

RX Family Driver Package Ver.1.17

On February 28, 2019, RX Family RX Driver Package Ver. 1.18 has been released on the web to replace the RX Family Driver Package Ver.1.17, which contained an unnecessary file.

Operations would not be affected by changing from RX Family Driver Package Ver.1.17 to Ver.1.18.

If you are a new user of the RX Family RX Driver Package, please download the Ver.1.18.

Outline

RX Family RX Driver Package Ver. 1.17 has been released on the web.

This product is an update of the RX Family RX Driver Package Ver. 1.16, including updates of the modules contained 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

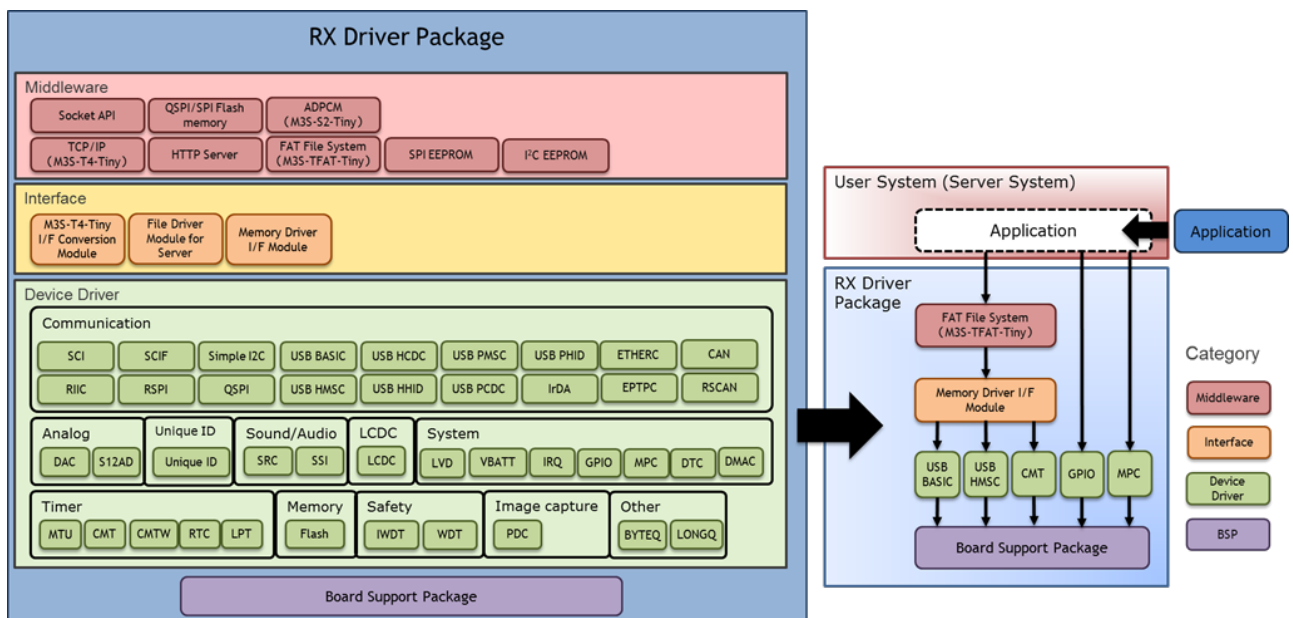


Figure 1. System Structure

(2) Major changes from RX Family RX Driver Package Ver.1.16 to Ver.1.17.

1. Updated FIT modules to support download and import sample project of FIT modules.
2. Updated FIT modules to be able to run on FreeRTOS.

Updated FIT Modules

After the release of RX Driver Package Ver. 1.16 (Document No. R01AN4471\*), many FIT modules have been updated. Differences from RX family RX Driver Package Ver. 1.16 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. 1.16
Board Support Package (BSP)	r_bsp	3.91	Same

- Device Driver

Table 2. Device Driver Update Information (Part 1)

Module Name	FIT Module Name	Rev.	Update Info from Ver. 1.16
Voltage Detection Circuit (LVD)	r_lvd_rx	2.41	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	2.31	Updated
Data Transfer Controller (DTC)	r_dtc_rx	2.10	Same
DMA Controller (DMAC)	r_dmaca_rx	1.10	Same
I/O Ports (GPIO)	r_gpio_rx	2.41	Updated
Multi-Function Pin Controller (MPC)	r_mpc_rx	2.41	Updated
Compare Match Timer (CMT)	r_cmt_rx	3.31	Updated

Table 2. Device Driver Update Information (Part 2)

