

## Help Index for Telephony Service Provider for AT Command Set Devices

The Windows Telephony Service Provider for AT Command Set Devices (ATSP.TSP) implements the basic functions of Windows Telephony necessary to let you use an AT command set-compatible (Hayes compatible) modem or similar device to dial voice telephone calls. The Dialer application (provided with Windows Telephony) or another Windows Telephony application must be used to actually place the calls. ATSP.TSP is the low-level driver that, under the control of the application and Windows Telephony, issues commands to the modem to cause dialing to take place.

### How to...

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## Selecting the Communications Port

When selecting a communications port, you choose the way ATSP accesses the modem and the baud rate the modem uses.

### To set the communications port

- 1 In Program Manager, double-click the Control Panel icon in the Main group to open the Control Panel. Double-click the **Telephony** icon to open the Windows Telephony settings.
- 2 Click the **Driver Setup...** button.
- 3 Select **AT Command Set Modem Telephony SP** from the list and click the **Setup...** button. The ATSP Configuration dialog appears.
- 4 Select the desired communications port from the drop-down list.
- 5 Select the desired speed from the drop-down list.
- 6 Click **OK** to save the settings. Click **Close** in the list of Telephony Drivers and in the Telephony Control Panel.

If you are unsure which communications port your modem is connected to or which baud rate to use, see the topic Testing your Modem.

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## Assigning a Name to the Modem that Appears in Dialer and other Applications

Most Windows Telephony applications (such as Dialer) allow you to select from a list of available line devices to choose one for placing calls. ATSP allows you to set a name to identify devices in a way meaningful to you.

### To set the name that will be displayed in Dialer and other applications

- 1 In Program Manager, double-click the Control Panel icon in the Main group to open the Control Panel. Double-click the Telephony icon to open the Windows Telephony settings.
- 2 Click the **Driver Setup...** button.
- 3 Select **AT Command Set Modem Telephony SP** from the list and click the **Setup...** button. The ATSP Configuration dialog appears.
- 4 Type the desired name in the **Line Name** field.
- 5 For accurate call logging, also enter into the **Phone Number** field the phone number assigned to the line to which the modem is attached.
- 6 Click **OK** to close the ATSP Configuration dialog to save the settings. Click **Close** in the list of Telephony Drivers and in the Telephony Control Panel.

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## Beginning Talking when a Call is Connected

When a Windows Telephony application requests that an outbound call be placed, and the line it has selected is under the control of ATSP, ATSP issues an **ATD** command to the modem to dial the call. For many modems, when the modem is off-hook, the telephone attached to the **Phone** port on the back of the modem is automatically disconnected. At this point, you are unable to talk until ATSP issues an **ATH** command to the modem to place it on-hook and connect the phone through to the line. But if ATSP issues this command before you lift the phone receiver (handset), the call is disconnected. Therefore, if you want to talk, you must lift the receiver before clicking the Talk button on the **ATSP Call Status** dialog.

### To place a call using ATSP, and begin to talk

- 1 In your Windows Telephony application (such as Dialer), select a line that is under the control of ATSP.
- 2 Enter a phone number and click Dial or whatever other control is used in the application to dial a call. The application requests Windows Telephony to place the call, and the request is routed to ATSP.
- 3 After ATSP has issued the dialing command to the modem, the ATSP Call Status dialog appears.
- 4 You may choose to lift the receiver on the phone connected through your modem as soon as the dialog appears. Or, you may listen through the modem speaker to see if the call rings, or even wait until the called party answers.
- 5 When you are ready to talk, lift the receiver if you have not already done so, and click the **Talk** button (or press **Enter**, because **Talk** is the default button). This causes ATSP to disconnect the modem from the line and connect the call through to your phone.
- 6 Begin your conversation.

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## Hanging up a Call before It Is Connected

When a Windows Telephony application requests that an outbound call be placed, and the line it selected is under the control of ATSP, ATSP issues an **ATD** command to your modem to dial the call. You may hear through the modem speaker that the called line is busy or that no one will answer.

