

[Notes]

R20TS0088EJ0100

Rev.1.00

Nov. 01, 2016

RX Family

Ethernet Module Using Firmware Integration Technology,

RX Driver Package Ver.1.10,

RX Driver Package Ver.1.11

## Outline

When using the RX family Ethernet Module Using Firmware Integration Technology, or the RX Family RX Driver Package, Rev1.10 or Rev1.11, take notes of the problems described in this note regarding the following point.

1. Detecting changes to the state of the link by the “R\_ETHER\_LinkProcess” function

## 1. Detecting Changes to the State of the Link by the “R\_ETHER\_LinkProcess” Function

### 1.1 Applicable Products

- RX Family Ethernet Module Using Firmware Integration Technology (hereinafter, Ethernet FIT module)

Revisions: Rev1.10 and Rev1.11

The following documents are relevant.

- Application notes for the RX Family Ethernet Module Using Firmware Integration Technology  
Document no.: R01AN2009EJ0110 (for Rev1.10)  
Document no.: R01AN2009EJ0111 (for Rev1.11)

The above also applies to the following products, which include the same Ethernet FIT module<sup>\*1, \*2</sup>.

- RX Family RX Driver Package Ver.1.10

\*1: The Ethernet FIT module is included as r\_ether\_rx\_v1.10.zip.

Revision: Rev1.00

The following document is relevant.

- Application note for the RX Family RX Driver Package Ver.1.10  
Document no.: R01AN3345EJ0100

- RX Family RX Driver Package Ver.1.11

\*2: The Ethernet FIT module is included as r\_ether\_rx\_v1.11.zip.

Revision: Rev1.00

The following document is relevant.

- Application note for the RX Family RX Driver Package Ver.1.11  
Document no.: R01AN3467EJ0111

### 1.2 Applicable MCUs

RX63N, RX64M, RX65N, and RX71M groups

### 1.3 Condition

This problem arises when the setting of ETHER\_CFG\_USE\_LINKSTA in r\_ether\_rx\_config.h is 0.

## 1.4 Details

Since there is an error in the detection of changes in the link state by the function `R_ETHER_LinkProcess` in the Ethernet FIT module source code file `r_ether_rx.c`, the below failures occur and application programs for which the above condition is satisfied may not run correctly.

- Failures

When function `R_ETHER_LinkProcess` is called while the setting of `ETHER_CFG_USE_LINKSTA` is 0, changes in the link state are detected by comparing the current and previous states of the link with the PHY-LSI in successive calls of `R_ETHER_LinkProcess`. When a change in the link state has been detected, the execution of processing for the link being up or down according to the current link state of the PHY-LSI causes the link states of the Ethernet FIT module and PHY-LSI to match. However, changes in the link state are judged incorrectly if the previous state of the PHY-LSI module was wrong. The result is non-matching of the link states of the Ethernet FIT module and PHY-LSI.

## 1.5 Workaround

Set `ETHER_CFG_USE_LINKSTA` to 1 in the `r_ether_rx_config.h` header file in the source code for the Ethernet FIT module.

- Example of setting: Extract from macro definitions (one part)

```
/* Use LINKSTA signal for detect link status changes
0 = unused (use PHY-LSI status register)
1 = use (use LINKSTA signal)
*/
#define ETHER_CFG_USE_LINKSTA (1) /* This setting is */
/* reflected in all channels */
```

## 1.6 Schedule for Fixing the Problem

- RX Family Ethernet Module Using Firmware Integration Technology

This problem will be fixed in the next revision (Rev1.12). (To be released in November, 2016)

- RX Family RX Driver Package, Ver.1.10 and Ver.1.11

The Ethernet FIT module modified in accord with this note will be included with the next version of the driver packages. (To be released in March, 2017)

## Revision History

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

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