ARTICLES

3 Senior Editors' Introduction
Richard C. Jaeger and Peter R. Rony

8 A History of Microprocessor Development at Intel
Robert N. Noyce and Marcian E. Hoff, Jr.
In its first decade, the "computer on a chip" has achieved power, applicability, and pervasiveness unimagined even by its developers.

23 Digital Filter Implementation on 16-Bit Microcomputers
H. T. Nagle, Jr., and V. P. Nelson
Today's 16-bit microprocessors with built-in multiply offer a new option for digital filter implementation, meeting the needs of a wide range of signal processing applications.

32 Digital Filtering Performance Comparison of 16-Bit Microcomputers
V. P. Nelson and H. T. Nagle, Jr.
An examination of five 16-bit microprocessors shows that inexpensive general-purpose hardware is suitable for digital filtering.

43 A Performance Study of a Microcomputer-Implemented FSK Receiver
Paul D. Stigall, Rodger E. Ziemer, and Van T. Pham
Microprocessors are finding new usefulness in digital signal processing. Here, a frequency shift-keyed receiver is implemented on a two-processor system.

53 Hierarchical Coding of Microcomputers for High-Level Architecture
Edwin E. Klingman
This first of two articles on high-level microcomputer architecture presents a hierarchy of computer codes and introduces "millicoding," a new level within that hierarchy.

58 A Design Philosophy for Microcomputers
Edwin E. Klingman
These eight design rules lead to better utilization of VLSI power, as the implementation of one high-level architecture shows.

67 Status Report on the P896 Backplane Bus
Andrew A. Allison
Future system bus requirements must be considered before the emergence of yet another generation of incompletely specified and incompatible buses.

84 Microprocessor Bus Structures and Standards
Paul L. Borrill
Bus structure must be transparent to the programmer of multiprocessor systems. Such transparency can be attained with the adoption of a standard data representation for future bus designs.

97 Putting Design into an Introductory Logic Design Course: A Review of An Engineering Approach to Digital Design
Glen G. Langdon, Jr.