≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻ ≻

Frox

OWNER'S
MANUAL

Important Safeguards

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

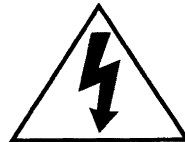**CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK,

DO NOT REMOVE COVER (OR BACK)

NO USER-SERVICEABLE PARTS INSIDE

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

➤ ➤

Important Safeguards

IMPORTANT SAFEGUARDS

Thank you for selecting the FroxSystem home entertainment theater ensemble! We hope your entertainment experience is enriched by our state-of-the-art digital audio/video imaging and information management systems.

Please READ THESE INSTRUCTIONS CAREFULLY concerning safe operation of your system, and retain this manual for future reference.

Use this space to record your component(s) serial numbers for future reference:

Model Numbers	Serial Numbers	Model Numbers	Serial Numbers
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED OR THREE-WIRE GROUNDING PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

NOTE TO CATV SYSTEM INSTALLER:
THIS REMINDER IS PROVIDED TO CALL THE CATV SYSTEM INSTALLER'S ATTENTION TO ARTICLE 820-33 OF THE NEC THAT PROVIDES GUIDELINES FOR PROPER GROUNDING. IN PARTICULAR, THIS SPECIFIES THAT THE CABLE GROUND SHALL BE CONNECTED TO THE GROUNDING SYSTEM OF THE BUILDING AS CLOSE TO THE POINT OF CABLE ENTRY AS PRACTICAL.

IMPORTANT SAFEGUARDS

☐ **(1) Read, Follow and Retain all Instructions and Warnings.**

Read and follow all the safety and operational instructions before using your FroxSystem, and retain these instructions for future reference. All warnings on the components and within the Owner's Manual should be carefully adhered to. Please review and follow all specific operation and usage instructions as outlined within this Owner's Manual.

☐ **(2) Water and Moisture.**

To prevent fire or electrical shock, do not expose the Frox components to water or moisture. Do not set or use these components near water (for example, near a sink or wash tub, in a wet basement, etc.). Use extreme care with any liquids near any electronic components.

☐ **(3) Cabinet Care and Cleaning.**

Always unplug your FroxSystem from the wall outlet before cleaning. Use only a damp cloth for cabinet cleaning; wipe dry. A mild detergent can be applied to a moistened cloth for heaver cleaning needs. Never use any petroleum-based liquid or aerosol cleaners.

☐ **(4) Placement and Mounting.**

Never place the Frox components on an unstable stand, table, cart, bracket or the like. A cart or stand may fall, resulting in serious injury to an adult or child and damage to the components. Use care when moving any component and cart combination, as uneven surfaces, quick starts and stops, even excessive force may cause the cart to overturn. Use only on a stand, table, or cart recommended by the cart manufacturer or Frox. Do not place heavy objects on top of the Frox components as damage may result. Finally, use care in mounting any of the system components; follow all specific installation instructions, heed all mounting safety warnings and only use recommended mounting accessories (where applicable).

☐ **(5) Attachments.**

Attachments other than those recommended by Frox may cause hazards. Do not use any other attachments or devices to these components without the manufacturer's approval.

☐ **(6) Ventilation.**

Your components are designed with optimum ventilation for reliable operation and protection from overheating. Maximum ventilation occurs when placed on hard, flat

>>

Important Safeguards
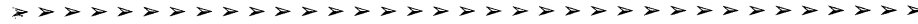
surfaces. Special cabinet slots assisting in ventilation must never be blocked by placing the components on a bed, sofa, rug (and any other like materials) or other components. Never allow drapes, rugs or other coverings to block any of the component vents. Always establish proper component spacing when installing the Frox components into a bookshelf or component rack. Also, insure that the electronics are kept away from heat sources (radiators, heating ducts) that may cause damage to the system components.

(7) Power Sources.

The Frox components are intended to operate only from power sources listed on the marked label on the components. Consult your Frox dealer or your local power company if you are unsure of the specific type of power supplied to your home. For video products intended to operate from battery power, or from other sources, refer to the operating instructions.

(8) Power Cords, Plugs and Grounding.

Your components are equipped with a three-wire Grounding-type plug for your safety:

Three-wire Grounding-type Plugs - a plug with a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

To prevent the risk of fire or electric shock, never overload wall outlets and/or extension cords. **Frox recommends the use of a safety-fused, properly-grounded regulated power strip or recepticle for optimum component protection.**

Finally, protect your power supply cords. Always route power cords with care to minimize fire or shock hazards. Insure that power cords are never walked upon, crimped or pinched by any furniture placed upon or near them, component positioning against the wall, etc. Pay particular attention to cords at plugs, convenience recepticles and the point where they exit from the component(s).

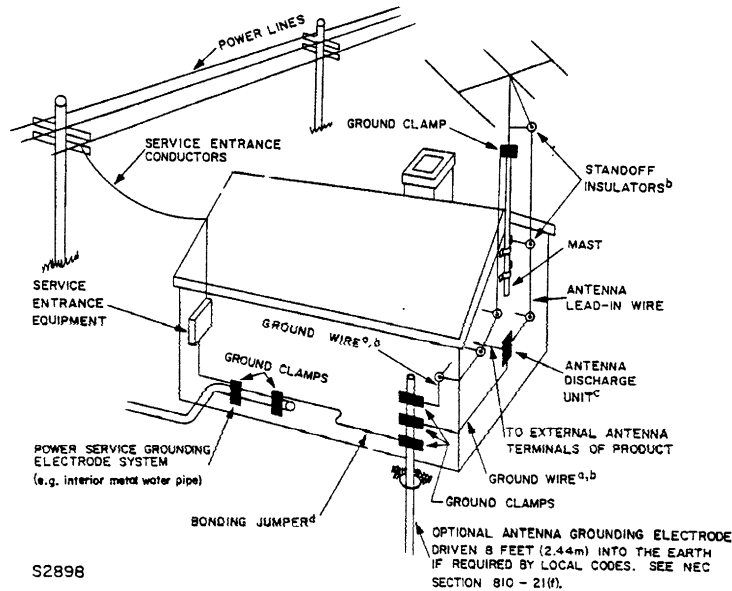**(9) Outside Antenna Systems - Safety and Grounding.**

Use extreme care when installing an outside antenna system. Never locate an outside antenna system near overhead power lines, overhead lights or any other powered circuits, particularly if the antenna could fall and come into contact with the power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching any power lines or circuits - contact with them might be fatal.

If you use an outside antenna or cable system, insure that the antenna or cable system is properly grounded to protect from unwanted voltage surges or built-up static charges. Section 810 of the National Electric Code, ANSI/NFPA No. 70 - 1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of

5

Important Safeguards

grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 - "RADIO AND TELEVISION EQUIPMENT"

POWER LINES

SERVICE ENTRANCE CONDUCTORS

GROUND CLAMP

STANDOFF INSULATORS[b]

MAST

SERVICE ENTRANCE EQUIPMENT

ANTENNA LEAD-IN WIRE

GROUND WIRE[a,b]

GROUND CLAMPS

ANTENNA DISCHARGE UNIT[c]

TO EXTERNAL ANTENNA TERMINALS OF PRODUCT

POWER SERVICE GROUNDING ELECTRODE SYSTEM
(e.g. interior metal water pipe)

GROUND WIRE[a,b]

GROUND CLAMPS

BONDING JUMPER[d]

OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44m) INTO THE EARTH IF REQUIRED BY LOCAL CODES. SEE NEC SECTION 810 - 21(f).

S2898

☐ **(10) Lightning.**

For added protection for your video components during a lightning storm, or when it is left unattended and unused for long periods of time, unplug the Frox processors from the wall outlet **(after powering down the system using the FroxWand's power off button)** and disconnect the antenna or cable system connected to it. This will prevent damage to the video product due to lightning and power-line surges.

☐ **(11) Object and Liquid Entry.**

Never push objects of any kind into any openings of the Frox component, as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the components.

☐ **(12) Servicing.**

Please refer all servicing to qualified personnel; contact your system installer or Frox at 800.525.5257 for specific service details should your system require attention. **Do not remove the component covers or attempt to service the units yourself** - there are no user-serviceable parts inside. Opening or removing the cabinet covers can expose you to dangerous voltage and electrical hazards.

➤ ➤

Important Safeguards
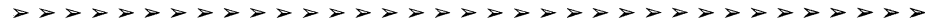
☐ **(13) Damage Requiring Service**.

Immediately disconnect the components from the power source and contact your qualified service personnel should one of the following conditions occur:

(a) Any liquid has spilled in/on the components

(b) Any object has fallen into the components.

(c) A heavy object has fallen onto the components

(d) Any Frox component has been dropped and/or exhibits cabinet damage

(e) Whenever the power cord and/or plug has been damaged

(f) The products have been exposed to rain or other elements

(g) If the product exhibits a distinct change in performance; this indicates a need for service

(h) Your product does not appear to operate normally by following these operation instructions within the Owner's Manual. Adjust only those controls covered by the operating instructions, as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.

☐ **(14) Replacement Parts.**

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

☐ **(15) Safety Check.**

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

Important Safeguards ◄

☐ **(16) Software Authorizations.**

CAUTION: Any changes or modifications to the operating software, design, recommendations and electronic component(s) not expressly authorized and approved by Frox, Inc. in writing will void the specific user's authority to operate the equipment. See your component warranty for further details.

☐ **(17) FCC Class B Digital Device Compliance.**

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

☞ Reorient or relocate the receiving antenna.

☞ Increase the separation between the equipment and receiver.

☞ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

☞ Consult an experienced radio/TV technician for help.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

Contents

Contents

➤ ➤

Owner's Manual Updates

This Owner's Manual refers to all features available with the FroxSystem Version 3.0 software release.

As a variety of system configurations are possible, this manual will attempt to clarify the most common installation and audio/video features. Please contact Frox Technical Support at 800.525.5257 should you have questions regarding items or operational characteristics that are unique to your particular system and not sufficiently covered by this document.

Any future addendums to this manual may be readily identified by the headline denoting their 'Addendum' status, as well as the letter 'A' following the page number. As the FroxSystem is a software-based product, new feature development and system operation enhancements continue to occur, often well beyond the press time of this document. If you would like to be kept abreast of the latest Owner's Manual and FroxSystem revisions, please take a moment to complete the information requested. All future documents and manual revisions will be mailed to you as they become available.

To receive future FroxSystem Owner's Manual updates, complete the following and mail to:

Frox, Inc.
323 Sinclair Frontage Road
Milpitas, CA 95035
ATTN: Dept. 7-OM

_____

Name:

_____

Address:

_____

City/State/Zip

_____

_____

Phone:

_____

FroxSystem Purchased From:

_____

Date:

_____

Media Processor Serial Number:

_____

Notes

>>

....Getting Started-
The FroxWand
Defined

SECTION 1 - GETTING STARTED - THE FROXWAND DEFINED

Grasp the FroxWand in either hand. As you hold this revolutionary controller, you'll immediately note the ergonomic design. Your hand is drawn to the master control button, with easy-to-reach front-mounted wand convenience buttons. No other 'universal remote control' can be as easily operated, nor is as functional. The FroxWand will control all FroxSystem menus, as well as provide 'instant access' controls for frequently-used functions (TV volume, channel up/down, and more).
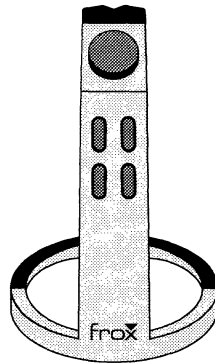
The main thumb button acts as a free air 'joystick', permitting on-screen icon movement in any direction across the video landscape. Underneath the wand are twin activation panels - by squeezing either panel when in the proper position (you'll hear a 'click'), the feature request is activated.

SECTION 1
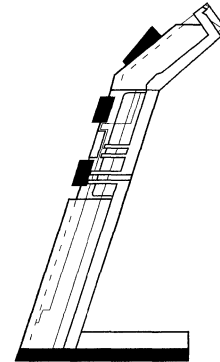
....Getting Started-
The FroxWand
Defined

‹ ‹

Finally, four small convenience rocker buttons (8 functions total) have been provided on the face of the FroxWand remote. These act as one-touch controls for:

Button	Label	Activity
System POWER ON/OFF	PWR	Main System Power
Volume UP/DOWN	VOL	Rocker button to increase or decrease sound level
Channel UP/DOWN	SEL	Up/down activity; also operates CDs and Laserdiscs as NEXT TRACK/PREVIOUS TRACK functions
Volume MUTE/PAUSE	M/II	Mutes the audio and/ or pauses the component

Programmable Buttons labeled:

	Label	Activity
F1	F1	Video Image Muting (see section 2.3)
F2	F2	Alternate Monitor software (see section 3.12)
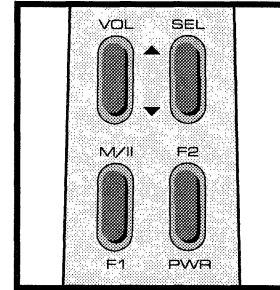
FroxWand Battery Replacement

1.1 FROXWAND BATTERY REPLACEMENT

The FroxWand operates on four 'AAA' batteries (supplied), with an estimated operating life of 6 months under normal usage. To replace the wand's batteries:

☐ (1) Turn the FroxWand over and remove the bottom cover of the remote using a standard slotted screwdriver.

☐ (2) Remove the old batteries and load four new 'AAA' batteries, insuring the battery polarities (+ and -) are properly aligned (as indicated within the battery housing). Always replace all four batteries when battery life is low. Carefully reposition the cover and gently tighten the screw; do not over-tighten.

☐ (3) Dispose of used batteries properly.

15

Notes

>>>
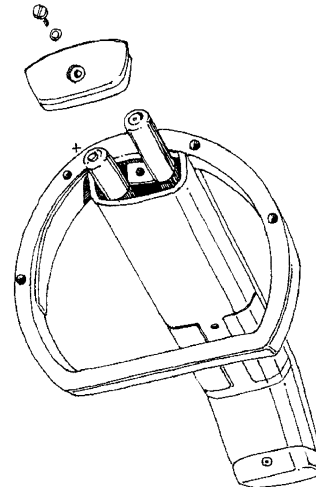
Getting Started with the FroxSystem

SECTION 2 - GETTING STARTED WITH THE FROXSYSTEM

2.1 POWER UP

First, insure that all peripheral components (VCRs, laserdiscs, etc.) are connected to the system and are ready for use. Your FroxSystem installer will personally set-up and configure your system; if you need further installation assistance please refer to the Installation Guide for specific details, contact your local Frox dealer/installer or call Frox Technical Support at 800.525.5257.

Hold the FroxWand firmly and, while pointing at the FroxSystem components, depress the POWER button (the lower right-hand conve- nience button on the face of the wand, labeled PWR). The system will turn on and present an on-screen FroxControl panel for your use.
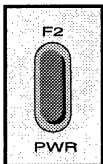
If this system does not immediately power up, review the following troubleshooting suggestions:

☐ (1) Check the FroxWand batteries. The small red triangle at the top of the wand will flicker strongly when any wand button is depressed. A dim light or slow flicker pattern may indicate low batteries and should be replaced.

☐ (2) Insure there is a clear 'sight' path between the FroxWand's infrared transmitter and the IR receiver on the face of the Media Processor.
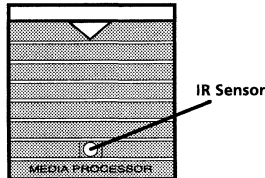
IR Sensor

(In some installations a remote IR sensor may be installed at the top or bottom of your video screen. Check to see that this remote IR repeater is powered up and working correctly at this time).

☐ (3) If, after depressing the PWR button the system fails to activate, carefully disconnect the AC power line to the Media Processor. Then, after waiting approximately five seconds, restore AC power.

AC In 90-132VAC 47-63Hz 2A
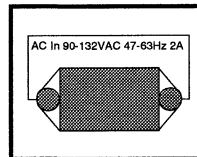
This is also known as a 'hard boot'. Your office com- puter and the FroxSystem share a common operating trait, as both occasionally require power cycling to re- store the operating system. The hard boot procedure takes a little over one minute, during which time a grey-colored *Copyright* screen will appear. Also at this time the FroxSystem runs systemwide diagnostics,

SECTION 2

Getting Started with the FroxSystem

checking for hardware and software integrity. Once the boot procedure is completed, the *Video* control panel will appear and either remain ready for immediate use, or will shut the system down and return it into a 'standby' mode (where the video image is blanked, the two green triangles on the face of the FroxSystem processors turn off - but the system is still connected to the AC and ready to operate). This movement into a standby 'off' mode is a normal activity, designed to shut off your system after any AC power line interruption. You may now depress the PWR button on the face of the wand and your system will become fully functional.

At any time the FroxSystem may be turned off by depressing the POWER (PWR) convenience button on the wand. This action places the system into the 'standby' mode while still maintaining AC line power to the processors.

☞ The system should NOT be 'hard powered' down on a regular basis via the disconnection of AC power to the system, as important FroxCast or FroxNet system updates cannot occur when the processors remain in a completely 'powered-off' state.

> >

Initial FroxWand Usage

2.2 INITIAL FROXWAND USAGE

To begin using your FroxSystem follow these basic steps:

☐ (1) Power up your FroxSystem (if you haven't already) by depressing the FroxWand control labeled PWR (the lower right-hand button on the face of the wand).
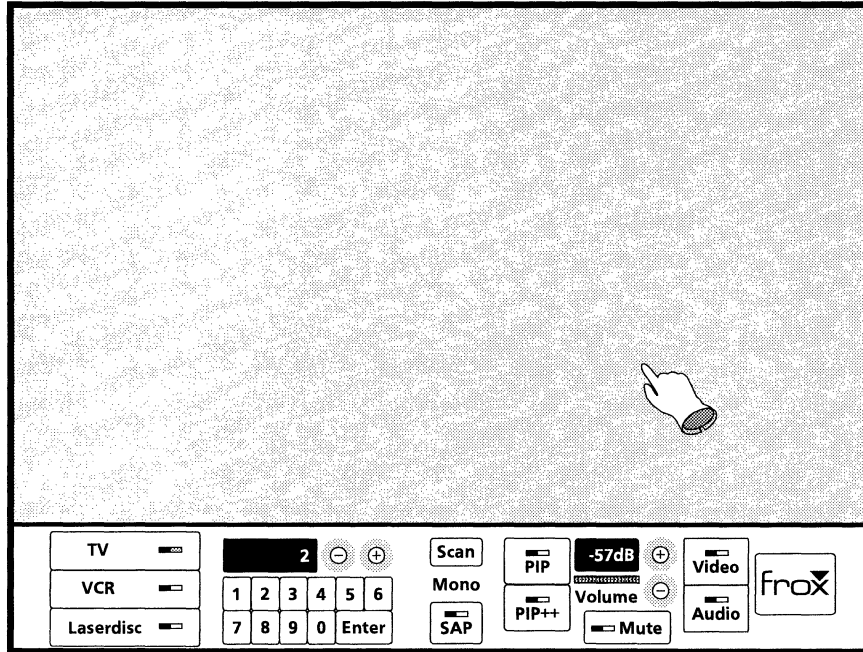
At this time the FroxSystem should present the primary *Video* control panel. Note that if your system was 'powered down' while in some other operating panel (for example, the *Compact Disc* area of the system), the subsequent system power up will return you to that last panel used. To return to the video portion of the system at this time, position your on-screen hand icon directly on the FROX button, click on it and then select the VIDEO button.

TV								Scan	PIP	-57dB	Video	froX
VCR		1	2	3	4	5	6	Mono	Volume			
Laserdisc		7	8	9	0	Enter		SAP	PIP++	Mute	Audio	

☐ (2) The *Video* control panel, featuring component choices labeled TV, LASERDISC or VCR will layer itself across the lower third of the video screen. This panel will remain in place while operating your television or video components.

19

Initial FroxWand Usage

☐ (3) Your FroxWand is now used to 'navigate' from feature to feature. A gloved on-screen 'hand' icon represents 'you' in the FroxControl landscape - and with simple movements activates all on-screen features and controls.

First, point the wand at the IR receiver (located on the Frox Media Processor), and guide the on-screen 'hand' by firmly depressing (with your thumb) the large black control button mounted on top of the FroxWand. This primary control button acts, in essence, as a remote 'joystick' and will position the on-screen hand icon at any desired location. Move the 'joystick' button with your thumb, while keeping the wand in a stationary position (since waving the wand around may hinder proper infrared signal reception). Note also that the wand is force sensitive: touch gently and the hand icon will move slowly; press harder and the hand tracks faster across the video landscape. Become familiar with the hand icon movement before proceeding.
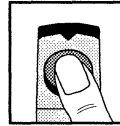
☞ Special note: Do not 'squeeze' the wand while using the thumb controller, as false activation commands may result.

Once you are comfortable with the on-screen hand movement, guide the hand to any button (most buttons will 'light up' when in position; also, the on-screen hand actually 'shifts' into a ready state, visually indicating it is in the correct position to activate the feature).
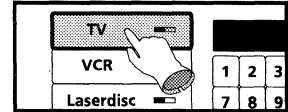
Remove your thumb from the main control button. Now 'squeeze' the wand activation panels (either panel located underneath the wand) - you'll hear a soft 'click' while the on-screen hand icon 'points' and engages the desired feature. Experiment with the FroxWand to find your preferred method of 'clicking' (one popular method involves placing your fingertips directly on either panel and pulling hard toward the palm of your hand). With practice you'll quickly discover the method best suited for you.

20

▷ ▷
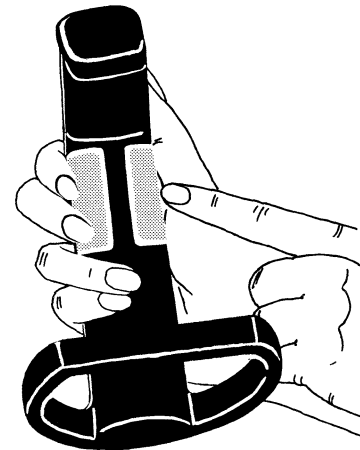
Initial FroxWand Usage

The combination of movement (the main top-mounted control button) with activation (the squeeze 'click' panel underneath) will allow you to control any FroxSystem feature and the major components connected to it.

☐ (4) Also, test any of the FroxWand's convenience buttons at this time: volume up, for example. Note that as you press the VOL UP button on the face of the FroxWand (the upper right hand control), the volume meter on the *Video* control panel will increment toward higher levels. Of course, should your system be completely installed (software configuration, power amplifiers 'on' and operational, etc.) the sound will increase at this time, as well.
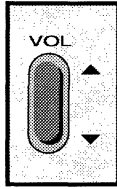
☐ (5) Finally, the wand's 'feel' as it relates to the on-screen hand's speed and sensitivity can be adjusted to accommodate your individual tastes. These predetermined factory settings may be changed at any time by accessing the *Preferences* portion of the FroxSystem and selecting another speed/sensitivity setting (review the Frox *Preferences* guidelines, section 10 of this manual, to adjust your wand's performance).

Mastery of the FroxWand takes only a few attempts; you will soon confidently control all features, components and advanced FroxSystem processing controls.

☐ (6) At any time the *Video* control panel may be removed from view for full enjoyment of your video presentation.

To dismiss the *Video* control panel, guide the on-screen hand directly over the live video image (into any space above the control panel) and click; the panel will now be removed from view. To recall the *Video* panel, click the FroxWand and it will reappear across the bottom of the screen.

21

FroxControl Notes

2.3 FROXWAND/FROXCONTROL USAGE NOTES

The following important FroxSystem usage notes should be reviewed before proceeding with the initial *Video* control panel discussions (section 3):

☐ (1) NOTE CONCERNING MOMENTARY HAND ICON 'PAUSES'. The on-screen hand, guided by the FroxWand remote control, is designed to be both smooth in functionality and positive in response during system operation. In certain instances the hand may appear to move more slowly (or less 'fluidly') than normal, or may actually 'pause' during your command requests. One of the following situations is likely occurring at this time:

☞ Internal memory updates are underway, writing or retrieving data from the system hard drive (usually lasting appx. 2-10 seconds).

☞ Certain feature requests (audio processing changes, for example) require a few seconds to engage.

☞ FroxWand batteries may need replacing.

The first two situations are only temporary in nature. The FroxSystem, after completing the appropriate updates, will return to its normal operating state. If the 'rough' on-screen movement persists over a longer period of time, check the wand batteries and replace if necessary.

☐ (2) NOTE CONCERNING HAND ICON 'FREEZES'. There may be situations where the on-screen hand actually 'locks' into place and cannot be moved. For example, at times the system may trigger internal safety mechanisms to engage and 'freeze' all operations. In other instances all available system memory might be in use (or even full) and complex multitasking requests may cause the FroxSystem processors to cease all activity.

This does not indicate any defect in your system. Should the on-screen hand 'freeze' into place and not release after approximately three minutes, follow these reboot and restoration guidelines:

☞ Disconnect the Frox Media Processor from the main AC power source (both Media Processor and Video Preprocessor may be disconnected, if desired).

☞ Restore AC power to the disconnected platform(s) after waiting five seconds. If both processors were turned off, restore power simultaneously to the two components.

☞ The FroxSystem will reboot and return you to normal operating conditions.

> >

*FroxControl
Notes*

☐ (3) NOTE CONCERNING THE F1 CONTROL AND SCREEN BLANKING. The FroxSystem has a built-in 'screen blanking' feature that, after a few minutes of inactivity, will cause any static screen image to dim or disappear from view. This is a safety feature designed to protect your monitor or projection television set from undesired image 'burn-in'.

Upon returning to your system (after leaving any panel in a static position for a period of time) and discovering the on-screen panel significantly diminished in brightness, the screen saver feature has been activated. Touch the main thumb control button, click an activation trigger or depress any convenience button (such as VOLUME) and the on-screen image will return. It is not necessary to depress the FroxWand power button to restore the image, as this will turn off the system.
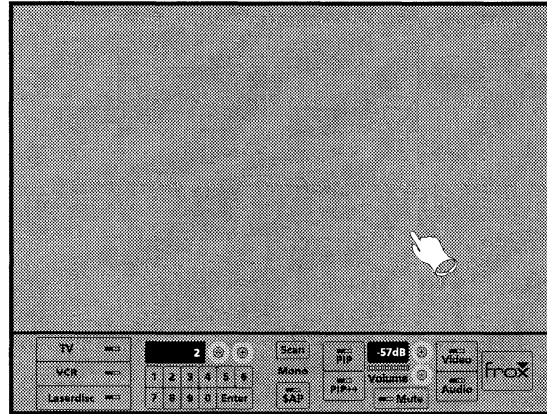
The FroxWand also contains a special button - the F1 control (lower left hand toggle) - than can request the 'screen blanking' feature for selectively turning on and off the video image to your monitor. When listening to music, for example, the television picture may be turned off by selecting the F1 button (in effect, 'blanked' - the set is still powered up). In this instance the on-screen hand will remain in a 'dimmed' state, thus reminding you of the current operating status. To restore the video image, simply depress any FroxWand control button (including the thumb directional button).
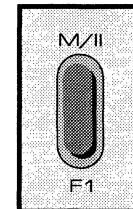
*Manual Terms
Defined*

2.4 MANUAL TERMS DEFINED

This manual offers a consistent style of terms and phrases to aid in feature identification and system operation.

☐ User interface buttons, FroxWand controls and other system features that are to be engaged will be identified in this manual with capitalization (examples: the POWER and PLAY buttons; VOLUME controls on both the wand and user interface panels; the PIP button, etc.).

☐ Principle system control areas will be referred to in italics (examples: the *Video* control panel; the *Installation* area of the system, the *Dubbing* control panel, and so forth).

☐ Important usage notes are highlighted by a small hand graphic (☞). *Pay particular attention to these important items when reviewing this manual.*

☐ Lastly, when the FroxWand activation triggers are to be engaged, the term 'click on' will be frequently used, associating the user's activity with the feature; for example, 'Please click on the PLAY button in the *Compact Disc* area of the system.' These standard terms and descriptions will assist the user in rapidly locating any feature, with concise instructions on the task to be performed clearly indicated.

> >

Buttons and Icons
Defined

2.5 FROXCONTROL BUTTON AND ICON IDENTIFICATION

The FroxSystem features a standard array of on-screen buttons and icons throughout the system. A brief review of the various button types and their functionality may be helpful prior to using the FroxSystem.
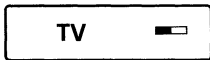
Feature Buttons - Turns on and off the listed control. Feature buttons may contain a green LED 'talley' light to indicate the feature's operating status. Button size may vary throughout the system, but most are rectangular and will 'light up' when the on-screen hand is positioned directly over the control. The feature will be activated, or hidden information revealed, by clicking on the button.

Certain text blocks may be selected, then physically 'carried' to new locations within the user interface. For example, individual CD tracks on a favorite album may be selected and then, by clicking and holding the wand's activation panel, the track may be moved (via the thumb controller) to a new position (thus reordering the CD play list). See section 6 entitled, *Compact Disc Library* for additional information and instructions on this technique.

Up/Down Buttons - Provides for incremental activation of the listed feature set. These buttons are located in most instances next to a visual display or numeric meter to aid in the feature's adjustment. Examples are the volume up/down
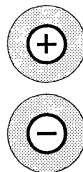
controls, a laserdisc's chapter search feature, adjustment controls throughout the audio and video processing panels, and so forth. These controls are activated by positioning the on-screen hand over the buttons (in all instances the controls 'light up' when in the correct position) and clicking on the control.

Additionally, one may click and hold (in effect, continuing to squeeze the wand's activation triggers) while the up/down buttons rapidly change operating state.

Scroll Bars - Indicates additional 'pages' of information available for usage. Scroll bars are found in all FroxControl 'browsers' (where information is organized, stored and presented upon request), the *TV Grid* area, even on the main FroxSystem navigation panel (via the FROX button). They are positioned in either horizontal or vertical layouts and always 'light up' when touched by the on-screen hand.

Click on any scroll bar to view the next page of available information.

Dismiss Pin - This grey icon is featured whenever an item is to be removed from the screen. The icon drawing is reminiscent of a small 'push pin' that one might use when posting a note on a bulletin board, for instance - and the subsequent removal of that note is accomplished by 'removing the pin!' The FroxSystem uses these icons for the dismissal of most information windows.

25

Buttons and Icons Defined

For example, a variety of instructional 'pop-ups' will offer valuable information, features or system status. Also, when browsing through the information details in the *TV Grid* or *CD Library* areas, this DISMISS PIN icon will be presented to close the information windows. This icon is always located in the upper left-hand corner of the information pop-up.

Unlike most buttons and controls within the FroxSystem, a DISMISS PIN icon does not light up; however, the gloved on-screen hand does 'change position' from a flatter, more 'open' state to a vertical, 'at-the-ready' position. Use the change of hand state as a visual indicator for correct positioning over the dismiss icon, then click to remove the pop-up or information window.

Sliders - Slider controls are located in the FroxSystem's audio processing areas, and are used to adjust speaker amplitude, balance, frequency adjustments, and other digital audio effects.

These controls offer a unique 4-way activation method: first, the 'arrow' box on either end of the slider may be selected (just the box and arrow will 'light up' when in the correct position) and clicked on to move the slider in your desired direction (this technique permits fine adjustments of the control when correcting loudspeaker balance, etc.); second, clicking and holding while the hand icon is held stationary over the box will accelerate the slider's movement toward your direction; third, the on-screen hand's fingertip may be positioned anywhere on the slider itself, and a single click of the FroxWand will instantly move the slider to your desired position; finally, the button

located in the center of the slider (the small grey icon with the slight depression in the center) may be clicked on, held firmly with the FroxWand (by continuing to squeeze the wand's activation panel), then 'carried' to your desired location along the slider by manipulation of the wand's thumb movement controller. Experiment with these methods to uncover the slider control technique best suited to you.

Text with Arrows - In certain areas of the system, information is not directly accessible via a traditional feature button. In these instances, 'categories' of information are filed under broad headings that require further investigation.

People ▷

A good example is in the *Movie Library* database. The panel offers you the ability to search through favorite movies by, among other choices, PEOPLE; however, the broad category of 'people involved in filmmaking' requires additional 'filtering' (Are you interested in cast members? Directors? Cinematographers? Composers?). In these instances where extremely wide choices require additional 'narrowing', the text followed by an arrow indicates the presence of additional information layers.

Text with Arrows controls are enabled by locating the desired feature description, coupled with a large directional 'arrow' adjacent to the text. This information arrow will activate like a standard feature button, but instead of receiving the results of your request (as one might expect when clicking on a primary feature button), additional 'layers' of information regarding the topic will be presented.

➤ ➤

*Buttons and Icons
Defined*

Text with Arrows controls are located in all 'browsers' - the *TV Schedules, CD* and *Movie Library* databases. To activate, position the on-screen hand directly over the text OR the arrow (the arrow will 'light up' to indicate proper positioning) and click. The next information layer will be presented for review.

Buttons with Arrows - Certain feature buttons combine the primary request with an 'arrow' icon to indicate additional layers of information. Both the feature box and the arrow icon offer interesting choices for the user.
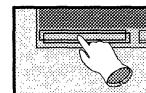
Keyboard ▷

For example, the *CD Library* provides the ability to browse through over 30,000 CD listings within the database. One high-level filter that permits detailed searches is called INSTRUMENTS. By clicking on this choice, the next panel provides a list of even more-specific instrumentation available - all feature buttons with arrows labeled KEYBOARD... VOICE... STRING... WOODWIND... and more. In this instance, positioning the on-screen hand directly over the button labeled KEYBOARD causes it to 'light up', and the activation of this request will present page after page of compact discs known to contain keyboard instrumentation of all types.

However, by positioning the on-screen hand *directly over the arrow* within the feature box, then clicking on the 'arrow' only, causes an additional layer of information to appear. In this example selecting the KEYBOARD ARROW presents a listing of specific keyboards, labeled CELESTA... FORTEPIANO... HARPSICHORD... ORGAN and much more. Clicking on any of these descriptive buttons will filter to

only those CDs with the specific requested keyboard instrumentation.

**Moving & Sizing** - The FroxSystem PIP (Picture-In-Picture) control enables the viewing of two video sources at a time. The primary PIP feature presents a smaller second video image inset within the main video. Two unique controls - Moving and Sizing - are available to adjust the smaller inset image.

First, click on the button on the video control panel labeled PIP to bring up the inset feature. At the bottom left of the smaller PIP window is the special MOVING icon. Click on this to activate the feature (the icons will disappear), and then by using the FroxWand thumb controller guide the inset window to any desired location. Click again and the inset PIP will remain in place.
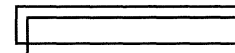
☞ Note: To dismiss all control panels, move the on-screen hand over the larger of the two images and click.

To resize the inset PIP, activate the primary PIP button and position the on-screen hand directly over the bottom right icon on the inset image. Click on this button (the inset controls will again disappear), and via movement of the FroxWand thumb controller the smaller screen may be streched and resized to desired dimensions. Once in place, click again to restore the MOVING/SIZING icons, also causing the PIP to remain in position.

27
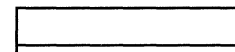
*Buttons and Icons
Defined*

In Collection - Both the *Movie* and *CD Library* databases permit custom 'filing' of discs and movies 'into your collection'.

Any listing currently logged into your personalized library is identified by a small *CD/ Laserdisc* icon (located on the information panel of each textual record). Listings not within your collection are identified by the same icon with a large white 'X' positioned directly over the graphic. These may be added to your collection at any time by guiding the on-screen hand over the *CD/LD* icon, then click. The white 'X' will be removed, thus identifying this particular disc or movie as one you now own. (The reverse procedure is used when deleting items from your personal collection).
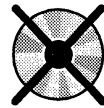
> >

The Video Control Panel

SECTION 3 - THE VIDEO CONTROL PANEL

The FroxSystem *Video* panel controls television (broadcast or cable), laserdisc and video cassette components from a single integrated, easy-to-operate menu. In addition, this operating panel is the 'default' menu presented when power cycling the FroxSystem (the 'hard boot' described in Section 2).

The *Video* control panel simplifies the integration of external cable converters, or permits access to the FroxSystem's internal 181-channel cable-compatible, MTS stereo television tuner (for viewing all non-scrambled cable channels or broadcast signals). This panel also serves as the window to adjust all FroxVision™ digital video parameters and the
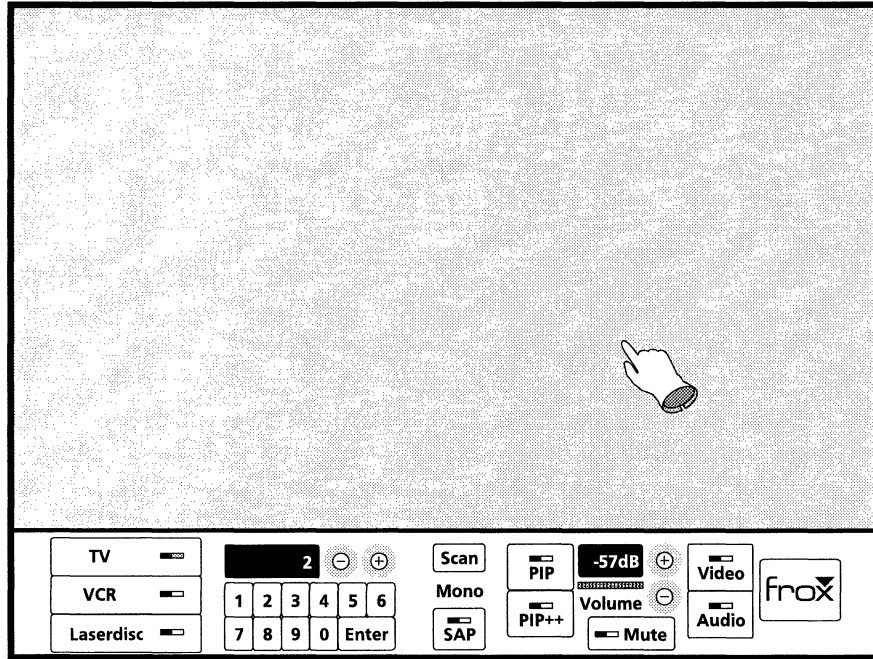
complementary FroxSound™ home theater digital audio processing (such as Dolby™ Pro·Logic or Home THX® surround sound).

