Release Notes

C6748 BIOSPSP 01.30.00

December 15, 2009

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1 Introduction

This PSP Package serves as fundamental software platform for development, deployment and execution of application software on C6748 based platform. PSP abstracts the functionality provided by the C6748.

This PSP package is intended for the DSP that runs DSP/BIOS™ (user guide that came along with this release details the system requirements)

1.1 Release Category

This PSP release versioned 01.30.00 is GA release for EVM 6748. Please refer to section Drivers/Components for this release for details of this release.

1.2 Text Conventions

O	This bullet indicates important information. Please read such text carefully.
q	This bullet indicates additional information.

2 Out-of-Box Contents

BIOSPSP_01_30_xx_xx_Setup.exe contains following:

1.	– Source code for driver and other necessary abstractions. – Project files (DSP/BIOS™), CCS3.3 / CCS4 build files – The above mentioned items are located inside the <installation dir>\pspdrivers_01_30_xx_xx\packages\ti directory – Please refer to the user guide for introduction to the folder structure – Please note that the CCS setup files and GEL files are _NOT_ provided with this release and this would be available with latest CCSv3 releases or from EVM manufacturer.
2.	Release Notes (this document) providing an overview of this release.
3.	User Guide that provides information on package usage and each driver's usage.
4.	Datasheet that provides resource usage and performance information of the each driver
5.	Doxygen based driver API (generated) documentation for all the drivers inside package.

3 Dependencies

- CCS 3.3.24 or higher with service release 10
- CCS 4.0.0.16 or higher (optional)
- C6748 EVM
- DSP/BIOS™ 5.41.02.14
- Code Generation Tools 6.1.9
- EDMA3 product version 01.11.00.02
- ERTFS File System - This is required if one wants to use the filesystem on Storage Media. Same can be downloaded from following link:

  http://software-dl.ti.com/dsps/dsps_registered_sw/sdo_sb/targetcontent//bios_file_system/index.html

  (This BIOSPSP version is built against RTFS v1.10.00.30 – GA release)

4 Drivers/Components for this release

This section lists the driver / components that are delivered as part of this release.

- DSP/BIOS™ 5.41.xx Drivers
  - Serial (UART, I2C and SPI)
  - Audio (McBSP, McASP, AUDIO interface and CODEC)
  - Storage (Block media, MMCSD, NAND, SATA)
  - Display (LCDC Raster and LCDC LIDD)
  - Video (VPIF)
  - PSC (that helps to turn the clock on/off for the modules)
  - GPIO (for operations on GPIO pins)
  - rCSL header files and examples for rCSL usage
- Sample applications that demonstrate the use of above drivers

Please note that at this point of time the drivers does not have any abstraction for the OS APIs and they use the OS (DSP/BIOS™ 5.41.xx) inside the drivers.

4.1 Changes from previous release (Version 01.30.00.07)

1) This is the GA release for BIOSPSP with combined support for EVM OMAPL138, OMAPL137, C6748 and C6747
2) This release is for support on DSP/BIOS™ 5.41.02.14.
3) This release contains support for building driver and application via CCSv4.
4) This release contains support for LPSC based clock gating (the PSC driver has undergone changes to support this feature), DVFS and SLEEP modes. Please note that the DVFS and SLEEP modes support is for OMAPL138 and C6748 only.
5) The device parameters (devParams to mdBindDev) contain changes (new parameters) to support DVFS and SLEEP modes. Legacy users migrating to this version of BIOSPSP might require recompiling the driver to absorb these changes. Please refer to the “Power management” section in user guide for more details
6) This release contains support for VBI capture and display as part of Video Port Interface (VPIF) driver.
7) This release contains changes to the McBSP device and channel parameters. Also, the driver internally configures the sample rate generator and the frame sync generator instead of using the IOCTLS as in the previous releases.
8) Please see the “Fixed in this release” for details on IR’s fixed/implemented

4.2 Other changes

None

5 Known Issues

None

6 Limitations

6.1 I2C (DSP/BIOS™) Device Driver

- Loopback is not supported
- In case of time bound IO requests, on timeout the driver is not able to perform any operations on the peripheral. (This peripheral limitation is documented in the technical reference manual of I2C under ICMDR register)
- I2C driver does not support slave mode of operation in polled mode. Only interrupt and DMA interrupt mode of operation are supported. The slave mode of operation is tested successfully 100,200 and 400 kHz I2C clock frequency.
- (a) I2C slave application need to take care of the data (application level) protocol on when and what to receive and send by/from slave side. (b)This driver provides a generic bus communication path for slave. (c) Application protocol also needs to consider the latency caused by software slave implementation. (d) The driver does not support “0” no of byte transfer and the slave driver would not function properly if master issues a STOP condition immediately after a START condition.

6.2 SPI (DSP/BIOS™) Device Driver

- (a) Application protocol also needs to consider the latency caused by software slave implementation. (b) The driver does not support “0” no of byte transfer.
- In case of interrupt mode of operation, at certain frequencies, the slave mode of operation of the driver may not yield expected results due to the speed of operation and interrupt processing latencies. It is recommended to use the DMA mode of operation in such cases.
- The slave mode of operation was tested in 5 PIN (using CS and ENA signals) with sufficient delay (WDELAY) between transfers from the master. This was to overcome the interrupt latencies for interrupt mode of operation.
- BIT errors are seen the SPI output frequency is greater 30 MHz.

6.3 UART (DSP/BIOS™) Device Driver

- Character timeout can be detected only when
  - the RX FIFO threshold level is NOT equal to 1
  - the number of characters sent by the transmitter is a not a multiple of the RX FIFO threshold
  - In FIFO mode and cannot be used in non-FIFO mode
  - In interrupt mode of operation
  - Please refer to the section 2.5.3.1 of UART Peripheral User’s Guide SPRUFM6A

6.4 McASP (DSP/BIOS™) Device Driver

- Mcasp Driver does not support switching from DIT mode to TDM mode dynamically.

6.5 McBSP (DSP/BIOS™) Device Driver

- The McBSP sample application works only in the release mode. In the debug mode due to the timing issues (delay in packet transfer completion and EDMA

disabling in EDMA callback), EDMA event miss error is observed because of which the sample application could not be tested.

- EDMA event miss occurs when BPTB read-write test cases are executed for some sample rate. This is because the time available to disable the EDMA in the callback after a transfer completion (when paramset becomes NULL) may vary. Thus when this time is less (owing to higher sampling rate or system loading etc.) EDMA miss events might occur because EDMA channel is not disabled before another event is generated to the EDMA peripheral by McBSP. This scenario is dependent on the Frame sync frequency, no of channels configured and the slot width.

6.6 EVM 6748 Limitation

- Only McBSP instance “1” can be used since the clock from MII interferes with the McBSP clock

7 Fixed in this release

7.1 UART (DSP/BIOS™) Driver

- CQ SDOCM00060680: Loopback read-write test would hang in interrupt mode when tested using multiple task. This issue was because the ISR was not updating the interrupt status appropriately. This has been fixed.

