
A Solid State Keyboard as Modern as Your Computer

Solid state electronics has moved the computer quickly from the business world into personal uses. Meanwhile, computer keyboards have hardly moved at all.

Now TASA introduces a keyboard as modern as your computer. Don't confuse it with ordinary flex switches. It is fully solid state and self-contained, ready to plug in and use. Since it has no mechanical moving parts, it responds quickly to your touch. And it provides full ASCII coding in TASA's exclusive color-keyed layout that makes it easier to say what you want to say to your computer.

This is the TASA Micro Proximity Keyboard, and it sells for only \$49.95. Despite the price, CMOS/LSI integrated circuits make it totally reliable inside. With the sensors behind a shield of polycarbonate—the most rugged plastic ever developed—it is also durable and reliable outside.

The TASA Keyboard contains all the features you would expect in a professional keyboard—shift, shift lock, control functions, and a normal typewriter format.

If you're tired of costly mechanical keyboards and kits you have to assemble, bring your computer up to date the easy way. Plug in a TASA Keyboard. It will never come between you and your computer.

the **tasa**

Micro Proximity Keyboard

\$49.⁹⁵



The TASA Keyboard

Features:

- 51 Keys, with entire 128 position ASCII code output.
- All keys identified as to Un-shift, Shift and Control outputs.
- Full 8-bit ASCII output with selectable positive or negative parity.
- Single power supply, 12.5 - 20V unregulated.
- Output TTL, DTL and CMOS-compatible.
- Full solid state design with no moving parts.
- Standard PC edge connector.
- Use on any flat surface, or with
- Optional plastic support stand (as shown)

Touch Activated Switch Arrays, Inc.
2346 Walsh Avenue, Santa Clara
California 95050 (408) 247-2301

NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

Enclosed is my check for \$ _____
to cover:

_____ TASA Keyboards
@ \$49.95— \$ _____

_____ Optional stands
@ \$12.00— \$ _____

Shipping and handling
charge at \$5.00
per keyboard— \$ _____

SUBTOTAL—\$ _____

Sales Tax, 6%—\$ _____
(California residents only)

TOTAL ENCLOSED \$ _____

9/78

Price subject to change without notice

Circle 363 on inquiry card.

Letters

WANTED: A RANDOM NUMBER CIRCUIT

Writing a really good pseudorandom number generator is not an easy thing to do; Knuth devoted half a volume to the process. Also, if you base a computer game on a pseudorandom number generator, you have the awkward problem of supplying a seed for each game. For these reasons, I would like a way of getting truly random numbers into a micro-processor. One way to do this is to have the computer increment a counter while waiting for the user to enter something. If the computer is fast enough, the low order bits of the counter will be random. However, this method is not good for generating large numbers of random numbers, since the user must be consulted for each one. What I really want is a circuit which generates random bits. I've heard that such circuits exist, based on something called "noisy" diodes. Where can I get details?

Scott D Johnson
241 Linden Av
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Certain processors, like the Zilog Z-80, have methods of apparently forming a random seed number. Since the hidden refresh counter for dynamic memory is always in operation it can be paged whenever a seed for a pseudorandom number generator is required. Within certain constraints it may also be possible to use a series of these numbers as pseudorandom numbers.

WHAT A SMALL COMPUTER CAN DO FOR THE MULTIPLY HANDICAPPED

Being extremely green at this computer game and having no hardware experience (come to think of it no experience whatever) I have only had my Apple about three weeks, but I have a glimpse of the tremendous possibilities now open to me.

Since breaking my neck whilst on National Service in Germany, I've been able to move my head, left, right and slightly backwards and forwards and that's my lot. If anyone tries lying on the floor on his back, using the above movements and tries writing his name with a pen in his mouth (holding a pad above) they will quickly realise there's not a big variety of things someone in my position can do.

Now imagine the same person with the keyboard of a computer in front of him you find the limits go up tenfold.

I know there are machines like "Possom" issued in certain cases by the UK government. It will connect the disabled to TV telephone, it will open doors and curtains, and work a typewriter, about a dozen functions and it costs between £1,400 and £1,600 depending on the number of functions.

The processor I have is an "Apple II" 16 K and because I have to work with a stick in my mouth, the shift and control keys have had to be modified so that they work like a typewriter and use two movements to lock and release.

The Apple has opened up a new world I didn't know existed. It now makes jobs possible, the design and colour graphics and all the games (and don't knock the games, remember your capabilities while lying on the floor) and all this at a touch with a stick, and at costs comparable with "Possom."

All I have to do now is buckle down and do a lot of studying and practicing.

I hope this gives some of your readers a glimpse of what a computer could do for the disabled and severely disabled. Also wonder if they have the same problem I have of doing a bit more, and a bit more to find it's 3 AM, or later, and that you have to force yourself to turn that switch off.

Charles Smith
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The Thistle Foundation
Edinburgh EH16 4EB
SCOTLAND

SOME NOTES FROM JAPAN

You may be interested in details of two recent Tokyo shows. At the Business Machines Show Sharp featured a new programmable calculator, the PC1300. This features magnetic card program storage, alphanumeric printer and display. It has 26 memories (A thru Z), program size is up to "256 steps," two levels of subroutine nesting are allowed, size is 44 by 123 by 220.5 mm (1.7 by 4.8 by 8.7 inches), weight is 680 grams (8 ounces). Numeric format is 10 digit mantissa, 2 digit exponent. Display scrolling (programmed?) was demonstrated at the show. Display and printer are both 16 characters wide.

Continued on page 66