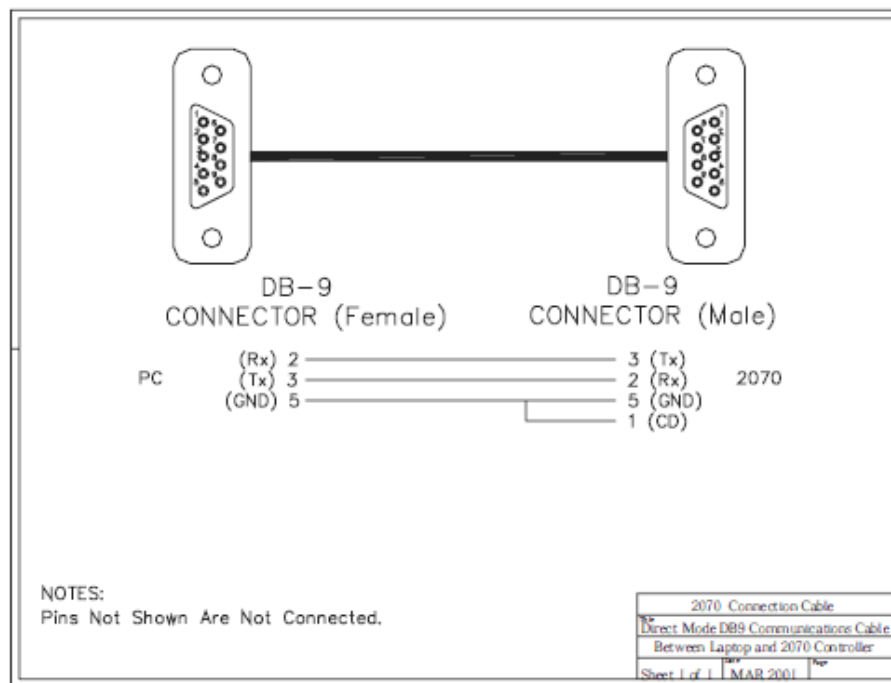


This document covers how to transfer files between Personal Computer running Microsoft Windows and 2070 controller with the HyperTerminal program that comes with Microsoft Windows. You can use any communication program that comes with the Kermit protocol instead of HyperTerminal if you wish.

Connecting a PC to the 2070 Controller's OS-9 Operating System

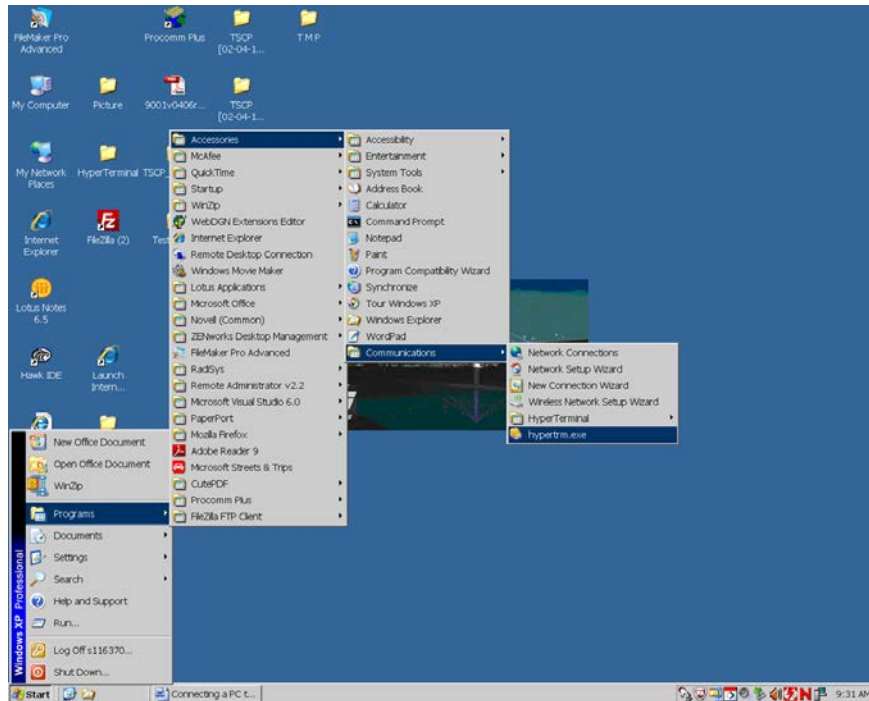
General interface with the operating system is by using a direct mode communication cable (shown below) running from a host computer on serial port 1 of your PC to the C50S port of the 2070 and using program terminal emulation software such as Hyper Terminal.



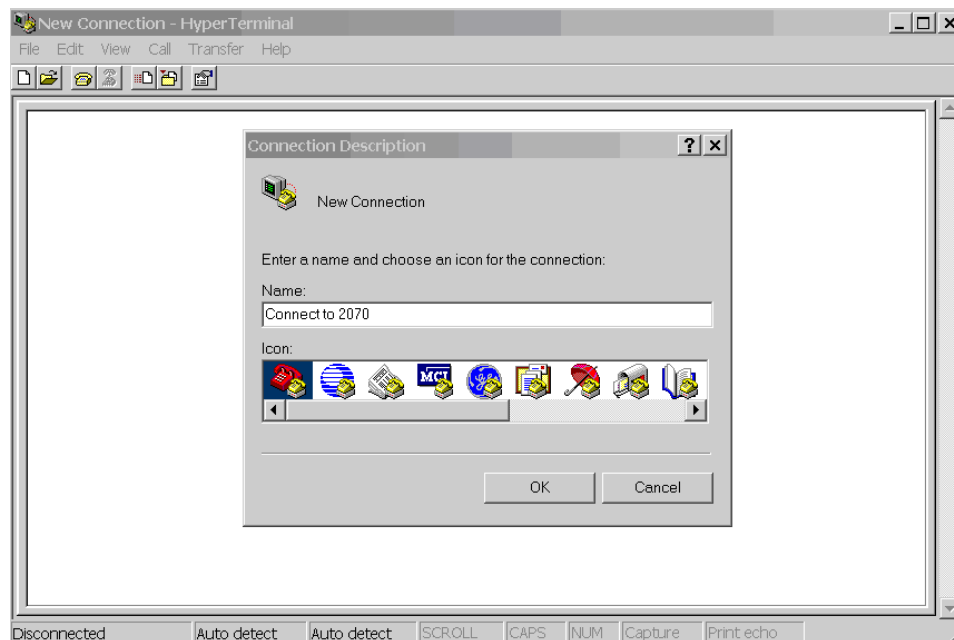
Once the cable is properly connected between the 2070 controller and the PC, you are ready to begin configuring HyperTerminal to communicate between the 2070 Controller's OS-9 operating system, and your PC.

Configuring HyperTerminal to communicate with a 2070 controller

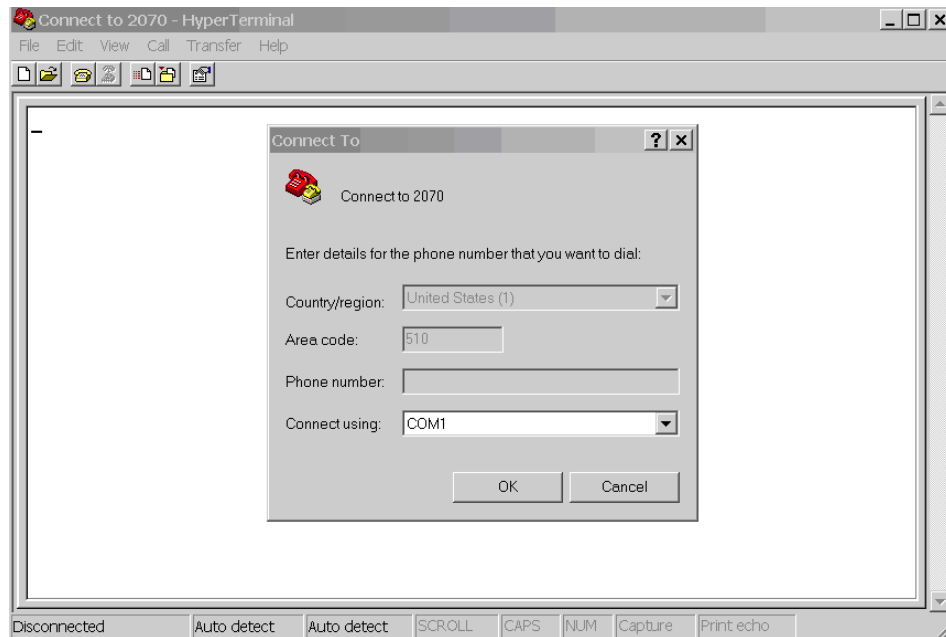
1. Using the start menu to open the HyperTerminal program



