CHAPTER 7

Peripheral Equipment Troubleshooting

This chapter reviews fault isolation and general repair procedures for peripheral equipment interfaced with a VCO/4K system. Peripheral equipment includes master console, system printer, remote maintenance modem, and external A/B Transfer Switch. This chapter also discusses problems with improperly configured interface parameters and cabling.

Interconnection and Interface Problems

Equipment that is not properly configured or is improperly cabled may fail to operate or may exhibit intermittent failures. Refer to the *Cisco VCO/4K Hardware Installation Guide* and OEM documentation supplied with the peripheral equipment for proper configuration (or setup) parameters. The parameters are defined in the VCO/4K database via the system administration Peripheral Configuration screen. Refer to the *Cisco VCO/4K System Administrator's Guide* for information on how to configure peripheral equipment parameters.

Refer to the OEM documentation, *Cisco VCO/4K Hardware Installation Guide*, and the *Cisco VCO/4K Site Preparation Guide* for information on peripheral equipment cabling.

Typical problems associated with setup parameters and cable faults are described below.

Equipment Self-test

Begin your fault isolation with a self-test. A self-test is generally incorporated in the power-on firmware of most of the peripheral equipment.

If the self-test completes successfully, verify the cable connections. When a known working device is properly connected to the controller, the remaining causes of peripheral equipment failure are related to system controller hardware and/or the operating system.

Master Console

Master console operating parameters (Baud Rate, Stop Bits, Bits per Character and Parity) in the system database must match the VT220/320 or WYSE Technology WY-185/185ES setup parameters. Variations in the data bits settings can cause data fields in menu displays to contain strange characters. Mismatched baud rates can produce erratic screen displays, long blanking intervals, or no screen display at all.

VT220 mode operation with Application Keypad and Application Cursor Keys selected, enables the feature key functions on the digit keypad and the programmable function key settings along the top row of keys on the keyboard.

A three-conductor serial cable carries the receive and transmit lines along with signal and equipment ground to the Serial Port 1/Console port on the Storage/Control I/O Module. Cable or serial port problems may not blank the screen because the VDT stores the data for each screen display in its own memory.

The VT220/32 and WYSE WY-185/185ES compatible terminals recommended by Cisco Systems run a self-test immediately upon being powered on. If the test is successfully completed, the OK message appears. Press any key to place the console in service after powering it on.

- If the Power On indicator is not illuminated, check the power cord, AC outlet and circuit breaker.
- If the Power On indicator is illuminated but the self-test cannot be completed, refer to the *VT320 Owner's Manual* for basic troubleshooting procedures.

If you are not using the VT320 video display terminal, refer to the OEM documentation for specific information about self-test and basic troubleshooting procedures.

System Printer

The VCO/4K requires a parallel printer with a Centronics-type interface for use as the system printer. You must define the end-of-line (EOL) terminator for the printer interface in the system database, and match the printer setup configuration prior to use. If this parameter is improperly set, the printer may print without advancing the paper. Refer to the OEM documentation supplied with the printer for setup parameters.

If the printer stops in the middle of a print operation, check the Out-Of-Paper switch to determine if it has been erroneously triggered by torn paper walking off the tractor feed mechanism.

Before you run a self-test of the system printer, verify that fan-fold paper is properly loaded and a ribbon cartridge is installed. Refer to the OEM documentation for specific information about self-test and basic troubleshooting procedures.

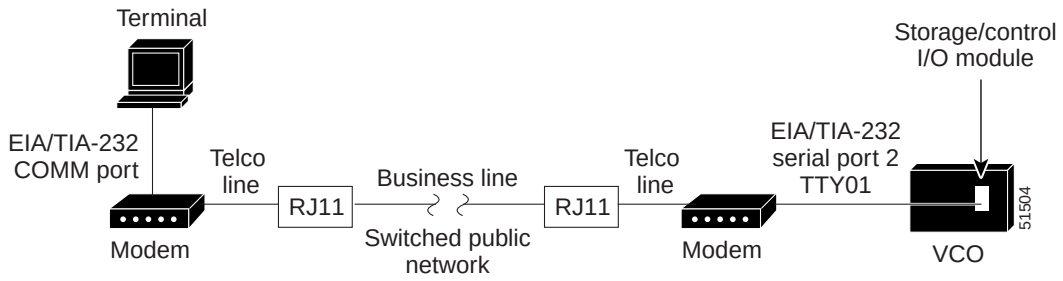
Remote Maintenance Modem

You may use a modem for the remote maintenance of a VCO/4K system. Modem operating parameters (Baud Rate, Stop Bits, Bits per Character, and Parity) defined in the system database must match the modem's setup parameters (refer to the OEM documentation supplied with the unit). Because of its high data transfer speed, a remote maintenance modem should not be connected to the switched public network behind a PBX. Induced noise from the PBX can create serious transmission problems.

If the remote maintenance modem is properly installed, problems will most likely be due to a faulty CO line to the modem.

Refer to the OEM manual supplied with your modem for details on hardware test procedures. A VDT and second asynchronous modem, or a PC with a communications package and modem, can be used to dial into the asynchronous modem connected to the VCO/4K. Figure 7-1 shows a simplified test arrangement.

Figure 7-1 Remote Maintenance Modem Test Call Setup



External A/B Transfer Switch

VCO/4K systems with redundant control may be equipped with an external A/B switch and drive cable. This Automatic Switching Unit (ASU) allows one set of peripheral devices to be automatically transferred between system controllers.

The following troubleshooting procedures are recommended if the ASU should fail to transfer connections between system controllers:

Step 1 Verify that the Select switch on the front panel of the ASU is in the AUTO position. Use the Select switch on the Alarm Arbiter Card (AAC) to manually switch from one side to the other. Observe the ASU. If the ASU fails to switch sides, proceed to Step 2.

Step 2 Verify that power is being supplied to the ASU by checking the voltage at the AC outlet into which it is plugged. Correct the AC problem and repeat Step 1.

Step 3 Use the Select switch to manually switch the ASU from side A to side B. If the switching action occurs, proceed to Step 4. If no switching action occurs, replace the ASU.

Step 4 Examine the control cable from the ASU to the AAC. Be sure there is no physical damage and that it is securely connected at both ends. Repeat Step 1. If no switching action occurs, replace the control cable and repeat Step 1.

Step 5 If replacing the control cable fails to correct the switching action of the ASU, replace the AAC. (Refer to the *Cisco VCO/4K Card Technical Descriptions*). Repeat Step 1.

Refer to the OEM manual supplied with the ASU for additional troubleshooting information.

Always verify that the cables from peripheral devices to the ASU, and from the ASU to the system controllers, are secure and free of signs of mechanical damage. Check these cables and the operation of the ASU before replacing any peripheral device that has passed a self-test but fails to operate properly in the system.

Refer to the *Cisco VCO/4K Hardware Installation Guide* for pin and signal information.