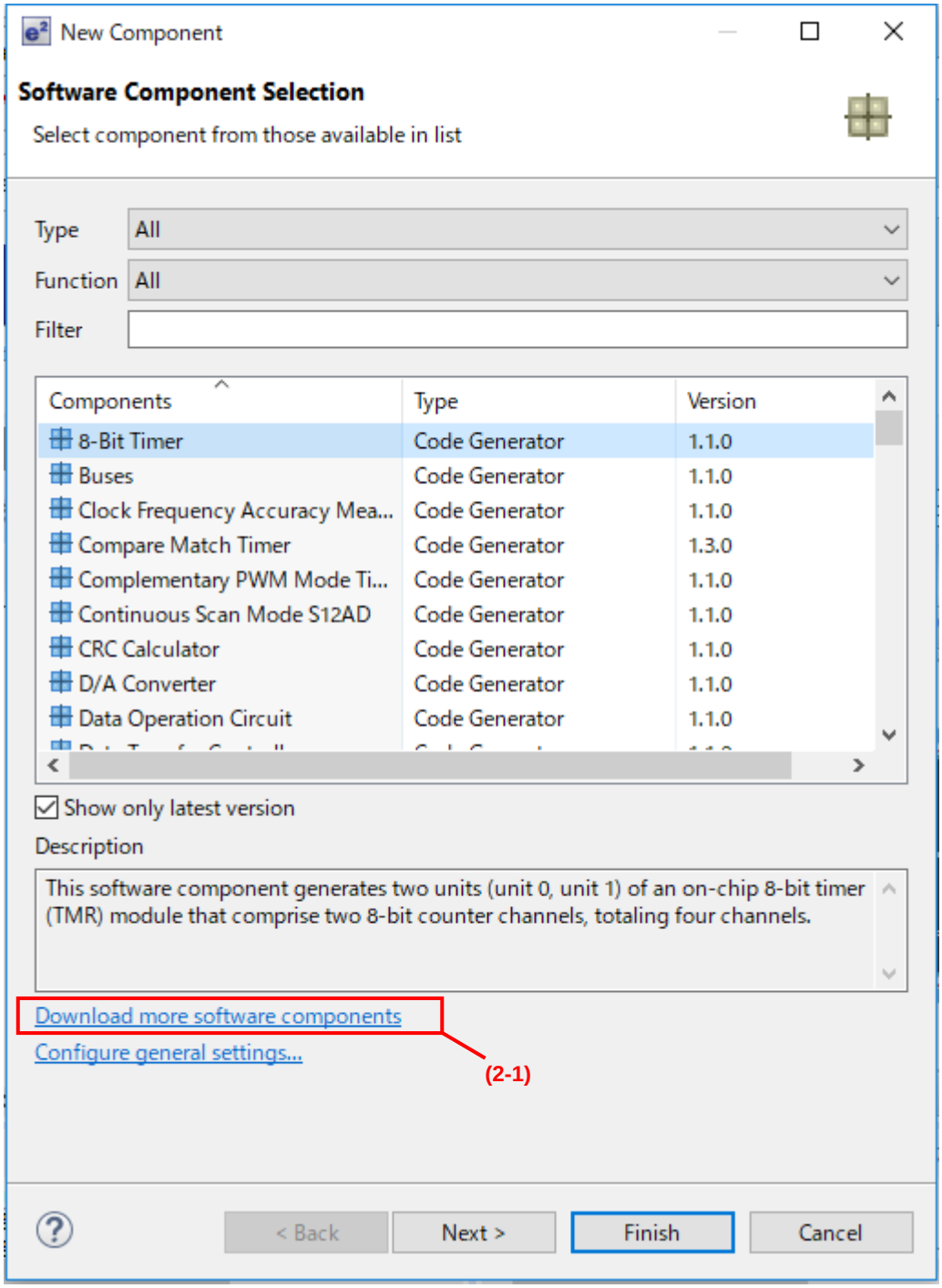
(1-1) Select the [Components] tab.

