- **Provides Synch mode of operation**
- **Operates in Polled Mode and DMA mode.**
- **Support for Big Block and Small Block NAND.**
- **Support for 1 bit ECC for error correction.**
- **Supports Wear-Leveling and Bad Block management.**
- **Support for protected region functionality.**
- **Modeled after TI Device Driver Architecture for Stream Class Devices that allows for easy porting and customization**
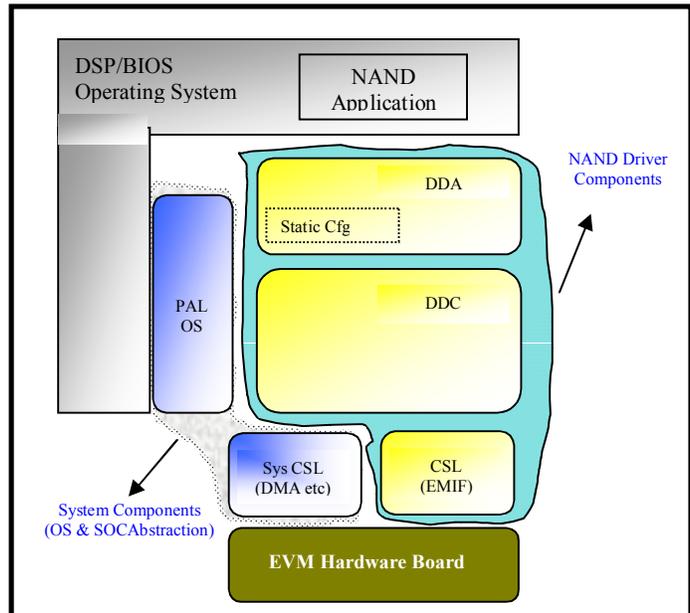
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Description

Details about the tools and the BIOS version that the driver is compatible with can be found in the system Release Notes.

Capabilities

The NAND DSP/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

- Can stack custom-functions along control/data-path to realize "driver filters"

- Supports polled as well as DMA mode.

- Supports 1 bit ECC.

For easy and quick reconfiguration of driver, all its statically configurable parameters have been isolated into a single file nand/dda/dda_nandCfg.c

The driver is constituted of following sub components:

- NAND DDA – Application facing, OS Specific Adaptation of NAND Device Driver

- NAND DDC – OS Independent part of NAND Driver Core

- NAND LLC – The low-level NAND h/w abstraction module

- System components – PALOS: DSP/BIOS Abstraction

The following table gives a quick overview of the supported API services.

PSP_nandInit()	Create (and initialize) a given NAND driver (instance)
PSP_nandTerminate()	Delete a given NAND driver (instance)
PSP_nandOpen()	Open Instance of the NAND device
PSP_nandClose()	Close Instance of the NAND device
PSP_nandReadSync()	Read data from NAND Instance
PSP_nandWriteSync()	Write data to NAND Instance
PSP_nandIoctl()	Ioctl interface.
PSP_nandErase()	Erases the NAND device
PSP_nandAddDevice ()	Set NAND configuration parameters for a new device ID.

PRODUCT PREVIEW

TEXAS
INSTRUMENTS

Driver Performance Characteristics

NAND DEVICE DRIVER SUB-COMPONENT	PROGRAM MEMORY (IN BYTES)	DATA MEMORY (IN BYTES)		
		MEMORY TYPE		TOTAL
		INITIALIZED	UN INITIALIZED	
<nand/dda>	5848	775	16896	23519
<nand/ddc>	26496	60	0	26556
<nand/llc>	2284	407	8	2699
Total	34628	1242	16904	52774

