ISP MPI Differences Between Hi3516D V300/Hi3516C V500/Hi3516A V300 and Hi3519A V100

Issue 01

Date 2019-09-15

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About This Document

Purpose

This document describes the differences between the media processing platform programming interfaces (MPIs) of Hi3516D V300/Hi3516C V500/Hi3516A V300 and Hi3519A V100, including the modified MPIs and new MPIs. With this document, engineers that develop products based on Hi3519A V00 can quickly understand the major differences between Hi3519A V00 and Hi3516D V300/Hi3516C V500/Hi3516A V300, and therefore quickly develop products based on Hi3516D V300/Hi3516C V500/Hi3516A V300.

Related Version

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

Product Name	Version
Hi3516D	V300
Hi3516C	V500
Hi3516A	V300

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 01 (2019-09-15)

This issue is the first official release, which incorporates the following changes:

Section 2.18 is added.

Issue 00B03 (2019-02-15)

This issue is the third draft release, which incorporates the following changes:

The description of Hi3516A V300 is added.

Issue 00B02 (2019-01-15)

This issue is the second draft release, which incorporates the following changes:

Sections 2.5 to 2.17 are modified.

Issue 00B01 (2018-07-15)

This issue is the first draft release.

Contents

Tables

1 Overview

This document describes the differences between the image signal processor (ISP) MPIs of Hi3516D V300/Hi3516CV500/Hi3516A V300 and Hi3519A V100.

The differences are classified into the following types: Adding, deleting, and modifying MPI functions and public data structures. The corresponding differences include but are not limited to the following: MPI functions and data structure members (such as structure, enumeration, and union). This document briefly describes the differences between various subjects and the causes of the differences.

2 Module

2.1 Module Ctrl

Table 2-1 Modified MPI

Modified MPI	Description
HI_MPI_ISP_SetModuleControl	New or unsupported MPI parameters

Table 2-2 Data structure with new and unsupported members

Data Structure with New and Unsupported Members	Description
ISP_MODULE_CTRL_U	New member: bitBypassDE Unsupported members: • bitBypassRadialShading • bitBypassRadialCrop • bitBypassAFStatFE

2.2 Mesh Shading

Table 2-3 Modified MPI

Modified MPI	Description
HI_MPI_ISP_SetMeshShadingGainLutAttr	The MPI parameters are added.

Table 2-4 Data structure with new members

Data Structure with New Members	Description
ISP_SHADING_LUT_ATTR_S	New member: stBNRLscGainLut

2.3 Radial Shading

Table 2-5 Modified MPIs

Modified MPIs	Description
• HI_MPI_ISP_SetRadialShadingAttr • HI_MPI_ISP_GetRadialShadingAttr • HI_MPI_ISP_SetRadialShadingLUT • HI_MPI_ISP_GetRadialShadingLUT	Radial Shading not supported

Table 2-6 Data structure with unsupported members

Data Structures with Unsupported Members	Description
ISP_RADIAL_SHADING_ATTR_S	Unsupported members: • bEnable • u16RadialStr
ISP_RADIAL_SHADING_LUT_ATTR_S	Unsupported members: • enLightMode • u16BlendRatio • u8LightType1 • u8LightType2 • u8RadialScale • u16CenterRX • u16CenterRY • u16CenterGrX • u16CenterGrY • u16CenterGbX • u16CenterGbY • u16CenterBX • u16CenterBY • u16OffCenterR • u16OffCenterGr

Data Structures with Unsupported Members	Description
	• u16OffCenterGb • u16OffCenterB • astRLscGainLut[3]

2.4 CA

Table 2-7 Modified MPIs

Modified MPIs	Description
• HI_MPI_ISP_SetCAAttr • HI_MPI_ISP_GetCAAttr	The CP function is deleted, and parameters related to the CP function cannot be configured.

Table 2-8 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_CA_ATTR_S	Unsupported members: • eCaCpEn • stCP

2.5 DRC

Table 2-9 Modified MPIs

Modified MPIs	Description
• HI_MPI_ISP_SetDRCAttr • HI_MPI_ISP_GetDRCAttr	Some DRC parameters cannot be configured.

Table 2-10 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_DRC_ATTR_S	Unsupported members: • u8FltScaleCoarse • u8FltScaleFine

2.6 Bayer NR

Table 2-11 Modified MPIs

Modified MPIs	Description
• HI_MPI_ISP_SetNRAttr • HI_MPI_ISP_GetNRAttr	The MPI parameters are modified.

