Instruction Manual

Tektronix

Profile LVS Event Management System

LVS 100

LVS Live Controller

LVS Basic Software

LVS ESW

LVS Enhanced Software Upgrade

This document applies for software version 2.2E

First Printing: August. 1997

CE

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This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interface Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limits applicables aux appareils numériques de la classe A préscrites dans le Règlement sur le brouillage radioélectrique édicté par le ministere des Communications du Canada.

FCC Class A device

The Profile LVS Live Controller described in this manual generates and uses radio frequency energy. If it is not installed and used properly in strict accordance with Tektronix' instructions, it may cause interference with radio and television reception.

This equipment has been tested and verified to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which cause the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by Tektronix can affect emission compliance and could void the user's authority to operate this equipment.

Declaration of Conformity

Tektronix, Inc., Video and Networking Division, declares on 1 November, 1996, under our sole responsibility that the Profile LVS Live Controller to which this declaration relates, is in conformity with the following standard(s) or other normative documents:

EMC Directive 89/336/EEC

EN55022 — Limits and Methods of measurement of radio interference characteristics of Information Technology Equipment.
Class A level

EN50082–1 1992 — Electromagnetic compatibility Generic immunity standard Part 1: Residential, commercial and light industry.

Environmental Phenomena	Test Specification	Basic Standard
Radio–Frequency Electromagnetic Field	27–500 MHz 3V/m (unmodulated)	IEC801–3
Electrostatic Discharge	8kV (charge Voltage)	IEC801–2
Fast Transients common mode on Signal lines	0.5kV (peak) 5/50 Tr/Th ns 5kHz Rep. Frequency (for cables > 3 meters)	IEC801–4
AC mains ports	1.0kV (peak) 5/50 Tr/Th ns 5kHz Rep. Frequency	IEC801–4

Low Voltage Directive 73/23/EEC

EN60950 — Safety of Information Technology Equipment including Electrical Business Equipment (includes Appendix ZB)

Manual Revision Status

Profile LVS Event Management System System Instruction Manual revision status.

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General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it.

While using this product, you may need to access other parts of the system. Read the *General Safety Summary* in other system manuals for warnings and cautions related to operating the system.

Safety Precautions

Use Proper Power Cord

To avoid fire hazard, use only the power cord specified for this product.

Avoid Electric Overload

To avoid electric shock or fire hazard, do not apply a voltage to a terminal that is outside the range specified for that terminal.

Ground the Product

This product is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

Do Not Operate Without Covers

To avoid electric shock or fire hazard, do not operate this product with covers or panels removed.

Use Proper Fuse

To avoid fire hazard, use only the fuse type and rating specified for this product.

Do Not Operate in Wet/Damp Conditions

To avoid electric shock, do not operate this product in wet or damp conditions.

Do Not Operate in Explosive Atmosphere

To avoid injury or fire hazard, do not operate this product in an explosive atmosphere.

Product Damage Precautions

Use Proper Power

Do not operate this product from a power source that applies more than the voltage specified.

Provide Proper Ventilation

To prevent product overheating, provide proper ventilation.

Do Not Operate With Suspected Failures

If you suspect there is damage to this product, have it inspected by qualified service personnel.

Safety Terms and Symbols

Terms in This Manual

These terms may appear in this manual:



WARNING. *Warning statements identify conditions or practices that could result in injury or loss of life.*



CAUTION. *Warning statements identify conditions or practices that could result in injury by hot surface.*



CAUTION. *Caution statements identify conditions or practices that could result in damage to this product or other property.*

Terms on the Product

These terms may appear on the product:

DANGER indicates an injury hazard immediately accessible as you read the marking.

WARNING indicates an injury hazard not immediately accessible as you read the marking.

CAUTION indicates a hazard to property including the product.

Symbols on the Product

The following symbols may appear on the product:



DANGER
High Voltage



Protective Ground
(Earth) Terminal



ATTENTION
Refer to
Manual



Double
Insulated

Certifications and Compliances

CSA Certified Power Cords

CSA Certification includes the products and power cords appropriate for use in the North America power network. All other power cords supplied are approved for the country of use.

Compliances

Consult the product specifications for IEC Installation Category, Pollution Degree, and Safety Class.

About This Manual

This instruction manual covers the Profile LVS Event Management System (Basic and Enhanced Feature Set) and the LVS Live Controller.

The LVS Event Management System and the Profile™ professional disk recorder (Profile) utilize software based on Windows NT™. However, this manual does not describe Windows NT operations. If you are not familiar with those operations, please refer to Windows NT documentation prior to operating this product.

This manual consists of the following:

- **Section 1 Getting Started** — Describes the system configurations, and software/hardware installation.
- **Section 2 Tutorial** — Describes basic operating procedures, including system start up, system setup, operation and system shut down. By going through these procedures from the beginning to the end, you can quickly learn the basic operations of the system.
- **Section 3 System Configuration and Startup** — The system is designed to be operated after various configuration parameters have been set up. This sub–section describes the set up and start up of the system.
- **Section 4 Operating the System** — After the system is configured and started, you can operate the system using the Graphical User Interface (GUI) displayed on the screen and/or using the Live Controller. This section describes the function of the windows essential for GUI system operation.
- **Section 5 Set and Edit Applications** — Describes the operations and functions of the windows that assist the essential LVS windows described in the Section 4.
- **Section 6 Live Controller** — Describes the functions of the buttons, knob and T-bar, and the displayed status messages on the LVS Live Controller.

The following four sections are for servicing the LVS Live Controller:

- **Section 7 Preparation for Use** — Describes preparations for basic operating procedures of the LVS Live Controller for servicing. Also includes information about the key configuration.
- **Section 8 Lever Adjustment** — Describes calibration/adjustment of the T-bar.

- **Section 9 Maintenance —** This section is composed of the following major sub–sections:

  Inspection and Cleaning — Describes the information and procedures for inspecting and cleaning the Live Controller.

  Removal and Installation Procedures — Describes the procedures for removing and installing the modules.

  Repacking — Describes the information on repacking the Live Controller.

  Diagnostics — Describes the procedures for the internal diagnostics.

  Troubleshooting — Describes the information for isolating failed modules.

- **Section 10 Replaceable Parts —** Lists the replaceable modules.
- **Appendices —** Lists LVS specifications, Live Controller option and accessories, and specifications.
- **Glossary —** Lists special terms used in the manual.
- **Index —** An alphanumeric list of major topics in the manual.

Basic LVS 100 and Enhanced Software Feature Differences

The following tables list the differences of the implemented features between the Basic Feature Set and the Enhanced Software Feature Set.

Resources	Basic Feature Set	Enhanced Software Feature Set
2 Channels Rec/Play	Yes	Yes
1 Channel Rec/Play	Yes	Yes
VTR Emulation	Yes	Yes
Extra Channel	No	Yes
Mix Effects	No	Yes
Timeline Edit	No	Yes

Windows	Basic Feature Set	Enhanced Software Feature Set
Main Window	Yes	Yes
GUI Controller Window	Yes	Yes
Scene Windows	Yes	Yes
Highlight Window	No	Yes
Playlist Window	No	Yes
Library Window	No	Yes
Timeline Windows	No	Yes
Audio Monitor Windows	Yes	Yes
Preview Windows	No	Yes
Scene Information Windows	No	Yes
Timecode Offset Window	No	Yes
Current Resource Information Window	No	Yes

Summary of New Features in Version 2.2E

The features listed below are those developed in the LVS software version 2.2E from version 1.50E or 1.04E.

New Windows

- **Launcher**

  The Launcher allows you to quickly open and close the other LVS windows. Click on the button representing a window to open it quickly, and click on it again to close the window.

- **Timeline Window**

  In the Timeline window, a timeline list is created, consisting of IN and OUT points, play speed, audio split, etc. on each audio and/or video track for each event in a timeline. This window manages more complex events than those in the Playlist window.

- **Scene Information Window**

  The scene informations such as name, playing speed, IN point, OUT point, fade-in, fade-out, audio swap, etc. can be edited.

- **Current Resource Information Window**

  The controls of the LVS from GUI, Live Controller and/or Remote can be enabled or disabled.

- **Timecode Offset Window**

  You can let the LVS calculate the timecode offset between internal and external timecode, or you can set an arbitrary timecode offset according to your needs.

Other New Features

- **Direct Editing**

  The scene name and comments about a scene can be edited directly in the List Display page of the Scene, Highlight and Library windows.

- **Creating Packaged Playlists**

  After creating a playlist in the Playlist window, it can be registered into the Highlight window as a packaged playlist.

- **Mix.Effects (Option)**

  Installing a Mix/Effects card in the Profile system allows you to set mix effects such as dissolve on each event and/or over each group in the Playlist window.

- **Manual Synchronization**

  Synchronization can be adjusted manually in the Controller window to lock the output signal from the Profile system to an external signal

- **Setting Remote Control Information**

  Use of a remote control other than the Live Controller can be set enabled for each RS-422 port.

- **No More Limitations in Configuration Window**

  Timeline Edit and Mix Effects resources can be assigned and configured.

  Timecode source can be selected.

  PB or EE can be specified at outputs.

- **Mute in Var Operation**

  Mute mode can be set in the Configuration window, which suppresses audio outputs during VAR operation.

Getting Started

Overview

In live event coverage, production decisions must be made quickly in response to the dynamic nature of sports and news. Production equipment must be fast, reliable, flexible, and, most essentially, easy to use. The new age of digital disk recording of video, led by the Profile PDR, offers:

- High quality digital recording of video and multi–channel audio.
- Multi–channel I/O.
- Nearly instantaneous random access to recorded material for instant replay or slow motion replay.
- Delayed playback for censorship or time–shifting for regional feeds.
- Scene sequencing.
- Synchronized multi–camera record and playback.

. . . and much more.

These features are vital to today's fast–paced coverage, and they encourage the flexibility to create programming with a new look and style. By fully utilizing the PDR technology, high speed response to the coverage situation is possible. Analysis that had to wait until the end of an event in the VTR realm, can now be ready before the event has come to an end. The Profile LVS Event Management System from Tektronix can respond to all these needs with a complete set of tools. Tools that provide production with reliability, speed, ease of use, and flexibility never before possible.

System Overview

The LVS Event Management System is a nonlinear, digital disk based recording, editing, and playback system with various functions designed for sports, news and other applications. The system uses a Profile digital disk recorder as the record/play device and provides easy control through the dedicated LVS Live Controller and the Graphical User Interface (GUI).

The LVS Event Management System provides the following functions:

- **Record/Playback —** Continuous recording and instantaneous cue-up, with instant replay and slow motion playback.
- **Highlight Edit —** Highlight material is quickly cut and edited with split audio capabilities.
- **Live Broadcasting —** Fast, flexible access to openings and commercials, and easily created playlists for sequential play out of clips. Commercials are continuously and/or sequentially broadcast in accordance with a predetermined transmission sequence.
- **Library Function —** Auto cue and auto play of scenes in the Library.
- **Delayed Transmission —** Allows dynamic program delays of 5 seconds or longer.

Features of the System

Direct operation via dedicated control panel

Most of the system functions can be controlled by the dedicated LVS Live Controller, making it suitable for live event broadcasting, where fast and accurate operations are required. The search function is very powerful, allowing scene number, event number, or time code access to material.

Simultaneous record/play functions

The Profile LVS allows you to begin playback of material before the recording of that material is completed.

Efficient use of disks

A powerful data management function keeps track of marked scenes for later use and will re–use unreserved disk space, optimizing the Profile storage capacity.

Intuitive Graphical User Interface (GUI)

Playlists and Highlight packets can be easily edited using drag–and–drop techniques with the mouse, keyboard, or GUI. Thumbnails make scene identification fast and accurate, and cue–up or playback can be done with a simple click of the mouse.

User defined configurations

The system can be configured for multiple purposes and applications, and each of the configurations can be saved for later use. For example, one configuration could allow two controllers to record and play material from two cameras independently, while another configuration could allow one controller to record and play, as well as edit images simultaneously.

High quality/High–capacity recording

Recording storage capabilities in the Profile system are as shown in Table 1–1. You can select high quality recording with the minimum compression target ration (3.5:1) that is equivalent to that of a professional studio VTR. If you need to store more material, select high–capacity recording with the maximum compression target ratio of 7:1. Additionally, the Profile LVS is compatible with Tektronix RAID products, which provide more extensive storage capacity where needed.

Table 1–1: Recording Sotrage Capabilities

Profile System	3.5:1	7:1
PDR 100 (32 GB)	1 hour 20 minutes	2 hours 40 minutes
PDR100 with PDX 103 (96 GB)	4 hours	8 hours
PDR 200 (72 GB)	3 hours	6 hours
PDR 200 with PDX 208 (144 GB)	6 hours	12 hours

Compact design

The Profile PDR occupies about the same space as a standard professional video cassette recorder. It can be used with flat panel displays and miniature keyboards in environments where space is a consideration, making the PDR ideal for mobile applications.

System Configuration Examples

The Profile LVS Event Management System software runs on the Profile PDR in the Windows NT environment. Set up is accomplished through the GUI with a mouse and keyboard, but most functions can be accessed by the Live Controller via the RS-422 port.

The system can be configured in various ways for specific applications, and configurations can be stored in the system for later recall. The following figures are examples of configurations. Since each production has its own requirements, the Profile LVS Event Management System is flexible and easy to reconfigure to meet changing needs. In Figure 1–1, two operators can be using Live Controllers for record and playback functions while a GUI is used to edit a highlights packet.

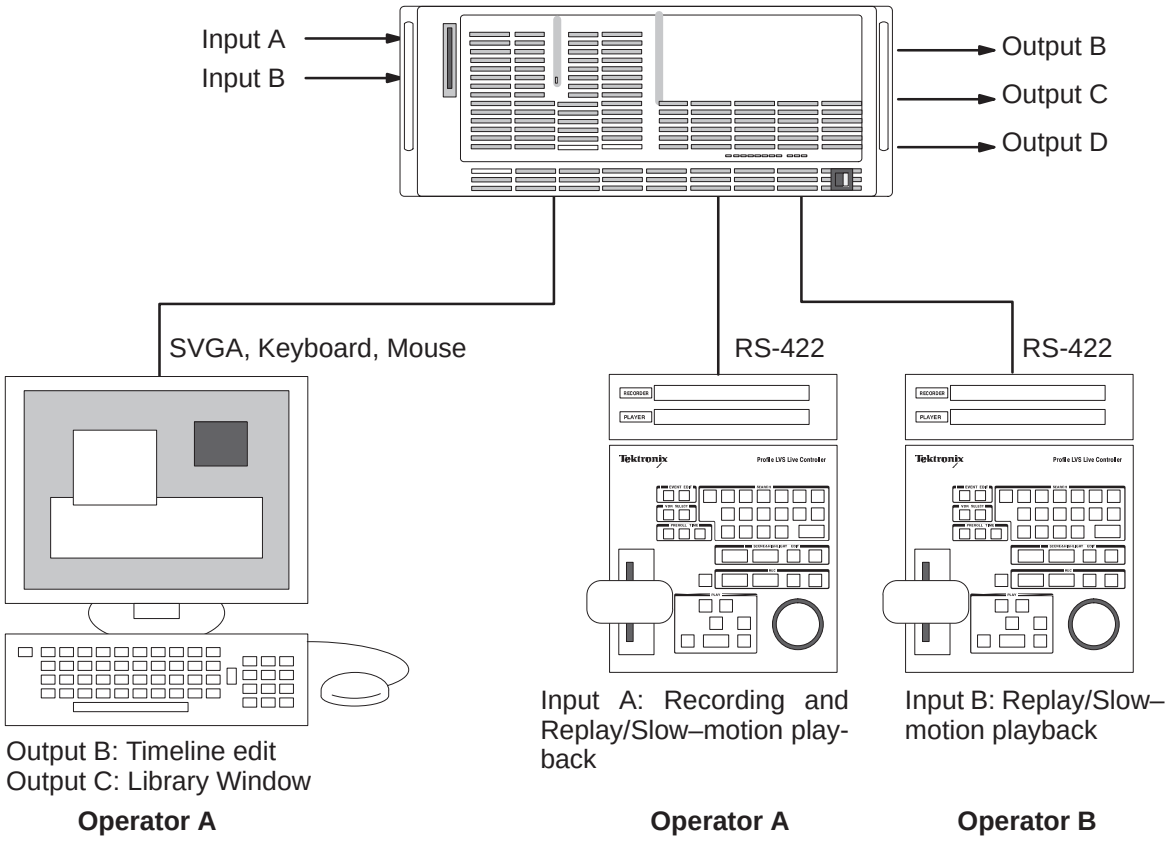


Figure 1–1: Configuration Example #1 (Two Operators)

Figure 1–2 shows a configuration consisting of one Live Controller, one SVGA monitor, one keyboard, and one mouse. In this configuration example, one operator can be editing scenes on the SVGA monitor while performing record and replay/slow–motion playback functions.

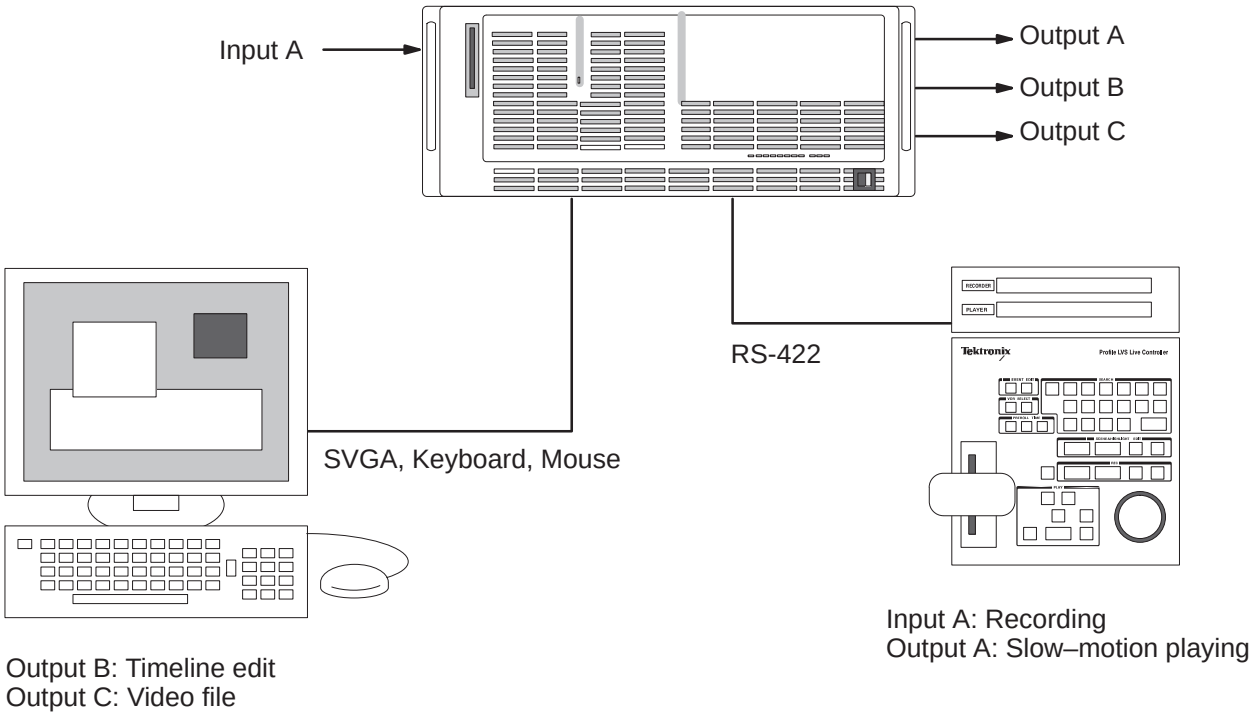


Figure 1–2: Configuration Example #2 (One Operator)

Figure 1–3 shows a configuration example where replay/slow–motion playback and edit operations are assigned to two operators.

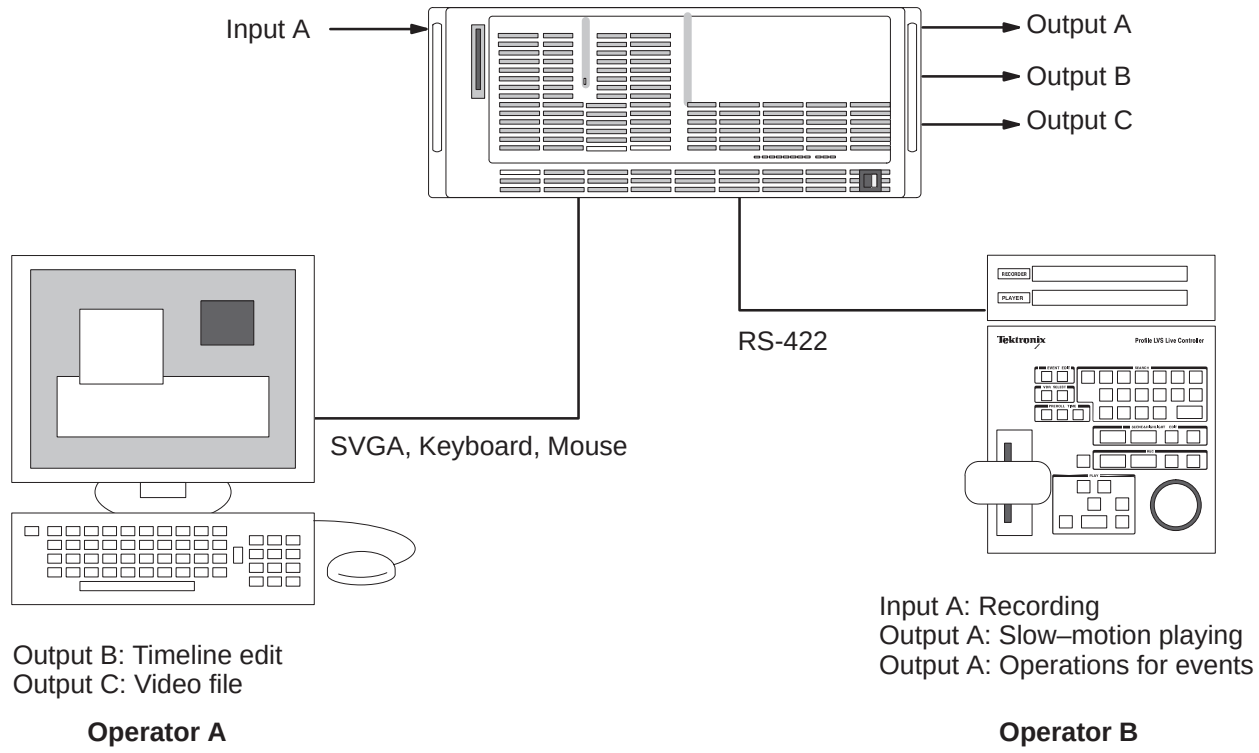


Figure 1–3: Configuration Example #3 (Two Operators)

Figure 1–4 shows a configuration example where one operator records and plays the scenes transmitted synchronously from two cameras. Another operator can perform timeline edit and video file functions with the GUI.

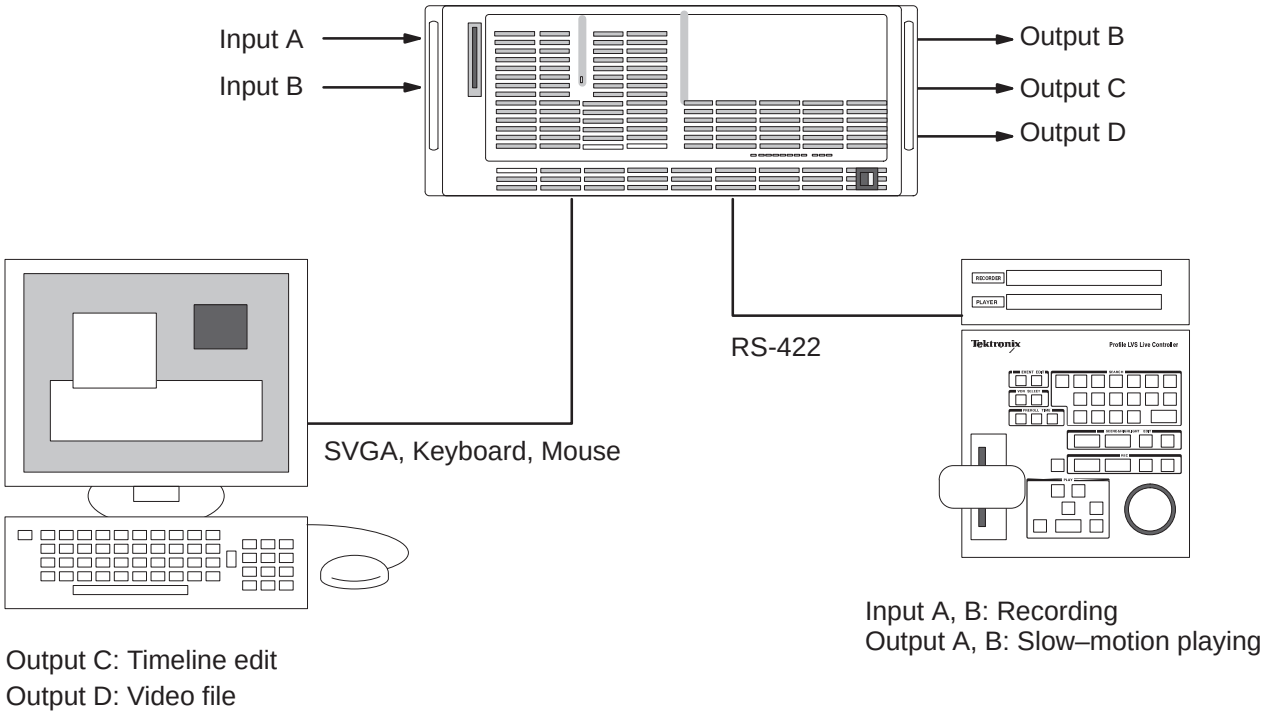


Figure 1–4: Configuration Example #4 (Two Operators)

The preceding examples show some of the flexibility of the Profile LVS Event Management System. Many other configurations are possible.

Recording Modes

The LVS provides the three recording modes, described here. These modes are available both in the LVS 100 Basic Feature Set and the Full Feature Set.

- 2-Channel Mode
- 1-Channel Mode
- VTR Emulation Mode

2–Channel Mode

Two channel mode allows you to play and record simultaneously. This requires two Profile codec resources: one resource for record and the other for play.

Features

While the record channel continues to record, you can create a scene by marking the IN and OUT points with MARK and ENTER/CUE UP, or with just ENTER/CUE UP. The marked scene can be replayed through the play channel immediately after the scene has been created. See Figure 1–5 for an example. The recording continues even during a slow–motion replay. To utilize disk storage efficiently, Manual or Auto clean can be used to free disk space not marked for replay.

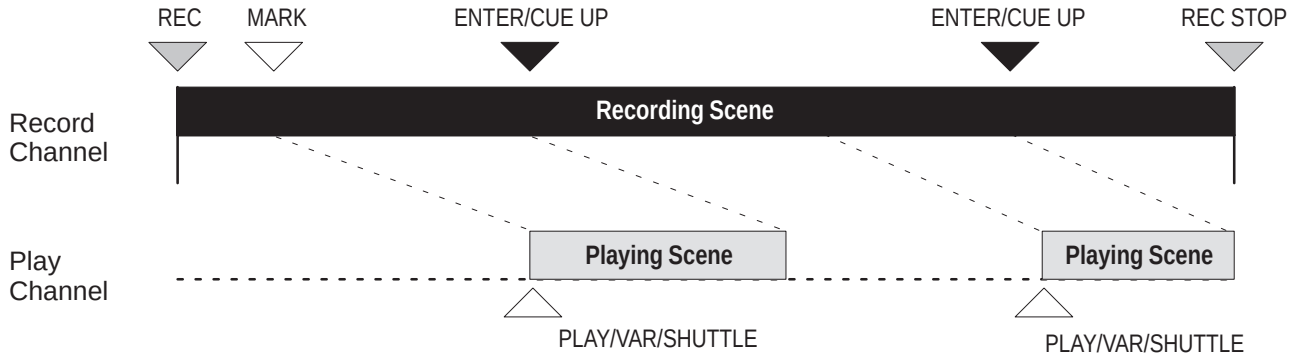


Figure 1–5: Simultaneous Record/Play Example

In the continuous record mode, all recorded material is available for replay whether or not marked as scenes. New scenes can be identified from the recorded material at any time.

1–Channel Mode

The 1–channel mode is used when operations which mimic a VTR are desired. One physical channel is used as both a record and play channel. Note that when playback is required, recording must end.

This channel is used for recording or playing, repeating record and play operations in turn (See Figure 1–6.). This provides the same features as conventional VTR recording. However, the system supports the dedicated Live Controller, which provides you with features unique to the nonlinear nature of the Profile PDR, including Highlight search, Time search, and Event control.

Features Record or play operations can be done with one channel. With a 4–channel Profile PDR, simultaneous recording of material from 4 cameras is possible.

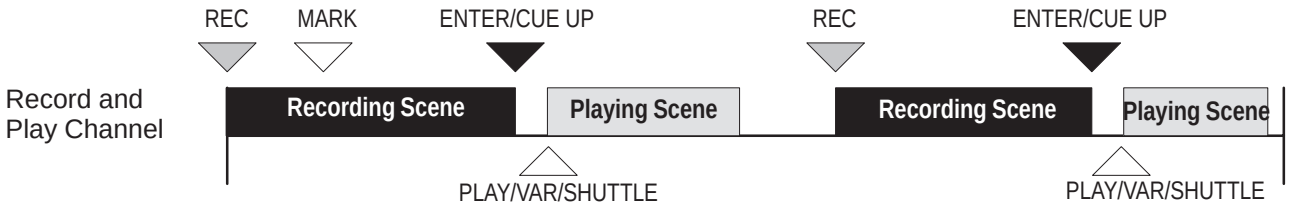


Figure 1–6: Example of Repeating Record/Play Operations

VTR Emulation Mode

The VTR emulation recording mode is equivalent to a VTR recording. It requires one Profile physical channel to record and play scenes. This recording mode is provided to support Sony DTR–3000. In this mode, you cannot use a Live Controller with this system.

Features The Sony DTR-3000 is supported. However, only limited support of LVS features are available, including immediate cue–up and the ability to respond by random access. (See Figure 1–7.)

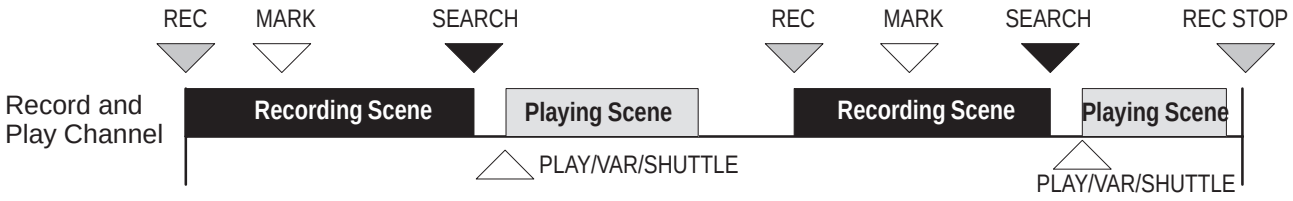


Figure 1–7: Example of VTR Emulation Mode

Installation

Connecting Equipment

CAUTION. *Read the* General Safety Summary *in the front of this manual or in the documentation of related equipment before installing equipment and before starting operations.*

Refer to the *Profile Installation Manual* to properly connect the input and output video signals along with the keyboard, mouse, and monitor.

1. Connect the SVGA monitor, the keyboard, the mouse, and the power cable to the Profile system.
2. Connect the RS-422 box, the Genlock, the LTC cable, and the video/audio signal cables.
3. Connect the RS-422 cable(s) between the RS-422 port(s) located on the rear panel of the LVS Live Controller (see Figure 1–8) and the RS-422 port(s) located on the rear panel of the Profile chassis. Ports will be assigned per the procedures given in *System Configuration* on page 2–3 or in *Configuration Window* on page 3–3. One or two RS–422 cables can be used for connection to the Profile PDR.

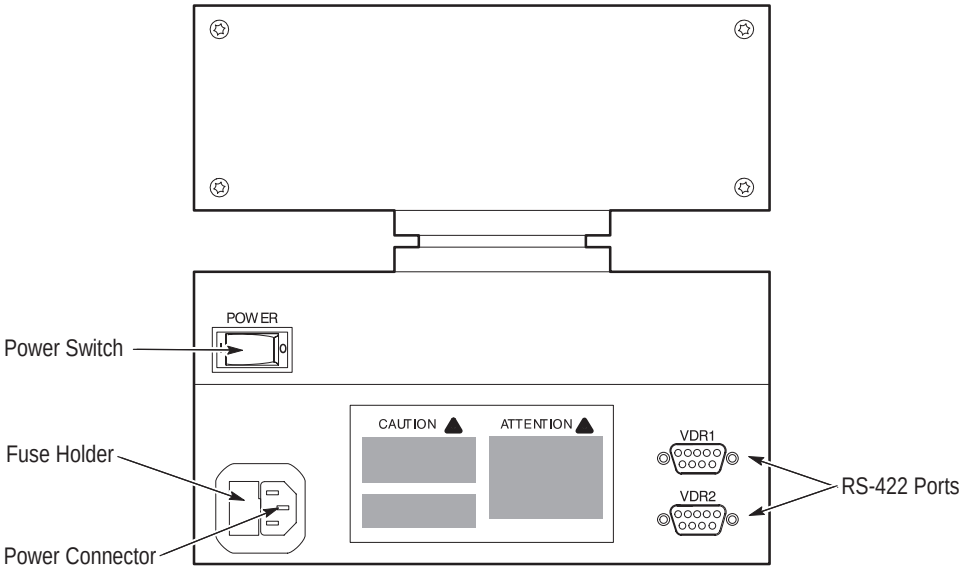


Figure 1–8: Rear Panel of the Live Controller

Initial Power On

Refer to the *Profile Installation Manual* for initial power on.

NOTE*. To prevent error conditions, make sure that at least the keyboard, mouse, and monitor are connected before applying power to the Profile.*

1. Turn on the power of the Live Controller (see Figure 1–8), the monitor, and the related equipment connected to the Profile.
2. Make sure you first turn the Profile rear–panel Power switch to ON, then turn the front–panel Standby/Power On switch to ON.

   When power is applied, the Profile system will begin its start up routine.

When system logon is complete and the Windows NT appears, proceed to the Software Installation instructions.

Software Installation

This Profile LVS software is shipped on floppy disks, so you will have to install it. You will also have to install the software when upgrading, or due to some other reason.

To install the software, perform the procedures described here. The procedures assume that physical installation was successfully completed and that you are familiar with Windows NT. Refer to *Connecting Equipment* on page 1–13.

Before going on to the installation, uninstall the previous version LVS software and data if you were using an older version of LVS software. If you were using the LVS Basic software and are upgrading to the LVS Enhanced software (LVS ESW) , you should uninstall the current LVS software and data.

If you are installing the LVS software for the first time, skip the uninstallation procedures, and go on to the installation procedures.

Uninstallation and installation procedures are slightly different between Windows NT 4.0 and 3.51. Use the procedures in the following sections to perform each of these tasks.

NOTE. *The LVS ESW software carries an encrypted serial number of the Profile it is to be run on. Therefore the LVS ESW software does not work on any other equipment but the Profile for which the system is purchased. If LVS software installation is going to be on a Profile other than the specified, contact your Tektronix representative.*

Uninstallation

For Windows NT 4.0 Users

1. Turn on the Profile system.

Logon as Administrator
User Name: admin
Password: triton

2. Determine the directory in which the LVS software is currently installed.

3. Remove the software by following these steps:

a. On the desktop, double-click **My Computer**, **Control Panel**, and then **Add/Remove Programs**.

b. In the Add/Remove Programs Properties box, select the directory determined in step 2, and then click **Add/Remove...**.

c. The Confirm File Deletion dialog box opens. Click **Yes** to confirm the deletion.

d. The Remove Programs From Your Computer message box appears. Click on **OK**.

e. In the Add/Remove Programs Properties box, click **OK** and then **Finish**.

4. Using **Explorer**, remove the directory determined in step 2.

5. Remove the data that the LVS created by following these steps:

a. Double-click **VdrPanel** on the desktop to open it.

b. Select **Delete clip** from Videoclip menu.

c. In the **Drive:**, select INT:/LVS/.

d. Select all the files and then click **OK**.

6. On the desktop, drag the LVS software shortcut to the Recycle Box.

For Windows NT 3.51 Users

1. Turn on the Profile system.

Logon as Administrator
User Name: admin
Password: triton

2. Determine the directory in which the LVS software is currently installed.

3. Remove the software by following these steps:

a. Open the LVS Event Management System group in Program Manager.

b. Double-click the **Uninstall** icon to remove the LVS software.

c. The Confirm File Deletion message box opens. Click **Yes** to confirm the deletion.

4. Using **File Manager**, remove the directory determined in step 2.

5. Remove the data that the LVS created by following these steps:

a. Double-click the **VdrPanel** icon in Program Manager to open it.

b. Select **Delete clip** from Videoclip menu.

c. In the **Drive:**, select INT:/LVS/.

d. Select all the files, then click **OK**.

Installation

In the following procedures, default settings are used. If you want to change the destination location, folder name, icon name, etc., follow the instructions which appear on the screen to make the desired changes.

NOTE. *If you're installing the LVS ESW software, you do not need to install the LVS 100 Basic software.*

For Windows NT 4.0 Users

1. Turn on the Profile system.

Logon as Administrator
User Name: admin
Password: triton

2. Insert DISK1 into floppy disk drive.

3. Double-click **My Computer** and then **3.5 inchs FD**.

4. In the floppy disk window, double-click the **Setup** icon to start the Setup Wizard, called *LVS Event Management System (Enhanced)* or *LVS100 Event Management System*.

5. Using the Setup Wizard, install the LVS software by following these steps:

a. In the Welcome box, click **Next>**.

b. In the Choose Destination Location box, click **Next>**.

c. In the Select Program Folder box, click **Next>**.

Only one floppy disk is required for the LVS 100 Basic software. In this case, skip the next step d and go on to step e.

d. When the Setup Needs The Next Disk box appears, change the floppy disk as prompted.

e. The Setup Complete box appears. Eject the floppy disk and then click **Finish**.

6. Create a shortcut by following these steps:

a. On the desktop, press the right button on the mouse to open the menu.

b. Select the **New** and then **Shortcut** from the menu to open the Create Shortcut dialog box.

c. Click on the **Browse**, then select **LVS Start.exe** in the list box.

d. Click **Open** to display it in the File name text box, and then click **Next**.

e. In the Select Title for the Program box, click **Finish**.

The **LVS Start** icon appears on the desktop. You can start the LVS software application by double-clicking the **LVS Start** icon.

For Windows NT 3.51 Users

1. Turn on the Profile system.

Logon as Administrator
User Name: admin
Password: triton

2. Insert DISK1 into floppy disk drive.

3. In File Manager, click the **A:** drive icon.

4. Double-click **setup.exe** in the A drive window.

5. In the floppy disk window, double-click **Setup.exe** to open the Setup Wizard titled *LVS Event Management System (Enhanced)* or *LVS100 Event Management System*.

6. Using the Setup Wizard, install the LVS software by following these steps:

a. In the Welcome box, click **Next>**.

b. In the Choose Destination Location box, click **Next>**.

c. In the Select Program Folder box, click **Next>**.

Only one floppy disk is required for the LVS 100 Basic software. In this case, skip the next step d and go on to step e.

d. When the Setup Needs The Next Disk box appears, change the floppy disk as prompted.

e. When a message box displaying LVS Live Event Management System software installation was completed successfully appears, eject the floppy disk and click **Finish**.

The Event Management System group is created in Program Manager. You can start the LVS software application by double-clicking the **LVS Start** icon.

Start and Terminate the LVS System

For starting and terminating the LVS system, refer to *System Start-up* section on page 2–2 and *System Terminate* on page 2–32, respectively.

Shutdown and Power Off

To shutdown Windows NT and turn off the Profile system, perform the following steps.

1. Select the **Shutdown** from the Windows NT 4.0 Start menu , or select **Shutdown** from the File menu in the Windows NT 3.51 File Manager.
2. Check the **Shutdown** in the Shutdown Computer dialog box.
3. When a message similar to *Now you can safely turn off the power* appears, you can turn off the power for the Profile system, the monitor, and the Live Controller.

Tutorial

Tutorial

This section describes the procedures from system set up to operation of main functions. For first time users, we recommend following the specified procedures from beginning to end. This will allow you to quickly learn basic operational procedures and functions.

The following procedures are described in this section:

1. System Start-up
2. System Configuration
3. Starting
4. How to Control LVS Windows
5. Record and Slow–motion Play
6. Registering Scene as Highlight (Enhanced Feature Set Only)
7. Search for Scene and Highlight (Enhanced Feature Set Only)
8. Video Library (Enhanced Feature Set Only)
9. Creating Playlists and Packaged Playlists (Enhanced Feature Set Only)
10. Creating Timeline lists and Packaged Timelines (Enhanced Feature Set Only)
11. System Shut–down

System Start–up

System start–up is as follows:

1. Turn on the Live Controller, the monitor and all related equipment connected to the Profile system.
2. Turn on the power for the Profile system. (The main power switch is located on the rear panel of the Profile chassis, and the Standby/Power On switch is on the lower right corner of the front panel. During operation, the power can be turned on or off using the Standby/Power On switch on the front panel.)

When the power is turned on, Windows NT is automatically started, and then LiveStation.exe (LVS software) is also automatically started. Depending on the configuration, the time required for starting up the system varies from 5 to 10 minutes from initial power–up.

Start–up procedure is completed when the Main Window of the Event Management System (LVS) appears. See Figure 2–1.

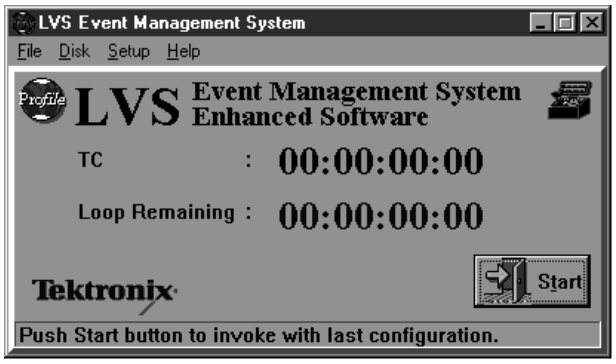


Figure 2–1: Main Window

System Configuration

For illustration purposes, let us assume that one Live Controller is connected with this system, and the RS-422 port 1 and port 3 are connected to resource A and resource C, respectively. See Figure 2–2. Record and slow-motion play of camera images, editing the recorded scenes, transmitting the video file of a scene, and transmitting live events are assumed to be performed sequentially by one operator in 2-Channel mode.

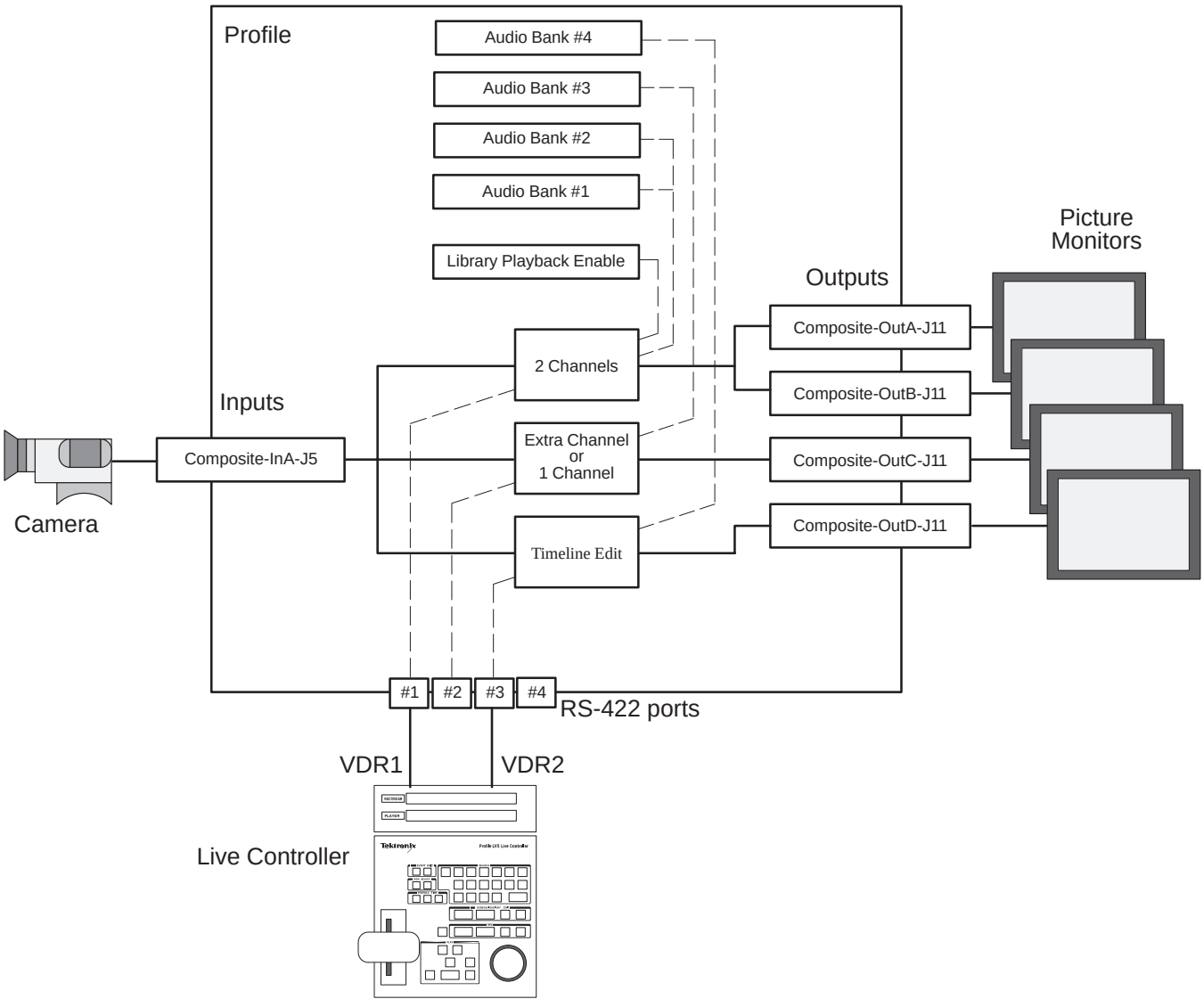


Figure 2–2: System Configuration Example

Start Configuration

1. Select **Normal** from the Setup menu in the Main Window for the LVS (see Figure 2–3). The Configuration window with the Resource Assign dialog box appears on the screen as shown in Figure 2–4.

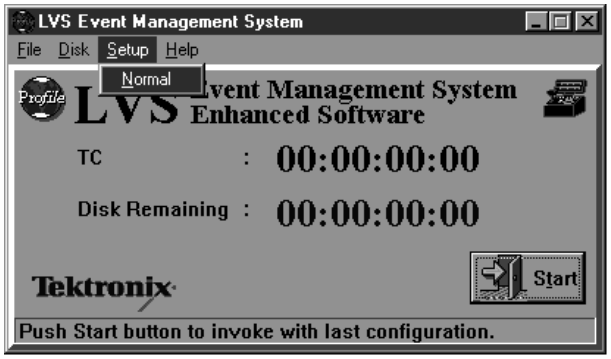


Figure 2–3: Main Window and Menu Bar

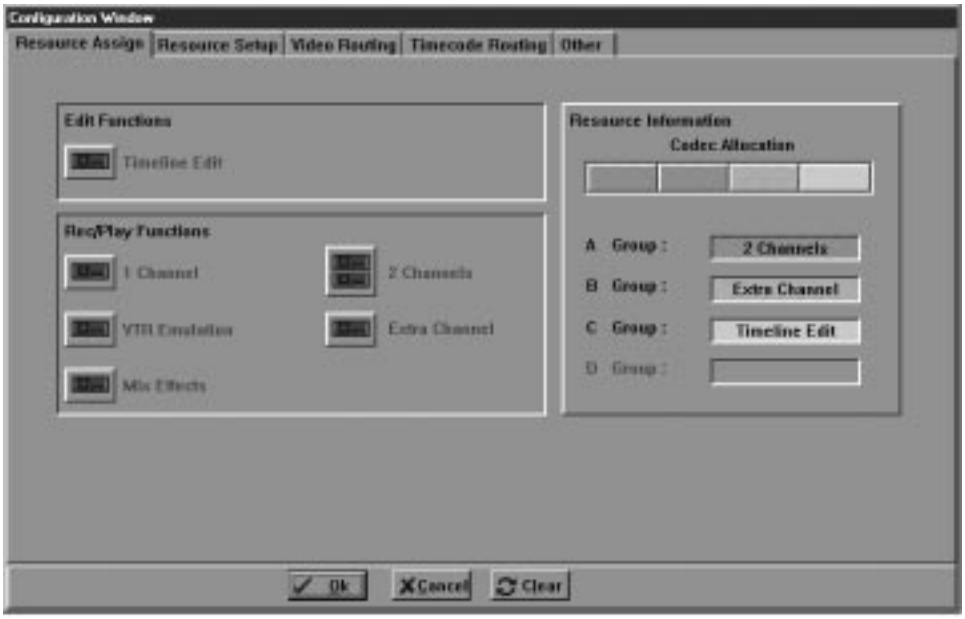


Figure 2–4: Configuration Window and Resource Assign Dialog Box

The Configuration Window includes the following five tabs.

- Resource Assign
- Resource Setup
- Video Routing
- Timecode Routing
- Other

NOTE*. Do not press the* ***OK*** *button at the bottom of the dialog box until the settings for Resource Assign, Resource Setup, Video Routing and Other tabs in the Configuration Window have been completed.*

Codec Resource Group

2. Click on the tab at upper part of the window to open each tab.

Before starting system operations, set up the system with this dialog box. First confirm that the Resource Assign tab is displayed as shown in Figure 2–4.

The Resource Assign tab consists of three areas: Edit Functions, Rec/Play Functions, and Resource Information. The **OK**, **Cancel** and **Clear** buttons can be found at the bottom of the dialog box.

3. Assign resources for this session (see Figure 2–4).

a. Since the 2–Channel mode is to be used in this example, click on the **2 Channels** button in the Rec/Play Functions panel. The codec resource group is allocated for record and play functions.

Two blocks out of four displayed in the Resource Information panel are colored. This indicates that two codec resources among the four Profile codec resources have been allocated and the remaining two are free.

b. With the Basic Features Set, click on the **1 Channel** button in the Rec/Play Functions panel.

With the Enhanced Features Set, you can click on the **Extra Channel** button, instead of the **1 Channel**. This Extra Channel resource is assigned and used for sharing the same image between the 2 Channels resource and Extra Channel resource, and for play operations by two independent operators. However, this type of operation is no longer described in following procedures.

One more block in the Resource Information area will be filled in to indicate that you have used up one more codec resource. (Note that this resource is not used in the following procedure, but this step is included to show how the codec resources are allocated.)

Resources can be combined to suit your purposes, limited only by your Profile system's capabilities (two or four channels).

c. Click on the **Timeline Edit** button in the Edit Functions panel. This resource is assigned for creating and editing timeline lists.

Resources are assigned codec resource group names (A group, B group, etc.) in rotation by the order in which assignments are made. There is no relation between a physical channel and a resource which has been assigned in this tab.

NOTE: Do not click the **OK** button yet.

Controllers and Audios

4. Assign the controller and audio.

a. Click **Resource Setup** to open the Resource Setup tab (see Figure 2–5).

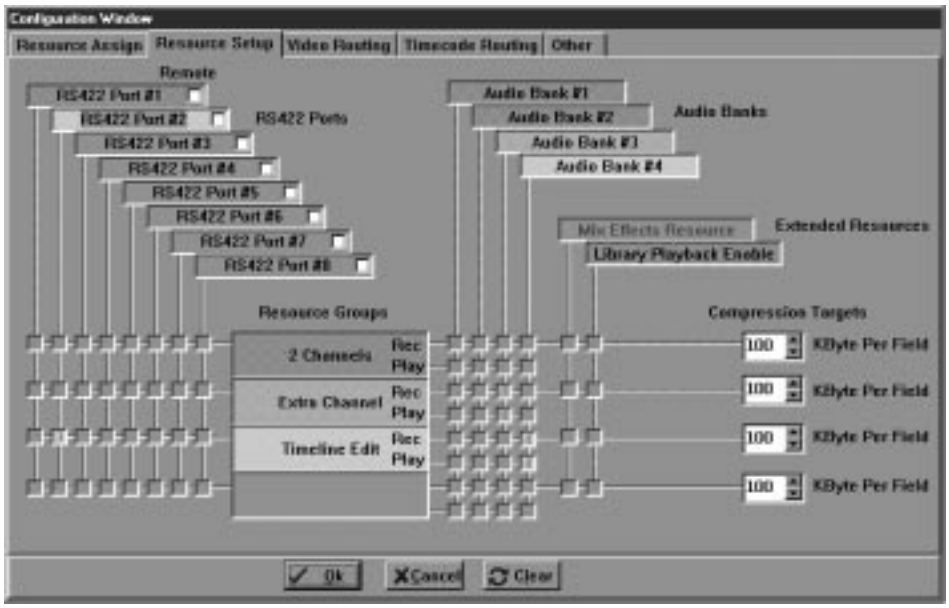
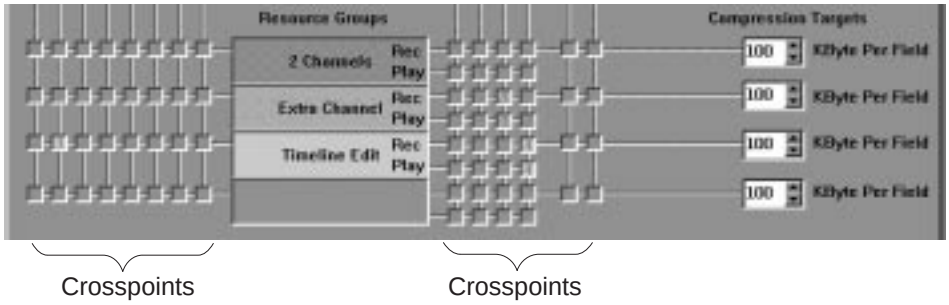


Figure 2–5: Resource Setup Tab — Configuration Window

On this page, physical conditions (for example, assignment of audio and RS-422 ports) are set up by clicking a crosspoint, and entering a compression target value.

b. Assign a controller to resource(s). Click on the crosspoint and select the port to which the controller which controls resources from an external source is connected.

In the example in Figure 2–5, Port #1, Port #2 and Port #3 are assigned to the codec resource groups A, B and C, respectively



To establish the connection, click the crosspoint at which a line from an RS-422 port and a line from a resource cross.

Figure 2–6: Crosspoints

The check box found in each RS-422 port is the information to let the LVS to know that the control signal will also be coming from a controller other than the Live Controller. In this example, keep them unchecked. This means that only the Live Controllers are connected to those ports.

c. Assign audio banks to resource(s) in the same manner as step b.

In the example in Figure 2–5, both audio banks #1 and #2 are assigned to the A Group of resources, audio bank #3 to the B Group, and audio bank #4 and the library source are assigned to the C Group of resources.

d. Set a compression target value ranging from 1 to 100, depending on the record duration. 100 is equivalent to 1/3.5, 75 to 1/5 and 50 to 1/7. In this example, 100 is set as the compression target value.

One audio bank must be assigned to Rec and Play channel for a 1 Channel resource and two audio banks must be assigned, one to Rec channel and the other to Play channel, for a 2 Channels resource.

Multiple Live Controllers can be assigned to one resource. For example, you can connect port 1 and port 3 to the same resource by clicking on the appropriate crosspoints. In this case, the resource can be controlled through port 1 and through port 3.

Multiple resources can be assigned to the one Live Controller. For example, if you assign two resources to the same Live Controller, you can have two resources which perform the same operations.

The number of controllers operating in one system is limited to two in order to ensure proper RS-422 response time.

Input and Output

5. Assign video inputs and outputs.

a. Click **Video Routing** to open the Video Routing tab (see Figure 2–7).

b. For each resource, click on a crosspoint and assign a video input and output.

In the example in Figure 2–7, input from the Composite-InA-J5 is distributed to: the 2 Channels resource (A group), the Extra Channel resource (B group), and the Timeline Edit resource (C group), at the same time.

The outputs are distributed as follows:

- From the 2 Channels resource (A group) to the Composite-OutA-J11 and Composite-OutB-J11.
- From the Extra Channel resource (B group) to Composite-OutC-J11.
- From the Timeline Edit resource (C group) to Composite-OutD-J11.

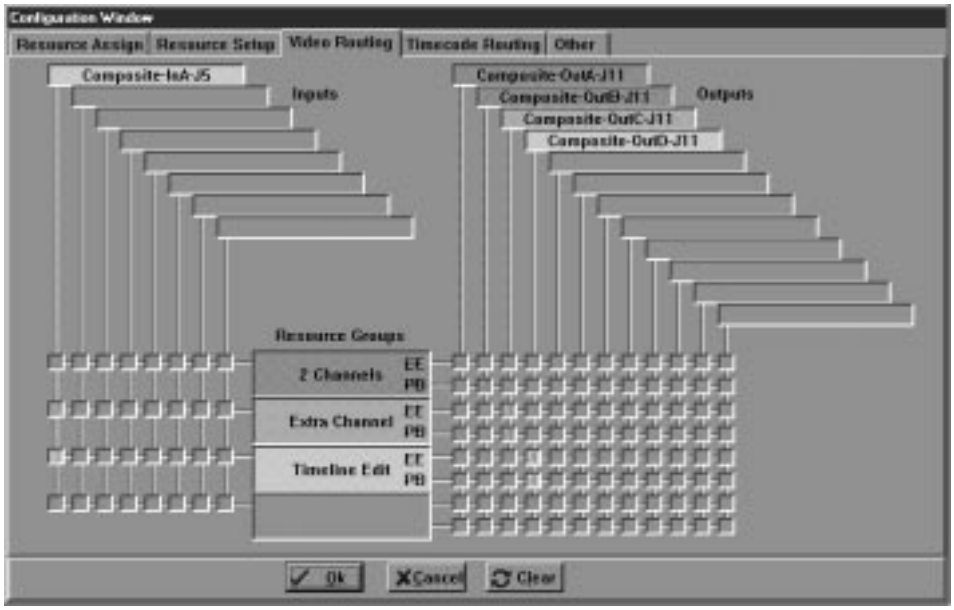


Figure 2–7: Video Routing Tab — Configuration Window

***NOTE**. More than one output connector can be assigned to one resource. The same video from that resouce will be present on all the selected output coneectors.*

NOTE. *E/E of record images are output to the output connector connected through the EE channel, and play images are output to the output connector connected through the PB channel.*

Timecode Source

6. Assign timecode sources.

a. Click **Timecode Routing** to open the Timecode Routing tab (See Figure 2–8).

