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1.5.0

## **Release Notes for Freescale Multimedia Framework On WinCE for MX27 ADS**

### **ABSTRACT:**

Multimedia Framework WinCE DirectShow Release Notes

### **KEYWORDS:**

Multimedia codecs, video, DirectShow, Parser, MP4, H264, MPEG4

## Revision History

VERSION	DATE	AUTHOR	CHANGE DESCRIPTION
1.0	Dec 1, 2007	Lauren Post	Draft version
1.1	Dec 17, 2007	Lauren Post	Internal release
1.3.3	Dec 20, 2007	Lauren Post	Updated for final known problems
1.4	Jan 10, 2008	Lauren Post	CPO updates based on comments
1.5	Jan 23, 2008	Lauren Post	Updates for formal release
1.6	April 28, 2008	Lauren Post	Updates for formal release

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# 1. Introduction

## 1.1. Purpose

The purpose of this document is to provide information on the package contents, instructions on building Freescale WinCE components on an MX27ADS platform running WinCE.

## 1.2. Scope

The scope is restricted to information on the package contents and instructions for building and testing. This document does not provide any details about the architecture or APIs in the Decoder.

## 1.3. Audience Description

The reader is expected to have basic understanding of Microsoft Direct Show framework.

## 1.4. References

## 1.5. Definitions, Acronyms, and Abbreviations

# 2. Release history

RELEASE NUMBER	DELIVERABLES	FEATURES
01.02	<ul style="list-style-type: none"><li>Documentation</li><li>Binaries of DMO/DShow Filter DLLs</li><li>WinCE image</li><li>MMFMWK source code</li></ul>	<ul style="list-style-type: none"><li>Video/audio playback<ul style="list-style-type: none"><li>avi (h264)</li><li>avi (mpeg4)</li><li>mp4 (h264)</li><li>mp4 (h264)</li><li>mp4 (mpeg4)</li><li>mp4 (mpeg4)</li></ul></li><li>Video encode<ul style="list-style-type: none"><li>MPEG4 Encode</li><li>H.264 Encode</li></ul></li><li>CE 6.0</li></ul>
01.03	Same as above	New features <ul style="list-style-type: none"><li>Bug fixing</li></ul>
01.04	Same as above	WinCE 6.0 release

# 3. Limitation of this release

- WinCE 5.0 releases are not available in this package
- Audio codecs are not provided in this release – do not include the FSL\_MMFCODEC\_AAC or FSL\_MMFCODEC\_MP3 in the environments or it will cause problems with the MP4Parser since these binaries are not available.

# 4. Components Version

Components	Version Number
Video codecs	VPU H264 Decoder 1.1

	and Encoder	
	VPU MPEG4 Decoder and Encoder	1.1
Parsers	MP4 Parser	5.12.00
	Source Filter	2.0

## 5. Resolved Issues

CR ID	Headline

## 6. Assumptions and Known Issues

## 7. List of Deliverables

Base Directory in Multi Site VOB: /vobs/fsl\_mad\_multimedia\_fmwk/fsl\_mm\_wince/

RELEASE NUMBER	DELIVERABLES BLN_MAD-MMFMWK_MX27_WINCE_05.04.00	ADDED FEATURES	DESCRIPTION
05.04.00	<b>Documents :</b>  RN_FSL_MMFMWK_WINCE_MX27ADS.doc		Release Notes
	<b>Libraries :</b>  1. fsl_mp4_parser_dshow.dll 2. fsl_src_filter.dll 3. mx27_vpu_dec_dshow.dll 4. mx27_vpu_enc_dshow.dll		filter libraries
	<b>Source code :</b> 1. DShow Filter sources 2. Components interface headers		

## 8. Software Setup and Tools used

- Build machine should be running Microsoft WinXP.
- Build machine should have following installed
  - Microsoft Windows CE 6.0 with Platform Builder
  - WinCE500 BSP F14

## 9. Build Procedure

FSL\_MMFW\_WINCE would be available as Platform Builder dirs projects with the directory structure mentioned above. The details of the projects are given below.

- mp4parser - This contains the MP4 Parser Core Library and DSHOW Filter
- mx27\_vpu\_dec\_6.0- VPU H.264 and MPEG4 Decoder Direct Show Filter
- mx27\_vpu\_enc\_6.0 - VPU H.264 and MPEG4 Encoder Direct Show Filter
- sourcefilter – Source Filter to encode

### *Steps to insert projects into Visual Studio Solution of BSP for building on 6.0:*

1. In Solution, select menu “View->PropertyPages->Environment”, add following new environment \_TGTARM=arm9.
2. Copy the directory “Multimedia” to the WinCE BSP platform directory. For example, copy into “wince600\platform\MX27ADS\src\” for MX27 BSP, and make it look like “wince600\platform\MX27ADS\src\Multimedia\”.
3. For each codec installed, a project can be created by the following steps
  - a) Right click on **Subprojects** in the WinCE BSP Solution, select the option ‘**Add Existing Project....**’
  - b) Select the option ‘Sources/Dirs Files (sources; dirs)’ in dropdown menu for “Files of Type”.
  - c) Open the “dirs” file in the codec folder – for example  
...\Multimedia\components\video\mx27\_vpu\_dec (PB will automatically create the mx27\_vpu\_dec.pbpxml).
4. In solution, select menu “View->PropertyPages->Environment”, add following new environment variables based on type of parser/codec to be built with a value of 1.  
FSL\_MMF\_PARSER\_MP4 - FSL MP4Parser Filter
5. In file "wince600\platform\MX27ADS\files\platform.reg", at the bottom add the following line:  
#include "\$(\_TARGETPLATROOT)\src\Multimedia\misc\fslmm\_MX27.reg"
6. Make sure your OSDesignView includes DirectShow component: Add all feature one by one in Catalog/Core OS/Windows CE devices/Graphics and Multimedia Technologies/Media/DirectShow:
  - a) Add Catalog item: Core OS -> Windows CE Devices -> Graphics and Multimedia Technologies -> Media -> Media Format -> AVI Filter;
7. Re-build CSP, and select “Build OS -> Sysgen” to re-build the BSP and generate the image. For detailed information of how to build image, please refer to the BSP document.

### *Steps to build the FSL\_MMFW\_WINCE separately (require above steps):*

1. Right click on Multimedia project present in the projects in Platform Builder’s workspace where Multimedia directory was copied
2. Check “Clean before building”.

3. Select “Multimedia” project and open right click menu again, select “Build the Current Project” to build the project.
4. Make sure that there are appropriate dirs in all the correct directories

This builds all DLLs of DShow Filters and places binaries in bin600 directories.

## 10. Test procedure

### 1. Audio/Video:

Run “Media Player” to play audio/video files.

## 11. BSP Requirements

The BSP must be built with VPU and eMMA drivers.

Location of VPU driver and eMMA driver in Catalog:

- Third Party->BSPs->Freescal MX27 ADS: ARMV4I ->Device Drivers->VPU
- Third Party->BSPs->Freescal MX27 ADS: ARMV4I ->Device Drivers->eMMA

## 12. Support

If you have any questions or problems concerning this release, please contact a Freescal representative. Please include release version, board version, BSP version and any other relevant information.