Vision Software Development Kit

Version 02.07.00

Release Notes

July 2015

Contents

- **NOTES:**
  - For TDA2Ex SoC and Multi-Sensor Fusion Platform (MonsterCam), this is a preliminary release with limited testing (Alpha Quality).

Build ID: 02.07.00.00

IMPORTANT NOTE: Vision SDK by default supports the TDA2xx, TDA3xx & TDA2Ex super set device configuration. Please refer to the datasheet of the specific part to know the details of the CPUs supported in that part. Vision SDK supports selecting only the CPUs available for the specific part.

Major Features in the Release

New features in the release vs previous Vision SDK release are highlighted in **blue**.

SDK Features (BIOS ONLY)

- Support the following SoC/Platforms
  - TDA2x SoC ES1.0/ES1.1 EVM
  - TDA3x SoC ES1.0/ES1.0A (15x15, 12x12 POP) EVM
  - TDA2Ex Soc ES1.0 EVM
  - TDA2x SoC ES1.1 MonsterCam
- Support for all CPU's in the TDA2xx Device (IPU1-0, IPU1-1, DSP1, DSP2, EVE1, EVE2, EVE3, EVE4, A15-0)
  - Single-channel Capture via VIP for OV10635 sensor, HDMI receiver
  - Multi-channel Capture (via VIP with LVDS, via Ethernet with AVB)
  - Dual Display and Display Controller for VENCs (LCDx and On-Chip HDMI)
  - Single-channel DSS Write Back Capture
  - VPE (Scalar), Encode (MJPEG/H264), Decode (MJPEG/H264)
  - Stripe based capture – support for OTF processing
  - MonsterCam – Stereo and Main camera support, examples of algorithm integration on Main Imager input
  - **Dual A15 support (SMP BIOS mode)**
  - **4CH OV10635 capture via UB960/OV490/TIDA00455 to support for Low cost surround view on TDA2xx**
- Support for all CPU's in the TDA3xx Device (IPU1-0, IPU1-1, DSP1, DSP2, EVE)
  - Single-channel Capture via VIP for OV10365 sensor, HDMI receiver
  - Multi-channel Capture (via VIP with LVDS)
  - Capture via ISS CAL OV10640 (CSI2/Parallel), AR132 (Parallel), **AR140 (parallel), IMX224 (CSI2)**
  - ISS M2M-ISP & ISS M2M-SIMCOP Links
  - Single Display and Display Controller for VENCs (LCD, SD VENC (NTSC/PAL) and Off-Chip HDMI)

    - 64MB memory map for TDA3x 12x12 POP package (IPU1-0, IPU1-1, DSP1, EVE1)
    - **ISS Image tuning tool (DCC – Dynamic Camera Configuration), AWB, AE library**
    - **Tuned AR140, OV10640, IMX224 with WDR**
    - **Multiple channel processing support for ISS CAPTURE and ISS M2M-SIMCOP Links.**
    - **Fast boot mode which allows capture-display to bring up first without DSP and EVE. POR to Display in < 320 ms (excluding sensor initialization).**
        - **Seamless switch to Object Detect usecase after DSP and EVE are up**
    - **Frame freeze detect using display write back & HW CRC**
    - **4CH AR140 CAL CSI2 capture via UB960 CSI2 Hub for Low cost surround view**
- Support for all CPU's in the TDA2Ex Device (IPU1-0, IPU1-1, DSP1, A15-0)
    - Single-channel Capture via VIP for OV10365 sensor
    - Multi-channel Capture (via VIP with LVDS)
    - Display and Display Controller for VENCs (LCD and On-Chip HDMI)
    - VPE (Scalar), Encode (MJPEG/H264), Decode (MJPEG/H264)
- All SoC supports Links Such as Dup, Merge, Select, Sync, NullSrc, Null and IPC (In/Out).
    - **Gate Link – Gives selective control to application on part of usecase data flow.**
        - **Typical usecases - power management, boot time optimizations**
    - **Split Link (TDA2xx only) – Allows single video buffer of higher resolution to be split into multiple channels of lower resolutions on same output queue.**
        - **Typical usecase - surround view using OV490 on TDA2xx.**
- Algorithm link with algorithm plug-in's support on all CPU's
- Integrated below TI algorithms (sample reference algorithms only)
    - Pedestrian Detection
    - Traffic Sign Recognition
    - Lane Detection
    - Sparse Optical Flow
    - Dense Optical Flow
    - Edge Detection
    - Stereo (MsonterCam ONLY)
    - 2D Surround View
    - 3D Surround View (Linux+BIOS Vision SDK ONLY)
- System and Local EDMA support on all cores
- TCP/IP support via NDK/NSP on IPU1-1 (TDA2xx, TDA3xx, TDA2Ex), A15-0 (TDA2xx,TDA2Ex)

