

Chapter 3 ✎

Using the Antex Mixer

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Introduction to Antex Mixer

The Antex Mixer is a software tool designed to be used in conjunction with application software such as In-Sync's Speedrazor and Innovative Quality Software's SAW Plus. It is a powerful program that allows you to configure many features of the *StudioCard*. Using the Mixer you can:

- ✎ Set sample clock reference source
- ✎ Set sample rate for input sources
- ✎ Control all timecode and screenburn functions
- ✎ Control and routing of physical inputs and outputs to logical devices used by Windows NT/2000
- ✎ Set the digital I/O format; either AES/EBU Professional or S/PDIF Consumer
- ✎ Set input and output trim levels
- ✎ Set relative volumes for true mixer operation

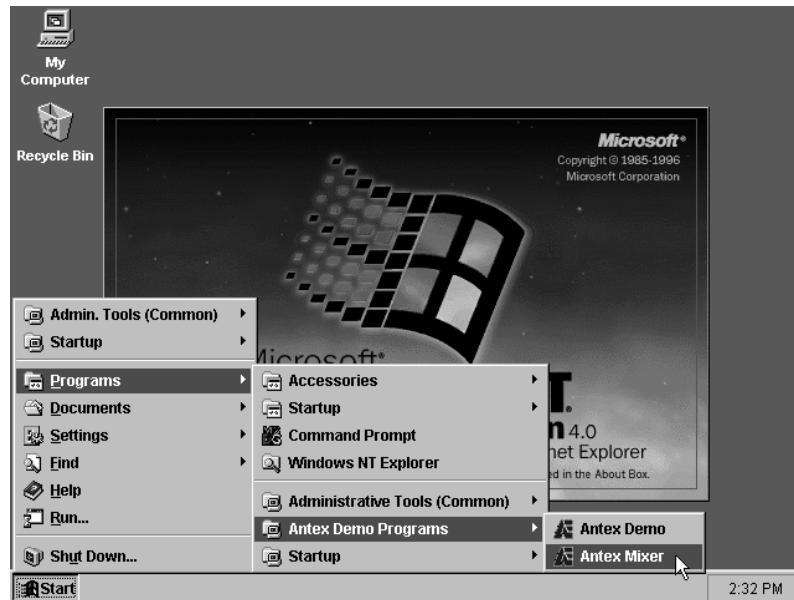
Why Would I Use the Antex Mixer?

The Antex Mixer is used in conjunction with other software applications, either the Antex Demo or a Non-Linear Video editing program to configure the *StudioCard* for audio recording.

The settings you specify in the Antex Mixer define how the *StudioCard* operates. It is a useful tool which allows you to change settings and control volume. If you find that you need to change Mixer settings frequently, it is a good idea to keep it open in the background or minimized.

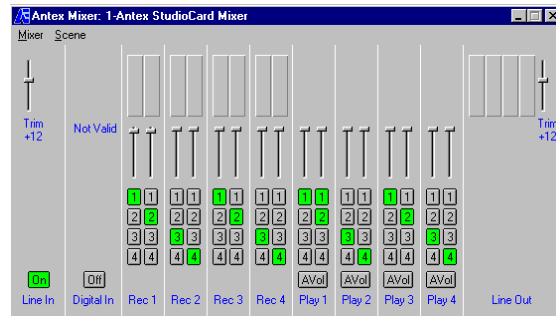
Starting the Antex Mixer

To open the Antex Mixer program, select **Start - Programs - Antex Demo Programs - Antex Mixer**, as illustrated below.



The Antex Mixer program opens.

Shown at right is the default display showing Line In, Digital In, Line Out, and four each record and play controls.



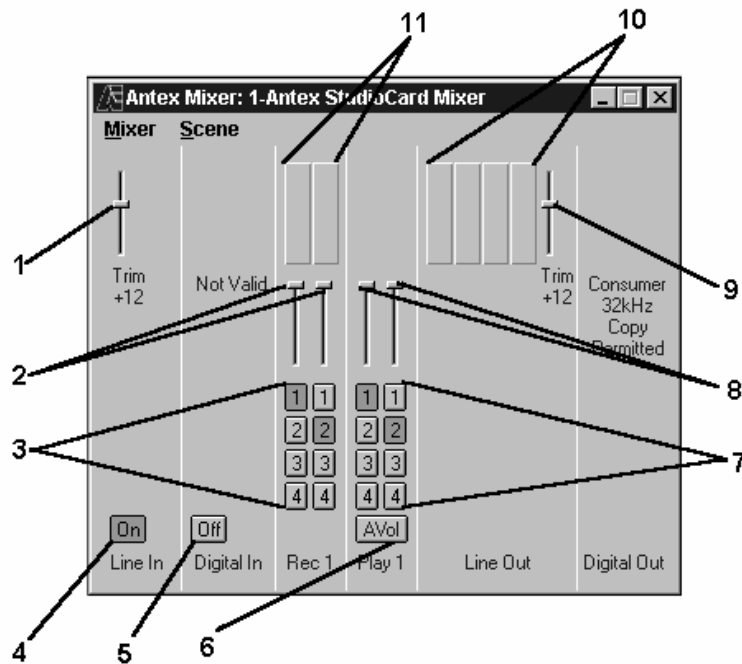
This default configuration allows the Antex Mixer to fit into a 640 x 480 pixel (standard VGA) display. The display can be modified to display up to four additional record and play controls, and adapter settings. See *Adjusting the Antex Mixer Display* on page 14.

Mixer Controls and Indicators

In this section are descriptions of all the controls and indicators of the Antex Mixer display, including its sub-menus.

Main Screen Controls and Indicators

A simplified display of the Antex Mixer is shown below. The default configuration actually displays four record and play controls, only one is shown for clarity as they are identical. Each of these controls and indicators is described in the table on the next page.