(1-2) Click the [Add component] button.



(2) On the Software Component Selection page, specify the following settings:

(2-1) Click [Download more software components].



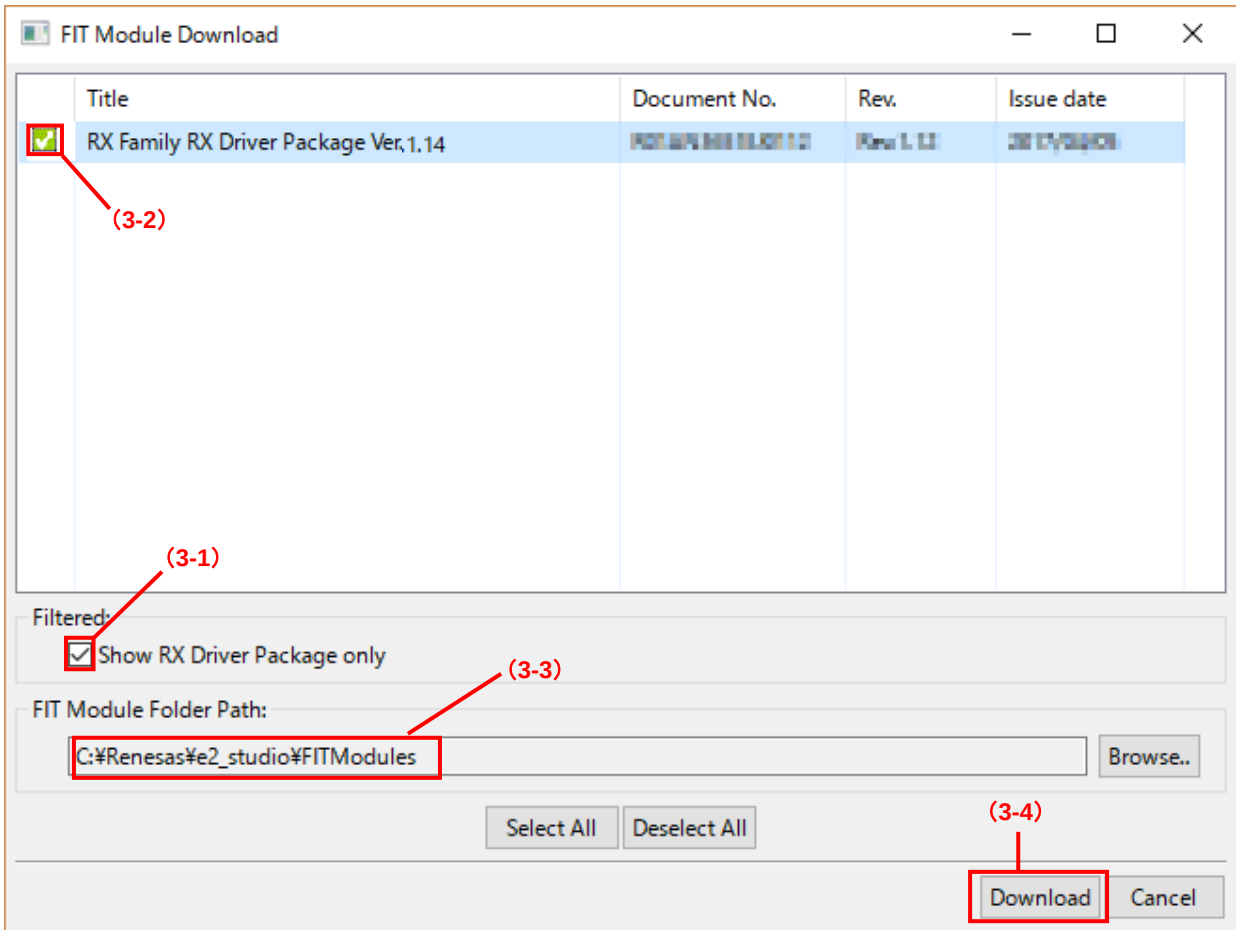
(3) On the FIT Module Download page, specify the following settings:

(3-1) Select [Show RX Driver Package only].

