Datasheet

BIOSPSP C6747 Datasheet

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1 Introduction

This PSP package consists of peripheral device drivers for the C6747 device. The drivers enable rapid software development on the C6747 platform. This document provides the performance data for each of the drivers on DSP/BIOS™.

2 BIOSPSP Drivers - Features

- Supported Devices
  - C6747
- Developed and tested on C6747 EVM
- Tools used to build DSP/BIOS™ PSP drivers
  - DSP/BIOS Version 5.41.02.14
  - Code composer studio 3.3.80.11 (Service Release 10)
  - CG tools 6.1.9
- EDMA3 LLD version used – 01.11.00.02
- Drivers supported on DSP/BIOS™:
  - I2C
  - SPI
  - UART
  - PSC
  - GPIO
  - McASP
  - Audio Interface
  - Aic3106 codec
  - LCD Raster
  - LCD LIDD
  - MMCSD
  - NAND
  - Block Media

3 Performance data for BIOSPSP drivers

The performance data for the drivers is captured into following sections

- Features supported/not supported
- Memory usage

  The following statistics are taken from drivers built in release mode.

  - Program memory
  - Data memory (Initialized and Un-Initialized memory)
- Resource usage
  - The OS and system resources consumed by each instance of the driver in different modes are listed.
  - OS resources include usage of semaphores
  - System resources include usage of EDMA3 resources (channels, PaRAMs), interrupts and timers
- I/O throughput and corresponding CPU loading numbers are captured for I2C, SPI, UART, McASP, LCDC Raster, MMC/SD and NAND driver.

3.1 I2C Driver

3.1.1 Features supported

- Multi-instantiable and re-entrant driver
- Each instance can operate as a receiver and/or transmitter
- Supports Polled, Interrupt and DMA Interrupt Mode of operation
- Supports slave mode in Interrupt and DMA mode of operation.

3.1.2 Features not supported

None

3.1.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
I2C	13120	188	1648	14956
I2c Edma	2112	64	0	2176
Total	**15232**	252	1648	**17132**

3.1.4 Resource usage

3.1.4.1 Polled mode

SEMAPHORES	DESCRIPTION
1	For synchronization of submit API

3.1.4.2 Interrupt mode

SEMAPHORES	DESCRIPTION
None	NA

INTERRUPTS	DESCRIPTION
1	For Transmit and receive channels

3.1.4.3 DMA mode

SEMAPHORES	DESCRIPTION
None	NA

EDMA3 CHANNELS	DESCRIPTION
1	For Transmit Channel

1	For Receive Channel

EDMA3 PARAMS	DESCRIPTION
1	For Transmit Channel
1	For Receive Channel

3.1.5 I/O Throughput and CPU Loading

CPU load and thorough put are calculated between start of I/O operation and end of I/O operation at application level.

The following are setup details for measuring the throughput in different modes

Slave device: EEPROM CAT24W256

No of bytes transferred: 66 bytes (Including slave address and address in EEPROM)

3.1.5.1 I/O Write Performance

The following graphs represent throughput numbers and CPU loads at different bus frequencies

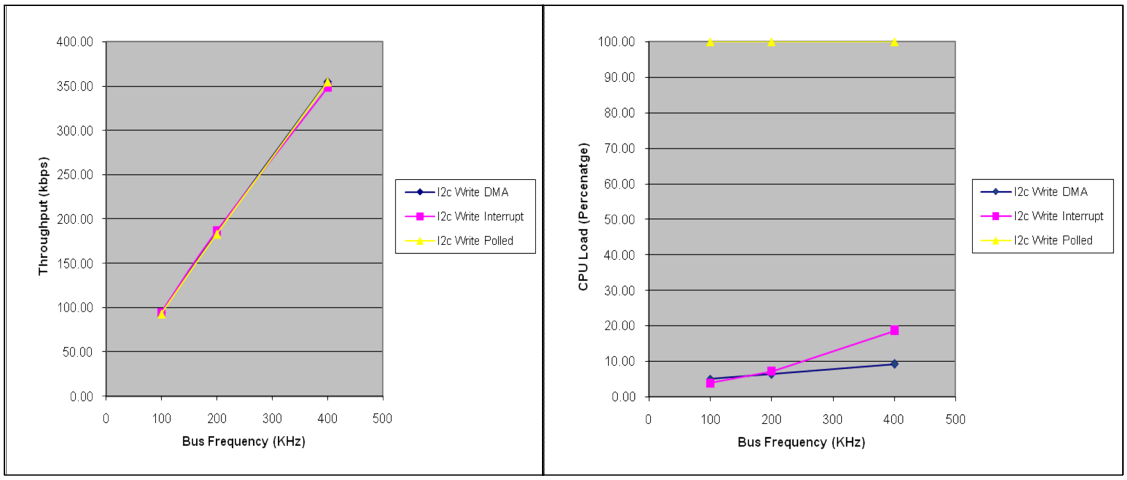

Fig: I2C write performance

DMA MODE

Bus Frequency (in KHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
100	6.18	94.25	4.99
200	3.15	184.79	6.41
400	1.64	355.11	9.21

Interrupt mode:

Bus Frequency (KHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
100	6.15	94.71	3.93
200	3.12	186.37	7.25
400	1.67	348.21	18.63

