



Application Note #179:

Using MS Windows HyperTerminal with Modem Products

INTRODUCTION

Communication between the Modem or Modem Evaluation Board and either the terminal emulation system or the DTE system is conducted over the Modem's RS232 serial port.

During evaluation of the Modem using the Modem Evaluation Board, it is necessary to employ a telecommunications software product to facilitate the transmission of information between the Modem evaluation board and the terminal emulation system/DTE/host system. This link is also useful for monitoring Modem communication. When system level debugging is required, Cermetek recommends the user may utilize MS Windows HyperTerminal to program the Modem. HyperTerminal is standard on MS Windows environments. Application Note #179 employs a step by step procedure to lead the user through all necessary sequences to setup and activate the MS Windows HyperTerminal Application using both Windows 95/98 environments and Windows NT/XP environments.

GETTING STARTED

The step-by-step instructions presented below assume that HyperTerminal resides on the user's computer system in the following location for MS Windows 95/98 environment:

C:\PROGRAMS FILES\ACCESSORIES\HYPERTERMINAL

or

C:\PROGRAMS\ACCESSORIES\COMMUNICATIONS\HYPERTERMINAL

for MS Windows XP environments.

This is typically the case when installing the MS Windows application suite per Microsoft's default configuration setup directions.

IMPORTANT NOTE

Apply power to the Modem hardware application/evaluation board and verify proper operation of the hardware system and the PSTN connection PRIOR to initiating an MS Windows HyperTerminal session. The hardware system/evaluation board should remain powered up while initiating the HyperTerminal session. This will ensure that the COM Port connection between the hardware application/evaluation board and the PC will be correctly configured when MS Windows HyperTerminal auto connects.

ACCESSING HYPERTERMINAL IN MICROSOFT WINDOWS 95/98 ENVIRONMENT

HyperTerminal is accessed as follows:

- Step 1. When in MS WINDOWS, proceed to the START button in the lower left corner of the monitor screen.
- Step 2. Single click on START.
- Step 3. Move the cursor to highlight PROGRAMS, then highlight ACCESSORIES, then highlight COMMUNICATIONS, and finally single click on HYPERTERMINAL.
- Step 4. The HyperTerminal window will open displaying various Connection Icons.

ACCESSING HYPERTERMINAL IN MICROSOFT WINDOWS XP ENVIRONMENT

Hyperterminal is accessed as follows:

- Step 1. When in MS WINDOWS, proceed to the START button in the lower left corner of the monitor screen.
- Step 2. Single click on START.

- Step 3. Move the cursor to highlight ALL PROGRAMS, then highlight ACCESSORIES, then highlight COMMUNICATIONS. If previous hypersessions have been saved, then highlight the HyperTerminal folder. The HyperTerminal folder will open displaying various Connection Icons with associated names.
- Step 4. If no previous sessions have been saved, then the HyperTerminal folder will be empty. Single click on the HYPERTERMINAL application.

SETTING UP HYPERTERMINAL

To configure hyperterminal for proper communication with the Modem device proceed as follows:

- Step 1. If desiring to use an existing Connection Icon (i.e., one created during a previous HyperTerminal session), simply double click on the appropriate Icon. Otherwise, proceed to Step 2 to create a new Connection Icon.
 - A. The HyperTerminal banner will appear momentarily and HyperTerminal will automatically configure the COM Port connection using the settings from the most recent HyperTerminal session associated with the Connection Icon selected.
 - B. The HyperTerminal data entry window will open. If the "BEEP THREE TIMES..." Box in the HYPERTERMINAL SETTINGS profile menu has been previously been selected, the PC will produce three distinct beeps or "clicking" sounds just after the session window appears.
 - C. HyperTerminal is now ready for use. Proceed to the next section of this application note.
- Step 2. If this is the initial HyperTerminal session, or if it is desired to create a new Connection Icon, double click on the HYPERTERM Connection Icon. Otherwise, go back to Step 1.
- Step 3. The HyperTerminal banner will appear momentarily.
- Step 4. The CONNECTION DESCRIPTION HyperTerminal window will open and two dialog boxes will appear.
 - A. In the ENTER A NAME AND CHOOSE AN ICON FOR THE CONNECTION dialog box, enter a descriptive name. DO NOT press <CR>.
 - B. In the ICON dialog box, select an icon from those displayed. Be sure to select an icon that has not been previously assigned.
 - C. Click on the icon. HyperTerminal will associate the name entered with the icon selected.
 - D. Click OK.
- Step 5. The CONNECTION DESCRIPTION window will close and the CONNECTION TO window will open.
- Step 6. Go to the CONNECT USING dialog box and use the scroll button to select the applicable DIRECT TO COM port response. Choose the COM Port corresponding to the COM Port currently connected to the hardware application/evaluation board.
 - A. Note that all the other dialog boxes in the CONNECTION TO window are gray and will not accept any phone number related information. This is desired because the Modem product will control the PSTN connection not HyperTerminal.
 - B. Click OK.
- Step 7. The CONNECTION TO window will close and the COM PROPERTIES window will open.
- Step 8. The PORT SETTINGS tab will automatically be selected.
 - A. In the BITS PER SECOND window, use the pull down button to select the appropriate speed, per Table I, for example: **57600** for CH2056 products or **2400** for CH1788 products. If appropriate speed is already selected as the default value, skip to the next window.
 - B. In the DATA BITS window, use the pull down button to select **8**. If **8** is already selected as the default value, skip to the next window.
 - C. In the PARITY window, use the pull down button to select **None**. If **None** is already selected as the default value, skip to the next window.

- D. In the STOP BITS window, use the pull down button to select **1**. If **1** is already selected as the default value, skip to the next window.
- E. In the FLOW CONTROL window, use the pull down button to select **None**. If **None** is already selected as the default value, skip to OK.
- F. Click OK. The CONNECT TO window will close.

Step 9. The data entry HyperTerminal window is now open. Note that the name entered will appear in the upper left hand corner of the title bar. Also, notice that the session clock (appearing in the lower left hand corner of the bottom task bar) is running.

Step 10. Click on the far right icon in the STATUS BAR. This is the PROPERTIES icon.

- A. When the PROPERTIES window opens, click on the SETTINGS tab.
- B. Click on the TERMINAL KEYS button. A bullet will appear in the center of the button when selected.
- C. Click on the CTRL+H button. A bullet will appear in the center of the button when selected.
- D. In the EMULATION dialog box, select **ANSII** using the pull down button.
- E. In the TELNET TERMINAL dialog box, enter **ANSII** if not already entered. DO NOT press <CR>.
- F. Set BACKSCROLL BUFFER LINES to **500**.
- G. Click on the BEEP THREE TIMES WHEN CONNECTING OR DISCONNECTING box. A check mark will appear in the box.
- H. Click on the ASCII SETUP... button.
- I. When the ASCII SETUP window opens, verify that the following defaults are set:
 - LINE DELAY set to **0**.
 - CHARACTER DELAY set to **0**.
 - WRAP LINES option selected.
 - All other options should be blank or not selected.
- J. Click OK. This will close the ASCII SETUP window.
- K. Click OK. This will close the PROPERTIES window.

Step 11. The data entry HyperTerminal window is now open. HyperTerminal is properly configured and ready for use. Proceed to the next section of this application note.

SET HYPERTERMINAL DISPLAY WINDOW CONFIGURATION

Set the HyperTerminal data entry display window configuration using the following procedure. Although the configuration settings are typically set by default within the HyperTerminal application, they are included here for completeness.

- Step 1. Click on VIEW in the upper menu bar (located above the TOOL bar) of the HyperTerminal window.
- Step 2. If a check mark appears beside the STATUS BAR line, proceed to Step 3. If not, click on the STATUS BAR line and a check mark will appear.
- Step 3. If a check mark appears beside the TOOL BAR line, proceed to Step 4. If not, click on the TOOL BAR line and a check mark will appear.
- Step 4. The TOOL BAR should now be displayed at the top of the HyperTerminal window and the STATUS BAR will be displayed in the bottom of the HyperTerminal window.

VERIFY PROPER HYPERTERMINAL OPERATION

The following test procedures can be used to verify operation of the COM Port while using the current HyperTerminal configuration settings. These procedures are intended to provide a rudimentary debug strategy should the HyperTerminal application fail to operate as required. For more detailed techniques, refer to Microsoft HyperTerminal technical support.

