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Welcome, john_newcombe.
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Vintage Computers Any vintage computer systems, calculators, video games etc., but with an emphasis on 1980s and earlier equipment.

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17th Jun 2019, 11:15 am   #**101**

john_newcombe
Tetrode

Join Date: Apr 2019
Location: Skipton, North
Yorkshire, UK.
Posts: 61

Re: Gemini 80-Bus System

Doh! I can create 4k block sized images with CpmTools.

Quote

17th Jun 2019, 11:23 am   #**102**

TonyDuell
Dekatron

Join Date: Jun 2015
Location: Biggin Hill, London,
UK.
Posts: 3,095

Re: Gemini 80-Bus System

Now my system has not been used for some years, so there are no promises that the ROMs and disk are still good. But when I have some time I can try to bring it up (carefully) and see if it will still boot.

Assuming the Simon ROM is still good there would be no problem in me making an image of it. It's socketted and I have a suitable programmer. But I am not sure how to image the hard disk.

Quote

17th Jun 2019, 11:31 am   #**103**

john_newcombe
Tetrode

Join Date: Apr 2019
Location: Skipton, North
Yorkshire, UK.
Posts: 61

Re: Gemini 80-Bus System

John may be able to help re: the disk image, I guess the main thing is to get a copy of the CP/M bios. The source for the bios may even be on the disk, multi.mac?

JohnBHanson
Hexode

Join Date: Aug 2009
Location: Worthing, Sussex, UK.
Posts: 367

Re: Gemini 80-Bus System

I would
1. Download xbeaver emulator
2. create a local directory ~/beaver/network
3. Run the emulator and execute
copy t-net.com n:
genhex t-net 100

This should ceate a file called ~/beaver/network/t-net.hex

connect the linux box and the gemini with a serial cable.

Using pip on the gemini machine get it ready to accept the file
pip t-net.com=rdr:

Using a terminal emulator send the file t-net.hex to the gemini machine followed by control+z

On the gemini machine convert t-net.hex back into t-net.com with the command
load t-net.com
(If you have a floppy emulator there are other ways to transfer the file, it does not matter which one you use).

edit the file xbeaver_netserver.cfg to the linux serial port you want to use.

on the linux box run xbeaver xbeaver_netserver.cfg to start the file server which will serve files from ~/beaver/network

On the gemini box run
t-net n

to start the network redirector.

Now on the gemini n: should contain the file disked.com
type
pip a:=n:disked.com

(This will transfer disked to drive a on the gemini machine).

NB Drive N: on the gemini is the directory in ~/beaver/network on the linux box . This is also drive N: in xbeaver.

To write a disk image to the file use the program called disked on the gemini
A:disked
Disked> (You want the command Fw n:image.dsk xxxx)
where xxxx is the number of CP/M sectors you wish to transfer

At the end type Q to quit disked.

Have fun - I hope that helps.

When I did it I had a real SCSI disk that I pluged into an AHA1542 (I think) Adaptec controller and then did the transfer. Not sure if that technique will work with a xebec controler - might do but you will have to specify the geometry of the disk to linux and hope that the scsi driver sets up the geometry in the xebec controller. Note if you do that you will find that the data is inverted. That is why the xbeaver emulator stores inverted data in the hard disk image files.

┌─ Attached Files ───┐
│   │
│   📁 xbeaver_netserver.zip (420 Bytes, 3 views)   │
│   │
└──┘

🟢 ⚠   [📝 Quote] [🔢+] [📝]

───

📄 18th Jun 2019, 9:45 pm   #105

john_newcombe
Tetrode

Join Date: Apr 2019
Location: Skipton, North
Yorkshire, UK.
Posts: 61

📄 **Re: Gemini 80-Bus System**

I have now assembled a new BIOS with support for the 788K 80 track GEMQDDS disk format and have created the 80 Track bootable disk images with some python. I have also added some *cpmtools* disk definitions so that the images can be manipulated, checked files added/removed etc.

The full story is here with some disk images should you be following the saga.
https://glasstty.com/wiki/index.php/...e_From_Scratch

Needless to say I am very grateful for all of the information that is currently on this thread. Of course what I could do with now is a disk formatter for the 80 Track 788K disks so that I can format the physical disk that is B:. Theres alway something...

18th Jun 2019, 10:07 pm

JohnBHanson
Hexode

Join Date: Aug 2009
Location: Worthing, Sussex,
UK.
Posts: 367

Re: Gemini 80-Bus System

You wish is my command -please find attached my multiple disk formatter. It numbers sectors from 1 not 0, but that is an easy change for you to make

use gemzap as the editor
gemzap
=r hdform
=a o=hdform
=q

to build

Note later versions of xbeaver allow for keyboard layout switching.

press and hold the left control key then press and release the right hand control key and finally release the left hand control key gives one keyboard map

reverse left and right in the above sequence gives the other.

