LES SOLOMON ON COMPUTER HARDWARE

Mixing and Matching Input/Outputs

WHEN you get ready to interface a peripheral to your computer, what's the first problem you face? Probably, it's how to match the mix of I/O parts that are available—TTL, RS232, and 20 mA. In short, you have to figure out a way to allow one to communicate with the other.

If you are ever caught in this fix, take a look at the accompanying illustrations. They show several ways to mix-and-match the three types of I/O.

If, for example, your computer has only TTL access and you need RS232, the circuits of A, B, and C give you a choice, while circuit D illustrates a simple way to convert RS232 to TTL.

On the other hand, if you run into a 20-mA/RS232 problem, then circuit E shows how to convert a 20-mA loop to RS232. The companion circuit shown in F illustrates how to convert an RS232 signal into a switch that can control a 20-mA loop.
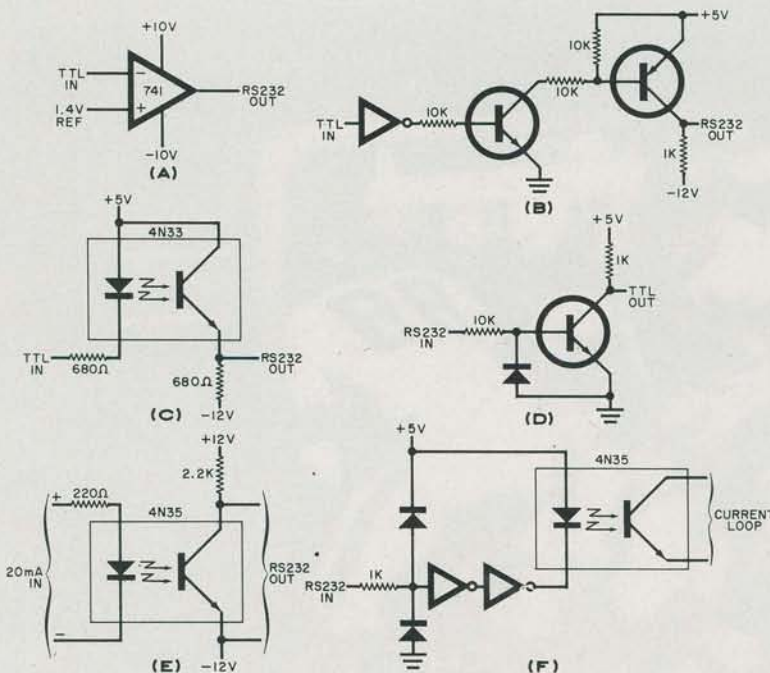
Apple "Jukebox". The Mega-Mate is a companion to the Apple II that uses a single conventional Apple drive in concert with 40 conventional diskettes all supported within a frame. A mechanical mechanism selects the desired diskette, opens the drive door, inserts the diskette, and closes the drive door. This allows up to 5M-bytes of stored data to be accessed. The resident firmware allows accessing any desired diskette. The number of the diskette is displayed on a front-panel 7-segment readout. The unit can be locked. It will soon be available for the TRS-80 Models I and III. $695. Additional diskette magazines are $70. **Address:** Computer Products Inc., Suite 124, 9071 Metcalf, Overland Park, KS 66212 (Tel: 913-648-7849).

IBM Controller. The Asynchronous Communications Controller for the IBM Personal Computer is available with either one or two RS232 ports. It is fully compatible with IBM software and can be used with a modem. It automatically adds and removes start, stop, and parity bits while a programmable baud-rate generator operates between 50 and 9600 baud. It supports a variety of character formats including five, six, seven, or eight characters with 1, 1½, or 2 stop bits and a prioritized interrupt system. The controller runs standard IBM diagnostics. $139 for one line, and $199 for the two-line version. **Address:** Datamac Computer Systems, 680 Almanor Ave., Sunnyvale, CA 94086 (Tel: 408-735-0323).

Apple Hard Disk. The Starfire is a 5M-byte Winchester specifically designed for the Apple II. It can also be used with CP/M (SoftCard required), or Pascal. It can be partitioned into 16 separate areas each under control of a different operating system if desired. Each partition is independent, and can be of any size. Software includes an expanded version of DOS with volume names, write protection, auto-boot, rename, volume directory, freespace directory, catalog, search, and single keystroke operation. Other utilities include locking and unlocking files, deleting and undeleting files, copy and verify status display. An extensive backup utility is also provided. $2495 with controller. A 10M-byte version is $2995 with controller. **Address:** Corona Data

When interfacing RS232 to TTL, you can use the circuit at A, B, or C. To convert RS232 to TTL, try the circuit at D. Converting a 20-mA loop to RS232 can be done with E, while the circuit at F is for the reverse situation.