

Putting the Commodore Online

By: Jeff Ledger – March 2007 Edition

<http://telbbs.petscii.com> / <http://www.petscii.com>

Now expanded to include TELBBS configurations for VICE for Windows.



- * **CONNECTING TO TELBBS SYSTEMS**
- * **CONNECTING TO DIALUP BBSES WITH WINVICE**
- * **TELBBSING WITH OLD SCHOOL TERMS FROM WINVICE**
- * **CONNECTING WITH HYPERLINK WEB BROWSER**

VERSION 3: RELEASED 3-1-07 WRITTEN BY: JEFF LEDGER

Connecting the 64 to TelBBS Systems

C= TelBBS systems are typically Commodore systems which are connected to the Internet to provide access to '80s-'90s style BBS systems without the hassle of long distance phone calls. The dialup phone line is replaced with your Internet connection.

Currently there are two popular methods of connecting the Commodore computer directly to an Ethernet (networking) connection, however this document will focus on the use of an RS232 interface type connection. The interface I currently use is a simple, low speed user-port interface, which can be built for less than \$20.00 in parts. The advantage of this type of interface is price and simplicity; its only disadvantage being that the top speed of these interfaces is 1200-2400 baud. (Plans for building two simple RS232 interfaces can be found in Appendix A of this document.)

CMDRKEY is currently selling the "Turbo232" High-Speed interface. Speeds of 300baud – 230Kbps can be achieved. The Turbo232 plugs into the Cartridge (game) port and provides a 9pin connection on the topside. The unit can be purchased from <http://www.cmdrkey.com> for \$48.00, and at time of writing this document was 'In Stock'. Keep in mind that it will require communication software compatible with the Turbo232 on the Commodore side. Older terminal programs may/may not provide that functionality. Novaterm9.6 is a compatible terminal, and can be downloaded from <http://telbbs.petscii.com>

The requirements for connecting to a Commodore TelBBS from a 64/128 are as follows:

- An RS232 interface for the Commodore computer**
- A null modem cable**
- A PC connected to the Internet reasonably close to your Commodore setup.**
- A serial port on the PC side.**
- A copy of BBS Server, TCPSER, or TCPSER4J running on the PC side.**
- A terminal program running on the Commodore side.**

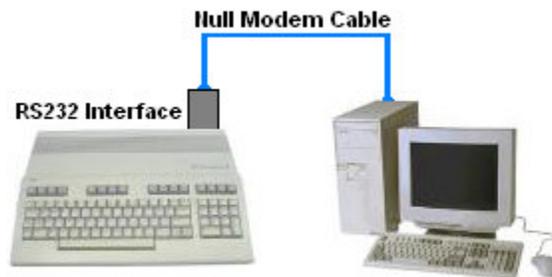
We've covered the interface at this point, so the "null modem" cable will be our next requirement. Simply put, the null modem cable allows us to connect one computer to another, providing a hardware crossover connection between the send and receive wires of a serial connection. I use a homebrew null modem cable (highly recommended by Jim Brain of TCPSER) which provides compatibility with both Quantum-Link Reloaded (see <http://www.quantumlink.tk>) as well as TelBBS needs. Radio Shack sells inexpensive null modem adapters which will convert any straight cable to a null modem by simply adding the adapter to one end of the cable.

PUTTING THE COMMODORE ONLINE: *Accessing TelBBS Systems*



Radio shack stocks Null Modem Adapters (under \$8.00)
These will turn any straight cable into a null modem cable.

At this point, you should have the hardware requirements for well in hand, your connection setup will look something like this.



Now we need some software on the Commodore side. My personal favorite is the CCGMS terminal software, which is lightweight and loads quickly. (Even without some type of fastloader.) You can download a .D64 of CCGMS 13.3 terminal from <http://www.petscii.com/terminals> in the Software section. (If you need to convert this to a real Commodore disk, refer to Appendix C for methods of handling this task.) Once loaded, hit **F7** to access the Parameters menu, and use option **B** to set the baud rate. 1200 baud is a good speed to test with initially, and then boost it to 2400 baud once you know every thing is working correctly.

PUTTING THE COMMODORE ONLINE: *Accessing TelBBS Systems*

The next requirement is *modem emulation* software on the PC side. There are currently two very good choices for doing this. Leif Bloomquist has produced an application called **BBS Server**, and Jim Brain has produced a product called **TCPSER**. Either of these applications will fulfill the requirement on the PC side.