One is wordstar and the other is gemini keyboard mapping. As you might expect gemzap needs gemini mapping

to enter the screen editor inside gemzap use e command
to exit use escape-e

You might find a gemzap manual online somewhere.

Attached Files
hdform.zip (6.6 KB, 3 views)

19th Jun 2019, 9:32 am

john_newcombe
Tetrode

Join Date: Apr 2019

Re: Gemini 80-Bus System

I did see hdform.com and tried it but it hung after I selected sector size. I will genzap it as you describe.and try again.

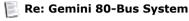19th Jun 2019, 11:34 am   #**108**

JohnBHanson
Hexode

Join Date: Aug 2009
Location: Worthing, Sussex,
UK.
Posts: 367

Re: Gemini 80-Bus System

If that was on the emulator - the emulator does not support the WRITE_TRACK command

If it is on your hardware could be there are some differences to mine. When I had working hardware this was written
for a GM849 not a GM829. I think I had run it on an 829 and there is certainly code in there to cope with an 829, but
I cannot remember if
it works or not.

The differences was in the drive select bits if I remember.

19th Jun 2019, 1:23 pm   #**109**

john_newcombe
Tetrode

Join Date: Apr 2019
Location: Skipton, North
Yorkshire, UK.
Posts: 61

Re: Gemini 80-Bus System

I have the same hanging issue 😟 I am unable to select any of the options on the HD/DD Sector size menu. CTL C
does abort though so not a hang as such. I am still using the Serial Port for display. I have tried the program with the
32K CP/M and so on but the result is the same. I am trying to format drive B:

19th Jun 2019, 2:14 pm   #**110**

JohnBHanson
Hexode

Join Date: Aug 2009
Location: Worthing, Sussex,
UK.
Posts: 367

Re: Gemini 80-Bus System

I have just checked with my simulator and the gemini 64k byte system and it appears to work.

Remember to select the sector size you need to select a digit 0 to 5. That should work.

19th Jun 2019, 4:42 pm   #**111**

john_newcombe
Tetrode

Join Date: Apr 2019
Location: Skipton, North Yorkshire, UK.
Posts: 61

Re: Gemini 80-Bus System

On the Gemini when I press one of the sector size options nothing happens, no screen echo, no response etc. Ctrl C aborts the program though. For completeness I will check on xbeaver later tonight.

19th Jun 2019, 5:42 pm   #112
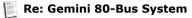
john_newcombe
Tetrode

Join Date: Apr 2019
Location: Skipton, North Yorkshire, UK.
Posts: 61

Re: Gemini 80-Bus System

It works fine with XBeaver but not on the Gemini with G811, MAP256K (64K) and GM829.

Is there anything I can do to see whats going wrong?

19th Jun 2019, 6:10 pm   #113

JohnBHanson
Hexode

Join Date: Aug 2009
Location: Worthing, Sussex, UK.
Posts: 367

Re: Gemini 80-Bus System

Try

hdform e31y

that is eee three one why

If you need to use a zsid I have given you a listing

you can make your own with
gemzap
=r hdform
=a l,p
=q

Will give a listing to the printer

You can assign the device for the printer with
device lp <device name>
and device ? gives a list of devices - (lp0 to lp9 are usually good) if you have setup the printer line in xbeaver.cfg

📁 hdformlist.zip (12.4 KB, 3 views)

19th Jun 2019, 8:11 pm   #**114**

john_newcombe
Tetrode

Join Date: Apr 2019
Location: Skipton, North
Yorkshire, UK.
Posts: 61

📝 **Re: Gemini 80-Bus System**

I just fired it up with the command HDFORM B34Y and it does start to format the B: drive. Each track is taking around 15 seconds so it is still running. I wasn't sure whether I should be using HD 512 or DD 512. I opted for DD as I assumed the HD was maybe 1.2Mb?

19th Jun 2019, 8:33 pm   #**115**

JohnBHanson
Hexode

Join Date: Aug 2009
Location: Worthing, Sussex,
UK.
Posts: 367

📝 **Re: Gemini 80-Bus System**

for 5 inch disks HD is 500kbps @ 360rpm and DD is 250kbps @ 300rpm.
for 8 inch disks always 500kbps at 360 rpm
for 3.5 inch disk always 300rpm at either 500kbps (HD) or 250kbps (DD).