For each resource group, you can record either VITC or LTC from an external source along with the audio and video. Timecode from the internal timecode generator is always recorded.

For timecode signal input, either LTC input or VITC can be selected.

For each resource, you can choose to output VITC, LTC, or both.

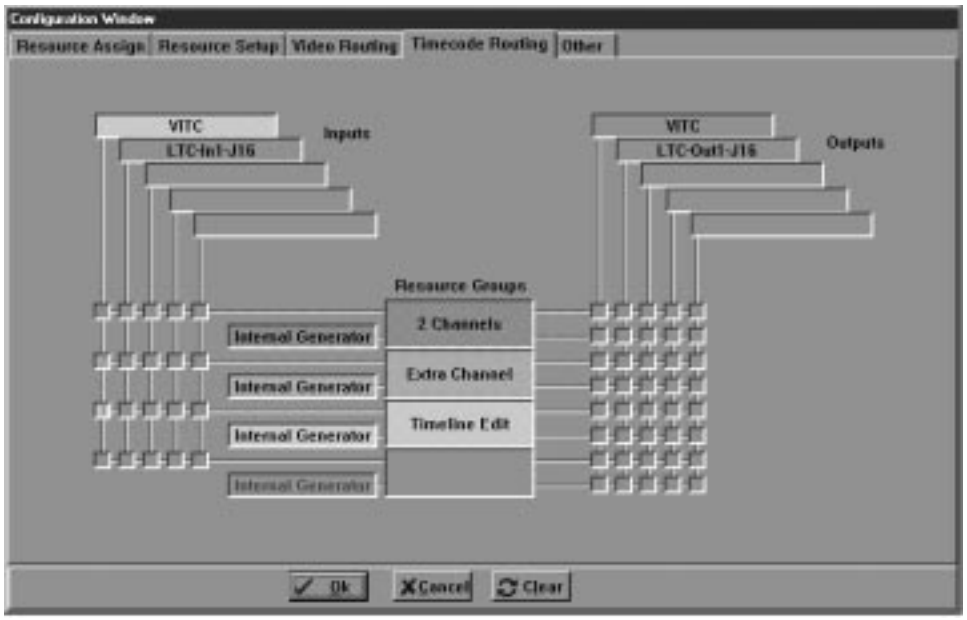


Figure 2–8: Timecode Routing Tab — Configuration Window

When no material is being played back, the input VITC and LTC are sent directly to the output , although they are slightly delayed. When recorded material is being played back, the recorded timecodes can be output as VITC , LTC or both. The internal generator is always connected to the resource. If neither VITC nor LTC is connected to the input channel of a resource, timecode output through the external channel will be unpredictable when playing back.

Other

7. Use this tab to set various operational parameters.

a. Click **Other** to open the tab (see Figure 2–9).

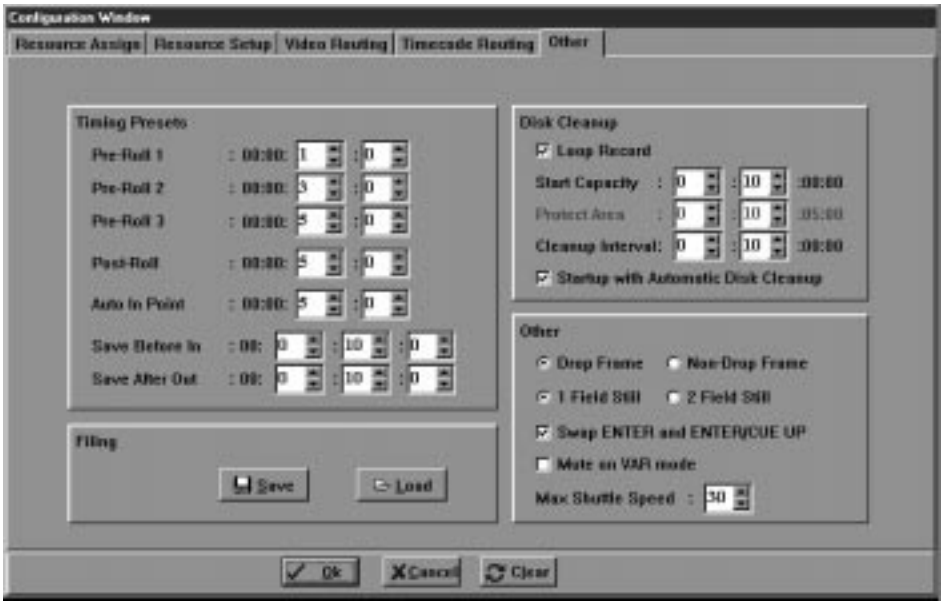


Figure 2–9: Other Tab — Configuration Window

b. In the Other tab, set the values related to the scene itself and related to playing that scene. Initial values are preset, but you may change these values to suit your purpose.

In this example, the default values are used without making any changes. For an explanation of these settings, refer to *Other Tab* on page 3–13.

The configuration setup is now complete. Saving a configuration or recalling a previous one (before clicking the **OK** button) is done with the **Save** or **Load** buttons, which are described on the following pages.

Save

8. Click on the **Save** button to open the Save Configuration File dialog box as shown in Figure 2–10.

To save the current configuration settings:

a. Select the drive and then the directory where you are going to save the configuration file.

b. Enter file name in the **File name** text box. The file name extension must be .cnf.

c. Click on the **Save** button.

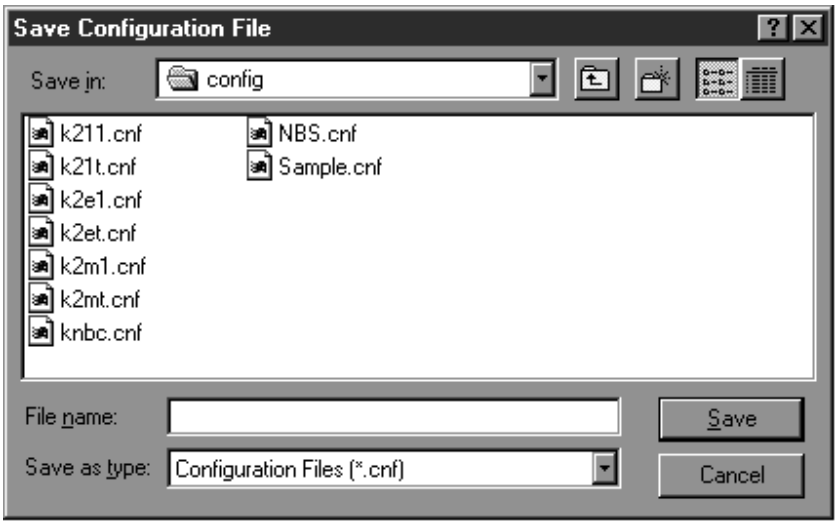


Figure 2–10: Save Configuration File Dialog Box

Load

9. Click on the **Load** button to open the Open Configuration File dialog box as shown in Figure 2–11.

To recall a configuration file:

a. Select the drive and then the directory containing the configuration (.cnf) file you wish to recall (load).

b. Select the configuration file.

c. Click on the **Open** button.

After clicking on the **Open** button, the settings in the Configuration window will be replaced with the settings in the file.

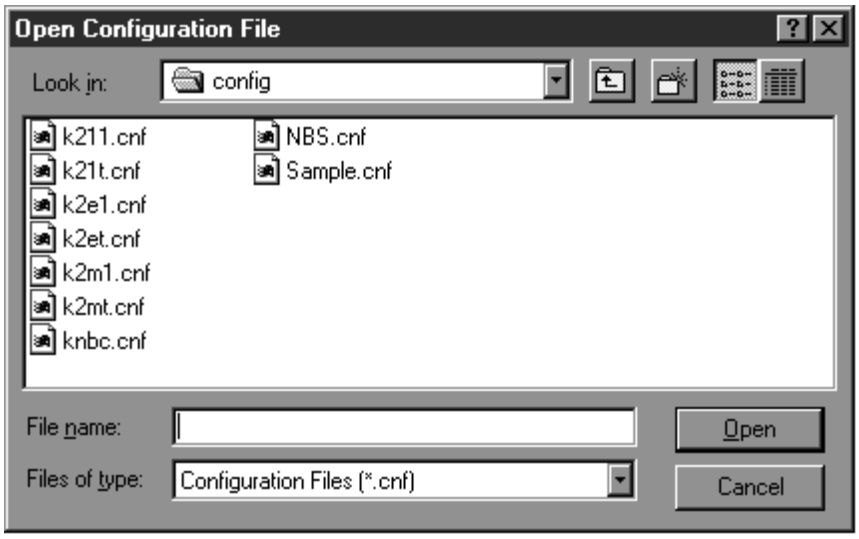


Figure 2–11: Open Configuration File Dialog Box

10. Click the **OK** button to open the file.

After clicking on the **OK** button, the Configuration Window will close and you will return to the Main window (see Figure 2–1).

Start Operation

11. Click the **Start** button in the Main window.

The Timecode Preset dialog box, shown in Figure 2–12, appears.

12. Preset the time code for this session.

The Profile system's internal timecode generator is used for the LVS Event Management System. This dialog box allows you to set an initial value for this internal generator.

When you check **Manual Timecode Set**, the value entered in the Preset Timecode field is from the internal time code generator.

Checking the **Auto Jam Timecode**, configures the system to read an external LTC input (LTC Port #1) on start–up. The value read from this external LTC is used to initiate (or *jam*) Profile's internal time code generator. This is useful for syncing the system up to a time-of-day signal in a broadcast facility. Accuracy may be a few frames from house time-of-day.

In this example, the time code starting from 00:00:00:00 is used for simplicity.

a. Confirm that the **Manual Timecode Set** is checked. If not, check it.

b. Click on the **OK** button.

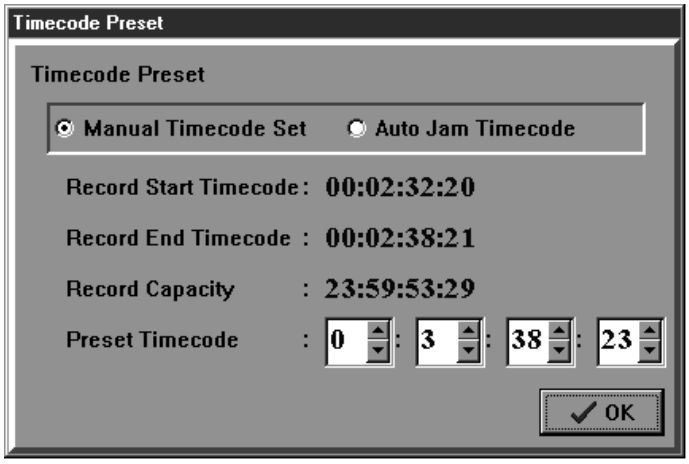


Figure 2–12: Timecode Preset Dialog Box

Starting

Once you have finished configuring the system, the Main window reappears, similar to the one shown in Figure 2–13. You can now start operation.

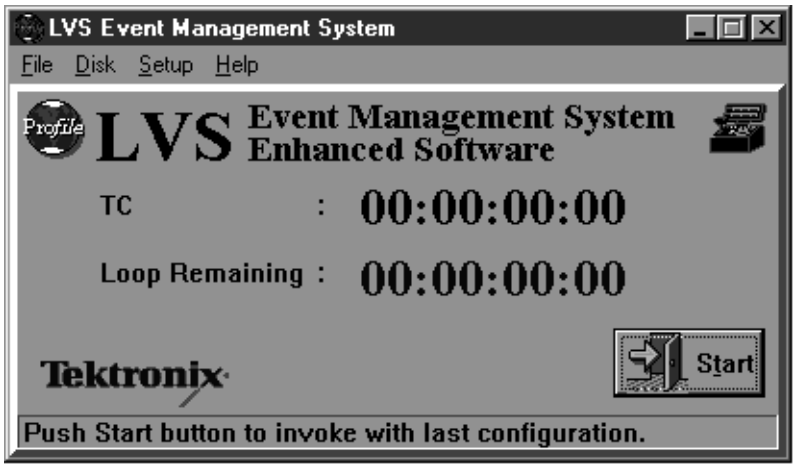


Figure 2–13: Main Window

1. Click the **Start** Button.

The LVS initializes the Profile system according to your settings and then displays the start-up screen with the Main window and the Launcher on the SVGA monitor as shown in Figure 2–14. You can now start working in the LVS windows.

How to Control LVS Windows

The Launcher includes buttons corresponding to the LVS windows.

Click on any desired button in the Launcher to open the corresponding window. You can move the window to any desired position on the screen and resize as necessary. Note that some windows or icons may be opened by selecting them from the pull-down menu in the menu bar of the Main window.

Clicking on a button again closes the corresponding window.

For further descriptions on the Main window and Launcher, refer to *Main Window* on page 4–5 and *Launcher* on page 4–9.

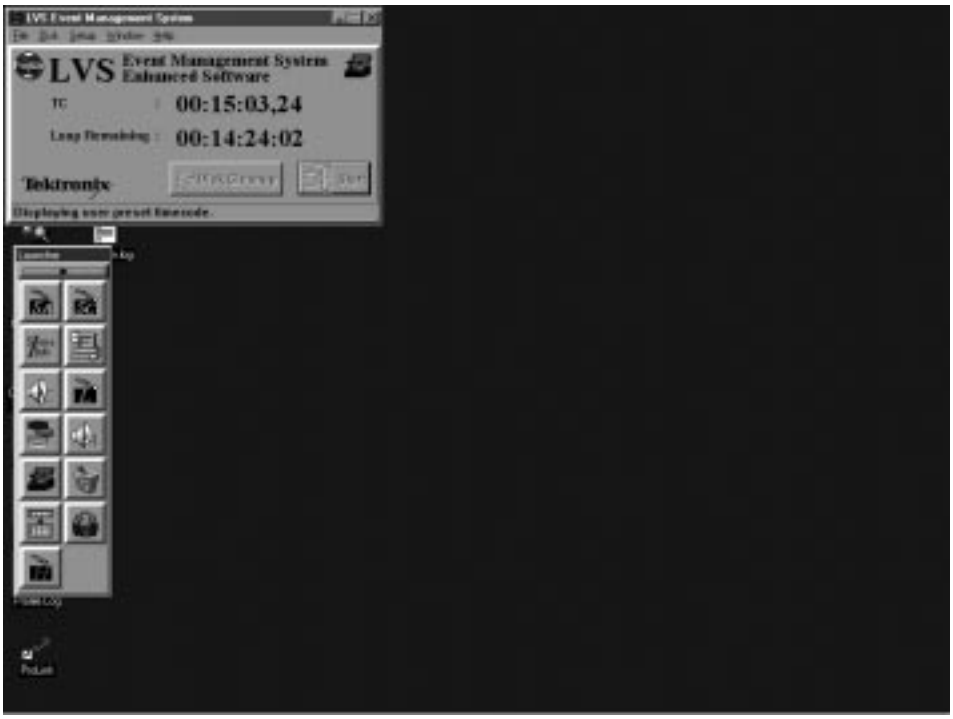


Figure 2–14: Start–up Screen

Window positions and sizes can be saved and automatically restored the next time the system is re-started. This can be part of a .cnf file saved from the Configuration window.

Record and Slow-motion Play

System setup procedures have been completed and you are ready for record and slow–motion play functions. In the following descriptions, a Live Controller is used. For further information on the Live Controller, refer to *Live Controller* on page 6–1.

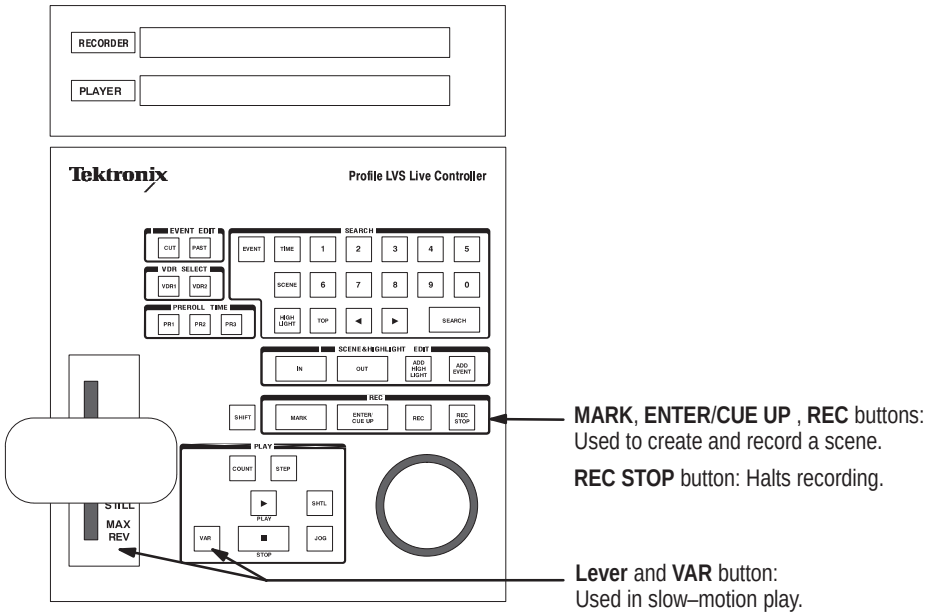


Figure 2–15: Live Controller



Before creating a scene, make sure that the Scene Window[A] as shown in Figure 2–17 is displayed. If not, click on the button labeled ***SA*** in the Command Launcher. This is called **Scene Window[A]** button or just **Scene** button. When you click on this button again, the window closes.

Note that scenes can be created even if the Scene window is closed.

Start recording

First, begin to record. Press the **REC** button on the Live Controller. Recording has started if the **REC** button illuminates.

Stop recording

Recording is stopped by pressing **SHIFT + REC/STOP** button. When recording is stopped, the **REC** button is extinguished. The operations described in the following sections are not available if a recording is not performed. Press the **REC** button again to restart recording.

Creating scenes

A scene is the basic unit for replay immediately after recording, for editing, and for selecting images.

A scene has a beginning point (the IN point) and an ending point (the OUT point). It is created by entering these points. Specify an IN point using the **MARK** button and an OUT point with the **ENTER/CUE UP** button.

The relationship between a recording and a scene is that the recording is all the video and audio, while a scene is just the data pointers to the beginning and the end of the marked material. See Figure 2–16.

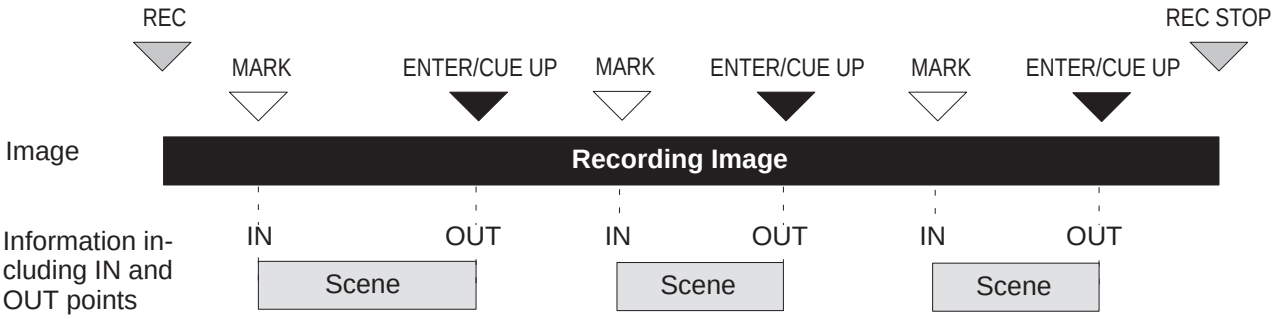


Figure 2–16: Relationship Between Recording and Scene

Press the **MARK** button on a desirable image, wait for a while and press **ENTER/CUE UP** button. An icon appears on the Scene window as shown in Figure 2–17. This icon is displayed for each scene, and this scene will be the base for selection of any image at a later time. Confirm that the image which was displayed upon pressing the **MARK** button is now displayed on a picture monitor.

The **ENTER/CUE UP** button specifies the OUT point of a scene, at the same time it will make the system cue up at the MARK point (the IN point). With this function, you can play back a recorded scene immediately in normal or variable playback speed.

Scene numbers are automatically incremented (i.e., SA001, SA002, SA003).



Figure 2–17: Scene Window and Scene Creation

Slow-motion Playback

The LVS cues up the scene created by pressing the **ENTER/CUE UP** button on the Live Controller. This means that the latest scene is cued up. (Note that a scene icon displayed in green indicates the scene currently selected, but not always cued up.) To play back a currently cued up scene in slow-motion mode, press the **VAR** button, and then move the lever on the Live Controller.

Another Way to Create Scenes

Next, press the **ENTER/CUE UP** button without pressing the **MARK** button. In this case, a complete scene entry is created by the system. The IN point is determined by back timing from the OUT point. The duration of the scene is preset in the Other page of the Configuration window with the Auto IN Point setting. This allows the operator to mark scenes very quickly, based only on the completion of the action. This is especially useful in a sport with fast action, such as soccer, hockey, etc. where it is difficult to identify the ***beginning*** of an important scene, but obvious if a score occurs.

NOTE*. If pressing the* ***ENTER/CUE UP*** *button does not cause the playback channel to cue up, the ENTER and ENTER/CUE UP functions may be swapped. Refer to* Swap ENTER and ENTER/CUE UP on page 3–17.

Highlights (Enhanced Features Set Only)

During live sports broadcasting, a number of scenes are created during a game. However, there are usually not many important scenes, and it may be critical to be able to play back a few important scenes immediately.

The LVS has a Highlight Window, which allows you to set important scenes apart.

Creating Highlights

To save important scenes in the Highlight window:

- Press the **ADD HIGHLIGHT** button on the Live Controller
- Drag a scene in the Scene window onto the Hightlight window or onto the **Hightlight** button in the Command Launcher.

The current scene's thumbnail image or its data points are displayed in the Highlight Window.



Figure 2–18: Highlight Window and Creating a Highlight Scene

Searching for Scenes and Highlights

You have to find scenes and highlights before you can play them. With the LVS, search and cue-up operations of a desired scene or highlight are performed at the same time, and you can search for a scene or highlight while checking it on a picture monitor. When you find the desired scene or highlgiht, press the **VAR** button, and move the lever of the Live Controller to replay that scene at variable speed.

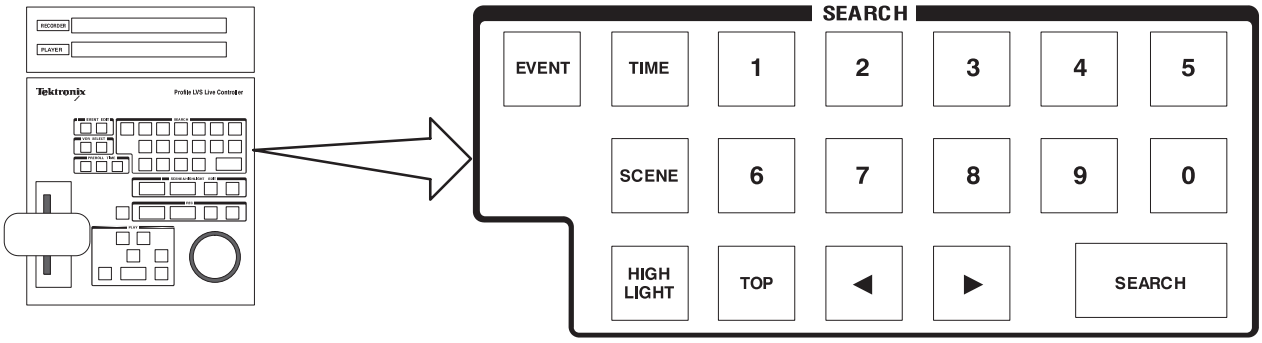


Figure 2–19: Search Function Controls

Selecting Search Mode

When you want for search to a scene, press the **SCENE** button. To search for a highlight, press the **HIGHLIGHT** button.

***NOTE**. The **HIGHLIGHT** button is valid only with the Enhanced Feature Set.*

Search by absolute number

Use the numeric keypad to either (with the Scene button illuminated) key in the numeric value for a scene number or, (with the Highlight button illuminated) key in the highlight number and then press the **SEARCH** button. The value input is searched for or cued up at the scene or highlight. For example, if you press **1 5 SEARCH** in this order, scene SA015 is searched for and cued up. The search using the **SEARCH** button is called ***search by absolute number***.

Sequential search

If you press the ◀ or ▶ button after entering a value, the scene or highlight preceded or succeeded by the number will be searched for from the current cued up scene or highlight, and then cued up there. If you press the ◀ or ▶ button without entering any value, the scene or highlights next to the current one will be searched for and cued up. This is called ***sequential search***. Check that images are cued up one by one by repeatedly pressing an arrow button.

Search by time

In addition to sequential search or search by absolute number, you can also search by recorded time. For example, if the scene was recorded at 6:30:00:00, press the **TIME** button and then enter **6 3 0 0 0 0 0 0 SEARCH**. The scene produced closest to 6:30:00:00 will be searched for and cued up. If you press the ◀ or ▶ button, instead of the **SEARCH** button, search by relative time is performed. For example, to jump forward 20 frames, enter 20 and then press ▶.

Video Library (Enhanced Feature Set Only)

Creation of scenes and highlights allows you to mark and organize incoming material as it's being recorded. However, there are some restrictions associated with storing marked material as scenes and highlights on a system re-start. Refer to *Starting Operation* on page 3–20 for details. The Library window is a place where you can store video and audio material for *extended periods of time*.

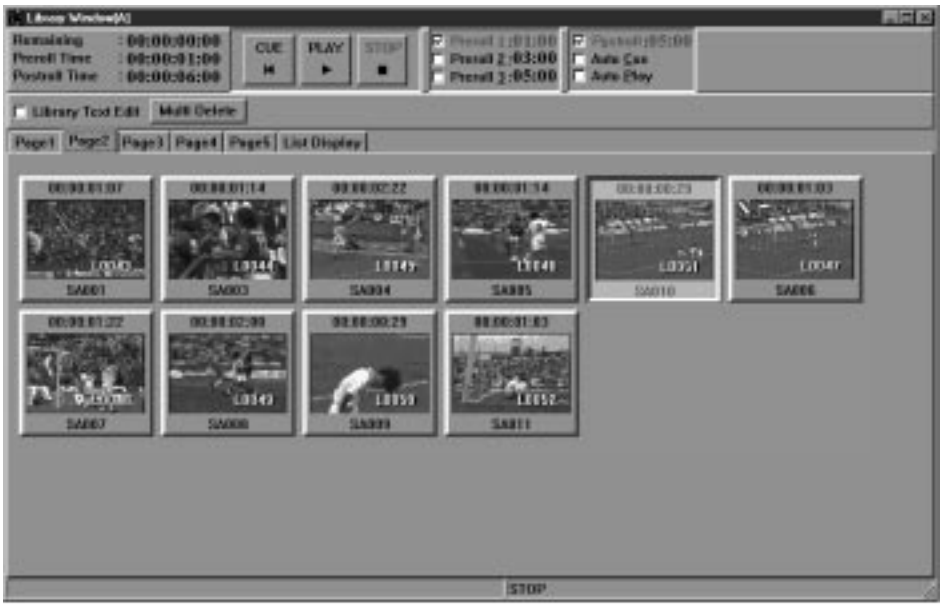


Figure 2–20: Library Window



Creating Library Items

You can add material to the Library window, shown in Figure 2–20, simply by dragging scenes or highlights onto Library window or onto the **Library** button in the Command Launcher.

Playback

Video files stored in the Library window can be played directly from this window.

1. Select a desired icon in the Library window by clicking on it.

2. Click on the **CUE** button on the window to immediately cue up at the beginning of the selected scene.

3. Click on the **PLAY** button. The scene is played back from its point cued up.

Check the **Auto Cue** box to enable the immediate cue-up of the selected video file at the time it is selected. Check the **Auto Play** box to enable the immediate playback of the selected video file at the time it is selected. In order to enable the Library window for direct playback, you must chose to do so during configuration set up. Refer to *Library Playback Enable* on page 3–9 for details. You may store video and audio in the Library window regardless of whether it is enabled for direct playback or not.

In sports broadcasting, this window is often used to play back pre-packaged clips, such as player profiles, openings, or bumpers. The material can be organized on the Library Window pages for quick access.

Creating Playlists and Packaged Playlists (Enhanced Feature Set Only)

The Playlist window provides the capability to sequence scenes for play out. When placed in the playlist, scenes are referenced as events.

Creating Playlists

Scenes may be added to a playlist in the Playlist window by cuing them up on the LVS Live Controller.

1. Press **SCENE**.

2. Enter the scene number.

3. Press **SEARCH** and then press **ADD EVENT**.

You can also add scenes with the drag-and-drop method.



1. Click and hold the mouse button and drag a scene from the Scene window onto the Playlist window or onto the **Playlist** button in the Launcher.

2. Release the mouse button.

Re-ordering

Scenes are appended at the end of the playlist. Scene order, however, can be rearranged at any time, even during playback of the playlist. (The Edit/Play mode must be re-enabled after Play is begun.) Any scene can be re-ordered or deleted provided it is not actively in playback at the time.

Playback

The Playlist can be set to **CONT** (continuous) mode (all scenes automatically play in order) or to **STEP** mode (each scene stops at the end of its play out and you must press **NEXT** and **PLAY** to play the next scene.

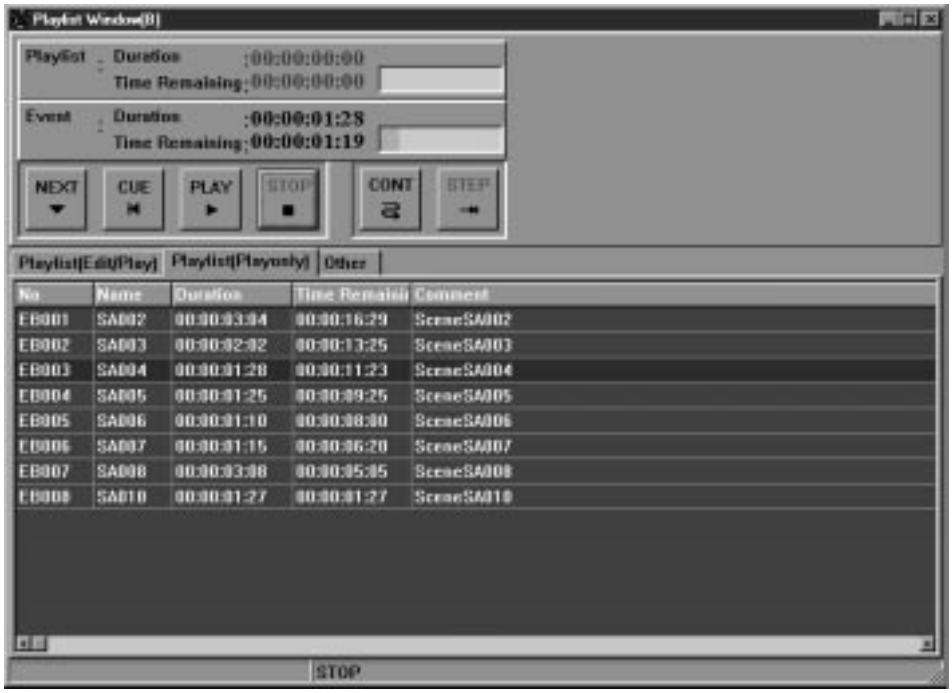


Figure 2–21: Playonly Tab — Playlist Window

You can select any event for playback by clicking a desired scene in the Playlist window. To select an event and play it back with the Live Controller:

1. Press **EVENT**.
2. Enter the event number
3. Press **SEARCH** to cue it.
4. Press **PLAY**.

If **CONT** is illuminated, the playlist will play sequentially from the selected event.

If **STEP** is illuminated, the next event will have to be played manually.

You may also use the arrow keys to step through the Playlist to select the event for playback.

Creating Packaged Playlists

A packaged playlist is an icon in the Highlight window. The playlist icon (group) can be used in the same way as any other highlight icon.

1. Click **Other** to open the Other tab in the Playlist window.
2. Enter icon name into the **Register Name** text box.
3. Click the **Add Highlight** button.



4. Open the Highlight window by clikcing on the **Highlight** button in the Launcher.
5. Verify that the packaged playlist icon with the name entered in step 2 exists in the Highlight window.

Creating Timeline Lists and Packaged Timelines (Enhanced Feature Set Only)

The Timeline Window allows you to create a sequence of events (scenes) on a Timeline list for playback. It provides you with the tools you need to edit or play back video and audio tracks independently, and lets you package your Timeline list for use as a Highlight.

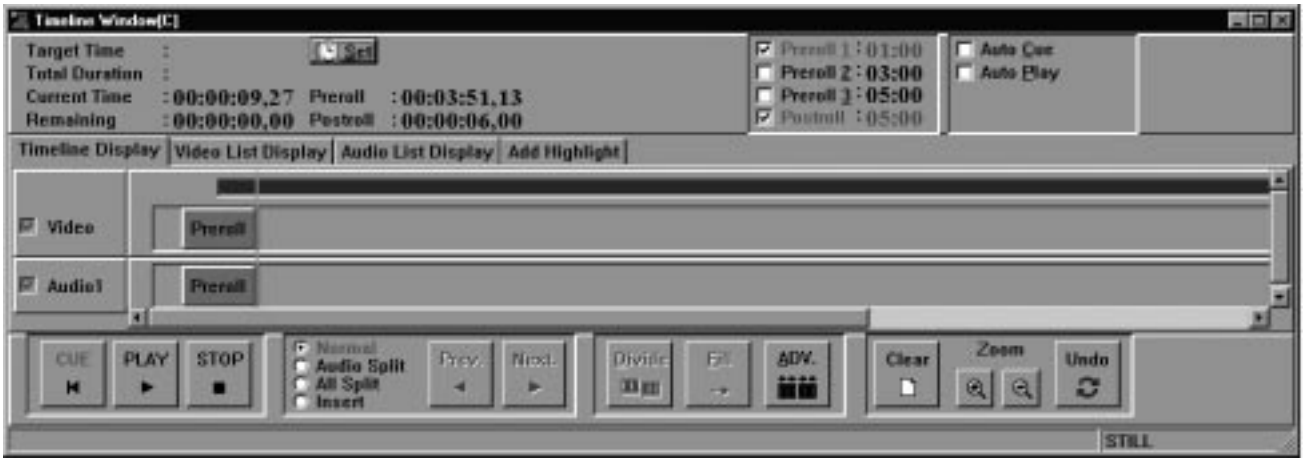


Figure 2–22: Timeline Window

Figure 2–22 shows the initial state of the Timeline Window. A Video and an Audio track are located just below the horizontal timeline bar, displayed in green.

Creating a Simple Timeline List



First, let's create a simple timeline list in Normal mode.

1. Click the **Timeline** button in the Launcher to open the Timeline window. See Figure 2–22.
2. Make sure that the **Normal** option at the lower left of the window is selected.
3. Drag a scene from the Scene window onto either video or audio track of the Timeline Window.

   An event (a scene) will be appended to both video and audio tracks.
4. Repeat step 3 several times.

Now you can create a simple timeline list. See Figure 2–23. Events displayed in yellow are currently selected.

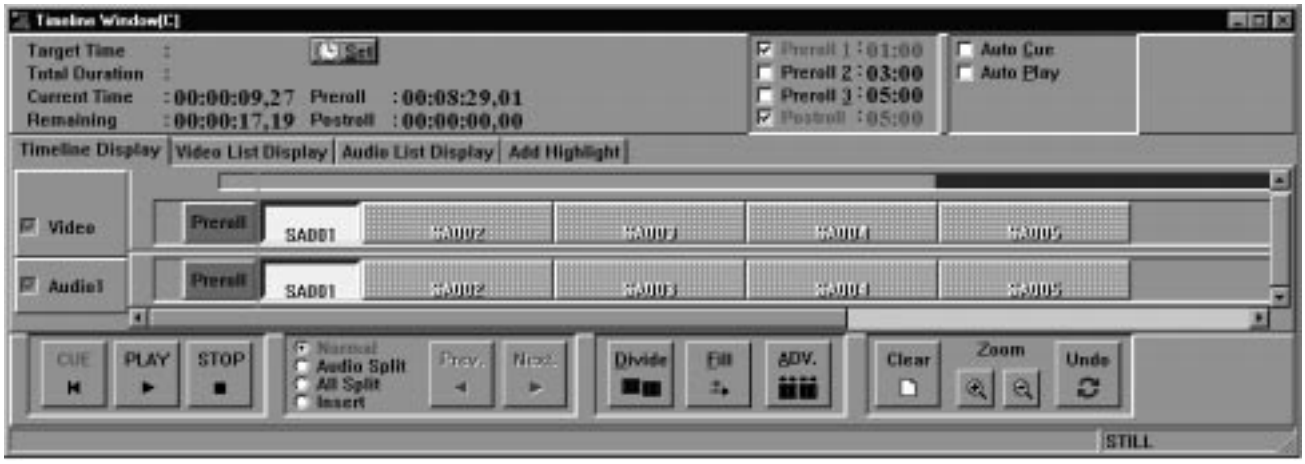


Figure 2–23: Example of Simple Timeline List

Editing the Audio Track

In Audio Split mode, you can edit events on the video or audio track independently, or on both tracks at the same time. In this example, you will edit events on the audio track only.

5. Select the **Audio Split** option to enter the Audio Split Edit mode.

   The **Video** and **Audio** check boxes are now available. By default, the video box is cleared and the audio box is selecteed. In this state, you can only edit events on the audio track, not on the video track.

6. Replace all events on audio track with other scenes by following these steps:



   a. Drag an event from the audio track onto the **Recycle Box** button to remove that scene from the timeline list.

   b. Repeat step **a** until there are no more events on the audio track. See Figure 2–24.



Figure 2–24: Audio Events Removed

   c. Drag a scene from the Scene Window onto the Timeline Window. See Figure 2–25.



Figure 2–25: Adding Another Event to the Audio Track

7. Since the last third part of the newly added event is unnecessary, cut it away by following these steps:

   a. Click on the desired edit point in the **Timeline** bar displayed in green. See Figure 2–26.



Figure 2–26: Selecting an Edit Point

   The timeline to the left of the edit point becomes pink. This means that the LVS is now cuing up at this point in the timeline.

   b. Click the **Divide** buttonto divide into two parts. See Figure 2–27.



Figure 2–27: Dividing an Event



   c. Remove the unwanted last half of the scene by dragging onto the **Recycle Box** button. See Figure 2–28.



Figure 2–28: Removing Unwanted Material

Target Time and Insert Mode

Target time is a desired total duration of a timeline list. You can set the total timeline duration and fill empty space with *BLACK* on each track.

8. Set a target time by following these steps:

a. Click on the **Set** button. The Target Time Setting dialog box appears.

b. Enter a target time in the form *Hours:Minutes:Seconds:Frames*. In this example, enter 00 23 00 00.

c. Click on the **OK** button.

A blue vertical bar appears on the timeline list, indicating the target time.

9. Fill space within the target time with *BLACK*.

a. Check the **Insert** box at lower left part of the window to enter into Insert mode.

In this mode, empty space is filled with *BLACK*, and the single audio track becomes four se[arate audio tracks. See Figure 2–29.

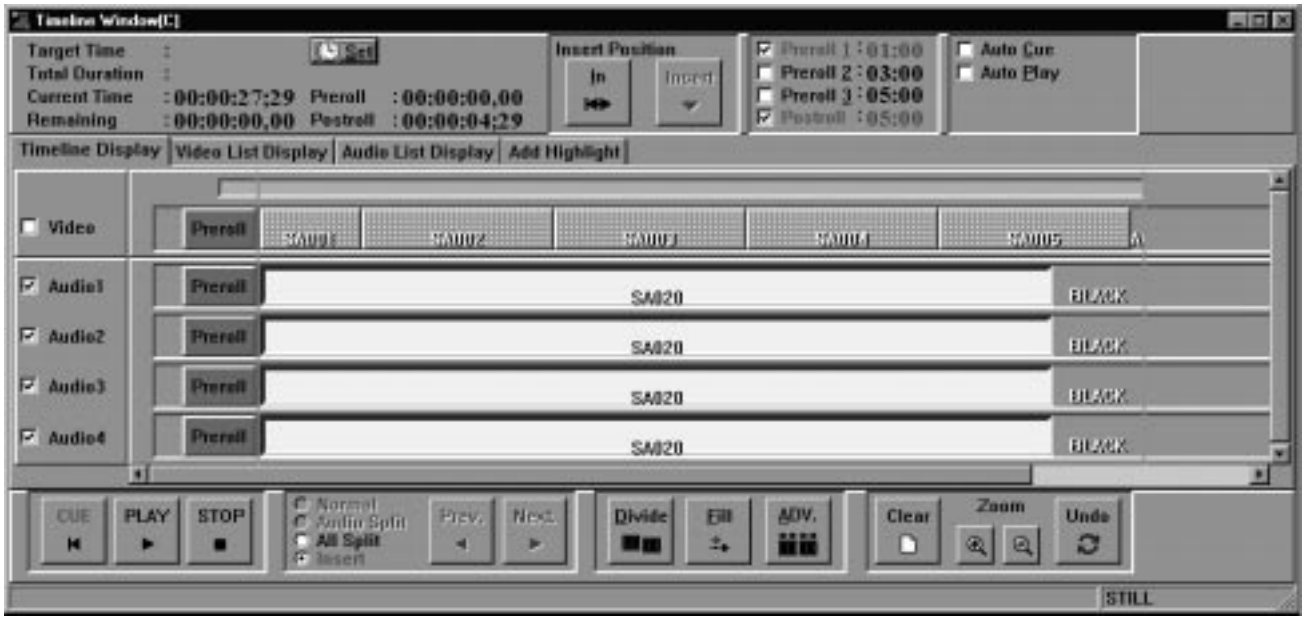


Figure 2–29: Timeline Window in Insert Mode

Editing in All Split Mode

Remove all events in audio track 3 and 4, and replace with another scenes.

10. Since events cannot be edited in Insert mode, change the mode to All Split edit by checking the **All Split** box.

11. Clear the Audio1 and Audio2 check boxes. This protects events on audio tracks 1 and 2 from editing operations.

12. Replace all events on audio tracks 3 and 4.



    a. Drag all event from audio tracks 3 and 4 onto the **Recycle Box** button in the Launcher.

    b. Drag the BLACK onto the **Recycle Box** button.

    c. Drag a scene from the Scene Window onto audio track 3 or 4. See Figure 2–30.

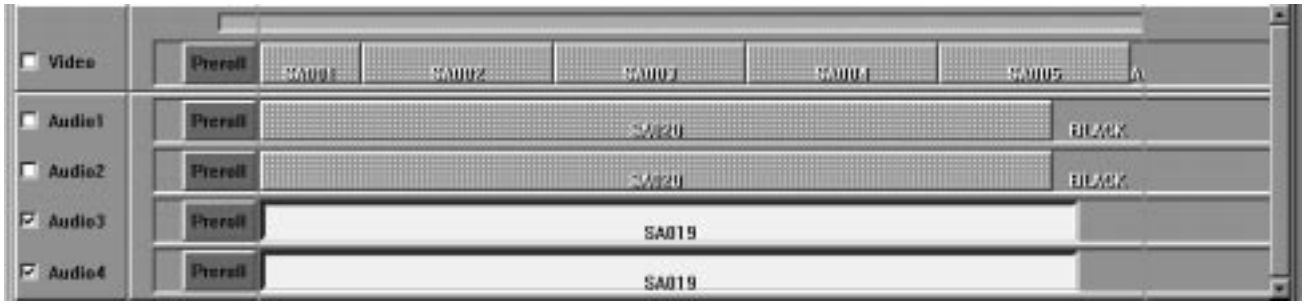


Figure 2–30: Editing in All Split Mode

Auto Slow-motion Setting

You can expand the newly added event so that its end point aligns with the target time. The event is played at a slightly reduced speed to fit the new duration.

13. Verify that the newly added event on the audio tracks 3 and 4 is selected (displayed in yellow).

14. Click on the **Fill** button at lower part of the window. Slow-motion speed is now set in the event on audio track 3 and 4. See Figure 2–31.

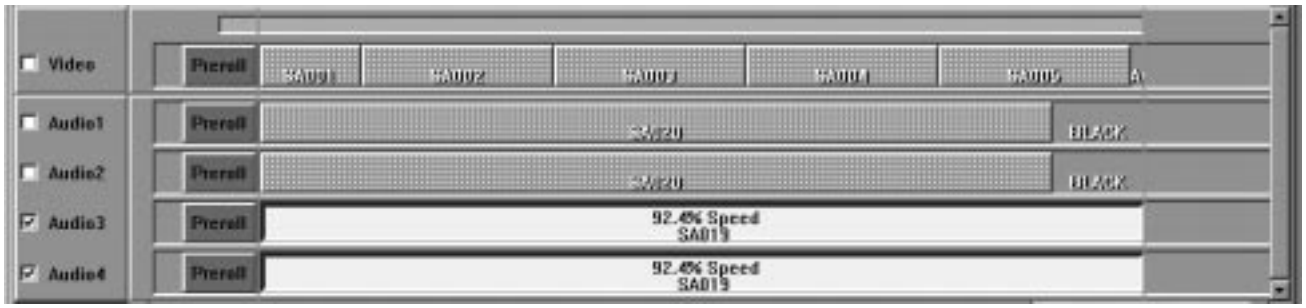


Figure 2–31: Automatic Slow-motion Speed Setting

Adding a Scene in Insert Mode

You'll now add another scene on the video track in Insert mode. In insert mode, material on the timeline is replaced by the new material. The total duration of the timeline is not changed.

15. Select the **Insert** option to enter Insert mode again.

Note that the **In/Out** toggle button and **Insert** button appear in the upper part of the window.

16. Over-write a scene only in the video track by following these steps:

a. Select the **Video** track, and disable editing on all the **Audio** tracks.

b. Click on any point on the **Timeline** bar.

c. Drag a scene from the Scene Window onto the video track.

The scene (event) is temporarily placed in the video track with the scene's IN aligned with the current cue-up point. Note that only **In** is labeled on the **In**/**Out** button. See Figure 2–32.

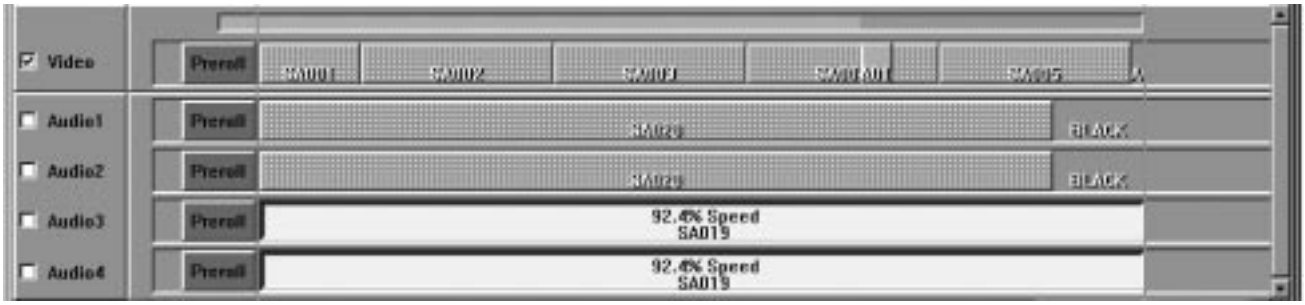


Figure 2–32: Dragging a Scene to the Timeline List

d. Click on the **In**/**Out** button to toggle the button's label and to move the scene so that its OUT point aligns with the current cue-up point.

e. Click on the **Timeline** bar at the target time to move the cue-up point to the end of the list. The scene also moves to align its OUT point with the cue-up point, in this case the target time. See Figure 2–33.

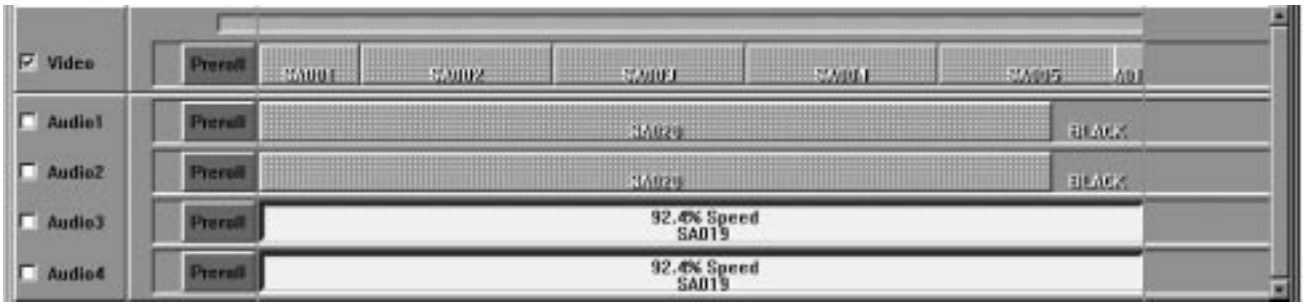


Figure 2–33: Moving the Inserted Scene

f. Click on the **Insert** button to replace the material in the timeline list with the current scene. See Figure 2–34.

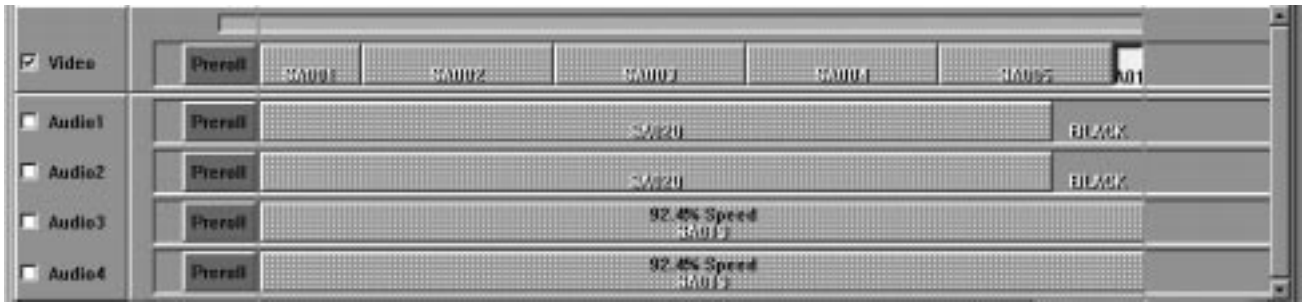


Figure 2–34: Replacing Existing Material

Cue Up

You can set a cue up at a point in the timeline list by any of the following methods:

- Click on any point on the **Timeline** bar to cue up at that point. This provides random access on the timeline list.
- Check the **Auto Cue** box, and then click on an event to cue up at the event's IN point minus the preroll time.
- Click on the **CUE** button at the lower left part of the window to cue up at the IN point of the first event in the timeline minus the preroll time.

Playback

To play back the timeline list:

1. Cue up at a point by one on the ways described in *Cue Up*.
2. Click on the **PLAY** button to start playing from the cue-up point.

Auto Playback

To start playing back automatically when selecting a scene:

1. Select **Auto Play** at upper right part of the window.
2. Click on a scene. The LVS cues up at the scene's IN point minus the selected preroll time, and then starts playing back.

Creating a Packaged Timeline

A packaged timeline is an icon (group) in the Highlight Window that you could use in the same way as you use any other highlight event. To create a packaged timeline:

1. Click **Other** to open the Other tab in the Timeline Window.
2. Enter the icon name in the **Register Name** text box.
3. Click on the **Add Highlight** button.



4. Open the Highlight window by clicking on the **Highlight** button in the Launcher.
5. Verify that the packaged timeline icon with the name entered in step 2 exists in the Highlight Window.

System Shutdown

To shut down the Profile system, follow this procedure.

1. Select **Exit** from the File menu in the Main Window to terminate the LVS application.
2. Select **Shutdown** from the Icons menu in the Windows NT Program Manager (or from the Windows NT 4.0 Start menu) to shut down Windows NT.
3. When the message *Now you can safely turn off the power* is displayed on the SVGA monitor, you can turn off the power for the Profile system, the SVGA monitor, and the Live Controller.

System Configuration and Startup

System Configuration and Startup

This subsection describes setup and startup of the system, which are required prior to beginning operation. System setup is required to configure the Profile resources. The functions and operational instructions for the Configuration Window are described in this section.

System configuration must be performed in the following order.

1. Starting the system.
2. Configuration the system, including:
   - **a.** Allocating resource(s).
   - **b.** Assigning RS-422 port(s) and audio bank(s), and setting compression target rates.
   - **c.** Assigning input and output channels to resource(s).
   - **d.** Assigning timecode channels to resource(s).

   Additional optional configuration settings include:

   - **e.** Setting various parameters necessary for system operation.
   - **f.** Saving or recalling configuration settings.
3. Starting system operation.

For the Live Controller functions and the windows related to system operation, refer to *Live Controller* starting on page 6–1 and *Operating the System* starting on page 4–1.

System Startup

Turn on the Profile system and its peripherals. With the application of power, Windows NT is starts automatically, along with 960.exe (to be used by this system). The LVS application will start automatically if its icon has been placed in the Windows NT Startup group. The time required for startup depends on the configuration.

Startup is complete when the Main Window (Figure 3–1) of the LVS Event Management System appears.

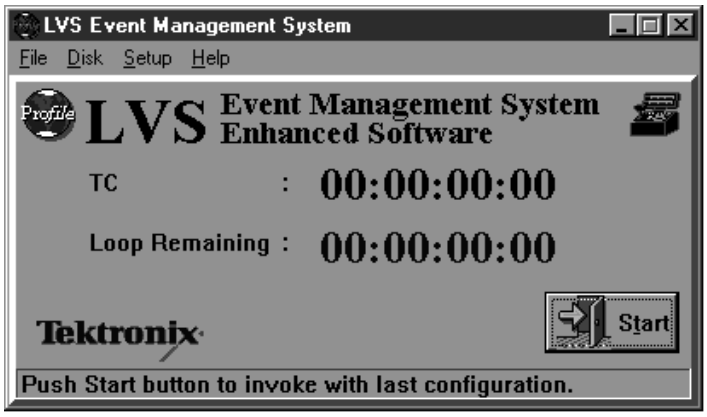


Figure 3–1: Main Window

Configuration Window

Select **Setup** from the menu bar of the LVS Event Management System Window. The Configuration Window appears. In the Configuration Window (Figure 3–2), you can confirm and modify system settings.

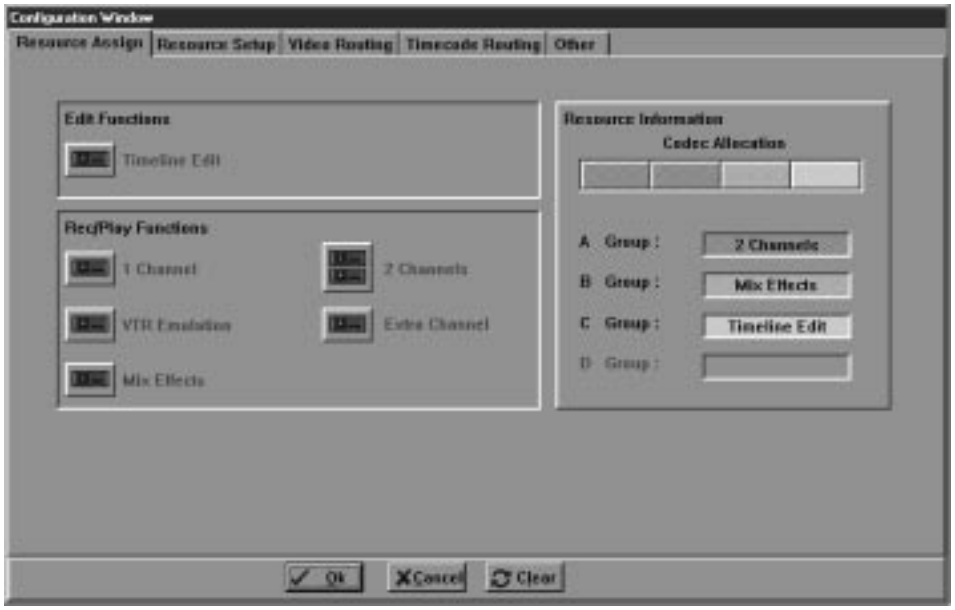


Figure 3–2: Configuration Window and Resource Assign Tab

The Configuration Window consists of three buttons and the following five tabs:

- Resource Assign
- Resource Setup
- Video Routing
- Timecode Routing
- Other

Click the name at the top part of the window to open the desired tab. Set the system configuration by opening these tabs one by one. The Filing panel in the Other tab lets you save your configuration settings in a file, or load previously saved settings from a file.

Buttons There are three buttons at the bottom of the window. The function of each button is as follows:

Clear — Clears all the assignment of resources. To be used for re–assigning resources.

Cancel — Terminates the Configuration Window by aborting the assignments of resources modified. In other words, it returns the system to the state where no changes to resource assignment has been made.

OK — Defines the resource assignment set on each tab and the system is prepared to start with the displayed settings.

NOTE*. Press the* ***OK*** *button only after completing the settings for Resource Assign, Resource Setup, Video Routing and Other tabs in the Configuration Window. Failure to do this or an incorrect setting may cause the system to halt.*

When the **OK** button is pressed, a message *Delete the previous scenes or highlights?* is displayed. If you wish to delete all the previous scenes and highlights, press the **Yes** button (the scenes stored in the library will not be deleted). If you want to continue operation without deleting the previous scenes or highlights, press the **No** button.

Refer to *Starting Operation* on page 3–20 for information on operational restrictions if you choose to not delete previous scenes and highlights.

For further information on a scene and highlight, refer to *Scene Window* on page 4–19 and *Highlight Window* on page 4–22.

Resource Assign Tab

Assigning resources

The LVS provides functions for recording, playing, editing, video filing, and play out. The Profile system can be ordered with two or four codec resources. The number of codec resources in the Profile system determines the number of *equivalent disk recorders* available. The Resource Assign tab provides a way to determine which LVS functions will be assigned to Profile codecs. This allows you to tailor the system to a specific application.

Figure 3–2 on page 3–3 shows an example of an open Resource Assign tab. This tab consists of the three areas: Edit Functions, Rec/Play Functions and Resource Information.

The four blocks for Codec Allocation in the Resource Information area give visible information of how many codecs have been used. Colored blocks indicate assigned codecs. Click any resource in the Edit Functions panel or Rec/Play Functions panel to assign LVS resources to codecs until no codecs are left. As LVS resources are assigned to Profile codecs, they are called *codec resource groups* and given a unique letter. The first resource assigned becomes resource A, the next B, and so forth.

