

## Chapter 2 ❖ Demo, Mixer and Meter

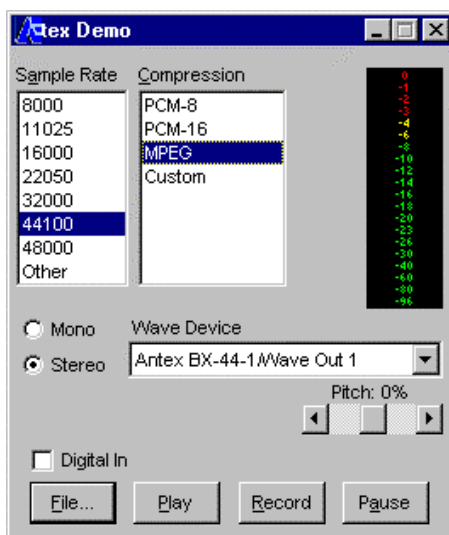
**Antex Demo** The Antex Demo allows you to record and play digital audio files on your hard drive. All files recorded or played by the Demo application are in Wave File format. It is also the perfect tool for verifying proper installation and functionality of your audio card by recording or playing back a simple audio file.

When you want to perform more advanced actions, such as mixing sounds from multiple sources, you will run the Demo simultaneously with the Antex Mixer. Whereas the Demo provides record and play functionality, it is the Mixer (described later in this chapter) that allows you to manipulate the audio. For example, using the Mixer you can change the volume of an audio file, select the audio input source or output destination, and capture audio in synchronization with video. See the section on the Mixer later in this chapter for a full list of its functionality.

### **Demo main window and features**

Shown below is the Antex Demo main window. Beginning on the next page is a description of each feature.

Figure 2-1 Demo main window for audio card model BX44



*MPEG not available with audio card LX44 or SC22*

*Digital In available with audio card BX44 only*

Table 2-1. Demo window feature descriptions.

Demo Feature	Description
Compression	In playback mode, indicates the compression method of the digitized audio signal. If the compression method is one for which the Audio card will function, but is not among the selections listed, "Custom" will be indicated. In record mode, choose either PCM-8 or PCM-16.
Digital In	Check ( <input checked="" type="checkbox"/> ) this box to ready the BX44 for digital signal input. When checked, the input channels 1 and 2 are routed from the digital in of the BX44 digital I/O cable. Digital In and analog inputs 1 and 2 cannot be used simultaneously. Leave this checkbox unchecked ( <input type="checkbox"/> ) for analog signal input.
File	Click this button to open an existing digital audio file or to create a new file.
Level Indicator	Displays the record (or playback) levels using a meter type display. 0dB is digital clipping and should be avoided.
Mono/Stereo	Click Mono for monophonic recording / playback. Click Stereo for stereophonic recording / playback.
Pause/Restart	Works exactly like the "pause" control on an audiocassette recorder. Indicates Pause when in record or playback mode; Restart when in pause mode. Also used to synchronize playback of multiple devices, as described later in this chapter.
Pitch 0%	Playback pitch adjustment. Slide to the left to reduce playback speed; to the right to increase playback speed by the percentage indicated. This feature is operational <u>only during playback</u> , not recording. The available range of adjustment varies depending on the sample rate in use. Example: When playing back at 44.1 kHz, the pitch may be adjusted from -86% to +13%.
Play/Stop	Works exactly like the "play" and "stop" controls on an audiocassette recorder. Indicates Play in stop or record modes; Stop in play mode.
Record/Stop	Works exactly like the "record" and "stop" controls on an audiocassette recorder. Indicates Record in stop or play modes; Stop in record mode.
Sample Rate	When in playback mode, indicates the sample rate of the digitized audio signal. Sample rate displays as "Other" when you are using a sample rate other than those listed. When in record mode, choose the desired sample rate by clicking on a listed rate.
Wave Device	Indicates which digital audio card is currently in use (wave device). When more than one such device is present, click the down arrow to display and choose another device.

### **Synchronizing playback of multiple devices**

- Step 1** Start one instance of the **Antex Demo** application for each device you wish to synchronize. (You should have one Antex Demo window running for each device you wish to synchronize.)
- Step 2** Select **Pause** on each device/window (**Pause** changes to **Paused**).
- Step 3** Select **Play** on each device/window (**Play** changes to **Restart**).
- Step 4** Select **Restart**. on each device/window.

When "Restart" is selected on the last device/window, all devices will start together. The meters will be active and the counters will count. The meters in each instance of the **Antex Demo** display the levels of outputs 1 and 2 only.

