
S3C6410 HW Multimedia Codec (MFC) Release Notes



DIVX Decoder for Samsung S3C6410 Application Processor
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Revision History

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1 Introduction

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

2 Release Detail (for latest version)

Software	Multi-Format Codec Driver Package
Version	5.73.1
Hardware Platform	Samsung Application Processor - S3C6410
Host Operating System	Windows Mobile v6.00
Software Dependencies	WinCE ARM Cross Compiler
Release Date	03-Feb-2009
Contact Person	Peter Oh, jaeryul.oh@samsung.com

3 Directory Structure

Directory	Files	Description
Mfc	*.c	Driver C src files
Mfc	*.h	Driver C header files
TestCode	*.h	Test Application Header Files
TestCode	*.c	Test Application Source Files
doc	*.doc	● Release Notes
	*.pdf	● User Manual

4 Limitation

No limitations found.

5 Changes

5.1 Changes for v5.73.1

- (Bug fix) When dynamic parameter change for encoder, MFC clk is enabled.

5.2 Changes for v5.73

- It was updated for code integrity (1st).
- (Bug fix) Unstable width/height calculation for VC1 decoder was fixed
- New parameters such as intraqp, qpmax & gamma in MFCInst_Enc_Init() was added

5.3 Changes for v5.72

- It was updated for handling the h.264 main profile data and therefore the MFC power gating is now enabled.
- (Bug fix) Cache invalidation for encoding is added.

5.4 Changes for v5.71

- Some MPEG4ASP related values are now maintained in MFCInstCtx context variable. Therefore the MFC Clock gating (clock is supplied while the MFC is running.) is enabled again.
- MFC power gating is still disabled since the error handling of the h.264 main profile data is not resolved yet.

5.5 Changes for v5.70

- MFC driver is updated for the Hybrid Divx (MV and MBType addresses are exposed.)

5.6 Changes for v5.62

- 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 dynamically 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.

5.7 Changes for v5.61.1

- Bug Fix: H.264-encoded stream has wrong header (wrong PPS data.)

5.8 Changes for v5.61

- Encoding with stream header is enabled.
- The length of stream header can be obtained through the function call parameter.

In this release v5.61, the RING BUFFER mode is supported.

5.9 Changes for v5.60

- Prism code (MFC firmware code) was updated to V1.36 (Prism_S_V136.c file). It is supporting the VC-1 B-frame & h.264 decoding with reorder enabled in LINE BUFFER mode.
- Post rotation mode in decoding is supported. IOCTL_MFC_SET_CONFIG command was added for this purpose.

5.10 Changes for v5.53

New ioctl command, IOCTL_MFC_GET_PHY_FRAM_BUF_ADDR, was added for WinCE/WM. This command was already implemented for Linux. It returns the physical address of the FRAM_BUF while already-existing IOCTL_MFC_GET_FRAM_BUF_ADDR command returns the virtual address.

In this release v5.53, the RING BUFFER mode is not supported temporarily.

5.11 Changes for v5.52

Prism code (MFC firmware code) was updated to V1.35 (Prism_S_V135.c file). It is supporting the MFC state retention during the Sleep/WakeUp operation. According to this, the MFC driver is now supporting the Sleep/WakeUp.

5.12 Changes for v5.51

Filling zeros at the end of the stream in case of RING_BUF mode decoding.

5.13 Changes for v5.50

MFC Clock gating is enabled dynamically.

- MFC clock is introduced only when the ARM issues the MFC command.

5.14 Changes for v5.4

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.)

5.15 Changes for v5.3

WinCE 6.0 migration is applied.

5.16 Changes for v5.2

User manual is updated.
Source code build error (in MFC_Instance.c) is fixed.

5.17 Changes for v5.1

LINE_BUF & RING_BUF mode are supported.

5.18 Changes for v5.0

VC-1 decoder is added as RING_BUF mode.

5.19 Changes for v3.0

Encoder is added.

5.20 Changes for v2.1

Bug fixed (OUTPUT FRAME BUFFER value is returned as garbage value.)

5.21 Changes for v2.0

Implemented as Device Driver,
Mixed Interrupt/Polling (Interrupt-based for PIC_RUN command, Polling-based for ther
command),