

A Practical Introduction to the New Logic Symbols, Ian Krampel (Butterworths, Borough Green, Sevenoaks Kent, England, 1985, 140 pp.)

Reviewed by Ken Anderson

This book introduces the new logic symbology provided in the International Electrotechnical Commission (IEC) Publication 617:12. The author collaborated with the IEC to provide the newcomer and the experienced digital system designer with an understanding of this new logic notation, which is gaining acceptance worldwide.

The notation described replaces that defined in MIL-STD-806B. The author warns us in his opening notes that the new symbols are far from a straightforward substitution of new shapes for old. A totally different concept is involved.

The new logic symbols offer the facility for high-level digital design specifications. This allows the design to start at the systems level and descend the design hierarchy to final implementation using the same set of logic symbols throughout. In this way, a universal language for digital design is provided.

The book contains 20 chapters and two appendices. The first three chapters present the definitions, fundamental language, and composition of the symbols that will be used for establishing the standards developed and described in the remaining chapters.

Topics in the early chapters include simple combinative elements, delay elements, dependency notation, label sequences, two-state elements, common control blocks, shift registers and counters, and coders. The book also discusses signal level converters, selectors, memory, arithmetic elements, levels of representation, multiple signal paths, and a symbol changer.

Two appendices contain a glossary of symbols and notations and a list of participating countries with their conformity to and deviation from the IEC standard.

The book is a good supplement to a textbook on logic design as well as a complete description of the terms and symbols defined in the IEC standard 617:12. It gives examples on the use of the symbols with illustrations showing the connectivity and delay relationship between the logic gates or system entities. Readers should get a better understanding of the information requirements for formally representing a digital design in a universal language.

Overall, the book is excellent for a start in using the IEC symbols. The

author has established a level of knowledge on an international standard that allows for the design of large VLSI ICs, as well as describing a combination of VLSI circuits used in a system. The book is a handy desk reference that offers the engineer a more efficient method of representing logic. I believe it is the only book available on the subject.

Ken Anderson is a member of the technical staff of Siemens Research and Technology Laboratories, where he is involved in VLSI design, test, and manufacturing automation. He has served as chairman of the Computer Society's Test Technology TC and is now responsible for the committee's ITC tutorial program.

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