ELECTROLINE

Test Point Selector™ *Control Software*

User Guide

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About this manual

The TPS Control Software User Guide is a complete guide to installing, operating and troubleshooting Electroline's TPS Control Software. It does not include instructions for operating any third-party control software or equipment which may be used in conjunction with this product.

This manual includes four chapters and an index which cover the following:

Chapter 1 *Getting started*	General overview of the TPS Control, its operating environment and its functions.
Chapter 2 *Installation*	Procedures for installing the TPS Control Software on your personal computer.
Chapter 3 *Operation*	How to use the TPS Control Software.
Chapter 4 *Troubleshooting*	Basic procedures for correcting possible errors.
Index	For finding information on a specific topic. Entries are grouped by subject; for example, all information on communication ports can be found under the "ports" main entry.

Conventions

The following conventions are used in all Electroline Equipment manuals:

Symbol	Meaning
Bold	Menu options, field names, messages shown on screen. Example: The message **Starting autosave** will appear on screen.
`Courier 10 pts`	Commands to be entered as is. Example: Type `dir *.*` to display the files.
< >	Keyboard commands and variables that must be replaced by real values. Example 1: Press the <Ctrl> key. Example 2: For the parameter <date>, enter today's date.
SMALL CAPITALS	Buttons in a user interface. Example: To erase a file, click on DELETE.
Italics	Titles of manuals. Foreign words or expressions.

Symbol	Meaning
[x..y]	Represents an interval of values. For example, [1..9] indicates the numbers from 1 to 9 inclusive.
{LIMIT}	Symbolic constants or limits are shown in capital letters between brackets. Example: TIME {HH:MM:SS}
☞	Information that should be noted.
⌨	Additional information on keyboard commands.
	Very important information is shown in a grey box.

Abbreviations

The following abbreviations are used in this manual:

Abbreviations	Meaning
CAT	Compact Addressable Tap
CATV	community antenna television (cable TV)
CPM	CLEARPath module
EAS	Electroline Addressable System
EAS-PA	Electroline protocol adapter
FSK	frequency-shift keying
MTS	Multi-Tier System
TPS	Test Point Selector
TPS-MS	Test Point Selector Master
TPS-SL	Test Point Selector Slave

Terminology

Term	Definition
active input	An input identified as connected in the TPS Control software. A green or red T appears in front of the input's label for a TPS input; a blue S appears for a spectrum analyzer input.
CLEARPath	An addressable attenuator deployed in the field to help detect ingress in the cable network.
group and tap address	Address assigned to a set of inputs on the same unit so that the Control Unit and TPS Control software can identify them. The taps are inputs on the TPS unit, which are numbered automatically according to the stations' definition in the TPS database (see *station* below).
inactive input	An input identified as unconnected in the TPS Control software. A black X appears in front of the input label. Can be a TPS input or a spectrum analyzer.
Multi-Tier System (MTS)	Scrambling signal generator for remote control of several service levels (tiers).
Reset	Take the system or program back to the standard startup point or to a point where it can be restarted
Station	A TPS-MS with one to three TPS-SL units for a total of from 16 up to 64 inputs within a single addressable unit.
TPS Control Software	A PC-based program for configuring and controlling TPS units in the field, as part of a cable ingress management system.
Test Point Selector (TPS)	The TPS is the 16-way RF multiplexer that selectively connects one of its 16 inputs to a single output.
Test Point Selector Master (TPS-MS)	The TPS-MS unit includes an FSK receiver port, an RS-232 port and the necessary resources to decode commands from one of those ports and control its own RF multiplexer. Up to three TPS slave units can be connected to its expansion port.
Test Point Selector Slave (TPS-SL)	The TPS-SL unit is controlled by a unique TPS-MS. It is also a 16:1 RF multiplexer, but has no processing abilities. Used as an expansion device to increase the capacity of the TPS-MS

1 GETTING STARTED

1. GETTING STARTED

The TPS Control software is a Windows-based application designed to run on a PC. It provides commands for installing and configuring TPS units, managing the structure of the ingress monitoring network and automating the TPS input selection.

This software is designed to work in conjunction with Electroline's Test Point Selector (TPS), the EAS Control Unit and other third-party products. When combined with these other products, the TPS Control software provides you with an integrated solution for locating ingress in your CATV network.

This chapter provides a general overview of the TPS Control software, its functions and operating environment. This chapter also describes the basic connections that are required for cabling the units. For operating the software, see Chapter 3, *Operation* for specific commands. For detailed information on the TPS unit and its functions, refer to Electroline's *Test Point Selector User Guide*.

There are five main sections in this chapter:

1. Applications
2. Operating principles
3. Environment
4. Materials
5. Cabling

1.1 Applications

Once you suspect that ingress is degrading services in your network's return paths, you can use the TPS Control software to begin managing this ingress. This software lets you control the addressable Test Point Selectors (TPS) you have installed for monitoring the return path.

The TPS Control software offers two main features: remote control and configuration for TPS units.

1.2 Operating principles

The TPS Control is a PC-based application that runs in a Microsoft Windows 95 environment. It is connected to both the EAS Control Unit and TPS master units via an RS-232 link. Operating the TPS Control requires a basic knowledge of Microsoft Windows 95 from a user perspective. If you are not already familiar with such things as icons and menus, clicking and dragging, cutting and pasting, maximizing, minimizing or activating a window, refer first to the Windows 95 operating system's online help or its numerous official or third-party manuals.

This software shows the TPS equipment network in a tree structure. Each input that is logically connected to the monitoring system is shown in a format similar to Windows Explorer. If you understand the hierarchy and nesting concepts associated with Explorer, you

will find it easy to operate within the TPS Control interface. The interface provides a simple view of the TPS network, the connections and the relationship between the various equipment.

1.3 Environment

Your TPS Control software runs on a PC in a Microsoft Windows 95 environment. Your PC must meet the minimum requirements for running Windows 95 and have enough free disk space to install TPS Control and to store the database information. You also need to have at least one free COM port for connecting the PC to Electroline's addressable units. If you have two free ports, this will make the job more efficient since you won't have to disconnect and reconnect cables for different operations.

Detailed connection instructions are provided in the *Test Point Selector User Guide* that ships with the TPS-MS unit. This chapter provides an overview of the basic connection process. For more information, refer to your *Test Point Selector User Guide*.

Typically, your PC is located in the headend with a local connection to the EAS Control Unit for FSK control. For RS-232 control, your PC will be connected to a TPS station in the headend. You will also have installed a third-party signal-measuring device at the headend and connected it to your master TPS.

Some common setups for the TPS system are described in the *Test Point Selector User Guide*.

In order to use TPS Control for ingress management, you will have deployed one or more TPS units in the headend of your cable network or hybrid fiber-coax network. You can also deploy similar TPS stations in the network's hubs.

For more information on the platform and performance requirements, see Chapter 2, *Installation*.

1.4 Materials

To save time, take a few minutes to assemble the materials you will need to set up your PC and to cable the PC to the TPS units and the EAS Control Unit.

For sending control commands to the EAS Control Unit, you will need a serial cable that you connect between one of the PC's COM ports (you may need a connector adapter) and one of the EAS Control Unit's COM ports. The FSK control method requires this EAS Control Unit connection. The EAS Control Unit can send commands to TPS units anywhere in the RF network.

For direct RS-232 control of the TPS units, you will need an RS-232 serial cable to connect a different communication port on the PC to the master TPS unit. This cable, with one male and one female DB-9 connector, is provided with the TPS units. This control method is for TPS units located in the same space as the PC running TPS Control.

Check that your PC meets the performance requirements before installing the TPS Control software. Refer to section 2.1 in Chapter 2, *Installation*.

For configuring the TPS units, you will need an Electroline protocol adapter, a female DB-25 to DB-9 null modem cable for connecting the PC to the Electroline protocol adapter, and a short length of flat cable with one male and one female DB-9 connector. The flat cable connects to the TPS-MS unit's configuration port.

1.5 Cabling the PC's COM ports

Connecting the PC to the TPS units and the EAS Control Unit is easier if you have at least two communication ports on the PC that can be used for the configuration and control functions. You will need a length of RS-232 serial cable for each communication port. You will need an Electroline protocol adapter to complete the configuration connections with Electroline's TPS unit and a null modem cable (provided with the reprogramming kit).

1.5.1 Connecting to the TPS control port

On the master TPS units, the CONTROL port is used to connect a PC which sends control commands over an RS-232 link to the TPS. This link lets the TPS receive control commands from the TPS Control software if you have chosen the RS-232 control method. This means that TPS Control can automatically control the scanning of TPS inputs in the TPS network.

The CONTROL port accepts a male DB-9 connector on the serial cable provided for the PC connection. The other end of the cable is a female DB-9. You will need a connector adapter if your PC's COM port is not a DB-9. For FSK control connections, see section 1.5.3.

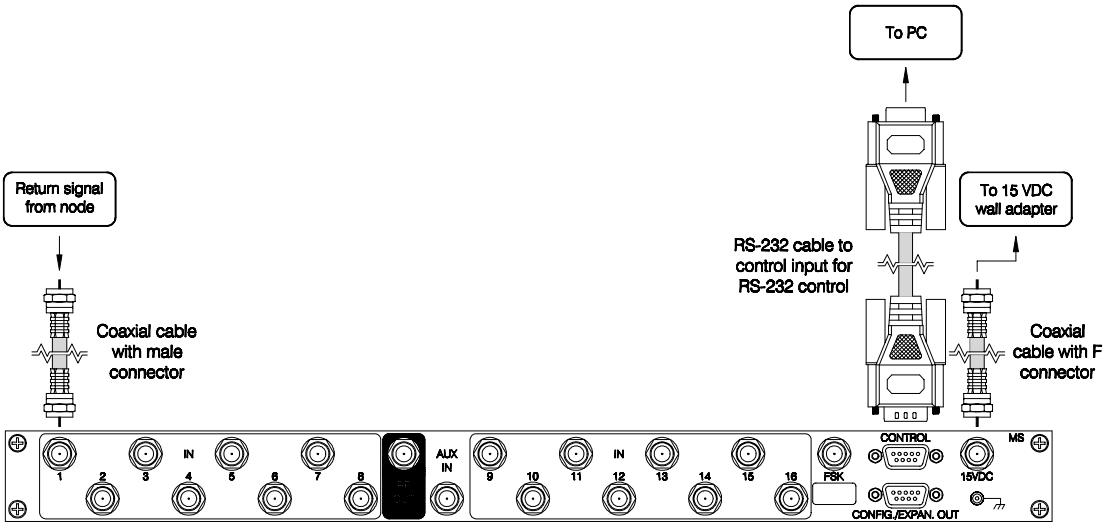


Figure 1-1: Cabling diagram for a TPS-MS unit

Refer to the *Test Point Selector Guide* for connector pinouts and for detailed specifications on the TPS units.

1.5.2 Connecting to the TPS configuration port

On the master TPS units, the CONFIG./EXPAN. OUT port is used initially for configuration and then for expansion. This port accepts a male DB-9 connector on a flat cable connected to the EAS-PA, which is connected to PC over a null modem serial link. This link lets the TPS receive configuration commands from the TPS Control software, such as the control method, address and timeout period. We recommend that you disconnect this cable once the TPS units have been configured. If a slave unit is connected to the TPS-MS, reconnect the expansion cable.

For configuring the TPS units, connect one end of an RS-232 null modem cable with a female DB-9 connector on one end to a COM port on the PC. You will need a connector adapter if your PC's port is not a DB-9 type. Connect the female DB-25 connector on the null modem cable to the EAS-PA's DB-25 male connector. Run a short length of flat cable (provided) from the EAS-PA's male DB-9 connector to the TPS unit's CONFIG./EXPAN. OUT port.

