Subject: Z80 computer - wirewrap hybrid
Posted by linker3000 on Sat, 04 Aug 2018 09:47:56 GMT
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Hi everyone, I've just finished my Z80 build - it's based on Grant Searle's design but with most of the glue logic replaced with a GAL. I've used perfboard and standard IC sockets with header pins instead of wirewrap sockets, so it's a bit of a hybrid.

More pics here: https://imgur.com/a/rGRR2NM

This is going to be a chip testing and a show-and-tell board used for STEM classes, so the build reduces handling and risk of snags/wire pulls if it can stay put and everyone can see the components and wirewrapping at the same time. Additionally, wirewrap IC sockets are becoming expensive in small quantities + I have a large stock of regular IC sockets and header pins!!

The only component purchased specifically for this build was the EPROM - and that was only because I has having problems programming a couple from my old stock (then I found out my programmer was faulty).

Chips: Z80 CPU (Mostek MK3880N-4 second-source, date stamped 1980) + 27C128 EPROM + 628128 SRAM + Z80 SIO/0 UART + 74HCT00 + GAL20V8B

Schematic and GAL programming details here: https://github.com/linker3000/Z80-Board

This board just runs MS Z80 ROM BASIC right now; the next step is to add the compact flash/IDE card for CP/M and program storage and that will be it for this board.

Board #2 will have a Eurocard (ECB) interface and banked ROM for expansion + be built on a PCB.

Subject: Re: Z80 computer - wirewrap hybrid
Posted by just4fun on Sat, 04 Aug 2018 18:34:57 GMT
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Neat! Never seen a wirewrap method like yours...

I've seen among the various images that you run super startrek. I've the same file but, as the text in the comment says, some lines are over the 72 chars limit, so are truncated when sent by the terminal emulator.
Of course the program stop in error soon.

Do you have modified the source or there is "some trick" with the 8K Basic that I don't know...?

Subject: Re: Z80 computer - wirewrap hybrid
Posted by linker3000 on Sat, 04 Aug 2018 19:07:40 GMT
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Hi,

Yep Startrek needs some modifications to get it working - I am just sorting out the final few issues and then I'll put the source on Github.

Edit: The program now loads (paste via Tera Term) and runs without error (the Enterprise scrolling at the start needs a small amount of work), although I have not played it thoroughly - see how you go and let me know if you find any issues...

https://github.com/linker3000/Z80-Board

Subject: Re: Z80 computer - wirewrap hybrid
Posted by etchedpixels on Sat, 04 Aug 2018 21:26:19 GMT
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I've got a C port that builds for Z80 if that's useful.

See
 https://github.com/EtchedPixels/FUZIX/blob/master/Applicatio ns/games/startrek.c

would need some minor adjustment to use CP/M rather than Unix APIs, but it's already been turned integer and squashed a bit so fits into 32K just fine.

Subject: Re: Z80 computer - wirewrap hybrid
Posted by just4fun on Sun, 05 Aug 2018 18:52:04 GMT
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@linker3000:

Thanks you so much! Now works! I've only changed the "SYSTEM" statement with "GOTO 9999" (at line 6360) because SYSTEM doesn't exist in my 8K "stand-alone" Basic (probably is good for the CP/M Basic version)

BTW: I've just found on the Nascom Basic manual that the symbol "?" is equal to "PRINT" when typing, and when LISTing that becomes PRINT again... Now understand an "obscure" comment inside the code...
Anyway, as you said, there were other issues in that code...

@etchedpixels:

Hoping to use your version with Fuzix one day, but the "walk" to home is long...

Fabio

Subject: Re: Z80 computer - wirewrap hybrid
Posted by plasmo on Sun, 05 Aug 2018 22:43:31 GMT
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linker3000,
I downloaded your Super Star trek and loaded it into ZZ80RC (SBC Z280 running in Z80 mode). It seems to run well. The BASIC program is Z80 BASIC ver 4.7b by Microsoft. It also does not understand "SYSTEM" statement at line 6360. It also has the weird scrolling effect in the beginning, but you are already aware of it.
  Bill

Subject: Re: Z80 computer - wirewrap hybrid
Posted by linker3000 on Mon, 06 Aug 2018 11:15:10 GMT
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Thanks guys, as you found out 'SYSTEM' isn't supported - I noticed that but forgot to revise it before pasting the code to Github (fixed now). As just4fun has done, the command can be changed to GOTO the end of the program, or replace SYSTEM with END

Subject: Re: Z80 computer - wirewrap hybrid
Posted by linker3000 on Mon, 06 Aug 2018 20:38:19 GMT
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STARTREK: NCC-1701 opening animation fixed. Also added some more games and examples: Maze, hangman, Eliza and Bunny (Rabbit)

Subject: Re: Z80 computer - wirewrap hybrid
Posted by just4fun on Tue, 07 Aug 2018 16:40:27 GMT
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Thanks a lot!