Troubleshooting a VMTWIN PC connection to your VM700A or VM700T

This is a short list of some troubleshooting tips for situations when a communication link cannot be successfully established between a VMTWIN session running on a PC and the target VM700A or VM700T. This list is not meant to be exhaustive. Basic knowledge of PC hardware and VM700A/T Communications Setup tools is assumed.

1. Read the Installation Instructions.

   Before going into a lot of depth to find a problem, review the set-up and connection instructions that are delivered with the VMTWIN software. Check your progress step by step. The instructions are contained in a "release.txt" file that appears in the directory after VMTWIN is extracted.

2. Check your interconnect cable.

   This has proven to be the problem area in more than 80% of the reported cases. The connection requires a cable that is wired for a null-modem configuration. In simple terms, Ground to Ground, Receive Data to transmit Data and Transmit Data to Receive Data are the three primary paths required. The pin-out descriptions for the VM700A or the VM700T are detailed in their respective manuals. The pin-out descriptions for your PC must be verified against your PC documentation. Most modern PC models are configured in a similar manner, but variants can be expected.

   An additional test for the electrical integrity of the RS-232 connection without starting a session of VMTWIN can be accomplished with a few steps. The basic process is simple, but does require a few initial set-ups and a simple communication program in your PC (such as WinTerm, HyperTerminal, etc.)

   - Set up the VM700A/T Communication Setup parameters (described in more detail later on in this document) so that the Copy Port is pointed at the desired RS-232 port of the VM700A/T and the flow control for this serial port is set to None.
   - Connect your RS-232 null-modem cable to the designated ports on your VM700A/T and your PC Comm port.
   - Launch a session of your general purpose communication program and connect it to the Comm port.
   - Select a normal operating mode on your VM700A/T (the Waveform mode, for example) and press the Copy button on the front panel.

   If your RS-232 null-modem cable is pin-to-pin correct, and your PC communication program is opened for receipt of data, you should immediately notice a long string of characters filling the PC communication program's terminal window. This is the data that is sent by the VM700A/T to a serial printer, if one is connected. This data file will be formatted in a specific page description language applicable only for the printer model/type as declared in the Copy Port parameters. The specific format of this data does not matter for this simple test. The presence of data flowing to the PC communication program's window is important. It indicates that a basic connection has been established and that the interconnecting cable is electrically correct.

3. Verify or /install Active X

   After loading VMTWIN on to your PC, if it has an operating system that is older than Windows 2000, you may need to install an Active X control .dll file. Make sure this has been accomplished in accordance with the VMTWIN instructions (step 4).

4. Verify your VM700A/T Communication Setup parameters.

   You access this file by pressing the Configure button on the VM700A/T, then touching the Configure Files soft key on the display, then touching the Communication Setup soft key on the next display that appears. The key file parameters to review or set are highlighted (in bold type) in the following example of the VM700A/T Communication Setup screen. Note that in this example, Serial Port 1 has been selected as the desired communication port, and a baud rate of 9600 has been chosen. Serial Port 0 and Serial Port 1 on your VM700A/T have identical functions. But, you may find that Serial Port 1 is more robust – especially at higher baud rates. A baud rate of 9600 was chosen as a starting point. Most modern devices should communicate well at 9600 baud for initial set-ups. The baud rate can be faster. 9600 is just considered to be a good starting point.

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Copy
    Port:
    Format:

Report
    Port:
    Format

Log
    Port:
    Format:

Control Port:   None

Remote Control
    Port:  Serial Port 1
    Prompt:  VM700>
    Message Display:  Remote
    Non-SLIP Interfacing Mode:  Computer

Port 0
    Protocol:           None
    Baud Rate:          9600
    Flow Control:       None
    Character Size:     8
    Parity:             None
    Reset Character:    None
    Carrier Detect:     Disabled