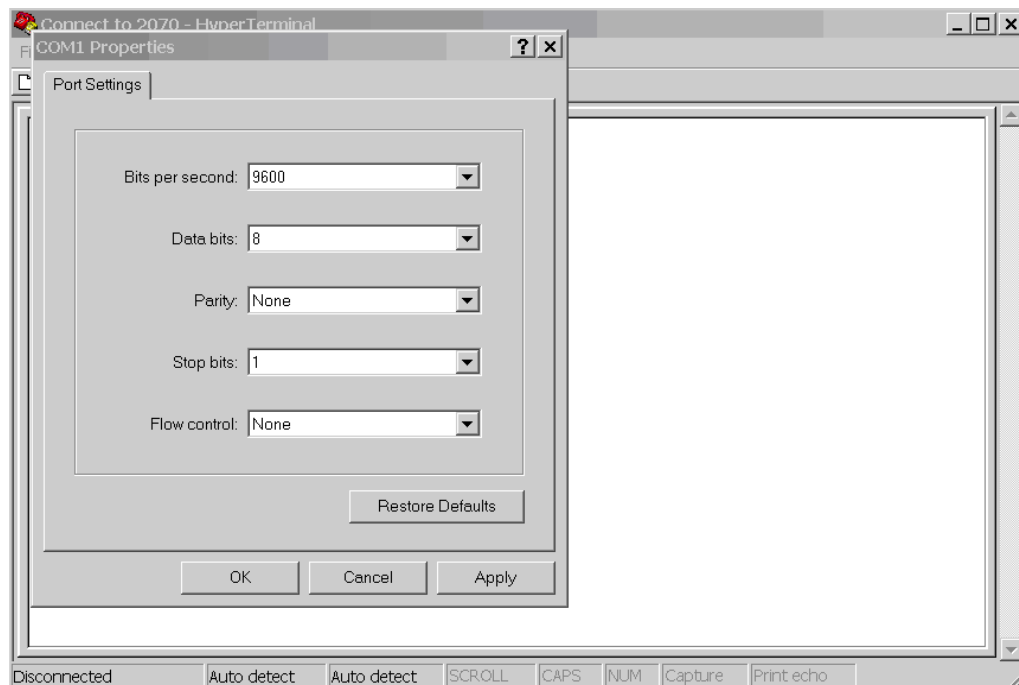
2. Create the name for your connection, and select the icon that you want to represent that connection.



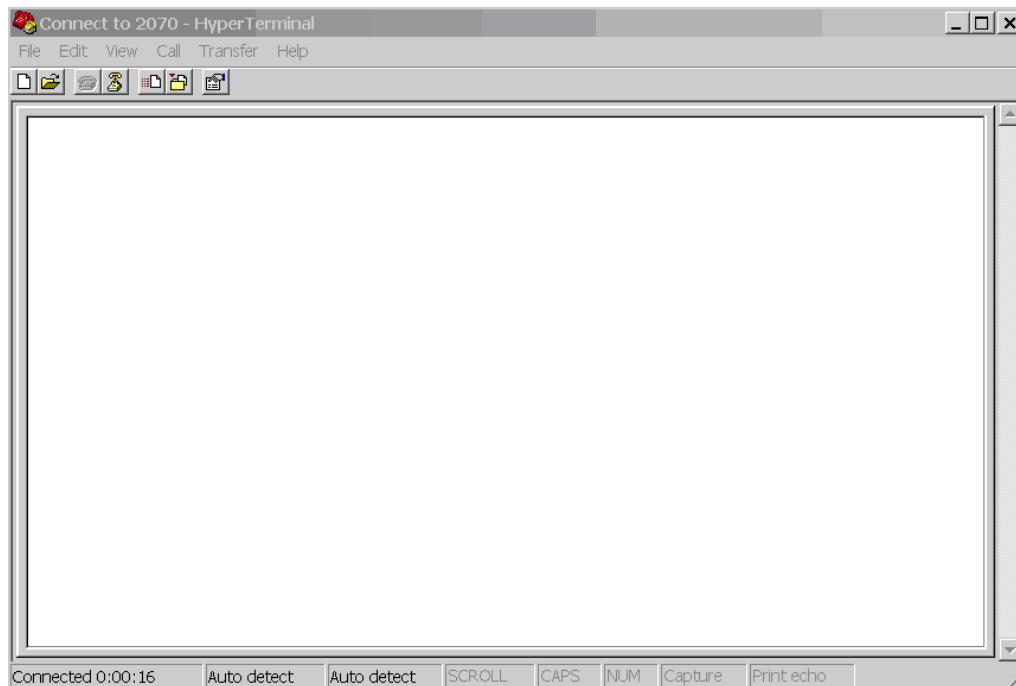
3. Under the “Connect using” selector, select “Direct to Com1”.



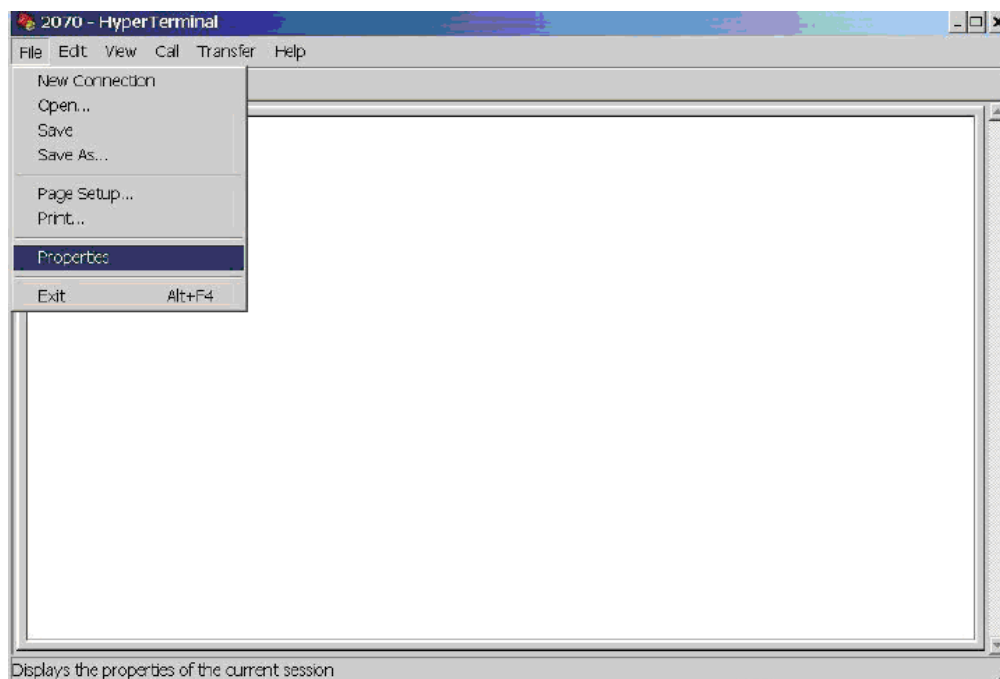
4. Select the baud, data bits, parity, stop bits and flow control as shown.