### To disconnect a busy or no-answer call

- 1 After ATSP has issued the dialing command to your modem, the ATSP Call Status dialog appears.
- 2 Listen through the modem or phone speaker for a busy signal or continuous ringing (no answer). To hang up the uncompleted call, click the **Hang up** button. This causes ATSP to disconnect the modem from the line and cut the call through to your phone.
- 3 If you have not lifted the phone receiver, the call is disconnected. If you have already lifted the phone receiver, you must hang up the receiver for the call to be disconnected.

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## Connecting your Telephone to your Modem

Most modems used with personal computers have two modular telephone jacks on the rear panels. One is usually marked **Line**, and the other is usually marked **Phone**.

### **To connect your modem and phone when your modem provides such jacks**

- 1 Connect the **Line** jack on the back of the modem to the telephone wall jack using a modular telephone cable.
- 2 Connect the telephone to the **Phone** jack on the back of the modem.

Many modems have internal devices that, when the phone is connected through the modem in this way, cause the phone to be disconnected from the line while the modem is in use. This prevents you from accidentally interrupting a data call by lifting the receiver on the phone connected to the modem, but it does not prevent other phones on the same line from disrupting your modem calls. This modem feature requires that you click the Talk button at the right time in order to converse after using ATSP to dial a voice call. See [begining Talking](#) for more information.

### **If your modem does not provide a phone jack, or if you want to bypass the modem's phone cut-off feature**

- 1 Visit your local hardware or electronics store and obtain a *duplex adapter*, also known as a *Y connector*.
- 2 Unplug your modem from the modular wall jack.
- 3 Plug the duplex adapter into the wall jack.
- 4 Plug the modular phone cable from your modem into one of the jacks on the duplex adapter.
- 5 Plug your phone into the other jack on the modular adapter.

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## Setting the Modem Speaker Volume Level when Dialing

Because of differences in the commands and levels used by various modems, ATSP does not internally control the modem speaker mode or volume. The speaker mode and volume stored in your modem's default configuration may be correct for you when placing voice calls as well as data calls, in which case there is no need to change the defaults (ATSP will use the stored modem settings). To override the stored modem settings and use a different speaker mode and volume when placing voice calls, use the **Additional Initialization String** configuration option.

### To set the modem speaker mode and volume

- 1 In Program Manager, double-click the Control Panel icon in the Main group to open the Control Panel. Double-click the Telephony icon to open the Windows Telephony settings.
- 2 Click the **Driver Setup...** button.
- 3 Select **AT Command Set Modem Telephony SP** from the list and click the **Setup...** button. The ATSP Configuration dialog appears.
- 4 Select the **Additional Initialization String** field.
- 5 Enter a valid **AT** command string according to your modem's documentation to set the speaker. You do not have to include the leading **AT** characters in the command string.

Modems that are compatible with those from Hayes Microcomputer Products, Inc., generally support the following modem speaker mode control commands:

<b>M0</b>	Speaker always off
<b>M1</b>	Speaker on until carrier
<b>M2</b>	Speaker always on
<b>M3</b>	Speaker off during dialing, then on until carrier

You may choose **M0** to keep the speaker always off. In ATSP, **M1** and **M2** work essentially the same way because the modem is put on-hook without establishing a carrier. You may want to use **M3** (if your modem supports it) if you're in an open office and do not want to disturb others with loud dialing sounds, but you still want to listen for a busy signal or no answer.

Modems that are compatible with those from Hayes Microcomputer Products, Inc., also generally support the following modem speaker volume control commands:

<b>L0</b>	Low volume
<b>L1</b>	Low volume
<b>L2</b>	Medium volume
<b>L3</b>	High volume

Because of differences in the design of modems, you may have to try several settings to find one that is comfortable for you. Also, you may find that your modem does not support the **L** command, but instead has a volume control knob or slide control.

Note that you can place two or more commands on the same command line. For example, **M1L2** selects medium volume and causes the speaker to be on during dialing.