- Support Auto use-case generation tool. Refer VisionSDK_UsecaseGen_Overview.pdf & VisionSDK_UsecaseGen_UserGuide.pdf under docs folder for details.
- Power Management Lib with CPU idle & Temperature measurement support. **Thermal management Limp Home Mode demonstration.**
- **Links framework, BSP/Starterware drivers modified to support optional static memory allocation (Refer VisionSDK_DevelopmentGuide.pdf for more details**).
- Debug and Instrumentation Framework
    - Performance log (FPS, CPU Load, Heap memory usage)
    - Debug log (exception log, assert log)
    - DDR BW statistics via HW statistic collectors
    - **PRCM status and reading clock frequencies of different modules.**
    - **Link statistics logic updated to get link statistics and CPU status without sending command to remote core.**
- Multiple boot mode support
    - TDA2x EVM: QSPI boot, SD boot, NOR boot, CCS boot
    - TDA3x EVM: QSPI boot, QSPI+SD boot (SBL in QSPI, AppImage in SD card), CCS boot
    - TDA2Ex EVM: QSPI boot, SD boot, NOR boot, CCS boot
    - TDA2x MC: QSPI boot, SD boot, CCS boot
- TDA2x MC – Calibration usecase
    - **Improved camera calibration process for Stereo, no need for PC based tools. Refer VisionSDK_MultiSensorFusionStereoCalibrationGuide.pdf**

Installation and Usage (BIOS ONLY)

- Kindly refer user guides vision_sdk/docs/VisionSDK_UserGuide_TDAxxx.pdf

Example use-cases (BIOS ONLY)

- Vision SDK demonstrates use-cases as examples. Below table lists these usecases and also indicates the SOC/Platform it is validated on.

No.	Usecases	TDA2xx EVM	TDA2xx MC	TDA2Ex EVM	TDA3xx EVM
Single Camera Use-cases					
1.	1CH VIP capture + Display	√	√	√	√
2.	1CH VIP capture + Alg Frame Copy (DSP1) + Display	√	√	√	√
3.	1CH VIP capture + Alg Frame Copy (EVE1) + Display	√	√	X	√
4.	1CH VIP capture + Alg Frame Copy (A15) + Display	√	√	√	X
5.	1CH VIP capture + Edge Detect (EVE1) + Display	√	√	X	√
6.	1CH VIP capture + Dense Optical Flow (EVEx) + Display (HDMI)	√	√	X	√[1]
7.	1CH VIP capture (HDMI) + Pedestrain and Traffic Sign Detect (EVE1 + DSP1) + Display	√	X	X	√