Polled mode:

Bus Frequency (KHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
100	6.26	93.02	100.00
200	3.18	183.09	100.00
400	1.64	354.75	100.00

3.1.5.2 I/O Read Performance

The following graphs represent throughput numbers and CPU loads at different bus frequencies

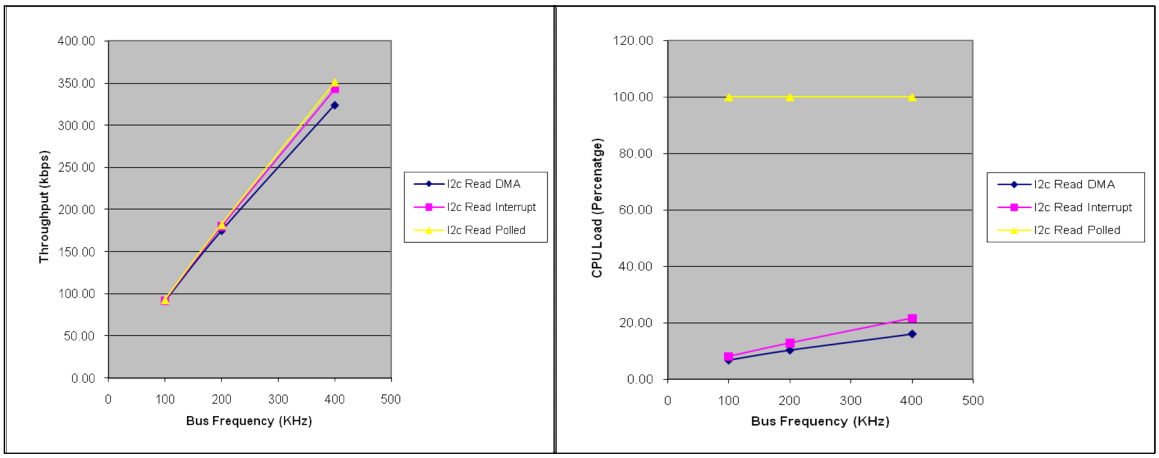

Fig: I2C read performance

DMA mode:

Bus Frequency (KHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
100	6.36	91.49	6.83
200	3.33	174.73	10.32
400	1.80	324.07	15.99

Interrupt mode:

Bus Frequency (KHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
100	6.31	92.26	8.15
200	3.23	180.01	12.85
400	1.70	342.77	21.58

Polled mode:

Bus Frequency (KHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
100	6.27	92.76	100.00
200	3.20	182.04	100.00
400	1.66	350.90	100.00

3.2 SPI Driver

3.2.1 Features supported

- Multi-instantiable and re-entrant driver
- Each instance can operate as an receiver and or transmitter
- Supports Polled, Interrupt and DMA Interrupt Mode of operation
- Supports slave mode in Polled, Interrupt and DMA mode of operation.

3.2.2 Features not supported

- NA

3.2.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
Spi	14016	290	1370	15676
Spi Edma	3520	247	0	3767
Total	17536	537	1370	19443

3.2.4 Resource usage

3.2.4.1 Polled mode

SEMAPHORES	DESCRIPTION
1	For synchronization of submit API

3.2.4.2 Interrupt mode

SEMAPHORES	DESCRIPTION
None	NA

INTERRUPTS	DESCRIPTION
1	For Transmit and receive channel

3.2.4.3 DMA mode

SEMAPHORES	DESCRIPTION
None	NA

EDMA3 CHANNELS	DESCRIPTION
1	For Transmit Channel

1	For Receive Channel

EDMA3 PARAMS	DESCRIPTION
1	For Transmit Channel
1	For Receive Channel

3.2.5 I/O Throughput and CPU Loading

CPU load and thorough put are calculated between start of I/O operation and end of I/O operation at application level.

The following are setup details for measuring the throughput in different modes

Slave device: SPI Flash (W25X32)

No of bytes transferred: 256 bytes

3.2.5.1 I/O Write Performance

The following graphs represent throughput numbers and CPU loads at different bus frequencies

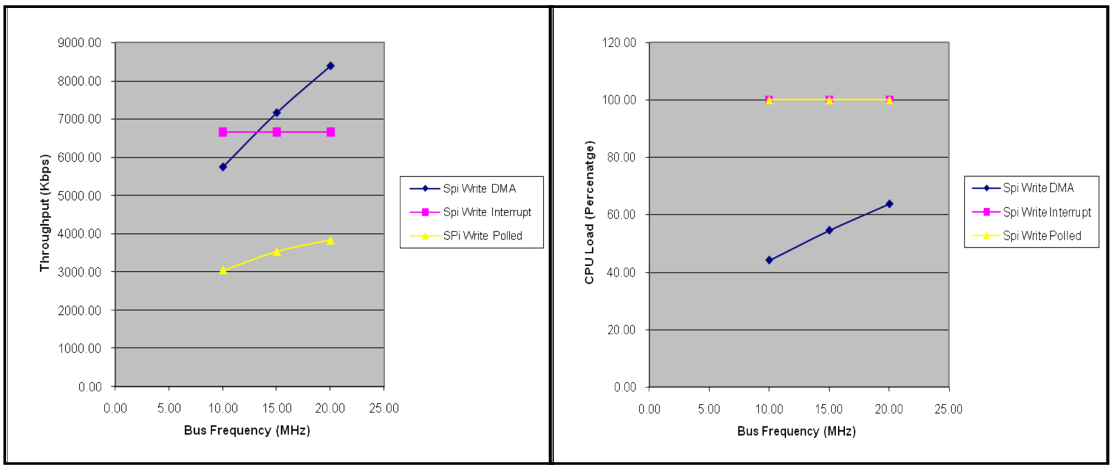

Fig: Write performance

DMA mode:

