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i.MX 6 Series Android Codec Release Notes

Contents

1 Release Description

- i.MX Android codec release includes standard codec package, special codec package, and excluded codec package.
- Standard codec pacakge is available on Freescale.com as part of the Freescale Android standard release.
- Special codec package contains codecs that are either moderated downloads or separate packages not part of general distribution.
- Excluded codec package contains codecs that require customer to have a special license.
- Both Special and Exclude codec package are based on standard codec package.

2 Supported Hardware SoCs/ Boards

- i.MX 6Dual/6Quad SABRE-SD board and platform
- i.MX 6DualLite SABRE-SD platform
- i.MX 6Dual/6Quad SABRE-AI platform
- i.MX 6DualLite SABRE-AI platform

3 What's New in this Release

- Enhanced stability and robustness

4 Supported Features

The supported features include the following:

- Local Playback
- Recording
- Movie studio
- Streaming playback
- Audio pass through
- Subtitle

4.1 Local Playback

Local playback includes the following information:

- Android native codecs
- Android native image
- Freescale enhanced codecs
- Trick mode playback
- Multiple audio track selection

4.1.1 Android Native Codecs

The following table provides the information on Android native codecs.

Table 1. Android Native Codecs

File Extension	Video Decoders	Audio Decoders
.mid/.xmf/.mxmf .rtttl/.rtx .ota .imy	-	MIDI Type 0 and 1. DLS Version 1 and 2. XMF and Mobile XMF. Support for ringtone formats RTTTL/RTX, OTA, and iMelody.
.ogg	-	Vorbis

4.1.2 Android Native Image

The following table provides the information on the Android native image.

Table 2. Android Native Image

File Extension	Encoder	Decoder	Details
.jpg	*	*	Base+progressive
.gif		*	
.png	*	*	
.bmp		*	

4.1.3 Freescale Enhanced Codecs

The following table provides the information on the Freescale enhanced codecs.

Table 3. Freescale Enhanced Codecs

File Extension	Demuxers	Video Decoders	Audio Decoders
.mp3			MP3
.aac/.adts			AAC LC/PLUS
.wav			LPCM
.flac			FLAC
.amr/.awb			AMR-NB/AMR-WB
.mp4 .mov .f4v	MP4	MPEG4 SP/ASP except GMC H.264 BP/MP/HP H263 MJPEG	AAC LC/PLUS MP3
.m4a	MP4		AAC LC/PLUS
.3gp	MP4	MPEG4 SP/ASP except GMC H.264 BP/MP/HP H263	AAC LC/PLUS AMR-NB AMR-WB
.avi	AVI	MPEG4 SP/ASP except GMC Xvid H.264 BP/MP/HP H263 MJPEG	AAC LC/PLUS MP3 LPCM
.wma	ASF		WMA STD, PRO, Lossless
.wmv/.asf	ASF	VC-1 SP/MP/AP WMV 7/8	WMA STD, PRO, Lossless
.mkv/mka	MKV	H.264 BP/MP/HP MPEG4 SP/ASP except GMC Xvid VC-1 SP/MP/AP	AAC MP3 WMA STD, PRO, Lossless Vorbis
.flv/.f4v	FLV	Sorenson H263	MP3

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Table 3. Freescale Enhanced Codecs (continued)

File Extension	Demuxers	Video Decoders	Audio Decoders
		H.264 BP/MP/HP	AAC
.mpg	MPEG2/PS	MPEG2 BP/MP	MP3
.vob	MPEG2/TS	MPEG2 BP/MP	AAC
.ts		H.264 BP/MP/HP	LPCM
.webm	MKV	VP8	MP3
			AAC LC/PLUS

NOTE

- All video codecs are accelerated with the Video Processing Unit (VPU) except the WMV7/8 decoder and the Sorenson H.263 decoder.
- All audio codecs are optimized by Freescale.
- ASF, WMV, WMA, and AACPLUS need special codec package to be installed.
- AC3 needs to be installed from the Excluded Codec Package.
- MJPEG subtypes and MJPEG_2000 and MJPEG_B are not supported.
- MJPEG only supports YUV420 and YUV422 (horizontal) color formats.
- H.264 TS streams do not support seek and are only tested with limited streams.

4.1.4 Trick Mode Playback

Trick mode playback is supported by extended API setPlaySpeed(int[] Speed).

- 0 < Speed[0] < 2: this is slow playback, video played with audio.
- -16 <= Speed[0] <= -2: this is fast backward, audio is muted and show video key frames with respected speed.
- 2 <= Speed[0] <= 16: this is fast forward, audio is muted and show video key frames with respected speed.
- Result speed is stored in Speed[0]. Check whether this call succeeds or fails.

4.1.5 Multiple Audio Track Selection

Audio track section is supported if the file has multiple audio tracks at runtime. For Jelly Bean or later versions, selection is implemented through MediaPlayer::selectTrack API.

4.2 Recording

The following table provides the information on recording.