SECTION 3

Initial Television
Viewing

3.1 INITIAL TELEVISION VIEWING

One of the buttons along the left-hand portion of the *Video* control panel will be labeled TV; click on this button to bring up the television control panel. (In the event you are in some other area of the FroxSystem, guide the on-screen hand icon to the FROX button on the far right side, click on it and select the VIDEO button on the navigator panel. This immediately routes you to the *Video* control area).

The television panel facilitates viewing of either cable or broadcast television signals.

Channels are changed by one of three methods: (1) by clicking on each direct access channel button via the 0-9 on-screen keypad (channel 2, 4, 12, etc.) and then selecting the ENTER button; (2) by clicking on the '+' or '-' buttons adjacent to the channel meter; (3) by using the convenience wand button labeled SEL with the
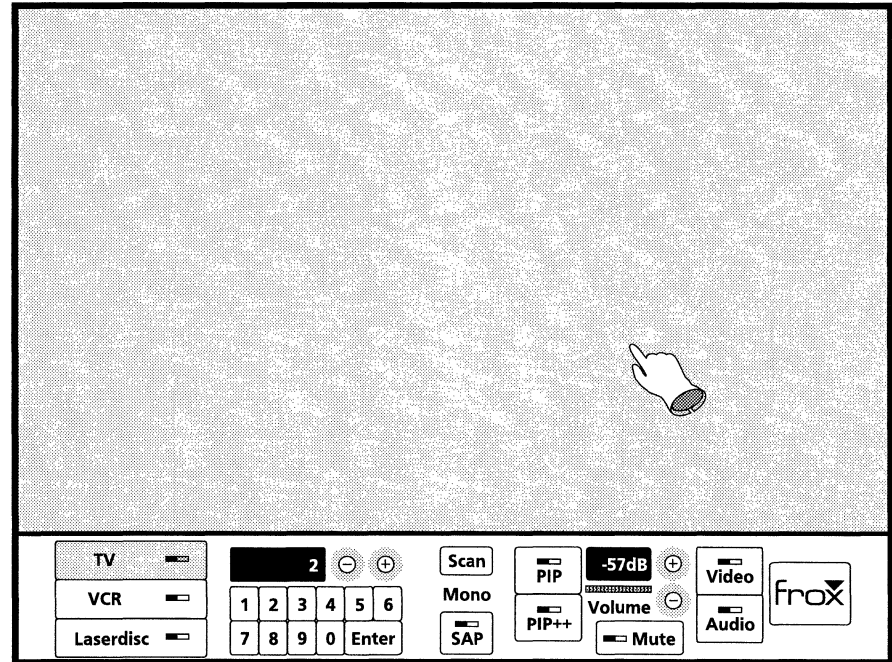
appropriate up/down directional rocker. As always with the on-screen buttons and icons, insure your on-screen hand is directly over the feature desired (it will 'light up' to indicate proper positioning of the hand graphic).

30

➤ ➤

Initial Television Viewing

Depending upon system configuration, your FroxSystem will change the channels on your cable converter box or directly access the internal TV tuner in the FroxSystem; the result, of course, is the same in both instances.

When the desired broadcast channel is reached, guide the on-screen hand directly over the video image and click; this will remove the television control panel from view. To recall the control panel, click again with the FroxWand.

☞ NOTE: Some cable channels may be scrambled and cannot be viewed without proper authorization. Broadcast reception will require a quality exterior antenna system. Contact your local cable company and/or your system installer for further assistance.

☞ Certain cable systems provide services on two separate wires into the home, and thus require a cable decoder able to distinguish between 'A' and 'B' channels; your FroxSystem can be installed to work with this type of converter box. An 'A' or 'B' button will also be presented on the television control panel in the event this type of access is required.

Initial Television Audio Adjustments

3.2 INITIAL TELEVISION AUDIO ADJUSTMENTS

After selecting the desired channel, the volume may be adjusted via two primary methods: (1) clicking on the '+' or '-' control adjacent to the volume meter; (2) by selecting the up or down VOL convenience button located on the face of the wand. Note the volume meter provides a numeric display of volume settings (registering in decibels, a unit to measure volume amplitude) along with a small green LED bar (directly underneath the numeric meter) to visually indicate volume settings.
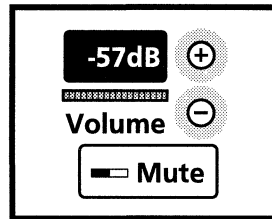
-57dB ⊕
Volume ⊖
◼▬ Mute

The FroxSystem's volume meter scales from an OFF position (no sound), then increases from -60dB in one dB increments to 0dB (the reference maximum volume level). The volume meter may be incremented beyond the 0dB level to a +12dB position (the green volume LED indicator will 'fill' from left to right, turning red at all volume levels above 0dB).

Beneath the volume meter is a MUTE control to instantly dismiss the FroxSystem's audio output. Audio muting may also be engaged by selecting the M/II (MUTE/PAUSE) control on the face of the FroxWand. Note the button's 'talley' light will indicate whether audio muting is engaged or not.

M/II

F1
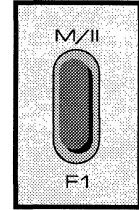
☞ SAFETY TIP: Be sure the volume level is lowered to a safe level (usually -25dB or lower) when 'unmuting', as toggling between muted and unmuted states at high volume levels can cause damage to your audio system.

☞ CAUTION: USE EXTREME CARE whenever adjusting the volume levels close to or beyond the 0dB point, as damage to loudspeakers and amplifiers can easily result. As a general rule, NEVER listen for extended periods of time to amplitude levels above normal 'conversational' levels. PERMANENT LOSS OF HEARING MAY RESULT FROM EXTENDED LISTENING AT EXTREME VOLUME LEVELS.

>>>

FroxSound Audio Processing -
An Introduction

3.3 FROXSOUND AUDIO PROCESSING - AN INTRODUCTION

Click on the AUDIO button (located to the right of the volume meter) to select and adjust desired audio processing parameters.
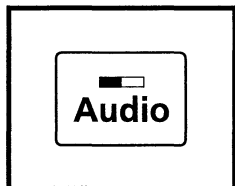
Presented across the center of the screen is the FroxSound Digital Audio processing panel.

This interface provides access to any of four primary audio processing choices: TONE for minimalist stereo adjustments; SURR (Surround) enabling either the all-digital Dolby™ Pro•Logic o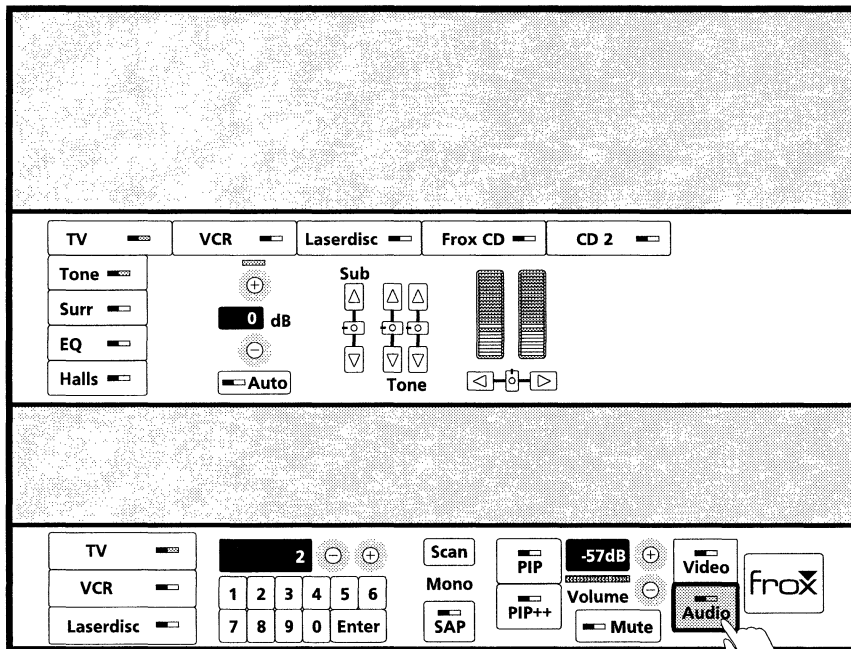r Home THX® Audio surround sound processing; EQ for the digital eight-band per channel stereo graphic equalization processing; HALLS to enter the unique Frox Sonic Playground™, where the creation of custom listening environments can be made. These selections are activated by choosing the desired audio processing from the left-hand choices on the audio panel.

33

FroxSound Audio Processing - An Introduction
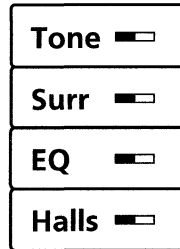
Tone ▬▢
Surr ▬▢
EQ ▬▢
Halls ▬▢

When the system is powered up for the first time, the TONE control panel is initially presented (it is the default processor). For example, you may at this time select another audio processor for television viewing, and the FroxSystem will remember this choice upon subsequent returns to the TV control panel. Each time a different audio processor is selected, the user interface will quickly change to present the new processor's available controls. Also note that in all instances a momentary 'delay' in the sound (a pause of up to five seconds) will result whenever the audio processing is changed from one type to another. This is normal for your FroxSystem, as the delay is caused by the 'clearing' of the previous audio processing program from the internal DSPs (Digital Signal Processors), and the subsequent 'loading' of the new audio program.

FroxSound digital audio processing is always associated with the source component. Whenever a different component is selected (for example, selecting any one of the other video components offered in the lower left-hand corner of the screen), the audio processing panel will also change to reflect its previous audio processing assignments. With the FroxSystem, you can configure desired audio processing on a component-by-component basis, and the system will automatically track and remember these choices upon returning to a specific device.

In addition, this panel provides the ability to watch one component while listening to another, even within a different audio processor. Located at the top of the audio processing panel are buttons indicating all available source components connected to the system. Reading from left to right, the video components (TV, VCRs, Laserdisc players) are presented first, with the remaining
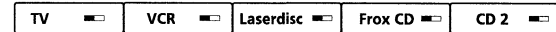
TV ▬▢	VCR ▬▢	Laserdisc ▬▢	Frox CD ▬▢	CD 2 ▬▢

audio components (CD Players, etc.) listed next. By choosing any one of these buttons, the sound (along with audio processing flavor) will change to reflect that source component - even as you view a different source. (Of course, the alternate component must be 'on' and playing to be able to listen to it while watching a different video source). We encourage you to experiment with the variety of audio processing and component configurations available through the FroxSystem; contact Frox Technical Support at 800.525.5257 should questions arise concerning audio processing and associated component selections.

A complete description of each of these unique processing centers is found in section 4 of this manual, entitled 'FroxSound Digital Audio Processing'.

Additional Television Features

3.4 ADDITIONAL TELEVISION FEATURES

A number of important video features are accessible directly from the television control panel. These are:
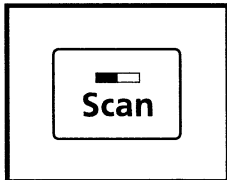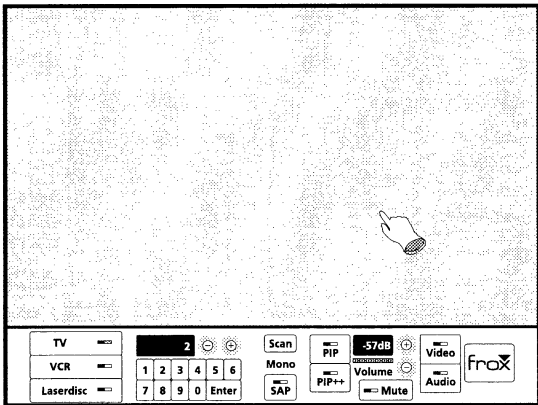
Scan - This control will initiate an automatic search through all available television channels, viewable in 9 equal-sized images. The SCAN button, once selected, will begin strobing with the first available TV channel and continues through the remaining channels, providing glimpses of live video on a per-channel basis. Previous channel images are 'frozen' while the next and subsequent channels are displayed.

Channel scanning may occur 'quietly' (without sound) - or simply touch the wand's VOL button to add the program's audio to each scan. Finally, the scanning process is ended by moving the on-screen hand directly over any of the desired programs (one of the 9) and click. This selected channel will now appear in your main screen, interrupting the scanning process and returning you to the TV control panel.
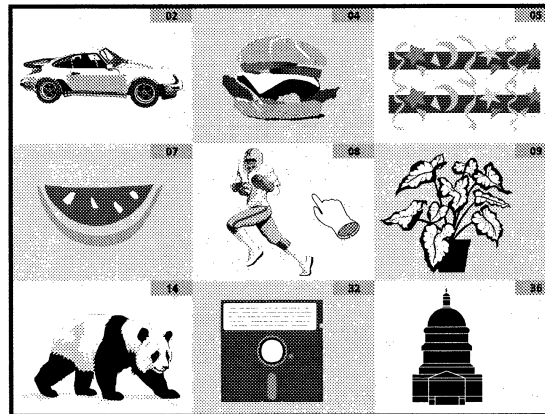
Additional Television Features

◅ ◅

Mono/Stereo, SAP (Secondary Audio Program) - The majority of television programs are broadcast in monaural sound (single channel). An increasing number of programs are offered in MTS stereo (two channel) for enhanced audio performance. The FroxSystem TV control panel will automatically identify and decode these respective broadcast signals, indicating which type (mono or stereo) is being received. This visual indicator is located directly above the SAP button.

In lieu of a stereo broadcast, certain channels employ a technique known as 'Secondary-Audio-Programming', or SAP. For example, a given program may be broadcast in both English (on one audio channel of the broadcast) and in Spanish (on the other). Another channel might offer weather, news or even traffic reports as a Secondary-Audio-Program. The activation of the SAP button will select between the two audio programs on this type of broadcast. To engage or dismiss the SAP feature, click on the button (an LED indicator will provide visual status of operation).
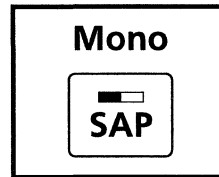
Closed Captioning - Enables the hearing impaired to enjoy key aspects of the home theater experience. Recent congressional legislation has mandated that all large-screen television sets must provide adequate visual display of what is known as 'closed captioned' information. Closed Captioning presents on-screen text from all

properly encoded broadcast or cable television programs, video tapes and laserdiscs. These programs will usually be identified by the small 'cc' on the television listings or on the prerecorded video packaging materials. The FroxSystem offers this special feature on all display monitors connected to any of the system's video outputs.

To turn on the Closed Captioning feature, first click on the button labeled VIDEO (to the immediate left of the
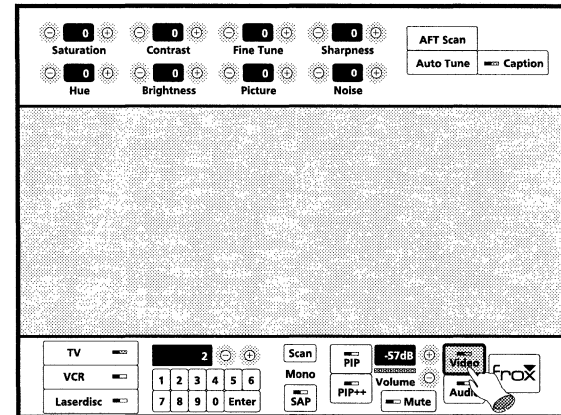
FROX button). The primary video enhancement control panel will now be displayed across the upper portion of your screen. Located on the far right-hand side of this panel resides a button labeled CAPTION; select this to turn on the Closed Captioning information (a green LED talley light will provide visual status of the feature).

▷ ▷

Additional Television Features

(including the main *Video* control panel). A quick method for removing the on-screen panels is to position the hand directly over the video image and click; all FroxControl panels will then be removed. Closed Captioning text is now viewable from appropriately encoded programs.

☞ IMPORTANT NOTE: CLOSED CAPTIONING TEXT WILL ONLY BE VIEWABLE ONCE ALL USER INTERFACE PANELS ARE REMOVED FROM THE SCREEN. To dismiss all control panels, position the on-screen hand directly over the video image and click.

To turn off the Closed Captioning feature, click again on the button labeled CAPTION.
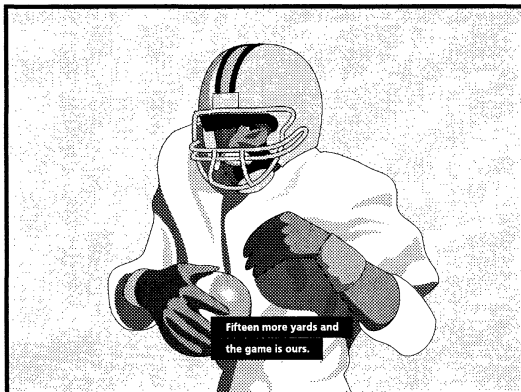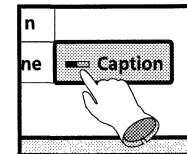

Finally, to view any program encoded with Closed Captioning information, turn on the CAPTION button, then dismiss all FroxSystem user interface panels

Initial Laserdisc Operation

3.5 INITIAL LASERDISC OPERATION

If your home theater system is configured with a laserdisc (LD) player, your video control panel will offer a button labeled LASERDISC (listed as a component choice on the video panel; multiple laserdisc players configured to the system will be identified by a number '1' or '2' following the component label). The FroxSystem provides a graphical user interface for the operation of all major-branded laserdisc players.

☞ NOTE: The FroxSystem will only operate laserdisc players featuring infrared wireless remote control; should your component NOT offer wireless remote capability, it must be operated manually. Contact Frox Technical Support at 800.525.5257 for assistance.

Laserdisc players offer some of the highest quality video signals available; as such, the FroxSystem's digital video processors will provide outstanding reproduction when presented with laserdisc source material. LD is the recommended format for large screen home theater viewing through the FroxSystem.
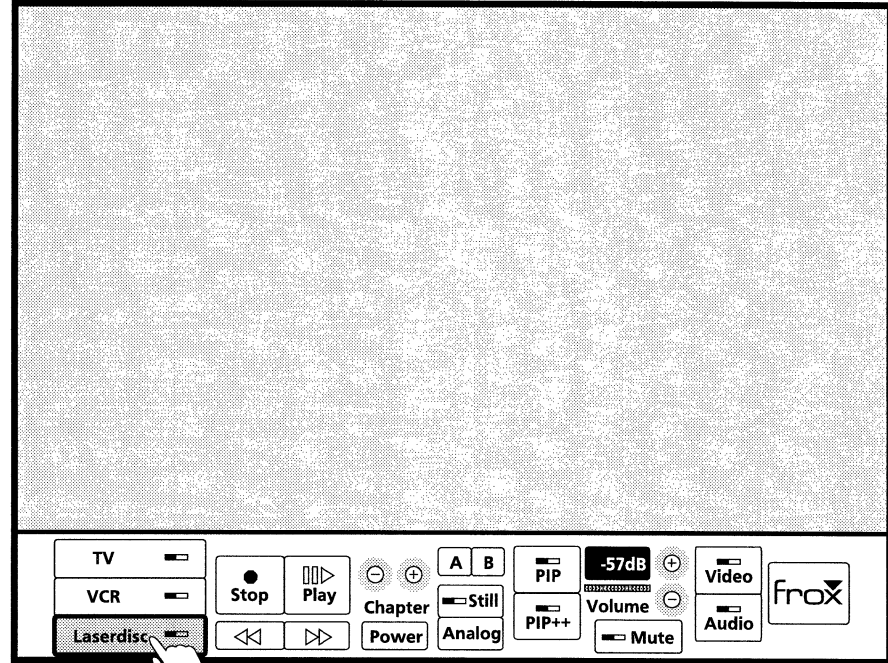
Watching a movie on laserdisc is an extremely popular activity. The following is a quick 'step-by-step' guide to operating and enjoying your laserdisc component:

➤ ➤

Initial Laserdisc Operation

▢ (1) Power up your FroxSystem (if you haven't already) by depressing the FroxWand control labeled PWR.

▢ (2) Select the LASERDISC button on the *Video* control panel (if you're located in some other area of the system, click on the FROX button, find the VIDEO button on the navigator panel and click. This routes you to the *Video* user interface. Then choose your laserdisc component).

▢ (3) Place a disc in your player (you can also manually power it up if it isn't already, or select the laserdisc's POWER button on the Frox control interface) - then click on the PLAY button on the control panel. Most LD players will load the disc automatically and begin playing; otherwise, close the disc drawer manually and then select the PLAY button from the FroxSystem's laserdisc user interface.
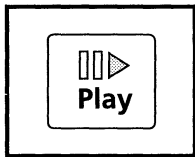
▢ (4) Adjust the volume to desired levels (via the volume buttons on the panel, or the quick-access rockers on the face of the wand labeled VOL).

▢ (5) Is the laserdisc player set up for your desired surround sound audio processing? Click on the AUDIO button to confirm. Watching movies, of course, is usually done in a surround sound mode for theater effects. If the laserdisc is configured to another audio processing choice, select the SURR button and choose between the two processors: THX or PROLOGIC (review section 4 of this manual for additional details; click on either button to quickly select either). Finally, dismiss the audio processing panel by clicking on the AUDIO button or move the on-screen hand directly over the video image and click - this removes all panels from view.
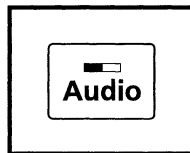
▢ (6) Does the video image look outstanding? It should - a quick method for adjusting the laserdisc image is to click on the VIDEO processing button (located next to the volume meter), guide the on-screen hand to the control labeled AUTO TUNE and activate the feature. Auto Tune, as described in section 3.10, is a quick 'retouch' feature for instant analysis and adjustment of the incoming video signal. Feel free to select and modify other video processing controls to optimize your image quality at this time. Dismiss the video processing panel by clicking on the VIDEO button.
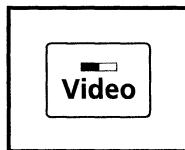
▢ (7) Finally, dismiss all video panels (move the on-screen hand directly over the video and click). Sit back, relax and enjoy the home theater experience.

To exit the laserdisc control screen, click on any other video component or select the main Frox navigator panel (the FROX button) and enter a new area of the system.

39

Laserdisc Features and Controls

3.6 LASERDISC FEATURES AND CONTROLS

Click on the LASERDISC button to bring up the control panel.
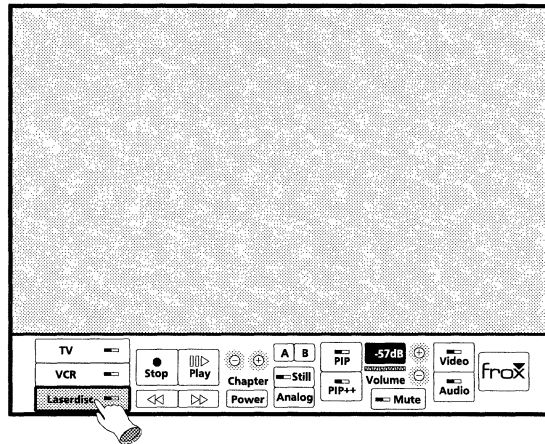
A number of important laserdisc control functions are now presented. The following is a brief description of each feature, discussed as they might be sequentially activated:

Power - Turns on and off your laserdisc player. Note that this button is only presented for players offering remote power on/off capability; otherwise, this button will not be available. Click on the button to power on or off your component.
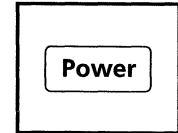
Of course, one may always 'power up' the component independently by physically selecting the power button on the face of the player.

Play/Pause- -Initial activation of the PLAY/PAUSE button will cause the LD player to enter the play mode; a second click on the control places the component into a 'paused' state. Continued toggling of this button will alternate between PLAY and PAUSE modes.

> >

Laserdisc Features and Controls
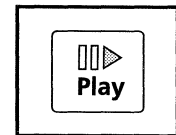
The M/II button (MUTE/PAUSE) on the face of the FroxWand will also toggle between the play and paused states (the volume is muted at the same time the component is paused when using this wand control).

☞ Note that most LD players provide a blue, green or black background when in the paused mode - an excellent visual confirmation of the player's operating status. Also be advised that some laserdisc players do not output 'standard' NTSC (National Television Systems Committee - our current format) signals when viewing the blue/green/black backgrounds. As such, this image may 'shimmer' or 'roll' when in the paused mode. In these instances the FroxSystem digital video processing cannot 'lock' to the non-standard signal format presented. While perhaps visually annoying, this 'rolling' does not indicate a defect with your player or the FroxSystem.

Loading a disc is easier with certain LD players. Some allow you to insert a laserdisc into the tray, then via the FroxWand one may select the PLAY button. The player's drawer will automatically close and begin playing the disc.

☞ It is NOT recommended that you manually begin disc play by touching the component's play button, as the FroxSystem 'operating state' may become confused. Manual play activation will cause the FroxSystem to report incorrectly the operating state of the device (after

all, there is no 'feedback' from the component telling the FroxSystem that 'you' just manually walked up to the LD player and hit the 'play' button. Only by operating the component via the FroxControl menu will the active state of the device be understood). In addition, important system software is initiated when you select the FroxSystem's PLAY command. Please review section 3.11 entitled, 'Important FroxVision Issues'.

Forward/Reverse Scan - While enjoying a laserdisc, most players offer a forward or backward visual scan feature. Click on first the PLAY button, then select either the >> (forward scan) or << (reverse scan) buttons to proceed rapidly in the desired direction.
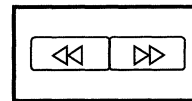
Multiple clicks with the FroxWand on either control may provide up to three incremental speed increases in both scanning directions (this will vary depending on brand and model of LD player; with some players this incremental scanning speed feature is not available).

When the desired part of the disc is reached, click on the PLAY button to continue with normal speed playback.

41

**Chapter Up/Down** - Many laserdisc players offer the ability to rapidly seek out a 'marked' section of the disc, much in the same manner by which CDs can be selected by individual tracks. Laserdisc sections are known as 'chapters' and are easily accessed by the FroxSystem in one of two methods.

At any time during the play mode, click on either CHAPTER '+' or '-' button to reach the desired area (in most cases, the laserdisc component will indicate via an on-screen message as to which particular chapter is being searched). Multiple clicks on the '+' or '-' buttons will search through additional chapters; or, click and hold the wand's activation trigger while positioned on the chapter button of choice until the more 'distant' chapters are reached.
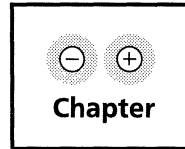
Alternately, the UP/DOWN button on the face of the wand labeled SEL (Select) will also activate the chapter search feature.

☞ Note that not all LD players (or even discs themselves) provide the ability to search by chapters.

Still - Many players feature a 'freeze-frame' control to allow close scrutiny of any video image. Laserdisc players providing this feature via remote control may be accessed by the FroxSystem's STILL button.

To use this feature, click on the STILL button; the disc will stop on a given frame of the disc and present a still video image (the STILL button will display a green LED indicating activation of this feature). Click again on the control and the disc will resume play - or, move the on-screen hand to the PLAY control and select it. In either case, the disc will once again begin playing. Also, from the STILL control any other feature may be selected (such as scanning forward to locate a particular spot on the disc), then select STILL again to freeze the image.
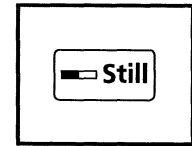
☞ Note that not all LD players offer the 'freeze-frame' feature, while some only provide the still capability on certain types of laserdiscs themselves (earlier LD players, for example, can only provide special effects on CAV laserdiscs and not on the CLV formatted discs). Review your particular laserdisc's manual, or contact your dealer for additional details.

☞ Also, the still image quality may vary from component to component, even from one video frame to another on a disc itself. Experiment with the control to discover your component's performance abilities.

>>>

Laserdisc Features and Controls

A/B Side Access - Recent vintage laserdisc players offer the ability to view either side of the disc, without having to physically remove it from the player and turn it over. This is a popular convenience feature, as most movies released today require at least two sides of the disc to view the entire movie. LD players providing dual side playback can be loaded once, started and upon reaching the end of side one will (in seconds) continue playing the second side of the disc.

The FroxSystem permits direct access to either side. Click on the A or B button (located above the STILL control) to change and play the other side of the disc. This control may be selected at any time during the play cycle on most laserdisc players; review your particular component's features for specific guidelines or restrictions.
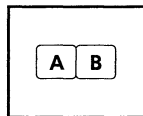
Analog/Digital - Depending upon your system's configuration (and your laserdisc player), two different audio inputs may be selected from the user interface.
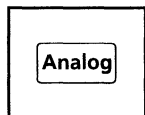
Earlier laserdiscs offered analog stereo audio tracks only (as the original film transfers were always accomplished in the analog domain). Later film transfers often provide true digital audio soundtracks. Recent model laserdisc players feature the ability to select between the analog or digital audio tracks on a disc.

The selection of either audio soundtrack is enabled through one button, located to the immediate left of the PIP++ control. One position of this button is labeled ANALOG for listening to the laserdisc's analog stereo audio tracks; clicking on this button will cause it to change operating state (it will be renamed DIGITAL), and will switch the FroxSystem's input to allow playback of any available digital audio soundtrack.

☞ It is important to note, of course, that not all laserdiscs contain digital audio tracks; also, not all laserdisc players can access these special digital tracks.

Stop - To conclude disc play at any time, click on the STOP button.
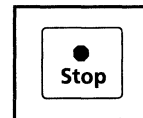
Some LD players will open the disc loading tray when clicking twice on the STOP control; experiment with your particular component to uncover this hidden feature.

43

*Laserdisc Features and
Controls*

To exit the laserdisc control panel, click on any other video component or select the main Frox navigator panel (the FROX button) and choose a new option.

Finally, the FroxSystem provides a number of other important features, many of which are common to all video components configured to the system.

For instance, the FroxSystem permits the independent adjustment of desired audio and video processing for each laserdisc component connected to the system,

enabling the finest performance from that specific video source. You can select from multiple PIPs (Picture-In-Picture) choices directly from this control panel. A preferred volume level specific to your laserdisc player may be established, retained and enjoyed upon returning to this component.

Please review the specific sections of this manual for additional details on PIP activation (section 3.9), FroxSound audio processing (introduction, section 3.3 and complete details, section 4), video image enhancement and adjustments (section 3.10).

➤ ➤

Initial VCR Operation

3.7 INITIAL VCR OPERATION

The popularity of Video Cassette Recorders (VCRs) has grown rapidly over the last decade. Viewing movies, 'timeshifting' (unattended recording of a favorite program) and recording a program while watching another - all are enjoyable attributes of a video cassette recorder.

Your home theater system may be configured with one or more VCRs. The system's *Video* control panel will label these components VCR (or VCR1 and VCR2 when multiple components exist).
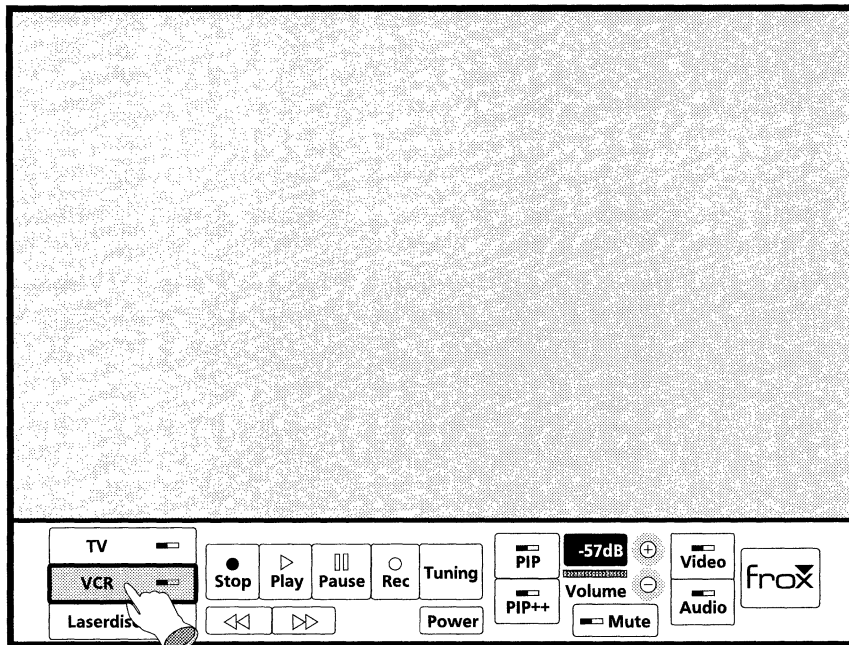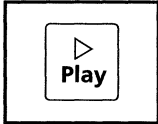
☞ As with other source components, the FroxSystem will only operate VCRs featuring infrared wireless remote control; should your particular component NOT offer wireless remote capability, it must be operated manually. Contact Frox Technical Support at 800.525.5257 for assistance and advice concerning these situations.

Click on a VCR button to bring up the control panel.
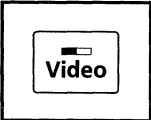
The following guidelines can be followed for initial VCR viewing and recording activities.

*Initial VCR
Operation*

◄ ◄

First, the steps for watching a prerecorded video tape:

☐ (1) Power up your FroxSystem by depressing the FroxWand control labeled PWR.

☐ (2) Select the VCR button on the *Video* control panel (if you're located in some other area of the system, click on the FROX button, find the VIDEO button on the navigator panel and click. This routes you to the *Video* user interface). Then select the desired video cassette component.

☐ (3) Insert a tape in your VCR and select its POWER button on the Frox control interface (if it is not already powered on).

☐ (4) Click on the PLAY button on the VCR control panel.

▷
Play

☐ (5) Adjust the volume to desired levels (via the user interface volume buttons or the quick-access wand controls labeled VOL).

☐ (6) Is your video cassette component set up for your desired audio processing? Click on the AUDIO button to confirm. Watching movies, of course, is usually done in the surround sound mode for best theater effects. If the system is presenting some other audio processing choice, click on the SURR button and choose between the two processors: THX or PROLOGIC (review section 4 of this manual for additional set-up instructions. Click on either button to quickly configure the desired flavor). Finally,

dismiss the audio processing panel by clicking on the AUDIO button (or move the on-screen hand directly over the video image and click - this removes all panels from view).

☐ (7) Does the video image look good? One quick method for adjusting the picture is to click on the VIDEO processing button (located next to the volume meter), move the on-screen hand to the control labeled AUTO TUNE and activate this feature. Auto Tune, as described in section 3.10, is a quick 'retouch' control for instant analysis and adjustment of the incoming video signal. Feel free to select and adjust any video processing controls to optimize your picture quality at this time. Dismiss the video processing panel by clicking on the VIDEO button (or by the fast dismissal technique - click on the video image to instantly remove all control panels).

Video

☐ (8) Dismiss all video panels (guide the on-screen hand directly over the video and click). Sit back, relax and enjoy the show.

To record a broadcast television program via this control panel, follow these five steps:

☐ (1) Power up your FroxSystem (if you haven't already) by depressing the FroxWand control labeled PWR.

➤ ➤

Initial VCR Operation

☐ (2) Select the desired VCR component from the choices on the *Video* control panel.

☐ (3) Insert a blank tape into your VCR. Power up the component manually, or select the POWER button for the component on the user interface.

☐ (4) Click on the TUNING button, locate the channel to be recorded, then return to the transport panel by choosing the button labeled TRANSPORT.

| Tuning |
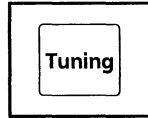
☐ (5) Activate the REC (Record) button on the VCR control panel. Your recording will continue until dismissed or tape end is reached. If the VCR recording is of non-scrambled cable or broadcast signals (via the VCR's internal tuner), you may dismiss the VCR control panel and activate any other component connected to the FroxSystem - your recording will continue uninterrupted.

| ○ Rec |
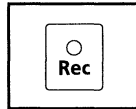
☞ CAUTION: If a single external cable converter is used to feed both your FroxSystem's internal tuner and your VCR, the selection of other video components may interrupt your recording. Experiment with your particular system configuration prior to attempting an important taping activity.

To exit the VCR control screen, click on any other video component or select the FROX navigator button and choose another FroxSystem selection.

VCR Features and Controls

3.8 VCR FEATURES AND CONTROLS
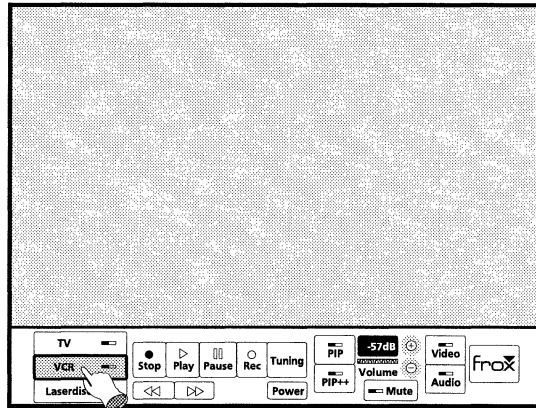
Frox provides for the following features and controls when operating your various video tape components:

Power - Turns on and off your VCR. Note this control (located next to the PIP++ button) is only configured for players offering remote power on/off capability; if presented, click on the button to power on or off your component.
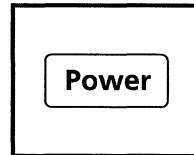
Power

☞ One may always 'power up' the VCR independently of the FroxSystem by physically selecting the power button on the face of the component. Some late-model VCRs will automatically power on when a prerecorded tape is loaded; all are acceptable methods of turning on your component.

