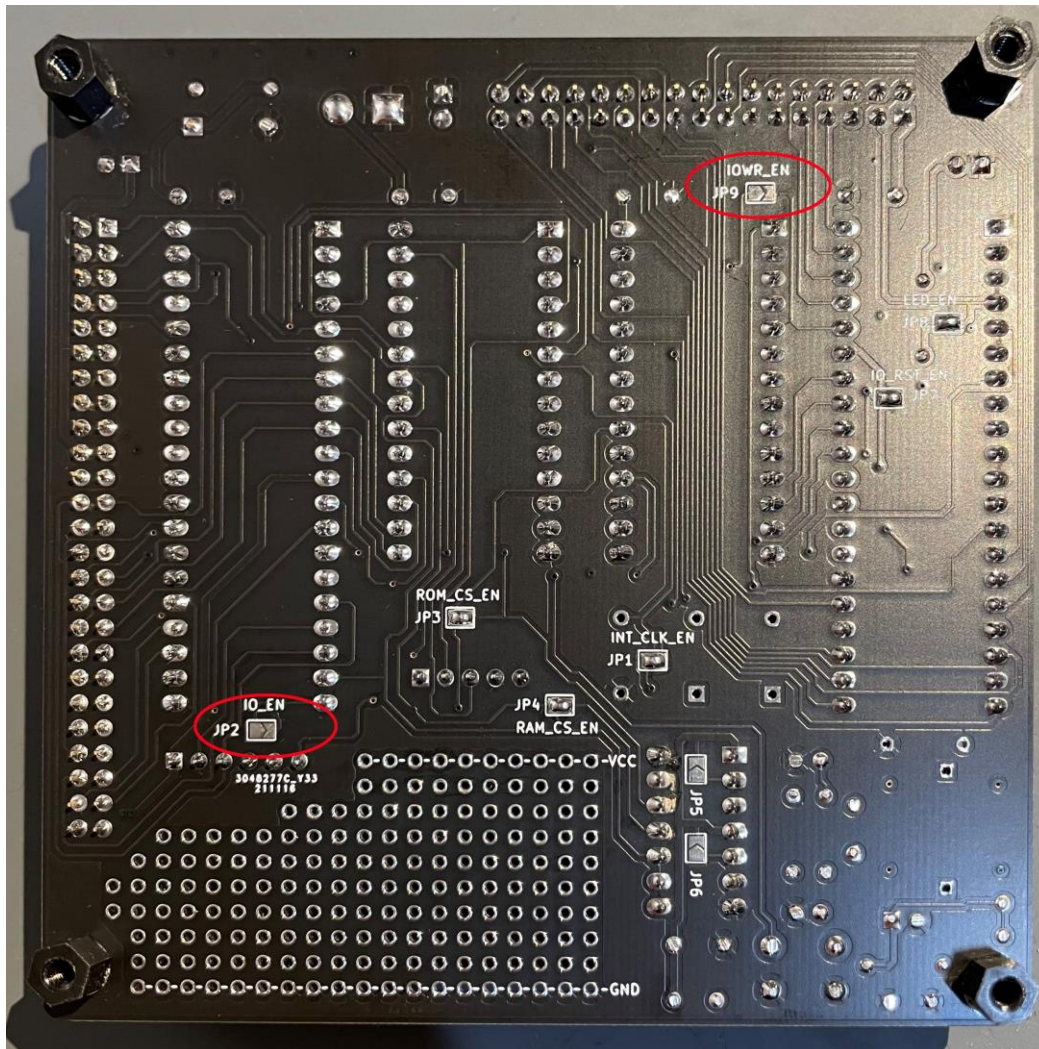Here are all the information you need to use your MGH80-Serial expansion board.

To successfully use this expansion board you will need to:

1. Double check that you are using 7.3728MHz or 3.6864MHz crystal.
2. Re-configure the solder bridges on MGH80 as follows:
   a. Make sure JP9 (IOWR_EN) is left open.
   b. Make sure JP2 (IO_EN) is left open.