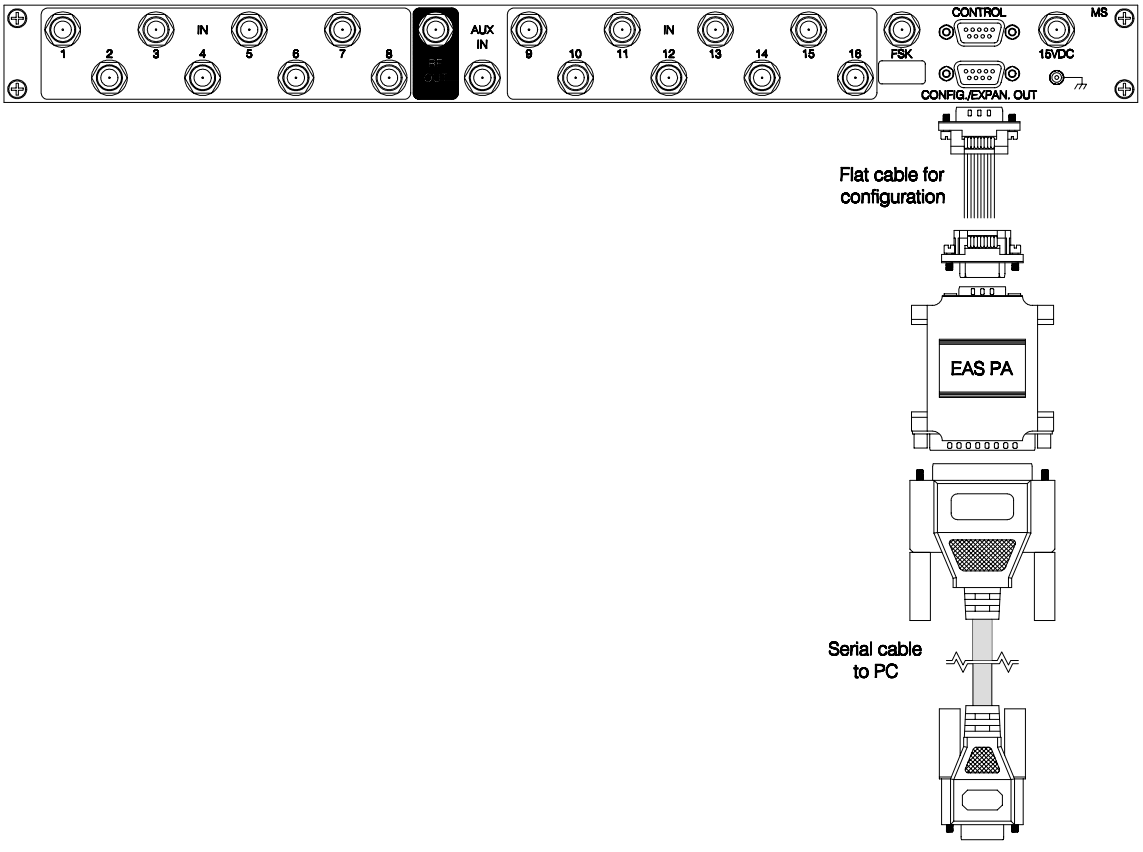


Figure 1-2: Cabling for configuring the TPS-MS

Refer to the *Test Point Selector Guide* for connector pinouts and for detailed specifications on the TPS units.

1.5.3 Connecting to the EAS Control Unit

The EAS Control Unit lets you remotely control the TPS units with the FSK method. The Control Unit receives the commands you define with TPS Control and transmits them to the TPS units in the field over the RF network. The RS-232 link between the EAS Control Unit and the PC lets you use the TPS Control software to control the TPS units automatically without a direct link to the PC.

On the EAS Control Unit (model II or IV), you will need to connect an RS-232 cable to one of the ports that is configured for terminal communications. The other end of the cable must be connected to one of the COM ports on the PC. Refer to the following connection diagrams. Use one of the 25-pin COM ports on the EAS Control Unit. You may also use model II (see Figure 1-4). Make sure your EAS Control Unit uses the ICOR protocol with EEPROM version 1.8 and is set to operate in Off-Basic-Pay (OBP) mode.

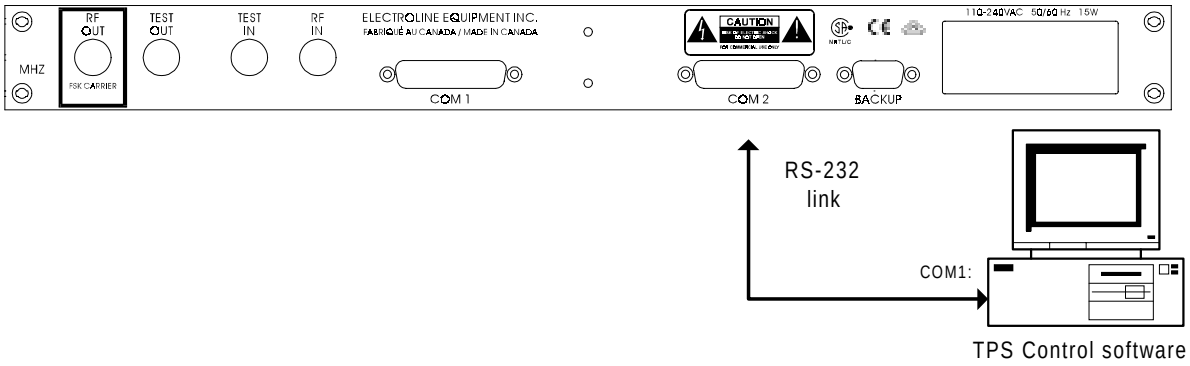


Figure 1-3: Connecting the EAS Control Unit IV and the PC

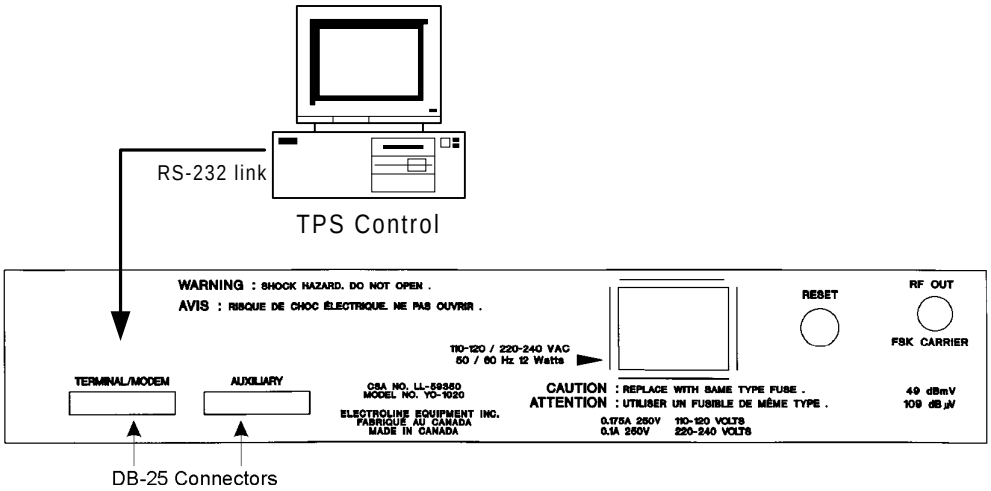


Figure 1-4: Connecting the EAS Control Unit II and the PC

2 INSTALLATION

2. INSTALLATION

This chapter guides you through the installation process for the TPS Control software.

The instructions in this chapter assume that you are familiar with operating a PC in a Microsoft Windows 95 environment. Please refer to your user documentation if you are new to this environment.

2.1 System requirements

The TPS Control software installs on a personal computer using the Microsoft Windows 95 operating system. Your PC must meet the following minimum performance requirements:

- 486 or better
- 16 MB of RAM or more
- 15 MB disk space or more
- 66 MHz speed processor or higher
- at least one COM port
- support a minimum resolution of 640 x 480 with 256 colors
- Windows 95 operating system
- for FSK control, an EAS Control Unit II or IV (see section 3.3.2, Configuring the COM port for the Control Unit for more information, or refer to your Control Unit documentation)

> **Note:**
>
> You should use the current standard version of Windows 95. Do **not** use Microsoft 95 Plus!.

2.2 Software installation procedure

This procedure installs TPS Control on your computer (see section 2.1 for system requirements). You will need the three 3 ½-inch diskettes labeled *TPS Control v1.01*. If you are not familiar with Windows 95, have your user documentation handy.

2.2.1 Installing diskette 1

Starting with the diskette labeled **Disk 1 of 3**, insert the diskette into the floppy drive (A: or B: depending on your configuration).

Using Windows Explorer, select the drive containing the diskette. You should see one file displayed, named TPSCTRL101.EXE, in the list. Double click on this file to begin the

automatic installation process. Click on OK to continue, or click on CANCEL to exit the setup program without installing the software.

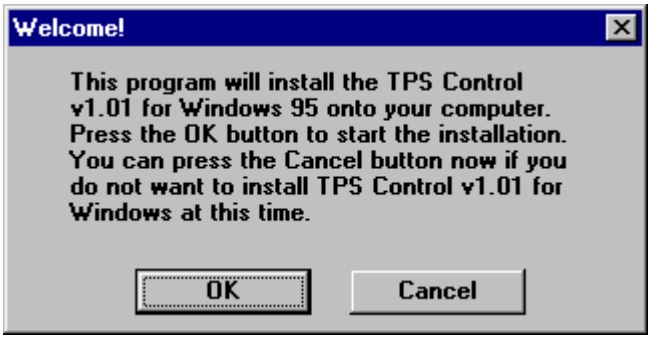


Figure 2-1: Confirming the installation process

Choose the directory on your computer where you want to install the program. By default, TPS Control selects the directory C:\Program Files and creates the main subdirectory TPSCTRL and its subdirectories. Use the following interface to change the directory, or click on OK to accept the default directory:

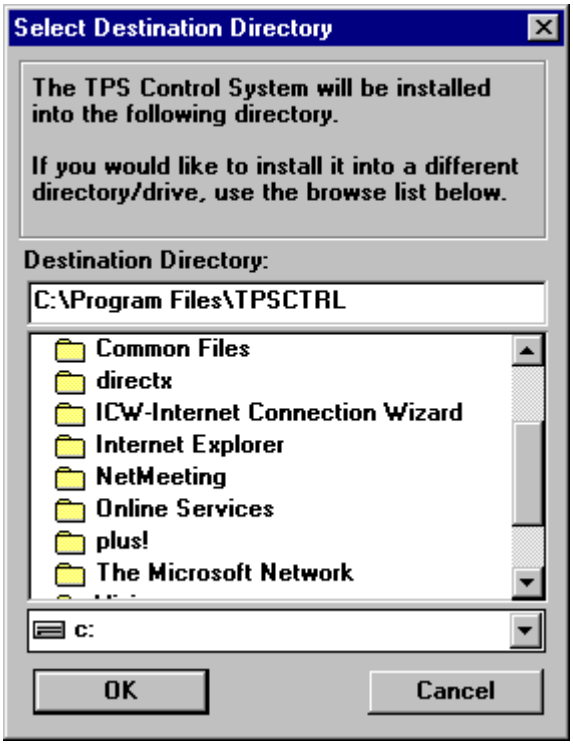


Figure 2-2: Selecting the installation directory

The program starts copying the first diskette to the selected directory. You can track the progress by looking at the percentage completed as indicated in the bar at the bottom of the window. The first diskette installs about 34% of the program.

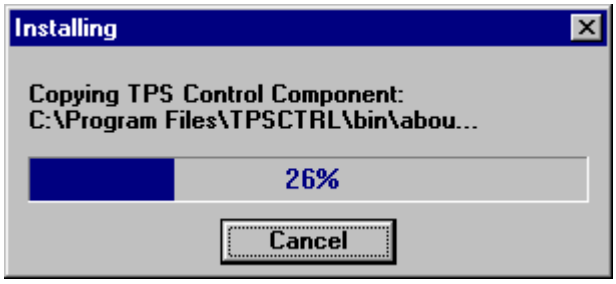


Figure 2-3: Copying the data from the first diskette

2.2.2 Installing diskette 2

You will be prompted to insert the second diskette to continue the installation process.

Figure 2-4: Installing the second TPS Control diskette

You can stop the installation process at this point by clicking on CANCEL. To continue, remove Disk 1 from the floppy drive and insert the diskette labeled **Disk 2 of 3**. Click on OK to begin copying the content to the …\TPSCTRL directories. The installation progress bar will reach about 71%.

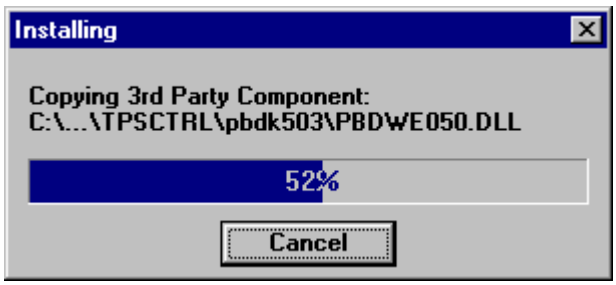


Figure 2-5: Copying the data from the second diskette

2.2.3 Installing diskette 3

You will be prompted to insert the third diskette to continue the installation process.

Figure 2-6: Installing the third diskette

Remove Disk 2 from the floppy drive and insert the diskette labeled **Disk 3 of 3**. Click on OK to begin copying the content to the …\TPSCTRL directories. When the installation progress bar reaches100%, this window disappears and is replaced by a message indicating the success or failure of the installation process.

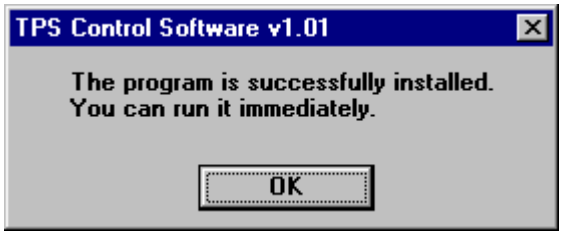


Figure 2-7: Successful installation window

Click on OK to close this window and go to Windows Explorer. Make sure that the TPSCTRL directory has been created in the location you selected in section 2.2.1. Use your Windows **Start** menu and make sure that the TPS Control Software is listed under **Programs**. You can click on this icon to start the program or see the *Operations* chapter for additional methods.

3 OPERATION

3. OPERATION

This chapter describes the TPS Control user interface and the commands for remote control and management of the TPS units. This software is delivered with the TPS unit and is recommended for configuring and controlling the TPS.