Play - After loading a prerecorded video tape, grasp the FroxWand and click on the PLAY button to engage the transport control (the button features a green LED indicator when activated).
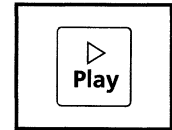
▷ **Play**

☞ IMPORTANT NOTE: It is NOT RECOMMENDED that you manually begin playing a video tape by selecting the component's play button, as the FroxSystem 'operating state' will become confused. Manual play activation will cause the FroxSystem to report incorrectly the operating condition of the device (after all, there is no 'feedback' from the component instructing the FroxSystem that 'you' just walked up to the VCR and manually hit the 'play' button; only by accessing the component via the FroxControl menu will the active state of the device be understood). In addition, important system software is activated when you select the FroxSystem's PLAY command. This software synchronizes the timing of the incoming video to the digital video processors of the FroxSystem; selecting the PLAY button engages this special software protocol. With VCRs, the image is also shifted slightly in the vertical direction and minimally cropped, in order to obtain the best possible picture.

48

> >

VCR Features and Controls

☞ Some VCRs, for instance, offer an 'auto play' feature that, upon inserting a prerecorded video tape (or one that has had the safety 'tab' removed on the lower left spine) will cause the component to enter the play mode. In these instances we recommend that you still click on the PLAY button (even if it is already playing), as this activity will engage the necessary synchronization software. Please review section 3.10 entitled, 'Important FroxVision Issues', for further details on this topic.

Finally, note that while a video tape is playing you cannot access the VCR's broadcast/cable ready television tuning controls. Click on the STOP button and then the TUNING control to select and watch the VCR's TV tuner.

Pause - An independent PAUSE button exists on the VCR control panel to interrupt the tape transport. Pause will function in both the Play or Record modes (allowing you to 'cue up' to desired portions of the tape).

While in the play mode, click on the PAUSE button (the border 'lights up' when your on-screen hand icon is in the correct position; this button also indicates proper activation when the green LED pause icon is illuminated). Many video cassette components will revert to a 'blue screen' (different colors may be used) when in the paused state; other VCRs treat the pause activity as a 'still' feature when in the playback mode, presenting a
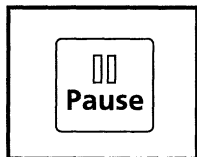
'freeze-framed' image to the viewer. Review your particular VCR's features to determine which is offered when in the pause mode.

To continue with video playback, click on the PLAY button.

Also, the M/II button (MUTE/PAUSE) on the face of the FroxWand will permit alternating between the play and paused states (the volume will be muted and unmuted each time the wand control is used for this activity). When recording, the M/II control will only mute the audio and will NOT pause the component.
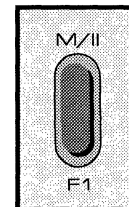
VCR devices vary widely in the manner by which the pause control reacts with the play or recording process.

☞ On some VCRs, selecting PAUSE while in a paused state will do nothing; you must move over and select the PLAY control. On other VCRs, the PAUSE button will act as a 'toggle' - multiple depressions will cause the component to change from pause to play and back to pause again. We urge caution when recording; for example, some VCRs react differently with the M/II (MUTE/PAUSE) control on the face of the FroxWand. Experiment with your particular component to uncover its unique operating parameters prior to any important video recording.

49

VCR Features and Controls

☞ With most VCRs the paused state will only remain active for a defined period of time. Undesired VCR head wear can occur if the unit remains too long in the pause/still mode, so most components will return to the playback state after a few minutes. Left in a still mode, your machine may shortly 'unpause' and continue with video playback, but the user interface will report (incorrectly, of course) that the unit is still in the 'paused' mode. This is a normal aberration of the FroxSystem user interface, as there is no 'active' communication between the VCR and the system to indicate external changes of operating condition. To correct the user interface in this situation, click on the PLAY button while the VCR is playing (turning off the PAUSE indicator).

The PAUSE button is also handy when setting up video tape recordings while using this control panel. For example, one may wish to begin recording the television program being viewed (but you'd like to start the recording somewhere in the middle of a previously-recorded video tape). In this example, the FroxSystem (on many VCRs) can be operated with these simple steps: (1) click on the PLAY button, perhaps selecting the scanning forward (>>) or backwards (<<) controls, until the desired spot to start the recording is reached; (2) select the PAUSE control; (3) move and click on the REC (Record) button - many VCRs will remain in the same spot when disengaging the play activity and engaging the record/pause state; (4) finally, click on the PAUSE button (or the REC button, depending on your component) to begin the recording.

☞ A final note concerns the image quality when in the 'still' mode. The performance of the still image will vary widely, depending on your VCR's quality, recorded speed of the program (some VCRs only offer still images in certain modes), quality of the tape, and other issues. Also, the colored background when in paused states (on certain VCRs) may 'shimmer' or 'roll' when in the paused mode. In these instances the FroxSystem digital video processing centers cannot 'lock' to the image due to the presentation of non-standard video signals by the VCR component. While perhaps visually annoying, this 'rolling' does not indicate a defect with your component or the FroxSystem.

Record - Click on the REC (Record) button to activate your VCR's recording capabilities.
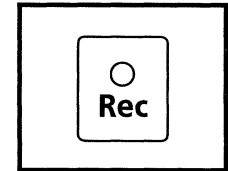
☞ A blank video tape must first be inserted into your component and powered on for the recording activity to begin. A 'recordable' video tape can be identified by close examination of the tape's spine, where a small 'tab' exists that will allow taping; if the tab is removed, the video tape cannot be recorded.

Recording will begin immediately on most VCRs when the REC button is selected, and will continue until dismissed or reaching tape end. As discussed in the above section regarding the PAUSE control, various

○
Rec

combinations of the 'pause' and 'recording' buttons may be used to operate your particular VCR. Most VCR recordings can be made by first, selecting a desired channel, then clicking on the REC button. The PAUSE control is your tool to interrupt the in-progress recording. Experiment with your system to uncover the available record and pause combinations on your particular components.

☞ When creating a recording in this control panel, in many cases you may begin the recording process and leave it unattended while enjoying other areas of the FroxSystem. Use caution when accessing the system's *Dubbing* or *Audio Routing* panels, as your video recorder's controls are also presented in these panels and may be inadvertently selected. Finally, other unique recording abilities exist in the FroxSystem, permitting easy 'timeshifting' (unattended in-advance VCR record-ing) and copying from one video component to another. Please review the sections entitled *TV Grid, TV Schedules* and *Video Dubbing* for additional video taping options.

Fast Forward/Rewind - Rapid access to distant areas of the tape can be obtained by clicking once on either the >> (FAST FORWARD) or << (FAST REWIND) icons.
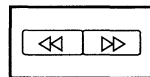
Activating fast forward or fast rewind is always accom-plished by first selecting the STOP control, then the desired directional icon. Note that these fast forward or rewind controls also serve as the forward/reverse visual scanning feature, described next.

Forward/Reverse Scanning - While enjoying a video tape, many VCR's offer a forward or backward visual scan feature. Click first on the PLAY button, then select either the >> (FORWARD SCAN) or << (REVERSE SCAN) buttons (these are the same as the FAST FORWARD/REWIND buttons) to visually scan rapidly in your desired direction.
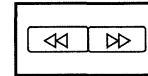
In some cases multiple clicks on either control will provide two or three incremental speed increases in either scanning direction (this will vary depending on the brand and model VCR used; on some components this incremental scanning speed feature is not available). On other components the third multiple click will move the transport into the Fast Forward or Fast Rewind mode automatically.

When the desired section of the video tape is reached, click on the PLAY button to continue with normal speed playback.

☞ The lack of transport stability with video tape machines may result in a picture that 'rolls' or 'tears' when in the scanning modes. This is related to the overall quality of the VCR and video tape, and is not a defect with your component or the FroxSystem. Please review the special note at the end of the VCR discussion for further information concerning video image quality.

51

VCR Features and Controls

Tuning - This control accesses the VCR's internal broadcast or cable-ready television tuner. Selecting the TUNING button switches the FroxSystem from the tape transport operating panel and presents the important tuning functions and controls.
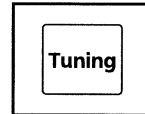
Channels may be changed by one of three methods: (1) by clicking on each direct access channel button using the 0-9 on-screen keypad (channel 2, 4, 12, etc.) and then selecting the ENTER button; (2) by clicking on the '+' or '-' button adjacent to the direct access pad; (3) by using the convenience wand button labeled SEL via the appropriate up/down directional rocker. As always with the on-screen buttons and icons, insure your on-screen hand icon is directly over the desired feature (most 'light up' to indicate proper positioning of the hand).

☞ Depending upon system configuration, this panel will instruct the FroxSystem to change the channels on your cable converter box or directly access the internal cable-ready tuner in your VCR. NOTE: Some cable channels may be scrambled and are not viewable without proper authorization. Broadcast reception will require a quality exterior antenna system. Contact your local cable company and/or your system installer for further assistance.

Click on the TRANSPORT button to return to the VCR's tape transport control panel.
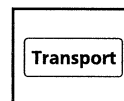
Stop - To conclude video tape playback or recordings in progress at any time, click on the STOP button.
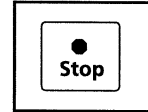
To exit the VCR control screen, click on any other video component or select the FROX navigator button and make another FroxSystem selection.

Finally, the FroxSystem provides a number of other important features universal to all video components connected to your system. Please review the specific sections of this manual for additional details on PIP activation (section 3.9), FroxSound audio processing (audio introduction, section 3.3 and complete details, section 4), video image enhancement and adjustments (section 3.10).

➤ ➤

VCR Features and Controls

☞ IMPORTANT NOTE CONCERNING VCR IMAGE QUALITY. The image quality from video cassette components may at times be less than desirable, particularly when compared to laserdisc, satellite or direct broadcast images. The available resolution from standard VCRs is known to be approximately one-half that of laserdisc sources, for instance. Also, video playback may 'flag' (or bend) at the top of the screen, as the head switching timing of video cassette components varies greatly from frame to frame. Some special effects features (freeze-frame, rapid scanning in forward or reverse directions, etc.) may be slightly impaired when viewed through the FroxSystem. Such image degradation may be particularly noticeable when standard video tapes are viewed on a large screen, data-rate home theater (as the source material's imperfections are always less noticeable on a smaller screen, or not noticeable at all in the reduced-performance NTSC frame rate).

The FroxVision processors will always attempt to correct for these signals, but in some cases the incoming video will be of such poor quality that additional outboard processing (such as provided by external time base correctors - a class of professional video processors that stabilize the video image and restore it to original NTSC standards) may be required. In these instances the old adage, 'garbage in, garbage out' applies when dealing with substandard video signals and components.

Frox recommends the use of only the highest quality VCRs and video tapes with the FroxSystem, and also recommends the use of external time base correctors to compensate for the limitations inherent in analog video cassette devices. Contact your dealer or Frox Technical Support at 800.525.5257 for additional information regarding this subject.

Video PIP Features

3.9 PIP - PICTURE-IN-PICTURE FEATURES

Picture-In-Picture features (also known as PIPs) allow for viewing more than one video image at a time. The FroxSystem permits the display of two 'live' video images (in conjunction with the television tuner built into your VCR), plus combinations of images from other video components (laserdisc players, VCRs, etc.) connected to the system.

Two PIP choices may be selected directly from the television panel: *Standard PIP* (labeled PIP) and *Advanced PIP* (labeled PIP++).

Standard PIP - To enjoy the *Standard PIP* features and controls:

☐ (1) Click on the top button labeled PIP to call up the standard picture-in-picture feature. A small inset picture window will appear within the larger main screen, providing two video images at one time. Note that the first time you select the PIP button from the television panel, the
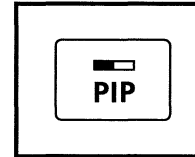
exact same TV image will usually be inserted into the smaller PIP window. To provide for two different pictures at the same time, click on any other component choice available (those indicated along the left-hand buttons labeled VCR, LASERDISC and so forth). Two different images will now be viewable, as well as the component device control panel for the larger video image.

➤ ➤
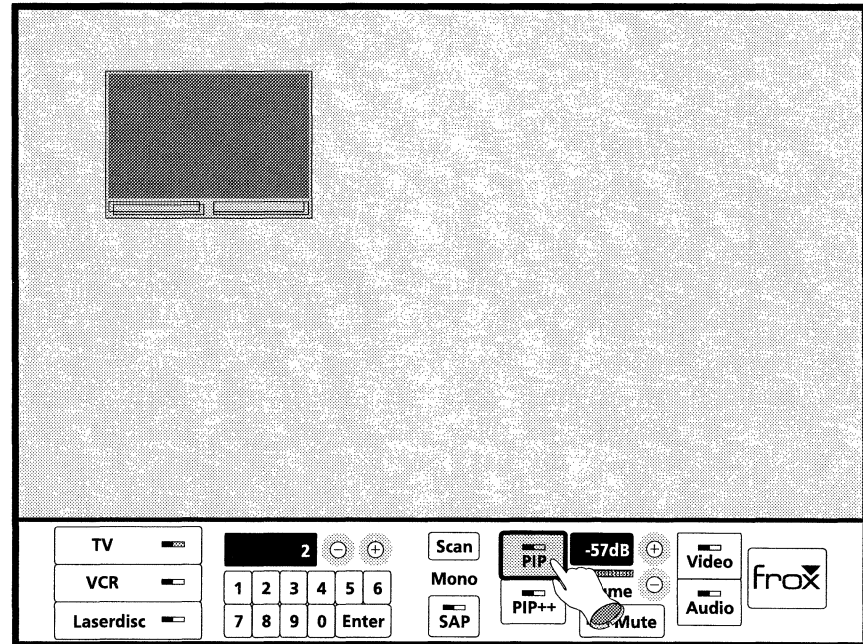
Video PIP Features

☐ (2) To 'swap' the two images, simply move the on-screen hand into the small PIP area and click; the video images will switch (the larger becoming the inset picture, the smaller image becoming the main one). Volume will accompany the main (large) viewing area.
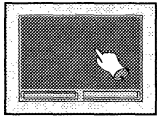
☐ (3) Two unique features - Moving and Sizing - are available to manipulate the smaller inset image.
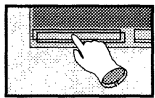
Notice the two rectangular icons at the base of the PIP inset. At the bottom left of the PIP window is the special MOVING icon. Click on this to activate the movement feature (the icons will disappear), and then by using the FroxWand thumb controller guide the inset window to any desired location. Click again and the inset PIP will remain in the new position.
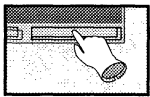
To resize the inset PIP, select the bottom right icon on the inset window, click on this button (the inset controls will again disappear), and via movement of the FroxWand thumb controller the smaller screen may be 'stretched' and resized to desired dimensions. After achieving your desired inset size, click with the wand to restore the MOVING/SIZING icons (also causing the resized PIP to remain in a fixed position).

☞ Note: To watch your two video windows and dismiss all control panels, guide the on-screen hand over the larger of the two images and click.

☐ (4) To turn off the PIP feature, click again on the PIP button (the green LED talley light indicating activation will turn off). The PIP window will be removed, returning you to the full-screen image.

☞ SPECIAL NOTE ON STANDARD PIP ACTIVATION. A general rule exists for the creation of PIP insets, designed to make the activation of 'customized' windows easier to accomplish. The rule is:

Create the inset (or secondary) window first, then select the larger/main window last.

For example, you'd like the inset window to show live video from your VCR's tuner (to watch one sporting event - let's say, a football game) while the larger image is a different sporting event (ex: hockey) viewed on the Frox television tuner. Here's how to apply the rule using this example:

☐ (1) CREATE THE INSET FIRST. Select a VCR from the component choices, then via the TUNING controls locate your desired football game. When the game is displayed, click on the PIP button, guide the on-screen hand directly over the small inset window (no matter whatever else is being shown there) and click. In effect, you are telling the FroxSystem, 'I want the tuner from the VCR positioned here (inside the small PIP window).'

55

Video PIP Features

◁ ◁

☐ (2) SELECT THE MAIN WINDOW LAST. Leave the PIP turned on, and choose the TV button from the available component choices; search for the hockey game via the channel keypad. You now view the VCR's tuner positioned in the inset window (the football game) with the main image filled by the hockey game (note the audio follows the larger, primary video image). Complete your selection by moving and resizing the inset window to desired proportions/position, dismiss all control panels and enjoy both games. (Once again, to dismiss all control panels, guide the on-screen hand directly over the primary, larger video window and click). While the games are in progress, you can at any time bring up the main control panel (click), move the on-screen hand over the smaller inset picture and click - thus swapping the images along with the sound.

☞ A tip relating to the audio: you may, at any time, choose to 'audio swap' and listen to the inset window instead of listening to the primary video. Referring to our example, you still want to watch the football game in the smaller inset, the hockey game in the larger window - but you'd like to listen continuously to the football game. This is easy with Frox: create the desired PIP positions, then click on the AUDIO button on the control panel.

TV ▬◻	VCR ▬◻	Laserdisc ▬◻	Frox CD ▬◻	CD 2 ▬◻
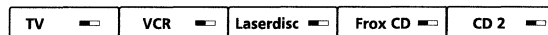
Move the on-screen hand to select the inset component's audio (from the choices located at the top of the Audio stripe) and click. You'll now hear the sound from the inset window. Dismiss all control panels as normal.

☞ Also, the system requires one additional television tuner (one is internal with the FroxSystem) to enjoy two 'live broadcasts' in the PIP mode. Your VCR's tuner is well-suited for this purpose, and is easily accessible in most system configurations. Note that some TV channels may be scrambled and cannot be received without proper equipment (such as cable converters) or other authorization methods. In some installations multiple live-broadcast PIPs cannot be achieved due to these external restrictions. Contact your installer or your cable company for further information.

Advanced PIP - PIP++ is an advanced version of picture-in-picture, providing one of four additional 'flavors' of PIP:
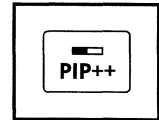
```
┌──────────┐
│  ▬▬◻     │
│  PIP++   │
└──────────┘
```

☐ SPLIT - two live images, full screen, divided equally in size.

☐ POP (Picture-Outside of-Picture) - one image, appx. 2/3 size of a normal image, with three images positioned outside and to the right of the main one.

☐ FOUR TILE - 4 equal-sized screens divided into quadrants, featuring strobed (still) images from available channels/sources.

☐ NINE TILE - 9 smaller screens of equal size, containing one live source and strobed images from additional channels/sources.

> >

Video PIP Features

The *Advanced PIP* choice is configured in the *Preferences* area of the system. To assign a new preferred picture-in-picture choice to the PIP++ button, first click on the FROX button and then select the PREFERENCES
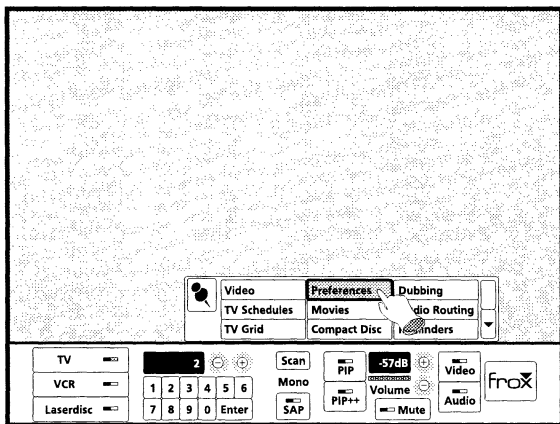
choice from the navigator menu. Among other controls, a button labeled PIP++ will be available; click on this control. The four types of advanced picture-in-picture
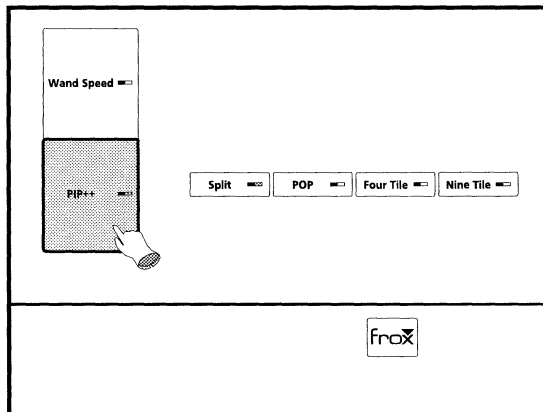
choices will be listed. Make your selection at this time and the PIP++ button on the *Video* control stripe will be configured to your desired type.

To enjoy your preferred choice of *Advanced PIP*, return to the *Video* control panel and click on the PIP++ button.

The following is a description of the operation of each type of *Advanced PIP* feature:
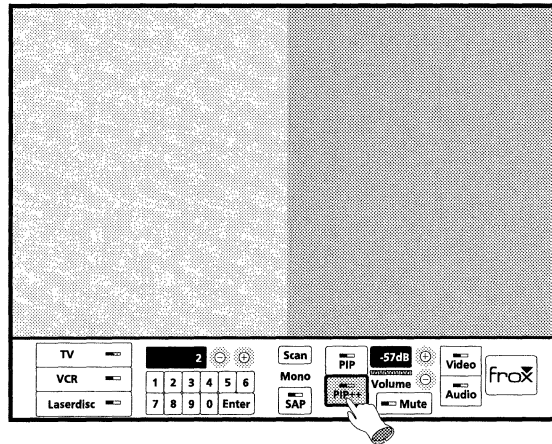
Split - Features the ability to view two video sources in equal-sized on-screen images. The video is 'compressed' to squeeze two images in one-half the normal area.

Click on the PIP++ control (after making the initial set-up choice in the *Preferences* area). Two images are presented of one video component and a second video source (you may also see the same image in both windows if no previous PIP activation has occurred). To change one of the video split-screened images, simply select another video component from the device list. This new selection will be presented (along with sound) in the other split-screen window.

As you create your preferred split-screened images, you may swap the two by moving the on-screen hand into the other image area and click. Note the images do not actually change position; only the audio and control panels for the components will exchange active states.

To dismiss the system user interface, guide the on-screen hand into the 'primary' image window (the image with corresponding sound and operation panel) and click.

☞ Split screen PIPs are created under similar guidelines as the previously-described *Standard PIP* inset rules. First create your desired 'secondary' video image on one side of the split screen and then select the main/primary image for the other. Take note which image is the primary one - the audio as well as the control panel always reflects the primary image. Lack of sound or the 'wrong' device control panel indicates the secondary video image.

Either window of the split screen may be configured to be the primary or secondary image. For example, to establish the right window as the primary viewing area, move the on-screen hand to the right image area and click; the control panel and audio will swap to that side OR the Frox control panel will be dismissed (indicating the right window is already the primary window - click again to continue). Now follow your basic PIP rules - create the secondary video image by moving to the left window, click on it and select the desired component, then return to the right window and click again to configure it as the primary window (it is always chosen last). Now select your desired primary video component

>>>

Video PIP Features

and the right viewing side will be appropriately enabled. A few attempts at setting up split screen PIPs may be necessary before your desired windows can be configured with confidence.

Let's look at a real example: You'd like the laserdisc image on one side (with audio) and the VCR image on the opposite side of the screen, without sound. The VCR image in this instance is the secondary image and should be created first, while the laserdisc is your primary image and is selected last. Here are the quick steps:

☐ (a) Click on the VCR component, engage the PLAY button and then the PIP++ feature. A split screen PIP will be presented with the VCR image in at least one of the windows.

☐ (b) Next, move the on-screen hand into the other image window (the non-VCR one) and click - this action establishes the window opposite the VCR as the primary one.

☐ (c) Finally, click on the LD control panel and both the laserdisc's image and sound will appear in the window, while the VCR plays in the other. To dismiss the Frox control panel, move the hand into the LD image area and click.

☞ A popular 'short cut' method for creating the split screen PIP you'd like to see is to: (1) activate the *Standard PIP* and follow the normal set-up rules (creating the inset first, then the primary video window last; (2) while still in the *Standard PIP* mode immedi-

ately click on the *Advanced PIP* (PIP++) button. The screens will change, presenting the inset (no audio) on one side and the primary image (w/sound) on the other. Experiment with these options to discover the choices best suited to you.

POP (Picture-Outside of-Picture) - A version of *Advanced PIP* that allows for viewing one large primary video image, and three smaller windows 'outside of' and to the right of the main window. The smaller windows always scroll through three available broadcast or cable channels from your VCR or the internal Frox tuner, with the scrolling channels easily changed upon request.
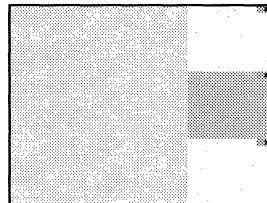
To configure your system for this POP version, click on the FROX button and select the PREFERENCES choice to enter this area of the system. Click on the second *Advanced PIP* choice labeled POP, and return to the video area.

Create first your preferred larger window - television, laserdisc or video cassette component. Next, click on the PIP++ control; your primary component choice will be presented in the large window, while the first three available television channels (channels 2, then 3, then 4, for example) will be scanned and previewed in short 'live video' increments down the right hand side of the screen. A snapshot still image of the channel remains when the system scrolls to the next available channel.

59

Video PIP Features

Your favorite three television channels may be 'inserted' into these three POP windows by first clicking on the TV or available VCR component choices (either will work). Simply select the channel you'd like to see, view it on the larger main video window, then guide the on-screen hand into any one of the three smaller windows and click; this new channel will now be inserted and always presented in that particular window. Continue the process by selecting two more preferred broadcast channels, likewise inserting the desired channel(s) into the remaining POP windows.

Depending on the primary component selected for the larger image, either the VCR's tuner or the FroxSystem's internal broadcast TV tuner will be used to deliver the 3 POP images. Select a VCR as the primary component and the television channel scan will utilize the internal Frox tuner; choose the Frox TV button and your VCR's tuner becomes the source component for the POP scans. (Of course, only the FroxSystem's internal TV tuner will be used if there is no VCR configured to the system, or your VCR tuner is unavailable).

Four Tile, Nine Tile - Two final *Advanced PIP* choices allow for either four or nine equal-sized images to be viewed at the same time. Like the above POP feature, one of the images will always be a continuous 'live' picture while the others strobe through available broadcast channels (received from your VCR or FroxSystem internal TV tuner).
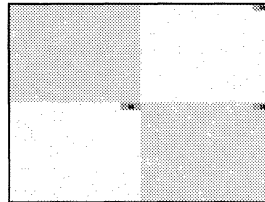
Set-up for either four or nine tile is easy - configure the desired *Advanced PIP* choice in the *Preferences* area of the system, then click on the PIP++ button on the *Video* control panel. The PIP will begin, with one window presenting the live image of your primary component and the other (three/eight, depending on selection) scanning through incoming broadcast feeds.

Your favorite television channels, including the desired location of your live video feed may be 'inserted' into any of the on-screen windows. First, set up your broadcast channels scan; click on the TV (or any available VCR component choice, since either will serve to configure the available channels). Select the channel you'd like to see, view it in the 'live' video feed area, then move the on-screen hand into any one of the three PIP windows (or eight other windows in the Nine Tile PIP mode) and click.

➤ ➤

Video PIP Features
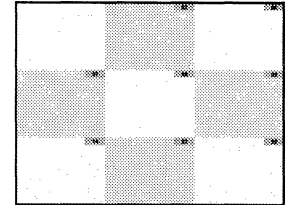
☞ This activity does not position the broadcast channel into the 'chosen' area, but instead places your 'live' image into the *new selected quadrant*. Your new broadcast channel is loaded into the *inset window just exited*. Wait just a moment - and the scanning procedure will strobe through all available channels, including the new channel you just configured. Continue in this manner by choosing each broadcast station you'd like to see in the current window position, then move the live image around until all desired channels are enabled.

Depending on the primary 'live video' component selected, either the VCR's tuner or the FroxSystem's internal broadcast TV tuner will be called upon to deliver the strobed broadcast images. If you select a VCR as the live image component, the television channel scan will use the internal FroxSystem tuner. Select the Frox TV button and your VCR's tuner will become the source component for the channel scans. In the event that no VCR is configured to the system (or is unavailable for other purposes) only the FroxSystem's internal TV tuner will be used for channel strobing.

To dismiss all component control panels, guide the on-screen hand into the live image window and click.

To dismiss any PIP selection, click on the PIP button (or the *Advanced PIP* control labeled PIP++). This will turn off the PIP choice and return you to the full-screen video image.

61

Adjusting Video Processing

‹ ‹

3.10 ADJUSTING VIDEO QUALITY - FROXVISION VIDEO PROCESSING AND CONTROLS

The VIDEO button (located on the television, laserdisc and VCR control panels adjacent to the FROX button) is the control to select and adjust all FroxSystem digital video processing: Channel Fine Tuning, Color/Tint corrections, Brightness and Contrast adjustments, Video Noise Reduction, Sharpness controls - as well as the activation of automatic fine tuning set-up procedures of the system. Closed Captioning is also selected from this panel (outlined in section 3.4).
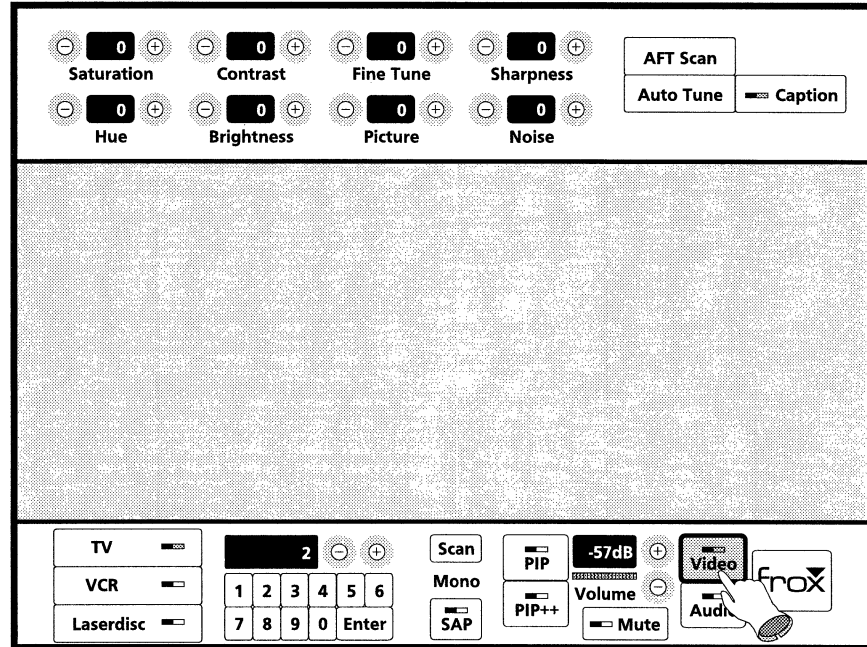
The FroxSystem is delivered with all video settings in a 'flat,' zero-referenced position. Changes to the video image are permitted on a per-channel, per-component basis. Video settings may be adjusted at any time, and will be 'remembered' whenever returning to enjoy that particular channel/component. This ability to optimize each channel and component provides the best performance available (as most products only allow video adjustments on an overall, 'averaged' basis). With the FroxSystem, you can adjust a channel one way - then the next with completely different settings for best performance, and so on for all available television channels.

The video enhancement controls are easily accessible in the FroxSystem. After selecting an active video component (TV, VCR, Laserdisc, etc.), click on the button labeled VIDEO to bring up or dismiss the panel. A control stripe is now presented across the top of the screen. To adjust any individual control, position the on-screen hand over the
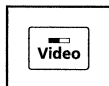
Adjusting Video Processing
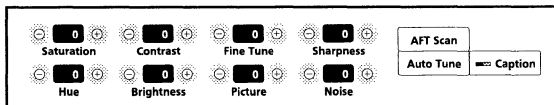
indicated control button and click (for faster manipulation of the control, click and hold the activation triggers). All video adjustments are accomplished using up/down meters, with numerical reference points available ('0' either being the mid-point of available adjustment, or the first-available control setting).

A brief summary of the features and video processing adjustments available from this panel are as follows:

Saturation - The amount of color intensity. May be adjusted from -6 to +9 values.
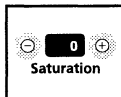
Hue - Color 'tint' or shading. Adjustment ranges from -68 to +59, shifting the color toward red values (minus settings) or toward green values (positive settings).

Contrast - White intensity control. May be adjusted from -6 to +9 values.

Brightness - Overall 'black level' intensity (only for the video image, exclusive of the graphical interface). Brightness settings range from -51 to +40.

Fine Tune - Automatic set-up for best broadcast/cable signal reception. Settings range from -10 to +10.

Picture - On-screen brightness (black level) of the entire video image, including the user interface. Values may be adjusted from -36 to +12.

Sharpness - Increases overall edge detail, image definition and picture sharpness. Control ranges from -10 to +10.

Noise - Engages video noise reduction parameters ('shot noise'). Processing starts at 0 (no noise reduction) and up to a +7 value (maximum noise reduction).

AFT Scan - Automatic Fine Tuning Scan. This feature will activate an automatic scanning of available over-the-air (or cable, depending upon system configuration) channels, and fine tune each for best reception. After running the AFT cycle, manual adjustment of any video parameter may be necessary to override any automatic settings. (NOTE: This control only adjusts the fine tuning for television channels; all other video components - VCRs, laserdiscs, etc.- should be adjusted manually or with the AUTO TUNE button for best results).

Auto Tune - Automatic 'touch up' control. Like the AFT SCAN feature, this control will analyze the incoming video signal (whether broadcast, cable or video component) and attempt to create the best image possible. The wide variety of monitors used with the system, however, may result in 'incorrect values' whenever auto parameters are engaged; manual overrides are often required in these instances and are easily permitted.

63

Adjusting Video Processing

‹ ‹

Caption - Turns on and off the Closed Captioning feature. Closed Captioning provides for scripted text on all programs, video tapes and laserdiscs encoded with the proper information. These encoded programs will be identified by the small 'cc' on the TV listing or prerecorded material.

Click on the button labeled CAPTION to bring up and dismiss the Closed Captioning information.

☞ IMPORTANT NOTE: CLOSED CAPTIONING TEXT WILL ONLY BE SEEN WHEN ALL CONTROL PANELS ARE DISMISSED AND REMOVED FROM THE SCREEN. Engage Closed Captioning, then remove all panels (audio control, video processing, etc.). Guide the hand directly over the video image - click on the image and all control panels will be dismissed. Closed Captioning text can now be viewed. Also, Closed Captioning should not be used when any PIP button is activated.

To turn off the Closed Captioning feature, click on the button labeled CAPTION.

☞ At any time the Video processing panel may be removed from view; click on the VIDEO button to dismiss the panel.

☞ While setting up the FroxSystem for best picture quality is relatively straight forward, we advise that your initial video configuration be accomplished by your authorized FroxSystem installer. Once established, the video parameters require minimal adjustment during normal usage.

☞ Video performance from your FroxSystem depends on a number of interrelated issues. The type of monitor used is extremely important, including that particular monitor's internal settings when referenced to the FroxVision video output. Also, the quality of video signals forwarded to the system - from broadcast, laserdisc or video cassette devices - may vary greatly and will be a determining factor in achieving video excellence. Even interconnect cabling can significantly affect video quality. Your authorized Frox dealer is well versed on each of these issues and can assist you in achieving the very best picture on your system.

The following steps can be followed for achieving optimum video imaging with your FroxSystem:

☐ (1) Insure your video monitor is properly adjusted to the FroxSystem. Data-rate RGB monitors and projectors (the components used for achieving the FroxVision 'line doubled' image) provide controls to adjust contrast and brightness parameters only. Standard NTSC television sets can be adjusted in all areas (hue, saturation, contrast, brightness, sharpness, etc.), in addition to these adjustments provided within the FroxSystem. Important details on monitor configuration and video set up are presented in the FroxSystem Installation Manual.

☞ If your monitor has been professionally calibrated, do not attempt to adjust any of its controls or settings; continue with step #2.

> >

Adjusting Video Processing

If your monitor requires initial set-up or adjustment, we urge you to contact your FroxSystem dealer/installer for assistance. Frox Technical Support can also provide advice in setting up your video monitor and can be reached at 800.525.5257.

☐ (2) Turn your monitor on and allow it to warm up for at least 1/2 hour prior to making any evaluations or adjustments.

☐ (3) Select the video input desired (television, laserdisc, etc.); click on the VIDEO button to access the digital video processing panel. Proceed with the necessary video enhancement steps on a per-component and per-channel basis.

☐ (4) A primary rule of thumb is to always use minimalist settings when adjusting the FroxVision controls. If your monitor is adjusted correctly, all panel settings should be at or near the center values (zero). Setting up the monitor to correct levels at the beginning will always result in a good picture; trying to compensate for your monitor's weaknesses (or one with incorrect settings) through the FroxSystem may result in a less-than-desirable image.

☞ For a more thorough understanding of the controls and how they operate, locate a strong incoming television signal (one that is sharp and colorful, with minimal 'ghosting'), or select the LD or VCR input. A proven technique is to make every attempt to achieve a good black and white image first, then adjust for proper color values in the video image.

Try selecting the SATURATION control and reduce it to -6; all color will be removed from the picture. Now evaluate the B&W image - is there significant contrast between black and white transitions? Adjust your CONTRAST settings +/-1, or at most +/-2. Wider adjustment ranges should always be accomplished first on your monitor, then on the FroxSystem for final touch-up. The picture should strike a good balance between 'absolute blackness' and too bright an image, but not so dark that details are lost (or when adjusted too far 'black' turns into 'grey'). Start with the '0' setting on the BRIGHTNESS control, then adjust to no more than +15/-15 settings. Beyond this range, adjust the monitor's brightness controls and then use the FroxSystem's internal brightness adjustments for final touch-up.