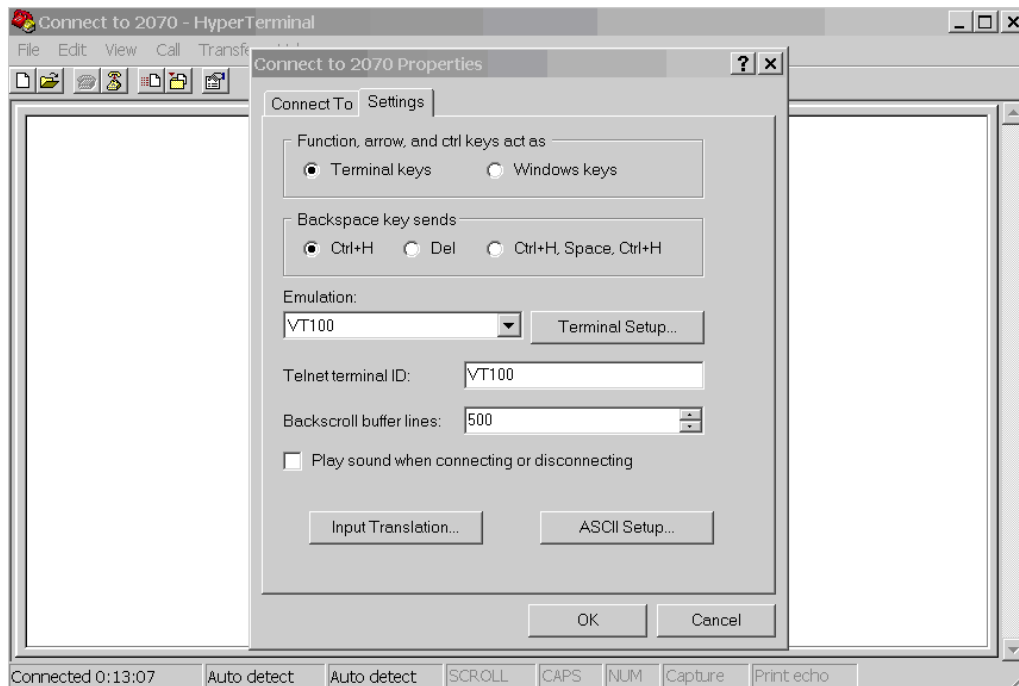
5. You should now be connected to the 2070. Note the lower left hand of the screen shows “connected”.



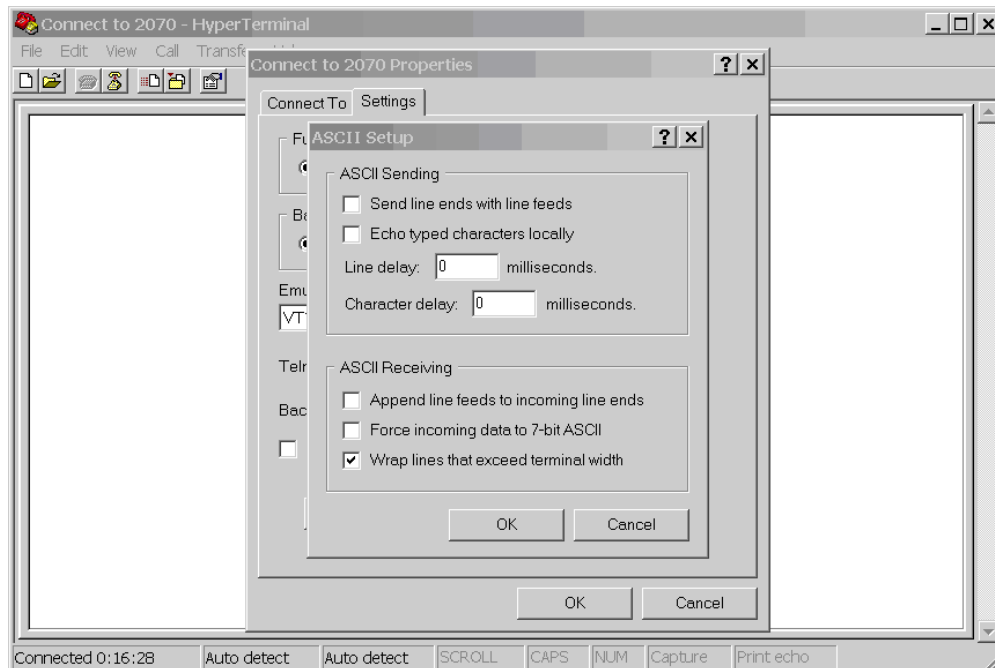
6. To ensure that HyperTerminal properly displays all 2070 characters, select file and the properties from the menu



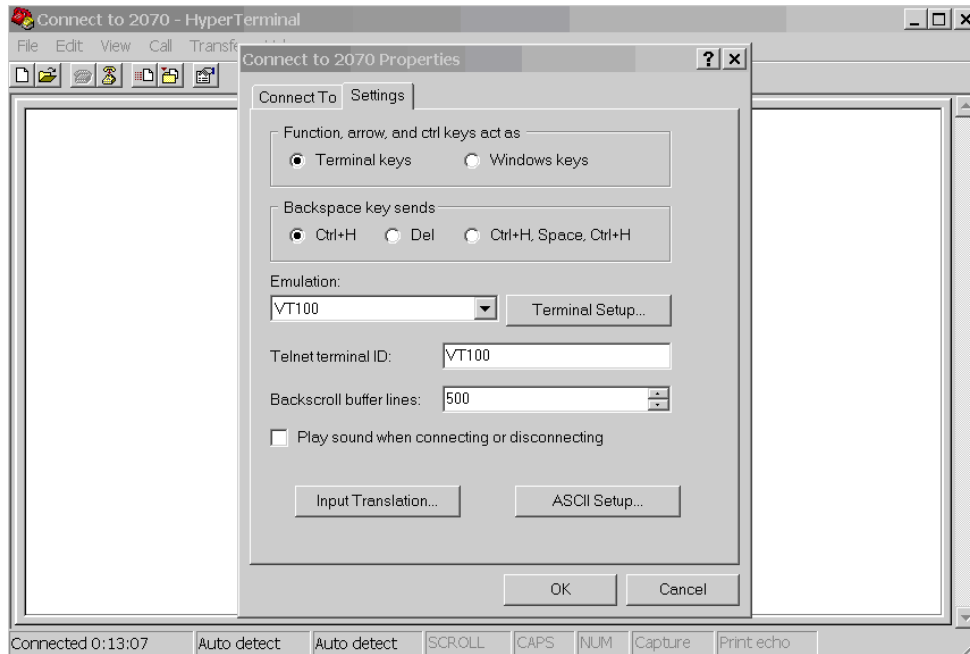
- After selecting the “settings Tab”, select the “Windows Keys” functionality, And set the terminal emulation to VT100.



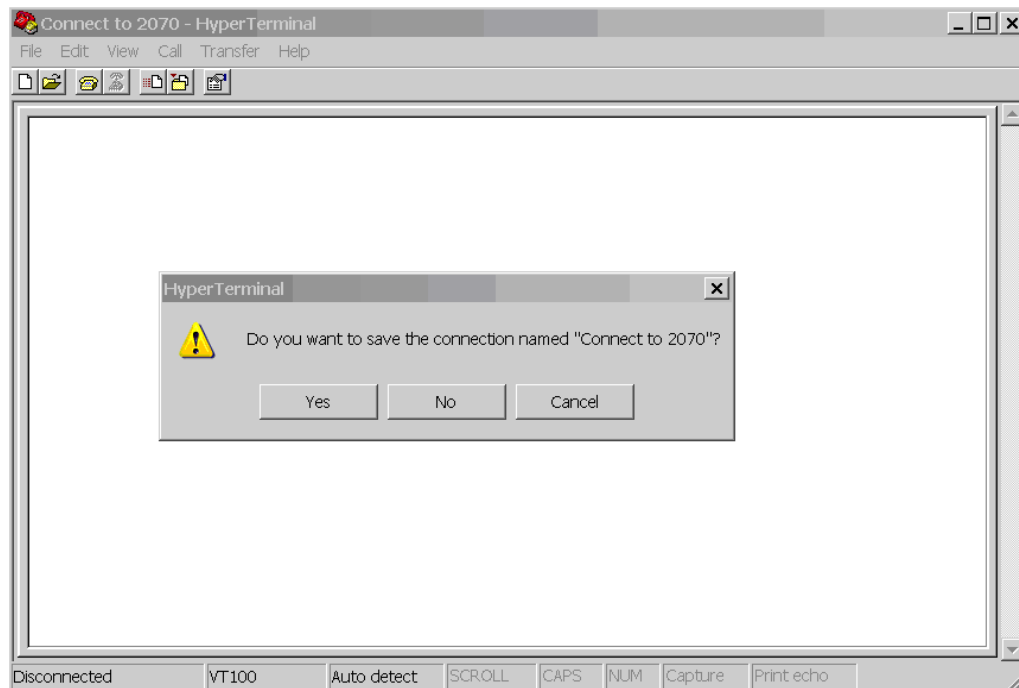
- Select the “ASCII Setup” button and ensure that the “Wrap lines that exceed Terminal width” is checked. Then select “OK” on the ASCII setup panel to accept these settings.



