
Subject: Resurrecting EaZy80, a forgotten glue-less 22MHz Z80 SBC.

Posted by [plasm0](#) on Mon, 20 Nov 2023 02:14:54 GMT

[View Forum Message](#) <> [Reply to Message](#)

EaZy80 was a 4-1/2 year pc board design that was forgotten. It was not assembled and powered up until recently when I rediscovered it while rummaging through pc boards. The design approach was a glue-less Z80 SBC very similar to Simple80 but used KIO (Z84C90) for I/O. KIO is much faster than Simple80's SIO thus can run at much higher CPU clock. The nominal operating frequency of EaZy80 is 22MHz, but it has been overclocked to 31MHz successfully. Second picture shows it working with Simple80's CF board to run CP/M.

I generally design with CPLD, but this is one of few designs without CPLD, so it is easy to find parts and put one together. While the parallel CF interface is faster, KIO has plenty of IO lines to bit-bang SD disk and talk to DS1302 RTC, so a CP/M computer can be created without any glue logic.

EaZy80 has 128K of RAM. The 2nd bank of 64K is accessible by manipulating KIO's PC0 output. Bank sharing routines are installed at high end of both RAM banks, so data can be shared between two banks. Ladislau Szilagyi has enhanced HiTec C and TE editor for Simple80 based on these bank sharing routines. I believe the same routines will also work for EaZy80.

Another thing to explore is replacing the 128K RAM with 512K RAM and port RomWBW to it. However, I don't know how to do that with 8 banks of 64K RAM, but with the addition of a quad OR gate (7432), 16 32K banks are possible which definitely will support RomWBW.

I created a homepage for EaZy80 here:

<https://www.retrobrewcomputers.org/doku.php?id=builderpages:plasm0:easy80:rev0pcb:easy80r0home>

Bill

File Attachments

1) [DSC_74821119_f.jpg](#), downloaded 512 times

2) [EaZy80_component_f.jpg](#), downloaded 518 times

Subject: Re: Resurrecting EaZy80, a forgotten glue-less 22MHz Z80 SBC.

Posted by [plasm0](#) on Sun, 24 Nov 2024 02:05:53 GMT

[View Forum Message](#) <> [Reply to Message](#)

Eazy80 rev0 has been updated to rev1 which corrected all bodes in rev0 pc board. It is functionally same as rev0, but the three RC2014 expansion connectors are replaced with prototype area to facilitate experimentation with KIO. Homepage for rev1 of Eazy80 is:

<https://www.retrobrewcomputers.org/doku.php?id=builderpages:plasm0:easy80:easy80r1pcb:easy80r1home>

One feature added to Eazy80 rev1 is an uncommitted 14-pin DIP for experimenting with 512K RAM and RomWBW. I have demonstrated that RomWBW can be ported to Eazy80 by replacing 128K RAM with 512K RAM, adding a SD card, and wiring in a 74HCT32 in the 14-pin DIP location. The RomWBW conversion is documented in this section of the homepage:
https://www.retrobrewcomputers.org/doku.php?id=builderpages:plasmoeazy80:eazy80r1pcb:eazy80r1home#eazy80_modifications_for_romwbw

File Attachments

- 1) [DSC_77631110.jpg](#), downloaded 310 times
 - 2) [booting RomWBW on modified Eazy80 rev1 for 512K RomWBW.jpg](#), downloaded 49 times
-

Subject: Re: Resurrecting EaZy80, a forgotten glue-less 22MHz Z80 SBC.
Posted by [norwestrzh](#) on Sun, 24 Nov 2024 16:23:48 GMT
[View Forum Message](#) <> [Reply to Message](#)

Excellent job, Plasm0!!! How difficult is it to find a KIO these days?

Roger

Subject: Re: Resurrecting EaZy80, a forgotten glue-less 22MHz Z80 SBC.
Posted by [plasm0](#) on Mon, 25 Nov 2024 04:37:25 GMT
[View Forum Message](#) <> [Reply to Message](#)

Eazy80 was designed with this kit in mind: <https://www.ebay.com/itm/116032696403>
I've purchased several kits in the past and checked out the components. The kit is still being offered right now.
I've also purchased KIO from [utsourcenet](https://www.utsourcenet.com/).
Bill

Subject: Re: Resurrecting EaZy80, a forgotten glue-less 22MHz Z80 SBC.
Posted by [norwestrzh](#) on Sat, 30 Nov 2024 16:18:22 GMT
[View Forum Message](#) <> [Reply to Message](#)

I've been thinking about maybe trying to build one of these. Plasm0 has been helping me try to translate the PCB layout to KiCAD. If anyone is thinking about doing that, be warned that the PLCC-84 footprint in KiCAD is screwed up. The default one that I picked up has duplicate numbering of some pins, and some pin numbers completely missing. I'm no KiCAD expert, but I *think* that my version (4.0) of KiCAD gets its footprints from the GitHub repository on-line? I *think* I found a good module library with a good PLCC-84 in the /usr/share/kicad directory as installed on my system. Getting KiCAD to ignore the broken footprint and pick up the good one

was quite an adventure!! As I said, I'm not very well versed in the ins and outs of KiCAD.

Bottom line: take a careful look at the pin numbering of the KiCAD PLCC-84 footprint if you try to use it!

Roger

Subject: Re: Resurrecting EaZy80, a forgotten glue-less 22MHz Z80 SBC.

Posted by [tingo](#) on Sun, 01 Dec 2024 13:45:50 GMT

[View Forum Message](#) <> [Reply to Message](#)

KiCad 4.0? Ouch. Is there a reason why you don't download and use KiCad 8.0?
