

Release Notes

BIOS PSP OMAPL137 01.20.00.07

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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 01.20.00.05)	9
4.2	Other changes	9
5	Known Issues.....	10
5.1	MISRA C (All components).....	10
5.2	Instrumentation (all components)	10
5.3	SPI (DSP/BIOS™).....	10
5.4	I2C (DSP/BIOS™)	10
5.5	UART (DSP/BIOS™).....	11
5.6	McASP (DSP/BIOS™).....	11
5.7	MMCSDB (DSP/BIOS™).....	11
5.8	NAND (DSP/BIOS™)	11
5.9	Block Media (DSP/BIOS™).....	11
5.10	LCDC Raster Controller Driver (DSP/BIOS™).....	11
6	Limitations	12
6.1	I2C (DSP/BIOS™) Device Driver	12
6.2	UART (DSP/BIOS™) Device Driver.....	12
6.3	McASP (DSP/BIOS™)Device Driver	12
6.4	Aic3106 Codec driver (DSP/BIOS™)	12
6.5	evmOMAPL137 EVM Limitation.....	12
7	Fixed in this release	13
8	Special notes.....	14
9	Technical Support BIOS PSP.....	15
10	Release History	16
10.1	Release 01.20.00.06.....	16
10.2	Release 01.20.00.05.....	16
10.3	Release 01.20.00.04.....	21
10.4	Release 01.20.00.03.....	23
10.5	Release 01.20.00.02.....	23

1 Introduction



This PSP Package serves as fundamental software platform for development, deployment and execution of application software on OMAPL137 based platform. PSP abstracts the functionality provided by the OMAPL137.

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 01.20.00.07 is an Engineering drop for EVMOMAPL137. Please refer to section [Drivers/Components for this release](#) for details of this release.

1.2 Text Conventions

	<p>This bullet indicates important information. Please read such text carefully.</p>
	<p>This bullet indicates additional information.</p>

2 Out-of-Box Contents

BIOSPSP_01_20_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_20_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.	Doxygen based driver API (generated) documentation for all the drivers inside package.

3 Dependencies

- CCS 3.3.24 or higher with service release 10
- OMAPL137 EVM
- DSP-BIOS 5.33.03
- Code Generation Tools 6.1.5
- EDMA3 product version 01.06.00
- XDC 3.10.03 (for xdc build)
- ERTFS File System v1.00.00.07 (Optional). This is required if one wants to maintain a filesystem on Storage Media. Same can be downloaded from following link:

https://www-a.ti.com/downloads/sds_support/targetcontent/bios_file_system/index.html

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 (McASP, AUDIO interface and CODEC)
 - Storage (Block media, MMCSDB and NAND)
 - LCDC Raster and LIDD drivers
 - GPIO driver
 - PSC (that helps to turn the clock on/off for the modules)
 - 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 01.20.00.05)

- 1) This is re-release of 01.20.00.05, with correction of artifacts observed in the image displayed by the raster sample application. The release 01.20.00.06 was consumed internally and was not an external release.

4.2 Other changes

None

5 Known Issues

5.1 MISRA C (All components)

- MISRA C check was not run on the code base as we had issues in running MisraC tools on this package. Tool had issues to scan the xdc based header files and we are currently working on it). **CQ SDOCM00052184**

Workaround: None.

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 SPI (DSP/BIOS™)

- IOM_FLUSH packet command is not supported by IOM drivers.**CQ: SDOCM00050527.**

Workaround:None.

- Slave mode is not tested, due to absence of on-board SPI master. The plan is to test the slave mode using board to board communication in future releases. **CQ SDOCM00048829**

Workaround: None.

- The SPI Sample application does not work when built in release profile. **CQ: SDOCM00050609**

Workaround: None

- Use of GPIO pin as SPI Chip select is not tested, due to absence of on-board test point for SPI CS pin. **CQ: SDOCM00048831**

Workaround: None

5.4 I2C (DSP/BIOS™)

- Slave mode is not tested, due to absence of on-board I2C master. The plan is to test the slave mode using board to board communication in future releases. **CQ SDOCM00048829**

Workaround: None.

- I2C Driver Deviation from RDD. The RDD mentions that the I2C sample application will read/write to the AIC31 codec, however it is now working with the on board EEPROM. At the time of writing of the RDD the schematics did not show EEPROM on the board and hence the scenario of AIC31 was used. Since, now it contains the EEPROM the sample application has been changed to use EEPROM, as it makes the sample application easier to understand. The RDD therefore needs to be modified to reflect the change in the sample application. **CQ: SDOCM00050948**

Workaround: None

- Code review comments. The I2c_Init () function needs to check for multiple calls. **CQ: SDOCM00052224.**

Workaround: None

5.5 UART (DSP/BIOS™)

- UART Hardware flow control is not tested. This test is planned for future release. **CQ SDOCM00048830**

Workaround: None.