Port 1
    Protocol:           None
    Baud Rate:          9600
    Flow Control:       None
    Character Size:     8
    Parity:             None
    Reset Character:    None
    Carrier Detect:     Disabled
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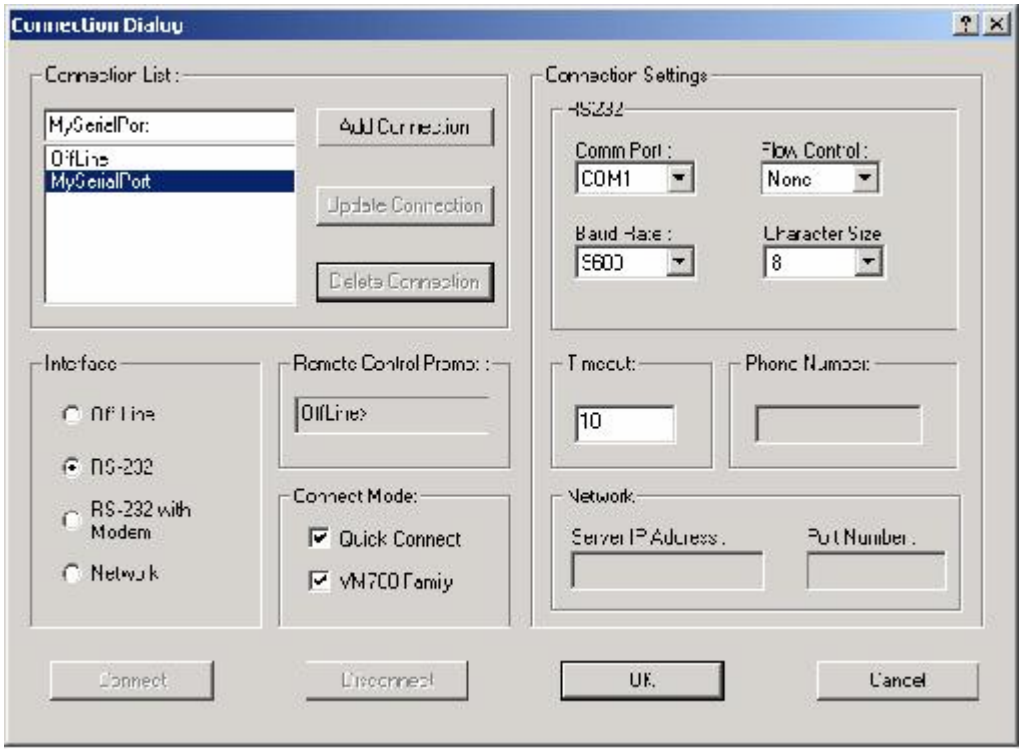
5. Verify your VMTWIN Connect Dialog Box communication parameters.

   When you first start up a new session of VMTWIN, you must build a set of your desired communication parameters into the Connect dialog box. These parameters include a new connection name (added to the Connections List), an Interface selection (RS-232), both entries selected in the Connect Mode window (Quick Connect and VM700 Family), the selection of the correct Comm port (the Comm port on your PC that will be used for the RS-232 communication activity), Flow Control (set to None), a baud rate (start with 9600), and a Character Size (8).

   The correct Comm port to use on the PC will vary with different manufacturers and operating system / hardware implementations. Some PCs may use Comm 0 for the mouse and Comm 1 for the RS-232 port and some may make Comm 0 available for the RS-232 communication port. Consult the system information for your particular PC and assign the Comm port variable in the Connection Dialog window according to where the actual physical RS-232 link will be established. Once your new Connection has been built, be sure to save the data – using the Add Connection button. Then close the window.

   A sample Connection Dialog window is shown below.



6. What to expect when the VMTWIN program first launches a connection.

   When a new VMTWIN is first used, the VMTWIN program creates a few supporting files. A target.ini file is created to contain the relevant Connection Dialog information for the new connection that you have built. A history.dat file is created to store a number of key parameters and variables about the VM700A/T being connected to. (These processes happen automatically, and the user should never edit these two files.) This initial "learning" process can take a fair amount of time. It is directly related to the number of options installed and the presence of user-created functions and custom limits files. Do not be surprised by a first connection time of a minute or more. Subsequent VMTWIN sessions will launch much faster.

   When VMTWIN starts to connect to the VM700A/T, the Configure button LED on the VM700A/T front panel will begin to blink, a "fill gauge" graphic element will begin to advance at the bottom of the VMTWIN screen and ASCII characters and commands will begin to scroll up through the VMTWIN Terminal View window.

   When the VM700A/T has successfully connected, the prompt "VM700>" will be displayed at the top of the VMTWIN Terminal View Window.

7. A more robust communication program tool is available for use with VMTWIN

   In some extreme situation, some older PCs have exhibited unpredictable RS-232 connections with VMTWIN and the VM700A/T. The primary causes may be an electrically noisy environment or an older Comm port driver IC in the PC. These conditions can manifest themselves by difficulties in establishing the VMTWIN communication link or an intermittent failure of an established link.

   The VMTWIN RS-232 communication utility contains a medium amount of error checking. In most circumstances, it is quite adequate. For difficult communication environments, there may be a definite need for a more robust RS-232 communication tool. In these cases, we recommend that you download a program called Serial Server from the Tektronix web site. Navigate to www.tek.com, click on and open the Video Test page, click on and open the Download Software page and scroll to or search for "**SERIAL SERVER SOFTWARE FOR VM700T** V3.02". Download it to an appropriate directory in your PC, open it and follow the instructions for set up.

   Once Serial Server is installed, you can launch a session of this program, then launch a session of VMTWIN, then establish a connection between VMTWIN and Serial Server. To do this, all you need to do is to create a new IP connection in your VMTWIN Connection Dialog box and use it during your VMTWIN session instead of the Serial connection created earlier. Serial Server will handle sending the VMTWIN commands to the RS-232-to-VM700A/T connection of your PC, and bringing the responses back. Serial Server also provides a small but very useful selection of communication port (RS-232 and IP) troubleshooting tools.

8. And, last, but certainly not least…

   Do not immediately rule out trying another PC or downloading a fresh copy of VMTWIN.

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