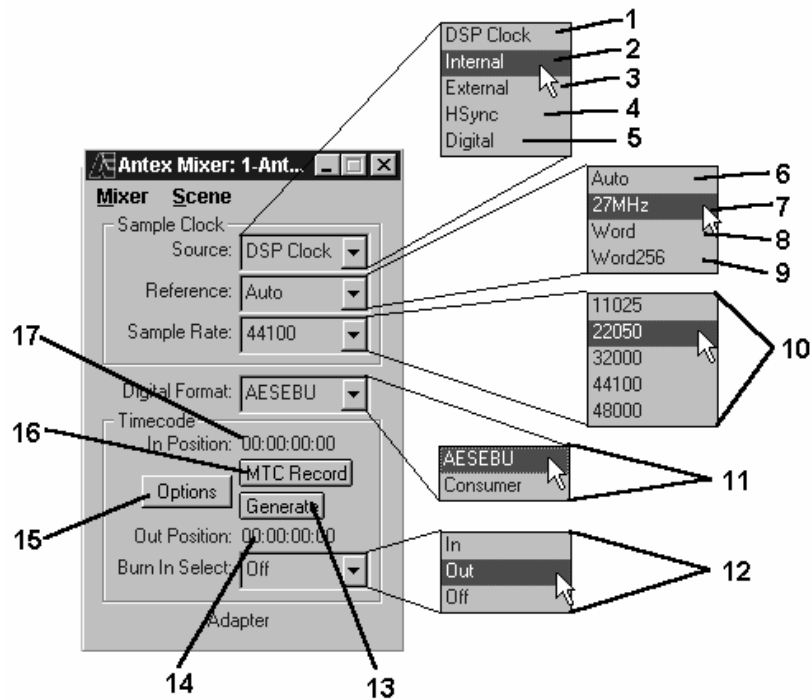


Main Screen Control	Description
1 Line In Trim	Trim slider control used to adjust the clipping level of the analog input signal to either +12 dBu or +24 dBu. Output trim is moved in unison. See Chapter 4 for more information regarding levels.
2 Rec 1 level controls	Level controls used to adjust the volume of the left and right stereo signal at the Rec 1 channel. If Rec 1 is defined by the application software to be mono rather than stereo, only the left slider and 1-4 buttons (Item 3) are valid. The relative signal level is indicated by the level indicators (item 11).
3 Rec 1 1, 2, 3, 4	1, 2, 3 & 4 selector buttons, highlighted when selected. These buttons represent the physical inputs 1-4 as marked on the analog I/O cable. Only one can be selected at a time. Used to select which of the four analog signal inputs (1 - 4) will correspond to the left and right inputs to this device (only left column is valid for a mono device).
4 Line In On/Off	On/Off selector button, highlighted and reads On when selected, Off when deselected. Mutually exclusive with Digital In selector button. When selected, the input signal to the Mixer is an analog signal supplied via the DB25 analog input/output connector on the back of the <i>StudioCard</i> .
5 Digital In On/Off	On/Off selector button, highlighted and reads On when selected, Off when deselected. Mutually exclusive with "Line In" selector button. When selected, the <i>StudioCard</i> is set for digital input and expects digital data via the digital I/O cable. When digital in is enabled, it replaces analog inputs 1 and 2. Application software recording from device 1 with digital in enabled expects data input digitally.
6 Play 1 AVol	Avol (Automatic Volume adjustment) selector button, highlighted in green when selected. Used only during playback of Mono files. When selected, the <i>StudioCard</i> duplicates data and volume settings of the left half of the playback device to a second physical output. Output 1 is copied to Output 2, Output 3 is copied to Output 4 in the default configuration. Stereo files are played back normally.
7 Play 1 1, 2, 3, 4	1, 2, 3 & 4 selector buttons, highlighted when selected. These buttons represent the physical outputs 1-4 as marked on the analog I/O cable. Multiple buttons may be selected, routing a file from disk to multiple physical outputs.
8 Play Output Level Control	Stereo pairs of level controls for the four analog output channels. When a file is mono, only the left slider is valid.
9 Line Out Trim	Trim slider control used to adjust the clipping level of the analog output signal to either +12 dBu or + 24 dBu. Input trim setting is moved in unison. See Chapter 4 for more information regarding levels.
10 Line Out Output Level	Indicators, one for each of the four analog signal outputs. Indicate the relative signal level at each output, leftmost meter is output one, rightmost output four.

Main Screen Control		Description
	Indicators	
11	Rec 1 Level Indicators	Level indicators that indicate the relative level of the left and right stereo signal at the Rec 1 channel. The signal level is affected by the setting of level controls (item 2).

Adapter Line Controls and Indicators The Adapter controls shown below can be added to the Antex Mixer main screen simply by choosing **Lines** from the **Mixer** menu, then selecting **Adapter**.

Each of the Adapter controls and indicators indicated below is described in the table on the next page. Beginning on page 3-10 is a description of each of the controls and indicators displayed when you click the Timecode Options button (#15).