Bus Frequency (MHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
10.00	0.35	5752.64	44.19
15.00	0.28	7168.46	54.60
20.00	0.24	8391.61	63.78

Interrupt mode:

Bus Frequency (MHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
10.00	0.30	6666.67	100.00
15.00	0.30	6666.67	100.00
20.00	0.30	6659.27	100.00

Polled mode:

Bus Frequency (in MHz)	Time Taken in milli-sec	Throughput (Kbps)	CPU LOAD(%)
10.00	0.66	3047.23	100.00
15.00	0.57	3535.65	100.00
20.00	0.52	3836.32	100.00

3.2.5.2 I/O Read Performance

The following graphs represent throughput numbers and CPU loads at different bus frequencies

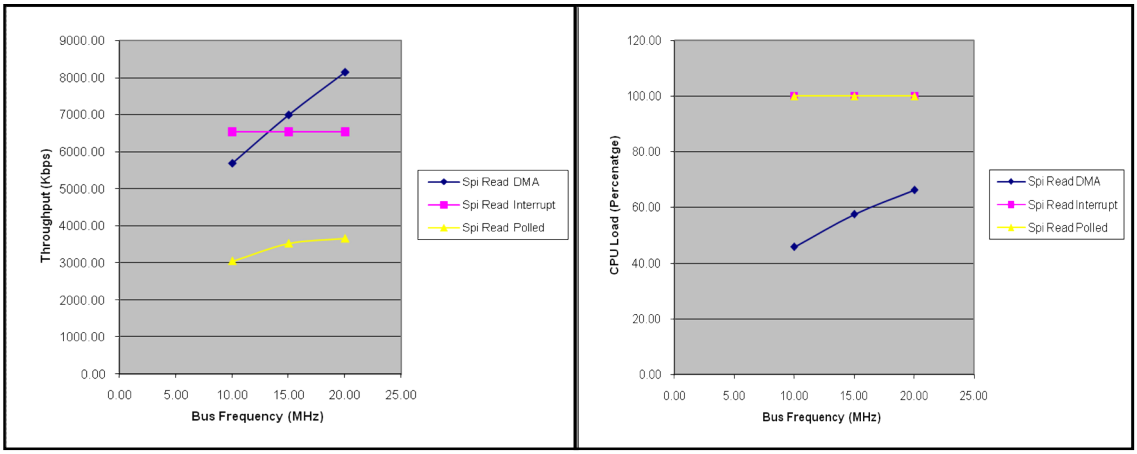

Fig: Read performance

DMA mode:

Bus Frequency (MHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
10.00	0.35	5692.60	45.88
15.00	0.29	6993.01	57.64
20.00	0.25	8141.11	66.38

Interrupt mode:

Bus Frequency (MHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
10.00	0.31	6543.08	100.00
15.00	0.31	6543.08	100.00
20.00	0.31	6535.95	100.00

Polled mode:

Bus Frequency (MHz)	Time Taken (milli-sec)	Throughput (Kbps)	CPU LOAD (%)
10.00	0.66	3050.33	100.00
15.00	0.57	3523.19	100.00
20.00	0.55	3656.31	100.00

3.3 UART Driver

3.3.1 Features supported

- Multi-instance support and re-entrant driver
- Each instance supports a transmit channel and a receive channel
- Supports Polled, Interrupt and DMA Interrupt Mode of operation

3.3.2 Features not supported

- 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).

3.3.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
UART	11136	176	992	12308
UART EDMA	1504	64	0	1568
Total	12640	244	992	13876

3.3.4 Resource usage

3.3.4.1 Polled mode

SEMAPHORES	DESCRIPTION
1	For synchronization of submit API

3.3.4.2 Interrupt mode

SEMAPHORES	DESCRIPTION
None	NA

INTERRUPTS	DESCRIPTION
1	For Transmit and receive channels

3.3.4.3 DMA mode

SEMAPHORES	DESCRIPTION
None	NA

EDMA3 CHANNELS	DESCRIPTION
1	For Transmit Channel
1	For Receive Channel

EDMA3 PARAMS	DESCRIPTION
1	For Transmit Channel
1	For Receive Channel

3.3.5 I/O Throughput and CPU Loading

CPU load and thorough put are calculated between start of I/O operation and end of I/O operation at application level.