The following resources are available:

- 1 Channel (requiring one codec)
- 2 Channels (requiring two codecs)
- Extra Channel (requiring one codec) (Enhanced Feature Set Only)
- VTR Emulation (requiring one codec)
- Mix Effects (requiring one codec) (Enhanced Feature Set Only)
- Timeline Edit (requiring one codec) (Enhanced Feature Set Only)

1 Channel (requiring one codec)

This resource allows you to record and play using only one Profile codec. It can also be used for Playlist or Library scene playback.

The limitation of the 1 Channel functions is that while playing, recording stops.

2 Channels (requiring two codecs)

This resource allows continuous record and playback, and so requires two Profile codecs. The resource allows you to record key plays even during replay or when in the middle of a slow–motion playback You can also use this resource to easily implement a time–delayed broadcast.

Extra Channel (requiring one codec) (Enhanced Features Set Only)

This resource allows you to show the same recorded material on two playback channels, so that two operators can create scenes, change duration, etc. from the same recorded material. Scenes and highlights are completely shared, so each can play back recorded material independently. Since recorded material, scenes and highlight information are shared as they are created, some changes on one resource are not available to both resources. For example, the playlist information in the channel B is not updated when you change the information in the channel A.

When a scene is added to the Highlight Window, two highlight icons appear in the window. This is because adding a scene as a highlight in one channel also adds the same scene to the Highlight Window for the other channel. Therefore, highlights can be pseudo–searched independently from the both Live Controllers.

NOTE. *If* ***ADD HIGHLIGHT*** *on the Live Controller is used from either channel, it is also saved in the Highlight Window for the other channel. In the Highlight Window, the two highlight scenes (which are the same) for resource group A and resource group B are displayed for each entry.*

With this extra channel, two operators can work together with one recording, or one operator can preview on one channel while playing to air on another channel.

Example — If you assign 2 Channels recording mode to resource group A and Extra Channel to resource group B, you can start and stop recording on either resource group A or resource group B. A created scene, an addition to Highlight mode, or modifications of the IN point and/or OUT point of a scene on one resource is reflected on the other resource. When a scene is created with resource group A, the scene containing exactly the same elements is also created for resource group B. If the IN point of the scene is modified on resource group B, the IN point of the scene for resource group A is also changed. Note that operations related to recording and creating scenes are the same for both resource groups. However, each resource is independently used for play operations. This allows you to play one section of material to air, for example, and preview a different section of material at the same time. Also, when a highlight is played on resource group A, another scene can be played on resource group B. Playlists are owned independently by each channel.

The Extra Channel resource can be selected only after a 2 Channels resource or a 1 Channel resource has been assigned.

VTR Emulation (requiring one codec)

With this resource, a Profile codec can be controlled by a BVW-75 protocol–based controller such as the Sony DTR-3000.

VTR Emulation can be used for record or play. However, since the BVW-75 protocol was not designed to control nonlinear devices, many of the LVS features (such as creation of scenes, building playlists, etc.) are not accessible.

NOTE. *This is option will respond to commands from most BVW-75 protocol based remote controls, but is only guaranteed to work with the DTR-3000. Even in this case, not all functions are supported.*

Mix/Effects (requiring one codec) (Enhanced Features Set Only)

This resource allows you to set a dissolve in the Playlist window and play a playlist with a dissolve using one Profile codec. You must install the optional Mix/Effects card in your Profile system to use the dissolve.

Timeline Edit (requiring one codec) (Enhanced Features Set Only)

This resource allows you to perform timeline edits in the Timeline Window using one Profile codec.

Reassigning Resources

Once the resource assignment is set, it cannot be changed until the system is restarted. To reassign resources, exit from the system and restart it.

Resource Setup Tab

In the Resource Setup tab, you can:

- Set the assignment of RS-422 ports and audio banks with crosspoints.
- Enter a compression target value .
- Assign (if desired) a resource for direct playback for the Library Window.

The selected Resource Groups will reflect the decisions made in the Resource Assign Tab. To enable a Port, Library Playback, or Audio Bank, click on the corresponding crosspoint check box.

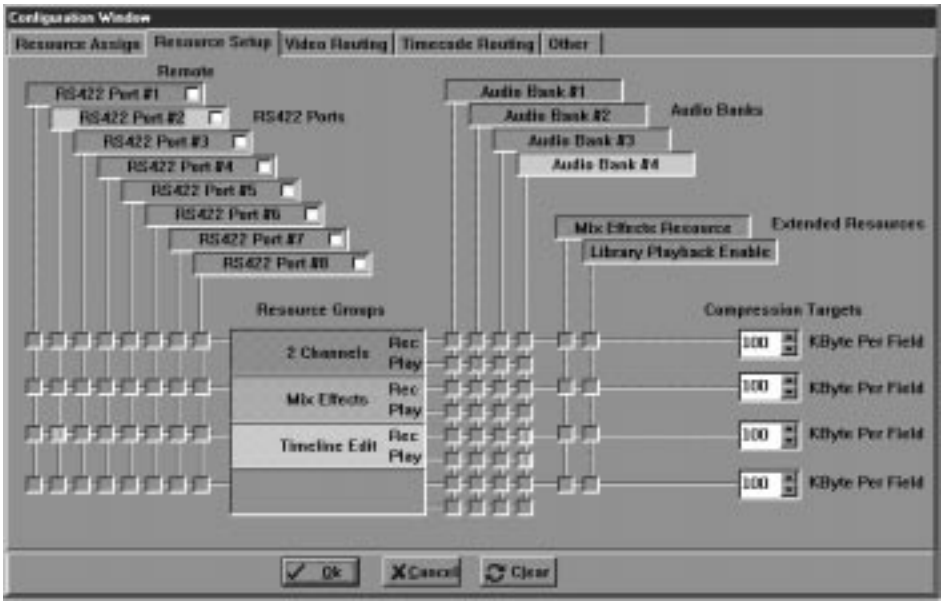


Figure 3–3: Resource Setup Tab

Assigning RS-422 Ports

Multiple RS-422 ports can be assigned to one resource. However, commands are executed from each port in the order in which they were given. For example, the play function is executed when a Play command is received from one Live Controller but it immediately stops playing if a Stop command is received from another Controller. Up to two Live Controllers are allowed for one resource.

One RS-422 port can also be assigned to more than one resource. In this case, multiple resources can be controlled by one Live Controller.

Remote Controllers

Check this box if remote control signals other than those from the Live Controller are possibly incoming to this RS-422 port. Uncheck if the Live Controller is connected to the port.

Note that the settings in the Resource Setup tab are used by the LVS software only. When you want to enable or disable the port(s), you must establish corresponding settings in the Current Resource Information Window. For more details, refer to *Current Resource Information Window* on page 5–6.

Assigning Audio Banks

Use the crosspoints to assign audio banks to respective resources.

You must make audio assignments for both the record channel (Rec) and the playback (Play) channel.

Setting Compression Target

The Compression Target is measured in kilobytes (KB) per field. The higher the number, the lower the compression ratio. 100 KB Per Field represents a compression ratio of approximately 3.5:1. This creates the highest quality image, but uses the most amount of storage to do so. An optimum value should be set in accordance with your production requirements.

- A setting of 100 is equivalent to a compression ratio of 3.5:1.
- A setting of 75 is equivalent to a compression ratio of 5:1.
- A setting of 50 is equivalent to a compression ratio of 7:1.

The effective range is 1 to 100, and the initial value is 100.

Library Playback Enable

If you desire to play back directly from the Library, click the crosspoint for Library Playback Enable next to the desired resource.

NOTE. *If you assign direct Library playback to a resource, a playlist from the same resource will not be available.*

Mix Effects Resource

When the Mix/Effect card is installed in the Profile system and the Mix Effects is assigned as a Resource Group in the Resource Assign tab, click the crosspoint for connecting the Mix Effects Resource to the Mix Effects Resource Group.

Video Routing Tab

In the Video Routing tab, you can assign the crosspoints for video inputs and outputs to the resources assigned on the Resource Assign tab.

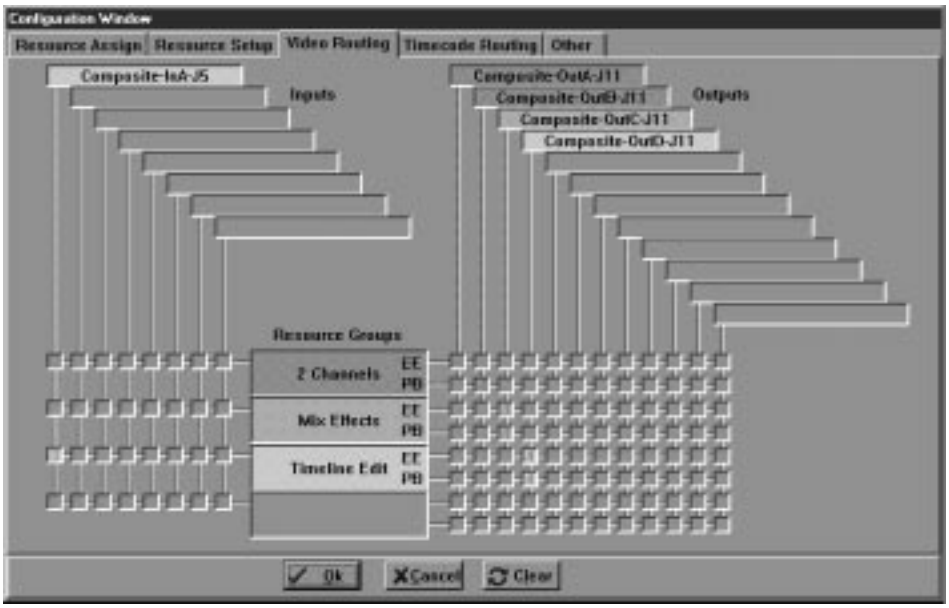


Figure 3–4: Video Routing Tab

In the Video Routing tab, all the video input and output channels installed in the Profile system are displayed. Use the crosspoints to assign video channels to each of the resources as required. Only one physical input channel can be assigned to the input channel of each resource, while multiple physical output channels can be assigned to each resource, which routes the same video signal to each of the assigned outputs.

When you assign an output channel on a 2 Channels resource, you can use the crosspoints to assign EE and PB outputs independently. For a 1 Channel resource, you can only assign EE and PB outputs as a set.

Timecode Routing Tab

The Timecode Routing tab allows you to select the timecode types for each resources.

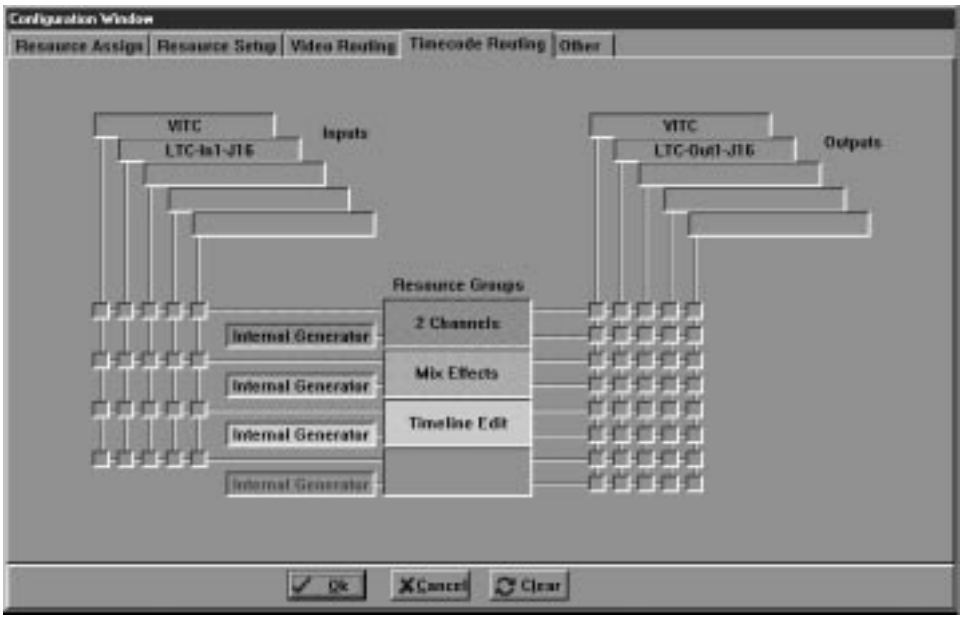


Figure 3–5: Timecode Routing Tab

About Timecodes

Use the Inputs crosspoints to select your external timecode source. This timecode is used for operations described in the next section, *External Timecode*. Timecode from the internal generator is used in situations described in *Internal Timecode*.

Use the Outputs crosspoints to select the type of timecode output for each resource.

External Timecode

Simple record and playback operations are performed based on the external timecode. Select the desired external timecode source (VITC or LTC). This timecode (original timecode) will be recorded and attached to the corresponding video material.

The upper input line of each resource represents the external timecode channel.

Internal Timecode

If you do not assign an external timecode source, timecode from the free–running internal timecode generator is attached to your video.

The timecode from the internal generator is also used during playback operations in the Playlist and Timeline windows. The recorded timecode is not used in these cases, thus ensuring continuous sequential timecode during the playback of all the scenes.

The lower input line of each resource represents the internal timecode. See Figure 3–5.

Running Timecode

Normally, the internal timecode is used as continuous time (running timecode) in the Playlist window.

The running timecode starts from 00:00:00:00, but you can also set a start time arbitrably with the **Clock** button in the Current Resource Information window. See Figure 5–5 on page 5–6.

For example, you can start a playlist from 11:00:00:00. When prerolled, the timecode starts from around 10:59:xx:xx.

Other Tab

In the Other tab, you can set various operational parameters. If the default settings do not exactly match your needs, you can change the settings and save the changed configuration to a file, which you can load whenever you need those settings.

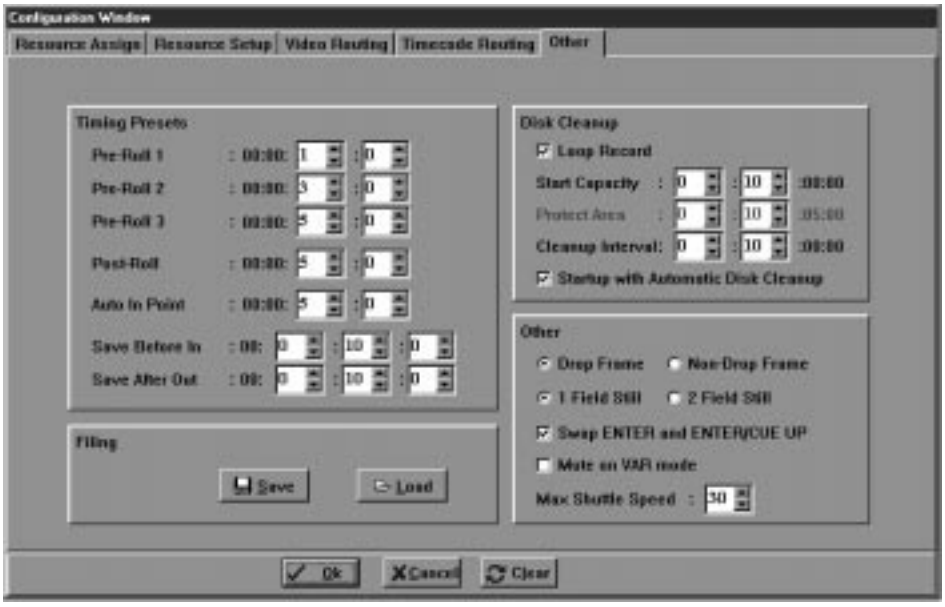


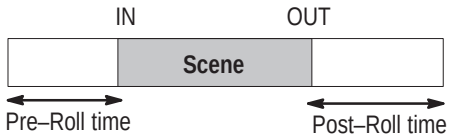
Figure 3–6: Other Tab

The Other tab consists of four panels: Timing Presets, Disk Cleanup, Filing, and Other.

Timing Presets

Pre-Roll — Set this parameter to the amount you want the material to roll prior to the In point of a scene.

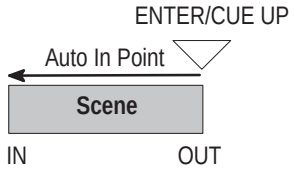
Three Pre–Roll times can be set in advance. These preset Pre–Rolls can be selected using the LVS Live Controller buttons **PR 1**, **PR 2**, and **PR 3**. Pre–Rolls can be set between 00:00 and 59:29 (seconds, frames). The default values are 01:00 for **PR 1**, 03:00 for **PR 2**, and 05:00 for **PR 3**.



Post–Roll — Post–Roll can be set between 00:00 and 59:29 (seconds, frames). The default value is 05:00.

Auto In Point — In the 2–Channel mode, a scene can be generated by simply pressing the **ENTER/CUE UP** button, without pressing the **MARK** button. The point when the **ENTER/CUE UP** button is pressed becomes the OUT point, and the IN point is set to the OUT point minus this parameter (back timed).

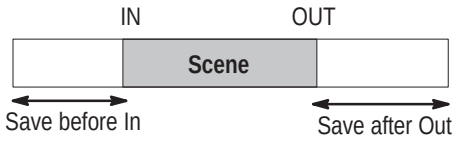
The effective range is between 00:05:00 and 59:59:29. The default value is 05:00.



NOTE. *Do not set this parameter to any value shorter than five seconds. Playing or cueing up to something in less than five seconds after it has been recorded may cause the system to play or cue to black.*

Save Before In / Save After Out — During disk cleanup, marked scenes and highlights as well as library material are protected. This setting determines how much pad on each side of a scene's and/or highlight's IN and OUT is saved.

The effective range for both parameters is between 00:00:00 and 59:59:29 (minutes, seconds, frames). The default value is 01:00:00 for both parameters.



Disk Cleanup

Although Profile system's disk capacity can be expanded with the expansion chassis and RAID systems, it is still finite. Because of this, the LVS software provides methods for *cleaning up* unwanted material, allowing you to record for much longer than the available disk capacity.

The LVS provides two fundamental approaches to *clean up* material: Disk Cleanup (auto and manual) and Loop Record.

Disk Cleanup

When disk cleanup is executed, all material on the disk is deleted, except the following:

- Material marked as scenes (with pads)
- Material marked as highlights (with pads)
- Material in the library (with pads)
- Material within the protected area

Note that events in the Playlist Window are not protected from a disk cleanup. Make sure that the scene or highlight associated with an event in the Playlist Window is not discarded.

You can also set a protect area to prevent the cleanup operation from erasing your most recently recorded material, regardless of whether or not it has been marked as a scene or highlight. See Protect Area on page 3–16.

Disk cleanups can be set up to occur automatically or manually. When set in automatic disk cleanup mode, disk cleanup is executed whenever the remaining disk capacity falls below a threshold, called Start Capacity (the remaining capacity at which a disk cleanup is started). Start Capacity is explained on page 3–16.

See *Disk Menu* on page 4–6 to perform manual disk cleanup.

Loop Record

In Loop Record mode, the system loops back and records over the oldest material in the loop. Therefore Loop Record allows you to save as much unmarked material as possible before discarding (recording over) it.

Scenes and highlights (as well as library files) are protected from being recorded over, even in loop mode. This means that the more scenes and highlights you create, the less time (disk space) is available for looping (recording over). The loop remaining time displayed in the Main Window shows this by decreasing as new scenes are created.

On system start–up, the loop remaining time is calculated based on the following factors:

- Free disk space at start-up
- Start-up capacity parameter × number of record resources
- Cleanup interval.

If the start capacity and cleanup interval are too large, loop remaining can be very small. Refer to recommended settings.

Loop Record — Check this option to enable loop record mode. Deselect this option to enable disk cleanup mode (manual or auto).

Start Capacity — The automatic disk cleanup function is executed when the free disk capacity of the main unit becomes smaller than the value specified in this parameter.

The effective range is between 10:00:00 and 59:59:29. The default value is 10:00:00.

The system uses this parameter multiplied by the number of configured resources with record capacity to determine the actual threshold. For example, with start capacity set to 10:00:00 and the system configured for two channel resources, auto disk cleanup would occur with 20 minutes of disk remaining.

NOTE. *If you set this parameter to any value smaller than 10:00:00, the disk capacity may be consumed while cleaning up the disk (which may take 10 minutes at maximum) and recording may be stopped. To avoid this, set the parameter to 10:00:00 or higher.*

Start Capacity is also used in loop record and must be set. A setting of 10:00:00 is recommended in loop record mode.

Protect Area — In disk cleanup mode, this parameter is used to set how far the data can be deleted from the current point when a disk cleanup is activated. This will avoid deletion of the data currently recording. This is not used in loop record mode.

The effective range is between 01:00:00 and 59:59:29. The default value is 05:00:00.

Cleanup Interval — This parameter is used in loop record.

Recommended range is between 10:00:00 and 20:00:00.

Startup with Automatic Disk Cleanup — If this box is checked, the automatic disk cleanup mode is set when starting LVS.

NOTE. *Always enable* ***Startup with Automatic Disk Cleanup*** *when loop record is selected. Manaul cleanup is not recommended in Loop Record.*

Other

Drop/Non–Drop Frame — Set for drop–frame or non–drop frame. The default value is Non–Drop Frame.

1 Field/2 Field Still — Selects an image playback mode for freeze or stop frame playback. The default value is 1 Field.

Swap ENTER and ENTER/CUE UP — Normally, the **ENTER/CUE UP** button on the Live Controller generates and cues up scenes. Pressing the **SHIFT** and the **ENTER/CUE UP** buttons will only generate scenes but will not cue up them. If you check this box, the functions are swapped. That is, pressing the **ENTER/CUE UP** button will generate scenes, but not cue them up. Pressing both the **SHIFT** and the **ENTER/CUE UP** buttons will generate and cue up scenes.

This function allows you to keep a scene cued up for playback while continuing to mark new scenes.

Mute on VAR mode — Check this option to mute audio, even at normal speed, when VAR operations are being performed.

Max Shuttle Speed — Sets the maximum shuttle speed of the Live Controller.

The effective range is between ±1 and ±50. The default value is ±30.

Save and Load

These buttons are used to save and load configuration settings.

When you click on the Save or Load button, the corresponding Save or Load Configuration File dialog box appears, as shown in Figure 3–7 and 3–8.

In the Save Configuration File dialog box, all the information set in the Configuration Window can be saved as a file on the Profile system hard disk, or on a floppy disk.

Previously saved system settings can be loaded with the Load Configuration File dialog box. When loaded, all current setup parameters are replaced with the newly loaded information, ranging from Resource Setup data to various parameter values (including window layout information).

To save a configuration setting, select a drive and a directory. Enter a file name in the File name text box, then click the **Save** button.

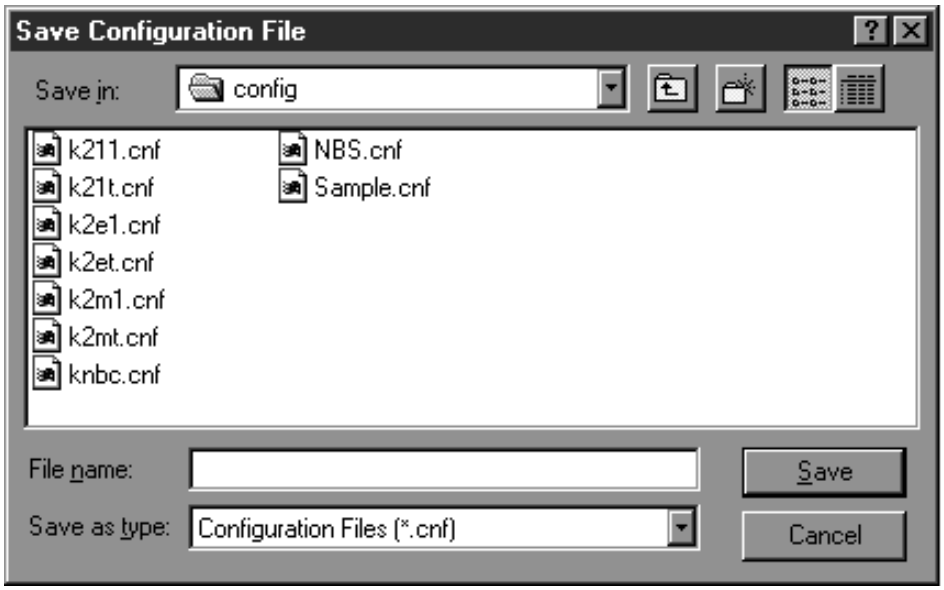


Figure 3–7: Save Configuration File Dialog Box

To load a configuration setting, select the drive, directory and file name in the Load Configuration File dialog box, then click **Open**.

You should periodically delete unused configuration files. Use the Windows NT version 3.51 File Manager , or My Computer in Windows NT version 4.0, to delete unneeded files.

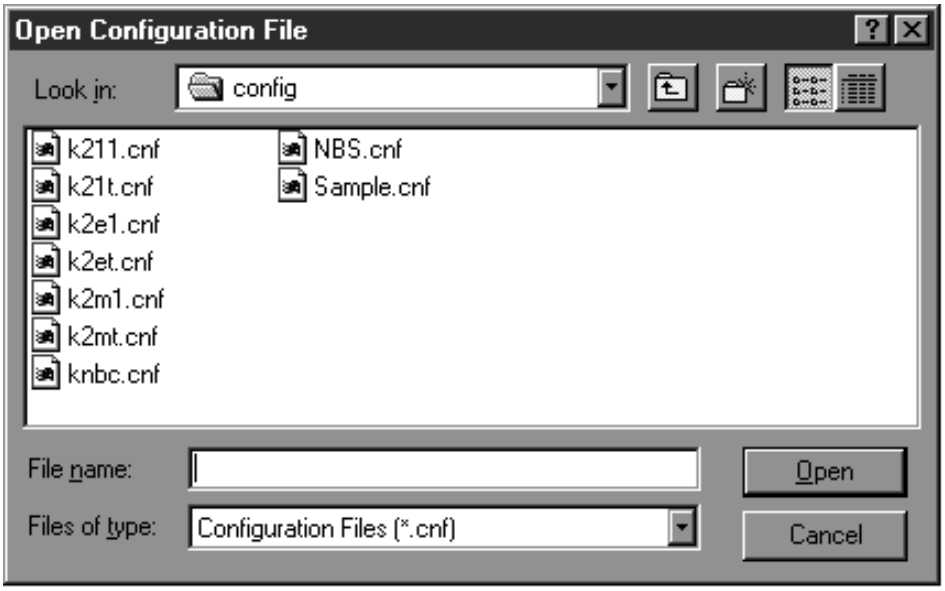


Figure 3–8: Load Configuration File Dialog Box

Starting Operation

Once you have completed assigning resources and setting the various parameters in the Configuration Window, press the **OK** button. This initializes the Profile system and enables the **Start** button on the Main menu.

Press the **Start** button.

You will be prompted to delete or save any previous scenes and/or highlights. Click on the **Yes** button if they are to be deleted, otherwise click on the **No** button. Note that if any previous scenes and/or highlights are not being deleted, subsequent operations will have recording time restrictions. See *Previous Scenes and Internal Timecode* that follows.

Previous Scenes and Internal Timecode

The Timecode Preset Window (see Figure 3–9) opens, allowing you to spedify timecode management for this session. The next paragraphs describe how to set the parameters in this dialog box, depending on what you chose to do with previous scenes and highlights.

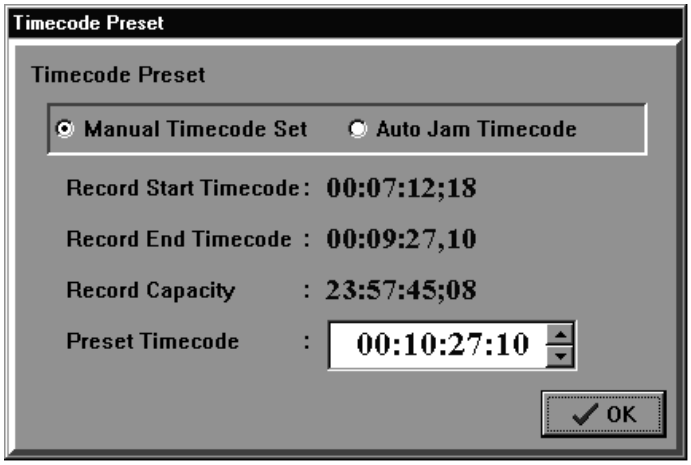


Figure 3–9: Timecode Preset Window

When previous scenes and highlights are deleted:

No restrictions apply.

When previous scenes and highlights are not deleted:

Scenes and highlights recorded by the LVS are managed solely by timecode. The LVS application will not allow duplication of timecode. Therefore, LVS will not allow you to operate the system continuously for more than 24 hours, even if recording is paused during that span of time. When 24 hours have passed since the time recording began, the system stops recording, regardless of the remaining disk capacity.

To alleviate this condition, you should preset the timecode to a time immediately after the end of the previous recording. This will maximize recording time.

The following times are displayed for your convenience.

- Record Start Timecode
- Record End Timecode
- Record Capacity

When Timecode Preset setup is completed, click **OK**. This will open the various LVS windows, as described in the next section.

Operating the System

Operating the System

Initial Screen

Once you have established the timecode presets for this session, the Main Window and Launcher (see Figure 3–8) appear on the screen and you can start operation.

The Launcher provides buttons which you can click to open each of the corresponding LVS windows. You can also open the windows from the Windows menu in the main LVS Event Management System window. The open windows can then be resized, moved on the screen, or minimized to suit your needs.

For further descriptions on the Main window and Launcher, refer to *Main Window* on page 4–5 and *Launcher* on page 4–9.

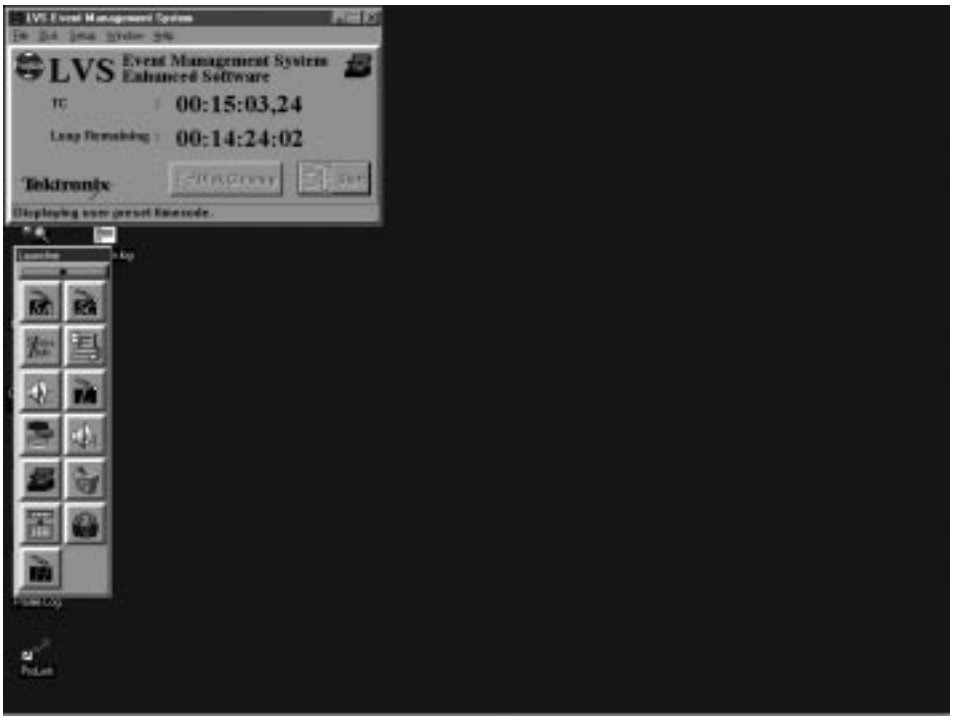


Figure 4–1: Start–up Screen

Window positions and sizes can be saved and automatically restored the next time the system is re–started. This can be part of a .cnf file on the Filing page in the Configuration Window. Refer to *System Configuration* and *Starting the System* for system configuration information.

Summary of Window Operation

The windows necessary for operating the system are determined by the settings in the Configuration Window.

The Main Window is used to open the Configuration Window, to start and stop the system, to perform disk cleanup, etc.

The principal windows used in most LVS operations are shown in Figure 4–2.

The LVS application also has following windows.

Launcher — The Launcher opens at the same time as the Main window. You can use the buttons in the Launcher to open and close all the windows except for the Main and Preview windows.

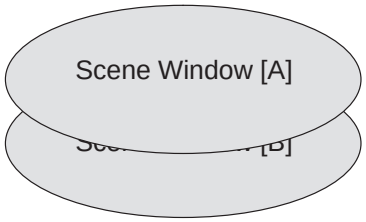
Preview Window — The Preview window opens when you double–click a scene, highlight, library item or an event which exists in any window. With this window, you can enter detailed information about the scene or event and perform play operations.

Scene Information Window — The Scene Information window opens when you click on the Scene Information button in the Launcher. This window presents detailed information about the recorded material.

Recycle Box Window — The Recycle Box window is a waste bin into which you can throw unwanted scenes, highlights, library items or events. Scenes moved to the Recycle Box are not immediately deleted from the system. They can be recovered until a cleanup operation takes place, or until the system is shut down.

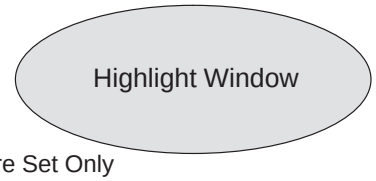
Audio Monitor Window — The Audio Monitor window graphically displays input and output audio levels. You can adjust these levels in this window. The number of Audio Monitor windows corresponds to the number of resource groups assigned in the Configuration Window. Each window is labeled with the letter of the resource group. You can open a window for the desired channel(s) by selecting it from the Window menu in the menu bar of the Main Window.

Timecode Offset Window — The Timecode Offset window is used to set the timecode offset value to the system, or to let the system to calculate the timecode offset value between the internal and external timecodes. This allows you to search for recorded material by external timecode.



The most basic window in the system. It is used to store and/or search for scenes. From this window, you can copy scenes to the windows below.

The number of Scene windows that appear corresponds to the number of resource groups assigned in the Configuration WIndow. Each window is labeled with the letter of a resource group. The Live Controller must be used to play the scenes stored in this window.



Enhanced Feature Set Only

This window is used to store and/or search for selected important scenes. Scenes in other windows can be copied to this window.

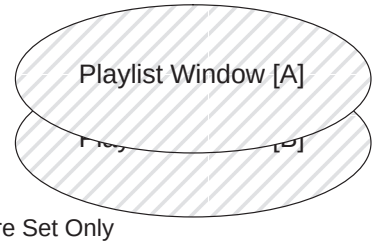
There is only one Highlight window for the system. The Live Controller must be used to play the highlights stored in this window.



Enhanced Feature Set Only

This window is used to store scenes in a library. Scenes in other windows can be copied to this window.

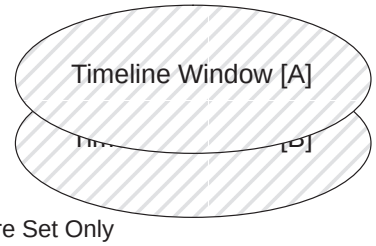
There is only one Library window for the system. You can play scenes stored in the Library by using the buttons which appear on this window.



Enhanced Feature Set Only

This window is used to create playlists, and to play events and/or playlists. Scenes and highlights in other windows can be copied to this window as an event.

The number of Playlist windows corresponds to the number of resource groups assigned in the Configuration WIndow. Each window is labeled with the letter of the resource group. You can play event(s) or play–list by using buttons which appear on this window.



Enhanced Feature Set Only

This window is used to create timeline list and packaged timeline. Scenes, highlights, library item, packaged playlist can be copied to this window as an event. Packaged timeline can also be copied back to this window.

There is only one Timeline window for the system. You can edit video and/or audio event independently. Timeline list can be played back with the buttons appears in the window.

Figure 4–2: Windows for System Operations

Summary of Recorded Material Flow

Table 4–1 shows whether the material in one window can be copied into another window. The symbols in the table mean:

- Cross (×) — cannot be copied.
- Icon — can be copied as an icon.
- D.Ass — can be copied and disassembled into events.

For example, a scene in the Scene window can be copied into all windows as an icon. a packaged playlist in the Highlight window can be copied into the Library window as an icon and also into the Playlist window as disassembled events. This means that you can use a packaged playlist as a group in the Library, but in the Playlist window, you can manage each event individually.

Table 4–1: Copying Recorded Materials between LVS Windows

LVS Windows (Copied to)	LVS Windows (Copied from)	Scene	Highlight	Library	Playlist	Timeline	–	–
	Material Name	Scene	Highlight	Library	Event	Event	P. Playlist	P. Timeline
Scene		–	×	×	×	×	×	×
Highlight		Icon	–		×	×	–	–
Library		Icon	Icon	–	×	×	Icon	Icon
Playlist		Icon	Icon	Icon	–	×	D.Ass	Icon
Timeline		Icon	Icon	Icon	×	–	×	D.Ass

Main Window

Figure 4–3 shows the Main Window as it appears after the **Start** button has been pressed. Many system functions, such as configuration and disk cleanup, are accessed from the Main Window.

NOTE. *You cannot re-configure the system for Resource Assign, Resource Setup, or Routing after pressing* ***Start****. To re-configure the system, you must first exit the system and then go through the configuration procedure again.*

The Launcher also opens once system configuration has been completed. All the windows can be opend and closed from the Launcher, except for the Main window and the Preview window. Refer to *Launcher* on page 4–9 for more information.

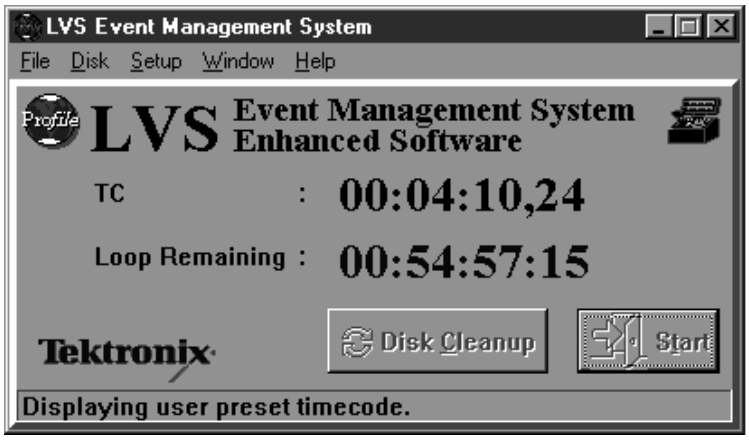


Figure 4–3: Main Window

Description

Displayed Information

TC (TimeCode) — The system timecode. The times for all the scenes are referenced to this timecode.

This time code is free–running, generated internally by the Profile system. The time code can be initialized to an external longitudinal time code (LTC), or manually preset, as previously described on page 2–12.

Disk Remaining/Loop Remaining — Depending on the settings in the Disk menu, one of the following two numbers is displayed:

- **Disk remaining**
  Estimated amount of *clean* or free disk space available for recording. When disk remaining reaches 00:00:40:00, recording will be stopped on all channels.

- **Loop Remaining**
  This display should only be used when in Loop Record mode. It indicates the current length of the record loop. Unmarked video older than this loop time will be *cleaned* and written over with new video.

NOTE*. During a disk cleanup operation, the color of the Disk Remaining/Loop Record number changes from blue to green for the duration of the disk cleanup. For more information on Disk Cleanup and Loop Record mode, refer to* Disk Cleanup Area *on page 3–15.*

Start Button

This button starts the system. For system start–up, see page 3–20.

Once the system has been started, this button is disabled, indicating that the system is ready for operation.

Disk Cleanup Button

Click the **Disk Cleanup** button to execute a manual disk cleanup. In the auto cleanup mode, this button is disabled. This button is not displayed until the **Start** button is pressed. For the disk cleanup mode, see *Disk Menu* to be discussed later, and *Disk Cleanup* which was previously discussed on page 3–15.

The menu bar in the Main Window contains pull–down menus, from which you can choose various commands.

File Menu

Exit — Terminates LVS application. The system prompts you as to whether you want to exit the LVS software (in case this function was selected by mistake). For complete system shutdown, refer to *System Shutdown* on page 2–32.

Disk Menu

Either of the following two functions can be checked.

Auto Cleanup — The Profile system automatically deletes material which has not been used in any scenes (when the remaining disk capacity becomes low).

Manual Cleanup — Press the **Disk Cleanup** button on the Main Window to execute Disk Cleanup.

NOTE*. When in Loop Record mode, do not select Manual Cleanup. Selecting Manual Cleanup causes Loop Record mode to operate improperly.*

Either of the following two options can be selected:

Disk Remaining — Displays current disk remaining capacity in the Main Window. This should typically be used when in either Manual or Auto Disk Cleanup mode.

Loop Remaining — Displays the current Loop Remaining value. This should be used only when in Loop Record mode.

Set Up Menu

Normal — Use this command to open the Configuration Window.

When this command is chosen, the Configuration Window opens for System set up. For further information on the Configuration Window, refer to *System Configuration* and *Starting the System* on page 3–1.

NOTE. *Once the configuration has been completed and the* ***Start*** *button has been pressed, you can not re-configure unless you exit the LVS application.*

Window Menu

Figure 4–4 shows an example of the Window menu, which provides a list of LVS windows which you can open.Windows can also be opened by pressing corresponding key(s), or by clicking in the Launcher, described on page 4–9.

Help Menu

About — When this menu item is selected, the version number of the current LVS software is displayed.

NOTE. *On-line Help is not available at this time.*



Figure 4–4: Example of the Window Menu

Launcher

After the system configuration has been completed, the Launcher, opens at the same time as the Main window. The Launcher allows you to quickly and easily open windows, and performs other functions, described in the following sections.

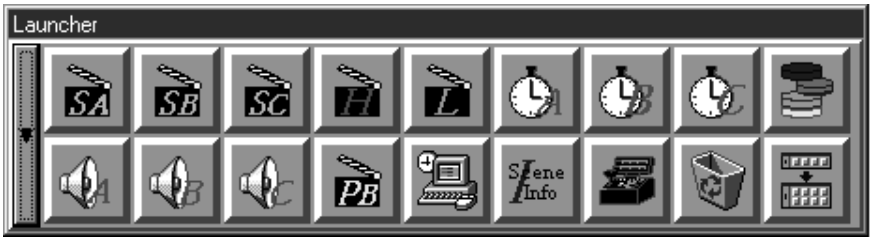


Figure 4–5: Launcher in Landscape Format

The Launcher can be placed on your SVGA monitor in portrait (vertically) or landscape (horizontally) format. You can customize the Launcher to display only those windows which you use most often, and change the order of the buttons to suit your needs.

Window and Button Functions

Open and Close

Click on a button to open the corresponding window. Click again on the button to close the window.

When you positioin the mouse pointer on a button, the corresponding button name will be displayed near that button.

Drag and Drop Operation

You can drag and drop video and audio material (scene, highlight, playlist, etc.) onto the buttons in the Launcher.

For example, when you drag a scene from the Scene window onto the Recycle Box window button in the Launcher and then drop it, this scene is put into the Recycle Box window. Similarly, you can put a scene back into the Scene window by dragging it from the Recycle Box window and dropping it on the Scene button in the Launcher. When you drop a scene on the Playlist window button, the scene is added to the end of the playlist.

Note that video and audio material cannot be added to the Library window with this drag and drop operation.

Displaying in Portrait or Landscape

The button at the top (portrait) or left (landscape) of the Launcher allows you to toggle the format of the Launcher, from Portrait (see Figure 4–6) to Landscape (see Figure 4–5) and back.

Rearranging Buttons

You can change the order of the Launcher buttons by dragging them to their new positions and dropping them.

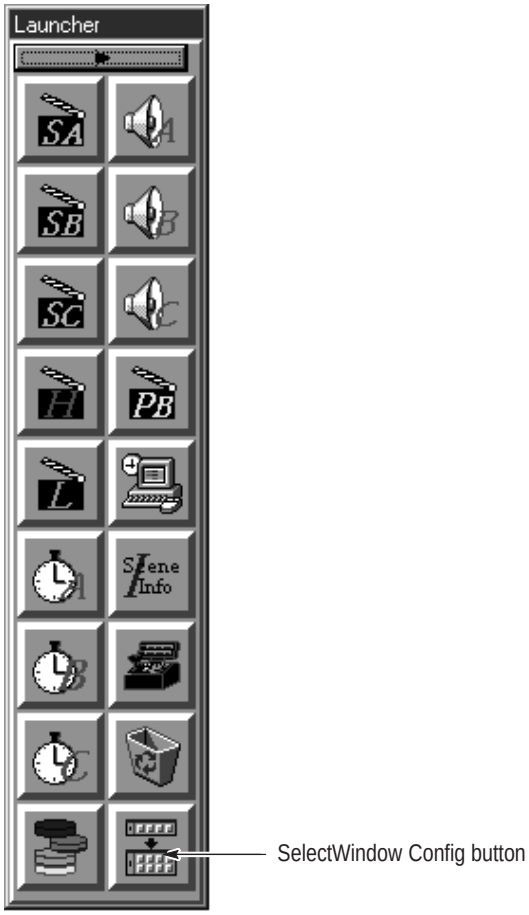


Figure 4–6: Launcher in Portrait Format

Configuring Launcher

Click the **SelectWindow Config** button (shown in Figure 4–6) to open Select-Window Config dialog box, which you can use to configure the Launcher.



SelectWindow Config Button

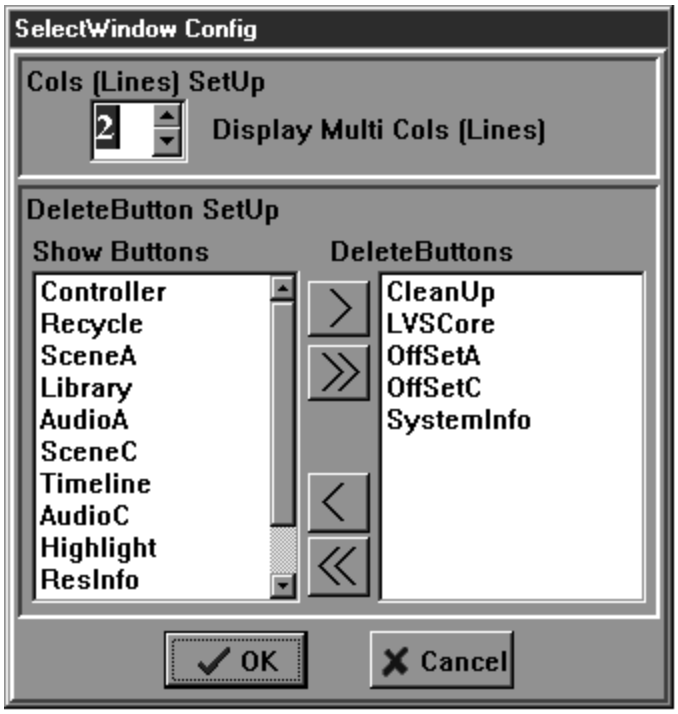


Figure 4–7: SelectWindow Config Dialog Box

Selecting Display or Non-display

The SelectWindow Config dialog box allows you to select buttons (windows) to be displayed in the Launcher. See Figure 4–7.

Select the button(s) from the **Show Buttons** list that you do not want to display in the Launcher, and then click the > button. The button(s) you choose move into the **Delete Buttons** list, and will deleted from the Launcher.

Clicking the >> button allows you to move all buttons from the **Show Buttons** list to the **Delete Buttons** list.

Select the button(s) from the **Delete Buttons** list, that you do want to display in the Launcher, and then click the < button. The button(s) you choose move into the **Show Buttons** list, and will be displayed in the Launcher.

Clicking the << button allows you to move all the buttons from the **Delete Buttons** list to the **Show Buttons** list.

Changing Number of Columns or Lines

The number of columns of buttons (lines, in landscape) can also be changed in the SelectWindow Config dialog box. Enter a number in the Cols (Lines) Setup field, or increase or decrease the number by clicking on the arrows. The buttons must be organized into at least two columns or lines.

Making Changes Effective

Accept your new Launcher cofiguration by clicking the **OK** button.

To discard your changes and return to the initial Launcher configuration, click the **Cancel** button.

LVS Controller Window (Record Controller)

The LVS Controller window gives you the ability to perform some typical controller functions, such as record and play, for channels that do not have an LVS Live Controller connected. Minimum operations can be performed. This window can also be used concurrently with an LVS Live Controller.

You can also use this window to manually synchronize the Profile output to an external signal.

To open the LVS Controller window, click the Controller button in the Launcher.



LVS Controller Button

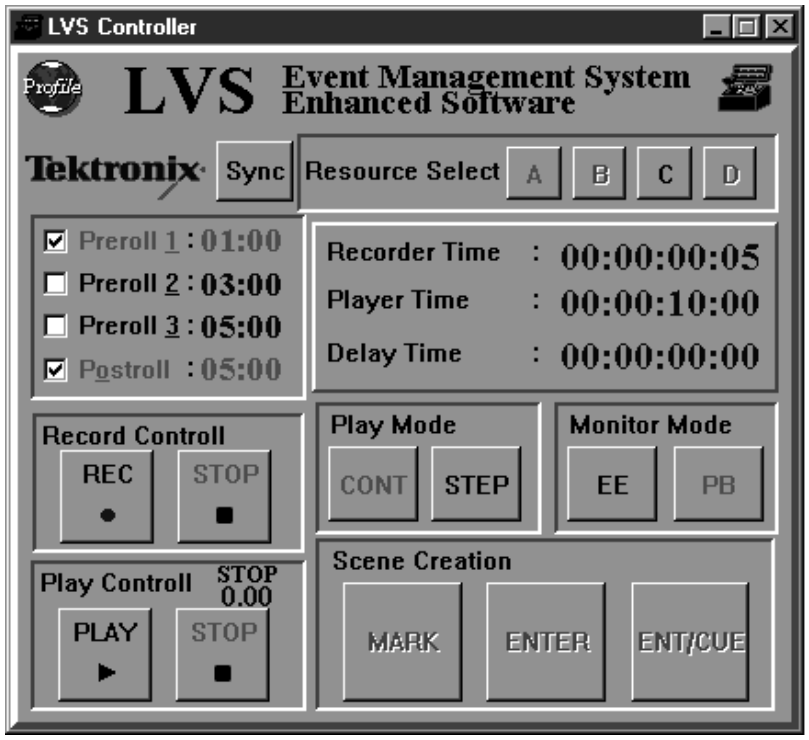


Figure 4–8: LVS Controller Window

Creating Scenes

1. Select a Record Resource from **A** to **D** by clicking the corresponding button. These letters correspond to the resource groups assigned in the Resource Setup tab of the Configuration window.
2. Start recording by clicking on the **REC** button.
3. To create a scene:
   a. Click the **MARK** button to set the IN point of a scene.
   b. Click the **ENTER** or **ENT/CUE** button to set the OUT point of the scene.

   Repeat steps **a** and step **b** as necessary. Each scene will be created in the Scene window.
4. Stop recording by clicking on the **STOP** button.

Playing Scenes

1. Select a Playback Resource from **A** to **B** by clicking the corresponding button. These letters correspond to the resource groups assigned in the Resource Setup tab of the Configuration window.
2. Select an output mode by clicking either the **EE** button or the **PB** button.
3. Select a mode by clicking either the **CONT** button or the **STEP** button.
4. Select a scene in the Scene window by clicking its icon.
5. Start playing by clicking the **PLAY** button.
6. Stop playing by clicking the **STOP** button.

Synchronization

The Profile output signal can be manually synchronized to an external signal by using following procedure.

1. Prepare two picture monitors to compare the video output from the Profile system and the video of the external signal.
2. Click the **Sync** button to open the Manual Synchronization panel. See Figure 4–9.

3. While monitoring the images on the two monitors, synchronize the two by speeding up or slowing down playback on the Profile system by following these steps:

   a. Slide the **bar** to right or to left to increase or decrease the acceleration rate and deceleration rate, respectively.

   b. Click and hold the **Acceleration** button (at right) to speed up the Profile playback, or the **Deceleration** button (at left) to slow it down.

   c. Repeat steps **a** and **b** until you find a synchronization point.

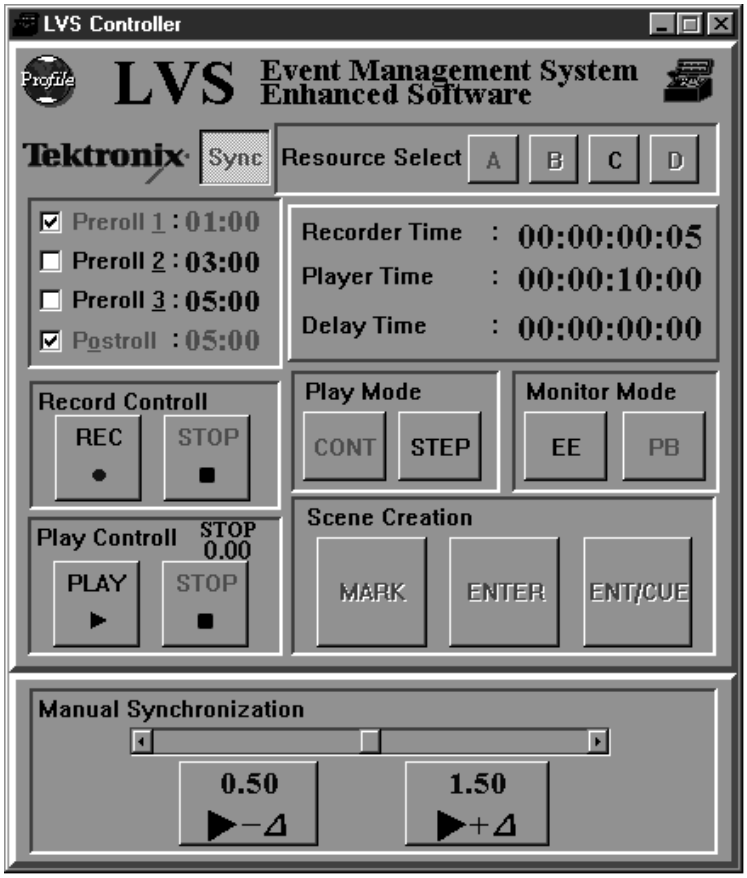


Figure 4–9: Manual Synchronization

Window Description

Resource Select

A, B, C, D — Select the codec resource group to be controlled. Each resource group, such as a 1 Channel Rec/Play or a 2 Channels Rec/Play, is assigned a letter (A, B, C or D) as previously discussed on page 3–5.

Preroll Options

Preroll 1, Preroll 2, and Preroll 3 — Select one of three preset Prerolls 1, 2 or 3 to enable it. The value set during configuration is displayed next to each selection.

Postroll — Select or deselect Postroll.

NOTE. *Although the Live Controller has dedicated buttons for selection of Preroll, it has no buttons for selection of Postroll. Postroll selection or deselection must be performed from the Controller Window.*

For Preroll and Postroll setup, refer to *Timing Presets* on page 3–13.

Information Display

Recorder Time — The last time recorded (time code) is displayed. While recording is paused, the display is also paused.

Player Time — The time code currently playing is displayed. While playing is paused, the display of the time code is also paused.

Delay Time — The elapsed time since recording of the material currently being played is displayed (the difference between recorder time and player time).

This function is helpful when you want to know how much the played material is delayed from the actual recorded time.

Record Control

REC — Starts recording on the selected resource.

STOP — Stops recording on the selected resource.

Play Mode

CONT — In CONT, or Continuous mode, playback does not stop when the OUT point of a scene is reached.

STEP — In STEP mode, playback will stop when the OUT point of a scene is reached. The actual stop point will depend on the Postroll setting.

Monitor Mode

Selects the output mode of the channels when stopped. Note that even though the LVS Live Controller is used to control the system, Monitor Mode must be set using this button.

EE — This setting places the outputs in the E–to–E mode. When E–E is selected, an input signal is routed to the output during stop or record.

PB — When PB is selected, the last field or the last two fields, depending on the configuration, are displayed when playback stops.

Play Control

PLAY — Plays the cued up scene.

STOP — Stops playing.

Scene Creation

Scenes are created by specifying an IN point using the **MARK** button and an OUT point using the **ENTER** or **ENT/CUE** button while recording.

MARK — Specifies the beginning of a scene. This point becomes the IN point of the scene.

If you press the **MARK** buttons more than once before pressing the **ENTER** button, the last point where the **MARK** button is pressed is set as the IN point.

ENTER — Specifies the end of a scene. This becomes the OUT point of the scene.

In this case, the system will not cue up at the IN point of the scene.

ENT/CUE — Specifies the end of a scene. This becomes the OUT point of the scene. The system cues up at the IN point of the scene and pauses so that the scene can be played immediately.

For operational convenience and speed, only pressing **ENTER** or **ENTER/CUE UP** will create a complete scene entry using the Auto In setting in the System Configuration (on the Other tab) to calculate a back timed In point. (See *Auto In Point*, page 3–12.)

Sync Button

Clicking on the **Sync** button in the Controller window to display two buttons and slide bar. See Figure 4–9. The **+Δ** (**Accelerate**) and **–Δ** (**Decelerate**) buttons allow you to put on and delay the output signal. The slide bar allows you to set how much to accelerate or decelerate when you press the **+Δ** or **–Δ** button.

The Slide Bar and buttons have corresponding keys on the keyboard. Refer to Table 4–2 for a summary of the key operations.

Slide Bar — Use the Slide Bar to increase or decrease the acceleration and deceleration rates. Use larger values to correct for larger lag times between the Profile output and the external signal.

Slide the bar to right or to left to increase or decrease the acceleration rate and deceleration rates, respectively.

A rate of 1.0 indicates normal playback. You cannot synchonize signals with this setting.

Acceleration and Deceleration Buttons — Click and hold the **+Δ** (**Accelerate**) button or **–Δ** (**Decelerate**) buttons, to adjust the Profile playback speed. The acceleration and deceleration rates are set with the slide bar.

The range of the **–Δ** button is from 0.00 to 1.00, and the **+Δ** button from 1.00 to 2.00. When the mouse button is released, original playback speed will be restored (1.0).

Through careful use of these controls, you can manually synchronize a Profile output to an external signal.

NOTE*. Early versions of the Live Controller may not allow you to successfully synchronize signals. This is because the Live Controller sends a STOP signal to the Profile system during the synchronization operations. If you have an early Live Controller, you can: replace the Live Controller firmware with version 1.20 or higher, turn off the power to the Live Controller, or disconnect the Live Controller from the Profile system.*

Table 4–2: Keyboard Keys for Manual Synchronization

Keys	Descriptions
Right Arrow (←)	Same as the +Δ (Acceleration) button
Left Arrow ( )	Same as the –Δ (Deceleration) button
Up Arrow (↑)	Same as the right arrow button in the Slide Bar
Down Arrow (↓)	Same as the left arrow button in the Slide Bar
Page Up	Moves the Slide Bar to the right by +0.1
Page Down	Moves the Slide Bar to the left by –0.1
Home	Moves the Slide Bar to the far left edge
End	Moves the Slide Bar to the far right edge

Scene Window

The Scene window is where incoming material, marked by a Live Controller or the Record Controller window, is logged. In this window, you can view information about each scene.

