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Titolo	High-speed Serial Buses in Embedded Systems // by Feng Zhang
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ISBN	981-15-1868-8
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XII, 366 p. 313 illus., 109 illus. in color.)
Disciplina	004.64
Soggetti	Electrical engineering Electronics Microelectronics Electronic circuits Input-output equipment (Computers) Microprocessors Logic design Communications Engineering, Networks Electronics and Microelectronics, Instrumentation Circuits and Systems Input/Output and Data Communications Register-Transfer-Level Implementation Logic Design
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	The History and Development of Bus -- The High-Speed Data Transfer based on SERDES -- ADC/DAC Data Transfer Based on JESD204 Protocol -- The High-speed Communication Architecture in SRIO -- The High-speed Data Transfer based on PCIE -- The High-speed Data Transfer based on Aurora -- A High-speed Data Recording Scheme based on SATA Protocol -- The Communication Structure of CompactPCI Express -- The Communication Structure of VPX -- The Implementation and Application of FC Protocol -- The Implementation and Application of Infiniband Protocol -- Appendixes.
Sommario/riassunto	This book describes the most frequently used high-speed serial buses in embedded systems, especially those used by FPGAs. These buses

employ SerDes, JESD204, SRIO, PCIE, Aurora and SATA protocols for chip-to-chip and board-to-board communication, and CPCIE, VPX, FC and Infiniband protocols for inter-chassis communication. For each type, the book provides the bus history and version info, while also assessing its advantages and limitations. Furthermore, it offers a detailed guide to implementing these buses in FPGA design, from the physical layer and link synchronization to the frame format and application command. Given its scope, the book offers a valuable resource for researchers, R&D engineers and graduate students in computer science or electronics who wish to learn the protocol principles, structures and applications of high-speed serial buses.

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