  Files changed: ti\pspiom\uart\src\Uart.c

- CQ SDOCM00064683: In interrupt mode of operation the character timeout interrupt was not handled correctly. This has been changed to abort the current packet with the status updated as ETIMEOUT and the size filed updated appropriately.

  Files changed: ti\pspiom\uart\src\Uart.c

- CQ SDOCM00064682: In DMA_INTERRUPT mode of operation when overrun errors occurred, the driver would throw away the error bytes and continue with the packet. However, this is not the desired behavior in case of errors. The packet should be aborted with proper error status and size updated.

  Files changed: ti\pspiom\uart\src\Uart.c

- CQ SDOCM00063092: The uartMdDeleteChan() function was not properly updating the LPSC turn off state. This has been fixed.

  Files changed: ti\pspiom\uart\src\Uart.c

7.2 SPI (DSP/BIOS™) Driver

- CQ SDOCM00064944: Junk characters in the name mangling protection guarding condition in SPI driver header file would emit compilation errors in C++ domain. This has been corrected.

  Files changed: ti\pspiom\spi\Spi.h

- CQ SDOCM00060229: Slave mode of operation of SPI drivers is tested successfully in this release. The issue was that the on board SPI ROM signal was interfering with the SOMI lines, when two boards are two connected for master/slave mode connection. This interference was worked around by operating on the BUFF_OE signal (making it high) via GPIO lines.

  Files changed: None

- CQ SDOCM00060226: The GPIO CS functionality tested on the EVM.

  Files changed: None

- CQ SDOCM00062392: The cancel pending IOCTL would fail because the active IOP and active channel variables were not updated appropriately after every transfer was completed. This has been fixed.

  Files changed: ti\pspiom\spi\src\Spi.c

7.3 MMCSD (DSP/BIOS™) Driver

- CQ SDOCM00062388: The driver did not disable the PSC during de-initialization. This has been fixed.

  Files changed: ti\pspiom\mmcsd\src\ddc_mmcsd.c

7.4 NAND (DSP/BIOS™) Driver

- CQ SDOCM00062388: The driver does not disable the PSC during de-initialization. This has been fixed.

  Files changed: ti\pspiom\nand\src\llc_nand.c

7.5 SATA (DSP/BIOS™) Driver

- CQ SDOCM00062415: SATA PSC clock is not disabled during the de-initialization of SATA module. This has been fixed
- Files changed: ti\pspiom\sata\src\

7.6 I2C (DSP/BIOS™) Device Driver

- CQ SDOCM00064536: After cancel pending IO IOCTL was called, the next IO would sometimes hang, because the current IO would be aborted, in the IOCTL context itself, without bothering about the proper conditions on the bus. This has been corrected by only setting the cancel flag in the IOCTL and the rest of the operation during the completion interrupt for the current IO.

  Files changed: ti\pspiom\i2c\src\I2c.c

- CQ SDOCM00063690: The channel handle inside the interrupt handle after an iteration of processing was not being updated with the “currentActiveChannel” variable. This was needed because during iteration, this could have changed due to IO completion. This was fixed in the driver.

  Files changed: ti\pspiom\i2c\src\I2c.c

7.7 McASP (DSP/BIOS™) Device Driver

- CQ SDOCM00062991: The audio would not play after using the channel reset IOCTL. This was because the IOCTL was resetting the device to default values. This has been fixed to reset only the channel data structures and channel states.

  Files changed: ti\pspiom\mcasp\src\Mcasp_ioctl.c

- CQ SDOCM00063254: In non-loopjob mode, during channel deletion, the driver would attempt to restart the EDMA and clocks, which would generate error interrupts. However, the clocks and EDMA should be restarted only in case a new packet is submitted in non-loopjob mode. This has been fixed.

  Files changed: ti\pspiom\mcasp\src\Mcasp.c

7.8 GPIO (DSP/BIOS™) Device Driver

- CQ SDOCM00063717: The index used for bank registers array was wrong. This has been fixed.

  Files changed: ti\pspiom\gpio\src\Gpio.c

- CQ SDOCM00063968: The GPIO open call now prevents against multiple opens used in a system.

  Files changed: ti\pspiom\gpio\src\Gpio.c

7.9 rCSL changes

- CQ SDOCM00064393: The rCSL header files was not properly including the closing the C++ guarding. This has been fixed.

7.10 PSC (DSP/BIOSTM) Device Driver

- CQ SDOCM00064394: The PSC driver project was not including "-dNDEBUG" option in the release mode. This has been fixed.

  Files changed: ti\pspiom\psc\build\<soc>\ccs3\psc.pjt

7.11 Input Parameter validation

- CQ SDOCM00059660: The input parameter checking in the drivers is guarded by PSP_DISABLE_INPUT_PARAMETER_CHECK (for interface functions only). This implementation has been optimized.

  Files changed: all driver files

7.12 Compilation errors

- CQ SDOCM00062652: Compilation of drivers without xxx_EDMA_ENABLE option would result in errors. This issue has been fixed.

Files changed: I2c, Uart and Spi driver files

8 Special notes

- Please refer the user guide for installation, build instructions and tool version information.
- The resource allocation is the responsibility of application (system integrator)

9 Technical Support

To submit questions about issues with this BIOSPSP drivers release please go to the external forums at http://community.ti.com/ or to http://support.ti.com .

10 Release History

10.1 Release 01.30.00.07

This was an internal release

10.2 Release 01.30.00.06

This was the BETA release

10.2.1 Changes from previous release (Version 01.30.00.05)

1) This is the Beta release for BIOSPSP with combined support for EVM OMAPL138, OMAPL137, C6748 and C6747
2) This release is for support on DSP/BIOS™ 5. 41.00.06.
3) This release contains support for building driver and application via CCSv4.
4) This release contains support for DSP/BIOS™ based power management and LPSC based clock gating. The PSC driver has undergone changes to support LPSC based clock gating.
5) This release contains Video Port Interface (VPIF) driver.
6) This release contains changes to the McBSP device and channel parameters. Also, the driver internally configures the sample rate generator and the frame sync generator instead of using the IOCTLS as in the previous releases.
7) Please see here for list of known issues.
8) Please see here for list of limitations.

10.2.2 Known Issues

10.2.2.1 MISRA C

- MISRA C check has not been run on all the components in this release.

10.2.2.2 Instrumentation (all components)

- CQ SDOCM00051988: Instrumentation code is not yet implemented. However, the project files for iDebug and iRelease (instrumentation enabled libraries) contain xxx_ DEBUGPRINT_ENABLE macro, which is just a place holder for further implementation.

  Workaround: None.

10.2.2.3 UART (DSP/BIOSTM) Driver

- CQ SDOCM00059982: When the RXFIFO threshold is greater than 4 and the baud rate is greater than or equal to 115200 baud, data received contains repeated characters and does not match the transmitted characters. This issue is being investigated.

  Workaround: Use polled or interrupt mode of operation.

- CQ SDOCM00060680: Loopback read-write test hangs for interrupt mode when tested using multiple task. This issue is being investigated.

