

Modifications for CMOS Die

The CMOS Die of April 1979 (File No 3/EG/11) contained two minor drawing errors, and a reader has also reported that it can develop a bias towards high numbers as the battery runs down. This note deals with both problems.

One error concerned the board pattern, whereby pin 2 of the 4017 was connected to pin 3 of 4001B/4, instead of pin 2. The other was a transposition of the pin numbers for 4017, on the overlay pattern. Both have been corrected on the accompanying drawings.

The high-number bias appears to be due to pulses from the display section coupling into the counting section, via the common battery impedance. The reader who reported this suggested sacrificing the "rolling dice" effect by removing the diode, 470k resistor, and C2 network. This approach is completely effective.

Alternatively, we can fit a decoupling network, consisting of a 1k resistor and a 1000uF capacitor. A modified board pattern (79d5m) with overlay is illustrated, and will take care of units yet to be built.

The drawing error in existing boards can be corrected by cutting the pattern and adding a link, and modified by making two more cuts and adding another link. The location of the cuts, links, and decoupling components are also illustrated.

Top right: the modified board pattern incorporating the corrections and modifications. Immediate right: The modified board with overlay pattern. Far right: How to modify an old board. Below: The circuit with the decoupling components added.

