

Usb Complete The Developers Guide Complete Guides Series

Intelligent readers who want to build their own embedded computer systems-- installed in everything from cell phones to cars to handheld organizers to refrigerators-- will find this book to be the most in-depth, practical, and up-to-date guide on the market. Designing Embedded Hardware carefully steers between the practical and philosophical aspects, so developers can both create their own devices and gadgets and customize and extend off-the-shelf systems. There are hundreds of books to choose from if you need to learn programming, but only a few are available if you want to learn to create hardware. Designing Embedded Hardware provides software and hardware engineers with no prior experience in embedded systems with the necessary conceptual and design building blocks to understand the architectures of embedded systems. Written to provide the depth of coverage and real-world examples developers need, Designing Embedded Hardware also provides a road-map to the pitfalls and traps to avoid in designing embedded systems. Designing Embedded Hardware covers such essential topics as: The principles of developing computer hardware Core hardware designs Assembly language concepts Parallel I/O Analog-digital conversion Timers (internal and external) UART Serial Peripheral Interface Inter-Integrated Circuit Bus Controller Area Network (CAN) Data Converter Interface (DCI) Low-power operation This invaluable and eminently useful book gives you the practical tools and skills to develop, build, and program your own application-specific computers.

Have you ever wondered how to use the USB hardware to send and receive data from an attached device? Wondered how to detect and initialize the controller, retrieve the device's descriptors, configure the device, and then communicate with it to send or retrieve its data? This book explains the ins and outs of the four major controllers, starting with the UHCI, OHCI, EHCI, and then the new Super Speed xHCI Controller. It explains in detail how to communicate with the various devices such as HID mice and keyboards, mass storage devices, including UASP devices, printers, and other USB devices. If you are interested in working with bare hardware to communicate with the USB, with no operating system to get in the way, you don't need to look any further. This book does not need to be on the shelf every USB enthusiast, it needs to be right on the desk. Third Edition -- 20180420

Provides advice for Visual Basic programmers attempting to interface hardware through standard ports.

Linux® is being adopted by an increasing number of embedded systems developers, who have been won over by its sophisticated scheduling and networking, its cost-free license, its open development model, and the support offered by rich and powerful programming tools. While there is a great deal of hype surrounding the use of Linux in embedded systems, there is not a lot of practical information. Building Embedded Linux Systems is the first in-depth, hard-core guide to putting together an embedded system based on the Linux kernel. This indispensable book features arcane and previously undocumented procedures for: Building your own GNU development toolchain Using an efficient embedded development framework Selecting, configuring, building, and installing a target-specific kernel Creating a complete target root filesystem Setting up, manipulating, and using solid-state storage devices Installing and configuring a bootloader for the target Cross-compiling a slew of utilities and packages Debugging your embedded system using a plethora of tools and techniques Details are provided for various target architectures and hardware configurations, including a thorough review of Linux's support for embedded hardware. All explanations rely on the use of open source and free software packages. By presenting how to build the operating system components from pristine sources and how to find more documentation or help, this book greatly simplifies the task of keeping complete control over one's

embedded operating system, whether it be for technical or sound financial reasons. Author Karim Yaghmour, a well-known designer and speaker who is responsible for the Linux Trace Toolkit, starts by discussing the strengths and weaknesses of Linux as an embedded operating system. Licensing issues are included, followed by a discussion of the basics of building embedded Linux systems. The configuration, setup, and use of over forty different open source and free software packages commonly used in embedded Linux systems are also covered. uClibc, BusyBox, U-Boot, OpenSSH, tftpd, tftp, strace, and gdb are among the packages discussed.

Newly updated to include new calls and techniques introduced in Versions 2.2 and 2.4 of the Linux kernel, a definitive resource for those who want to support computer peripherals under the Linux operating system explains how to write a driver for a broad spectrum of devices, including character devices, network interfaces, and block devices. Original. (Intermediate)

"Primarily a software developers guide for enabling UPnP, this book also provides a thorough introduction for those new to the technology. Described are the basic UPnP concepts such as control points, devices, and services and the protocols that form the foundation of UPnP. Developers are also shown how to develop a UPnP device from start to finish, including choosing a UPnP SDK, adding device discovery, defining device services, handling subscriptions, and adding a presentation page. Advanced topics include UPnP audio and video and adding AV support to a device. Also presented are ideas for the future such as UPnP Internet gateway devices, and simple control protocol."

