

RX64M

R20AN0311EJ0100

Rev.1.00

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Interface conversion module
for Ethernet Driver and Embedded system M3S-T4-Tiny
Firmware Integration Technology

Introduction

This application note explains the software information about to convert the Embedded TCP/IP Library M3S-T4-Tiny (T4) user defined functions to the RX64M Ethernet Driver Interface.

T4 supports Ethernet communication. T4 is divided TCP/IP process and Ethernet control, and user can custom the parts of Ethernet control. This module provides the source code fitting T4 to RX64M Ethernet driver.

Target Device

RX64M

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1. Overview

This module includes the following files.

table1. file/folder structure

file/folder name		description		
R20AN0311EJ0100_rx_t4.pdf		Application note		
reference_document				
	r01an1723eu0110_rx.pdf	how to build into the e ² studio		
FITModules				
	r_t4_driver_rx64m_v1.00.xml		FIT plug-in XML	
	r_t4_driver_rx64m_v1.000.zip		FIT pluig-in ZIP	
	configuration (r_config)			
		r_t4_driver_rx64m_config.h	configuration file(default)	
	FIT Module (r_t4_driver_rx64m)			
	document(doc)			
		ja	R20AN0311JJ0100_rx_t4.pdf	Application note (Japanese)
		en	R20AN0311EJ0100_rx_t4.pdf	Application note (English) (this document)
	configuration refer reference (ref)			
		r_t4_driver_rx64m_config_reference.h	configuration file(template)	
	source code(src)			
		readme (readme.txt)	readme	

2. API Information

This API adheres to the Renesas API naming standards.

2.1 Hardware Requirements

None

2.2 Software Requirements

This FIT Module is dependent upon the following packages:

- r_t4_rx

2.3 Supported Toolchains

This driver is tested and works with the following toolchain:

- Renesas RX Toolchain v.2.00

2.4 Header Files

All API calls and their supporting interface definitions are located in **r_t4_itcpip.h**

2.5 Integer Types

This project uses ANSI C99.

2.6 Configuration Overview

The configuration options in this module are specified in `r_t4_driver_rx64m_config.h`. The option names and setting values are listed in the table below.

Configuration options in <code>r_t4_driver_rx64m_config.h</code>	
None	---

2.7 API Data Structure

No structures in the APIs using.

2.8 Return Values

None

2.9 Adding Driver to Your Project

The module must be added to an existing e² studio project. It is best to use the e² studio FIT plug-in to add the driver to your project as that will automatically update the include file paths for you.

3. Relation about T4 modules

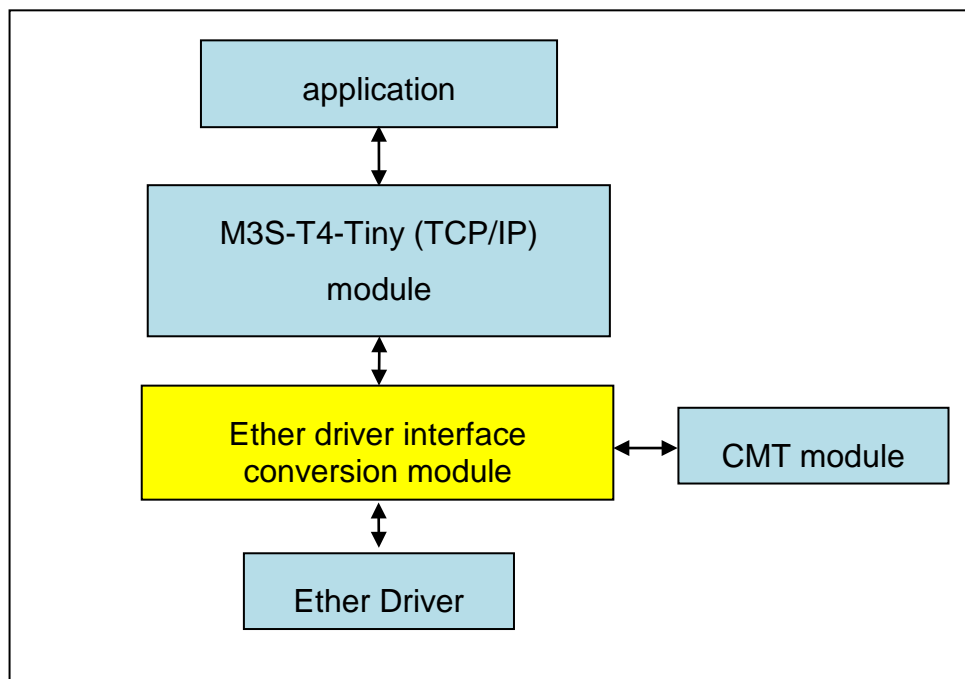


Figure1. Relation about T4 modules

4. Specification about module

Please refer to the T4 user's manual (r20uw0031jjxxx_t4tiny.pdf) and Ethernet Driver Interface Specification (r20uw0031jjxxx_t4tiny.pdf).

In case, the timer channel would not be allocated from CMT module, this module will stop.

CMT interrupt priority level is set in CMT module configuration option (r_cmt_rx_config.h).

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<http://www.renesas.com/>

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Revision History

Rev.	Date	Description	
		Page	Summary
1.00	May 01, 2014	—	First edition issued

General Precautions in the Handling of MPU/MCU Products

The following usage notes are applicable to all MPU/MCU 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 an MPU or MCU 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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