The PICTURE control may also be used to increase brightness; however, this control affects all FroxSystem user interface panels as well as the video image. Use this control only when all panels and incoming video images require additional brightness intensity (for example, if the brightness control on the monitor offers only limited adjustment). Otherwise, use the BRIGHTNESS control exclusively.

Work with both controls - CONTRAST and BRIGHTNESS - until an excellent black and white image results (since adjusting one usually affects the other). Finally, bring up the SATURATION control to a satisfactory color intensity level.

65

Adjusting Video Processing

☞ *Adjustment Tip*: look at a bright commercial or outdoor scene in a movie, then adjust the color level to desired intensity.

HUE (color tint) is your final adjustment in this exercise - a quick method is to look at facial close-ups and shift the image either toward the red (minus settings) or toward more green (plus settings).
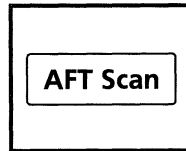
AFT Scan

☐ (5) To adjust your system for optimum television channel reception - click on the 'AFT SCAN' button. This feature scans through all available television channels (cable or broadcast), analyzes the incoming video signal and establishes an initial set of image values. This procedure takes only a few minutes to complete (NOTE: it cannot be dismissed once activated). The affected parameters - Saturation, Hue, Contrast, Brightness and Fine Tuning - are automatically set to best compensate for the incoming signal. However, the values and settings achieved by this process may ultimately NOT be the correct ones as the monitor used (and how it is set-up) can greatly alter the image quality.

Broadcast reception is also improved by adjusting the meter labeled FINE TUNE. This button only operates on television or cable feeds, and is part of the automatic adjustment when AFT SCAN is activated. Importantly, the fine tuning control affects both image reception,

⊖ **0** ⊕
Fine Tune
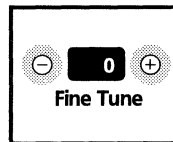
apparent sharpness and color intensity. Experiment with this control - for example, color intensity may be increased by moving the FINE TUNE control into a plus-range (instead of increasing the SATURATION control). In effect, the channel had 'plenty of color' but was not being received at correct or peak signal levels.

Finally, the AUTO TUNE control acts as a 'single channel' touch-up for video enhancement. When selected, only that channel currently in view will be evaluated and the automatic adjustments applied.
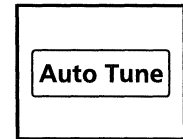
Auto Tune

☐ (6) To achieve initial laserdisc or video cassette playback settings - select the component, bring up the video processing panel and click on the AUTO TUNE control. The FroxSystem instantly evaluates the incoming video signal and applies a set of processing enhancements. Only the Saturation, Hue, Contrast and Brightness parameters are affected when using this feature; use it as a 'touch-up' control when readjusting the picture quality. Individual controls may still be selected for final adjustment.

☐ (7) Two additional controls will enhance any component or channel:

Use the SHARPNESS control when the image requires 'softening' (sharpness is reduced with settings toward -10) or more edge detail (sharpness is increased with settings

⊖ **0** ⊕
Sharpness

➤ ➤
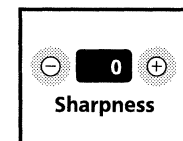
Adjusting Video Processing

up to and including +10). Some broadcast channels are improved by *reducing* the sharpness control, while others will benefit from *increased* edge detail. Experiment with this control for preferred results.

The NOISE control provides adjustable levels of video 'shot noise' reduction. Often the video image is contaminated by 'white specs' - interference from blenders and other

⊖ ▮ 0 ▮ ⊕
Noise
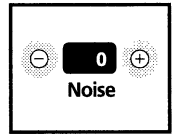
appliances - even laserdisc degradation known as 'laser rot'. All may be reduced in apparent intensity by selectively increasing the noise reduction parameters. The maximum available noise reduction range is +7 on the control, and is designed to minimize video softening or other unwanted degradation when in use.

67

Important FroxVision Issues

◄ ◄

3.11 IMPORTANT FROXVISION ISSUES

Frox employs an architecture that digitizes the incoming analog video signal. All deinterlacing, chrominance and luminance processing, noise reduction and additional NTSC artifact reduction are performed in the digital domain, then converted back into primary RGB signals when forwarded to the monitor. The end result - an image free of NTSC 'scanning lines' and motion artifacts - is of major benefit when incorporating the FroxSystem into a large home theater display. Some signals, however, are not easily processed by the FroxSystem due to a number of reasons. The following is a brief summary of these issues and possible solutions.

☐ (1) VIDEO IMAGE 'TEARING.' Certain incoming signals may pose problems for the FroxSystem, particularly if they do not meet NTSC (National Television Systems Committee) video standards. For example, some VCRs connected to the FroxSystem exhibit an artifact known as 'flagging' (a 'tearing' of the image, usually across the top 1/8 to 1/4 of the image). In severe cases the on-screen image becomes unwatchable as complete sync loss occurs. A secondary artifact may be present known as 'jaggies' (visible saw-tooth patterns in vertical edges). Both are related to incoming analog video signals with improper sync.

Again, the FroxSystem is a digital video system. The hardware looks at an incoming analog video source and converts it into digital parameters. In order to do this,

the Frox Video Preprocessor locks to the horizontal and vertical synchronization (sync) signals that exist in the FCC (Federal Communications Commission) standard for NTSC television broadcasts. If all broadcasters and manufacturers of hardware adhered to FCC regulations, video reproduction in the consumer and commercial world would be hassle-free and dependable. But this is not always the case.

In the beginning of television broadcasting the FCC was very strict about the timing requirements of the video image. The precision of these timing requirements is critical because key picture parameters are placed at specific points in the signal, and a television decoder looks to these very points to gather the necessary information to properly reproduce an image. For example, the horizontal sync signal is at 15.75 kHz, the vertical sync signal is at 60 Hz and the color burst is at 3.58 MHz. If the timing is suddenly altered, incorrect information that might result could cause an visible error or artifact in the image.

In the 1970's the video cassette recorder (VCR) became a popular new method of delivering video images to the consumer. VCR manufacturers were not required to meet the FCC broadcast requirements (since they weren't broadcasting anything at all) and found that they didn't need to meet the standard's specifications in order to deliver an image to an analog television receiver. Hence, a defacto variation to the original NTSC standard evolved for video that permitted greater possibilities for error.

➤ ➤

Important FroxVision Issues

With VCRs, when a field of video reaches the bottom and goes to the top of the next field, the heads switch causing the horizontal sync pulses to jump. The jump or shift is an example of time base error and is very common with VCRs. Time base errors are caused in other ways as well. Even a laserdisc can have time base errors due to the eccentricities in the disc itself. Typically, inexpensive VCRs are a primary source of time base errors due to their head switching errors and low quality tape transport mechanisms.

To complicate matters, cable systems in this country are not required to meet FCC 'over-air' broadcast require-ments. When terrestrial cable companies downlink signals from satellites, they are only required to pass the entire signal along to the consumer. There is no regulation designed to assure quality in this delivery path; in some instances local cable companies feed commercials that are generated by in-house consumer-grade VCRs (fraught with signal degradation and time base errors). Therefore, all of the problems associated with VCRs can be legally passed to a subscriber's television set by a cable operator.

Digital video systems such as home computer editing stations or digital video production houses are familiar with these problems. A digital Time Base Corrector (TBC) is a component that connects to a personal computer, digital video editor or even the FroxSystem to deliver signals with a 'rock solid' time base, thus insuring optimum picture quality. An outboard TBC will also correct for the use of poor quality VCRs at local cable company broadcast sites (the VCR tuner would be

selected in the FroxSystem for primary television viewing in this instance).

☞ Discriminating enthusiasts desiring the very best video performance through the FroxSystem (and, in particular, with systems incorporating average-to-lower quality VCRs) should consider adding an in-line TBC for optimum image stability and video quality.

In lieu of a TBC the Frox digital software will attempt to correct for these signal errors; for example, the VCR software code (referred to as a 'coarse lock' mode) processes the video differently from the Laserdisc and TV video software (where sync signals are highly stable - a 'fine lock' mode video processing is used in these latter situations). The 'coarse lock' mode permits a greater range of sync wandering, while at the same time cropping the video image (including shifting the video image up) to remove most of the offending 'flagging' and tearing from view. Note that this image shift will remain for all video sources as long as the PLAY button is engaged on the Frox user interface; selecting STOP on the VCR panel will return full-frame video to all sources.

69

Important FroxVision Issues

◁ ◁

☐ (2) VIDEO SYNC LOCKING ('PINK BARS'). As previously outlined, the FroxSystem synchronizes and locks to the 3.58 MHZ color burst in the video signal. Either the 'coarse lock' or 'fine lock' software modes are engaged and selected by the system, depending upon source material and component(s) used. These sync modes are directly affected by the FroxControl user interface panel: hit PLAY and the proper video software is activated.

Loss of sync may result in the appearance of a number of horizontal 'pink bars' across the video image; another manifestation is a 'stair stepping' effect in vertical edges. This indicates that the FroxSystem has lost synchronization lock with the incoming video signal and requires activation of the timing software.

A number of situations can cause loss of sync (thus 'pink bars') to occur: (a) improper component operation; (b) signal loss or degradation caused by poor video cabling; (c) video tape, laserdisc or broadcast signal dropouts; (d) certain black and white videotape transfers from film; (e) video components that provide non-standard video graphics when in PAUSE modes ('blue' or 'black' screen internally–generated patterns).

☞ The majority of sync loss cases occur when starting up a component for the first time or when manually operating the device. Remember, Frox anticipates managing both the component's device control and digital video software processing for the home theater - they are interrelated parts of each other. Activating a component manually (by walking up to a laserdisc, for example, and hitting PAUSE when it was playing, then selecting PLAY again *without using the FroxSystem's user interface*) interrupts the known operating state of the device as well as the video timing signals. The FroxSystem has no outside knowledge of your actions and thus did not reengage the 'fine lock' sync mode. Correction is easy and simple - with the FroxWand, select PAUSE and then PLAY, or STILL and then PLAY. The selection of the PLAY command (or ENTER when watching TV) is the activation signal for the resynchronization software.

The second situation (b) can be easily remedied by using quality interconnect cables between all video components and the FroxSystem. As with most all-digital devices, Frox is unforgiving. The old adage 'the entire system is only as good as its weakest link' holds true with the FroxSystem: poor quality interconnect cables can cause a number of signal errors to reach the processors, errors that could cause intermittent loss of sync. Use only the highest-quality shielded video cabling and make every attempt to limit the distance between the source components and the FroxSystem.

Issue (c) is similar, though of less direct control by the end user. Small, intermittent dropouts in the source material will not affect the FroxSystem's performance. Large signal errors (such as sectional dropouts in the source material, video tape tears, even momentary broadcast signal interrupts) can result in loss of sync. As

70

> >

Important FroxVision Issues

discussed earlier, simply engage the PLAY or ENTER command on the video control stripe; the resynchronization software will once again respond and correct the problem.

Situations (d) and (e) above are caused by similar problems - the lack of a chroma burst within the video signal. The vast majority of black and white film transfers to video contain the 3.58MHz color carrier signal; thus, no difficulties will be experienced by the FroxSystem. Also, most (but not all) laserdisc players and VCRs provide the proper signal (with chroma burst) when in the pause mode. Again, the FroxSystem can properly lock to these products. The rare instances where the video does not contain a color carrier may cause the 'pink bars' or 'stair stepping' artifacts to appear throughout the image and cannot be eliminated.

◻ (3) CHROMA SATURATION. The FroxSystem processes both chrominance (color) and luminance (black & white) portions separately in digital states. A true 24-bit digital color processor, the FroxSystem can recognize and reproduce over 16.7 million individual hues, achieving excellent color tracking and overall accuracy from standard NTSC sources.

A finite range of color intensity, however, exists within the system due to the digitization method used by Frox. Oversaturation (most commonly resulting when the SATURATION control located on the video adjustment panel is increased beyond proper operating range) can occur, causing the primary colors to 'clip' and distort. In

these instances, red images can turn to green, green can shift to red and blue to green (in effect, wrapping around the color palette).

An analogy can be made to the audio world. Analog hi-fi systems can softly 'clip' and distort when at high amplitude levels, perhaps sounding a bit harsher but otherwise generally listenable. Digital audio components either produce music or distortion; there is no headroom or margin for errors to occur (as the signals exist in a digital state - ones or zeros). The FroxSystem video processors permit video clipping to occur, as the range of color intensity required from monitor to monitor and from the various source components is an unknown variable.

☞ Proper adjustment of the video display monitor is *most important* when setting up a FroxSystem, and the critical variable when attempting to achieve accurate color hue and intensity. Grey scale and RGB color test patterns are provided in the FroxSystem *Maintenance* area for this specific purpose. Once properly configured with the monitor of choice, few systems can match the overall color balance and 'film-like' image achieved with Frox.

As a final note, a general guideline exists for setting the other video controls, including the SATURATION parameter - always follow a 'minimalist' approach at all times, keeping the controls as close to nominal (or zero) as possible. Not only does this aid in obtaining the best video processing for the desired component, but indicates the correct set-up of the video display monitor.

71

Important FroxVision
Issues

☐ (4) BLUE SCREEN 'ROLLING.' Similar to the situation with video games (section 3.13), certain VCR or laserdisc components may output non-standard NTSC signals. In rare instances (and only on certain component models) the internally-generated full-frame 'blue' or 'green' screens, often presented during the stop or pause modes, will continuously roll and not achieve 'lock' by the FroxSystem digital processors.

These components output only one of the two video fields when presenting this image. While perhaps visually annoying, no damage will be caused to the system or to the control methodology; re-synchronization will occur when standard video is once again displayed.

> >

Alternate Monitor

3.12 ALTERNATE TV MONITOR ACTIVATION - THE F2 FROXWAND CONTROL

The FroxSystem can be configured to operate on any standard television monitor.

Previous software releases mandated data-rate, VGA graphics-compatible monitors only (operating at the horizontal retrace rate of 31.5 kHz, with separate RGB and sync inputs). These special monitors or video projectors are still required when the full FroxVision home theater features are desired (providing all-digital video enhancement, deinterlacing processing and digital video special effects). With Version 2.0 and beyond, scanning-rate conversion software can optionally enable the FroxControl graphical user interface through the output of the Video Preprocessor's second video channel (Video Output #2). This is designed so that you can enjoy the ultimate performance in the home theater room and still access the majority of the FroxSystem components on standard television sets in alternate locations.
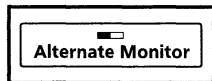
All FroxControl graphics, digital audio, digital video and data services may be accessed on such monitor(s) via the ALTERNATE MONITOR button (located on the *Dubbing* and *Routing* panels) or by depressing the F2 button on the FroxWand. The F2 FroxWand button turns on or off the FroxSystem feed to a standard television set (in some cases turning on and off the standard monitor, as well).
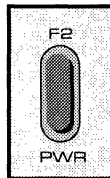
☞ The Alternate Monitor software is routed from your system's Video Output #2 using either the S-Video or composite line outputs; the S-Video pathway will always result in the best picture quality.

☞ When using the Alternate TV Monitor option, a number of system-wide features are disabled: *the FroxVision digital video imaging, most PIP features, video dubbing capability and the access to any component connected to Video Input #2*. Understanding these restrictions, your installer should consider the component priority at installation time when configuring an alternate monitor to a FroxSystem (in other words, the most important or most frequently used video source component should be configured into Video Input #1, as the component installed in Video Input #2 *will not be accessible* when the Alternate Monitor is selected). Also, at time of installation the Alternate Monitor may be selected to operate 'all the time' (for configurations using standard NTSC monitors exclusively) or 'on demand.' In the latter, the Alternate Monitor software will be turned on and off via the F2 button on the face of the FroxWand, or by choosing the ALTERNATE MONITOR button located in the *Audio Routing* or *Dubbing* areas of the system.

It is important to note that no feature loss would occur if an external RGB-to-NTSC scan converter is used, instead of using the internal scan conversion software.

Alternate Monitor

F2

PWR

Other Video Components

3.13 ADDITIONAL VIDEO COMPONENT INTEGRATION NOTES

☐ (1) SATELLITE RECEIVER INTEGRATION. Frox recently announced plans to incorporate satellite receiver device control in a future software release.

At the present time satellite systems may be connected to a FroxSystem, but only as an external video component without support by the user interface control structure. Operation would require manual access of the satellite receiver, including subsequent activation of a PLAY or ENTER button to engage the FroxSystem sync protocol (as described earlier in section 3.11).

In the case of satellite component integration, your FroxCast data reception will require manual tuning of the satellite receiver to either Galaxy 5, Transponder 6 (WTBS - Vertical Blanking Interval line #20) or Galaxy 5, Transponder 7 (WGN - featured on VBI line #17). Since FroxCast data transmissions are always received during system 'soft power' down (when the FroxWand POWER toggle is depressed - the system blanks the video output but does not perform AC interrupt to the processors), it is important that you perform a daily routine that properly tunes the satellite receiver to one of the above channels for data reception.

Contact Frox Technical Support at 800.525.5257 for specific questions concerning satellite receiver integration with the FroxSystem.

☐ (2) VIDEO GAMES. Video games, in general, cannot be used with the FroxSystem.

A primary reason for this is due to the non-standard video output of the device. The FroxSystem digital video processors 'de-interlace' the incoming video signal: two alternating video fields are digitized, compared and combined to create a single full-frame image free of NTSC scanning lines (the odd-numbered scanning lines are read first and stored, then compared with the even-number scanning lines presented 1/60th of second later. In effect the NTSC *field* rate is converted to *frame* rate in the FroxSystem, presenting 60 images a second, verses 30).

Unfortunately, many video games only output *either the odd or even fields, not both*. Analog monitors can accept this anomalous video output and display it; the digital video FroxVision processors cannot.

➤ ➤

Other Video Components

☞ Interestingly, certain time base correctors (TBCs) can assist in the correction of this signal from a video game, and will permit limited viewing of the game when connected to the FroxSystem (though often retaining some horizontal 'jitter' in the image due to this lack of video information). Frox recommends the use of alternate NTSC inputs on the monitor or projector whenever video game play is desired.

▢ (3) MULTI-ZONE VIDEO. The FroxSystem, while providing multi-zone audio capabilities as a primary feature set of the product, has no provisions for multi-zoned video display.

Multiple data-rate and standard NTSC monitors may be connected to the FroxSystem (using outboard video distribution amplifiers); however, all monitors will 'see' the same video image as presented in the main home theater area.

75

Notes

‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹‹

>   *FroxSound Digital Audio Processing*

SECTION 4 - FROXSOUND DIGITAL AUDIO PROCESSING.

The FroxSystem provides breakthrough technology that advances the state-of-the-art in digital audio signal processing. Using a unique 'open-architecture' design, the FroxSystem sets new standards in providing all-digital LucasFilm Home THX® audio processing, digital Dolby™ Pro • Logic surround sound, graphic equalization and our infinitely-variable DSP hall-effects generator called The Sonic Playground™.

An important technique known as Digital-Straight-Line™ is employed by the FroxSystem to sustain a digital audio signal longer than any other processor on the market. Regardless of the audio input (whether analog or digital), the system converts it to a digital state immediately and maintains its integrity (with your choice of sonic processing) until it reaches either digital speakers or D-to-A converters. This technique eliminates extraneous noise created by analog or environmental sources, while providing all signal processing entirely in the digital domain.

The result is a wide array of digital audio effects created by your FroxSystem, controlled and managed by the unique FroxControl user interface menus.

SECTION 4

Audio Control Panels

‹ ‹

4.1 AUDIO CONTROL PANELS

FroxSound digital audio processing is accessed from any component control panel featuring the AUDIO button (the *Video* control panel, the *CD Library, Dubbing* and *Routing* screens). On all user interface panels, the
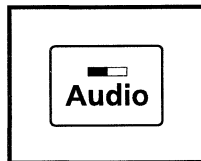
Audio

AUDIO button is always located to the immediate left of the main FROX navigator button. As the FroxSystem associates audio processing with the component, each component's processing and respective volume levels may be independently set, stored and retained for future recall and use.
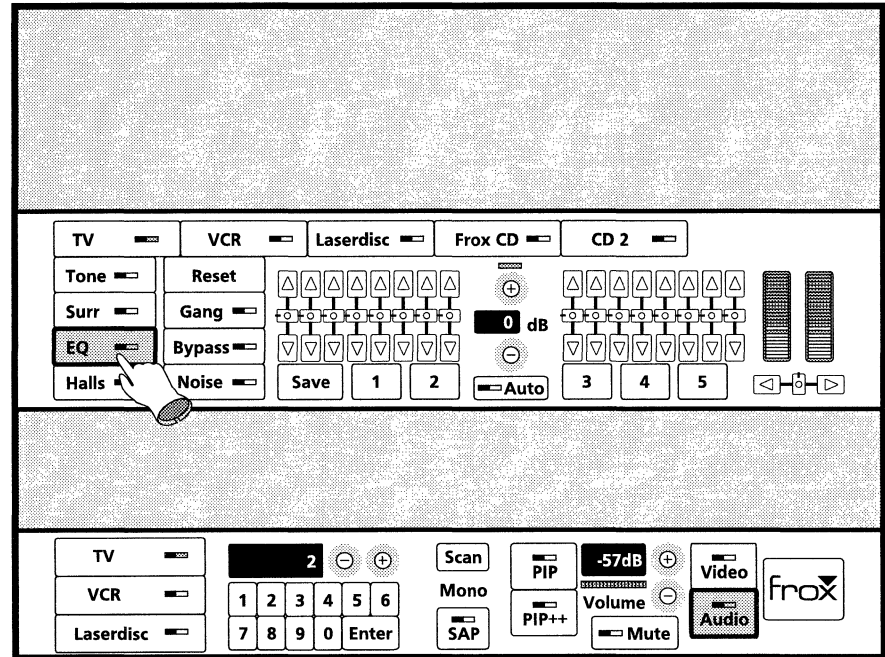
Click on the AUDIO button to review the four available processing choices:

| TONE | EQ |
| SURROUND | HALLS |

➢ ➢

Audio Control Panels

TONE - provides the least amount of signal processing. In addition to basic midrange and treble controls (plus balance adjustments), other features include a subwoofer level control, a unique input level adjustment trim control and convenient 'peak reading' VU meters.

| Tone ▬▭ |
| Surr ▬▭ |
| EQ ▬▭ |
| Halls ▬▭ |

SURR (Surround) - provides access to all-digital Dolby™ Pro•Logic or LucasFilm certified Home THX® surround sound processing. A number of adjustments are available, including calibration controls to properly set up and configure your home theater audio levels.

EQ - a digital eight-band per channel stereo graphic equalizer featuring five favorite-memory presets.

HALLS - enables the unique digital hall environment processing, where your favorite music can transport you to exciting new venues within The Sonic Playground™.

Watching movies, for course, is usually performed in one of the two surround sound modes for outstanding theater impact and realism. Other audio components can be directed through favorite digital audio sound processing choices to achieve your desired effects.

Inital Volume Settings

4.2 INITIAL VOLUME SETTINGS

Each component configured to the system offers independent volume settings (as compared to other systems having only one volume level for all components, a less-than-desirable attribute). Volume may be adjusted via two primary methods: (1) clicking on the '+' or '-' control adjacent to the volume meter; (2) by selecting the up 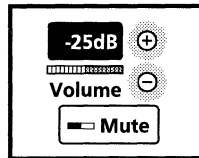or down rocker position on the VOL convenience button located on the face of the wand. Note the volume meter offers a numeric display of volume settings (registering in decibels, a unit to measure volume amplitude) along with a small green LED bar (located directly underneath the numeric meter) to visually indicate volume levels.
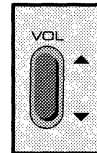
The FroxSystem's volume meter scales from an OFF position (no sound), then increases from -60dB in one dB increments to 0dB (the reference maximum volume level). The volume meter may be raised beyond the 0dB level to a +12dB position (the green volume LED indicator will 'fill' from left to right, turning red at all volume settings above 0dB).

Beneath the volume meter is a MUTE control to instantly dismiss the FroxSystem's audio output; audio muting may also be engaged by selecting the M/II (MUTE/PAUSE) control on the face of the FroxWand. Note the control's 'tally' light will indicate whether audio muting is engaged.

☞ OPERATIONAL TIP: Be sure the volume level is reduced to a safe level (usually -25dB or lower) when 'unmuting', as toggling between muted and unmuted states at high volume levels can cause damage to the rest of your audio system.

☞ CAUTION: USE EXTREME CARE whenever adjusting the volume levels close to or beyond the 0dB point, as damage to loudspeakers and amplifiers can easily result. As a general rule, NEVER listen for extended periods of time to amplitude levels above normal 'conversational' levels. PERMANENT LOSS OF HEARING MAY RESULT FROM EXTENDED LISTENING AT EXTREME VOLUME LEVELS.

>>

*FroxSound Audio
Processing*

4.3 FROXSOUND AUDIO PROCESSING

Click on the AUDIO button to select and adjust desired audio processing parameters.

Presented across the center of the screen is the FroxSound digital audio processing panel. This interface provides access to the four major audio processing choices, selected by choosing the appropriate button along the left-hand side of the audio processing panel.

When the system is powered up for the first time, the TONE control panel is always presented (it is the default processor). For example, you may at this time select another audio processor to enjoy with your laserdisc player, and the FroxSystem will remember this choice upon subsequent returns to the LD control panel. Each time a different audio processor is requested, the user interface will quickly change to reflect the new processor's available controls. Also note that a momen- tary 'delay' in the sound (a pause of up to 5 seconds) may result whenever the audio processing is changed from one type to another. (This is normal for your FroxSystem, as the delay is caused by the 'clearing' of the previous audio processing program and the subsequent 'loading' of the new audio program).
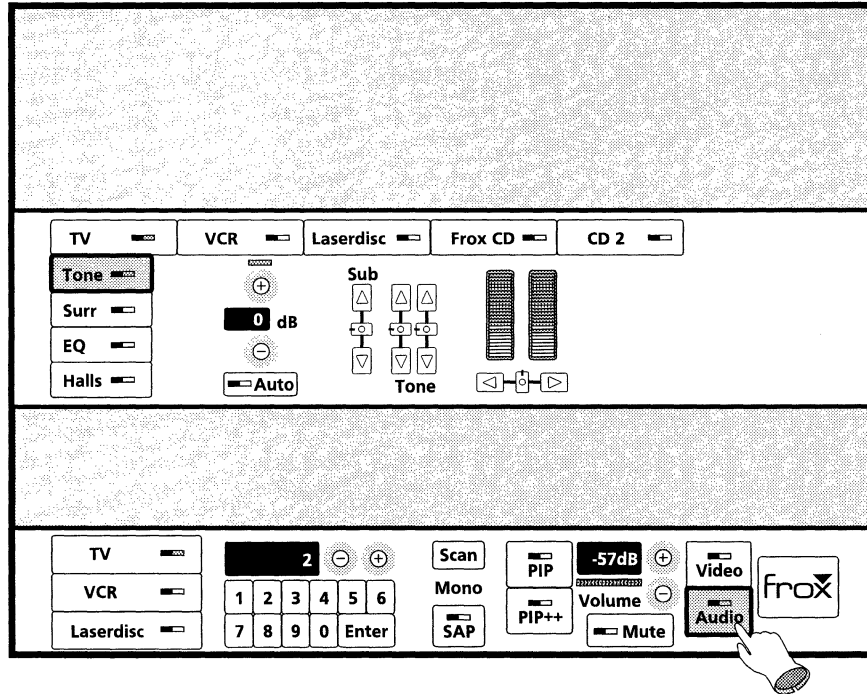
FroxSound Audio Processing

‹ ‹

FroxSound digital audio processing is always associated with the source component. Whenever a new audio or video component is selected, the audio processing panel will also change to reflect any previous assignments. With the FroxSystem, you can set up your desired audio processing on a component-by-component basis, and the system will automatically track and remember these choices upon returning to that specific device.

This panel also permits the unique ability to 'watch' one component while 'listening' to another, even via a

TV ▬	VCR ▬	Laserdisc ▬	Frox CD ▬	CD 2 ▬
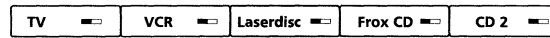
different audio processor. Located across the top portion of the audio panel are buttons indicating the available source components connected to the system. Reading from left to right, all video components (TV, VCRs, laserdisc players) are presented first, with the remaining audio components (CD players, etc.) listed next. By choosing any one of these buttons, the sound (along with audio processing flavor) will change to reflect that source component (as you view a different source). Of course, the alternate device must be 'on' and playing to be able to listen to it while watching a different video component.

We encourage you to experiment with the variety of audio processing and component configurations available through the FroxSystem; contact Frox Technical Support at 800.525.5257 should questions arise concerning audio processing selections.

>>

Tone Control
Adjustments

4.4 TONE CONTROL ADJUSTMENTS

The selection labeled TONE provides for minimalist digital audio processing on any component. The main operating controls are as follows (as viewed from left to right on the Tone control panel):
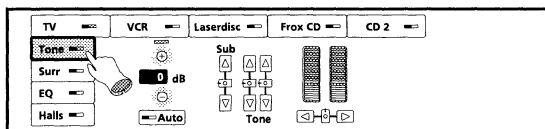
Auto Input Trim Adjustment - The first meter to the immediate right of the processing buttons. This control features a top-mounted LED clipping indicator, a '+' and '-' meter with decibel settings, and a button labeled AUTO. All three controls work in tandem to protect your audio equipment from unwanted damage.

☞ Loud passages can often overload any digital input pathway, particularly if the subwoofer, midrange, or treble controls have been boosted to higher-than-normal levels. The FroxSystem's auto input trim feature aids in establishing and maintaining proper input levels from the various source components.

As the music plays, note the VU meters on the right; should they exceed the normal 'green' or 'yellow' operating ranges and reach the 'red' peak areas, harmful clipping may occur. Your audio system may exhibit

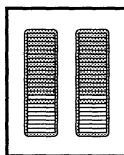a loud 'pop' or other such artifact, indicating clipping (the digital processors within Frox, in essence, have tried to reproduce a 'hot' input signal that exceeds the system's finite digital processing values). Continued listening at these levels can result in permanent damage to both your amplifiers and/or loudspeakers (not to mention your hearing).

The solution is to click on the AUTO button located beneath the input trim meter.

This control provides a real-time dynamic adjustment to the incoming audio signal, and will automatically detect any signals of extreme amplitude and reduce them to safe levels. The input level trim adjustment is reflected by the numeric dB meter, starting at maximum input levels (0dB) and will reduce the audio input in 1dB increments.
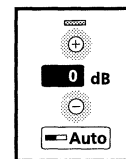
☞ Frox recommends that during initial system setup, all automatic input trim controls be turned on and allowed to monitor the respective device's input levels, in order to make the automatic adjustments. The control can be turned off for daily use; however, there's no harm in leaving the control in the 'on' position, as it will always remain at the ready to protect your audio system.

83

Tone Control Adjustments

When the input trim control is active, the volume will be diminished - but achieving the proper input level is vital when configuring your source components to the FroxSystem. Simply increase the main volume control to increase the overall amplitude (after the input trim adjustment has occurred) and reach your desired audio levels.

To manually reset the input trim control at any time, click on the '+' or '-' buttons located above and below the meter.

Subwoofer, Midrange and Treble Controls - Three independent audio sliders permit adjustment of your subwoofer (if your system has one or more configured; if not, this control affects the lower bass regions of your system) and midrange/treble tone regions.

The subwoofer control is a 'lowshelf' filter operating at 100 Hz, with a +/- 12dB per octave possible adjustment range. The midrange control (middle slider, next to the subwoofer control) operates at a center frequency of 1 kHz (+/- 12dB), while the treble control (right slider) affects all frequencies at and above the 6 kHz range ('highshelf' filter type, +/- 12dB per octave).
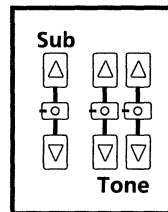
The slider controls are adjusted by one of the following methods: the 'arrow' box on either end of the slider may be selected (just the box and arrow will 'light up' when in the correct position) and clicked on to move the slider in your desired direction; second, clicking and holding while the hand icon is held stationary over the box will accelerate the slider's movement toward your direction; third, the on-screen hand's fingertip may be positioned anywhere on the slider itself, and a single click of the FroxWand will instantly move the slider to your desired position. Finally, the button located in the center of the slider (the small gray icon with the slight depression in the center) may be clicked on, held firmly with the FroxWand by continuing to squeeze the wand's activation panel, then 'carried' to your desired location along the slider by manipulation of the wand's thumb movement controller.

≻ ≻

Tone Control Adjustments

Balance - Permits left/right balance adjustment. Located beneath the twin VU meters, this slider operates much like the vertically-positioned tone controls, allowing for optimal 'centering' of the stereo image. Often your listening environment (or seating position) can affect the relative volume between speakers - so the BALANCE slider is used to center and adjust the sound for precise stereo imaging.
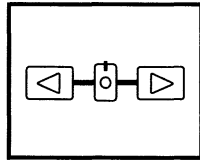
VU Meters - Twin 'peak reading' VU meters are present on the Tone control panel, offering a visual representation of the incoming audio signal. The lower part of the VU meters register in the green or 'safe' operating range, increase upward into a 'caution' area (indicated by yellow LEDs) and finally reach the red colored, peak input ranges (generally indicating an 'unsafe' input operating condition). Use these helpful meters in setting proper input trim levels and overall volume adjustments.
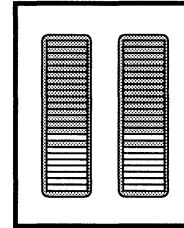
85

Surround Sound Processing

≺ ≺

4.5 SURROUND SOUND PROCESSING

Two distinct versions of surround sound processing are provided with your FroxSystem: all-digital Dolby™ Pro•Logic or LucasFilm certified Home THX® Audio processing.

Major motion picture film releases provide for special encoded Dolby Stereo™ soundtracks, allowing for four separate sound channels to be recorded and reproduced in the theater (Left, Center, Right and Surround effects). The transfer of the film's soundtrack to video tape or laserdisc for home use is released as a Dolby Surround™ encoded movie. When played back through the FroxSystem's certified Dolby™ Pro•Logic decoder, the listener is able to experience a close approximation of theater's audio effects within the home environment.
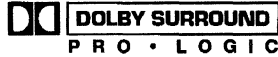
An augmentation to the Dolby Pro•Logic surround sound processing is available through the Home THX® audio system, also provided with your FroxSystem. THX is a set of stringent performance criteria for all parts of the audio reproduction chain (including the certified-THX surround processor within the FroxSystem, plus amplifiers and loudspeakers that comprise a Home THX theater system). A properly configured Home THX system can achieve a close approximation of the actual dubbing stage where the film's audio was originally created. In addition, special processing to the original decoded soundtrack (employing the necessary Dolby Pro•Logic decoding techniques) results in a 6-channel matrix for enhanced theater audio performance. THX provides for Left, Center, Right, Left Surround, Right Surround and Subwoofer steering - all obtained from the original Dolby Stereo encoded audio.

Whichever format you choose, the FroxSystem provides outstanding surround sound decoding - achieving the ultimate experience available in your state-of-the-art home theater environment.

4.6 DOLBY™ PRO·LOGIC OPERATION

The original standard for all home consumer electronics surround decoders, our all-digital Frox Dolby™ Pro·Logic processing recreates the four audio channels (Left, Right, Center and Surround) from the encoded Dolby Stereo™ (two channel) soundtrack. Dolby Pro·Logic enhances the sonic steering and provides accurate localization of sound images - dialogue in the center, left/right staging plus surround effects properly identified and forwarded to the appropriate speakers.

To activate the FroxSystem's Dolby Pro·Logic surround processor:

☐ (1) Click on the AUDIO button to access the *Audio* control panel and select the SURR choice from the four processing choices.
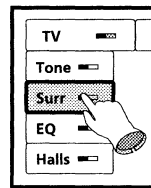
☐ (2) The system will default to the THX processor (if available) but will always provide easy access to the required Dolby Pro·Logic foundation. Note the THX and the PROLOGIC buttons are both toggled 'on'; simply position the on-screen hand icon on the button labeled PROLOGIC and click. This will activate only the Dolby Pro·Logic surround sound processor (and thus turn off the THX version).
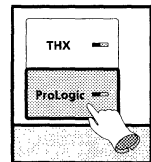
☐ (3) Adjustments may now be made to the Dolby Pro·Logic panel, or simply sit back and enjoy the movie experience. To dismiss the *Audio* control panel, select the AUDIO button (or move the on-screen hand directly over the video image and click - the rapid user interface removal technique).
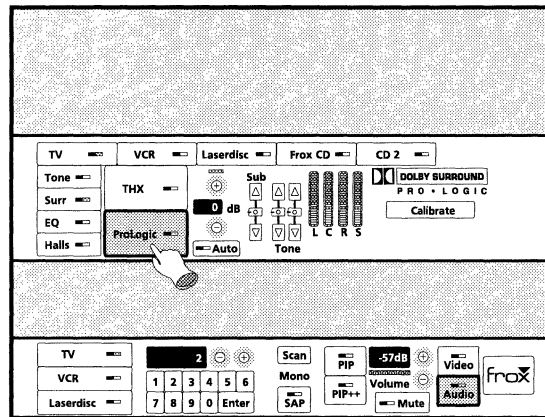
Pro·Logic effects can be enjoyed from any source material offering the Dolby Stereo™ or Dolby Surround™ encoding, including (but not limited to) stereo television broadcasts, cable and satellite television programs, video tapes and laserdiscs. Such encoded programs will be listed with either designate, and may also include the 'Double D' trademark logo of Dolby Laboratories.