There may be four scene windows, A, B, C and D, depending on the system configuration. These letters correspond to the resource groups in the Configuration window.

To open a Scene Window, click the Scene button corresponding to the desired resource in the Launcher. You can also open the desired Scene Window by choosing it from the Windows menu in the Main window. As new scenes are created, they are added to the window.



Scene Button

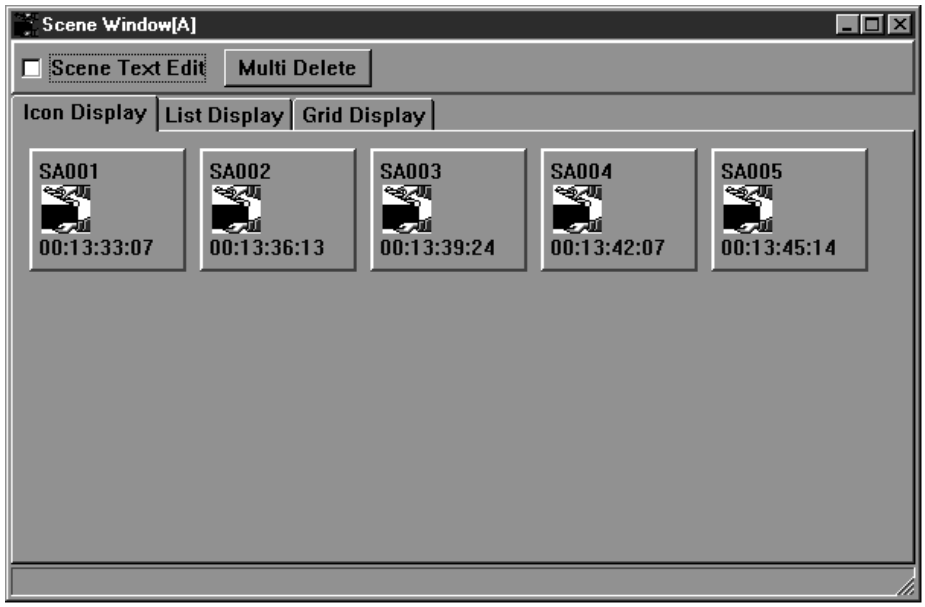


Figure 4–10: Icon Display Tab — Scene Window

Creating Scenes

Scenes are created using the Live Controller or the LVS Controller window, and appear as icons in the Scene Window. A scene icon currently being recorded is marked with ***REC*** in red and displayed in green.

Refer to *REC* on page 6–4 and *Controller Window* on page 4–13 for more information on creating scenes.

Cueing Up and Playing Back

To cue up a scene, use the Live Controller. Refer to *Searching for a Scene* on page 2–20, and *SEARCH* on page 6–10 for information on searching for and selecting scenes. IN and OUT points can be trimmed using the Live Controller. Refer to *Edit* on page 6–12.

Editing Scene Information

You can edit highlight information with the Text Edit box and Multi Delete button, or with the Preview window, Scene Information window, or the Live Controller.

Refer to *Preview Window* on page 5–12, *Scene Information Window* on page 5–21, and *Edit Area* on page 6–12.

Window Description

Messages

When creating a scene, the timecode of the MARK point is displayed in the area to the right to the **Multi Delete** button.

Text Edit Option and Multi Delete Button

Refer to *Text Edit and Multi Delete* on page 5–9.

Display Tabs

Icon Display — A scene is displayed as an icon with a name, where the default name consists of a scene number. See Figure 4–10 for an example of the Icon Display tab. The IN point timecode for a scene appears on its icon.

List Display — This tab displays information about each scene, including scene number, scene name, IN point, OUT point, duration and a comments field. See Figure 4–11 for an example of List Display tab. Each scene in this tab can be selected for drag and drop operations and double-clicked to open the Preview window for the scene.

In this tab, you can also edit the name of a scene and comment about it if the Text Edit option is selected. For more information about this option, refer to *Text Edit and Multi Delete* on page 5–9.

Grid Display — This tab displays the scene names on a grid. See Figure 4–12 for an example of Grid Display tab. Each scene in this tab can be selected for drag and drop operations and double–clicked to open the Preview window for the scene.

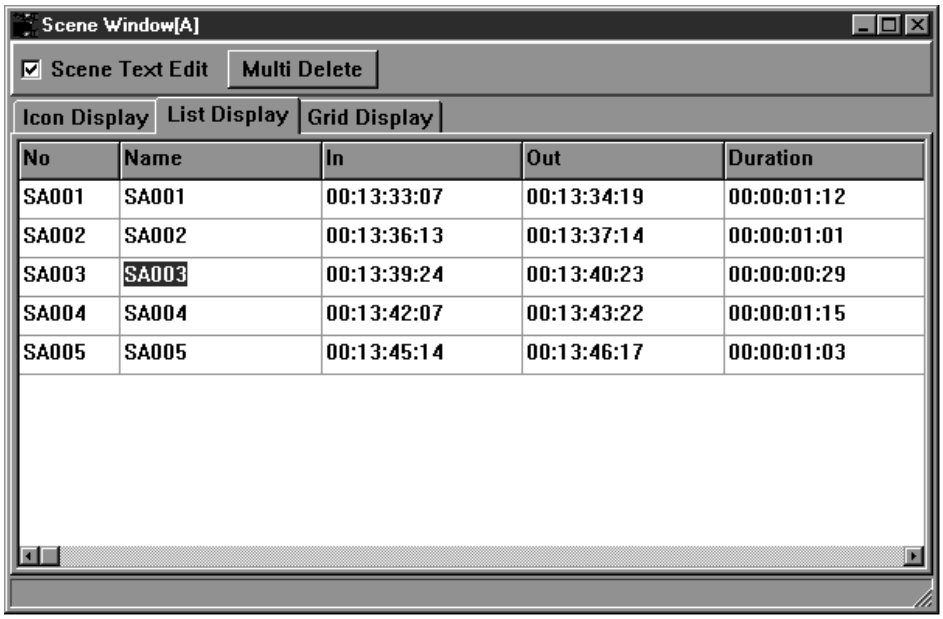


Figure 4–11: List Display Tab — Scene Window

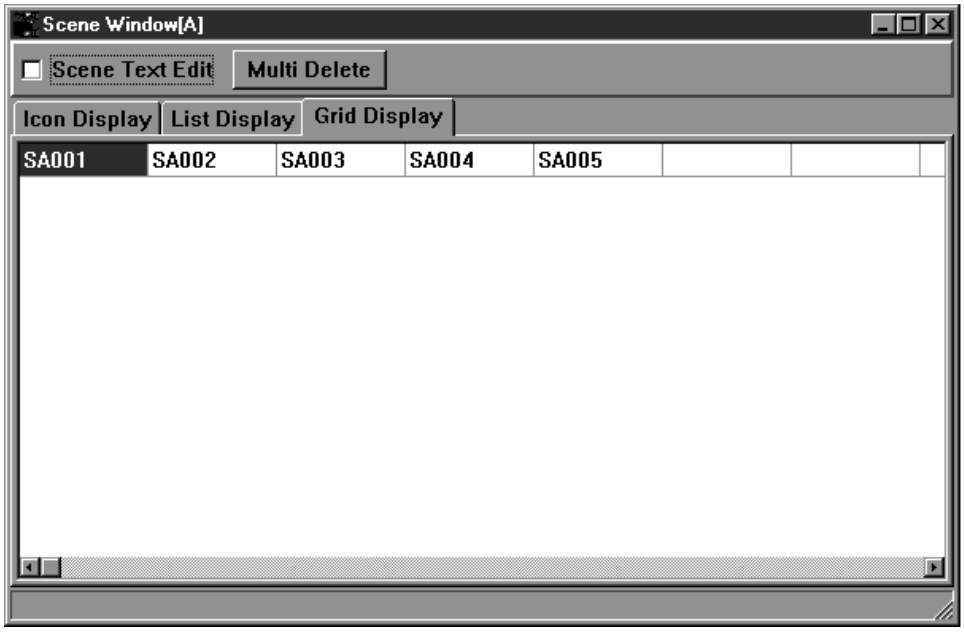


Figure 4–12: Grid Display Tab — Scene Window

Highlight Window (Enhanced Feature Set Only)

The Highlight Window provides a place to store copies of important scenes from among all the scenes generated in the Scene window. Depending on the application, the Scene window can typically contain hundreds of scenes, making it difficult to quickly search for a required scene. The Highlight window provides a place to keep key scenes so that they can be quickly identified and found.



Highlight Button



Figure 4–13: Highlight Window

Adding Highlights

Scenes

Scenes may be added to the Highlight window in one of two ways:

- Using the Live Controller, select a scene and press the **ADD HIGHLIGHT** button.
- From a Scene Window, simply drag and drop a scene on the Highlight window. Library items can also be added to the Highlight Window in the same fashion.

The highlight and the original scene are linked together. If any change is made to either one, the other is also changed.

Only one Highlight window exists for all resources The scene window from which the Highlight originated is indicated by the second letter of the Highlight number. For example, HB002 refers to the second highlight created from Scene Window B. A Live Controller connected to a particular resource group can only search for highlights from that resource. For example, a Live Controller connected to Scene Window A (resource group A) can only search for a Highlight beginning with HAxxx.

Playlist and Timeline

By using the **Add Highlight** button in the Other tab of the Playlist and Timeline windows, you can add playlists and timeline lists to the Highlight Window as packaged playlist icons and packaged timeline icons.

NOTE. *Since the Highlight window is just a temporary storage area for packaged playlists and timelines, you cannot perform any search, edit and/or playback operations on the packaged playlists and timelines in the Highlight window. To perform these operations, you must copy packaged playlists and timelines into the Library window.*

Cueing Up and Playing Back

To cue up a highlight, use the Live Controller. Refer to *Searching for a Scene* on page 2–20, and *SEARCH Area* on page 6–10 for selection and search of a scene. IN and OUT points may be trimmed using the Live Controller. Refer to *Edit Area* on page 6–12.

Editing Highlight Information

You can edit highlight information with the Highlight Text Edit option and Multi Delete button, or with the Preview window, Scene Information window, or the Live Controller.

Refer to *Preview Window* on page 5–12, *Scene Information Window* on page 5–21, and *Edit Area* on page 6–12.

Playing Back through the Playlist Window

Highlights, packaged timelines or packaged playlists in the Highlight window can be played back through the Playlist window. While this takes place, the current playlist is stored in a temporary location, and can be restored later when the playback is completed.

Figure 4–14 shows the Highlight window with **Playlist** buttons.

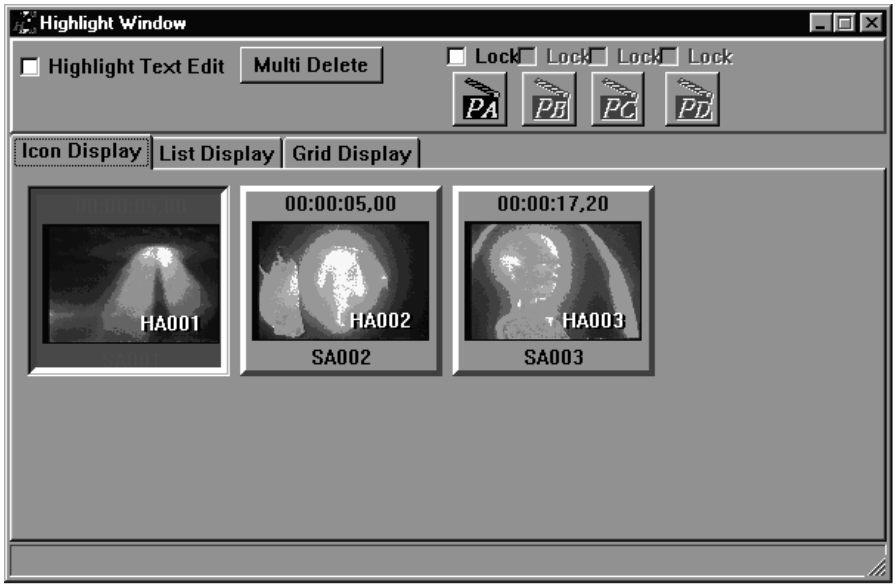


Figure 4–14: Highlight Window

To play an item from the Highlight Window through the Playlist Window, select the item by clicking on it, then click on the **Playlist** button corresponding to the channel through which you wish to play back. This temporarily adds the item to the specified Playlist Window, and stores the current playlist in a temporary location. The Highlight Window item is cued up at its first event in the Playlist Window.

Click the **PLAY** button in the Playlist window to play the material.

You can repeat this procedure for as many Highlight Window items as you choose. The current playlist remains in the temporary storage location until you restore it.

To restore the original playlist, click on the **Restore** button in the Other tab of the Playlist Window. See Figure 4–15. This button is only available when there is a playlist in the temporary storage location.

You can select the check box above each of the **Playlist** buttons to lock that Playlist button (see Figure 4–14). Locking the buttons prevents you from clicking them by mistake. Clear the Locks for the buttons you wish to use for playback operations.

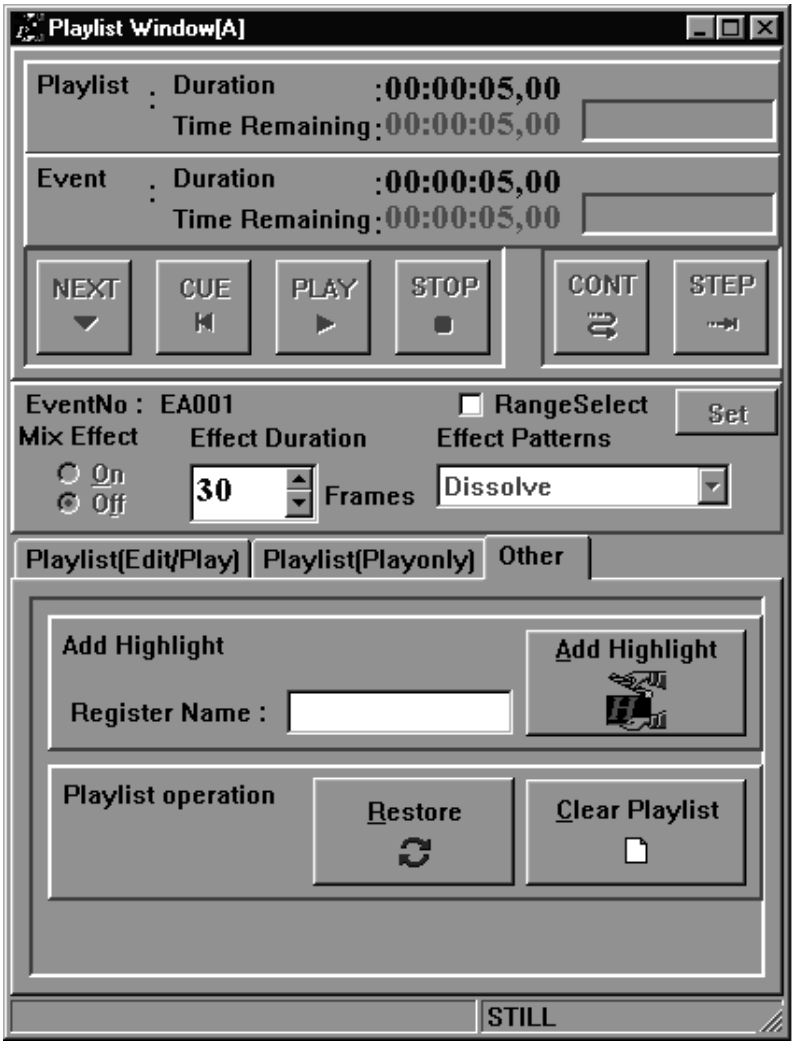


Figure 4–15: Playlist window and Restore button

Window Description

Highlight Text Edit Option and Multi Delete Button

Refer to *Text Edit and Multi Delete* on page 5–9.

Playlist Buttons

Use one of these buttons to temporarily play back a highlight item through the specified Playlist window.

Display Tabs

The Highlight window includes of three tabs; Icon Display, List Display and Grid Display.

Icon Display — This tab displays a scene as an icon with a name, where the default name consists of a scene number.

The highlight IN point (time code) is displayed on the icon.

List Display — This tab displays the highlight number, the highlight name, the IN point, the OUT point, the duration and the comment field in the form of a list (see Figure 4–11).

In this tab, you can edit the highlight's name and comment if the Highlight Text Edit option is selected. For more information about this option, refer to *Highlight Text Edit and Multi Delete* on page 5–9.

Each highlight in this page can be selected for drag and drop operations and double-clicked to display a Preview Window corresponding to that highlight (see page 5–12).

Grid Display — This tab displays the highlight names (see Figure 4–12).

Each highlight in this tab can be selected for drag and drop operations. Double-clicked a highlight opens the Preview window for that highlight.

Library Window (Enhanced Feature Set Only)

The Library Window is different from the Scene and Highlight windows in two important ways:

1. Library items can be cued up and played directly from the window.
2. Library items can be stored for use in subsequent sessions, while scenes and highlights are typically deleted after each session (or after 24 hours of continuous operation, see page 3–21).

To open the Library Window, click on the Library button in the Launcher. The window, as shown in Figure 4–16, appears.



Library Button

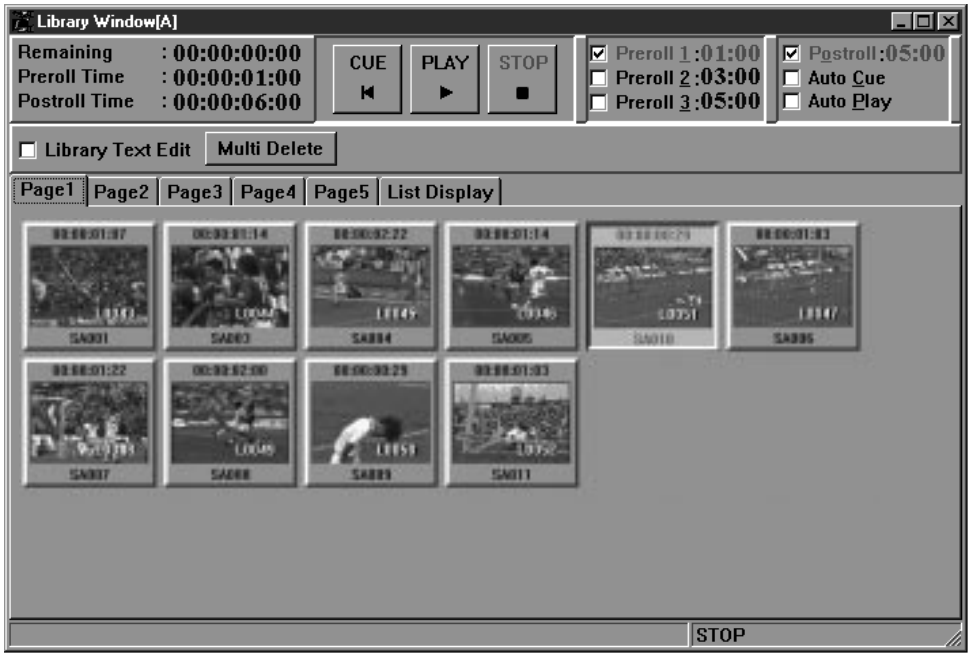


Figure 4–16: Library Window

Adding Library Items

To copy a scene, highlight, packaged playlist or packaged timeline into the Library Window, drag them to the Library window. The library items can be organized in five tabs, numbered from 1 to 5, in the Library window.

Playback

Library items can be played back with controls in the Library window, through the channel to which the Library Playback Enable resource is connected. Refer to *Resource Setup Tab* on page 3–8 for the setting.

To play a library item:

1. Click on the desired icon in the window.
2. Click on the **CUE** button.

   The system cues up at the library item's IN point minus the selected Preroll time.
3. Click on the **PLAY** button to start playing back.
4. Click on the **STOP** button to stop playing.

Editing Library Information

You can edit highlight information with the Highlight Text Edit box and Multi Delete button, or with the Preview window, Scene Information window, or the Live Controller.

Refer to *Preview Window* on page 5–12, *Scene Information Window* on page 5–21, and *Edit Area* on page 6–12.

Window Description

Displayed Information

Scene Remaining — Displays the duration of the play operation. Postroll is not counted in this duration.

Preroll Time — Displays the duration of the Preroll.

Postroll Time — Displays the duration (in seconds) since the start of Postroll.

Play Operations

After selecting a library item by clicking, the following play operations are available using the buttons displayed in the window.

CUE — Cues up the selected library item.

PLAY — Plays the library item which has been cued up.

STOP — Stops playing.

Options

Prerolls 1, 2, and 3 — If a Preroll option is selected, the library item is cued before the IN point by the specified amount.

Preroll times are displayed next to the respective options. The Preroll times can be changed in the Configuration window. Refer to *Other Tab* on page 3–13 for more details.

Postroll — If the Postroll option is selected, the Library item is played past the OUT point by the duration specified for Postroll. The Postroll time can be changed in the Configuration window. Refer to *Other Tab* on page 3–13 for more details.

Auto Cue — Selecting this option automatically cues up the selected Library item. The system pauses at the IN point minus the specified Preroll time, and you can immediately play the item by clicking the **PLAY** button.

Auto Play — Selelcting this option immediately cues up and begins playing the the selected Library item from its Preroll point.

LibraryText Edit Option and Multi Delete Button

Refer to *Text Edit and Multi Delete* on page 5–9.

Page Tabs

Page 1, 2, 3, 4, and 5 — A Library item can be placed on one or several of the five pages. This allows you to organize your Library items for quick retrieval. Each page only has one layer.

List Display — Displays the highlight number, the highlight name, the IN point, the OUT point, the duration and the comment field in the form of a list. See Figure 4–17.

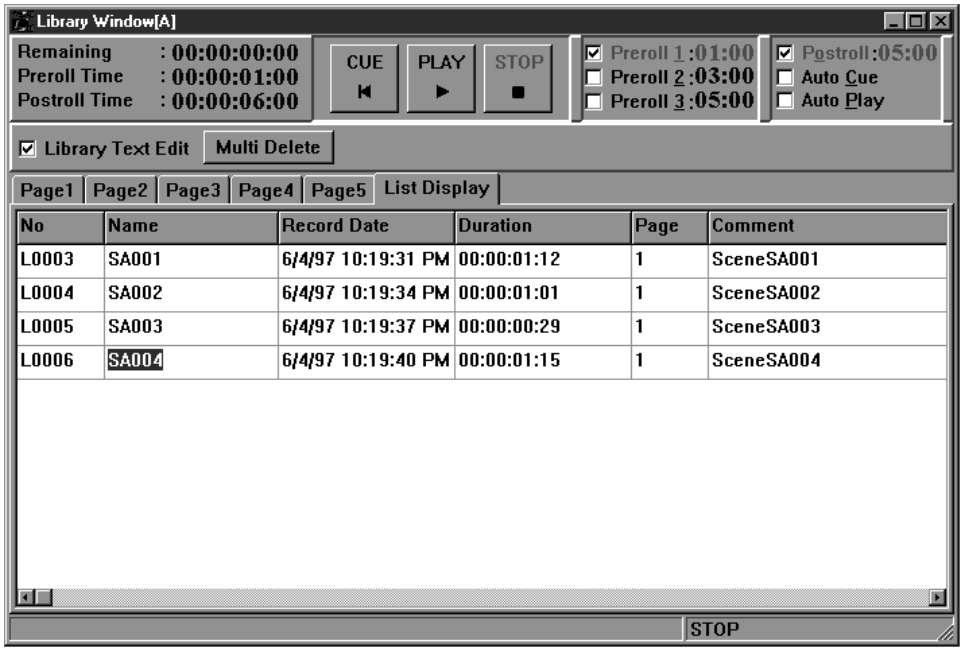


Figure 4–17: List Display Tab — Library Window

Playlist Window (Enhanced Feature Set Only)

In the Playlist window, you can play a series of marked material in sequence. Each item in the Playlist is called an event. Scenes, highlights or library items can be added to the playlist as events.

Events may be added, deleted and re-ordered within a Playlist even while playing to air, which allows for last second changes.

To open the Plasylist window, click on a Playlist button in the Launcher. A Playlist Window similar to the one shown in Figure 4–18 appears.



Playlist Button

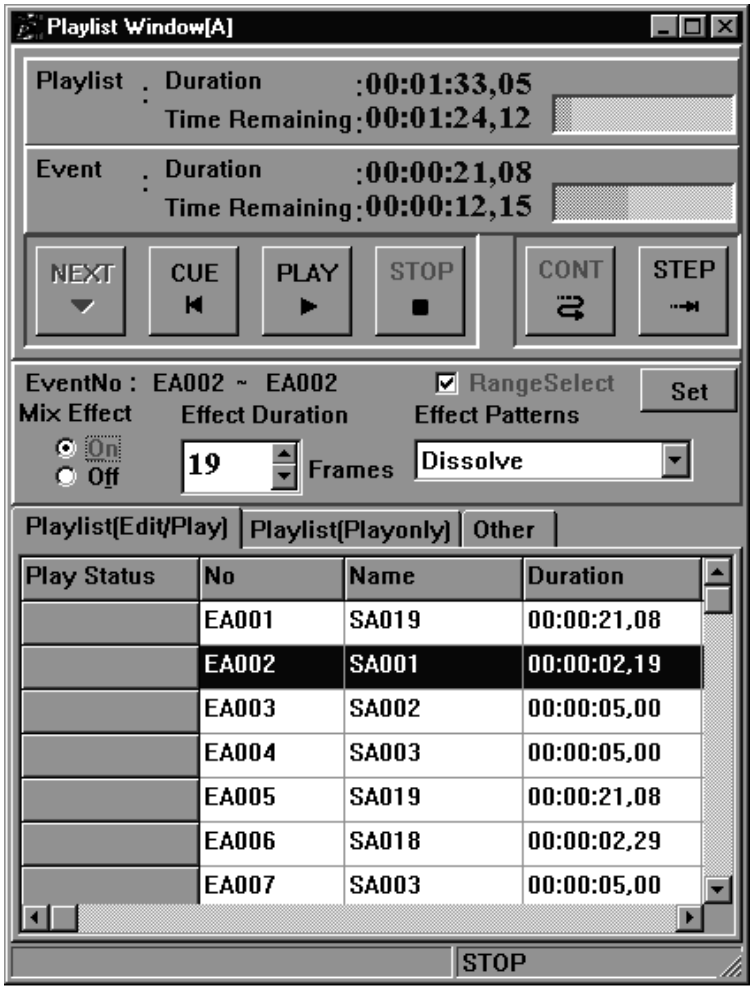


Figure 4–18: Playlist (Edit/Play) Tab — Playlist Window

Adding Events

Events can be added to any playlist by dragging and dropping scenes, highlights, librarys, packaged playlists and packaged timelines to the playlist.

For more information on adding packaged playlists and timelines to the Playlist Window, refer to Recalling Packaged Playlists on page 4–33 , and Recalling Timeline Lists on page 4–54.

Recorded material from a particular resource (A, for example) can be added as events in the corresponding playlist (in this example, Playlist A) by searching for the scene or highlight, and then pressing the **ADD EVENT** button on the Live Controller.

Changing List Order

First, make sure you are in the Playlist (Edit/Play) tab of the Playlist Window. To change the location of an event in the Playlist, click and hold the grey area beside the event number you wish to move, then drag it to the new location and release it. The list will automatically update.

From the Live Controller, events may be cut and pasted using the **SHIFT + CUT** and **SHIFT + PASTE** buttons with event searches. Refer to *SEARCH Area* on page 6–10 and *EVENT EDIT Area* on page 6–14 for more information.

Double–clicking an event in the white area of the list will open the Preview Window corresponding to that event. From here you can change the name of the event or edit its comment field. For Preview Window information, see page 5–12.

Creating Complete Package Programs

Playlists created in the Playlist Window can be included as icons in the Highlight and Library Windows.

To add the packaged playlist to the Highlight Window as an icon, click the **Add Highlight** button in the Other tab of the Playlist window (see Figure 4–19). The packaged playlist icon can be handled as is done for the traditional used just like any other highlight item. This allows you to prepare several playlist icons in advance, then select one of them just before going to air. You can also play back several playlists in a specified order.

Note that the Highlight window is a temporary storage area for the packaged playlist, and you can not perform any search, edit or playback operations there. To search and/or playback a packaged playlists, you must copy the icons to the Library Window.

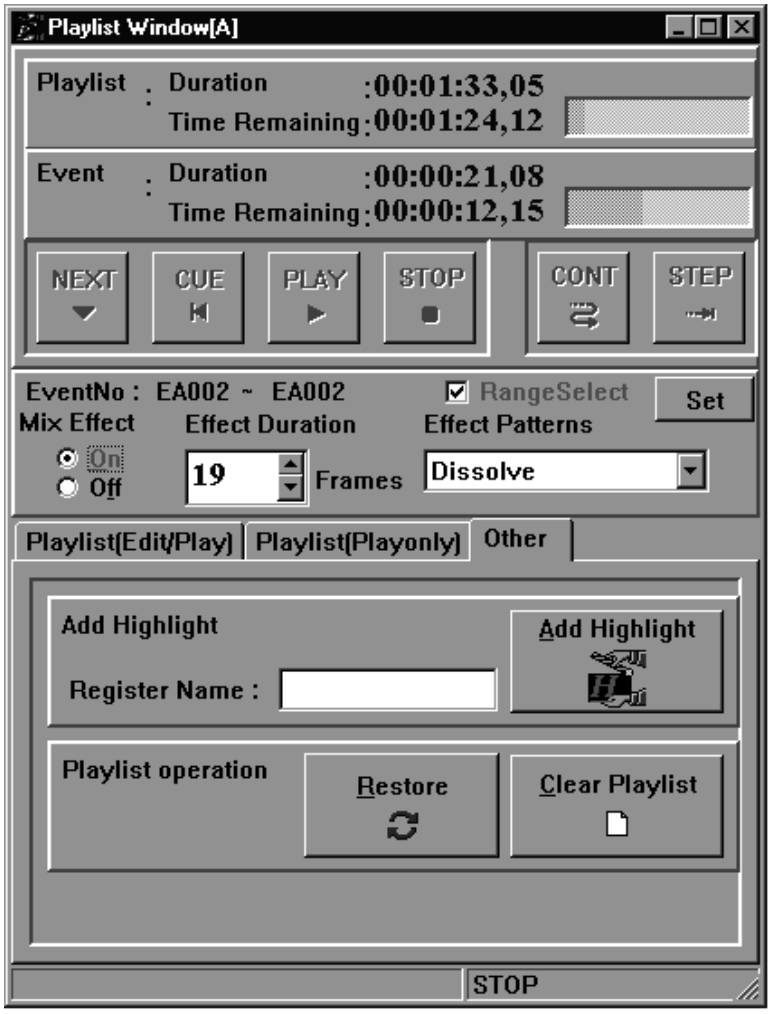


Figure 4–19: Other Tab — Playlist Window

Recalling Packaged Playlists

As with scene icons, packaged playlist icons can be added to the Playlist Window and the Highlight window using the drag and drop method.

You cannot add packaged playlist icons to the Timeline window. However, you can add a group icon, which has been created in the Timeline window, to the Playlist window.

Dragging a packaged playlist or a group icon to the Playlist window and inserts it at the position where you dropped it in playlist.

Editing Packaged Playlists

A packaged playlist icon is managed as a single video unit. However in the Playlist window, a playlist is disassembled into all of its constituent events, which can then be managed event by event.

You can use this capability to reorder events in a packaged playlist . Drag the packaged playlist back into the Playlist Window, edit the events to obtain the desired order, then use the **Add Highlight** button to add the edited playlist to the Highlight Window as a new packaged playlist.

Playback

You can play the events in a playlist either in CONT (continuous) or STEP mode. Select CONT mode with the **CONT** button or STEP mode with the **STEP** button by clicking the respective button on the window, or press the **STEP** or **CONT** button on the LVS Live Controller. You can switch the modes while playing. However, it requires about 5 seconds to make the switching effective after pressing the button during play.

Swapping Playlists

The current playlist (original playlist) in this window may be temporarily stored and replaced by an item from the Highlight Window. In the highlight Window, you can select an item and click a Playlist button to play that material through the Playlist Window. You can do this as often as you desire without affecting the original playlist.

Once the playback operations have been completed, you can restore the original playlist from the temporay storage location by clicking the **Restore** button in the Other tab.

For more details, refer to *Playing Back through the Playlist Window* on page 4–23.

Window Description

Playlist Panel

Duration — Displays the total length of the playlist.

Time Remaining — Displays the remaining time from the current play position to the end of the playlist.

Event Panel

Duration — The length of the event that is currently selected or being played.

Time Remaining — Displays the remaining time from the current play position to the end of the current event.

Button

NEXT — Press this button to cue up the next event to the IN point minus the current Preroll setting.

CUE — Press this button to cues up the selected event to its IN point minus the current Preroll setting.

PLAY — Plays the cued event.

STOP — Stops playing the current event.

CONT — Sets the system to CONT (Continuous) mode. In this mode, play continues until the OUT point of the last event in the Playlist, plus the current Postroll setting.

STEP — Sets the system to STEP mode. The current event is played and the system pauses at the event's out point plus the Postroll time.

NOTE. *Preset Preroll times can be selected with the Live Controller or in the LVS Controller Window.*

In the CONT mode, the Preroll time for each event, except the first event, is set to 0 and the postroll is set to 0 for all events except the last.

NOTE. *Toggle the Postroll ON or OFF in the LVS Controller Window. The Postroll time can be changed in the Other tab of the Configuration Window.*

The Playlist Window has three tabs: Playlist (Edit/Play), Playlist (Playonly) and Filing.

Playlist (Edit/Play) Tab

Use this tab to edit a playlist, including changing the order of event.

To add a scene or highlight to the Playlist (Edit/Play) tab, drag a scene or highlight and drop it on the blank part of the Playlist. The scene is added to the end of the Playlist as an event.

If you drop an event between two existing events, the new event is placed between them.

To change the sequence, click and hold on the grey column to the left of the event you wish to move and drop it at the desired position.

To delete an event, click and hold on the white portion of the event and drop it in the Recycle Box.

To cue up an event, click the white portion of the event and then press the **CUE** button.

To start playing from the position currently cued up, click the **PLAY** button. When the **PLAY** button is pressed, the window will switch to the Playlist (Play only) tab. While playing, you can switch back to the Playlist (Edit/Play) tab to edit the order of events.

Playlist (Playonly) Tab

This tab is similar to Playlist (Edit/Play), except that it is for monitoring only. The order of events can not be changed, nor can events be added or deleted. Use this tab to prevent any inadvertent changes to the playlist as you monitor its play status.

NOTE. *You must choose the Playlist (Edit/Play) to add events to the Playlist.*

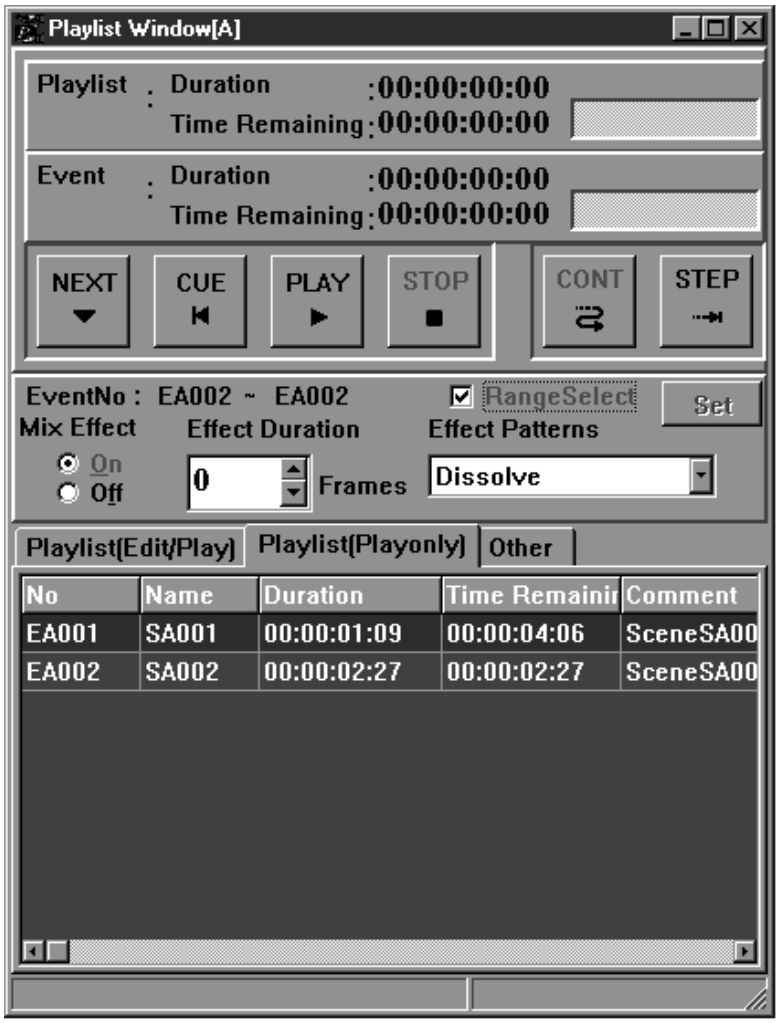


Figure 4–20: Playlist (Playonly) Tab — Playlist Window

Other Tab

Click **Other** to open the Other tab (see Figure 4–19).

Register Name — Enter a packaged playlist icon name up to 14 characters long.

Add Highlight — Pressing this button adds the playlist in the Playlist Window to the Highlight Window as a packaged playlist icon. The icon has the name entered in the Register Name text box.

A playlist added to the Highlight Window is called a ***packaged playlist***,or just a ***group***, and is displayed as an icon in the Highlight Window.

As with scene icons, packaged playlist icons or group icons can also be added to the Timeline window and to the Library window with the drag and drop method.

You can drag and drop a packaged playlist icon back into the Playlist Window. The packaged playlist is dissassmbled into its constiuent events in the Playlist Window.

Restore Button — Restores the original playlist that was temporarily strored during playback of Highlight Window items. For more information, refer to *Playing Back through the Playlist Window* on page 4–23 and *Swapping Playlists* on page 4–34.

Clear Playlist — Puts all the events in the current playlist into the Recycle Box.

Playlist Window with Mix/Effect (Option)

When you add a mix/effects card to the Profile system, you can create dissolves between events in the playlist. If you assign two audio banks to the target channel, the audio will automatically be cross-faded.

The audio cross-fade uses the outputs from two Profile audio banks. Therefore, you must combine the two Profile audio outputs to obtain the desired effect. A simple Y–cable is all that is required.



Playlist Button

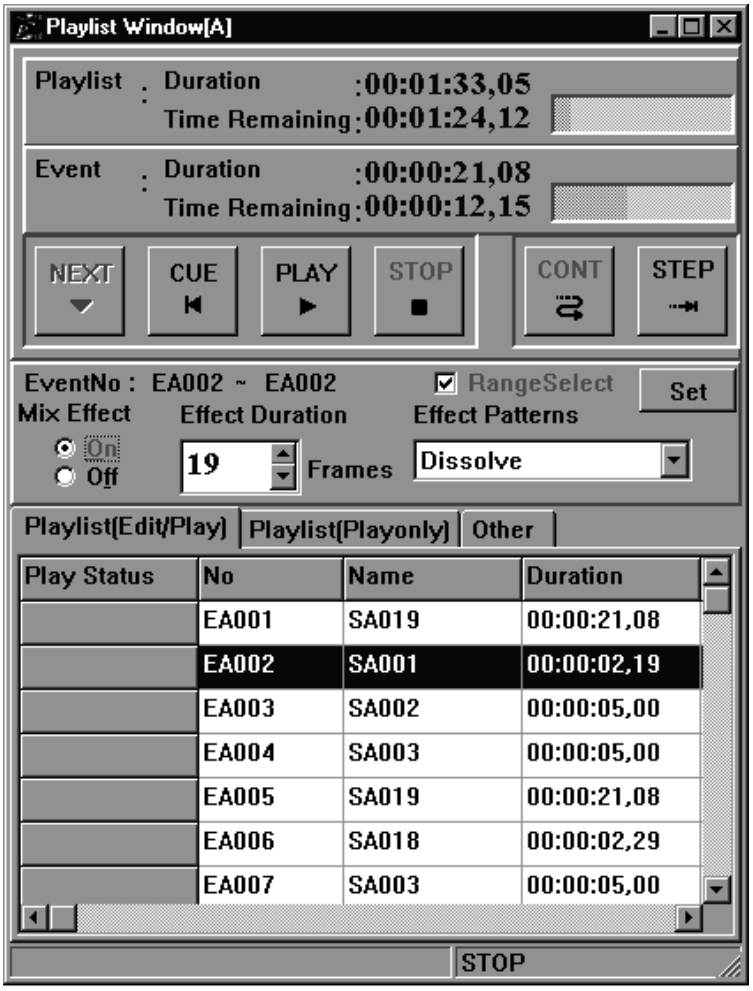


Figure 4–21: Mix Effect Settings — Playlist Window

Initial Setup

To use a mix effect in the Playlist window, you must:

1. Verify that the Mix/Effect card has been installed in the Profile system.
2. Assign Mix Effects resource in the Resource Assign tab of the Configuration window.

   Refer to *Resource Assign Tab* on page 3–5 for more details.
3. Assign the Mix Effects Resource to the Mix Effects resource group in the Resource Setup tab of the Configuration window.

   Refer to *Resource Setup Tab* on page 3–8 for more details.
4. Specify the output(s) from the Mix Effects resource group in the Video Routing tab of the Configuration window.

   Refer to *Video Routing Tab* on page 3–10 for more details.
5. Open the Playlist window and set the Mix Effect **On**.

Mix Effect on Event

1. Clear the **Range Select** option.
2. Select an event for the effect. The dissolve will be set between the beginning of the selected even and the end of the previous event.
3. Enter the number of frames for the effect in the **Effect Duration** text box.
4. Click on the Mix Effect **On** option.
5. Click on the **Set** button to make settings effective.
6. Repeat above steps for another effects you want to set.

You cannot set the effect on the first event in the playlist. When you select the first event in the playlist, the Mix Effect **On** and **Off** options are disabled.

Mix Effect over Multiple Events

Mix effects can be set on individual events, but they can also be applied to a group of events.

1. Check the **Range Select** option.
2. Click on the first event of the group you want to set, then drag to the end of the last event of the group. The selected events are highlighted, and the **Event No** indicates the range from first to the last event in the group.
3. Enter number of frames for mix effect in the **Effect Duration** text box.
4. Click on the Mix Effect **On** option.
5. Click on the **Set** button to make settings effective.

Note that the mix effect setting is ignored when the top event in the playlist is included in the group you want to set.

Window Description

Mix Effect Options

Check the Mix Effect **On** or **Off** option to enable or disable the effect you set.

The dissolve is performed between the OUT point of the previous event and the selected event.

Range Select

The effect can be set over a group of events.

Check this option if you wish create dissolves over a group of events.

You cannot set the mix effect on the first event in the Playlist. If you set a mix effect on an event, and you move that event to the top of the playlist, that event does not have the mix effect as long as it's at the top of the playlist.

You cannot move events inluded in the group into the Recycle Box.

Effect Patterns

Only dissolves can be selected as a type of mix effect.

Effect Duration

Specifythe effect duration as a number of frames.

Mix effects start at the OUT point of a previous scene and last the specified duration (number of frames).

The duration is limited to [event length – 2 seconds]. Mix effecst can not be set on events whose duration is shorter than 2 seconds.

Set Button

Click this button to make the settings effective. If you click on an event before clicking on this button, the settings for the mix effect will be canceled.

Timeline Window (Enhanced Feature Set Only)

In the Timeline Window, you can create a timeline list and play a series of marked events in sequence as is done in the Playlist window. However, the Timeline Window allows you to perform more complex editing tasks than are possible in the Playlist Window, such as:

- Editing the duration of each event.
- Editing video and audio independently.
- Setting slow-motion playback.
- Setting different playback speeds for video and audio.
- Automatic speed adjustment to match the target time.
- Editing events in Normal or Insert mode.
- Dividing events in two.

To open the Timeline window, click on the Timeline button in the Launcher. See Figure 4–22.



Timeline Button

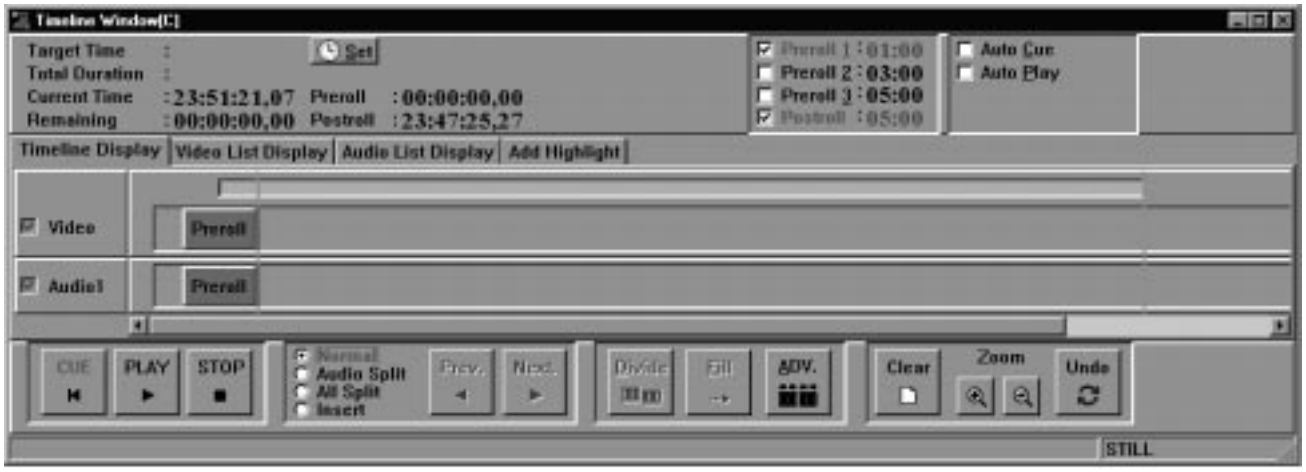


Figure 4–22: Timeline Window

Timeline Overview

***NOTE**. When you are recording on two or more channels and performing timeline editing, you should set the compression target to 75 KByte Per Field or less in the Configuration window. Higher values may cause black to be recorded.*

This section describes the following operations:

1. Adding and/or inserting scenes at arbitrary positions on the timeline.
2. Editing events in various modes.
3. Creating packaged timelines by adding timeline lists to the Highlight Window..

It also explains how to create another packaged timeline from an existing packaged timeline by:

4. Copying a packaged timeline back into the Timeline window.
5. If necessary, adding and/or inserting other scenes at arbitrary position on the timeline.
6. As required, editing events in various modes.
7. Creating a new packaged timeline by adding timeline list to the Highlight window..

Setting Target Time

You should specify the total duration of the timeline. This setting can be changed at any time.

1. Click on the **Set** button to open the Target Time dialog box. See Figure 4–23.
2. Enter timecode for total duration in the form of *Hours:Minutes:Seconds:Frames*.
3. Click on the **OK** button to make the input target time effective and close the dialog box.

While this dialog box is open, you cannot perform any other operations in the Timeline Window.

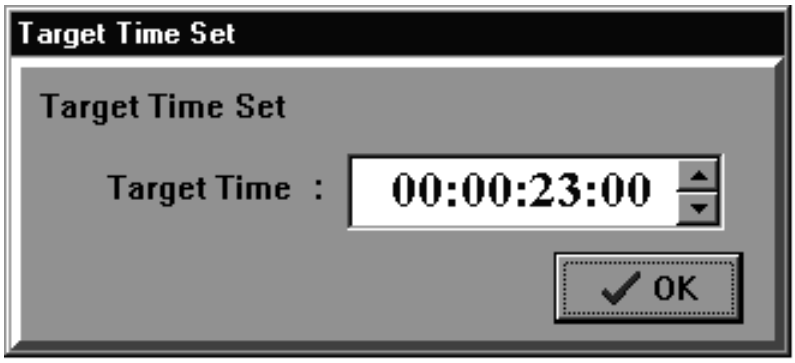


Figure 4–23: Target Time Set Dialog Box

Adding or Inserting Scenes

There are two modes, Normal and Insert, to place scenes onto the timeline.

In Normal mode, adding scenes to the timeline affects the position of the other events in the timeline, or it changes the duration of the material in the timeline. In Insert mode, the positions of the other events are not affected, and the total duration of the material in the timeline is unchanged, except if you add events to the end of the timeline.

For example, when you insert a scene C between events A and B in Normal mode, event B will be pushed to the right, and scene C is just placed between scenes A and B. The duration of the timeline increases by the duration of scene C. This is sometimes called building-block mode.

Performing the same operation in insert mode, however, will result in scene C replacing material from scene B. The total timeline duration remains unchanged.



Figure 4–24: Timeline Display Tab in Audio Split Mode

Normal Mode

Normal mode can be subdivided into three edit modes: Normal, Audio Split and All Split.

1. Specify the edit mode by selecting the **Normal**, **Audio Split** or **All Split** option.

   Normal mode is used when you add or insert a scene onto both the video and audio tracks at the same time.

   Audio Split mode is used when you add or insert a scene only on the audio track. When you also check the **Video** box, you will have the same result as in Normal mode.

   All Split mode is used when you want to add or insert a scene only on one or more of the four **Audio** tracks and one **Video** track. If you enable all **Audio** tracks and the **Video** track, you will have the same result as in Normal mode. If you enable all the **Audio** tracks and disable the **Video** track, you will have the same result as in Audio Split mode.

2. If you are in Audio Split or All Split mode, check the **Video** and/or **Audio** box(es). You can place a scene only on the timeline track whose box is checked. Uncheck the box if you do not want to place a scene on that timeline track.

3. Drag a scene from the Scene, Highlight, Library or Playlist onto the timeline and drop it.

The scene is added to the end of the timeline list when you drop it after the final event in the timeline.

When you drop it on a event, the scene is inserted just before that event.

NOTE. *Playlist icons (packaged playlists) cannot be added or inserted into the Timeline window.*

NOTE. *When a packaged timeline is inserted, the edit mode is automatically changed to the All Split mode.*

4. Repeat these steps to build your timeline list.

Insert Mode

In Insert mode, adding a scene to the timeline over-writes the existing material on the timeline.

NOTE. *Packaged timelines cannot be added to the timeline in insert mode. Use the Normal mode.*

1. Select the **Insert** option to enable Insert mode.

Checking the **Insert** option fills the video track and all audio tracks with BLACK up to the target time you specified in the Target Time dialog box.

2. Enable the **Video** and/or **Audio** tracks on which you wish to insert material. You can only place a scene on timeline tracks whose check boxes are selected. Disable a track if you do not want to place material on that track.

3. Click a point on the timeline bar where you want to inset a scene. The timeline bar changes color up to that point.

4. Drag a scene from the Scene, Highlight, Library, or Playlist Window onto the timeline and drop it.

The dropped scene is temporarily placed at the point you specified in step 3. To permanently position the scene and overwrite the existing material in the timeline, proceed with the following steps.

5. Click the **In**/**Out** button to decide which point of the scene, the IN or OUT point, is placed at the point you specified in step 3.

Clicking the **In**/**Out** button toggles **In** and **Out** and changes the position of the scene on the timeline.

6. If necessary, move the point specified in step 3 on the timeline by clicking the timeline bar

You can also use the **PLAY** button to move the insertion point forward. Stop playing by clicking the **STOP** button.

When you move the insertion point by clicking or playing, the scene moves with the insertion point.

7. Click the **Insert** button to permanently insert the scene into the timeline.

Clearing

To clear all scenes from the timeline, or from specific track(s):

1. Select track(s) by selecting the **Video** and/or **Audio** check boxes.
2. Click the **Clear** button.

   Clicking the **Clear** button opens the Confirmation dialog box.
3. Click the **All** button to clear all events in the window, regardless of the setting in step 1. Click the **Yes** button to clear the events on the track(s) specified in step 1. Click on the **No** button to cancel clearing.

Editing Event Lists

You can edit events directly in the timeline list, or use the Preview and Scene Information windows to change.

Preparing for Editing

You can edit an event or a series of events on one or several specified tracks in the timeline.

1. If necessary, change edit mode by selecting the appropriate edit mode option. In Insert mode, check the **All Split** option. In Normal mode, select the Normal, Audio Split or All Split option.
2. Enable the tracks on which you wish to edit an event or a series of events by selecting the **Video** and/or **Audio** check boxes.
3. Select an event by clicking on it.

Deleting Events

Drag an event to the Recycle Box window or the **Recycle Box** button in the Launcher and drop it.

As the event is deleted, the events to the right of the deleted event are moved to the left to fill the gap left by the deleted event.

Events dropped in the Recycle Box cannot be put back into the Timeline Window.

Changing Event Order

Drag an event onto an another event and drop it. The event is moved and inserted just before the event on which you dropped it. When you drop an event to the right of the last event in the timeline list, the event is placed immediately following the last event.

In Insert mode, the event order can not be changed. Check the **All Split** box to enter into the All Split mode and then change the order.

Extending a Selection

With the **Prev.** and **Next**. buttons, you can extend a selection to include the next or the previous event.

1. Select an event in the timeline.
2. Click on the **Prev**. to extend the selection to the IN point of the previous event.

   Click on the **Next.** button to extend the selection to the OUT point of the next event.

Editing Event Duration

An event's IN and OUT points can be changed with the Preview or Scene Information windows, or with the Live Controller.

1. Select a mode, Advanced or Non-advanced, by clicking the **ADV**. button.

   Refer to page 4–60 for the more information on the Advanced mode.

2. Adjust the event's IN and OUT points using one of the following methods:

   - The Preview Window, described in *Preview Window* on page 5–12.
   - The Scene Information window, described in *Scene Information Window* on page 5–21.
   - The Live Controller, described in *Edit Area* on page 6–12.

     To edit with the Live Controller, use the Event mode to search for an event, then change its IN and OUT points. Using this method, you can shorten the duration, but not lengthen it.

Audio Slip

Audio slip changes the IN and OUT points of an event without changing the duration.

For example, when you set the audio slip value to 10 frames, the IN point and the OUT point will be set to the points 10 frames after the current IN and OUT points, respectively. This is very effective when audio and video have been split from each other.

Refer to *Editing Event Duration* for more details on settings.

Playback Speed

Usually, when you play back video at slow-motion speed, the audio is also played back at the same speed. In Audio Split mode, however, video can be played back at slow-motion speed and the audio can be played back independently at normal speed. In this mode, operations such as slow-motion play affect only one of the tracks; audio or video. You do not have to use and additional resource (codec) to play back audio at normal speed.

There are two ways to set the playback speed. You can use the Preview Window or the Scene Information Window.

For details on setting the playback speed with Preview Window, refer to *Preview Window* on page 5–12.

For details on setting the playback speed with Scene Information Window, refer to *Scene Information Window* on page 5–21.

Fade In / Fade Out

You can set fade in, fade out, track swapping and splits for each event. Set them in the Preview window, or in the Scene Information window.

The start level, end level and duration can be set for fade in and fade out. Note that the start level of the fade in is affected by the end level of the fade out of the previous event.

For example, suppose that event B immediately follows event A in the timeline. No fade parameter is set for event A, so its audio level is 100 % at the end of the event. If you set a fade in from 0 % and 80 % on event B, event B will be faded in from 100 % to 80 %. This is because the final level on event A takes precedence over the start level of event B.

In such cases, the end level of the preceding event takes precedence over the start level of the following event.

For details on setting fade-in/out with the Preview Window, refer to *Preview Window* on page 5–12.

For details on setting fade–in/out with the Scene Information Window, refer to *Scene Information Window* on page 5–21.

Audio Swap

Audio swap is the function that plays out one audio track to another track's output channel. For example, the audio on the track 1 can be output through track 2.

For details on setting up audio swaps with the Preview Window, refer to *Preview Window* on page 5–12.

For details on setting up audio swaps with the Scene Information Window, refer to *Scene Information Window* on page 5–21.

Auto Slow-motion Setting

You can stretch an event so that it fills the time remaining to the target time. As the duration of the event increases, the playback speed is reduced automatically.

1. Set the target time. Refer to *Setting Target Time* on page 4–44.
2. Select the last event on the timeline.
3. Click the **Fill** button.

Dividing Events

You can use the Divide button to divide a single event into two events at an arbitrary point.

You may find this useful if you want to:

- Remove part of an event.
- Perform operations such as audio swapping on only part of an event.
- Align the duration of all tracks

To divide an event:

1. Set the current cue up point to the desired division point by clicking on the point in the **Timeline** bar or by using playback controls.
2. Click on the **Divide** button

   Event positioned at the current cue up point on each enabled track are divided in two at the current cue up point on the timeline.

Playback

Playback controls are used:

- To playback an area in the timeline
- To playback a created timeline list.
- To set an insertion point when adding scenes to the timeline in Insert mode.
- To set a division point when dividing timeline events with the Divide button.

In the Timeline window, playback is performed only in CONT (Continuous) mode.

Cueing Up

Set a cue–up point using one of the following methods.

- Click on an arbitrary point on the **Timeline** bar to cue up at that point. The area to the left of the clicked point changes color.
- With the **Auto Cue** option enabled, click an event to cue up at the event's IN point minus the preroll time.
- Click the **CUE** button to cue up at the first event's IN point minus the current preroll time.

Playback

Click on the **PLAY** button to start playing back from the current cue up point.

With the **Auto Play** option selected, click an event to start playing from the event's IN point minus the current preroll time.

Click on the **STOP** button to stop playing back.

Creating a Complete Packaged Program

A Timeline list created in the Timeline Window can be used as a complete packaged program.

You can add an edited timeline list to the Highlight window by clicking on the **HIGHLIGHT** button in the Add Highlight tab of the window. The resulting packaged timeline icon can be used just like a scene icon, and can be added to the playlist, the library, etc. using the drag and drop method. You can prepare several packaged timeline icons and select one of them just prior to going on air. You can also play them back in a previously established order.

Note that the Highlight Window is just a temporary storage area for the packaged timeline, and you can not perform any search, edit or playback operations in that window. To search or play back a packaged timeline, you must copy it to the Library Window.



Figure 4–25: Add Highlight Tab

NOTE. *A timeline list that has a different total duration in each track cannot be added to the Highlight Window. You must align the total durations of all tracks by using insert, divide, auto slow-motion setting, etc.*

Recalling Timeline Lists

Packaged timeline icons can be copied into the Playlist, Library and Timeline windows using the drag and drop method, just as you would with a scene.

When copied into the Library or Playlist windows, packaged timeline icons can be used as a single unit. However, when copied into the Timeline window, timeline list is disassembled (divided into its constituent events) and you can edit each event on each track. Once you've completed editing the timeline, you can add that timeline list to the Highlight Window again, creating a new version of the icon.