Module Name	FIT Module Name	Rev.	Update Info from Ver. 1.16
Compare Match Timer W (CMTW)	r_cmtw_rx	1.32	Updated
Real-Time Clock (RTC)	r_rtc_rx	2.73	Updated
Low Power Timer (LPT)	r_lpt_rx	1.22	Updated
Independent Watchdog Timer (IWDT)	r_iwdt_rx	1.91	Updated
Watchdog Timer (WDT)	r_wdt_rx	1.31	Updated
Serial Communications Interface (SCI: Asynchronous/Clock Synchronous)	r_sci_rx	2.11	Updated
Serial Communications Interface with FIFO (SCIFA: Asynchronous/Clock Synchronous)	r_scif_rx	1.21	Updated
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	2.31	Updated
I <sup>2</sup> C Bus Interface (RIIC)	r_riic_rx	2.31	Updated
Serial Peripheral Interface	r_rspi_rx	1.80	Same
Serial Peripheral Interface (RSPI: Device Driver for Serial Memory Control)	r_rspi_smstr_rx	1.15	Same
Quad Serial Peripheral Interface (QSPI: Device Driver for Serial Memory Control)	r_qsapi_smstr_rx	1.10	Same
USB Basic Firmware	r_usb_basic	1.24	Updated
USB Host Mass Storage Class	r_usb_hmsc	1.24	Updated
USB Host Communication Device Class	r_usb_hcdc	1.24	Updated
USB Host Human Interface Device Class	r_usb_hhid	1.24	Updated
USB Peripheral Mass Storage Class	r_usb_pmsc	1.24	Updated
USB Peripheral Communications Device Class	r_usb_pcdc	1.24	Updated
USB Peripheral Human Interface Device Class	r_usb_phid	1.24	Updated
USB Basic Firmware mini	r_usb_basic_mini	1.10	Same
USB Host Mass Storage Class mini	r_usb_hmsc_mini	1.10	Same
USB Host Communication Device Class mini	r_usb_hcdc_mini	1.10	Same
USB Host Human Interface Device Class mini	r_usb_hhid_mini	1.10	Same
USB Peripheral Mass Storage Class mini	r_usb_pmsc_mini	1.10	Same
USB Peripheral Communication Device Class mini	r_usb_pcdc_mini	1.10	Same
USB Peripheral Human Interface Device Class mini	r_usb_phid_mini	1.10	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	1.15	Same
CAN Module (CAN)	r_can_rx	2.14	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	2.02	Updated
SD Slave Interface (SDSI)	r_sdsi_rx	2.00	Same
12-Bit A/D Converter (S12AD)	r_s12ad_rx	3.01	Updated
D/A Converter (DAC)	r_dac_rx	3.21	Updated
Flash Memory (On-chip flash memory Programing)	r_flash_rx	3.41	Updated
Sampling Rate Converter (SRC)	r_src_api_rx	1.11	Same

Table 2. Device Driver Update Information (Part 3)

Module Name	FIT Module Name	Rev.	Update Info from Ver. 1.16
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	1.71	Updated
Long Queue Buffer (Data Management)	r_longq	1.71	Updated
Event Link Controller (ELC)	r_elc_rx	1.20	Same
CTSU Module	r_ctsu_qe	1.00	Added

- Middleware/Interface Module

Table 3. Middleware/Interface Module Update Information

Module Name	FIT Module Name	Rev.	Update Info from Ver. 1.16
M3S-T4-Tiny Module for Embedding	r_t4_rx	2.08	Updated
Interface Conversion Module for Ethernet Driver and TCP/IP M3S-T4-Tiny for Embedding	r_t4_driver_rx	1.07	Updated
System Timer Module	r_sys_time_rx	1.00	Same
SD Mode SD Memory Card Driver	r_sdc_sdmem_rx	2.03	Updated
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	3.04	Updated
M3S-TFAT-Tiny Memory Driver Interface Module	r_tfat_driver_rx	1.05	Updated
Touch Module	r_touch_qe	1.00	Added

## 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. System Requirements

System requirements are listed below.

- Integrated development environment: e<sup>2</sup> studio V7.2.0
- Cross tool: C/C++ Compiler Package for RX Family V3.00.00

## 4. How to Use a Product

RX Driver Package enables you to construct application programs 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.

RX Driver Package Ver.1.17 is scheduled to be released on January 21, 2019.

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	Jan. 16, 2019	-	First edition issued
1.01	Mar. 01, 2019	1	Added descriptions regarding the change from Ver.1.17 to Ver.1.18.

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