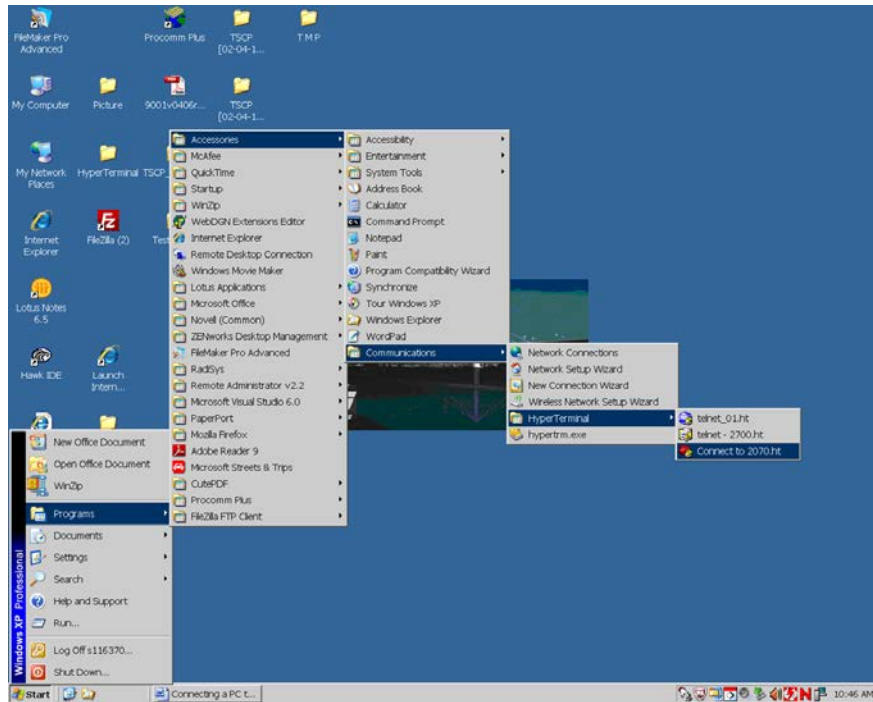
9. Select “OK” on the “Settings” panel.



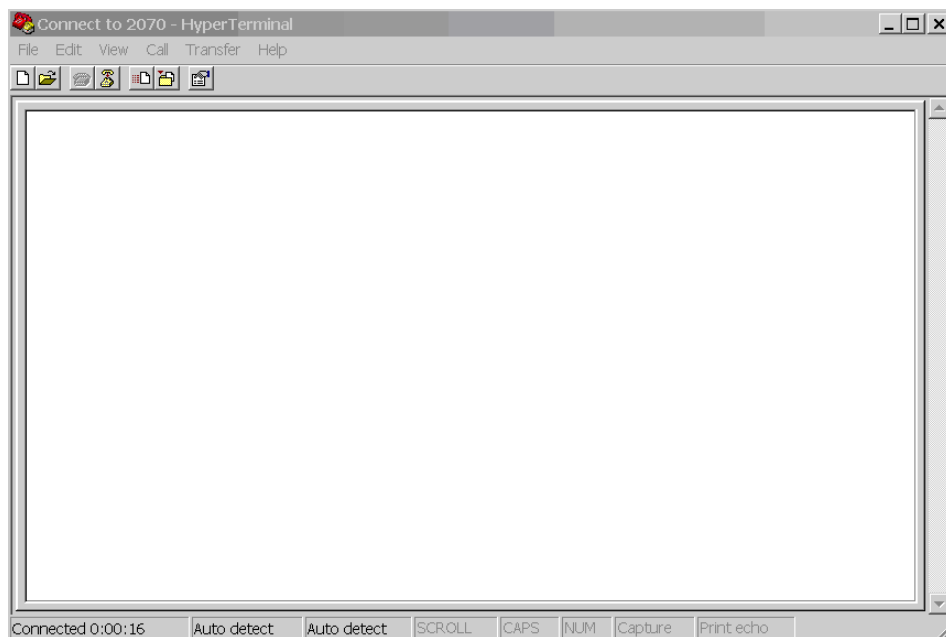
10. Upon exiting the program, select yes when you are asked if you want to save the session. This will allow you to preserve your settings for future sessions.



If you need to use HyperTerminal to connect to a 2070 controller again, you can select the icon with the name you have previously selected in step 2.



Upon restarting a saved session, you will be automatically connected with the 2070.