No.	Usecases	TDA2xx EVM	TDA2xx MC	TDA2Ex EVM	TDA3xx EVM
8.	1Ch VIP capture + Sparse Optical Flow (EVE1) + Display	√	√	X	√
9.	1Ch VIP capture (HDMI) + Lane Detect (DSP1) + Display	√	X	√	√
10.	1CH VIP capture + Alg Subframe Copy (EVE1) + Display	√	√	X	√
11.	1Ch VIP capture (HDMI) + FrontCam Analytics (PD+TSR+LD+SOF) (DSPx, EVEx) + Display (HDMI)	√	X	X	√
12.	1Ch VIP capture + DSSWB + CRC + Display	X	X	X	√
13.	1Ch VIP capture + ENC + DEC + VPE + Display	√	√	√	X
Multi-Camera LVDS Use-cases					
14.	4CH VIP Capture + Mosaic Display	√	X	√	X
15.	4CH VIP Capture + Surround View (DSP) + Display (HDMI) (TDA2x & TDA2Ex ONLY)	√	X	√	X
16.	5CH VIP Capture + Surround View (DSPx) + Analytics (DSP/EVE) + Ultrasound (DSPx) + HDMI Display (HDMI) (TDA2x ONLY)	√	X	X	X
17.	4CH VIP Capture + Surround View (DSPx) + Display (HDMI) (TDA3x ONLY)	X	X	X	√
18.	2CH VIP Capture (2560x720 TIDA0455) + Surround View (DSPx) + Display	√	X	X	X
AVB RX Use-cases, (TDA2x ONLY)					
19.	4CH AVB Capture + Decode + VPE + Sync + Alg DMA SW Mosaic (IPU1-0) + Display	√	X	X	X
20.	5CH AVB Capture + Surround View (DSPx) + Edge Detect (EVE1) + Display (HDMI)	√	X	X	X
Dual Display Use-cases, (TDA2x EVM ONLY)					
21.	1CH VIP capture + Dual Display	√	X	X	X
22.	1CH VIP capture + Edge Detect (EVE1) + Dual Display	√	X	X	X
23.	2CH LVDS VIP capture + Dual Display	√	X	X	X
ISS Use-cases, (TDA3x ONLY)					
24.	1CH ISS capture + ISS ISP + ISS LDC+VTNF + Display	X	X	X	√
25.	1CH ISS capture + ISS ISP + Display for mono chrome	X	X	X	√
26.	4CH ISS Capture + ISS ISP + Surround View (DSP1) + DISPLAY	X	X	X	√
Stereo Use-cases, (TDA2x MonsterCam ONLY)					
27.	2CH VIP capture + Stereo (DSPx, EVEx) + Display (HDMI)	X	√	X	X
28.	2CH VIP capture + Stereo (DSPx, EVEx) + PD+TSR+LD+SOF (DSPx, EVEx) + Display (HDMI)	X	√	X	X
29.	2CH VIP capture + SoftISP + Remap + Display - USED for Stereo Calibration	X	√	X	X
30.	Network + Stereo + Display (HDMI)	X	√	X	X
Other Use-cases					
31.	Network RX/TX Use-cases	√	√	X	√

- [1] Only EVE1 is used in TDA3xx

SDK Features (Linux + Bios)

- Support the following CPU's in the TDA2xx system (IPU1-0, DSP1, DSP2, EVE1, EVE2, EVE3, EVE4, A15-0)
    - Single-channel Capture via VIP for OV10365 sensor
    - Multi-channel Capture (via VIP with LVDS, via Ethernet with AVB)
    - DRM based Display (support both LCDx and On-Chip HDMI)
    - VPE (Scalar), Encode (MJPEG/H264), Decode (MJPEG/H264)
    - IPU1 based EVE loader
    - **Improved 3D SRV link using SGX (Open-GL Algo) for creating the "360 degree view of the car with virtual camera motion" is integrated**
    - AVB and NDK support on IPU1_0 when A15 is running Linux
    - This release supports Rev-E and higher versions of TDA2xx EVM only
- Support the following CPU's in the TDA2Ex system (IPU1-0, DSP1, A15-0)
    - Single-channel Capture via VIP for OV10365 sensor
    - Multi-channel Capture (via VIP with LVDS)
    - DRM based Display (support both LCDx and On-Chip HDMI)
    - VPE (Scalar), Encode (MJPEG/H264), Decode (MJPEG/H264)
- Linux on A15 (3.14 kernel) & BIOS on all other cores
- sgxDisplay, sgx3Dsrv, Dup, Merge, Select, Sync, NullSrc, Null and IPC (In/Out) links.
- Inter processor communication framework infrastructure between A15 running Linux and other cores running BIOS,
- This release doesn't support late attach & error recovery features supported by remoteproc module
- Basic SGX/OpenGL support - SGX link on A15 can be used to render/texture the video frames
- Auto use case generation tool (same as BIOS only Vision SDK)
- Debug and Instrumentation Framework (same as BIOS only Vision SDK)

Installation and Usage (Linux + Bios)

- Kindly refer vision_sdk/linux/docs/VisionSDK_LinuxUserGuide.pdf

Example use-cases (Linux + Bios)

- Vision SDK demonstrates use-cases as examples. Below table lists these usecases and also indicates the SOC/Platform it is validated on.