  Workaround: None.

10.2.2.4 McASP (DSP/BIOSTM) Driver

- CQ SDOCM00059897: The driver is not working as expected in non-loop job mode. Data loss is observed in some cases. This issue is being investigated.

  Workaround: None.

10.2.2.5 SPI (DSP/BIOSTM) Driver

- CQ SDOCM00060229: Slave mode of operation of SPI drivers are yet to be tested. This will be taken up in next releases.

  Workaround: None.

- CQ SDOCM00060226: The GPIO CS functionality is yet to be tested. This will be taken up in next releases.

  Workaround: None.

- CQ SDOCM00060205: BIT errors are seen in interrupt and polled modes of operation when the SPI output frequency is greater 30 MHz.

  Workaround: Use DMA mode of operation

- CQ SDOCM00062392: The cancel pending IOCTL fails because it does not update the active IOP and active channel variables appropriately. This will be fixed in the next releases.

  Workaround: None

10.2.2.6 MMCSD (DSP/BIOSTM) Driver

- CQ SDOCM00062388: The driver does not disable the PSC during de-initialization. This will be fixed in the next release

  Workaround: None.

10.2.2.7 NAND (DSP/BIOSTM) Driver

- CQ SDOCM00062388: The driver does not disable the PSC during de-initialization. This will be fixed in the next release

  Workaround: None.

10.2.2.8 SATA (DSP/BIOSTM) Driver

- CQ SDOCM00062415: SATA PSC clock is not disabled during the de-initialization of SATA module. This will be fixed in the next release

  Workaround: None.

10.2.2.9 VPIF (DSP/BIOSTM) Device Driver

- VBI capture and display is not implemented in the driver and will be updated in the future releases.

10.2.3 Limitations

10.2.3.1 I2C (DSP/BIOS™) Device Driver

- Loopback is not supported in interrupt mode

- In case of time bound IO requests, on timeout the driver is not able to perform any operations on the peripheral. (This peripheral limitation is documented in the technical reference manual of I2C under ICMDR register)
- I2C driver does not support slave mode of operation in polled mode. Only interrupt and DMA interrupt mode of operation are supported.
- (a) I2C slave application need to take care of the data (application level) protocol on when and what to receive and send by/from slave side. (b)This driver provides a generic bus communication path for slave. (c) Application protocol also needs to consider the latency caused by software slave implementation. (d) The driver does not support "0" no of byte transfer and the slave driver would not function properly if master issues a STOP condition immediately after a START condition.

10.2.3.2 SPI (DSP/BIOS™) Device Driver

- (a) Application protocol also needs to consider the latency caused by software slave implementation. (b) The driver does not support "0" no of byte transfer.

10.2.3.3 McASP (DSP/BIOS™) Device Driver

- Mcasp Driver does not support switching from DIT mode to TDM mode dynamically.

10.2.3.4 McBSP (DSP/BIOSTM) Device Driver

- The McBSP sample application works only in the release mode. In the debug mode due to the timing issues (delay in packet transfer completion and EDMA disabling in EDMA callback), EDMA event miss error is observed because of which the sample application could not be tested.
- EDMA event miss occurs when BPTB read-write test cases are executed for some sample rate. This is because the time available to disable the EDMA in the callback after a transfer completion (when paramset becomes NULL) may vary. Thus when this time is less (owing to higher sampling rate or system loading etc.) EDMA miss events might occur because EDMA channel is not disabled before another event is generated to the EDMA peripheral by McBSP. This scenario is dependent on the Frame sync frequency, no of channels configured and the slot width.

10.2.3.5 Aic3106 Codec driver (DSP/BIOS™)

- The Aic31 driver currently supports only one codec instance.

10.2.3.6 EVM 6748 Limitation

- Only McBSP instance "1" can be used since the clock from MII interferes with the McBSP clock

10.2.4 Fixed in this release

10.2.4.1 Error handling

- CQ SDOCM00061546: Driver were not updating the IOM packet status appropriately before returning the packet to the upper layer. This has been fixed.

10.2.4.2 UART (DSP/BIOSTM) Driver

- CQ SDOCM00060841: When the RXFIFO threshold was set to 1 at baud rate of 115200 baud RX overrun errors were observed. This was because there were remnant bytes in the FIFO due to previous irrelevant transmits from the transmitter which caused continuous overruns. In cases where there are chances that the RX FIFO might contain remnant bytes from previous transfer, it would be good to start with RX reset via the RXFIFO reset IOCTL provided.

Files modified: None

- CQ SDOCM00058955: The transmission at 2400 baud rate would fail in interrupt mode. This was because of lower values of trial counts in the interrupt handler to check for completion of previous transfer before the write of next character. This count has been increased (Uart_TRANSMITEMPTY_TRIALCOUNT defined in Uart.h).

Files modified: ti\pspiom\uart\Uart.h

10.2.4.3 I2C (DSP/BIOSTM) Driver

- CQ SDOCM00058961: I2C read/write to the I/O expander on the EVM would fail inconsistently in polled mode of operation. This was because the polled mode transfer function would not wait for the previous transfer to be completed and wait for the bus to be ready for next transfer. This check has been added..

Files modified: ti\pspiom\i2c\src\I2c.c

- CQ SDOCM00060228: Slave mode of operation of I2C drivers are tested on the EVM.

Files modified: ti\pspiom\i2c\src\I2c.c

- CQ SDOCM00060486: Set Bit rate/Set own address IOCTL test cases would fail for interrupt and DMA mode. This was because the pending IO flag was not reset after the completion of the current IOP. This has been fixed.

Files modified: ti\pspiom\i2c\src\I2c.c

- CQ SDOCM00061786: I2C Read-Write test would fail after cancel pending ioctl command is issued for interrupt and DMA modes. This was because the next channel was not scheduled for transfer. This has been fixed.

Files modified: ti\pspiom\i2c\src\I2c.c

10.2.4.4 McBSP (DSP/BIOSTM) Driver

- CQ SDOCM00059860: Transmit channel deletion would fail. This has been fixed by stopping of the TX section is only after the transmitter is empty. Also the deletion of the channel now uses a retry count rather than an indefinite loop.

Files modified: ti\pspiom\mcbsp\src\Mcbsp.c

- CQ SDOCM00059894: The IOCTL commands are tested in this release.
- CQ SDOCM00059896: During the non primed mode of operation the handling of the subsequent packets (after the first packet) requires the hardware to be reconfigured properly for the events to be generated to the EDMA controller. This is now fixed and hence the non primed mode works properly.

Files modified: ti\pspiom\mcbsp\src\Mcbsp.c

- CQ SDOCM00061286: The receive state machine was not stopped using the STOP IOCTL command. This has been fixed.

Files modified: ti\pspiom\mcbsp\src\Mcbsp.c

- CQ SDOCM00061336: Clock divisor and frame period calculations are corrected in the driver.

