



Advanced Memory

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**Datasheet: SD Memory Card Controller
AM2705EN**

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ADVANCED MEMORY TECHNOLOGY CO., LTD.

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1. Foreword

This document has been produced by Advanced Memory Technology Co., Ltd., should the company modifies the contents of this specification, it will be re-released with an identifying change of release date and an increase in revision number as follows:

Revision mn.xy, where:

- mn the first two digit are incremented for major changes of substance, e.g., functional changes.
- xy the second two digits are incremented when minor changes have been incorporated into the specification, i.e., enhancements, corrections, updates, etc.

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2. Statement of Scope

This data book describes the main features and the applications of SD Memory Card Controller AM2705EN. For more details, please contact service.asolid@asolid-tek.com directly.

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3. General Description

AM2705EN is the SD controller launched by Advanced Memory Technology Co., Ltd., which utilizes UMC process technology. AM2705EN is featured with higher performance and lower power consumption, and supports SD1.01, SD1.10, SD2.02, SD3.01, SD4.1, SD5.1, SD6.0 and SD6.1. The product is built in with single channel high speed flash interface with advanced error correction code (ECC), and supports all kinds of 2D and 3D NAND type flash including QLC and TLC.

3.1. Feature

- Compatible with SD Card standard specification v1.01/v1.1/v2.02/v3.01/v4.1/v5.1/v6.0/v6.1.
 - Supports SPI mode.
 - Supports Bus Speed Mode: Default Speed mode, High Speed mode, SDR12, SDR25, SDR50, SDR104 and DDR50.
 - Copyright Protection Mechanism-Complies with highest security of SDMI standard.
 - Supports standard capacity SD memory card ($\leq 2\text{GB}$).
 - Supports SDHC capacity (4GB to 32GB).
 - Supports SDXC capacity (32GB to 2TB).
 - Supports SD command class 0, 2, 4, 5, 6, 7, 8 and 10.
 - Supports password protection and built-in write protection features.
 - Supports CMD queue function
 - Supports Cache function.
 - Supports Function Extension.
 - Supports LVS(Low Voltage Signaling interface)
 - Supports A1,A2(Application performance class)
- SD card interface with programmable output drive capability
- Flash interface Support:
 - Supports one flash chip selection and 8-bit flash IO access
 - Supports both 1.2V and 1.8V flash IO voltage for SD card
 - Supports both 2.5V and 3.3V flash core voltage for SD card
- Flash memory support:
 - Supports ECC function to correct up to equivalent 16x-bits data errors per 1K bytes data automatically
 - Supports 2D and 3D TLC and QLC NAND type flash
 - Supports flash with 8KB/16KB page architecture



- Supports four-plane 16KB-page/eight-plane 8KB-page operation
- Supports Toggle Mode flash
- Supports ONFI3.0/ONFI2.3/ONFI2.2/ONFI2.1/ONFI2.0 flash
- Low power consumption
- Enhanced ESD design
- Non-Direct remap architecture
- Manufacturing utility ready

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3.2. AM2705EN Function Block Diagram

The following diagram is the internal block diagram of AM2705EN.

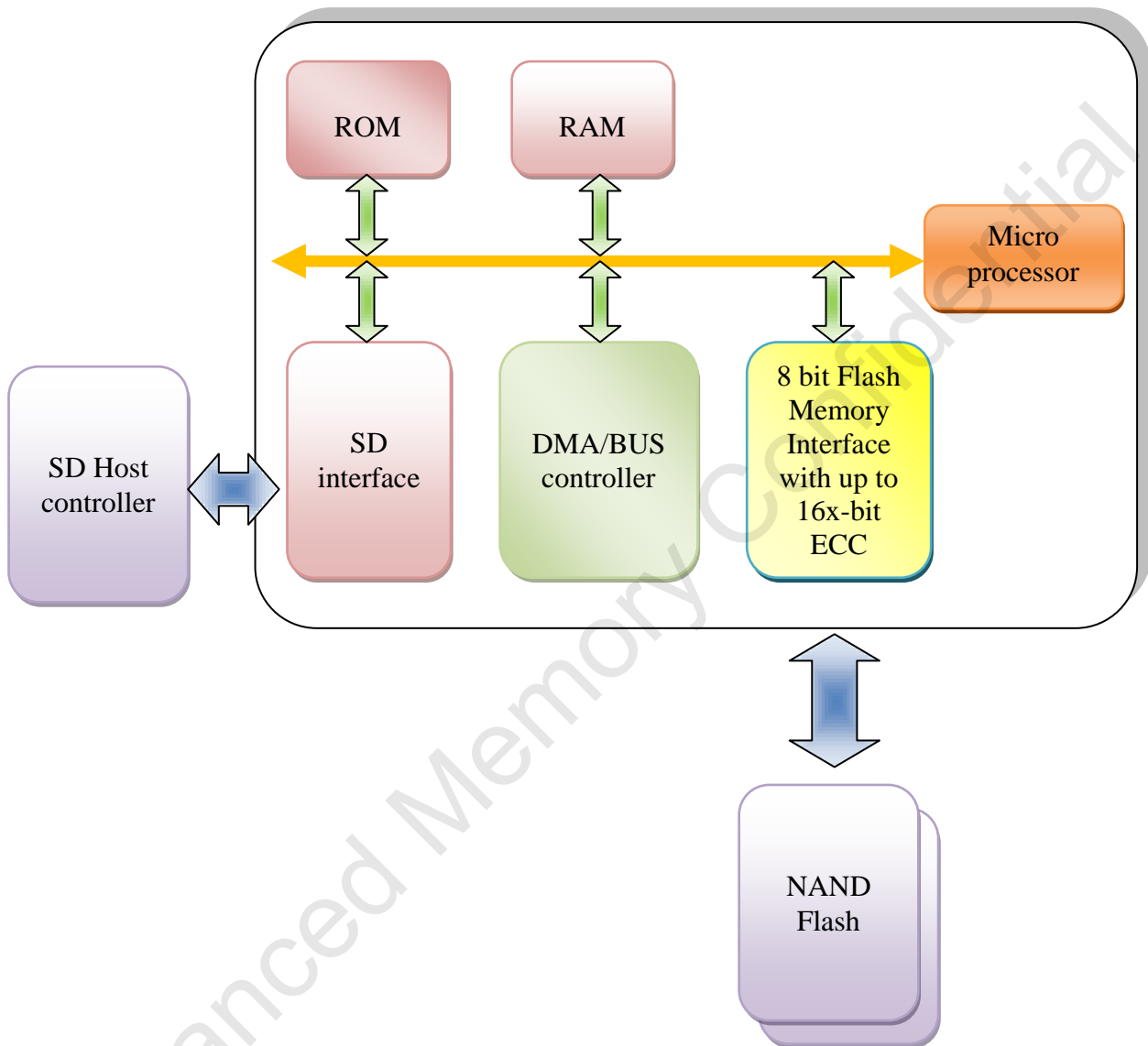


Figure 3-2-1 AM2705EN Function Block Diagram