No.	Usecases	TDA2xx EVM	TDA2xx MC	TDA2Ex EVM	TDA3xx EVM
Single Camera Use-cases					
1	1CH VIP capture + SGX DISPLAY(A15)	√	X	√	X
2	1CH VIP capture + Encode + Decode + SGX DISPLAY(A15)	√	X	√	X
3	1CH VIP capture + PD + TSR (EVE1 + DSPx) + SGX DISPLAY(A15)	√	X	X	X
Multi-Camera LVDS Use-cases					
4	4CH VIP LVDS capture + SGX DISPLAY (Mosaic, A15)	√	X	√	X
5	4CH VIP LVDS capture + 3D SRV (SGX/A15) + SGX/DRM DISPLAY(A15) - Only HDMI 1080p display supported	√	X	X	X
6	2CH OV490 2560x720 capture + Split + 3D SRV (SGX/A15) + SGX/DRM DISPLAY(A15) - Only HDMI 1080p display supported	√	X	X	X
AVB RX Use-cases, (TDA2x ONLY)					
7	4CH AVB Capture + Decode + SGX DISPLAY (Mosaic, A15)	√	X	X	X

Component Versions

Color **blue** indicates update in component version vs previous Vision SDK release

Component / Tools	Version
Code gen tools (Bios)	
Code gen tools for IPU	**tms470_5_2_4**
Code gen tools for DSP	c6000_7_4_2
Code gen tools for EVE	arp32_1_0_6
Code gen tools for A15	gcc-arm-none-eabi-4_7-2013q3*
Code Composer Studio – used only for loading and debug	6.0.1.00040* (SDK also works with 5.4.0.00091 and 5.5.0.00077)
Dynamic Camera Configuration (DCC) Tuning Tool (TDA3x only)	Version - 2.0 (Refer the TDA3x user guide for the download link)
OS tools (Bios)	
BIOS	**6_41_04_54**
IPC	**3_36_01_11**
XDC tools	**3_30_06_67_core**
OS tools (Linux)	
Linaro tools for A15	gcc-linaro-arm-linux-gnueabihf-4.7-2013.03-20130313_linux
Linux Kernel	3.14.31
Linux Uboot	2014.07
OpenGL ES	2.0
Linux SGX drivers	1.9.0.12-r1
Linux Target FileSystem	1.9
Drivers (Bios)	
BSP drivers	**01_03_00_07**
Starterware	**01_03_00_09**
EDMA3LLD driver	02_12_00_20
Networking Tools (Bios)	
NDK (TCP/IP Stack)	**2_24_02_31**
NSP (Ethernet driver)	4_13_00_00
AVB (AVB protocol stack)	0_09_00_01
Algorithm / Codecs (Bios)	
Framework components	3_31_00_02
XDAIS	7_24_00_04
HDVICP2 API library	1_00_00_23

Component / Tools	Version
MJPEG Encode	01_00_16_01
MJPEG Decode	01_00_13_01
H264 Encode	02_00_09_01
H264 Decode	02_00_17_01
DSP VLIB	3_2_1_0
EVE software package	01_09_00_00
DSP SRV Alg	1_2_0_0
DSP Alg Object detection	00_04_00_00
DSP Lane detection	00_02_01_00
DSP Stereo Post Process	00_02_02_00
AWB Library	1_0_0_0
DCC Library	1_0_0_0

* Not included in the SDK package. Needs to be downloaded separately, refer user guide for download details.

Validation Hardware

This software package is tested with the below hardware

- **TDA2xx EVM**
  - Single Camera use-cases: Vision Application Board + OV10635 sensor or HDMI capture + LCD or HDMI display
  - LVDS Multi Camera use-cases: Vision Application Board + De-serializer board + 4~5xSerializer board + 4~5x OV10635 sensor + LCD or HDMI display
  - AVB Multi Camera use-cases: Vision Application Board + HDMI display + AVB talker (on Linux on PC)

- **TDA3xx EVM**
  - Single Camera VIP use-cases: OV10635 sensor or HDMI capture + LCD or SDTV or HDMI display
  - LVDS Multi Camera use-cases: De-serializer board + 4xSerializer board + 4x OV10635 sensor + SDTV display
  - Single Camera ISS use-cases: OV10640 (CSI2/Parallel) or AR0132 (Parallel) sensor + LCD or SDTV or HDMI display
  - Surround view use-case: Requires UB960 EVM with 4 TIDA00262 camera modules and HDMI Display