Files modified: ti\pspiom\mcbsp\src\Mcbsp.c

10.2.4.5 SATA (DSP/BIOSTM) Driver

- CQ SDOCM00059865: Exception occurs when trying access the SATA device when not connected to EVM. This issue is being analyzed.

Files modified: ti\pspiom\platforms\evm6748\src\lcdlidd_evmInit.c

- CQ SDOCM00060297: SATA Driver De-initialization feature is not implemented. As a result of this the initialization and de-initialization sequence cannot be called in sequence repeatedly.

Files modified: ti\pspiom\platforms\evm6748\src\lcdlidd_evmInit.c

- CQ SDOCM00060329: The driver contains some embedded 'printf()' functions which are not guarded by any debug enable/disable macros. This will be corrected in next release.

Files modified: ti\pspiom\platforms\evm6748\src\lcdlidd_evmInit.c

10.2.4.6 McASP (DSP/BIOSTM) Driver

- CQ SDOCM00059895: The IOCTLs for non-loopjob mode have been tested.

Files modified: ti\pspiom\mcasp\src\Mcasp.c

- CQ SDOCM00059968: The start and stop IOCTLs were not working as expected. IOP handling during the state machine STOP condition was not correct. State machine STOP condition was not being considered by the driver.

Files modified: ti\pspiom\mcasp\src\Mcasp.c

- CQ SDOCM00059969: The IOCTLs for MUTE and Un-MUTE were not working as expected. Calculation of the EDMA parameters during the Mute of the channel is not correct. This has been fixed.

Files modified: ti\pspiom\mcasp\src\Mcasp.c

ti\pspiom\mcasp\src\Mcasp_edma.c

10.2.4.7 NAND (DSP/BIOSTM) Driver

- CQ SDOCM00059984: Data integrity (mismatch) errors are seen when the driver is accessed via file system. This is observed very randomly. This issue is because of wrong ECC calculation method used inside the nand driver.

Files modified: ti\pspiom\nand\src\llc_nand.c

- CQ SDOCM00060750: Throughput numbers are observed to be low on the EVM. This issue is because wrong CS is used inside the driver to update the timing parameter.

Files modified: ti\pspiom\nand\src\llc_nand.c

10.2.4.8 *MMCSD (DSP/BIOSTM) Driver*

- CQ SDOCM00060892: During performance measurements on SanDisk™ 4GB card, it is observed that the read may fail. This is because of card timeout, so the timeout is increased.

Files modified: ti\pspiom\mmcsd\src\ddc_mmcsd.c

10.3 Release 01.30.00.05

This was an EA release

10.3.1 Changes from previous release (Version 01.30.00.04)

1) This is the EA release for BIOSPSP with combined support for EVM OMAPL138, OMAPL137, C6748 and C6747
2) This release is for support on DSP/BIOS™ 5.33.06.
3) This release contains support for Character LCD display
4) Please see here for list of known issues.
5) Please see here for list of limitations.

10.3.2 Known Issues

10.3.2.1 *MISRA C*

- MISRA C check has not been run on all the components in this release.

10.3.2.2 *Instrumentation (all components)*

- Instrumentation code is not yet implemented. However, the project files for iDebug and iRelease (instrumentation enabled libraries) contain xxx_ DEBUGPRINT_ENABLE macro, which is just a place holder for further implementation. CQ SDOCM00051988

  Workaround: None.

10.3.2.3 *UART (DSP/BIOS™) Driver*

- The write from the UART to the serial console fails at 2400 baud in interrupt mode. This issue is being analyzed. CQ SDOCM00058955

  Workaround: Use DMA or polled mode for data transfer

- When the RXFIFO threshold is set to 1 at a baud rate is 115200 baud there could be RX overrun errors. This issue is being analyzed. CQ SDOCM00060841

  Workaround: use higher values of RXFIFO threshold value

- When the RXFIFO threshold is greater than 4 and the baud rate is greater than or equal to 115200 baud, data received contains repeated characters and does not match the transmitted characters. This issue is being investigated. CQ SDOCM00059982

  Workaround: Use polled or interrupt mode of operation.

10.3.2.4 *I2C (DSP/BIOS™) Driver*

- Slave mode of operation of I2C drivers are yet to be tested. This will be taken up in next releases. CQ SDOCM00060228

- I2C read/write to the I/O expander on the EVM fails inconsistently in polled mode of operation. This issue is being analyzed. CQ SDOCM00058961

  Note: Please note that during emulation DSP should be connected before U-Boot on the ARM comes up. This is because the U-Boot places the emulation control under ARM during the U-boot steps.

10.3.2.5 McASP (DSP/BIOS™) Driver

- The start and stop IOCTLs are not working as expected. The audio does not appropriately stop and restart at the issue of these commands. This is issue is being investigated. CQ SDOCM00059968
- The IOCTLs for MUTE and Un-MUTE are not working as expected. The audio does not appropriately mute and restart at the issue of these commands. This is issue is being investigated. CQ SDOCM00059969
- The IOCTL commands are not tested in non-loop job mode,. This will be taken up in forthcoming releases. CQ SDOCM00059895
- The driver is not working as expected in non-loop job mode. Data loss is observed in some cases. This issue is being investigated. CQ SDOCM00059897
- The cache settings for audio sample application need changes to improve the performance of audio sample application. Currently, the L2 cache is not being used and the external memory is not placed as cache-able memory. CQ: SDOCM00060198

10.3.2.6 McBSP (DSP/BIOS™) Driver

- Transmit channel deletion fails. This issue is being analyzed. CQ SDOCM00059860
- The IOCTL commands are not tested extensively. This will be taken up in forthcoming releases. CQ SDOCM00059894
- When the driver is not primed in non-loop job mode, sample application is not working as expected. This issue is being investigated. CQ SDOCM00059896

  Workaround: Use primed mode of operation

10.3.2.7 SPI (DSP/BIOS™) Driver

- Slave mode of operation of SPI drivers are yet to be tested. This will be taken up in next releases. CQ SDOCM00060229
- The GPIO CS functionality is yet to be tested. This will be taken up in next releases. CQ SDOCM00060226
- BIT errors are seen in interrupt and polled modes of operation when the SPI output frequency is greater 30 MHz. CQ SDOCM00060205

  Workaround: Use DMA mode of operation

10.3.2.8 MMCSD (DSP/BIOS™) Driver

- During performance measurements on SanDisk™ 4GB card, it sis observed that the read may fail. This issue is being analyzed. CQ SDOCM00060892

10.3.2.9 NAND (DSP/BIOS™) Driver

- Data integrity (mismatch) errors are seen when the driver is accessed via file system. This is observed very randomly. This is however not observed when driver is accessed in RAW mode. This issue is being analyzed. CQ SDOCM00059984

  Workaround: None

- Throughput numbers are observed to be low on the EVM. This issue is being analyzed. CQ SDOCM00060750

  Workaround: None

10.3.2.10 SATA (DSP/BIOS™) Driver

- Exception occurs when trying access the SATA device when not connected to EVM. This issue is being analyzed. CQ SDOCM00059865

  Workaround: Connect the SATA device to EVM and power the SATA device before accessing the SATA device

- SATA Driver De-initialization feature is not implemented. As a result of this the initialization and de-initialization sequence cannot be called in sequence repeatedly. CQ SDOCM00060297

  Workaround: Once, the SATA driver is initialized the same instance should be used without calling de-initialization function.