5.6 McASP (DSP/BIOS™)

- The audio output contains noise at increased input (to the board) audio volume levels. **CQ SDOCM00053555**

Workaround: Adjust input volume to the board to optimum levels

- Audio Sample Rate selection IOCTL is not implemented for McASP in Master mode. **CQ SDOCM00052890.**

Workaround: None.

5.7 MMCSDB (DSP/BIOS™)

- The instrumentation for MMCSDB is not working. The code inside the instrumentation macro "MMCSDB_INSTRUMENTATION_ENABLED" is just a place holder for the code being there but is not implemented and is not working. User should not enable this macro.

5.8 NAND (DSP/BIOS™)

- The instrumentation for NAND is not working. The code inside the instrumentation macro "NAND_INSTRUMENTATION_ENABLED" is just a place holder for the code being there but is not implemented and is not working. User should not enable this macro.

5.9 Block Media (DSP/BIOS™)

- The instrumentation for Block media is not working. The code inside the instrumentation macro "BLKMEDIA_INSTRUMENTATION_ENABLED" is just a place holder for the code being there but is not implemented and is not working.

5.10 LCDC Raster Controller Driver (DSP/BIOS™)

- It is sometimes observed that the I2C Expander setting function in the evmInit library for LCDC hangs intermittently **CQ SDOCM00053541**

Workaround: Power off the board. Plug out the UI board and plug in the UI board and power on the board.

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)

6.2 UART (DSP/BIOS™) Device Driver

UART Baud rates greater than 115200 are not supported. This is due to high error percentage observed for baud rates greater than 115200. Please refer UART datasheet sprufm6, section 2.1 (Table 1) for more details.

6.3 McASP (DSP/BIOS™) Device Driver

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

6.4 Aic3106 Codec driver (DSP/BIOS™)

The Aic31 driver currently supports only one codec instance.

6.5 evmOMAPL137 EVM Limitation

None

7 Fixed in this release

- The artifacts observed in the image displayed by the LCDC raster sample application were corrected. **CQ SDOCM00053539**

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 BIOS PSP

To submit questions about issues with this BIOS PSP 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 01.20.00.06

The release 01.20.00.06 was consumed internally and was not an external release.

10.2 Release 01.20.00.05

This was the BETA release for OMAPL137.

10.2.1 Known Issues

10.2.1.1 MISRA C (All components)

- MISRA C check was not run on the code base as we had issues in running MisraC tools on this package. Tool had issues to scan the xdc based header files and we are currently working on it). **CQ SDOCM00052184**

Workaround: None.

10.2.1.2 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.

10.2.1.3 SPI (DSP/BIOS™)

- IOM_FLUSH packet command is not supported by IOM drivers. **CQ: SDOCM00050527.**

Workaround:None.

- Slave mode is not tested, due to absence of on-board SPI master. The plan is to test the slave mode using board to board communication in future releases. **CQ SDOCM00048829**

Workaround: None.

- The SPI Sample application does not work when built in release profile. **CQ: SDOCM00050609**

Workaround: None

- Use of GPIO pin as SPI Chip select is not tested, due to absence of on-board test point for SPI CS pin. **CQ: SDOCM00048831**

Workaround: None

10.2.1.4 I2C (DSP/BIOS™)

- Slave mode is not tested, due to absence of on-board I2C master. The plan is to test the slave mode using board to board communication in future releases. **CQ SDOCM00048829**

Workaround: None.

- I2C Driver Deviation from RDD. The RDD mentions that the I2C sample application will read/write to the AIC31 codec, however it is now working with the on board EEPROM. At the time of writing of the RDD the schematics did not show EEPROM on the board and hence the scenario of AIC31 was used. Since, now it contains the EEPROM the sample application has been changed to use EEPROM, as it makes the sample application easier to understand. The RDD therefore needs to be modified to reflect the change in the sample application. **CQ: SDOCM00050948**

Workaround: None

- Code review comments. The I2c_Init () function needs to check for multiple calls. **CQ: SDOCM00052224.**

Workaround: None

10.2.1.5 *UART (DSP/BIOS™)*

- UART Hardware flow control is not tested. This test is planned for future release. **CQ SDOCM00048830**

Workaround: None.

