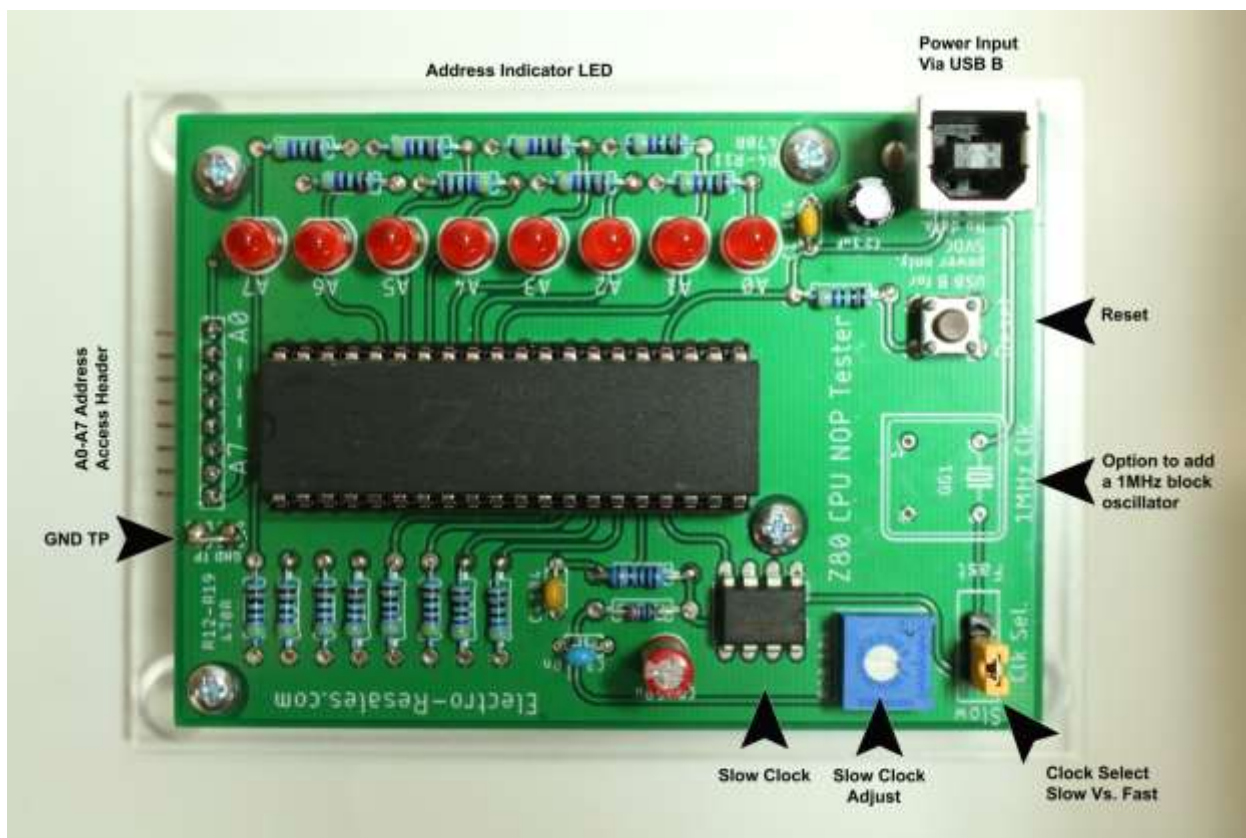Electro-Resales LLC
Think-Design-Make

Z80 CPU Tester Plus

This quick guide to the Z80 NOP tester is designed to outline the key features and assist you in using this unit.

The plan photo of the PCB unit below should be reviewed while reading this note.

First use

1. Before applying power, insert the Z80 CPU chip to be tested in to the on board socket. Insure the notch at the top of the chip matches the notch in the chip socket and is toward the top of the PCB where the Address header is located. Visually inspect the chip after installation to insure each pin is properly inserted and no bent pins exist.

2. Check that the clock select header is bridging the center and left side header pins. This will insure the slow speed clock is selected.
3. Power is supplied by connecting a USB B cable to the USB B socket on the lower right of the PCB, the other end is connected to a regular USB connector on a computer or a 5VDC power bank.
4. As soon as power is applied the tester should start up with the Address line LED's lighting in a binary count from A0 –A7 of 1 – 255, after all the LED's have lit, the count resets and starts over.
5. If the count does not start, briefly press the reset button, to force a reset, the count should now begin. If no count starts it is likely that the CPU has a fault of some sort.
6. LED A7 will flash when the count lights this LED, this is thought to be connected to the Z80 signal designed to refresh dynamic RAM. The flashing does not affect the count or tester operation.
7. The slow clock has been set at the factory and should not need to be altered, however this trimmer can be adjusted to speed up or slow down the clock.

Advanced Features

The Z80 tester has the option to test a Z80 CPU further, by analyzing the address lines using a scope or logic tester. By adding a 1MHz block oscillator to the positon on the PCB, this oscillator will need to be obtained separately and soldered on to the PCB.

After installation the clock select header needs to be moved to bridge the center and right side header. Application of power using this clock will perform the same steps as the slow clock, but the count as visualized on the LED's will not be visible, as the LED's will all light simultaneously.

The Header located at the top of the PCB and GND tap allow the address lines to be observed by either am Oscilloscope or logic analyzer.

We have included a typical screen shot of the address lines A0-A1 as observed using a simple logic analyzer.
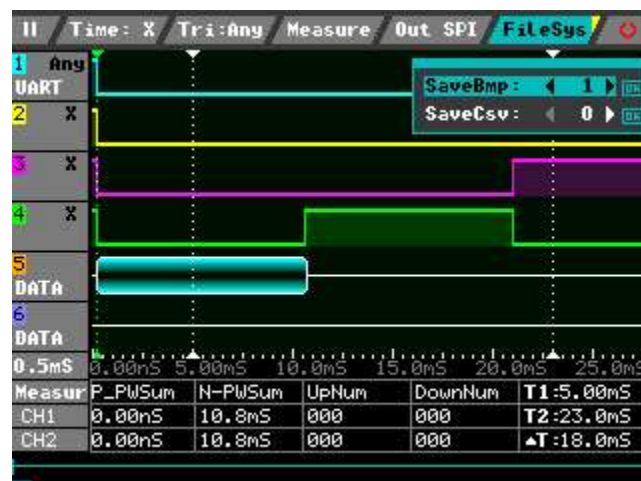
Final Notes & Warnings

This simple tester is designed to provide a quick Go-No-Go evaluation of the Z80 CPU; while the Address lines have been broken out to allow more sophisticated analysis to be conducted.

1. Always insert/remove the CPU under test with power removed.
2. Only use 5 VDC USB power outputs use of higher power levels will damage the unit.
3. If probing the Address line header always insure the GND is also connected to the instrument used for probing.
4. Problems or questions? Contact us; steve@electroresales.com