Leif's **BBS Server** can be downloaded from: <http://home.ica.net/~leifb/bbs/>

Jim's **TCPSER** has been released in two flavors:

TCPSER, which runs on Windows/XP, and most distributions of Linux/UNIX.
<http://www.jbrain.com/pub/linux/serial/>

TCPSER4J: The Java version of TCPSER.
<http://www.jbrain.com/pub/xplatform/serial/>

Connecting with BBS Server:

Let's start with Leif's *BBS Server*. The first time you run the program, it will ask you to check your options, do so by pressing "**Advanced**". The most critical setting is the Serial setup string under **Comms**. By default it will read 2400,N,8,1. Change the 2400 to match the speed you have selected earlier in CCGMS terminal on the Commodore side, and click **Save+Apply Changes**.

At this point, you should be able to type **ATH** on the Commodore side and see the **OK** message from the BBS Server software. If you can do this, you've successfully connected both the PC and the Commodore together and are ready to do some TelBBSing. Type **ATI** on the Commodore side and you should get a more detailed message from the BBS Server software.

Telnet BBS Server v1.2

My IP Address is: xxx.xxx.x.xxx

{ If nothing is working at this point, double check your cable connections, the baud rates in both BBS Server and CCGMS, as well as the COM port setting on the first page of the BBS Server software. }

Try connecting to a TelBBS system with the following command:

ATDT bbs.petscii.com:6400

PUTTING THE COMMODORE ONLINE: *Accessing TelBBS Systems*

Notice that the modem emulation that the *BBS Server* software is doing, all the way down to the old Hayes **ATDT** (Attention, Dial Tone) command. You may have also noticed that the PC requires you to SHIFT for the **:** colon. This habit will get you a '[' on the Commodore and cause things not to work. Remember hit press **SHIFT-F7** a couple times in CCGMS terminal to make sure that you are in C/G (Color Graphic) mode.

TelBBS dialup requires both the address/IP of the BBS as well as the port number. The format to remember is **ATDT {address/ip}:{port number}**.

There is a shortcut in BBS Server, TCPSER, and TCPSER4J, which permits dialing using Phonebook Codes. Phonebooks Codes are a type of book marking system incorporated recently, which will allow you to dial using: **ATDT {phonebook code}**.

A list of current TelBBS Systems can be found at <http://telbbs.petscii.com>

Connecting with TCPSER4J:

TCPSERJ can also be quickly configured and used as well. Edit the file "config.xml" included in the TCPSER4J package. Change the following line:

```
<Modem type="rs232" device="COM1" speed="38400">
```

Adjust the speed to match the baud speed in CCGMS, as well as the COM port you have the null modem cable plugged into on the PC side.

The following line may also have to be changed:

```
<Initialization>s0=2</Initialization>
```

to

```
<Initialization>&amp;k0</Initialization>
```

Save the file, and double click the **tcpserj** batch file. Type **ATH** on the Commodore side, and a friendly OK should appear.

Try dialing a TelBBS using **ATDT bbs.petscii.com:6400**

TelBBS dialup requires both the address/IP of the BBS as well as the port number. The format to remember is **ATDT {address/ip}:{port number}**.

A list of current TelBBS Systems can be found at <http://telbbs.petscii.com>

PUTTING THE COMMODORE ONLINE: *Accessing TelBBS Systems*

Connecting with TCPSER:

Running TCPSER under Windows will require you to download “cygwin1.dll”

You can download the file from: <http://www.jbrain.com/pub/linux/serial/>.

Save the file in either your WINDOWS folder, or the folder you extracted TCPSER.

From a DOS window, start TCPSER with the following line:

```
tcpser -d /dev/ttyS0 -s 2400
```

Change the /dev/ttyS0 to your correct serial port using the chart below:

```
ttyS0 = COM1  
ttyS1 = COM2  
ttyS2 = COM3  
ttyS3 = COM4
```

The “**2400**” is the baud speed. Set it to match the speed of your terminal program on the Commodore side.

You may have to add **-i “&k0”** if you have trouble getting it to start.

tcpser -h will give a full list of supported commands.

Try typing **ATH** on the Commodore side, and you should see an OK message.

Try dialing a TelBBS using **ATDT bbs.petscii.com:6400**

TelBBS dialup requires both the address/IP of the BBS as well as the port number.

