R-IN32M4-CL2

Driver/Middleware Set for R-IN32M4-CL2 IAR KickStart Kit Release Note

R18AN0031EJ0271
Rev.2.7.1
Jul 31, 2019

Summary

Thank you for using Driver/Middleware Set for R-IN32M4-CL2 IAR KickStart Kit.

This document describes the package contents and operating environment of this product.

Please be sure to read before use.

For details on how to use each sample software, middleware etc, please refer to the related documents below.

Related documents

R18UZ0048EJ****	R-IN32M4-CL2 Development Tools Startup Manual
R18UZ0040EJ****	R-IN32M4-CL2 Programming Manual (OS edition)
R18UZ0038EJ****	R-IN32M4-CL2 Programming Manual (Driver edition)
R18UZ0042EJ****	R-IN32M4-CL2 User's Manual CC-Link IE Field
R18UZ0056EJ****	R-IN32 Series User's Manual CC-Link Remote device station
R18UZ0063EJ****	R-IN32 Series User's Manual (µNet3/SNMP edition)
R18UZ0064EJ****	R-IN32 Series User's Manual (µNet3/BSD edition)

Last four digits of document number (described as ****) indicate version information of each document.

Please download the latest document from our web site and refer to it.

Contents

1. Introduction

Driver/Middleware Set for R-IN32M4-CL2 IAR KickStart Kit is a software package that collects various sample applications, libraries, middleware, peripheral function drivers that can be used for developing applications using R-IN32M4-CL2.

2. Package contents

The sample applications, libraries, middleware, and peripheral function drivers included in this package are shown below.

- Sample application

No.	Sample application name
1	CC-Link Ver.1 sample
2	CC-Link Ver.2 sample
3	CC-Link IE Field (intelligent device)
4	CC-Link IE Field (remote device)
5	Interval timer sample
6	OS sample
7	OS-less sample
8	TCP/IP BSD Socket API sample
9	TCP/IP MAC Control sample
10	TCP/IP nonblock API sample
11	TCP/IP Network App sample
12	TCP/IP SNMP sample
13	Version get sample

- Library

No.	Library name
1	HW-RTOS library
2	EtherPHY library
3	TCP/IP stack library

- Middleware

No.	Middleware name
1	Parallel flash ROM control
2	Serial flash ROM control
3	TCP/IP stack control

- Peripheral function driver

No.	Driver name
1	ADC
2	CSI
3	DMAC
4	IIC
5	Serial Flash MEMC
6	Timer (32bit timer TAUJ2)
7	TAUD (16bit timer TAUD)
8	UART
9	WDT
10	Ether Switch

3. Folder structure

Folder structure of this package is shown below.

```
TOP
|
+-- CMSIS << Cortex Microcontroller Software Interface Standard >>
|    +-- include
|
+-- Device << Device dependent files >>
     +-- Renesas
          +-- RIN32M4  << R-IN32M4 dependent files >>
               +-- Include<< Include directory >>
               +-- Library << Library directory >>
               +-- Source << Source directory >>
                    |
                    +-- Driver         << Driver directory >>
                    +-- Middleware << Middleware directory >>
                    +-- Project        << Project directory >>
                    |   |
                    |   +-- IAR_StarterKit_CL2
                    |        +-- CCSV1
                    |        +-- CCSV2
                    |        +-- cie_intelligent_device
                    |        +-- cie_remote_device
                    |        +-- interval_timer
                    |        +-- os_sample
                    |        +-- osless_sample
                    |        +-- uNet3_bsd
                    |        +-- uNet3_mac
                    |        +-- uNet3_nonblock
                    |        +-- uNet3_sample
                    |        +-- uNet3_snmp
                    |        +-- version_get_sample
                    |
                    +-- Templates   << Startup file and others >>
                        +-- IAR        << IAR compiler dependent files >>
```

4. Operating environment

The operating environment of this package is shown below.

