



M-Systems

Flash Disk Pioneers

Product Update

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|------------------|---|---------------------|------------------------|
| Subject: | DiskOnChip Technology Upgrade to 0.21 Micron Process | | |
| Products: | DiskOnChip 2000 | Part Number: | MD2202-Dxx, MD2203-Dxx |
| Update #: | PU0300 | Date: | February 16, 2000 |

Description:

Beginning April 15, 2000 some products of the DiskOnChip 2000 products family will be upgraded to an advanced 0.21 micron process technology. The new technology will reduce cost and increase the capacity of the flash media. In addition, since more dies will be produced from each wafer the production capacity is also increased, thus greatly improving the delivery lead time. This change will allow MSystems to increase the DiskOnChip capacity to 512MB by the end of the year 2000 and to 1GB in 2001.

Beginning March 1st, 2000, when the new technology is implemented, new capacities will be introduced. Some capacities that are in the high profile package will be shifted to a low profile package, thus reducing the products height on the target platform. In addition, some capacities have been upgraded to the 0.21 micron technology to provide better delivery time and cost structure.

The DiskOnChip 2000 devices, based on 0.21 micron technology, will be named MD2202-Dxx for the low profile package (in place of MD2200D-xx) and MD2203-Dxx for the high profile package (in place of MD2201-Dxx). All other DiskOnChip 2000 devices remain unchanged, including the DiskOnChip Millennium.

The length of the MD2202/3 (0.21 micron based) is 2mm longer than the MD2200/MD2201 products, due to changes in die geometry in the new technology.

The new capacities, described in the table below, will be offered beginning April 15, 2000. They will require TrueFFS software version 4.1 for all operating systems supported by DiskOnChip family except for DOS, and version 1.23 for DOS driver and utilities.

The table below summarizes the new capacities:

| Product | Capacity (MB) | Profile |
|----------------|----------------------|----------------|
| MD2202- D64 | 64 | Low |
| MD2202- D96 | 96 | Low |
| MD2203- D160 | 160 | High |
| MD2203- D192 | 192 | High |
| MD2203- D288 | 288 | High |

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The table below summarizes the products in the DiskOnChip 2000 product family that are being upgraded to the newer technology:

| New Product | End Of Life Product | Capacity (MB) | Profile |
|--------------|---------------------|---------------|---------|
| MD2202- D32 | MD2200- D32 | 32 | Low |
| MD2202- D48 | MD2200- D48 | 48 | Low |
| MD2203- D80 | MD2201- D80 | 80 | Low |
| MD2203- D112 | MD2201- D112 | 112 | Low |
| MD2203- D144 | MD2201- D144 | 144 | Low |

All capacities above are offered both in 3.3V and 5V versions.

Note: the following devices remain unchanged and are expected to be upgraded to the new technology around the middle of 2000:

- MD2200-D16
- MD2200-D24
- MD2201-D72

Dimension Changes:

The shift to the new 0.21 micron technology results in a 2mm longer package, from 41.75mm (MD2200/1) to 43.75mm (MD2202/3). Refer to the data sheet Rev. 3.0, available by March 1st 2000.

DiskOnChip GANG Programmer Support:

DiskOnChip GANG Programmer is H/W compatible with the new devices. All current capacities (32/48/80/112/144MB) require the DiskOnChip GANG S/W version 1.21 or higher. All new capacities (64/96/160/192/288) require the DiskOnChip GANG S/W version 1.23.

Call for Action

M-Systems strongly encourages customers to:

1. Verify the 2mm length increase in their target platforms
2. Qualify that the MD2202/MD2203 meets your storage requirements and shift orders to MD2202/MD2203 for the capacities mentioned above.

Key Milestones:

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|--|----------------|
| Mass production of new capacities (TrueFFS 4.1, DOS driver & utilities version 1.23) | April 15, 2000 |
| Mass production Current capacities, software version 1.21 | March 15, 2000 |
| GANG software 1.23 upgrade | April 15, 2000 |

Please contact your M-Systems' representative, or refer to M-Systems' web site (www.m-sys.com), for any further information or guidance.

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