- **TDA2xx MonsterCam**
  - Single Camera use-cases: DM388 capture (AR0132) + HDMI display
  - Stereo Camera use-cases: Stereo capture (AR0132 RCCC) + HDMI display
  - Network capture + 4 Algorithms + Stereo + HDMI display

- **TDA2Ex EVM**
  - Single Camera use-cases: Vision Application Board + OV10635 sensor + HDMI display
  - LVDS Multi Camera use-cases: Vision Application Board + De-serializer board + 4xSerializer board + 4x OV10635 sensor + HDMI display

Refer user guide for exact board number and revision that this release is validated with.

SW Quality – Status

Software Component	System / Component Testing	MISRA - C *	Static code analysis	Quality Compliance**
SBL – TDA2x	Yes	Yes	Yes	Yes (QM)
SBL - TDA3x	Yes	Yes	Yes	Yes (QM)
StarterWare	Yes	Yes	Yes	Yes (QM)
ISS StarterWare	Yes	3Q15	Yes	Yes (QM)
BSP / Drivers	Yes	Yes	Yes	Yes (QM)
EVE Library	Yes	3Q15	Yes	Yes (QM)
EVE StarterWare	Yes	Yes	Yes	Yes (QM)
DSP (C66x) VLIB	Yes	Yes	Yes	Yes (QM)
NDK	Yes	Yes	Yes	Yes (QM)
NSP	Yes	Yes	Yes	Yes (QM)
AVB	Yes	Yes	Yes	Yes (QM)
IVAHD MJPEG Dec	Yes	No	Yes	Yes (QM)
IVAHD H.264 Enc/Dec	Yes	No	Yes	Yes (QM)
EDMA LLD	Yes	Yes	Yes	Yes (QM)
Framework Components	Yes	Yes	Yes	Yes (QM)
BIOS	Yes	Yes	Yes	Yes (QM)
BIOS-IPC	Yes	Yes	Yes	Yes (QM)
Links Framework	Yes	3Q15	Yes	Yes (QM)

- * MISRA-C compliance is with respect to a set of accepted rules, using TI-CGT or Klockworks for compliance.
- **Following TI QSS 024-412 Rev. I process

Bugs Fixed In This Release

Defect ID	Headline
OMAPS00316026	[Vision SDK Linux] - EVE clocks are not set to the correct values in Linus build, log shows some wearied values
OMAPS00317328	[TDA3xx] ISS usecase output for AR0140 sensor is slightly noisy with WDR enabled for black scene
OMAPS00319100	[Vision SDK] Green patches on Jeep image observed with 2D SRV + FC + Ultra Sonic demo
OMAPS00319193	[TDA3xx] NTSC to PAL switching is not working
OMAPS00319315	[Vision SDK Linux] Kernel crash observed while exiting the application on TDA2Ex, this issue is not observed with TDA2x
OMAPS00319556	[Vision SDK + Linux] Build break on 32 bit machine when EVEs are enabled
OMAPS00319574	Display stutters when applying ISP configurations via DCC.
OMAPS00319577	Dark spot is observed when light source is pointed at sensor (OV10640 CSI2)
OMAPS00319581	[Linux + vision_sdk] J6Eco memreserve for SR1 is causing rpmsg to fail
OMAPS00320062	[DOC] TDA3x LVDS Requires board mod - Need to mention in Userguide
OMAPS00320192	Output is Blank for ISS Usecase when ENABLE_UART is disabled
OMAPS00320195	Vision sdk crashes when network tool tries to access out of bound memory
OMAPS00320197	[vision SDK] document on reserve a memory block in the beginning of the DDR @0x8000 0000 for EVE self-branch instruction
OMAPS00320238	{vision SDK linux] - update the user guide to refer the LVDS capture dip switch pin settings
OMAPS00321051	ISS: QSPI write for DCC binary file is commented out
OMAPS00321096	TDA2Ex, LVDS is “set_vip_mux.sh” is not copied to targetfs
OMAPS00321188	Utils_printLatency API resets latency parameters always

