

[Notes]

R20TS0674EJ0100

Rev.1.00

Mar. 16, 2021

RX Driver Package,

RX Family Parallel Data Capture Unit (PDC) Module Using Firmware Integration Technology

Overview

When using the RX family parallel data capture unit (PDC) module using Firmware Integration Technology (referred to as PDC FIT module hereafter,) note the following point.

- Notes on calling the R_PDC_Close function during operations for reception or continued reception

- Notes on calling the R_PDC_Close function during operations for reception or continued reception

1.1 Applicable Products

- (1) RX family parallel data capture unit (PDC) module using Firmware Integration Technology

The relevant revisions and documents are as shown in "Table 1.1, PDC FIT Module Applicable Products".

Table 1.1 PDC FIT Module Applicable Products

Revision of the PDC FIT module	Document number
Rev.1.00	R01AN2220EJ0100
Rev.1.01	R01AN2220EJ0101
Rev.1.02	R01AN2220EJ0102
Rev.1.03	R01AN2220EJ0103
Rev.2.00	R01AN3167EJ0200
Rev.2.01	R01AN3167EJ0201
Rev.2.02	R01AN3167EJ0202
Rev.2.03	R01AN3167EJ0203
Rev.2.04	R01AN3167EJ0204
Rev.2.05	R01AN3167EJ0205

These notes also apply to the following RX Driver Package products which include the above PDC FIT module^{*1}.

1: The PDC FIT module is included as r_pdc_rx_v.**.zip (*.** is the revision number).

(2) RX Driver Package

The product name and revision of the relevant RX Driver Package products and the revision of the included PDC FIT module are as shown in "Table 1.2 Products Which Include the PDC FIT Module".

Table 1.2 Products Which Include the PDC FIT Module

Product name of the RX Driver Package	Revision of the RX Driver Package	Document number	Revision of the included PDC FIT module
RX64M Group RX Driver Package User's Manual	Rev.1.01	R01AN2460EJ0101	Rev.1.00
RX64M, RX71M Group RX Driver Package Ver.1.02	Rev.1.04	R01AN2606EJ0104	Rev.1.02
RX Family RX Driver Package Ver.1.10	Rev.1.10	R01AN3345EJ0100	Rev.1.03
RX Family RX Driver Package Ver.1.11	Rev.1.11	R01AN3467EJ0111	Rev.2.00
RX Family RX Driver Package Ver.1.12	Rev.1.12	R01AN3651EJ0112	Rev.2.00
RX Family RX Driver Package Ver.1.13	Rev.1.13	R01AN3859EJ0113	Rev.2.01
RX Family RX Driver Package Ver.1.14	Rev.1.14	R01AN4191EJ0114	Rev.2.01
RX Family RX Driver Package Ver.1.15	Rev.1.15	R01AN4372EJ0115	Rev.2.01
RX Family RX Driver Package Ver.1.16	Rev.1.16	R01AN4471EJ0116	Rev.2.01
RX Family RX Driver Package Ver.1.17	Rev.1.17	R01AN4572EJ0117	Rev.2.01
RX Family RX Driver Package Ver.1.18	Rev.1.18	R01AN4659EJ0118	Rev.2.01
RX Family RX Driver Package Ver.1.19	Rev.1.19	R01AN4677EJ0119	Rev.2.02
RX Family RX Driver Package Ver.1.20	Rev.1.20	R01AN4794EJ0120	Rev.2.03
RX Family RX Driver Package Ver.1.21	Rev.1.21	R01AN4843EJ0121	Rev.2.03

RX Family RX Driver Package Ver.1.22	Rev.1.22	R01AN4873EJ0122	Rev.2.04
RX Family RX Driver Package Ver.1.23	Rev.1.23	R01AN4976EJ0123	Rev.2.04
RX Family RX Driver Package Ver.1.24	Rev.1.24	R01AN5267EJ0124	Rev.2.04
RX Family RX Driver Package Ver.1.25	Rev.1.25	R01AN5371EJ0125	Rev.2.05
RX Family RX Driver Package Ver.1.26	Rev.1.26	R01AN5401EJ0126	Rev.2.05
RX Family RX Driver Package Ver.1.27	Rev.1.27	R01AN5600EJ0127	Rev.2.05
RX Family RX Driver Package Ver.1.28	Rev.1.28	— ^{*1}	Rev.2.05

*1: RX Family RX Driver Package Ver.1.28 has not been released yet as of March 16, 2021.

1.2 Applicable Devices

RX64M, RX651, RX65N, RX66N, RX71M, RX72M, and RX72N groups

1.3 Details

When an R_PDC_Close function is called during operations for reception or continued reception, the processing of the R_PDC_Close function may not end because the PCCR0 register cannot be overwritten.

1.4 Conditions

When you start data capture by calling an R_PDC_Control function, and then call an R_PDC_Close function during the operations for reception or continued reception before the data capture is stopped by a frame end interrupt or error interrupt, the PCCR0 register cannot be overwritten in the processes indicated in red below. Therefore, an infinite loop occurs in the process of waiting for the register to be overwritten.

```
/* Disables interrupts (PCFEI, PCERI, and PCDFI) used by the PDC. */
R_BSP_InterruptRequestDisable(VECT(PDC, PCDFI));
PDC.PCCR0.LONG &= (~0x03F0);
/* WAIT_LOOP */
while (0 != PDC.PCCR0.BIT.DFIE)
{
    /* Do Nothing */
}
IR(PDC, PCDFI)= 0; /* Interrupt request is cleared. */
```

1.5 Workaround

Call an R_PDC_Close function in either of the following timings:

1. After the operations for reception or continued reception of PDC is stopped by a frame end interrupt or error interrupt.
2. After the operations for reception of PDC is disabled by an R_PDC_Control function.

1.6 Permanent Measure

(1) PDC FIT module

This problem will be fixed in a later version.

(2) RX Driver Package

The PDC FIT module modified in accord with this note will be included in an upcoming release of the RX Family RX Driver Package.

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Mar.16.21	-	First edition issued

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