The first two sections of this chapter are addressed to all TPS Control users. Read these sections to become familiar with the operating principles and the basic commands available in TPS Control. This chapter also includes specific procedures as a reference guide for operators and technicians. Basic knowledge of Microsoft Windows 95 commands and mouse operation is required. If you are not familiar with the Windows environment, please refer to your user documentation. Use the following table as a quick reference guide for finding the basic TPS Control procedures.

Action	Reference	Menu/Option
1. If your TPS units are not already programmed with their internal operating parameters, you must configure them.	Section 3.3 for procedure; See Chapter 1 for cabling	**Equipment** -Configure TPS
2. Physically install the TPS units.	See Chapter 1 for cabling or refer to the *Test Point Selector User Guide*	(not applicable)
3. To control the TPS units, configure the PC for interfacing with an Electroline Control Unit or directly with the TPS.	Section 3.4 for procedure; See Chapter 1 for cabling or refer to the *Test Point Selector User Guide*	**Configuration** -TPS serial port -Control unit serial port
4. Select a command mode.	Section 3.5	**Configuration** -TPS control mode
5. Physically connect the spectrum analyzer and “install” it in the equipment database.	Section 3.6.3	**Equipment** -Install spectrum analyzer
6. Enter the definition and hierarchy of the TPS inputs into the internal equipment database.	Sections 3.6.4 and 3.6.5	**Equipment** -Install TPS -Install input
7. Define a scanning sequence and set up the scan options	Section 3.9	**Sequence**

Table 3-1: Procedure overview

3.1 Operating overview

This section introduces the basics of the TPS Control such as starting and shutting down the program, the operating modes, views and help options. Whether you are an operator, technician, system administrator or supervisor, these basic commands will help you understand the TPS Control user interface.

3.1.1 Starting the program

The simplest way to start the program is to use the **Start** menu in Windows 95 and go to the **Programs** section. In the list, click on **TPS Control Software** to start the program (see Figure 3-1). Another method is to create a shortcut to TPS Control on your desktop. Clicking on the icon will start the program. A third option is to use the **Run…**option in the Windows 95 start menu, and type `tpsctrl`.

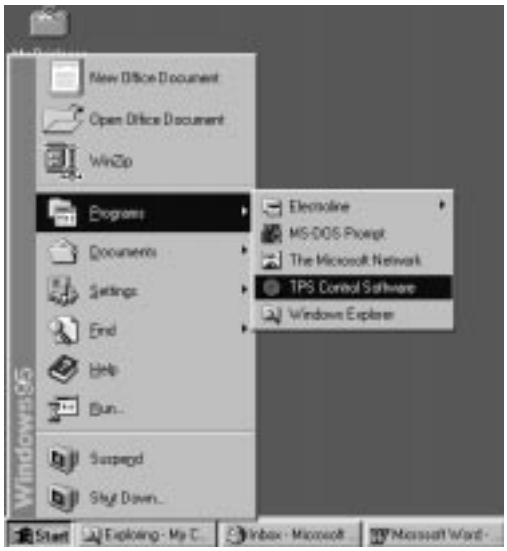


Figure 3-1: Starting TPS Control with Windows 95

Once you have started the program, the following screen appears:

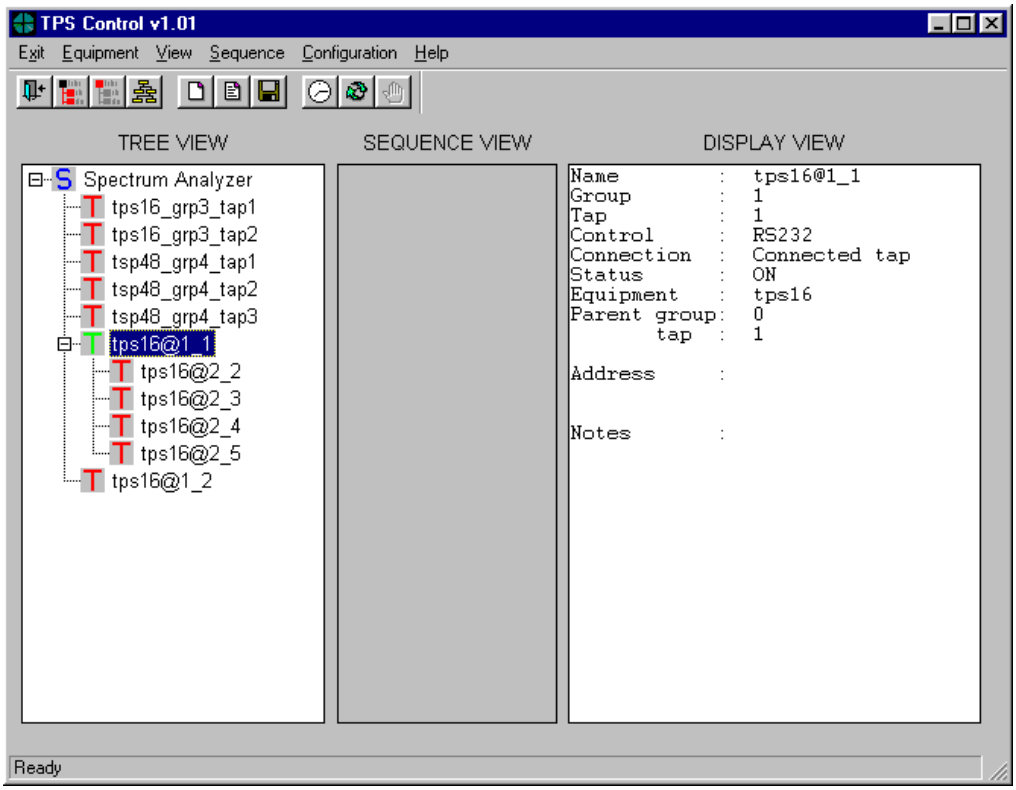


Figure 3-2: Startup screen (with a sample TPS network)

TPS Control is delivered with an equipment database that contains only a spectrum analyzer and no TPS units. As you install equipment, you create your own custom database that is updated in real time.

3.1.2 Selecting the operating mode

TPS Control offers two operating modes: user mode and edit mode. By default, user mode is activated at startup. User mode lets you:

- modify the status of the TPS inputs
- configure an existing TPS
- configure the PC's serial ports used to communicate with the TPS and EAS Control Unit
- manage the scan function

However, no changes to the structure of the system can be made in this mode. To add, delete or edit inputs, you must be in edit mode.

In edit mode, all the basic user privileges are still available. Edit mode also allows you to make changes and to manage the inputs. To toggle between user and edit modes, select the item **Edit mode** in the **Configuration** menu. When the item is ticked, edit mode is active; if not, you are in user mode.

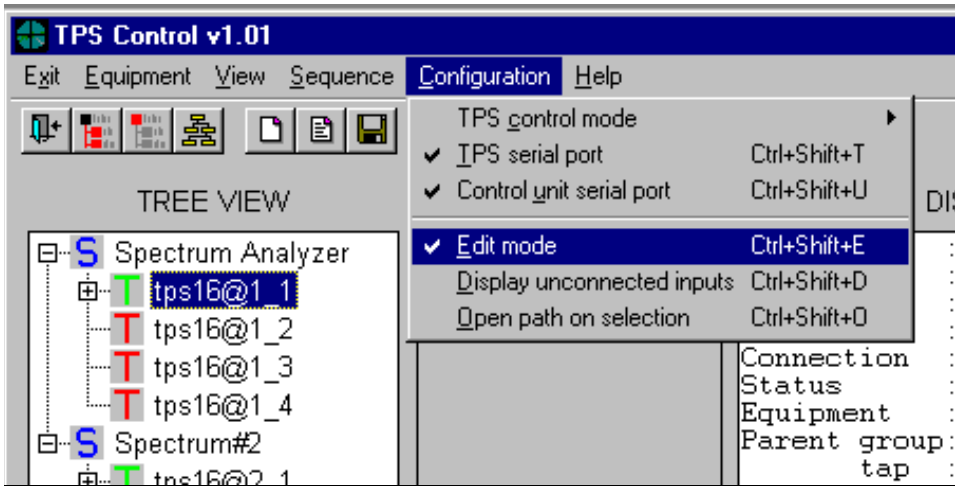


Figure 3-3: Selecting Edit mode

Note that all disabled menu options in user mode appear in grey text and cannot be selected from the menu. The following table summarizes edit and user mode functions:

Functions	Edit mode	User mode
Install/edit	x	
Configure TPS	x	x
Change input status	x	x
Delete	x	
Rename	x	
On/off	x	x
Open/close path	x	x
Expand/collapse	x	x
Show/Hide inactive inputs	x	
Control mode	x	x
Serial ports	x	x
All sequence/scanning functions	x	x
Display unconnected inputs	x	

Table 3-2: Edit and user mode features

3.1.3 Main menu

The main menu bar over the three views manages most of the TPS Control functions. The main menu contains six items: **Exit**, **Equipment**, **View**, **Sequence**, **Configuration** and **Help**. Below is the list of basic functions that each menu offers:

Exit	quits the program
Equipment	provides the interface for the actions related to the TPS
View	shows or hides sections or all of the tree structure representing your TPS units in the field
Sequence	manages the scan function for the selected group of TPS units
Configuration	lets you edit certain parameters that influence the program's operation
Help	lets you access the online help function and product version information

3.1.4 Getting online help

To read the online help documentation, press <F1> or click on **Help** in the main menu and select **Help Content**. By default, the table of contents for the online help documentation appears.

3.1.5 Product information

To view the general information on the TPS control software, go to the **Help** menu, and select **About…** from the list. The icon shows the product's name and version as well as copyright information.

3.1.6 Exiting the program

You can exit the program at any time through the TPS Control menu or by using the standard Windows shortcuts. Before the program shuts down completely, it makes sure that all the changes have been saved and then closes the main window. To quit the program, either:

- click on the X button in the upper right corner of the application window
- click on the exit button in the tool bar
- select **Exit** from the main menu
- use the <Alt+F4> keyboard command

3.2 Program views

There are three different view windows in the program: **Tree**, **Sequence** and **Display**. Tree View shows the TPS network hierarchy and its current state. You enter this information in the installation and editing screens to reflect the TPS network's topology (see section 3.3). Sequence View lets you scan the RF inputs that are shown in this window. Display View always shows the information of the input selected in Tree View. See section 3.2.1 for details on the Tree View functions.

Display View is available at all times, and shows information on the equipment selected in Tree View. To toggle between Tree and Sequence views, click the left mouse button in the window you want to activate or press the <Tab> key.

Tree View gives you access to the functions for changing the status and configuration of the TPS units in the TPS network, depending on the operating mode (edit mode or user mode). See section 3.1.2 for details on functions available in each operating mode.

Sequence View lets you manage the scan sequence for the TPS units. The window uses the same names as in Tree View. See section 3.2.2 for more details.

3.2.1 Tree view

Tree View provides you with an overview of the inputs used and their interconnection. The hierarchy always needs a measuring device at the root. From this point, you can add TPS units. The hierarchical structure of the TPS network is limited to a certain naming convention.

Equipment:	**Can share same level with:**	**Possible children:**
Spectrum Analyzer (SPM)	SPM	TPS
Test Point Selector (TPS)	TPS	TPS

Tree View uses a set of symbols to differentiate the input types and the various situations that the software may encounter:

Symbol	Description
	Unknown input type
	Inactive input (black “X”)
	Spectrum analyzer input (blue “S”)
	TPS input with the status “OFF” (red “T”)
	TPS input with the status “ON” (green “T”)
	Means that the input has children that are not shown
	Means that the input’s children are displayed
	Lines showing the hierarchical (or parent/child) relationship between the inputs. These lines represent the cable connection from one input to another.

Table 3-3: Tree View symbols

When you select an input in Tree View, the commands you select will affect that input (edit, delete, change, and so on). You can only select one input at a time in Tree View. You can use the main menu, keyboard shortcuts or the right mouse button to display a pop-up menu of possible commands.

3.2.2 Sequence view

Sequence View is used to manage the scan sequence for the TPS inputs. To include a TPS input in the scan, you add the icons defined in Tree View to the sequence window. The cut and paste commands let you modify the scan order. You can select one or more TPS inputs in the sequence view window for cutting and pasting.

3.2.3 Display view

The Display View window provides you with the general information on the input you have selected in Tree View, such as input’s name, group and tap number, control and current status. The Display View window is always available. No commands are associated with this view.

3.3 Configuring a TPS

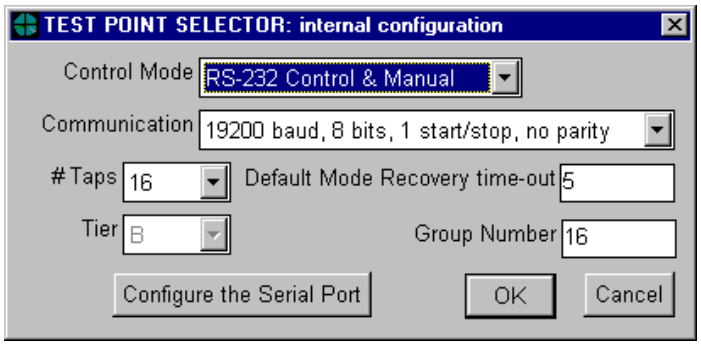
3.3.1 Cabling the TPS

If your TPS units are not preprogrammed, you can define or edit the overall operating parameters of a particular TPS with the TPS Control software. You must first cable the TPS unit that you want to configure, using the null modem cable, an Electroline protocol adapter (EAS-PA) module, and a short length of flat serial cable. See Figure 1-2 in Chapter 1, *Getting Started* for more information, or refer to your *Test Point Selector User Guide*. The next steps let you configure the serial port on your PC that will be used for this link.

