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Power Consumption; 2.11.4 System Features; 2.11.5 Debug Supports; Chapter 3. Cortex-M3 Basics; 3.1 Registers; 3.1.1 General Purpose Registers R0 through R7; 3.1.2 General Purpose Registers R8 through R12; 3.1.3 Stack Pointer R13; 3.1.4 Link Register R14; 3.1.5 Program Counter R15; 3.2 Special Registers; 3.2.1 Program Status Registers; 3.2.2 PRIMASK, FAULTMASK, and BASEPRI Registers; 3.2.3 The Control Register; 3.3 Operation Mode; 3.4 Exceptions and Interrupts 3.5 Vector Tables 3.6 Stack Memory Operations; 3.6.1 Basic Operations of the Stack; 3.6.2 Cortex-M3 Stack Implementation; 3.6.3 The Two-Stack Model in the Cortex-M3; 3.7 Reset Sequence; Chapter 4. Instruction Sets; 4.1 Assembly Basics; 4.1.1 Assembler Language: Basic Syntax; 4.1.2 Assembler Language: Use of Suffixes; 4.1.3 Assembler Language: Unified Assembler Language; 4.2 Instruction List; 4.2.1 Unsupported Instructions; 4.3 Instruction Descriptions; 4.3.1 Assembler Language: Moving Data; 4.3.2 LDR and ADR Pseudo-Instructions; 4.3.3 Assembler Language: Processing Data 4.3.4 Assembler Language: Call and Unconditional Branch 4.3.5 Assembler Language: Decisions and Conditional Branches; 4.3.6 Assembler Language: Combined Compare and Conditional Branch; 4.3.7 Assembler Language: Instruction Barrier and Memory Barrier Instructions; 4.3.8 Assembly Language: Saturation Operations; 4.4 Several Useful Instructions in the Cortex-M3; 4.4.1 MSR and MRS; 4.4.2 More on the IF-THEN Instruction Block; 4.4.3 SDIV and UDIV; 4.4.4 REV, REVH, and REVSH; 4.4.5 Reverse Bit; 4.4.6 SXTB, SXTH, UXTB, and UXTH; 4.4.7 Bit Field Clear and Bit Field Insert; 4.4.8 UBFX and SBFX 4.4.9 LDRD and STRD

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## Sommario/riassunto

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 technologyMi

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