[Notes]

RX Family Application Example Using the Embedded TCP/IP M3S-T4-Tiny (DHCP/DNS/FTP/HTTP) Firmware Integration Technology

RX Family Interface Conversion Module for Ethernet Driver and Embedded System M3S-T4-Tiny Firmware Integration Technology

Outline

When running the example of use of "RX Family Application Example Using the Embedded TCP/IP M3S-T4-Tiny (DHCP/DNS/FTP/HTTP) Firmware Integration Technology" or "RX Family Interface Conversion Module for Ethernet Driver and Embedded System M3S-T4-Tiny Firmware Integration Technology", take note of the problems described in this note regarding the following points.

1. Repeated use of the DHCP

2. UDP transmission continuing for more than 10 minutes

1. Repeated Use of the DHCP

1.1 Applicable Products

➢ RX Family Application Example Using the Embedded TCP/IP M3S-T4-Tiny (DHCP/DNS/FTP/HTTP) Firmware Integration Technology

Applicable revision: Rev1.00

The following document is relevant.

RX Family Application Example Using the Embedded TCP/IP M3S-T4-Tiny (DHCP/DNS/FTP/HTTP) Firmware Integration Technology Application Note

Document no: R20AN0314EJ0100 (for Rev1.00)

1.2 Details

The following functions of the source code in r_sample_main.c share the working area variable tcpudp_work for TCP/IP.

- Initialization function (tcpudp_open()) for TCP/IP

- Initialization function (r_dhcp_open()) for DHCP

Thus, if the conditions mentioned in 1.3 are applicable, subsequent TCP/IP operation becomes unstable since the working area variable tcpudp_work for TPC/IP is overwritten by the initialization function (r_dhcp_open()) for DHCP.
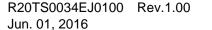
1.3 Conditions

This problem arises because the initialization function (r_dhcp_open()) for DHCP is called without executing the close (tcpudp_close) function for TCP/IP in the source code in r_sample_main.c.

1.4 Workaround

Prepare a separate working area for DHCP from the tcpudp_work working area for variables for TCP/IP, and include the working area for DHCP in the initialization function r_dhcp_open() for DHCP.

1.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.

2. UDP Transmission Continuing for More than 10 Minutes

2.1 Applicable Product

➢ RX Family Interface Conversion Module for Ethernet Driver and Embedded System M3S-T4-Tiny Firmware Integration Technology (FIT module)

Applicable revisions: Rev1.00, Rev1.01, Rev1.02, and Rev1.03

The following document is relevant.

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

Document no: R20AN0311EJ0100 (for Rev1.00)

Document no: R20AN0311EJ0101 (for Rev1.01)

Document no: R20AN0311EJ0102 (for Rev1.02)

Document no: R20AN0311EJ0103 (for Rev1.03)

The problem also applies to the following product which includes the above FIT module.

➢ V.2.05 Release 00 and earlier versions of RX Family Embedded TCP/IP M3S-T4-Tiny

2.2 Details

UDP transmission fails when the conditions under 2.3 apply because the timer variable for TCP/IP, tcpudp_time_cnt, is incremented at the wrong position in the source code of r_t4_driver.c. The return value of the udp_snd_dat() function becomes E_TMOUT once UDP transmission has failed.

2.3 Conditions

This problem arises if the following conditions are all met:

(1) The destination IP address has not been registered in the APR table that is managed within the TCP/IP software.
(2) tcpudp_time_cnt is incremented after execution of the _process_tcpip() function in the processing function (timer_interrupt()) for the 10-ms timer interrupt.
(3) Processing for the 10-ms timer interrupt is executed before the UDP transmission API function (udp_snd_dat()).
    Remarks:
    This note does not apply if the Ethernet interrupt (lan_inthdr()) is used instead of the 10-ms timer interrupt.
(4) 1 (=10 ms) is specified as the fifth argument (timeout specification) of the UDP transmission API function (udp_snd_dat()).

2.4 Workaround

Ensure that tcpudp_time_cnt is incremented before the execution of _process_tcpip() function in the processing function (timer_interrupt()) for the 10-ms timer interrupt.

2.5 Schedule for Fixing the Problem

This problem will be fixed in a later version.

Revision History

Rev.	Date	Description	
		Page	**Summary**
1.00	Jun. 01, 2016	-	First edition issued

TOYOSU FORESIA, 3-2-24 Toyosu, Koto-ku, Tokyo 135-0061 Japan

Renesas Electronics Corporation

■Inquiry

http://www.renesas.com/en-hq/support/contact.html

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