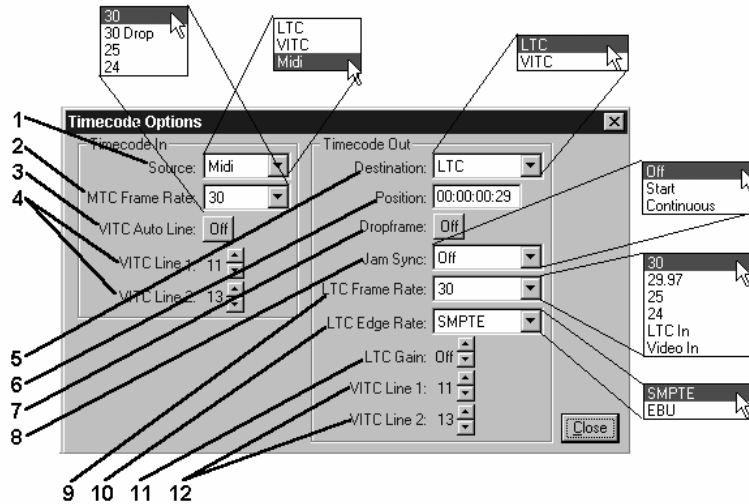


Adapter Controls		Description
1	Sample Clock Source DSP-Clock	The physical source of the audio sample clock is derived from this selection. When DSP is selected, the sample clock generator signal source is the internal clock on the Digital Signal Processor card (<i>StudioCard</i>). See note at end of table..
2	Sample Clock Source Internal	Internal selector. When selected, the sample clock generator signal source is supplied through the CLOCK IN connector on the top of the <i>StudioCard</i> internal to the computer. This is the correct setting for the PVR without the PFX board or for slave <i>StudioCards</i> in multiple card installations. See note.
3	Sample Clock Source External	External selector. When selected, the sample clock generator signal source is supplied from the External Clock In female BNC connector of the Digital I/O cable. See note.
4	Sample Clock Source HSync	HSync selector. When selected, the sample clock generator signal source is supplied from a composite video or composite sync signal source through the VIDEO IN connector on the top of the <i>StudioCard</i> . This is the correct setting for many video capture boards. NOTE: The signal source must be a stable one, such as from a time base corrector or sync generator. The uncorrected output from a VTR is not adequate. See note.
5	Sample Clock Source Digital	Digital selector. When selected, the sample clock generator signal source is the word clock derived from the digital input (AES/EBU or S/PDIF). See note.
6	Sample Clock Reference Auto	Auto selector. When selected, the sample clock generator will automatically determine the frequency of the selected clock source. This is the only valid option for the DSP-Clk and Digital In. The DSP-clock is a fixed 20 MHz clock. The Digital In is always a word clock. See note.
7	Sample Clock Reference 27MHz	27MHz selector. When selected, the sample clock generator will assume that the selected clock source has a frequency of 27 MHz. This is the correct setting for the PVR when connected via the PVR sync cable, PN 210-0398 (PFX not installed). Supports 13.5MHz and 54MHz clocks also. See note.
8	Sample Clock Reference Word	Word selector. When selected, the sample clock generator will treat the selected clock source as a word clock with a frequency identical to the desired sampling rate. The sampling point of the <i>StudioCard</i> 's A/D and D/A occurs on the rising edge of the input word clock. This provides a means to maintain coherency with other digital audio devices. Valid word clock frequencies are 32, 44.1 and 48 kHz. Slave devices in multiple card installation use an internal word reference. See note.

9	Sample Clock Reference Word256	Word256 selector. When selected, the sample clock generator will assume that the selected clock source has a frequency 256 times the desired sample rate. See note.
1 0	Sample Rate	Sample rate selector. Selects the sample rate of the incoming sample clock signal. This parameter must be set for Word and Word256 references. In all other cases, the application program such as Antex Demo set this parameter at time of record or playback.
1 1	Digital Format AESEBU/Consumer	AESEBU/Consumer selector. In AESEBU mode, signals on the digital I/O pins of the DB15 connector will conform to the AES/EBU electrical standards and professional data format. In Consumer mode, they conform to S/PDIF electrical standards and consumer data format.
1 2	Time Code Burn In Select	Enables timecode burn in on video feedthrough and source of timecode data. "In" burns in externally input timecode, "Out" burns in timecode generated by the <i>StudioCard</i> . "Off" disable burn in.
1 3	Time Code Generate	Turns on and off the generation of timecode to whatever destination is selected in the "Options/Destination" combobox.
1 4	Time code Out Position	Shows the current timecode position of item 13 (above). Editable under Options sub-menu.
1 5	Time code Options	See Timecode Options on page 11.
1 6	Time Code MTC Record	Turns on and off the generation of Midi Timecode from the timecode source
1 7	Time code In Position	Shows the position of whatever input (source) is selected in the "Options/Source" combobox.

Note: If the sample rate clock source is disrupted, the sample rate must be reset by selecting a different clock source then re-selecting the desired clock source.

Timecode Options The Adapter Timecode options shown below are accessed by clicking the **Options** button in the Adapter Timecode group.



A description of each of the Timecode Options is provided in the table on the next page.

Timecode Option		Description
1	Timecode In Source	Selects timecode source to be read and shown in the "timecode in" position and optionally converted to MIDI timecode.
2	Timecode In MTC Frame Rate	During MIDI Timecode Generation (when LTC or VITC is the source), this specifies the frame rate of the incoming data. This is also encoded into the Generated MIDI Timecode Data Stream.
3	Timecode In VITC Auto Line	Selects auto detection of the VITC lines. When ON, the VITC Line 1 and VITC Line 2 controls (item 4) disappear.
4	Timecode In VITC Line 1 VITC Line 2	Visible only when VITC Auto Line (item 3) is off. Allows manual selection of up to two lines to detect encoded VITC data. Range is 10-40.
5	Timecode Out Destination	Selects the destination of the generated timecode to either the LTC Output (on the DB15 connector) or VITC on the Video Out on the top of the <i>StudioCard</i> .
6	Timecode Out Position	Allows entry of the starting position of the generated timecode. The default is the last timecode generated.
7	Timecode Out Dropframe	Turns on and off dropframe, which is independent of the frame rate.
8	Timecode Out Jam Sync	Jam Sync is used to synchronize the generated time code to the input time code. Start indicates that the start of time code generation is triggered from an input time code. The input time code is also used as the starting time code value for the generator. In continuous mode the generated time code is continuously updated with the input time code. Care must be taken with the continuous mode to make sure that the input time code rate is exactly the same as the output time code rate.
9	Timecode Out LTC Frame Rate	Selects the frame rate of the generated LTC (Linear Time Code). "LTC In" slaves the frame rate to the LTC Input, and "Video In" slaves to the video input on the top of the <i>StudioCard</i> .
10	Timecode Out LTC Edge Rate	These are the two industry standard edge-rates for the analog time code signal. They define how fast the edges of the digital signal rise and fall.
11	Timecode Out LTC Gain	Selects the Gain of the LTC Output in 3 dB increments. Range is Off, -33 to +9.
12	Timecode Out VITC Line 1	Selects the two lines to encode VITC data on the video feedthrough. Range is 10 to 40.

