

[Released on the Web]

R20TS0372EJ0100

Rev.1.00

RX Family RX Driver Package Ver.1.16

Nov. 27, 2018

Outline

RX Family RX Driver Package Ver. 1.16 has been released on the web.

This update from the RX Family RX Driver Package Ver. 1.15 has added a supported MCU group and has updated the modules included in the package.

This product is available free of charge.

1. Features

(1) About RX Driver Package

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

Package Component

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

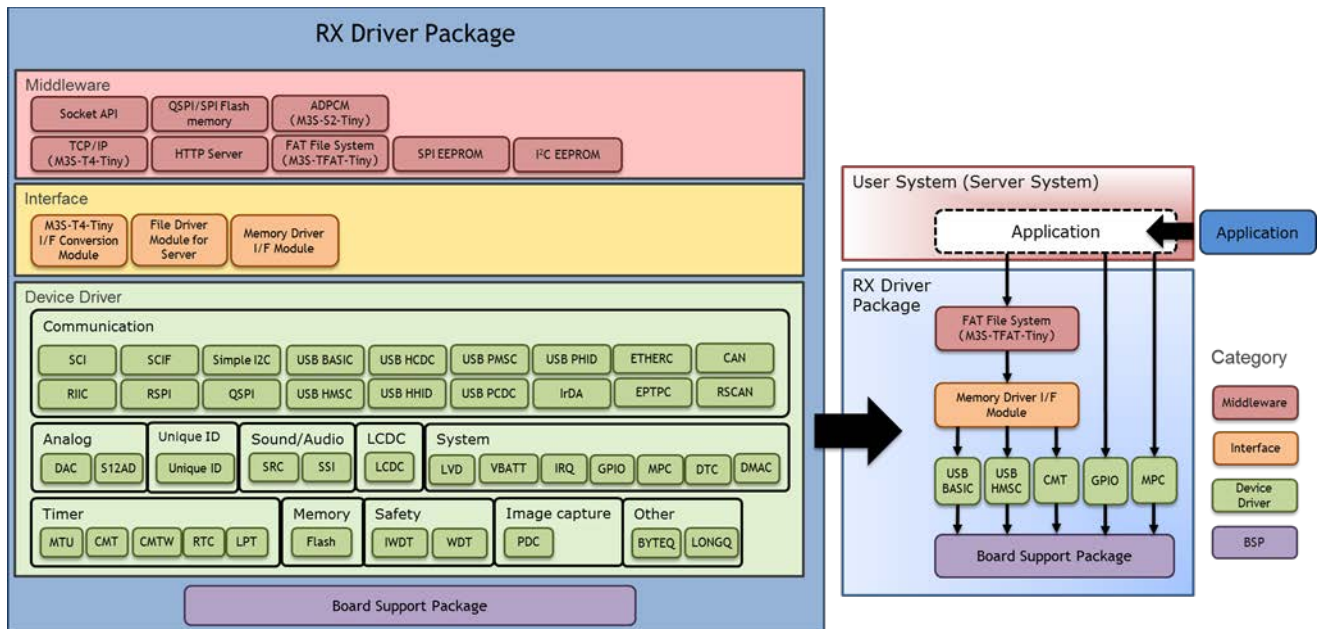


Figure 1. System Structure

(2) Major changes from RX Family RX Driver Package Ver. 1.15 to Ver. 1.16.

1. Addition of Supported MCUs

Support has been added to RX66T group.

2. Updated FIT Modules

After the release of RX Driver Package Ver. 1.15 (Document No. R01AN4372\*), many FIT modules have been updated. Differences from RX family RX Driver Package Ver. 1.15 are shown in Table 1, Table 2, and Table 3. The meanings of the terms in the column of Update Information are listed in the table below.

Term	Meaning
Same	Includes the same modules as previous.
Updated	Includes updated modules. Updated contents differ depending on the driver used. Check the revision history of each driver's document.
Added	Includes the modules added in this update.

\*Only the first 9 digits are listed.

● Board Support Package (BSP)

Table 1. Board Support Package (BSP) Update Information

Module Name	FIT Module Name	Rev.	Update Info from Ver. 1.15
Board Support Package (BSP)	r_bsp	3.91	Updated

● Device Driver

Table 2. Device Driver Update Information (Part 1)

Module Name	FIT Module Name	Rev.	Update Info from Ver. 1.15
Voltage Detection Circuit (LVD)	r_lvd_rx	2.40	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	2.30	Updated
Data Transfer Controller (DTC)	r_dtc_rx	2.10	Updated
DMA Controller (DMAC)	r_dmaca_rx	1.10	Updated
I/O Ports (GPIO)	r_gpio_rx	2.40	Updated
Multi-Function Pin Controller (MPC)	r_mpc_rx	2.40	Updated
Compare Match Timer (CMT)	r_cmt_rx	3.30	Updated
Compare Match Timer W (CMTW)	r_cmtw_rx	1.31	Same
Real-Time Clock (RTC)	r_rtc_rx	2.72	Same
Low Power Timer (LPT)	r_lpt_rx	1.21	Same
Independent Watchdog Timer (IWDT)	r_iwtdt_rx	1.90	Updated
Watchdog Timer (WDT)	r_wdt_rx	1.30	Updated
Serial Communications Interface (SCI: Asynchronous/Clock Synchronous)	r_sci_rx	2.10	Updated
Serial Communications Interface with FIFO (SCIFA: Asynchronous/Clock Synchronous)	r_scif_rx	1.20	Same

