

[Released on the Web]

R20TS0423EJ0100

Rev.1.00

RX Family RX Driver Package Ver.1.19

May.16, 2019

Outline

RX Family RX Driver Package Ver.1.19 has been released on the web.

This product is the updated version of RX family RX Driver Package Ver.1.18. The update includes addition of supported devices and updated modules within the package.

This product is available free of charge.

1. Features

(1) About RX Driver Package

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, as well as application functions such as USB and Ethernet.

Package Component

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

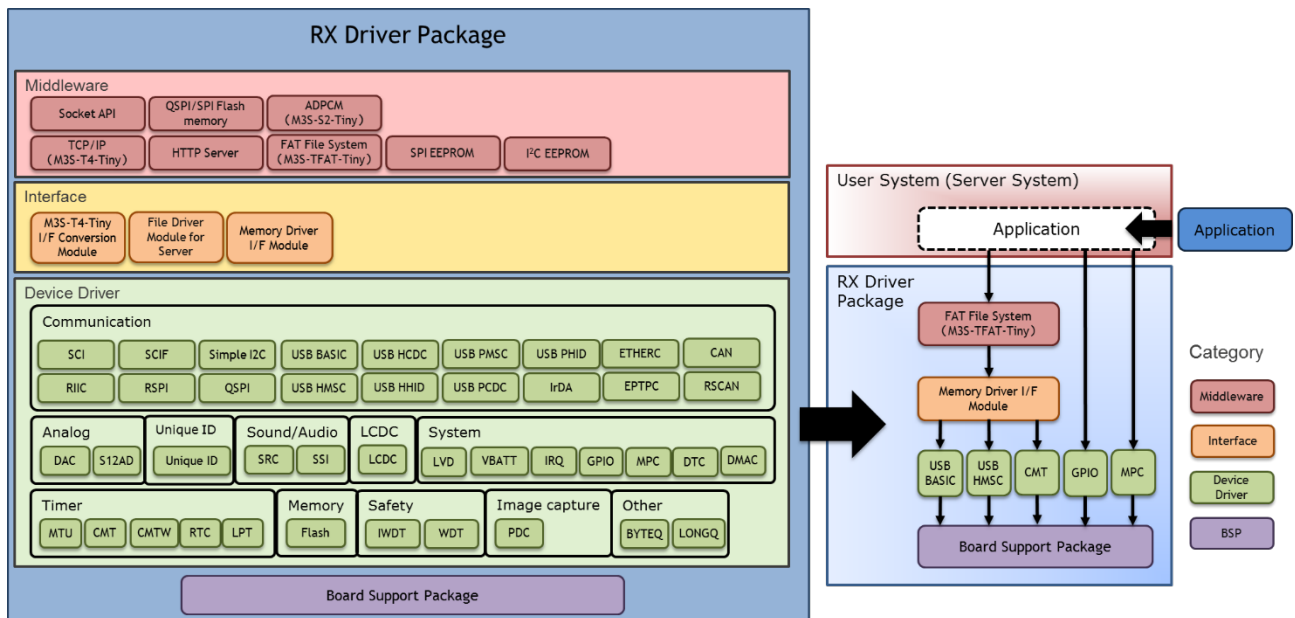


Figure 1. System Structure

(2) Major changes from Ver.1.18 to Ver.1.19 of RX Family RX Driver Package

1. Addition of supported devices  
Support has been added for RX72T group.
2. Updated FIT Modules

After the release of RX Driver Package Ver.1.18 (Document number: R01AN4659\*), many FIT modules have been updated. For the updated FIT modules, see the update information from Ver.1.18 to Ver.1.19 in Table 1, Table 2, and Table 3.

For the meanings of the terms used in the 'Update from Ver.1.18' column, see the table below.

Term	Meaning
Same	Same as the previous version.
Updated	The module is updated from the previous version. Update content varies depending on the driver. Check the revision history of each driver's document.
Added	New module

\*The first 9 digits are shown.

