

Bibliography

This appendix lists some of the books I've found useful in my projects. Due to the incredible pace of publishing in the PC industry, many books go out of print within a year or two, with the sad result that you may not be able to find these at your local bookstore. New revisions of these books, with new ISBN codes, may also appear, so expect to search for them based on the author or title as well as ISBN.

Check the Sources appendix for places to find these books.

The Zen of Assembly Language, Volume 1: Knowledge

Michael Abrash

Scott, Foresman and Company, 0-673-38602-3

Zen of Code Optimization

Michael Abrash, Coriolis Group Books, 1-883577-03-9

Abrash is the high priest of PC code optimization and these books summarize his magic. *Zen of Code Optimization* includes key chapters from his earlier (and long out of print) work, along with expanded information from his *Dr. Dobb's Journal* columns. Believe me, if you follow his precepts, you need not apologize to anybody for anything you write!

Parallel Port Complete: Programming, Interfacing, and Using The PC's Parallel Printer Port

Jan Axelson, Lakeview Research, 0-9650819-1-5

Distributed by Peer-to-Peer Communications

Finally, a complete guide to the PC's parallel port! If you've wondered how to use the Enhanced Parallel Port or Extended Capabilities Port hardware found on your PC, this is the book you need. The software includes DLLs for direct, controlled port access from those GUI Windows 95 programs.

PC Interrupts, Second Edition

Ralf Brown and Jim Kyle

Addison Wesley Longman, 0-201-62485-0

A huge tabulation of every hardware and software interrupt used by every PC program inside the asteroid belt. Each entry includes a brief functional description, input and output register contents, warnings on conflicts with other interrupts, and occasionally some functional details. The text may be available online from several sources, but I suspect the book is cheaper than the download charges.

The Embedded PC's ISA Bus

Microprocessors: A Programmer's View

Robert Dewar and Matthew Smosna

McGraw-Hill, 0-07-016639-0 cloth, 0-07-016638-2 paper

A savage romp through CPU taxonomy. You get a detailed explanation of CPU functions and addressing modes, lengthy descriptions of the 80386 and 68030, the 387 coprocessor, as well as a chapter apiece devoted to the SPARC, Intel 860, IBM RISC, and Transputer RISCs. After reading about the 80386 protection mechanisms you find a section titled "Is All This Worthwhile?" with the memorable sentence "The previous section is virtually incomprehensible." Don't miss it!

The Undocumented PC, Second Edition

Frank Van GILLuwe

Addison Wesley Longman, 0-201-47950-8

Unlike the other "Undocumented" books you've seen, this one covers *hardware*. It skips over information you can find elsewhere to cover the hidden functions and features within nearly every PC chip. Whether you need to know about the CPU instructions you won't find in the Intel manual, how the keyboard hardware works, or all the data hidden in the Real-Time Clock RAM in an EISA bus PC, you'll find it here. Lots of sample code, diagnostics, and test routines.

The Programmer's PC Sourcebook, Second Edition

Thom Hogan

Microsoft Press, 1-55615-321-X

A category killer book with nearly everything you could possibly want to know about your PC, albeit in desiccated tabular format. Sporting nary a paragraph of narrative text, you must depend on other sources for the *why* behind each function. This is the book I reach for first when trying to decipher a connector, socket, interrupt, DOS/BIOS function, or chip pinout. Other books have the explanations, but this one covers the territory. I've run across a few errors, so don't make this one the only book on your shelf.

PC Magazine Programmer's Technical Reference:

The Processor and Coprocessor

Robert Hummel

Ziff-Davis Press, 1-56276-016-5

As it says on the back cover, "Finally — a single, concise technical reference on Intel's entire family of 80x86 processors and 80x87 coprocessors." Exhaustive detail on how the machinery at the heart of your PC munches instructions and data, with lots of info on protected mode operation and memory management. It includes a chip bug summary by CPU mask step, with workarounds and hints. Unfortunately, I haven't seen a more recent edition than the 1992 copy on my shelf.