(3-2) Select the displayed [RX Family RX Driver Package Ver.1.14] check box.

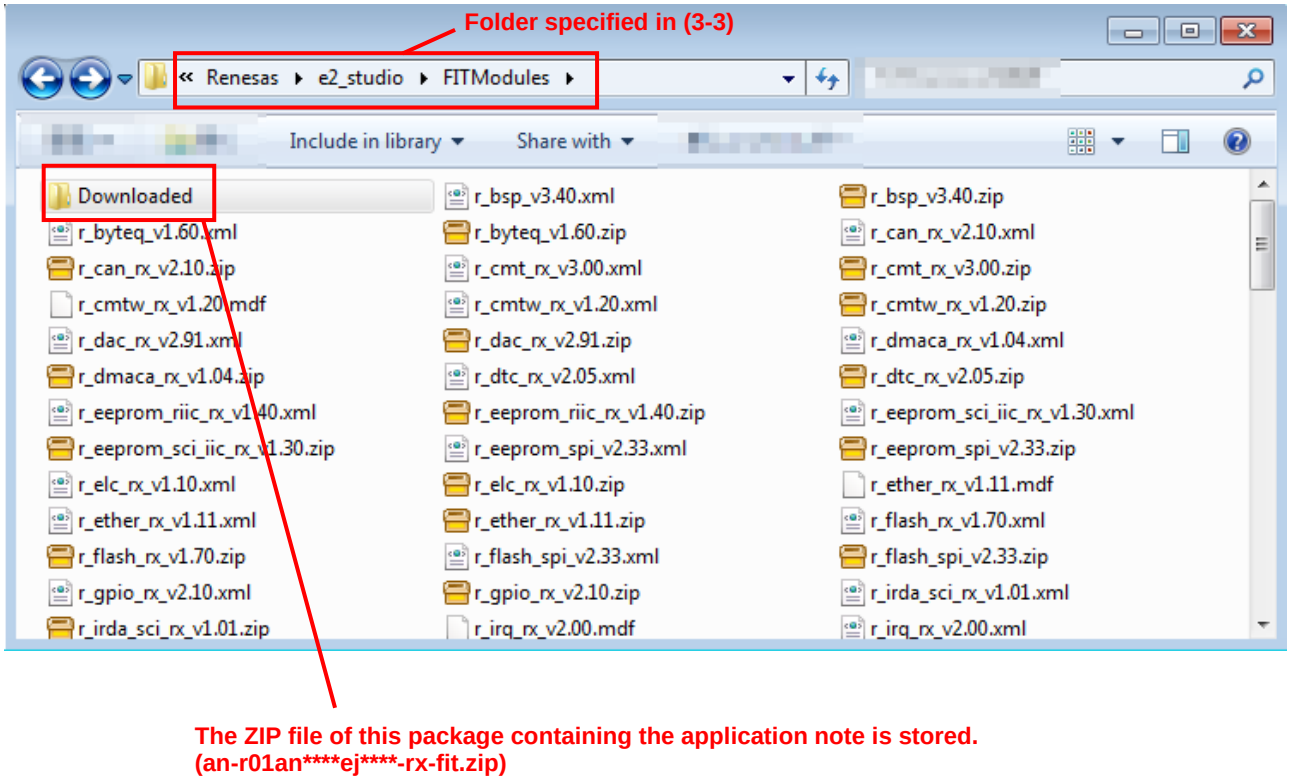
(3-3) Specify the location in which the FIT modules are to be saved.

(3-4) Click [Download].



(4) RX Family RX Driver Package Ver.1.14 is saved in the folder specified in (3-3).

In the Downloaded folder, the ZIP file of this package containing the application note is saved.