Note:
The CONFIG./EXPANSION OUT connector on the TPS unit uses a special Electroline protocol. Always use an Electroline protocol adapter (EAS-PA) on the serial link to this port.

3.3.2 Configuring the PC's COM port for interfacing with the EAS-PA

Once you have cabled the TPS unit and the PC, you must configure the PC's serial port with the correct communication parameters. To configure the PC's COM port, first go to the **Equipment** menu and choose the item **Configure TPS**. This calls up the editing window which includes a button labeled CONFIGURE THE SERIAL PORT. Click on this button.



This calls up the window for selecting a COM port on the PC and setting its parameters.

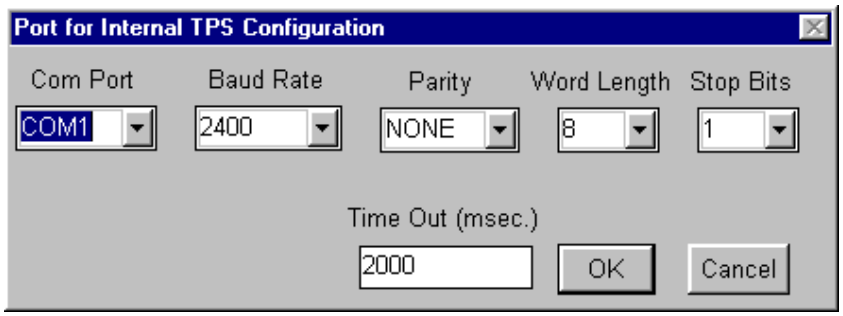


Figure 3-4: Configuring the PC's serial port parameters

The parameters you select in this window are used for the communications between the serial port on the PC and the CONFIG./EXPANSION OUT connector on the TPS unit via the EAS-PA. These values are stored in the TPSCTRL.INI file and are written to the TPS unit's non-volatile memory (EEPROM).

By default, the values for the serial port are as follows:

Parameter	Default setting
COM port	COM1
Baud rate	2400
Parity	NONE
Word length	8
Stop bits	1
Timeout (ms)	2000 ms

Table 3-4: Serial port default settings for configuring a TPS

Note:
You can only change COM port, if desired, but must not change any other parameters. The baud rate must be 2400 since the EAS-PA cannot support other transmission speeds nor data configurations.

3.3.3 Setting the TPS's internal operating parameters

To configure a TPS, go to the **Equipment** menu and choose the item **Configure TPS**. This calls up an interface that lets you change the control mode, the number of inputs (taps), the group number, the timeout period and also lets you choose the communication parameters. These parameters are written into the TPS unit's internal memory. If you are editing a TPS that you have already entered in your equipment database (see section 3.6.4), select one of the unit's inputs in Tree View.

Important:
It is very important to note the group number for the TPS unit and to label the unit so it can be easily identified. This will save you much valuable time when installing additional inputs.

By default, the internal TPS parameters are set as follows:

Parameter	Default setting
Control mode	RS-232 and Manual
Communication	19200 baud, 8 bits, 1 start/stop, no parity
Number of taps	as per installation (16, 32, 48 or 64)
Default mode recovery timeout	5 seconds
Group number	as per installation
Tier.....	B

Table 3-5: Default internal operating parameters for TPS

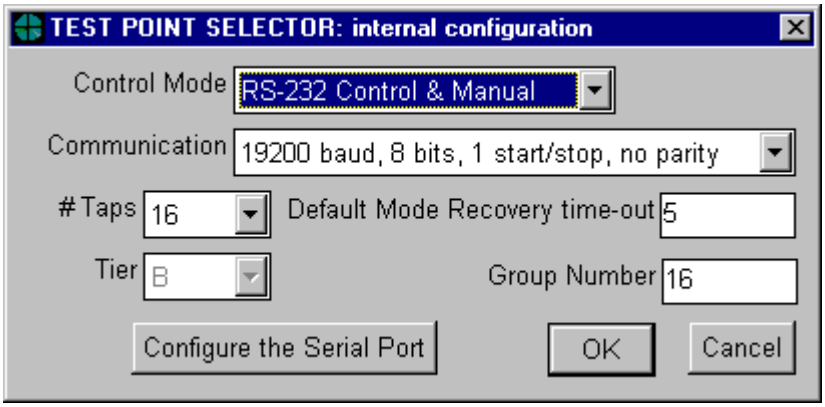


Figure 3-5: Configuring a TPS

The timeout parameter is the amount of time the TPS allows before switching from manual mode to the remote control mode (RS-232 or FSK) you have defined. Once you have selected the control parameters, they are stored in the TPS's non-volatile memory (EEPROM).

3.4 Configuring the PC's COM ports for controlling TPS units

3.4.1 Configuring the PC-to-Control Unit link

If you are operating any TPS units in FSK-control mode (see section 3.3.3), then the TPS Control software must be used in conjunction with an EAS Control Unit model II or IV. A physical connection using the RS-232 protocol must be established between the PC running the TPS Control software and the Control Unit (see Chapter 1, *Getting Started* for more information, or refer to the *Test Point Selector User Guide*). Select a port on your PC and run a serial cable to the EAS Control Unit. The Control Unit will send the TPS commands over the FSK carrier so that the TPS units that are configured for FSK control can receive their instructions.

Once the EAS Control Unit is connected, you need to configure the communication port. Choose **Control unit serial port** from the **Configuration** menu and select the port and its communication parameters.

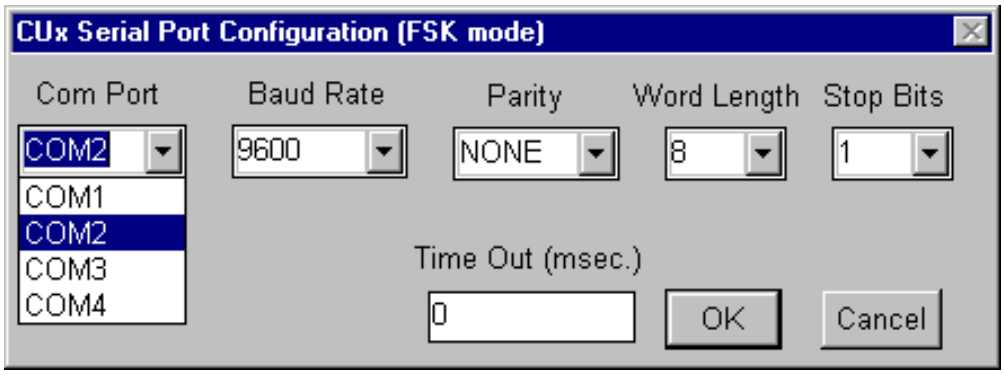


Figure 3-6: Configuring the port for communicating with the Control Unit

By default, the serial port communications are set as follows:

Parameter	Default setting
COM port	COM2
Baud rate	9600
Parity	NONE
Word length	8
Stop bits	1
Timeout (ms)	0 (500 recommended)

Table 3-6: Serial port default settings for connecting to a Control Unit

Make sure you use the same baud rate as the port on your Control Unit II or IV. All Control Unit models must operate with the ICOR protocol. Model II units require EEPROM version 1.8. Model IV units must be set to Off-Basic-Pay (OBP) mode.

3.4.2 Configuring the PC's COM port for interfacing with the TPS's control port

If you have configured any TPS units to be controlled by RS-232 commands sent by the TPS Control software (see section 3.3.3), you must set the communication parameters for the PC's serial port that you will use.

Go to the **Configuration** menu and select **TPS serial port**. The parameters that you enter here will be used in all control communications between the port on the PC and the CONTROL connector on the TPS unit. Select the COM port to be used, the baud rate, parity, word length (data bits) and the number of stop bits.

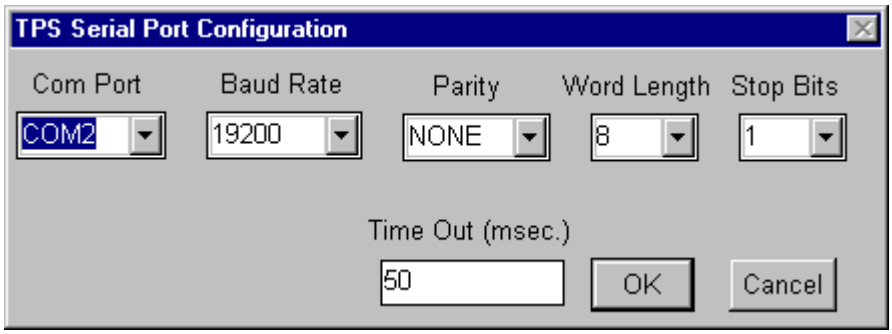


Figure 3-7: Configuring the port for controlling the TPS

By default, the serial port communications are set as follows:

Parameter	Default setting
COM port	COM2
Baud rate	19200
Parity	NONE
Word length	8
Stop bits	1
Timeout (ms)	50

Table 3-7: Serial port default settings for direct control of a TPS

3.5 Selecting a TPS control mode

The next steps in setting up your PC to control your TPS units is to select the type of command that the TPS Control software will send. The two methods of controlling a TPS with the TPS Control software are via the TPS's serial port or via its FSK input. If you choose the serial port, then commands are sent directly to the TPS from the PC's port reserved for this mode, using RS-232 communications. On the PC, you must configure the serial port you will be using (see section 3.4.2). If you choose FSK as the control method, then commands are sent on the FSK carrier generated by an EAS Control Unit (model II or IV). The Control Unit receives its commands from your PC, over a cable connected to one of the serial ports reserved for this mode. You must configure the PC's port (see section 3.4.1). You can also enable both RS-232 and FSK control modes simultaneously, by using the mixed mode option, to accommodate a structure containing both types of TPS units.

Go to the **Configuration** menu and select **TPS control mode**. A menu appears with four options. The option you choose will determine the mode in which the TPS Control software operates and also defines the default control type for installing new TPS units and inputs.

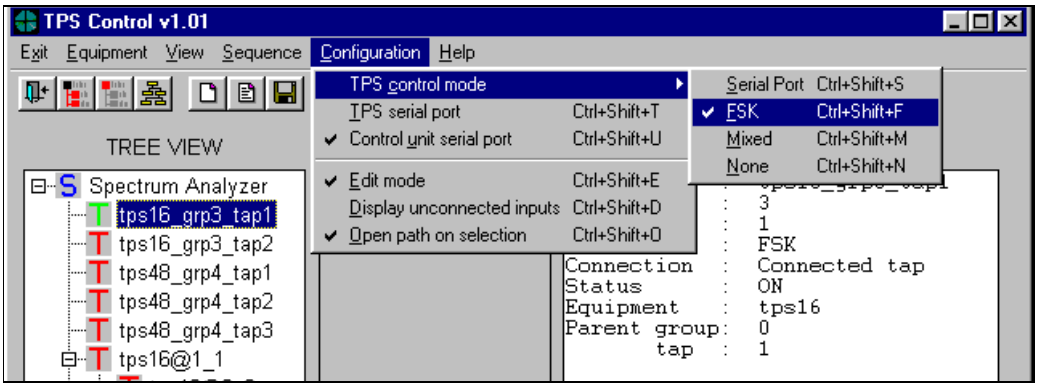


Figure 3-8: Selecting a TPS control mode

You can address only RS-232-controlled TPS units by choosing the **Serial Port** option, or address only FSK-controlled units by selecting **FSK**. If you have both types of units in your TPS network, select the **Mixed** mode. If you do not want to control the TPS units with the TPS Control software, choose **None**. This means that no commands will be sent to the units in the field. To select an input, you must use the buttons on the front panel of the TPS unit (see the *Test Point Selector User Guide* for more information).

Mode	Description	Shortcut
Serial Port	controls only TPS units configured for RS-232 mode	Ctrl+Shift+S
FSK	controls only TPS units configured for FSK units	Ctrl+Shift+F
Mixed	controls TPS units configured for both FSK and RS-232 modes	Ctrl+Shift+M
None	no control command is sent to the TPS units	Ctrl+Shift+N

Table 3-8: Control modes and keyboard shortcuts

3.6 Setting up the TPS equipment database

The TPS Control software uses an equipment database that you create using the “install” or “add” functions when you set up your TPS network on your PC. The structure part of the database is represented in the Tree View window and the equipment definition part is shown in the Display View window. The equipment database as shown in Tree View is only the definition of the equipment you enter into the computer. You still have to install the TPS units physically and make the actual connections for each input.

3.6.1 Hierarchy

Depending on how units are connected, the parent/child relationship will differ. The following examples have been developed to help illustrate the correlation between the internal database and a TPS network. They show a sample of a single TPS unit and its inputs, a TPS unit with “children” and a diagram showing two TPS units sharing the same level, with two connection options.