- Board Support Package (BSP)

Table 1. Board Support Package (BSP) Update Information

Module Name	FIT Module Name	Rev.	Update from Ver.1.18
Board Support Package (BSP)	r_bsp	4.01	Updated

- Device Driver

Table 2. Device Driver Update Information (1/3)

Module Name	FIT Module Name	Rev.	Update from Ver.1.18
Voltage Detection Circuit (LVD)	r_lvd_rx	2.50	Updated
Low Power Consumption (LPC)	r_lpc_rx	1.40	Same
Battery Backup (VBATT)	r_vbatt_rx	1.02	Updated
Interrupt Controller (IRQ)	r_irq_rx	2.40	Updated
Data Transfer Controller (DTC)	r_dtc_rx	2.20	Updated
DMA Controller (DMAC)	r_dmaca_rx	1.20	Updated
I/O Ports (GPIO)	r_gpio_rx	2.50	Updated
Multi-Function Pin Controller (MPC)	r_mpc_rx	2.50	Updated
Compare Match Timer (CMT)	r_cmt_rx	3.40	Updated

Table 2. Device Driver Update Information (2/3)

Module Name	FIT Module Name	Rev.	Update from Ver.1.18
Compare Match Timer W (CMTW)	r_cmtw_rx	1.40	Updated
Real-Time Clock (RTC)	r_rtc_rx	2.74	Updated
Low Power Timer (LPT)	r_lpt_rx	1.22	Same
Independent Watchdog Timer (IWDT)	r_iwdt_rx	2.00	Updated
Watchdog Timer (WDT)	r_wdt_rx	1.40	Updated
Serial Communications Interface (SCI: Asynchronous/Clock Synchronous)	r_sci_rx	2.20	Updated
Serial Communications Interface with FIFO (SCIFA: Asynchronous/Clock Synchronous)	r_scif_rx	1.21	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 I <sup>2</sup> C Bus)	r_sci_iic_rx	2.40	Updated
I <sup>2</sup> C Bus Interface (RIIC)	r_riic_rx	2.40	Updated
Serial Peripheral Interface	r_rspi_rx	2.00	Updated
Quad Serial Peripheral Interface (QSPI: Device Driver for Serial Memory Control)	r_qsapi_smstr_rx	1.11	Updated
USB Basic Firmware	r_usb_basic	1.25	Updated
USB Host Mass Storage Class	r_usb_hmsc	1.25	Updated
USB Host Communication Device Class	r_usb_hcdc	1.25	Updated
USB Host Human Interface Device Class	r_usb_hhid	1.25	Updated
USB Peripheral Mass Storage Class	r_usb_pmsc	1.25	Updated
USB Peripheral Communications Device Class	r_usb_pcdc	1.25	Updated
USB Peripheral Human Interface Device Class	r_usb_phid	1.25	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	2.15	Updated
CAN Module (RSCAN)	r_rscan_rx	1.21	Updated
IrDA Interface (IrDA)	r_irda_sci_rx	1.01	Same
Parallel Data Capture Unit (PDC)	r_pdc_rx	2.02	Updated
SD Host Interface (SDHI)	r_sdhi_rx	2.03	Updated
SD Slave Interface (SDSI)	r_sdsi_rx	2.01	Updated
MMC Mode MMCIF Driver (MMCIF)	r_mmcif_rx	1.04	Added
12-Bit A/D Converter (S12AD)	r_s12ad_rx	3.10	Updated
D/A Converter (DAC)	r_dac_rx	3.30	Updated
Flash Memory (On-Chip Flash Memory Programming)	r_flash_rx	3.50	Updated
Sampling Rate Converter (SRC)	r_src_api_rx	1.12	Updated
Serial Sound Interface (SSI)	r_ssi_api_rx	1.22	Updated

Table 2. Device Driver Update Information (3/3)