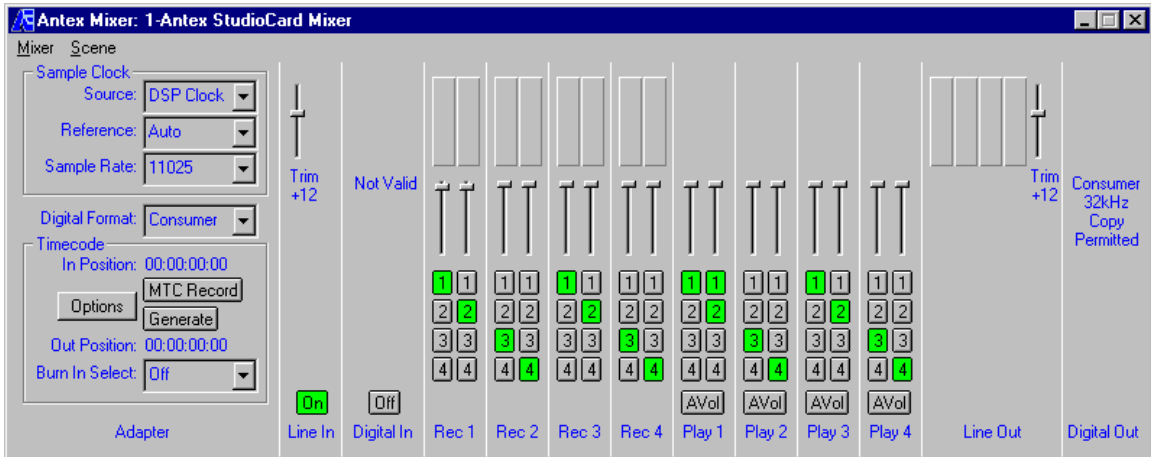
Timecode Option	Description
VITC Line 2	

Timecode Option	Description
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Adjusting the Antex Mixer Display

The Antex Mixer contains many components and can display a large amount of information. The program has been designed to allow you to reconfigure it so that only the components of your choosing are displayed. This section will describe the process for modifying the displayed components of the Antex Mixer.

Each of the components in the Antex Mixer (separated by a vertical white line) shown below can be added or removed; four additional record and play controls can also be added (if your monitor can display at 1024 x 768 pixels).

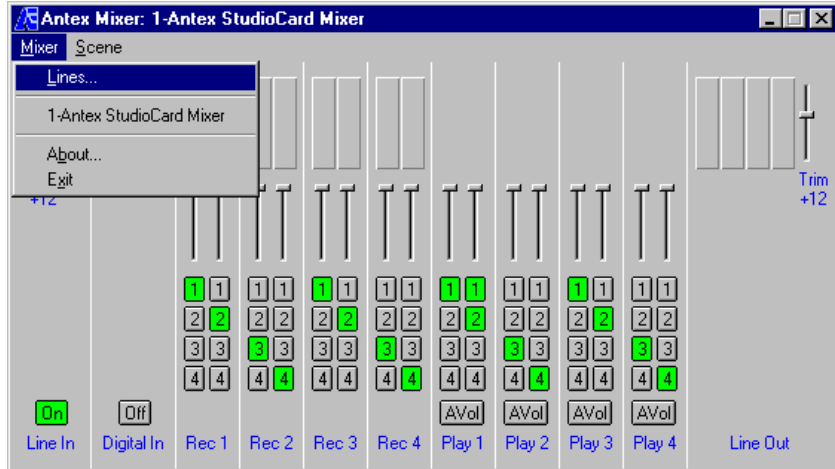


Due to the range of screen resolution limits our customers use, the default display for the Antex Mixer is set to show fewer items than are shown in the figure above.

To change the Mixer display, follow the instructions below.

Step 1

Start Antex Mixer, then select **Lines...** from the **Mixer** menu.

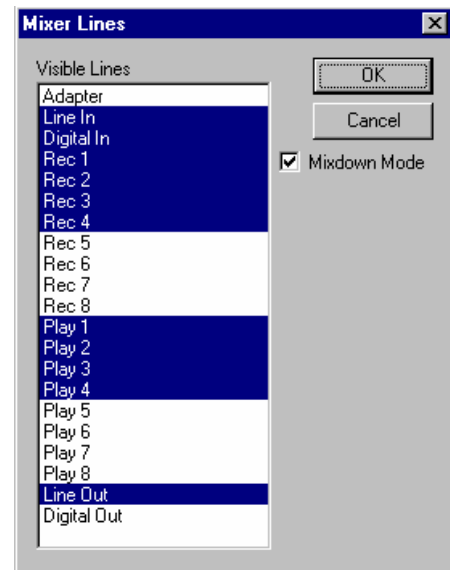


Step 2

The Mixer Lines window appears.

Select and deselect the items to appear on the Mixer screen, then click OK when done.

Experiment with selection and display of the various Lines of the Antex Mixer. Please leave the Mixdown Mode checkbox (under the cancel button) checked at this time, it will be explained later.



You will find that displaying all of the lines results in a rather large display. The Antex Mixer allows you to display only what's important to you.

Note

When a line is not selected and displayed, the function it represents may not be available to application software. For example, if the Digital In is not part of the active Mixer display, you may not be able to record digitally.