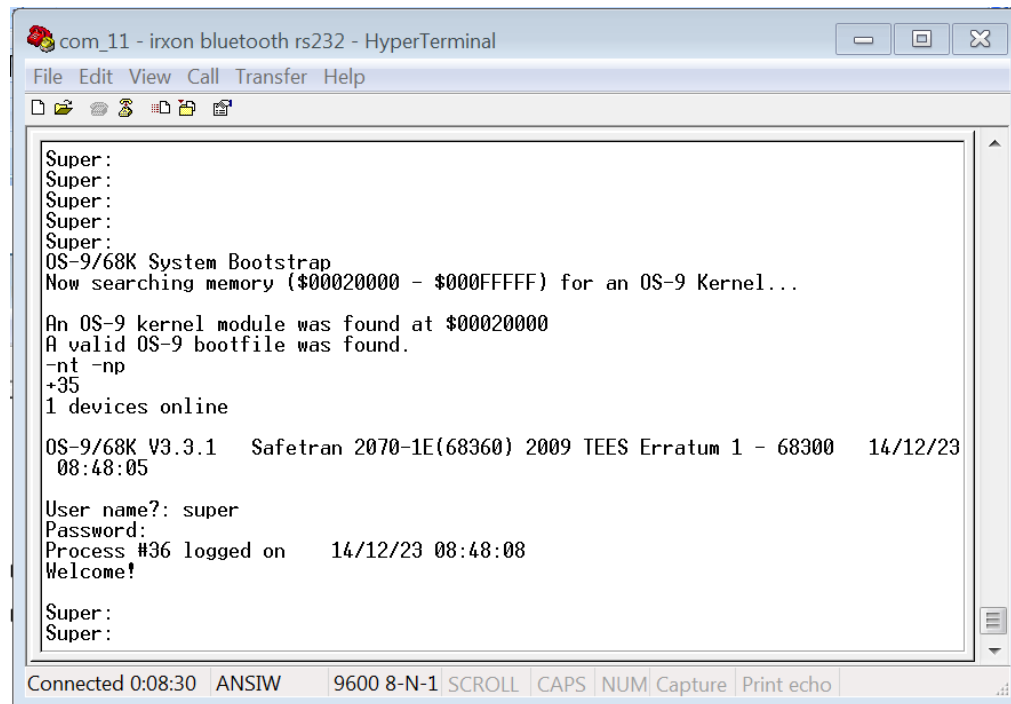


11. Login to the 2070 controller

User name: super

Password: user

Shown below is a typical 2070 boot-up as seen in the HyperTerminal terminal emulator. Normally, any OS-9 shell command can now be entered at the “\$” or “Super:” prompt. Once communication is established, commands can be entered in a format similar to MS-DOS.



```
com_11 - irxon bluetooth rs232 - HyperTerminal
File Edit View Call Transfer Help

Super:
Super:
Super:
Super:
Super:
OS-9/68K System Bootstrap
Now searching memory ($00020000 - $000FFFFF) for an OS-9 Kernel...

An OS-9 kernel module was found at $00020000
A valid OS-9 bootfile was found.
-nt -np
+35
1 devices online

OS-9/68K V3.3.1  Safetran 2070-1E(68360) 2009 TEES Erratum 1 - 68300  14/12/23
08:48:05

User name?: super
Password:
Process #36 logged on  14/12/23 08:48:08
Welcome!

Super:
Super:

Connected 0:08:30  ANSIW  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

Increasing Port Rates

Increasing Port Rate of 2070 Controller

The 2070 front panel C50S port can be configured for a rate greater than the default 9600 bps. It is recommended that when loading files to the 2070 that the port rate be increased to its greatest bps rate. The HyperTerminal program has a baud rate of 19200 bps that is compatible with the 2070 controller. To adjust the bps rate of the 2070, enter the following command at the 2070 OS-9 prompt (after the dollar sign) followed by the Enter key. You do not need to type the \$ key.

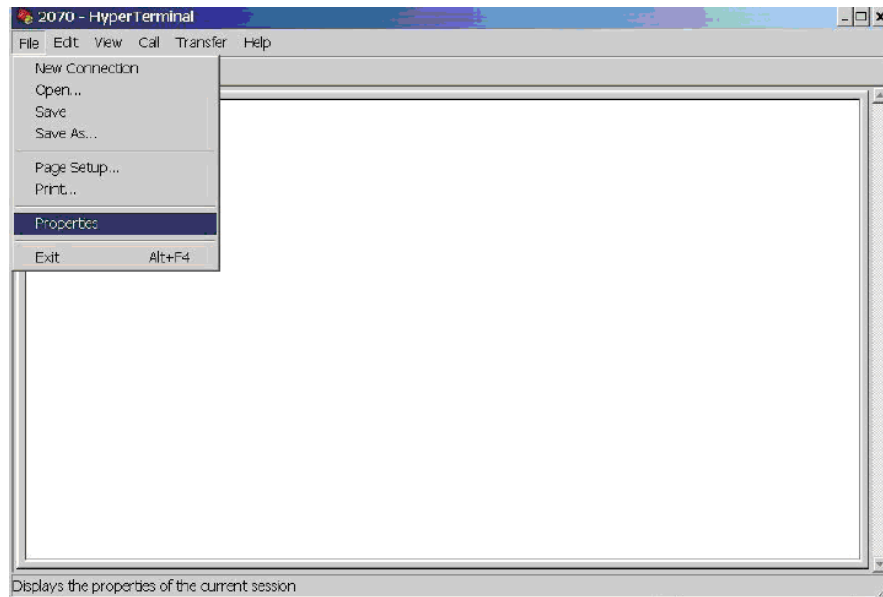
```
$ tmode baud=19200
```

