Release Notes for MFC Device Driver (Linux)

S3C6400/6410

August 29, 2008

(Preliminary) REV 3.20

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S3C6400/6410 RISC Microprocessor
Release Note for MFC device driver

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Revision History

Revision No	Description of Change	Refer to	Author(s)	Date
2.00	Initial Draft	-	Jiun Yu	Aug.17, 2007
2.10	Memory policy and APIs are added		Jiun Yu	Aug. 31, 2007
2.11	Configuration is added		Jiun Yu	Sep. 1, 2007
2.20	FrameExtractor and multiple slice mode in H.263 encoding are added		Jiun Yu	Oct. 15, 2007
2.21	Support multi-process		Jiun Yu	Dec. 21, 2007
2.30	Rotation mode is added		Jiun Yu	Jan. 24, 2008
2.40	Encoding options are added		Jiun Yu	Mar. 31, 2008
3.00	Supporting S3C6400 and 6410		Jiun Yu	April 14, 2008
3.10	Supporting Hybrid divx decoder		Jiun Yu	July 5, 2008
3.20	Set and Get command were added for Hybrid divx decoder		Jiun Yu	August 29, 2008

Contents

1 Introduction

MFC is a name of internal HW codec in Samsung's S3C6400/6410 Application Processor.

2 Release Detail

Software	Multi-Format Codec Driver Package
Version	3.20
Hardware Platform	Samsung Application Processor – S3C6400/6410
Host Operating System	Linux 2.6.24
Software Dependencies	ARM Cross Compilation Tool Chain
Release Date	29-August-2008
Contact Person	Jiun Yu, jiun.yu@samsung.com

3 Directory Structure

Directory	Files	Description
FIMV_MFC_V1.0/mfc_drv	***.c**	**Driver C src files**
FIMV_MFC_V1.0/mfc_drv	***.h**	**Driver C header files**
FIMV_MFC_V1.0/mfc_app	***.h**	**Test Application Header Files**
FIMV_MFC_V1.0/mfc_app	***.c**	**Test Application Source Files**
FIMV_MFC_V1.0/doc	***.doc** ***.pdf**	● **installation guide** ● **porting guide** ● **release note**

4 Limitation

5 Changes

5.1 Changes for v2.00

Power Management is added.

- MFC Power is introduced when the MFC handle is opened.
- MFC Power is down when the handle is closed.

Bug in the Encoder Init part was fixed. (SET_FRAME_BUF command)

Installation guide and porting guide are updated.

LINE_BUF & RING_BUF mode are supported.

VC-1 decoder is added as RING_BUF mode.

Test application of RING_BUF is added.

kernel version 2.6.16 and 2.6.21 are supported

Performance data is added.

Common argument passing

Post processor function and LCD function in MFC driver are removed

5.2 Changes for v2.10

New reserved memory policy is applied (reserved_mem.h)

MFC APIs made by samsung are added.

Encoder and Decoder performance data is added

Test applications using API are added.

Display test application is added

5.3 Changes for v2.11

API of getting the FRAM_BUF physical address is added.

Demo test application is added

5.4 Changes for v2.20

FrameExtractor is changed(All codecs have same sequence of codec's initialization)

Supports multiple slice mode in H.263 encoding case

5.5 Changes for v2.21

Garbages in buffer are initialized as 0.
Multi-process test was completed

5.6 Changes for v2.30

APM(Advanced Power Management) test was completed.
DPM(Dynamic Power Management) test was completed.

- If MFC HCLK(0x7E00_F030, bit 0) is off, MFC power control resister(0x7E00_F810, bit 9) doesn't work.

Post rotation mode was added.
To get encoded header size in encoding case
Prism code from C&M was updated to v136
Driver and test application were compiled as toolchain version 4.4.2-eabi
Display test application was tested on 24bpp LCD

5.7 Changes for v2.40

- Multiple Slice mode is enabled for H.263 and H.264 encoding (IOCTL_MFC_SET_CONFIG command with ENC_SLICE_MODE)
- H.263 encoding Annex option is enabled (IOCTL_MFC_SET_CONFIG command with ENC_H263_PARAM)
- Encoding parameter can be changed dymanically after the encoder instance initialization (IOCTL_MFC_SET_CONFIG command with ENC_PARAM_CHANGE)
- Encoding option for each picture is possible (IOCTL_MFC_SET_CONFIG command with ENC_CUR_PIC_PROPERTY)

- The FRAME_NEED_COUNT value is available through IOCTL_MFC_GET_CONFIG command.
- Rendering test application is optimized using FIFO and double buffering(display_optimiztion1.c , display_optimization2.c)

5.8 Changes for v3.00

- MFC in S3C6410 is supported

5.9 Changes for v3.10

- SsbSipMPEG4DecodeGetConfig()'s commands are added for supporting Hybrid divx decoder

5.10 Changes for v3.20

- Commands of SsbSipMPEG4DecodeGetConfig() and SsbSipMPEG4DecodeSetConfig() are added for supporting Hybrid divx decoder
- Power on/off tested.
- MFC driver was tested on s3c-linux-2.6.24 kernel