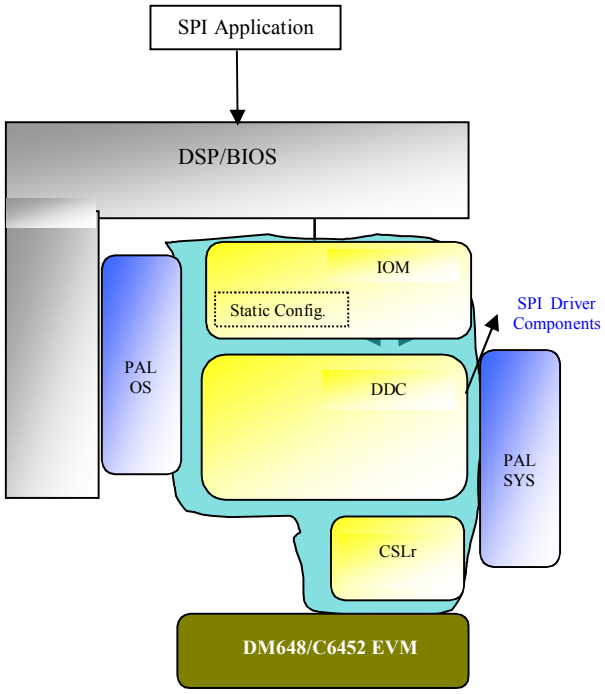
- Multi-instantiable and re-entrant safe driver
- Provides Synch mode of operation.
- Programmed serial bit of stream between 2 to 16 bit.
- Can be configured in Three and Four pin mode of operation.
- Data transfer rate can be programmed for different value.



PRODUCT PREVIEW

Capabilities

The SPI BIOS device driver adopts a scalable architecture that eases customization/extension

- Isolates H/W and OS Accesses, Easy to maintain & re-target to new platforms
- Supports Multiple Instances

The driver is constituted of following sub components:

- SPI DDA –OS Specific Adaptation of SPI Device Driver
- SPI DDC – OS Independent part of SPI Driver Core. This also includes CSLR.
- System components – PALOS: BIOS Abstraction

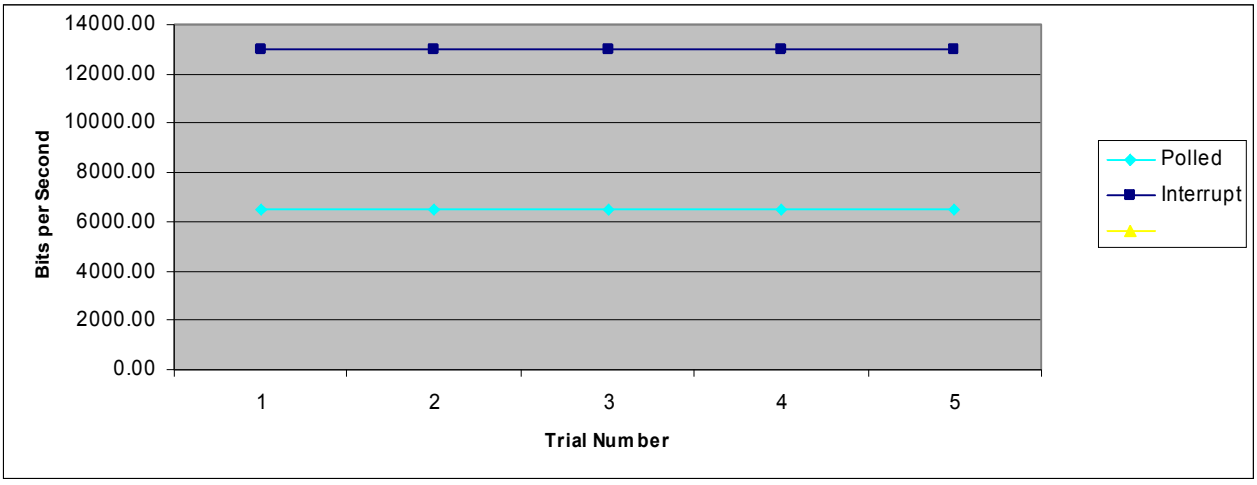
The following table gives a quick overview of the supported API services. For help on interfaces refer to the SPI Driver Help File:

GIO_create	Creates the communication channel (Tx/Rx) for the data transfer by setting up SPI channel parameters. It calls PSP_spiCreate () driver core function to achieve this.
GIO_Delete	Delete the channel object and freeing up channel resources. It calls PSP_spiDelete () driver core function to achieve this.
GIO_Submit	Submit IO request packet to the SPI driver. The submit command may be read/write/flush/abort. It calls PSP_spiSubmit () for input/output command or PSP_spiAbort () for abort/flush command.
GIO_control	This is used to perform input output control (IOCTL) on the SPI driver on the fly. It calls PSP_spiIoctl () to achieve this.

Driver Performance Characteristics

SPI DEVICE DRIVER SUB-COMPONENT	PROGRAM MEMORY (IN BYTES)	DATA MEMORY (IN BYTES)		
		MEMORY TYPE		TOTAL
		INITIALIZED	UN INITIALIZED	
<SPI/IOM>	1632	128	104	1864
<SPI/DDC>	7584	268	296	8148
Total	**9216**	**396**	**400**	**10012**

- System Components Total Memory (Code & Data):
  Code = **9056** Bytes.
  Data = **792** Bytes.
  Total = **9848** Bytes



Test Setup Information	Trial No.	Polled			Interrupt		
		Bits/Sec	Bytes Transferred	Duration	Bits/Sec	Bytes Transferred	Duration
	1	6506.67	48800	60	13014.40	97608	60
	2	6506.67	48800	60	13014.40	97608	60
API Interface : GIO_Submit	3	6506.67	48800	60	13013.33	97600	60
	4	6506.67	48800	60	13013.33	97600	60
	5	6506.67	48800	60	13014.40	97608	60
Comments:							
SPI connected with ATMEL64025256A EEPROM							
SPI Bus Clock Rate : 3 Mhz							

Driver Profiling Characteristics

PRODUCT PREVIEW

Polled Mode								
API Profiled	**Trial-1**	**Trial-2**	**Trial-3**	**Trial-4**	**Trial-5**	**Average (usec)**	**Maximum (usec)**	**Minimum (usec)**
DEV_createDevice	2.00	2.00	2.00	3.00	2.00	2.20	3.00	2.00
GIO_create	7.00	8.00	7.00	7.00	8.00	7.40	8.00	7.00
GIO_write	11.00	12.00	11.00	12.00	12.00	11.60	12.00	11.00
GIO_read	13.00	12.00	11.00	12.00	12.00	12.00	13.00	11.00
GIO_delete	12.00	12.00	12.00	11.00	12.00	11.80	12.00	11.00
DEV_deleteDevice	5.00	3.00	5.00	6.00	5.00	4.80	6.00	3.00
Interrupt Mode								
API Profiled	**Trial-1**	**Trial-2**	**Trial-3**	**Trial-4**	**Trial-5**	**Average (usec)**	**Maximum (usec)**	**Minimum (usec)**
DEV_createDevice	3.00	3.00	2.00	3.00	4.00	3.00	4.00	2.00
GIO_create	7.00	8.00	7.00	8.00	8.00	7.60	8.00	7.00
GIO_write	12.00	12.00	11.00	9.00	9.00	10.60	12.00	9.00
GIO_read	12.00	12.00	9.00	12.00	9.00	10.80	12.00	9.00
GIO_delete	12.00	15.00	9.00	12.00	12.00	12.00	15.00	9.00
DEV_deleteDevice	5.00	2.00	2.00	5.00	5.00	3.80	5.00	2.00

1 sec	26984800	ticks
1 tick	3.70579E-05	usecs

PSP_PSP_SPI_IOCTL_SET_LOOPBACK_IOCTL_ENABLE_DLB Was used to profile IOCTL

References

[1] SPI Functional Specifications

[2] BIOS Documentation from TI

[3] SPI Device Driver Documentation

Glossary

IOM	TI Terminology, Input / Output mini Driver.
DDC	TI Terminology, Device Driver Core that is OS independent
HAL	Hardware Abstraction Layer

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