- The driver contains some embedded 'printf()' functions which are not guarded by any debug enable/disable macros. This will be corrected in next release. CQ SDOCM00060329

  Workaround: none.

10.3.3 Limitations

10.3.3.1 I2C (DSP/BIOS™) Device Driver

- Loopback is not supported in interrupt mode
- In case of time bound IO requests, on timeout the driver is not able to perform any operations on the peripheral. (This peripheral limitation is documented in the technical reference manual of I2C under ICMDR register)
- I2C driver does not support slave mode of operation in polled mode. Only interrupt and DMA interrupt mode of operation are supported.
- (a) I2C slave application need to take care of the data (application level) protocol on when and what to receive and send by/from slave side. (b)This driver provides a generic bus communication path for slave. (c) Application protocol also needs to consider the latency caused by software slave implementation. (d) The driver does not support "0" no of byte transfer and the slave driver would not function properly if master issues a STOP condition immediately after a START condition.

10.3.3.2 SPI (DSP/BIOS™) Device Driver

- (a) Application protocol also needs to consider the latency caused by software slave implementation. (b) The driver does not support "0" no of byte transfer.

10.3.3.3 McASP (DSP/BIOS™) Device Driver

- Mcasp Driver does not support switching from DIT mode to TDM mode dynamically.

10.3.3.4 McBSP (DSP/BIOS™) Device Driver

- The McBSP sample application works only in the release mode. In the debug mode due to the timing issues (delay in packet transfer completion and EDMA disabling in EDMA callback), EDMA event miss error is observed because of which the sample application could not be tested.

10.3.3.5 Aic3106 Codec driver (DSP/BIOS™)

The Aic31 driver currently supports only one codec instance.

10.3.3.6 EVM 6748 Limitation

- Only McBSP instance "1" can be used since the clock from MII interferes with the McBSP clock

10.3.4 Fixed in this release

10.3.4.1 LCDC LIDD (DSP/BIOS™) Driver

- CQ SDOCM00060890: The platform library did not contain the specific initialization sequence for enabling the character LCD data path. This issue has been fixed

Files modified: ti\pspiom\platforms\evm6748\src\lcdlidd_evmInit.c

10.4 Release 01.30.00.04

This was an internal release

10.4.1 Changes from previous release (Version 01.30.00.03)

1) This is the EA release for BIOSPSP with combined support for EVM OMAPL138, OMAPL137, C6748 and C6747
2) This release is for support on DSP/BIOS™ 5.33.06.
3) This release contains support for Character LCD display
4) Please see here for list of known issues.
5) Please see here for list of limitations.

10.4.2 Known issues

10.4.2.1 MISRA C

- MISRA C check has not been run on all the components in this release.

10.4.2.2 Instrumentation (all components)

- Instrumentation code is not yet implemented. However, the project files for iDebug and iRelease (instrumentation enabled libraries) contain xxx_ DEBUGPRINT_ENABLE macro, which is just a place holder for further implementation. CQ SDOCM00051988

  Workaround: None.

10.4.2.3 UART (DSP/BIOS™) Driver

- The write from the UART to the serial console fails at 2400 baud in interrupt mode. This issue is being analyzed. CQ SDOCM00058955

  Workaround: Use DMA or polled mode for data transfer

- When the RXFIFO threshold is set to 1 at a baud rate is 115200 baud there could be RX overrun errors. This issue is being analyzed. CQ SDOCM00060841

  Workaround: use higher values of RXFIFO threshold value

- When the RXFIFO threshold is greater that 4 and the baudrate is greater than or equal to 115200 baud, data received contains repeated characters and does not match the transmitted characters. This issue is being investigated. CQ SDOCM00059982

  Workaround: Use polled or interrupt mode of operation.

10.4.2.4 I2C (DSP/BIOS™) Driver

- Slave mode of operation of I2C drivers are yet to be tested. This will be taken up in next releases. CQ SDOCM00060228
- I2C read/write to the I/O expander on the EVM fails inconsistently in polled mode of operation. This issue is being analyzed. CQ SDOCM00058961

  Note: Please note that the during emulation DSP should be connected before U-Boot on the ARM comes up. This is because the U-Boot places the emulation control under ARM during the U-boot steps.

10.4.2.5 McASP (DSP/BIOS™) Driver

- The start and stop IOCTLs are not working as expected. The audio does not appropriately stop and restart at the issue of these commands. This is issue is being investigated. CQ SDOCM00059968
- The IOCTLs for MUTE and Un-MUTE are not working as expected. The audio does not appropriately mute and restart at the issue of these commands. This is issue is being investigated. CQ SDOCM00059969
- The IOCTL commands are not tested in non-loopjob mode,. This will be taken up in forthcoming releases. CQ SDOCM00059895
- The driver is not working as expected in non-loopjob mode. Data loss is observed in some cases. This issue is being investigated. CQ SDOCM00059897
- The cache settings for audio sample application need changes to improve the performance of audio sample application. Currently, the L2 cache is not being used and the external memory is not placed as cache-able memory. CQ: SDOCM00060198

10.4.2.6 McBSP (DSP/BIOS™) Driver

- Transmit channel deletion fails. This issue is being analyzed. CQ SDOCM00059860
- The IOCTL commands are not tested extensively. This will be taken up in forthcoming releases. CQ SDOCM00059894
- When the driver is not primed in non-loopjob mode, sample application is not working as expected. This issue is being investigated. CQ SDOCM00059896

Workaround: Use primed mode of operation

10.4.2.7 SPI (DSP/BIOS™) Driver

- Slave mode of operation of SPI drivers are yet to be tested. This will be taken up in next releases. CQ SDOCM00060229
- The GPIO CS functionality is yet to be tested. This will be taken up in next releases. CQ SDOCM00060226
- BIT errors are seen in interrupt and polled modes of operation when the SPI output frequency is greater 30 MHz. CQ SDOCM00060205

  Workaround: Use DMA mode of operation

10.4.2.8 NAND (DSP/BIOS™) Driver

- Data integrity (mismatch) errors are seen when the driver is accessed via file system. This is observed very randomly. This is however not observed when driver is accessed in RAW mode. This issue is being analyzed. CQ SDOCM00059984

  Workaround: None
- Throughput numbers are observed to be low on the EVM. This issue is being analyzed. CQ SDOCM00060750

  Workaround: None

10.4.2.9 SATA (DSP/BIOS™) Driver

- Exception occurs when trying access the SATA device when not connected to EVM. This issue is being analyzed. CQ SDOCM00059865

  Workaround: Connect the SATA device to EVM and power the SATA device before accessing the SATA device
- SATA Driver De-initialization feature is not implemented. As a result of this the initialization and de-initialization sequence cannot be called in sequence repeatedly. CQ SDOCM00060297

  Workaround: Once, the SATA driver is initialized the same instance should be used without calling de-initialization function.
- The driver contains some embedded 'printf()' functions which are not guarded by any debug enable/disable macros. This sill be corrected in next release. CQ SDOCM00060329

  Workaround: none.

