ARM System-on-Chip Architecture (2nd Edition)
The future of the computer and communications industries is converging on mobile information appliances - phones, PDAs, laptops and other devices. The ARM is at the heart of this trend, leading the way in system-on-chip (SoC) development and becoming the processor core of choice for many embedded applications. System-on-chip technology is changing the way we use computers, but it also sets designers the very challenging problem of getting a complex SoC design right first time. ARM System-on-Chip Architecture introduces the concepts and methodologies employed in designing a system-on-chip based around a microprocessor core, and in designing the core itself. Extensive illustrations, based on the ARM, give practical substance to the design principles set out in the book, reinforcing the reader’s understanding of how and why SoCs and microprocessors are designed as they are. ARM System-on-Chip Architecture:- presents and discusses the major issues of system-on-chip design, including memory hierarchy, caches, memory management, on-chip buses, on-chip debug and production test - provides an overview of the ARM processor family, enabling the reader to decide which ARM is best for the job in hand - describes the ARM and Thumb programming models, enabling the designer to begin to develop applications - covers all the latest ARM products and developments, including StrongARM, the ARM9 and ARM10 series of cores, and the ARM-based SoC components at the heart of Ericsson’s Bluetooth technology, the Psion Series 5 PDA and Samsung’s SGH2400 GSM handset - includes details on the AMULET asynchronous ARM cores and the AMULET3H asynchronous SoC subsystem ARM System-on-Chip Architecture is an essential handbook for system-on-chip designers using ARM processor cores and engineers working with the ARM. It can also be used as a course text for undergraduate and masters students of computer science, computer engineering and electrical engineering.
My motivation for reading much of this book is because I own two, soon to be three HP50g calculators, as well as an out of production HP40gs. Both of those HP models contain an unspecified version of ARM 9 processor running at 75 MHz. Unfortunately in 2014, this book dates back 14 years to 2000, but it still contains content up to ARM 9 and ARM 10, so that should be adequate for this reader. I do wonder whether the coverage of asynchronous Amulet chips in chapter 14 became the more recent several series of Cortex ARM chips in the intervening years or not. From Googling author, Professor Steve Furber, he has personally and professionally gone beyond any concerns that would produce a needed 3rd edition of this book. He is a 60 yr old honored professor with a bunch of Ph.D.

I started reading this book on Sat 8Feb14 and have read all of chapters 1, 2, 4, 8 thru Tue 18Feb. Chapters 3, 5, 7 all are about assembly language and Thumb programming, which don’t really have much to do with architecture as such, and it is easily possible to skip those chapters. See the ‘Look Inside’ for this book to see the whole table of contents, though it is not linked for easy access to the book.

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