PCM16C00 vs PCM16C02: A Functional Comparison

National Semiconductor
Application Note 981
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Purpose:
The purpose of this application note is to provide the necessary functional differentiation between the PCM16C00 and the PCM16C02 to enable customers to select the part that best suits the needs of their applications.

FEATURE OVERVIEW

Common Features

- Compliant with multi-function extension to PCMCIA's PC Card Standard
- PC Card Standard configuration registers
- Address decoding and control for 2 I/O functions
- Serial EEPROM interface compatible with MICROWIRE™ EEPROM protocol
- On-Chip RAM for attribute memory
- Logic to support concurrent interrupt control for any two interrupt-capable I/O functions on a PC Card
- Power management and clock control
- Logic for Common Memory Access
- ISA-compatible interface to card functions

Key Device Differences

Refer to PCM16C00 and PCM16C02 block diagrams *Figures 1* and *2* respectively.

	PCM16C00	PCM16C02
PACKAGE	144-Lead TQFP	100-Lead TQFP
ATTRIBUTE SRAM	Size: 2k bytes Stores all 2k bytes of EEPROM	Size: 1k bytes Stores 1k bytes of EEPROM
ADDITIONAL EXTERNAL ATTRIBUTE MEMORY SUPPORT LOGIC	Yes, thru EARD pin. Memory size up to 64k bytes total (internal and external) is supported	No. Attribute memory is limited to 1k bytes of internal RAM.
BUS ARBITRATION	Programmable card-side bus arbitration	No card-side arbitration
EEPROM INTERFACE	16k bit (Read/Write) 4k bit (Read Only) 8- or 16-bit organization	16k bit (Read/Write) 16-bit organization
LAN INTERFACE	Support Logic for NSC DP83902A Ethernet LAN or Generic ISA LAN	NO Support Logic for NSC DP83902A Ethernet LAN. Supports Generic ISA LAN
I/O ADDRESS SPACE	64k byte (16 address lines decoded)	8k byte (13 address lines decoded)
UNIQUE FEATURES	4-bit direction-programmable generic digital port	NAND Flash (NM29N16) support logic for Function 0
*****DMA***	No DMA	Single Channel DMA support logic for function 1 compliant to PC Card Standard
BUFFERS	Buffer 16 bits of Data and 16 bits of Latched Address	Buffer 16 bits of Data

