

# CIRCUIT IDEAS

## Modifying the K.B.6 ASCII encoded keyboard

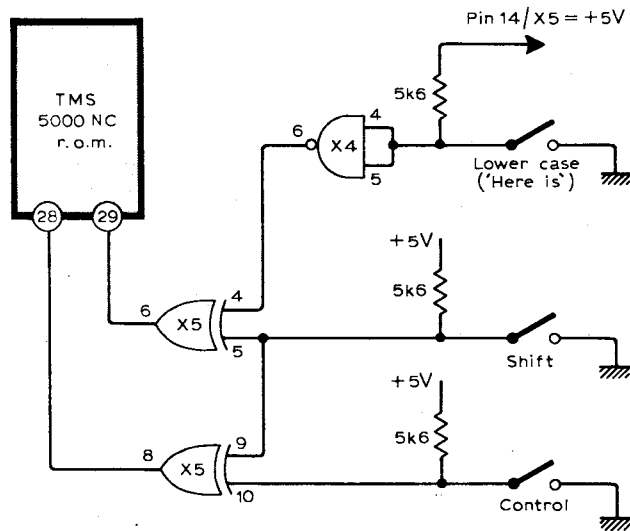
This keyboard does not have a lower case character output and fails to provide the parity bit required for some applications. Although it is quite easy to sense the seven bits of the ASCII output, the TMS 5000 NC encoder chip provides the parity bit on pin 6 which can be hard-wired to the redundant segment 2 on the outlet.

Cut the track leading from switch "P" to the plated-through hole near pin 20 of the TMS 5000 r.o.m., close to the switch. Trace the track from pin 22 of the r.o.m. to the contacts of the "+;" switch, and

hard-wire this to the disconnected contact of the "P" switch. Lower case characters will now be obtained by simultaneously pressing the "shift" and "ctrl" keys together with the requisite character key. The keyboard however contains sufficient hardware to implement a separate lower case key, and the redundant "here is" key may be used for this purpose. Wire the non-earthly side of the "here is" key to pins 4 and 5 of the 7400 marked X4, and connect a 5.6kΩ resistor from these pins to pin 14 of the 7486 marked X5. Connect a wire from

pin 6 of the 7400 to pin 4 of the 7486. Finally, cut the connection between pin 4 of the 7486 and the ground line on the key side of the printed circuit board. The consequential loss of the "@" character and the "NUL" ASCII output from the "P" as previously connected, can be made good by borrowing another redundant key and wiring it into the r.o.m. lines which previously yielded the "P" and "@" characters.

Dr. F. Schild,  
Fortis Green,  
London.



Pin 28	Pin 29	Output
0	0	Lower case
0	1	Upper case
1	1	Control
1	0	Shift

TRUTH TABLE