10.4.3 Limitations

10.4.3.1 I2C (DSP/BIOS™) Device Driver

- Loopback is not supported in interrupt mode
- In case of time bound IO requests, on timeout the driver is not able to perform any operations on the peripheral. (This peripheral limitation is documented in the technical reference manual of I2C under ICMDR register)
- I2C driver does not support slave mode of operation in polled mode. Only interrupt and DMA interrupt mode of operation are supported.

- (a) I2C slave application need to take care of the data (application level) protocol on when and what to receive and send by/from slave side. (b)This driver provides a generic bus communication path for slave. (c) Application protocol also needs to consider the latency caused by software slave implementation. (d) The driver does not support "0" no of byte transfer and the slave driver would not function properly if master issues a STOP condition immediately after a START condition.

10.4.3.2 SPI (DSP/BIOS™) Device Driver

- (a) Application protocol also needs to consider the latency caused by software slave implementation. (b) The driver does not support "0" no of byte transfer.

10.4.3.3 McASP (DSP/BIOS™) Device Driver

- Mcasp Driver does not support switching from DIT mode to TDM mode dynamically.

10.4.3.4 McBSP (DSP/BIOS™) Device Driver

- The McBSP sample application works only in the release mode. In the debug mode due to the timing issues (delay in packet transfer completion and EDMA disabling in EDMA callback), EDMA event miss error is observed because of which the sample application could not be tested.

10.4.3.5 Aic3106 Codec driver (DSP/BIOS™)

The Aic31 driver currently supports only one codec instance.

10.4.3.6 EVM 6748 Limitation

- Only McBSP instance "1" can be used since the clock from MII interferes with the McBSP clock
- Character LCD support is not available on the EVM

10.4.4 Fixed in this release

10.4.4.1 SATA (DSP/BIOS™) Driver

- CQ SDOCM00060839: During SATA write DMA I/O performance when the buffer size was greater than 400KBytes the CPU Load was high (99%). This was because the DPS Interrupt was enabled, due to that there was interrupt overloading to CPU for every PRD table update. The DPS interrupt has been disabled.

Files modified: ti\pspsiom\sata\src\Ahci.c

10.4.4.2 LCDC LIDD (DSP/BIOS™) Driver

- CQ SDOCM00060837: The LCDC character driver would always configure and initialize the CS0 chip select during channel creation. This has been corrected by adding a parameter to the channel parameters to specify the chip select which needs to be used for the channel and hence appropriately configuring and initializing the device on that chip select.

Files modified: ti\pspiom\lcdclidd\Lidd.h and ti\pspiom\lcdclidd\src\Lidd.c

10.5 Release 01.30.00.03

This was the EA release with combined support for C6748, C6747, OMAPL137 and OMAPL138 platforms.

10.5.1 Changes from previous release (01.30.00.02)

1) This is the EA release for BIOSPSP with combined support for EVM OMAPL138, OMAPL137, C6748 and C6747
2) The Licensing scheme for BIOSPSP package has been changed from “TI Proprietary” to “new BSD”.
3) Contains components mentioned above – in Section 4.
4) Please see here for list of known issues.
5) Please see here for list of limitations.

10.5.2 Known Issues

10.5.2.1 MISRA C

- MISRA C check has not been run on all the components in this release.

10.5.2.2 Instrumentation (all components)

- Instrumentation code is not yet implemented. However, the project files for iDebug and iRelease (instrumentation enabled libraries) contain xxx_ DEBUGPRINT_ENABLE macro, which is just a place holder for further implementation. CQ SDOCM00051988

  Workaround: None.

10.5.2.3 UART (DSP/BIOS™) Driver

- The write from the UART to the serial console fails at 2400 baud in interrupt mode. This issue is being analyzed. CQ SDOCM00058955

  Workaround: Use DMA or polled mode for data transfer

- When the RXFIFO threshold is greater that 4 and the baudrate is greater than or equal to 115200 baud, data received contains repeated characters and does not match the transmitted characters. This issue is being investigated. CQ SDOCM00059982

  Workaround: Use polled or interrupt mode of operation.

10.5.2.4 I2C (DSP/BIOS™) Driver

- Slave mode of operation of I2C drivers are yet to be tested. This will be taken up in next releases. CQ SDOCM00060228
- I2C read/write to the I/O expander on the EVM fails inconsistently in polled mode of operation. This issue is being analyzed. CQ SDOCM00058961

  Note: Please note that the during emulation DSP should be connected before U-Boot on the ARM comes up. This is because the U-Boot places the emulation control under ARM during the U-boot steps.

10.5.2.5 McASP (DSP/BIOS™) Driver

- The start and stop IOCTLs are not working as expected. The audio does not appropriately stop and restart at the issue of these commands. This is issue is being investigated. CQ SDOCM00059968
- The IOCTLs for MUTE and Un-MUTE are not working as expected. The audio does not appropriately mute and restart at the issue of these commands. This is issue is being investigated. CQ SDOCM00059969
- The IOCTL commands are not tested in non-loopjob mode,. This will be taken up in forthcoming releases. CQ SDOCM00059895
- The driver is not working as expected in non-loopjob mode. Data loss is observed in some cases. This issue is being investigated. CQ SDOCM00059897
- The cache settings for audio sample application need changes to improve the performance of audio sample application. Currently, the L2 cache is not being used and the external memory is not placed as cache-able memory. CQ: SDOCM00060198

10.5.2.6 McBSP (DSP/BIOS™) Driver

- Transmit channel deletion fails. This issue is being analyzed. CQ SDOCM00059860
- The IOCTL commands are not tested extensively. This will be taken up in forthcoming releases. CQ SDOCM00059894
- When the driver is not primed in non-loopjob mode, sample application is not working as expected. This issue is being investigated. CQ SDOCM00059896

  Workaround: Use primed mode of operation

10.5.2.7 SPI (DSP/BIOS™) Driver

- Slave mode of operation of SPI drivers are yet to be tested. This will be taken up in next releases. CQ SDOCM00060229
- The GPIO CS functionality is yet to be tested. This will be taken up in next releases. CQ SDOCM00060226
- BIT errors are seen in interrupt and polled modes of operation when the SPI output frequency is greater 30 MHz. CQ SDOCM00060205

  Workaround: Use DMA mode of operation

10.5.2.8 NAND (DSP/BIOS™) Driver

- Data integrity (mismatch) errors are seen when the driver is accessed via file system. This is observed very randomly. This is however not observed when driver is accessed in RAW mode. This issue is being analyzed. CQ SDOCM00059984

  Workaround: None

10.5.2.9 SATA (DSP/BIOS™) Driver

- Exception occurs when trying access the SATA device when not connected to EVM. This issue is being analyzed. CQ SDOCM00059865

  Workaround: Connect the SATA device to EVM and power the SATA device before accessing the SATA device

- SATA Driver De-initialization feature is not implemented. As a result of this the initialization and de-initialization sequence cannot be called in sequence repeatedly. CQ SDOCM00060297

  Workaround: Once, the SATA driver is initialized the same instance should be used without calling de-initialization function.

