

# DOCKET

### **USB** Complete

**Everything You Need** to Develop Custom USB Peripherals

Jan Axelson

Lakeview Research Madison, WI 53704

## DOCKET

copyright 1999 by Jan Axelson. All rights reserved.
Published by Lakeview Research
Cover by Rattray Design. Cover Photo by Bill Bilsley Photography.

 Lakeview Research
 Phone: 608-241-5824

 2209 Winnebago St.
 Fax: 608-241-5848

 Madison, WI 53704
 Email: info@lvr.com

 USA
 Web: http://www.lvr.com

14 13 12 11 10 9 8 7 6 5 4 3 2

Products and services named in this book are trademarks or registered trademarks of their respective companies. In all instances where Lakeview Research is aware of a trademark claim, the product name appears in initial capital letters, in all capital letters, or in accordance with the vendor's capitalization preference. Readers should contact the appropriate companies for complete information on trademarks and trademark registrations. All trademarks and registered trademarks in this book are the property of their respective holders.

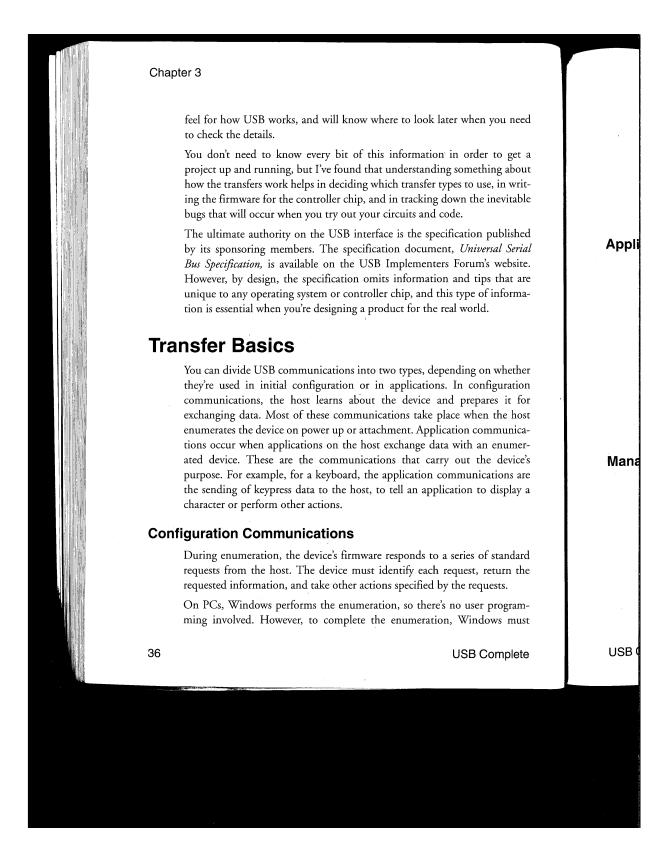
No part of this book, except the programs and program listings, may be reproduced in any form, or stored in a database or retrieval system, or transmitted or distributed in any form, by any means, electronic, mechanical photocopying, recording, or otherwise, without the prior written permission of Lakeview Research or the author, except as permitted by the Copyright Act of 1976. The programs and program listings, or any portion of these, may be stored and executed in a computer system and may be incorporated into computer programs developed by the reader.

The information, computer programs, schematic diagrams, documentation, and other material in this book and the accompanying diskette are provided "as is," without warranty of any kind, expressed or implied, including without limitation any warranty concerning the accuracy, adequacy, or completeness of the material or the results obtained from using the material. Neither the publisher nor the author shall be responsible for any claims attributable to errors, omissions, or other inaccuracies in the material in this book and the accompanying disc. In no event shall the publisher or author be liable for direct, indirect, special, incidental, or consequential damages in connection with, or arising out of, the construction, performance, or other use of the materials contained herein.

ISBN 0-9650819-3-1

Manufactured in the United States of America

Inside USB Transfers device rith any At this riptors. ost. In ded by 's bus. el and **Inside USB Transfers** nded firm-In order to design and program a USB device, you need to know a certain amount about the inner workings of the interface. This is true even though the hardware and system software handle many of the details automatically. This and the next three chapters are a tutorial on how USB transfers data. This chapter has the essentials that apply to all transfers. The following chapters cover the four transfer types supported by USB, the enumeration process, and the standard requests used in control transfers. USB is complicated, and much of what you need to know is intertwined with everything else. This makes it hard to know where to start. In general, I try to begin with the big picture and work down to the details. Unavoidably, some of the things I refer to won't be explained in detail until later. And some things are repeated because they're important and relevant in more than one place. The information in these chapters is dense. If you don't have a background in USB, you won't absorb it all in one reading. You should, however, get a **USB** Complete 35





## DOCKET

### 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.