Table 2-12 Data structures with new and unsupported members

Data Structures with New and Unsupported Members	Description
ISP_NR_ATTR_S	Unsupported members: • bLowPowerEnable • u8NrLscRatio New members: • u8BnrLscMaxGain • u16BnrLscCmpStrength
ISP_NR_WDR_ATTR_S	New member: au8FusionFrameStr[4]

2.7 WDR

Table 2-13 Modified MPIs

Modified MPIs	Description
• HI_MPI_ISP_SetFSWDRAttr • HI_MPI_ISP_GetFSWDRAttr	The short frame NR function in WDR mode is deleted, and parameters related to the short frame NR function cannot be configured.

Table 2-14 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_WDR_FS_ATTR_S	Unsupported member: stBnr

2.8 DE

Table 2-15 New MPIs

New MPIs	Description
• HI_MPI_ISP_SetDEAttr • HI_MPI_ISP_GetDEAttr	New DE MPIs are added.

Table 2-16 Data structure with new members

Data Structure with New Members	Description
ISP_DE_ATTR_S	New members: • bEnable • au16LumaGainLut[17] • enOpType • stAuto • stManual

2.9 Radial Crop

Table 2-17 Unsupported MPIs

Unsupported MPIs	Description
• HI_MPI_ISP_SetRcAttr • HI_MPI_ISP_GetRcAttr	Radial Crop is not supported.

Table 2-18 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_RC_ATTR_S	Unsupported members: • bEnable • stCenterCoor • u32Radius

2.10 LogLut

Table 2-19 Unsupported MPIs

Unsupported MPIs	Description
• HI_MPI_ISP_SetLogLUTAttr • HI_MPI_ISP_GetLogLUTAttr	LogLut is not supported.

Table 2-20 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_LOGLUT_ATTR_S	Unsupported member: bEnable

2.11 PreLogLut

Table 2-21 Unsupported MPIs

Unsupported MPIs	Description
• HI_MPI_ISP_SetPreLogLUTAttr • HI_MPI_ISP_GetPreLogLUTAttr	PreLogLut is not supported.

Table 2-22 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_PRELOGLUT_ATTR_S	Unsupported member: bEnable

2.12 DIS

Table 2-23 Unsupported MPIs

Unsupported MPIs	Description
• HI_MPI_ISP_SetDISAttr • HI_MPI_ISP_GetDISAttr	ISP DIS is not supported.

Table 2-24 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_DIS_ATTR_S	Unsupported member: bEnable

2.13 AF Statistics

Table 2-25 Modified MPI

Modified MPI	Description
HI_MPI_ISP_GetFocusStatistics	FE AF statistics cannot be obtained.

Table 2-26 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_AF_STATISTICS_S	Unsupported member: stFEAFStat

2.14 Statistics Config

Table 2-27 Modified MPIs

Modified MPIs	Description
• HI_MPI_ISP_SetStatisticsConfig • HI_MPI_ISP_GetStatisticsConfig	Parameters related to the stitching and FE AF cannot be configured.

Table 2-28 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_STATISTICS_CTRL_U	Unsupported members: • bit1FEAeStiGloStat • bit1FEAeStiLocStat • bit1BEAeStiGloStat • bit1BEAeStiLocStat • bit1FEAfStat

2.15 AE Stitching Statistics

Table 2-29 Unsupported MPI

Unsupported MPI	Description
ISP_GetAEStitchStatistics	AE stitching statistics cannot be obtained.

Table 2-30 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_AE_STITCH_STATISTICS_S	Unsupported members: • au32FEHist1024Value • au16FEGlobalAvg • au16FEZoneAvg • au32BEHist1024Value • au16BEGlobalAvg • au16BEZoneAvg

2.16 WB Stitching Statistics

Table 2-31 Unsupported MPI

Unsupported MPI	Description
ISP_GetWBStitchStatistics	WB stitching statistics cannot be obtained.

Table 2-32 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_WB_STITCH_STATISTICS_S	Unsupported members: • u16ZoneRow • u16ZoneCol • au16ZoneAvgR • au16ZoneAvgG • au16ZoneAvgB • au16ZoneCountAll

2.17 Pipe Differ

Table 2-33 Unsupported MPIs

Unsupported MPIs	Description
• HI_MPI_ISP_SetPipeDifferAttr • HI_MPI_ISP_GetPipeDifferAttr	These MPIs are not supported.

Table 2-34 Data structure with unsupported members

Data Structure with Unsupported Members	Description
ISP_PIPE_DIFF_ATTR_S	Unsupported members: • as32Offset • au32Gain • au16ColorMatrix

2.18 Calc Flicker

Table 2-35 Modified MPIs

New MPIs	Description
HI_MPI_ISP_CalcFlickerType	This MPI is added.

Table 2-36 Data structure with new members

Data structure with new members	Description
ISP_CALCFLICKER_INPUT_S	New member: u32LinesPerSecond
ISP_CALCFLICKER_OUTPUT_S	New member: enFlickerType