The format to remember is **ATDT {address/ip}:{port number}**.

A list of current TelBBS Systems can be found at <http://telbbs.petscii.com>

**A collection of great Commodore terminal programs can be found at:
<http://www.petscii.com/terminals>**

Real Modem Dialup from WinVICE

Recent changes in the emulator VICE for Microsoft Windows allow it to handle simulated RS232 communication to a TCP/IP port. This makes it possible to dial TelBBS systems (discussed later in this document) using your favorite terminal program over the Internet. This is of course the next best thing to actually configuring your Commodore 64 with an RS232 interface as discussed previously.

The *nix version of VICE allows direct access to serial ports on the PC. The same thing can be accomplished with the addition of a “TCP/IP Server” interface program, allowing us to take control of a local modem from WinVICE.

At time of this update, there exists only 1 Commodore dialup BBS in the United States, but is well worth the connection if you have a copy of WinVICE installed on a PC with a modem. The feeling of a true 2400 baud connection to an actual Commodore BBS will truly take you back in time.

Download VICE for Microsoft Windows 1.20 or later. (<http://www.viceteam.org/>)

Configure the following settings:

Settings... RS232 Settings... Set RS232 device 1 as: **127.0.0.1:232**



PUTTING THE COMMODORE ONLINE: *Real Modem Dialup from WinVICE*

Now click on the following options...

Settings... Cartridge/IO Settings... RS232 userport settings...

Enable RS232 userport, and check that the Userport device is: **RS232 device 1**
The Userport baud rate should be set to the top speed of the terminal program you are intending to use. Make a note of this for later.



Ok, with WinVICE ready for action, it's time to configure the "TCP/IP Server"

I've successfully tested this with both TCPcom and ComPort Serial IP server. Both of these work equally well and have trial versions of these programs available.

TCPcom: <http://www.taltech.com/products/tcpcom.html>

Serial IP Server: http://www.fogsoft.com/RS232_to_TCP_Converter.html

TCPcom is certainly the more expensive of these options, but seemed to work a little more smoothly than it's Serial IP counterpart. Both are configured mostly the same way with minor variations. If nothing else, you'll pick up a month+ of trial usage between the two programs.

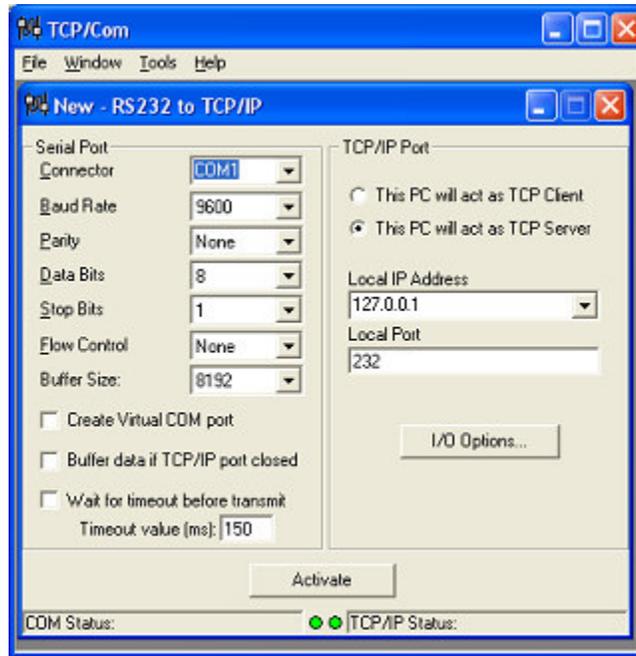
I'll use TCPcom in this example. Configure the following **TCP/IP port settings**.

Local IP Address: 127.0.0.1

Local Port: 232

Did that local port setting look familiar? Make a note of the "Activate" button at the bottom of the TCPcom screen. We will come back to it later.

PUTTING THE COMMODORE ONLINE: *Real Modem Dialup from WinVICE*



Your TCPcom settings should look like this.

Set your Connector to the correct COM port of your modem, but don't worry about baud.

Time for some fun. Press the "Activate" button in TCPcom, then load WinVICE and attach your favorite terminal program image. Make sure the baud rate of your terminal program matches the settings you made note of earlier when configuring VICE. If all is well at this point you should be able to type ATH and see an OK response from your modem. If things are moving by now, back up and recheck all the settings and go again. Don't forget that sometimes just a good modem reset is in order

Remember your Hayes AT commands? Try ATDT 1-951-242-3593

Tell Andrew at **Cottonwood BBS** that Jeff sent you.