- Step 1. Procedure to verify that the proper serial communication port (i.e., COM PORT) has been selected. Proceed as follows:

- A. Enter **AT<CR>** in the HyperTerminal date entry display window. If **AT<CR>** is echoed back on the screen followed by an **<CR>OK<CR>**, then the COM PORT selected is correct. Proceed to the next section of this application note. If **AT<CR>** is not displayed on the screen, proceed to B below.
- B. Click on the far right icon in the TOOL BAR. This is the PROPERTIES icon.
- C. Click on the CONNECT TO tab and select one of the alternative COM PORTs.
- D. Click OK. This will close the PROPERTIES window and reconfigure HyperTerminal.
- E. Enter **AT<CR>** in the HyperTerminal display window. If **AT<CR>** is echoed back on the screen followed by an **<CR>OK<CR>**, then the COM PORT selected is correct. If **AT<CR>** is not displayed on the screen, go back to B above and select a different COM Port. Repeat the verification process until all the possible COM Ports have been tested.

Step 2. Procedure to verify that the proper communication speed and data format has been selected.

- A. The connection speed will be displayed in the STATUS BAR. If the connection speed and/or the data format is not as specified below, the **AT** commands will not function properly and it is necessary to reconfigure the HyperTerminal application. The following is a summary of the required properties by product family:

Table I. HyperTerminal Settings by Product.

	CH2056	CH1799	CH1794	CH1788	CH1786
Bits Per Second	57600	33600	14400	2400	2400
Data Bits	8 bits				
Parity	None	None	None	None	None
Stop Bits	1	1	1	1	1
Flow Control	None	None	None	None	None

Verify that the lower STATUS BAR displays, for example: **57600 8-N-1** for CH2056 products or **2400 8-N-1** for CH1788/CH1786 products. If not, proceed as follows:

- B. Click on the far right icon in the TOOL BAR. This is the PROPERTIES icon.
- C. Click on the CONFIGURE button.
- D. In the BITS PER SECOND window, use the pull down button to select speed for the specific product or indicated in Table I. If the speed is already selected as the default value, skip to the next window.
- E. In the DATA BITS window, use the pull down button to select **8**. If **8** is already selected as the default value, skip to the next window.
- F. In the PARITY window, use the pull down button to select **None**. If **None** is already selected as the default value, skip to the next window.
- G. In the STOP BITS window, use the pull down button to select **1**. If **1** is already selected as the default value, skip to the next window.
- H. In the FLOW CONTROL window, use the pull down button to select **None**. If **None** is already selected as the default value, skip to OK.
- I. Click OK. This will close the CONFIGURE window and reconfigure HyperTerminal.
- J. Verify that the STATUS BAR now displays, for example: **57600 8-N-1** for CH2056 products or **2400 8-N-1** for CH1788 products. If not, go back to B above and repeat the reconfiguration process.

TERMINATING HYPERTERMINAL

Upon completion of the Modem programming activity, the following steps are required to exit HyperTerminal and return to the MS Windows desktop screen. Two distinct methods a provided. Method 1 is preferred, but either method is adequate.

Method 1.

- Step 1. Move the cursor to the upper task bar (located above the TOOL bar) and single click on CALL.
- Step 2. A pull down dialog box will appear. Click on DISCONNECT to terminate the current HyperTerminal session.
- Step 3. The HyperTerminal window will close terminating the current session but the parent HyperTerminal window will remain open.

Step 4. Move the cursor to the upper right hand corner of the parent HyperTerminal window and single click on the X. This will close the HyperTerminal window and return to the MS Windows desktop screen.

Method 2.

Step 1. Move the cursor to the upper right hand corner of the HyperTerminal window and single click on the X.

Step 2. The monitor screen will display a pop-up dialog box with the Comments: "YOU ARE CURRENTLY CONNECTED. ARE YOU SURE YOU WANT TO DISCONNECT NOW? Single Click on Yes to terminate the current HyperTerminal session.

Step 3. The HyperTerminal window will close terminating the current session but the parent HyperTerminal window will remain open.

Step 4. Move the cursor to the upper right hand corner of the parent HyperTerminal window and single click on the X. This will close the HyperTerminal window and return to the MS Windows desktop screen.

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