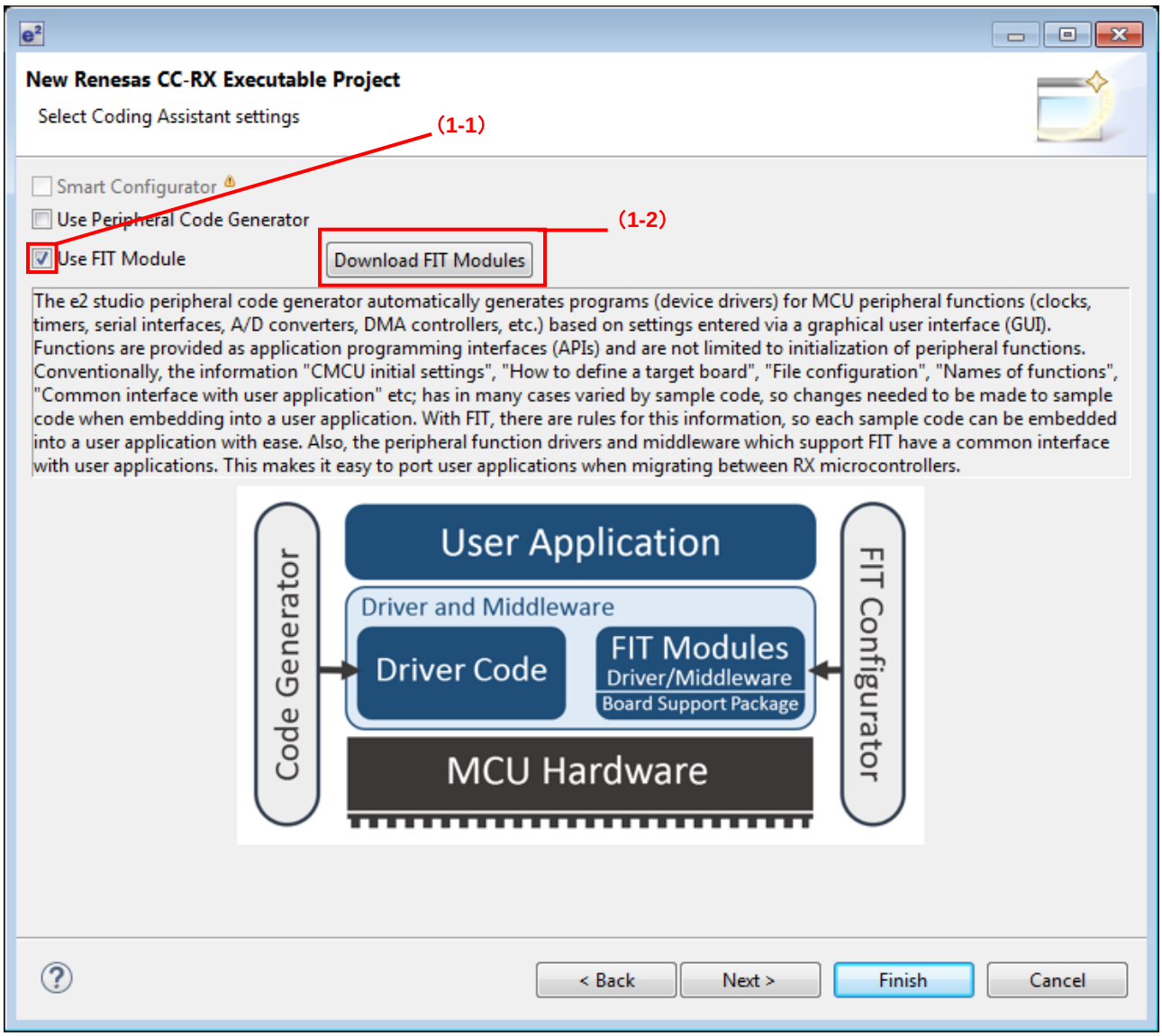
4.2 Using the FIT Configurator

Use e^2 studio to create a new project, and then proceed with the project creation processing until the Select Coding Assistant settings page appears.

(1) On the Select Coding Assistant settings page, specify the following settings:

(1-1) Select the [Use FIT Module] check box.

(1-2) Click [Download FIT Modules].