Ten Strategies of a World-Class Cyber Security Operations Center conveys MITRE's accumulated expertise on enterprise-grade computer network defense. It covers ten key qualities of leading Cyber Security Operations Centers (CSOCs), ranging from their structure and organization, to processes that best enable smooth operations, to approaches that extract maximum value from key CSOC technology investments. This book offers perspective and context for key decision points in structuring a CSOC, such as what capabilities to offer, how to architect large-scale data collection and analysis, and how to prepare the CSOC team for agile, threat-based response. If you manage, work in, or are standing up a CSOC, this book is for you. It is also available on MITRE's website, www.mitre.org.

A hands-on introduction to microcontroller project design with dozens of example circuits and programs. Presents practical designs for use in data loggers, controllers, and other small-computer applications. Example circuits and programs in the book are based on the popular 8052-BASIC microcontroller, whose on-chip BASIC programming language makes it easy to write, run, and test your programs. With over 100 commands, instructions, and operators, the BASIC-52 interpreter can do much more than other single-chip BASICs. Its abilities include floating-point math, string handling, and special commands for storing programs in EPROM, EEPROM, or battery-backed RAM.

Transform the ways you communicate, create, collaborate, and explore using Microsoft HoloLens About This Book Create immersive augmented reality apps for Microsoft HoloLens from scratch Leverage the powerful HoloLens sensors to interact with real-world motions and gestures and make your app life-like Explore the powerful Unity 5 SDK along with the Windows Unified platform to get the most out of your HoloLens app Who This Book Is For If you are a developer who wants to create augmented reality apps for the Microsoft HoloLens platform, then this is the book for you. Coding experience with C# is assumed. What You Will Learn Design an app for HoloLens that is feasible and attractive to use Add gestures and interact with them Create sounds in the app and place them in a 3D space Use voice generation and voice recognition to make your apps more lifelike Interact with the physical environment to place holograms on top of physical objects Compare HoloLens with the other products and know how to use its strengths Use assets from third parties to enrich our app In Detail HoloLens, Microsoft's innovative augmented reality headset, overlaps holograms into a user's vision of their environment. Your ideas are closer to becoming real when you can create and work with holograms in relation to the world around you. If you are dreaming beyond virtual worlds,

beyond screens, beyond pixels, and want to take a big leap in the world of augmented reality, then this is the book you want. Starting off with brainstorming and the design process, you will take your first steps in creating your application for HoloLens. You will learn to add gestures and write an app that responds to verbal commands before gradually moving on creating sounds in the app and placing them in a 3D space. You will then communicate between devices in the boundaries of the UWP model. Style and approach This book takes a step-by-step, practical, tutorial-style approach where you will dive deep into HoloLens app development. You will work with the API and write your own complex scripts that would interact with the powerful HoloLens sensors and with realistic examples, you will be able to create immersive 3D apps for HoloLens.

Now in its third edition, this developer's guide to the Universal Serial Bus (USB) interface covers all aspects of project development, including device programming and host application software. This book shows how to transform the information in the USB 3.0 specifications into functioning devices and application software that communicates with the devices. To help build a foundation for design decisions, developers are guided in selecting device-controller hardware. Developers will also learn the benefits of the USB interface, its limitations, and how certain design choices made at the beginning of the project can reduce development time. Recent developments in host and device hardware, more detail on the standard USB classes, application examples using Microsoft's .NET Framework, and information on developing dual-role devices using USB On-The-Go is provided in detail.

