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MD104 Manual

Multi (8) Disk-On-Chip Carrier

Manufactured by
TRI-M ENGINEERING
Engineered Solutions for Embedded Applications

Technical Manual

P/N:MD104-MAN
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TRI-M ENGINEERING
1407 Kebet Way, Unit 100
Port Coquitlam, BC V3C 6L3
Canada
http://www.Tri-M.com
Tel 604.945.9565
North America 800.665.5600
Fax 604.945.9566

PREFACE

This manual is for integrators of applications of embedded systems. It contains information on hardware requirements and interconnection to other embedded electronics.

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1) Introduction

The Tri-M Engineering MD-104 is a PC-104 form factor peripheral module capable of providing up to 240 Mbytes of disk storage space using M-Systems DiskOnChip (DOC) 2000 devices. This high storage capacity is achieved through the use of multiple DOC devices to form one large solid state flash disk drive (MultiDiskOnChip). The MD-104 is capable of accommodating up to 8 DOC devices.

The design of the MD-104 actually supports an unlimited capacity since future DOC devices with higher densities still allow for full upward and downward compatibility.

2) Requirement

Each DOC socket on the MD-104 is mapped into a 8Kbyte window in the BIOS expansion address space of the PC, which is usually between address 0C8000H to 0E0000H. Therefore, to fully populate the MD-104, a 64Kbyte windows is required. The base memory address can be selected amoung 0D0000H, 0D8000H and 0E0000H with jumper A, B and C.

Figure 1 below shows the jumpering for the three different memory window addresses.

Jumper JP1	**Function**
C installed	Select address D0000H
A, B installed	Select address D8000H
A installed	Select address E0000H

Figure 1. Jumper location and function

All DOC devices placed should be first unformatted from their standard formatting as single device single drive formatting, then re-formatted as a MultiDiskOnChip. Not all DOC sockets need to be populated to form a MultiDOC device.

Figure 2 shows the layout of the sockets with respect to their memory addresses.

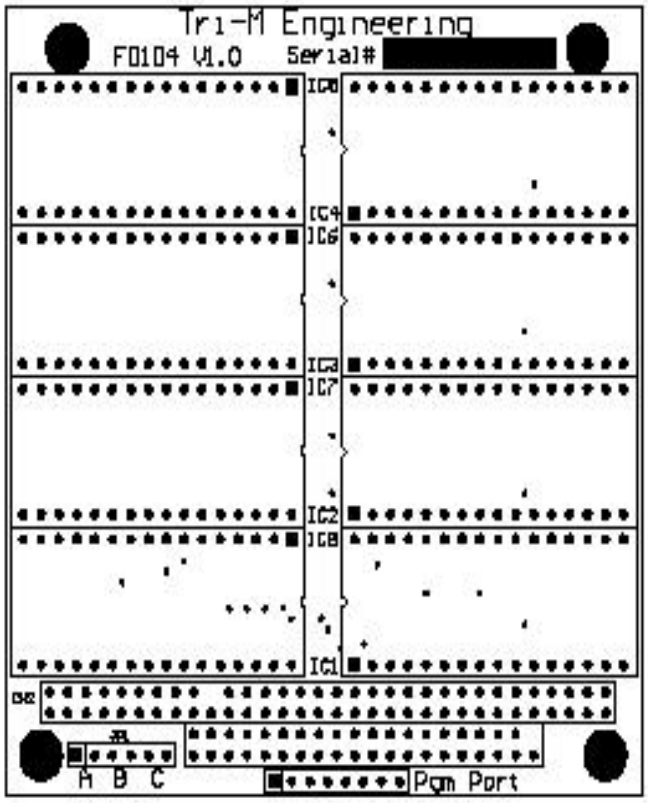
Assuming N is either 0D0000H or 0E0000H.

N + E000H

N + C000H

N + A000H

N + 8000H



N

N + 2000H

N + 4000H

N + 6000H

Figure 2. MD104 socket address

*The PGM PORT is for programming the GAL at factory.

3) Installation

1) Install jumper into pair A, B or C to select base memory address
2) Align pin 1 on the DOC with pin 1 of socket
3) Push the DOC into the socket carefully until it is fully seated.
4) Check to ensure the DOC is installed securely, and there are no bent pins
5) Repeat steps 2 to 4 for the rest of the sockets.
6) Copy the self-extract utility called FD_104.EXE from distribution diskette into an empty sub-directory.
7) Run FD_104.EXE and the necessary files will be extracted
8) Unformat each socketed DOC by issuing either one of the following command:

- If DOC appears to operating systems as logical drive with drive-letter, use:
DFORMAT/ C: /UNFORMAT/Y

- If DOC does not appear as logical drive, use:
DFORMAT/WIN: D000 /UNFORMAT /Y

Note: Use DINFO.EXE to find out where DOC is located in memory.

9) Repeat step 8 for each other DOC
10) Format all DOCs to form a single flash disk drive by issuing the following command:

MDFORMAT/S:MD0C107.EXB

11) Reboot computer after MDFORMAT is completed
12) All DOCs on the MD-104 now appears as one logical drive to the operating system.
13) To make the MultiDOC bootable, simply use the SYS command from DOS.

*Please refer to M-System MultiDiskOnChip application not for detail software syntax and examples.

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