Undo

The Undo function can be used to return to a previous state when trying temporary edit operations, or to recover from editing errors.

Storing Edit Information

Information on the five latest editing operations is automatically stored. You don't need to do anything to ensure that this information is stored.

Displaying Stored Information

When you wish to return to a previous state after you have performed several edit operations in the Timeline window, click on the **Undo** button to open the Undo Information dialog box. Figure 4–27 shows the **Undo** button and Figure 4–26 shows the Undo Information dialog box. The history of the five most recent edit operations that you performed to the timeline are displayed in this window.

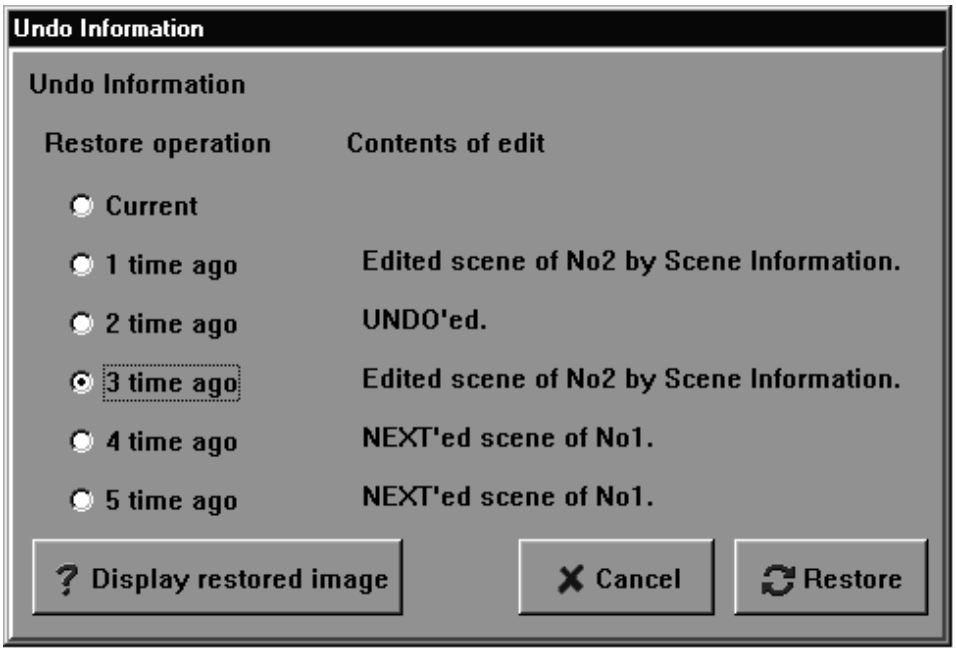


Figure 4–26: Undo Information Dialog Box

Viewing Restored Images

You can temporarily display a previous state in the Timeline window.

In the Undo Information dialog box, select the previous state that you wish to restore, then click the **Display restored image** button. The Timeline window displays that state.

Restoring In the Undo Information dialog box, select a state that you wish to restore, then click the **Restore** button. (You can restore a state wihout temporarily restoring it with the **Display restored image** button.) This restores the Timeline window to the selected state and closes the Undo Information dialog box. The restore operation is also stored as an edit operation information, and can itself be restored.

Canceling Clicking the **Cancel** button returns the Timeline Window to the same state it was in when you opened the Undo dialog box and closes the dialog box. Temporarily restored states are abandoned.



Figure 4–27: Timeline Window And Undo Button

Window Description

Target Time

Clicking the **Set** button allows you to open the Target Time dialog box. See Figure 4–23.

Enter a value for the total duration (target time), then click the **OK** button.

The target time can be used for:

- Visual reference when building a timeline. The blue line indicating the target time shows you how much time you have to work with.
- Adjusting the duration of events in the timeline by slowing their playback speed. The appropriate slow–motion speed is automatically calculated when you click the **Fill** button.

Timecode Displays

Target Time — Displays the target time set with the **Set** button.

Total Duration — Displays the current duration of all events in the timeline.

Current Time — Displays current playing back point on the timeline.

Remaining — Displays the remaining time from the current playback point to the end point of the total duration.

Preroll — Displays the current pre-roll time.

Postroll — Displays the current post-roll time.

Prerolls / Postroll

Selecting one of the three **Preroll** options, whose values are preset in the Configuration window, allows you to use that preroll time for playback operations.

Selecting the **Postroll** option, whose value is preset in the Configuration window, allows you to add the postroll to playback operations.

Cue Up / Play

Auto Cue — If this option is enabled, selecting an event cues it up at its IN point, minus the current pre–roll time.

Auto Play — If this option is enabled, selecting an event plays it from its IN point, minus the current pre–roll time.

Mode Selection

Normal — In this mode, you can operate on both video and audio tracks together. For example, if you insert a scene on the timeline, both the video information and audio information are inserted at the same time.

Audio Split — In this mode, you can operate independently on either video or audio tracks.

If the video track only is selected by checking the **Video** option, you can edit on the video track without affecting the audio track. If the audio track only is selected by checking the **Audio** option, you can edit on the audio track without affecting the video track.

All Split — In this mode, the audio track is divided into four tracks; Audio1, Audio2, Audio3, and Audio4.

Use this mode when you want to perform operations on each track independently. Enable the tracks on which you wish to edit, and disable tracks you want to protect from edits.

If the video track and all of the audio tracks are enabled, operations are performed on all tracks at the same time, just as in Normal mode. Editing operations will affect events on all the tracks, even if the material on the audio tracks is unrelated to the material on the video track.

Insert — In this mode, a scene placed on the timeline will replace existing material at that position. Portions of the timeline containing no video or audio material up to the target time are filled with *BLACK*.

For example, when you insert scene 4 between events 2 and 3 in the Normal mode, event 3 is moved later (to the right), so that events 2, 4, and 3 are continuous on the timeline.

The same operation in Insert mode would result in the material from scene 4 replacing the material in scene 3 for the duration of scene 4.

To insert a scene in Insert mode, drag a scene icon from the Scene Window and drop it on the timeline. The IN point or the OUT point of the scene is placed temporarily on the current playback or cue up point. This point can be moved by clicking on the timeline bar, or by using the playback controls. Monitor the playback to determine the appropriate insertion point. Toggling the **IN** / **OUT** button determines whether the IN or the OUT point of the inserted scene moves with the playback point. Click the **Insert** button to insert the clip in the timeline permanently.

This operation does not affects events on the timeline before and after the inserted scene, and inserts scenes only on selected tracks. Scenes can also be inserted in empty areas of the timeline.

In / Out Button — Selects which point, IN or OUT, of the inserted scene should be aligned with the current playback point. Note that this button appears only in Insert mode.

Insert Button — Permanently inserts the event which was temporarily placed on the timeline in Insert mode. The inserted event replaces existing material on the timeline at that point.

Playback Control Buttons

CUE — Cues up the currently selected event's IN point, minus the current pre–roll time. If no events are selected, cues the first event in the timeline, minus the pre–roll time.

You can also cue up by performing a search operation in event mode on the Live Controller.

PLAY — Starts playing back from the current playback point. This is the same as pressing the **PLAY** button on the Live Controller.

In the Timeline window, playback is performed only in CONT (Continuous) mode.

STOP — Stops playing back. This is the same as pressing the **STOP** button on the Live Controller.

By using the Live Controller, you can also perform the following operations:

JOG
SHUTTLE
VAR
TOP — Allows the LVS to cue up at the top point of a timeline list,
SHIFT + **TOP** — Allows the LVS to cue up at the last point of a timeline list.

Audio Split Buttons

Prev. Button — Extends the selected area on a track to the IN point of the previous event. This button can be used repeatedly. For example, if you select a single event and then click this button three times, the three events to the left of the initial event (earlier) will be added to the selected area, for a total of four events.

Next Button — Extends the selected area on a track to the OUT point of the next event. This button can be used repeatedly. For example, if you select a single event and then click this button three times, the three events to the right of the initial event (later) will be added to the selected area, for a total of four events.

Divide Button — Divides an event into two at the current playback point.

If you only want to use the middle part of a long event, divide the event twice to create an event containing only the required material, then put the unwanted portions in the Recycle Box.

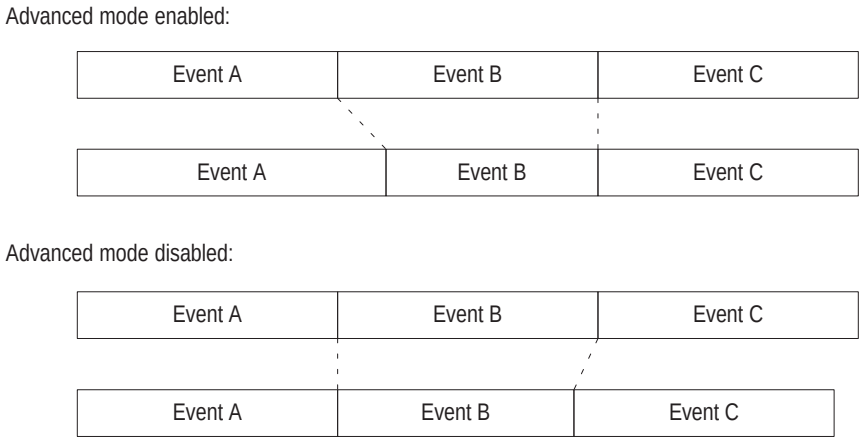
To divide an event in two, move the playback point to the desired division point, then click on the **DIV**. button. You can move the playback point by clicking the timeline bar, or by using the playback controls.

Fill Button — Sets selected events to play at a slow-motion speed so that the duration of the selected events fills the remaining time to the target time.

ADV. Button — When you change the duration of an event in Advanced mode, the total duration of the affected timeline track does not change. The duration of the immediately adjacent event is changed by the same amount as the change in the selected event.

For example, suppose that Event B immediately follows Event A, and Advanced mode is enabled. If you use the Scene Information Window to shorten the duration of Event B by moving its IN point later (to the right), the duration of Event A lengthened by a similar amount. Event C, which immediately follows Event B, maintains its duration and position in the timeline. The total duration of the track does not change

Performing the same operation with Advanced mode disabled changes only the duration of Event B. Event A remains unchanged, and Event C and all events that follow move earlier (to the right) in the timeline. The total duration of the track in the timeline is reduced by the amount that you shortened Event B.



You can use this button to create split edits. By enabling Advanced mode and shortening an event on the audio track only

To create a split edit as explained in this example, proceed as follows:

1. Enable the Audio Split mode by selecting the Audio Split option.
2. Enable editing on the **Audio** track only.
3. Enable Advanced mode by clicking the **ADV**. button.
4. Select the audio event and clicking on it to open the Scene Information window.

5. Enter –1 second in the **Adjust In** text box.

6. Click the **Change** button.

NOTE. *When you move the IN point of the first event on the timeline to a later time, BLACK will be inserted before the IN point.*

Clear Button — Clears all events on the timeline. The Confirmation dialog box opens, allowing you to confirm that you really want to clear all events from the timeline by clicking the **Yes** button.

Zoom Buttons — Zooms in and out on the timeline track display.

Undo — Restores a previous edit state. Refer to *Undo* on page 4–55 for more information.

Timeline Display Tab

Figure 4–22 and 4–24 show the Timeline Display tab in the Timeline Window.

Play Area / Timeline Bar — The bar displayed in highlighted green represents the total duration to be played back.

Current Playback Point — The bar displayed in pink represents the duration that has been played back. The rightmost point of the pink area is the current playback point.

Cue up Point — Clicking on an arbitrary point on the bar allows the LVS to cue up at that point.

Video Check Box — Enables editing on the video track. When the check box is cleared, you can no longer edit on the video track.

Audio Check Boxes — Enable editing on the audio tracks. When the check boxes are cleared, you can no longer edit on the corresponding audio tracks.

Video List Display Tab

Click **Video List Display** to open the Video Display tab. See Figure 4–28.

This tab displays a list of all the events on the timeline, including associated comments. You can not perform any operations on events in this tab.

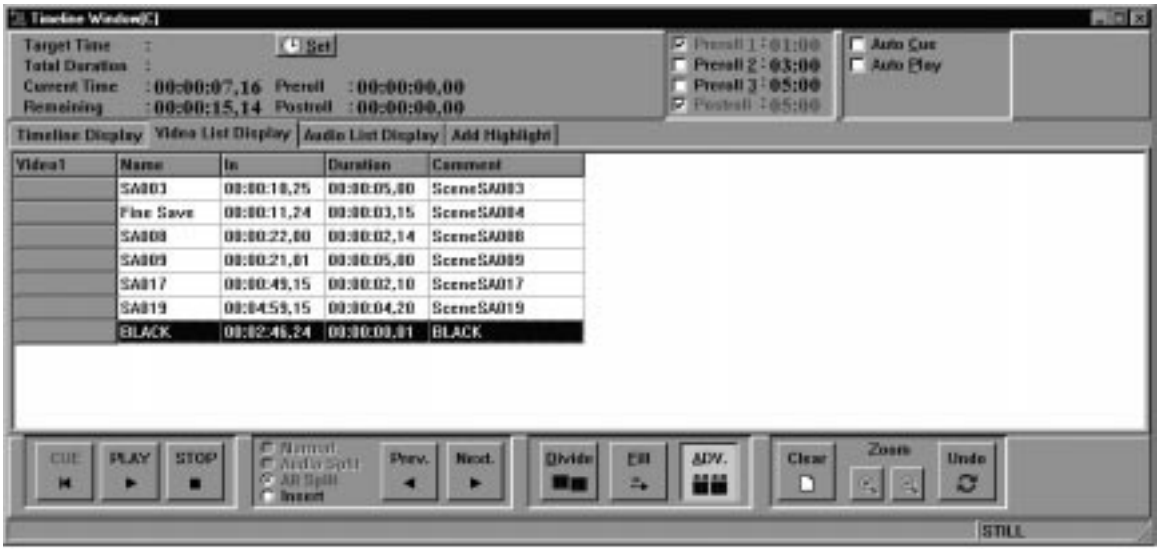


Figure 4–28: Video List Display Tab

Audio List Display Page

Click **Audio List Display** to open the Audio List Display tab. See Figure 4–29.

This tab lists audio information for all the events on the timeline. You cannot perform any operation in this page.

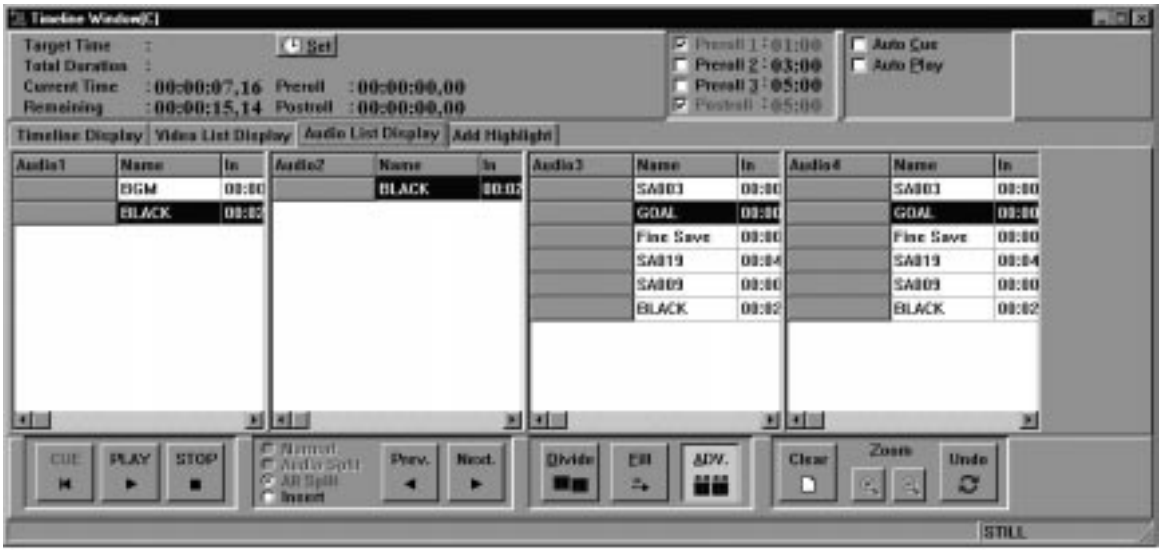


Figure 4–29: Video List Display Tab

Add Highlight Tab

Click **Add Highlight** to open the Add Highlight tab. See Figure 4–25.

Register Name Text Box — Enter a packaged timeline icon name The name can be up to 14 characters long.

Add Highlight Button — Adds the timeline list created in the Timeline Window to the Highlight Window as a packaged timeline icon. This icon has the name entered in the Register Name text box.

A timeline list added to the Highlight Window is called ***packaged timeline,*** or just ***group***, and is displayed as an icon in the Highlight Window.

As with scene icons, packaged timeline icons can also be dragged and dropped into the Playlist and Library Windows.

You can drab and drop this icon back into the Timeline window again. Doing so disassembles the timeline list into its constituent events, which you can edit before adding the packaged timeline to the Highlight Window again.

Audio Monitor Window

The audio level of each channel can be monitored through the Audio Monitor. The Audio Monitor window is opened by clicking on the Audio Monitor button in the Launcher.

Also, the record level and play level can be adjusted. There are four audio monitors corresponding to the four audio channels, whose levels can be adjusted independently or adjusted together.



Audio Monitor Button

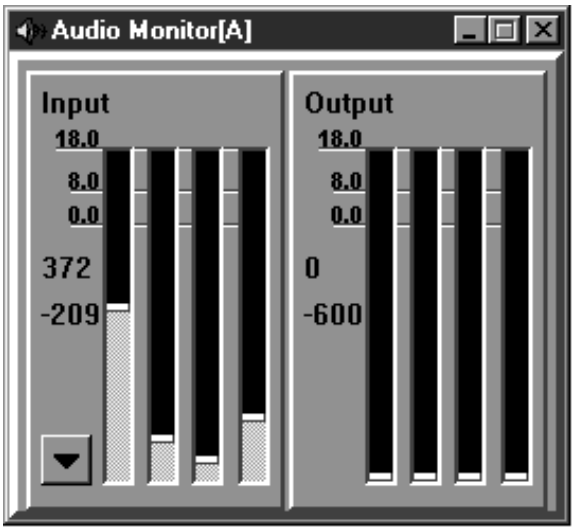


Figure 4–30: Audio Monitor Window

Play and Record Level Displays

Play and record levels are displayed vertically with green bars.

Either the play level or the record level is displayed for the 1–channel resource.

Both play and record levels are displayed for the 2–channel resource.

Tuning Audio Level

1. Click on the ▼ button at lower left part of the window to reveal the level controls when you want to adjust the levels.

2. Adust the level independently on each track by dragging the faders or clicking on the **UP** and **DOWN** arrow buttons.

   Selecting **Group Control** allows you to control four tracks together.

   Clicking the **0** button to the left of the faders resets the levels to 0 dB.

3. Click on the ▲ button to hide the faders and return the extended window to its original size.

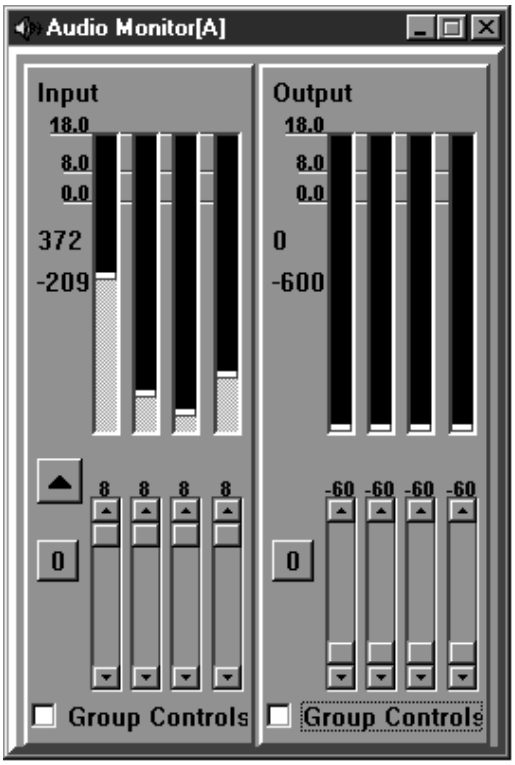


Figure 4–31: Audio Monitor Window with Faders

Window Description

▼ Button Displays the faders by extending the window. See Figure 4–31.

▲ Button Hides the faders by returning the window to its original size.

Fader Bars Adjust the record and playback levels by dragging the faders up or down.

0 Button Resets all the levels for the four channels to default levels (0 dB).

Group Control Selects whether the adjustment of the four channels is performed independently or all together. To adjust the levels as a group, select this option.

Set and Edit Applications

About Field Dominance

When you change the duration of recorded material such as scenes, for example, you can set field dominance for that timecode, field 1 or field 2.

Setting Field Dominance

Field 1 and field 2 can be set in the Scene Information or Preview window. See Figure 5–1 for an example of the Scene Information window. There are two options to the right to each of the timecode text boxes. Set the field dominance by selection one of the options, **1** or **2.** To make the change effective, click the **Change** button in the Scene Information window, or on the **Save** button in the Preview window.

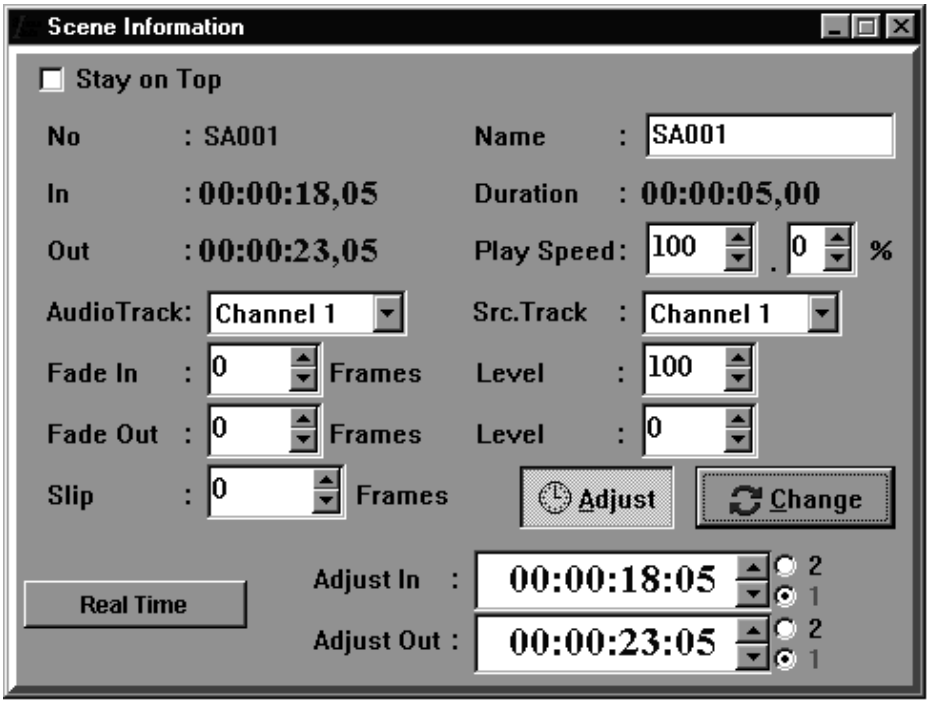


Figure 5–1: Example of Setting Field Dominance

Field Dominance Display

The field dominance information (field 1 or field 2) is displayed in all the timecode display fields. Table 5–1 shows how the field dominance in each of the drop–frame and non-drop–frame timecodes is displayed.

Table 5–1: Timecode Display for Field Dominance

Fields	Drop–frame	Non–drop–frame
Field 1	Comma (,) is used as a delimiter between Seconds and Frames.	Period (.) is used as a delimiter between Seconds and Frames.
Field 2	Semi–colon (;) is used as a delimiter between Seconds and Frames.	Colon (:) is used as a delimiter between Seconds and Frames.

For example, timecodes are displayed as XX:XX:XX,XX in the Highlight window shown in Figure 5–2. This indicates that all the timecodes are drop–frame, and field 1 is dominant.

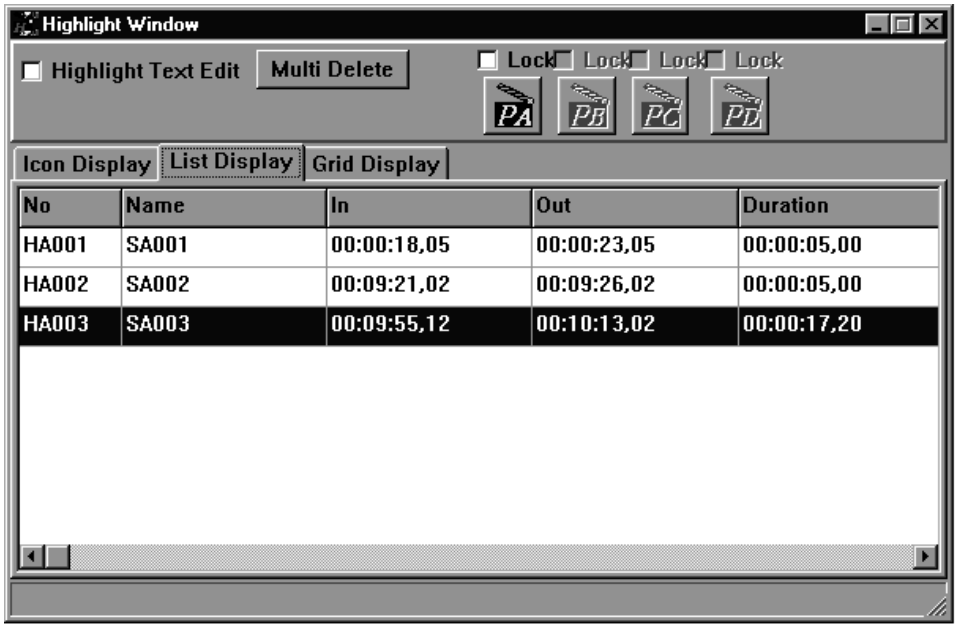


Figure 5–2: Field Dominance Display Example

Entering Timecode

Timecode can be entered in timecode input text boxes in various windows. Figure 5–3 shows an example of the text box in the Timecode Offset dialog box. This subsection describes how to enter a timecode in this text box.

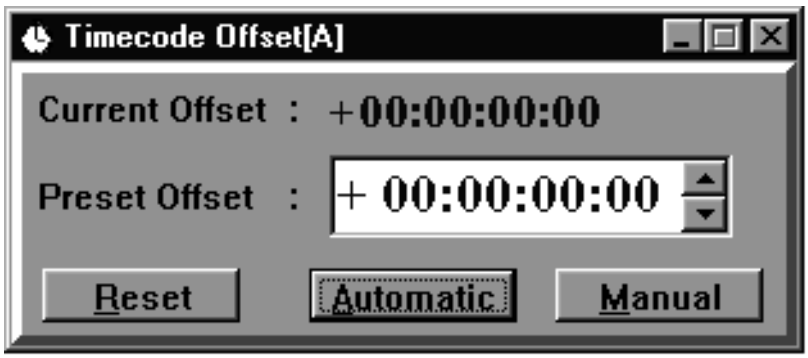


Figure 5–3: Timecode Input Text Box Example

To enter a timecode, move the insertion point to the desired position in the text box and type in the numbers. As you enter numbers, they appear to the left of the insertion point, and the insertion point moves to the left by one character. If there are selected numbers in the text box, they are replaced by the new numbers.

To increase or decrease hours, minutes, seconds and/or frames displayed in the text box, move the mouse pointer onto the number to be changed, and then click the arrows to increase or decrease the number.

To delete a number, move the insertion point to the right to the number to be deleted, and press the BS (Back Space) key. The numbers displayed to the left of the insertion point shift to the right by one character every time you press the BS key.

The plus and minus signs can be entered by pressing plus (+) and minus (–) keys, respectively. The insertion point can be anywhere in the text box. To switch the pulse sign to the minus sign or vice versa, move the insertion point to the right to the sign and press the up or down arrow key.

NOTE. *When you enter an invalid timecode in the text box and move insertion point out of the text box, the newly–entered timecode will be discarded and the previous timecode will be restored.*

Timecode Offset Window (Enhanced Feature Set Only)

The Profile internal timecode generator can be set to match the timecode of an external source by enabling Jam Sync. However, there is usually an error of one or several frames when setting the internal generator. To correct for this kind of error on each channel, timecode offset can be set manually or automatically.

The timecode offset is used:

- To search by absolute timecode.
- To output timecode from the Profile system in sync with source timecode.

To open the Timecode Offset window, click on the **Timecode Offset** button in the Launcher.



Timecode Offset Button

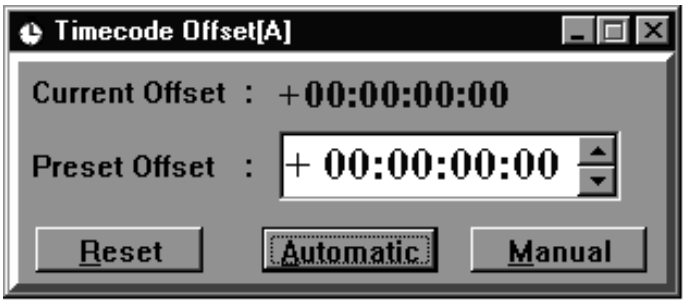


Figure 5–4: Timecode Offset Window

In LVS software calculates the difference between the internal and external timecodes. This allows the system to locate recorded material based on external timecode.

NOTE. *This feature cannot be used for the Playlist, Library and Timeline windows.*

Even if you set a timecode offset, the timecodes displayed in the SVGA monitor or monitor of the Live Controller are still internal timecode. The internal timecode should be used to set an IN point when you desire to set it by timecode.

For a description of timecodes used for Profile operation, refer to *Timecode Routing Tab* on page 3–11.

Timcode Offset Setting Procedures

1. To use the timecode offset feature properly, you must assign an external timecode source to the record resource in the Timecode Routing tab of the Configuration window. Refer to *Timecode Routing Tab* on page 3–11 for details on timecode source setting.
2. Start recording.
3. Open the Timecode Offset window by clicking the **Timecode Offset** button in the Launcher.
4. Set the timecode offset automatically or manually in the Timecode Offset window. Refer to *Window Description* for details on setting the timecode offset.

NOTE. *The timecode difference varies every time a recording is started. You can set the timecode offset only once at the beginning if you record continuously. If you stop recording, you must set the timecode offset again when you restart recording.*

Function Details

Current Offset The current timecode offset is displayed.

Reset Button Clicking the Reset button sets the timecode offset value to 00:00:00:00.

Automatic Button Cue up at an arbitrary point in the recorded material, and then click on the **Automatic** button in the Timecode Offset window. This operation causes the LVS to obtain the difference between the internal and external timecodes automatically. After this, the LVS uses this difference when you perform a search by timecode. (Search by timecode is only available with the Live Controller. Refer to *SEARCH Area* on page 6–10.)

Manual Button Enter a timecode offset value in the ±*Hour:Minutes:Seconds:Frames* format in the Preset Offset text box, then click on the **Manual** button. The input timecode offset value can be used, regardless of the external timecode. When you perform a search by timecode, the LVS cues up at the input timecode plus the offset. In the search by relative timecode, the timecode offset is not applied.

Current Resource Information Window (Enhanced Feature Set Only)

You may want to use another remote controller to manage material on a specific resource. The Current Resource Information window lets you assign controlling devices for each resource. It also lets you disable controllers for a given resource to ensure that only the specified device can manage that resource.

The controlling devices for each port can be the LVS application (GUI, Graphical User Interface), the Live Controller, or a remote controller.

The assignments you make in this window take effect immediately. You can change the assignments at any time without restarting the system.

To open the Current Resource Information window, click on the **Current Information** button in the Launcher.

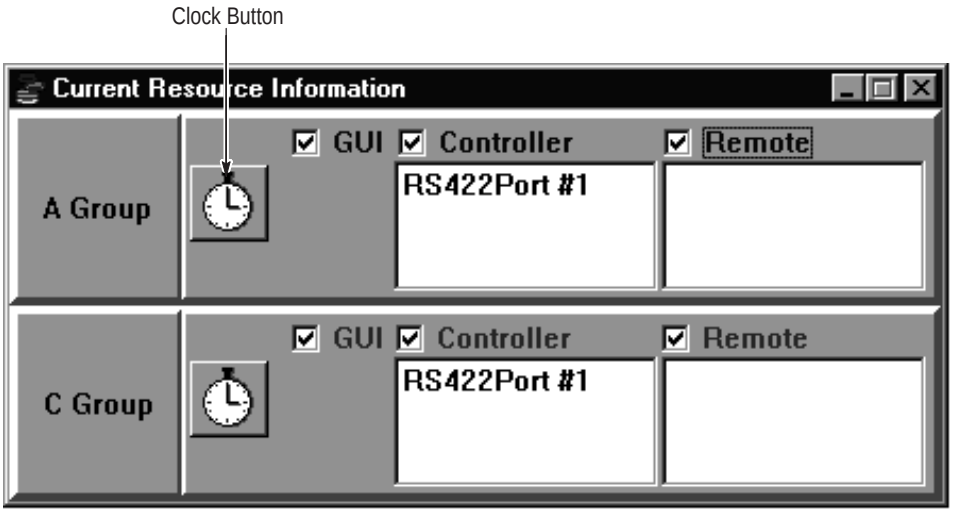


Figure 5–5: Current Resource Information Window

Assigning Controllers

1. In the Resource Setup tab of the Configuration window, select the RS-422 resource check box if this port is connected to a device other than the Live Controller. Clear it if the port is connected to the Live Controller.

   Note that this step is performed when you configure the system. You cannot change this setting dynamically.

2. Select the desired **GUI**, **Controller**, or **Remote** options in the Current Resource Information window. The Profile system will accept commands from all of the selected controllers for the specified resource.

The setting takes effect immediately.

In the Current Resource Information window, you can change the controller assignments dynamically while the LVS software is running.

Window Description

Groups

Group display indicates the resource group channel assigned in the Resource Assign page of the Configuration window (refer to page 3–5).

Resource Controller Options

GUI — Select this option to control the group resources from the GUI (LVS application windows). Clear this option to disable control the specified group resources from the GUI.

Controller — Select this option to control the group resources from the Live Controller. Clear this option to disable control the specified group resources from the Live Controller.

The list below the Controller option displays the RS-422 port numbers to which the Live Controllers are connected. The list is derived from your settings in the Resource Setup tab of the Configuration window. Refer to page 3–8.

Remote — Select this option to control the group resources from a device other than the Live Controller. Clear this option to disable control the specified group resources from a device other than the Live Controller.

The list below the Controller option displays the RS-422 port numbers to which the Live Controllers are connected. The list is derived from your settings in the Resource Setup tab of the Configuration window. Refer to page 3–8.

Clock Buttons

Click the **Clock** button to open the Offset Setting of Playback Timecode panel for each group, as shown in Figure 5–6. This panel allows you to set an arbitrary start time for the running timecode.

To set a start time:

1. Enter the desired start time in the text boxes. The start time is in the following format: *Hours:Minutes:Seconds:Frames*.
2. Click the **Set** button.

Click on the **Clock** button again to close the Offset Setting of Playback Timecode panel.

Refer to *Timecode Offset Window* on page 5–4 for more information about running timecode.

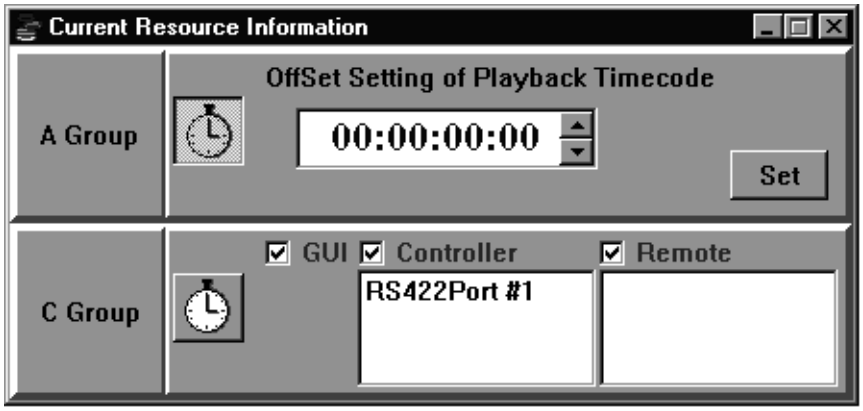


Figure 5–6: Offset Setting of Playback Timecode

Text Edit and Multi Delete

In the Scene, Highlight, and Library windows, the **Text Edit** option and **Multi Delete** button are always found at upper–left part of the window.



Figure 5–7: Example of Text Edit Option and Multi Delete Button

Text Edit

When the **Text Edit** option is selected, you can edit the name and comments for each item (scene, event, etc.) in the List Display tab. Figure 5–8 shows an example of editing a name in the List Display tab of the Scene window.

To edit a name or comment:

1. Open List Display tab by clicking on **List Display**.
2. Select the **Text Edit** option.
3. Double–click the name or comment column you wish to change.
4. Type the new name or new comment. Press the ENTER key when you've finished entering new text.
5. If necessary, clear the **Text Edit** option.

Only the event's name and comment can be changed. Other information, such as the IN point, OUT point, and duration cannot be changed.

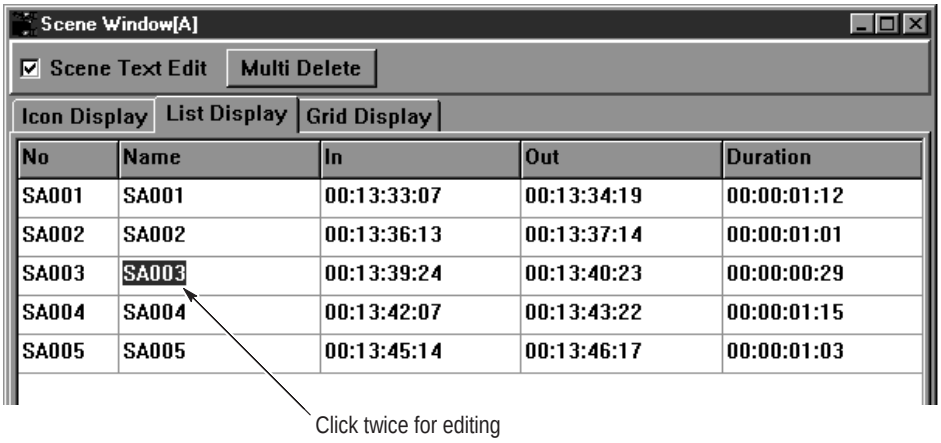


Figure 5–8: Example of Editing a Scene Name

NOTE. *You cannot drag and drop material onto the list or open the Preview window while the* ***Text Edit*** *option is selected.*

Multi Delete

Clicking the **Multi Delete** button opens the Multi Delete dialog box, which provides you with a way to delete many items from a list at a time. See Figure 5–9.

To delete scenes from a window using the Multi Delete button, follow these instructions.

1. Click the **Multi Delete** button to open the Multi Delete dialog box.
2. In the Scene, Highlight, or Library window, click the item you wish to delete from the window to add them to the Multi Delete dialog box. Repeat this step for all the material to be deleted.

   Clicking the **Select all** button allows you to add all the material from the window to the list in the Multi Delete dialog box. Use this button when you want to delete all scenes.

   If there is material in the Multi Delete list that you do not wish to delete, click that item to remove it from the list. Click the **Clear list** button to remove all material from the Multi Delete list.
3. Confirm that all the items in the list are to be deleted, then click on the **Delete** button to put all the material listed in the Multi Delete dialog box into the Recycle Box.

4. Click the **Multi Delete** button again to close the dialog box.

You cannot delete scenes from a Scene Window if the scene is used in a Highlight window. To delete these scenes, you must first delete them from the Highlight Window.

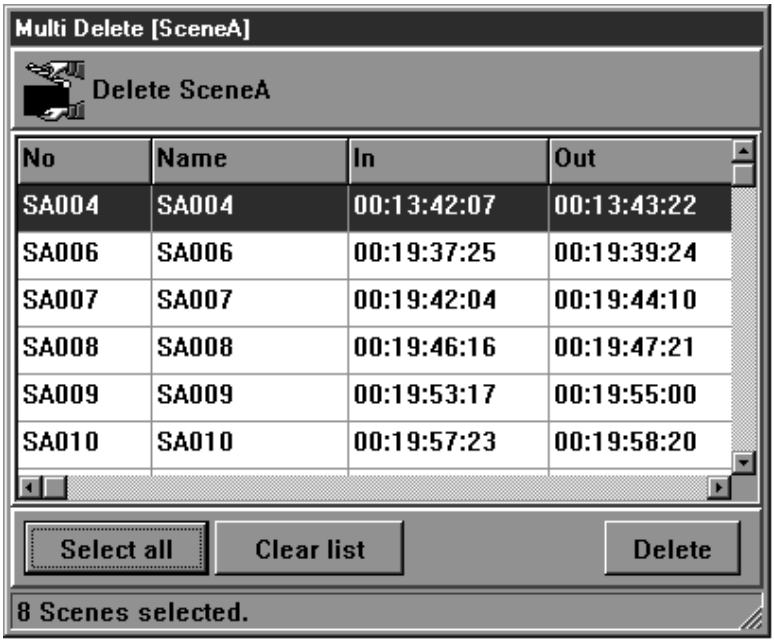


Figure 5–9: Multi Delete Dialog Box

Preview Window (Enhanced Feature Set Only)

If you double-click an item in a window, such as a scene, highlight, library item or playlist event, a Preview window opens (see Figure 5–10). This window displays all the information about the selected material.

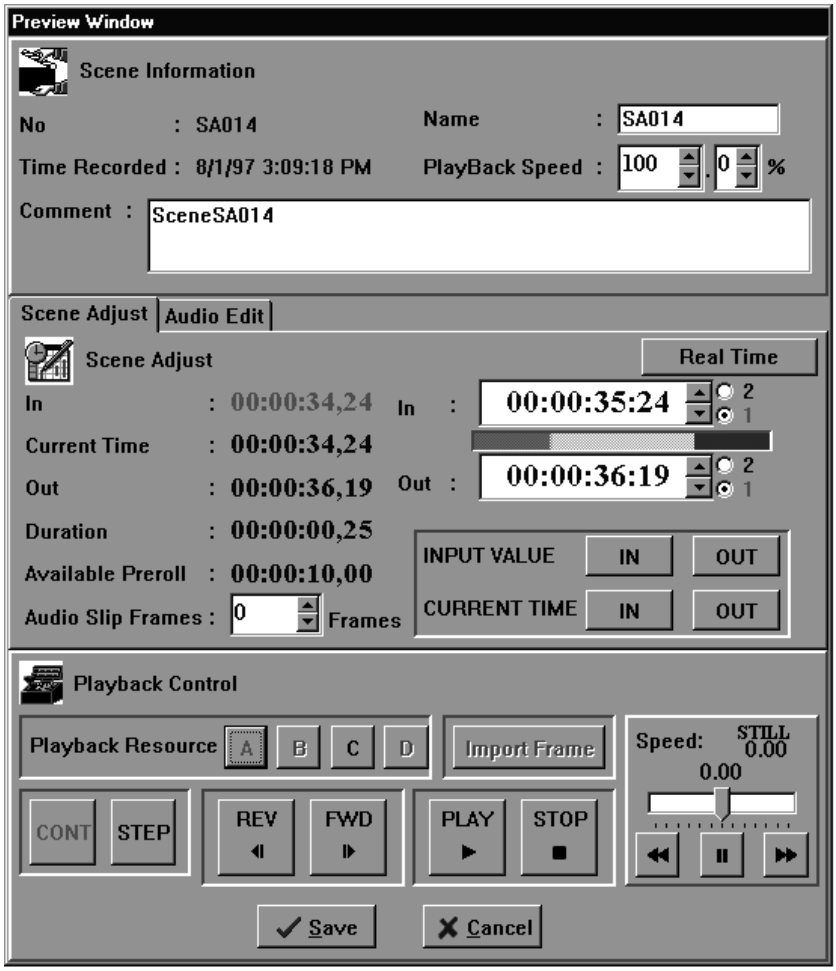


Figure 5–10: Scene Adjust Tab — Preview Window

Overview of Viewing and Editing

1. Double-click an item in the window to open the Preview window.
2. Click a Playback Resource button, from **A** to **D**. This selects the resource group channel to use for playback. The dimmed channels cannot be selected. Note that the text boxes and buttons in this window may not be available until you select a Playback Resource channel.
3. If needed, change the information in this window.
4. Click the **Save** button to accept the changes and close the window. Click the **Cancel** button to close the window and discard any changes.

Editing Duration

You can change an event's IN and OUT. These changes will update references to the event added to the Playlist or Library window.

1. Double-click an event display the information.
2. Choose the **Scene Adjust** tab.
3. Enter a new IN point timecode.

   You can type the new IN point in the text box, or use the playback controls or the Live Controller to locate the desired timecode
4. Click on the INPUT VALUE **IN** button to set this timecode as the new IN point.

   Click the CURRENT TIME **IN** button or press twice on the Live Controller's **IN** button if you used the playback controls or the Live Controller to locate the new IN point.
5. Enter a new OUT point timecode.

   You can type the new OUT point in the text box, or use the playback controls or the Live Controller to locate the desired timecode
6. Click on the INPUT VALUE **OUT** button to set this timecode as the new OUT point.

   Click the CURRENT TIME **OUT** button or press twice on the Live Controller's **OUT** button if you used the playback controls or the Live Controller to locate the new OUT point.
7. Click the **Save** button to make the changes effective and close the window. Click the Cancel button to discard the changes and close the window.

You can also change duration in the Scene Information Window. Refer to *Editing Duration In Scene Information Window* on page 5–23.

Editing Audio Channels

1. Double-click an item in the window to open the Preview Window.
2. Click a Playback Resource button from **A** to **D**.
3. Click **Audio Edit** to open the Audio Edit tab. See Figure 5–11.

   In this tab, you can edit audio channels from channel 1 to 4 at the same time. These channels represent the recorded channels.

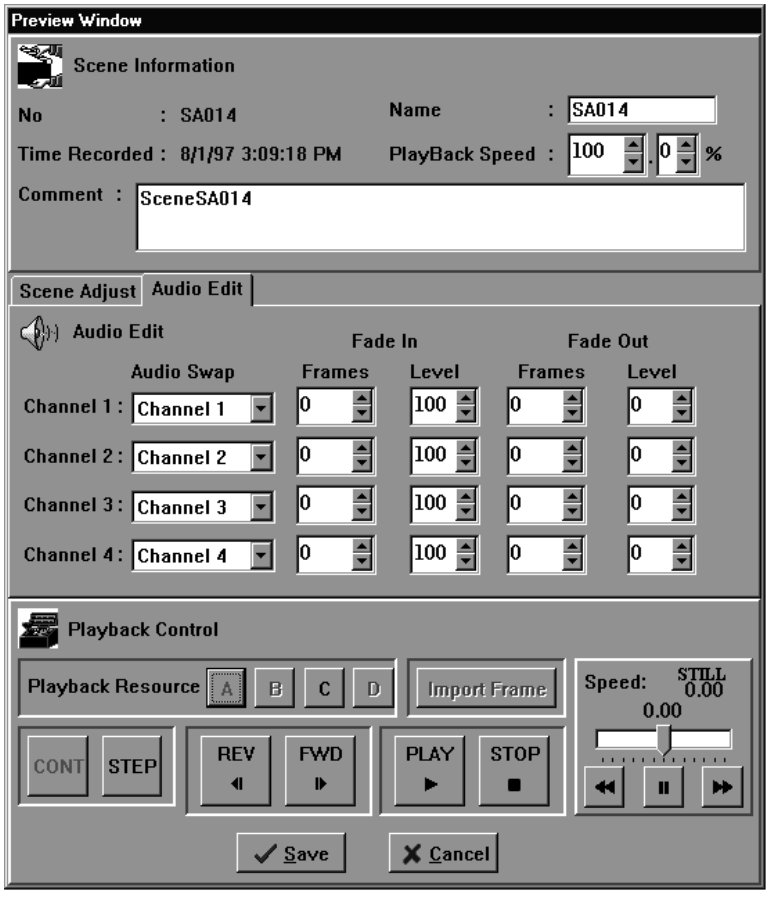


Figure 5–11: Audio Edit Tab — Preview Window

4. Select a channel in the **Audio Swap** drop–down list box. The audio will be played back through the selected channel. For example, the audio recorded on Channel 2 can be played back through Channel 4 if you select **Channel 4** in the **Audio Swap** drop–down list box for **Channel 2.**

5. Enter the number of frames for the fade-in duration in the **Fade In : Frames** text box, and the level at the end of the fade-in in the **Fade In : Level** text box.

6. Enter the number of frames for the fade-out duration into the **Fade Out : Frames** text box, and level at the end of the fade-out into the **Fade In : Level** text box.

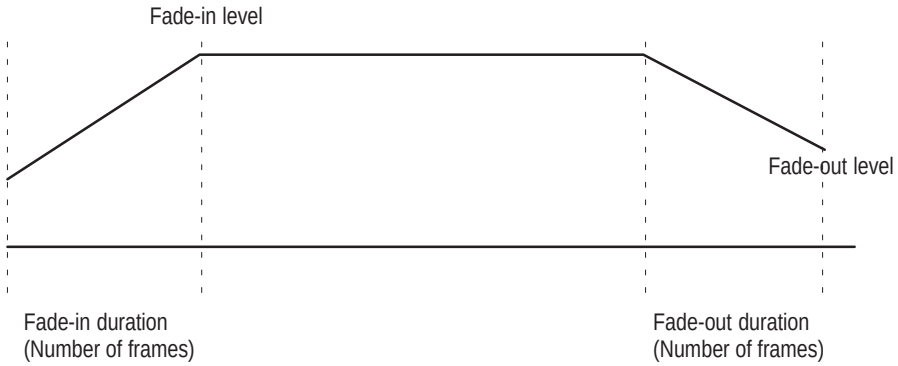


Figure 5–12: Fade-in and Fade-out Settings

7. Click on the **Save** button to make the changes effective and then close the window.

Changing an Icon's Image

The thumbnail displayed on as a highlight or library icon can be changed.

1. Double–click a highlight or library icon to display its information.

2. While monitoring the output, use the Playback controls to locate the new frame that you want to use as the thumbnail. Stop on that frame.

3. Click the **Import Frame** button.

4. Click the **Save** button to accept the change and close the window. Click the **Cancel** button to discard the change and close the window.

Playback

Using the Preview window, you can play back the recorded material whose information is currently displayed in this window.

1. Double–click an item in the window to open the Preview Window.
2. Click a Playback Resource button from **A** to **D**.
3. Select a mode by clicking the **CONT** button for continuous mode or the **STEP** button for step mode.
4. If necessary, set the playback speed with the **SHUTTLE Slide Bar**.
5. Start playing by clicking the **PLAY** button, and stop playing by clicking the **STOP** button.

   Click on the **REV** or **FWD** button to move one frame backward or forward, respectively.

   Click on the **Pause** (**II**), **REW** (**◀◀**) or **FFD** (**▶▶**) button for pause, rewind or fast forward.

Notes on Changing Event Information

Different types of information can be edited in the Preview window, depending on the type of icon. Table 5–2 lists the type of information that can be changed.

Table 5–2: Notes on Editing Information

Windows	Icon Type	Information that can be edited
Scene	Scene [1]	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
Highlight	Scene	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
	Packaged Playlist	Name
	Packaged Timeline	Name
Timeline	Scene [1]	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
	Packaged Playlist [2]	–
	Packaged Timeline [3]	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
Library	Scene [1]	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
	Packaged Playlist	Name
	Packaged Timeline	Name
Playlist	Scene [1]	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
	Packaged Playlist [4]	–
	Packaged Timeline	Name

1 Only name, IN and OUT are changed immediately. The other items are kept as internal information and will be reflected when the scene has been added to the Playlist, Library and/or Timeline window.

2 Packaged playlists cannot be added to the Timeline window.

3 When packaged timeline is added to the Timeline window, it is treated as a single event.

4 When packaged playlist is added to the Playlist window, it is disassembled into its constituent events.

Window Description

Information

No — Displays scene number of the currently selected scene.

Time Recorded — Displays the date when the scene was recorded.

Name — Displays the scene name. This information can also be edited. A scene name can be up to 14 alphanumeric characters long.

Playback Speed — Displays the current playback speed. You can enter speed as percentage of the normal speed.

Comment — Displays comments about the scene. This information can also be edited. Comments can be up to 256 alphanumeric characters long.

Scene Adjust Tab

Open this tab by clicking **Scene Adjust**.

Refer to *Notes on Changing Event Information* on page 5–17 for more details on editing in this tab.

In — Displays the timecode of the current IN point.

Current Time — Displays timecode of current playback point.

Out — Displays the timecode of the current OUT point.

Duration — Displays the duration of the current event.

Available Preroll — Displays how much pad exists before the IN point.

Audio Split Frames — Displays how many frames the audio is shifted from the video. You can edit this value.

Absolute Time / Relative Time — Toggles between Absolute Time and Relative Time. This button establishes how you change the IN and OUT points. When Absolute Time is displayed, you can enter a value by absolute time based on recorded time. When the Relative Time is displayed, you can enter a value relative to the current IN or OUT point.

In — Allows you to enter a timecode for the new IN point.

Out — Allows you to enter a timecode for the new OUT point.

INPUT VALUE

The values entered in the IN and OUT field must be made effective by following buttons.

IN Button — Sets the value in the **IN** text box as the IN point.

OUT Button — Sets the value in the **OUT** text box as the OUT point.

CURRENT TIME

You can change the IN and OUT points while monitoring the video and/or audio. Play a scene, and then decide its new IN and OUT points by clicking on the **IN** and **OUT** buttons.

IN Button — Sets the current playback point to the IN point.

OUT Button — Sets the current playback point to the OUT point.

The playback point is displayed as the current timecode.

Audio Edit Tab

Open this tab by clicking **Audio Edit**. See Figure 5–11 for an example of the Preview window's Audio Edit tab.

Refer to *Notes on Changing Event Information* on page 5–17 for more details about editing in this tab.

Audio Swap — Allows you to select an output channel through which the recorded audio track will be played back

Fade In — Allows you to enter the two parameters for fade in. The fade in will be performed with a fade duration specified by the number of frames and the specified level at the end of the fade in.

The level at the beginning of the fade in is equal to the level at the end of the fade out of the previous scene. Therefore, the fade in of the current scene could not start from 0 unless the level of the fade out of the previous scene is set to 0.

Frame — Allows you to enter a fade duration as a number of frames.

Level — Allows you to enter the level at the end of the fade in. The level must be specified as a percentage of the recorded level.

Fade Out — Allows you to enter the two parameters for fade out. The fade out will be done with a fade duration represented by the number of frames and a specified level for the end of the fade out.

Frame — Allows you to enter a fade duration as a number of frames.

Level — Allows you to enter the level at the end of the fade out. The level must be specified as a percentage of the recorded level.

Refer to *Fade In / Fade Out* on page 4–50 for more details about fade-in and fade-out.

Playback Controls

Playback Resource — Allows you to select an output channel through which the scene is played.

Import Frame — This button allows you to assign another frame for use as the scene's thumbnail when the scene is added to the Highlight or Library windows.

To replace the thumbnail, search and cue up to a frame in the scene by performing a playback operation, then click on this button.

CONT / STEP Buttons — Sets the LVS to CONT (Continuous) mode or to STEP mode. In the CONT mode, playback continues past the OUT point of the scene. In the STEP mode, playback continues until to the OUT point plus the postroll.

REV / FWD Buttons — Steps one frame forward or one frame backward.

PLAY / STOP Buttons — Starts playing back and ends playback.

Speed — Displays the current playback speed.

REW Button — Rewinds.

PAUSE Button — Pauses playback.

FFW Button — Fast forward.

SHUTTLE Slide Bar — Shuttles through the material.

Save / Cancel Buttons

Click **Save** to accept your changes and close the window. Click **Cancel** to discard your changes and close the window.

Scene Information Window (Enhanced Feature Set Only)

The Scene Information window allows you to view and edit information about the current scene. Since it doesn't provide previewing of the scene, this window is simpler than the Preview window.

With this window, you can view and edit information about scenes, highlights, events, library items, timeline items, packaged playlists and packaged timelines. You can only edit the name of groups such as packaged timelines and playlists.

To open the Scene Information window, click the **Scene Information** button in the Launcher. The window shown in Figure 5–13 appears.



Scene Information Button

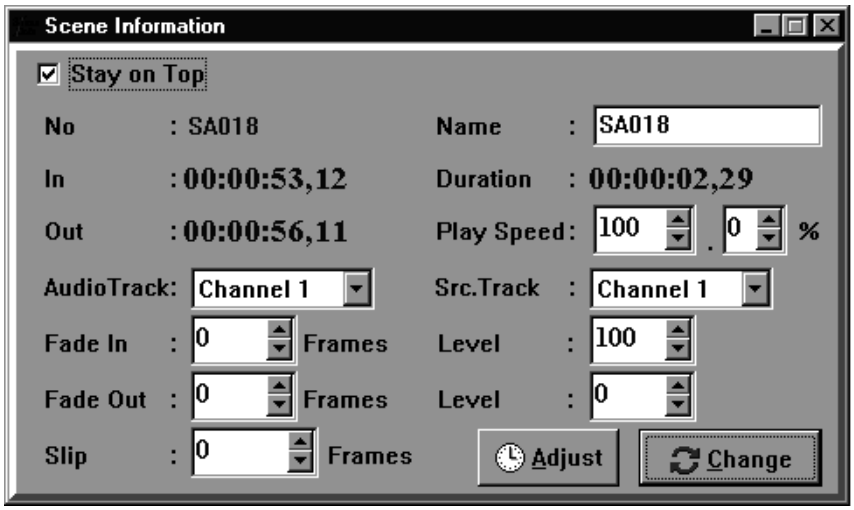


Figure 5–13: Scene Window

NOTE. *Information items that you can change are different depending on the selected item. See Table 5–3.*

Procedures for Viewing and Editing

1. Click the **Scene Information** button in the Launcher to open the window.

   When you select the **Stay on Top** option, the Scene Information window is always displayed on top of other windows.

2. Click an item in the window (Scene, Highlight, Playlist, ...) to display the item's information in the Scene Information window.

   The Scene Information window displays information for the currently selected window. If you select another item in the window, the information displayed in the Scene Information window will change.

NOTE. *Cueing up a scene or event with the Live Controller will* ***not*** *display that scene's information in the Scene Information window. This prevents erroneous changes caused by other Live Controllers.*

You should always click an item in the window to ensure that you're viewing and changing its information in the Scene Information window.

---

3. If needed, change the information in this window, and then click the **Change** button.

   If you select another item in the window without clicking the **Change** button, the changes you made are discarded and the Scene Information windows displays information about the new scene.