Defect ID	Headline
OMAPS00321313	TDA2x - MPU protect is not included in SDK to address the A15 speculative access which results DSP random crash/exception
OMAPS00321436	Capt Link do not enabling the VIP VPDMA line limit feature. It is currently set to unlimited. could result memory corruption
OMAPS00322275	build SBL under Vision SDK make, they might need to go to Starterware env.mk to fix the build if the CCS version is different
OMAPS00322296	In the VSDK displayCtrlLink_drv.c file. The order of DCTRL IOCTL needs to be changed.
OMAPS00322349	Noise on Borders in Stereo demo
OMAPS00322453	Assert in displayCtrlLink when any usecase run 2nd time
OMAPS00322626	TDA3xx Front camera analysis usecase hangs
OMAPS00322632	utils QSPI read/write API modify to add checks for the dst buffer size contrains
OMAPS00322635	Linux VSDK - 3D SRV calibration logic always erase the TBL in the beginning of demo, this should not happen
OMAPS00322667	User Guide documentation errors
OMAPS00322673	[Monster Cam] system hangs during exiting usecase
OMAPS00323074	I2C error seen when we load & run binaries using CCS
OMAPS00323077	TDA2xx FC Analytics with networking is failing
OMAPS00323387	TDA3x user guide - add comment to check env.mk for cygwin path
OMAPS00323434	Memory address out of bounds with IMX224
OMAPS00323720	TDA2xx AVB 5ch usecase, video freezes
OMAPS00323721	Performance Stats are not displayed completely
OMAPS00323723	TDA2xx 256M and TDA3xx 64M memory build is failing
OMAPS00323724	DOF usecase, Green horizontal artifact observed at bottom of video
OMAPS00323729	TDA2Ex LVDS usecase not working

Defect ID	Headline
OMAPS00323819	[TDA3xx]Front camera usecase, video is not smooth
OMAPS00323820	[TDA2Ex] Linux binaries not working
OMAPS00323883	[TDA2xx] Front camera analytic usecase broken
OMAPS00323884	IPU1-0 binary size is increasing drastically
OMAPS00323977	Linux build not working when DSP or EVE are enabled
OMAPS00323978	Linux build - Enc/Dec not working (both H264 & MJEG)
OMAPS00323998	[TDA2xx] Front camera analytic hangs when it is run 2nd time
OMAPS00324019	Linux - single cam analytic demo do not work - some green path is spread over the video
OMAPS00324022	TDa2x FC use-case hangs after sometime (HDMI input)
OMAPS00324023	DSS WB + CRC use-case dont not work as expected
OMAPS00324024	Utils Temperature should use BspOsal for Hwi instead of direct BIOS APIs
OMAPS00324048	TDA3xx LVDS usecase video not displayed properly
OMAPS00324183	LD and OD when run on same DSP, hangs the LD.
OMAPS00324184	[vision SDK Linux] - EVE cores are showing load as 100% even if it is not used.
OMAPS00324311	Fast boot does not with SBL in "production" mode
OMAPS00324335	Random assert @ Line: 181 in utils_mem_debug.h

Known Issues / Limitations

Module	Description	Workaround	Frequency of Occurrence	CQ ID
Vision_SDK	[Vision_SDK] LVDS Hardware (I2C) hangs very rarely while stop and start the usecase	NA	Rarely	OMAPS00301208
Vision_SDK	[TDA2xx] Random crash noticed when running 5 algo demo on Monstercam with Network streaming	Using 100Mbps network link reduces frequency of occurence	Always (after ~5-6 hours of running)	OMAPS00319043
Vision_SDK	[Vision SDK] After running SOF usecase , Subframe usecase is failing	NA	Always	OMAPS00319592
Vision_SDK	Monstercam - Census Link Stats show I/p frame rate on 2nd Channel 0	NA	Always	OMAPS00320065
Vision_SDK	[VSDK] - With SMP BIOS on A15 - Observed random crash with NDK/NSP on A15	NA	Always	OMAPS00322330
Vision_SDK_Linux	[Vision SDK Linux] - Problem with multiple use case selection/switching (DRM Error). documented in User guide with steps to close/open the application before switching demos	NA.	Always	OMAPS00321691
Vision_SDK_Linux	[Vision SDK Linux] - Exit option "x" make Kernel crash for ENC/DEC usecase with TDA2Ex	NA	Always	OMAPS00324308
BSP	Display write back is not working properly for interlace mode of displays	NA	Always	OMAPS00324461
Vision_SDK	AR0132 Sensor does not work always, randomly, it outputs grey/white frames. Also sometimes, it does not output any frames	NA	Random	OMAPS00324533

