

It's a super sales promoter, either locally or on a store-wide basis. It's easily converted to a title machine for a video recorder. It's a message generator or "answer back" unit for advanced two-way cable TV systems. Tied to a cassette recorder, it's an electronic notebook and study aid, or a custom catalog. It's an annunciator for plant, schools, and hospitals that tells not only that someone is needed, but why and where.

And, if all that isn't enough, it's easy to convert into a 12- or 16-place electronic calculator. You can also make a clock out of it, and, with extensive modification, you can even make a 32-register, 16-place serial digital computer out of the beast!

Cost of the project? Around \$120 for the basic unit. This is slightly under two month's normal rental of commercial units that don't do nearly as much, and less than 1/10 the cost of anything commercial you could buy to do the same job. And we feel that this cost is finally low enough that a lot of new uses are now not only possible, but reasonable as well.

The low cost comes about by using the latest available semiconductors, leaving the keyboard and case as flexible options, and working in kit form.

Printed-circuit boards and complete kits are readily available as are any special or hard-to-get-normally parts. A limited quantity of high-quality keyboards are also available from the same source. This is not the sort of thing you'd want to try as a first electronic project, but if you are willing to slowly and methodically work things out and carefully reason out any debugging problems, you shouldn't have an unreasonable amount of trouble getting the thing to work. Once you're past a certain stage early in the construction, the TV set itself becomes a self-testing display that greatly simplifies debugging.

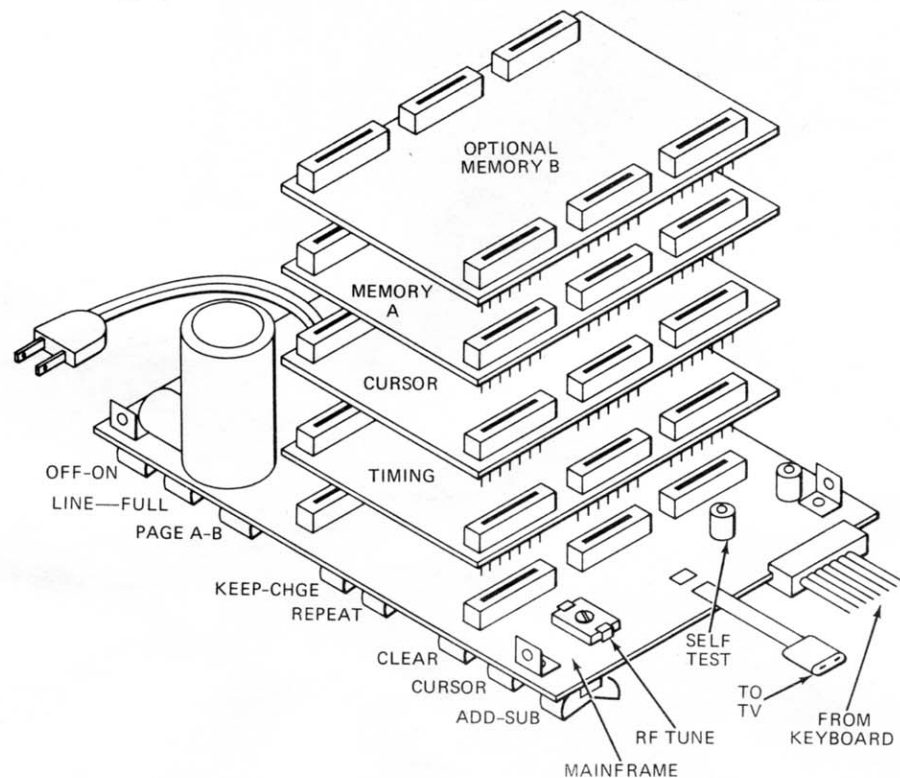
To make things easier, you can get a complete copy of the *entire* story that includes additional design information, how it works, PC patterns, construction details, etc. **DO NOT ATTEMPT CONSTRUCTION WITHOUT THIS ADDITIONAL INFORMATION!**

Construction is done in stages. Once each stage is tested, it is safe to go into the next, progressively working up to a complete unit. The basic machine we'll show you works from a keyboard or a set of six switches and a pushbutton. Thanks to the plug-in construction, low-cost add-on circuit boards can let you talk to a computer or a cassette recorder, or adapt the unit for 12-place calculation. These add-ons will be picked up later if enough readers seem interested. They're not needed for most of the possible applications of this TV Typewriter.

Specs of the unit

Complete specs appear in Table 1. The basic device generates and stores 512 characters, arranged as sixteen lines of 32 characters each. A second page of characters is easily added internally to bring the total up to 1024 characters. For more storage, a C90 cassette can store well over a hundred pages, so the total capability is quite large. The characters available are standard ASCII ones that include the capital letters, numerals, and most punctuation.

The TV Typewriter is self-powered and contains its own miniature TV transmitter which simply clips onto the antenna terminals of an unmodified TV tuned to an unused channel. Several TV's may be driven simultaneously, and a direct video output is also available for industrial and experimental uses. While any TV can be "borrowed" and used with the typewriter, small, high-quality portables give the nicest presentation, and slight size and position



HOW TYPEWRITER ELECTRONICS IS ASSEMBLED within the case. The timing, cursor and memory boards plug into the mainframe and each other, cordwood fashion.