Replacing the BULL Micral 45 BIOS battery

Francis Massen (francis.massen@education.lu)

File: BULL_Micral45_Bios_battery_replacement.docx (and .pdf)

version: 1.0 date: 18 Oct 2026

1. Introduction

The Computarium has in its collection several Bull Micral 45 microcomputers, which were the first family of “IBM compatible” classroom computers introduced in the second half of the 1980’s in the Luxembourg secondary schools (the first were “non compatible” BBC model B and BBC Master microcomputers).

In October 2026 we were asked by a movie making company for a big batch of computers from the 1980’s, and so I tried to check the machines in our stock which were not on display. There were 3 Bull Micral 45 and 1 Bull Micral 200. Both are AT-type machines from the 1985-1989 period; the BM45 has a DIN keyboard connector and a EGA/CGA display ourput (DB9 connector), whereas the BM200 has a PS/2 keyboard connector and a VGA display output (DB15). The Bios batteries of all these machines were dead; the setup is made by software, using an INSTALL.EXE program from a bootable floppy diskette (3.5” 720kB for the BM45, 1.44MB for the BM200).
The BM200 has a DALLAS 1287 RTC chip with inbuilt battery; I was able to find in our stock a still working replacement and could configure easily this machine and install a vintage DOS 6.22

2. Replacing the BM45 BIOS battery

The BM45 had a special 7.2V BIOS battery, with two 3.6V cells in series with a 47kOhm limiting resistor. Fig.1 picture (adapted from Ref. 1) shows that battery with its 4 pole connector going into the P14 connector of the mainboard. Only pin2 (+) and pin4 (-) are used (see fig.2). Fig.2 shows the open chassis and Fig.3

a close-up view to the P14 connector located near the main multi-pole.power connector

Fig.1. Original BM45 Bios battery pack (pictured adapted from Ref. 1)

Fig.2. Open chassis of the BM45; power-supply module and original Bios battery at the left.

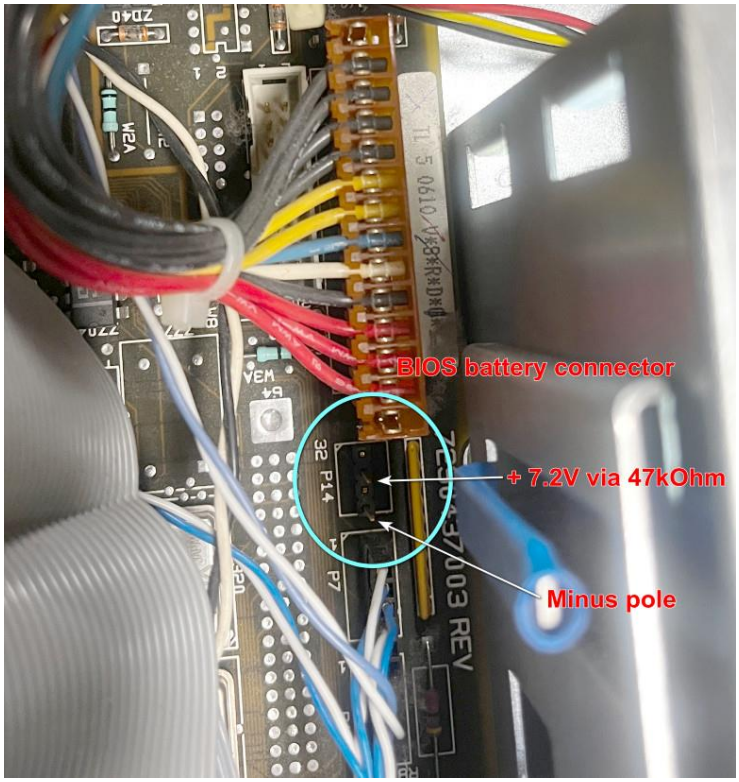

Fig.3. Location of the P14 battery connector on the mainboard.

Replacement non-rechargeable 3.6V AA cells can be ordered at Amazon…

Fig.4. Relative inexpensive 3.6V cells (ca. 15 € for 4 cells)

The following battery-cases can easily include the mandatory 47kOhm resistor: they have a small (not useful here) ON/OFF switch compartiment, where one contact is sufficiently large to solder one pin of the resistor, the second going to the red + pole wire (see Fig. 6).