Table 4. Feature Matrix for Recording

File Extension	Video Encoders	Audio Encoders
.3gp	H263	AMR-NB
	H264	AMR-WB
	MPEG4	AAC LC
.mp4	H263	MP3

Table 4. Feature Matrix for Recording

File Extension	Video Encoders	Audio Encoders
	H264 MPEG4	AAC LC

NOTE

- All video codecs are accelerated with the Video Processing Unit (VPU).
- AMR-NB, AMR-WB, and MP3 encoder are optimized by Freescale.

4.3 Movie Studio

The following table provides the information on movie studio.

Table 5. Feature Matrix for Movie Studio

File Extension	Video Encoders	Audio Encoders
.3gp	H263 H264 MPEG4	AMR-NB AMR-WB AAC LC
.mp4	H263 H264 MPEG4	MP3 AAC LC
.mp3		MP3

NOTE

- All video codecs are accelerated with the Video Processing Unit (VPU).

4.4 Streaming Playback

The following table provides the information on streaming playback.

Table 6. Feature Matrix for Streaming Playback

Protocol	File Format
HTTP	.mp4/.3gp/.mov .flv/ .f4v .avi .wmv/.asf .mpg/.vob/.ts .mp3 .aac .wma

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Table 6. Feature Matrix for Streaming Playback (continued)

Protocol	File Format
	.mkv
RTSP	.mp4
HTTPLive	.m3u8
RTP	.ts
UDP	.ts

To set up RTP/UDP streaming, perform the following operations:

- Install vlc 1.1.5 on Windows or Ubuntu.
- For UDP streaming server: run vlc with the command:

```
vlc -vvv stream_file_name --sout udp://224.0.1.1:1234
```

- For RTP streaming server:
  a. Start vlc with GUI, and then select MediaStreaming.
  b. Press Add to load the stream file, press Stream, and then click Next.
  c. Select RTP/Mpeg Transport Stream from the drop-down list, and then click Add.
  d. Enter the IP address 224.0.1.1 and base port number 5004, and deselect Activate Transcoding.
  e. Press Stream at the bottom. The server is started.
- For UDP streaming client, run Gallery on Android with the command:

```
am start -n com.android.gallery3d/com.android.gallery3d.app.MovieActivity -d udp://
224.0.1.1:1234
```

- For RTP streaming client, run Gallery on android with the command:

```
am start -n com.android.gallery3d/com.android.gallery3d.app.MovieActivity -d rtp://
224.0.1.1:5004
```

- For uni-cast, use client IP address instead of 224.0.1.1 when starting server, and use server IP address instead of 224.0.1.1 when starting client.

4.5 Audio Pass Through

The following table provides the information on audio pass through.

Table 7. Feature Matrix for Audio Pass Through

File Extension	Audio Format
.avi	AC3
.mkv	
.mpg	
.vob	
.ts	

The steps to enable or disable the audio pass through feature are given below:

1. Boot the board in dual display mode.
2. Connect the board with Audio/Video receiver through HDMI cable.
3. Enter the following commands from console to enable the audio pass through feature:

```
echo 2000 > /data/system/audio_pass_through_pref
chmod 777 /data/system/audio_pass_through_pref
```

4. Enter the following command from console to disable the audio pass through feature:

```
echo 1000 > /data/system/audio_pass_through_pref
```

NOTE

The user can also add a check box in Android Settings to enable/disable the audio pass through feature.

4.6 Subtitle

The following table provides the information on subtitle.

Type	Format
In Band	SRT UTF-8
Out Band	SRT UTF-8

5 License Limited Codecs

This chapter describes the excluded codec release package and special codec release package.

5.1 Excluded Codec Release Package

This release package includes two prebuild codec packages, fsl_ac3_dec.tar.gz and fsl_ddp_dec.tar.gz.

The following features are supplementary to the standard codec release package:

- Audio decoder: AC3
- Audio core decoder: EAC3

5.2 Special Codec Release Package

This release package includes the following two prebuilt codec shared libraries:

- fsl_aacp_dec.tar.gz
- fsl_ms_codec.tar.gz

Below features are supplementary to standard codec release package:

- Demuxer: ASF
- Video Decoder: WMV
- Audio Codecs: AAC Plus and WMA

5.3 How to Install Excluded and Special Codecs

See the readme file of each package.

6 Extend Android Multimedia Framework APIs

In Jelly Bean, Freescale has extended only one Android API, set playback speed.

```
     /* trick mode */
     /**
     * Set playback speed.
     *
     * @param Speed[]  contains only one item which is normalized speed multiplied by 0x10000
     * Range of normalized speed is:
     *         [-16,-2] means rewind, [0.1, 16] means fast forward, step is 0.1
     * when normalized speed is [0.1, 1.9] audio is outputted, otherwise audio
     * is not outputted.
     * After this function call returns, result speed is stored in Speed[0], to show whether
it succeeds or fails.
     */
     public native void setPlaySpeed(int[] Speed);
```

7 Limitations of this Release

- The minimum resolution is 64*64
- Complex Profile of WMV9 is not supported
- Multimedia files that do not have index table may not be searchable
- Corrupted multimedia files may not be searchable and may have wrong duration

8 Known Issues

None.

How to Reach Us:

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