

1. Record Nr.	UNINA9910453422103321
Titolo	Embedded systems [[electronic resource] /] / Jack Ganssle [editor] ; with Stuart Ball ... [et al.]
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Elsevier/Newnes, c2008
ISBN	1-281-77202-X 9786611772024 0-08-055686-8
Descrizione fisica	1 online resource (583 p.)
Collana	World class designs
Altri autori (Persone)	GanssleJack G BallStuart R. <1956->
Disciplina	004.16
Soggetti	Embedded computer systems - Design and construction Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Embedded Systems; Copyright Page; Table of Contents; About the Editor; About the Authors; Preface; Chapter 1: Motors; 1.1 Stepper Motors; 1.2 DC Motors; 1.3 Brushless DC Motors; 1.4 Tradeoffs Between Motors; 1.5 Motor Torque; Chapter 2: Testing; 2.1 Why Test?; 2.2 When to Test?; 2.3 Which Tests?; 2.4 When to Stop?; 2.5 Choosing Test Cases; 2.6 Testing Embedded Software; 2.7 Performance Testing; 2.8 Maintenance and Testing; Additional Reading; Summary; References; Chapter 3: System-Level Design; 3.1 Dissecting the Requirements Document; 3.2 Communications; 3.3 System Priorities 3.4 Error Handling 3.5 System-Level Design; Chapter 4: Some Example Sensor, Actuator, and Control Applications and Circuits (Hard Tasks); 4.1 Introduction; 4.2 E2BUS PC-Host Interface; 4.3 Host-to-Module Communications Protocol; 4.4 Speed-Controlled DC Motor with Tach Feedback and Thermal Cutoff; 4.5 Two-Axis Attitude Sensor Using MEMS Accelerometer; 4.6 RS-422-Compatible Indicator Panel; Chapter 5: Installing and Using a Version Control System; 5.1 Introduction; 5.2 The Power and Elegance of Simplicity; 5.3 Version Control 5.4 Typical Symptoms of Not (Fully) Utilizing a Version Control System 5.5 Simple Version Control Systems; 5.6 Advanced Version Control

Systems; 5.7 What Files to Put Under Version Control; 5.8 Sharing of Files and the Version Control Client; 5.9 Integrated Development Environment Issues; 5.10 Graphical User Interface (GUI) Issues; 5.11 Common Source Code Control Specification; 5.12 World Wide Web Browser Interface or Java Version Control Client; 5.13 Bug Tracking; 5.14 Non-Configuration Management Tools; 5.15 Closing Comments; Suggested Reading, References, and Resources
Chapter 6: Embedded State Machine Implementation 6.1 State Machines; 6.2 An Example; 6.3 Implementation; 6.4 Testing; 6.5 Crank It; References; Chapter 7: Firmware Musings; 7.1 Hacking Peripheral Drivers; 7.2 Selecting Stack Size; 7.3 The Curse of Malloc(); 7.4 Banking; 7.5 Logical to Physical; 7.6 Hardware Issues; 7.7 The Software; 7.8 Predicting ROM Requirements; 7.9 RAM Diagnostics; 7.10 Inverting Bits; 7.11 Noise Issues; 7.12 A Few Notes on Software Prototyping; Chapter 8: Hardware Musings; 8.1 Debuggable Designs; 8.2 Test Points Galore; 8.3 Resistors; 8.4 Unused Inputs; 8.5 Clocks
8.6 Reset 8.7 Small CPUs; 8.8 Watchdog Timers; 8.9 Making PCBs; 8.10 Changing PCBs; 8.11 Planning; Chapter 9: Closed Loop Controls, Rabbits and Hounds; 9.1 Basic PID Controls; 9.2 Predictive Controls; 9.3 Combined Reactive and Predictive Controls; 9.4 Various PID Enhancements; 9.5 Robot Drive Controls; 9.6 Tuning Controls; 9.7 Rabbits Chasing Rabbits; 9.8 Conclusions; Chapter 10: Application Examples; 10.1 Introduction; 10.2 Automotive Driver Assistance; 10.3 Baseline JPEG Compression Overview; 10.4 MPEG-2 Encoding; 10.5 Code Optimization Study Using Open-Source Algorithms
Chapter 11: Analog I/Os

Sommario/riassunto

Famed author Jack Ganssle has selected the very best embedded systems design material from the Newnes portfolio and compiled into this volume. The result is a book covering the gamut of embedded design—from hardware to software to integrated embedded systems—with a strong pragmatic emphasis. In addition to specific design techniques and practices, this book also discusses various approaches to solving embedded design problems and how to successfully apply theory to actual design tasks. The material has been selected for its timelessness as well as for its relevance to contemporary embedded des
