

Release Notes

C6748 BIOSPSP 01.30.00.05

August 6, 2009

This page has been intentionally left blank.

IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

Mailing Address:
Texas Instruments
Post Office Box 655303
Dallas, Texas 75265

Copyright ©. 2009, Texas Instruments Incorporated

This page has been intentionally left blank.

TABLE OF CONTENTS

1	Introduction	6
1.1	Release Category	6
1.2	Text Conventions	6
2	Out-of-Box Contents	7
3	Dependencies	8
4	Drivers/Components for this release	9
4.1	Changes from previous release (Version 01.30.00.04)	9
4.2	Other changes	9
5	Known Issues	10
5.1	MISRA C	10
5.2	Instrumentation (all components)	10
5.3	UART (DSP/BIOS™) Driver	10
5.4	I2C (DSP/BIOS™) Driver	10
5.5	McASP (DSP/BIOS™) Driver	10
5.6	McBSP (DSP/BIOS™) Driver	11
5.7	SPI (DSP/BIOS™) Driver	11
5.8	MMCSDB (DSP/BIOS™) Driver	11
5.9	NAND (DSP/BIOS™) Driver	11
5.10	SATA (DSP/BIOS™) Driver	11
6	Limitations	13
6.1	I2C (DSP/BIOS™) Device Driver	13
6.2	SPI (DSP/BIOS™) Device Driver	13
6.3	McASP (DSP/BIOS™) Device Driver	13
6.4	McBSP (DSP/BIOS™) Device Driver	13
6.5	Aic3106 Codec driver (DSP/BIOS™)	13
6.6	EVM 6748 Limitation	13
7	Fixed in this release	14
7.1	LCDC LIDD (DSP/BIOS™) Driver	14
8	Special notes	15
9	Technical Support	16
10	Release History	17
10.1	Release 01.30.00.04	17
10.2	Release 01.30.00.03	20
10.3	Release 01.30.00.02	24
10.4	Release 01.30.00.01	28

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 01.30.00.05 is an EA release for EVM 6748. Please refer to section [Drivers/Components for this release](#) for details of this release.

1.2 Text Conventions

○	This bullet indicates important information. Please read such text carefully.
□	This bullet indicates additional information.

2 Out-of-Box Contents

BIOSPSP_01_30_xx_xx_Setup.exe contains following:

1.	<ul style="list-style-type: none"> – Source code for driver and other necessary abstractions. – Project files (DSP/BIOS™), CCS3.3 build files – The above mentioned items are located inside the <installation dir>\pspdriers_01_30_xx_xx\packages\ti directory – Please note that the CCS setup files and GEL files are <u>NOT</u> 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
- C6748 EVM
- DSP-BIOS 5.33.06
- Code Generation Tools 6.1.9
- EDMA3 product version 01.10.00.01
- 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 v1.10.00.23 – Engineering release)

4 Drivers/Components for this release

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

- DSP/BIOS™ 5.33.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)
 - 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™ 5.33.xx) inside the drivers.

4.1 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.

4.2 Other changes

None

5 Known Issues

5.1 MISRA C

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

5.2 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.

5.3 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 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.

5.4 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.

5.5 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 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 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

5.6 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

5.7 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

5.8 MMCSD (DSP/BIOS™) Driver

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

5.9 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

5.10 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.

6 Limitations

6.1 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.

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.

6.3 McASP (DSP/BIOS™) Device Driver

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

6.4 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.

6.5 Aic3106 Codec driver (DSP/BIOS™)

The Aic31 driver currently supports only one codec instance.

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 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_evmlnit.c

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 01.30.00.04

This was an internal release

10.1.1 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.

10.1.2 Known issues

10.1.2.1 MISRA C

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

10.1.2.2 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.

10.1.2.3 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 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.

10.1.2.4 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.

10.1.2.5 *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

10.1.2.6 *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

10.1.2.7 *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

10.1.2.8 *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

10.1.2.9 *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 will be corrected in next release. CQ SDOCM00060329

Workaround: none.

10.1.3 Limitations

10.1.3.1 *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.

10.1.3.2 *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.

10.1.3.3 *McASP (DSP/BIOS™) Device Driver*

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

10.1.3.4 *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.

10.1.3.5 Aic3106 Codec driver (DSP/BIOS™)

The Aic31 driver currently supports only one codec instance.

10.1.3.6 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

10.1.4 Fixed in this release

10.1.4.1 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

10.1.4.2 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\pspsiom\lcdclidd\Lidd.h and ti\pspsiom\lcdclidd\src\Lidd.c

10.2 Release 01.30.00.03

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

10.2.1 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.

10.2.2 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)*

- 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.

10.2.2.3 *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 than 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.

10.2.2.4 *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.

10.2.2.5 *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 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 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

10.2.2.6 *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

10.2.2.7 *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

10.2.2.8 *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

10.2.2.9 *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 will be corrected in next release. CQ SDOCM00060329
Workaround: none.

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/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.

10.2.3.5 *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
- Character LCD support is not available on the EVM

10.2.4 **Fixed in this release**

10.2.4.1 *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.

10.2.4.2 *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

10.3 Release 01.30.00.02

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

10.3.1 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.

10.3.2 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 greater than 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.

10.3.2.4 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 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 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 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

10.3.2.6 *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-loopjob 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*

- 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

10.3.2.8 *SATA (DSP/BIOSTM) 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

10.3.3 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. 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.
- 10.3.3.2 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.
- 10.3.3.3 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
 - Character LCD support is not available on the EVM
- 10.3.4 Fixed in this release**
- 10.3.4.1 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.
- 10.3.4.2 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.
- 10.3.4.3 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.
-

10.3.4.4 *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.

10.3.4.5 *AIC3106 (DSP/BIOS™) Driver*

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

10.3.4.6 *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

10.3.4.7 *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.

10.3.4.8 *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.

10.3.4.9 *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 cs1r_edma3cc.h The reserved bytes at the end of EDMA3CC register overlay had been changed

- o cslr_spi.h file has included changes for multiple chipselects
- o cslr_pll.c.h will now be cslr_pll.c_<soc>.h

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

10.4 Release 01.30.00.01

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

10.4.1 Known Issues

10.4.1.1 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.

10.4.2 Limitations

10.4.2.1 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.

10.4.2.2 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.

10.4.2.3 McASP (DSP/BIOS™) Device Driver

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

10.4.2.4 Aic3106 Codec driver (DSP/BIOS™)

- The Aic31 driver currently supports only one codec instance.

10.4.2.5 *EVM 6748 Limitation*

- None