Example 1: Single TPS and its inputs

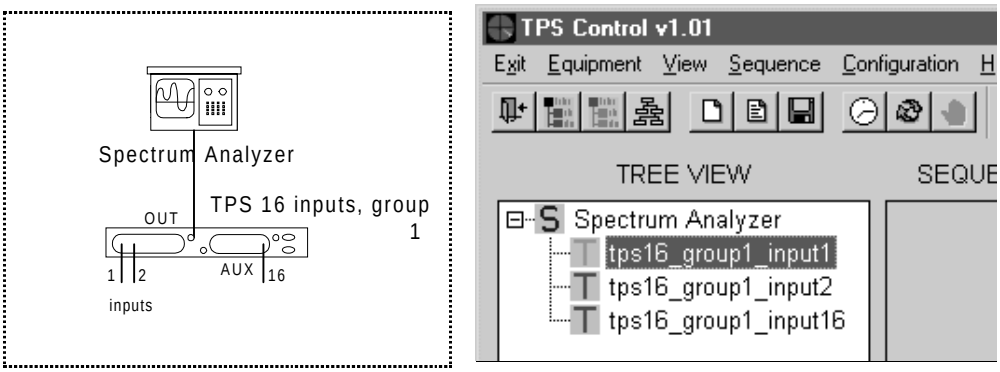


Figure 3-9: Connection diagram and screen display for a single TPS

Example 2: Parent/Child relationship

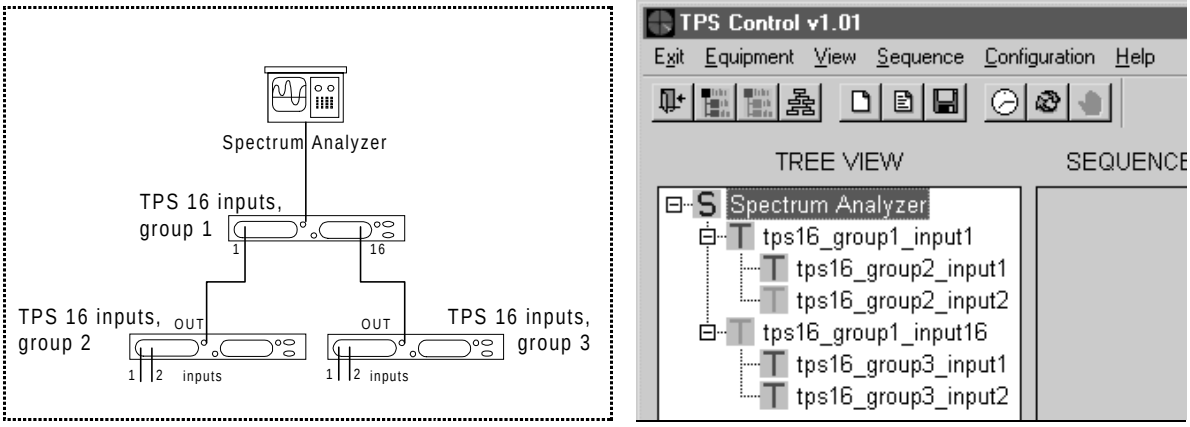
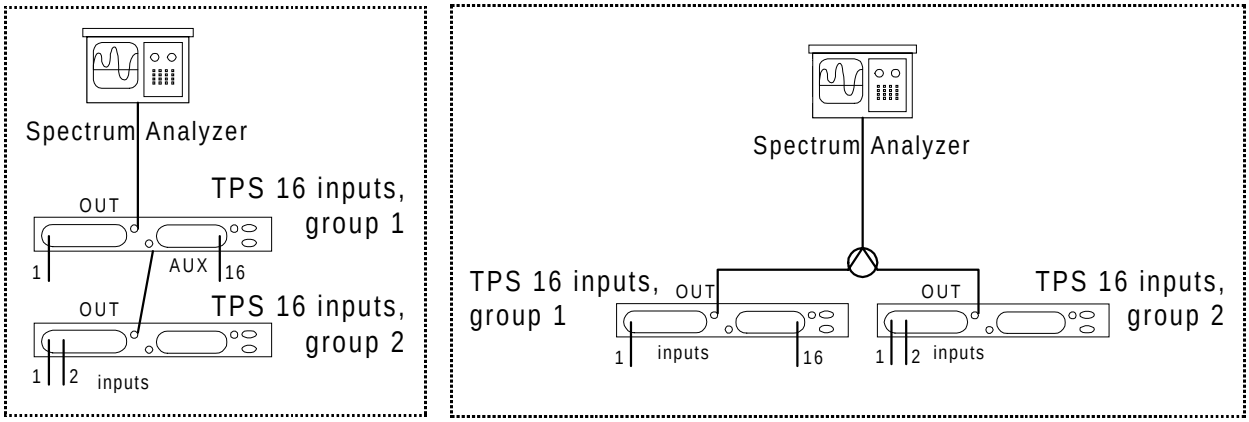


Figure 3-10: Connection diagram and screen display for a parent TPS and its children

Example 3: Sharing the same level

The TPS can be physically connected two ways and still share the same level within the TPS Control equipment database. One connection method uses the "cascade" principle; the other one uses a combiner to bring a single cable to the spectrum analyzer's input.



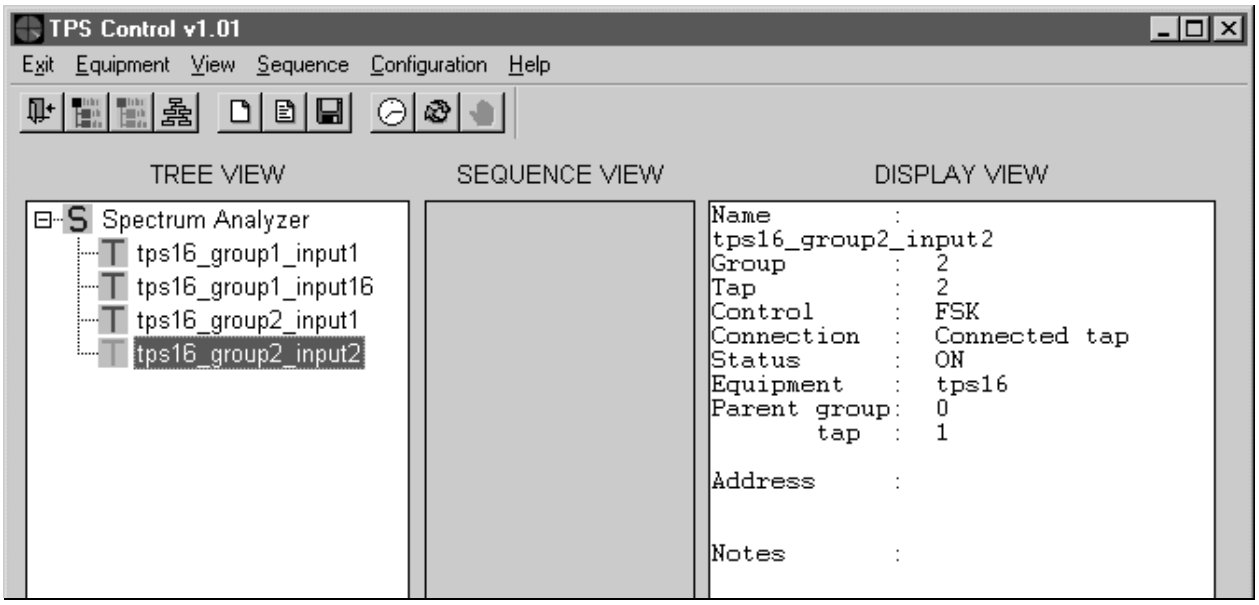


Figure 3-11: Connection diagrams and screen display for two peer TPS units

3.6.2 Control

The items you enter into the database must reflect the actual equipment installed in your TPS network and its topology. For example, if you define a TPS as being a 64-input station controlled by RS-232 link, then you will need to choose tps64 as the equipment type and RS-232 as the control type when you install this unit. If you physically remove a slave unit on this TPS station, then you will have to redefine it in the database as a 48-input unit using the editing commands. If you change the control type, this too will have to be updated manually in the database. The following examples have been developed to help illustrate the correlation between the internal database and a TPS network.

Example 1: RS-232 control of a TPS network

In this example, a TPS master unit (TPS-MS) is used to route the signals from a TPS station located in the headend. Both TPS-MS units are controlled by the PC through a direct RS-232 link over a serial cable. The TPS station with 64 inputs is routed to the first input on the TPS with 16 inputs.

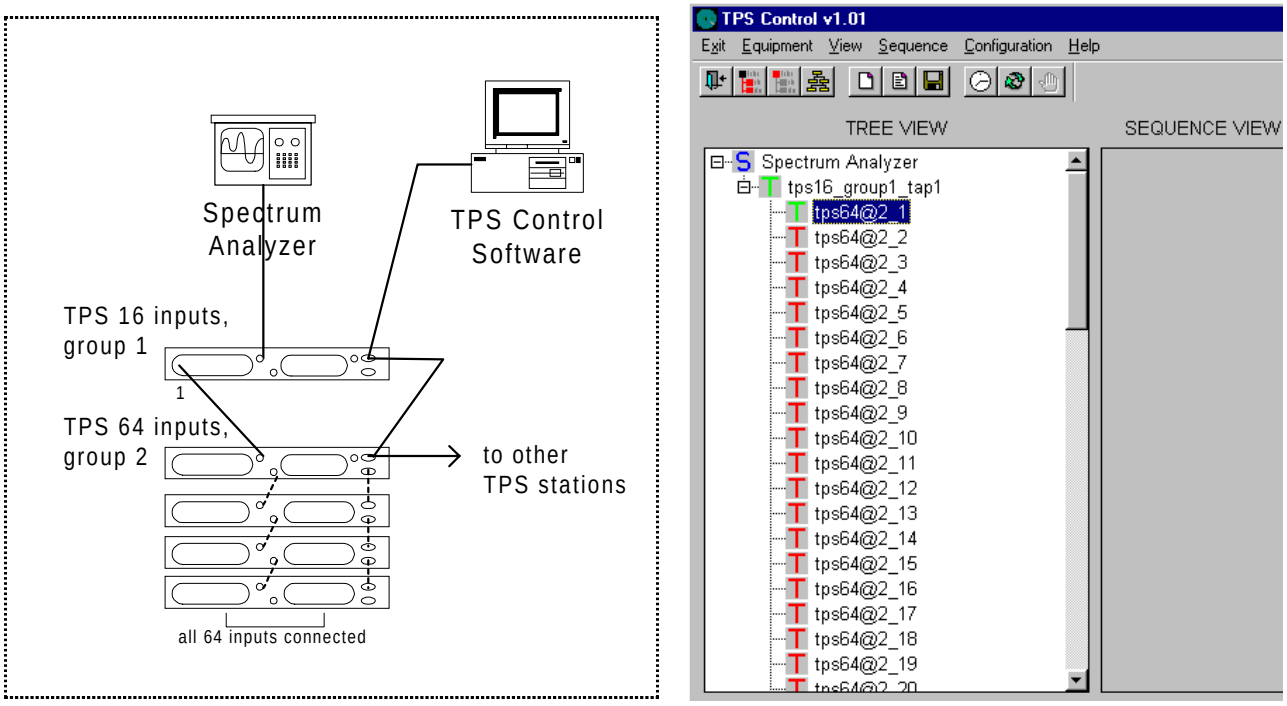


Figure 3-12: TPS network with RS-232 control of the TPS units

Example 2: FSK control of a TPS network

In this example, a TPS master unit (TPS-MS) is used to route the signals from a TPS station located in the headend. Both TPS-MS units are controlled by the EAS Control Unit through an FSK signal sent over coaxial cable. The TPS station with 48 inputs is routed to the AUX input on the TPS with 16 inputs.