The following are setup details for measuring the throughput in different modes

No of bytes transferred: 1024, 8192 and 51200 bytes

Baud rate: 115200

3.3.5.1 I/O Write Performance

The following graphs represent throughput numbers and CPU loads at different bus frequencies

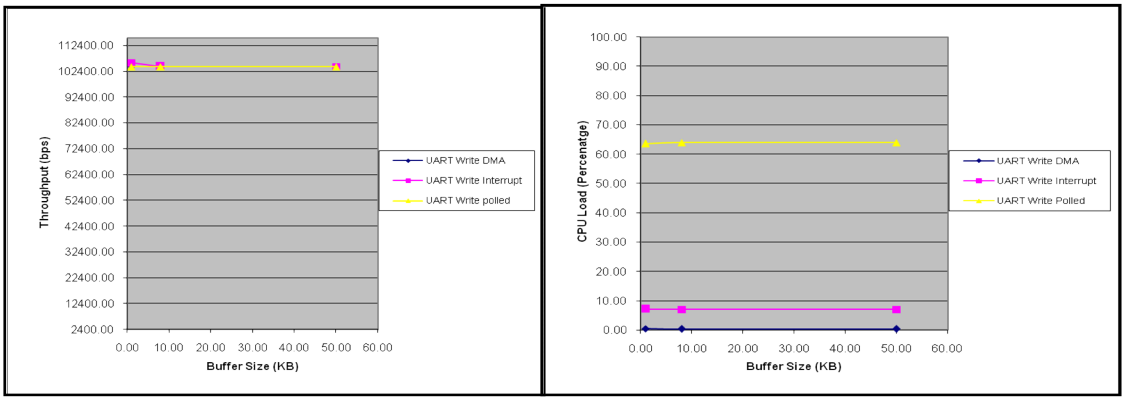

Fig: Write performance

DMA mode:

Buffer Size (KB)	Time Taken (milli-sec)	Throughput (bps)	CPU LOAD (%)
1.00	88.37	104292.33	0.39
8.00	707.69	104181.55	0.30
50.00	4423.61	104168.24	0.32

Interrupt mode:

Buffer Size (KB)	Time Taken (milli-sec)	Throughput (bps)	CPU LOAD (%)
1.00	87.20	105688.88	7.05
8.00	707.00	104282.84	7.00
50.00	4425.83	104115.99	7.00

Polled mode:

Buffer Size (KB)	Time Taken (milli-sec)	Throughput (bps)	CPU LOAD (%)
1.00	88.55	104075.62	63.60
8.00	708.36	104082.62	63.95
50.00	4427.25	104082.59	64.00

3.4 BLOCKMEDIA Driver

3.4.1 Features supported

- Provides both Sync access for File system as well as for Raw/Sector level access (for e.g. USB MSC Class).
- Provides interfaces for Mass Storage Class devices like USB, NAND and MMC/SD.
- Provides support for big block sector sizes.
- Supports cache alignment on unaligned buffers from application.
- Provides Write Protect support and Removable media support.

3.4.2 Features not supported

None

3.4.3 Memory usage

- **RAW**

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
blkmedia	12128	285	1562028	1572105
Total	12128	285	1562028	1572105

- **FileSystem**

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
blkmedia	12128	285	1562028	1574441
Total	12128	285	1562028	1574441

3.4.4 Resource usage

3.4.4.1 Polled mode

SEMAPHORES	DESCRIPTION
NA	NA

3.4.4.2 Interrupt mode

SEMAPHORES	DESCRIPTION

NA	NA

3.4.4.3 DMA mode

SEMAPHORES	DESCRIPTION
16	Assuming MMC, NAND,USB0 & USB1 are attached to BlockMedia EDMA memcopy for I/O (Filesystem) is Enabled. EDMA memcopy for I/O (Sector level) is Enabled.

3.4.5 Brief usage of Semaphores:

1. Semaphore-1: For BlockMedia Event i.e. for attaching of device.
2. Semaphore-1: For BlockMedia Mount i.e. Mounting drives on File system.
3. Semaphores-12: For each BlockMedia device Semaphores-3, each for Sector I/O, File system I/O & IOCTLs invocation.
4. Semaphores-2: Each For BlockMedia EDMA memcopy for File system I/O and async (Sector Level I/O).

EDMA3 CHANNELS	DESCRIPTION
1	For file system access
1	For RAW access

EDMA3 PARAMS	DESCRIPTION
1	For file system access
1	For RAW access

3.4.6 I/O Throughput and CPU Loading for MMCSD using Block media

CPU load and thorough put are calculated between start of I/O operation and end of I/O operation at application level.

The following are setup details for measuring the throughput in different modes

No of bytes transferred: 10485760 bytes (10 MB)

Card Size: 2 GB SD.

Card Make: Elite Pro.

3.4.6.1 I/O Write Performance

The following graphs represent throughput numbers and CPU loads at different buffer sizes.