Refer also to BSP / Starterware Release Notes for additional known issues

Compatibility Info

This section contains information about compatibility of APIs between this release and 02.06.00.00

NOTE: It is recommended to recompile the user created use-cases, alg plugins, links against the new release interface files even if no code level change is required in the user application.

Link API

Module	Interface file	Change in user application required	Change details
Alg Link	algorithmLink.h	No	Added new Algo for CRC for checking Frame Freeze Detect on IPU1-0. Only valid for TDA3x.
Alg Link	algorithmLink_algPluginSupport.h	No	Added new API to return the Link ID from a given algorithm. This is used by Link Statistics.
Alg Link	algorithmLink_disparityHamDist.h	Yes	Added parameters to the structure AlgorithmLink_DisparityHamDistCreateParams for Search direction, Extra Right Left map for left-right check, X and Y offset for Left Frame, and X and Y offset for Right Frame
Alg Link	algorithmLink_geometricAlignment.h	Yes	Added paramters to the structure AlgorithmLink_GAlignCreateParams for first valid frame number and default focal length of the lens.
Alg Link	algorithmLink_issAewb.h	Yes	Added two new commands for Setting and Getting 2A parameters for AE/AWB. Added SIMCOP Configuration parameter to the AEWB DCC Callback function. Added two new modes to the ISS AEWB Modes (NONE and MAX). Added Back Light Compensation configuration parameter in the AlgorithmLink_IssAewbAeDynamicParams. Added a new configuration structure used by DCC to control 2A parameters. Added memory allocation information and renamed flag to enable DCC in the ISS AEWB create parameters. Added SIMCOP configuration parameters to ISS DCC AEWB Control Parameters. Added new structure for ISS DCC 2A Control Parameters. New API added to initialize AEWB plugin.
Alg Link	algorithmLink_remapMerge.h	Yes	Added new parameter for calibration LUT buffers in the structure AlgorithmLink_RemapMergeCreateParams
Alg Link	algorithmLink_stereoPostProcess.h	No	Added new command to update post processing dynamic parameters. Added new parameters for Stereo Post Processing Create Parameters. Added new structure for Stereo Post Processing Dynamic Parameters.
Capture Link	captureLink.h	No	Added a new command to update the Frame Skip Mask during run time. Added support for DSS Write Back and memory allocation region information in the Capture Link Create Parameters.
Display Link	displayLink.h	No	Removed the command for changing the Display Window size and position dynamically. Removed the parameter for maximum Driver queue length in the Display Link Create Parameters.
IPC Link	ipcLink.h	No	Removed the command for Getting IPC Queue Info. Removed support for IPC polling mode and IPC Queue Info.
ISS Capture Link	issCaptureLink.h	Yes	Added support for multiple ISS Channels and memory allocation information in the ISS Capture Link Create Parameter Structure.
ISS ISP Configuration	issIspConfiguration.h	No	Added support for ISS ISP 2D LSC Configuration.