Dolby™ Pro•Logic Surround

☞ At minimum your system should feature dedicated left, right and surround loudspeakers to enjoy the home theater surround sound experience. This is known as a basic Dolby Surround™ configuration, easily achieved by your FroxSystem processor. Improved results can be attained in the complete Dolby Pro•Logic mode, in which your home theater system is configured with a dedicated center loudspeaker. The center audio track is principally employed to emphasize the film's dialogue, while music and 'panning' effects across the sound stage will generally emanate from the left and right loudspeakers. Greater dialogue clarity throughout your theater seating area is a principle benefit of the Pro•Logic mode.

Some installations, however, cannot accommodate a center speaker (due to space limitations, etc.). In these instances your Pro•Logic processor can be configured to provide a 'phantom' center image. In such installations be advised that your seating area may be critical, as the 'center' image is equally reproduced by the left and right speakers. You many need to sit in a area equidistant from both left and right speakers (the 'sweet spot', as it is known) in order to achieve the proper dialogue relationship to the video screen and balance with the other loudspeakers. Refer to the FroxSystem Installation documentation to reconfigure your system if necessary, or contact your authorized Frox installer for assistance.

A number of important features and controls exist to aid in the enjoyment of surround sound effects. The controls and their operation are as follows:

Auto Input Trim Adjustment - As described in the Tone discussion earlier (section 4.4), an 'automatic input trim' panel offers special protection to your FroxSystem. When engaged, very loud (and thus potentially dama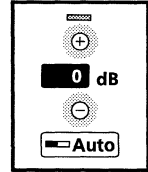ging) audio input levels are automatically reduced in amplitude until safe operating ranges are reached. The input level adjustments may be manually set using the '+/-' controls, or allowed to monitor the incoming signal and activate automatically.

To turn on the automatic feature, click on the button labeled AUTO. As your musical passage plays, the decibel meter indicates how far the system had to reduce the overall input volume levels to protect your system. Most input reductions are made in small 1dB increments, lowered from the maximum 0dB level - though the necessary volume trim may take larger steps. The input trim adjustments will remain at the reduced setting until either overridden by the end user, or another reduction in input level is required.

Of course, when the input trim feature is active, the overall system volume may be slightly diminished - but achieving the proper input level is important when configuring your source components to the FroxSystem. Simply increase the main volume control to achieve your desired audio levels (after the input trim adjustment has occurred).

> >

Dolby ™ Pro · Logic
Surround

To restore the maximum available input setting after the system has detected these potentially-damaging levels, click on the '+' button until the meter is returned to the 0dB position.

☞ The auto input trim feature may be activated and left in the 'on' position at all times.

Subwoofer, Midrange and Treble Controls - Three independent audio sliders permit adjustment of your subwoofer (if your system has one or more configured; if not, this control affects the lower bass regions of your music) and midrange/treble tone regions. The subwoofer control is a 'lowshelf' filter operating at 100 Hz, with a +/- 12dB per octave possible adjustment range. The midrange control (middle slider, next to the subwoofer control) operates at a center frequency of 1 kHz (+/- 12 dB), while the treble control (right slider) affects all frequencies at and above the 6 kHz range ('highshelf' filter type, +/- 12dB per octave).

To recap the slider control activation, choose one of the following methods: the 'arrow' box on either end of the slider may be selected (just the box and arrow will 'light up' when in the correct position) and clicked on to move the slider in your desired direction; second, clicking and holding while the hand icon is held stationary over the box will accelerate the slider's movement toward your direction; third, the on-screen hand's fingertip may be positioned anywhere on the slider itself, and a single click of the FroxWand will instantly move 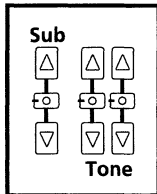the slider to your desired position. Finally, the button located in the center of the slider (the small gray icon with the slight depression in the center) may be clicked on, held firmly with the FroxWand by continuing to squeeze the wand's activation panel, then 'carried' to your desired location along the slider by manipulation of the wand's thumb movement controller.

VU Meters - 'Peak reading' VU meters for Left, Center, Right and Surround channels (labeled 'L/C/R/S') are present on the Dolby Pro · Logic panel, offering a visual representation of the incoming audio signal. The lower portion of the meters register in the green or 'safe' operating range, and increase upward to yellow and red-colored (maximum input) ranges. These meters are important tools in monitoring overall system volume and input level adjustments.
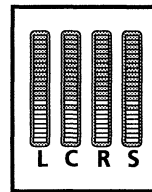
89

Calibrate - Located beneath the Dolby Pro•Logic logo is a special CALIBRATE control, used to setup and adjust your home the-ater surround sound parameters.
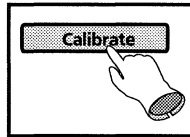
Upon the completion of your home theater installation, your dealer will enter this calibration area to fine tune the surround sound array. This panel is used to determine the proper amplitude levels of all loudspeakers in the room, plus perform any necessary adjustments to compensate for your particular room's overall layout and listening position.

In some installations, however, the calibration button (permitting adjustments of the left, center, right and surround channels) may have been removed. This protects your system from undesired alterations or adjustments after the alignment procedures have been completed; these controls are then only accessible by your authorized FroxSystem dealer/installer. The calibration controls can be reconfigured and made available to you upon request - contact your dealer or Frox Technical Support at 800.525.5257 for assistance.

To enter the setup area, click on the CALIBRATE button. A new panel will be temporarily 'written' over your
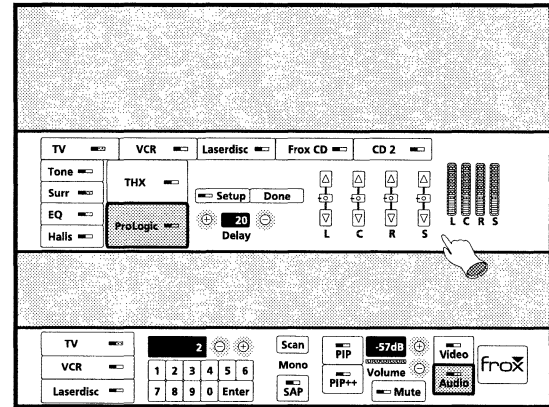
normal Pro•Logic control stripe, providing the special surround sound configuration controls.

The first systems check is usually one that determines if the physical installation has been performed correctly; by clicking on the SETUP button a test signal is rotated throughout all available channels. The installer can quickly ascertain if a particular loudspeaker or amplifier is functioning properly, as the test signal begins with the left

≻ ≻

Dolby ™ Pro · Logic Surround
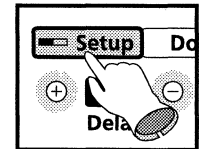
front channel and circles through the remaining channels (left; center; right; surround) Note the VU meters on the right of the panel will confirm which channel is currently being provided a test signal.

Next, the amount of time delay required is calculated and adjusted by your installer. Your FroxSystem's Pro · Logic decoder features an adjustable time delay control to improve system performance. Establishing the proper amount of time delay is important, as the correct setting aids in front speaker clarity and directionality. A properly-adjusted Pro · Logic surround sound system permits the frontal sound image (where all the action and dialogue occurs) to reach your ears first, while the surround sound speakers create a sense of spaciousness. In this manner even the most prominent surround effects will be enjoyed, without overpowering the vital front speaker information.

The DELAY meter indicates the arrival time setting (in milliseconds, abbreviated ms) of the decoder. This control compensates for the arrival times between the front and rear sounds, as they relate to your listening position. Most installations can use the normal 20 ms setting without need for further adjustment. However, if your preferred listening area is much closer to either the front or rear speakers, the time delay can be adjusted. Check the
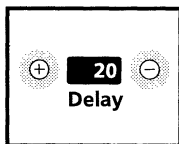
distance from your seating area to the front and rear speakers, then use the following graph to determine the best time delay setting for your listening area. Adjust the '+/-' controls until the desired time delay setting (in milliseconds) is reached.

HAAS EFFECT
DIFFERENTIAL
ARRIVAL TIME

DISTANCE FROM FRONT SPEAKERS (FEET)
USABLE SPEAKER PLACEMENT RANGE WITH
XX ms DELAY TIME

91
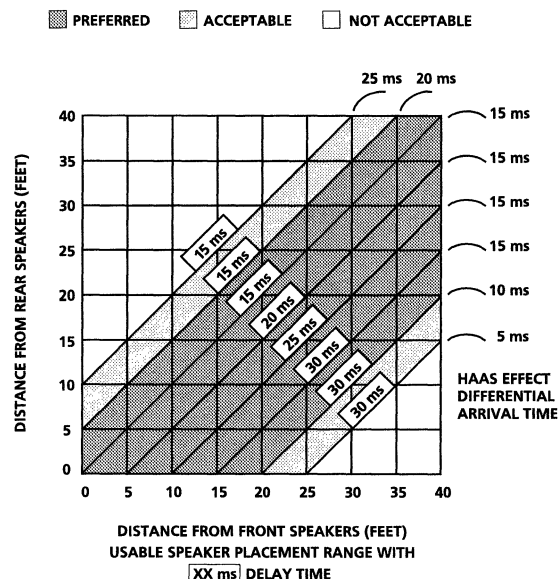
Dolby™ Pro • Logic Surround

Finally, the SETUP control is once again selected to fine tune the various loudspeaker volume levels. Four sliders (labeled L - Left, C - Center, R - Right and S - Surround) are provided to make fine adjustments to the processor's output. These sliders should be used only after adjusting any volume controls or trims provided on the amplification equipment. The goal is to achieve the same relative sound pressure level from all speakers, using the test signals as the reference.
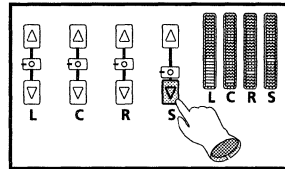
Careful monitoring of the test signal as it sweeps through the theater environment can help one achieve a close balance from the speakers (a better method is to use a sound pressure meter to accurately measure and adjust the volume settings).

These steps complete the calibration process. Turn off the test signal (click on the SETUP button), then return to the main Dolby Pro • Logic control panel by selecting the DONE button.

To dismiss the Dolby™ Pro • Logic surround processing, select any other audio choice (EQ, HALLS, TONE) or the THX button, activating the THX controller software. Your audio control panel may be removed from view by clicking on the AUDIO button.

THX® Surround Sound

4.7 HOME THX® AUDIO SYSTEM

The all-digital Home THX® Audio System provides the no-compromise choice for the discriminating home theater enthusiast.

Licensed by Lucasfilm LTD, the FroxSystem's THX controller has been developed to faithfully reproduce the theater experience in the home, while maintaining the artistic integrity created by the film maker in the editing room. In conjunction with THX-certified amplifiers and loudspeakers, the FroxSystem is capable of providing the ultimate theater sound performance rivaling that of a production sound studio.

To quote George Lucas, "We developed the theatrical THX Sound System for movie theaters to insure that viewers would experience movies in their purest form; the Home THX Audio System will help to extend that experience into the home."

To activate the FroxSystem's THX surround sound processor:

☐ (1) Click on the AUDIO button to access the *Audio* control panel and select the SURR choice (one of the four processing choices along the left side of the panel).
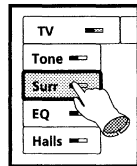
☐ (2) The system will default to the THX processor. Note the THX and the PROLOGIC controls are both toggled 'on,' as THX is a processing version built upon the Dolby™ Pro•Logic foundation.
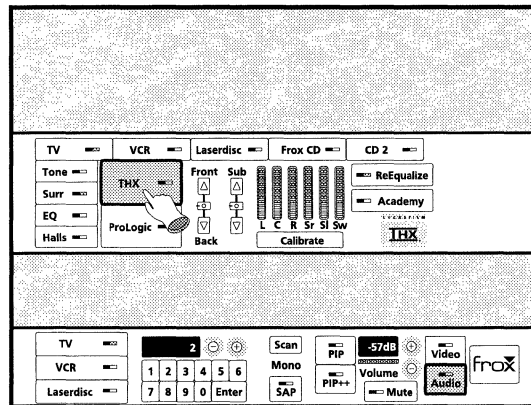
☐ (3) Adjustments may now be made to the THX control panel, or one can simply enjoy the experience. To dismiss the *Audio* control panel after the processing choice has been made, click on the AUDIO button.

Since THX employs Dolby Pro•Logic as the principle decoding method, the surround sound effects are achieved with source material also featuring the Dolby Stereo™ or Dolby Surround™ encoding. Broadcast programs, video tape and laserdisc material will be usually designated by one of these terms and may include the familiar 'Double D' trademark logo of Dolby Laboratories.

93

THX® Surround Sound

As with the Pro•Logic decoder, your THX controller receives the appropriately-encoded program material and decodes it. Unique to THX, however, is the production of six channels of audio by the decoder - Left, Center, Right, Surround Left, Surround Right and Subwoofer channels. Three additional (and proprietary) enhancements by the THX controller are applied prior to audio reproduction:

☐ (1) THX Re-Equalization - Digital equalization to compensate for a soundtrack's overly 'bright' sound in the home, often experienced when compared to the generally larger theater environment. The re-equalization portion of the THX audio system corrects for this problem and brings to the home theater a more natural, less harsh sonic experience.

☐ (2) THX Decorrelation - As the finest theaters successfully achieve a diffuse sound field (in particular, the surround effects on the sides and in the rear of the theater do not detract from the moviegoing experience), so does the home THX processor deliver a more enveloping, more natural sonic impression. Decorrelation provides for discrete left and right surround sound channels (derived from the original mono surround signal) in order to achieve this desired diffusion of the rear effects.

☐ (3) THX Timbre Matching - Sound that 'pan' (or move) across a film's front stage and into the surround effects channels can change in tonality, even if the speakers are identical in the theater system (this tonality change is due, in part, to the shape of the outer ear and the directionality of the sound striking the ear). Proprietary THX equalization is applied to the surround channels to compensate for this tonality shift, providing added realism for the front-to-rear (and back) sound effects.

In addition to these processing enhancements unique to THX controllers, two important system features are provided to help achieve the home THX audio experience:

☐ (1) Subwoofer Electronic Crossover - Separates the low frequency signal from the main Left/Right/Center signals, thus providing a discrete subwoofer channel for greater sonic impact and realism. The main speakers and subwoofer can now be powered separately (bi-amplified), allowing for greater flexibility in speaker size and installation with no loss of performance.

☐ (2) THX Level Calibration Controls - Permits the precise match between THX-certified products, achieving the desired impact and realism throughout the movie experience. Loud effects are created without distortion in a properly-matched THX audio system, while soft sounds (especially dialogue) are presented effortlessly and clearly to the listener.

A number of these features are accessible on the THX control panel, including individual VU meters for Left (labeled L), Center (C), Right (R), Surround-Right (Sr),

>>

THX® Surround Sound

Surround-Left (Sl) and Subwoofer (Sw) channels. Additional sliders and buttons also provide easy access to the following features:
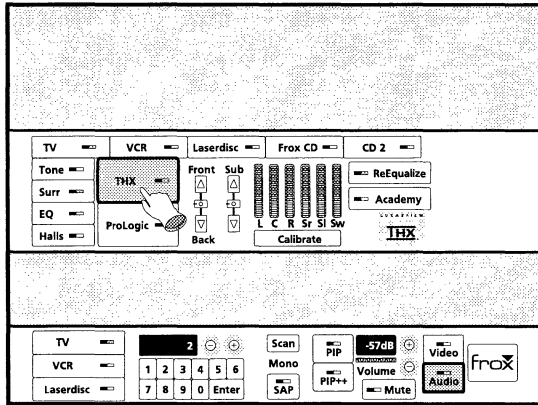
Front/Back Slider - This unique control permits the apparent 'movement' of the sound stage without changing your listening position. By shifting this control toward the FRONT (the upper part of the slider) the soundtrack's dialogue is accentuated, while simultaneously reducing the volume in the left/right and surround speakers. (It's as if one physically moved toward the center of the theater, with a perceptual increase in sound from the center of the screen while naturally hearing fewer effects from stage left, right or the rear surround areas).

A good application of this feature would be to enjoy a late-night movie in full THX
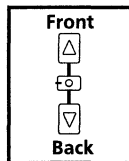
surround processing - but you don't want to wake everyone else in the house. Shifting the control toward the FRONT position will allow you to watch the movie at an overall lower volume level, but will still permit sufficient dialogue clarity from the center speaker in the surround mode. Also, this control is excellent for those films where the dialogue is placed too far 'back in the mix,' and requires more volume for clarity.

Shifting the slider toward the BACK position will likewise have the apparent effect of moving away from the screen. Dialogue and left/right effects are diminished, while increasing the 'spaciousness' of the listening environment.

Feel free to experiment with different positions of this control for best results.

Subwoofer Control - Increases (or decreases) the output level to your subwoofer(s) configured with the system, aiding in achieving deep bass response, impact and realism. The subwoofer control is a 'lowshelf'-type filter operating at 100 Hz, with a +/- 12dB per octave possible adjustment range. CAUTION: USE CARE WHEN INCREASING THE SUBWOOFER LEVEL CONTROL, as raised levels can cause damage to amplification equipment and loudspeakers.
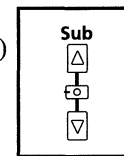
ReEqualize Control - The Re-Equalization response curve designed to correct for overly 'bright' movie soundtracks is an active part of the THX processor. As
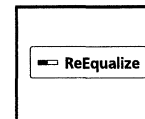
THX® Surround Sound

discussed earlier, film transfers to video may contain high-frequency attenuation best suited to the larger theater environments; such soundtracks may appear overly 'bright' in the treble region. The THX re-equalization curve restores the original 'flat response' nature of the audio prior to reproduction.

In general, the Re-Equalization filter should be left 'on' while enjoying movies. It may be defeated by clicking on the control (for example, to listen to music programs while in the THX surround mode). Try the two different positions of this control when listening to different source material in order to achieve the best results.

Academy Filtering - Select this processing option when viewing older films with mono (single-channel) soundtracks.

Early films of the 30's and 40's boosted the high frequency end of the spectrum to compensate for the existing movie theater's audio equipment. Transfers of these films to video may pass this excessive equalization (resulting in 'overbright' highs and excessive noise in the soundtrack). The THX Academy Filter effectively reduces the high frequency intensity of these films while subjectively reducing noise; click on the ACADEMY button to engage this filter when desired.
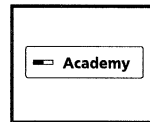
VU Meters - 'Peak reading' VU meters for the Left, Center, Right, Surround Right, Surround Left and Subwoofer channels (labeled L/C/R/Sr/Sl/Sw) are present on the THX panel, offering a visual representation of the

audio signal. As with other VU meters in the system, the lower portion of the meters register in the green or 'safe' operating range, and increase upward to yellow or red-colored (maximum input) ranges.
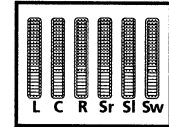
Calibrate - Located beneath the VU meters is a special CALIBRATE control, used to setup and adjust your home THX theater system. This panel is used to achieve precise level matching of all loudspeakers in your listening environment - plus permits any necessary adjustments to compensate for your particular room's layout and/or listening position.
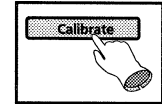
☞ The best results from your THX surround sound processor are obtained when the system is carefully configured by your FroxSystem installer. Upon the completion of the physical installation of your home theater, your dealer will enter this calibration area to fine tune the surround sound array. We urge caution when attempting to alter these settings after professional calibration, as significant sonic changes may result.

☞ To protect your system from undesired alterations or adjustments after completing the THX setup procedures, the calibration button may be disabled and removed from view. In these instances the controls are only accessible by your FroxSystem dealer/installer. It is possible to restore the THX calibration controls for your use upon request; contact your dealer or Frox Technical Support at 800.525.5257 for assistance.
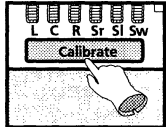
THX® Surround Sound

When entering the setup area, click on the CALIBRATE button. A new panel will be presented containing the THX surround sound configuration controls.
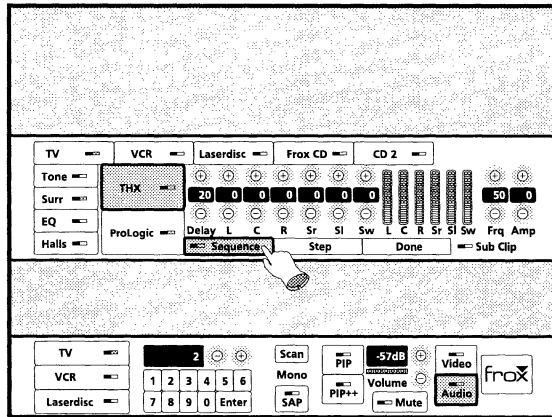
Your initial systems check is usually one that determines proper hardware interconnect. Clicking on the SEQUENCE button provides a test signal that is played throughout all available channels (starting with the left channel, and moving to the center - right - surround right - surround left - and ending with the subwoofer output). One can quickly troubleshoot any amplifier or loudspeaker problems by using this test signal sequence. When finished with an initial systems check, click again on the SEQUENCE control to turn off the test generator.

As with the Pro•Logic configuration, the proper amount of time delay required must be calculated and adjusted. Establishing the correct time delay is important, as an incorrect setting can impair front speaker clarity and directionality. Proper adjustment of the THX time delay parameters permits the frontal sound images to reach your ears first (including critical dialogue information), while the rear effects channels are properly timed to create a true sense of spaciousness.

The DELAY meter on the left part of the calibration panel adjusts for the arrival times between the front and rear channels as they relate to your listening position. Most installations can use the normal 20 milliseconds (abbreviated ms) setting without need for further adjustment. If your primary seating area is much closer to either the front or rear speakers, the time delay setting can be changed (the range of adjustment is 15 ms to 30 ms). Calculate the distance from your seating area to the front and rear speakers, then refer to the graph in section 4.6 (the same one used in the Dolby Pro•Logic setup) to determine the optimum time delay settings. Enter the proper time delay via the '+/-' controls above and below the meter.
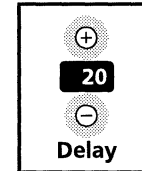
97

THX® Surround Sound

Next, the STEP control is used to adjust the amplitude settings for each channel. Rather than 'sweeping' the test signal throughout the six channels, this control turns on the test signal for as long as necessary to properly adjust each independent channel. The first click on the STEP control turns on the test signal, then each subsequent click on the control forwards the test signal to the next available channel. In setting up the first channel (starting with the 'Left' output), the installer first raises the main panel's volume control at the bottom to register 0dB; by using a hand-held SPL (sound pressure level) meter this test signal is evaluated and adjustments made. Correct THX configuration requires that all channels produce an even sound pressure level of 75 decibels from each channel in the primary listening area (when referenced to the 0dB output volume level of the main volume setting). Amplifiers are always adjusted first (should trims be available), then the individual meters labeled L - Left, C - Center, R - Right, SR - Surround Right, SL - Surround Left and SW - Subwoofer are each in turn measured and adjusted.
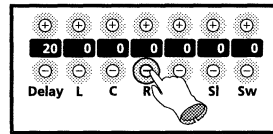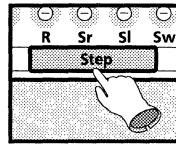
A set of controls are also provided to aid in achieving optimum bass response in the theater. The two controls on the far right-hand side of the panel are a 'parametric' low-frequency equalizer for adjusting the subwoofer. Affected by the room environment, undesired low-frequency resonances may amplify or cancel out the bass response. In these situations, typical solutions call for relocating the subwoofer away from resonating walls or furniture (often impossible in a custom theater installation). The parametric equalizer may be used to adjust the low-frequency output, in order to minimize these problems without having to undergo environmental or layout revisions. The first meter labeled FRQ selects the desired frequency range for adjustment (any center frequency from 20 Hz to 80 Hz), while the second control (labeled AMP - amplitude) adjusts the gain of the low frequency signal (+12dB/-12dB).

➤ ➤

THX® Surround Sound
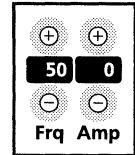
Note the SUB CLIP indicator below the VU meters. This alerts the installer to any detrimental 'clipping' in the low-frequency ranges when adjusting the parametric eq - if this occurs the amplitude settings should be reduced accordingly until this red LED stops illuminating. The parametric equalizer, when used in conjunction with the SUBWOOFER gain control on the main THX panel, can tune your subwoofer levels for best performance in virtually any environment.

These steps complete the THX calibration process. Turn off the test signal (click on either the SEQUENCE button or shift through the test signals with the STEP control) and hit the DONE button. This returns you to the main THX operating panel.
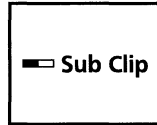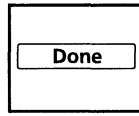
To dismiss the Home THX® Audio System, click on any other Audio processing (EQ, HALLS, TONE) or select the PROLOGIC control, engaging the Dolby Pro·Logic surround processor.

The audio control panel may be removed from the screen by either clicking on the AUDIO button or, when watching live video, positioning the hand directly over the video image, then click. This will dismiss both the audio control panel and the lower video component operation panel at the same time.

Digital Graphic Equalizer

4.8 DIGITAL GRAPHIC EQUALIZER

The third major FroxSystem audio processor is comprised of a digital 8-band per channel Graphic Equalizer, allowing a wide range of tonality adjustment across the entire audible spectrum. Use this panel for tailoring stereo source material to better suite your listening taste, compensating for loudspeaker or environmental anomalies, and so forth.

To activate the Graphic Equalizer (abbreviated EQ):

☐ (1) Click on the AUDIO button on any primary control window and select the EQ choice from the offerings along the left side of the audio processing stripe.
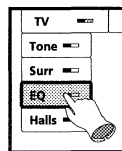
☐ (2) The EQ panel is now presented for use. Begin your musical selection, then adjust the various controls as needed. To remove the panel from view, click on the AUDIO button (or move the hand icon over the live video image and click).

≫ ≫
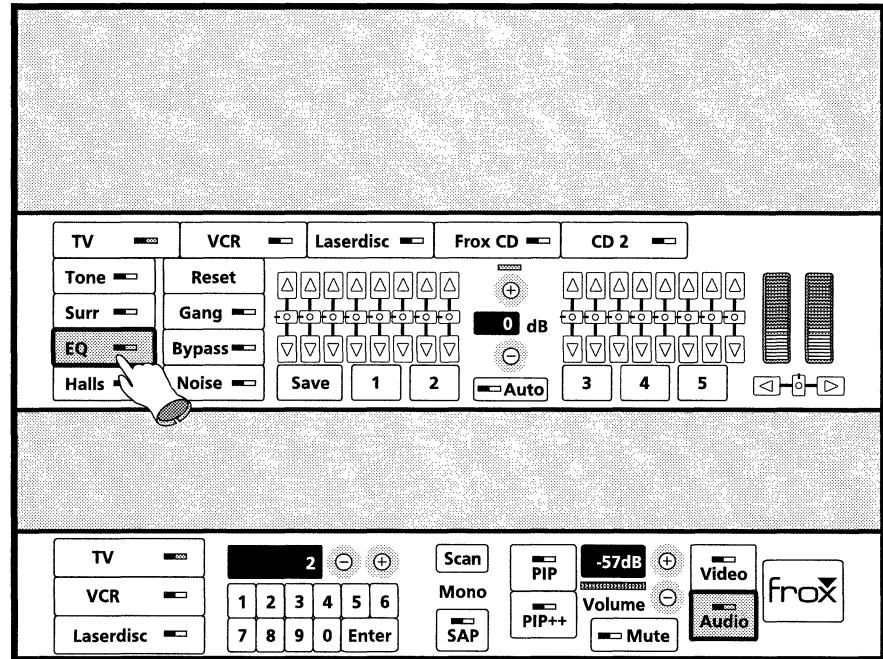
Digital Graphic Equalizer

Note the number of sliders and controls available; each stereo audio channel can be independently adjusted or can be 'ganged' for instant processing duplication from left to right channel. The all-digital processors will allow a full +12dB/-12dB gain or reduction at the following frequencies (starting with the left slider on each channel and continuing from left to right):

Slider #	Center Frequency
1	91.875 Hz*
2	122.5 Hz
3	245 Hz
4	490 Hz
5	980 Hz
6	1960 Hz
7	3920 Hz
8	6125 Hz*

* Sliders #1 and #8 are 'lowshelf' and 'highshelf' filters, respectively. Instead of representing a true center frequency adjustment, these controls offer a +12dB/-12dB gain per octave above/below these frequency points.

Adjusting any frequency slider is fast and straightforward - position the on-screen hand directly over the control to be adjusted (it lights up when in position) and activate it via of the following methods:

☐ (1) The 'arrow' box on either end of the slider may be selected (just the box and arrow will 'light up' when in the correct position) and clicked on to move the slider in your desired direction. Note that each

click will adjust the slider by approximately 1dB in either direction.

☐ (2) Clicking and holding while the hand icon is held stationary over the 'arrow' box at the end of the slider will accelerate the control's movement toward the desired direction.

☐ (3) The on-screen hand's fingertip may be positioned anywhere on the slider itself, and a single click of the FroxWand will instantly move the slider to that location.

☐ (4) The button located in the center of the slider (the small gray icon with the slight depression in the center) may be clicked on, held firmly with the FroxWand by continuing to squeeze the wand's activation panel, then 'carried' to your desired position along the slider by manipulation of the wand's thumb movement controller.

Many enthusiasts begin using the equalizer by playing a familiar musical selection, then carefully adjusting each frequency band per channel in 1dB increments until the desired effects are attained. Minimal adjustments are best when they gently transition from one slider to the next.

☞ USE CARE WHEN ADJUSTING THE GRAPHIC EQUALIZER, as extreme signal increases at certain frequencies can cause damage to amplifiers and loudspeakers in the audio chain.

101

Digital Graphic Equalizer

☞ Frox recommends that you familiarize yourself with the operation of all available controls and features in this panel prior to activation. From left to right on the panel, the main features are as follows.

Reset - Return all eq adjustments to the unity-gain, 'flat' position. The RESET control is useful when experimenting with various equalization settings, then rapidly shifting back to the beginning 'flat' status.

> **Reset**
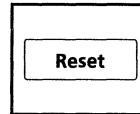
Gang - This feature 'copies' adjustments made from one channel to the other. Click on the GANG button to first turn on the feature (the green LED 'lights' up to indicate operating status), then select any one of the sliders and make an adjustment; note how the other channel mirrors your activity and provides an exact copy of the processing in both channels.
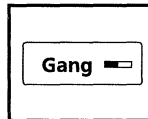
> **Gang** ▬▭

When activated from its 'off' position, the GANG control will only copy from the left channel to the right (and not vice versa). When turned on, your adjustments may be made from either left or right audio channel.

Bypass - Bypass allows the user to adjust equalizer frequencies across the entire audio bandwidth - then immediately compare these adjustments to a reference 'flat' position. Create your desired settings, then click on the BYPASS control; the panel adjustments will remain in view on-screen, but the sound heard will be from the original 'unprocessed' position. Turn off the control to listen once again to the equalized audio.

> **Bypass** ▬▭
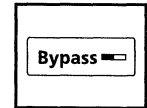
Noise - A test generator for equalizer setup and adjustment. Full-bandwidth 'white noise' is provided for those using spectrum analyzers to aid in establishing preferred equalizer settings, or for quick comparative listening to the various adjustments made to musical passages. Click on this control to turn the test signal on or off, as desired.

> **Noise** ▬▭
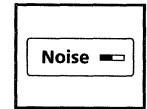
Save (Favorite Presets) - Across the lower portion of the audio panel are a series of 5 preset equalization buttons. These are used in conjunction with the SAVE control to store and recall favorite equalizer settings for future enjoyment.
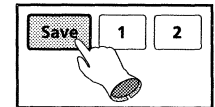
Many users create preferred types of settings for different source material - a particular eq setting for rock and roll music, another for jazz/classical, a third for vocals, etc.

> **Save** 1 2

> >

Digital Graphic Equalizer

The five presets are easily configured by

☐ (1) Creating the equalizer settings.

☐ (2) Click on the SAVE button (notice the 'state' change - both the SAVE button legend and the 5 presets turn to a 'yellow' color, indicating you are preparing to store the above eq setting).

☐ (3) Select one of the 5 preset button to store the setting (click on it to save the information).

☐ (4) Your new equalizer setting is retained in the desired preset location, as indicated by its new 'green' button state.

Recall of any preset settings is made by clicking on any of the 1-5 preset buttons. The selected preset will change to the 'green' legend, indicating its 'in-use' operating state.

These audio presets are excellent not only for retrieving your five favorite settings, but as a base for creating new overall adjustments on a more-rapid basis. For instance, start with your preferred 'jazz' setting (already created and stored in memory position #3, as an example), then adjust any or all sliders from that position for further sonic refinement. The 'green' #3 preset button will revert back to a standard 'white' #3, but the range of slider settings now begin from the #3 jazz configuration (instead of the normal 'flat' starting point). New configurations may be saved and stored - overwriting previous settings - at any time.

Auto Input Trim Adjustment - As described in earlier audio processing discussions, an 'automatic input trim' control is a special protection feature of the FroxSystem. When activated, very loud (and thus potentially damaging) audio input levels are automatically reduced in amplitude until safe operating ranges are reached. The input level adjustments may be manually set using the '+/-' controls, or allowed to monitor the incoming signal and activate automatically.

To turn on the automatic feature, click on the button labeled AUTO. As your musical passage plays, the decibel meter indicates how far the system had to reduce the overall input volume levels to protect your system. Most input reductions are made in small 1dB increments, lowered from the maximum 0dB level - though the necessary volume trim may occur in larger steps. The input trim adjustments will remain at the new reduced setting until either overridden by the end user, or another reduction in input level is required.
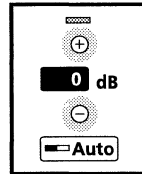
Of course, when the input trim feature is active, the overall system volume may be diminished. However, achieving the proper input level is important when successfully configuring your source components to the FroxSystem. Simply increase the main volume control to increase the overall amplitude (once the input trim adjustment has occurred) and you'll achieve the desired audio levels.

Digital Graphic Equalizer

To restore the maximum available input setting after the system has detected these potentially-damaging levels, click on the '+' button until the meter is returned to the 0dB position.

☞ The auto input trim feature may be activated and left in the 'on' position at all times.

Balance - Permits left/right balance adjustment. Located beneath the twin VU LED meters, this slider operates much like the vertically-positioned equalizer sliders, allowing for precise placement of the stereo image. Often your listening environment (your seating position, etc.) can affect the relative volume between speakers; this BALANCE slider is used to center and adjust the sound for optimum stereo imaging.
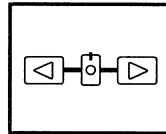
VU Meters - Twin 'peak reading' VU meters are present on the EQ control panel, offering a visual representation of the incoming audio signal. The lower part of the VU meters register in the green or 'safe' operating range, increase upward into a 'caution' area (indicated by yellow LEDs) and finally reach the red colored, peak input ranges (generally indicating an 'unsafe' input operating range).

104

> >

The Sonic Playground™
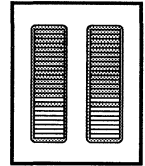
4.9 HALL SIMULATION - THE SONIC PLAYGROUND™

The fourth FroxSystem digital audio package provides ambient 'hall effects' signal processing, creating a nearly-infinite palette of 'acoustic venues' in which to enjoy your favorite music. Any of five preset hall 'models' may be selected - transforming your theater room into a listening environment closely approximating the hall's acoustics. Even 'customized' room sizes and reflective properties may be created at the touch of a button to provide a wide choice of diverse listening environments.

The sophisticated modeling of the Frox digital hall simulations offers a broad range of sonic abilities, including adjustable 'seating positions,' room sizes and shape, even the reflective or absorptive characteristics of the 'room' itself. These effects are nothing short of remarkable, transporting the listener to exciting new venues that emulate the 'live concert' experience.
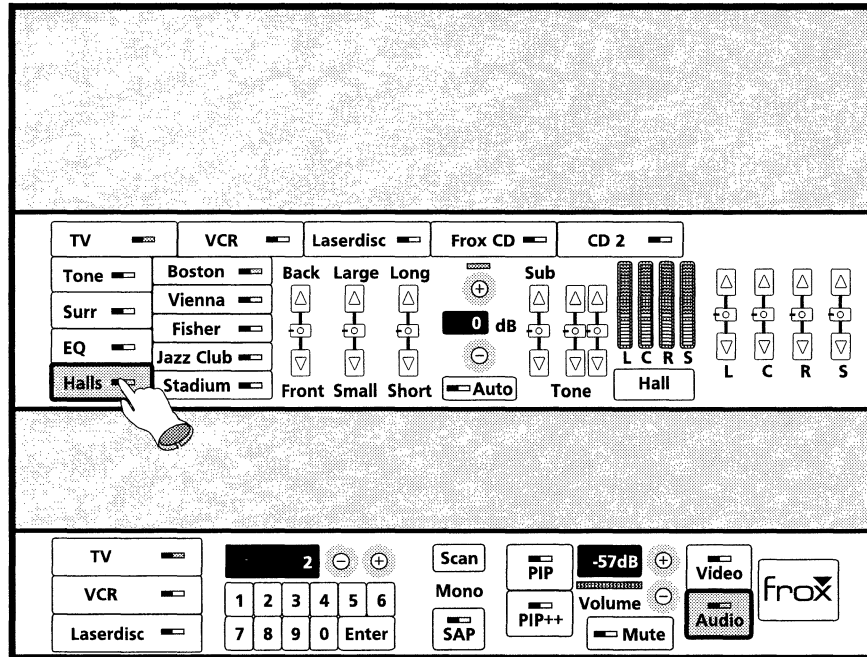
We refer to our state-of-the-art digital hall effects processor as The Sonic Playground.™

☞ For best effects with the hall simulation processor, your system should contain at minimum a left, right and surround speakers. The same configurations used for either Dolby™ Pro·Logic or Home THX® Audio will provide excellent results with the halls program (the effects can still be obtained with only left/right speakers,

105

The Sonic Playground™

but is less pronounced due to the lack of ambient sound created by the surround speakers).