This book contains a selection of articles from The 2014 World Conference on Information Systems and Technologies (WorldCIST'14), held between the 15th and 18th of April in Funchal, Madeira, Portugal, a global forum for researchers and practitioners to present and discuss recent results and innovations, current trends, professional experiences and challenges of modern Information Systems and Technologies research, technological development and applications. The main topics covered are: Information and Knowledge Management; Organizational Models and Information Systems; Intelligent and Decision Support Systems; Software Systems, Architectures, Applications and Tools; Computer Networks, Mobility and Pervasive Systems; Radar Technologies; Human-Computer Interaction; Health Informatics and Information Technologies in Education.

USB Complete: The Developer's Guide, Fifth Edition Lakeview Research LLC

Master the new Windows Driver Model (WDM) common to Windows 98 and Windows 2000. You get theory, instruction and practice in driver development, installation and debugging. Addresses hardware and software interface issues, driver types, and a description of the new 'layer' model of WDM. ;

Python for Everybody is designed to introduce students to programming and software development through the lens of exploring data. You can think of the Python programming language as your tool to solve data problems that are beyond the capability of a spreadsheet. Python is an easy to use and easy to learn programming language that is freely available on Macintosh, Windows, or Linux computers. So once you learn Python you can use it for the rest of your career without needing to purchase any software. This book uses the Python 3 language. The earlier Python 2 version of this book is titled "Python for Informatics: Exploring Information". There are free downloadable electronic copies of this book in various formats and supporting materials for the book at www.pythonlearn.com. The course materials are available to you under a Creative Commons License so you can adapt them to teach your own Python course.

Presents instructions for creating Android applications for mobile devices using Java.

If you need to learn CUDA but don't have experience with parallel computing, CUDA Programming: A Developer's Introduction offers a

detailed guide to CUDA with a grounding in parallel fundamentals. It starts by introducing CUDA and bringing you up to speed on GPU parallelism and hardware, then delving into CUDA installation. Chapters on core concepts including threads, blocks, grids, and memory focus on both parallel and CUDA-specific issues. Later, the book demonstrates CUDA in practice for optimizing applications, adjusting to new hardware, and solving common problems. Comprehensive introduction to parallel programming with CUDA, for readers new to both Detailed instructions help readers optimize the CUDA software development kit Practical techniques illustrate working with memory, threads, algorithms, resources, and more Covers CUDA on multiple hardware platforms: Mac, Linux and Windows with several NVIDIA chipsets Each chapter includes exercises to test reader knowledge

This unique guide goes beyond all the USB specification overviews to provide designers with the expert knowledge and skills they need to design and implement USB I/O devices.

In the world of e-commerce, there are dozens of tools available to use in custom web design and development. Out of all of these options, Magento is the web's fastest growing e-commerce platform. Its architecture makes it possible to extend the functionalities using plugins, which are shared by the community, extensively. This book is a practical guide packed with examples so developers can understand its fundamental concepts and then start developing and testing Magento code. The book starts by building your knowledge of Magento, providing you with the techniques and tools you require to start your first Magento development. You will then learn to work with data collections and the EAV system, before gradually moving on to extending the frontend and backend. You will learn all about deploying and distributing custom modules. This book will help you navigate your way around your first Magento developments, helping you to avoid all of the most common headaches that new developers face when first getting started.

Provides information on writing a driver in Linux, covering such topics as character devices, network interfaces, driver debugging, concurrency, and interrupts.

8115C-5.TXT The complete guide to the revolutionary new USB standard. Written for everyone-from users to engineers. Operating system support and troubleshooting techniques. USB hubs, bus interconnects, devices, hosts, protocols, and more. The new Universal Serial Bus standard handles everything from joysticks to live video, all at breathtaking speeds. USB devices are coming fast, and built-in USB support is a key feature of Windows 98. Now there's a complete guide to making the most of this hot new connectivity standard: Universal Serial Bus Explained. Co-authored by the best-selling author of RS-232 Made Easy, this book is written in layman's terms for every interested computer user-and it's comprehensive enough to serve the needs of hardware and software developers. You'll find thorough coverage of: Setting up USB hardware and interfacing peripherals. USB protocols and data flow: what actually happens "on the wire." A close look inside USB hubs, bus interconnects, devices, and hosts. Troubleshooting USB: Analyzing bus traffic and device configuration. USB support in Windows and other operating systems. Universal Serial Bus Explained shows how

the USB standard delivers easy peripheral expansion, fast data transfer, guaranteed bandwidth for multimedia, low cost, true “plug-and-play” support, and a whole lot more. It answers today's most frequently asked questions about USB and the new generation of devices that utilize it. Detailed appendices provide more information about the USB specification; Internet-based resources, periodicals and technical conferences; and an extensive source list for USB devices and software. Whether you want to use USB devices or invent them, this is the only USB book you'll ever need.