3. Configure the Serial Expansion board as follows:
    a. JP1 (IO_CS) - closed
    b. JP2 (ACIA_CS) – closed.
    c. JP5 – Closed
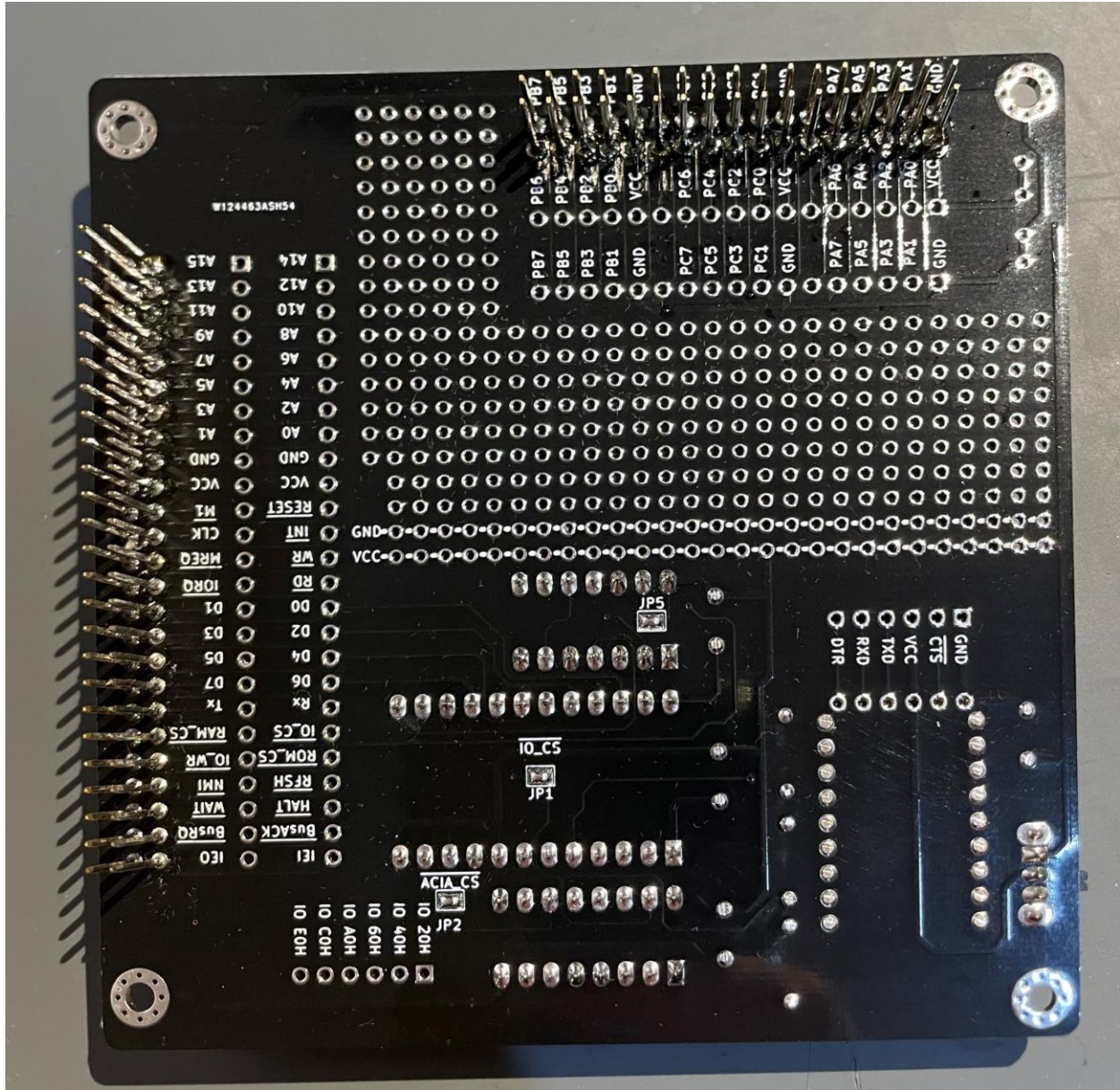
4. In terms of firmware you can use the provided EPROM and load "SCMonitor-v100-R3-RC2014-32k-ROM.hex", for your convenience I already programmed the EPROM, but note you are not paying for the firmware as it is free of charge. This firmware has not been written by me, but is open source and available on the internet. I've reached out to the author to get an official permission to distribute the code with my board.

