Differences Between the MPIs of the Hi3536D V100 and Hi3536C V100

Issue 00B01

Date 2017-09-08

HiSilicon Technologies Co., Ltd.

Address: Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129
People's Republic of China

Website: http://www.hisilicon.com

Email: support@hisilicon.com

About This Document

Related Version

The following table lists the product version related to this document.

Product Name	Version
Hi3536D	V100

Intended Audience

This document is intended for:

- Technical support engineers
- Software development engineers

Change History

Changes between document issues are cumulative. Therefore, the latest document issue contains all changes made in previous issues.

Issue 00B01 (2017-09-08)

This issue is the first draft release.

Contents

Tables

1 Overview

This document describes the differences between the media processing platform (MPP) programming interfaces (MPIs) of Hi3536D V100 and Hi3536C V100.

The differences can be classified into four types. The MPIs are added, deleted, modified, or the public structures are modified. The difference entity includes but is not limited to the MPI function and member type (structure, enumeration, and union). This document briefly describes the differences in various entities and the causes of the differences. For details about the MPIs and scenarios, see the *HiMPP V3.0 Media Processing Software Development Reference*.

2 Module

2.1 VDEC

Table 2-1 New MPIs of the VDEC module

New MPI	Description
None	-

Table 2-2 Modified MPIs of the VDEC module

Modified MPI	Description
HI_MPI_VDEC_CreateChn HI_MPI_VDEC_DestroyChn HI_MPI_VDEC_GetChnAttr	• These modified MPIs do not support MP4 decoding. • These MPIs are modified to support the maximum decoding width and height of 3072.
HI_MPI_VDEC_SetChnParam HI_MPI_VDEC_GetChnParam	These MPIs are modified to support the linear outputs.
HI_MPI_VDEC_GetChnLuma	H.264 and H.265 encoding supports the obtaining of luminance statistics.

Table 2-3 Deleted MPIs of the VDEC module

Deleted MPI	Description
None	-

2.2 VPSS

Table 2-4 New MPIs of the VPSS module

New MPI	Description
None	-

Table 2-5 Modified MPIs of the VPSS module

Modified MPI	Description
HI_MPI_VPSS_CreateGrp	**bIeEn**, **bNrEn**, **bHistEn**, and **bEsEn** must be set to **false**. **enDieMode** must be set to **VPSS_DIE_MODE_NODIE**.
HI_MPI_VPSS_SetGrpAttr	**bIeEn**, **bNrEn**, **bHistEn**, and **bEsEn** must be set to **false**. **enDieMode** must be set to **VPSS_DIE_MODE_NODIE**.
HI_MPI_VPSS_SetChnParam	Only the settings of the sharpening parameters are valid.
HI_MPI_VPSS_SetGrpParam	Only the settings of the DCI strength parameters are valid.
HI_MPI_VPSS_SetRotate	This MPI is modified to add the rotation parameter setting in AUTO mode.
HI_MPI_VPSS_SetGrpAdvancedParam	This modified MPI does not support advanced parameter setting of groups
HI_MPI_VPSS_GetGrpAdvancedParam	This modified MPI does not support advanced parameter reading of groups.
HI_MPI_VPSS_SetPreScale	This modified MPI does not support pre-scaling parameter setting of groups.
HI_MPI_VPSS_GetPreScale	This modified MPI does not support pre-scaling parameter reading of groups.
HI_MPI_VPSS_SetPreScaleMode	This modified MPI does not support pre-scaling mode setting of groups.
HI_MPI_VPSS_GetPreScaleMode	This modified MPI does not support pre-scaling mode parameter reading of groups.
HI_MPI_VPSS_SetGrpField	This modified MPI does not support selecting the field mode of groups.
HI_MPI_VPSS_GetGrpField	This modified MPI does not support parameter reading of the field mode of groups.
HI_MPI_VPSS_SetChnOverlay	This modified MPI does not support the setting of

Modified MPI	Description
	the VPSS channel video overlay region.
HI_MPI_VPSS_GetChnOverlay	This modified MPI does not support the parameter reading of the VPSS channel video overlay region.
HI_MPI_VPSS_GetGrpRegionLuma	This modified MPI does not support the obtaining of luminance statistics of groups.
HI_MPI_VPSS_SetImageQualityCfg	This modified MPI does not support the configuration of picture quality parameters.
HI_MPI_VPSS_GetImageQualityCfg	This modified MPI does not support the obtaining of the configuration of picture quality parameters is not supported.