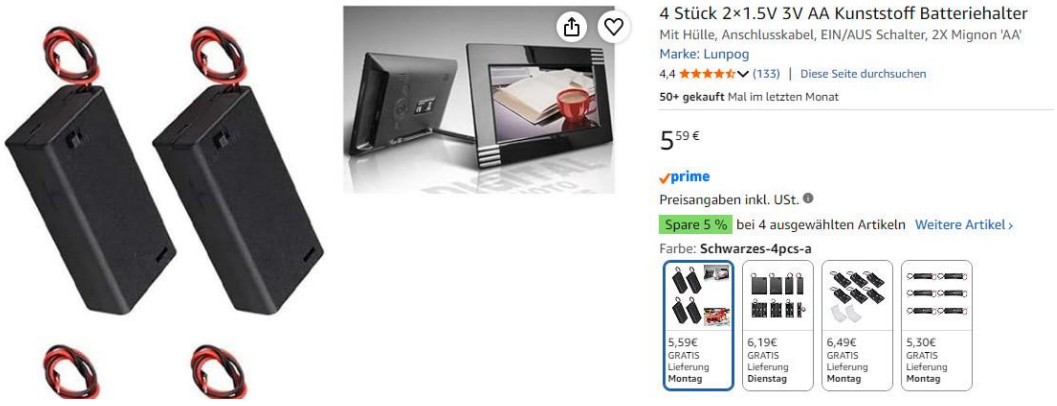

Fig.5. Battery cases with leads and switch compartimenet

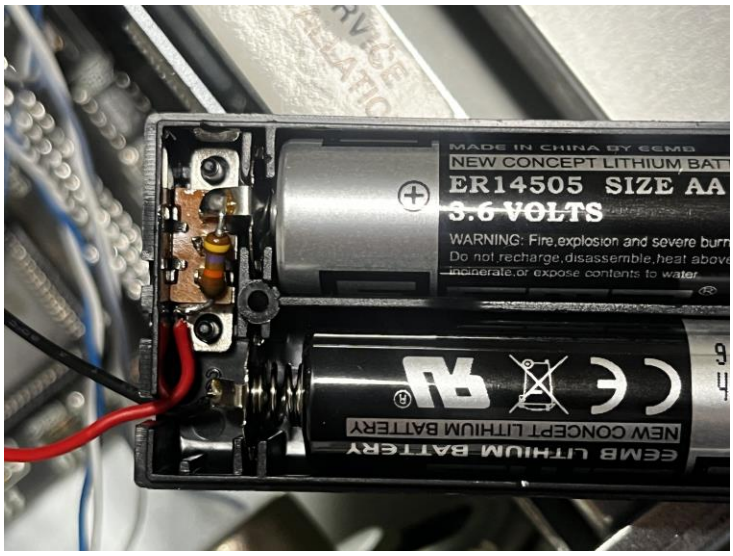

Fig.6. Close-up view on resistor soldered between right switch contact tongue and + red wire.