**DMA Mode has not been verified in an application environment. For Technical Support, see References, Note 3.

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PCM16C00 Block Diagram

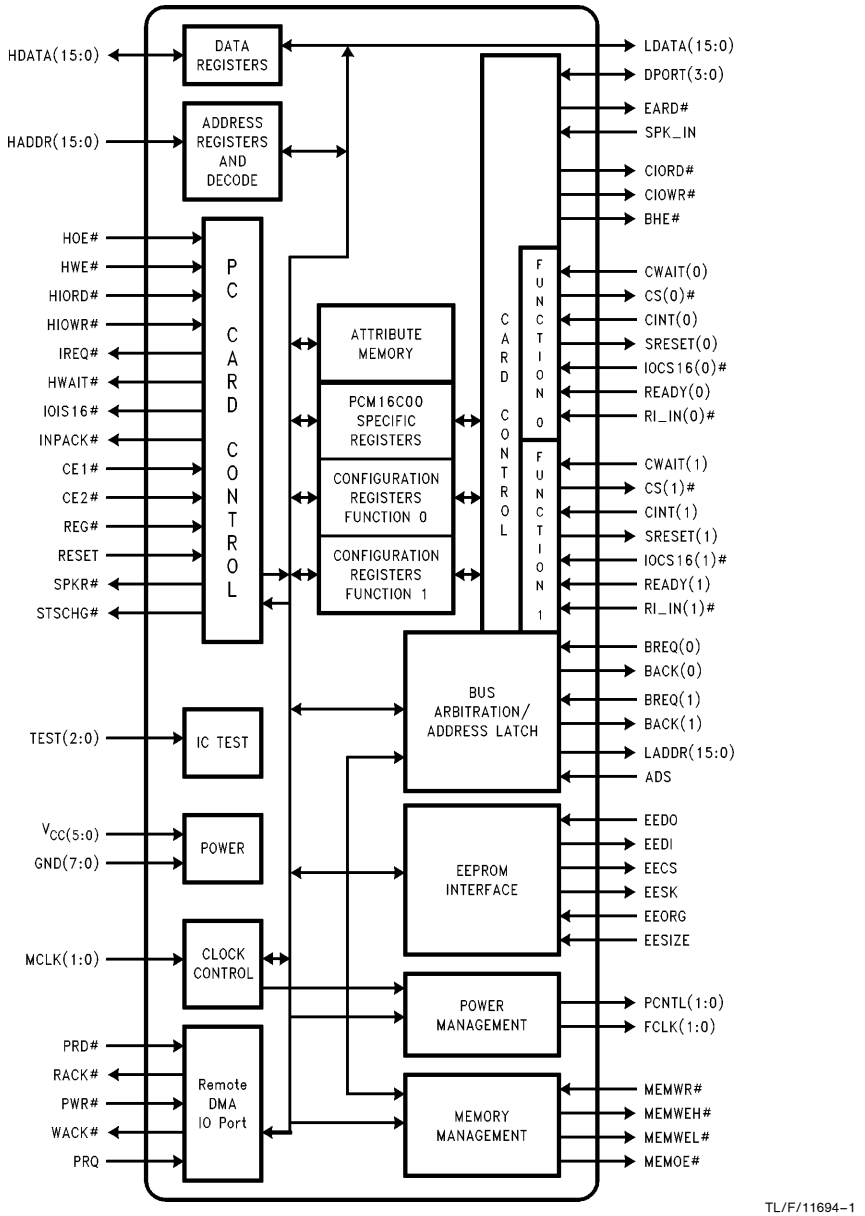
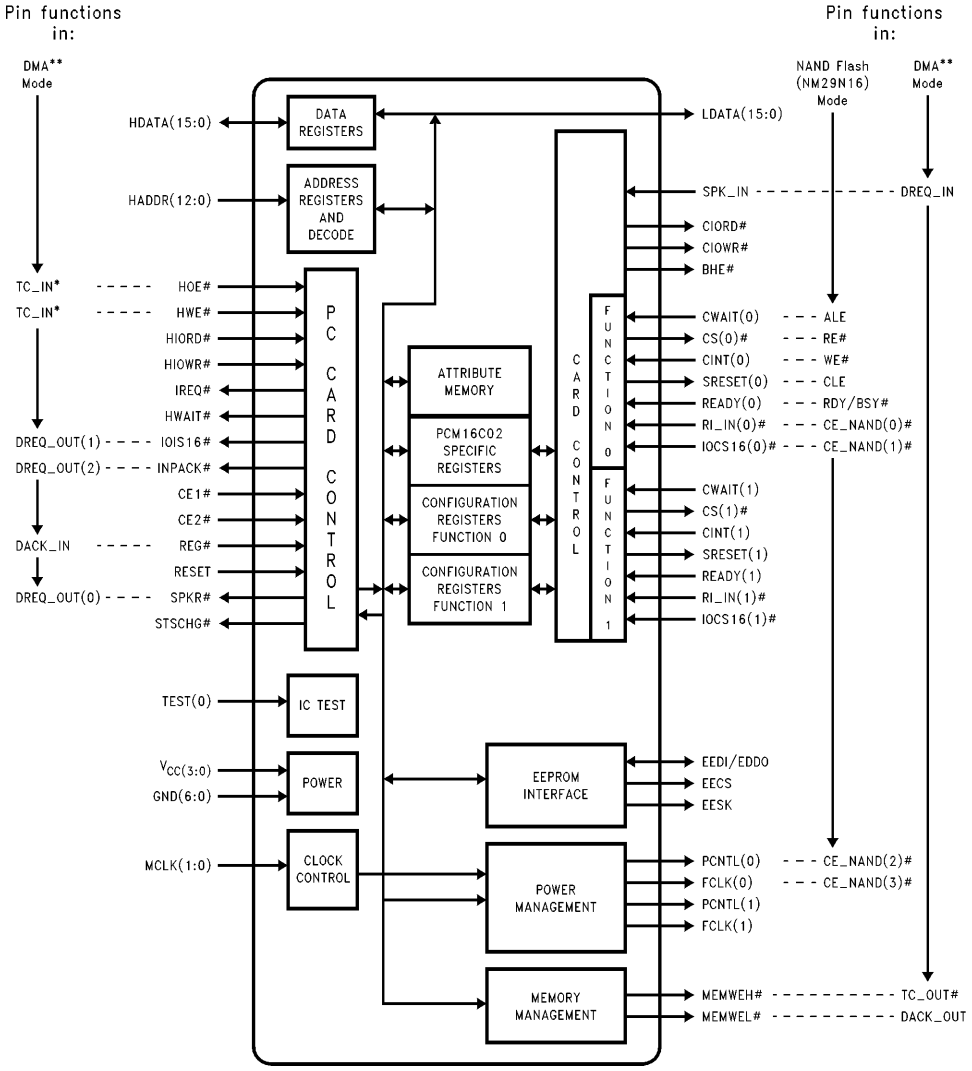


FIGURE 1

PCM16C02 Block Diagram



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Note: TC__IN is HOE# for DMA Writes and HWE# for DMA Reads.

FIGURE 2

**DMA Mode has not been verified in an application environment. For Technical Support, see References, Note 3.

REFERENCES

1. National Semiconductor PCM16C00 and PCM16C02 datasheets
2. National Semiconductor Memory Databook
3. Contact Mike Gilbert at Customer Applications Support for current status of DMA functionality.

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