At this point the terminal will output garbage since the communication rate does not match between the 2070 and the PC. The terminal program needs to have its rate changed to 19200 bps.

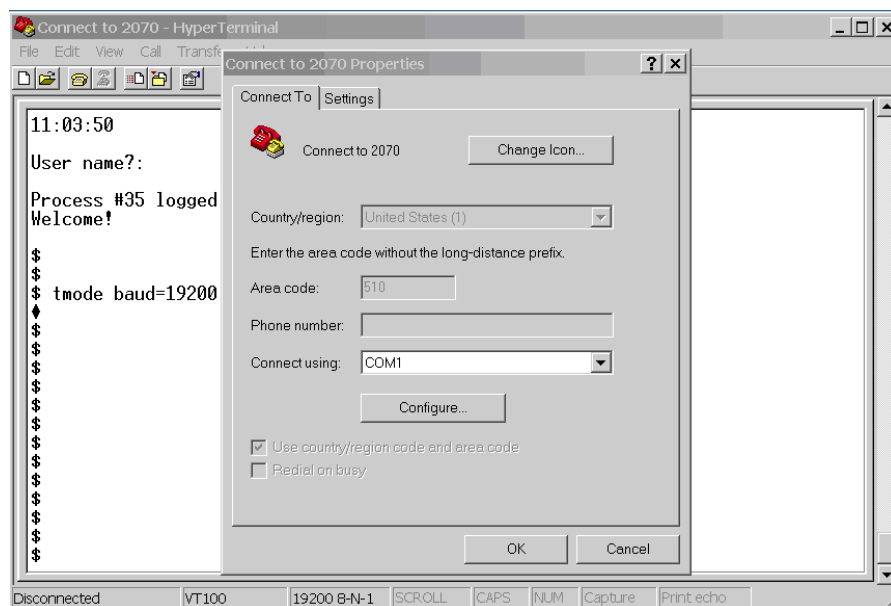
Increasing Port Rate of PC

To increase the port communication rate of the PC:

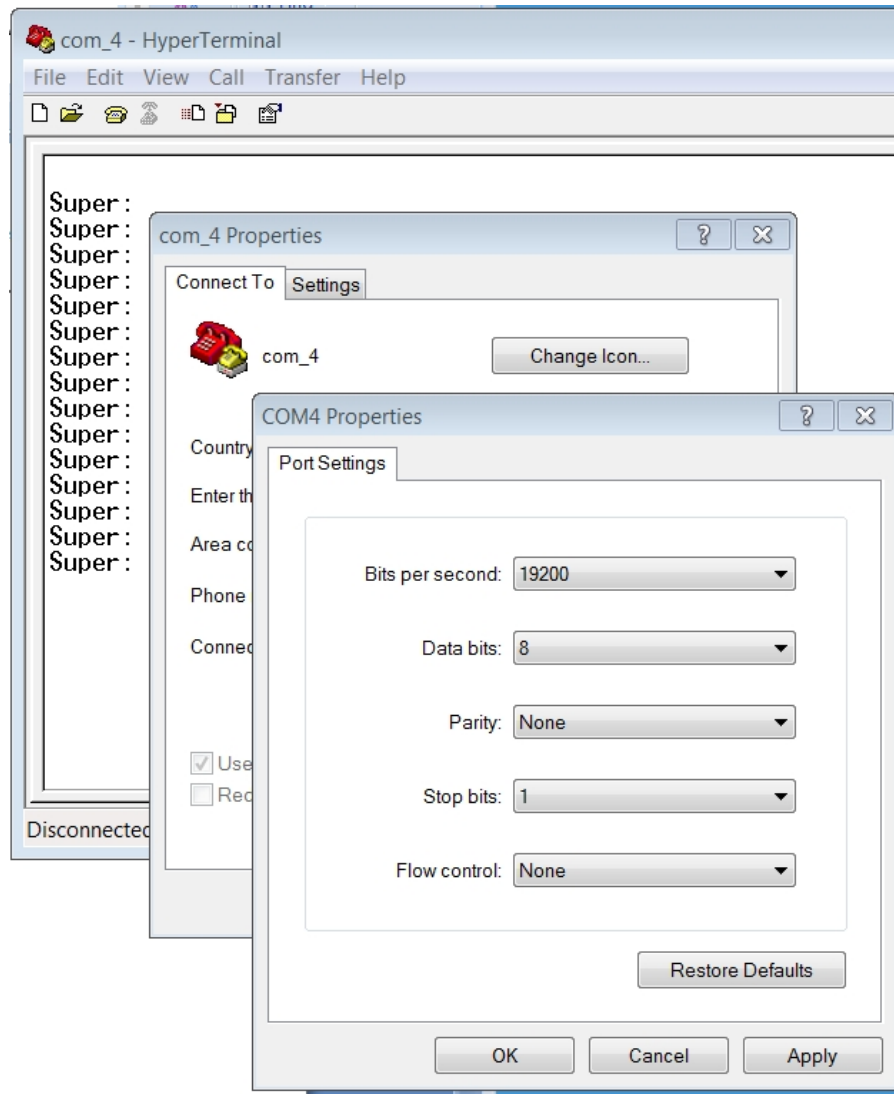
1. click the disconnect button to disconnected the connection
2. select file and the properties from the menu



3. Select the "Configure" button to open the "COM Properties" dialog box.



4. Change the “Bits per second” drop-down to 19200 in the “COM Properties” Dialog box.

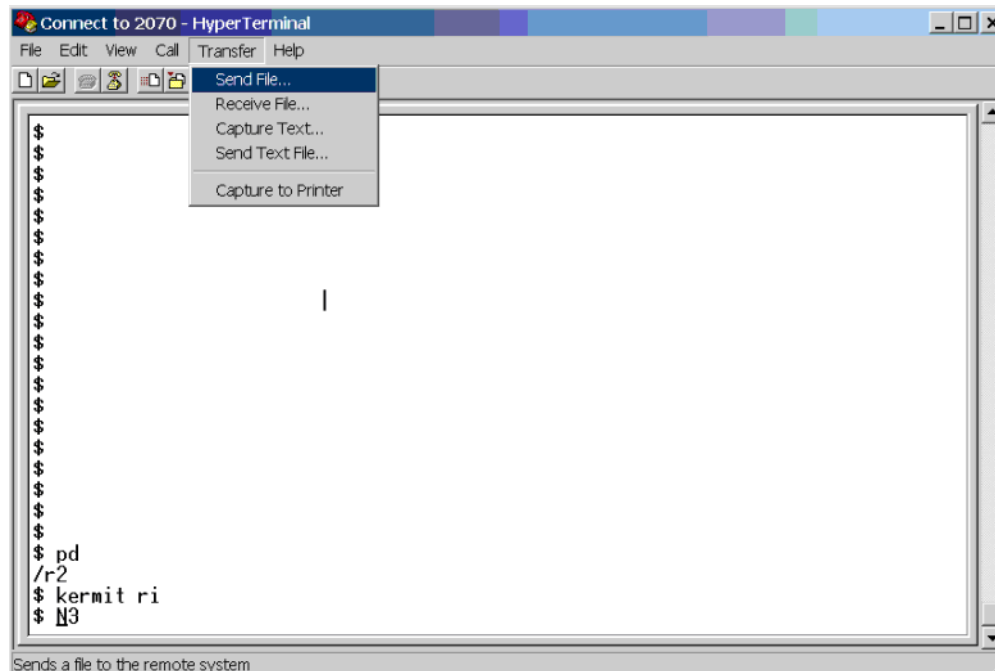


5. Click the Apply, then OK button on the “COM Properties” dialog box.
6. Click the OK button on the Properties dialog box.

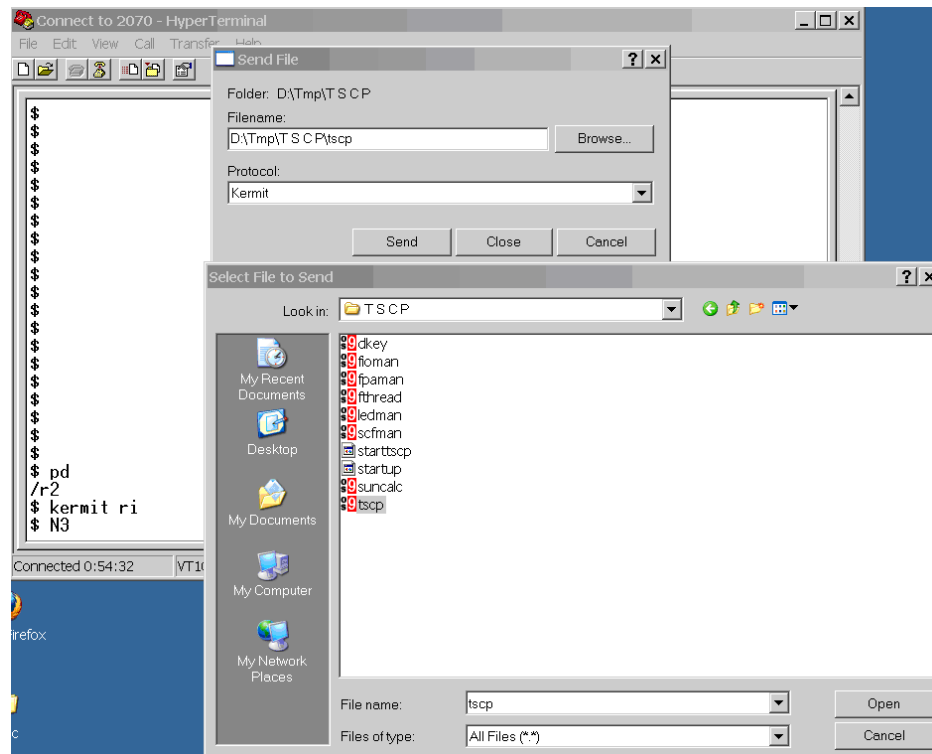
Transferring Files

Transfer files from PC to 2070 controller

1. Set the current directory of the 2070 to the SRAM drive with the command:
\$ chd /r2
2. Delete any files that may be in the SRAM drive with the command:
\$ del *
3. Run Kermit to receive a file with:
\$ Kermit ri
The terminal program will now halt while waiting to receive a file.
4. Click the “Send File...” from the Transfer menu to open the “Send File” dialog box.



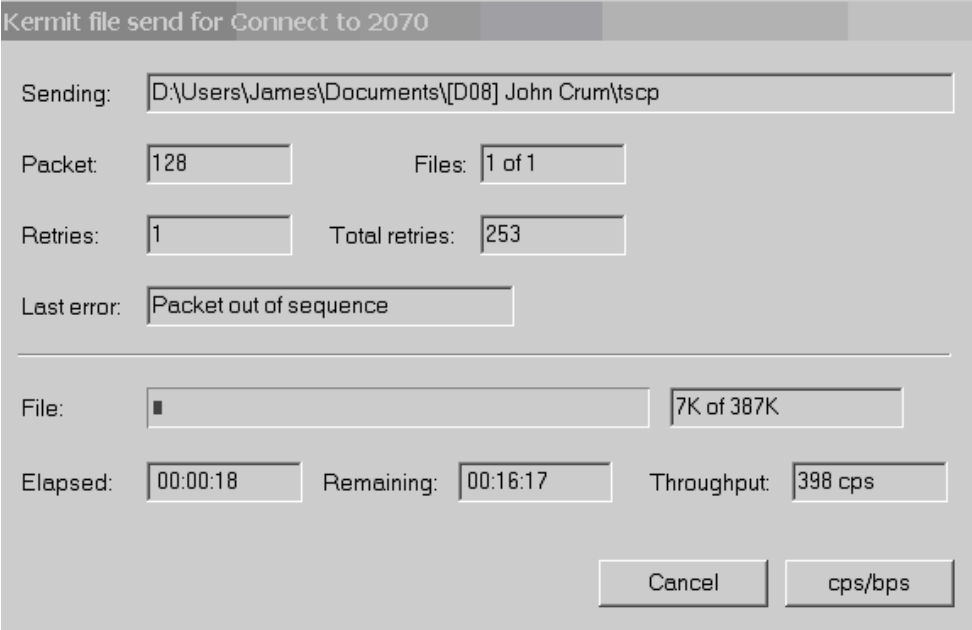
5. Select kermi from the Protocol drop down. Click on the Browse button to open the “Select File to Send” dialog box.



6. Double click on the file that you want to be transferred.
7. Click the Send Button on the “Send File” dialog box to send the file.



The “Kermit file send” dialog box will display information such as transfer rates, time elapsed, etc. for the file being transferred.



