

MAN-005500-000
Rev. 1.3
November 21, 1996

CRD-5500

SCSI RAID Controller User's Manual

CMD Technology, Inc.
1 Vanderbilt
Irvine, California 92618
(714) 454-0800

Trademarks and Copyright

CMD, CMD Technology, and CRD-5500 are trademarks of CMD Technology, Inc. All other product and company names are trademarks or registered trademarks of other manufacturers.

Copyright © CMD Technology, Inc. 1996. All rights reserved.

CMD reserves the right to make changes to this manual and the equipment described in this manual without notice. CMD has made all reasonable efforts to ensure that the information in this manual is accurate and complete. CMD will not be liable, however, for any technical or editorial errors or omissions made in this manual, or for incidental, special, or consequential damage of whatsoever nature, resulting from the furnishing of this manual, or operation and performance of equipment in connection with this manual.

FCC Notice

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Statement of License Limitations

CMD is licensed under patents by EMC which contain claims directly applicable to controllers. The purchase of this controller product does not expressly nor impliedly license the purchaser to combine or use the product in combination with any other products or components which combination would be covered by EMC patent claims applicable to RAID subsystems. As used herein, controllers means a single or multi-processor device or group of functionally interrelated devices operable to physically and/or logically configure a plurality of physical mass storage devices as one or more independently accessible arrays, and to control the communication of data between the array(s) and host(s) or client(s) in a predetermined RAID format or other formats. RAID subsystems means a storage subsystem including one or more arrays of physical mass storage devices, and one or more controllers associated therewith.

Declaration of Conformity

CMD Technology, Inc. declares that the equipment described in this document is in conformance with the requirements of the European Council Directives listed below:

89/336/EEC EMC Directive

93/68/EEC EMC Directive

On the approximation of the laws of Member States relating to Electromagnetic Compatibility.

This declaration is based upon compliance of the product to the following standards:

EN 55022, CISPR 22B RF Emissions Control

EN 50082-1 IEC 801 Immunity to Electromagnetic Disturbances

Product Description: RAID SCSI to SCSI Interface

Model: CRD-5500



Manufacturer: CMD Technology, Inc.
1 Vanderbilt
Irvine, California 92618 (USA)

Warranty

CMD Technology warrants this product to be free of defects in materials and/or workmanship for a period of 3 years from the date of purchase. If the product proves to be defective within the warranty period, CMD Technology will either repair or replace it. This warranty covers defects incurred in normal use only. Defects, malfunctions, or failures resulting from accidents, misuse, or mishandling are not covered. In the event that this product must be repaired or replaced, please contact CMD for an RMA number.

Note

CMD has tested and certified this product in the configuration as delivered. Failure to verify any proposed modification or change in configuration with CMD Technical Support or Sales may result in improper operation or damage to the product.

This page left blank intentionally.



Table of Contents

1	About the CRD-5500	1-1
1.1	Modular Hardware Design.....	1-1
1.2	Flexible RAID Set Configuration.....	1-1
1.3	Performance Enhancements	1-3
1.3.1	Custom Components	1-3
1.3.2	Efficient Write and Read Algorithms	1-3
1.3.2.1	<i>Write-Back Caching</i>	1-4
1.3.2.2	<i>Write Gathering</i>	1-4
1.3.2.3	<i>Write On Top</i>	1-4
1.4	RAID Levels Supported	1-5
1.4.1	RAID 0.....	1-5
1.4.2	RAID 1.....	1-6
1.4.3	RAID 0+1.....	1-7
1.4.4	RAID 4.....	1-8
1.4.5	RAID 5.....	1-9
1.4.6	JBOD.....	1-10
1.5	A Few Words About Compatibility	1-11

2	Setup Guidelines	2-1
2.1	Installing Modules.....	2-1
2.1.1	How To Tell the Modules Apart.....	2-1
2.2	Disk Drives	2-3
2.2.1	Drive Geometry	2-3
2.2.1.1	<i>Drive Geometry Example</i>	2-4
2.3	SCSI Bus Setup.....	2-4
2.4	Cache	2-5
2.4.1	How To Order SIMMs.....	2-5
2.4.2	Installing SIMMs.....	2-6
2.5	Warning Alarm	2-6
2.6	Battery Backup.....	2-7

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.