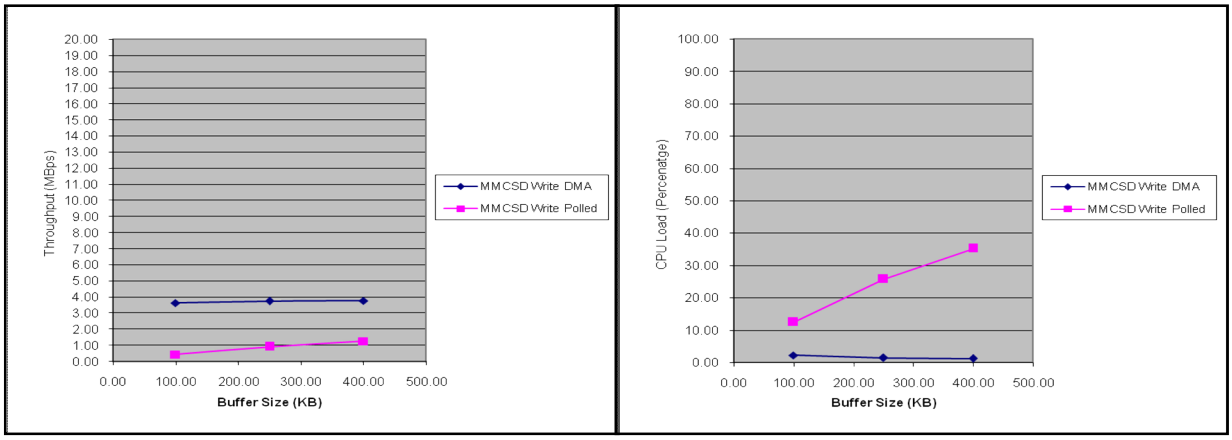

Fig: Write performance

DMA mode:

Buffer Size (KB)	Time Taken (seconds)	Throughput (MBps)	CPU LOAD (%)
100.00	2.76	3.63	2.24
250.00	2.67	3.74	1.37
400.00	2.66	3.76	1.15

Polled mode:

Buffer Size (KB)	Time Taken (seconds)	Throughput (MBps)	CPU LOAD (%)
100.00	23.32	0.43	12.49
250.00	10.95	0.91	25.78
400.00	7.94	1.26	35.24

3.4.6.2 I/O Read Performance

The following graphs represent throughput numbers and CPU loads at different buffer sizes.

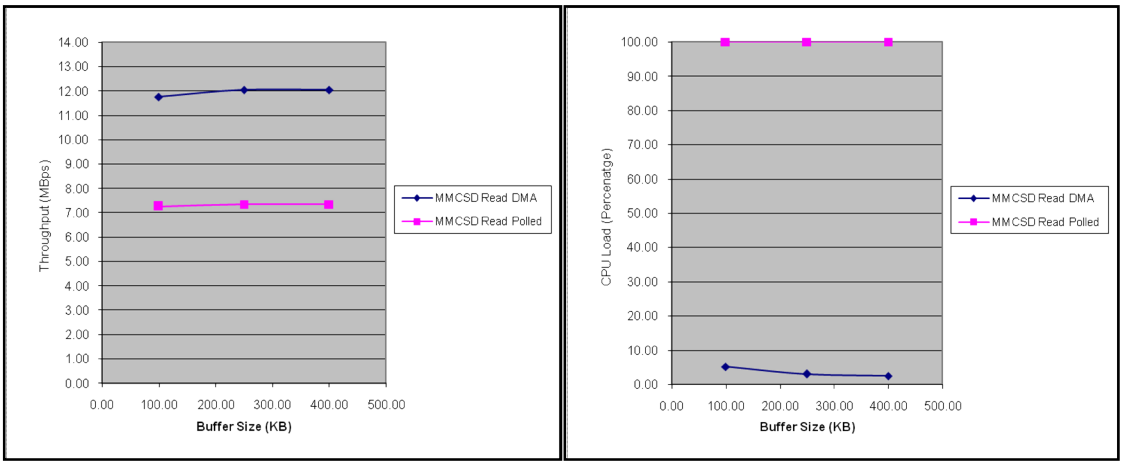

Fig: Read performance

DMA mode:

Buffer Size (KB)	Time Taken (seconds)	Throughput (MBps)	CPU LOAD (%)
100.00	0.85	11.76	5.20
250.00	0.83	12.05	2.98
400.00	0.83	12.05	2.42

Polled mode:

Buffer Size (KB)	Time Taken (seconds)	Throughput (MBps)	CPU LOAD (%)
100.00	1.38	7.26	100.00
250.00	1.36	7.35	100.00
400.00	1.36	7.35	100.00

3.4.7 I/O Throughput and CPU Loading for NAND using Block media

The following are setup details for measuring the throughput in different modes

No of bytes transferred: 5242880 bytes (5 MB)

Size Of NAND: 512 MB.

3.4.7.1 I/O Write Performance

The following graphs represent throughput numbers and CPU loads at different buffer sizes.

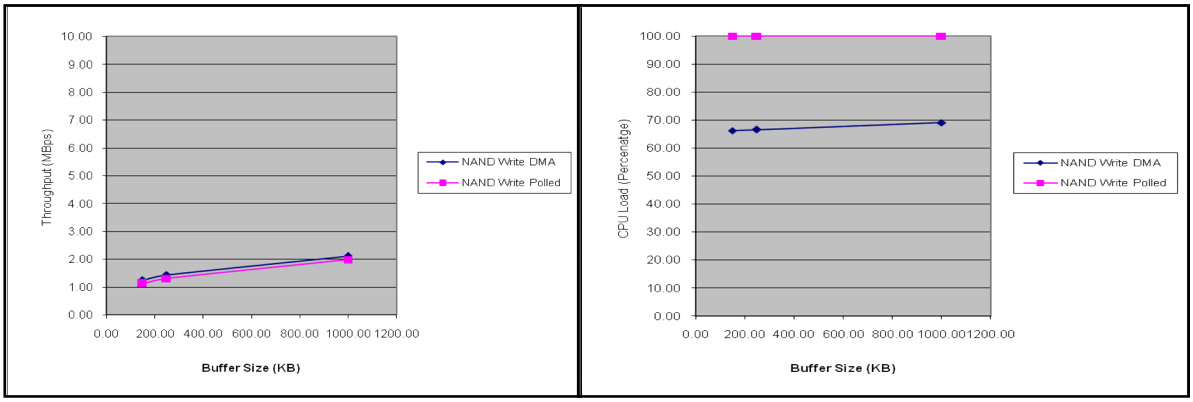

Fig: Write performance

DMA mode:

Buffer Size (KB)	Time Taken (seconds)	Throughput (MBps)	CPU LOAD (%)
150.00	4.01	1.25	66.18
250.00	3.46	1.45	66.54
1000.00	2.37	2.11	69.13

Polled mode:

Buffer Size (KB)	Time Taken (seconds)	Throughput (MBps)	CPU LOAD (%)
150.00	4.46	1.12	100.00
250.00	3.82	1.31	100.00
1000.00	2.52	1.99	100.00

3.4.7.2 I/O Read Performance

The following graphs represent throughput numbers and CPU loads at different buffer sizes.

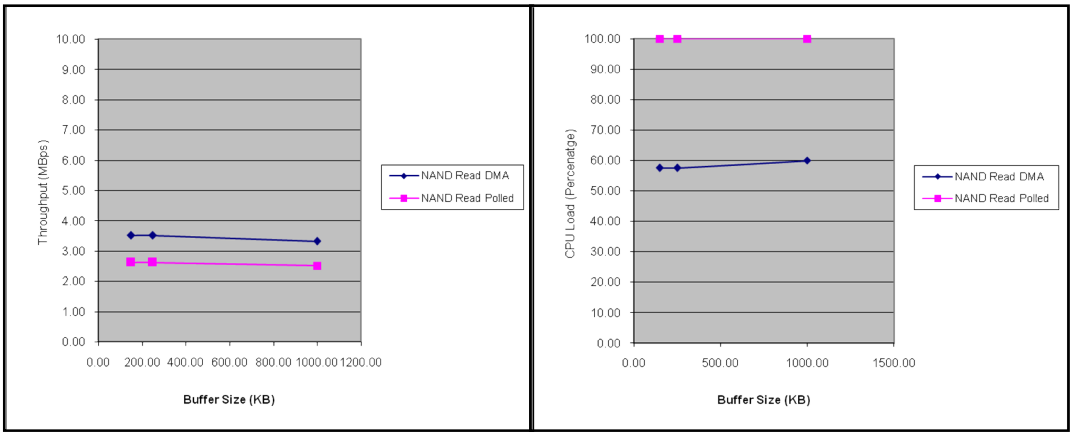

Fig: Read performance

DMA mode:

Buffer Size (KB)	Time Taken (seconds)	Throughput (MBps)	CPU LOAD (%)
150.00	1.42	3.51	57.55
250.00	1.42	3.51	57.56
1000.00	1.50	3.33	59.97

Polled mode:

Buffer Size (KB)	Time Taken (seconds)	Throughput (MBps)	CPU LOAD (%)
150.00	1.90	2.63	100.00
250.00	1.90	2.63	100.00
1000.00	1.99	2.51	100.00

3.5 GPIO

3.5.1 Features supported

- Setting GPIO pin directions
- Marking pins or banks as available for use
- Enabling and Disabling of bank interrupts
- Registering interrupt handlers for a pin or bank interrupt
- Getting or setting a group of pins to a value

3.5.2 Features not supported

None

3.5.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
Gpio	3904	1118	2546	7568
Total	3904	1118	2546	7568

3.5.4 Resource usage

3.5.4.1 Semaphores

SEMAPHORES	DESCRIPTION
NA	NA

3.5.4.2 EDMA resources

EDMA3 CHANNELS	DESCRIPTION
NA	NA

EDMA3 PARAMS	DESCRIPTION
NA	NA

3.6 LCDC LIDD Driver

3.6.1 Features supported

- Multi-instance able, asynchronous and re-entrant driver.
- Each instance operates as a LIDD controller instance of the LCDC.
- Supports only character LCD type.

3.6.2 Features not supported

- The LCDC controller has two modes of operation. One is the Raster mode and the other is the LIDD mode. However, only one mode can be operation can be chosen at a time. Following this constraint, the drivers for these two modes have been separated out and the each mode has a different driver/module, namely Raster and Lidd. Only one driver should be used at a time.

3.6.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
Lidd	6048	96	240	6384
Total	6048	96	240	6384

3.6.4 Resource usage

3.6.4.1 Polled mode

SEMAPHORES	DESCRIPTION
NA	NA

3.6.4.2 Interrupt mode

SEMAPHORES	DESCRIPTION
NA	NA

3.6.4.3 DMA mode

SEMAPHORES	DESCRIPTION
None	NA

EDMA3 CHANNELS	DESCRIPTION
None	None

3.7 LCDC RASTER Driver

3.7.1 Features supported

- Supports QVGA display.
- Supports enabling and disabling of raster.
- Supports display at various bits per pixel configurations – 1, 2, 4, 8, 12 and 16bpp.
- Supports channel creation and deletion through SIO create and delete APIs and queueing and dequeing of buffers through SIO issue and reclaim APIs.
- Supports ioctls to retrieve the raster and sub panel configuration.
- Supports ioctls for setting the sub panel and DMA configurations(frame buffer mode, burst size and end of frame interrupt).
- Supports adding and clearing events and event stats.

