proaches very closely the "ideal" computer interface with which the users can wire for each channel a single, parallel connector between his instrument(s) and this system and operate his instrument under control of the device linked serially with the STX 1003. Besides operating this interface with teletypewriter and IBM SYS/7, we have also operated it with an Altair 8800 microcomputer. We have used the interface both full duplex and half duplex. We also have a limited capability for selecting the baud rate through control logic.

Future Serial Computer Interfaces

But despite the versatility of the system built around the STX 1003, microprocessors will undoubtedly play an important role in future serial computer interfaces. With an 8-bit microprocessor and its clock, a parallel I/O port, and a serial I/O port, one could eliminate the need for almost any electronic design. Under program control, one could select and/or change baud rates, codes, numbers of channels transmitted, and formats. Designing microprocessor-controlled serial interfaces would be reduced to wiring a parallel input connector and to programming a PROM (*P*rogrammable *R*ead *O*nly *M*emory). Changing the interface tailored for one instrument to that for another would require changing PROM's. Standard, high-volume serial interfaces between commercially available instruments and commercially available computers would require the same microprocessor-based interface and a much cheaper, mass-produced ROM (*R*ead *O*nly *M*emory).

In summary, serial computer interfaces can be made quite generally applicable for interfacing many instruments having parallel I/O with computers and many hard-copy devices. Serial interfaces suffer only when required to handle extremely high data rates. Finally, one should not underestimate the power, simplicity, and convenience of a single pair of wires for a computer interface using serial data exchange techniques.

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