- 6 Click **OK** to close the ATSP Configuration dialog and save the settings. Click **Close** in the list of Telephony Drivers and in the Telephony Control Panel.

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## Using Pulse Dialing

By default, ATSP uses tone (DTMF, dual-tone multi-frequency) dialing for your calls. Some telephone systems, particularly outside North America, require pulse dialing to be used. Windows Telephony applications can specify the dialing method to be used by including a **T** or **P** dial modifier in the dialable address string (phone number) that they pass to ATSP through the Windows Telephony API, but not all applications do this. In fact, applications are discouraged from doing so because it makes them less portable to other dialing environments. ATSP allows you to specify that pulse dialing and not tone dialing should be used as the default, if your phone system requires it.

### **To set ATSP to use pulse dialing instead of tone dialing as the default**

- 1 In Program Manager, double-click the Control Panel icon in the Main group to open the Control Panel. Double-click the Telephony icon to open the Windows Telephony settings.
- 2 Click the **Driver Setup...** button.
- 3 Select **AT Command Set Modem Telephony SP** from the list and click the **Setup...** button. The ATSP Configuration dialog appears.
- 4 To cause ATSP to use pulse dialing by default, check the **Dial using Pulse Mode** box. To use tone dialing by default, uncheck the box.
- 5 Click **OK** to close the ATSP Configuration dialog and save the settings. Click **Close** in the list of Telephony Drivers and in the Telephony Control Panel.

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## Defining a Special Initialization String to Be Sent to the Modem

When ATSP dials a call, it normally uses an AT command string that includes the following commands:

<b>S11=n</b>	Set duration of tones
<b>S8=n</b>	Set duration of comma dial modifier
<b>S7=n</b>	Set timeout before automatically hanging up
<b>X4</b>	Use extended result codes (including <b>BUSY</b> and <b>NO DIALTONE</b> )
<b>E1</b>	Echo commands sent to the modem
<b>S6=2</b>	Wait two seconds before blind dialing if dialtone is not being detected
<b>D</b>	Dial command

The settings for **S11**, **S8**, and **S7** are obtained from the application placing the call; if the application does not provide values, ATSP uses **S11=95** (95 milliseconds for each tone, with 95 milliseconds between tones), **S8=2** (two-second pause for a comma), and **S7=60** (60-second timeout).

These settings and the others mentioned above are supported by virtually all AT command set modems, and are usually the only ones needed. You may find, however, that some of the commands do not work with your modem, or that you need to add additional commands (such as to control the modem speaker mode and volume; see [Setting the Modem Speaker Volume](#) for more information).

### To add additional commands to the command string automatically sent by ATSP

- 1 In Program Manager, double-click the Control Panel icon in the Main group to open the Control Panel. Double-click the Telephony icon to open the Windows Telephony settings.
- 2 Click the **Driver Setup...** button.
- 3 Select **AT Command Set Modem Telephony SP** from the list and click the **Setup...** button. The [ATSP Configuration Dialog](#) appears.
- 4 Select the **Additional Initialization String** field.
- 5 Enter a valid **AT** command string to set the speaker according to your modem's documentation. You do not have to include the leading "**AT**" characters in the command string. The additional commands you enter will be inserted into ATSP's normal command string immediately before the "**D**" command.
- 6 If you want to prevent ATSP from sending the "**X4 E1 S6=2**" portion of its normal command string, you may check the box labeled **Do not use internal initialization string**. Unless you are certain of the effect, you should leave this box unchecked.
- 7 Click **OK** to close the ATSP Configuration dialog and save the settings. Click **Close** in the list of Telephony Drivers and in the Telephony Control Panel.

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## Testing the Modem with Microsoft Terminal

The Telephony Service Provider for AT Command Set Devices (ATSP) is very sensitive to the degree of Hayes compatibility that the modem provides (also defined in the standard EIA/TIA-602-1992). Some modems claim to be Hayes compatible or compliant with this standard, but are, in fact, only partially Hayes compatible. If you find that ATSP is not hanging up calls correctly or your telephony applications (such as Dialer) display unexpected error messages, your modem may not be fully compatible with ATSP. You can use Microsoft Terminal or any other communications program to determine whether or not your modem behaves in the basic manner expected by ATSP.