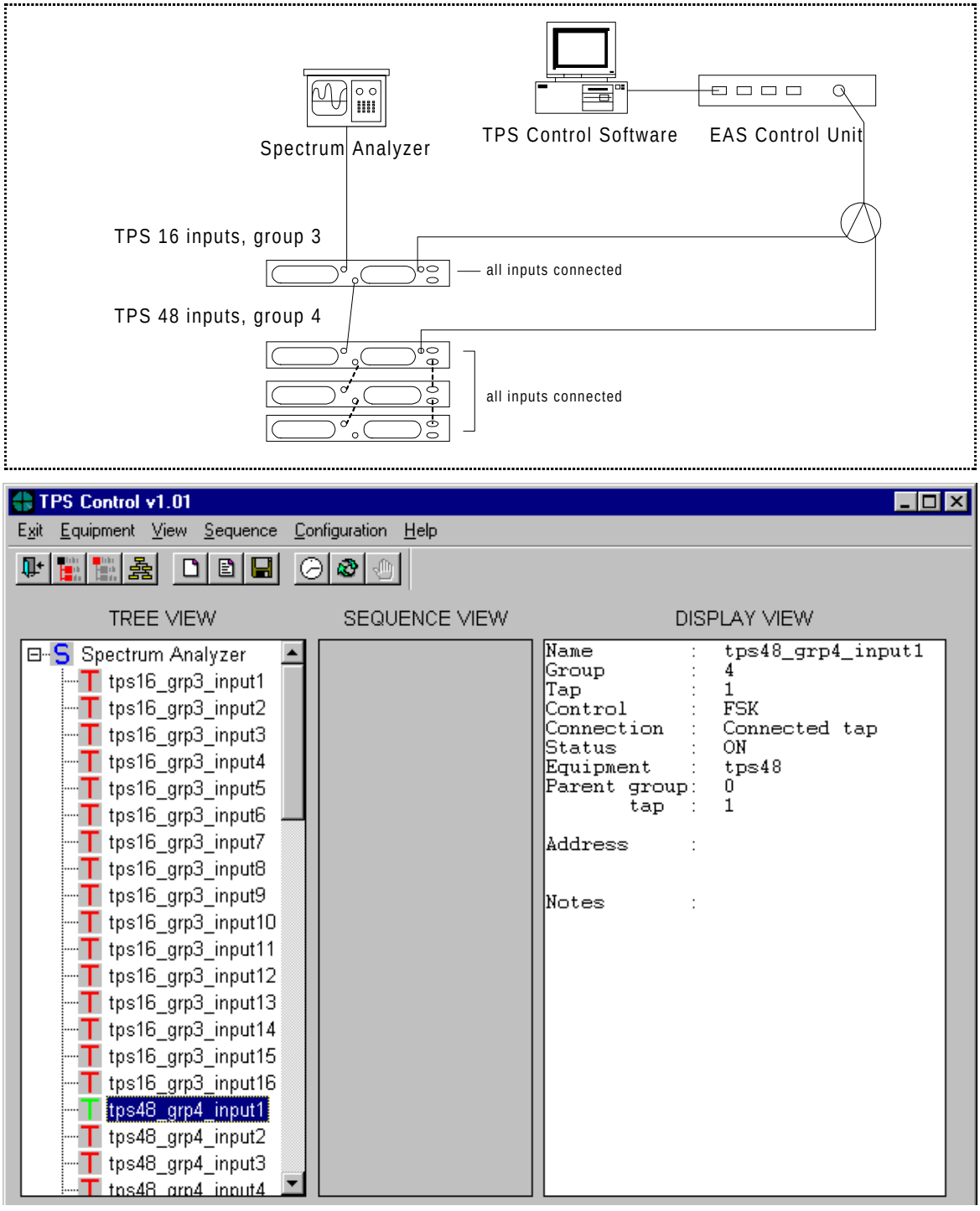


Figure 3-13: TPS network with FSK control of the TPS units

3.6.3 Installing a spectrum analyzer

To create a tree structure, you must have at least one spectrum analyzer. The default TPS Control database contains a spectrum analyzer only. To install another one, use the **Equipment** menu, and select **Install spectrum analyzer**.

This calls up the window where you can enter the description of the spectrum analyzer. You can enter the input number, the name, address and your notes. The equipment, control and status fields cannot be changed in this version.

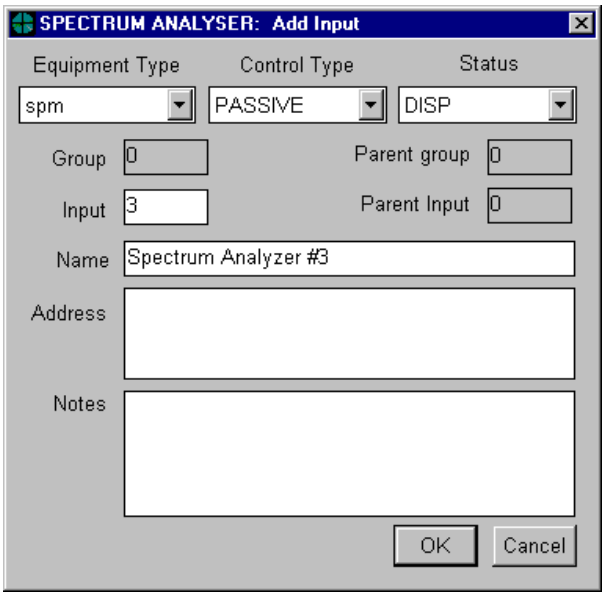


Figure 3-14: Defining an input for a spectrum analyzer

Once you have installed a spectrum analyzer, you can also use the pop-up menu associated with it in Tree View. Highlight a spectrum analyzer and press the right mouse button to display the pop-up menu:

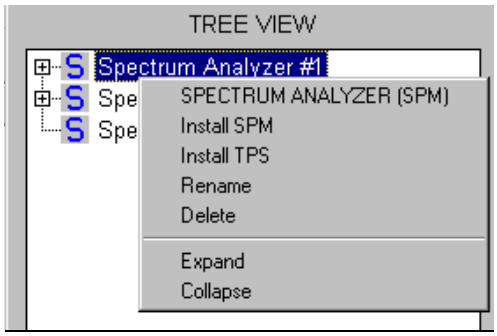


Figure 3-15: Spectrum analyzer pop-up menu options

You can use this menu to install another spectrum analyzer or to install TPS units below the selected spectrum analyzer. It is also a quick way to change the name of the unit you have selected or to delete a unit. The **Expand** and **Collapse** options are the standard Windows

functions to show or hide the dependent branches in the structure. Clicking on the plus and minus icons accomplishes the same thing.

3.6.4 Installing the TPS units

You can install a TPS either below a spectrum analyzer or below another TPS. The install function creates a new "child" group for the selected input and displays it in Tree View. See section 3.6.1 for an explanation of the TPS network hierarchy.

There are three ways to access the window for installing a TPS.

Method 1. Use the **Equipment** menu and select **Install TPS**; or

Method 2. Use the pop-up menu activated by the right mouse button when a spectrum analyzer or a TPS input is selected, and choose **Install TPS**; or

Method 3. Press <Shift+Alt+I>

This command calls up an interface for defining some of the characteristics for the TPS you are installing. You choose the type of TPS based on the number of inputs (16, 32, 48 or 64), its control method (RS232 or FSK), and enter its group number and select its default status on startup. The group number must be unique. When you add slaves to a TPS unit, you must make sure that the TPS unit is configured for the total number of inputs including the slave unit or units. The inputs are numbered automatically based on the definition of the TPS unit. By default, the name given to the TPS unit reflects the total number of inputs and its group. For example, the first input of a TPS with one slave in group 2 is named tps32@2_1. The last digit indicates the input. In this example, there would be 32 names in the list. The following screen shows the default definition of a TPS unit.

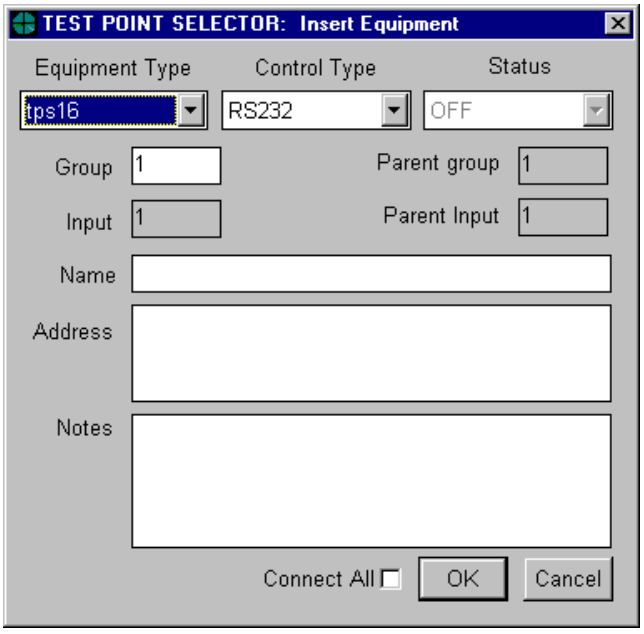


Figure 3-16: Defining the TPS in the database

Check off the **Connect All** box if you want all the TPS inputs to be installed. The input number is added automatically to the name. You can rename your TPS unit at any time using the **Rename** option available in with the right mouse button menu.

The information that you enter when installing a TPS unit becomes part of the internal database. You must make sure that the database reflects the actual state of the TPS network. When you define your TPS unit, be sure to enter the correct control type, group number and total number of taps available. The next section will take you through the steps for configuring the TPS unit's internal parameters.

3.6.5 Installing an input

Installing an input means that you will create a new input based on the information associated with the selected input. The new input will be a child of the selected input. To install the new input, first select the parent equipment in Tree View (a spectrum analyzer or a TPS unit). In the **Equipment** menu, select the **Install input** option or press <Alt+I> on the keyboard. This action creates the input in the database. You must physically connect a cable to an unused input on the equipment.

The following example shows the window for entering information on an input. Note that you must enter the group and input number. Each TPS station installed must have a different group number in order to be valid. When you install and input, use an unused input number. This information is stored in the database as the unit's addressing data.

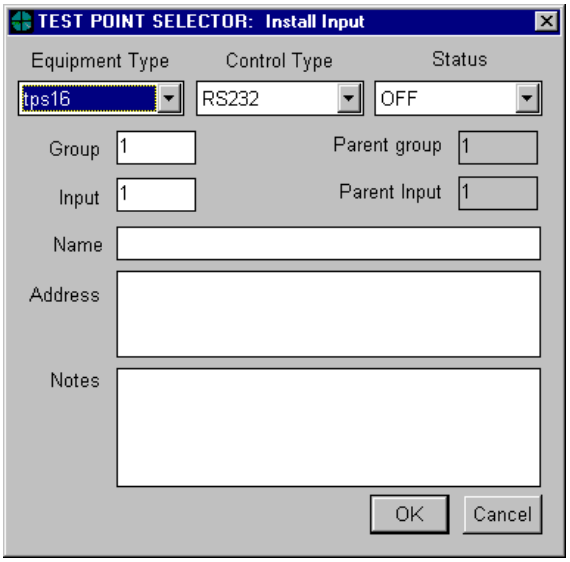


Figure 3-17: Defining an input in the database

The **Install Input** function checks the integrity of the data you enter. It will make sure that the group number, control type, status and so on are valid. It does not verify the actual presence of an input. Make sure each input that you install is physically connected.

3.7 Managing TPS units

3.7.1 Editing a TPS

To edit the characteristics of an existing TPS in the database, first highlight the TPS in Tree View. Choose **Edit TPS** from the **Equipment** menu or press <Shift+Alt+Ins>. This lets you change the equipment type and the control method parameters for the TPS you have selected. All the inputs on this TPS will take on the new parameters. These are the only attributes that can be modified in this window.

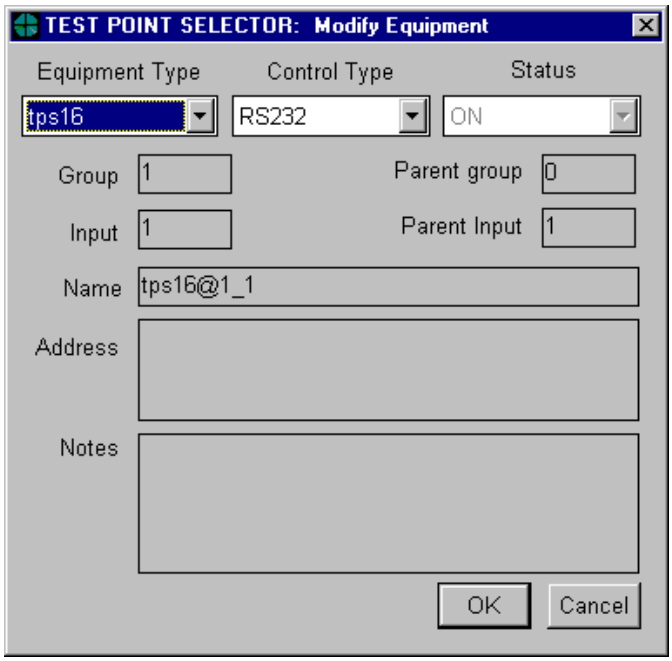


Figure 3-18: Modifying a TPS

3.8 Managing inputs

3.8.1 Viewing the inputs

Tree View shows the active inputs at all times. The active inputs are the ones that are connected, both physically and in your database. Tree View can also show the inactive (unconnected) TPS inputs . These inputs are not part of the information in the database. Select the **Display unconnected inputs** from the **Configuration** menu. If there is a checkmark next to this item, then the inactive inputs (if there are any) will be shown. If there is no checkmark, then the inactive inputs will be hidden.

You can also use the TPS pop-up menu to accomplish the same show/hide function for a selected TPS unit or spectrum analyzer. Highlight a TPS in Tree View and press the right mouse button to display the pop-up menu. To see all inputs for this branch of the structure, including the inactive ones, select **Show inactive inputs**. To hide the inactive inputs, select **Hide inactive inputs**. To view the inputs in the overall structure, use the plus and minus buttons to show or hide the tree structure. You can also use the arrow keys on your keyboard for the same purpose.

3.8.2 Connecting an input

If you did not connect all inputs when you installed the TPS in the database (see section 3.6.4), you can connect any individual unconnected input later. First, select the input in Tree View. An unconnected input has a black "X" icon in front of its label. Use the **Connect input** command from the **Equipment** menu, or use one of the shortcut commands: <Alt+Ins> or the <Enter> key. A "T" icon will appear in front of the input's label when it is connected (active). To disconnect (deactivate) the input, you must delete it (see section 3.8.6). The black "X" icon reappears.

