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MPEG2 Decoder on ARM11 ELINUX V1.1.2 Release Notes

ABSTRACT:

MPEG2 Decoder on ARM11 ELINUX V1.1 Release Notes

KEYWORDS:

Multimedia codecs, Video, MPEG2

APPROVED:

Wang Ze Ning

Revision History

VERSION	DATE	AUTHOR	CHANGE DESCRIPTION
1.1	2007-08-7	Wang Zening	Creation of Release Note for REL1.1 of Shanghai
1.2	2007-10-17	Eagle Zhou	Update
1.3	2009-03-13	Eagle Zhou	Add support of device mxc_mem

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1 Read Me First

The purpose of this document is to provide MPEG2 decoder (Main profile@Main level) release information, mainly focus on:

- Package contents
- Feature
- Changes
- Known issues.

1.1 Requirements

1.1.1 System Requirements

Hardware requirements:

MCIMX31	
ARM Core	ARM1136JF-S
Frequency(MHz)	532 MHz
L1 Cache Size	I=16K, D=16K
L1 Cache Setting	Writeback
L2 Cache Size	128Kb
L2 Cache Setting	Writeback
External Memory Interface Width	X16
External Bus Width	16bits
External Bus Frequency	133MHz
Core:Bus Ratio	4:1
Ext. Memory Type	DDR

Software requirements:

- Linux BSP L26_1_18

1.1.2 Target Requirements

Target requirement:

- MX31 ADS (Freescale i.MX31 based) PASS 1.1 [x32 DDR]

1.1.3 Equipment Requirements

N/A

1.2 Upgrading From the Previous Release

N/A.

1.3 Problem Reporting Instructions

Please submit CRs on the ClearQuest system:

<http://cq.freescale.net/cqweb/login>

Database :

ENGR : Production DB

Parent Bins :

MAD Bins & Project

MAD Components: Video

VPRG-MMVCODEC

2 Release Content

Release package can be retrieved at:

<http://compass.freescale.net/go/178190648>

DELIVERABLE	LOCATION	STATUS
Documentation	Root/docs/mpeg2_dec	Updated
Application Interface header file	Root/ghdr/	Not Changed
ELINUX, WinCE and RVDS libraries and test applications	Root/release/	Updated
Makefiles for the ELINUX, WinCE and RVDS libraries. *	Root/build/	Updated
Source code for common use *	Root/common	Not Changed
Source code for library including optimized assembler for the ELINUX, WinCE and RVDS libraries. *	Root/src/mpeg2_dec Root/src/mpeg2_dec/c_src Root/src/mpeg2_dec/asm_arm Root/src/mpeg2_dec/hdr	Updated
Source code for test application for the ELINUX, WinCE and RVDS libraries.	Root/test/mpeg2_dec Root/test/mpeg2_dec/c_src Root/test/mpeg2_dec/hdr Root/test/mpeg2_dec/script	Updated
Sample Test Stream	Root/ test_stream Root/ test_stream/sony-ct4.bs (a mpeg2 ES) Root/ test_stream/ zelda_video.mpg1 (a mpeg1 ES)	New

Note *: Only authorized audiences can access this content.

3 What's New

3.1 New Features

Version 1.1.2 offers these new features:

- Performance optimization, by 36% improvement over REL 1.0, being capable of decoding D1 sized clips in real-time
- Support output YV12 4:2:0 for WinCE
- Support MPEG1 Stream that its dimension is not multiple of 16

3.2 New Regressions

None

3.3 Fixed Features

None

4 Release Description

4.1 Supported Features

Version 1.1.2 offers these features:

- Support MPEG2 Main Profile@Main Level stream
 - Input element stream data
 - Output format: YUV 4:2:0 for Linux and YV12 4:2:0 for WinCE
 - Can decode up to D1 sized clips in real-time (720x480@30fps, 720x576@25fps, 4Mbps)
- Support MPEG1 Stream

4.2 Feature Regressions

N/A.

4.3 Limitations

N/A.

5 Summary of Changes

This section lists in details the list of PRs changed from the previous release.

IDENTIFIER	
ENGR00047321	[MPEG2D] Release MPEG2 decoder revision 1.1
ENGR00054445	[MPEG2D] Release MPEG2 decoder revision 1.1.2

5.1 New Works

IDENTIFIER	HEADLINE	STATE
ENGR00040270	[MPEG-2] Leverage bit operation from DivX and MPEG-4 implementation	Resolved
ENGR00040273	[MPEG-2] Leverage VLD from DivX and MPEG-4 implementation	Resolved
ENGR00040274	[MPEG-2] Leverage MC from DivX and MPEG-4 implementation	Resolved
ENGR00040277	[MPEG-2] Leverage IDCT from DivX and MPEG-4 implementation	Resolved
ENGR00040634	[MPEG2] use embedded ASM code to replace memset	Resolved
ENGR00044337	Merge add_idct_mblock_intra into IDCT process to avoid unnecessary memory access	Resolved
ENGR00044642	Add input bitstream length check	Resolved
ENGR00044792	Integration idct vld and mc modification for optimize	Resolved
ENGR00045441	implement SWAP(a,b) with REV instruction in ARM platform	Resolved
ENGR00045450	code refinement	Resolved
ENGR00045796	Porting Inter IDCT from DivX	Resolved
ENGR00046023	Integration engr45450 engr44337 engr45796 for Mpeg2	Resolved
ENGR00046182	[MPEG2 DEC]Add Change History into modified source file	Resolved
ENGR00046392	Rearrange data flow from VLD/IDCT-->MC to MC-->VLD/IDCT	Resolved
ENGR00046394	Add shortcut to speed Intra IDCT	Resolved
ENGR00046476	half_half_pred optimization	Resolved
ENGR00046565	Integration engr46392 engr46394 engr46476 engr46566 engr46608 engr46857	Resolved
ENGR00046566	Optimize add Inter Skip MB block	Resolved
ENGR00046608	Merge two 8x8 copy to 16x8; and fine tune vld	Resolved
ENGR00046741	Remove invoking integer division of eabi library	Resolved

ENGR00046857	optimize proc_slice_mpeg2	Resolved
ENGR00046964	Refine whole architerture	Resolved
ENGR49716	Add WinCE version into ClearCase branch for MPEG-2	Resolved
ENGR50273	Add output format of YV12 for WinCE	Resolved

5.2 Fixed Defects

IDENTIFIER	HEADLINE	STATE
ENGR00039575	[MMVCODEC] MPEG2 DUT fails to pass VTS for sony-ct4.m2v	Resolved
ENGR00039576	[MMVCODEC] MPEG2 DUT fails to pass the VTS for tccla-11v2.m2v	Resolved
ENGR00053572	[MPEG2 DEC] can't decode a MPEG1 clip properly	Resolved

5.3 Workarounds

N/A.

6 Known Issues

IDENTIFIER	HEADLINE	STATE

Appendix A Release History

RELEASE VERSION	DATE	DESCRIPTION
1.1.2	2007-10-18	Release MPEG2 decoder revision 1.1.2, added YV12 output for WinCE, fixed a MPEG1 bug
1.1	2007-08-10	Release MPEG2 decoder revision 1.1, improved 36% for D1 clips
1.3	2009-03-13	Mxc_mem device support(please get more detail from BSP)