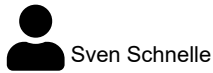



✖ Mute This Topic (<https://groups.io/g/HP-Agilent-Keysight-equipment/ft/91924573?csrf=5513314409256117711&mute=1&p=Created%2C%2C%2C20%2C2%2C0%2C0>)

E4418B hangs after few seconds Date ▲ (<https://groups.io/g/HP-Agilent-Keysight-equipment/topic/91924573?p=Created%2C%2C%2C20%2C2%2C0%2C0>)



Jun 22  (<https://groups.io/g/HP-Agilent-Keysight-equipment/message/127340>)

Hi Paul,

"Paul Bicknell" <admin@bicknells.f2s.com> writes:

Hi Steve

I assume you are talking about a E4418 assuming that

Err, yes. Typo.

is so Lothar is quite correct in fact going back a few years I had the same problem that you are suffering I asked on this sit only to find another 4418 in the USA with the same problem
That was to go on the bench for repair that afternoon 6 hours' time difference I replaced the battery and fixed the fault then posted the fix onto this site and we had repaired 2 meters within the day

Ok. I'm happy if replacing the battery is all i have to do. I'm not really wanting to replace the CPU if not absolutely required.

Ok All the information is on this site including the modification to stop the meter discharging a new cell within 6 months

Yes, seen the service note and checked. The resistors are already removed. I guess they were removed, because the firmware has a date in it from 2000, so i think its an early model. (Serial number starts with MY41, not sure when HP started selling the 4418B)

I also read the bootloader from the device and uploaded it to the groups files section. I did this by populating the J12 debug connector, and connecting a BDM debugger (a Lauterbach Trace32). I was able to single step the firmware and also read/write memory. The interesting thing is that when the CPU stops, the debugger even reports a 'Debug port failure' and i can no longer access memory or break/single step/continue the CPU.

But i'll wait for the battery + replacement battery now. First replacing the battery and if that doesn't help replacing the processor. ... And maybe figuring out that the processor wasn't the culprit. :-)

I noticed that there's a minimalistic boot monitor in the firmware:

bootvars - display bootrom variables

bc [[hex boot config](#)] - set the bootrom configuration (see [bchelp](#))

gu [[hex start addr](#)] - go to start address

bs - force a breakpoint when starting

gbreak - force a gdb breakpoint

```

gdb      - enable gdb trapping of exceptions
dlong   [<hex start address> [num bytes]] - display memory using longs
dword   [<hex start address> [num bytes]] - display memory using words
dbyte   [<hex start address> [num bytes]] - display memory using bytes
dmem    [<hex start address> [num bytes]] - display memory using bytes
slong   <hex start address> <hexchars> - set memory using longs
sword   <hex start address> <hexchars> - set memory using words
sbyte   <hex start address> <hexchars> - set memory using bytes
smem    <hex start address> <hexchars> - set memory using bytes
hmon    [device] - download into memory
version - display bootrom version

```

It looks like it's sending a 0x05 byte via the serial port connection and waits for either 0x06 or 0x1b (ESC) for a short amount of time. I haven't figured out whether that requires holding down a certain key during power up (like the key to start RS232 firmware downloading).

Not sure what one would do with this - the only thing i can imagine is replacing the LCD display by something better readable and modify the firmware to handle that. :-)

/Sven

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Sven Schnelle

12:38pm 🔗 (<https://groups.io/g/HP-Agilent-Keysight-equipment/message/127719>)

Ok, i'm stupid. Really.

Replaced the processor, didn't help. Thought "Ok, the only thing left is the SRAM's". So I ordered four of them (I already swapped two of them with old ones I had). Replacing all of them didn't help either.

Measuring everything again, and it turned out, that the PFO# output of the MAX703 supervisor output starts oscillating after 30s on first startup, after that after 2s. Cooled it down with spray, the unit is working again for 30s. I lifted the PFO# output and pulled it up with a resistor, and the unit is working fine. The PFI input is ok, so it must be the supervisor chip.

So all that is broken is the supervisor chip - I'm pretty sure I probed the PFO pin right at the beginning. Can't believe I swapped the Processor + SRAM's without noticing that.

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Harvey White

1:19pm 🔗 (<https://groups.io/g/HP-Agilent-Keysight-equipment/message/127721>)

In some early designs, the processor supervisor keeps the processor from booting when the power supply voltages are out of spec. It also generates a guaranteed-to-spec reset pulse after the voltages stabilize. Another possible function is that of a watchdog timer. The code must "hit" the timer with an address/strobe within a certain amount of time or the chip resets the processor. The logic behind this is that the processor could be caught in a "wait for something to change" loop where, due to a fault, the something doesn't ever change. This resets the processor and at least keeps the system up and running. Current chips have a watchdog timer that does the same watchdog function. That function may be disabled as needed.

Depending on how the MAX703 works, you may want to see that the processor is actually sending a reset signal to the MAX703 (if it uses one).

This same watchdog scheme is used in some military equipment to keep the processor "running" in error conditions, for certain limited definitions of "run".

Harvey

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Paul Bicknell (/g/HP-Agilent-Keysight-equipment/profile/@Paul_B)

1:35pm <https://groups.io/g/HP-Agilent-Keysight-equipment/message/127722>

Hi just in case you didn't realise I have up loaded all the service notes for the 4418 to this sight

- 1. HP-Agilent-Keysight-equipment@groups.io (<https://groups.io/g/HP-Agilent-Keysight-equipment>)
- 1. Files (<https://groups.io/g/HP-Agilent-Keysight-equipment/files>)
- 1. 4000 to 4999 (<https://groups.io/g/HP-Agilent-Keysight-equipment/files/4000%20to%204999>)
- 1. E 4418-9 B Power meter and CLIP (<https://groups.io/g/HP-Agilent-Keysight-equipment/files/4000%20to%204999/E%204418-9%20%20B%20Power%20meter%20and%20%20CLIP>)
- 1. E4418 B Service Notes

Regards Paul

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- ← (<https://groups.io/g/HP-Agilent-Keysight-equipment/topic/92170663?p=%2C%2C%2C20%2C0%2C0%2C0%3A%3A%2C%2C%2C0%2C0%2C0%2C92170663>)
- (<https://groups.io/g/HP-Agilent-Keysight-equipment/topic/92171255?p=%2C%2C%2C20%2C0%2C0%2C0%3A%3A%2C%2C%2C0%2C0%2C0%2C92171255>)