3.8.3 Moving an input

By selecting an active (connected) input with the left mouse button, you can drag it to an inactive (unconnected) input. This changes the structure you have defined in the database. Physically, you must disconnect the cable of an input and connect it according to your new structure.

You must respect the system's hierarchy when you move an input. This means that a spectrum analyzer cannot be moved to a TPS input since the equipment does not support this connection. When you move a TPS input to a spectrum analyzer input or to another TPS, the input must be inactive.

3.8.4 Editing the input's parameters

Each input belongs to a parent TPS which is already defined in the database. You can customize some of the parameters for the input such as its name, address and any notes you may want to record. To edit the input, highlight the input in Tree View and select **Edit input** from the **Equipment** menu or press <Alt+Ins>. The input editing window appears on screen.

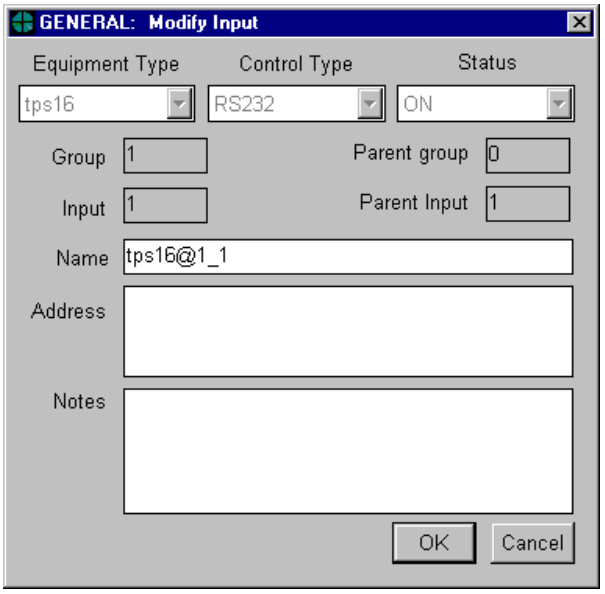


Figure 3-19: Modifying an input

3.8.5 Changing the input's status

This option applies only to the TPS since it is an addressable device. You can toggle an input between on and off to check for the presence of noise, through the reading you get on the spectrum analyzer when the input is selected.

When the input is on, the unit lets the RF signal pass through. When the input is off, the RF signal is blocked. There are three ways to toggle between the on and off states:

Method 1. Use the **Equipment** menu and select **Change input status** or press <Alt+S> to call up this window. Select the status from the pulldown **Status** menu. There are only two choices, on or off.

Method 2. Use the pop-up menu activated by the right mouse button when an input is selected, and choose **On**, **Off**, **Open path** or **Close path**.

Method 3. Use the function keys on your keyboard. Press <F5> to put the input in the on state and press <F7> for off.

The on and off states are implicit in the commands for opening and closing the input's path to the headend. When you open the path, you switch on all the inputs that your input passes through on its way to the headend. Closing the path switches all the inputs off, from the headend to the input you have selected. To access the open and close path commands, select your input in Tree View and click on the right mouse button to call up the TPS pop-up menu. Choose **Close path** or **Open path** from the list.

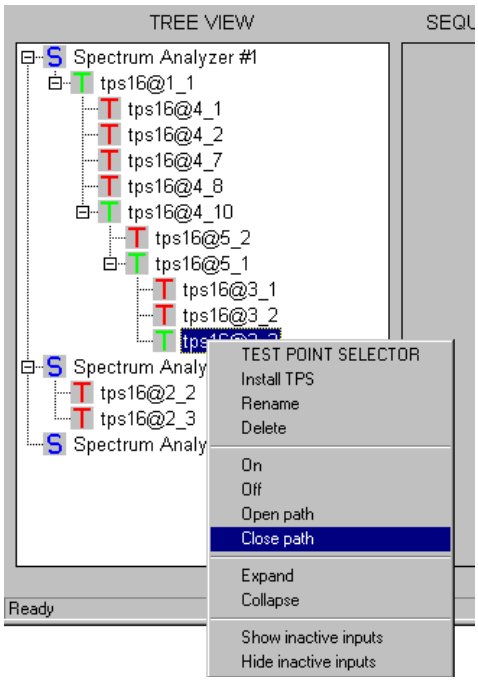


Figure 3-20: Selecting the input status

By default, the input is switched on and its path to the network headend is opened when you select it in Tree View. This is represented by the green symbols next to the inputs that are on, tracing the route to the headend. To deactivate this option, go to the **Configuration** menu

and remove the checkmark next to the item **Open path on selection**, or press the keys <Ctrl+Shift+O>.

3.8.6 Deleting an input

Deleting an input means that you will remove the input and any inputs that fall below it in the structure. To delete an input in Tree View, you can use the right mouse button to display the pop-up menu and select **Delete** or use the **Equipment** menu and click on **Delete input**.. You can also simply press <Delete> on the keyboard. You will be asked to confirm the delete action.

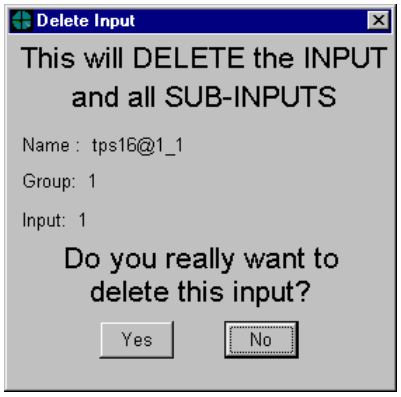


Figure 3-21: Deleting an input

3.9 Managing the TPS scan function

3.9.1 Creating a new sequence

To clear the current sequence and create a new one, select one of the following methods:

- select **New** from the **Sequence** menu
- press <Ctrl+N> on the keyboard
- click on the blank page icon in the tool bar

Add the inputs to create your new sequence as described in section 3.9.3.

3.9.2 Saving your sequence

You may save your sequence in a file by selecting one of the following options:

- in the **Sequence** menu, select **Save**
- press <Ctrl+S> on the keyboard
- click on the diskette icon in the tool bar

Choose a directory and a file name for your sequence file. By default, your file will be saved with the file extension ".SEQ". Do not use another file extension.

3.9.3 Adding inputs to the sequence

To add an input to the scan sequence, select the input in Tree View and drag it to the Sequence View window. This is the simplest way to add a single input. However, if you want to add the main units in an entire branch to the scan sequence, first select the parent input of the branch, then use the **Sequence** menu and select **Import all**. This copies all the sub-inputs of the branch to the Sequence View window. By default, the inputs are listed in the order in which you add them to the sequence. To change the order, see section 3.9.6.

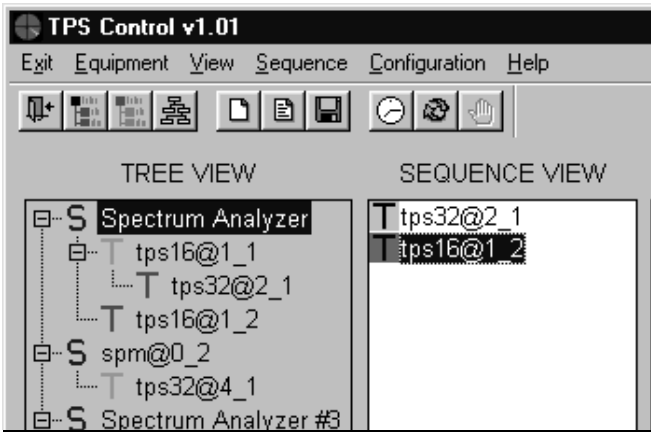


Figure 3-22: Importing all the sub-inputs of a branch

3.9.4 Deleting inputs from the sequence

The program lets you delete the selected inputs using the **Delete** option in the **Sequence** menu or by using the <Delete> key. Deleting the input from the sequence only removes it from the scan list. This action does not affect the database. To delete an input from the database, see section 3.8.6.

In order for the scan to be valid, the sequence must contain at least two inputs. If you delete all the inputs, this means there will be no scan.

3.9.5 Retrieving an existing sequence

To use a sequence file that you have stored on your computer or on a diskette or network drive, choose one of the following options:

- in the **Sequence** menu, select **Open**
- press <Ctrl+O> on the keyboard
- click on the page with writing on it in the tool bar

Go to the directory where your file is located and open it. The file must have the file extension ".SEQ". If you had another sequence open, it will be cleared and replaced with the new sequence.

3.9.6 Editing the sequence

You can edit the sequence in Sequence View with simple cut and paste commands. These commands are most useful for changing the order. If you want to remove inputs from the scan sequence, the easiest way is to delete them (see section 3.8.6).

To move one or more inputs to another position in the scan sequence, select the input(s) in Sequence View and then either choose **Cut** from the **Sequence** menu or press <Ctrl+X>. This action does not affect the database. To place the input in its new position, go to the insertion point and use the **Paste before** command from the **Sequence** menu or press <Ctrl+V>. This places the new input before the input you selected as the insertion point. If you want the new input to appear after the insertion point, press <Ctrl+Shift+V> or select **Paste after** from the **Sequence** menu.

To copy an input or a block of inputs, select the input(s) in Sequence View and use the **Copy** option in the **Sequence** menu or press <Ctrl+C>. This lets you include the same inputs more than once in the scan sequence. To paste the block in the desired location, use the paste commands in the **Sequence** menu or on the keyboard (see above).

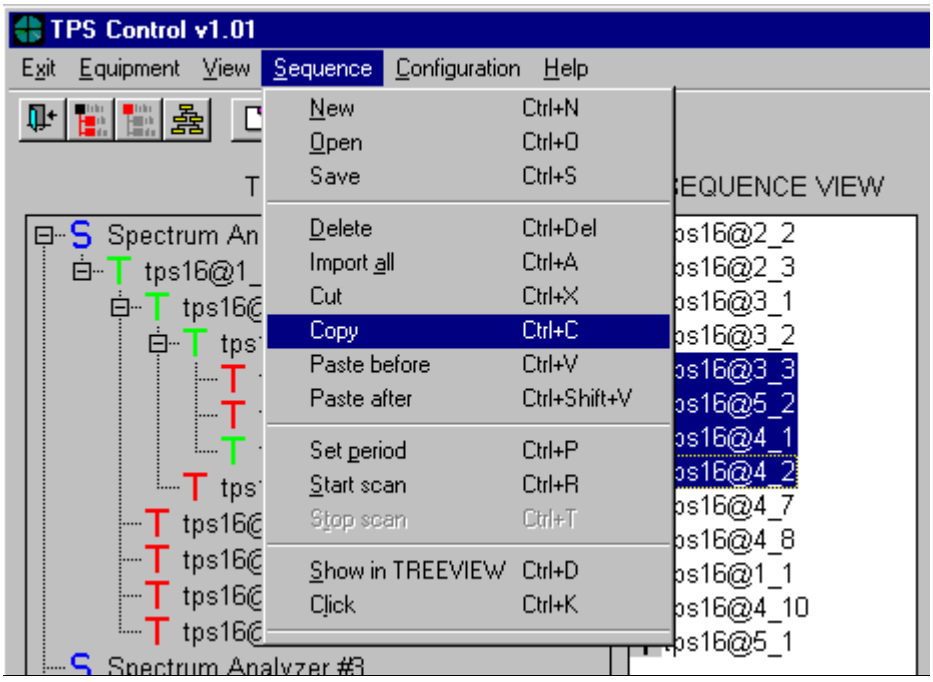


Figure 3-23: Editing commands in the Sequence menu

3.9.7 Configuring the scan

Once you have defined the list of inputs to be scanned, you can enter the period of time that each input will be scanned. This time period is entered in milliseconds. To configure the scan period, choose one of the following options:

- use the **Set period** option in the **Sequence** menu
- press <Ctrl+P>
- click on the clock icon in the tool bar.

A window appears with a field for entering the scan period in milliseconds.

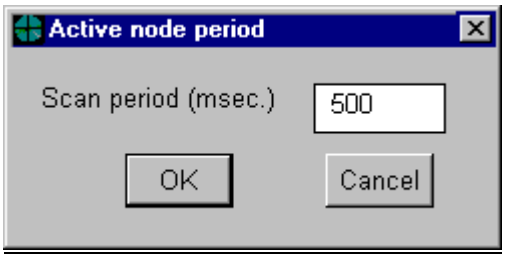


Figure 3-24: Setting the scan period

The default value is 500 ms. To change the scan period, enter a figure between 200 and 32000. This value will be used with all sequence files you call up. The period is not saved with the sequence file. You can modify the scan period while the scan is running, and the new period will take effect as soon as you click on **OK**.

3.9.8 Starting the scan

The program only starts the sequence scan if the Sequence View contains at least two inputs and if there is no other scan in progress. There are three ways to start the scan:

- choose **Start scan** from the **Sequence** menu
- click on the circular arrow icon in the tool bar
- press <Ctrl+R>

The program disabled all menu options that cannot be used during the scan. The scan starts from the selected input in Sequence View and at the end of the scan period defined, goes to the next input. When the program reaches the end of the scan sequence list, it starts over from the first input.