To activate the Hall Simulation processor, click on the AUDIO button, located on any primary control window, then select the HALLS button from the left-hand offerings along the audio processing panel. The Hall Simulation control panel is now presented for use, featuring five preset hall environments, adjustment sliders, tone controls and a button to compare the processor's effectiveness. First, a brief description the five preset hall environments:
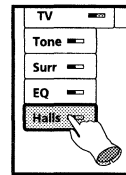
Boston - Digital recreations of the Boston Symphony Hall, opened in 1900. Wallace Clement Sabine, widely regarded as the father of modern acoustics, was the consultant for the hall's construction. Begin your musical selection (symphonic and 'grand' musical works of all types sound superb in this hall), then click on the BOSTON button to activate this sonic choice.
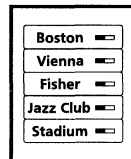
Vienna - Grosser Musikvereinssaal, located in Vienna, was built in 1870. Also called the 'Goldener Saal' because of its gilded interior and fine acoustics, it is considered to be one of the world's best concert halls. Interestingly, the hall's narrow shoe-box style was emulated by Sabine

when designing the Boston Symphony Hall. Select the VIENNA control to enjoy your favorite music of all types in this unique venue.

Fisher - Avery Fisher Hall, Lincoln Center in New York. Completed in 1976, the Avery Fisher's acoustics are considerably 'cooler' and more precise than the first two environments, tending to reveal rather than flatter the performance. This trait is characteristic of the modern North American 'hi-fi' concert halls - click on the FISHER button to turn on or off this processing flavor.

Jazz Club - Rather than choose a particular small venue model, the Frox engineers have simulated their favorite intimate environment for ensemble music. Distances from the performers is never very far; early reflections arrive quickly, while the reverberation effects also fade quickly. Select the JAZZ CLUB environment for listening to your favorite blues, jazz or chamber music recordings.

Stadium - An extremely large environment, with a 'bright' sound and long reverberation signatures. Actually closer to a 'cathedral' in flavor, select the STADIUM control when transporting yourself to that favorite 'live concert' memory.

106

> >

The Sonic Playground™
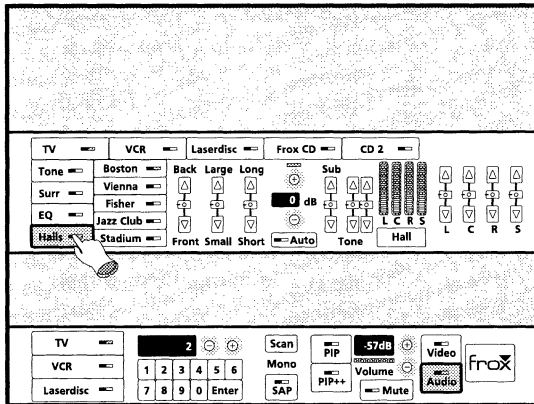
Large/Small - This control adjusts the apparent 'size' of the room. Slide the control up toward the LARGE position and you'll notice more reverberation (particularly if you also select the BACK slider and move further away from the stage, since the rear seats of a large hall have more reflections than the rear seats of a small hall). Shift the slider toward the SMALL end of the control and the apparent hall size will diminish greatly. Anytime your change the LARGE/SMALL hall size, the most clearly-defined sounds will always result when moving the first slider toward the FRONT position (as the best seats of any hall are close to the front).

Long/Short - The third slider affects the length of time the reverberations will last in the room. Think of this control as an adjustment to the amount of sound-absorbing material installed in the hall. Perhaps you have observed how less-reverberant a 'dead' room is (one with thick carpet, heavy drapes and acoustic-tile ceilings) when compared to a more 'live' area (a large storage room, for example, that has hard floors, brick walls and a high metal ceiling). This LONG/SHORT control produces a similar effect - at the top of the control (LONG) the reverberations are pronounced, more 'live' and dominant; at the lower position (SHORT) the reverberations are reduced, as though the room were stuffed with sound-absorptive materials.

While the preset hall environments are excellent and immediately satisfying, additional controls allow you to tailor each hall's effects, significantly changing the original acoustic model. Feel free to choose any particular hall, then create 'custom' modifications to that environment via the following sliders:

Back/Front - Located immediately next to the preset hall buttons, the BACK/FRONT slider shifts your relative 'seating' position in the hall. Move the slider down, and the sound will change toward the 'front row, center isle' seats in the environment; slide the control up and your seating moves to the rear of the hall. As you 'move' further back, the direct signal gets quieter and 'darker,' while the ambience becomes more pronounced.

107

The Sonic Playground™

◄ ◄

☞ We encourage experimentation with these controls to create your favorite hall environments from the original models provided. One special button exists to help you in comparing the effects of your chosen hall, or one in the creation stages:

Hall - The HALL button (located below the four VU meters) acts as a three-position switch to compare your musical selections in original states, then listen to the same material with the digital hall effects added.
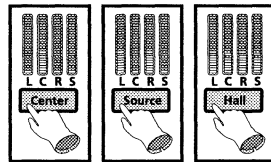
When selected the first time, the button changes to read CENTER, and the sound is changed and routed to come only from the center speaker. This is important when the source material you are auditioning is monophonic - at this time you will hear the material as it was originally intended to be heard through one speaker. If no center speaker exists in your system, you may hear silence; the VU meter for the center channel will track the music up and down accordingly.

The next click on the control changes the label to SOURCE, causing the original material to bypass the digital hall effects area altogether and be sent only to the left and right speakers. Stereo musical passages will be heard as it originally emanates from the source component, without FroxSound digital processing. The left and right VU meters will visually confirm this activity.

Your final click on this button returns the label to HALL, turning back on the hall simulation program once again. Quick selection of this control can aid in the evaluation of the sometimes subtle effects you are creating with the sliders.

The remaining audio processing controls include:

Auto Input Trim Adjustment - As described in earlier discussions, an 'automatic input trim' control is a special protection feature of the FroxSystem. When activated, very loud (and thus potentially damaging) audio input levels are automatically reduced in amplitude until safe operating ranges are reached. The input level adjustments may be manually set using the '+/-' controls, or allowed to monitor the incoming signal and activate automatically.

To turn on the automatic feature, click on the button labeled AUTO. As your musical passage plays, the decibel meter indicates how far the system had to reduce the overall input volume levels to protect your system. Most input reductions are made in small 1dB increments, lowered from the maximum 0dB level (though the necessary volume trim may occur in larger steps). The input trim adjustments will remain set at that reduced position until either overridden by the end user, or another reduction in input signal level is required.

>>

The Sonic Playground™

To restore the maximum available input setting after the system has detected these potentially-damaging levels, click on the '+' button until the meter is returned to the 0dB position. The auto input trim feature may be activated and left in the 'on' position at all times.

Subwoofer, Midrange and Treble Controls - Three independent audio sliders permit adjustment of your subwoofer (if your system has one or more configured; if not, this control affects the lower bass regions of your music) and midrange/treble tone regions. The subwoofer control is a 'lowshelf' filter operating at 100 Hz, with a +/- 12dB per octave possible adjustment range. The midrange control (middle slider, next to the subwoofer control) operates at a center frequency of 1 kHz (+/- 12dB), while the treble control (right slider) affects all frequencies at and above the 6 kHz range ('highshelf' filter type, +/- 12dB per octave).

VU Meters - 'Peak reading' VU meters for Left, Center, Right and Surround channels (labeled L/C/R/S) are present on this panel, offering a visual representation of the incoming audio signal. The lower portion of the meters register in the green or 'safe' operating range, and increase upward to yellow and red-colored (maximum input) ranges. These meters are important tools in monitoring overall system volume and input level adjustments.

L/C/R/S Sliders - Four sliders (labeled L - Left, C - Center, R - Right and S - Surround) are provided to make fine adjustments to the input levels for each channel. These controls can adjust for seating problems in the theater (too close to one channel, for example) or permit adjustments to the relative balance of all speakers when in the hall simulation mode. Normal operation maintains all sliders in the 'maximum' top-level positions.

109
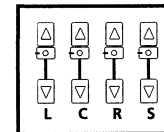
The Sonic Playground™

☞ In summary, the choice of material used in the hall simulation program can greatly affect the experience. Studio recordings are usually the best material to show off the effects, as strongly reverberated music may tend obscure the system's abilities. Percussive music (such as guitars, pianos, drums, etc.) tends to reveal the selected hall processing more than 'continuous' sounds from stringed instruments.

And, like all things, the effect's impact can vary widely from person to person. Setting up an environment's reverberation is sometimes a tricky thing to evaluate, since none of us go to a theater to listen to the room! An excellent hall configuration provides an unobtrusive setting to enjoy your music, with the effects perceived but never exaggerated.

> >

TV Grid, TV Schedules and System Reminders

SECTION 5 - TV GRID, TV SCHEDULES AND SYSTEM REMINDERS

FroxCast™ and FroxNet™ are powerful information and entertainment services packages for updating your FroxSystem. Using available portions of existing national or local broadcast signals (and received via current 'over-the-air' television reception, satellite and cable carriers), FroxCast transmits digital information on a daily basis to every FroxSystem owner across the country. FroxNet is the same services network provided over standard phone lines via modem interconnect to your system.

Both services feature Frox television schedules. This package updates your FroxSystem with up to 7 days continuous local and national TV schedules (viewable in either the familiar 'grid' or unique FroxControl browser formats). Programming windows may be 'opened' to reveal additional information, featuring useful details on actors, actresses, critical ratings, even a brief synopsis of

Sun-30th	3:00 pm	3:30 pm	4:00 pm	4:30 pm	5:00 pm	5:30 pm	6:00 pm	6:30 pm
BET (57)	Paid Program				Paid Program			
CNN (42)	World Report		Early Prime	Newsmk Sun.	World Today	NBA Week	In Business	Sports Sun
CSP (14)	Public Policy		Public Policy					
DISC (37)	Mac & Mutley	Polar Bear	Wildlife	Easy Does It	Camera/Wilderness		Natural World	
DISN (53)	Casablanca				Avonlea		Look for Miracles	
ESPN (34)	America's Horse	Auto Race	Col. Tennis			Sports Center	B'ball Night	
FAM (47)	Lover Come Back				Brother Jake	My Dog	Rin Tin Tin	African Sky

▲ ▼ Fri May 28 1:30 pm | Su | Mo | Tu | We | Th | Fr | Sa | Day | Prime | Night | Now |

froX

the particular event. FroxSystem television listings are conveniently identified by 'color-coding' - movies are listed with blue shadings, sporting events in orange, news programs in red and general programs in gray. FroxCast or FroxNet customers can easily peruse their on-screen television grid of current and upcoming programs, select only the desired shows and, with the touch of a button, instruct the FroxSystem to record these events with your VCR - or even instruct the system

SECTION 5

TV Grid, TV Schedules
and System
Reminders

to 'remind' you when your favorite programs are about to begin. It's all possible with Frox!

Frox TV schedules are broadcast over the WTBS and WGN national feeds, in addition to selected local channels (California stations KMIR and KTVU) during each day. The program information is repeated approximately 5 times daily to insure reception by everyone, as the FroxSystem only accepts this data when it is in the powered off (system standby) mode. These data

transmissions will also be received via phone modem in late 1993.

FroxCast or FroxNet services require activation by your dealer, and are a separate monthly charge (billed quarterly). See your dealer or contact Frox at 800.525.5257 for more information.

➤ ➤

TV Grid

5.1 THE TV GRID

The *TV Grid* is an easy-to-use panel for reviewing current and upcoming television programs. Like other frequently-used newspaper or magazine TV schedules, Frox formats the information within a 'grid' structure, listing all available channels along the left of the screen (top to bottom) - plus time slots arranged horizontally across the top (from left to right). 'Instant-access' buttons rapidly enable specific days of the week or major time blocks, with scroll bars available for viewing additional 'pages' of scheduling information.

Sun-30th	3:00 pm	3:30 pm	4:00 pm	4:30 pm	5:00 pm	5:30 pm	6:00 pm	6:30 pm	▶ ◀
BET (57)	Paid Program				Paid Program				
CNN (42)	World Report		Early Prime	Newsmk Sun.	World Today	NBA Week	In Business	Sports Sun	
CSP (14)	Public Policy		Public Policy						
DISC (37)	Mac & Mutley	Polar Bear	Wildlife	Easy Does It	Camera/Wilderness		Natural World		
DISN (53)	Casablanca				Avonlea		Look for Miracles		
ESPN (34)	America's Horse	Auto Race	Col. Tennis			Sports Center	B'ball Night		
FAM (47)	Lover Come Back				Brother Jake	My Dog	Rin Tin Tin	African Sky	
▲ ▼	Fri May 28 1:30 pm		Su	Mo	Tu	We	Th	Fr	Sa	Day	Prime	Night	Now

froX

To access the *TV Grid*, first click on the FROX button, then the choice labeled TV GRID on the navigator panel.

The grid is delivered 'blank'; that is, empty and without information details. Upon initial system power up the grid will be comprised of identical 30-minute sections,
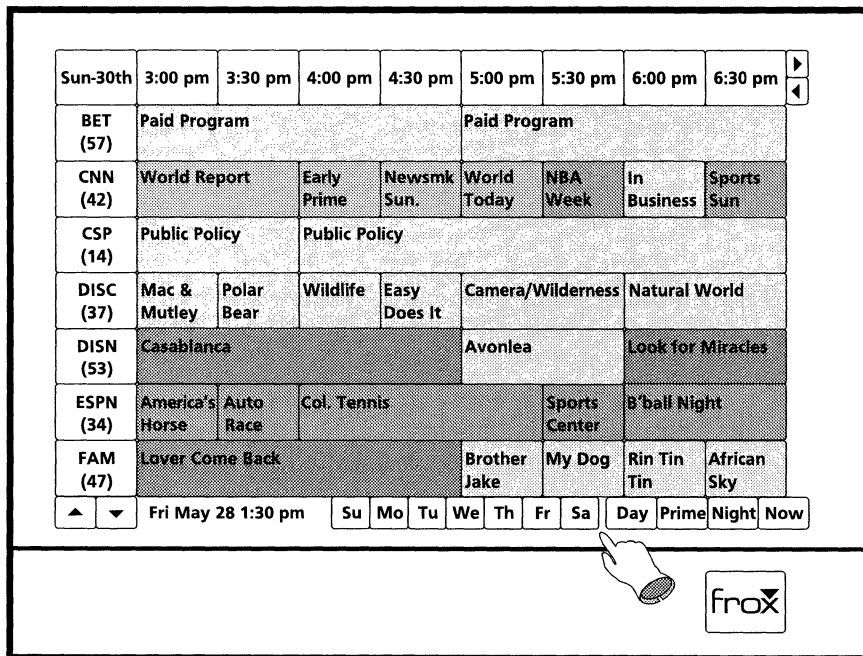
representing each channel within uniform 30-minute time segments. FroxCast or FroxNet data transmissions will 'fill up' the grid with each channel's specific programming details. Of course, not all TV channels offer program listings and always remain in a 'blank' state - for example, the home shopping channels do not provide a 'defined' schedule of events (since they feature continuous shopping all day long)! These and other such

The TV Grid

≺ ≺

channels (local community access programming, news, or other non-specific events) will always feature a 'blank' TV grid.

Sun-30th	3:00 pm	3:30 pm	4:00 pm	4:30 pm	5:00 pm	5:30 pm	6:00 pm	6:30 pm	▶ ◀
BET (57)									
CNN (42)									
CSP (14)									
DISC (37)									
DISN (53)									
ESPN (34)									
FAM (47)									

▲ ▼ Fri May 28 1:30 pm   Su | Mo | Tu | We | Th | Fr | Sa   Day | Prime | Night | Now

froꞅ
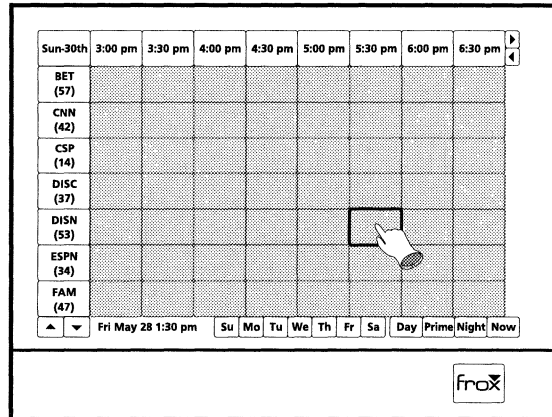
Upon initial FroxCast or FroxNet authorization, your system will require up to 4 consecutive days of data reception to complete one full week's worth of television schedules. After this initial period the system will maintain one continuous week of TV schedules.

☞ The Frox daily broadcasts are comprised of a data bundle containing 3 days of TV schedules (assigned to four days in the future - Monday's broadcasts contain schedule information for the following Fri./Sat./Sun. period; Tuesday's transmissions contain repeats of Saturday/Sunday and a first look at Monday schedules; Wednesday consists of Sun./Mon./Tues. schedules, and so forth). This pattern of repeated data broadcasting is relied upon to provide the best reach and frequency to our many customers, as each FroxSystem only accepts data transmissions during its 'powered off' state (when turned off via the FroxWand PWR button).
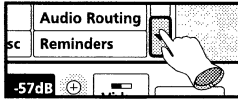
Should this be the first day of your system operation with the Frox TV schedules, browse ahead tomorrow morning and confirm the reception of your initial TV schedules for future days 5, 6 and 7.

>>

*Adjusting The System
Clock*
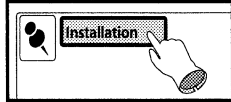
5.2 INTERNAL FROXSYSTEM CLOCK ADJUSTMENTS

For successful operation in the *TV Grid* area, confirm that the current day, date and time are correct in the lower left-hand area of the grid. System clock date and time adjustments are performed in the *Installation* area of the system, and may be changed at any time by the end user.

To adjust the system clock:

☐ (1) Select the FROX button, then click on the DOWN scroll bar located on the right-hand side of the navigator panel. Page two of the system navigator is now presented.

☐ (2) Click on the button labeled INSTALLATION, wait a moment and then select LOCALE from the lower control choices.
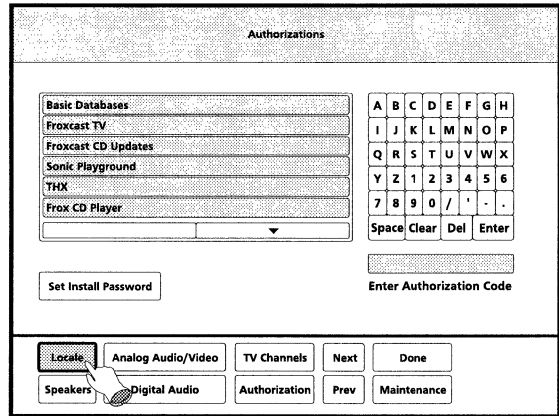
Adjusting The System Clock

Both your TV Market area designate and the system clock are contained in the *Locale* screen.

Your TV Market Area

Locale

Maine
New Hampshire
Vermont
Hartford-New Haven
Boston-Providence
Albany
New York Metro
Penn.-N.Y.

Fri May 28, 1993   1:30:27 pm

| Locale | Analog Audio/Video | TV Channels | Next | Done |
| Speakers | Digital Audio | Authorization | Prev | Maintenance |

The small directional carets under the date/time menu are your adjustment controls; from left to right, adjust the up/down carets to correct the 'Month' - 'Day' - 'Year,' and then the select the final two carets for 'Hour' and 'Minute' adjustments.

Fri May 28, 1993   1:30:27 pm

☐ (3) To exit the *Installation* area, click on the DONE button. In approximately 10 seconds you will be returned to the primary *Video* control panel. Select the FROX button and then the *TV Grid* area to confirm your system date/time changes.

116
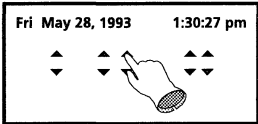
Using the TV Grid

5.3 OPERATING THE TV GRID

At this time, take a moment to familiarize yourself with the grid's numerous features. Even the initial 'blank' configuration provides a number of useful controls - such as in-advance VCR programming, or setting up 'reminders' for upcoming programs you'd like to see.

Along the left are listed the available TV channels (in ascending station order, with all local television channels presented first followed by the national channels). An up/down 'scroll bar' at the bottom of the list will access additional channels within that particular time segment. Across the top of the screen are located the 30-minute time increments (also

Sun-30th	3:00 pm	3:30 pm	4:00 pm	4:30 pm	5:00 pm	5:30 pm	6:00 pm	6:30 pm	▶ ◀
BET (57)									
CNN (42)									
CSP (14)									
DISC (37)									
DISN (53)									
ESPN (34)									
FAM (47)									

▲ ▼ Fri May 28 1:30 pm Su Mo Tu We Th Fr Sa Day Prime Night Now

FroX

featuring scroll buttons at the right to search additional time blocks). Finally, the lower right area offers 'instant
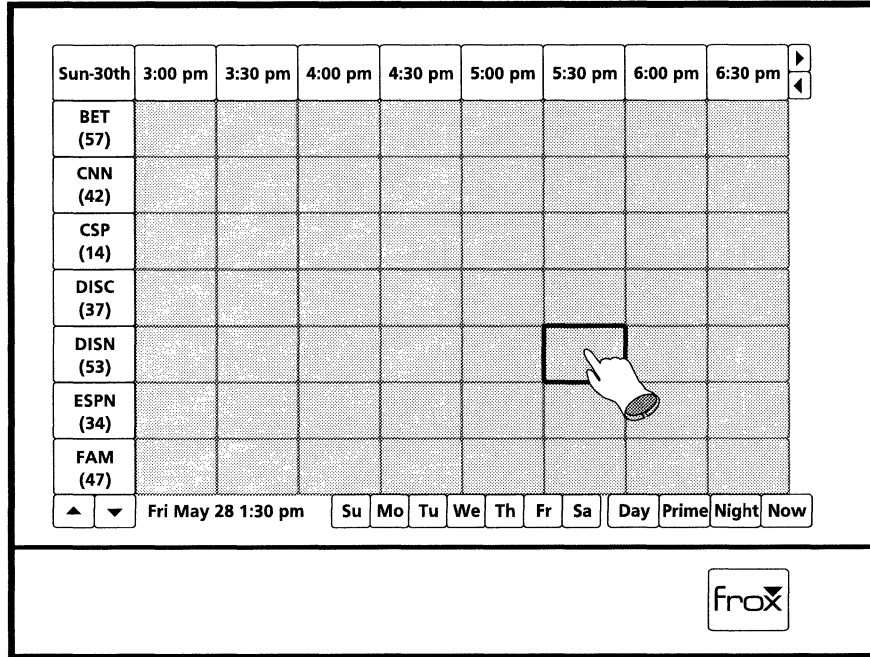
Using The TV Grid

access' day-of-the-week and time-of-day buttons; these are used to rapidly select:

DAY — Program listings from 6:00 am through 9:30 am

PRIME — Program listings from 7:00 pm through 10:30 pm

NIGHT — Program listings from 11:00 pm through 2:30 am

NOW — Presents the listings for your current date and time

Click on the NOW button from the lower right-hand choices; within a few seconds the grid will show your current time frame (indicated by a green border highlight around the current 30-minute time indicator at the top). The grid is now properly enabled for further activity.
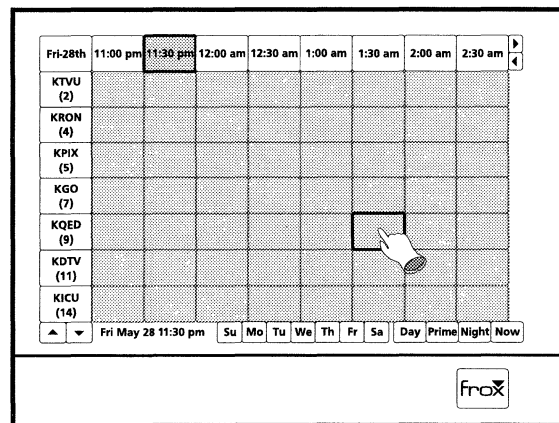
Let's illustrate how the blank grid can be easily used with a typical example. You'd like, for instance, to record 'The Tonight Show' this evening - using the FroxSystem's *TV Grid* to program your VCR. You already know that this event is aired each weeknight, starting at 11:00 pm on your local NBC affiliate (we'll assume it's channel 4 for this discussion). Your first step is to select the NOW button (or the current 'day of the week' button) to position yourself in today's TV grid; confirm the correct grid has been selected via the upper left-hand corner day/date indicator.

Now
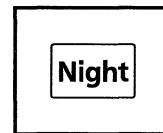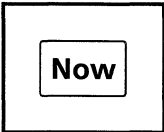
Night

Next, use the scroll bars at the top right to reach the 11:00 pm time slot, or click on the NIGHT button for instant access to that particular time segment. Locate the 11:00 pm grid position for channel 4, guide the on-screen hand over that block (it will light up) and click - opening a window that contains the following information:
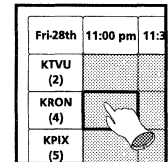
??: 11:00 pm <today> <today's date/year>

     (30 min)

>>>

Using The TV Grid

This is the 'generic script' used to identify 'unknown' programs in the grid. (Of course, Frox data transmissions 'completes' the window and lists the actual event's title and other information. This would then read, 'The Tonight Show: 11:00 pm,' etc. etc., plus list the guests scheduled to appear).
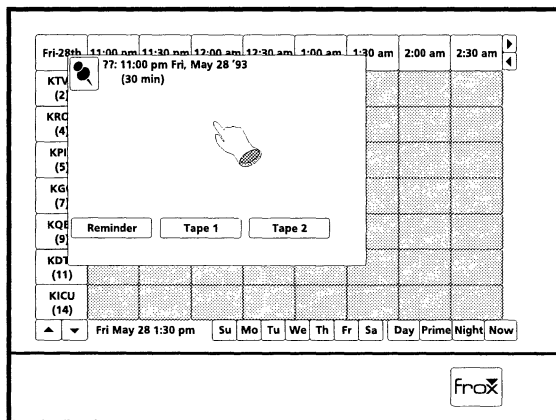
In addition to the textual information, special controls exist to assist you in the creation of in-advance viewing or recording activities:

Reminder - When chosen, the FroxSystem will 'remind' you of an upcoming TV show. Desired TV programs can be 'tagged' for future recall, alerting you to their imminent airing no matter where you are in the FroxSystem. A small 'reminder' pop-up window will coincide with the beginning of the show, 'asking you' if you still want to watch this particular program. When the 'Reminder' pop-up appears, you can select the WATCH IT button - and be immediately transported to the *Video* control panel to watch the event. Or, click on the FORGET IT button to remove the 'Reminder' pop-up and continue with your current activities. (You can simply ignore it and the pop-up will dismiss after 5 minutes).

Watch It - Should you select a TV grid listing that is within your current time period, the REMINDER button is changed into a WATCH IT feature. Click on this button to be immediately routed to the *Video* panel and that particular channel - sit back and enjoy the show.
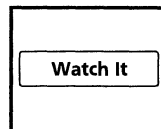
Using The TV Grid

Tape 1, 2 - The buttons to record your chosen event. Selection of the TAPE 1 or TAPE 2 buttons will prompt the FroxSystem to engage the VCR, change the channel on the VCR's internal tuner to the appropriate station, begin the recording process, and dismiss the recording when complete. Be certain the VCR is loaded with a blank tape and it is left in a 'powered on' state. (These buttons appear only if you have one or more VCR's configured with the system). The start times and program length may be adjusted in the *Reminders* section of the system (discussed in section 5.4)

Dismiss Pin - Used to remove the info window without selecting a recording/viewing request; click on the small DISMISS PIN icon in the upper left-hand corner of the window.
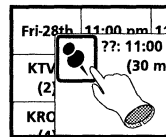
Continuing with our earlier example, remember you are configuring the system to record 'The Tonight Show' (11:00 pm, channel 4). The appropriate 11:00 pm TV grid window has been 'opened;' finally, click on the TAPE 1 or TAPE 2 button, depending on which VCR is to be used. The information window will be dismissed after receiving your request.

At this time you have successfully programmed your FroxSystem to start recording channel 4 at 11:00 pm - for one half hour only! Follow the identical steps to set up

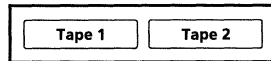and record the next adjacent 1/2 hour time increment for channel 4 - click on the 11:30 pm block (open the info window), then select the same component from the TAPE recording choices. The FroxSystem understands your request and will combine the two time activities into one, recording one full hour on channel 4 ('The Tonight Show') from start to finish. Confirmation of these requests can be viewed in the *Reminders* area of the system.
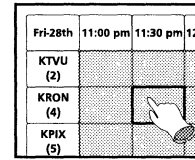
☞ Three final tips to achieve a successful recording from the *TV Grid*:

☐ (1) Always leave your VCR in a 'powered on' state (since there is no method by which the FroxSystem can determine if the device is truly on or not).

☐ (2) Select the desired the recording speed of your VCR in advance - SP (two hour mode), EP (four hour) or SLP (six hour mode). Some VCRs may be adjusted via the Frox user interface speed adjustment on the *Dubbing* panel; others must be changed manually. (Not all speeds are available for recording; refer to your VCR's operating guide for additional details).

☐ (3) Don't forget to insert a blank tape prior to the recording activity! A recordable tape is one with the small 'tab' still attached to the tape's spine.

➤ ➤

Using The TV Grid

In this manner, a wide variety of television programs may be recorded, or in-advance reminders may be established up to seven days prior to the show's broadcast.

☞ As you begin to set up multiple recording or reminders activities, the system will keep track of your many requests and will not permit 'conflicts' to be created. For instance, check any other channel opposite 'The Tonight Show' that you have just programmed - the recording option buttons you previously selected will not appear as a system choice. The remaining activity buttons (REMINDER, WATCH IT etc.) will be available for use on these and other like-time channels.

In summary, the grid is a highly-functional control panel to assist in the creation of 'time-shifted' events. Either the 'blank' grid or the fully-enabled FroxCast/FroxNet grid versions can be used. Of course, the addition of schedule information complements the grid by providing a wealth

of details on each event (including show title, actors/actresses, critical ratings, the show's synopsis, and more). With FroxCast or FroxNet reception, the 'blank' grids for most national and local channels will be replaced by the specific program grids, 'color-coded' by event type (movies in blue, sports in orange, news in red and general programming in gray). Operation of the completed *TV Grid* is as easy as (1) clicking on your desired show, (2) confirming the event's specifics (times, the show's synopsis, etc.) and finally (3) selecting any of the offered choices - to watch the program, or to instruct the system to remind you or to record the event.

Adjustments to the start/stop times of any of these programs - or removal of the activity request - is accomplished in an area of the system known as *Reminders,* discussed next in this manual.

Reminders

5.4 FROXSYSTEM REMINDERS

The *Reminders* panel operates in tandem with the *TV Grid* and *TV Schedule* control areas, serving to confirm, adjust or delete your recording or viewing requests. Television programs may be adjusted to be recorded on a specific day of the week, or set up for frequent daily/ weekly recordings.

To enter the *Reminders* screen:

☐ (1) Click on the primary FROX button and select the REMINDERS button from the listed choices.
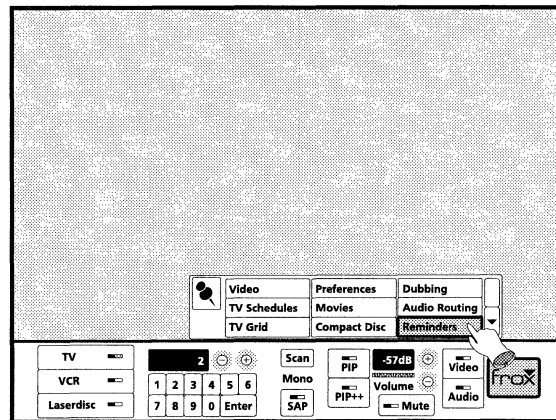
☐ (2) The *Reminders* panel appears under the header, 'Scheduled Events.' This panel provides space in the center of the screen to list multiple in-advance viewing or VCR recording requests. Buttons along the lower-portion of the screen are used to adjust the event's frequency and running times.
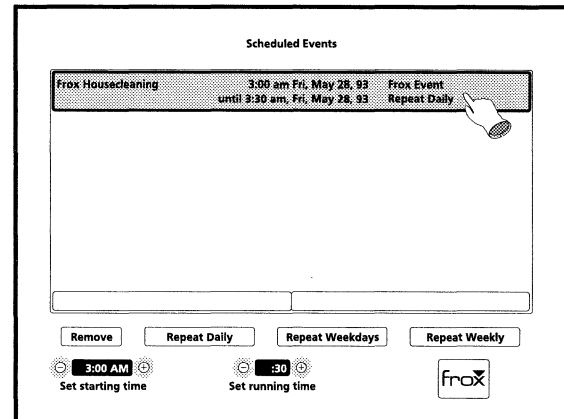
One special event - 'Housecleaning' - is always scheduled to run on a daily basis. This important maintenance routine will be discussed momentarily.

> >

Reminders

All television events listed in the *Reminders* panel may be independently selected, adjusted or dismissed. For example, the previous section covered how to set up your VCR to record 'The Tonight Show' (in our discussion this program aired on channel 4 from 11:00 pm until 12:00 am). To continue with our overview of the *Reminders* area, please enter the *TV Grid* of your system at this time and request this event to be recorded 'tonight' (review section 5.3 for the step-by-step instructions).

Your *Reminders* panel will now list the newly-scheduled television program in an event 'box' like this:

<title> 11:00 pm <today's date>   Tape on VCR <#1 or 2>
On channel 4   until 12:00 am <tomorrow's date>
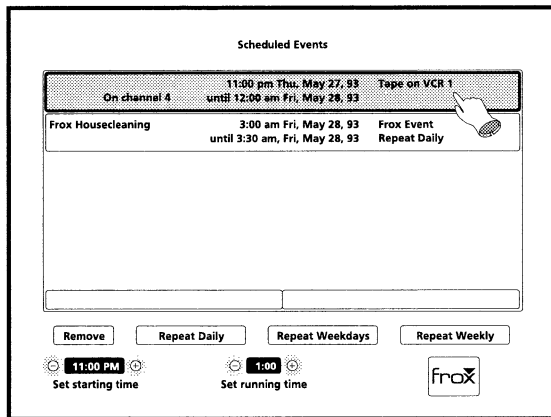
Should you have a grid updated by Frox data transmissions, the program's title ('The Tonight Show') will be featured to the left of the 11:00 pm starting time label. Otherwise, no title will appear on the 'blank' grid item.

To adjust this program, position the on-screen hand directly over the event 'box' (it will light up) and click. The event 'box' is now surrounded by a green border, indicating it is ready for your interaction. Note that the meters along the bottom of the screen have changed to reflect the program's starting and run times.

Let's continue with our example and actually adjust the 'Tonight Show' recording to begin a few minutes earlier (so we won't miss any of the opening monolog). Click on the '-' button next to the SET STARTING TIME meter 3 times - both the meter and the text within the event 'box' now reflect an earlier recording time by 3 minutes (starting at 10:57 pm). Note, however, that your program's recording length is still set at one hour - unless your indicate otherwise, your recording will end at 11:57 pm (perhaps missing a portion of the show's concluding moments). Move the hand icon to the '+' button next to the SET RUNNING TIME meter and click three times, adjusting the recording to stop one hour and three minutes later (at 12:00 am). This method of first adjusting the starting
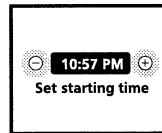
123
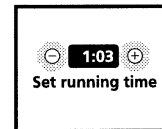
Reminders

time and then setting your desired program length can be used to 'tailor' any recording or viewing activity. (Program run times may be independently adjusted if the starting times are satisfactory).

Four other buttons exist that offer additional capabilities on a per-event basis:

Repeat Daily - This button will configure any particular program to be recorded (or reminded for watching) every day of the week, including weekends. To activate this feature, first select the program, then click on the REPEAT DAILY button. The event description will indicate that this selection is to be repeated on a daily basis.
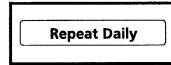
Repeat Weekdays - Similar to the REPEAT DAILY feature, except that the scheduled event will only be activated on weekdays (Monday through Friday) - perfect for recording programs such as 'The Tonight Show' (since they're not shown on the weekends).
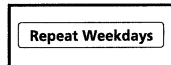
Repeat Weekly - The control to record your favorite weekly television programs. Select the program, then click on the REPEAT WEEKLY button - only the event within the channel/time slot on that specific day of the week will be recorded (every Monday, every Wednesday, and so forth).
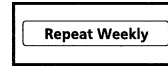
Remove - Click on this button to dismiss and remove any scheduled activity.

Before concluding our example ('The Tonight Show'), try clicking on the various 'repeat' buttons to note the change in operating state. When finished, dismiss this recording activity - click on the REMOVE button and the event will be eliminated.

>>>

FroxSystem
Housecleaning

5.5 THE 'HOUSECLEAN-ING' ROUTINE

In addition to TV events reminders, an important routine known as 'Housecleaning' is presented in the *Reminders* panel for user adjustment. At one of two pre-designated times (3:00 am or 3:00 pm) the FroxSystem runs a special maintenance program to purge unnecessary, obsolete data. For instance, yesterday's TV programming information is no longer needed today; the 'Housecleaning' routine will remove this data, thus 'freeing up' memory for continued reception of future TV schedules. Other systemwide memory areas are also purged during this important software routine.

