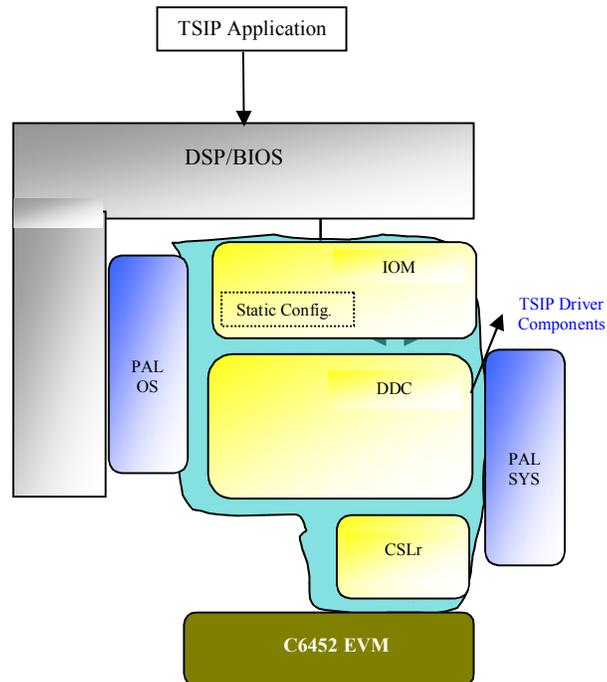




- Multi-instantiable and re-entrant safe driver
- Provides Asynchronous mode of operation.
- Programmable timeslot bitmap selection for A and B super-frame contexts.
- Data rate support of 8.192 Mbps for 2 links, 16.384 Mbps for 1 link.



PRODUCT PREVIEW



Capabilities

The TSIP 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 And Multiple DMATCU channels within the instance.

The driver is constituted of following sub components:

- TSIP IOM – OS Specific (DSP/BIOS) Adaptation of TSIP Device Driver
- TSIP DDC – OS Independent part of TSIP Driver Core. This also includes HAL and CSLr.
- System components – BIOS: BIOS Abstraction.

The following table gives a quick overview of the supported IOM API services. These APIs can be invoked in two ways by using GIO or SIO. For help on interfaces refer to the TSIP Driver Help File:

tsip_mdBindDev	Initialize the TSIP device or port. It calls PSP_tsipCreate core function to do this. This function will be called from BIOS context to install and initialize TSIP driver for the given instance.
tsip_mdUnBindDev	Un-initialize the TSIP device or port. It calls PSP_tsipDelete core function to do this.
tsip_mdCreateChan	Creates the communication channel (Tx/Rx) for the data transfer by setting up TSIP DMATCU channel parameters. It calls PSP_tsipCreate () driver core function to achieve this.
tsip_mdDeleteChan	Delete the channel object and freeing up channel resources. It calls PSP_tsipDelete () driver core function to achieve this.
tsip_mdSubmitChan	Submit IO request packet to the TSIP driver. The submit command may be read/write/flush/abort. It calls PSP_tsipSubmit () for input/output command or PSP_tsipAbort () for abort/flush command.
tsip_mdControlChan	This is used to perform input output control (IOCTL) on the TSIP driver on the fly. It calls PSP_tsipIoctl () to achieve this.

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Driver Performance Characteristics

TSIP DEVICE DRIVER SUB-COMPONENT	PROGRAM MEMORY (IN BYTES)	DATA MEMORY (IN BYTES)		
		MEMORY TYPE		TOTAL
		INITIALIZED	UN INITIALIZED	
<TSIP/IOM>	1312	208	184	392
<TSIP/DDC>	16640	7968	7744	15712
<b>Total</b>	<b>16246</b>	<b>8176</b>	<b>7928</b>	<b>16104</b>

- System Components Total Memory (Code & Data): **32350** Bytes

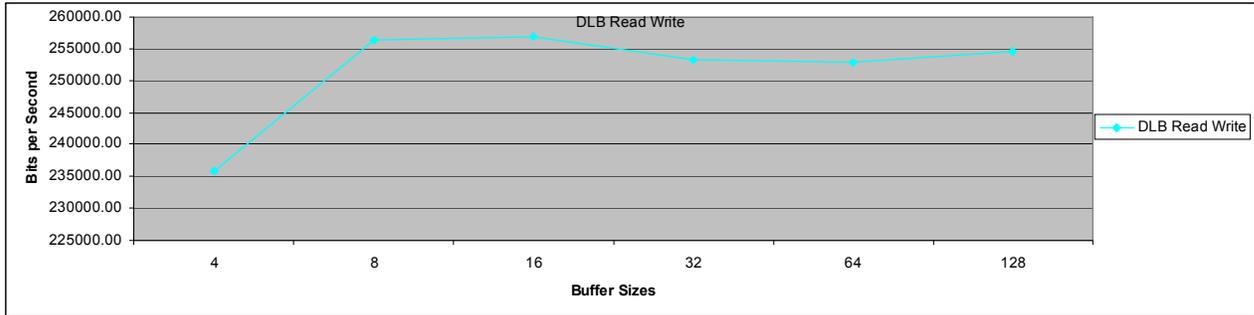
Driver Profiling Characteristics

API Profiled	Trial-1	Trial-2	Trial-3	Trial-4	Trial-5	Average (usec)	Maximum (usec)	Minimum (usec)
DEV_createDevice	13.00	12.00	15.00	12.00	14.00	13.20	15.00	12.00
DEV_deleteDevice	90.00	90.00	90.00	87.00	89.00	89.20	90.00	87.00
GIO_Create	75.00	87.00	75.00	82.00	76.00	79.00	87.00	75.00
GIO_Delete	15.00	13.00	13.00	14.00	13.00	13.60	15.00	13.00
GIO_Submit - Write	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
GIO_Submit- Read	7.00	4.00	7.00	4.00	6.00	5.60	7.00	4.00

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Driver Performance Characteristics



Test Setup Information	Buffer Size (Bytes)	DLB Read Write		
		Bits/Sec	Pkts	Duration
	4	235866.13	442249	60
	8	256305.07	240286	60
<b>API Interface</b>	16	256829.87	120389	60
	32	253307.73	59369	60
	64	252791.47	29624	60
	128	254668.80	14922	60

<b>Comments:</b>
Framesync - 8Khz
4bytes per frame
Expected data rate 256KHz

References

- [1] TSIP Functional Specifications
- [2] BIOS Documentation from TI
- [3] TSIP 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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