5. **A few words on power**: the serial expansion board comes with a USB-TTL adapter that can provide power to both the serial adapter and MGH80. There is also a power switch on-board, you should turn it into the ON position, if you want the USB port to be the source of power. Otherwise you should keep it in the OFF position. **Note, even in the OFF position the small red LED on the serial adapter will still be lit up.**
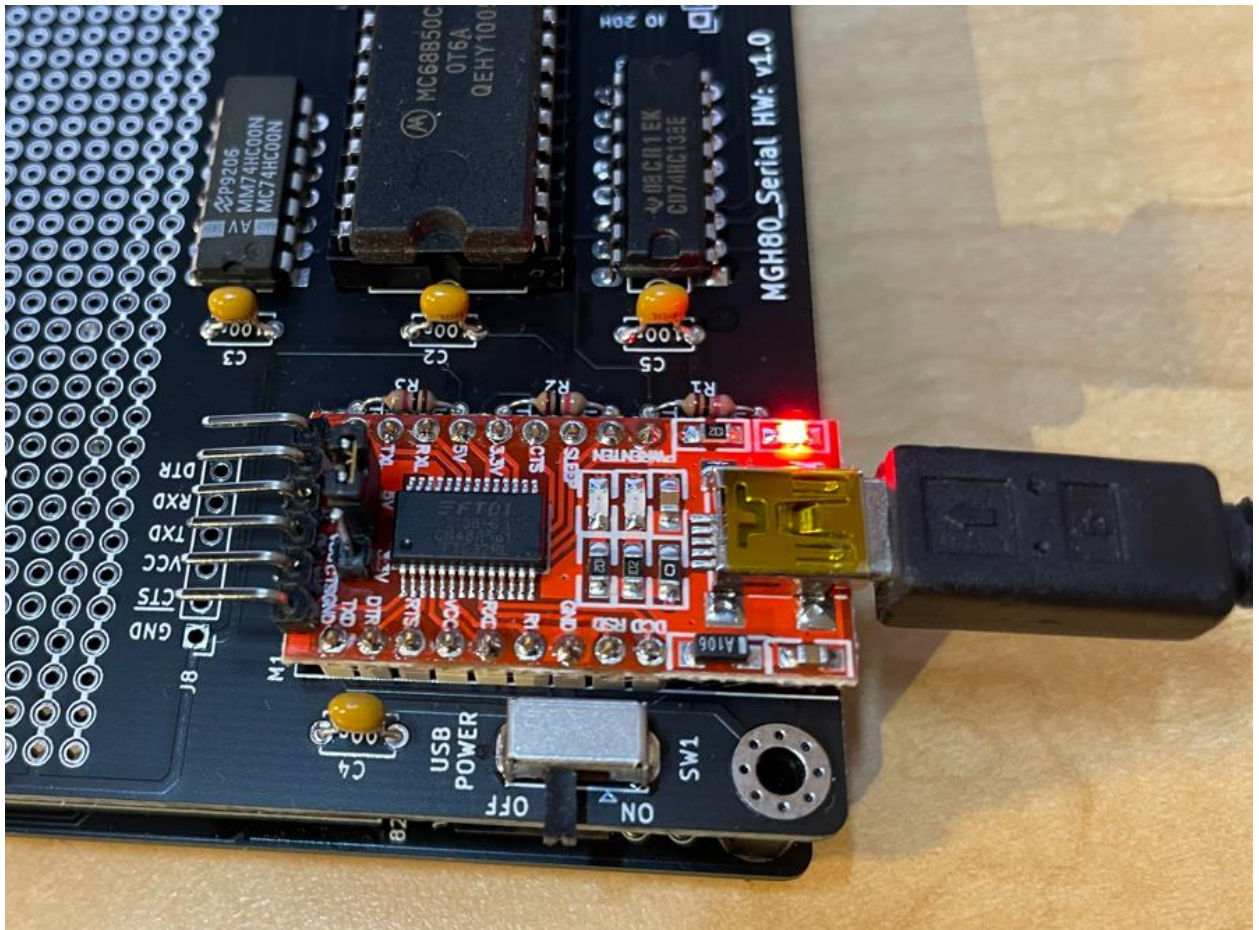
6. Establishing connection: you will need a serial terminal (screen or putty), set the speed to 115200kbps (or 57600bps if 3.6864 MHz crystal is used) . The board will initially boot to the SCM "monitor", you can do some low level commands there (for example to set all lines of port A of the 8255 to logic "1" you would send the following commands:

```
Small Computer Monitor - RC2014
*o 3 80
*o 0 ff
*o 0 0
*
```

"o 3 80" command translates to set I/O port 03h to 80h (that is the address of control byte that sets all ports of the 8255 as outputs, "o 0 ff" changes the lines of Port A to "1" and "o 0 0" changes the level back to "0" on all outputs of port A.

7. Here is how you start BASIC, from the "monitor" start by typing "BASIC", when it asks "Memory top?" just hit enter. The small example basic program shows how to control the ports of the 8255 (note basic is not using hex by default, so parameters are provided in decimal).

```
Small Computer Monitor - RC2014
*
*BASIC

Memory top?
Z80 BASIC Ver 4.7b
Copyright (C) 1978 by Microsoft
31427 Bytes free
Ok

10 OUT 3,128
20 OUT 0,255
RUN
Ok
```

Have fun and report any issues / successes on groups.io ☺ This way everyone is "learning".

Note: IO_WR Was added to MGH80 in PCB ver 1.5, if you are using 1.4 you
will have to cut the WR link between the Z80 and the 8255, and run IO_WR
from the 8255 to Z50Bus pin 41. This is only needed for 82C55-2 or
82C55-5 chips, standard CP82C55A works fine.

100nF Decoupling Capacitors.

Unused Gate

Mounting Holes

Address

Doc version 1.1.1