

1. Record Nr.	UNINA9911034958303321
Autore	Wang Wenxiang
Titolo	CPU Design and Practice // by Wenxiang Wang, Jinzhang Xing
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2025
ISBN	981-9665-73-6
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (398 pages)
Collana	Professional and Applied Computing Series
Altri autori (Persone)	XingJinzhang LuRongmin HaoMiao XuTianhao
Disciplina	004.22
Soggetti	Microprocessors Computer architecture Computer hardware description languages Computers Processor Architectures Register-Transfer-Level Implementation Computer Hardware
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Overview of the CPU Chip Development Process -- Chapter 2. Hardware Experiment Platform and FPGA Design Flow -- Chapter 3. Fundamentals of Digital Logic Circuit Design -- Chapter 4. Design A Single-cycle CPU -- Chapter 5. Design A Simple Pipelined CPU -- Chapter 6. AddMore User Mode Instructions into Pipeline -- Chapter 7. Support Exception and Interrupt -- Chapter 8. AXIBus Interface Design -- Chapter 9. Storage Management Unit Design -- Chapter 10. Cache Design -- Chapter 11. Advanced Experimental Environments -- Chapter 12. Advanced Design.
Sommario/riassunto	The book provides guidance and practical techniques for the CPU design and its implementation. By scheduling a complete CPU design procedure into a series practicing tasks, the book offers a step-by-step process support to the readers for the design of a CPU which can run Unix-like OS (e.g. Linux) kernel. It also covers various design practices

and debug skills. The book is suitable for undergraduate and graduate students, lecturers and tutors, as well engineers and practitioners who are interested in the CPU design and implementation.

---