Housecleaning is scheduled to run each day. This program cannot be 'removed' as with other events, but it may be adjusted to start at an earlier or later time should conflicts arise.

Scheduled Events

| Frox Housecleaning | 3:00 am Fri, May 28, 93 | Frox Event |
| | until 3:30 am, Fri, May 28, 93 | Repeat Daily |

| Remove | Repeat Daily | Repeat Weekdays | Repeat Weekly |

⊖ **3:00 AM** ⊕   ⊖ **:30** ⊕   froX
Set starting time   **Set running time**
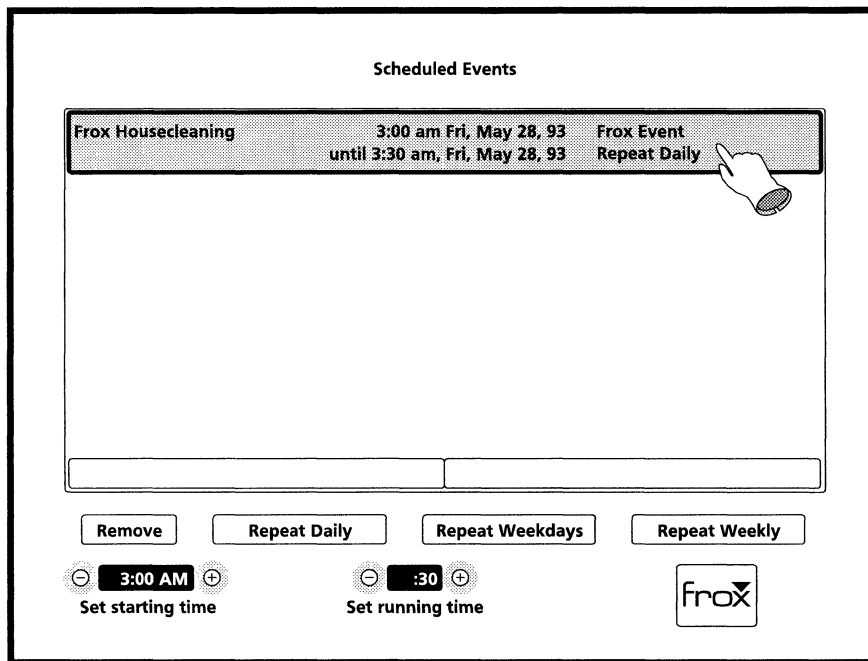
☞ IMPORTANT HOUSECLEANING NOTE: During the 'Housecleaning' routine all systemwide operating controls are disabled (including the FroxWand's control). Your current viewing or listening activity will be permitted, but during this procedure no other user interface control panel (or adjustments therein) will be operational.

Frox System
Housecleaning

◁ ◁

For example, you may be watching TV at 3:00 am - the Frox Housecleaning routine begins - and for the next 30 minutes you will NOT be able to adjust volume, change channels or access any other portion of the system. (If you are listening to a CD, the current selection will continue until the disc end is reached).

Housecleaning can be adjusted to minimize conflicts with desired timeshifted activities. For instance, return to the *TV Grid* and click on any program concurrent with the 3:00 am Housecleaning time period (or 3:00 pm, if your system is so configured). You'll note that all activity buttons have been removed. (In other words, Frox will not let you configure any other activity during the routine).

Should you wish to record a program or set up an in-advance reminder that conflicts with the Housecleaning routine, follow these three steps:

☐ (1) Click on the event box labeled FROX HOUSE-CLEANING in the *Reminders* panel. A green border will indicate it is now adjustable.

☐ (2) Using the SET STARTING TIME meter, shift the Housecleaning routine to begin at some other time that does not conflict with your desired event. Using the wand, click and hold on either '+' or '-' button to reach distant time periods. Leave the SET RUNNING TIME control at a '30 minute' duration.

☐ (3) Return to the *TV Grid,* locate your desired program(s) and choose the now-available activity controls (the TAPE it or REMINDER buttons will be presented for use).

➤ ➤

FroxSystem
Housecleaning
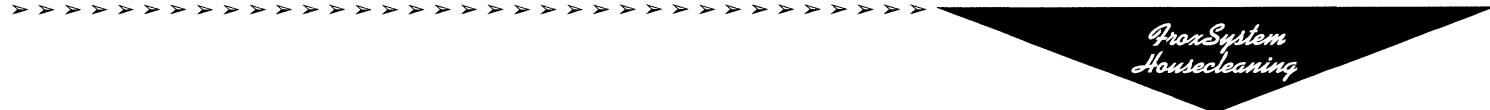
Your Housecleaning adjustments will automatically reset to the 3:00 am/3:00 pm time period for the next available day.

☞ During your system installation, your particular Housecleaning time was selected and configured (the FroxSystem defaults to the 3:00 am time). To change your routine to the other available setting (3:00 am or 3:00 pm), enter the *Installation* area of the system, then click on the button labeled MAINTENANCE. The second button from the bottom of the *Maintenance* panel is labeled STATISTICS - select this control. Your two Housecleaning choices are presented, labeled LATE NIGHT (for the 3:00 am period) and EARLY AFTERNOON (the 3:00 pm time). Choose the desired time, click on the DONE button and then the next two DONE buttons presented (exiting from both the *Maintenance* and *Installation* areas). Confirm your choice has been accepted via a review of the new Housecleaning time in the *Reminders* panel.
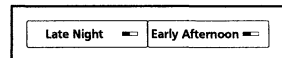
| Late Night ▬ | Early Afternoon ▬ |

System Statistics

FroxCast transmission statistics 0:0

Housekeeping Time | Late Night ▬ | Early Afternoon ▬ |

Serial Number: DM10923B
Type of cable system detected: 0
Number of Digital Signal Processors installed: 6

Frox database version 3.0, September 1, 1993
Software version 3.0, September 1, 1993

Done
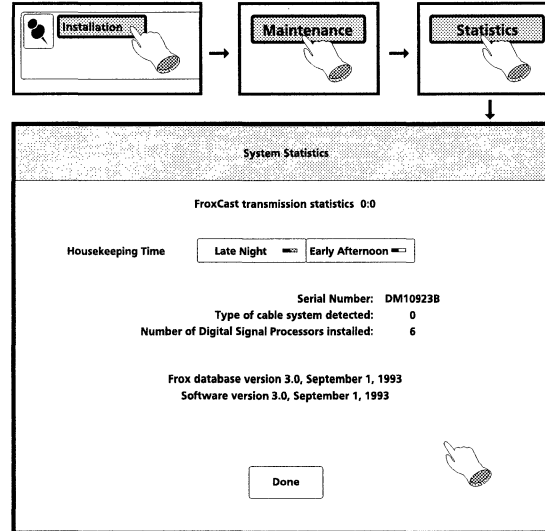
TV Schedules Browser

5.6 THE TV SCHEDULES BROWSER - AN INTRODUCTION

In addition to the *TV Grid*, your FroxSystem provides a second unique user interface panel for locating upcoming television programs by title search, show type, preferred stations, time periods, even by favorite actor or actress. This panel is known as the *TV Schedules* browser.

The name 'browser' refers to a method used by the FroxSystem in a number of other areas (the *Movies* browser and CD *Library* databases, to name two) by which the user can search ('browse') through a wide universe of information - and rapidly obtain specific information. Within the television browser it is extremely easy to 'filter out' extraneous schedule information and locate the item or items of high interest. Much as one would locate desired information by using a book's index, the Frox browser technique employs a standard on-screen 'index' to greatly simplify access to information.
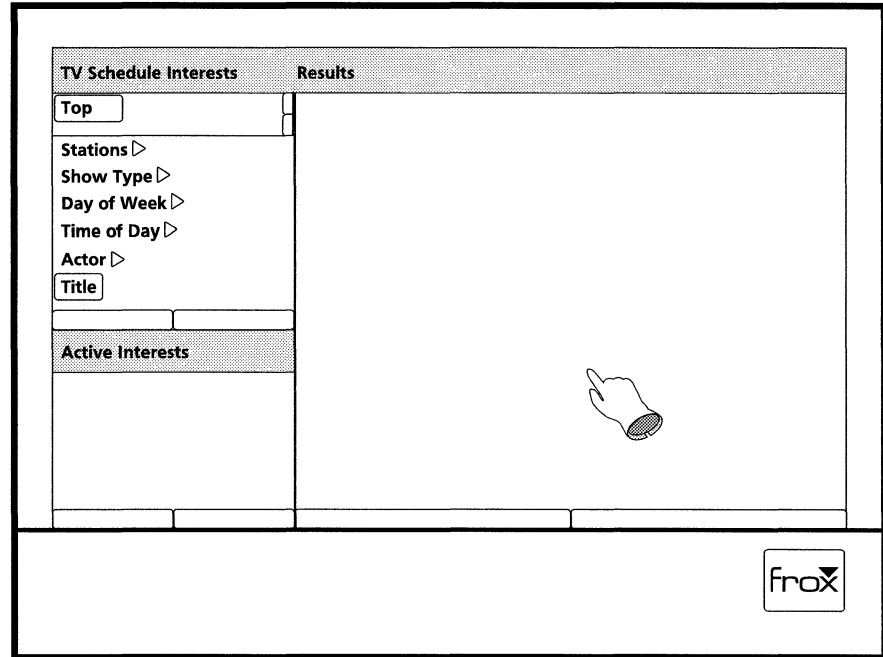
☞ IMPORTANT NOTE: While the *TV Grid* is a 'universal' control panel (that is, the grid operates in all systems with or without FroxCast or FroxNet data updates), the *TV Schedules* panel will only function when Frox data transmissions have been properly authorized, configured and received. Contact your dealer or Frox Technical Support at 800.525.5257 for subscription information.

➤ ➤
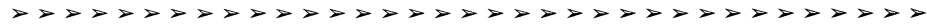
TV Schedules Browser

FroxCast or FroxNet transmissions, as indicated earlier, 'fills' in the blanks within the television grid structure. This same data is also formatted for use by the *TV Schedules* area. Note that the Frox television schedule updates are broadcast daily and received by your system when it is in the 'off' mode. For best results, therefore, it is advised that you 'power down' your FroxSystem (via the PWR button on the face of the FroxWand remote control) when the system is not in use. Frox TV data reception will be received and your schedules updated during this time.

In addition, due to the transmission 'bandwidth' of the television schedules, your FroxSystem will provide current TV schedules only after four continuous days of data reception. After the fourth day, your system will be loaded (and then updated on a daily basis) with the completed seven days of TV schedules.

129

Using The TV Schedule Browser

≺ ≺

5.7 USING THE TV BROWSER

To enter the *TV Schedules* browser, click on the button labeled TV SCHEDULES from the main Frox navigator panel (the FROX button).

The television schedules browser is divided into three main sections: (1) TV Schedule Interests - the upper left-hand area; (2) Active Interests - located in the lower left-hand corner; (3) Results - the center and right-hand portions of the screen.

TV Schedule Interests

Top

Stations ▷
Show Type ▷
Day of Week ▷
Time of Day ▷
Actor ▷
Title

Active Interests

Results

Start using the browser by clicking on any top-level interest label or button (STATIONS, SHOW TYPE, DAY OF WEEK, TIME OF DAY, ACTOR, etc.). Your selection will either cause a result to appear in the right-hand side of the panel, or the browser will guide you to deeper layers of information concerning your request.

The browser is actually quite simple to use. Here are three tips to begin with:
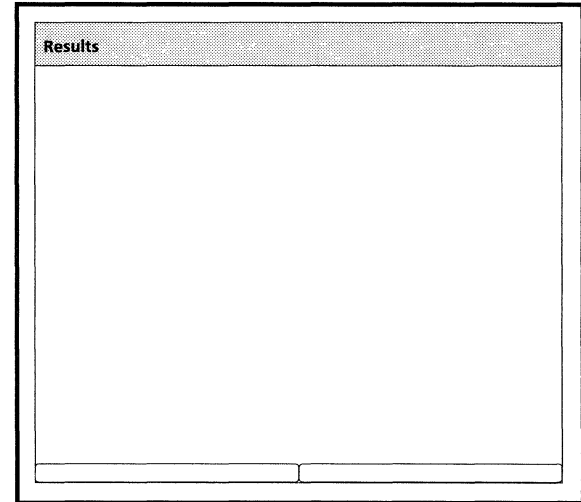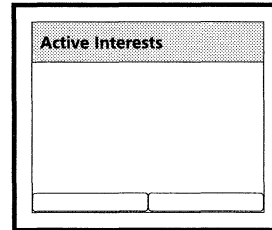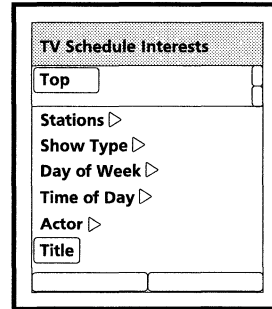
☐ (1) TO ACCESS any 'Interest' topic - click on either the text with arrow, the text box itself OR the small arrow (>) within the topic box (the arrow is lit separately by positioning the hand directly on it, versus on the overall interest box). This small arrow often points the way to deeper layers of information about a particular topic.

Stations ▷

Movies ▷

Movies ▷

> >

Using The TV Schedules Browser

☐ (2) TO CLEAR AND RESET the Interest Section (upper left-hand corner) - click on the TOP button directly under the screen header. This takes you back to the original starting point for continued or new requests.
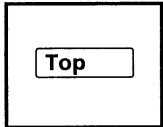
☐ (3) TO REMOVE any Active Interest selected (your topics are confirmed via text buttons that appear in the lower left-hand area of the screen) - click on each topic you wish dismissed.

In addition to the standard feature buttons common to all FroxSystem control panels, the TV Schedules browser provides two important button variations for information access and one new control sub-panel (the first two are described earlier but are repeated briefly here for clarity):

Text with Arrows - This control accesses 'categories' of information filed under broad headings.

Certain schedule listings require additional delineation before results can be obtained. Any text followed by an 'arrow' indicates the presence of additional information layers.
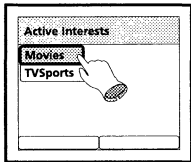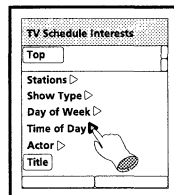
A good example is found in the control labeled SHOW TYPE: this information 'arrow' will activate like a standard feature button, but instead of presenting the results of your request (as one might expect when clicking on a primary feature button), additional 'layers' of information regarding the topic will instead be offered.

Text with Arrows are activated by positioning the on-screen hand directly over the text OR the arrow (the arrow will 'light up' to indicate proper positioning) and click. The next important information layer will be presented for continued selection.

Buttons with Arrows - Some feature buttons combine the primary request with an 'arrow' icon to indicate further related information. Both the button and the arrow icon offer interesting choices for the end user.

For example, by positioning the on-screen hand directly over the button labeled MOVIES causes it to 'light up', and the activation of this request will present the complete list of movies being broadcast this week.

However, by guiding the on-screen hand directly over *just the arrow* within the feature box, then clicking on the 'arrow' only will provide an additional layer of information. In this example selecting the MOVIES arrow lists important subcategories

131
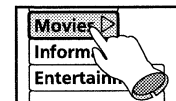
Using The TV Schedules Browser

‹ ‹

that movies may be filtered by - genre, critical or descriptive ratings, and more. Further access to any of these deeper layers will give you a more precise result of your inquiry regarding movies.

On-Screen Keyboards - In areas where searches by a specific show title or name is desired, an on-screen keyboard is presented for use.

The keyboard contains all letters of the alphabet, numbers and frequently-used punctuation. A SPACE control exists for word spacing, while an ERASE button is used for corrections. Once the desired title or name is 'typed' in (by guiding the on-screen hand to each letter/number, then clicking on each to enter it), the OK button activates the search process.

☞ In many instances you need enter only partial names or titles for rapid sortation results (rather than having to type out the entire artist's name or show title. *At least 3*

TV Schedule Interests								Results
a	b	c	d	e	f	g	h	
i	j	k	l	m	n	o	p	
q	r	s	t	u	v	w	x	
y	z	1	2	3	4	5	6	
7	8	9	0	/	'	-	.	
SPACE	ERASE		OK					

Active Interests

froX
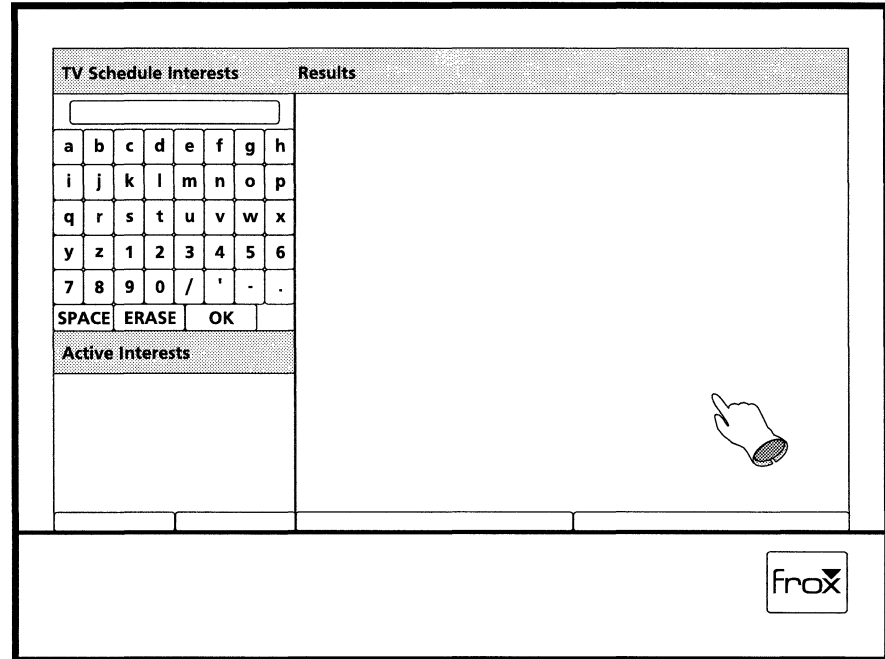
characters must be entered before the filtering process will take place).

Any feature or button selection will reveal the deeper 'layers' of information that can be explored, with many controls revealing results on your chosen topic.

> >

Using The TV Schedules Browser

The following are just a few of the information layers found within the *TV Schedule* browser:

Top Layer:	Second Layer:	Third Layer (or Result of Inquiry):
Stations ->		
	Local Stations ->	All local stations by 'call signs'
	Other Stations ->	The national stations arranged by 'call signs'
Show Type ->		
	TV Sports ->	Sports (by Type ->), Live Sports, Recorded Sports
	Movies ->	Genre, MPAA Rating, Critical Rating, Descriptive Ratings
	Information ->	News, Documentary, Education, Public Affairs, more
	Entertainment ->	Comedies, Exercise, Game Shows, How-to, more
	Children's	
	Specials	
	Other ->	Black & White, Colorized, Closed Captioned, Stereo, more
Day of Week ->		
	Sunday . . . Saturday	
Time of Day ->		
	Prime Time ->	7:00 through 10:00 pm
	Night Time ->	11:00 pm through 5:00 am
	Day Time ->	6:00 am through 6:00 pm
Actor ->		
	First Name ->	Provides a keyboard to enter the first name
	Last Name ->	Provides a keyboard to enter the last name
Title ->		
		Provides a keyboard to enter the show's title

Using The TV Schedules Browser

◄ ◄

There are often many layers beneath each primary topic; such topics can be searched independently to obtain specific information on the subject. As you select items from the upper left-hand area of the browser panel, the topics will be confirmed in the Active Interests area (the lower left-hand corner of the screen). At the same time, the details of your inquiry will appear in the large Results area. Multiple information requests may often be combined, achieving filtered results on interrelated (or diverse, if desired) subjects.

Let's look at a few examples of the *TV Schedule* browser in action:

Example 1 - *You'd like to review Saturday and Sunday night's movies (during prime time hours) and see if there are any films you'd like to watch.*

This is a relatively simple procedure with the browser. Of course, you could use the *TV Grid* and scroll through each page of Saturday and Sunday night's grids to search for the movies - or select the schedule browser and rapidly perform the following steps:

☐ (1) Click on the TV SCHEDULES button from the Frox navigator panel.

☐ (2) Position the on-screen hand over the SHOW TYPE text and click. This presents a second-level listing of available programs by classification.
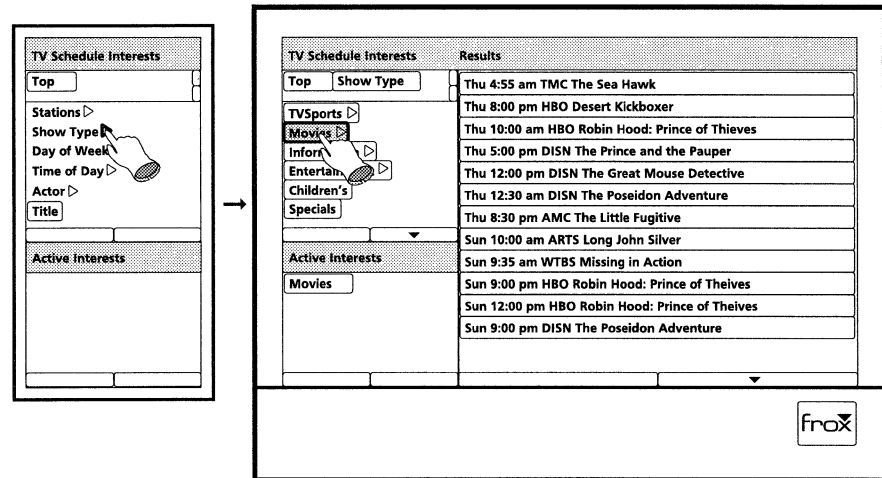
☐ (3) Select the topic MOVIES (be sure to choose the box and not just the arrow - either can be selected). After a moment, the system will present all the upcoming movies for your review (in no particular order).

>>>

Using The TV Schedules Browser

☞ TROUBLESHOOTING NOTE: If no results appear at this time, then one of two things has occurred - either insufficient FroxCast/FroxNet data has been receive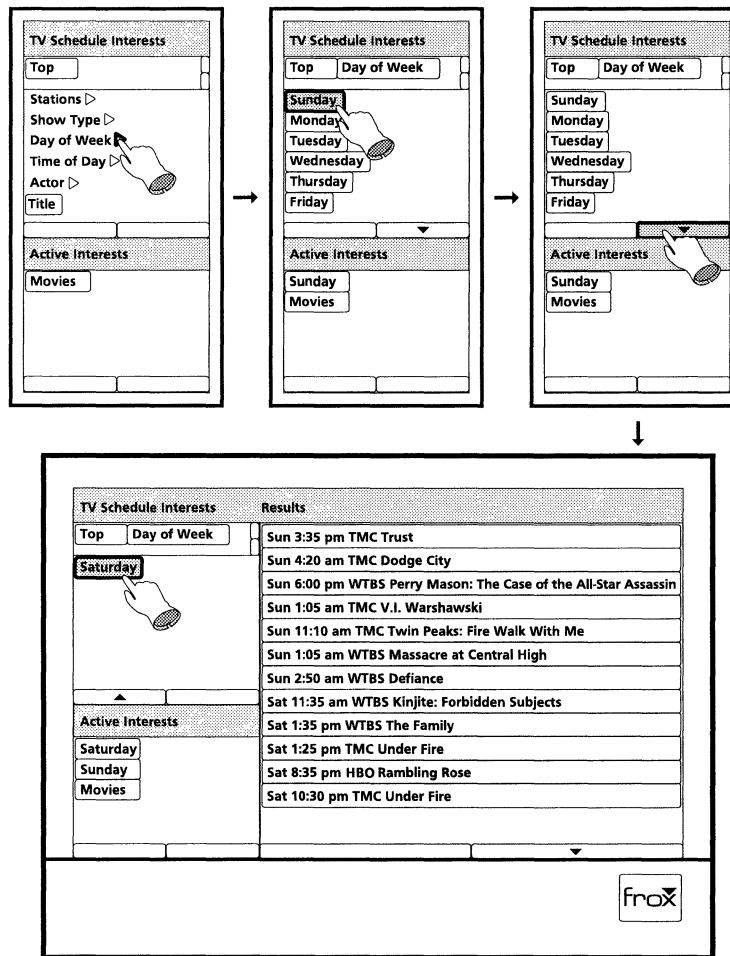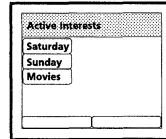d by your system, or there are *'no movies at all'* appearing during the upcoming week. In this example, the former is far more likely. Try these steps again after receiving a few days of uninterrupted data transmissions.

To continue with our example -

☐ (4) Leave the 'Movies' results in view and click on the TOP button (below the TV Schedule Interest name). This routes you back to the original 'top layer' options.

☐ (5) Select the DAY OF WEEK button.

☐ (6) Click on the first button labeled SUNDAY (the system will search through the database and present *'all movies on Sunday'*) - then select the 'next page' scroll bar, located right above the blue Active Interests legend. Click on the SATURDAY button.

TV Schedule Interests

Top

Stations ▷
Show Type ▷
Day of Week ▷
Time of Day ▷
Actor ▷
Title

Active Interests

Movies

→

TV Schedule Interests

Top | Day of Week

Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
▼

Active Interests

Sunday
Movies

→

TV Schedule Interests

Top | Day of Week

Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
▼

Active Interests

Sunday
Movies

↓

TV Schedule Interests | **Results**

Top | Day of Week

Saturday

Results
Sun 3:35 pm TMC Trust
Sun 4:20 am TMC Dodge City
Sun 6:00 pm WTBS Perry Mason: The Case of the All-Star Assassin
Sun 1:05 am TMC V.I. Warshawski
Sun 11:10 am TMC Twin Peaks: Fire Walk With Me
Sun 1:05 am WTBS Massacre at Central High
Sun 2:50 am WTBS Defiance
Sat 11:35 am WTBS Kinjite: Forbidden Subjects
Sat 1:35 pm WTBS The Family
Sat 1:25 pm TMC Under Fire
Sat 8:35 pm HBO Rambling Rose
Sat 10:30 pm TMC Under Fire

▲

Active Interests

Saturday
Sunday
Movies

▼

frox

**135**

Using The TV Schedules Browser

At this time three buttons will be listed in the Active Interests area: SATURDAY, SUNDAY and MOVIES. The results presented are of *'all movies appearing on these two days.'* One more filter is necessary to obtain only those movies aired during the prime time viewing hours.

☐ (7) Choose TOP and select the TIME OF DAY listing; finally, click on the PRIME TIME button.

The Results window now lists *all the upcoming movies from the hours of 7:00 pm through 10:00 pm on both Saturday and Sunday night.* Each movie title in the Results area may be selected and 'opened' to reveal the program's synopsis. Note the 'scroll bar' at the lower part of the results window (directly above the FROX button) to allow browsing through additional pages of information.

Choose any movie result at this time and click on the title (the title 'light's' up when in the correct position).

You are now presented with the movie's details (title, date/time, brief show description, movie rating, etc.). In addition, the all-important activity buttons are arrayed at the lower portion of the program window. To recap these
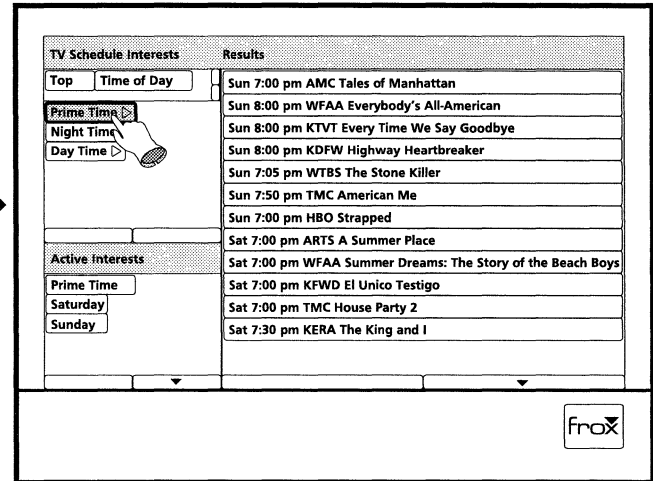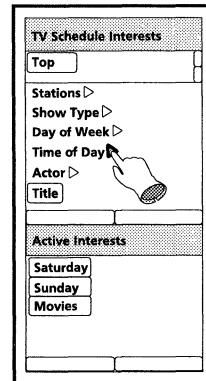
controls (they are identical to the controls described in the *TV Grid* area, section 5.3):

136

>> >

Using The TV Schedules
Browser

Reminder - When chosen, the FroxSystem will 'remind' you of an upcoming TV show. Desired TV programs can be 'tagged' for future recall, alerting you to their imminent airing no matter where you are in the FroxSystem. A small 'reminder' pop-up window will coincide with the beginning of the show, 'asking you' if you still want to watch this particular program. When the Reminder pop-up appears, you can select the WATCH IT button - and be immediately transported to the *Video* control panel to watch the event. Or, click on the FORGET IT button to remove the Reminder pop-up and continue with your current activities. (You can simply ignore it and the pop-up will dismiss after 5 minutes).

Watch It - Should you select a TV listing that is in your current time period, the REMINDER button is changed into a WATCH IT control. Click on this button to be routed immediately to the *Video* control panel.
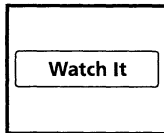
Tape 1, 2 - The buttons to record your chosen program. Selection of the TAPE 1 or TAPE 2 button will prompt the FroxSystem to engage the VCR, change the channel on the VCR's internal tuner to the appropriate station (and/or external cable converter), begin the recording process, and dismiss the recording when complete. Be certain the VCR is loaded with a blank tape and it is left in a 'powered on' state. (These buttons appear only if you have one or more VCR's configured with the system). The start times and program length may be adjusted in the *Reminders* section of the system (covered in section 5.4)
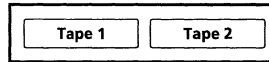
Click on any of these buttons and the information window will be closed automatically, or click on the small DISMISS PIN icon in the upper left-hand corner of the window.

Combining Interests - Any number of 'Interests' may be requested to uncover additional information, including deeper third and fourth layer requests. For instance, you could continue with our above example and find out if there are *'any good movies on Saturday and Sunday night'* - you simply leave your results visible and select the TOP button, then SHOW TYPE. Next, click on only the small 'arrow' within the MOVIES button - this accesses four additional topics for in-depth movie filtering:
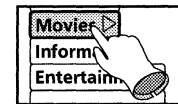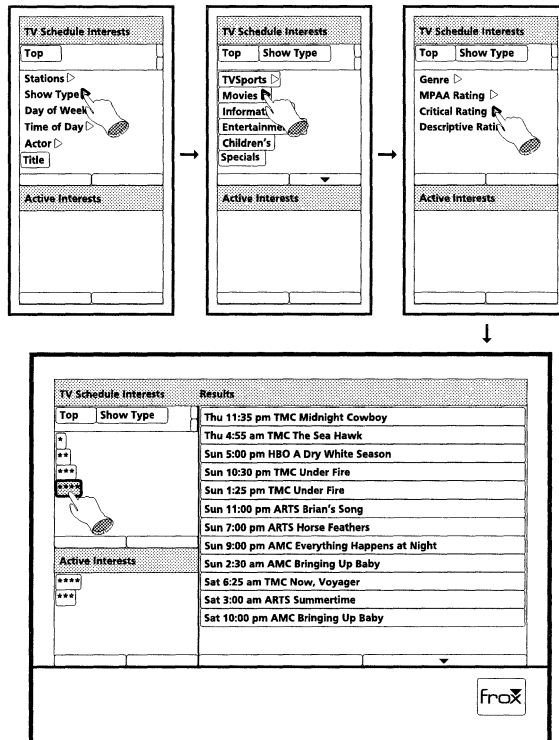
Using The TV Schedules Browser

‹ ‹

Top Layer:	**Second Layer:**	**Third Layer:**	**Fourth Layer/Results:**
Show Type ->			
	Movies ->		
		Genre ->	Action, Adventure, Comedy, Horror, Western, etc.
		MPAA Rating ->	G, PG, PG-13, R, NC-17, NR, etc.
		Critical Rating ->	*, **, ***, **** ratings
		Descriptive Ratings ->	Violence, Adult Situations, Mature Themes, etc.

In our example, click on the CRITICAL RATING legend, then the *** (Three-Star rated) button and the **** (Four-Star movies) - and review the results. You end up with *'only the three and four-star rated movies broadcast on Saturday and Sunday during prime time.'*

The creation of additional interest filters could be continued almost 'ad infinitum,' but at some point you run out of logical combinations. The FroxSystem will often reveal a result of such combinations, but rather than 'filtering' the list of items - an 'additive' approach may be used. Something like *'Horror movies-Sporting events'* seems illogical and should never be combined; however, the FroxSystem if requested will search through the two requests and present ALL upcoming Horror shows AND Sporting events for your review.

Here's another illustration of the browser's usefulness:

Example #2 - *You enjoy talk shows of all types; you'd first like to browse through the upcoming week's talk shows and review who is scheduled to appear on your favorite ones - then set up your VCR to record all of the upcoming 'Donahue' broadcasts.*

This activity would take quite a bit of time if you only had the *TV Grid* to search with; it's a task completed in moments using the *TV Schedules* browser.

First, clear the screen (click on each button appearing in the Active Interests area - removing all Results items, then select the TOP button in the upper left-hand area.

The *TV Schedule* browser will be returned to the top layer starting with STATIONS, SHOW TYPE, etc.).

Select the first-level SHOW TYPE text and then click on the small 'arrow' icon located within the ENTERTAIN-MENT button (either the box or the arrow will 'light' up for different results). This arrow presents a defined list of 'Entertainment' show types; select the scroll down bar located below and to the right of the MINI-SERIES button to reach page two of the list, and then click on the last button labeled TALK SHOWS. You'll now be able to browse through the list of this week's upcoming talk show programming.
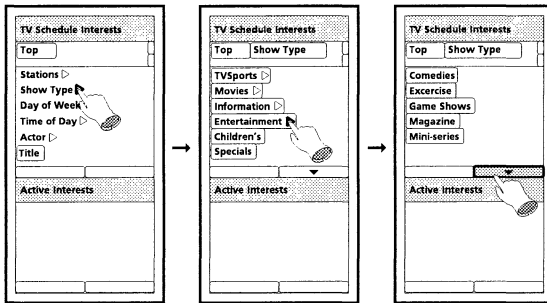
Next, select the TOP button (returning to the first level of interests) and click on the button labeled TITLE. You are now going to search specifically for only 'Donahue' listings. An on-screen keyboard is presented to use for title and name searches. Type in a few letters of the desired program (you don't have to spell out the entire program
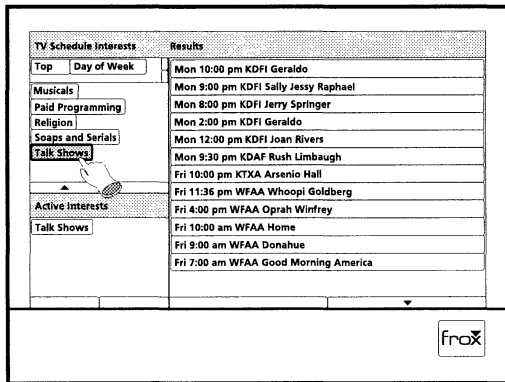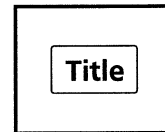
Using The TV Schedules Browser

≺ ≺
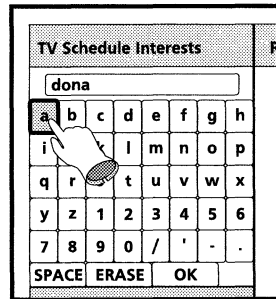
name, nor the preposi- tions - just the first proper word of the program). Always enter at least 3 letters or characters to activate the browser. Using the wand, click on the letters D - O - N - A (that's probably enough) - as you select each letter the title being spelled out will appear in the upper left-hand area of the keyboard. (Corrections are made with the ERASE button. Use the SPACE button when entering more than one word in the program's title). Then, click on the OK button within the keyboard - only the upcoming 'Donahue' programs will be listed in the Results area of the browser. Simply 'open' each to review the guest list, then click on any desired buttons for taping or reminders activities.

☞ SPECIAL NOTE CONCERNING TV SCHEDULE ACCURACY. The upcoming week's television schedules are constantly being refreshed and transmitted to your FroxSystem, every day. While accuracy is a constant goal, it is possible that, on occasions, our data transmission link to your system may 'miss' a scheduled programming
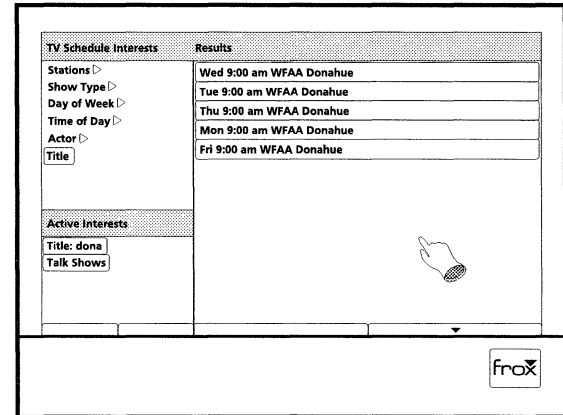
listing update. Our broadcasts are constantly repeated during the course of any given day, and your corrected TV schedule should be available through the next update cycle. Also, the TV schedules may at times be preempted by other shows or events beyond our control; program- ming accuracy cannot be guaranteed.

To exit the *Television Schedule* browser, click on the FROX button (lower right hand corner) and select another area of the system (TV GRID, VIDEO, etc.).

