# R-IN32M3 Series

TCP/IP Stack V3.1.6 Release Note

R18AN0029EJ0120
Rev.1.20
Jul 31, 2019

## Summary

This document describes the package contents and operating environment of this product. Please make sure to read before use.

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

## Related document

| | |
|---|---|
| R18UZ0062EJ**** | R-IN32M3 Series User's Manual: TCP/IP Stack |
| R18UZ0011EJ**** | R-IN32M3 Series Programming Manual: OS edition |
| R18UZ0009EJ**** | R-IN32M3 Series Programming Manual: Driver edition |

## Contents

# 1. Introduction

The R-IN32M3 TCP/IP stack is a software package that lists various sample applications, libraries, middleware, and peripheral function drivers that can be used when developing application applications using R-IN32M3.

# 2. Package contents

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

・Sample application name

| No. | Sample application name |
|---|---|
| 1 | TCP/IP BSD Socket API sample |
| 2 | TCP/IP MAC Control sample |
| 3 | TCP/IP Socket(nonblack) API sample |
| 4 | TCP/IP uNet3 Application sample |
| 5 | TCP/IP SNMP sample |
| 6 | — Version get sample |

・Library

| No. | Library name |
|---|---|
| 1 | HW-RTOS library |
| 2 | TCP/IP stack library |
| 3 | TCP/IP(BSD Socket IF) stack library |
| 4 | SNMP stack library |

・Middleware

| No. | Middleware |
|---|---|
| 1 | EEPROM control |
| 2 | Parallel flash ROM control |
| 3 | Serial flash ROM control |
| 4 | TCP/IP stack control |

・Peripheral function driver

| No. | Drive name |
|---|---|
| 1 | CAN |
| 2 | CSI |
| 3 | DMAC |
| 4 | IIC |
| 5 | Serial Flash MEMC |
| 6 | Timer (32bit timer TAUJ2) |
| 7 | UART |
| 8 | WDT |
| 9 | Ether Switch |
| 10 | TCP/IP |

## 3. Folder structure

Folder structure of this package is shown below.

```
TOP
|
+-- CMSIS << Cortex Microcontroller Software Interface Standard >>
|    +-- include
|
+-- Device << Device dependent files >>
     +-- Renesas
          +-- RIN32M3    << R-IN32M3 dependent files >>
               +-- Include  << Include directory >>
               +-- Library   << Library directory >>
               +-- Source   << Source directory >>
                    |
                    +-- Driver          << Driver directory >>
                    +-- Middleware    << Middleware directory >>
                    +-- Project         << Project directory >>
                    |   |
                    |   +-- uNet3_bsd
                    |   +-- uNet3_mac
                    |   +-- uNet3_nonblock
                    |   +-- uNet3_sample
                    |   +-- uNet3_snmp
                    |   +-- version_get_sample
                    |
                    +-- Templates     << Startup file and others >>
                         +-- ARM       << Arm compiler dependent program >>
                         +-- GCC       << GCC compiler dependent program >>
                         +-- IAR       << IAR compiler dependent program >>
```

## 4. Operating environment

The operating environment of this package is shown below.

- Target device

  R-IN32M3-EC

  R-IN32M3-CL

- Target board

  TS-R-IN32M3-EC (Tessera Technology Inc.)

  TS-R-IN32M3-CL (Tessera Technology Inc.)

- Development environment
  - Compiler

    Arm : RealView Developer Suite

    Mentor Graphics : Sourcery G++ Lite

    IAR : Embedded Workbench for Arm
  - Debugger

    DTS Insight : microVIEW-PLUS

    IAR : Embedded Workbench for Arm
  - ICE

    DTS Insight : adviceLUNA

    IAR : I-jet / JTAGjet-Trace / J-Link / J-Trace

## 5. Change history

| Version | Changes |
|---|---|
| V3.1.6<br>(2019/3/20) | - Update Driver.(1.0.4) |
| V3.1.5<br>(2018/2/28) | - Update uNet3.(2.1.8)<br>- Update uNet3(BSD).(1.0.8) |
| V3.1.4<br>(2017/2/28) | - Update Driver.(1.0.3) |
| V3.1.3<br>(2016/10/28) | - Update HWOS.(2.0.3)<br>- Update uNet3.(2.1.6)<br>- Update uNet3(BSD).(1.0.6) |

## 6. Website and Support

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

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## Revision history

| Revision | Date | Page | Changes |
|---|---|---|---|
| 1.20 | Jul 31 2019 | - | Update to TCP/IP stack V 3.1.6 |
| 1.10 | Feb 28 2018 | - | Update to TCP/IP stack V 3.1.5 |
| 1.00 | Feb 28 2017 | - | First edition |

## 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.

   — The characteristics of Microprocessing unit or Microcontroller unit products in the same group but having a different part number may differ in terms of the internal memory capacity, layout pattern, and other factors, which can affect the ranges of electrical characteristics, such as characteristic values, operating margins, immunity to noise, and amount of radiated noise. When changing to a product with a different part number, implement a system-evaluation test for the given product.

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