P896 status

The P896 working group has voted overwhelmingly in favor of publishing Draft 4.1 of the proposed Advanced Microcomputer System Backplane Bus Standard (P896) for public comment.

This draft incorporates the key features of P896 outlined previously (see IEEE Micro, February 1981, page 67; May 1981, page 86; November 1981, page 89), namely, distributed control of a 32-bit, multiplexed address/data path; a serial, intermodule communications channel; and a self-selecting arbitration mechanism supporting up to 32 bus masters. Four 5V power supply lines and ten grounds are included in the 64-pin, Level 1 configuration described in the draft. Mechanical specification of the backplane follows IEC 297 Edition 2, IEC SC48D, and DIN41494 (more familiarly known as Eurocard specifications).

In light of the introduction of Eurocard-based backplanes by US manufacturers of microprocessors, an outline of the differences between some well-publicized backplanes and P896 may be in order. The principal difference is that P896 is processor-, manufacturer-, and technology-independent—in stark contrast to the other buses. Another difference is that the decision to place the interface to the processor on the module, rather than on the backplane, has allowed the bus protocols to be optimized. Control of the P896 backplane is distributed among up to 32 completely independent masters; i.e., the reliability problems inherent in daisy-chained control and default mastery of the bus are eliminated. However, one of the most important features of the P896 is its compactness. The proposed standard offers far more capability than the alternatives but requires far fewer signal lines. For example, the VME bus provides 16 bits on 96 pins, or 32 on 192; Versabus needs 140 pins for 16 bits, and 260 for 32; Multibus needs 86 pins for one connector, 60 for a second (required), and only supports 16-bit operation. P896, on the other hand, combines a powerful, 32-bit bus structure with the pin count of a simple, 8-bit backplane.

Copies of the current working document may be obtained from Mrs. Dolores Swantkowsk i, Bldg. 255, Rm. A216, National Bureau of Standards, Washington, DC 20234.

New working group on expansion boards formed

The Microprocessor Standards Subcommittee of the Computer Society’s Computer Standards Committee has established a working group to develop a proposed standard for plug-in expansion boards. Such boards are used by manufacturers of single-board computers to provide easy and reconfigurable expansion of their products. The proposed standard will specify the logical, electrical, and mechanical requirements for such boards and their connectors.

The working group is taking as its starting point the ISBX expansion board developed by Intel Corporation and adopted by other suppliers of Multibus modules (see figure). Those interested in participating in the activities of the group are invited to contact its chairman, Leon Adams, at Texas Instruments, Inc., PO Box 1443, MS 6405, Houston, TX 77001; (713) 778-5724.

Expansion board concept.

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