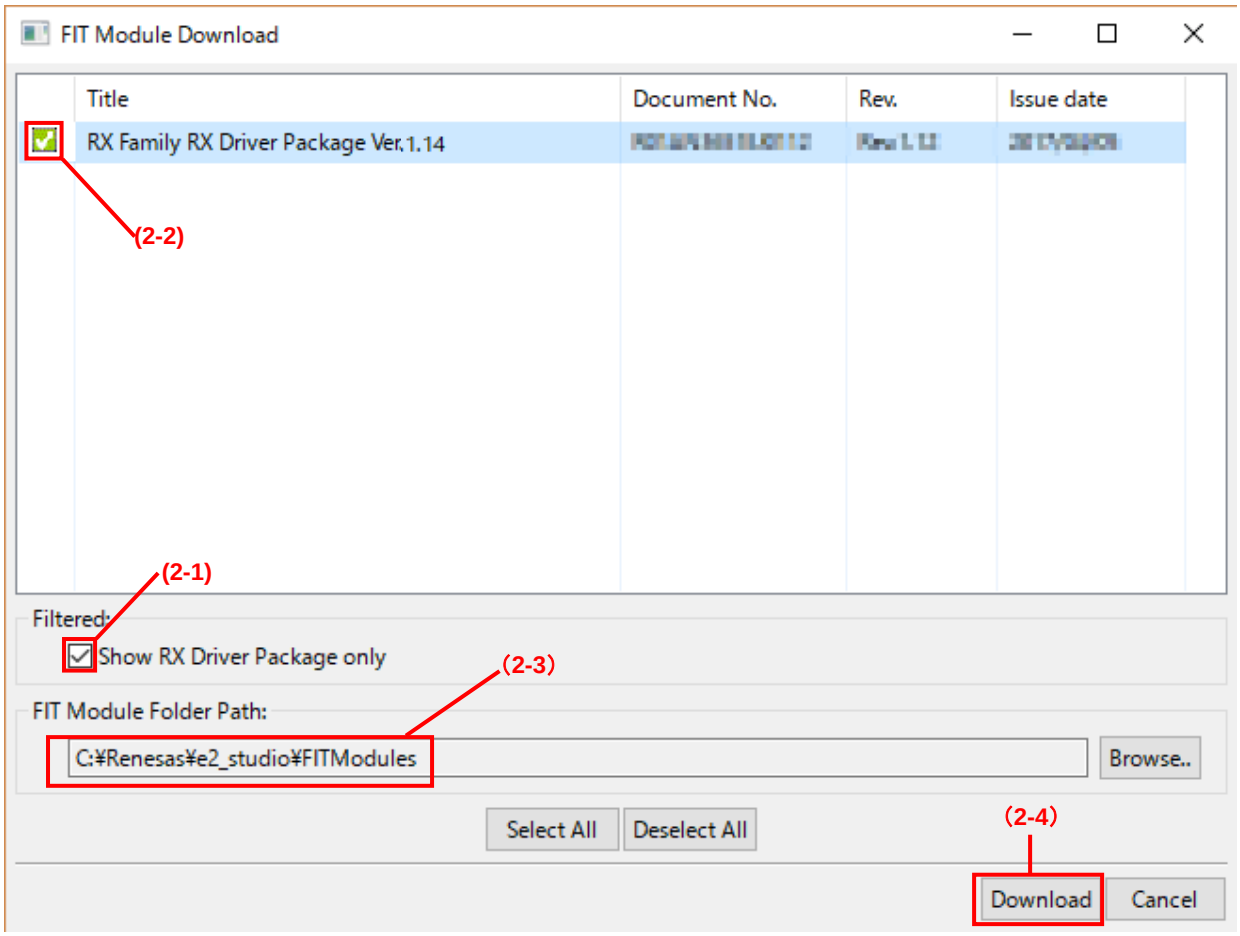
(2) On the FIT Module Download page, specify the following settings:

(2-1) Select [Show RX Driver Package only].

(2-2) Select the displayed [RX Family RX Driver Package Ver.1.14] check box.

