

# CD4x00 Product Specification

**EXHIBIT**

10 Russell  
9-26-00

4100StuffPat\DP64116\_B.doc  
PAGE 1

ATTORNEYS'  
EYES ONLY

CRDS 43928

PLAINTIFF'S  
EXHIBIT  
267  
A-10-CR-217-16

Crossroads Systems Inc.

The information contained in this document has been carefully checked and is believed to be entirely reliable. However, no responsibility is assumed for inaccuracies. Furthermore, Crossroads Systems, Inc., reserves the right to change this document and product without notice and to make improvements in reliability, function and design without notice. Crossroads Systems, Inc., neither assumes any liability arising out of the application or use of any product, software or circuit described herein, nor does it convey any license under its right or the rights of others. Companies, names, and data used in examples herein are fictitious unless otherwise noted. No part of this document may be reproduced or transmitted in any form or by any means, electronic, mechanical, for any purpose, without the express written permission of Crossroads Systems, Inc..

© 1997, 1998 Crossroads Systems, Inc.. All rights reserved.

Crossroads Systems is a trademark of Crossroads Systems, Inc., in the USA and other countries.

Copyright © 1997, 1998  
Crossroads Systems, Inc.  
9390 Research Blvd  
Suite 11-300  
Austin, Texas 78759

(512) 349-0300  
Fax: (512) 349-0304

[info@crossroads.com](mailto:info@crossroads.com)  
[support@crossroads.com](mailto:support@crossroads.com)  
<http://www.crossroads.com>

Printed in the United States of America.

Crossroads Systems Inc.

**Revision History**

Revision	Date	Description	Author
0.1	8/21/97	Original	Geoff Hoes
0.2	9/4/97	Added HW portions	John Middleton
0.2a	9/12/97	General revisions	Geoff & John
0.3	10/5/97	Added External Interface Section	Geoff Hoes
0.4	10/19/97	Added diagnostic, boot code, hardware section	John Middleton, Geoff Hoes
A	2/24/98	Released at Rev A	John
B1	4/19/98	Revised as a combined 4100/4200 document	John
B3	6/1/98	Add HP's changes	John

Confidential Document

iii of vi

P/N DP64116 Rev B3

ATTORNEYS'  
EYES ONLY

CRDS 43930

Table of Contents

- 1 INTRODUCTION ..... 1
  - 1.1 Overview ..... 1
    - 1.1.1 Motivation ..... 2
    - 1.1.2 Description ..... 2
    - 1.1.3 Implementation Standards ..... 3
  - 1.2 Modes of Operation ..... 4
    - 1.2.1 Mode 1: FC<sub>T</sub> to SCSI<sub>T</sub> ..... 4
    - 1.2.2 Mode 2: SCSI<sub>T</sub> to FC<sub>T</sub> ..... 4
    - 1.2.3 Concurrent Operation ..... 4
  - 1.3 Miscellaneous Characteristics ..... 5
    - 1.3.1 Configuration ..... 5
    - 1.3.2 Management ..... 5
    - 1.3.3 Media Interfaces ..... 5
- 2 DESIGN CRITERIA ..... 5
  - 2.1.1 System I/O ..... 5
  - 2.1.2 Physical environment ..... 6
  - 2.1.3 User Interface ..... 7
- 3 ARCHITECTURE ..... 7
  - 3.1 Overview ..... 7
    - 3.1.1 Standards ..... 7
    - 3.1.2 Structure ..... 8
  - 3.2 Operational Scenarios ..... 9
    - 3.2.1 Protocol mapping and data flow ..... 10
    - 3.2.2 FCP\_Port/SCSI device Relationships ..... 10
- 4 SOFTWARE ..... 12
  - 4.1 CP4x00 Start-up (Boot) ..... 12
    - 4.1.1 IMI Phase ..... 12
    - 4.1.2 BOOT Phase ..... 12
    - 4.1.3 Monitor/POST Phase ..... 13
    - 4.1.4 LOAD Phase ..... 13
  - 4.2 CP4x00 Download Procedure ..... 13
    - 4.2.1 Serial Download Details ..... 13
    - 4.2.2 FTP Download Details ..... 13
    - 4.2.3 Fibre Channel Details ..... 13
  - 4.3 Diagnostics ..... 14
    - 4.3.1 Power-On Self Test (POST) ..... 14
    - 4.3.2 Wrap Test ..... 15
    - 4.3.3 Point to Point Test ..... 15
  - 4.4 Kernel ..... 16
  - 4.5 FC Driver ..... 16
  - 4.6 SCSI Driver ..... 17
  - 4.7 Bridge Code ..... 17
  - 4.8 Program Flow ..... 18
  - 4.9 Fibre Channel Initiators Addressing SCSI Targets ..... 19
  - 4.10 SCC Addressing Option ..... 20

Confidential Document

iv of vi

P/N DP64116 Rev B3

ATTORNEYS' EYES ONLY

CRDS 43931

Crossroads Systems Inc.

4.11 Indexed Addressing Option.....21

4.12 Auto Assigned Addressing Option .....21

4.13 SCSI Initiators to Fibre Channel Targets .....22

**5 EXTERNAL INTERFACE CHARACTERISTICS .....22**

5.1 Fibre Channel Interface.....22

5.1.1 Fibre Channel Initialization.....22

5.1.2 Controller Command Operations.....23

5.1.3 Routed Command Operations.....24

5.1.4 ABTS Error Recovery .....25

5.1.5 Timeout Conditions.....25

5.1.6 Error Handling.....25

5.1.7 Task Management.....25

5.2 SCSI Interface.....27

5.2.1 Device Discovery .....27

5.2.2 Wide/Synchronous Negotiation .....27

5.2.3 Auto Sense .....27

**6 HARDWARE.....28**

6.1 Overview .....28

6.2 Main Board.....29

6.2.1 Processor.....29

6.2.2 Serial Port.....30

6.2.3 Ethernet Port.....30

6.2.4 Fibre Channel Port.....30

6.2.5 Memory.....31

6.2.6 SCSI Interface.....32

6.2.7 General Components.....32

6.2.8 Peripheral I/O.....33

6.3 SCSI Interface Board.....34

6.4 LED Board.....34

**7 ENCLOSURE .....35**

7.1 Chassis.....35

7.1.1 Implementation Standards.....35

7.1.2 Color Scheme .....35

7.1.3 Front Panel .....35

7.1.4 Rear I/O Panel .....36

7.1.5 Labels.....36

7.2 Mechanical Features.....37

7.2.1 Air flow.....37

7.2.2 Electromagnetic Shielding .....37

7.2.3 Desk Top.....37

7.2.4 Rack Mounting - Ears .....37

7.2.5 Rack Mounting - Rails.....38

7.3 Enclosure Components.....39

7.3.1 Fan.....40

7.3.2 Power Supply.....40

7.3.3 Main Printed Circuit Board.....40

7.3.4 SCSI Interface Board.....42

7.3.5 Power Entry .....42

7.3.6 DC cable harness .....42

7.3.7 Fan Assembly Cable.....42

**8 TESTING .....43**

# 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.