Note

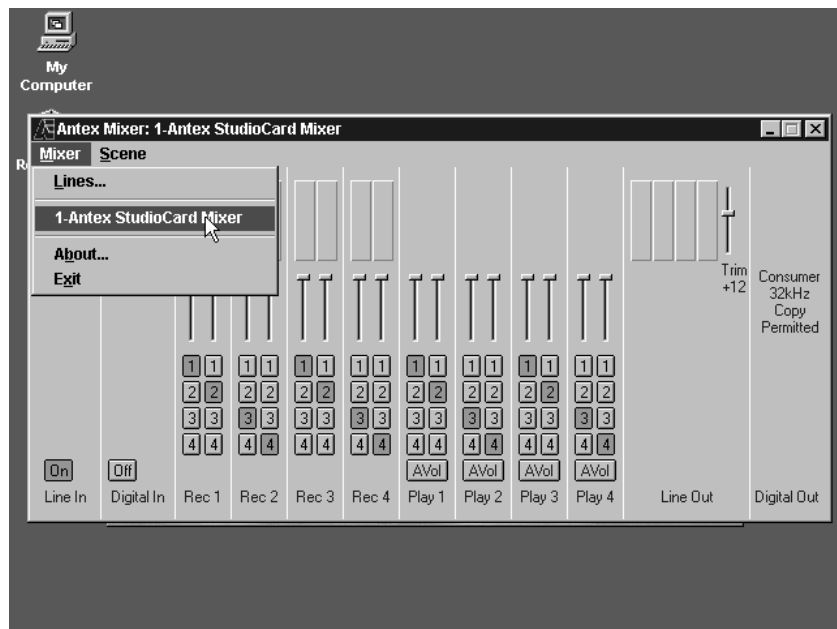
Displaying the entire Antex Mixer main screen requires a display resolution of 1024 x 768 pixels. As some monitors run only at 640 x 480 or 800 x 600, the default configuration for the Antex Mixer main screen does not contain all possible components. When adding components to the display, if your monitor is not setup to display 1024 X 768 resolution, some portions of the Mixer may appear off the screen. Changing your screen resolution is accomplished via the Widows Control Panel/Settings/Display/Settings Menu.

A complete description of the Antex Mixer main screen display and controls is provided in *Mixer Controls and Indicators* on page 3-5.

Selecting the Active Antex Mixer

The Antex Mixer can be used with up to four physical *StudioCards*. To select the *StudioCard* for which the **Mixer** is active, click on **Mixer** in the menu bar; then select **1-Antex StudioCard Mixer** through **4-Antex StudioCard Mixer**. The figure below illustrates the **Mixer** as it appears with only one card in the system. Note that the title bar also reflects which card the mixer has been configured to control. The **Mixer** program may be opened more than once, allowing a separate display for each card in your system.

If there is only one *StudioCard* installed, the Antex Mixer will automatically default to **1-Antex StudioCard Mixer**.



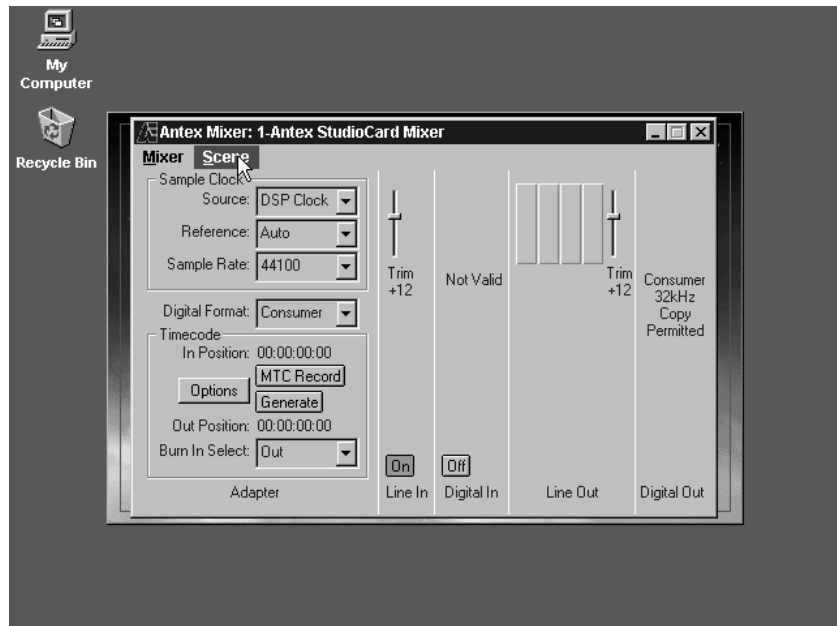
Saving Antex Mixer Settings

The **Scene** menu allows you to save Mixer settings for use at a later time. **Scene Save** allows you to name the Mixer setup, storing it in the system registry. **Scene Restore** allows you to recall a previously saved Mixer setup by name.

To save a Mixer setting, perform the following steps:

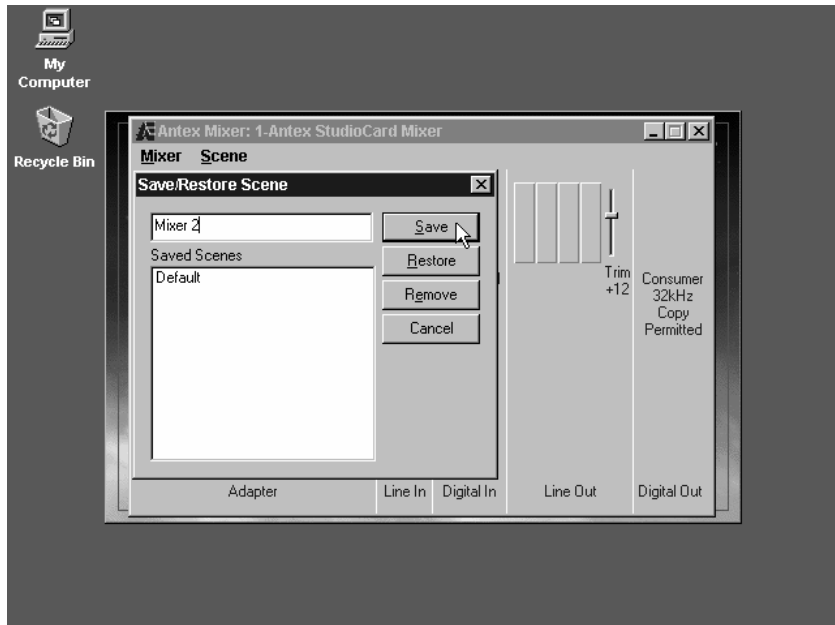
Configure the Mixer the way you want to save it.

Click the **Scene** menu, as illustrated below.