### **Digital feedthrough mode**

It is occasionally useful to determine and set the levels of an audio source without writing to a file. The **Antex Demo** application allows you to do this by digitizing an analog input, and playing it back directly to an output. This mode of operation is referred to as Digital Feedthrough Mode (DFM) as the signal is actually passing from the A/D to D/A converters on the input and output. This is analogous to separate record and play heads on a tape machine for true monitoring of the recorded material. The sound output is an exact representation of the data available for recording to the hard drive, whereas Analog Feedthrough is not.

By default, the data from each record device is digitally fed to its playback device so you may monitor the material recorded. Disabling DFM is described in Chapter 3, Running in Simultaneous Record-Play Mode.

To enter DFM, follow the instructions below.

- Step 1** Start Antex Demo.
- Step 2** Click **File**, then type a name for a temporary file.
- Step 3** Click **Pause**.
- Step 4** Click **Record**.

Digital Feedthrough Mode is now enabled. The meters will be active but the counter to the left of the Pitch % control will not count; no data is actually being written to the disk.

Levels can be set using the Antex Mixer described later in this chapter. This includes external volume controls on the input source.

- Step 5** To exit Digital Feedthrough Mode, click **Stop**.

### Antex Mixer

The Antex Mixer is used in conjunction with other software applications, either the Antex Demo or a non-linear video editing program (such as In-Sync's Speedrazor and Innovative Quality Software's SAW Plus) to configure the audio card for audio recording. Default settings in the Mixer are automatically defined based on the model audio card to install.

The settings you specify in the Antex Mixer define how the audio card operates. It is a useful tool that 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.

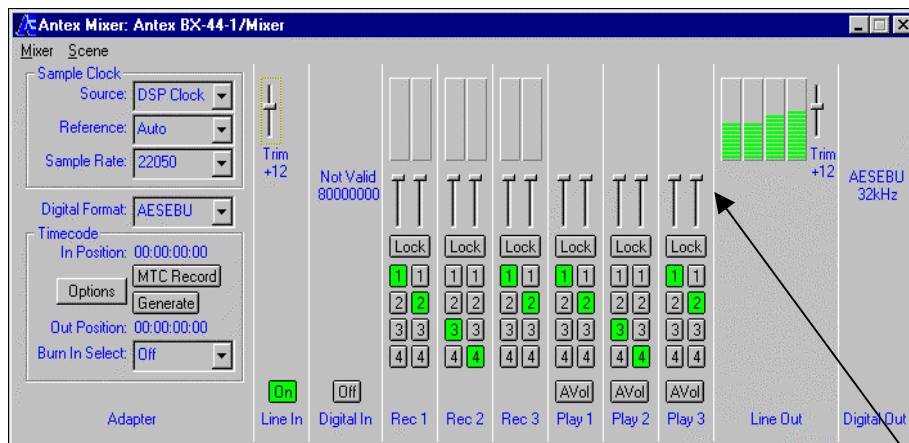
Using the Mixer you can:

- Set sample clock reference source and sample rate for input sources
- Control all timecode and screenburn functions
- Control and rout physical inputs and outputs to logical devices used by Windows NT
- Set the digital I/O format (BX44 only)
- Set input and output trim levels and relative volumes for true Mixer operation

### Mixer main window features

Shown below is the Antex Mixer main window for the BX44; on the next page is the default Mixer main window for the LX44, LX22m, and LX24m model audio cards. Immediately following is a description of each control in the Mixer.

Figure 2-2 Default Mixer main window configuration for audio card BX44



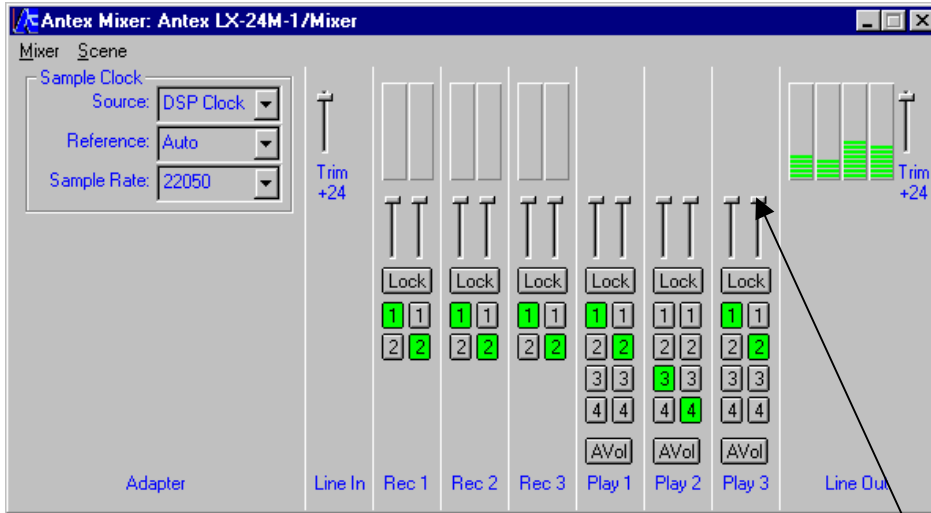
Click **Lines** in the **Mixer** menu to add and remove controls and indicators on the Mixer window.