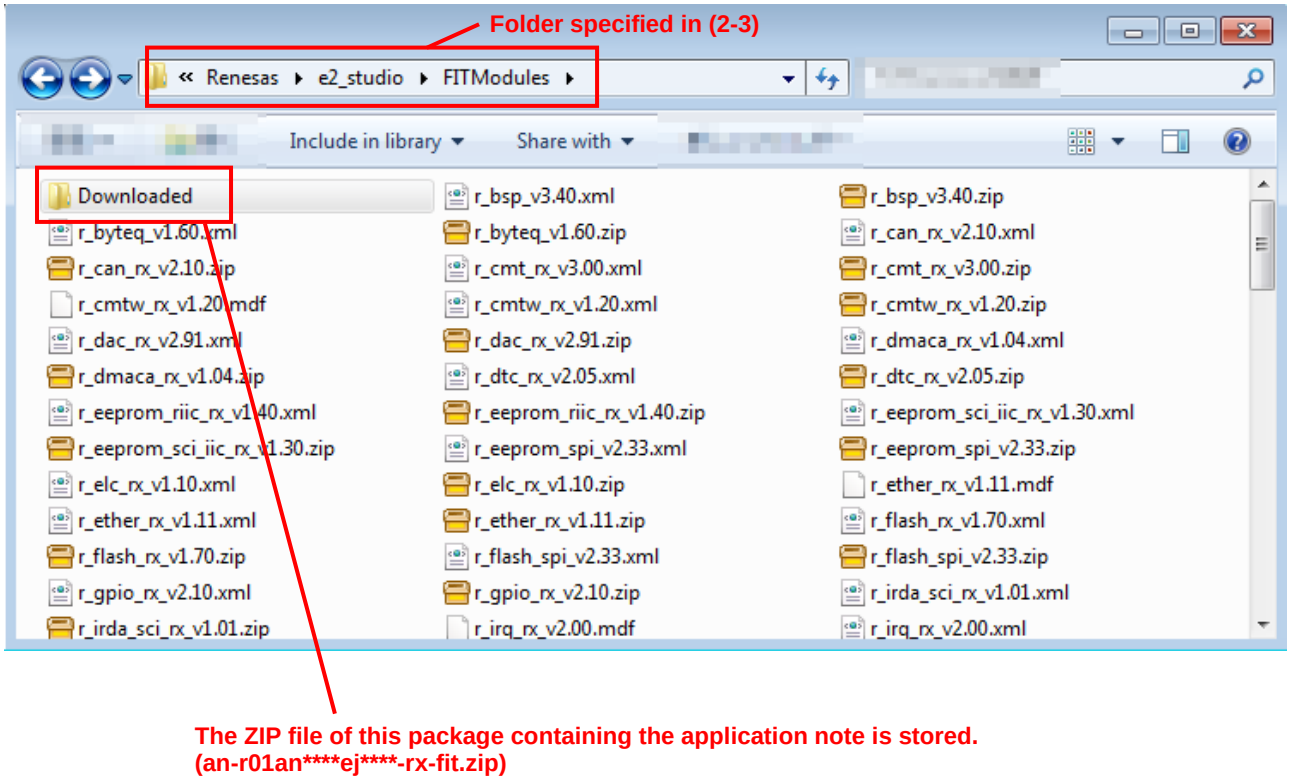
(2-3) Specify the location in which the FIT modules are to be saved.

(2-4) Click [Download].



(3) RX Family RX Driver Package Ver.1.14 is saved in the folder specified in (2-3).

In the Downloaded folder, the ZIP file of this package containing the application note is saved.



5. Appendix

5.1 Introduction of the RX Driver Package Dedicated Page

The Renesas website provides a page dedicated to the RX Driver Package.

This page provides descriptions of upgrades for Firmware Integration Technology (FIT) modules included in the RX Driver Package, precautionary notes, and past versions of the RX Driver Package.

Refer to the URL below.
https://www.renesas.com/rdp

Revision History

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

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