- The driver contains some embedded 'printf()' functions which are not guarded by any debug enable/disable macros. This sill be corrected in next release. CQ SDOCM00060329

  Workaround: none.

10.5.3 Limitations

10.5.3.1 I2C (DSP/BIOS™) Device Driver

- Loopback is not supported in interrupt mode
- In case of time bound IO requests, on timeout the driver is not able to perform any operations on the peripheral. (This peripheral limitation is documented in the technical reference manual of I2C under ICMDR register)
- I2C driver does not support slave mode of operation in polled mode. Only interrupt and DMA interrupt mode of operation are supported.
- (a) I2C slave application need to take care of the data (application level) protocol on when and what to receive and send by/from slave side. (b)This driver provides a generic bus communication path for slave. (c) Application protocol also needs to consider the latency caused by software slave implementation. (d) The driver does not support "0" no of byte transfer and the slave driver would not function properly if master issues a STOP condition immediately after a START condition.

10.5.3.2 SPI (DSP/BIOS™) Device Driver

- (a) Application protocol also needs to consider the latency caused by software slave implementation. (b) The driver does not support "0" no of byte transfer.

10.5.3.3 McASP (DSP/BIOS™) Device Driver

- Mcasp Driver does not support switching from DIT mode to TDM mode dynamically.

10.5.3.4 McBSP (DSP/BIOS™) Device Driver

- The McBSP sample application works only in the release mode. In the debug mode due to the timing issues (delay in packet transfer completion and EDMA disabling in EDMA callback), EDMA event miss error is observed because of which the sample application could not be tested.

10.5.3.5 Aic3106 Codec driver (DSP/BIOS™)

The Aic31 driver currently supports only one codec instance.

10.5.3.6 EVM 6748 Limitation

- Only McBSP instance "1" can be used since the clock from MII interferes with the McBSP clock
- Character LCD support is not available on the EVM

10.5.4 Fixed in this release

10.5.4.1 SPI (DSP/BIOS™) Driver

- CQ SDOCM00059965: The read/write (to on board SPI flash) test would hang at 50MHz. This was because the IOP would not be returned to the application in case of errors. This has been corrected.
- CQ SDOCM00059026: Cancel pending IOCTL would fail to return to the application in all modes. This was because the status to the GIOlayer was being sent as completed, though it was being queued and actually pending to be completed. This would result in the IOP packet being reused and corrupting the queue maintained by the driver. This has been corrected.

10.5.4.2 UART (DSP/BIOS™) Driver

- CQ SDOCM00060094: Some of the IOCTL commands would result in failure because the mdControlChan function would check command arguments against NULL even if command argument would be NULL by requirement –example command to reset TX/RX FIFO. This has been corrected and only in valid cases command arguments are checked for NULL

10.6 Release 01.30.00.02

This was the first release with combined support for C6748, C6747, OMAPL137 and OMAPL138 platforms.

10.6.1 Changes from previous release (01.30.00.01)

1) This is the EA release for BIOSPSP with combined support for EVM OMAPL138, OMAPL137, C6748 and C6747
2) The UART driver EDMA programming has been now changed to AB-Sync mode and as a result a new parameter has been added to the device parameters (instance parameters). Please refer to the UART section of User guide for more details.
3) The GPIO Chip Select feature implementation of SPI driver has undergone changes. This is to include provision for using more than one GPIO as Chip selected. The instance parameters and the I/O request (submit time) parameters have undergone changes. Please refer to the SPI section of User guide for more details.

10.6.2 Known Issues

10.6.2.1 MISRA C

- MISRA C check has not been run on all the components in this release.

10.6.2.2 Instrumentation (all components)

- Instrumentation code is not yet implemented. However, the project files for iDebug and iRelease (instrumentation enabled libraries) contain xxx_ DEBUGPRINT_ENABLE macro, which is just a place holder for further implementation. CQ SDOCM00051988

  Workaround: None.

10.6.2.3 UART (DSP/BIOS™) Driver

- The write from the UART to the serial console fails at 2400 baud in interrupt mode. This issue is being analyzed. CQ SDOCM00058955

  Workaround: Use DMA or polled mode for data transfer

- When the RXFIFO threshold is greater that 4 and the baudrate is greater than or equal to 115200 baud, data received contains repeated characters and does not match the transmitted characters. This issue is being investigated. CQ SDOCM00059982

  Workaround: Use polled or interrupt mode of operation.

10.6.2.4 I2C (DSP/BIOS™) Driver

- I2C read/write to the I/O expander on the EVM fails inconsistently in polled mode of operation. This issue is being analyzed. CQ SDOCM00058961

  Note: Please note that the during emulation DSP should be connected before U-Boot on the ARM comes up. This is because the U-Boot places the emulation control under ARM during the U-boot steps.

10.6.2.5 McASP (DSP/BIOS™) Driver

- The start and stop IOCTLs are not working as expected. The audio does not appropriately stop and restart at the issue of these commands. This is issue is being investigated. CQ SDOCM00059968
- The IOCTLs for MUTE and Un-MUTE are not working as expected. The audio does not appropriately mute and restart at the issue of these commands. This is issue is being investigated. CQ SDOCM00059969
- The IOCTL commands are not tested in non-loopjob mode,. This will be taken up in forthcoming releases. CQ SDOCM00059895
- The driver is not working as expected in non-loopjob mode. Data loss is observed in some cases. This issue is being investigated. CQ SDOCM00059897

10.6.2.6 McBSP (DSP/BIOS™) Driver

- Transmit channel deletion fails. This issue is being analyzed. CQ SDOCM00059860
- The IOCTL commands are not tested extensively. This will be taken up in forthcoming releases. CQ SDOCM00059894
- When the driver is not primed in non-loopjob mode, sample application is not working as expected. This issue is being investigated. CQ SDOCM00059896

  Workaround: Use primed mode of operation

10.6.2.7 SPI (DSP/BIOS™) Driver

- The read/write (to on board SPI flash) test hangs at 50MHz in DMA/INTERRUPT/POLLED modes of operation. This issue is being analyzed. CQ SDOCM00059965
- Cancel pending IOCTL fails to return to the application in all modes. This issue is being analyzed. CQ SDOCM00059026

10.6.2.8 SATA (DSP/BIOS™) Driver

- Exception occurs when trying access the SATA device when not connected to EVM. This issue is being analyzed. CQ SDOCM00059865

  Workaround: Connect the SATA device to EVM and power the SATA device before accessing the SATA device

10.6.3 Limitations

10.6.3.1 I2C (DSP/BIOS™) Device Driver

- Loopback is not supported in interrupt mode
- In case of time bound IO requests, on timeout the driver is not able to perform any operations on the peripheral. (This peripheral limitation is documented in the technical reference manual of I2C under ICMDR register)
- I2C driver does not support slave mode of operation in polled mode. Only interrupt and DMA interrupt mode of operation are supported. The slave mode of operation is tested successfully 100,200 and 400 kHz I2C clock frequency.
- (a) I2C slave application need to take care of the data (application level) protocol on when and what to receive and send by/from slave side. (b)This driver provides a generic bus communication path for slave. (c) Application protocol also needs to consider the latency caused by software slave implementation. (d) The driver does not support “0” no of byte transfer and the slave driver would not function properly if master issues a STOP condition immediately after a START condition.