- Target device

  R-IN32M4-CL2

- Target board

  R-IN32M4-CL2 IAR KickStart Kit

- Development environment
  - Compiler

    IAR Embedded Workbench for Arm 7.80.4 (IAR Systems)
  - Debugger

    IAR Embedded Workbench for Arm 7.80.4 (IAR Systems)
  - ICE

    I-jet / JTAGjet-Trace (IAR Systems)

5. Change history

Version	Changes
V2.7.1 (July 10, 2019)	[Changes-1] /Include/RIN32M4.h /Source/Driver/ethsw/ethsw.c - Correction of inconsistencies with the user manual [Changes-2] /Device/Renesas/RIN32M4/Source/Templates/IAR/cstartup_M.c - Update to enable FPU by default. FPU is enabled by "__iar_init_vfp()" in "__iar_program_start()".
V2.7.0 (Nov 22, 2018)	[Changes-1] - Update CC-Link sample programs. IOTENSU changed to low fixed. "Number of I/O points fixed to 32 points" can not be used. [Changes-2] - Update CC-Link IE Field intelligent device sample driver.
V2.6.0 (Jul 11, 2018)	[Changes] - Modify TCP/IP stack middleware.
V2.5.0 (Apr 26, 2018)	[Changes] - Modify TCP/IP stack sample programs and drivers.
V2.4.0 (Dec 7, 2017)	[Changes] - Add CC-link Project for TS-R-IN32M4-CL2 board
V2.3.0 (Jul 14, 2017)	[Changes-1] - Update CC-Link IE Field sample programs and drivers. Add Fast-Link UP function for CC-Link IE Field(Default disable) Modify Status of Master Station in case of non-receive cyclic transmission [Changes-2] - Update I2C drivers. Modify initial setting of I2C
V2.2.0 (Apr 28, 2017)	[Changes-1] - Update CC-Link IE Field intelligent device sample programs and drivers. Fix "MyStatus Counter" Bug Fix "Baton Pass Error" Add a Loop-back function. To use this function, enable the compile switch "LOOPBACK_FUNCTION". - Add CC-Link IE Field remote device sample programs and drivers.
V2.1.1 (Feb 28, 2017)	[Changes-1] - Modify TCP/IP stack sample programs (Technical Update TN-RIN-A016A/E,J support) [Changes-2] /Middleware/sflash/sflash.h
V2.1.0 (Nov 30, 2016)	[Changes-1] - Add TCP/IP stack sample programs and drivers.(3.1.8) [Changes-2] - Update ADC Driver - Update WDT Driver - Update Interval Timer Sample
V1.1.2 (Oct 31, 2016)	[Changes-1] - Update of HW-RTOS Library (V2.0.3)

V1.1.1 (Jul 26, 2016)	[Changes-1] - Update of EtherPHY Library
V1.1.0 (Mar 18, 2016)	[Changes-1] /CMSIS/* - Update of CMSIS for V4.5 [Changes-2] /Include/sromc/sromc.h /Driver/sromc/sromc.c /Middleware/sflash/sflash.c /Middleware/sflash/sflash.h - Add Dual I/O mode initialize function. - Add Quad I/O mode initialize function. [Changes-3] /Driver/iic/iic.c - Modify setting of iic_init()
V1.0.0 (Jan 29, 2016)	First release

6. Website and Support

Renesas Electronics Website
http://www.renesas.com/

Inquiries
http://www.renesas.com/contact/

Revision history

Revision	Date	Page	Changes
V2.7.1	July 10, 2019	-	Update to package V2.7.1
V2.7.0	Dec 27, 2018	-	Update to package V2.7.0
V2.4.0	Dec 07, 2017	-	Update to package V2.4.0
V2.1.1	Feb 28, 2017	-	First release

General Precautions in the Handling of Microprocessing Unit and Microcontroller Unit Products

The following usage notes are applicable to all Microprocessing unit and Microcontroller unit products from Renesas. For detailed usage notes on the products covered by this document, refer to the relevant sections of the document as well as any technical updates that have been issued for the products.

1. Handling of Unused Pins

   Handle unused pins in accordance with the directions given under Handling of Unused Pins in the manual.

   — The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible. Unused pins should be handled as described under Handling of Unused Pins in the manual.

2. Processing at Power-on

   The state of the product is undefined at the moment when power is supplied.

   — The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the moment when power is supplied.
   In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the moment when power is supplied until the reset process is completed. In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the moment when power is supplied until the power reaches the level at which resetting has been specified.

3. Prohibition of Access to Reserved Addresses

   Access to reserved addresses is prohibited.

   — The reserved addresses are provided for the possible future expansion of functions. Do not access these addresses; the correct operation of LSI is not guaranteed if they are accessed.

4. Clock Signals

   After applying a reset, only release the reset line after the operating clock signal has become stable. When switching the clock signal during program execution, wait until the target clock signal has stabilized.

   — When the clock signal is generated with an external resonator (or from an external oscillator) during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Moreover, when switching to a clock signal produced with an external resonator (or by an external oscillator) while program execution is in progress, wait until the target clock signal is stable.

5. Differences between Products

   Before changing from one product to another, i.e. to a product with a different part number, confirm that the change will not lead to problems.

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