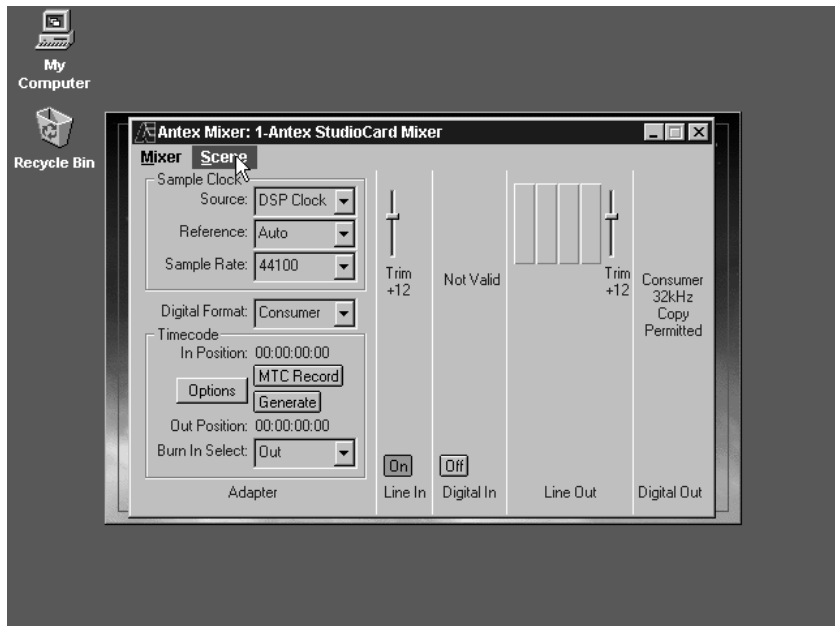
The **Save/Restore Scene** dialogue box will appear.

In the **Save/Restore Scene** dialogue box, type the name for the Mixer configuration you are saving (Mixer 2); then click on **Save**. The current Mixer configuration will be saved to the name you typed in.

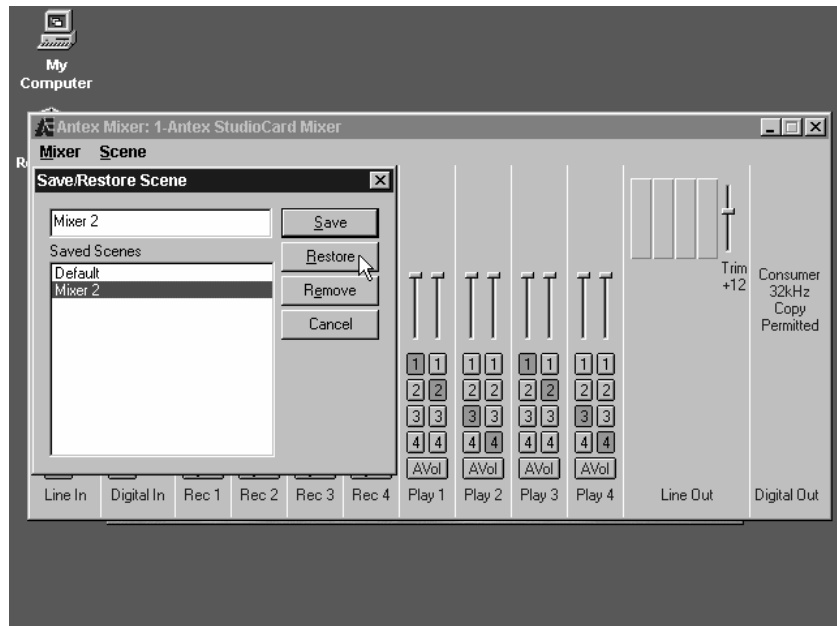


Recalling Saved Mixer Settings To recall a saved Mixer setting at any time, perform the following steps:

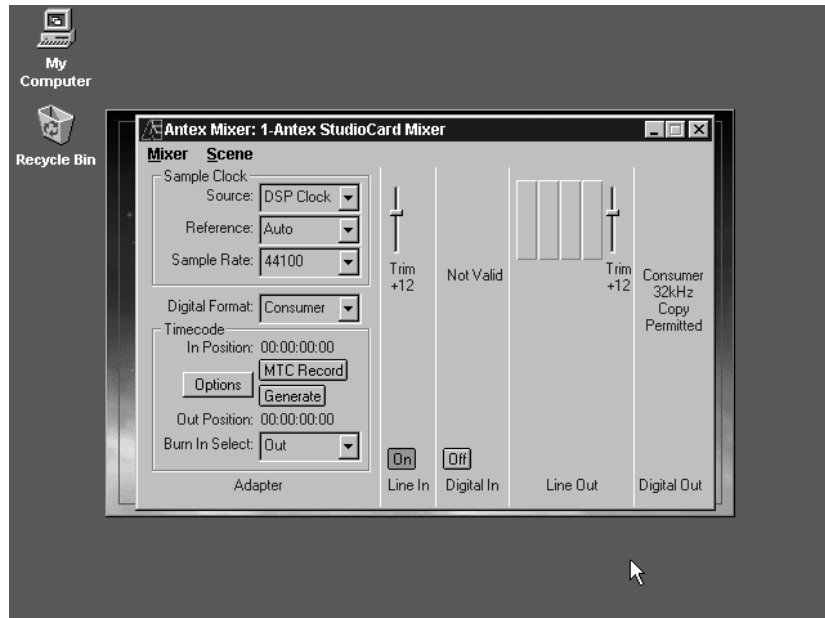
Click the **Scene** Menu bar.



The **Save/Restore Scene** dialogue box will appear. Select the saved Mixer configuration name; then click **Restore**, as shown below.

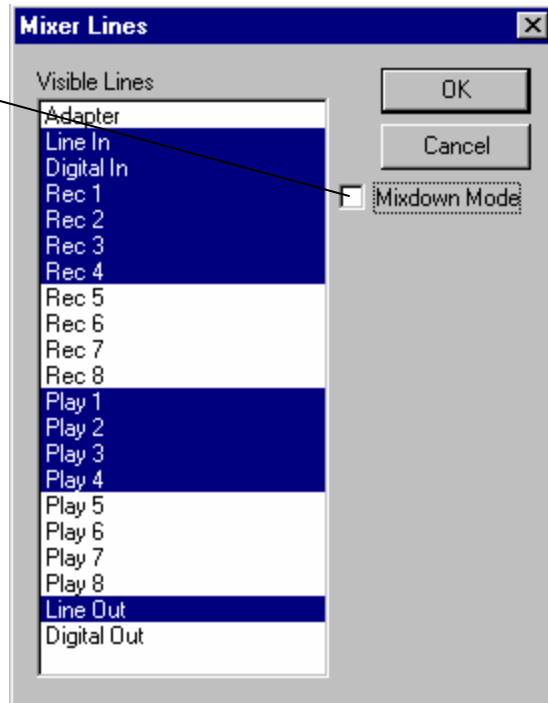


The previous configuration will be restored.