Go to the **Mixer** menu and click the card you want to activate when multiple audio cards are installed.

Click the **Scene** menu to save and name the current window configuration.

Right click a slider to set channel relative to other channels.

Figure 2-3 Default Mixer main window for audio card models LX22m, LX24m and LX44\*



\* The LX44 Mixer main screen includes four (4) record/play displays.

Click **Lines** in the **Mixer** menu to add and remove controls and indicators on the Mixer window.

Go to the **Mixer** menu and click the card you want to activate when multiple audio cards are installed.

Click the **Scene** menu to save and name the current window configuration.

Right click a slider to set channel relative to other channels..

### Record and playback controls and indicators

A simplified display of the Antex Mixer is shown below; only one record and display control is shown. Each of these controls and indicators is described in the table on the next page.

Figure 2-4 Mixer record and playback controls and indicators

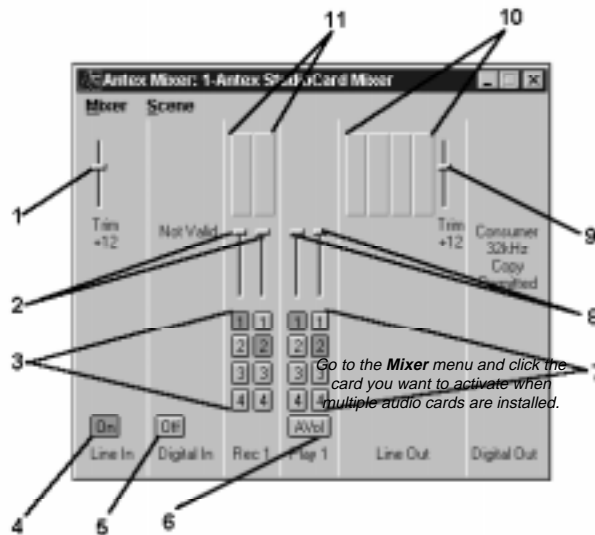


Table 2-3 Mixer record and playback controls and indicators descriptions

Rec/Play 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.
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 audio card
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 BX44 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 audio card 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.
10 Line Out Output Level Indicators	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.
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).

### **BX44/SC22 Adapter line controls and indicators**

The Adapter controls shown below can be added to the Antex Mixer main window for the BX44 and SC22 mode only, 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 (followed by a description of each of the controls and indicators displayed when you click the Timecode Options button #15).

Figure 2-5 Mixer adapter line controls and indicators for BX44

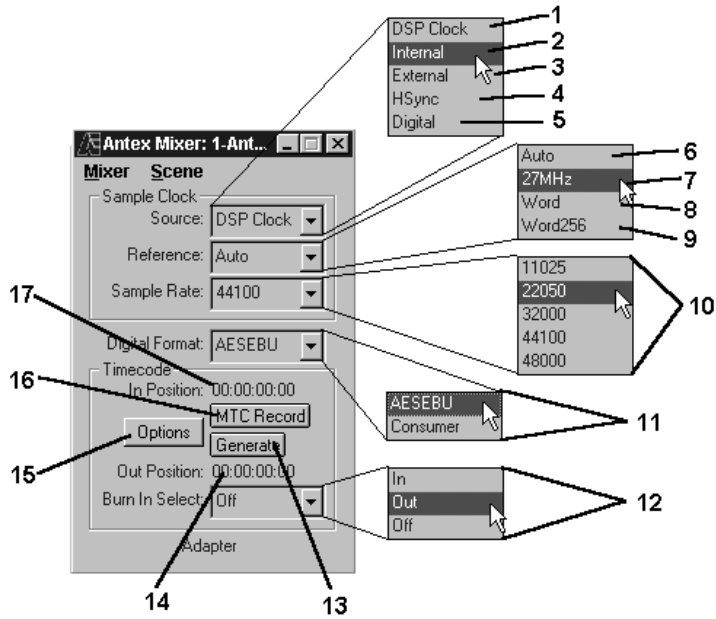


Table 2-3 BX44/SC22 Mixer adapter line controls and indicators descriptions

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 audio card. 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 gold CLOCK IN connector on the top of the audio card internal to the computer.
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 audio card. 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 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 ( <b>PFx not installed</b> ). 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 audio card'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.

