ISS Drivers on DM8127/DM385

Release Notes

Version: 3.8.0.0

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1 Release Contents

This release notes provides important information that will assist you in using the ISS software package. This document provides the product information and known issues that are specific to the ISS software package.

2 Release Requirements

The following products are required for using IPNC RDK:

- PC with Linux (Ubuntu 10.04 LTS recommended)
- Code Composer Studio(CCS) v4.x or v5.x (for flashing and debugging, optional) http://processors.wiki.ti.com/index.php/Category:Code_Composer_Studio_v4 or http://processors.wiki.ti.com/index.php/Category:Code_Composer_Studio_v5
- IPNC DM8127/DM385 Reference Design Kit along with Hardware
- Arago Cross Compiler Tool Chain. It is a part of the TI Tools Linux Devkit
- Spectrum Digital XDS560v2 USB STM emulator with a 20-14 pin adapter cable (required to burn U-boot files to IPNC)
- "Teraterm" version 4.69 or higher

3 New In This Release

3.1 Release 3.8.0

- Multi sensor support
  - AR 0330
  - IMX 136 driver for Appro and LI sensor boards
  - MT9M034
- CSI2 sensor driver added
- Code cleanup

3.2 Release 3.5.0

- ISS RSZ OVF RESET support
- Multi sensor support
  - IMX 104
  - IMX 136
  - MT9M034
- Enhanced image quality parameters
- UYVY Data Support in ISS examples
- SWOSD Tiled Memory Support
- Resizer Horizontal/Vertical Flip Support

- Resizer Crop Mode Support

3.3 Release 3.2.0

- ISP M2M Driver
- M2M Scalar Driver
- On-The-Fly Capture Driver
- YUV and RAW Capture Mode Supported
- Histogram Support
- H3A Engine Driver and Auto Exposure/Auto WhiteBalance Implementation
- AF Merit Function Support
- Multi Sensor Support
- DPC Support
- EVF Framework for Simcop supported
- Image Tuning Tool (ITT) Support

3.4 Release 3.0.0

- This is a combined release for DM8127 and DM385
  - User can select the platform by changing IPNC_DEVICE from Rules.Make
- Added support for AF Merit Function (details given in the document)
- Added support Histogram Display on the captured video
- Added support for 10Megapixel sensor mode of capture+encode+streaming
- Migrated TI_TOOLS to latest version (details in the table below)
- Further tuning of Image quality for AR331 sensor for DM385 platform
- Added YUV sensor mem-to-mem driver support

4 Fixed In This Release

4.1 Release 3.8.0

- Fixes in 2A algorithm support
- Fixes in CSI2 driver support
- Fixes in interrupt handler

4.2 Release 3.5.0

- Memory leaks and Teardown fixes
- DCC tuning tool related updates and fixes

- Fixes in 2A algorithm support
- Enhanced image tuning parameters
- Semaphore for the optimization fo synchronization of various CPIS Algorithms

4.3 Release 3.2.0

- Several Memory leaks resolved in ISS drivers
- Fixes in flicker detect setting for 60/50hz switch for TI2A
- Image setting was not getting correctly loaded when switching between Appro and TI 2A
- TEARDOWN related isssues fixed when changing several usecase combinations
- AR331 sensorboard hardware modification fro achieving higher 60fps performance, errata shared in Hardware folder
- SALDRE were not getting dynamically adjusted with various strengths for different lighting conditions

4.4 Release 3.0.0

- Camera crash is seen and same frame is repeated when streaming for 1080p60 combo with SD recording enabled
- Framerate deviation of 25-30% is observed for 1080p, 30fps and 15fps with SD recording for 8mbps and higher bitrate
- [Mirror] Video start flickering for Mirror option 90ROTATION

5 Known Issues

- Lens distortion correction, is not tuned and optimized in the current release. This will be addressed in next release
- Video stabilization works on 20% more data, sensor used cannot output at 60fps at this higher resolution, so resolution is reduced to show output at 30fps. This will encode at 1600x900 resolution
- Video Noise Filter will reduce the output resolution by 32 as the hardware require extra 32 pixels in X and Y direction
- Logo insertion for ISS VNF may crop the OSD logo by 32 lines, user needs to adjust this based on requirement
- Megapixel mode is only validated on DM8127 in low power mode.

6 Key Points to Note

6.1 Devices Supported

- *TI8127*
- *DM385*

6.2 Application Boards Supported

- *DM8127 IPNC*
- *DM385 IPNC*

6.3 Notes on Using Evaluation Version of 2A algorithm

As part of the IPNC, you have received 2A algorithm from following vendors:

- *Texas Instruments Inc:* TI 2A algorithm library is provided with release by Texas Instruments Inc and this comes with production license. Also, flicker detect library is provided with this release which comes with production license
- *Appro Photoelectron Inc:* Appro 2A algorithm provided is under "for evaluation-only" license agreement. This algorithms will not be functional after a day long run. If you wish to use this in a production environment, please contact Appro sales representatives and get the latest production versions, along with the appropriate license agreement.

Note:

2A algorithm includes Auto Exposure and Auto White Balance algorithms

7 Software Tools Packages

This release is based on the following software packages

Develoment IDE(not included in release but needed for build and debug)		
IDE Name	Product Version	Vendor
Code Composer Studio	5.x	TI

TI Software modules **		
Module Name	Product Version	CCS Support
PSP	Arago tree	N/A
Code Generation Tools for Cortex M3	5.1.3	N/A
Code Generation Tools for DSP	7.4.6	N/A
Code Generation Tools for A8 (Arago Toolchain)	GLIBC version 2.12.2	Open Linux tools
HDVPSS Drivers *	01.00.01.37	Yes (for M3 example codes)
IPC	1.25.03.15	N/A
edma3_lld	02.11.10.09	N/A
Ivahd-hdvicp20api	01.00.00.23	N/A
Sysbios	6.37.01.24	Yes (for M3 example codes)
Xdais	7.24.00.04	N/A
Xdctools	3.25.05.94	N/A
FrameWork Components	3.30.00.06	N/A
Linux Utils	3.23.00.01	N/A
Syslink *	02.21.02.10	Yes (for M3 example codes)
ISS Drivers	03.80.00.00	Yes

*Changes done to the base packages released from TI

8 Revision History

Release	Date	Description
3.0	19-June-2012	GA release 3.0 with system test issue fixed for DM385 PG1.0 Silicon / DM812x PG2.1 Silicon
3.2	10-Oct-2012	GA release 3.2 with upgrades for DM385 PG1.0 Silicon / DM812x PG2.1 Silicon
3.5	21-Dec-2012	GA release v3.5
3.8	21-Jan-2014	GA v3.8 release