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MM-5428CN

2GB 64-bit/66MHz
Low Profile
PCI NVRAM Card

FEATURES

Capacity: 256MB, 512MB, 1GB and 2GB

64-bit/66MHz PCI 2.2 Interface

Transfer Rate: Up to 533 MB/s

Mailbox DMA for maximizing read and write transfers

Error Detection and Correction

Supports interrupts

Multiple software drivers available

Low Profile PCI card form factor

Device Drivers are available for several operating systems



The MM-5428CN is a low profile PCI card with a 64-bit/66MHz PCI interface and 256MB to 2GB of NVRAM.

Micro Memory is the leading supplier of open bus architecture memory boards and has had a core focus on solid state, NVRAM products since its inception over twenty-five years ago.

This focus has involved supplying solid state NVRAM products to satisfy demanding and diverse requirements, from the performance criteria of enterprise networks, to the high availability needed in communications, to the environmental specifications required in space and defense applications.

PRODUCT CHARACTERISTICS

The MM-5428CN is a low profile, long version, PCI card with a 64-bit/66MHz PCI interface and 256MB to 2GB of NVRAM.

Data Retention

Redundant, rechargeable Lithium Ion batteries are on-board to provide data retention in the event of a power loss. Status LED lights are software programmable and battery status registers in the CSR can be enabled to monitor battery voltages. The battery circuitry have been refined over twenty-five years of product development to ensure the utmost in data retention and availability.

Controller

Micro Memory started development on its first PCI memory controller in 1994, and released one of the first 64-bit, FPGA based PCI interfaces in 1996.

The MM-5428CN controller has a rev. 2.2 compliant PCI interface and operates in both 64-bit and 32-bit PCI modes and is capable of burst mode accesses at the full bus bandwidth at 66MHz. The peak transfer rate is 533 MB/s and the sustained transfer rate is 480 MB/s.

In addition to handling data management, the controller corrects single bit errors and provides double bit detection.

Mailbox DMA

The DMA has been optimized for multi-threaded operating systems and cluster implementations. Instead of just generating an interrupt after a transfer, the DMA writes a semaphore to the host in host memory when the transfer is complete so the host does not have to pole the status of the DMA.

Memory Array

The array utilizes low power consumption SDRAM to provide 256MB, 512MB, 1GB or 2GB of memory and to maximize data retention time.

SPECIFICATIONS

Parameter	Specification															
Capacity	256MB, 512MB, 1GB, 2GB															
Data Integrity	Error detection and correction for all single-bit errors and detection for double-bit errors.															
Compatibility	PCI Local Bus Specifications 2.2															
Burst Mode Transfer Rate	Up to 533 MB/s (not including refresh)															
Bus Mastering	DMA Initiator and Target capabilities															
Refresh	Refresh cycles are 75nsec every 7.8 μ sec.															
Batteries	2 Redundant batteries, Lithium Ion Rechargeable 1.95A each															
Batteries Shelf Life	5 years @ 25° C															
Data Retention	<table border="1"> <thead> <tr> <th>Size</th> <th>Typical</th> <th>Worst Case</th> </tr> </thead> <tbody> <tr> <td>256M</td> <td>300 hrs.</td> <td>250 hrs.</td> </tr> <tr> <td>512M</td> <td>175 hrs.</td> <td>145 hrs.</td> </tr> <tr> <td>1G</td> <td>94 hrs.</td> <td>75 hrs.</td> </tr> <tr> <td>2G</td> <td>73 hrs.</td> <td>56 hrs.</td> </tr> </tbody> </table>	Size	Typical	Worst Case	256M	300 hrs.	250 hrs.	512M	175 hrs.	145 hrs.	1G	94 hrs.	75 hrs.	2G	73 hrs.	56 hrs.
Size	Typical	Worst Case														
256M	300 hrs.	250 hrs.														
512M	175 hrs.	145 hrs.														
1G	94 hrs.	75 hrs.														
2G	73 hrs.	56 hrs.														
Operating Temperature	0° to +55° C															
Storage Temperature	-40° to +85° C															
Relative Humidity	Up to 95% without condensation															
Power Requirements	<table border="1"> <thead> <tr> <th></th> <th>Standby</th> <th>Operate(max)</th> </tr> </thead> <tbody> <tr> <td>5.0 V Supply</td> <td>675 ma</td> <td>1.32 A</td> </tr> <tr> <td>3.3 V Supply</td> <td>325 ma</td> <td>375 ma</td> </tr> </tbody> </table> (max does not include battery charge)		Standby	Operate(max)	5.0 V Supply	675 ma	1.32 A	3.3 V Supply	325 ma	375 ma						
	Standby	Operate(max)														
5.0 V Supply	675 ma	1.32 A														
3.3 V Supply	325 ma	375 ma														
Power Consumption	5V @ 3.75A (worst case, during a burst while battery is recharging)															
Power Disipation	7.8W (worst case)															
Shock	Operating: 5 G's Non-operating: 10 G's															
Vibration	Operating: 0.5 G's Non-operating: 1.0 G's															
ESD	1,500 volts, human body model															
Warranty	One year on parts and labor															

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