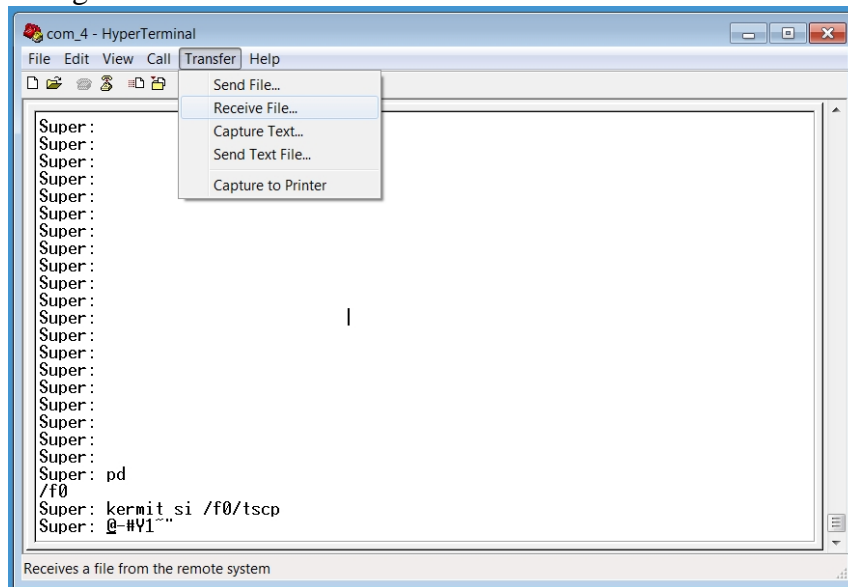
The image shows a screenshot of the "Kermit file send for Connect to 2070" dialog box. The window has a title bar with the text "Kermit file send for Connect to 2070". Inside the window, there are several input fields and labels. The "Sending:" label is followed by a text box containing the path "D:\Users\James\Documents\[D08] John Crum\tscp". Below this, there are two rows of input fields. The first row has "Packet:" followed by a box with "128" and "Files:" followed by a box with "1 of 1". The second row has "Retries:" followed by a box with "1" and "Total retries:" followed by a box with "253". Below these is a "Last error:" label followed by a box containing "Packet out of sequence". A horizontal line separates this section from the bottom section. The bottom section has a "File:" label followed by a progress bar and a box showing "7K of 387K". Below this are three pairs of labels and boxes: "Elapsed:" with "00:00:18", "Remaining:" with "00:16:17", and "Throughput:" with "398 cps". At the bottom right, there are two buttons: "Cancel" and "cps/bps".

Field	Value
Sending:	D:\Users\James\Documents\[D08] John Crum\tscp
Packet:	128
Files:	1 of 1
Retries:	1
Total retries:	253
Last error:	Packet out of sequence
File:	7K of 387K
Elapsed:	00:00:18
Remaining:	00:16:17
Throughput:	398 cps

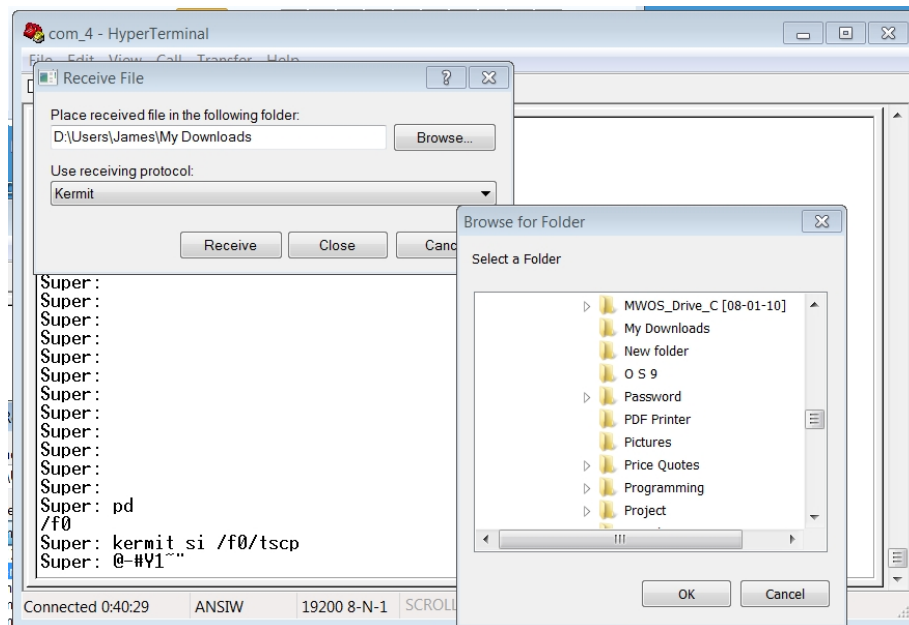
8. Repeat steps 3 through 7 for all the remaining files.

Transfer files from the 2070 controller to the PC

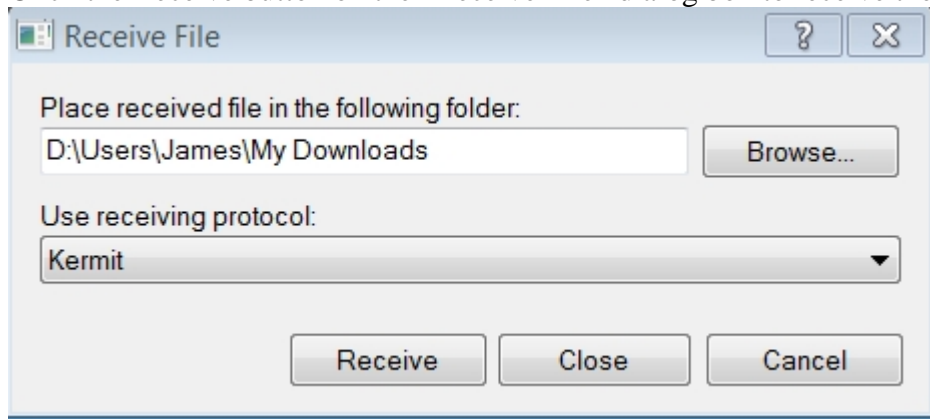
1. Run kermit to send a file with:
\$ kermit si /f0/tscp/tscp
The terminal program will now halt while waiting to send a file.