Want to create devices that interact with the physical world? This cookbook is perfect for anyone who wants to experiment with the popular Arduino microcontroller and programming environment. You'll find more than 200 tips and techniques for building a variety of objects and prototypes such as IoT solutions, environmental monitors, location and position-aware systems, and products that can respond to touch, sound, heat, and light. Updated for the Arduino 1.8 release, the recipes in this third edition include practical examples and guidance to help you begin, expand, and enhance your projects right away—whether you're an engineer, designer, artist, student, or hobbyist. Get up to speed on the Arduino board and essential software concepts quickly

- Learn basic techniques for reading digital and analog signals
- Use Arduino with a variety of popular input devices and sensors
- Drive visual displays, generate sound, and control several types of motors
- Connect Arduino to wired and wireless networks
- Learn techniques for handling time delays and time measurement
- Apply advanced coding and memory-handling techniques

When PCs and peripherals began showing up with USB ports in the late 1990s, many predicted that legacy serial (COM) ports would soon be obsolete. The predictions were wrong. While most standard peripherals now use USB, serial ports are the interface of choice for devices that require simple programming, long cables, operation in harsh environments, or basic networking capabilities. Serial ports are more versatile than ever due to developments such as USB virtual COM ports, the .NET SerialPort class, enhanced microcontroller USARTs, and new wireless interfaces. Serial Port Complete Second Edition is a completely revised and updated guide to programming and interfacing to COM ports, USB virtual COM ports, and serial ports in embedded systems. Author Jan Axelson shows how to:

- § Access COM ports using the SerialPort class in Microsoft's .NET Framework.
- § Program embedded systems for serial-port communications.
- § Design and program USB devices accessed as virtual COM ports.
- § Upgrade RS-232 designs to USB with no changes to host software or device firmware.
- § Design circuits for electrically harsh environments.
- § Create serial networks of embedded systems and PCs.
- § Use serial ports in wireless links.

Example code is provided for PCs and embedded systems in both Basic and C/C#. The author maintains a website with articles, program code, and other links of interest to developers of serial-port applications (janaxelson.com).

The quick way to learn Windows 10 This is learning made easy. Get more done quickly with Windows 10. Jump in

wherever you need answers--brisk lessons and colorful screenshots show you exactly what to do, step by step. Discover fun and functional Windows 10 features! Work with the new, improved Start menu and Start screen Learn about different sign-in methods Put the Cortana personal assistant to work for you Manage your online reading list and annotate articles with the new browser, Microsoft Edge Help safeguard your computer, your information, and your privacy Manage connections to networks, devices, and storage resources

- The WinForms team at Microsoft praises Chris as a definitive authority; Microsoft has named Chris one of eight Software Legends - The content and structure are based on years of experience both building apps with WinForms as well as teaching other developers about WinForms - Alan Cooper, the 'father of Visual Basic', has provided the foreword for the book

Provides information on designing devices that share and store data with PCs and other USB hosts.

Make your Android device truly your own Are you eager to make your Android device your own but you're not sure where to start? Then this is the book for you. XDA is the world's most popular resource for Android hacking enthusiasts, and a huge community has grown around customizing Android devices with XDA. XDA's Android Hacker's Toolkit gives you the tools you need to customize your devices by hacking or rooting the android operating system. Providing a solid understanding of the internal workings of the Android operating system, this book walks you through the terminology and functions of the android operating system from the major nodes of the file system to basic OS operations. As you learn the fundamentals of Android hacking that can be used regardless of any new releases, you'll discover exciting ways to take complete control over your device. Teaches theory, preparation and practice, and understanding of the OS Explains the distinction between ROMing and theming Provides step-by-step instructions for Droid, Xoom, Galaxy Tab, LG Optimus, and more Identifies the right tools for various jobs Contains new models enabling you to root and customize your phone Offers incomparable information that has been tried and tested by the amazing XDA community of hackers, gadgeteers, and technicians XDA's Android Hacker's Toolkit is a simple, one-stop resource on hacking techniques for beginners.