Serial IP Server works the same way, except that it doesn't allow a port number below 2000, so simply replace the "127.0.0.1:232" in your VICE settings with "127.0.0.1:2000"

Connecting Old School Terminals from WinVICE

As discussed in the last chapter, WinVICE has a shortcoming when it comes to serial communication. It requires the use of a TCP/server (ie: TCPcom) or TCP/modem emulator (ie: TCPSEr) to easily communicate.

This section will cover the use of TCPcom and BBS Server to connect our favorite old skool terminal software to the Internet for TelBBSing from WinVICE. With a little experimentation you will find variations, which will also work, but we'll build on the information discussed in previous chapters.

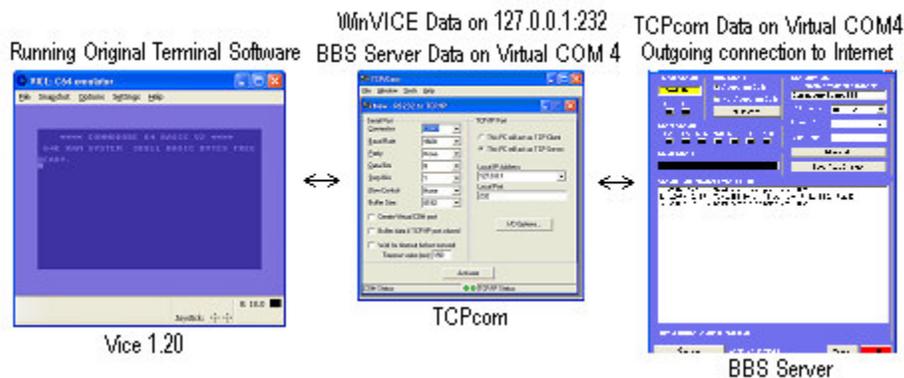
We will use the following configuration:

WinVICE 1.20 with **RS232 device 1** set as **2400 baud**, IP **127.0.0.1**, port **232**
<http://www.viceteam.org/>

TCPcom with local address of **127.0.0.1**, port **232**, creating *Virtual COM4*
<http://www.taltech.com/products/tcpcom.html>

BBS Server looking at *Virtual COM4*
<http://home.ica.net/~leifb/bbs/>

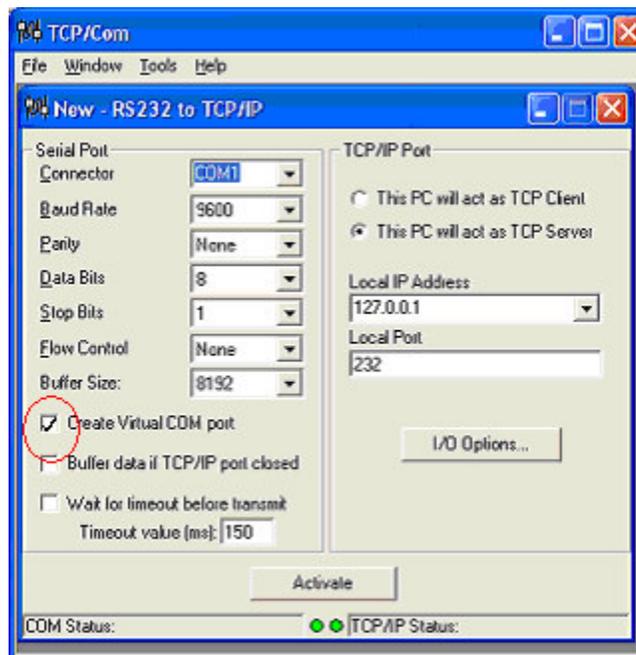
If you are starting to feel a bit lost, here's a diagram of the setup:



Take a few minuets now to read the last chapter and configure WinVICE and TCPcom.

PUTTING THE COMMODORE ONLINE: *Old School Terminals from WinVICE*

Got WinVICE and TCPcom configured correctly? Most of the settings in the last chapter are identical to what you will need here with one small exception. Under the “Connector” option in TCPcom, select a COM port, which you are sure doesn’t exist in your hardware. My own computer only has one serial port, so COM4 was a good choice for me. Put a checkmark in the box labeled, “Create Virtual COM Port.” Wella, you now have a Virtual COM4, which BBS server can see.