10.6.3.2 SPI (DSP/BIOS™) Device Driver

- Slave mode of operation is tested at 2MHz. Because of the wired EVM to EVM connectivity, signal integrity was not good to test on further higher frequencies.
- (a) Application protocol also needs to consider the latency caused by software slave implementation. (b) The driver does not support “0” no of byte transfer.

10.6.3.3 McASP (DSP/BIOS™) Device Driver

- Mcasp Driver does not support switching from DIT mode to TDM mode dynamically.

10.6.3.4 McBSP (DSP/BIOS™) Device Driver

- The McBSP sample application works only in the release mode. In the debug mode due to the timing issues (delay in packet transfer completion and EDMA disabling in EDMA callback), EDMA event miss error is observed because of which the sample application could not be tested.

10.6.3.5 Aic3106 Codec driver (DSP/BIOS™)

The Aic31 driver currently supports only one codec instance.

10.6.3.6 EVM 6748 Limitation

- Only McBSP instance “1” can be used since the clock from MII interferes with the McBSP clock
- Character LCD support is not available on the EVM

10.6.4 Fixed in this release

10.6.4.1 BLOCK MEDIA (DSP/BIOS™) Driver

- CQ SDOCM00056769: Block media driver SET_RAW_DEVICE IOCTL would fail if called multiple times. This was because once the RAW device is set, setting it again would return failure values. However, this has been corrected and now it would return success.

10.6.4.2 Audio Interface (DSP/BIOS™) Driver

- CQ SDOCM00057452: Critical section protection was not implemented properly during channel creation and return values we not handled properly during channel deletion. These are corrected.

10.6.4.3 McASP (DSP/BIOS™) Driver

- CQ SDOCM00057459: The interrupt registration in McASP was improper. Wrong combination of event/hwi number and ECM/Interrupt enable APIs were used. This has been corrected.
- CQ SDOCM00057627: The loop job buffer size has been reduced by managing the loop job buffers with better parameter and options for EDMA.

10.6.4.4 McBSP (DSP/BIOS™) Driver

- CQ SDOCM00059786: McBSP device deletion was failing because the instance number was wrongly updated to -1 before freeing the instance. This has been corrected.
- CQ SDOCM00059787: McBSP device deletion would fail because the associated channel states were not updated properly. This has been corrected.

10.6.4.5 AIC3106 (DSP/BIOS™) Driver

- CQ SDOCM00057467: The default parameters for codec were was using wrong value for slot width. It was 16 instead if using slotwidth enumeration. This has been corrected.

10.6.4.6 SPI (DSP/BIOS™) Driver

- CQ SDOCM00057735: The NULL condition check was for output buffer only. This has been corrected to include check for both INPUT and OUTPUT buffer NULL condition

10.6.4.7 I2C (DSP/BIOS™) Driver

- CQ SDOCM00057837: The NULL check for packet during submits was made in case of FLUSH and ABORT commands also. However, this will actually be NULL for these commands and hence should not be checked. This has been corrected.
- CQ SDOCM00058010: The user supplied EDMA event queues were being overwritten. This has been corrected.
- CQ SDOCM00058047: The default number of channels for the driver has been increased from 2 to 5.
- CQ SDOCM00059530: The module input clock frequency for I2C 0 instance were wrongly based at 50 MHz. This has been corrected to 24MHz.

10.6.4.8 UART (DSP/BIOS™) Driver

- CQ SDOCM00057984: The NULL condition check for parameters in uart read and writes functions have been corrected.
- CQ SDOCM00058384: The UART FIFO needs to be re-enabled in case of EDMA miss errors to re-generate the missed event. The steps followed were wrong and this has been corrected.

10.6.4.9 Register CSL

- CQ SDOCM00059633: The base address for HPI registers was incorrect and this has been corrected.
- CQ SDOCM00059705: The base address for MCBSP instance 1 data region was incorrect and this has been corrected.
- CQ SDOCM00059240: As part of having a common code base for C6747, OMAPL137, C6748 and OMAPL138 following changes have effected:-
    - Macros for number of banks and pins for GPIO has been moved to SoC file from GPIO header file.
    - In cslr_edma3cc.h The reserved bytes at the end of EDMA3CC register overlay had been changed
    - cslr_spi.h file has included changes for multiple chipselects
    - cslr_pllc.h will now be cslr_pllc_<soc>.h

  cslr_intc.h will now be cslr_dspintc.h. Also, the macros inside the file will now contain DSPINTC instead of INTC

10.7 Release 01.30.00.01

This was the first release and contained support only for EVM OMAPL138.

10.7.1 Known Issues

10.7.1.1 Instrumentation (all components)

- Instrumentation code is not yet implemented. However, the project files for iDebug and iRelease (instrumentation enabled libraries) contain xxx_ DEBUGPRINT_ENABLE macro, which is just a place holder for further implementation. CQ SDOCM00051988

  Workaround: None.

10.7.2 Limitations

10.7.2.1 I2C (DSP/BIOS™) Device Driver

- Loopback is not supported in interrupt mode
- In case of time bound IO requests, on timeout the driver is not able to perform any operations on the peripheral. (This peripheral limitation is documented in the technical reference manual of I2C under ICMDR register)
- I2C driver does not support slave mode of operation in polled mode. Only interrupt and DMA interrupt mode of operation are supported. The slave mode of operation is tested successfully 100,200 and 400 kHz I2C clock frequency.

- (a) I2C slave application need to take care of the data (application level) protocol on when and what to receive and send by/from slave side. (b)This driver provides a generic bus communication path for slave. (c) Application protocol also needs to consider the latency caused by software slave implementation. (d) The driver does not support “0” no of byte transfer and the slave driver would not function properly if master issues a STOP condition immediately after a START condition.

10.7.2.2 SPI (DSP/BIOS™) Device Driver

- Slave mode of operation is tested at 2MHz. Because of the wired EVM to EVM connectivity, signal integrity was not good to test on further higher frequencies.
- (a) Application protocol also needs to consider the latency caused by software slave implementation. (b) The driver does not support “0” no of byte transfer.

10.7.2.3 McASP (DSP/BIOS™) Device Driver

- Mcasp Driver does not support switching from DIT mode to TDM mode dynamically.

10.7.2.4 Aic3106 Codec driver (DSP/BIOS™)

- The Aic31 driver currently supports only one codec instance.

10.7.2.5 EVM 6748 Limitation

- None