   Refer to *Window Description* on page 5–26 for details on how to change the information.

4. Close the window by clicking the **Scene Information** button in the Launcher.

Editing Duration

1. Click the **Scene Information** button in the Launcher to open the window.
2. Click a scene, playlist, library, or timeline icon to display its information.
3. Click on the **Adjust** button if the **Adjust In** and **Adjust Out** text boxes are not visible. See Figure 5–14.
4. Enter new IN and OUT points in the **Adjust In** and **Adjust Out** text boxes.

5. Click the **Change** button to make the changes effective.

With this method, you can not change IN and OUT points while monitoring the video and audio. If you want to view your material while changing the IN and OUT points, refer to *Editing Duration* on page 5–13.

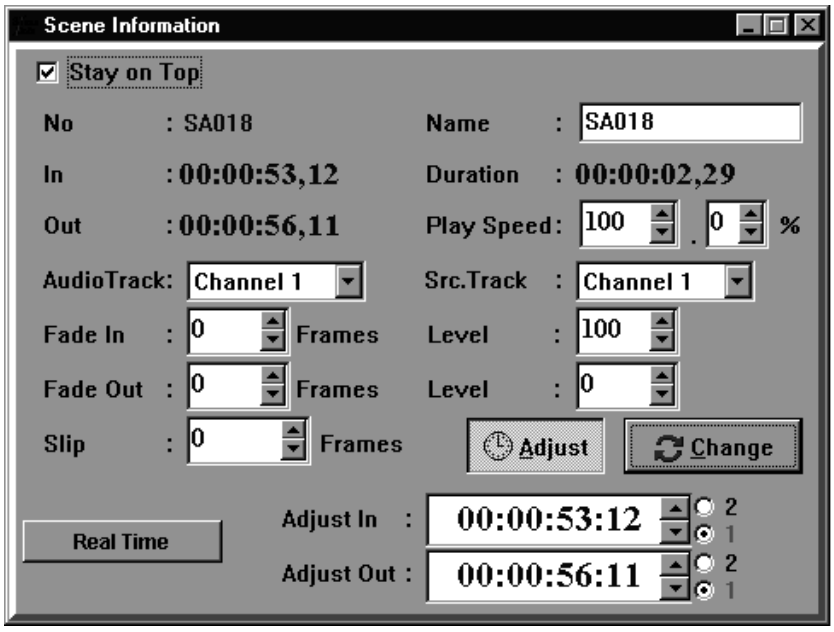


Figure 5–14: IN and OUT Adjust

Editing Fade-in, Fade–out or Slip

1. Click the **Scene Information** button in the Launcher to open the window.
2. Click a scene, playlist, or highlight icon to display its information.
3. Select an audio track by entering the audio track number in the **Audio Track** text box.
4. Enter the number of frames for fade-in duration in the **Fade In : Frames** text box, and level at the end of the fade-in in the **Fade In : Level** text box. See Figure 5–15.
5. Enter the number of frames for fade-out duration in the **Fade Out : Frames** text box, and level at the end of the fade-out in the **Fade Out : Level** text box. See Figure 5–15.

6. Enter number of frames into the **Slip** text box, as needed.

   When you enter a value smaller than 0, the audio starts playing back before starting the video. When you enter a value larger than 0, the audio starts playing back after starting the video.

7. Click on the **Change** button to make the changes effective.

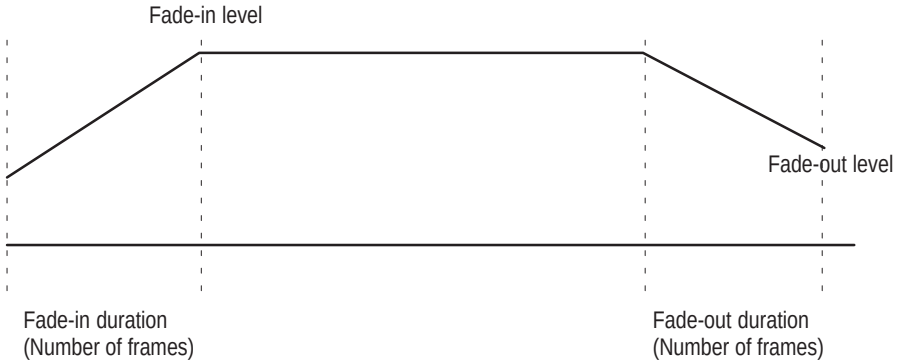


Figure 5–15: Fade-in and Fade-out Settings

Notes on Changing Information Items

Different types of information can be edited in the Scene Information window, depending on the type of icon. Table 5–2 lists the type of information that can be changed.

Table 5–3: Notes on Editing Information

Windows	Icon Type	Items that can be edited
Scene	Scene [1]	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
Highlight	Scene	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
	Packaged Playlist	Name
	Packaged Timeline	Name
Timeline	Scene [1]	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
	Packaged Playlist [2]	–
	Packaged Timeline [3]	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
Library	Scene [1]	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
	Packaged Playlist	Name
	Packaged Timeline	Name
Playlist	Scene [1]	Name, IN, OUT, Speed, Audio Swap, Fade-in, Fade-out, and Slip
	Packaged Playlist [4]	–
	Packaged Timeline	Name

1 Only name, IN and OUT are changed immediately. The other items are kept as internal informations and will be reflected when the scene is added to the Playlist, Library and/or Timeline window.

2 Playlist packages cannot be added to the Timeline window.

3 When packaged timeline is added to the Timeline window, it is treated as a single event.

4 When packaged playlist is added to the Playlist window, it is disassembled into its constituent events.

Window Description

Stay on Top Checking this option causes the Scene Information window to always display on to of other windows. (The Launcher may be displayed on top of this window.)

Scene Information

No — Icon number that is automatically assigned when the icon is created.

In — IN point of the material. This is always 0 for packaged playlists and timelines.

Out — OUT point of the material. This is always the duration of packaged playlist and packaged timelines, since their IN points are always 0.

Duration — Duration of the material at normal speed (100%). When the speed is set to other than 100 %, correct duration is calculated.

Editable Information

Name — Name of the currently selected icon.

Play Speed — Play speed currently set for this icon. Normal speed is represented as 100 %. The play speed can be changed by entering a value in the **Play Speed** text box and then clicking on the **Change** button.

Refer to *Notes on Changing Event Information* on page 5–25 for more details about editing this field value.

Audio Track — Audio track number. The information about this audio track is currently displayed in the window. Enter an audio track number to display or edit the audio track information.

Src. Track — Audio track number. The audio track specified in the **Audio Track** text box will be played back on this audio track.

The audio track specified in the **Audio Track** text box corresponds to the recorded track, and the audio track specified in the **Src. Track** field corresponds to the output track used for playback.

Fade In — Duration for fade in at the start of the recorded material and signal level at the end of the fade in.

Frames — Fade in duration represented as a number of frames.

Level — Signal level at the end of the fade in. This value must be given as a percentage of the recorded level.

Fade Out — Duration for fade out at the end of the recorded material and signal level at the end of the fade out.

Frames — Fade out duration represented as a number of frames.

Level — Signal level at the end of the fade out. This value must be given as a percentage of the recorded level.

Refer to *Fade In / Fade Out* on page 4–50 for more details about fade-in and fade-out.

Refer to *Notes on Changing Event Information* on page 5–25 for more details about editing these values.

Slip — Audio frames to be slipped from the video. This value changes the relative position between audio and video.

Change Button

Click on this button to make the changes effective.

If you click on an another icon before clicking on this button, the changes will be discarded.

Adjust Button

This button allows you to edit the duration of the recorded material. Click on this button to display following buttons and text boxes. See Figure 5–14.

Real Time / Relative Time Button — Use this button to toggle the type of timecode you enter in the **Adjust In** and **Adjust Out** text boxes. When the button is labeled **Real Time,** you can enter absolute timecode values in the text boxes. When the button is labeled **Relative Time,** you can enter offsets to the current IN and OUT points.

Adjust In — Timecode at the IN point.

Adjust Out — Timecode at the OUT point.

Recycle Box Window

Scenes, highlights, library items, and events which are no longer needed can be deleted from the various LVS windows by dragging and dropping them into the Recycle Box window. They can be dropped in the Recycle Box even when the Recycle Box is iconized.

***NOTE**. Dropping something in the Recycle Box means to move it from a window to the Recycle Box Window. The item has not been deleted and may be retrieved by opening the Recycle Box and dragging the item out of the Recycle Box.*



Recycle Box Button

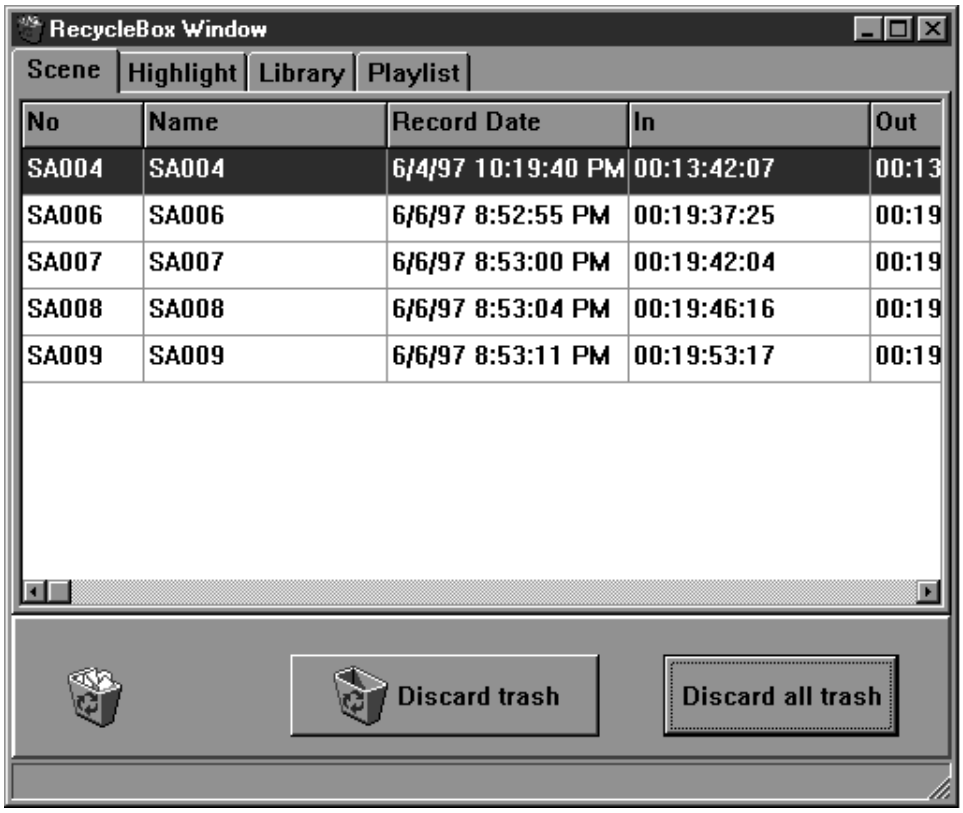


Figure 5–16: Recycle Box

Discard trash Button

When you are sure that the contents of the Recycle Box are no longer needed, press the **Discard trash** button. This destroys the management information but not the video or audio data. The contents are actually deleted the next time Disk

Cleanup is run. To recover disk capacity immediately, run a manual Disk Cleanup after pressing the **Discard trash** button.

NOTE. *In Loop Record mode, manual Disk Cleanup operations after pressing the* ***Discard trash*** *button are not necessary and not recommended.*

There are four tabs in this window; Scene, Highlight, Library and Playlist. The material discarded from the windows is placed in each respective window. The material to be deleted by the **Discard trash** button is that listed in the current tab. For example, you can delete only library material while not deleting highlights.

The **Discard all trash** button deletes all material from all the tabs.

Live Controller

Live Controller

The LVS Live Controller is a dedicated controller for the Profile LVS Event Management System, which allows you to control many critical on-air functions. The Live Controller provides easy–to–use operability including record, replay, slow-motion playback, time delayed playback, scene creation and editing, playlist creation and editing, as well as extensive nonlinear search capabilities. It is designed for the world of live event broadcasting, where accuracy, quick response, and flexibility are required.

Functional areas of the Live Controller (see Figure 6–1) are briefly listed and briefly described below.

- **REC Area** — Start/Stop recording and buttons for marking the IN and OUT points on incoming material.
- **PLAY Area** — Playback controls, including CONT and STEP.
- **SEARCH Area** — Controls for scene or location searching by scene number, event number, highlight number, or time code.
- **EDIT Area** — Trimming INs and OUTs of scenes and highlights, as well as adding new events or highlights.
- **EVENT EDIT Area** — Control to modify event sequences.
- **VDR SELECT Area** — Delegates control of the Profile PDR via RS-422 Port 1 or Port 2.
- **PREROLL TIME Area** — Buttons to select one of three preset Preroll times.
- **Status Displays** — Dual LCD display of the record and play channel status.

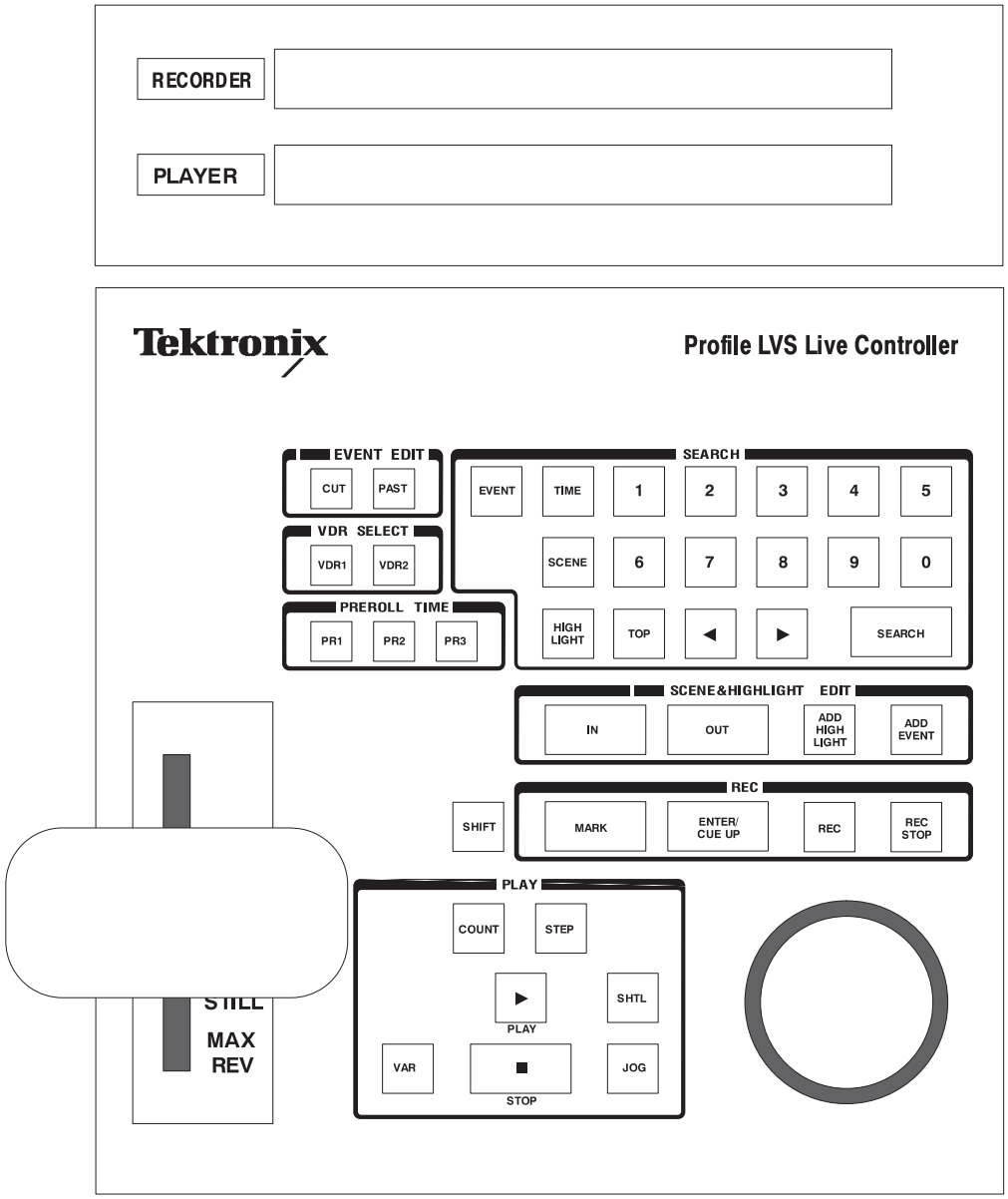


Figure 6–1: Live Controller

Relationship Between Recording Mode, Scene and Clip

Figures 6–2 and 6–3 show the relationships between the recording mode, a scene, and a clip. Also refer to *Recording Mode* on Page 1–9.

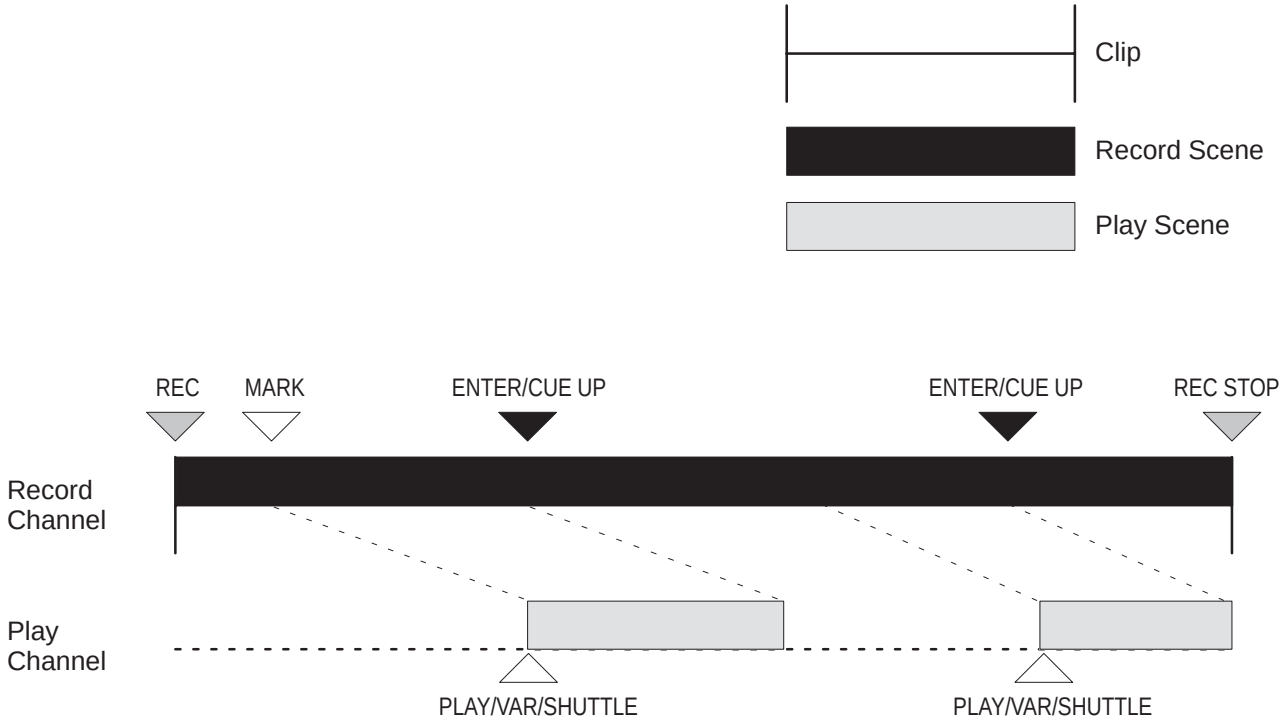


Figure 6–2: 2–Channel Mode

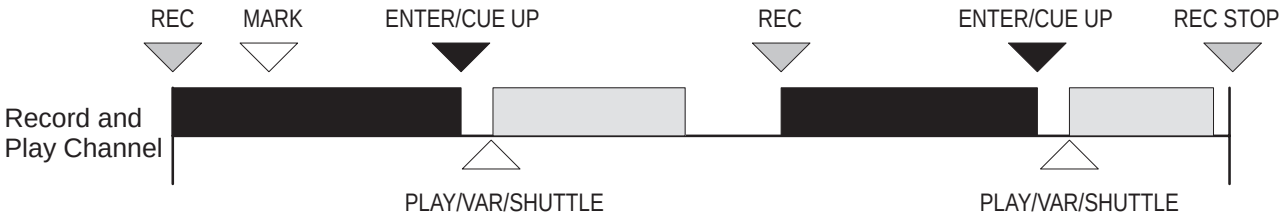


Figure 6–3: 1–Channel mode

Functions

REC Area

The start and stop of recording, and creation of scenes are controlled by the buttons in REC area.

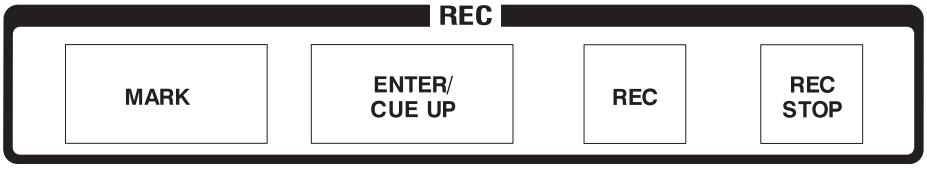
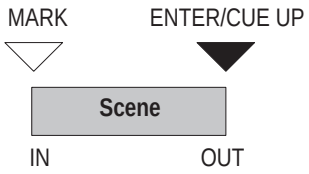
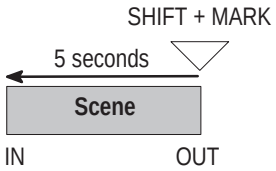


Figure 6–4: Buttons in the REC Area

MARK — Specifies the start of a scene. The time at which the **MARK** button is pressed becomes the IN point of the scene. If the **MARK** button is pressed more than one time before pressing the **ENTER/CUE UP** button, the time when the **MARK** button is pressed last will be the IN point.

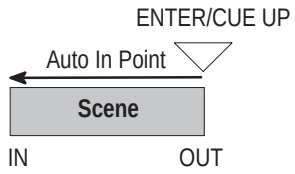


If you press the **MARK** button while holding down the **SHIFT** button, a scene is created. The IN point is set at a time five seconds before the time when the button is pressed, and the time the button is pressed will be the OUT point. The system cues up at the IN point and the **OUT** button in the EDIT area (see page 3–58) flashes. This creates a scene with a temporary Out point and puts the Live Controller into a mode that allows the operator to manually adjust the picture to the desired Out point and entering that by pressing the **OUT** button.



ENTER/CUE UP — Specifies the Out point, or end of a scene. The system cues to the IN point and the scene can be played immediately.

If you do not press **MARK** to locate an In point, but only press **ENTER/CUE UP**, the IN point will automatically be generated according to the Auto In Point setting (see page 3–14). This is useful in sports with continuous action, such as soccer, basketball and ice hockey, where there is no way to know in advance when a good play will occur. With this feature, you can simply press **ENTER/CUE UP** to have the action cued immediately for replay.



If you press **ENTER/CUE UP** while holding down **SHIFT**, a new scene is created but not cued up. This function is helpful when a scene is cued for playback but you need to continue to mark scenes as the action continues.

NOTE*. You can swap the actions for* ***SHIFT + ENTER/CUE UP*** *and* ***ENTER/CUE UP****. Set this in the Configuration Window. See page 3–17.*

REC STOP — **SHIFT + REC STOP** stops recording and defines the end of a clip. If these buttons are pressed while creating a scene, the scene is also ended.

REC — Starts recording.

PLAY Area

Using the buttons in the PLAY area, the operator controls the Profile transport functions. You can switch the Playback mode between continuous play and Step mode, including Play, Stop, Shuttle, Jog, and Variable speed playback (with the T-bar control).

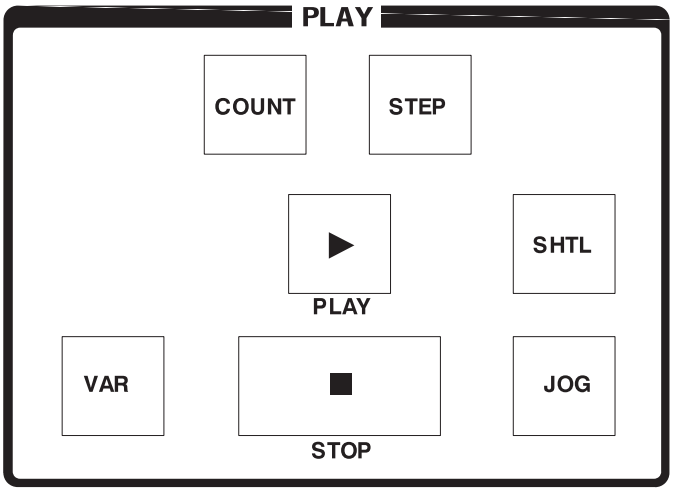


Figure 6–5: Buttons in PLAY Area

PLAY — Plays the selected scene.

STOP — Stops playing.

When the Controller Window is set to E–E, input video is looped through to the output. When the setting is PB, a video freeze is output. For setting the E–E or PB mode, refer to *Monitor Mode* on page 4–16.

If you press the **STOP** button and the **SHIFT** button, the system is temporarily set to the E–E mode, and input video is looped through to the output. When any play operation is executed later, this temporary E–E mode is reset. This function is helpful when you want to temporarily refer to input video while the monitor mode is set to PB in the Controller Window.

SHTL — Enables the Jog/Shuttle knob for shuttle operation. See page 6–8 for additional information.

JOG — Enables the Jog/Shuttle knob for jog operation. See page 6–8 for additional information.

VAR — Enables the Slow-motion lever (T-bar) for slow motion playback control. See page 6–9 for additional information.

CONT — When enabled, causes the playback of a scene to continue past the Out point until the end of the recording or until the **STOP** button is pressed. If a Playlist is running, **CONT** will cause the scenes in the Playlist to play out sequentially until the last event. It will then stop at the end of the Postroll.

STEP — When enabled, causes the playback of a scene to stop at the completion of the Postroll after the Out point. If a Playlist is running, **STEP** will cause playback to stop at the end of each event, requiring the operator to press **PLAY** to start playback of the next event.

Jog/Shuttle Knob

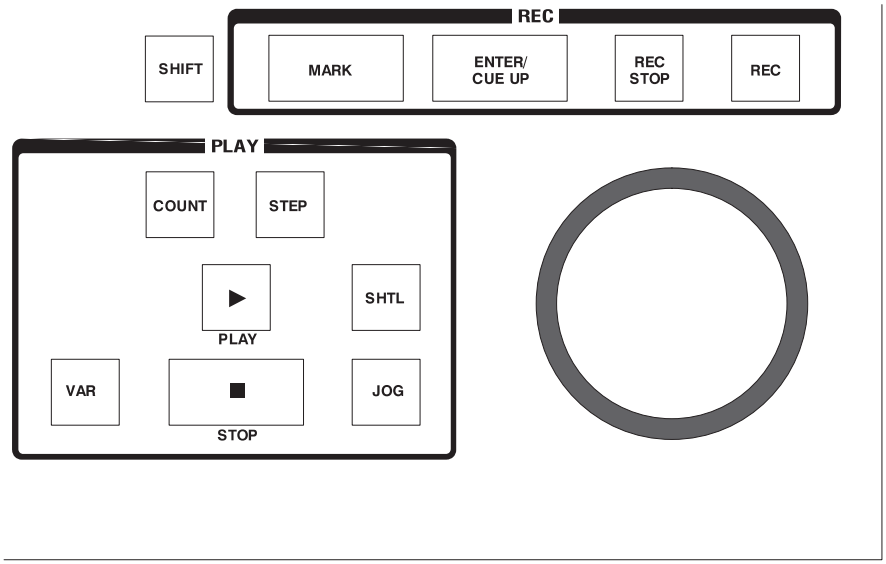


Figure 6–6: Jog/Shuttle Knob

JOG — Allows you to change the play speed rate between –3.0 and +3.0 corresponding to the number of times the knob is rotated. No click, clutch or lock mechanism is provided.

SHTL — Allows you to change the shuttle speed from maximum Reverse Shuttle Speed (–3.0 to 0) to maximum Forward Shuttle Speed (0 to +3.0), in accordance with the rotation angle of the knob. A click is provided at the 0.0. point.

A clutch is provided between maximum Reverse Shuttle Speed and maximum Forward Shuttle Speed, and there is tension on the knob. The clutch is engaged at maximum Shuttle Speed in either direction.

NOTE. *The values for Max Shuttle Speed can be freely set (± 1 to ± 50). Set these values in the Other tab of the Configuration Window. For details, refer to* Max Shuttle Speed *on page 3–17.*

Slow Motion Lever

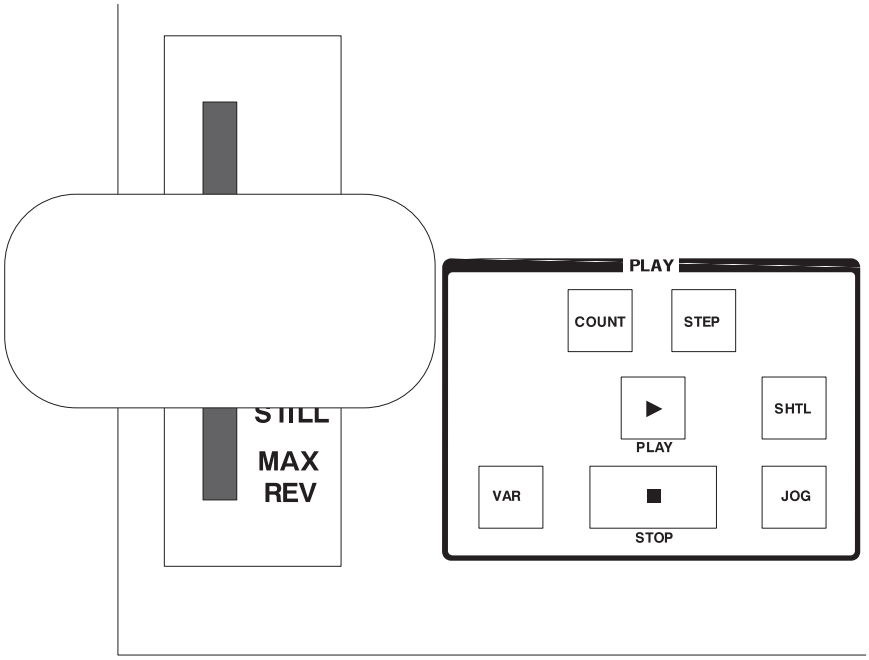


Figure 6–7: Slow Motion Lever (T-bar)

Slow Motion Lever — Allows you to vary playback speed between 0.0 (still) and +1.0 (normal play) depending to the angle of the lever. The lever has stops at points 0.0 and +1.0.

The locks are released by using the button located on either side of the lever. This permits further travel of the lever, giving the operator precise control of playback speeds in either: Reverse (from 0 to –3.0), then in Shuttle to the maximum Shuttle speed; or in Forward (from 0 to +3.0), then in Shuttle to the maximum Shuttle speed. (Maximum Shuttle speed is set on the Other tab of the Configuration Window.) The lever is tensioned to give positive control to the operator.

NOTE. *The values for Max Shuttle Speed can be freely set (±1 to ±50). Set these values in the Other tab of the Configuration Window. For details, refer to* Max Shuttle Speed *on page 3–17.*

SEARCH Area

Using the SEARCH area buttons, you can search for a scene, event, or highlight.

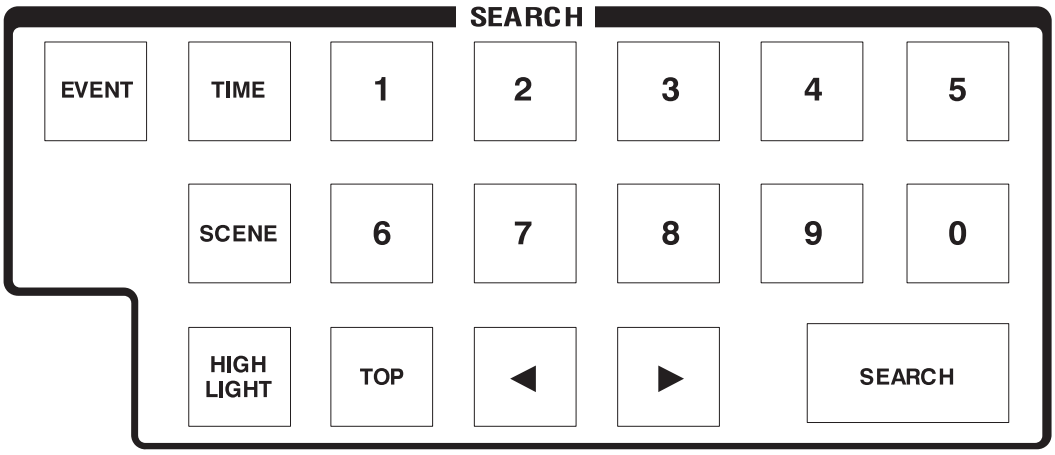


Figure 6–8: Buttons in SEARCH Area

TIME — Specifies the search is to be by timecode and requires the entry of a valid timecode value. When this mode is active, the **TIME** button is lit.

A numeric value is entered as hours, minutes, seconds and frames. For example, entry of 4–0–0–0–0–0 means 00 hours, 40 minutes, 00 second, 00 frame, and entry of 2–3–4–0–0–0–0 means 02 hours, 34 minutes, 00 second, 00 frame.

SCENE — Specifies the search is to be by scene number and requires the entry of a valid scene number. When this mode is active, the **SCENE** button is lit.

HIGH LIGHT — Specifies the search is to be by highlight number and requires entry of a valid highlight number. When this mode is active, the **HIGHLIGHT** button is lit.

EVENT — Specifies the search is to be by event number and requires entry of a valid event number. When this mode is active, the **EVENT** button is lit.

0 to 9 — Numeric keypad for data entry.

If a numeric entry is incorrect, press the selected mode button again. For example in the TIME mode, press the **TIME** button again. The value is cleared.

SEARCH — To search to a specific location (absolute scene number or time code), enter a numeric value and then press this button.

The system will pause at the In point of the video searched for. (In scene, highlight and event search mode, the search is to the corresponding In point minus Preroll time.) For example: to search for scene 14, press **SCENE**, **1**, **4**, **SEARCH**; to search for a specific time code location, press **TIME**, **2**–**0**–**1**–**1**–**4**–**0**–**0**, **SEARCH**.

◀ ▶ — Relative search is executed by entering a numeric value and then pressing one of these button. For example: to search ahead three scenes, press **SCENE**, **3**, ▶; to search back 2.5 minutes, press **TIME**, **2**–**3**–**0**–**0**–**0**, ◀.

If you press ◀ or ▶ without entering a numeric value, it is assumed that the value of 1 was entered. When you press this button the system pauses at the start point of the video searched for. (In scene, highlight and event search mode, the search is to the corresponding in point minus preroll time.)

TOP — The system cues to the start point (In point minus any set Preroll) of the current scene, highlight, or event depending on which is selected.

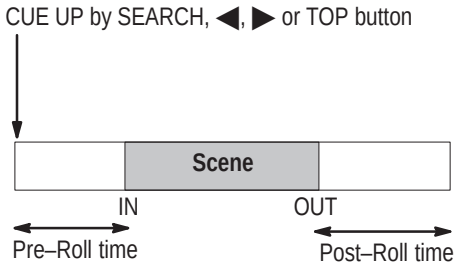


Figure 6–9: CUE UP Point

NOTE. *If you need to cue to the In point, set 0 as one of the three preset Preroll parameters in the Configuration Window.*

EDIT Area

With EDIT area buttons, you can change the duration of a scene and add a highlight or an event.

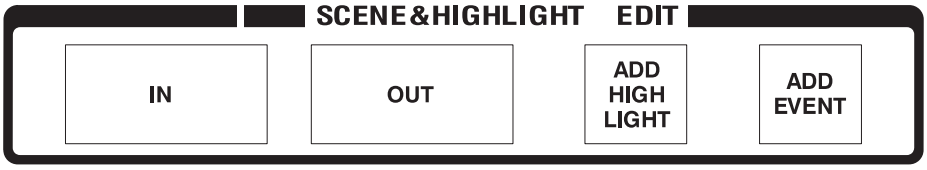


Figure 6–10: EDIT Area Buttons

IN — Valid when the play channel is currently within a scene window or highlight.

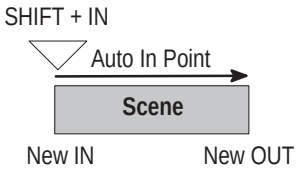
You can change the IN point of a scene or highlight cued on the current play channel by the following procedure:

1. Press the **IN** button once. The button flashes, making the system ready to change the IN point.
2. Move the play point using any Play control while the IN button is flashing.
3. Press the IN button again at the desired point. This becomes the new IN point.

When a new IN point is set, this button goes off.

If you want to cancel an In point trim when the button is flashing, press the **OUT** button.

If you press **IN** with **SHIFT** held down, a new scene, using the current position as the new In point, will be created. The Out point of the new scene will be calculated using the duration set in the Auto In Point section of the Other tab in the Configuration Window. See page 3–14 for the Auto In Point.



The difference between the **IN** button and the **MARK** button is that the **MARK** button determines the IN point for a frame currently being *recorded* while **SHIFT + IN** determines the In point for a frame currently being played. **MARK** determines the In point only and does not determine the Out point, while **SHIFT + IN** automatically determines the Out point.

OUT — Valid when the play channel is currently within a scene boundary.

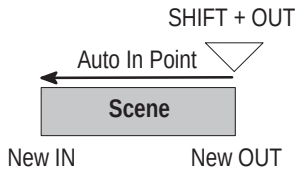
You can change the Out point of a scene or highlight cued on the current playing channel by following procedure:

1. Press the **OUT** button once, the button flashes, making the system ready to change the OUT point.
2. Move the play point using any Play control while **OUT** is flashing.
3. Press **OUT** again at a desired point. That point becomes the new Out point.

When a new OUT point is set, the button goes off.

If you want to abort an OUT point trim after the **OUT** button is flashing, simply press the IN button.

If you press **OUT** with **SHIFT** held down, a new scene using the current position as the Out point will be created. The In point of the scene will be calculated (back timed) using the duration set in the Auto In Point section of the Other Page on the Configuration Window. See page 3–14 for Auto In Point.



The difference between the **OUT** button and the **ENTER** button is that the **ENTER** button determines the Out point at a frame currently being *recorded*, while the **SHIFT + OUT** determines an Out point at a frame currently being played. **ENTER** determines the Out point only and the In point is set by pressing **MARK**, while **SHIFT + OUT** automatically determines the In point.

ADD HIGHLIGHT — Valid when the play point is currently within a scene boundary. Enters the scene loaded on the current play channel as a highlight.

ADD EVENT — Valid when the play point is currently within a scene or highlight boundary. Enters (adds) the scene or highlight loaded on the current playing channel as an event to the end of the playlist.

EVENT EDIT Area

With the buttons in the EVENT EDIT area, any event can be cut from or pasted to the Playlist.

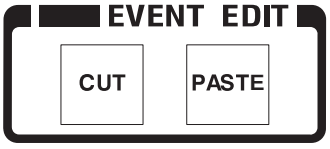


Figure 6–11: EVENT EDIT Area Buttons

CUT — Valid when the play point is within the playlist. Deletes the event currently loaded from the Playlist. The deleted event is temporarily stored in a one–deep paste buffer. **SHIFT + CUT** buttons must be used.

PASTE — Valid when the play channel is playing from the playlist. Inserts the event in the paste buffer immediately after the currently loaded event. (The event cut from the list is inserted immediately after the current event; the Playlist order can be changed using **CUT** and **PASTE** .) **SHIFT + PASTE** must be used.

VDR SELECT Area

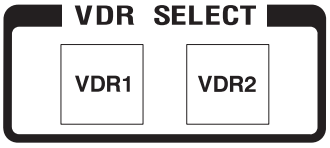


Figure 6–12: VDR SELECT Area Buttons

VDR1, VDR2 — The Live Controller is provided with two RS-422 ports (see Figure 6–13). With two RS-422 ports, two LVS resource groups can be controlled from one Live Controller. Press either one of the buttons to specify the port to be enabled. The button corresponding to the specified port will come on. The **VDR1** is selected by default.

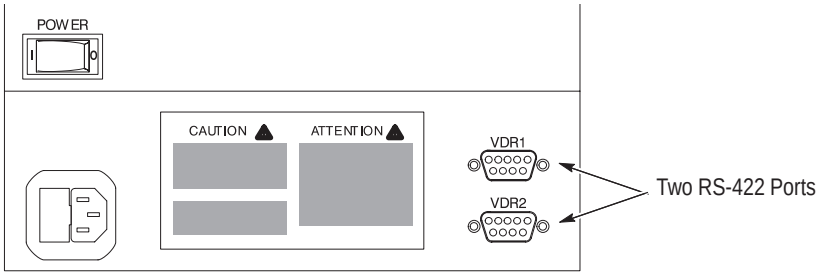


Figure 6–13: Tow VDR Ports (RS-422 Ports)

PREROLL TIME Area

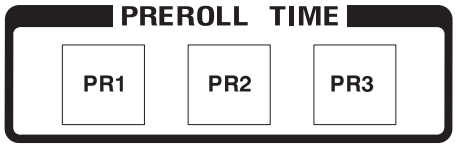


Figure 6–14: PREROLL Area Buttons

PR1, PR2, PR3 — Select a Preroll time from the three Preroll time presets set in the Other tab of the Configuration Window. Refer to *Timing Preset* on page 3–13 for presets.

A Preroll time specifies how far the cue up point is from the IN point. In this mode, the button corresponding to the Preroll specified will be lit. The Preroll 1 is selected by default.

SHIFT Button



Figure 6–15: SHIFT Button

The **SHIFT** button is pressed together with other buttons to change the function of that button or to enable it.

Buttons whose behavior can be changed with the **SHIFT** button are: **ENTER/ CUE UP**, **SEARCH**, ◀, ▶, **IN**, **OUT**, **STOP**, **TOP** and **MARK**.

The **REC STOP**, **CUT** and **PASTE** buttons will not be valid without pressing the **SHIFT** button.

Displays

PLAYER Status The lower part of the Live Controller display shows information related to play.

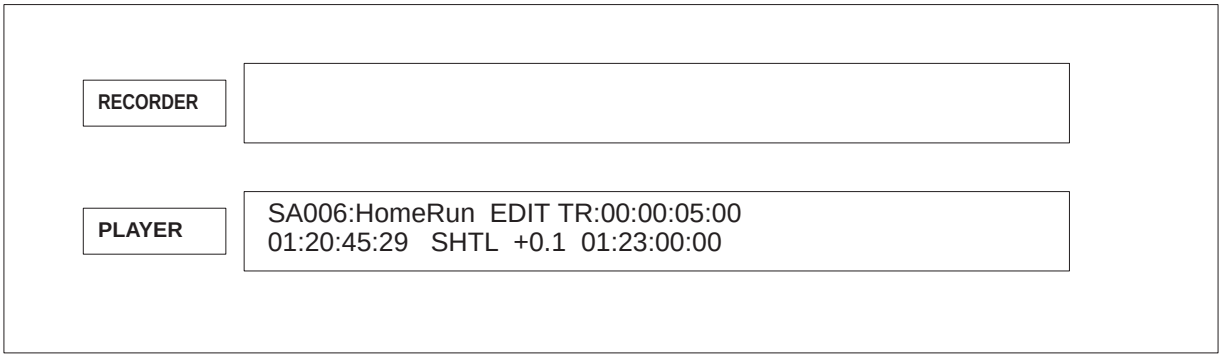


Figure 6–16: Player Status Indication (Lower LCD)

The player status items listed in Table 6–1 are displayed in left–to–right, top–to–bottom order in the lower LCD screen.

Table 6–1: Player Status

Item/Status (in Top Row)	Display/Description
Current load number	Sxxx/Hxxx/Exxx (scene, highlight or event)
Current load name	:yyyyyyy (Up to 8 alphanumeric characters.)
Edit status	EDIT (Displayed while changing an IN or OUT point in any existing scene or highlight scene.)
Time remaining to Out point	TR:XX:XX:XX:XX
Item/Status (in Bottom Row)	**Display/Description**
Current Timecode of Playback	XX:XX:XX:XX
PLAY status	SHTL ± xx.xx PLAY/STOP/JOG ± xx.xx VAR ± xx.xx
Search No./Search Time	Scene, highlight, event or time that will be searched for when **SEARCH** is pressed.

When the line is not connected, *OFF LINE* is displayed.

RECORDER Status

The upper part of the Live Controller display shows the information related to record functions.

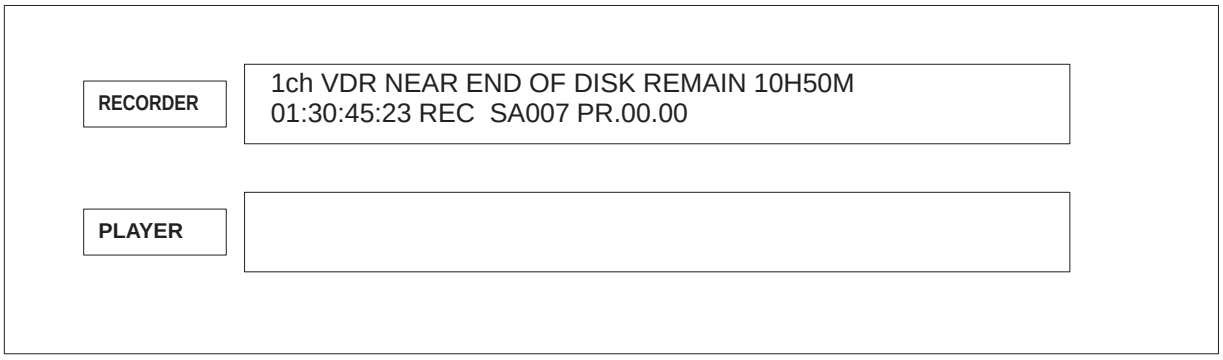


Figure 6–17: Recorder Status Indication (Upper LCD)

The recorder status items listed in Table 6–2 are displayed in left–to–right, top–to–bottom order in the upper LCD screen.

Table 6–2: Recorder Status

Item/Status (in Top Row)	Display/Description
Recording mode	Continue/1ch VDR/Lnr VTR (2 ch, 1 ch, VTR resource groups, respectively)
Warning message	NEAR END OF DISK / END OF DISK / OFF LINE/NAK
Disk Remaining	REMAIN xxHxxM
Current Timecode in recording	xx:xx:xx:xx
Item/Status (in bottom Row)	**Display/Description**
Recording status	REC/STOP
Reserved scene number	Sxxx Number of next scene to be created.
Current Preroll Time	PR.xx.xx (where xx.xx is sec.frame)

When the line is not connected, *OFF LINE* is displayed.



Warning

The following servicing instructions are for use only by qualified personnel. To avoid injury, do not perform any servicing other than that stated in the operating instructions unless you are qualified to do so. Refer to all Safety Summaries before performing any service.

Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* before performing any service procedures.

Do Not Service Alone. Do not perform internal service or adjustments of this product unless another person capable of rendering first aid and resuscitation is present.

Disconnect Power. To avoid electric shock, disconnect the power cord.

Do Not Service With Power On. Dangerous voltages or currents may exist in this product. Disconnect power, remove battery (if applicable), and disconnect cables before removing panels, soldering, or replacing components.

To avoid electric shock, do not touch exposed connections.

Preface

The following sections contain information needed to properly service the Live Controller, as well as general information critical to safe and effective servicing.

To prevent personal injury or damage to the Live Controller, consider the following before attempting service:

- The procedures in this manual should be performed only by a qualified service person.
- Read the *General Safety Summary* beginning on page xiii near the beginning of this manual and the *Service Safety Summary* beginning on page s-i.
- Read *Preparation for Use* in the *Operating Information* section on page 7–1.

When using this manual for servicing, be sure to follow all warnings, cautions, and notes.

Performance Check, Diagnostic Test and Lever Adjustment

Generally, no performance check is required to the Live Controller. Diagnostic test and lever adjustment should be done periodically. In addition, diagnostic test and lever adjustment are recommended after module replacement.

Strategy for Servicing

Throughout this manual, the term module refers to any field-replaceable component, assembly, or part of the Live Controller.

This manual contains all the information needed for periodic maintenance of the Live Controller. (Examples of such information are procedures for diagnostic test and lever adjustment.)

Further, it contains all information for corrective maintenance down to the module level. To isolate a failure to a module, use the fault isolation procedures found in *Diagnostics* and *Troubleshooting,* starting on page 9–25. To remove and replace any failed module, follow the instructions in *Removal and Installation Procedures*, on page 9–5. After isolating a faulty module, replace it with a fully-tested module obtained from the factory. *Replaceable Parts* on page 10–1 contains part numbers and ordering information for all replaceable modules.

Tektronix Service Offerings

Tektronix provides service to cover repair under warranty as well as other services that may provide a cost-effective answer to your service needs.

Whether providing warranty repair service or any of the other services listed below, Tektronix service technicians are well equipped to service the Live Controller. Tektronix technicians train on Tektronix products; they have access to the latest information on improvements to the Live Controller.

Warranty Repair Service

Tektronix technicians provide warranty service at most Tektronix service locations worldwide. The Tektronix product catalog lists all service locations worldwide.

Self Service

Tektronix supports repair to the module level by providing *Module Exchange*.

Module Exchange. This service reduces down-time for repair by allowing you to exchange most modules for remanufactured ones. Tektronix ships an updated and tested exchange module from the Beaverton, Oregon service center, typically within 24 hours.

For More Information. Contact your local Tektronix service center or sales engineer for more information on any of the repair or adjustment services just described. For sales and Support information, please refer to page 10–2 of this manual.

Operating Information

Preparation for Use

This section describes how to prepare the Live Controller for use. The information describes these items:

- Proper operating environment.
- Checking power cord and line voltage configurations.
- Checking the fuse.
- Power-on and power-off cycles.

Supplying Power

Before installing the Live Controller, note these precautions:



WARNING. *To avoid equipment failure, potential fire, or personal shock hazards, do not exceed the maximum rated operating voltage of 250 V between the voltage-to-ground (earth). The Live Controller operates on single-phase power. It has a three-wire power cord with two-pole, three-terminal grounding plugs. Before attempting to connect the Live Controller, make sure source power has a suitable two-pole, three-terminal grounding-type plug.*

To avoid personal shock hazard, do not contact conductive parts. All accessible conductive parts are directly connected through the grounding conductor of the power cord to the grounded contact of the power plug.

To avoid personal shock hazard, insert the power plug only in a mating receptacle with a grounding contact where earth ground has been verified by a qualified service person. Also, for electrical shock protection, make the grounding connection before making connection to the Live Controller.

Power Cord Information

Refer to Appendix B *Live Controller Option and Accessories* for power cord information.

Operating Environment

To ensure proper operation and long life of the Live Controller, note the following environmental requirements.

Operating Temperature

The Live Controller operates in an environment with an ambient air temperature between +10° C and +40° C. The Live Controller storage temperature ranges from –20° C to +60° C. After storage at temperatures outside the operating limits, allow the Live Controller chassis to stabilize at a safe operating temperature for one hour before applying power.

Rear Panel Controls

Appendix C, *Specifications*, lists the line voltage and frequency ranges over which the Live Controller operates.

Figure 7–1 shows the rear panel of the Live Controller .

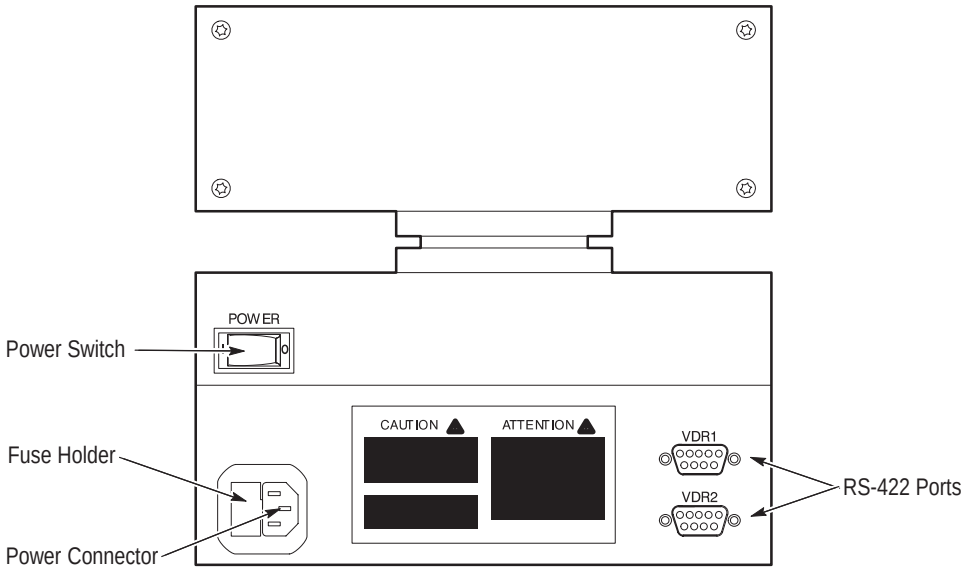


Figure 7–1: Rear Panel

Fuse Type and Rating

The Live Controller uses one of two fuses, depending on the country of use. The U.S. and International fuse is installed in the fuse holder, while the other is included in a bag labeled **For Use in Canada Only**. Table 7–1 lists the fuse types and ratings.

Table 7–1: Fuse Type and Rating

Country of Use	Fuse	Fuse Part Number
U.S. and International except Canada	5 mm × 20 mm (IEC 127): 2A(T),250V	159-0107–00
Canada only	5 mm × 20 mm (UL 198G): 2A FAST,250V	159-0260-00



WARNING. *To avoid electrical shock, always unplug the power cord from the socket before checking the line fuse.*

To check the fuse, remove the fuse holder on the rear panel. Refer to Figure 7–1 for the location of the fuse holder. To remove the fuse holder, use a flat-bladed screwdriver to pull the fuse holder out. See Figure 9–12 on page 9–22. Then remove the fuse from the fuse holder.

Applying and Interrupting Power

Observe the following when you power on the Live Controller.

Power-on Cycle

At power-on, no self-test is provided to the Live Controller. Instead, LCD backlights come on and the following message appears:

```
**** FAIL ****
```

```
Sony/Tektronix
                X.XX
```

Where X.XX indicates the firmware version installed.

Key lamps and LEDs on the panel then light on and off in the following order:

1. LED and key lamps in the EVENT EDIT area and key lamps in the VDR SELECT and PREROLL TIME areas.
2. Key lamps in the SEARCH area.
3. LED and key lamps in the SCENE & HIGHTLIGHT EDIT area, key lamps in the REC areas and the SHIFT key.
4. Key lamps in the PLAY area.

If the backlights of the LCDs, key lamps and/or LEDs do not light in the above order, turn the power off and refer to *Diagnostics* and *Troubleshooting*, starting on page 9–25, for information on diagnostics and fault isolation.

NOTE*. If the ambient temperature goes outside the specified operating temperature range, do not turn Live Controller power on. Wait until the chassis temperature has stabilized at a safe operating temperature.*

Power-off Cycle

The Live Controller can be powered off at any time.

Memory Backup Power

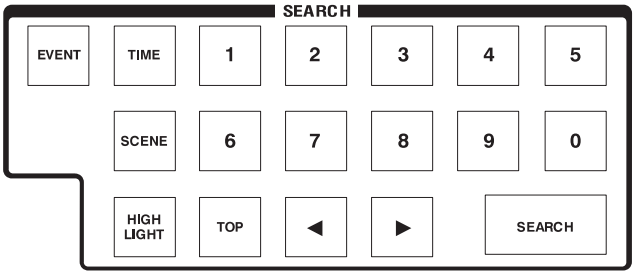
No memory backup power is used in the Live Controller.

About Key Configuration

The Live Controller provides two Key configurations, depending on your application. The Key configuration may be selected as *Standard* or *Alternate*.

The difference between the Standard and Alternate key configurations are shown in Figure 7–2. Only the keys and their configuration in the SEARCH area are different.

(A) Standard Key Configuration



(B) Alternate Key Configuration

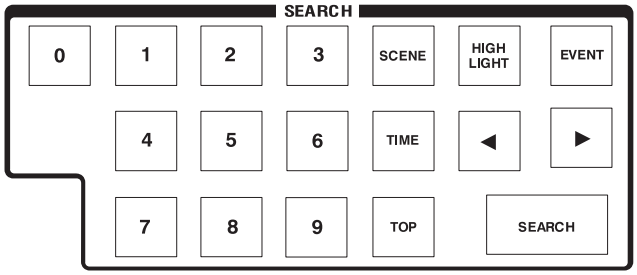


Figure 7–2: Key Configuration Difference

NOTE. *All the procedures in this manual are described based on a correctly selected key configuration. In the diagnostic test, if the keys displayed in diagnostic menus do not correspond to keys whose lamps are lit, it may be because of improper selection. If this occurs, select the correct key configuration as referred to in the key configuration selection procedures on page 7–6.*

If the operation panel of your Live Controller is the one shown in Figure 7–2 (A), you should select the standard key configuration. If it is the one shown in Figure 7–2 (B), you should select the Other key configuration.

If you intend to change the key configuration, follow the procedures in *Key Configuration Selection* described on page 7–6. The Key top configuration on the operation panel of the Live Controller can also be changed. Refer to *Key Top* described on page 9–20 for removing and installation procedures.

Key Configuration Selection

Selection is made as follows.

1. Enter the diagnostic routine and display the Main menu.

a. Turn the Power on while holding the **EVENT** and **TIME** buttons. The following menu appears on both upper and lower LCDs of the Live Controller.

```
            **** DIAG ****
```

```
 CONT: Starting tests or configure.
    0: Starting up the system.
```

b. Press the **CONT** key. The following Diagnostic Main menu appears.

```
  [MAIN MENU]          0: Exit menu.
1: MEMORY  2: RS422  3: KEY/LED  4: LCD
```

```
5: SLNID/ADC/ENCDR/CLTCH  6: S-E2PROM
SEARCH: KEY PLACE SELECT
```

2. Change the key configuration.

a. Press **SEARCH** to bring up the KEY PLACE SELECTION menu on the LCDs.

```
  [KEY PLACE SELECTION]
```

```
 IN  : Standard key place.
 OUT : NBC key place.
```

b. Press **IN** if you want to select the Standard key configuration, or press **OUT** if you want to select the Other key configuration.

After **IN** or **OUT** is pressed, the following menu appears:

```
[KEY PLACE SELECTION]
   XXXX key place is selected!!

CONT: Exit.
```

Where XXXX means Standard or Other depending on your selection.

The key configuration you selected will be kept through a power-on and-off cycle.

c. Press **CONT** to return to the Main menu.