3.7.2 Features not supported

- The LCDC controller has two modes of operation. One is the Raster mode and the other is the LIDD mode. However, only one mode can be operation can be chosen at a time. Following this constraint, the drivers for these two modes have been separated out and the each mode has a different driver/module, namely Raster and Lidd. Only one driver should be used at a time.

3.7.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
Raster	12640	481	328	13449
Total	12640	481	328	13449

3.7.4 Resource usage

3.7.4.1 Polled mode

SEMAPHORES	DESCRIPTION
NA	NA

3.7.4.2 Interrupt mode

SEMAPHORES	DESCRIPTION
NA	NA

3.7.4.3 DMA mode

SEMAPHORES	DESCRIPTION
None	NA

EDMA3 CHANNELS	DESCRIPTION
None	NA

EDMA3 PARAMS	DESCRIPTION
None	NA

3.7.5 I/O CPU Loading

CPU load and thorough put are calculated between start of I/O operation and end of I/O operation at application level.

The following are setup details for measuring the performance in lcdcraster driver.

Frame per second: 60

Mode: 16 bpp

CPU load: 39.58%

3.8 McASP Driver

3.8.1 Features supported

- Multi-instance support and re-entrant driver
- Each instance can operate as a receiver and/or transmitter
- Supports multiple data formats
- Can be configured to operate in multi-slot TDM, I2S, DSP and DIT (S/PDIF) modes
- Mechanism to transmit desired data (such as NULL tone) when idle
- Explicit control of PIN directions for High Clock, Bit Clock and Frame Sync PINS.
- FIFO support for both TX and RX sections.

3.8.2 Features not supported

- Sample rate change IOCTL is not supported in master mode.

3.8.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
Mcasp	17984	332	3748	22064
Mcasp Edma	5408	124	0	5532
Mcasp ioctl	7424	116	0	7540
Total	**30816**	572	3748	**35136**

3.8.4 Resource usage

3.8.4.1 DMA mode

SEMAPHORES	DESCRIPTION
0	NA

INTERRUPTS	DESCRIPTION
1	For transmit and receive combined.

EDMA3 CHANNELS	DESCRIPTION
1	Per channel

EDMA3 PARAMS	DESCRIPTION
2	Per channel

3.8.5 I/O Throughput and CPU Loading

CPU load and thorough put are calculated between start of I/O operation and end of I/O operation at application level at different number of samples with below mentioned configurations.

The following are setup details for measuring the performance in different number of samples.

Codec device: AIC3106

Sample Rate: 48 KHz

Word Length: 32 bit

Mode of MCASP: DSP

3.8.5.1 I/O Read-Write Performance

The following graphs represent latency period and CPU loads at different sample size.

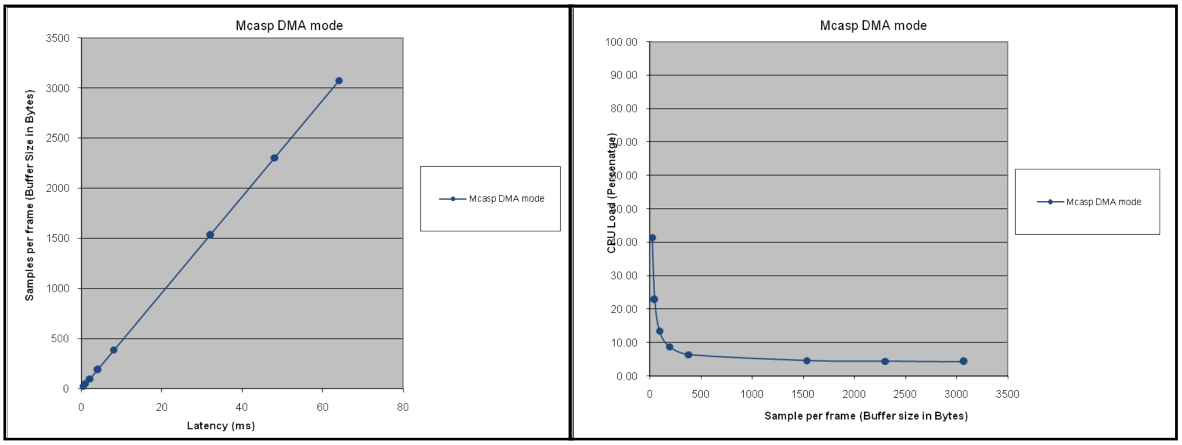

Fig: Read-Write performance

The following graph represent latency period at different sample size.