Table 2. Device Driver Update Information (Part 2)

Module Name	FIT Module Name	Rev.	Update from Ver. 1.15
Serial Communications Interface with FIFO (SCIFA: Device Driver for Serial Memory Control)	r_scifa_smstr_rx	1.09	Same
Serial Communications Interface (SCI: Simple I <sup>2</sup> C Bus)	r_sci_iic_rx	2.30	Updated
I <sup>2</sup> C Bus Interface (RIIC)	r_riic_rx	2.30	Updated
Serial Peripheral Interface	r_rspi_rx	1.80	Updated
Serial Peripheral Interface (RSPI: Device Driver for Serial Memory Control)	r_rspi_smstr_rx	1.15	Updated
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	Same
USB Host Mass Storage Class	r_usb_hmsc	1.23	Same
USB Host Communication Device Class	r_usb_hcdc	1.23	Same
USB Host Human Interface Device Class	r_usb_hhid	1.23	Same
USB Peripheral Mass Storage Class	r_usb_pmsc	1.23	Same
USB Peripheral Communications Device Class	r_usb_pcdc	1.23	Same
USB Peripheral Human Interface Device Class	r_usb_phid	1.23	Same
USB Basic Firmware mini	r_usb_basic_mini	1.10	Updated
USB Host Mass Storage Class mini	r_usb_hmsc_mini	1.10	Updated
USB Host Communication Device Class mini	r_usb_hcdc_mini	1.10	Updated
USB Host Human Interface Device Class mini	r_usb_hhid_mini	1.10	Updated
USB Peripheral Mass Storage Class mini	r_usb_pmsc_mini	1.10	Updated
USB Peripheral Communication Device Class mini	r_usb_pcdc_mini	1.10	Updated
USB Peripheral Human Interface Device Class mini	r_usb_phid_mini	1.10	Updated
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	1.15	Same
CAN Module (CAN)	r_can_rx	2.13	Updated
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	Same
SD Slave Interface (SDSI)	r_sdsi_rx	2.00	Same
12-Bit A/D Converter (S12AD)	r_s12ad_rx	3.00	Updated
D/A Converter (DAC)	r_dac_rx	3.20	Updated
Flash Memory (On-chip flash memory Programming)	r_flash_rx	3.40	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	Same
Byte Queue Buffer (Data Management)	r_byteq	1.70	Updated
Long Queue Buffer (Data Management)	r_longq	1.70	Updated
Event Link Controller (ELC)	r_elc_rx	1.20	Same

- Middleware/Interface Module

Table 3. Middleware/Interface Module Update Information

Module Name	FIT Module Name	Rev.	Update Info from Ver. 1.15
M3S-T4-Tiny Module for Embedding	r_t4_rx	2.07	Same
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
SD Mode SD Memory Card Driver	r_sdc_sdmem_rx	2.02	Added
SPI Serial EEPROM Module	r_eeprom_spi	2.34	Same
SPI Serial Flash Memory Module	r_flash_spi	2.34	Same
I <sup>2</sup> C Bus Interface (RIIC) Module for EEPROM Access	r_eeprom_riic_rx	1.40	Same
Simple I <sup>2</sup> C 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 Sound Playback and Compression System (original ADPCM codec)	r_s2_rx	3.04	Same
M3S-TFAT-Tiny (Open-Source FAT file system)	r_tfat_rx	3.03	Same
M3S-TFAT-Tiny Memory Driver Interface Module	r_tfat_driver_rx	1.04	Updated

## 2. Supported MCUs

RX110, RX111, RX113, RX130, RX210, RX230/RX231, RX23T, RX24T, and RX24U groups  
 RX63N/RX631, RX64M, RX65N/RX651, RX66T and RX71M groups

## 3. Operating Environment

Main operating environment is as follows.

- Integrated development environment: e<sup>2</sup> studio V7.0.0 and later versions
- Cross tool: C/C++ Compiler Package for RX Family V3.00.00

## 4. How to Use a Product

RX Driver Package enables you to create an application program easily by using the Smart Configurator or FIT Configurator functions of e<sup>2</sup> studio.

For details on how to use a product, refer to the documents for each tool listed in Table 4, and the Application Note included in this package.

Table 4. Related Documents for Instructions

Tool	Document
e <sup>2</sup> studio Smart Configurator	Renesas e <sup>2</sup> studio Smart Configurator User Guide (Document No. R20AN0451 <sup>(Note)</sup> )
e <sup>2</sup> studio FIT Configurator	RX Family Adding Firmware Integration Technology Modules to Projects (Document No. R01AN1723 <sup>(Note)</sup> )
CS+	RX Family Adding Firmware Integration Technology Modules to CS+ Projects (Document No. R01AN1826 <sup>(Note)</sup> )

Note: Only the first 9 digits are listed.

## 5. Appendix

### 5.1 Web Page for RX Driver Package

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

Refer to the following URL:

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

**Revision History**

Rev.	Date	Description	
		Page	Summary
1.00	Nov. 27, 2018	-	First edition issued

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■Inquiry

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