Looks like there maybe something strange in the ccp command buffer that is causing the lock up - first guess would be the conin routine. However I have tried hdform with the gemini configuration which is the same as yours and it works fine.

I am surprised that the tracks are taking so long though - it should be a few tracks per second. Remember it takes one revolution of the disk to do one side, and then another revolution to do the other side and then you will hear the step motor step inwards.

19th Jun 2019, 8:45 pm   #**116**

john_newcombe
Tetrode

Join Date: Apr 2019
Location: Skipton, North
Yorkshire, UK.
Posts: 61

📝 **Re: Gemini 80-Bus System**

OK, I am wondering of that is the issue, the drives I have are 300rpm, 250kbps, same as the Gotek emulatio and, as far as I can remember the early drives fitted to the Gemini. Would it be the case that HDFORM is for the IBM type 360 rpm disk drives?

20th Jun 2019, 1:11 am

JohnBHanson

Hexode

Join Date: Aug 2009
Location: Worthing, Sussex, UK.
Posts: 367

Re: Gemini 80-Bus System

HDFORM is indeed setup for the later drives (for example 3ms step) so it could be that. Should easy be patchable to a slower step rate etc as you have the source/listing. 300 rpm
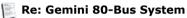drives will work with DD mode.

20th Jun 2019, 7:02 pm

john_newcombe

Tetrode

Join Date: Apr 2019
Location: Skipton, North Yorkshire, UK.
Posts: 61

Re: Gemini 80-Bus System

Quote:

> Originally Posted by **JohnBHanson**
> *HDFORM is indeed setup for the later drives (for example 3ms step) so it could be that. Should easy be patchable to a slower step rate etc as you have the source/listing. 300 rpm*
> *drives will work with DD mode.*

I will look into that, thanks.

As an aside, I now have a working EPROM programmer so have burn't RP/M 2.3 with divisor for a 9600 baud serial port. This works well, next I will patch CP/M for 9600 also to make a more useable system all round. Alas, I still don't have a working IVC card. However, I will send Barbara out shopping and try and spend some time looking at it tomorrow.

Yesterday, 10:09 pm

john_newcombe

Tetrode

Join Date: Apr 2019
Location: Skipton, North Yorkshire, UK.
Posts: 61

Re: Gemini 80-Bus System

I think I ned help to sort out this IVC video card issue I have. I have attached a circuit diagram below.

When I first got the machine earlier this year everything worked fine. However, after a week or so I was left with a blank screen with the occasional faint line type interference. As far as I can tell the IVC connected keyboard doesn't work either but this could be a red herring.

The basics have been done e.g.

- All socketed chips have been inspected, cleaned and reseated.
- The CPU has been changed as the original had failed.
- The CRTC chip was tested in a BBC Micro and was fine.
- The three RAM chips were swapped as I happened to have three brand new identical devices.
- The ROM contents have been compared to ROM images and both are OK.

So out came the logic probe and scope. I have removed the rack's right hand endplate and placed the IVC in the right hand most socket so I can probe around reasonably easily.

- The 4 Mhz clock signal from the backplane is good and appears where it should do on the various components.
- There is activity on the data and address bus when checked on the CPU pins.

Things that seem odd to me are...

- There is no activity on the CPU output IORQ which I know is used in conjunction with the clock to strobe data into or out of the CRTC.
- Pulling the CRTC and the Z80 allowed me to isolate and test IC31, this is a D-Type flip flop used to strobe the data as mentioned above. This did not appear to work. It is now socketed and has been swapped.
- There are vsync pulses output from the CRTC but no hsync signals.

Removing IC31 from its new socket allows me to monitor the IORQ CPU output and there is nothing to see. This seems to me to be the thing to investigate. The trouble is I am not sure how.

Julie, on this forum suggested that I program up a custom ROM that is just an infinite loop of IN instructions, however, rather than introduce another variable, I am wondering if I am missing something, perhaps there is something else I can probe or try out.

Yesterday, 11:29 pm

#**120**

JohnBHanson

Hexode

Join Date: Aug 2009
Location: Worthing, Sussex, UK.
Posts: 367

Re: Gemini 80-Bus System

First thing to check is the reset circuit - look at voltage across C44. Also then short out C44 and then release the short and see if it starts behaving.

Reset circuits like this can be sensitive to power supply rise time as well as leaky capacitors (Which age).

Next step would depend on what test equipment I have available. I would also disassemble the first bit of the program rom - that would give you some understanding.

PS - the circuit diagram does not appear to be posted.....

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