Module	Interface file	Change in user application required	Change details
ISS ISP M2M Link	issM2mIspLink.h	Yes	Added support for Single Pass WDR, Two Pass WDR, Two Pass WDR with Line Interleaved and 12 bit Monochrome modes. Added support for WDR Offset Parameters and memory allocation information in the Create Parameters.
ISS SIMCOP M2M Link	issM2mSimcopLink.h	Yes	Converted structures to pointers in the IssM2mSimcopLink_ConfigParams. Added support for memory allocation information in the Create Parameters
Null Link	nullLink.h	No	Added initialization of numInQue parameter to 1 in the initialization function.
Null Source Link	nullSrcLink.h	No	Updated Max channels per output queues supported by Null Src Link to 6
System Link	system.h	No	Added structure and API support for Memory Allocation Information. Added API support to check if fast boot is supported.
System Common Link	system_common.h	No	Updates to SystemIpcMsgQ_Msg and SystemIpcRpMsg_Msg structures.
System Link Constants	system_const.h	No	Updated maximum number of channels per output queue from 16 to 8. Added new error code for force unblocking a blocking thread.
System VIP Constants	system_const_vip.h	No	Renamed and updated value of SYSTEM_CAPTURE_INST_MAX (12U) to SYSTEM_CAPTURE_VIP_INST_MAX (10u). Added SYSTEM_CAPTURE_DSSWB_INST_MAX.
System Inter Link	system_inter_link_api.h	No	Bit Stream related macros and structures moved to system_buffer.h
System Link ID	system_linkId.h	No	Support for Notify Link Id, Gate Links, Split Links and End Point Links.
System Trace Link	system_trace.h	No	Updated Task_sleep to BspOsal_sleep().
BIOS Vring Config	system_vring_config.h	No	Updates to Build Configuration.
System Common Link	systemLink_common.h	No	Added system configuration for switching between EVE Auto clock gate and EVE Idle Low Power Configuration.
System Link IPU Parameters	systemLink_ipu1_0_params.h	No	Added DSS WB Input and output parameters.
VPE Link	vpeLink.h	No	Added support for memory allocation information in VPE Link Create Parameters.
Alg Link CRC	algorithmLink_crc.h	No	New feature – Algorithm Link for CRC.
End Point Link	epLink.h	No	New feature – End point Link
Gate Link	gateLink.h	No	New feature – Gate Link: Gate link allows usecase writer to have runtime control on part of a data flow. It acts as a switch which can be turned on/off. Based on the state of the link it decides to either forward or return data.
Split Link	splitLink.h	No	New feature – Split Link takes an input buffer and duplicate it across 'N' output links.
System Buffer	system_buffer.h	No	New File to hold Bit Stream related macros and structures.

Module	Interface file	Change in user application required	Change details
System IPC Interface	system_ipc_if.h	No	New file to hold the IPC Data Structures
System Link Info	system_link_info.h	No	New file to hold the System Channel Information data structure.

Utils API – This API is used by users when writing an algorithm plugin or use-case or link

Module	Interface file	Change in user application required	Change details
UTILS	network_api.h	Yes	Network Session Open and Close parameter type changed from Task_Handle to BspOsal_TaskHandle.
UTILS	utils_dma.h	No	Support for 1D EDMA transfers. Semaphore_Handle type converted to BspOsal_SemHandle in the Utils_DmaChObj.
UTILS	utils_idle.h	No	Support for EVE Auto clock gate functions
UTILS	utils_ipc_que.h	No	Removed Utils_IpcQueSharedMemObj structure.
UTILS	utils_mem.h	No	Added APIs for memory allocation and freeing.
UTILS	utils_mem_cfg.h	No	Added new definitions for DDR Heap Sizes
UTILS	utils_prf.h	Yes	Updated structure for Latency statistics and individual core Utils performance task APIs.
UTILS	utils_qspi.h	Yes	Updated return type of System_qspiReadSector, System_qspiWriteSector and System_qspiEraseSector.
UTILS	utils_que.h	No	Updated Utils_QueHandle parameter type from Semaphore_Handle to BspOsal_SemHandle.
UTILS	utils_remote_log_if.h	No	Updated RemoteLog_CoreObj structure and added support for Remote Log Server index Information for a given core.
UTILS	utils_temperature.h	Yes	Updated APIs and added commands to support Limp Home Mode for thermal management
UTILS	utils_tsk.h	No	Updated structures to change the type of Task_Handle to BspOsal_TaskHandle.
UTILS	utils_vip_interrupt.h	Yes	Updated API return and input parameters from Hwi_Handle to BspOsal_IntrHandle.
UTILS	utils_soc_conf.h	No	Deprecated APIs defined in utils_soc_conf.h. Functionality of knowing the PRCM status now implemented in utils_prcm_stats.h.
UTILS	utils_boot_slaves.h	No	New Feature – APIs to load the code for DSP1/2 and EVE and synchronize with IPU.
UTILS	utils_link_stats_if.h	No	New Feature - Link statistics layer allows to keep the all the statistics in a common shared location.
UTILS	utils_prcm_stats.h	No	New Feature – APIs to know PRCM status.