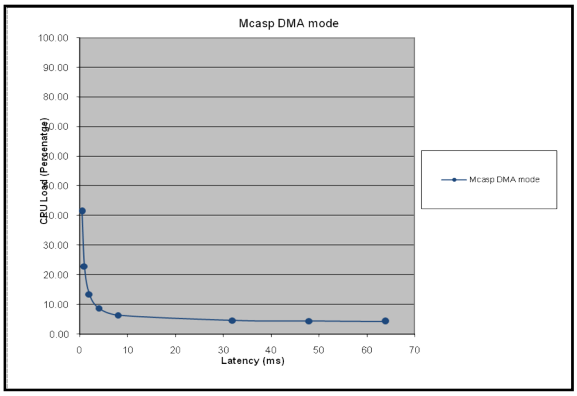

Fig: Sample size v/s Latency

DMA mode:

Latency (ms)	Sample Size	CPU Load (%)
0.5	24	45.61
1	48	25.02
2	96	14.27
4	192	9.02
8	384	6.27
32	1536	4.23
48	2304	4.01
64	3072	3.90

3.9 Audio Interface Driver

3.9.1 Features supported

- Multi-instance support and re-entrant driver.
- Each instance can be used to configure a complete receive and transmit section of an audio configuration consisting of an audio device and multiple audio codecs.

3.9.2 Features not supported

None

3.9.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
Audio	2688	89	364	3141
Total	2688	89	364	3141

3.9.4 Resource usage

None

3.10 Aic3106 codec Driver

3.10.1 Features supported

- Multi-instance support and re-entrant driver.
- Each instance can operate as a receiver and or transmitter.
- Interfaces to control the codec specific features like sample rate etc.

3.10.2 Features not supported

None

3.10.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
Aic31	8864	93	428	9385
Total	8864	93	428	9385

3.10.4 Resource usage

SEMAPHORES	DESCRIPTION
1	For Both TX and RX channels combined.

3.11 MMCSD Driver

3.11.1 Features supported

- Re-entrant safe driver
- Provides Async IO mechanism
- Configurable to operate in Polled and DMA mode
- Supports hot removal and insertion of MMC/SD card
- Supports variety of SD and MMC cards

3.11.2 Features not supported

None

3.11.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
dda_mmcsdBios	3168	220	40	3428
dda_mmcsdCfg	0	14	8	22
ddc_mmcsd	32288	134	1225	33647
llc_mmcsd	2816	0	0	2816
Total	38272	368	1273	39913

3.11.4 Resource usage

3.11.4.1 Polled mode

SEMAPHORES	DESCRIPTION
3	Blkmedia callback, driver alignment and sync operations.

3.11.4.2 Interrupt mode

SEMAPHORES	DESCRIPTION
NA	NA

3.11.4.3 DMA mode

SEMAPHORES	DESCRIPTION
3	Blkmedia callback, driver alignment and sync operations.

EDMA3 CHANNELS	DESCRIPTION
1	For Transmit Channel
1	For Receive Channel

EDMA3 PARAMS	DESCRIPTION
1	For Transmit Channel
1	For Receive Channel

3.12 NAND Driver

3.12.1 Features supported

- Supports 512-byte page and 2048-byte page NAND devices.
- Supports 8-bit and 16-bit NAND devices
- Error correction using 4-bit ECC mechanism
- Supports wear-leveling and bad-block management functionalities
- Supports protecting a portion of the NAND flash from application access

3.12.2 Features not supported

None

3.12.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
dda_nandBios	2240	47	28	2315
ddc_nandFtl	7616	0	20288	27904
ddc_nand	1024	36	32	1092
llc_nand	9344	331	400	10075
Total	20224	414	20748	41386

3.12.4 Resource usage

3.12.4.1 Polled mode

SEMAPHORES	DESCRIPTION
1	For exclusive locking of IO APIs, erase IOCTL, driver registration, and completion callback to blkmedia driver.

3.12.4.2 Interrupt mode

SEMAPHORES	DESCRIPTION
NA	NA

3.12.4.3 DMA mode

SEMAPHORES	DESCRIPTION
2	For exclusive locking of IO APIs, erase IOCTL, driver registration, completion callback to blkmedia driver and edma syncronisation

EDMA3 CHANNELS	DESCRIPTION
1	For Transmit and receive Channel

EDMA3 PARAMS	DESCRIPTION
1	For Transmit and receive Channels

3.13 PSC

3.13.1 Features supported

- Simple module level functions.
- Standalone module (driver).

3.13.2 Features not supported

- PSC does NOT support instances.
- PSC does not implement IOM interface.

3.13.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
Psc	832	0	256	1088
Total	832	0	256	1088

3.13.4 Resource usage

NA

3.14 EvmInit

3.14.1 Features supported

- Evm specific initializations for the required modules.

3.14.2 Features not supported

- Initializations specific only to those instances used by the sample application are supported.

3.14.3 Memory usage

Component	Memory Statistics (Bytes)			
	Program Memory	Data Memory		Total
		Initialized	Un-Initialized	
audio_evmInit	224	0	44	268
common_evmInit	32	0	0	32
gpio_evmInit	64	0	0	64
i2c_evmInit	64	0	0	64
lcdlidd_evmInit	512	6	44	562
lcdraster_evmInit	512	6	44	562
mcaspDit_evmInit	96	0	0	96
mmcsd_evmInit	992	6	44	1042
mmcsd_startup	384	0	0	384
nand_evmInit	800	6	44	850
nand_startup	384	0	0	384
spi_evmInit	64	0	0	64
uart_evmInit	64	0	0	64
Total	4192	24	220	4436

3.14.4 Resource usage

NA