Today, software engineers need to know not only how to program effectively but also how to develop proper engineering practices to make their codebase sustainable and healthy. This book emphasizes this difference between programming and software engineering. How can software engineers manage a living codebase that evolves and responds to changing requirements and demands over the length of its life? Based on their experience at Google, software engineers Titus Winters and Hyrum Wright, along with technical writer Tom Manshreck, present a candid and insightful look at how some of the world's leading practitioners construct and maintain software. This book covers Google's unique engineering culture, processes, and tools and how these aspects contribute to the effectiveness of an engineering organization. You'll explore three fundamental principles that software organizations should keep in mind when designing, architecting, writing, and maintaining code: How time affects the sustainability of software and how to make your code resilient over time How scale affects the viability of software practices within an engineering organization What trade-offs a typical engineer needs to make when evaluating design and development decisions

This guide takes the pain out of designing for this popular interface with specific, detailed examples that show how to develop USB devices

and the applications that communicate with them. How the USB communicates with the PC, deciding if a project should use a USB interface, choosing a USB controller chip for peripheral design, and determining code with Windows applications are covered in detail.

FREE PCB SOFTWARE! The EagleCAD light software inside does all the tasks described in this book -- schematic capture, layout, and autorouting. Run it on Windows or Linux. **DESIGN TO PRODUCTION -- EVERYTHING YOU NEED TO MAKE YOUR OWN PCBs** With Build Your Own Printed Circuit Board, you can eliminate or reduce your company's reliance on outsourcing to board houses, and cut costs significantly. Perfect for advanced electronics hobbyists as well, this easy-to-follow guide is by far the most up-to-date source on making PCBs. Complete in itself, the handbook even gives you PCB CAD software, on CD, ready to run on either Windows or Linux. (Some PCB software costs from \$10,000 to \$15,000!) **STEP-BY-STEP DIRECTIONS, AND A PRACTICE RUNTHROUGH** Written by a PCB designer and electronics expert, Build Your Own Printed Circuit Board gives you absolutely everything you need to design and construct a professional-looking prototype or production-ready PCB files with modern CAD tools. You get: * Instructions for every phase of project flow, from design schematics, sizing, layout, and autorouting fabrication * The latest in PCB tips, tricks, and techniques * Cutting-edge tactics for shrinking boards * Guidance on generating CAM (computer-aided manufacturing) files to produce the board yourself or send it out * A sample project, demonstrating all the book's techniques, that you can build and use in practical applications * Discussions on using service bureaus to produce designs * Expert comparison of CAD program options **THE BEST GUIDE TO BUILDING YOUR OWN PCBs!**

This user's guide does far more than simply outline the ARM Cortex-M3 CPU features; it explains step-by-step how to program and implement the processor in real-world designs. It teaches readers how to utilize the complete and thumb instruction sets in order to obtain the best functionality, efficiency, and reuseability. The author, an ARM engineer who helped develop the core, provides many examples and diagrams that aid understanding. Quick reference appendices make locating specific details a snap! Whole chapters are dedicated to: Debugging using the new CoreSight technology Migrating effectively from the ARM7 The Memory Protection Unit Interfaces, Exceptions, Interrupts ...and much more! The only available guide to programming and using the groundbreaking ARM Cortex-M3 processor Easy-to-understand examples, diagrams, quick reference appendices, full instruction and Thumb-2 instruction sets are included T teaches end users how to start from the ground up with the M3, and how to migrate from the ARM7