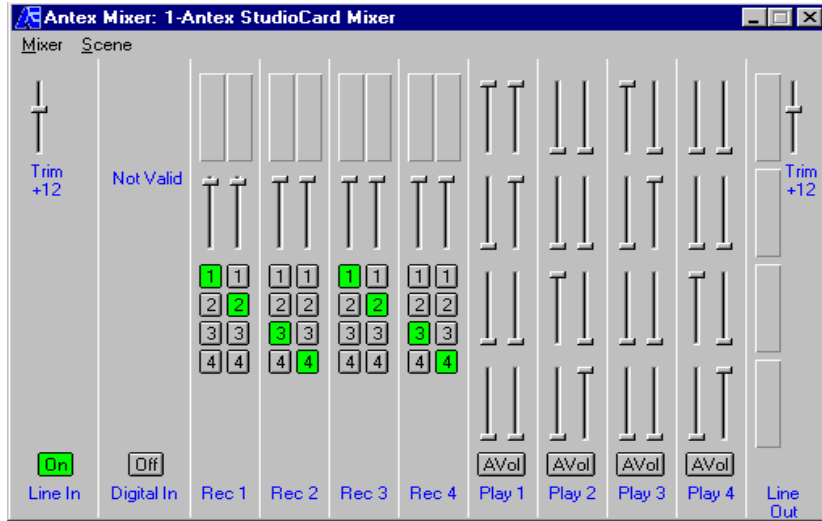


Non-mixdown Mode All pictures thus far have shown the Antex Mixer in “mixdown” mode. A second mode of operation providing greater control of a devices volume and its mappings to each physical output is the “non-mixdown” mode.

To switch to “non-mixdown” mode, click the **Mixdown Mode** checkbox to turn the checkmark off, then click “OK.”



The **Mixer** display will change, as is illustrated in the figure at the top of the next page.



The volume sliders for the play devices appear in four rows, as do the meters in the Line Out section. Each row, including meter, corresponds to a physical output of the *StudioCard*. The top row is output 1, the bottom row output 4.

This configuration allows you to control the level of each playback device independently for each physical output. For example, the screen capture illustrates the following:

- ✍ Play 1- left output 1 full volume, right output 1,2 full volume
- ✍ Play 2- left output 3 full volume, right output 4 full volume
- ✍ Play 3- left output 1 full volume, right output 2 full volume
- ✍ Play 4- left output 3 full volume, right output 4 full volume

This example shows the volume sliders in their full on or full off position; they may also be set at any volume in between.

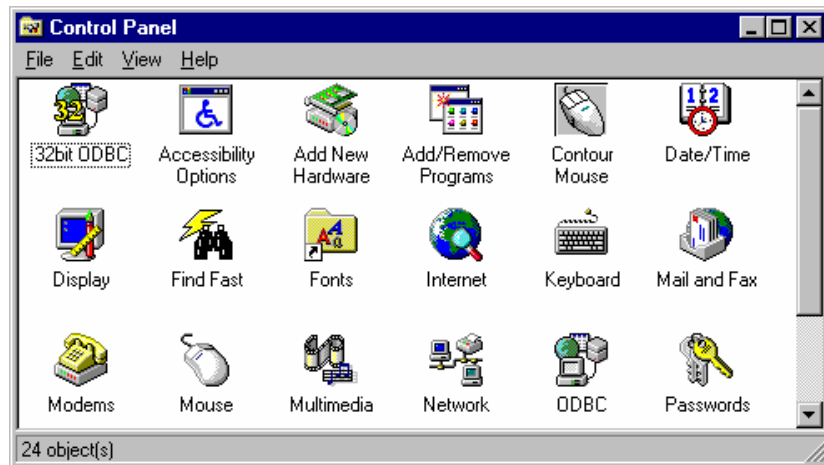
Two-Device / Four-Device Operation

During installation of the Antex driver, Antex Demo and Antex Mixer software, the *StudioCard* and Antex Mixer are automatically configured for eight-device operation. The *StudioCard* and Antex Mixer may also be configured for either two-device or four-device operation. The main benefit of reducing the number of devices is a simplified display of available devices in various application programs.

When configured for either two-device or four-device operation, the *StudioCard* and Antex Mixer may (optionally) be set for simultaneous record-play (SRP) operation as described later in this chapter. SRP operation is not possible when eight-device configuration is set.

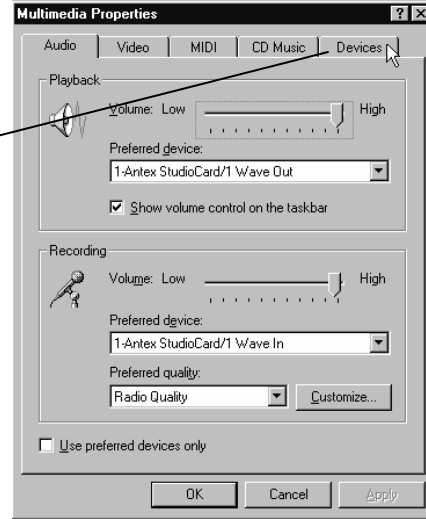
To change the configuration to either two-device or four-device operation, use the following procedure:

Open the Windows NT/2000 Control Panel and double click the **Multimedia** icon.