10.2.1.6 *McASP (DSP/BIOS™)*

- The audio output contains noise at increased input (to the board) audio volume levels. **CQ SDOCM00053555**

Workaround: Adjust input volume to the board to optimum levels

- Audio Sample Rate selection IOCTL is not implemented for McASP in Master mode. **CQ SDOCM00052890.**

Workaround: None.

10.2.1.7 *MMCSDB (DSP/BIOS™)*

- The instrumentation for MMCSDB is not working. The code inside the instrumentation macro "MMCSDB_INSTRUMENTATION_ENABLED" is just a place holder for the code being there but is not implemented and is not working. User should not enable this macro.

10.2.1.8 *NAND (DSP/BIOS™)*

- The instrumentation for NAND is not working. The code inside the instrumentation macro "NAND_INSTRUMENTATION_ENABLED" is just a place holder for the code being there but is not implemented and is not working. User should not enable this macro.

10.2.1.9 *Block Media (DSP/BIOS™)*

- The instrumentation for Block media is not working. The code inside the instrumentation macro "BLKMEDIA_INSTRUMENTATION_ENABLED" is just a place holder for the code being there but is not implemented and is not working.

10.2.1.10 *LCDC Raster Controller Driver (DSP/BIOS™)*

- It is sometimes observed that the I2C Expander setting function in the evmInit library for LCDC hangs intermittently **CQ SDOCM00053541**

Workaround: Power off the board. Plug out the UI board and plug in the UI board and power on the board.

10.2.2 Limitations

10.2.2.1 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)

10.2.2.2 UART (DSP/BIOS™) Device Driver

UART Baud rates greater than 115200 are not supported. This is due to high error percentage observed for baud rates greater than 115200. Please refer UART datasheet sprufm6, section 2.1 (Table 1) for more details.

10.2.2.3 McASP (DSP/BIOS™) Device Driver

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

10.2.2.4 Aic3106 Codec driver (DSP/BIOS™)

- The Aic31 driver currently supports only one codec instance.

10.2.2.5 evmOMAPL137 EVM Limitation

- None

10.2.3 Fixed in this release

10.2.3.1 SPI (DSP/BIOS™) Device Driver

- **CQ: SDOCM00050526** - Spi edma mode example needs to be added and hence the driver still needs to be tested in edma mode. This IR is fixed in this release. The EDMA mode sample application is provided in this release for SPI driver.

Files Modified: spiSample_main.c, spiSample_io.c

- **CQ: SDOCM00049902** - SPI data transfer fails when configured for loopback in Interrupt mode. This IR is fixed in this release.

Files Modified: None

- **CQ: SDOCM00051114** - Spi_IOCTL_CANCEL_PENDING_IO ioctl returns failure. This IR is fixed in this release.

Files Modified: Spi.c.

- **CQ: SDOCM00048831** - The SPI driver need to have "use a GPIO" as chip select feature. This IR is fixed in this release.

Files Modified: Spi.c, Spi.h.

- **CQ SDOCM00050831** - After loading the SPI sample application program (.out) through CCS, none of the program can be loaded. This IR is fixed in this release.

Files Modified: spiSample_main.c

10.2.3.2 I2C (DSP/BIOS™) Device Driver

- **CQ: SDOCM00049900** - I2C Set bit rate IOCTL commands fails. This IR is fixed in this release.

Files Modified: I2c.c

- **CQ: SDOCM00050946** - Driver hangs for I2C write to invalid slave address in Interrupt and DMA mode. This IR is fixed in this release.

Files Modified: I2c.c.

- **CQ: SDOCM00050950** – code review, the driver code should return error in case of failure. This IR is fixed in this release.

Files Modified: I2c.c.

10.2.3.3 UART (DSP/BIOS™) Device Driver

- **CQ: SDOCM00049903** - UART data transfer fails when configured as loopback in DMA mode. This IR is fixed in this release.

Files Modified: None.

- **CQ: SDOCM00050475** - UART Baud rates greater than 115200 are not supported. This IR is fixed in this release.

Files Modified: none. (Please refer to the section 6.3)

- **CQ: SDOCM00050477** - UART Multiple submit calls (transmit) results in failure in DMA mode. This IR is fixed in this release.

Files Modified: Uart_edma.c, Uart.h.

- **IR SDOCM00050835** - UART sample application fails in interrupt mode, when a file greater than 1000 bytes is given as input. This IR is fixed in this release.

Files Modified: uartSample_io.c.

- **CQ: SDOCM00052469** – OMAPL137 uart edma example Pjt file list and cmd file errors. This IR is fixed in this release.