"Bluetooth (enabled devices) will ship in the billions of units once it gains momentum." - Martin Reynolds, Gartner Group Bluetooth is the most exciting development in wireless computing this decade! Bluetooth enabled devices can include everything from network servers, laptop computers and PDAs, to stereos and home security systems. Most Bluetooth products to hit the market in 2001 will be PC cards for laptop computers and access points, which allow up to seven Bluetooth devices to connect to a network. Reports indicate that by the end of 2003 there will be over 2 billion Bluetooth-enabled devices. Bluetooth-enabled devices communicate with each other through embedded software applications. Bluetooth Developer's Guide to Embedded Applications will provide embedded applications developers with advanced tutorials and code listings written to the latest Bluetooth's latest specification, version 1.1. Written by Bluetooth pioneers from market leaders in Bluetooth software development, Extended Systems and Cambridge Silicon Radio, this is the first advanced level Bluetooth developer title on the market. White Hot Topic While other books introduce readers to the possibilities of Bluetooth, this is the first comprehensive, advanced level programming book written specifically for embedded application developers Authors are responsible for SDK, the market-leading development tool for Bluetooth Comes with Syngress' revolutionary Credit Card CD containing a printable HTML version of the book, all of the source code and sample applications from Extended Systems and Cambridge Silicon Radio

A guide to using embedded systems with Ethernet covers such topics as hardware and firmware, TCP/IP protocols, creating embedded Web sites, local networks and the Internet, and sending and receiving e-mail using SMTP and POP3.

Authored by two of the leading authorities in the field, this guide offers readers the knowledge and skills needed to achieve proficiency with embedded software.

Developers who want to access USB devices from their embedded systems will find a helpful resource in *USB Embedded Hosts: The Developer's Guide*. This new book from the author of *USB Complete* shows how small systems can take advantage of the same wealth of USB devices available to conventional PCs. The book begins with a review of USB host communication protocols. Readers then learn which USB host requirements are relaxed for embedded systems and what new requirements some embedded systems must meet. To help in selecting a development platform, the book explores available hardware and software for USB host communications in small systems. The heart of the book focuses on communicating with USB devices. The topics (with example code) include USB drives, keyboards, virtual serial ports, network bridges, mics, speakers, video cameras, and printers, plus devices that don't fit defined USB classes. Also discussed are systems that support both USB host and device functions. The example code is written for the BeagleBoard-xM open development board using a distribution of Linux targeted to small systems. Also covered is how to use Linux commands and utilities to learn about, monitor, and debug communications with USB devices.

This is a "How-To" book which explains, with hands-on examples, how to design and implement a SuperSpeed USB peripheral that can interface to your hardware using a 32-bit 100MHz bus with standard or custom protocols. The book is based on the Cypress FX3 SuperSpeed Device and the firmware examples are written around a low-cost SuperSpeed Explorer board and a companion CPLD board which are available from www.cypress.com/fx3book. The software examples are written for the Windows operating system and the CPLD examples are written in Verilog. The source code for all of the examples is downloadable from the book web site. If you currently think that SuperSpeed USB design is only for the elite then look inside this book and discover that SuperSpeed technology has now been made accessible to the rest of us!

Developers who design and program USB devices have a new resource in the fifth edition of *USB Complete: The Developer's Guide*. This edition adds an introduction to USB 3.1 and SuperSpeedPlus bus, which offers a 2x increase in bus speed over USB 3.0's SuperSpeed. For designs that don't require USB 3.1's capabilities, the book also covers USB 2.0 technology and applications. *USB Complete Fifth Edition* bridges the gap between the technical specifications and the real world of design and programming. Author Jan Axelson distills the fundamentals of the protocols and guides developers in choosing device hardware, deciding whether to target a USB class driver or another host driver, and writing device firmware and host applications. Example code in Visual C# shows how to detect and access USB devices and how to program and communicate with vendor-defined devices that use the human-interface-device (HID) class driver and Microsoft's WinUSB driver. Also covered are how to use bus power, including new advanced power delivery capabilities, wireless communications for USB devices, and developing embedded

hosts, including dual-role USB On-The-Go devices. Programmers and hardware designers can rely on USB Complete's Fifth Edition to help get projects up and running quickly. Students and hobbyists will learn how to use the interface built into every PC. Instructors will find inspiration and guidance for class projects.

