

1. Record Nr.	UNINA9910819928303321
Autore	Ibrahim Dogan
Titolo	PIC32 microcontrollers and the digilent chipKIT : introductory to advanced projects
Pubbl/distr/stampa	Oxford, England ; ; Waltham, Massachusetts : , : Newness, , 2015 ©2015
ISBN	0-08-099935-2
Edizione	[First edition.]
Descrizione fisica	1 online resource (403 p.)
Disciplina	629.89
Soggetti	Microcontrollers Embedded computer systems - Programming Programmable controllers
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Cover; Title Page; Copyright Page; Contents; Preface; Acknowledgments; Chapter 1 - Microcomputer Systems; 1.1 - Introduction; 1.2 - Microcontroller Systems; 1.2.1 - RAM; 1.2.2 - ROM; 1.2.3 - PROM; 1.2.4 - EPROM; 1.2.5 - EEPROM; 1.2.6 - Flash EEPROM; 1.3 - Microcontroller Features; 1.3.1 - Supply Voltage; 1.3.2 - The Clock; 1.3.3 - Timers; 1.3.4 - Watchdog; 1.3.5 - Reset Input; 1.3.6 - Interrupts; 1.3.7 - Brown-Out Detector; 1.3.8 - Analogue-to-Digital Converter; 1.3.9 - Serial Input-Output; 1.3.10 - EEPROM Data Memory; 1.3.11 - LCD Drivers; 1.3.12 - Analogue Comparator 1.3.13 - Real-Time Clock1.3.14 - Sleep Mode; 1.3.15 - Power-On Reset; 1.3.16 - Low-Power Operation; 1.3.17 - Current Sink/Source Capability; 1.3.18 - USB Interface; 1.3.19 - Motor Control Interface; 1.3.20 - CAN Interface; 1.3.21 - Ethernet Interface; 1.3.22 - ZigBee Interface; 1.3.23 - Multiply and Divide Hardware; 1.3.24 - Operating Temperature; 1.3.25 - Pulse Width Modulated (PWM) Outputs; 1.3.26 - JTAG Interface; 1.3.27 - Package Size; 1.3.28 - DMA; 1.4 - Microcontroller Architectures; 1.4.1 - RISC and CISC; 1.5 - 8, 16, or 32 Bits?; 1.6 - Summary; 1.7 - Exercises Chapter 2 - PIC32 Microcontroller Series2.1 - The PIC32MX360F512L Architecture; 2.1.1 - The Memory; 2.1.2 - The Microcontroller Clock; Clock sources; Clock outputs; USB clock; CPU clock; Peripheral clock;

Configuring the operating clocks; Performance and power consumption considerations; The flash wait states; 2.1.3 - Resets; 2.1.4 - The Input/Output Ports; TRISx; PORTx; LATx; ODCx; CNCON; SET, CLR, INV I/O port registers; Digital/analogue inputs; 2.1.5 - The Parallel Master Port (PMP); PMCON; PMMODE; PMADDR; PMDOUT; PMDIN; PMAEN; PMSTAT; 2.1.6 - Timers; Timer 1; Timers 2, 3, 4, 5
2.1.7 - Real-Time Clock and Calendar 2.1.8 - Analogue-to-Digital Converter; AD1CON1; AD1CON2; AD1CON3; AD1CHS; AD1PCFG; AD1CSSL; Operation of the ADC module; 2.1.9 - Interrupts; Configuring Timer 1 interrupts; Configuring external interrupt 0; PIC32 interrupt service routines; 2.2 - Summary; 2.3 - Exercises; Chapter 3 - PIC32 Microcontroller Development Tools; 3.1 - Software Development Tools; 3.1.1 - Text Editors; 3.1.2 - Assemblers and Compilers; 3.1.3 - Simulators; 3.1.4 - High-Level Language Simulators; 3.1.5 - Simulators With Hardware Simulation
3.1.6 - Integrated Development Environment (IDE) 3.2 - Hardware Development Tools; 3.2.1 - Development Boards; PIC32 Starter Kit; Microstick II; PIC32 USB Starter Kit II; PIC32 Ethernet Starter Kit; Cerebot MX3cK; Cerebot MX4cK; Cerebot MX7cK; MINI-32 Board; EasyPIC Fusion V7; Mikromedia for PIC32; Multimedia for PIC32MX7; Olimex PIC32 Development Board; PIC32-MAXI-WEB Development Board; LV-32MX V6; 3.2.2 - Device Programmers; mikroProg; 3.2.3 - In-Circuit Debuggers; 3.2.4 - In-Circuit Emulators; 3.2.5 - Breadboard; 3.3 - Summary; 3.4 - Exercises
Chapter 4 - The Cerebot MX3cK (chipKIT MX3) Development Board

Sommario/riassunto

PIC32 Microcontrollers and the Digilent chipKIT: Introductory to Advanced Projects will teach you about the architecture of 32-bit processors and the hardware details of the chipKIT development boards, with a focus on the chipKIT MX3 microcontroller development board. Once the basics are covered, the book then moves on to describe the MPLAB and MPIDE packages using the C language for program development. The final part of the book is based on project development, with techniques learned in earlier chapters, using projects as examples. Each project will have a practical approach, with in-dept