Bibliography

Writing Solid Code

Steve Maguire

Microsoft Press, 1-55615-551-4

How to write code that works dependably, assure yourself (or your boss) that it will meet its specifications, and how to armor it against unforeseen gotchas. Although I'm no longer such a big fan of Hungarian notation, I do agree with his advice that single stepping through your code can reveal more problems in a shorter time than the fanciest ICE. Apply this book's suggestions early and often to all your projects.

Code Complete

Steve McConnell

Microsoft Press, 1-55615-484-4

As the cover blurb puts it, "A practical handbook of software construction." While not directly covering embedded programming, the precepts in this book convert the often confusing advice about high level design into practical techniques you can use in your own projects. The advice on naming variables and formatting your source code may just pay for the book... wish I'd had this one a long time ago!

Macro Magic with Turbo Assembler

Jim Mischel

John Wiley & Sons, 0-471-57815-0

This book suffers from a terminally cute title. It will, however, give you the dope on an aspect of assembler programming that you won't find elsewhere. He even builds a useful language entirely in macros.

Serial Communications: A C++ Developer's Guide

Mark Nelson

M&T Publishing, 1-55851-281-0

Firmware with a somewhat high-level language bias. A good introduction to low-level operations, although I fear that C++ has progressed to the point where much of the speed available in earlier versions has gone away.

System BIOS for IBM PC/XT/AT Computers and Compatibles

Phoenix Technologies, Ltd

Addison Wesley Longman, 0-201-51806-6

The straight dope on one vendor's BIOS implementation: good descriptions of what all the functions and data areas actually do. Although it certainly will not match up precisely with the BIOS in your machine, it should give you a running start on the standard functions. It is considerably more verbose than the corresponding Official IBM BIOS documentation, which is not a bad thing.

The Embedded PC's ISA Bus

Undocumented DOS, Second Edition

Schulman, Brown, Maxey, Michaels, Kyle
Addison Wesley Longman, 0-201-63287-X

How It All Works, outward from the most ugly and hidden innards. Lots of explanations, sample code, tables, and a few diagrams tell you pretty nearly everything you need to know about the versions of DOS leading up to Windows 95. If you plan to work down near the bare metal, you'll need this information to prevent you from messing up the details.

The SCSI Bus and IDE Interface

Friedhelm Schmidt
Addison Wesley Longman, 0-201-42284-0

If you must write DOS-less drivers for hard disks and other devices, this book will give you the information you need. Because it's mostly a book about SCSI by a SCSI expert, you won't find the EIDE and ATAPI variations on the IDE theme.

The Mindshare, Inc. PC System Architecture Series:

<i>PCMCIA System Architecture</i>	0-201-40991-7
<i>Pentium System Architecture</i>	0-201-40992-5
<i>PCI System Architecture</i>	0-201-40993-3
<i>80486 System Architecture</i>	0-201-40994-1
<i>EISA System Architecture</i>	0-201-40995-X
<i>ISA System Architecture</i>	0-201-40996-8
<i>CardBus System Architecture</i>	0-201-40997-6
<i>Plug-and-Play System Architecture</i>	0-201-41013-3
<i>Protected Mode Software Architecture</i>	0-201-55447-X

Tom Shanley and Don Anderson
Addison Wesley Longman

This series of books contains excellent x86 information drawn from Mindshare's engineer training courses and give a good overview of the entire subsystem. Use these books in addition to your hardware data books, not as replacements.

ISA System Architecture includes a thorough discussion of ISA bus mechanics. You must also have Solari's book if you're building hardware that must work on many systems, but this book is far more readable. The *80486* and *Pentium System Architecture* books cover CPU details, rather than bus level issues.

The illustrations resemble the overhead projector block diagrams you find in seminars, rather than crisp schematics, and you'll find nary a line of sample code. Although some background information tells you *why* a feature might be useful, the books do not provide system level design explanations.

Bibliography

AT Bus Design

Edward Solari

Annabooks, 0-929392-08-6

ISA & EISA Theory and Operation

Edward Solari

Annabooks, 0-929392-15-9

All the gory details required to get a board running in a PC using the ISA or EISA bus, documented with timing diagrams, signal descriptions, and cautionary notes. Information that you just cannot find anywhere else, written by somebody who knows whereof he speaks. *ISA & EISA Theory and Operation* replaces *AT Bus Design*, with a better presentation and more explanatory notes.