3.9.9 Displaying the scanned inputs in Tree View

If you want to see which inputs in the structure are being scanned, you can force the display of the active input in Tree View during the scan. By default, this option is disabled. Select the **Show in TREEVIEW** option in the **Sequence** menu or press <Ctrl+D>. If you select the menu again, you should see a checkmark next to this item. As the inputs are scanned, you will see them turn on and off according to the sequence you defined.

To remove the input display in Tree View, select the item again in the **Sequence** menu or press <Ctrl+D> again and make sure that the checkmark is gone. When the view mode is disabled, the inputs can be scanned more rapidly. This option can be toggled on and off during the scan.

3.9.10 Activating the scan clicks

If you want to hear a click for each input scanned during the sequence, select the **Click** item in the **Sequence** menu or press <Ctrl+K>. By default, this option is disabled. If you select the menu again, you should see a checkmark next to this item. As the inputs are scanned, you will hear a clicking sound as each input is turned on and off according to the sequence you defined.

To disable the click sound effect, select the item again in the **Sequence** menu or press <Ctrl+K> again and make sure that the checkmark is gone. This option can be toggled on and off during the scan.

If the click option is enabled, you will hear the scan even if you minimize the TPS Control window or open another application. This means you can monitor the scan by ear. As long as you don't close the TPS application, the click can still be heard. The click may take a moment to adjust when the window is restored.

3.9.11 Stopping the scan

To stop the scan in progress, choose one of the following methods:

- select the **Stop scan** item in the **Sequence** menu
- press <Ctrl+T>
- click on the hand icon in the tool bar

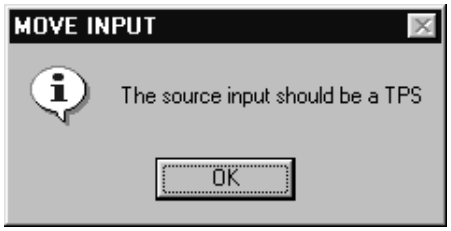
The program reactivates the menu options that were disabled during the scan.

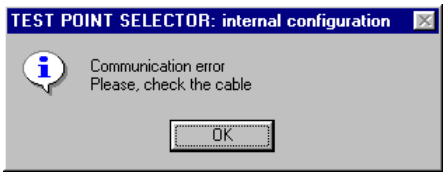
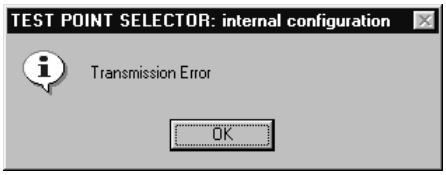
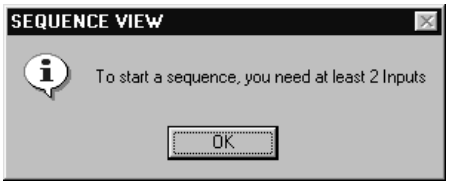
4 TROUBLESHOOTING

4. TROUBLESHOOTING

4.1 Operating errors

The TPS Control software detects most errors during operation. This section guides you through the correction process.

Error	Message box	Solution
Connection error at startup or when changing the control mode		Run a serial cable from the EAS Control Unit to one of the COM ports on the PC. Verify the port's communication parameters. If you are running TPS Control for test or training purposes, you do not need to connect a Control Unit. Simply click on OK to close the window and continue.
Failed Move Input command (drag)		You cannot move a TPS to an active input (e.g. to a spectrum analyzer or another TPS).You must always install or move inputs to an inactive input. Choose an inactive input and try the move command again.
Failed Move command for a spectrum analyzer		You cannot move a spectrum to a TPS. A spectrum analyzer can have TPS units below it, but not above it in the structure.
Invalid input when installing a TPS		Assign a unique group number to each TPS-MS unit. By default, the units are named with their group number as part of their name. Show all the inputs in Tree View and choose a group number that has not been used yet.

Error	Message box	Solution
Unable to configure serial port for TPS configuration		Make sure your cables are connected properly and are in good condition. Verify the port's communication parameters.
Unable to configure TPS		Make sure you have cabled the PC and the TPS properly. One or more cables may be missing or connected to the wrong COM port. Verify the port's communication parameters.
Unable to start scan		You have less than two items in the sequence. Copy at least two inputs to the sequence view, or call up a file containing a valid sequence (*.SEQ). Try to start the scan again.
Database not updated		Make sure that the database engine is running. Click on the SQL TPSCTRL button in your Windows taskbar to call up the database information screen. If the database has been shut down, you must restart the TPS application.

4.2 Troubleshooting the installation process

4.2.1 Installation errors

There are few errors that may occur during installation. The TPS Control software will detect invalid directories or data and will prompt you to correct them before continuing with the installation process.

If you are using an invalid directory, TPS Control will prompt you to enter a directory on your PC. By default, TPS Control is installed in the Program Files directory on your C: drive.

When you install the TPS Control software, you should see the welcome screen as indicated in the *Installation* chapter. If you use the wrong diskette, you get the "Open with" dialog box that Windows generates when it does not recognize the application associated with a file. You must

start with disk 1 of 3 since this diskette contains the installation program. You cannot install the second or third diskette by itself. The installation program will prompt you for the correct diskette.

4.2.2 Reinstalling TPS Control

If you are reinstalling the TPS Control software, it is important to note that you may overwrite the existing database if desired. The installation program will detect that the database already exists and will ask you if you want to keep it or overwrite it.

If you want to keep your database, make sure you answer YES in the following window:

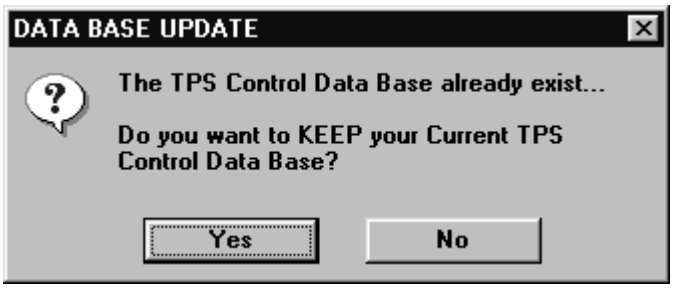


Figure 4-1: Reinstalling TPS Control

To overwrite the database, choose NO. This replaces your database with the default database delivered with TPS Control. The default database contains only a spectrum analyzer. You must add all the TPS units to the database.

4.3 Troubleshooting the database

4.3.1 Database error at startup

TPS Control is delivered with a database file. The program creates a log file during operation to log changes to the database. If the log file does not correspond to the database, then the program will not start up. If this error occurs, delete the TPSCTRL.LOG file in the main TPSCTRL directory and restart the application. A new log file will be created during operation.

The first indication of this error is a connection window:

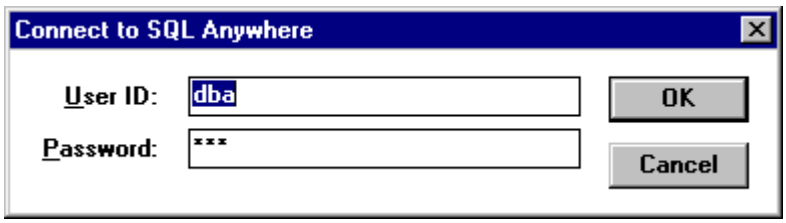


Figure 4-2: Database connection window at startup

The correct user ID and password appear by default in this window. Changing this data will not solve the connection error. Click on OK to go to the error window, which you must use to close the application.

Figure 4-3: Database connection failure

Click on OK to close this window. This also stops the process of opening the TPS Control software. If you do not have a backup of the database, you must reinstall TPS Control. You do not need to delete the application on your computer. Insert the first TPS Control diskette and follow the installation procedure as per the instructions in the *Installation* chapter. If the database is missing, this process will copy the original database file included with the TPS Control software. If your database file exists but is corrupted, replace your database with the original one (see section 4.2.2) or a valid backup (see section 4.4.1). If you use the original database file, you will need to reinstall all your inputs. You will not need to reconfigure the actual TPS units.

4.3.2 Database error during operation

Normally, as you configure TPS units and add them to the network structure, this information is saved in the TPS Control internal database. This database is powered by Sybase's SQL Anywhere engine, and is launched at the same time as the TPS Control program. The database is automatically updated in real time. The information is saved in the TPSCTRL.DB file located in the main TPSCTRL directory.

When the database is running, you will see the button

in the Windows taskbar. To verify that the database engine is running properly, click on the **SQL tpsctrl** button to view the database information window:

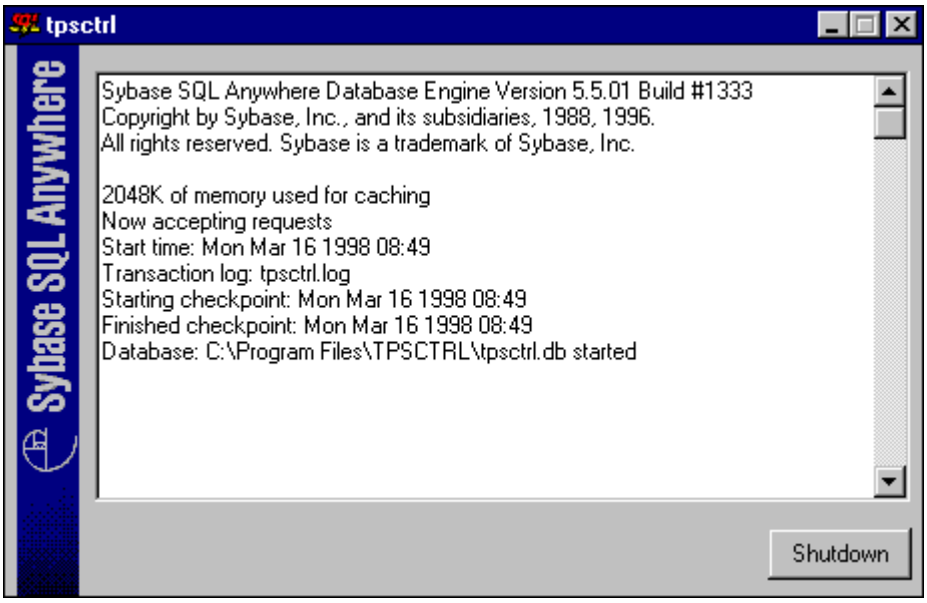


Figure 4-4: TPS database information and shutdown interface

The message “Now accepting requests” should be included in the information window, on the line preceding the start time. The database’s log file is created when the engine is launched and it is stored in the same directory as the database file itself.

Do not shut down the database unless you are having problems with it, In this case, use the SHUTDOWN button as shown in Figure 4-4. However, if you shut down the database engine, this prevents registering any changes to the database. Some commands will not work properly without the database engine such as adding and connecting inputs.

To restart the database, you must relaunch the TPS control software. See the *Operation* chapter for details.

4.4 Maintenance

You may want to make periodic copies of your TPS database. You will need to use Windows Explorer, a DOS window or another file management program to create directories and make copies.

4.4.1 Backup procedure

1. Create a backup directory or prepare a floppy disk to be used as the backup location.
2. Exit the TPS Control software.

Go to the TPSCTRL directory and copy the TPSCTRL.DB file to the backup location. Copy the log file (TPSCTRL.LOG) to avoid startup errors.

4.4.2 Restore procedure

1. Make sure that TPS Control is not running.
2. Copy your backup TPSCTRL.DB file and the TPSCTRL.LOG file to your TPSCTRL directory. This will overwrite the existing database, unless you make a backup copy of this database.
3. If you did not back up the old log file, you must delete the current log file and let the system create a new one when the program is run.
4. Restart TPS Control to use the new database. The restored database will be in effect.

   Note:

   You must make the necessary connections to make sure that the physical structure of your TPS system corresponds to the database. You may also need to configure the TPS units if there are discrepancies between the data stored in the TPS unit’s memory and the database.

4.5 Initialization file

The TPSCTRL.INI file stores the configuration parameters you set for interfacing with the TPS units and the EAS Control Unit through your computer's serial ports. This file also contains essential operating information. The initialization file that is delivered with the TPS Control software contains the following default values:

```
[Configuration]
FSK Port Mode Active=true
Serial Port Mode Active=true

[TreeView]
Close Path first=false
Close Path Up To Root=false
Open Path On Selection=true
Show Unconnected Input=false

[SequenceView]
Click=off
Display in Tree View=false
Scanning Period (msec)=500
Last Sequence File=

[Database]
DBMS=ODBC
Database=tpsctrl
Password=sql
UserId=dba

[CU-II/IV]
COM_PORT=COM2
COM_PARITY=NONE
COM_STOP_BIT=1
COM_CODE_LENGTH=8
COM_BAUD_RATE=9600
COM_TIME_OUT=0

[TPS]
COM_PORT=COM1
COM_PARITY=NONE
COM_STOP_BIT=1
COM_CODE_LENGTH=8
COM_BAUD_RATE=19200
COM_TIME_OUT=50

[EAS PA]
COM_PORT=COM1
COM_PARITY=NONE
COM_STOP_BIT=1
COM_CODE_LENGTH=8
COM_BAUD_RATE=2400
COM_TIME_OUT=2000

[Sequence View]
Display in Tree View=false
```

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