Table 2-6 Deleted MPIs of the VPSS module

Deleted MPI	Description
None	-

2.3 VGS

Table 2-7 New MPIs of the VGS module

New MPI	Description
None	-

Table 2-8 Modified MPIs of the VGS module

Modified MPI	Description
None	-

Table 2-9 Deleted MPIs of the VGS module

Deleted MPI	Description
None	-

2.4 VENC

Table 2-10 New MPIs of the VENC module

New MPI	Description
None	-

Table 2-11 Modified MPIs of the VENC module

Modified MPI	Description
HI_MPI_VENC_RequestIDR HI_MPI_VENC_SetRoiCfg HI_MPI_VENC_GetRoiCfg HI_MPI_VENC_SetRoiBgFrameRate HI_MPI_VENC_GetRoiBgFrameRate HI_MPI_VENC_SetH264SliceSplit HI_MPI_VENC_GetH264SliceSplit HI_MPI_VENC_SetH264InterPred HI_MPI_VENC_GetH264InterPred HI_MPI_VENC_SetH264IntraPred HI_MPI_VENC_GetH264IntraPred HI_MPI_VENC_SetH264Trans HI_MPI_VENC_GetH264Trans HI_MPI_VENC_SetH264Entropy HI_MPI_VENC_GetH264Entropy HI_MPI_VENC_SetH264Poc HI_MPI_VENC_GetH264Poc HI_MPI_VENC_SetH264Dblk HI_MPI_VENC_GetH264Dblk HI_MPI_VENC_SetH264Vui HI_MPI_VENC_GetH264Vui HI_MPI_VENC_SetMjpegParam HI_MPI_VENC_GetMjpegParam HI_MPI_VENC_GetRcParam HI_MPI_VENC_SetRcParam HI_MPI_VENC_SetRefParam HI_MPI_VENC_GetRefParam HI_MPI_VENC_EnableIDR HI_MPI_VENC_SetH264IdrPicId	These modified MPIs do not support H.264, H.265, or MJPEG encoding.

Modified MPI	Description
HI_MPI_VENC_GetH264IdrPicId HI_MPI_VENC_SetH265SliceSplit HI_MPI_VENC_GetH265SliceSplit HI_MPI_VENC_SetH265PredUnit HI_MPI_VENC_GetH265PredUnit HI_MPI_VENC_SetH265Trans HI_MPI_VENC_GetH265Trans HI_MPI_VENC_SetH265Entropy HI_MPI_VENC_GetH265Entropy HI_MPI_VENC_SetH265Dblk HI_MPI_VENC_GetH265Dblk HI_MPI_VENC_SetH265Sao HI_MPI_VENC_GetH265Sao HI_MPI_VENC_SetH265Timing HI_MPI_VENC_GetH265Timing HI_MPI_VENC_SetH265Vui HI_MPI_VENC_GetH265Vui HI_MPI_VENC_SetFrameLostStrategy HI_MPI_VENC_GetFrameLostStrategy HI_MPI_VENC_SetSuperFrameCfg HI_MPI_VENC_GetSuperFrameCfg HI_MPI_VENC_SetIntraRefresh HI_MPI_VENC_GetIntraRefresh HI_MPI_VENC_AttachVbPool HI_MPI_VENC_DetachVbPool HI_MPI_VENC_GetSSERegion HI_MPI_VENC_SetSSERegion HI_MPI_VENC_EnableAdvSmartP	

Table 2-12 Deleted MPIs of the VENC module

Deleted MPI	Description
None	-

2.5 VOU

Table 2-13 New MPIs of the VOU module

New MPI	Description
None	-

Table 2-14 Modified MPIs of the VOU module

Modified MPI	Description
HI_MPI_VO_SetPubAttr	• The only device ID is 0. • **enIntfType** can only be set to **HDMI** and **VGA**. • **enIntfSync** supports **VO_OUTPUT_2560x1440_30** in maximum.
HI_MPI_VO_SetVideoLayerAttr	• The video layer IDs are 0 and 1. • The video layer does not support zoom-in. • The maximum width and height of the display region are 2560 and 1440, respectively. • The video layer 0 supports only the PIXEL_FORMAT_YUV_SEMIPLANAR_422 pixel format when the width is greater than 1920, and supports PIXEL_FORMAT_YUV_SEMIPLANAR_420 and PIXEL_FORMAT_YUV_SEMIPLANAR_422 when the width is less than 1920. • The video layer 1 supports one pixel format: PIXEL_FORMAT_YUV_SEMIPLANAR_422. • **bDoubleFrame** must not be set to **TRUE**.
HI_MPI_VO_SetVideoLayerCompressAttr	**bSupportCompress** must not be set to **TRUE**.
HI_MPI_VO_SetVideoLayerCSC	• The coefficients are fixed. Only the configuration of **enCscMatrix** is supported. Other parameters are read-only and not writable. • **enCscMatrix** can only be configured as **VO_CSC_MATRIX_BT601FULL_TO_BT709FULL**, **VO_CSC_MATRIX_BT601LIMIT_TO_BT709FULL**, **VO_CSC_MATRIX_BT709FULL_TO_BT709FULL**, or **VO_CSC_MATRIX_BT709LIMIT_TO_BT709FULL**.
HI_MPI_VO_SetDispBufLen	• **u32BufLen** can be configured as **0**.