TCPcom with Virtual COM enabled

One more step. Launch BBS Server and set it’s COM port setting to 4 (Virtual 4). Activate the connection in TCPcom, LOAD your favorite terminal program from yesteryear into WinVICE and “dial” your favorite TelBBS system.

PUTTING THE COMMODORE ONLINE: *Old School Terminals from WinVICE*



An old school diversion from work with my favorite cursor.

Remember a favorite terminal from years ago? A great collection of terminals can be downloaded from <http://www.petscii.com/terminals>

Note: A lot of terminal software from the 80's only supported 1200 baud. This doesn't stop the fun. Simply drop the baud in WinVICE to 1200 under **RS232 userport settings**.

Connecting with Hyperlink Web Browser

Hyperlink (designed by Cameron Kaiser) is a web browser for the Commodore 64/128. It provides access to the Internet using simple HTML pages, supporting standard graphics types. Joystick and Commodore mouse is support for surfing action. Hyperlink is currently available in two versions: The software requires a \$7.00 registration fee for full access, and is well worth the contribution.

Hyperlink 2.5e:

This version of hyperlink is recommended for owners of Swiftlink and the afore mentioned Cmdrkey T232 interfaces. It supports speeds up to 57.6Kbps, providing high-speed web access direct to the 64.

Hyperlink 2.5:

This version is suited for users of low-speed interfaces like we have discussed so far, and while this version does not have official tech support, and a few minor bugs, I've found it to work well for my own interface, and will use it in my example here. (Note: One of the known issues in this version is that the 1200-baud mode does not work with PAL systems.)

Using Hyperlink 2.5 with a low-speed interface:

Before using Hyperlink for the first time, you will be required to run the "CONFIG" program included on the Hyperlink disk. If you are installing version 2.5 for low-speed interface use, select **no interface**, and **1200 baud** at your speed. This will configure the software for both offline and 1200 baud usage.

Start Leif's BBS Server software as mentioned in the TelBBS documentation on the PC side and configures the software for 1200 baud, (under **Advanced, COMMS**)

Hyperlink requires that you connect to a server supporting HLPP support. (HLPP is can be downloaded from Cameron's site as well, and will require a shell account or unix type server to run the software) Leif Bloomquist has a publicly available HLPP account, which we will use here.

Load the Hyperlink software on the Commodore side, and use your joystick to select and click on "Shortcut: click here for HyperPlanet" The screen should turn black and respond with:

**** Connect to your host. Press F1 when directed.

Type **ATI** and hit **[ENTER]**

PUTTING THE COMMODORE ONLINE: *Hyperlink Web Browser*

The BBS Server should send back the following response:

Telnet BBS Server v1.2

My IP Address is ###.###.###

Type **ATDT bbs.jammingsignal.com:6464**

Use **hlpp** as both your login name and password. The system will display some welcome information and then prompt you to press **F1**. At this point, Hyperlink is online and will begin loading HyperPlanet's website.

Unregistered copies of Hyperlink are limited to the links from the Hyperplanet site. You are encouraged to register to unlock the software for unlimited web use.

The homepage for Hyperlink is: <http://www.armory.com/~spectre/cwi/hl/>

PUTTING THE COMMODORE ONLINE: *Appendix A (Low speed Interfaces)*

There are two easy-to-build interfaces, which require an IC, and a few basic parts to get your Commodore online. While I've built both of these myself and have verified that they work, you assume the risks of frying your PC, your Commodore, or your dog by building these circuits. Take your time and double check your connections. Never hook anything to the Commodore while it is turned on.

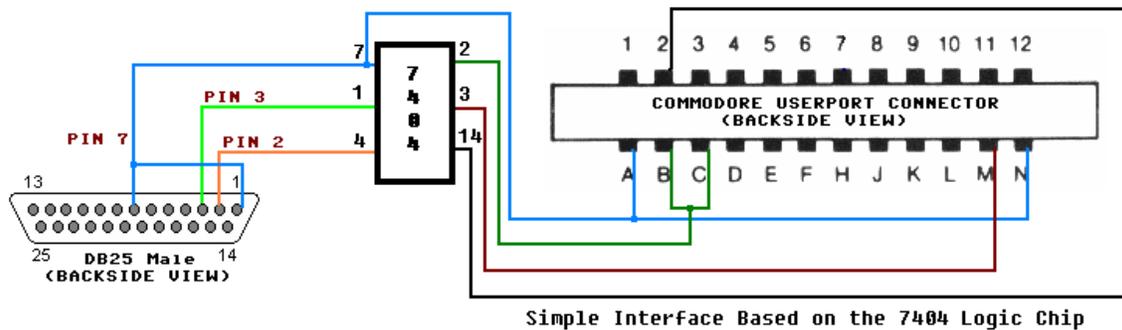
SIMPLE 7404 INTERFACE:

