

PM7380, PM7381, PM7382, PM7383, PM7384, PM7385

FREEDM-NG DEVICE DRIVER

RELEASE NOTES

PROPRIETARY AND CONFIDENTIAL

RELEASED

ISSUE 3: DECEMBER, 01

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PMC-1991680 (R3)

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Contacting PMC-Sierra

PMC-Sierra
8555 Baxter Place
Burnaby, BC Canada V5A 4V7

Tel: +1-604-415-6000
Fax: +1-604-415-6200

Document Information: document@pmc-sierra.com
Corporate Information: info@pmc-sierra.com
Technical Support: apps@pmc-sierra.com
Web Site: <http://www.pmc-sierra.com>

REVISION HISTORY

Issue No.	Issue Date	Details of Change
1	January 2000	Document created
2	October 2001	Updated for second beta release of FREEDM-NG Driver.
3	December 2001	Updated for production release of FREEDM-NG Driver.

1 ABOUT THIS RELEASE

This is release rel-1.0 of the PM7380, PM7381, PM7382, PM7383, PM7384, PM7385 (FREEDM-NG) device driver. Rel-1.0 is intended for use with Revision A of the PM7382 and PM7383 FREEDM-NG devices, and with Revision C of the PM7380, PM7381, PM7384, and PM7385 FREEDM-NG devices. Rel-1.0 is functionally complete and has been tested by PMC-Sierra as described in Section 4 below.

Throughout this document, the driver is referred to as the FREEDM-NG driver. Any information that is unique to a particular device type is explicitly stated.

2 WHAT'S INCLUDED IN THIS RELEASE

This rel-1.0 release of the FREEDM-NG driver includes the following files:

Directory	Filename	File Version
/src	frd_api.c	1.3
	frd_chnl.c	1.2
	frd_link.c	1.2
	frd_pckt.c	1.2
	frd_diag.c	1.2
	frd_hw.c	1.3
	frd_isr.c	1.2
	frd_rtos.c	1.3
	frd_stats.c	1.2
	frd_util.c	1.2
/inc	frd_api.h	1.4
	frd_defs.h	1.3
	frd_err.h	1.3
	frd_fns.h	1.2
	frd_hw.h	1.3

Directory	Filename	File Version
/inc	frd_rtos.h	1.3
	frd_strs.h	1.2
	frd_typs.h	1.1
/example	frd_app.c	1.2
	frd_app.h	1.1
/	Makefile	1.3
/	software.lic	n/a
/	frd_relnotes_r3.pdf (this file)	n/a

Notes:

1. frd_app.c, frd_app.h contain example callback function implementation and example code.

3 INSTALLATION

Please perform the following steps to install the FREEDM-NG device driver in your system.

- Unzip the release zip file, and install the files and its directory structure under your local drive. Modify the directory variable names in the `Makefile`, if necessary, to reflect your actual driver and directory names.
- Modify `frd_typs.h`, `frd_hw.h` and `frd_rtos.h` as per your system's characteristics. Also, modify/implement the hardware and RTOS dependent functions in `frd_hw.c` and `frd_rtos.c`. Please refer to Section 7 of the FREEDM-NG driver manual (PMC-1991045, Issue 3), Porting the FREEDM-NG driver, for detailed instructions on porting the driver to your specific environment.
- Set up compile switches or other environment variables in the `Makefile`. Please refer to the `Makefile` for a detailed description of the available compile switches.
- Compile the source files and build the FREEDM-NG driver using your make utility.
- Link the FREEDM-NG driver to your application code.

4 TESTING STATUS OF THIS RELEASE

All FREEDM-NG device driver Application Programming Interface (API) functions have been tested in-house using the PM7380, PM7381, PM7384, and PM7385 devices on a proprietary PMC-Sierra, Inc. validation platform running VxWorks™ RTOS. However, the customer is advised to consult our web site (<http://www.pmc-sierra.com>) for any relevant errata that may have been issued subsequent to the publication of this document.