3. Return to the Live Controller system.

a. From the Main menu, press **0**.

Adjustment

Lever Adjustment

The Lever Unit is the only moveable module in the Live Controller. Periodically, and after replacement, the procedures below should be performed to calibrate the Lever's mechanical and electrical positions.

For these adjustments, no external equipment or cable is required.

About Lever Operation

The lever (or slow–motion lever) is used to change the play speed according to the position of the lever.

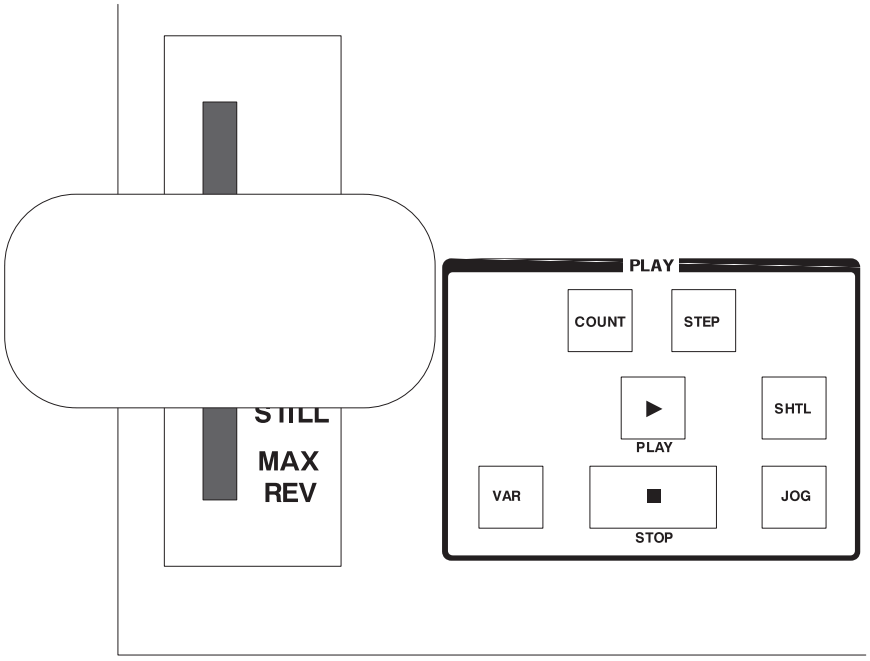


Figure 8–1: Slow–motion Lever

The lever has lock mechanisms which allow you to operate within a range between 0 and +1.0 play speed, and spring mechanisms which allow you to change the play speed within the range from –| Max Shuttle Speed |, –3.0 to 0 then to +3.0, +| Max Shuttle Speed |. These operations are illustrated as shown in Figure 8–2.

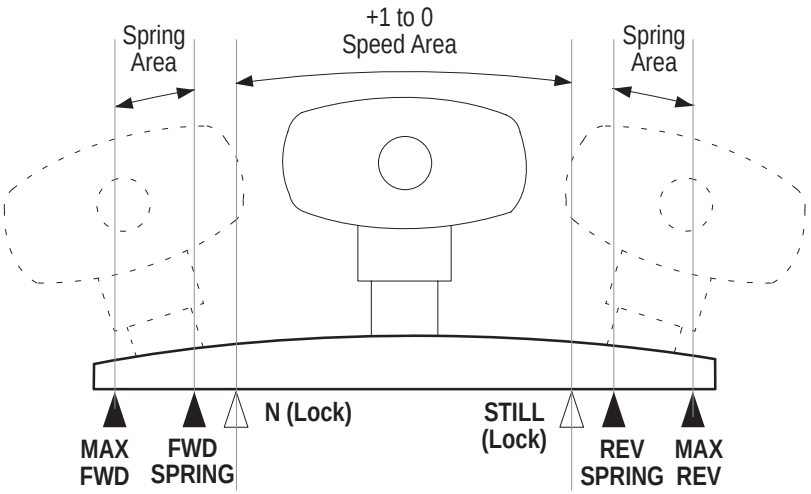


Figure 8–2: Lever Position and Control of Play Speed

The Live Controller controls the play speed by electrically detecting the lever positions as you move it. To control play speed correctly, the electrical positions of MAX FWD, FWD SPRING, N (Lock), STILL (Lock), REV SPRING and MAX REV have to be adjusted to match those mechanical positions.

Before Starting the Adjustment

Warm up A 20 minute warm up period is required prior to performing the adjustment.

Starting the Adjustment

Turn power on while holding the ◀ and ▶ buttons. The following menu will appear on both upper and lower LCDs of the Live Controller.

```
      **** LEVER ADJUST ****
```

```
CONT: Starting calibration.
   0: Starting up the system.
```

The letters to the left of the colon (:) indicate a key on the panel that you can press to select and to advance the adjustment procedure. LCDs also light to indicate that these keys are available for use.

NOTE. *When the key configuration is being set to Alternate, the* ***EVENT*** *key instead of the* ***0*** *key will light when you enter the lever adjustment routine. For more detail about the Other key configuration, refer to About Key Configuration on page 7–5.*

Pressing **0** exits the lever adjustment routine and starts the Live Controller. When you want to continue the adjustment procedures, press **CONT**. The following messages appears.

```
        [STEP 1]
1. Turn on the lever switch.
```

```
2. Move lever to position MAX FWD.
3. Push CONT key.
```

The messages displayed on the LCDs represent the adjustment procedures you should follow.

MAX FWD Position

To adjust the MAX FWD position, proceed as follows:

1. Move the lever forward until the lock mechanism engages.

Maintain constant pressure while moving the lever forward.

NOTE*. The action of the lock mechanism in the adjustment routine is different from that in the system routine when you push the lever button.*

2. Move the lever forward while pressing and holding the lever button until the lever stops.

3. Press **CONT**.

Pressing **CONT** causes the instrument to adjust the MAX FWD position. The following message appears:

```
        [STEP 2]
1. Move lever to position FWD SPRING.
```

```
2. Push CONT key.
```

4. Release the lever button.

MAX SPRING Position

To adjust the MAX SPRING position, proceed as follows:

5. Release the lever. This causes the lever to move back automatically to the MAX SPRING position.

6. Press **CONT**.

Pressing **CONT** causes the the instrument to adjust the MAX SPRING position. The following message appears:

```
        [STEP 3]
1. Move lever to position N.
```

```
2. Push CONT key.
```

N (Lock) Position

To adjust the N position, proceed as follows:

7. Slowly move the lever backward until the lock is disengaged.

If you move the lever back too quickly, move the lever forward again until the lock is re–engaged and then repeat this step.

8. Press **CONT**.

Pressing **CONT** causes the instrument to adjust the N (Lock) position. The following message appears:

```
        [STEP 4]
1. Move lever to position STILL.
```

```
2. Push CONT key.
```

STILL (Lock) Position

To adjust the STILL position, proceed as follows:

9. Move the lever backward until the lock is engaged.

10. Press **CONT**.

Pressing **CONT** causes the instrument to adjust the STILL (Lock) position. The following message appears:

```
        [STEP 5]
1. Turn on the lever switch.
```

```
2. Move lever to position REV SPRING.
3. Push CONT key.
```

REV SPRING Position

To adjust the REV SPRING position, proceed as follows:

11. Move the lever backward while pressing and holding the lever button until the lever stops.

12. Release the lever. This causes the lever to move forward automatically to the REV SPRING position.

13. Press **CONT**.

Pressing **CONT** causes the instrument to adjust the REV SPRING position. The following message appears:

```
        [STEP 6]
1. Move lever to position MAX REV.
```

```
2. Push CONT key.
```

MAX REV Position

To adjust the MAX REV position, proceed as follows:

14. Move the lever backward until it stops.

15. Press **CONT**.

Pressing **CONT** causes the instrument to adjust the MAX REV position.

If adjustments have completed successfully, the following message appears:

```
          **** COMPLETE ****
```

```
 Push CONT key for starting system
```

Press **CONT** to quit the lever adjustment routine and to start the Live Controller.

If the adjustment was not successful, the following message appears:

```
          **** FAIL ****
```

```
Push CONT key for retry adjustment.
                        XX,XX,XX,XX,XX,XX
```

Where XX,XX,XX,XX,XX,XX is internal data for the lever positions.

Press **CONT** to retry adjustment procedures from step 1 on page 8–4.

Maintenance

Maintenance

This section contains information about periodic and corrective maintenance on the Live ControllerLive Controller. It includes the following subsections:

- ***Preparation***. This subsection includes general information on preventing damage to internal modules when doing maintenance. See the following subsection.
- ***Inspection and Cleaning***. Information and procedures for inspecting the Live Controller and cleaning its external and internal modules. See page 9–2.
- ***Removal and Installation Procedures***. Procedures for removing and installing modules. See page 9–5.
- ***Repacking***. Information on packaging the Live Controller properly for shipment. See page 9–23.
- ***Diagnostics***. Information for operating the Live Controller internal diagnostic routines. See page 9–25.
- ***Troubleshooting***. Information for isolating failed modules, including a fault isolation troubleshooting table. Most of the table makes use of the internal diagnostic routine to speed fault isolation to a module. See page 9–33.

Preparation

Before performing any of the procedures in the *Maintenance* section, note the following:

- Only trained service technicians should perform these procedures.
- Read the *General Safety Summary* beginning on page xiii near the beginning of this manual and the *Service Safety Summary* beginning on page s-i.
- Read the *Strategy for Servicing* on page s-iii.
- Read the section called *Operating Information*, starting on page 7–1, before servicing the Live Controller.

Inspection and Cleaning

This subsection describes how to determine whether the Live Controller needs cleaning, and how to do the cleaning. Inspection and cleaning are preventive maintenance procedures. When done regularly, preventive maintenance may prevent Live Controller malfunctions and enhance reliability.

Preventive maintenance consists of visually inspecting and cleaning the Live Controller, and using general care when operating it.

How often you do periodic maintenance depends on the severity of the environment in which the Live Controller operates.

Inspection and Cleaning Procedures

Inspect and clean the Live Controller as operating conditions require. The accumulation of dirt on components inside can cause them to overheat and break down. (Dirt acts as an insulating blanket, preventing efficient heat dissipation.) Dirt can also provide an electrical conduction path that can cause instrument failure, especially under high-humidity conditions.



WARNING. *To avoid personal injury or death due to electric shock, unplug the power cord from the line voltage source before cleaning the Live Controller.*



CAUSTION. *To prevent damaging the plastics used in the Live Controller, do not use chemical cleaning agents. Use only deionized water when cleaning the keys, lever or knob. Use a 75% isopropyl alcohol solution as a cleaner, and rinse with deionized water. Before using any other type of cleaner, consult your Tektronix Service Center or representative.*

To prevent damaging Live Controller components, do not use high-pressure compressed air when cleaning dust from the interior of the Live Controller. (High pressure air can cause electrostatic discharge.) Instead, use low pressure compressed air (about 9 psi).

Inspection — Exterior. Inspect the outside of the Live Controller for damage, wear, and missing parts, using Table 9–1 as a guide. If the Live Controller appears to have been dropped or otherwise abused, check it thoroughly to verify correct operation and performance. Repair any defects that may cause personal injury or lead to further damage to the Live Controller.

Table 9–1: External Inspection Check List

Item	Inspect For	Repair Action
LCD module, operation panel, and bottom chassis	Cracks, scratches, deformed or damaged hardware.	Replace defective module.
Keys, knob, and lever	Missing, damaged, or loose knob.	Replace missing or defective keys, knob and lever.
Connectors	Broken shells, cracked insulation, and deformed contacts; dirt in connectors	Replace defective modules. Clear or wash out dirt.
Chassis	Damage.	Replace defective module.
Cables	Frayed cables	Replace frayed cables.

Cleaning Procedure — Exterior.



WARNING. *To avoid potential electric shock hazard or damage to the Live Controller circuits, do not allow any moisture inside the Live Controller during external cleaning; use only enough liquid to dampen the cloth or applicator.*

1. Remove loose dust on the outside of the Live Controller with a lint free cloth.
2. Remove remaining dirt with a lint free cloth dampened in a general purpose mild detergent-and-water solution. Do not use abrasive cleaners.
3. Clean the LCD panel with a lint-free cloth dampened with, a mild, general purpose detergent-and-water solution.

Inspection — Interior. To access the inside of the Live Controller for inspection and cleaning, refer to the *Removal and Installation Procedures* in this section.

Inspect the internal portions of the Live Controller for damage and wear using Table 9–2 as a guide. Replace any defective parts immediately.



CAUTION. *To prevent damage from electrical arcing, ensure that circuit boards and components are dry before applying power to the Live Controller.*

Table 9–2: Internal Inspection Check List

Item	Inspect For	Repair Action
Circuit boards	Loose, broken, or corroded solder connections; burned circuit boards; burned, broken, or cracked circuit-run plating	Remove defective modules and replace with a new module.
Modules	Dents, deformations, and damaged hardware	Replace module.

Cleaning Procedure — Interior. If, after doing steps 1 and 3, a module is clean upon inspection, skip the remaining steps.

1. Access parts to be cleaned by removing easily accessible shields and panels (see *Removal and Installation* in this section).
2. Blow off dust with dry, low-pressure, deionized air (approximately 9 psi).
3. Remove any remaining dust with a lint-free cloth dampened in isopropyl alcohol (75% solution), and rinse with warm deionized water. (A cotton-tipped applicator is useful for cleaning in narrow spaces and on circuit boards.)
4. Dry all parts with low-pressure, deionized air.

Lubrication. There is no periodic lubrication required for the Live Controller.

Removal and Installation Procedures

This subsection contains procedures for removing and installing mechanical and electrical modules in the Live Controller.

Preparation

This subsection contains the following information:

- Preparatory information needed to properly do the procedures that follow
- A list of equipment required when removing modules
- Procedures for removing and installing electrical and mechanical modules



WARNING. *To avoid possible personal injury or damage to Live Controller components, read* Preparation for Use *on page 7–1. Before doing this or any other procedure in this manual, read the General Safety Summary on page xiii and the Service Safety Summary on page s-i.*

To avoid possible personal injury or death, disconnect the power cord from the line voltage source before doing any procedures in this subsection.

General Instructions

NOTE. *Read these general instructions before removing a module.*

First read the *Summary of Procedures* that follows to understand how the procedures are organized. Then read *Equipment Required* to find out the tools needed to remove and install modules.

Summary of Procedures

The removal procedures are categorized as follows depending on the module location in the Live Controller.

- *Opening the Operation Panel* on page 9–8 describes how to remove the lever and to open the operation panel (top cover). The operation panel must be opened to remove another mechanical and electrical modules.
- *JOG/SHUTTLE Knob Removal* is described on page 9–11.
- *Keyboard (A20) Removal* is described on page 9–13.
- *CPU Board (A10) Removal* is described on page 9–14.
- *Power Supply Removal* is described on page 9–15.
- *VAR Lever Removal* is described on page 9–17. It is first necessary to remove the CPU board, power supply, and operation panel.
- *LCD Module Removal* is described on page 9–18.
- *Key Top, RS-422 Connector. Power Switch, and RFI Filter Removal* is described on page 9–20.

Unless otherwise noted, an installation procedure is basically the reverse of a removal procedure.

Equipment Required

Table 9–3 lists the tools required to remove and reinstall the modules of the Live Controller.

Table 9–3: Tools Required

Name	Description	Part Number
Hex wrench, 1.5 mm	L–shaped or other	
Hex wrench, 2 mm	L–shaped or other	
Hex wrench, 2.5 mm	L–shaped or other	
Phillips screwdriver, 5 mm	Minimum 8 cm long shank is needed	
Phillips screwdriver, 6 mm		
Nut driver, 5.0 mm		
Nut driver, 5.5 mm		
Open–end wrench, 7 mm		
Flat-bladed screwdriver	Screwdriver for removing standard-head screws	
Long–nose pliers	Standard tool	

Opening the Operation Panel

How to remove the lever and open the operation panel are included in this procedure.

The procedure to remove the lever and open the operation panel varies depending on your instrument's serial number. If your Live Controller's serial number is J310130 or higher, proceed with steps 1 – 6 below (see Figure 9–1):

1. Move the lever forward until it stops.
2. Insert the 5 mm (long shank) Phillips screwdriver into the slit of the escutcheon, as shown in Figure 9–1.
3. While pulling the lever upward, slowly turn the screwdriver counterclockwise until the lever is free.
4. Use the 2.5 mm hex wrench to remove the two screw on the front of the instrument.
5. Open the cover by lifting up the front edge of the operation panel until it stops.
6. With your finger, push the hinged support bracket to lock the operation panel open. See Figure 9–3.

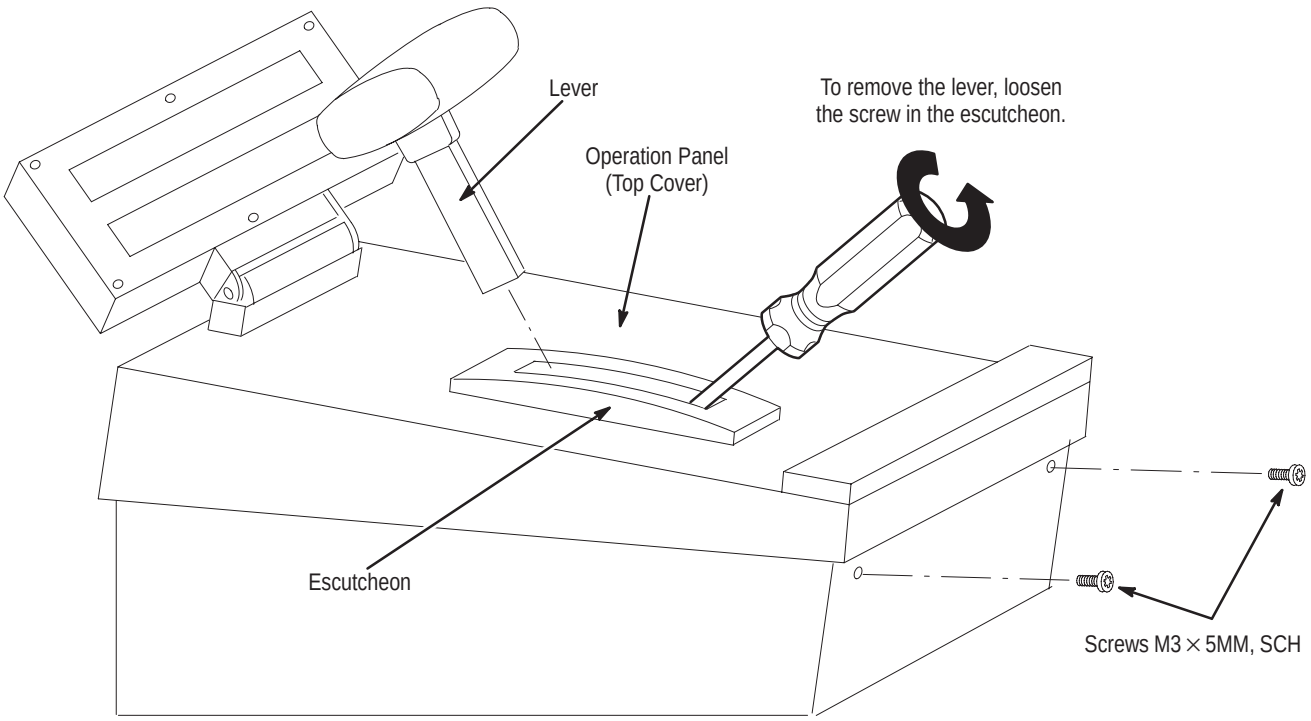


Figure 9–1: Operation Panel Removal (Serial NO. J310130 or higher)

If your Live Controller's serial number is lower than J310130, proceed with steps 1 – 6 (see Figure 9–2):

1. Move the lever to center position.
2. Use the 2.5 mm hex wrench to remove the two screws on the front of the instrument.
3. Lift the front edge of the operation panel about 2 cm, so that you can see the screw head though the screw hole on the left side of the Live Controller.
4. While pulling the lever upward, use the flat–bladed screwdriver to slowly turn the screw securing the lever counterclockwise until the lever is free.
5. Continue to lift the front edge of the operation panel until it stops.
6. With your finger, push the hinged support bracket to lock the operation panel open. See Figure 9–3.

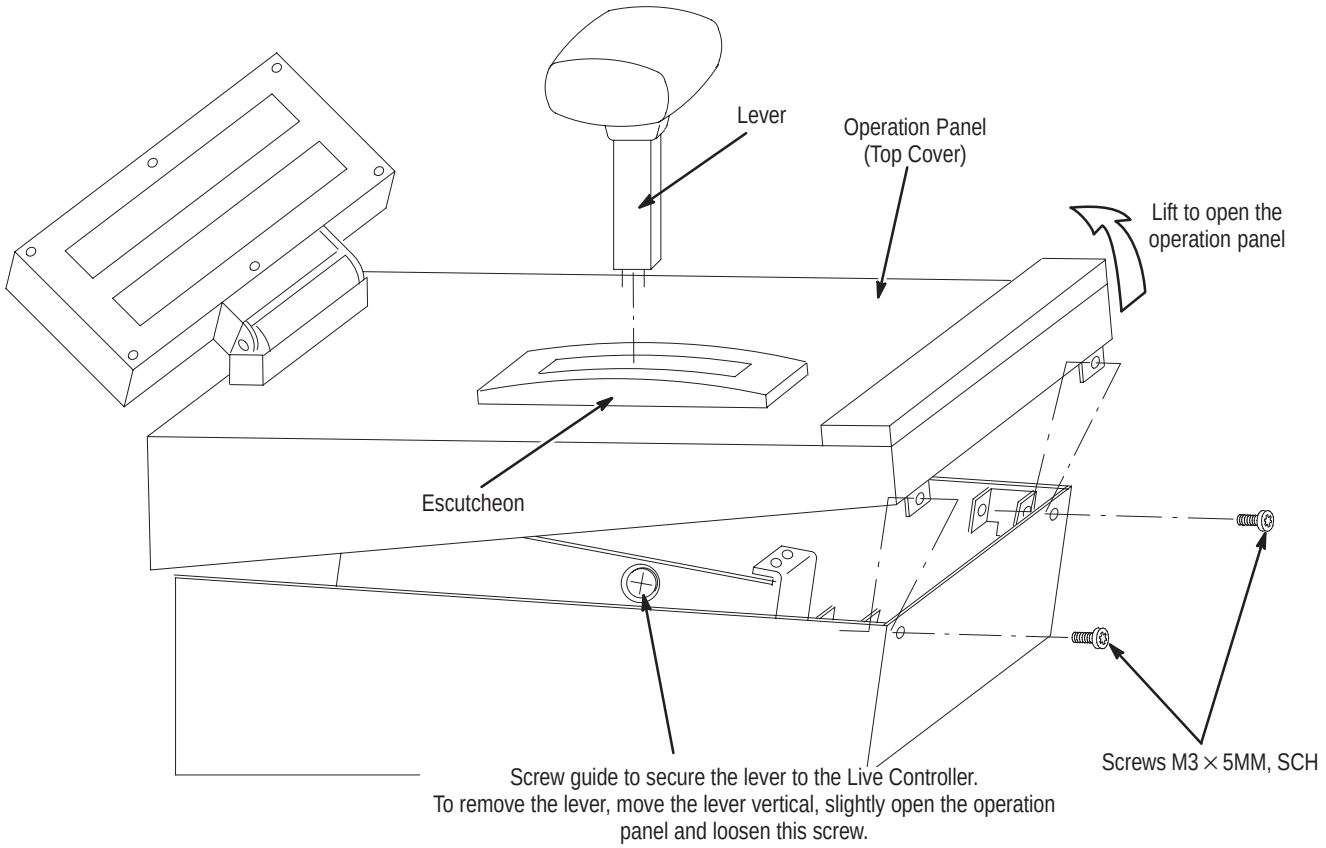


Figure 9–2: Operation Panel Removal (Serial NO. J310129 or Lower)

CAUTION. *When you install the lever, do not over tighten the screw securing the lever. Otherwise, the screw head may be broken when you try to remove that screw in the lever removal procedure.*

NOTE*. The current lever type (serial number J310130 or higher) can be used on all Live Controllers. However, the early lever type (before serial number J310130) cannot be used for Live Controllers serial number J310130 and higher.*

If you are using the early type Live Controller and want to replace the lever, order the current lever type. For more details, refer to Replaceable Part Lists *starting on page 10–1.*

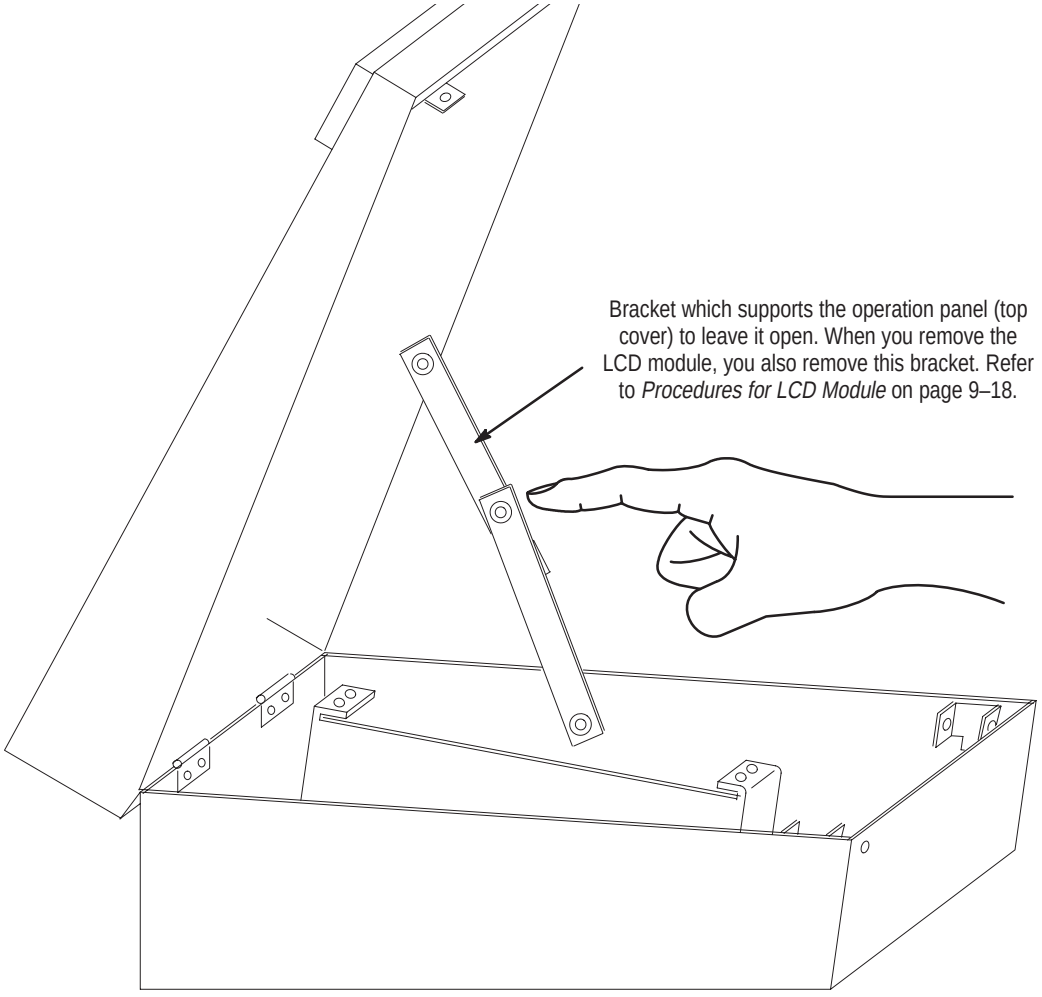


Figure 9–3: Open the Operation Panel and Straighten the Bracket

JOG/SHUTTLE Knob Removal

With the operation panel open, you can remove the JOG/SHUTTLE knob unit, including the encoder, without removing any other modules per the following steps (see Figure 9–4):

1. Disconnect the cable at J800 on the circuit board of the encoder unit.
2. Remove the urethane knob with your fingers.
3. Use the 6 mm Phillips screwdriver to remove the screw securing the retainer and upper knob.
4. Remove the retainer and upper knob.
5. Use the 1.5 mm hex wrench to loosen the setscrew securing the lower knob.
6. Remove the lower knob.
7. Use the 6 mm Phillips screwdriver to remove the three screws which secure the encoder unit to the operation panel.
8. Remove the encoder unit completely.

Two types of JOG/SHUTTLE knobs, which include the encoder unit, exist. Replacement knobs are always the new type. See Figure 9–4.

NOTE. *If you are using an early encoder (before serial number J310130) and order a new encoder, you must also order a new knob set. If you are using an early encoder and want to replace the knob, you must order the early knob set. For more information, refer to* Replaceable Part Lists *starting on page 10–1.*

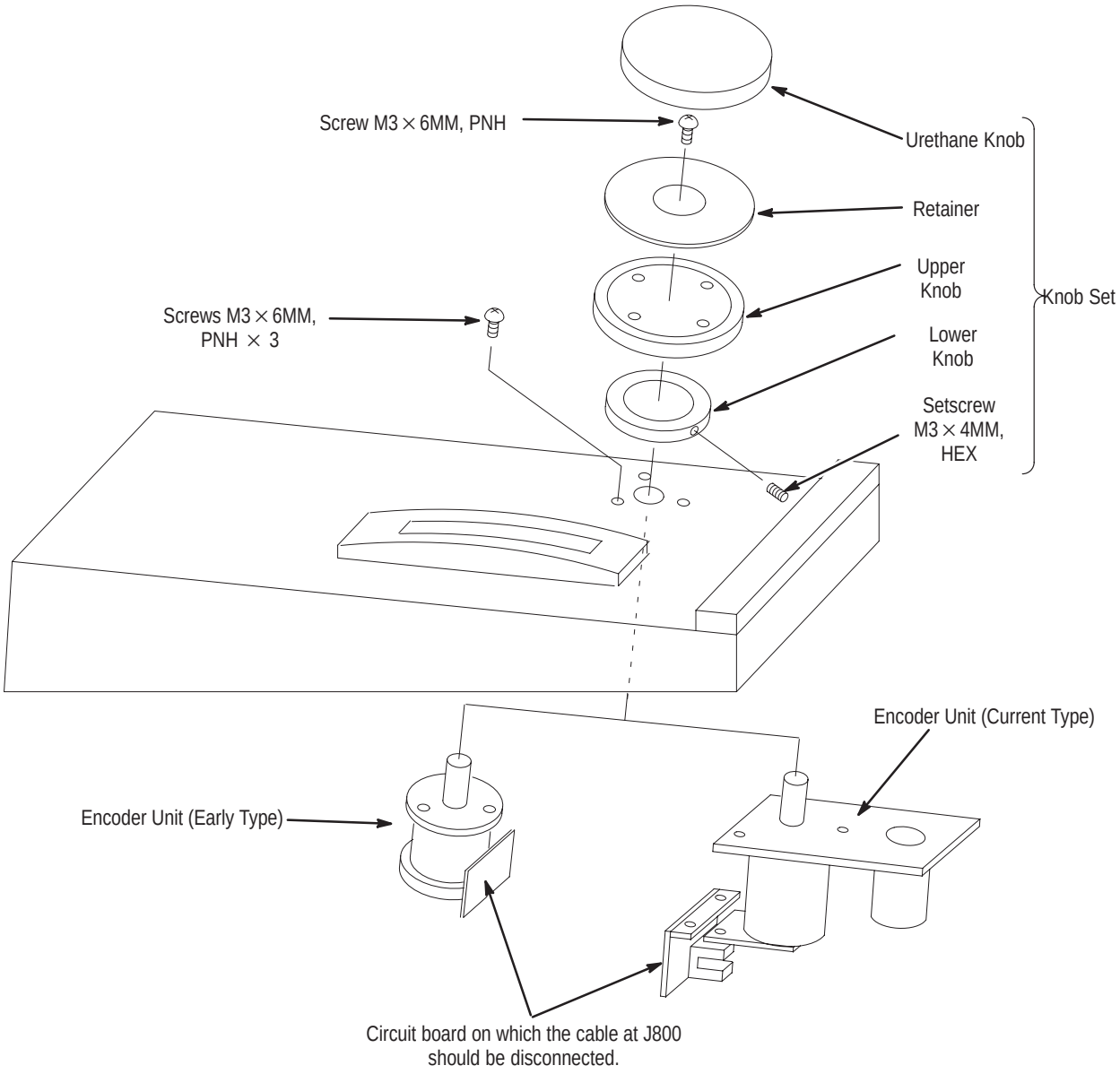


Figure 9–4: JOG/SHUTTLE Knob Removal

Keyboard Removal

With the operation panel open, you can remove the keyboard (A20) without removing any other modules per the following (see Figure 9–5):

NOTE. *If you are using the Live Controller with a serial number J310130 or higher and if you did not remove the encoder, avoid contact between the keyboard and the encoder module when you remove the keyboard.*

1. Disconnect the cable at J100 on the A20 keyboard.
2. Use the 6 mm Phillips screwdriver to remove the eleven screws securing the keyboard (A20).
3. While avoiding contact between the keyboard and the encoder unit, remove the keyboard completely.

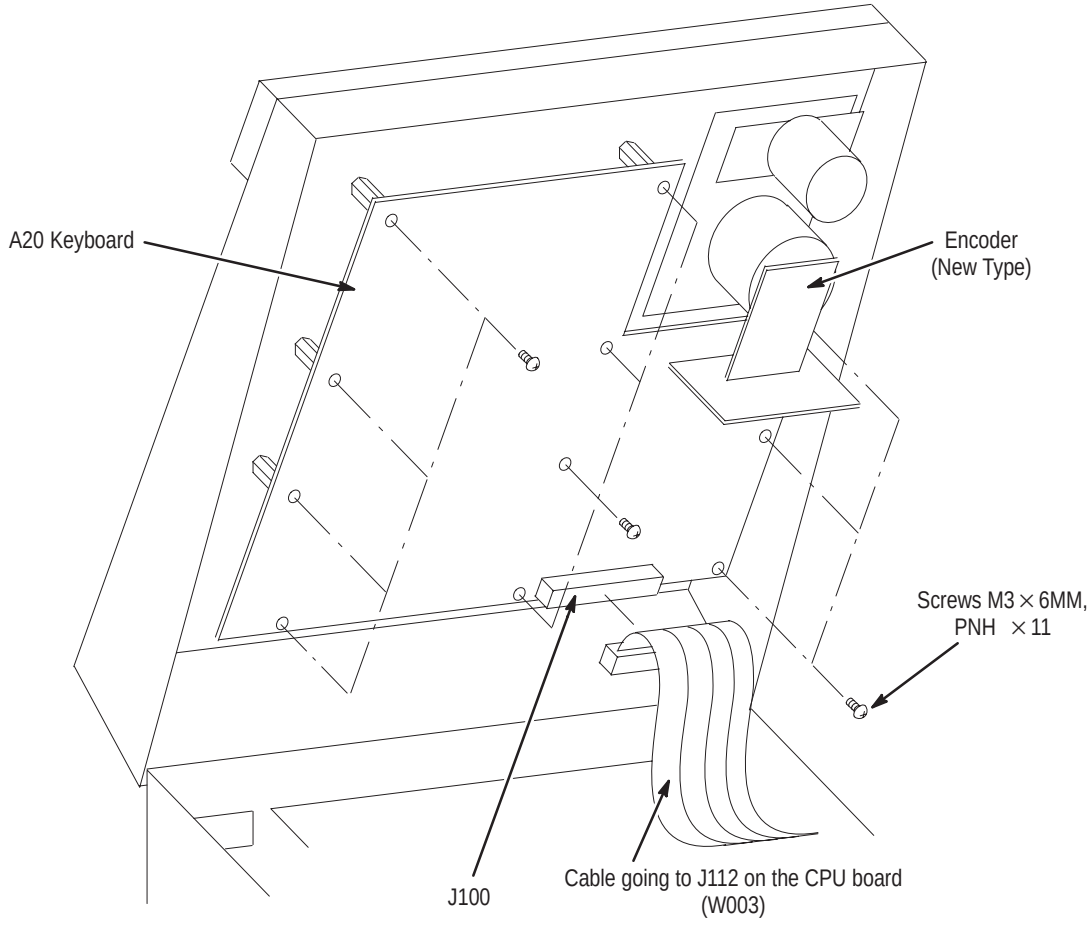


Figure 9–5: Keyboard Removal

CPU Board Removal

With the operation panel open, you can remove the CPU board (A10) without removing any other modules per the following (see Figure 9–6):

1. Disconnect the ten interconnect cables at J160, J152, J150, J151, J140, J141, J110, J111, J112 and J10 on the A10 CPU board.
2. Use the 6 mm Phillips screwdriver to remove the six screws securing the CPU board.
3. Remove the A10 CPU board completely.

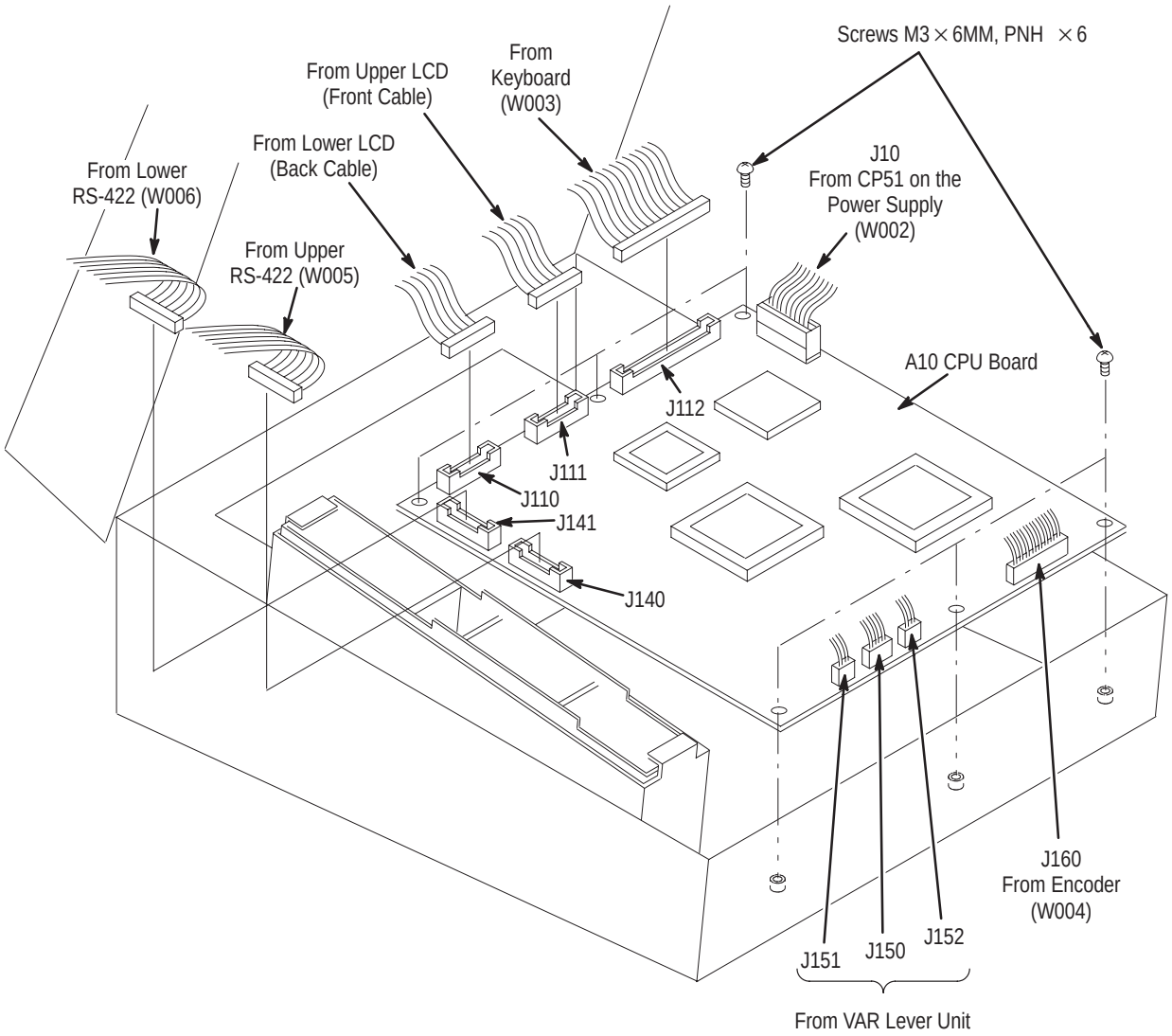


Figure 9–6: CPU Board Removal

Power Supply Removal

With the operation panel open, you can remove the power supply without removing any other modules as following steps (see Figure 9–7):

1. Use the 7 mm wrench to remove the nut connecting the two brackets.
2. Lift the operation panel until it stops.
3. Disconnect the four interconnect cables at J110, J111, J112 and J10 on the A10 CPU board.



WARNING. *To prevent electrical shock hazard, make sure the power cord is disconnected.*

4. Use the 6 mm Phillips screwdriver to remove the three screws securing the power supply shield to the bottom of the chassis.

   If the spacer between the power supply and its shield turn together with the screw, use the 5.5 hex wrench to set the spacer.

   The ground cable coming from the LCD module is also removed in this step as shown in Figure 9–7. This ground cable is not included in some instruments.
5. Remove the power supply shield completely.
6. Disconnect the cable at CP2 on the power supply.
7. Use the 5.5. mm hex wrench to remove the three spacers securing the power supply to the bottom of the chassis.
8. Use the 6 mm Phillips screwdriver to remove the screw securing the power supply to the bottom of the chassis.
9. Remove the power supply completely.

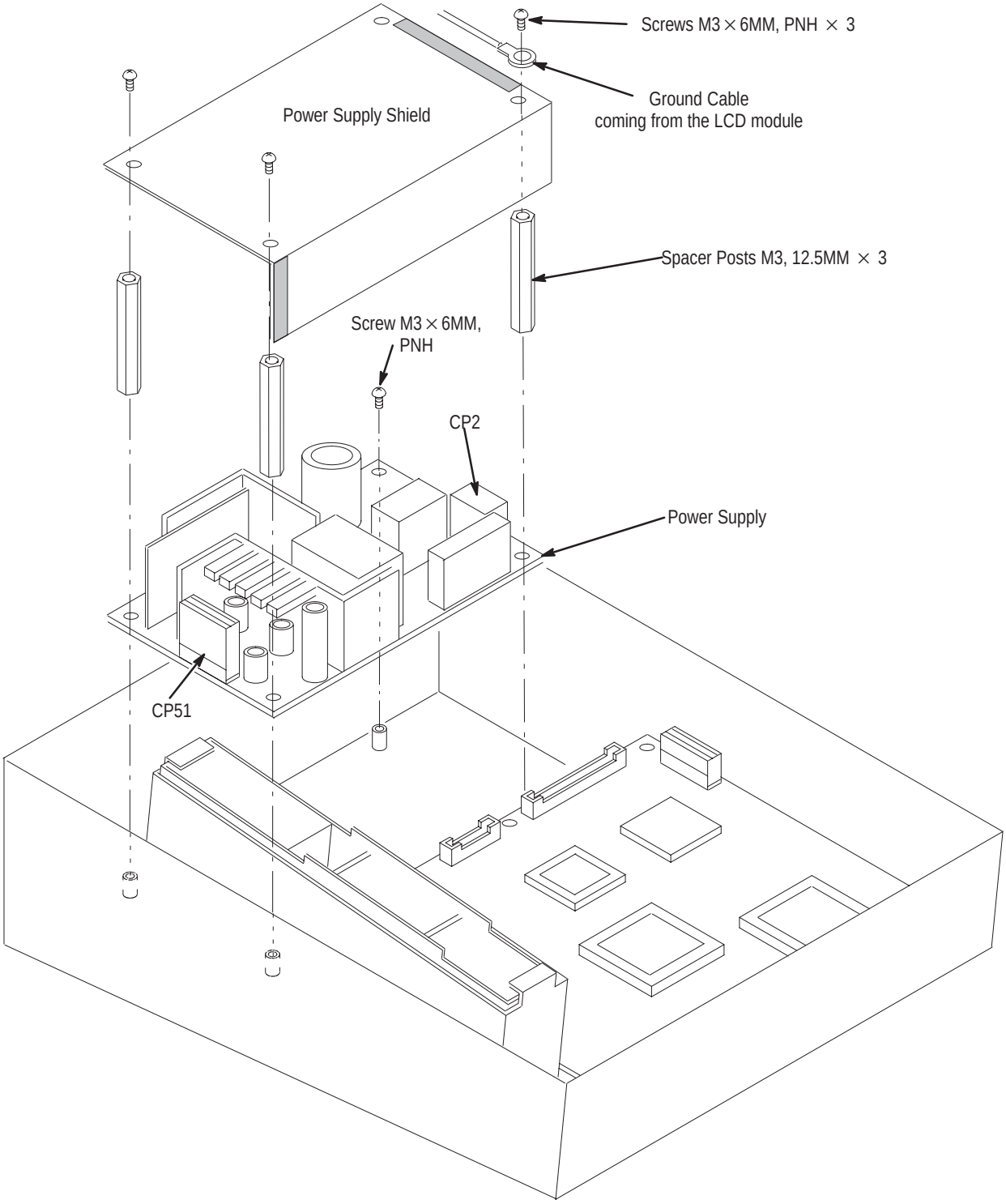


Figure 9–7: Power Supply Removal

VAR Lever Unit Removal

To remove the VAR lever unit, remove the CPU board and power supply first, and then remove the VAR lever unit.

1. Remove the CPU board. Refer to *CPU Board Removal* on page 9–14.
2. Remove the power supply. Refer to *Power Supply Removal* on page 9–15.
3. Use the 6 mm Phillips screwdriver to remove the four screws securing the VAR lever unit to the bottom of the chassis. See Figure 9–8.
4. Remove the VAR lever unit completely.

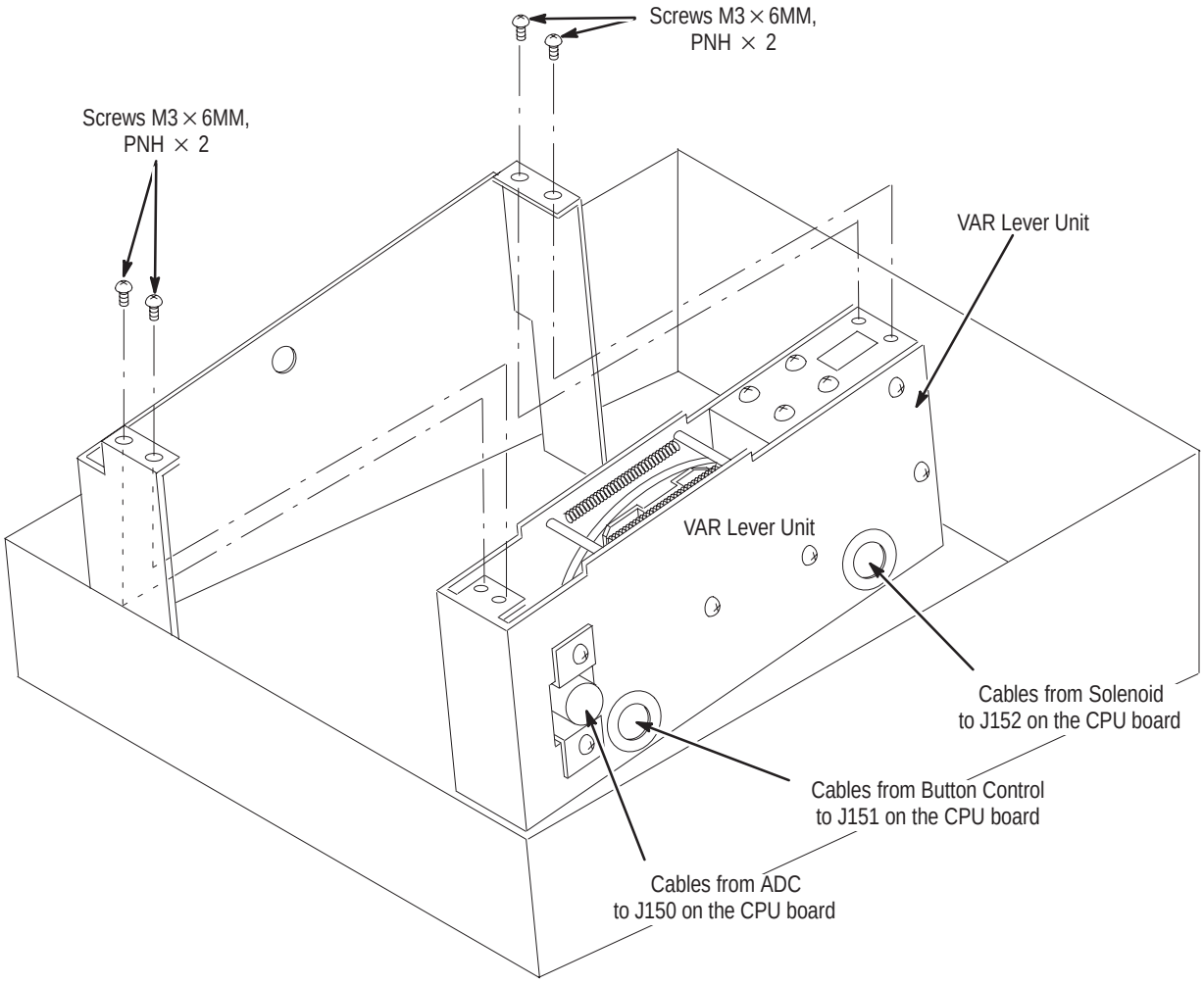


Figure 9–8: VAR Lever Unit Removal

LCD Module Removal

To remove the LCD module, remove the keyboard first, and then the LCD module. See Figure 9–9.

1. Remove the keyboard (A20). Refer to *Keyboard Removal* on page 9–13.
2. Disconnect the two interconnection flat cables at J110 and J111 on the CPU board (A10)
3. Remove the ferrite cores attached to the flat cables disconnected from J110 and J111. Use the two notches on the ferrite cores to open them.
4. Using the 6 mm Phillips screwdriver to disconnect the ground cable connected to the power supply shield (see Figure 9–7).
5. While holding the LCD module, use the 7 mm wrench to remove the two nuts securing the LCD module to the operation panel.
6. While carefully pulling out two flat cables and ground cable through the hole, remove the LCD module completely.

NOTE*. The flat cables from the LCD module must be connected to J110 and J111 on the CPU board. However, there are no identifications on the cables to distinguish one from the other. The only the way that you can identify which flat cable must be connected to which connector is as follows:*

When the LCD display panel is facing you, the front flat cable is to be connected to J111, and the back flat cable is to be connected to J110.

These two flat cables have identical electrical pin assignment. If you reverse the connection of the two cables, the displays on the upper and lower LCD will be reversed.

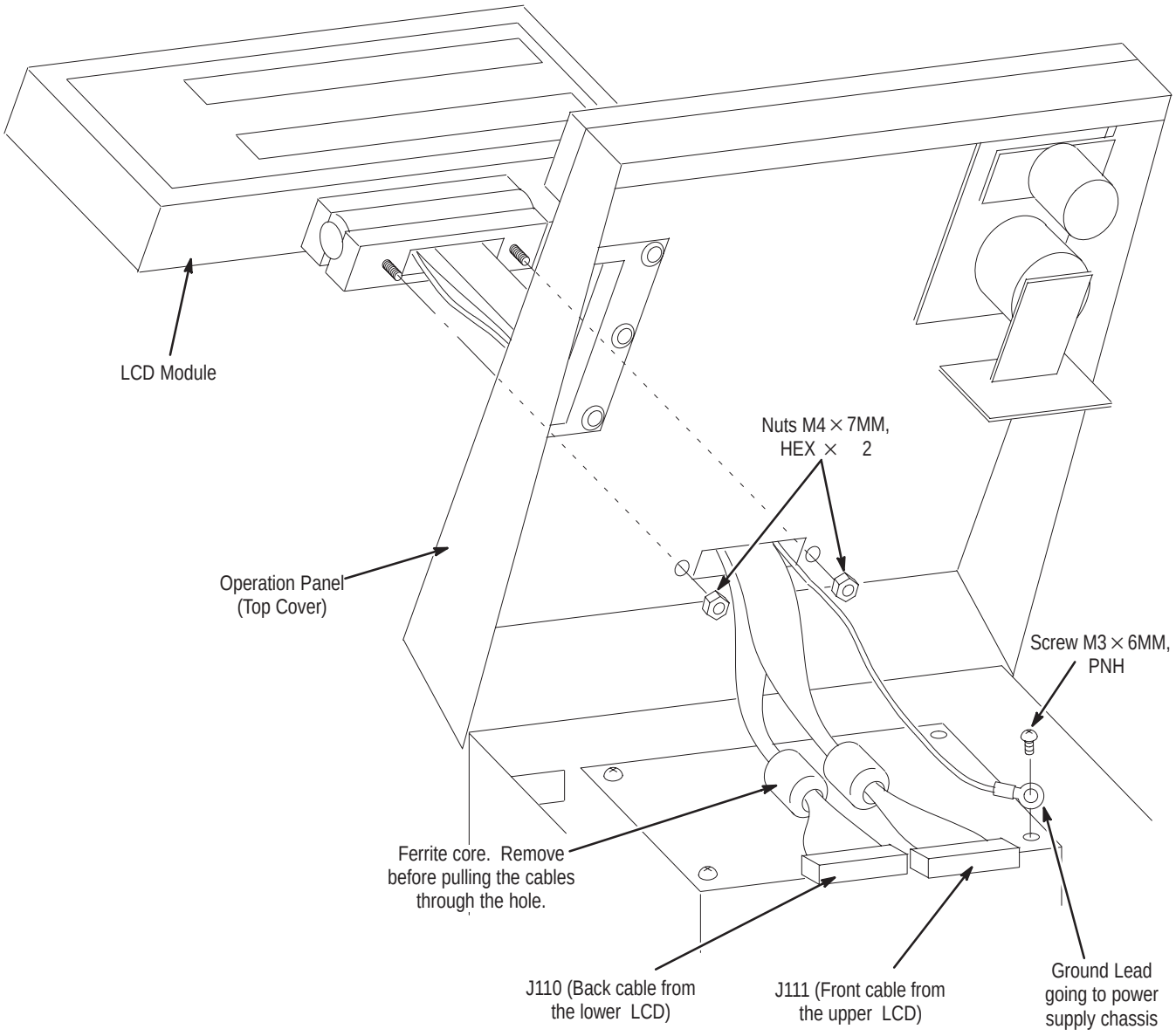


Figure 9–9: LCD Module Removal

Key Top, Connectors, Switch and RFI Filter Removals

Key Top

To remove key tops on the operation panel (top cover), grasp a key top with your thumb and first finger, and pull it out. See Figure 9–10. This can be done without removing any other module or opening the operation panel.

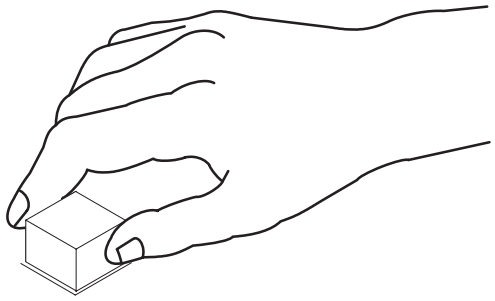


Figure 9–10: Key Top Removal

RS-422 Connectors

1. Open the operation panel. Refer to *Opening the Operation Panel* on page 9–13.
2. Disconnect the cables at J140 on the CPU board for the CH1 RS-422 connector (VDR1), and the cable at J141 on the CPU board for the CH2 connector (VDR2).
3. Use the 5 mm nut driver to remove the four spacer posts (two on each connector).
4. Remove the connectors completely.

Power Switch

1. Open the operation panel. Refer to *Opening the Operation Panel* on page 9–13.
2. Remove the keyboard (A20). Refer to *Keyboard Removal* on page 9–13.
3. Using a long-nose pliers, disconnect the two cables at RFI filter, coming from the power switch.
4. Disconnect the cable at CP2, coming from the power switch.
5. Using a flat-bladed screw driver, pull the power switch out completely as indicated in Figure 9–12.

RFI Filter

1. Open the operation panel. Refer to *Procedures for Operation Panel* on page 9–13.
2. Use the long-nose pliers to disconnect the two cables going to the power switch, and the ground cable connected to the bottom of the chassis.
3. Use the 2.0 mm hex wrench to remove the two screws securing the RFI filter to the rear of the Live Controller.
4. Remove the RFI filter completely.