Parts List:

7404 IC (some Radio Shacks still have one of these on the shelf)

DB25 male connector

User Port connector (Digikey (digikey.com), or I've stolen them from old C= modems)



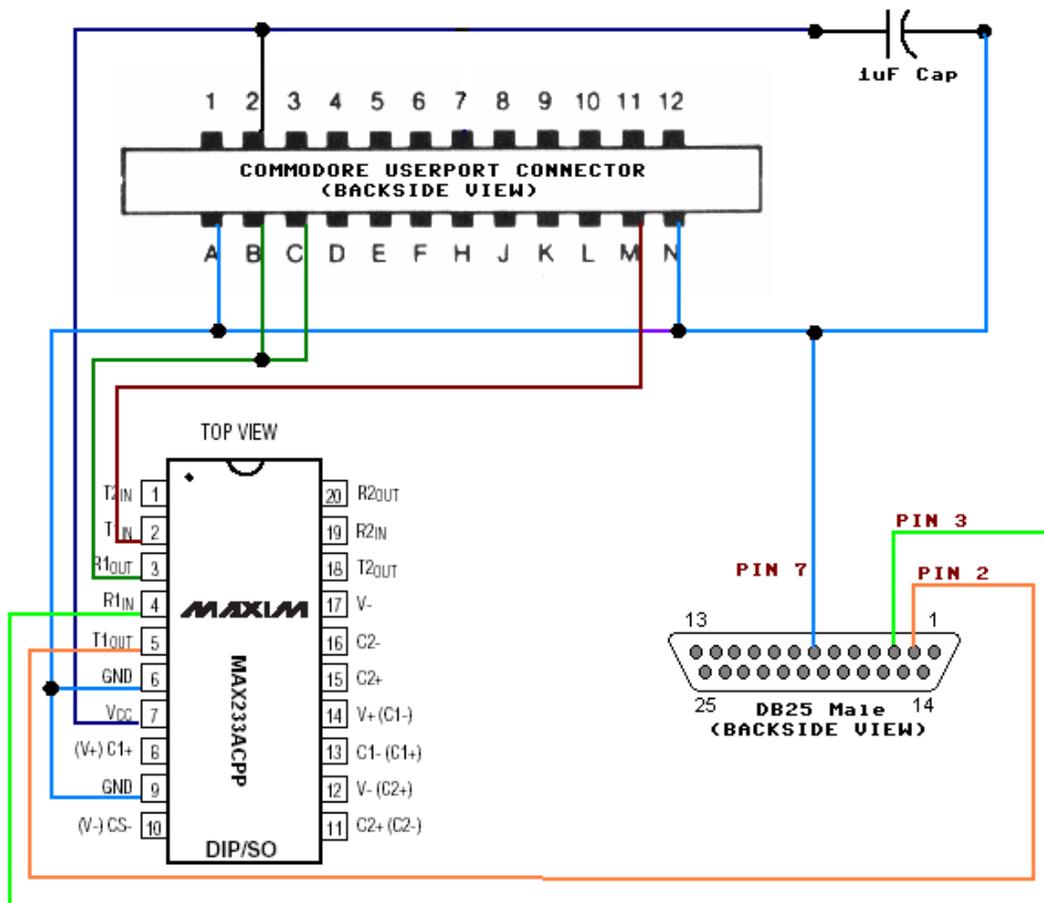
MAX233 BASED INTERFACE:

Parts List:

MAX233 IC

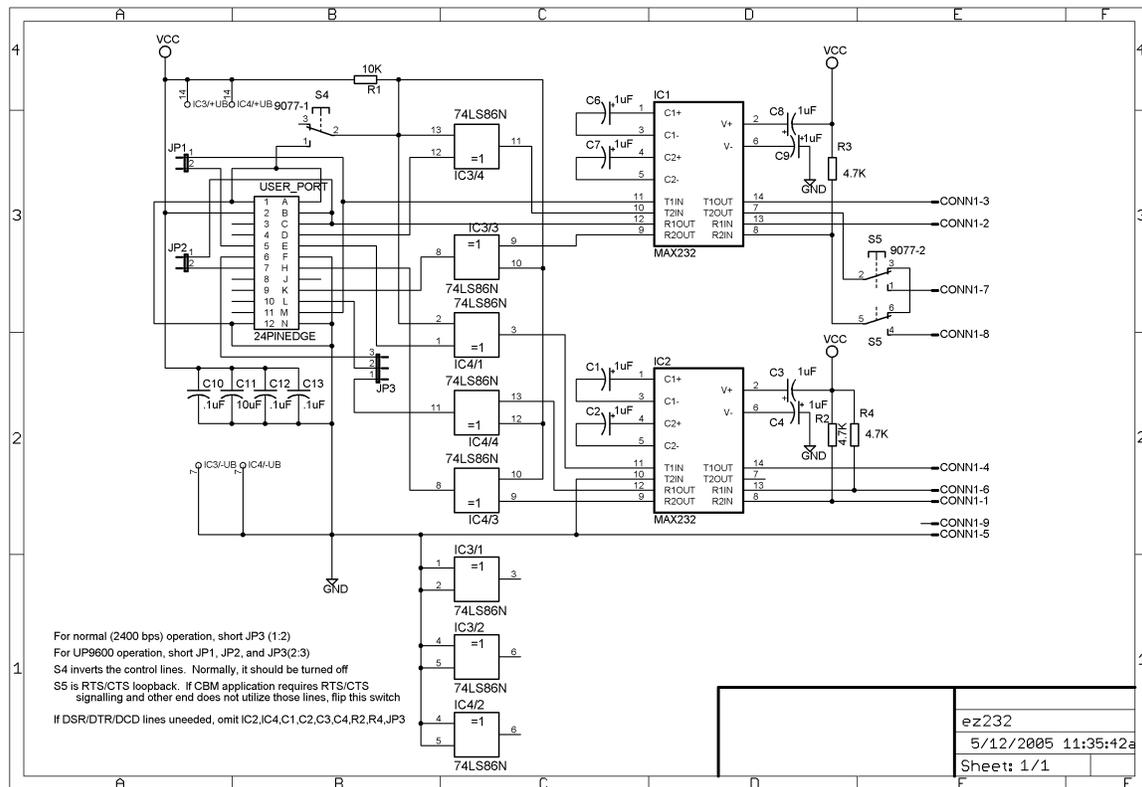
DB25 male connector

User Port connector (DigiKey Corporation (www.digikey.com), or I've stolen them from old C= modems)



JIM BRAIN'S USERPORT INTERFACE:

This interface supports 2400 baud on the 64 and 9600 baud on the 128.
 It includes all lines required for TelBBS needs as well as support of Commodore modem games. A PDF of this interface can be downloaded from <http://telbbs.petscii.com>.



PUTTING THE COMMODORE ONLINE: *Appendix B (Null modem Specifications)*

Anyone using a low speed interface as specified in *Appendix A* can use a simple three-wire interface based on the following:

2 --- 3
3 --- 2
7 --- 7

Those using high-speed interfaces like the T232 or Swiftlink or wanting to run a BBS using a low-speed interface should consider using this cable, which incorporates a few more data lines. Jim Brain has recommended this design.

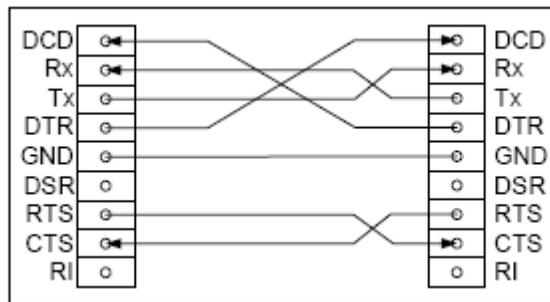


Image Courtesy Leif Bloomquist

PINOUT REFERENCE:

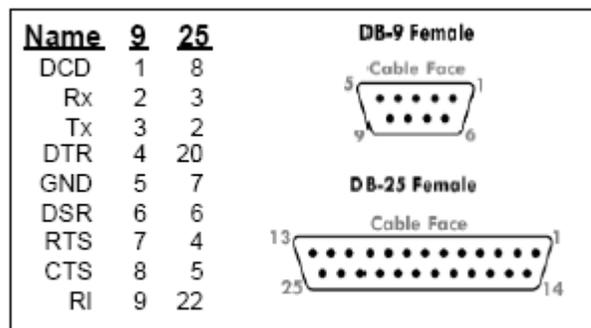


Image Courtesy Leif Bloomquist

PUTTING THE COMMODORE ONLINE: *Appendix C (Converting .d64 to 5.25 disks)*

Spiro Trikaliotis has provided a command line utility, which allows the connection of a 1541/1571/etc drive(s) to a Windows PC. (Windows 2000/XP) The following cables are supported by CBM4WIN. XA1541, XM1541, XAP1541, XMP1541. The common XE1541 cable is NOT supported, but can be converted to an XM1541 cable by simply swapping signals 5 and 6 on the DIN (Commodore) end. Better yet, an XE1541 to XM1541 adapter that swaps these signals can easily be made.

Once CBM4WIN is installed, Leif Bloomquist has provided an easy to use GUI interface which allows you to move files in either direction, and best of all convert a .d64 file directly to a 5.25 disk.

The CBM4WIN homepage is: <http://www.trikaliotis.net/cbm4win.shtml>

The CBM4WINGUI homepage is: <http://www.jammingsignal.com/gui4cbm4win>

Details on the construction of the XM1541 cable is at: <http://sta.c64.org/xm1541c.html>

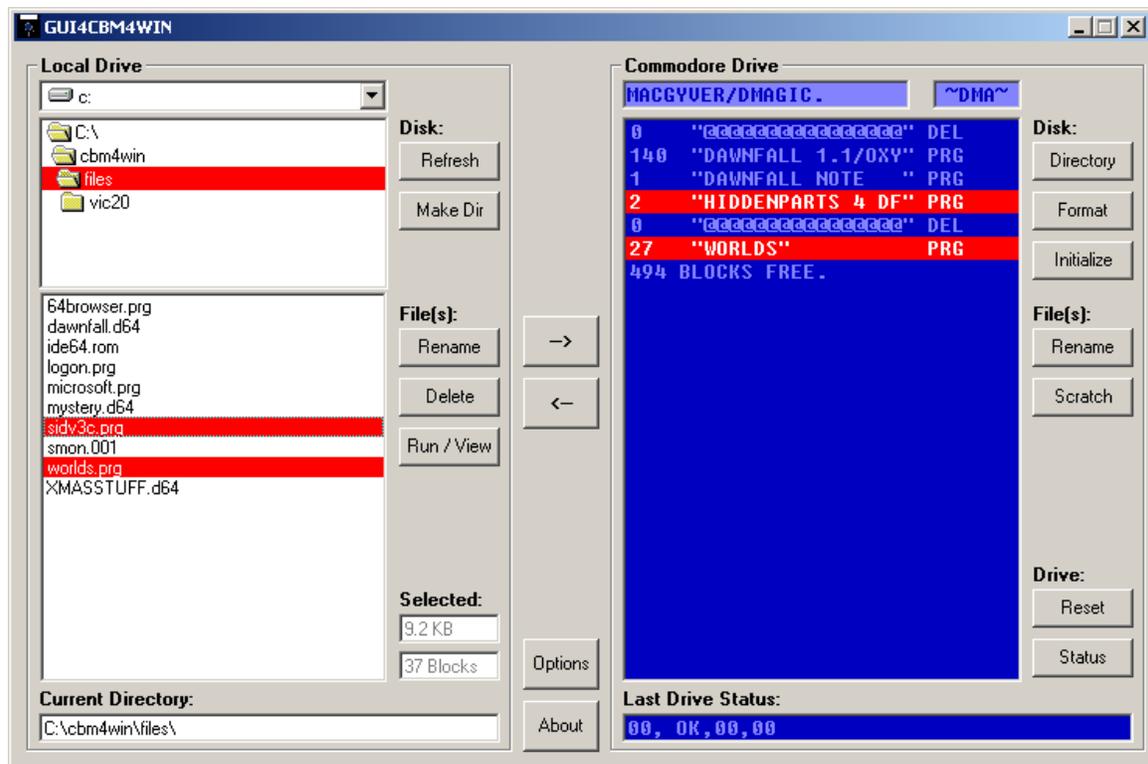


Image Courtesy Leif Bloomquist