5 WHAT'S NEW IN THIS RELEASE?

rel-1.0: Production release for the FREEDM-NG device driver

- Workaround for SBI Tributary External C1FP hardware errata added.
- In-line documentation has been updated to match the driver manual.
- New constants for configuring and working with channel and packet structures defined.
- Register and RAM tests are no longer performed during device initialization.
- Link type constants have been renamed for clarity. The constants are divided into two groups for SBI and non-SBI devices. Replace the original constant with the updated constant for the device type in use.

PM7380, PM7381, PM7382, PM7383 Link Type Constants

Original Name	Updated Name
FREEDM_T1_FRAMED	FREEDM_T1_CHANNELISED
FREEDM_T1_UNSTR	FREEDM_T1_UNCHANNELISED
FREEDM_T1_UNSTR_BSYNC	FREEDM_T1_UNCHANNELISED_BSYNC
FREEDM_E1_FRAMED	FREEDM_E1_CHANNELISED
FREEDM_E1_UNSTR	FREEDM_E1_UNCHANNELISED
FREEDM_E1_UNSTR_BSYNC	FREEDM_E1_UNCHANNELISED_BSYNC
FREEDM_2M_MVIP	FREEDM_2M_MVIP
FREEDM_8M_MVIP	FREEDM_8M_MVIP

PM7384, PM7385 Link Type Constants

Original Name	Updated Name
FREEDM_T1_FRAMED	FREEDM_T1_FRAMED
FREEDM_T1_UNSTR	FREEDM_T1_UNFRAMED
FREEDM_E1_FRAMED	FREEDM_E1_FRAMED
FREEDM_E1_UNSTR	FREEDM_E1_UNFRAMED
FREEDM_STR_DS3	FREEDM_DS3_FRAMED
FREEDM_UNSTR_DS3	FREEDM_DS3_UNFRAMED

- Field names and meanings in sFREEDM_OTHER_STATS have been changed to closer reflect the statistics collected. The following table lists the only affected fields.

Original Field Name	Updated Field Name
fcsErrors	rxFCSErr
rxPktFreeFreeDescErr	rxFreeQueuesEmptyErr
rxPktFreeLargeReads	rxLargeFreeQueueCacheRead
rxPktReadyQErr	rxReadyQueueFullErr
rxPktFreeReadyReads	rxReadyQueueWrite
rxPktFreeSmallReads	rxSmallFreeQueueCacheRead
overflows	txFIFOOverflowErr
txFIFOUnderflows	txFIFOUnderflowErr
txFreeDescErr	txFreeQueueFullErr
txPktReadyQWrites	txFreeQueueWrite
txCompletes	txPacketInterruptOnComplete
(new field)	txParityErr
txPktRdyQCacheReads	txReadyQueueCacheRead
unprovTx	txUnprovisionedChannel
underflows	(field deleted)

unprovRx

(field deleted)

6 WORKAROUNDS FOR DEVICE ERRATA

The FREEDM-NG device driver performs the following workarounds for the PM7384 and PM7385.

- **Incorrect T1 CAS Phase Information:** the driver changes register 0x6A4 from the default value of 2E to 0x6E on reset.
- **Delay Required After Writing SBI Master Configuration Registers:** the driver implements a delay of 10 ms following a write to either SBI Master Configuration Register.
- **Dropped data on Unchannelised DS-3 SBI SPE:** the driver sets the SPE mode to T1, delays for 10 ms, and then sets the mode to DS-3.
- **Reset of SBI Tributaries are Required if C1FP is Sourced Externally (such as from a TEMUX):** the driver enables the tributary, disables it, delays for 1 ms, and then re-enables the tributary.

The reader is referred to the device errata documents for a detailed description of the device errata.

- PM7384 FREEDM-NG Revision C Device Errata (PMC-2000953, Issue 4)
- PM7385 FREEDM-NG Revision C Device Errata (PMC-2000954, Issue 4)