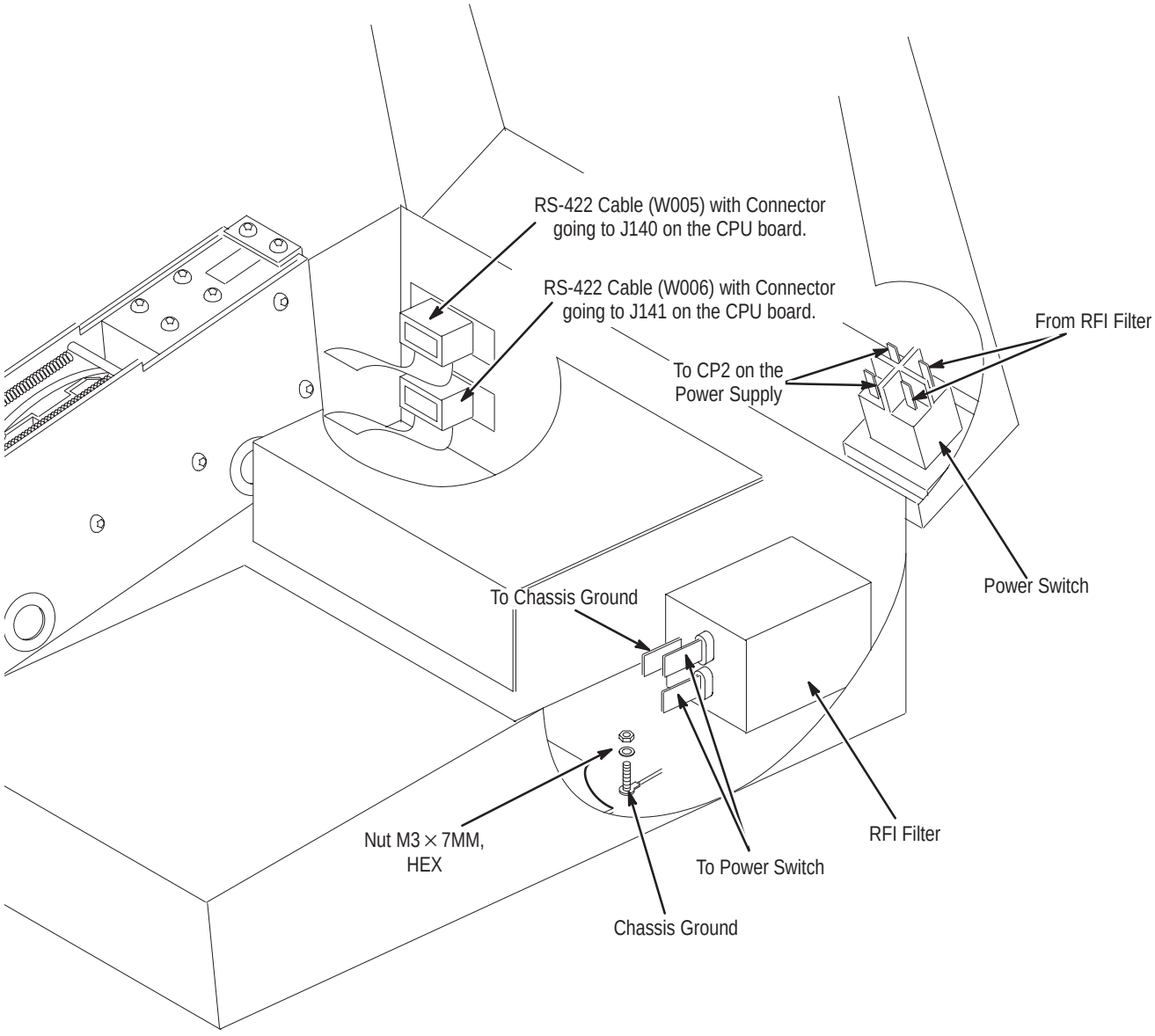


Figure 9–11: Power Switch, RFI Filter and RS-422 Connectors Removal (Inside View)

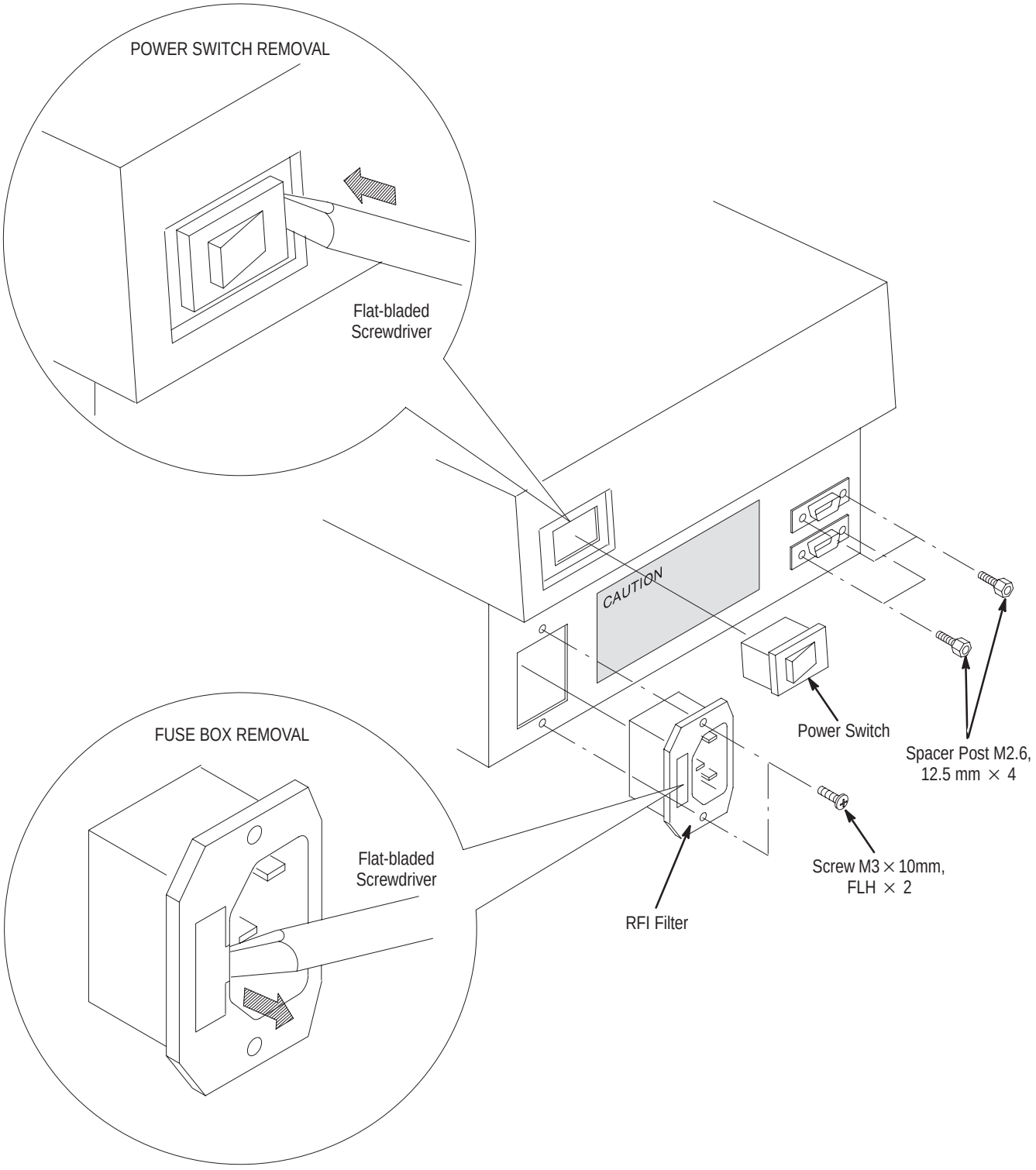


Figure 9–12: Power Switch, RFI Filter and RS-422 Connectors Removal (Outside View)

Repackaging

This subsection contains information about repackaging the Live Controller for shipment.

Repackaging Instructions

Use a corrugated cardboard shipping carton having a test strength of at least 54.0 pounds (24.5 kg) and with an inside dimension at least six inches (15 cm) greater than the Live Controller dimensions. (If available, use the original shipping carton, which meets these requirements.)

If the Live Controller is shipped to a Tektronix Service Center, enclose the following information:

- The company name and address.
- Name and phone number of a contact person.
- Type and serial number of the Live Controller.
- Reason for returning.
- A complete description of the service required.

Seal the shipping carton with strapping tape.

Mark the address of the Tektronix Service Center and your own return address on the shipping carton in two prominent locations.

Diagnostics

Introduction

This section describes the diagnostic test procedures for the Live Controller

When you turn the power on, all lamps incorporated in keys light in turn. This does not mean that the instrument performs a self–test at power on. The performance of the Live Controller. will only be checked when you execute a diagnostic routine.



CAUTION. *These diagnostic routines includes a test which lights all key LEDs on the Live Controller. Prolonged lighting of all the key LEDs may heat the surface of the Live Controller enough to cause personal injury. To avoid personal injury, you should avoid lighting all the LEDs for more than ten minutes at a time. After ten minutes of continuous operation, you should turn all the LEDs off for at least five minutes before turning them on again.*

The diagnostic routine includes the following tests:

- Internal memory test
- RS-422 test
- Keys and LEDs test
- LCD test
- Lever and knob operation test
- Serial EEPROM test

If you find errors or if there is an indication of a problem with your Live Controller during the diagnostic tests, refer to Troubleshooting, described on page 9–33, for fault isolation.

Failure in some modules of the Live Controller may cause the test routine to not operate properly. In this case, consult Troubleshooting, described on page 9–33, to find and replace defective modules.

Before Running the Tests

Warm up A 20 minute warm up period is required prior to running the tests.

Required When you perform the RS-422 test, the loop–back cable shown in Figure 9–13 is required. This cable is a standard accessory and supplied with the Live Controller. Connect the two RS-422 connectors on the rear of the Live Controller with this cable before running the test. See Figure 9–13 and 9–14.

No other cables or equipment are required for this diagnostic test.

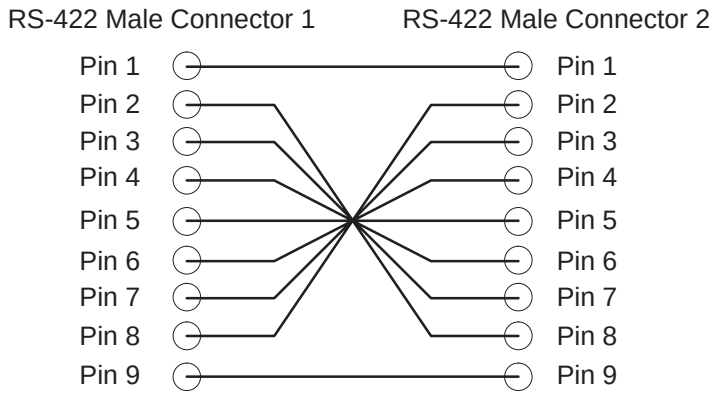


Figure 9–13: RS-422 Loop–back Test Cable

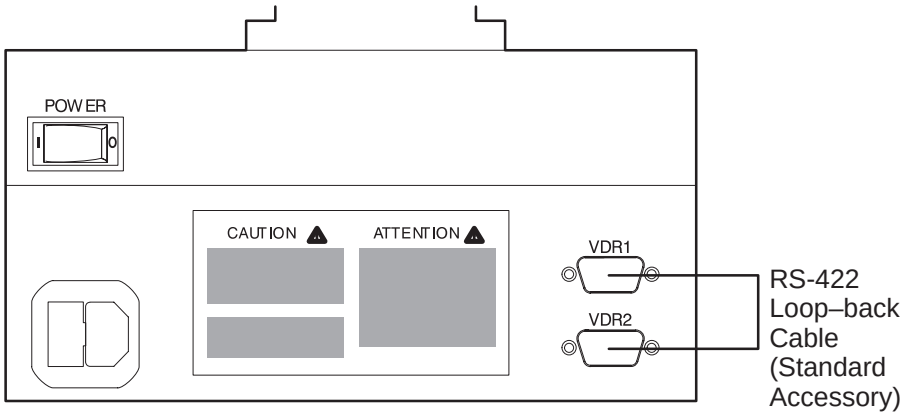


Figure 9–14: Cable Connections

Starting the Diagnostic Routine

Turn the Power on while holding **EVENT** and **TIME** buttons. The following menu appears on both upper and lower LCDs of the Live Controller.

```
          **** DIAG ****
```

```
CONT: Starting tests or configure.
   0: Starting up the system.
```

The letter(s) to the left of the colon (:) indicates keys on the instrument that you should press to select a test procedure. These keys also light to indicate that they are available for test procedures.

The messages following the colon (:) indicate the functions you can select.

NOTE. *When the key configuration is set to the Alternate key, the **EVENT** key instead of the **0** key will light when you enter the diagnostics routine. For more detail about the Alternate key configuration, refer to About Key Configuration on page 7–5.*

Press **0** to exit from the diagnostic routine and start the Live Controller. When you want to continue the test procedure, press **CONT**. The following Diagnostic Main menu appears.

```
  [MAIN MENU]          0: Exit menu.
1: MEMORY  2: RS422  3: KEY/LED  4: LCD
```

```
5: SLNID/ADC/ENCDR/CLTCH  6: S-E2PROM
SEARCH: KEY PLACE SELECT
```

Confirm that all keys corresponding to test procedures you can select are lit. Press a key to execute the corresponding test.

Memory Test

Press **1** for the following menu on the LCD.

```
[MEMORY TEST]       0: Return to menu

PLAY: Starting memory test.
```

Press **PLAY** to start the memory test. The memory test will terminate in about 0.5 seconds if no fault exists and the following message will appear on the lower LCD.

```
Memory test complete.
```

Press the **0** key to return to the Main menu.

RS-422 Test

Before executing the RS-422 test, verify that the loop–back cable is connected to the RS-422 CH1 (VDR1) and RS-422 CH2 (VDR2) connectors on the rear of the Live Controller.

Press **2** when the Main menu is displayed on the LCDs. The following menu will appear.

```
[RS422 TEST]        0: Return to menu

PLAY: Starting RS422 loop back test.
STOP: Stop testing.
```

Press **PLAY** to start the test. The lamps of the **VDR1** and **VDR2** keys go on and off, and the lower LCD displays the following:

```
CH0:          □○.
CH1:          □○.
```

The □○· symbol moves from right to left on the LCD.

Press **STOP** to terminate the test.

Press **0** return to the Main menu.

Key and LED Test

Press **3** when the Main menu is displayed on the LCDs. The following menu will appear.

```
[KEY/LED TEST] SHIFT+0: Return to menu
```

```
<any-key>,JOG/SHTL: Testing one by one.
```

The following two ways are used to execute key and LED functions.

- When you turn the JOG/SHTL knob, a lamp on the key lights on and then off. Turn the knob until you confirm all the lamps and LEDs can light on and off properly.

  This test only verifies that the lamps and LEDs work properly. To verify that the key functions properly, perform the following test.

- When you press a key, the corresponding lamp goes on and, when you press that key again, the lamp goes off. Press all keys twice to confirm that the keys work properly and that the lamps and LEDs function properly.



CAUTION. *Prolonged lighting of all the key LEDs may heat the surface of the Live Controller enough to cause personal injury. To avoid personal injury, you should avoid lighting all the LEDs for more than ten minutes at a time. After ten minutes of continuous operation, you should turn all the LEDs off for at least five minutes before turning them on again.*

Use the preceding test to confirm that all the keys, lamps and LEDs work properly.

Press and hold **SHIFT** and press **0** to stop the test.

LCD Test

Press **4** when the Main menu is displayed on the LCDs. Then following LCD TEST menu will appear.

```
 [LCD TEST]          0: Return to menu
```

```
PLAY: Starting LCD test.
STOP: Stop testing.
```

Press **PLAY** to start the LCD test. When the test starts, a character set appears in each line on the upper and lower LCDs, and moves right to left. Confirm that the characters are being displayed properly.

```
!""#$%&'()*+,-./0123456789:;<=>?@ABCDEFG
!""#$%&'()*+,-./0123456789:;<=>?@ABCDEFG
```

```
!""#$%&'()*+,-./0123456789:;<=>?@ABCDEFG
!""#$%&'()*+,-./0123456789:;<=>?@ABCDEFG
```

Press **STOP** to stop the test.

Press **0** to return to the Main menu.

Lever and Knob Operation Test

Press **5** when the Main menu is displayed on the LCDs. The following messages will appear.

```
 [SOLENOID/ADC/ENCODER/CLUTCH TEST]
                     0: Return to menu
```

```
ADC:   116                    SLNID:  OFF
ENC: <-000  000->   ORG: 0  CLTCH:  OFF
```

ADC indicates a position of the lever. When you move the lever forward to MAX FWD position, the value approaches 0. When you move it backward to MAX REV, the value approaches 255. This value varies between 0 and 255 depending on the lever's position.

SLNID indicates OFF while the lever handle button is released, and turns ON when you press it.

ENC indicates the rotation speed of the knob. When you turn the knob clockwise, the value followed by the –> symbol varies depending on the rotation speed. When you turn the knob counterclockwise, the value following the <– symbol varies in the same fashion.

CLTCH toggles ON and OFF whenever you press the **SHTL** key. When the CLTCH is ON, the clutch and stopper are set to the knob. The value of ORG turns to 1 only when the CLTCH is set to ON and you turn the knob.

Check that each value varies while operating the lever, the lever handle button, and the knob with and without clutch.

After the test is completed, press **0** to return to the Main menu.

NOTE. *If your Live Controller has firmware version 1.11 or lower, pressing **0** at this step causes the diagnostic routine to exit and the Live Controller system to start. To perform the next diagnostic test, re–run the diagnostic routine by powering off and on again. This problem has been fixed in firmware version 1.12 and higher.*

Serial EEPROM Test

Press **6** when the Main menu is displayed on the LCDs. Then following menu appears.

```
[S-E2PROM TEST]     0: Return to menu
```

```
PLAY: Starting S-E2PROM R/W test.
```

Press **PLAY** to perform the serial EEPROM test. When the test starts, the following message appears on the lower LCD.

```
S-E2PROM test executing...
```

This test takes about 20 seconds. When the test completes, the message turns to following.

```
S-E2PROM test complete.
```

Press **0** to return to the Main menu.

Troubleshooting

This subsection contains information about how to isolate faulty modules in the Live Controller. If a module needs to be replaced, follow the *Removal and Installation Procedures* described on page 9–5.

At Power On

The Live Controller does not have a self–test executed at power-on. However, Table 9–4 lists symptoms which may occur when you turn the power on.

At Diagnostics

Diagnostics are to be run manually and periodically to verify that the Live Controller is working properly. See *Diagnostics* described on page 9–25 for the diagnostic procedures. Table 9–5 lists the symptoms which may occur during diagnostic tests.

Table 9–4: Troubleshooting at Power On

Routines to be run	Symptoms	Causes / Actions
For Live Controller	Backlights for both LCDs do not light.	☐ Power code cable is not connected properly. Check the power code cable connection. ☐ Fuse is blown. Replace the fuse. ☐ Power supply module failure. Replace the power supply unit.
	Backlights for both LCDs light, but the key lamps do not light in their pre–determined sequence.	☐ LCD module failure. Replace the LCD module. ☐ Keyboard module failure. Replace the Keyboard (A20). ☐ CPU module failure. Replace the CPU module (A10). ☐ Power supply unit failure. Replace the power supply unit.
For diagnostic routine	Diagnostic main menu does not appear.	☐ EVENT and TIME keys were not pressed. Press both keys at power on. ☐ EVENT and/or TIME key failure. Replace the Keyboard (A20). ☐ Keyboard module failure. Replace the Keyboard (A20). ☐ CPU module failure. Replace the CPU module (A10).

Table 9–5: Troubleshooting at Diagnostics

Test Items	Symptoms	Causes / Actions
Memory test	After the test has been terminated, message: *Memory Test Complete* is not displayed.	☐ CPU module failure. Replace the CPU module (A10).
RS-422 test	RS-422 test is stopped or could not be executed.	☐ Loop–back cable is not connected properly. Check the loop–back cable connection. ☐ CPU module failure. Replace the CPU module (A10). ☐ Loop–back cable failure. Replace the loop–back cable.
KEY and LED test	When a key is pressed, corresponding lamp does not light on or off.	☐ Keyboard module failure. Replace the Keyboard module (A20). ☐ CPU module failure. Replace the CPU module (A10). ☐ Power supply unit failure. Replace the power supply.
LCD test	Character(s) does/do not display properly.	☐ LCD module failure. Replace the LCD module. ☐ CPU module failure. Replace the CPU module (A10).
Lever and knob operation test	Value for the ADC does not vary continuously as the lever moves.	☐ CPU module failure. Replace the CPU module (A10). ☐ VAR lever unit failure. Replace the VAR lever unit.
	SOLENOID does not turn on or off as the lever button turns on or off.	☐ Lever is not installed into the VAR lever unit properly. Check the Lever and VAR lever unit installation. ☐ CPU module failure. Replace the CPU module (A10). ☐ Lever unit failure. Replace the lever unit.
	SOLENOID turns on or off as the lever button turns on or off, but stopper is not released.	☐ VAR lever unit failure. Replace the VAR lever unit.
	Value does not indicate rotation speed as the knob turns.	☐ Encoder unit failure. Replace the Encoder unit. ☐ CPU module failure. Replace the CPU module (A10).
	Clutch for the dial does not turn on and off every when the STHL key is pressed. Clutch is not enabled on the knob or stopper does not work.	☐ SHTL key failure. Replace the Keyboard (A20). ☐ CPU module failure. Replace the CPU module (A10). ☐ Power supply unit failure. Replace the power supply.
	Value for the ORG does not turn to 1 or 0 when the knob turns with clutch on.	☐ JOG/SHUTTLE unit failure. Replace the JOG/SHUTTLE unit. ☐ CPU module failure. Replace the CPU module (A10).
Serial EEPROM test	After the test, message: *Test Complete* is not displayed.	☐ Test takes 20 seconds to terminate. Wait for 20 seconds. ☐ CPU module failure. Replace the CPU module (A10).

Replaceable Parts

Replaceable Parts

This section contains a list of the replaceable modules for the Live Controller. Use this list to identify and order replacement parts.

Parts Ordering Information

Replacement parts are available through your local Tektronix field office or representative.

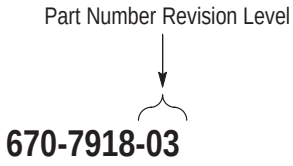
Changes to Tektronix products are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest improvements. Therefore, when ordering parts, it is important to include the following information in your order.

- Part number (see Part Number Revision Level below).
- Instrument type or model number.
- Instrument serial number.
- Instrument modification number, if applicable.

If you order a part that has been replaced with a different or improved part, your local Tektronix field office or representative will contact you concerning any change in part number.

Part Number Revision Level

Tektronix part numbers contain two digits that show the revision level of the part.



When you order parts, Tektronix will provide you with the most recent part for your product type, serial number, and modification (if applicable). At the time of your order, Tektronix will determine the part number revision level needed for your product, based on the information you provide.

Tekronix Product Support

Contact your local Tektronix service center or representative for repair assistance per the following:

United States and Canada

Monday – Friday 5:30AM–5:00PM Pacific Time, (800) 547–8949

Europe

Monday – Friday 9:00AM–5:30PM

Austria	222–799–3535	Netherlands	010–495–4255
Belgium	02–714–3401	Norway	22–83–85–69
Denmark	3543–5259	Spain	91–564–4692
Finland	161–691–98559	Sweden	08–679–8419
Germany	069–935–25001	Switzerland	041–210–6009
Italy	44–1908–681–706	United Kingdom	01908–681–703
Luxembourg	400–848	Other	44–1908–681–703

EMAIL: EuroProfile@tek.com

Asia and South America

Australia	61–2–888–7066	Korea	82–2–528–5299
Brazil	55–11–3741–8417	Mexico	52–5–666–6333
Hong Kong	852–2585–6688	Singapore	65–356–3900
Japan	81–3–3448–3111	Taiwan	886–2–765–6362

World Wide

24–hour Emergency Hotline: (503) 685–2345 (Contract and Warranty customers)
World Wide Web: http://www.tek.com/Profile/Support
FTP Site: ftp.tek.com (IP address: 134.62.48.21)
Email: ProfileSupport@tek.com
Users Group: profile–users@tek.com

Using the Replaceable Parts List

This section contains a list of the mechanical and electrical components that are replaceable for the Live Controller. Use this list to identify and order replacement parts. The following table describes each column in the parts list.

Parts List Column Descriptions

Column	Column Name	Description
1	Figure & Index Number	Items in this section are referenced by figure and index numbers to the exploded view illustrations that follow.
2	Tektronix Part Number	Use this part number when ordering replacement parts from Tektronix.
3 and 4	Serial Number	Column three indicates the serial number at which the part was first effective. Column four indicates the serial number at which the part was discontinued. No entries indicates the part is good for all serial numbers.
5	Qty	This indicates the quantity of parts used.
6	Name & Description	An item name is separated from the description by a colon (:). Because of space limitations, an item name may sometimes appear as incomplete. Use the U.S. Federal Catalog handbook H6-1 for further item name identification.

Abbreviations Abbreviations conform to American National Standard ANSI Y1.1–1972.

Replaceable Parts List

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description
	118–9491–00			1	LVS CONTROLLER UNIT:COMPLETE ASSEMBLY

Replaceable Parts List

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description
10–1–1	437–0463–00			1	COVER ASSEMBLY:TOP & BOTTOM,W/HARDWARE
–2	671–4048–00			1	CIRCUIT DB ASSY:A20 KEYBOARD 389–A555–XX WIRED

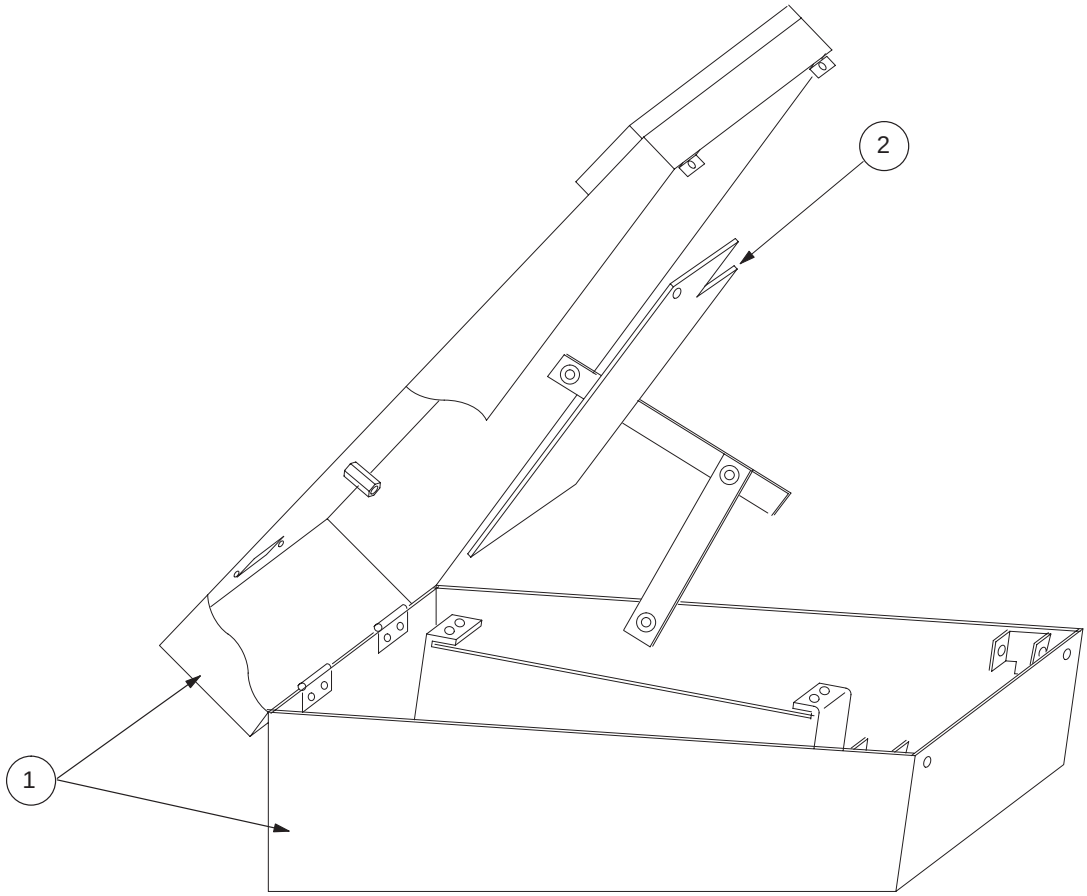


Figure 10–1: Covers and Keyboard Assembly

Replaceable Parts List

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description
10–2–1	260–2680–00			1	SWITCH,ROCKER:DSP,250V,3A W/CABLE ASSY
–2	119–3603–00			1	FILTER,RFI:115/230V,4A
–3	174–3716–00			1	LOOPBACK TEST CABLE ASSY

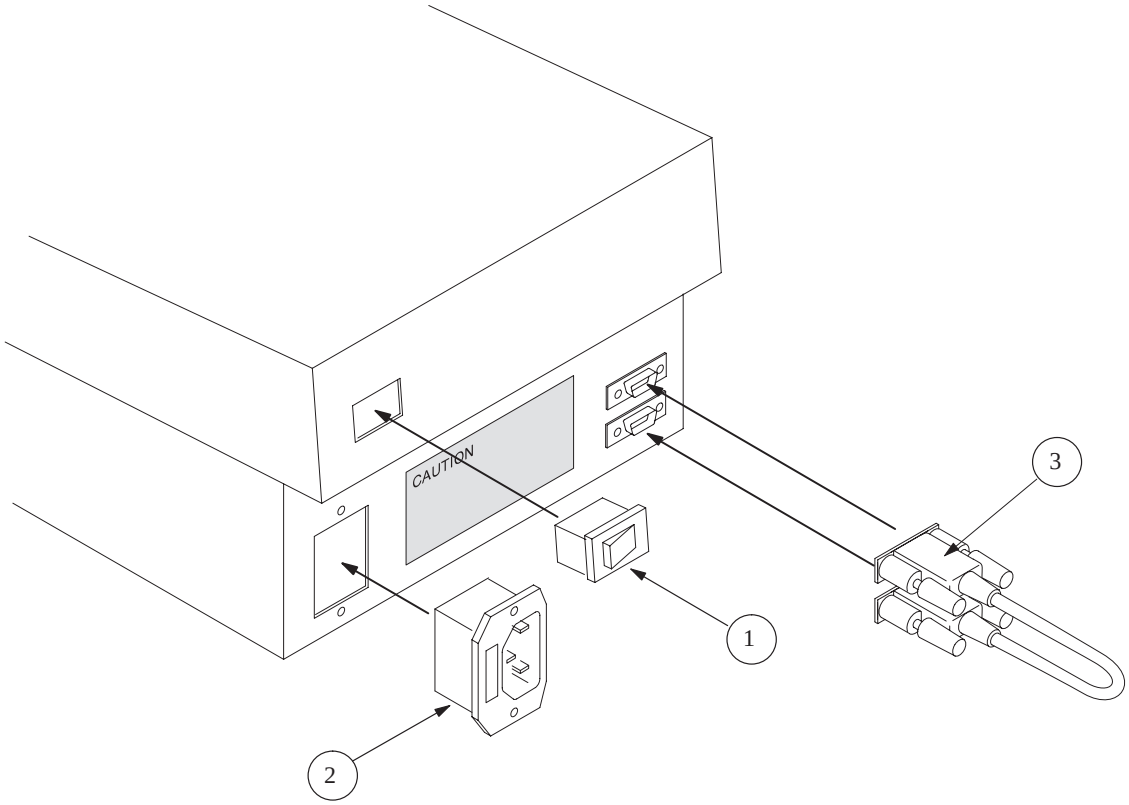


Figure 10–2: Rear Panel Assembly

Replaceable Parts List

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description
10–3–1	119–5594–00			1	LCD MODULE:

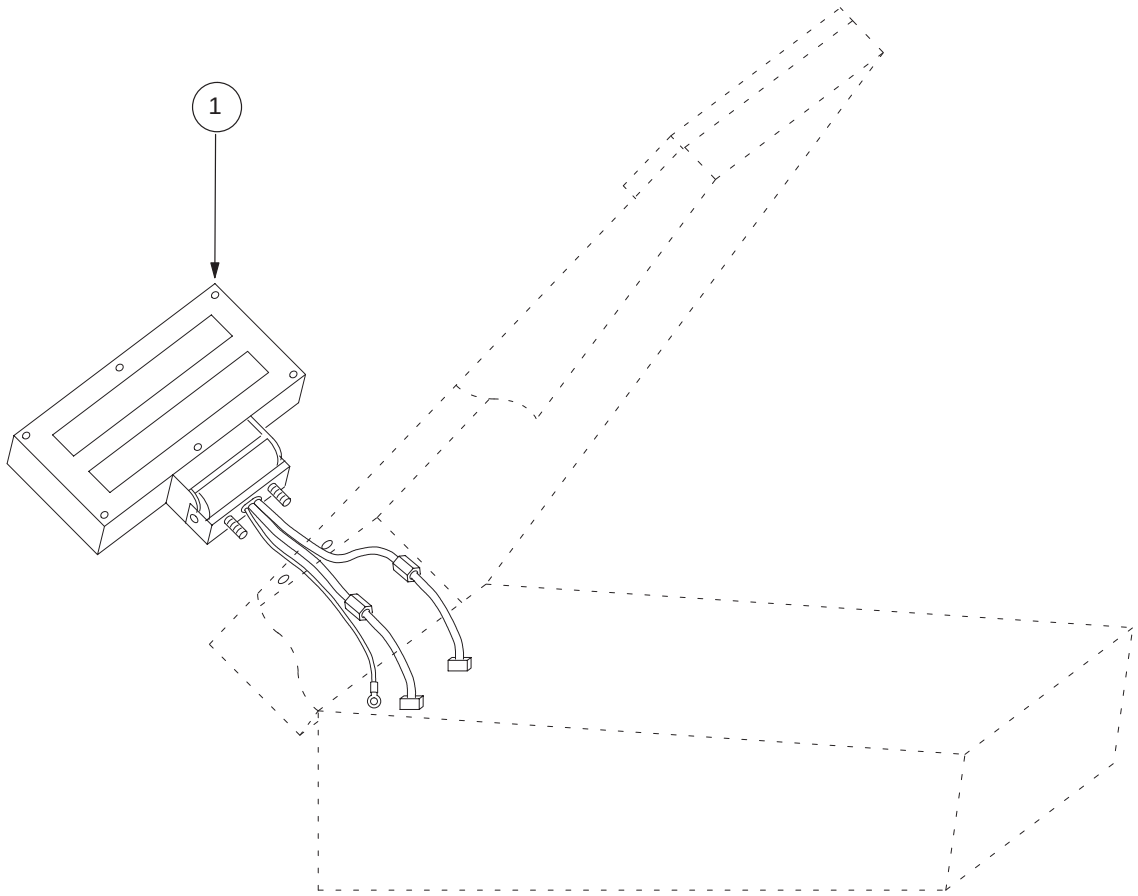


Figure 10–3: LCD Module Assembly

Replaceable Parts List

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description
10–4–1	119–5595–00			1	POWER SUPPLY:
–2	671–4049–00			1	CIRCUIT BOARD:A10 CPU 389–A???–XX WIRED

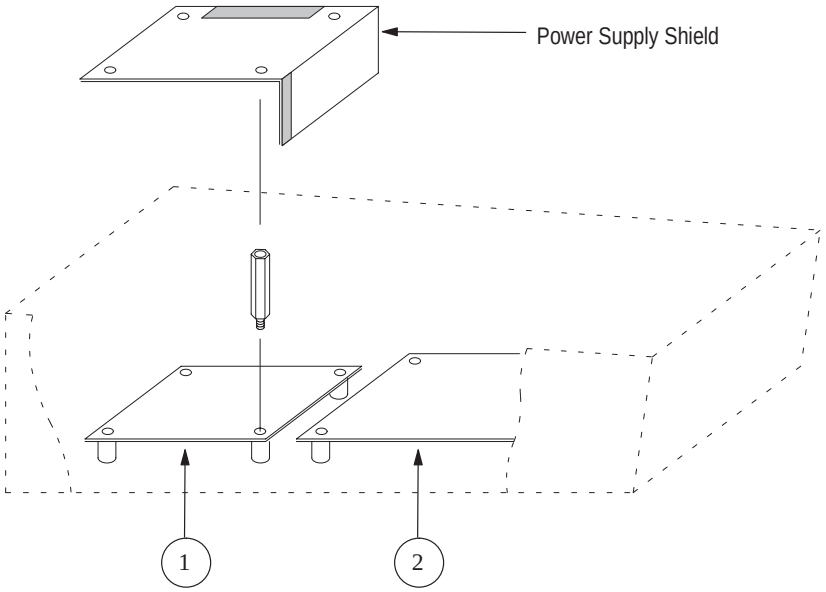


Figure 10–4: CPU Board and Power Supply Assembly

Replaceable Parts List

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description
10–5–1	119–5596–01	J310130		1	VAR LEVER UNIT

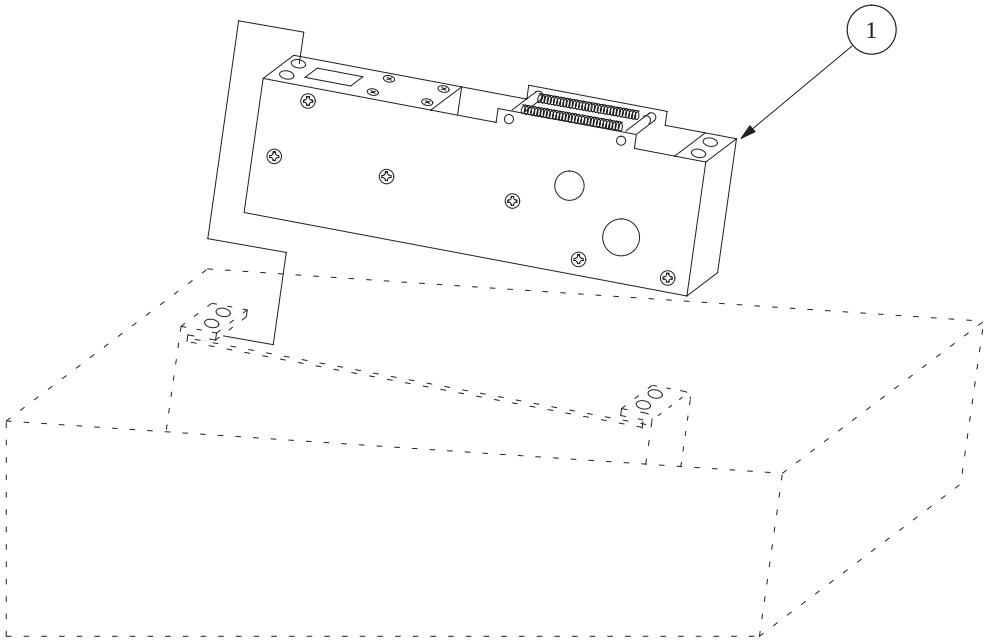


Figure 10–5: VAR Lever Unit Assembly

Replaceable Parts List

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description
10–6–1	331–0572–01	J310130		1	DIAL ASSY
–2	331–0572–00		J310129	1	DIAL ASSY
–3	119–5597–01	J310130		1	ENCODER UNIT

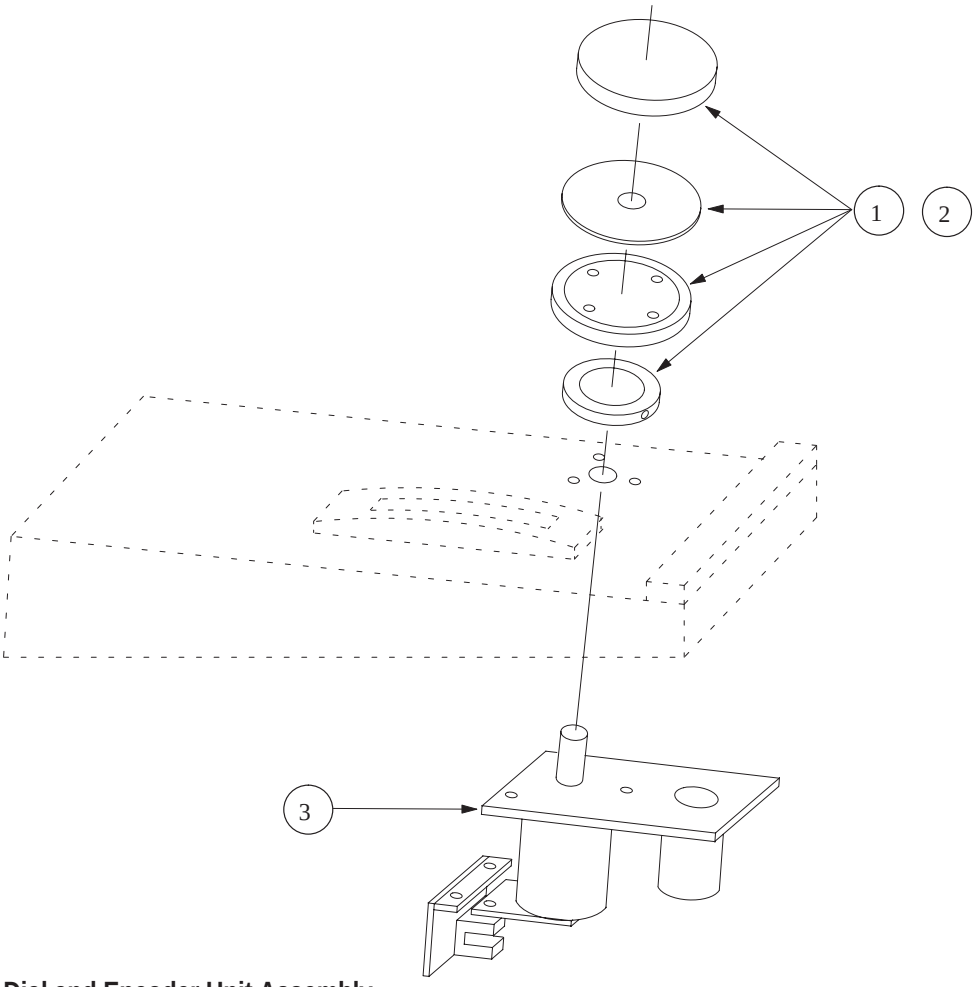


Figure 10–6: Dial and Encoder Unit Assembly

Replaceable Parts List

Fig. & Index Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description
10–7–1	119–5598–01	J310130		1	LEVER UNIT
–2	366–0785–00			1	KEYTOP SET:set of 41 ea

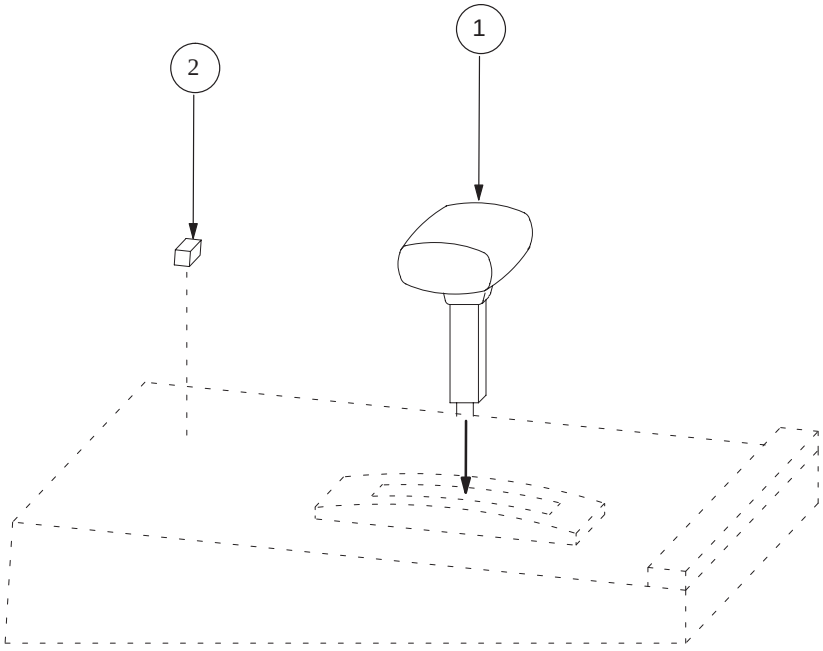


Figure 10–7: Lever and Key Top

Replaceable Parts List

Component Number	Tektronix Part Number	Serial No. Effective	Serial No. Discont'd	Qty	Name & Description
W002	174–3701–00			1	CA ASSY,SP,ELEC: 6,22AWG 200MM
W003	174–3702–00			1	CA ASSY,SP,ELC:26,28AWG 250MM L,FLAT
W004	174–3703–00			1	CA ASSY,SP,ELEC:10,26AWG 450MM L
W005	174–3704–00			1	CA ASSY,SP,ELEC:10,28AWG 200MM L,FLAT
W006	174–3704–00			1	CA ASSY,SP,ELEC:10,28AWG 200MM L,FLAT

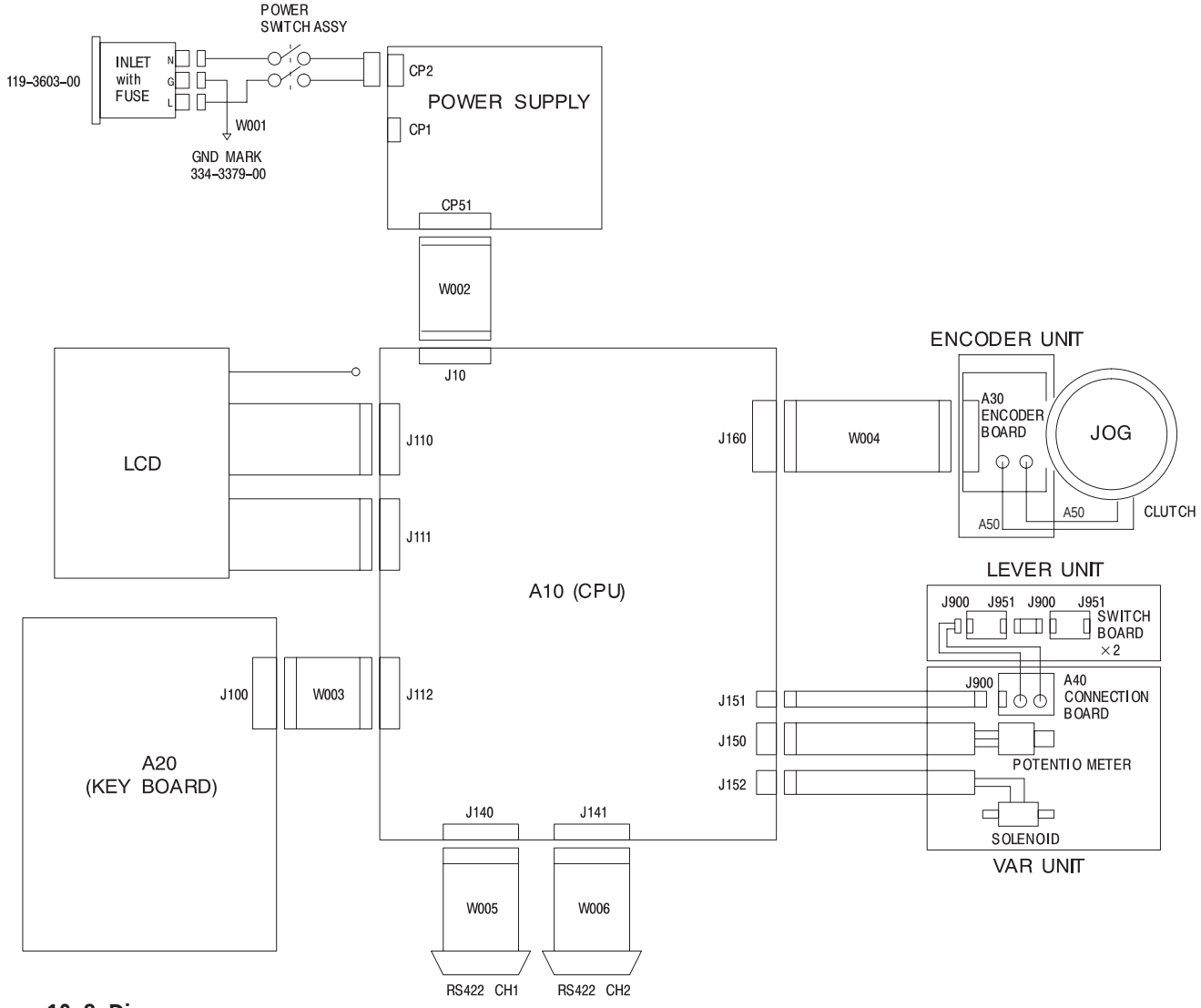


Figure 10–8: Diagram

Fig. & Index No.	Tektronix Part No.	Serial No. Effective Dscont	Qty	12345 Name & Description
				STANDARD ACCESSORIES
	161–0066–09		1	CABLE ASSY,PWR:(OPTION A1–EUROPEAN)
	161–0066–10		1	CABLE ASSY,PWR:(OPTION A2–UNITED KINGDOM)
	161–0066–11		1	CABLE ASSY,PWR:(OPTION A3–AUSTRALIAN)
	161–0066–12		1	CABLE ASSY,PWR:(OPTION A4–NORTH AMERICAN)
	161–0154–00		1	CABLE ASSY,PWR:(OPTION A5–SWITZERLAND)

Appendices

Appendix A: System Integration

For details about system integration and accessories, contact Tektronix.

Appendix B: Live Controller Accessories

This appendix describes options and accessories for the Live Controller.

Standard Accessories

The following accessory items are included with this product:

1	Instruction Manual for the Profile LVS Event Management System	(070-9794-XX)
1	Power Cord Set: Refer to *AC Power Cord Set* below	
1	Fuse (in Fuse Holder): U.S. and International except Canada	(159-0107-00)
1	Fuse: Canada only	(159-0260-00)
1	Loopback Test Cable	(174-3716-00)



CAUTION. *To meet CSA safety standards in Canada, the standard fuse (159-0107-00) must be replaced with the Canadian fuse (159-0260-00), labeled* **This Fuse for Use in Canada Only**.

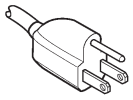
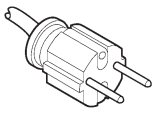
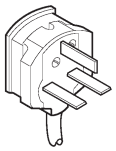
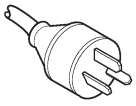
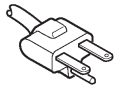
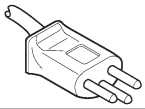


WARNING. *Fuse replacement may expose high voltage parts. To prevent possible electric shock, refer fuse replacement to qualified service personnel only.*

AC Power Cord Set

The LVS Live Controller is shipped from the factory with six power cords. Use the appropriate power cord for you area. Refer to Table B–1 to determine which power cord you should use.

Table B–1: AC Power Cord Set

Plug Configuration	Normal Usage
	North America 115 V
	Europe 230 V
	United Kingdom 230 V
	Australia 230 V
	North America 230 V
	Switzerland 230 V

Optional Accessories

No optional accessories are provided for the Live Controller.

Appendix C: Specifications

The specifications of this system are described below.

Hardware

Table C–1: Profile Configuration

Item	Description
Configurations supported by the system	Any type of PDR100 and PDR200. The LVS supports the expansion disk unit PDX103, and the PDX 208 disk expansion unit is scheduled to be supported. (INIT1 partition including the Profile disk and Expansion unit is only available.) The LVS supports the Mix/Effects board as an option.
VRAM	2 M bytes are required on the Profile. (Images on the monitor deteriorates with 1 M byte VRAM)
SVGA Monitor	65,536 (64 k) color SVGA monitor is required to ensure accurate display of clip icons.
Number of input channels	Up to 3 analog composites Up to 4 digital components Combinations of these are determined by the number of slots and power capacity.
Number of output channels	Up to 4 analog composites Up to 4 digital components Combinations of these are determined by the number of slots and power capacity.
Recording duration	
PDR 100	1 hour and 20 minutes with standard unit, and can be extended up to 2 hours and 40 minutes (when the compression target is 1/7) without using an external disk unit. By connecting an expansion chassis, a much longer recording duration is possible. Contact your Tektronix representative for details.
PDR 200	3 hours with standard unit, and can be extended up to 6 hours (when the compression target is 1/7) without using an external disk unit. By connecting an expansion chassis, a much longer recording duration is possible. Contact your Tektronix representative for details.
Number of controllers connected	Up to 2 controllers with the Live Controller, 1 controller with model DTR-3000, and up to 2 controllers when using both controllers.
Limitations	
Minimum delay in delayed transmission	5 seconds
Enter/Cue Up shortest cue point	5 seconds

Table C–1: Profile Configuration (Cont.)

Item	Description
Range of compression target	1/3.5 to 1/10 (For NTSC 100 K bytes/field on Configuration Window corresponds to 1/3.5)
Others	Approx. 1 second is required to switch between PLAY and SEARCH by using **SHIFT + SEARCH**. When jog operation is executed by multiple controllers at the same time, the process speed may be reduced.

Software

Table C–2: Software

Item	Description
Number of scenes	Up to 999 per Window
Number of highlights	Up to 99
Number of library items	Up to 99
Name of scene, highlight and library item	Up to 14 bytes
Name of packaged playlist and timeline	Up to 14 bytes
Number of pages in library	Up to 5 pages
Number of supported Live Controllers	2 units
Number of supported Sony DTR-3000s	1 unit
Total number of controllers	Up to 2 units
Time required to fetch images for icons	Approx. 1 sec.
Time required to start the software	Within three minutes, takes longer with items in Library
Time required to exit the software	Within 20 seconds
Number of audio banks	One bank is required for each codec resource group (VDR).
Required Windows NT version	3.51 with Service Pack 4 and its hotfix, 4.0 with Service Pack 2
Required VDR Panel version	2.1

Live Controller

Table C–3: Live Controller

Item	Description
RS-422 Connectors	DSUB 9 pins × 2 For the connector pin assignment and communication protocol, refer to the Profile Installation Manual.
Power Source	
Electrical Rating	
Range	90 VAC to 250 VAC, 47 Hz to 66 Hz
Nominal	100 VAC to 240 VAC, 50 Hz/60 Hz
Supply Type	Single Phase
Supply Connection	Detachable cord set
Heat Dissipation	
Power Consumption	≤ 14 W (0.5 A_{rms} maximum line current at 50 Hz)
Dissipation	90 V line with 5 % clipping
AC Current	≤ 0.5 A
Surge Current	60 A (25˚C) peak for ≤ 5 line cycles, after instrument has been turned off for at least 30 seconds.
Fuse	UL198G: 250 V, 2A, FAST (5 mm × 20 mm) for Canada only. IEC127: 250 V, 2 A (T) (5 mm × 20 mm) for U.S. and Internaltional, except Canada.
Environmental Characteristics	
Temperature	
Operating	10˚C to +40˚C
Non–operating	–20˚C to +60˚C
Relative Humidity	
Operating	20 % to 80 % (No condensation), Maximum wet–bulb temperature 29.4˚C
Non–operating	5 % to 90 % (No condensation), Maximum wet–bulb temperature 40.0˚C
Altitude	
Operating	Up to 4.5 km (15,000 ft) Maximum operating temperature decreases 1˚C each 300 m above 1.5 km (5,000 ft)
Non–operating	Up to 15 km (50,000 ft)
Vibration	
Operating	0.7 g_{rms}, from 5 to 500 Hz, 10 minutes
Non–operation	2.28 g_{rms}, from 5 to 500 Hz, 10 minutes

Table C–3: Live Controller (Cont.)

Item	Description
Shock	
Non–operating	294 m/s^2 (30 G), half–sine, 11 ms duration. Three shocks per axis in each direction (total 18 shocks).
Mechanical Characteristics	
Dimensions	
Height	148 mm (5.83 inch) with feet 235 mm (9.25 inch) with Display Unit Extended
Width	212 mm (8.35 inch)
Depth	265 mm (10.43 inch) 327 mm (12.87 inch) with Display Unit extended
Weight	
Net	4.2 kg
Shipping	5 kg
Safety Certification compliance	
Equipment Type	Information Technology Equipment
Equipment Class	Class I: Grounded product (as defined in IEC 1010-1, Annex H)
Installation Category	Installation Category II (as defined in IEC 1010-1, Annex J). Note: Rated for indoor use only. Category — Examples of Products in this Category: CAT III — Distribution-level mains, fixed installation CAT II — Local-level mains, appliances, portable equipment CAT I — Signal levels in special equipment or parts of equipment, telecommunications, electronics
Pollution Degree	Pollution Degree 2: Do not operate in environments where conductive pollutants may be present.

Table C–3: Live Controller (Cont.)

Item	Description
Certification and compliances	
Safety	Designed/tested for compliance with: **UL1950 –** Safety of Information Technology Equipment, including Electrical Business Equipment (Second edition, 1993) **IEC 950 –** Safety of Information Technology Equipment, including Electrical Business Equipment (Second edition, 1991) **CAN/CSA C22.2, No. 950-93 –** Safety of Information Technology Equipment, including Electrical Business Equipment **EN60950 –** Safety of Information Technology Equipment, including Electrical Business Equipment
EC Declaration of Conformity	Meets intent of Directive 89/336/EEC for Electromagnetic Compatibility. Compliance was demonstrated to the following specifications as listed in the Official Journal of the European Communities: EN 50081-1 Emissions: EN 55022 Class A Radiated and Conducted Emissions EN 50082-1 Immunity: IEC 801-2 Electrostatic Discharge Immunity IEC 801-3 RF Electromagnetic Field Immunity IEC 801-4 Electrical Fast Transient/Burst Immunity

Glossary and Index

Glossary

Clip

A unit of physical records which may contain multiple scenes. In operating this system, you do not have to pay attentions to clips. (Explained in comparison with VdrPanel: To play video recorded in this system by starting VdrPanel, operate on this video in units of clips.)

Codec, **Codec Resource**

Codec means Coder/Decoder. The codec channel is the link between component parallel digital video and the interface between the audio and video data and the disk array. The codec compresses the video data to a rate that is commensurate with the available disk bandwidth, and conversely de-compresses the video data back to 8-bit component parallel digital video.

Codec Resource Group

This is called a resource group or virtual disk recorder (VDR), which is a logical recorder composed of one or two codecs that provide for the record and/or play and edit of video. There are four basic functions in this system that the codec resource group provides: 2–Channel Rec/Play, 1–Channel Rec/Play, Extra Channel, and VTR (BVW-75) Emulation.

Event

An item in the Playlist or Timeline window. Events are created from either scenes or highlights. An event is created by pressing the **ADD EVENT** button, or dragging the icon of a scene or highlight on the window to the Playlist Window. In doing this, the highlight is copied from the original scene.

Playlist

A sequence of edited materials (events) which can be played.

Event Number and Event Name

The event number denotes an event's position in a playlist. If an event's position in the playlist is changed , its number also changes, but its name remains the same.

Genlock

This term defines the relationship between video paths. Two video signals are genlocked if they are synchronized.

Highlight

A scene with information added that it is more important than other scenes. A highlight scene can be created by pressing the **ADD HIGHLIGHT** button on the Live Controller, or by dragging the icon for a scene on the window to the Highlight Window. By doing this the highlight is linked to the original scene.

Highlight Number and Highlight Name

A unique highlight number is assigned to a scene when it is designated a highlight scene. The highlight number will not be changed until the system is terminated. Also the highlight name can be changed to any name that can be easily understood. A highlight name of up to 14 alphanumeric characters can be entered. By default, the highlight scene name will be the same as the scene name (to be assigned with a number from HA001 to HA999 in this order).

Packaged Playlist

A complete package program that is created in the Playlist window. Playlist becomes a packaged playlist when the playlist has been added to the Highlight window.

Packaged Timeline

A complete package program that is created in the Timeline window. Timeline list becomes a packaged timeline when the timeline list has been added to the Highlight window.

Recorded Material

A general term of video and/or audio material, such as scene, highlight, event, packaged playlist, packaged timeline, library item, etc.

Resource Group

Same as codec resource group.

RS-422

A differential voltage digital interface circuit, normally used to transmit control signals. Through this interface, the Profile Professional Disk Recorder is controlled by the Live Controller.

Scene

A logical record unit. The material that can be played later, with its IN and OUT points marked. A scene is created at the point when MARK (IN) and ENTER (OUT) points are specified by a Live Controller or by operating through the windows and a mouse These values will be used as the IN and OUT points. The IN and OUT points can be changed later.

Scene Number and Scene Name

A scene is assigned a number and a name automatically at the time of creation (SA001 to SA999). The scene number will not be changed until the system is terminated. A scene name is the same as the scene number as default, it can be changed to any name easily understood. A scene name of up to 14 alphanumeric characters can be entered.

A scene is assigned with a number in creating a clip. This is called a reservation number, and it is used as the scene number when the scene is actually created.

Timeline

Video and audio tracks extended along time axis. Events are arranged along this axis and can be edited on all tracks.

Timeline list

A sequence of edited materials (events) in timeline which can be played.

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