DRA7xx GLSDK 6.10.00.01 Release Notes

Generic Linux Software Development Kit (GLSDK) 6.10.00.01 for DRA7xx

June 19, 2014

This is the EA release of the Generic Linux Software Development Kit (GLSDK) for the DRA7xx platform. This GLSDK Software release gives developers the ability to evaluate the hardware and software capabilities of the DRA7xx platform.

This document is divided into the following sections:

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Documentation

- Latest up to the minute information and updates may be found on the Texas Instruments Processors Wiki (http://processors.wiki.ti.com/index.php/Main_Page).
- The *Quick Start Guide (http://downloads.ti.com/infotainment/esd/jacinto6/glsdk/latest/exports/DRA7xx_EVM_Quick_Start_Guide.pdf)* contains information on how to set up your EVM for an out of box demo showcase as well as for software development. It is located in the *docs/* folder in the GLSDK along with other documentation.
- The *EVM_GLSDK_Software_Developers_Guide Software Developer's Guide (http://processors.wiki.ti.com/index.php/DRA7xx)* contains information on how to start developing software on the DRA7xx EVM and is located in the *docs/* folder in the GLSDK along with other documentation.

Components

The Linux GLSDK is a single package that includes the following components:

- U-boot support (2013.04)
  - Boot from: SD card, eMMC (FAT load), QSPI
  - tftp, dhcp
  - Not supported : Boot from UART and Secure boot are not validated in this release
- Linux kernel 3.12.18
  - FS Media: SD card, eMMC, NFS
  - USB Host: Isochronous A/V, HID, MSC
  - USB 3.0 Host: MSC
  - UART, I2C, QSPI, Ethernet
  - VIP (V4L2, DMABUF)
  - VPE (V4L2 M2M, DMABUF)
  - DSS (LCD, HDMI)
- Multimedia
  - H.264, MPEG2, MPEG4 & VC1 decoders @ 1080p60
  - MJPEG decoder
  - Gstreamer plugin for video decode acceleration
  - Gstreamer plugin for video processing acceleration (using VPE)
  - Gstreamer plugin for KMS display sink
  - Gstreamer plugin for Wayland sink
  - DSP-side DCE interface for custom codec integration
- Graphics
  - 3D graphics acceleration (OpenGL ES 2.0)
  - Wayland, with Weston compositor, multiple display support

- Frameworks
  - BIOS (IPU2, SMP-only)
  - DCE (IPU2)
  - IPC 3.x
  - OMAPDRM
- Demo applications
  - Single camera capture -> display demo using native VIP & DSS drivers
  - Dual-decode demo with one display on HDMI and other on LCD (VIDDEC3 interface)
  - Dual-decode demo on single display (Wayland) through GStreamer.
  - Dual-decode demo on two displays (Wayland) through GStreamer.

The Software Build of Materials is deprecated, please look at the repo manifest file and yocto layers for details.

Installation and Usage

The *EVM_GLSDK_Software_Developers_Guide Software Developer's Guide (http://processors.wiki.ti.com/index.php/DRA7xx)* contains information on how to start developing software on the DRA7xx EVM and is located in the *docs/* folder in the GLSDK along with other documentation.

Host Support

This release supports Ubuntu 12.04 LTS (http://www.ubuntu.com) as your development host.

Dependencies

The GLSDK requires the Linaro toolchain, more information is there in the *Software Developer's Guide (http://processors.wiki.ti.com/index.php/{{{sdk_platform}}}_GLSDK_Software_Developers_Guide)*

Device Support

This GLSDK supports the DRA7xx EVM.
This release is tested on Rev E uEVM.

Validation Information

Please get in touch with your TI contact for validation information / test report.

Upgrade and Compatibility Information

Known Issues and Limitations

This section contains the snapshot of Known Issues and Limitations at the time of making the release.

Known Issues:

Kernel and Uboot

- OMAPS00310516: DRA7xx: Kernel: DSS: HDMI: modetest not listing all the modes for some hdmi monitors.
- OMAPS00310487: DSS: PLL GO bit not set error reported during wayland launch test(in a loop) causing display failure.
- OMAPS00310544: I2C : Read/write tests for accessing I2C EEPROM fails on J6EVM.
- OMAPS00310567: Ethernet : default vlan tag is not removed on egress - causes inter-op issues with vlan unaware system
- OMAPS00310508: Kernel: DRM - Driver does not return correct value for OMAP_PARAM_CHIPSET_ID
- OMAPS00310462: DSS: Kernel backtrace seen while executing dss testcases
- OMAPS00310457: DSS: Kernel backtrace(slowpath warning) seen occasionally while executing long duration wayland tests
- OMAPS00310452: DRM: While running graphics test, kernel error messages "[drm:drm_mmap_locked] *ERROR* Could not find map" reported on the console
- OMAPS00310451: DSS: omap_crtc_error_irq seen occasionally while running wayland test cases
- OMAPS00310583: DRA7xx: kernel: VIP: Jitter observed when capturing at <10 fps from OVcam/TVP camera
- OMAPS00310582: Kernel: VPE: Artifacts in some frames while deinterlacing shields 720x240i uyvy image
- OMAPS00310581: Kernel: VIP: Kernel crash in regression test
- OMAPS00310737 : Flashing u-boot images to QSPI from kernel is broken
- OMAPS00310738 : Executing "reboot" command from terminal prompt causes system/boot hang

Graphics

- OMAPS00310491: SGX: SGX Kernel module crash observed once during long duration weston testcase
- OMAPS00308301: Wayland: Stress Test - Kernel crash during Wayland stress test after ~40 hours of continuous testing due to dispc_mgr_go
- OMAPS00308513: Graphics/DRM: Usability - kmscube application on HDMI shows tearing artifacts in specific screen area
- OMAPS00308070: SGX: Functionality: Killing Weston simple-egl and subsurface applications leads to SGX HW recovery
- OMAPS00302074: Wayland: Stress - Termination of Weston and running clients causes kernel crash due to page faults

Multimedia

- OMAPS00310515: Multimedia long run tests freezes after hundreds of iterations.
- OMAPS00310464: viddec3 dual display tests don't work (no video on HDMI) after running DSS tests.

Limitations:

- Conflict between HDMI and I2C2 requires that HDMI be disabled when VIP is used.

Following features are not supported/validated in this release.

- Boot from UART
- SATA driver (planned for next release)
- McASP /audio driver (planned for next release)
- Triple display support with FPDLink
- WiLink 8 (WLAN) (planned for next release)
- MPU DVFS, AVS Class 0
- MPU Thermal Mgmt (via CPU freq)
- X11 stack
- HDMI audio is not supported
- 2D graphics acceleration (BLTsville) - (planned for next release)
- NAND/NOR FS support is not available.
- VIP multi-instance support

Versioning

This is EA release (GLSDK 6.10.00.01) based on 3.12.x linux kernel for DRA7xx ES 1.0 and ES 1.1.

Technical Support and Product Updates

Latest up to the minute information and updates may be found on the http://processors.wiki.ti.com/index.php/Category:GLSDK.
E2E Linux Forum - http://e2e.ti.com/support/embedded/f/354.aspx] can be used for discussing the Linux GLSDK development.

Download the Latest GLSDK

The latest GLSDK is available for download from http://downloads.ti.com/infotainment/esd/jacinto6/glsdk/latest/index_FDS.html

GLSDK releases can be downloaded from http://downloads.ti.com/infotainment/esd/jacinto6/glsdk/

The current version is 6.10.00.01.

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