Files Modified: uartSample_Debug.cmd, uartSample.pjt

10.2.3.4 Aic3106 Codec driver (DSP/BIOS™)

- AIC31 driver does not support more than one codec instance **CQ SDOCM00049853.**

- AIC31 driver does not support some IOCTLs **CQ SDOCM00049855.**

- The left channel of the audio output from the HP out pin is muted. **CQ SDOCM00050490.**

- Option to configure gain in the initialization parameter is not available. **CQ SDOCM00051147.**

10.2.3.5 Audio Interface driver (DSP/BIOS™)

- The audio interface driver does not implement some IOCTLs. **CQ SDOCM00049862.**

10.2.3.6 McASP (DSP/BIOS™) Device Driver

- Mcasp clock failure error handling is not implemented. **CQ SDOCM00049850.**

- Usage of hardware FIFO in Mcasp driver is not implemented **CQ SDOCM00049851.**
 - McASP peripheral count check is wrong in the driver **CQ SDOCM00051171.**
 - McASP is to be tested in master mode **CQ SDOCM00052187.**
- IOCTL command for MUTE on/off is not working. **CQ SDOCM00049904**

10.3 Release 01.20.00.04

This was the EA2 release for OMAPL137.

10.3.1 Fixed in this release

- None.

10.3.2 Known Issues

10.3.3 MISRA C (All components)

- MISRA C check was not run on the code base as we had issues in running MisraC tools on this package. Tool had issues to scan the xdc based header files and we are currently working on it).

Workaround: None.

10.3.4 Instrumentation (all components)

- Instrumentation code is not yet implemented

10.3.5 SPI (DSP/BIOS™)

- SPI EDMA mode has not been tested and there is no sample application available for spi edma mode. **CQ: SDOCM00050526**

Workaround: None.

- IOM_FLUSH packet command is not supported by IOM drivers. **CQ: SDOCM00050527.**

Workaround: None.

- Slave mode is not tested, due to absence of on-board SPI master. The plan is to test the slave mode using board to board communication in future releases. **CQ SDOCM00048829**

Workaround: None.

- SPI driver fails in interrupt mode and configured for loopback (DLB). **CQ SDOCM00049902**

Workaround: None.

- The SPI Sample application does not work when built in release profile. **CQ: SDOCM00050609**

Workaround: None

- The SPI sample application IO transfer fails after usage of IOCTL_SET_POLLEDMODETIMEOUT ioctl call for any value of timeout. **CQ: SDOCM00051115**

Workaround: None

- After loading the SPI sample application program (.out) through CCS, none of the program can be loaded. **CQ SDOCM00050831**

Workaround: None**10.3.6 I2C (DSP/BIOS™)**

- Slave mode is not tested, due to absence of on-board I2C master. The plan is to test the slave mode using board to board communication in future releases. **CQ SDOCM00048829**

Workaround: None.

- IOCTL command for setting the bit rate for data transfer fails. **CQ SDOCM00049900**

Workaround: None.**10.3.7 UART (DSP/BIOS™)**

- UART driver fails in EDMA mode and configured for loopback (DLB). **CQ SDOCM00049903**

Workaround: None.**10.3.8 McASP (DSP/BIOS™)**

- McASP FIFO support is not yet implemented and is planned for future releases. **CQ SDOCM00049851**

Workaround: None.

- SPDIF mode is not tested and planned for future release. **CQ SDOCM00050686**

Workaround: None.

- McASP clock failure error handling is not yet implemented. **CQ SDOCM00049850**

Workaround: None.

- IOCTL command for MUTE on/off is not working yet. This is being analyzed. **CQ SDOCM00049904**

Workaround: None**10.3.9 Audio Interface driver (DSP/BIOS™)**

IOCTLs for the following are not yet implemented.

- Configuring the receive channel sample rate for a given Audio configuration
- Configuring the transmit channel sample rate for a given Audio configuration

10.3.10 Aic3106 Codec driver (DSP/BIOS™)

IOCTLs for the following are not yet implemented.

- Select the input Audio mode Line-In or Mic-In.
- Select the output Audio mode Line-Out or Speaker-Out

- Increase or Decrease the input volume

10.4 Release 01.20.00.03

- This was the EA1 release for OMAPL137 that contained the rCSLs and their examples. This contained the fixes for following IRs
 - SDOCM00048718
 - SDOCM00048737

10.5 Release 01.20.00.02

- This was the EA1 release for OMAPL137 that contained the rCSLs and their examples. This was the initial release