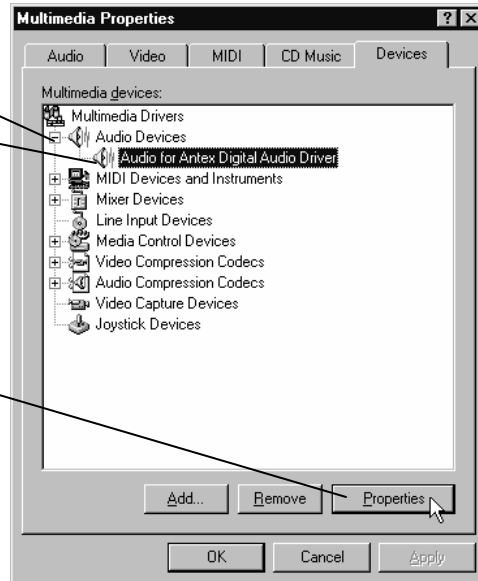
The Multimedia Properties dialogue box opens, as shown at right.

Click the **Devices** tab in the Multimedia Properties dialogue box.



Double click **Audio Devices** and highlight **Audio for Antex Digital Audio Driver**.

Then click the **Properties** button.



In the **Antex Digital Audio Driver Properties** window, click the **Settings** button.

The Antex Audio Driver Setup dialogue box will open, as shown in the figure below at right.

Unless the setting has been changed since the original installation, eight devices will be selected and the "SRP" feature will be grayed out.

Select either two-device or four-device operation by clicking on the **2** or **4** radio button under Devices, **but do not click OK. Continue on for a description of Simultaneous Record-Play.**

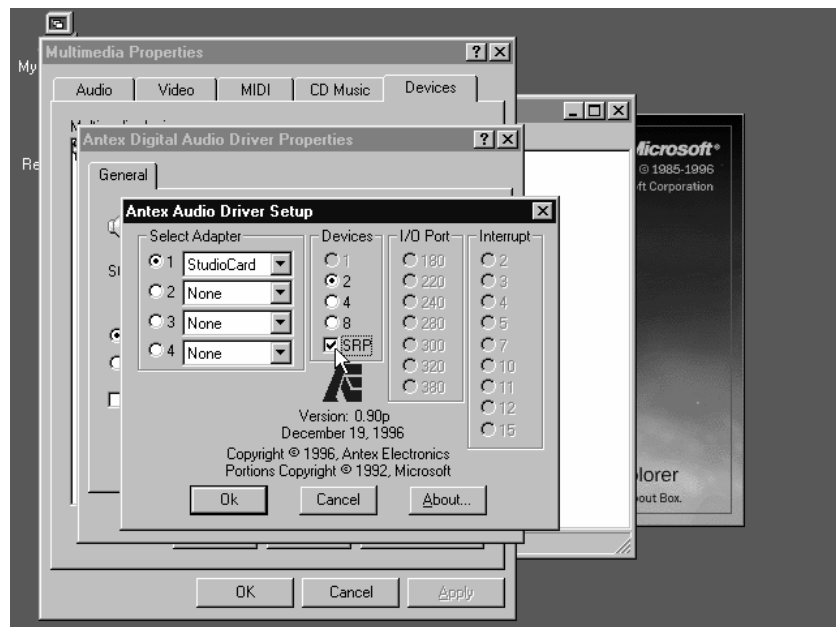


Simultaneous Record-Play (SRP) Mode

There are two ways for application programs to view the devices on the *StudioCard*. One way is to consider each device on the *StudioCard* as a device that can *either* record *or* play. The second way is to consider each device on the *StudioCard* as a device that can *both* record *and* play.

The *StudioCard* is designed to support both modes of operation. If your application views each device as one that can *either* record *or* play, then the *StudioCard* should be set for non-SRP mode. If your application views each device as one that can *both* record *and* play, then the *StudioCard* should be set to SRP mode. Note that SAW Plus from Innovative Quality Software requires the *StudioCard* be set in SRP mode.

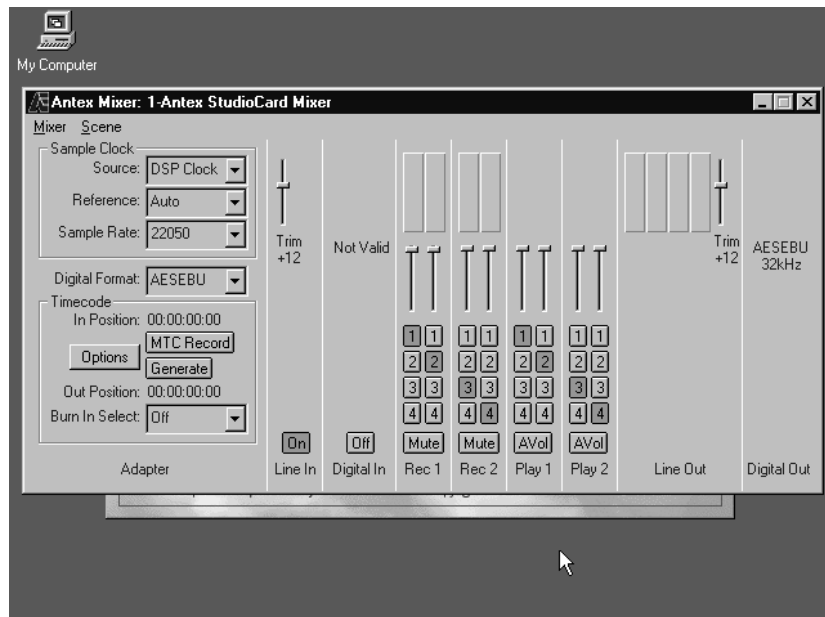
To place the *StudioCard* and Antex Mixer into SRP mode, place a check in the SRP box of the Antex Audio Driver Setup window. Note SRP is only available for 2 or 4 devices.



This completes the selection of two-device or four-device operation and/or SRP mode. Close all open dialogue boxes and windows.

When SRP mode is selected, a new control button appears in the "Record" lines of the Antex Mixer. This is the "Mute" button. The Mute button will only be present when the *StudioCard* and Antex Mixer are set for SRP mode, and this can only occur in either two-device or four-device operating mode.

The Mute button allows you to mute the feedthru audio (going from the record device to the line outputs) while recording in Simultaneous Record-Play (SRP) mode. When in non-SRP mode, this control is not needed, as you can just turn down the play half of the device.



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