"This series of books is truly an important part of my library.... They are consistently accurate.... I would recommend them to anyone doing hardware design or support, as well as to any developers who write low-level system code." Paul Tomlinson "Windows Developer's Journal" "Universal Serial Bus System Architecture" provides an in-depth discussion of USB and is based on the 1.0 version of the Universal Serial Bus specification. It focuses on the USB protocol, signaling environment, and electrical specifications, along with the hardware/software interaction required to configure and access USB devices. Although this book does not focus on writing USB device drivers, it does contain useful background information that aids in understanding the USB software environment. Key topics include: differential signaling environment device configuration suspend/resume operations device descriptors device requests (commands) transfer mechanisms USB transaction protocols bus-powered devices self-powered devices host controller designs (UHC and OHC) error detection and handling device class definitions If you design or test hardware or software that involves USB, "Universal Serial Bus System Architecture" is an essential, time-saving tool. The "PC System Architecture Series" is a crisply written and comprehensive set of guides to the most important PC hardware standards. Each title is designed to illustrate the relationship between the software and hardware and explains thoroughly the architecture, features, and operations of systems built using one particular type of chip or hardware specification. MindShare Inc. is one of the leading technical training companies in the computer industry, providing innovative courses for dozens of companies, including Intel, IBM, and Compaq. Don Anderson passes on his wealth of experience in digital electronics and computer design by training engineers, programmers, and technicians for MindShare. 0201461374B04062001

Modern cars are more computerized than ever. Infotainment and navigation systems, Wi-Fi, automatic software updates, and other innovations aim to make driving more convenient. But vehicle technologies haven't kept pace with today's more hostile security environment, leaving millions vulnerable to attack. The Car Hacker's Handbook will give you a deeper understanding of the computer systems and embedded software in modern vehicles. It begins by examining vulnerabilities and providing detailed explanations of communications over the CAN bus and between devices and systems. Then, once you have an understanding of a vehicle's communication network, you'll learn how to intercept data and perform specific hacks to track vehicles, unlock doors, glitch engines, flood communication, and more. With a focus on low-cost, open source hacking tools such as Metasploit, Wireshark, Kayak, can-utils, and ChipWhisperer, The Car Hacker's Handbook will show you how to: –Build an accurate threat model for your vehicle –Reverse engineer the CAN bus to fake engine signals –Exploit vulnerabilities in diagnostic and data-logging systems –Hack the ECU and other firmware and embedded systems –Feed exploits through infotainment and vehicle-to-vehicle communication systems –Override factory settings with performance-tuning techniques –Build physical and virtual test benches to try out exploits safely If you're curious about automotive security and have the urge to hack a two-ton computer, make

The Car Hacker's Handbook your first stop.

Over the last ten years, the ARM architecture has become one of the most pervasive architectures in the world, with more than 2 billion ARM-based processors embedded in products ranging from cell phones to automotive braking systems. A world-wide community of ARM developers in semiconductor and product design companies includes software developers, system designers and hardware engineers. To date no book has directly addressed their need to develop the system and software for an ARM-based system. This text fills that gap. This book provides a comprehensive description of the operation of the ARM core from a developer's perspective with a clear emphasis on software. It demonstrates not only how to write efficient ARM software in C and assembly but also how to optimize code. Example code throughout the book can be integrated into commercial products or used as templates to enable quick creation of productive software. The book covers both the ARM and Thumb instruction sets, covers Intel's XScale Processors, outlines distinctions among the versions of the ARM architecture, demonstrates how to implement DSP algorithms, explains exception and interrupt handling, describes the cache technologies that surround the ARM cores as well as the most efficient memory management techniques. A final chapter looks forward to the future of the ARM architecture considering ARMv6, the latest change to the instruction set, which has been designed to improve the DSP and media processing capabilities of the architecture. * No other book describes the ARM core from a system and software perspective. * Author team combines extensive ARM software engineering experience with an in-depth knowledge of ARM developer needs. * Practical, executable code is fully explained in the book and available on the publisher's Website. * Includes a simple embedded operating system.

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