2. Click the “Receive File ...” from the Transfer menu to open the “Receive File” dialog box.



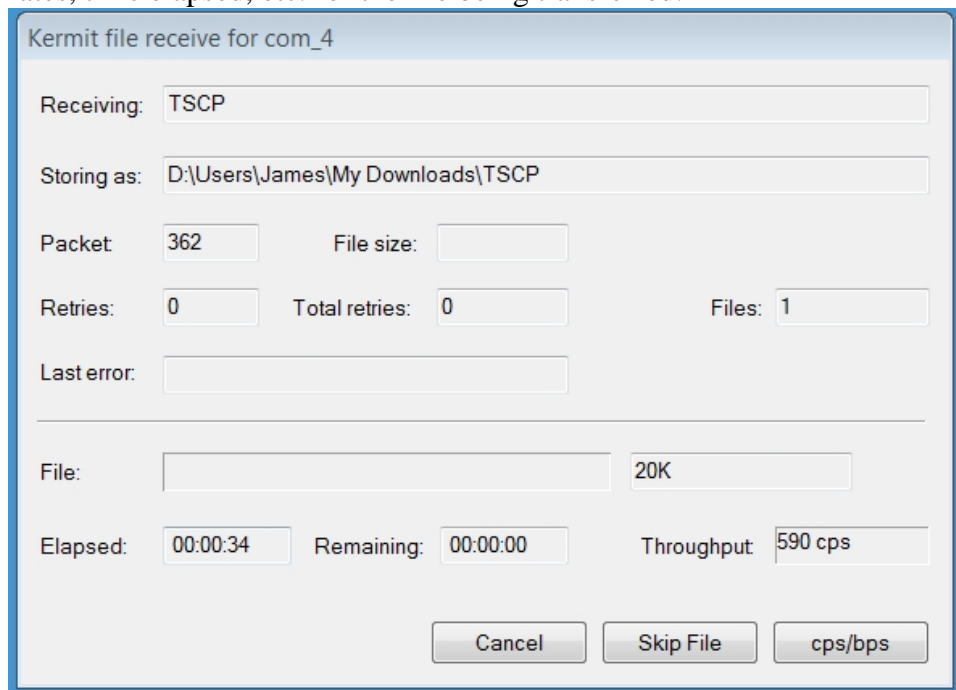
3. a. Select Kermit from the Protocol drop down.
b. Click on the Browse button to open the “Browse for Folder” dialog box and select a folder to store the file that will be transferred from the 2070 controller.



4. Click the Receive button on the “Receive File” dialog box to receive the file.



The “Kermit file receive” dialog box will display information such as transfer rates, time elapsed, etc. for the file being transferred.



Set Port Rates back to 9600 bps

Set Port Rate of 2070 Controller back to 9600 bps

Enter the following command at the 2070 OS-9 prompt (after the dollar sign) followed by the Enter key. You do not need to type the \$ key.

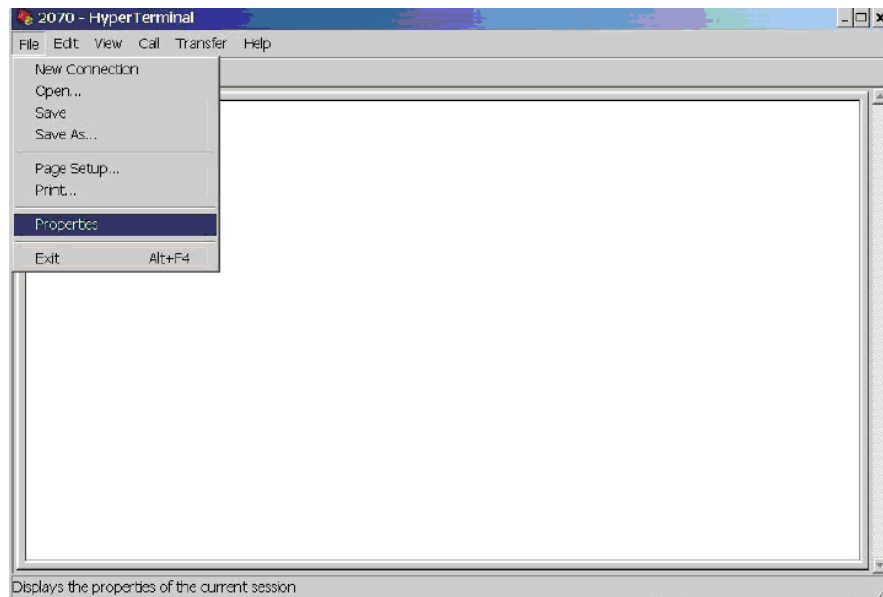
```
$ tmode baud=9600
```

At this point the terminal will output garbage since the communication rate does not match between the 2070 and the PC. The terminal program needs to have its rate changed to 9600 bps.

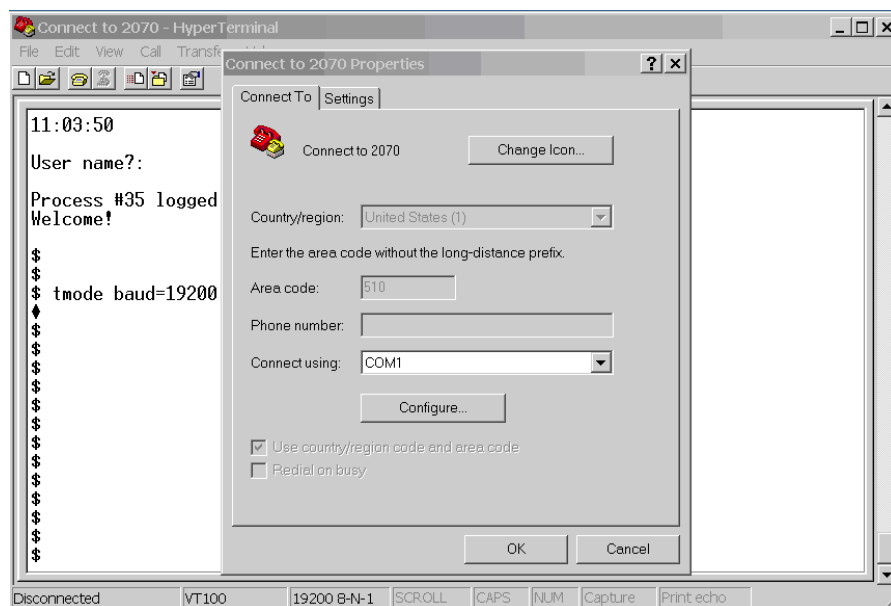
Set Port Rate of PC back to 9600 bps

To set the port communication rate of the PC back to 9600 bps

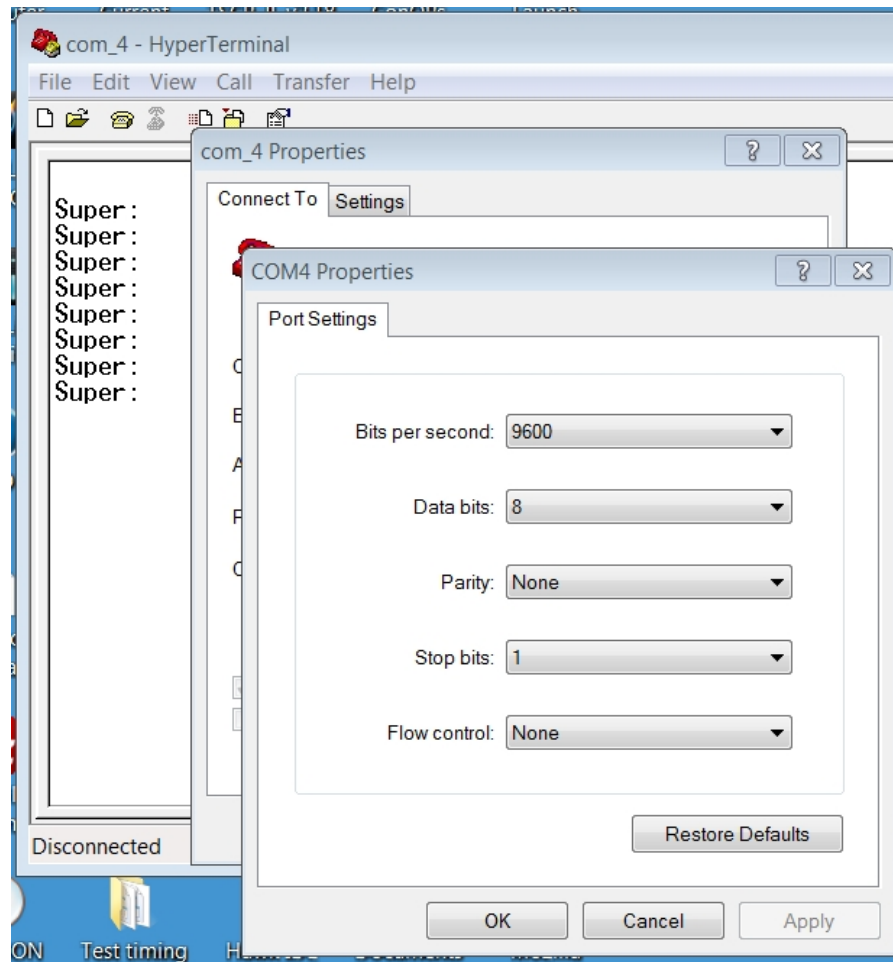
1. click the disconnect button to disconnected the connection
2. select file and the properties from the menu



3. Select the "Configure" button to open the "COM Properties" dialog box.



4. Change the “Bits per second” drop-down to “9600” in the “COM Properties” dialog box.



5. Click the OK button on the “COM Properties” dialog box.
6. Click the OK button on the Properties dialog box.