**To test if your modem is compatible with ATSP, follow these steps—note that the characters you type are in bold**

1 In Program Manager, open the Accessories program group. Double-click the Terminal icon to start the Microsoft Terminal Program.

2 Select **Communications...** under the **Settings** menu.

3 Set the baud rate used to communicate with your modem, and the communications **connector** to which it is attached.

4 Click **OK** to close the Communications settings dialog.

5 Type a command to your modem to be sure it responds. It should respond to, for example, the command **AT** with a simple **OK** response (note that you must follow all commands by pressing the Enter key):

```
AT  
OK
```

6 Issue a command to dial your own number. Append a ';' (semicolon) to the number so that the modem returns to command state immediately after dialing. The modem should dial the number and return an **OK** result code. If the number is "555-1234", enter:

```
ATX4DT5551234 ;  
OK
```

7 Send the **ATX4D** command to commence busy detection. The modem should not return until it detects the busy condition or times out.

```
ATD  
BUSY
```

8 Again, issue the **ATD** command in step 6. Before the modem detects busy, press Enter to abort the call progress tone detection. The modem should issue a **NO CARRIER** result code. You should then be able to issue an **ATH** command to ensure that the modem is on-hook.

```
ATX4DT5551234 ;  
OK  
ATD  
<another carriage return>  
(modem hangs up)  
NO CARRIER  
ATH  
OK
```

9 Select **Exit** from the **File** menu to close Microsoft Terminal.

If you can make it through these steps, then ATSP should be able to properly control your modem to dial voice calls. If your modem does not behave in the way described (for example, if it returns **OK** twice after an **ATD** command, or if it does not return to command state and issue an **OK** result code when you send

the **ATD** command terminated by a semicolon), then your modem probably cannot be used to dial voice calls with ATSP.

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## ATSP Configuration

The **ATSP Configuration** dialog is used to configure ATSP for use with your modem. It also allows you to set a name by which your Telephony applications (such as the Dialer application provided with Windows Telephony) identifies the line to which the modem is attached.

Use the **Communications Port** drop-down list to select the communications port to which your modem is attached.

Use the **Speed (DTE Rate)** drop down list to select the baud rate at which ATSP issues dialing commands to your modem. Note that it is not necessary to select the highest speed your modem supports; 2400 bps is sufficient for most dialing applications.

To set the name by which the line to which your modem is attached is identified in Windows Telephony applications, select the **Line Name** field and type the name.

For accurate call logging, enter into the **Phone Number** field the phone number assigned to the line that is attached to the modem.

If you want to issue additional commands to the modem before dialing each voice call, enter the AT command string into the **Additional Initialization String** field. It is not necessary to include the leading **AT** characters in the string; ATSP provides them for you.

If you want to prevent ATSP from sending part of its normal initialization string, check the **Do not use internal initialization string** checkbox.

If you want ATSP to use pulse dialing (clicks) instead of tone dialing (beeps) by default, check the **Dial using Pulse Mode** box. Applications can always override this setting in a particular dialing operation; this checkbox specifies the dialing mode to use when the application does not specify a particular method.

For more information, see [Setting a Special Initialization String](#), [Use Pulse Dialing](#), and [Setting the Modem Speaker Volume](#).

Click **OK** when you are finished with your Settings to save them to disk and return to the Telephony control panel.

Click **Cancel** to discard the settings you have made and return to the Telephony control panel without saving them.

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## ATSP Call Status

The **ATSP Call Status** dialog appears when you have asked a Windows Telephony application to dial a voice call through a Telephony line device that is under the control of the ATSP Telephony Service Provider. The buttons on this dialog allow you to Begin Talking (the **Talk** button) or Hang up (the **Hang up** button).

Please see the help topics on those buttons for more information.

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