Modified MPI	Description
HI_MPI_VO_EnableChn	The maximum number of channel regions is 16.
HI_MPI_VO_SetChnAttr	The **bDeflicker** channel does not support anti-flicker.
HI_MPI_VO_SetWbcSource	Not supported
HI_MPI_VO_GetWbcSource	Not supported
HI_MPI_VO_EnableWbc	Not supported
HI_MPI_VO_DisableWbc	Not supported
HI_MPI_VO_SetWbcAttr	Not supported
HI_MPI_VO_GetWbcAttr	Not supported
HI_MPI_VO_SetWbcMode	Not supported
HI_MPI_VO_GetWbcMode	Not supported
HI_MPI_VO_SetWbcDepth	Not supported
HI_MPI_VO_GetWbcDepth	Not supported
HI_MPI_VO_GetWbcFrame	Not supported
HI_MPI_VO_ReleaseWbcFrame	Not supported
HI_MPI_VO_SetGraphicLayerCSC	• The coefficients are fixed. Only the configuration of **enCscMatrix** is supported. Other parameters are read-only and not writable. • **enCscMatrix** can only be configured as **VO_CSC_MATRIX_RGB_TO_BT601_PC** or **VO_CSC_MATRIX_RGB_TO_BT709_PC**.
HI_MPI_VO_SetVgaParam	**enCscMatrix** can only be configured as **VO_CSC_MATRIX_BT709_TO_RGB_PC** or **VO_CSC_MATRIX_BT709LIMIT_TO_RGB**.
HI_MPI_VO_SetHdmiParam	**enCscMatrix** can only be configured as **VO_CSC_MATRIX_BT709FULL_TO_BT709FULL**, **VO_CSC_MATRIX_BT709FULL_TO_BT601FULL**, **VO_CSC_MATRIX_BT709FULL_TO_BT709LIMIT**, or **VO_CSC_MATRIX_BT709FULL_TO_BT601LIMIT**.

Table 2-15 Deleted MPIs of the VOU module

Deleted MPI	Description
None	-

2.6 Audio

The built-in DAC changes settings through the ioctl function and provides the following commands:

Table 2-16 New MPIs of the audio module

New MPI	Description
ACODEC_SOFT_RESET_CTRL	This MPI is added to restore the DAC to the default setting.
ACODEC_SET_I2S1_FS	This MPI is added to set the sampling rate of the I^2S1 interface.
ACODEC_SET_DACL_VOL	This MPI is added to control the output volume of the audio-left channel.
ACODEC_SET_DACR_VOL	This MPI is added to control the output volume of the audio-right channel.
ACODEC_SET_DACL_MUTE	This MPI is added to mute the output of the audio-left channel.
ACODEC_SET_DACR_MUTE	This MPI is added to mute the output of the audio-right channel.
ACODEC_GET_DACL_VOL	This MPI is added to obtain the output volume control of the audio-left channel.
ACODEC_GET_DACR_VOL	This MPI is added to obtain the output volume control of the audio-right channel.
ACODEC_SET_PD_DACL	This MPI is added to control the power-off of the output of the audio-left channel.
ACODEC_SET_PD_DACR	This MPI is added to control the power-off of the output of the audio-right channel.
ACODEC_SET_OUTPUT_VOL	This MPI is added to set the output volume
ACODEC_GET_OUTPUT_VOL	This MPI is added to obtain the output volume

Table 2-17 Modified MPIs of the audio module

Modified MPI	Description
None	-

Table 2-18 Deleted MPIs of the audio module

Deleted MPI	Description
None	-

2.7 HDMI

Table 2-19 Modified MPIs of the HDMI module

Modified MPI	Description
HI_MPI_HDMI_SetAttr	• **enVideoFmt** supports **HI_HDMI_VIDEO_FMT_2560x1440_30** in maximum. • **u32PixClk** supports 119375 kHz in maximum.

Table 2-20 Deleted MPIs of the HDMI module

Deleted MPI/Parameter	Description
None	-

2.8 Region

Table 2-21 New MPIs of the region module

New MPI	Description
None	-

Table 2-22 Modified MPIs of the region module

Modified MPI	Description
HI_MPI_RGN_Create	This MPI is modified to change the range of supported regions. The Overlay, Cover, and Mosaic regions are not supported.

Table 2-23 Deleted MPIs of the region module

Deleted MPI	Description
None	-