- System Components Total Memory (Code & Data): 52774 Bytes
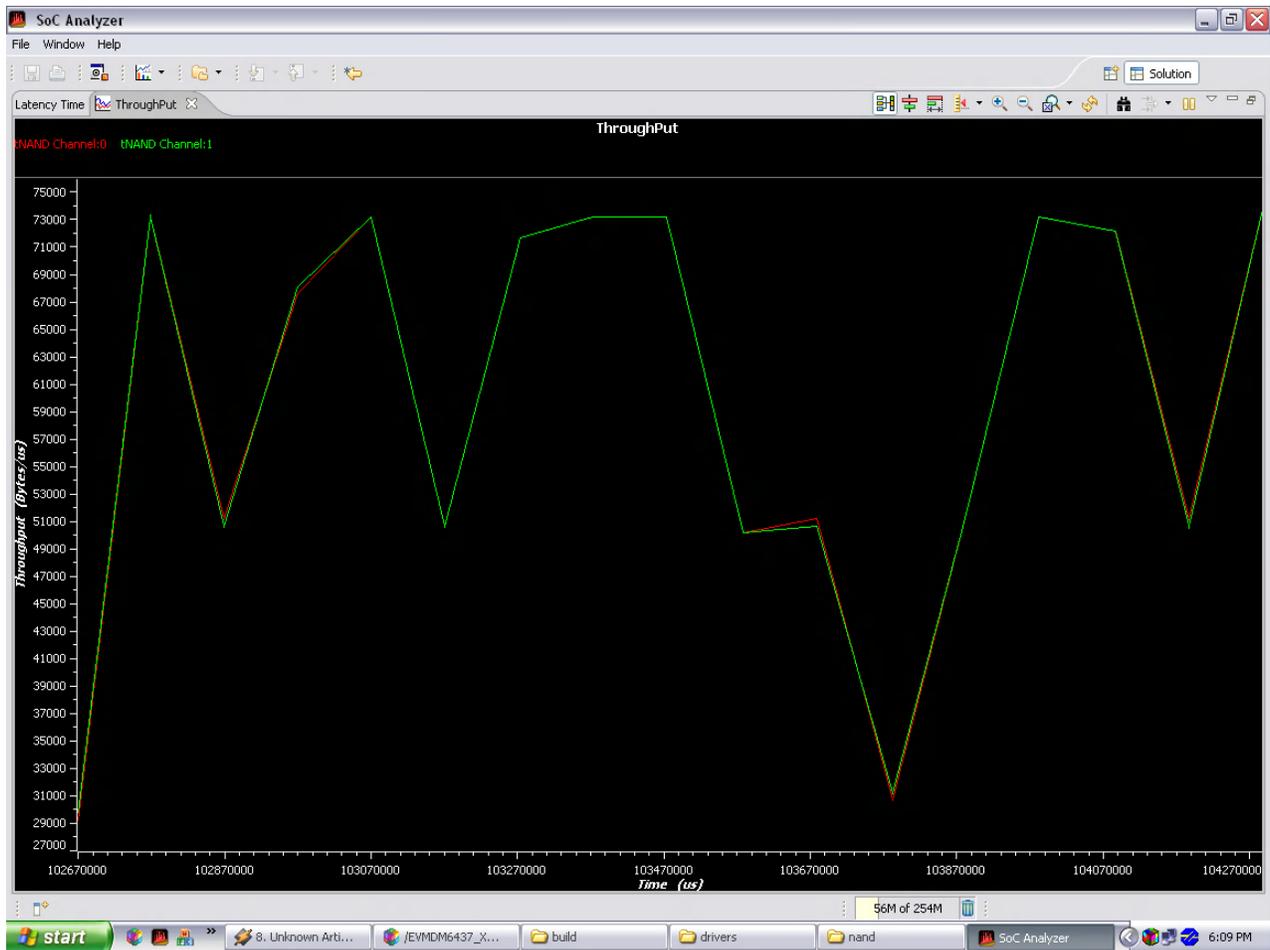
- Throughput of NAND driver in DMA mode

Note: The Driver Performance Characteristics can be included once testing is done on DM6437/C6424 SoC. For generating performance figures of NAND driver in other modes please refer the top-level user guide for usage of SoC Analyzer.

References

[1] NAND Module Hardware Specifications

[2] NAND Device Driver Documentation

Glossary

LLC	TI Terminology, Low Level Controller
DDA	TI Terminology, Device Driver Adapter to OS
DDC	TI Terminology, Device Driver Core that is OS independent

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