Excessive Battery Drain

New 28 June 2001

Two messages posted on CIX regarding a bad capacitor draining batteries.

>>>z88/general 2415 forensics(1603)26Sep97 11:07
Old Z88 revived....
My Z88 died a few years ago, with a faulty screen

Realising just recently how much I missed _LIGHT_ portable word processing, I bought a second hand one from someone on CIX.

All seemed fine, but after a day or so, I realised my newly acquired computer wasn't working properly. This is no criticism of the person who sold it to me..I am now entirely happy with my purchase, and this fault would not have been readily apparent to the vendor.

The computer was drawing excessive current in stand-by mode - consuming 4 duracells every 24 hours! It also lost memory contents immediately I removed the batteries. This pointed to a fault with the "super-cap" - the memory retention capacitor.

I swapped the screen from the new machine into my old machine.
Fine...except that machine also manifested the same problem.

To confirm the problem was with the super-cap, I removed it from one of the machines. This cured the excessive current use. I've now soldered in a 0.22F capacitor (the nearest replacement I could find) to replace the 0.047F capacitor originally fitted. This has cured the problem.

These capacitors are available from Maplins at ca. £2.50. They are sold as memory retention capacitors. Ordinary high capacity electrolytics might not work, as many have a high leakage current.

Two old machines showing the same problem suggests that these capacitors do not last for ever. If you have an old machine which you've stopped using because of short battery life, this is an easy and cheap fix.

'scuse this posting if I've re-invented wheel!

Mark Webster

>>>z88/general 2417 forensics(1718)26Sep97 20:48 c2416*
> How difficult is it?

The "super-cap" is big, easily recognisable, and in a part of the board which is easily accessible and not crowded with other connections...but, if you've never unsoldered a component from a circuit board and soldered in a replacement, I wouldn't attempt it....not without practicing :-)

I'm not an engineer...or even a good amateur, but I have constructed various circuits in the past. The level of difficulty is about the same as inserting a simm in a PC and then soldering a DIN plug onto an audio lead. It took me about 20 mins to do.

If you want to get your z88 working properly (and it's suffering from this fault) what you might want to do is:

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Remove all the screws on the back - some are below rubber pads and under
the "tilt" flap.

Lift off the fascia to the screen.

Pull the keyboard up, and then downwards a couple of inches

Unplug the ribbon cables connecting keyboard and screen - be careful with
the screen, apparently it's v. sensitive to static, so earth yourself first.

The capacitor is the green plastic and metal drum shaped component (C22?)
to the left of the leftmost chip occupying a socket which is four pins too
large.

Lift the lower edge of the board upward to gain access to the
undersurface.

Desolder the capacitor - melt the solder and use a solder pump to suck
away the solder or desoldering wick to draw it up...or do like I do, and
blow the molten solder away by blowing sharply through a drinking straw
(not recommended!).

Solder in a replacement, Maplin Cat No. JP99H. "rnd memcap 0.22F/5.5", £2.29.

Reassemble. Simple. But I offer no guarantees and you follow these
suggestions at t you own risk. Worked for me!

Mark Webster
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Note

'the leftmost chip occupying a socket which is four pins too large' refers to the internal ROM chip which is 28 pin for OZ version 3.0, and 32 pin on all other OZ versions where the chip is actually an EPROM. Make that 'the leftmost chip with 28 or 32 pins'.

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