**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.**

### Mixer timecode controls for BX44 and SC22

The Adapter Timecode options shown below (BX44 only) 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.

Figure 2-6 Mixer adapter timecode controls for BX44

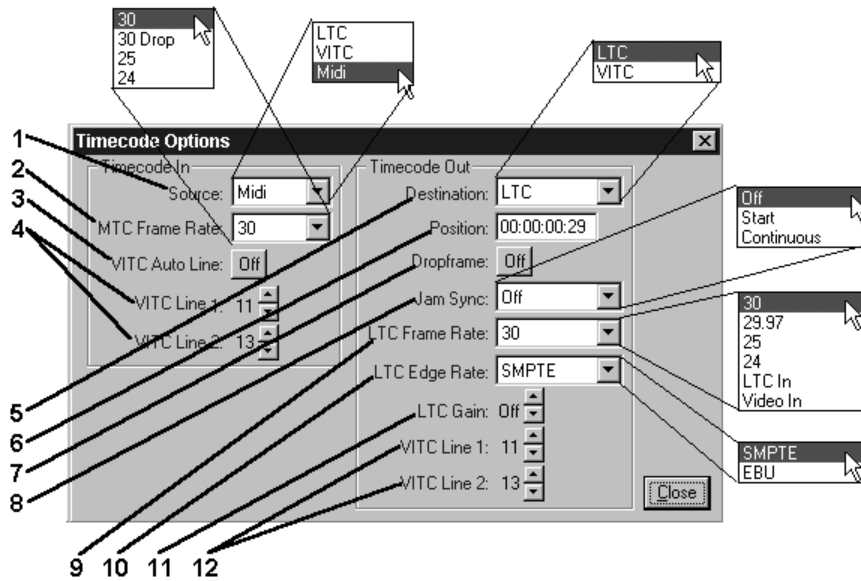


Table 2-4 BX44/SC22 Mixer adapter timecode controls descriptions

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 card.
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 card.
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 VITC Line 2	Selects the two lines to encode VITC data on the video feedthrough. Range is 10 to 40.

**Antex Meter** The Antex Meter, as shown in the figure below, is a read-only tool displaying audio record and playback levels. The Meter window can be resized like any Windows window.

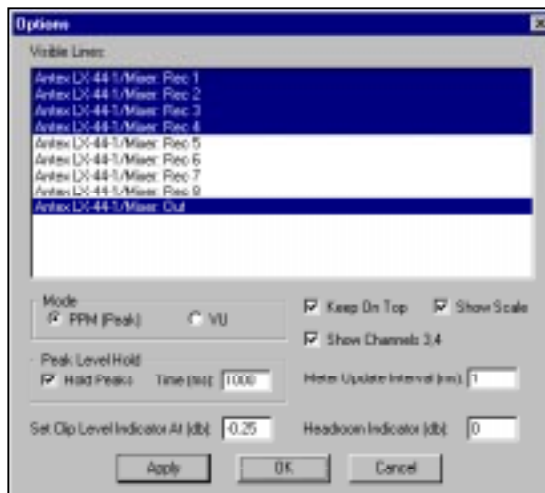
Figure 2-7 Antex Meter display (temporary graphic)



### Meter options

You can add and remove the number of meters displayed in the Meter simply by right clicking anywhere on the Meter window, then clicking **Options**. Shown below is Meter Options window. Beginning on the next page is a description of each option.

Figure 2-8 Antex Meter options window



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Table 2-5 Meter options descriptions

Meter Option	Description
Visible Lines	Click to select/deselect the channels appearing on the meter.
Mode	Peak or VU response for meters
Peak Level Hold	Determines how long the largest peak level is held before redisplaying.
Set Clip Level Indicator	Can be set from -1 to 0 dB full scale to allow indication of signal levels close to or actually clipping.
Keep On Top	Check to keep the meter display always on top of all other windows.
Show Scale	Check to display meter scales.
Show Channels	Check to show channels 3 and 4. Clear to show channels 1 and 2 only.
Meter Update Interval	Value specified determines how frequently the meter levels are updated. By default, Meter Update Interval is set to XX milliseconds.
Headroom Indicator	Changes peak of display to number entered, ie. moves full scale from 0dB to a number. The actual voltage that causes clipping is unchanged, just the displayed scale is modified.