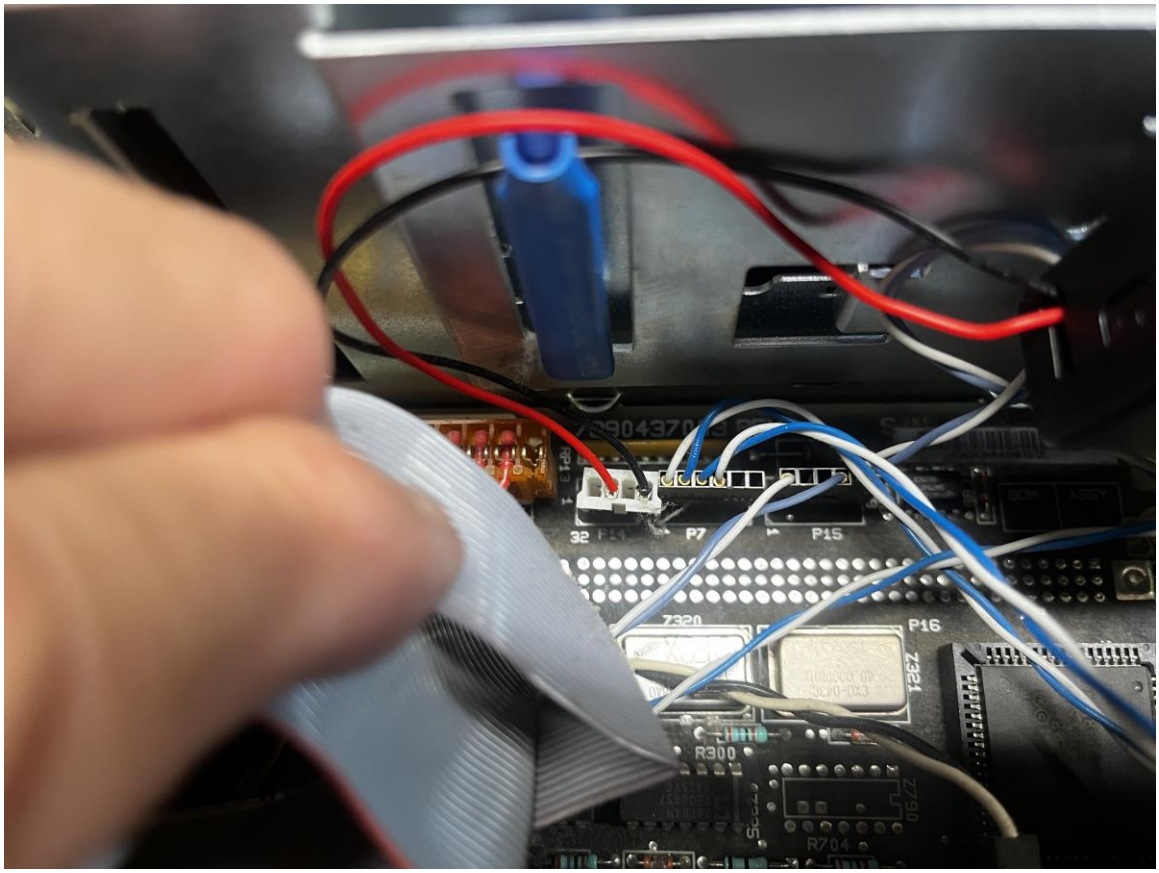

Fig.7. New battery connector in P14

Fig. 8 shows the new battery-case fixed on the original Velcro still in place. The battery will probably be good for at least 5 to 8 more years. The new case allows an easy replacement if that should be needed in a distant future

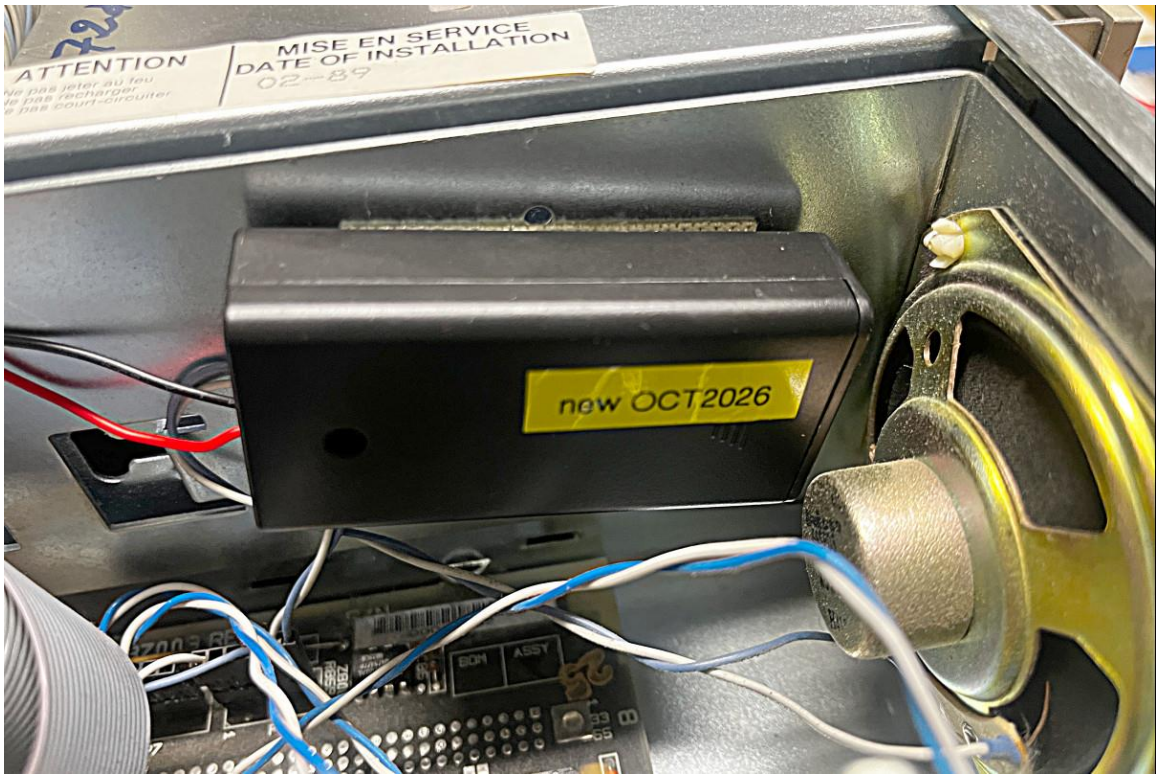

Fig.8. Closed battery case with Velcro fixed in the original position.

References:

1. https://forum.system-cfg.com/viewtopic.php?t=9767&start=15