Module Name	FIT Module Name	Rev.	Update from Ver.1.18
LCD Controller/Driver (LCDC)	r_lcdc_rx	1.00	Same
Graphic LCD Controller (GLCDC)	r_glcdc_rx	1.01	Updated
Unique ID Read	r_uid_rx	1.10	Same
Byte Queue Buffer (Data Management)	r_byteq	1.71	Same
Long Queue Buffer (Data Management)	r_longq	1.71	Same
Event Link Controller (ELC)	r_elc_rx	1.20	Same
CTSU Module	r_ctsu_qe	1.00	Same

- Middleware/Interface module

Table 3. Middleware/Interface Module Update Information

Module Name	FIT Module Name	Rev.	Update from Ver.1.18
M3S-T4-Tiny module for Embedding	r_t4_rx	2.08	Same
Interface Conversion Module for Ethernet Driver and TCP/IP M3S-T4-Tiny for Embedding	r_t4_driver_rx	1.07	Same
System Timer Module	r_sys_time_rx	1.00	Same
SD Mode SD Memory Card Driver	r_sdc_sdmem_rx	2.03	Same
Clock Synchronous Control Module for EEPROM Access	r_eeprom_spi	3.00	Updated
Clock Synchronous Control Module for Serial Flash Memory Access	r_flash_spi	3.00	Updated
I <sup>2</sup> C Bus Interface (RIIC) Module for EEPROM Access	r_eeprom_riic_rx	1.41	Updated
Simple I <sup>2</sup> C Module for EEPROM Access	r_eeprom_sci_iic_rx	1.31	Updated
Memory Access Driver Interface Module	r_memdrv_rx	1.00	Added
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
M3S-TFAT-Tiny Module (Open-Source FAT File System)	r_tfat_rx	3.04	Same
M3S-TFAT-Tiny Memory Driver Interface Module	r_tfat_driver_rx	1.05	Same
Touch Module	r_touch_qe	1.00	Same

## 2. Supported Devices

RX110, RX111, RX113, RX130, RX210, RX231/RX230, RX23T, RX24T, and RX24U groups  
 RX63N/RX631, RX64M, RX65N/RX651, RX66T, RX71M, and RX72T groups

## 3. Operating Environment

The main operating environment is as follows.

- Integrated development environment: e<sup>2</sup> studio V7.3.0
- Cross tool: C/C++ Compiler Package for RX Family V3.01.00

## 4. Using the Product

RX Driver Package enables you to create an application program easily using the Smart Configurator <sup>(Note1)</sup> or FIT Configurator <sup>(Note2)</sup>.

For details about how to use the product, refer to the applicable documents listed in Table 4, as well as the application note included in this package.

Note1: Supported by CS+ and e<sup>2</sup> studio.

Note2: Supported by e<sup>2</sup> studio only when using devices which are not supported by Smart Configurator.

Table 4. Documents for Usage Instructions

Tool	Applicable Document
e <sup>2</sup> studio Smart Configurator	RX Smart Configurator User's Guide: e <sup>2</sup> studio (R20AN0451 <sup>(Note)</sup> )
e <sup>2</sup> studio FIT Configurator	RX Family Adding Firmware Integration Technology Modules to Projects (R01AN1723 <sup>(Note)</sup> )
CS+	RX Family Adding Firmware Integration Technology Modules to CS+ Projects (R01AN1826 <sup>(Note)</sup> )

\*Only the first 9 digits are listed.

## 5. Appendix

### 5.1 Introducing RX Driver Package Web Page

The Renesas website provides a dedicated webpage for the RX Driver Package.

See the URL below.

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

### 5.2 Introducing Development Software and Tools

We are introducing development software and tools that enable you to quickly start developing for RXv3 core-based RX72T group.

For details, refer to the following tool news.

<https://www.renesas.com/search/keyword-search.html#genre=document&q= r20ts0427>

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	May.16.19	-	First edition issued

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