> >

The CD Library

SECTION 6 -
THE CD LIBRARY

The FroxSystem *CD Library* features a unique compact disc management system, combining the control of your favorite CD players with an extensive library of music information. Together, these two elements are seamlessly integrated to provide the ultimate CD listening experience.

The control protocol of the FroxSystem allows for easy operation of many available single play and multi-disc components, including the FroxDisc 100-CD jukebox (manufactured for Frox by NSM of Germany). Either the FroxDisc or NSM changer can access 100 CDs 'on-line' at any one time (with additional 50-disc cartridges at the ready for further library expansion).

CD Library Interests

- Top
- In Collection
- In Player
- Title
- Artist ▷
- Style ▷
- Instruments ▷
  ▼

Active Interests

- In Player

Results

Joni Mitchell: Hejira

Asylum: 2-1087
9 tracks; 51:23 total

[Play All] [Play Track]

1. Coyote	(05:00)	9. Refuge Of The Ro...	(06:37)
2. Amelia	(06:00)		
3. Furry Sings The Bl...	(05:03)		
4. Strange Boy	(04:15)		
5. Hejira	(06:35)		
6. Song For Sharon	(08:30)		
7. Black Crow	(04:20)		
8. Blue Motel Room	(05:03)		

Frox CD ▬ — ● Stop | ▯▯▷ Play — Disc [1] Track [0] — 0:00:00 — ▬Audio — frox

CD 2 ▬ — ◁◁ | ▷▷ — 1 2 3 4 5 6 — -57dB ⊕ — Ident

Power — 7 8 9 0 Enter — Volume ⊖ — STD Play — ▬ Mute

|◀◀ |▶▶|

The CD database portion of the system features a library of over 30,000 CD titles, including cover artwork for over 10,000 CD titles. New CD entries are expanding the database at the rate of approximately 500 titles per month, plus additional cover artwork on new and

The CD Library

previously released CDs. Your Frox *CD Library* allows quick review of new releases, the ability to locate information regarding favorite titles and artists, even sort CDs to preferred interest levels by music type, instrumentation, and more.

Additional new CD release updates will be broadcast and received by your system via phone modem interconnect in late 1993, as part of the FroxNet™ services update package. The FroxNet new CD release updates are a separate charge (billed quarterly). See your dealer or contact Frox for service activation.

Frox continues to expand the CD database and actively seeks rare or obscure discs to add to the library for the benefit of all. This service allows one's entire CD collection to be entered in the library, matched to each disc's textual records and on-screen album graphics.

Should you have compact discs that you would like entered into the national database, please contact Frox's Customer Service at 800.525.5257. Arrangements can be made to enter your personal discs for release in an upcoming CD database update.

6.1 PLAYING COMPACT DISCS

The following steps are used to enter the CD component control portion of the system and begin playing favorite discs:

☐ (1) Select the FROX button, and from the navigator pop-up click on the button labeled COMPACT DISC.

☐ (2) The new user interface presented consists of a 'browser' panel to search within the CD database, plus operate the various CD components connected to your system (CD component control is provided from the buttons located at the bottom of the *CD Library* panel).

☐ (3) To listen to a CD, click on the desired component from the choices at the bottom left of the screen, load the disc into your player (if it is a CD changer, load one or more discs) and select the PLAY button
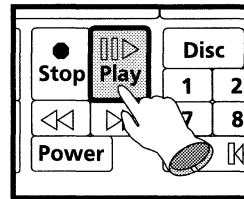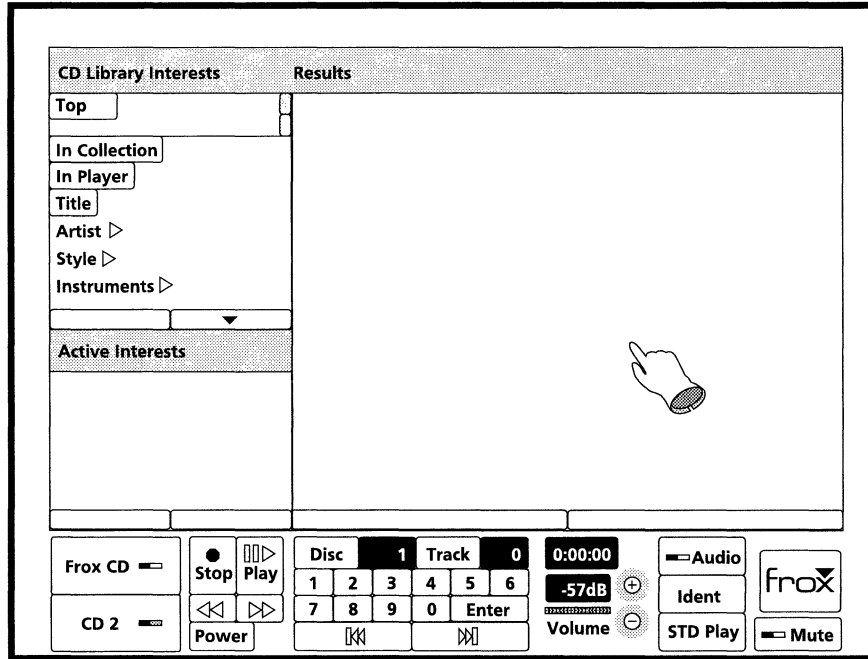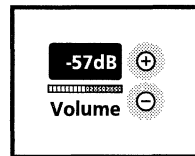
via the FroxWand. Adjust volume via the wand's VOL up/down control, or click on the volume buttons adjacent to the volume meter to reach your desired listening levels.

143

Playing Compact Discs

Most CD players may be operated by loading a disc(s) and selecting the PLAY button. Your FroxSystem will support and control four general 'classes' of CD components: (1) single disc CD players; (2) changers featuring 3-5 discs loaded into a 'carousel-type' tray; (3) CD changers featuring a cartridge 'pack' that holds 5-10 discs; (4) the 100-disc changers manufactured under the Frox or NSM brand name. The first three require infrared remote control access (as with most devices connected to the system), or they must be operated manually. The 100-disc CD changer is an exception to this and achieves reliable communication via direct RS-232 interconnect to the FroxSystem.

Once your musical selection is playing, the volume is adjusted via two primary methods: (1) clicking on the '+' or '-' button adjacent to the volume meter; (2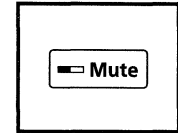) by selecting the up or down rocker control on the VOL convenience button located on the face of the wand. Note the on-screen meter offers a numeric display of volume settings (registering in decibels, a unit to measure volume amplitude) along with a small green LED bar (located directly beneath the numeric meter) to visually indicate volume levels.
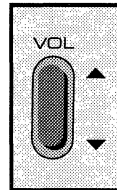
As in other areas, the CD control panel's volume meter scales from an OFF position (no sound), then increases from -60dB in one dB increments to 0dB (the reference maximum volume level). The volume meter may be incremented beyond the 0dB level to a +12dB position (the green volume LED indicator will 'fill' from left to right, turning red at all volume levels above 0 dB).

Beneath the FROX button is a MUTE control to instantly dismiss the FroxSystem's audio output. Audio muting may also be engaged by selecting the M/II (MUTE/PAUSE) control on the face of the FroxWand. Note the control's 'tally' light will indicate whether audio muting is on or not. Always insure the volume level is reduced to a safe level (usually -25dB or lower) when 'unmuting', as toggling between muted and unmuted states at high volume levels can cause damage to the rest of your audio system.

At any time during disc play, the FroxSystem's audio processing may be changed to better suit your listening needs. Click on the AUDIO button on the lower right-hand side of the panel to select from the various digital audio processing choices. (Review section 4, 'FroxSound Digital Audio Processing' for complete details).

Finally, the top portion of the screen contains the *CD Library* browser. This will be discussed in section 6.4 entitled, '*CD Library* Browser'.

144

>>> *Important CD Notes*

6.2 IMPORTANT CD COMPONENT USAGE COMMENTS

☞ Prior to enjoying the CD controls and library features, please review the following notes:

☐ (1) ALWAYS USE EXTREME CARE whenever adjusting the volume levels at or beyond the 0dB point, as damage to loudspeakers and amplifiers can easily result. As a general rule, NEVER listen for extended periods of time to amplitude levels above normal 'conversational' levels. PERMANENT LOSS OF HEARING MAY RESULT FROM EXTENDED LISTENING AT EXTREME VOLUME LEVELS.

☐ (2) SPECIAL NOTE CONCERNING ANALOG (NON-DIGITAL) CD PLAYER INTEGRATION. While any analog CD component can be successfully incorporated within the basic operational structure of the system, the full capabilities of the FroxSystem are only obtained by using the 'digital-direct' output found on many current CD changers and players. Specifically, the FroxSystem uses the embedded digital subcode information on each CD to enable many of the system's features, such as track/time indicators, random or sequential disc play, rearranging or deleting individual tracks, plus automatic identification of a disc within the *CD Library* database. Such features are either not available or are disabled when using analog-output only components.

There have also been reported rare instances of digital-output CD players that 'strip' the CD subcode information from the digital output, also eliminating many of these important FroxControl features. Contact Frox Technical Support at 800.525.5257 if this problem is encountered with any digital-direct CD player.

CD Features and Controls

6.3 CD PLAYBACK FEATURES AND CONTROLS

A number of important controls exist to aid in CD player/ changer operation. Review the following descriptions for information regarding each feature, discussed as they might be sequentially activated:

Power - Turns on and off your CD player. Note that this button (located beneath the SCAN FORWARD/BACKWARD buttons) is only presented for components offering remote power on/off capability. Otherwise, this button will not be available as a control choice. Click on the button to power on or off your device.
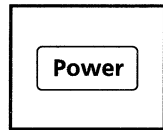
☞ Of course, one may always 'power up' the component independently of the FroxSystem by physically selecting the power button on the face of the player. Do not use the wand's POWER button as this is only used for main system power.

Play/Pause - Your initial selection of the PLAY/PAUSE button will cause the CD player to enter the play mode; a second click on the control places the component into a 'paused' state. Continued toggling of this button will alternate between PLAY and PAUSE modes.

The M/II button (MUTE/PAUSE) on the face of the FroxWand will also permit toggling between the play and paused states (the volume will be muted at the same time the device is paused when this wand control is used).
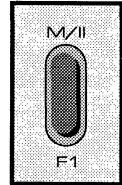
Loading a disc is easier with certain CD players. Some components allow you to insert a new compact disc into the tray, then via the FroxWand one may simply select the PLAY button. The player's drawer will automatically close and begin playing the disc.

☞ It is acceptable for the user to manually begin disc play by touching only the CD component's play button, but understand that the 'operating state' may become confused. Manual play activation will cause the FroxSystem to report incorrectly the operating condition of the device (since there is no 'feedback' from the component telling the FroxSystem that 'you' just manually walked up to the CD player and hit the 'play' button. Only by accessing the component via the FroxControl menu will the correct state of the device be understood).
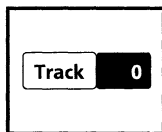
Disc/Track Direct Access Control Panel - Frox provides an easy-to-use control panel for locating any disc (when using a multi-disc CD changer) or independent musical selections on a specific disc.

> >

CD Features and Controls

The panel consists of two primary buttons labeled DISC and TRACK, two disc/track status meters, a '0' through '9' keypad to locate desired selections, and an ENTER button to activate the request. Also located beneath this panel are NEXT/PREVIOUS controls to reach earlier or upcoming songs (or even discs) from those in play.

☞ Note the green 'highlight' lettering within either the DISC or TRACK buttons; this alerts you to which of the two tasks are currently selected and ready for use.

For example, to listen to a new song elsewhere on your current disc, simply choose the TRACK button (the border will 'light' up to indicate your on-screen hand is in the correct position) and click. The green text 'highlight' is now changed to indicate the TRACK function is active. Next, enter the desired track via the numerical keypad and hit the ENTER control. Your CD component will now locate and play the new selection. (On some components you merely have to click on a track selection via the keypad and the disc will automatically begin playing).

The two search controls (>>| and |<<) may be used in lieu of the keypad to reach additional tracks on a particular CD. Click first on the TRACK button, and these two controls will now function
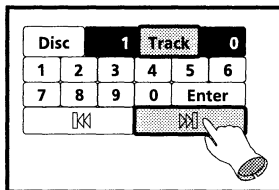
as NEXT TRACK/PREVIOUS TRACK access buttons. You may click and hold (or select track-by-track) until your desired song is located. Also, the wand's SEL button ('Select') can be similarly used for a quick-access method of reaching other tracks on the current disc.

To locate a new CD in a multi-disc component, click on the DISC button, key in the desired disc position within the changer by using the '0' through '9' buttons - then hit the ENTER button. The FroxSystem will find the new disc and place your component into the play mode. The same two search controls (>>| and |<<) now act as a NEXT DISC/PREVIOUS DISC feature for locating other discs in the multi-disc changer.
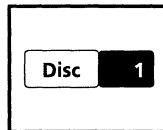
☞ A note concerning digital verses analog CD players: not all direct access control features are available for analog-only CD players and changers. For example, with an analog CD component it is possible to enter a track number and begin play from that point; however, the TRACK meter will NOT advance beyond the indicated track. (This track information is only reported to the FroxSystem via the digital subcode output, as discussed earlier in section 6.2). Other features such as the elapsed time counter are also not available when analog CD components are used - such features are either disabled or removed from view.
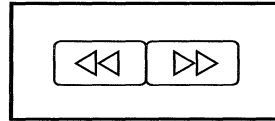
Forward/Reverse Scan - Many CD players offer a forward or backward scan feature. This is useful in quickly locating

CD Features and Controls

‹ ‹

desired portions within a particular song. Otherwise, the direct access track controls are used to reach the beginning of a new musical selection.

Select the PLAY button first , then click on either the >> (FORWARD SCAN) or << (REVERSE SCAN) buttons to proceed rapidly in your desired direction. Short clicks with the wand may only 'skip' ahead or backwards a few seconds into the song; by clicking and holding the FroxWand activation triggers one may keep the CD player in the scan mode for longer periods of time. The moment you release the activation triggers, normal play will resume.

On some components you may first place the disc in 'pause' (click on the PLAY/PAUSE button until playback is interrupted; the 'pause' toggle light will be indicated), and then select either directional scan button. The CD will remain in the 'paused' state, but will permit rapid movement in the forward or reverse directions.

When the desired area of the disc is reached, click on the PLAY button to continue with normal speed playback.

Mute - Reduces all audio output from the system. Audio muting is also activated when selecting the M/II (MUTE/PAUSE) control on the face of the FroxWand.
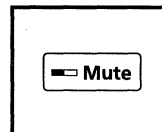
Elapsed Time Counter - Located above the volume meter, an elapsed time counter provides accurate information regarding the disc currently in play. This counter presents the elapsed time information of each track during playback (in hours, minutes and seconds, as the counter is read from left to right).
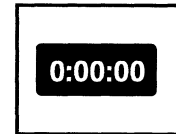
☞ This counter is operational only on digital-direct CD components. The counter is removed from view when analog CD players are used.

Ident - A procedure for 'matching' the compact discs you own with the 30,000 CD textual library. This control only functions on digital-direct CD components and is removed when analog players are configured to the system (see section 6.7 for further details).
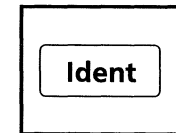
Std (Standard) Play - The control to setup normal playback, random play (from a disc or group of discs) or sequential play from a list of CDs in your changer. This feature is described in section 6.9, 'Standard Play, Random Play and Multiplay Options.' Also, the control is available only on digital-direct CD players and changers.

148
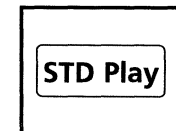
Video Mute (Screen Blanking) - The FroxWand contains a special button - the F1 control (lower left hand toggle) - than can request the 'screen blanking' feature for selectively turning on and off the video image to your monitor. When listening to music, for example, the television picture may be turned off by selecting the F1 button (in effect, 'blanked' - the set is still powered up). In this instance the on-screen hand will remain in a 'dimmed' state, thus reminding you of the current operating status. To restore the video image, simply depress any FroxWand control button (including the thumb directional button).
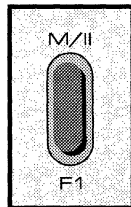
Stop - To conclude disc playback at any time, click on the STOP button.

☞ Selecting the STOP button also 'resets' the known operating state of many CD components. For example, in some instances your Frox/NSM 100-disc changer may not accept your commands (as the reported condition on the user interface does not match the 'known' state of the device). Click on the STOP control once or even twice should this occur - the changer will stop playback, return the disc to its tray and reset the device for your next request.
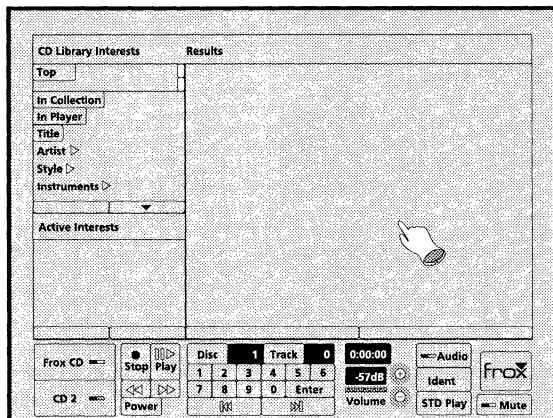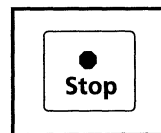
To exit the Compact Disc control area, select the main Frox navigator window (the FROX button) and request another menu.

The remaining features and controls will be described as they relate to the integration of device control with the extensive FroxSystem *CD Library* database. The next section (6.4) outlines the operation of only the browser portion of the *CD Library*; section 6.8 will combine the component operation with the database features unique to the FroxSystem.

6.4 THE CD LIBRARY BROWSER

As described earlier, the *CD Library* is comprised of an interactive database of over 30,000 titles, containing entries codified by artist, genre, style, ti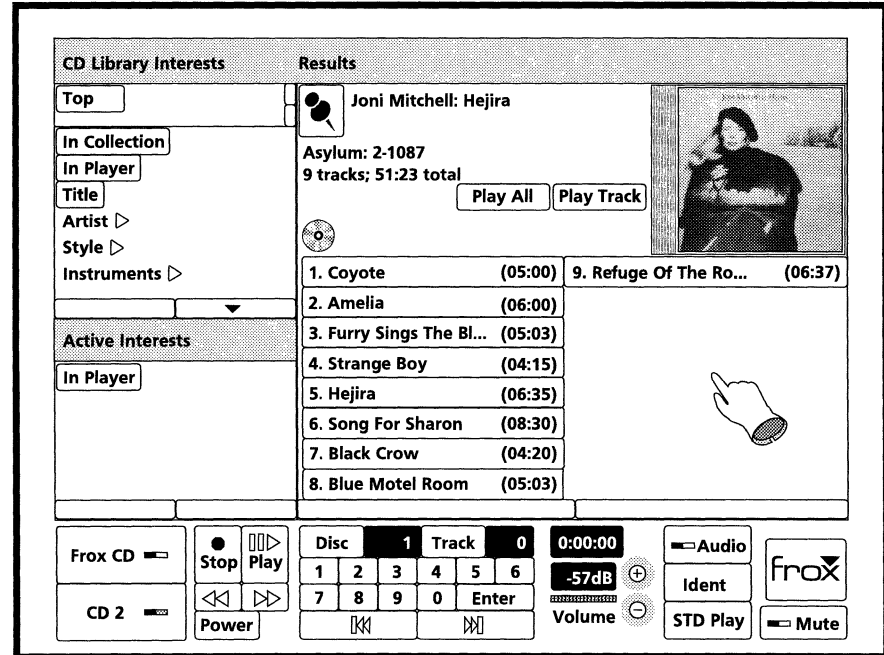tle, label, instrumentation, year released and more. These textual records are stored on the internal hard drive within your Media Processor, and can be updated via the FroxNet data updates network.

Your FroxSystem provides the unique ability to identify, sort and manage your entire compact disc library. Both 'manual' and 'automatic' methods exist to recognize CDs as being part of your collection. Once identified and filed within the database, your collection can be perused at leisure and information recalled upon demand. Plus, CD album graphics may be added to personalize your collection as it is viewed 'on screen.'

The *CD Library* can be thought of as a 'book' containing a wealth of musical information, uniquely combined with the operating controls of your CD components. For instance, one might wish to uncover how many Joni Mitchell albums are currently available, learn which particular songs are on each disc - refer to the collection of her CDs you actually own - then load them into a multi-disc changer and instruct the FroxSystem to play them randomly. This is all possible with the *CD Library* database and integrated management structure.

CD Library Interests

- Top
- In Collection
- In Player
- Title
- Artist ▷
- Style ▷
- Instruments ▷

Active Interests

- In Player

Results

Joni Mitchell: Hejira

Asylum: 2-1087
9 tracks; 51:23 total

Play All | Play Track

1. Coyote	(05:00)	9. Refuge Of The Ro...	(06:37)
2. Amelia	(06:00)		
3. Furry Sings The Bl...	(05:03)		
4. Strange Boy	(04:15)		
5. Hejira	(06:35)		
6. Song For Sharon	(08:30)		
7. Black Crow	(04:20)		
8. Blue Motel Room	(05:03)		

Frox CD — Stop | Play | Disc | 1 | Track | 0 | 0:00:00 | Audio | froX
CD 2 — | Power | 1 2 3 4 5 6 / 7 8 9 0 Enter | -57dB | Ident | STD Play | Mute
Volume

> >

The CD Library Browser

☞ The name 'browser' refers to a method used by the FroxSystem in a number of other areas (the *Movies* browser and *TV Schedules* databases, to name two) by which the user can search ('browse') through a wide universe of information and rapidly obtain specific information.

To enter the *CD Library* browser, click on the button labeled COMPACT DISC from the main Frox navigator panel (the FROX button).

The *CD Library* browser is divided into three main sections: (1) CD Library Interests - the upper left-hand area; (2) Active Interests - located in the lower left-hand corner; (3) Results - the center and right-hand portions of the screen.

Start using the browser by clicking on any top-level interest label or button (ARTIST, TITLE, INSTRUMENTS,
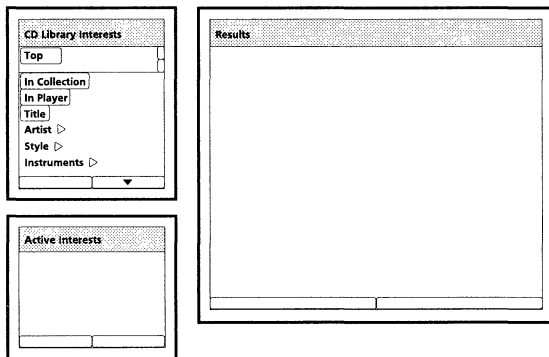
NEW RELEASES, etc.). Your selection will either cause a result to appear in the right-hand side of the panel, or the browser will guide you to deeper layers of information about your initial request.

The browser is actually quite simple to use. Here are three helpful tips to get started by:

☐ (1) TO ACCESS any Interest topic - click on either the text with arrow, the text box itself OR the small arrow (>) within the topic box (the arrow is lit separately by positioning the hand directly on it, verses on the overall interest box). This small arrow often points the way to deeper layers of information about a particular topic.

| Style ▷ |

| Classical ▷ |

| Classical ▷ |

☐ (2) TO CLEAR AND RESET the Interest Section (upper left-hand corner) - click on the TOP button directly under the screen header. This takes you back to the original starting point for continued or new requests.

| Top |

☐ (3) TO REMOVE any Active Interest selected (your topics are confirmed via text buttons that appear in the lower left-hand area of the screen) - click on each topic you wish dismissed.

CD Library Interests
Top
In Collection
In Player
Title
Artist ▷
Style ▷
Instruments ▷

Results

Active Interests

Active Interests
Classical
Bluegrass

151

The CD Library Browser

‹ ‹

In addition to the standard array of buttons common to all FroxSystem control panels, the *CD Library* panel features two important button variations for information access and one new control sub-panel (described earlier, but repeated briefly here for usage clarity):

Text with Arrows - These controls access 'categories' of information filed under broad headings.

Many topics require additional delineation before any results can be presented. A text line followed by an 'arrow' indicates the presence of additional information layers.

Style ▷

Instrum ▷
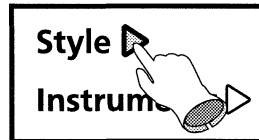
A good example is found in the text labeled STYLE. This information 'arrow' will activate like a standard feature button, but instead of presenting an immediate result of your request (as one might expect when clicking on a feature button), new 'layers' of information regarding the topic will instead be offered.

TEXT WITH ARROWS controls are activated by positioning the on-screen hand directly over the text OR the arrow (the arrow will 'light up' to indicate proper positioning) and click. The next information layer will be presented for further review.

Buttons with Arrows - Certain feature buttons combine the primary feature with an 'arrow' icon to indicate deeper layers of related information. Both the feature box and the arrow icon offer interesting choices for the user.

Classical ▷
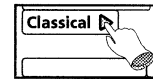
Classical ▷

For example, position the on-screen hand directly over the button labeled CLASSICAL (it is a subcategory of the STYLE choice from the primary CD panel). The border surrounding the button will 'light up,' and if chosen will present a list of all Classical CDs available (in no particular order).

However, by positioning the on-screen hand directly over the arrow within the feature box, then clicking on the 'arrow' only, causes an additional layer of information to appear. In this example selecting the CLASSICAL arrow presents a detailed list of Classical music types for further review: general, ballet, chamber music, electronic, film scores, opera, and so forth. Continued searching within any of these individual topics will result in the appropriate answer to your inquiry.

>>

The CD Library Browser

On-Screen Keyboards - In the areas where searches by a specific CD title or artist's name is desired, an on-screen keyboard is provided.

Click on the TITLE button to view the keyboard.

Included are all letters of the alphabet, numbers and frequently-used punctuation. A SPACE control exists for word spacing, while an ERASE button is available for corrections. Once the desired title or name is 'typed' in (by guiding the on-screen hand to each letter/number, then clicking on each to enter it), the selection of the OK button activates the search procedure.

☞ In many instances you need enter only partial names or titles for rapid sortation results (rather than having to type out the entire artist's name or CD title). At least 3 characters must be entered before the request will be honored.
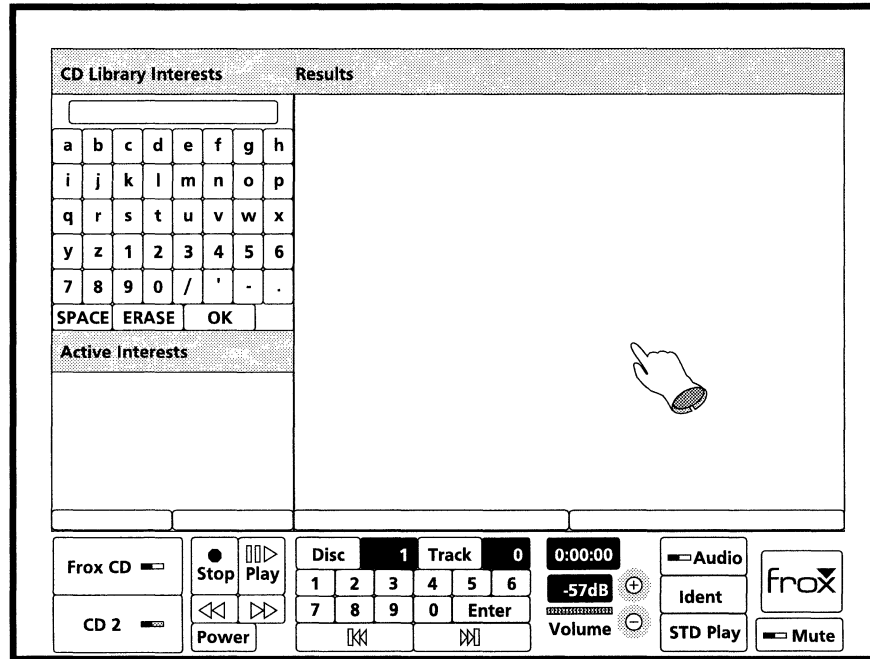
As you browse through the *CD Library*, your activities will reveal many results regarding your topic. Often deeper 'layers' of information exist can be explored, with many selections revealing unique information on your topic.

153

The CD Library Browser

The following is a summary of the main information layers found within the *CD Library* Browser:

Top Layer:	Second Layer:	Third Layer (or Result of Inquiry):
In Collection ->		Presents immediate listings of all CDs identified as 'in your personal collection'
In Player ->		Presents a listing of known discs within your currently active CD player/changer
Title ->		Presents a keyboard to enter the CD's title.
Artist ->	First Name	Presents a keyboard to search by first name
	Last Name	Searches by last name
	Group Name	Searches by group name

NOTE: Results in this area may not be 'combined' - for example, entering an artist's First Name, then adding the Last Name to locate this particular artist's material. At this layer, the browser works in an additive mode, presenting all discs found from the First Name search AND all those with the Last Name entered.

>>>

The CD Library Browser

Top Layer:	Second Layer:	Third Layer (or Result of Inquiry):	
Style ->			
	Bluegrass	Each 'style' is a primary filter; others, like 'Classical'	
	Blues	offer additional sortation to third and forth levels	
	Cajun/Zydeco		
	Children		
	Christmas/Holiday		
	Classical ->	General ->	20th Century, Baroque, more
		Ballet ->	Impressionist, Romantic, more
		Chamber ->	Classical, General, more
		Opera ->	Medieval, Renaissance, more
		... etc.	
	Comedy		
	Country		
	Dance		
	... more		
Instruments ->			
	Keyboard ->	Celesta, Fortepiano, Harpsichord, Keyboards, Organ, more	
	Voice ->	Alto, Baritone, Bass, Chorus, Soprano, Tenor, more	
	String ->	Bass Guitar, Cello, Harp, Mandolin, Viola, Violin, more	
	Woodwind ->	Basset Horn, Clarinet, Flute, Harmonica, Oboe, more	
	Brass ->	Cornet, Horn, Trombone, Trumpet, Tuba, more	
	Percussion ->	Congas, Drums, Timpani, Xylophone, more	
	Computer/Electronic ->	Electric Organ, Synthesizer, more	
	Other ->	Glass Harmonica, Mandora, Noneo, more	

The CD Library Browser

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

Top Layer:	Second Layer:	Third Layer (or Result of Inquiry):
New Releases ->		Presents listings of newly-released CDs
CD Updates ->		Offers updated listings from previously-entered discs
Label ->	All Labels ->	Rhino, Polydor, EMI, CBS, Warner, Geffen, Verve, more
	Enter Label	Presents an on-screen keyboard to enter the desired label
Year ->	60's ->	Each may be sorted to individual years within the decade
	70's ->	
	80's ->	
	90's ->	

As you select items from the upper left-hand area of the browser panel, the topics will be confirmed in the Active Interests area (the lower left-hand corner of the screen). At the same time, the details of your inquiry will appear in the large Results area. Multiple information requests may often be combined, achieving filtered results on interrelated (or diverse, if desired) subjects.

Using The CD Library Browser

6.5 USING THE CD BROWSER.

Here is an example of the *CD Library* browser in use:

Example - *You'd like to review all available albums by Joni Mitchell; then, you'd like to instruct the FroxSystem that you just purchased her disc, 'Hejira.' (In essence, you'll be 'filing' this CD into your personal collection area of the system).*

This is a relatively simple procedure with the browser:

☐ (1) Select the COMPACT DISC choice from the Frox navigator panel (the FROX button).

☐ (2) Move the on-screen hand to the ARTIST text and click. This presents a second-level panel for searches by First, Last or Group names.

☐ (3) Select the filter FIRST NAME. It is often useful to analyze, for a moment, which name request might be more specific than others (as the end results can be more rapidly obtained, or results more clearly defined). Entering the last name, 'Mitchell' will result in more answers (since there are more artists with the same last name when compared to her first name - in this case, her first name is more unique).

☐ (4) An on-screen keyboard is presented for title and name searches. Type in the artist's first name (it is not necessary to spell out the entire name, just the first few letters. Always enter at least 3 letters or
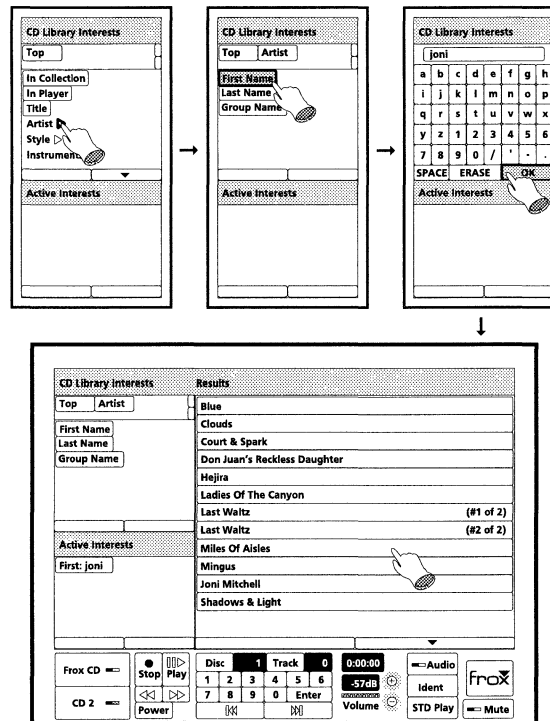
characters to activate the browser). Using the wand, click on the letters J - O - N - I. As you select each letter the name will appear in the upper left-hand area of the keyboard. (Corrections are made with the ERASE button; use the SPACE button when entering more than one word in the name). Then, click on the
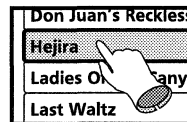
157

Using The CD Library Browser

◄ ◄

OK control within the keyboard - all the albums by artists with 'Joni' (First Name) will be listed in the Results area of the browser. Simply 'open' each album presented (click on each) to review any disc's information.

☞ TROUBLESHOOTING NOTE: If no Results appear during your initial search, then either the name is misspelled or *there are no albums made by the artist in question.* In this example, the former is more likely. Try these steps again by entering only the first three letters of the artist's name to minimize potential spelling errors.

To continue with our example -

☐ (4) Browse through the presented albums and click on Joni Mitchell's disc, 'Hejira.' You'll view the information

concerning artist and title, label, catalogue number, total tracks and time of the disc, and a list of all tracks in order as they appear on the disc. A large 'generic' CD jewel box graphic is also pictured in the upper right hand area of the panel.

➤ ➤

Using The CD Library Browser

Note also the 'bad' news: the small CD icon above the track listings has a 'X' through it, indicating you do not own this disc! Since in our example you just purchased this CD 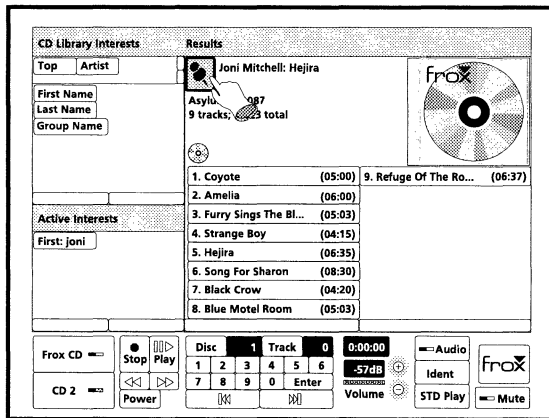and would like to file it within your system's personal 'In Collection' area, guide the hand icon to point directly on the small CD icon and click. This removes the white 'X' and notates this title as a disc you currently own.
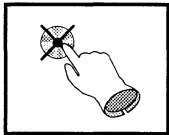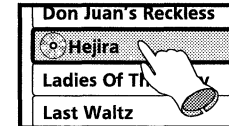
☐ (5) Move the hand to the small DISMISS PIN graphic in the upper left hand corner of the Results window,

and click on it to remove the 'Hejira' information. You'll note that the list of 'Joni' CDs returns, with the 'Hejira' disc now featuring a CD graphic adjacent

to the album title box (thus indicating it is now part of your personal CD library).

To clear the screen and prepare to search for another disc, click on any item in the Active Interests portion of the panel (in this example, click on the button labeled FIRST: JONI). This removes all results from the right hand side of the panel. Lastly, click on the button labeled TOP in the upper left hand corner - this resets all screens and returns you to the initial browsing level.
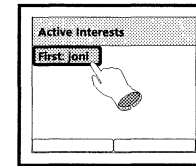
With practice one can access a variety of Interests and obtain interesting combined results. For example, selecting STYLE and then JAZZ presents all the various Jazz CDs within the library. Perhaps you'd like to uncover how many of these releases feature the noted jazz guitarist, George Benson. Selecting ARTIST and then LAST NAME, typing in B-E-N-S... and you'll now be able to view over 30 compact disc releases offering George Benson's work.

This process of sortation and filtering to your interest level will enable you to access detailed, specific information throughout the *CD Library* area.

Using The CD Library Browser

Of special interest is the ability to sort and browse through one's personal collection, including discs loaded in a multi-disc CD changer. The same techniques are used to access, for example, your 100-disc CD changer (select IN PLAYER), browse to uncover how many 'Blues' discs are loaded - and instruct the system to play them all randomly. The upcoming sections of this manual will outline the steps required to identify, sort and integrate your personal music library with your CD components in such a manner.

☞ SPECIAL NOTE CONCERNING CD DATA ACCURACY. While every attempt is made to insure complete and accurate information, Frox does not warrant the *CD Library* to be 'error-free.' Errors can be made in the physical entry of the data; as such, we at Frox encourage the reporting of such problems found for correction. Plus, our evolving database of over 30,000 titles is one that marries two completely different sources of CD information: the first one presents the tracks of CDs 'in native order' (as they would appear on the disc itself), the second version only listing the tracks in alphabetical order (without individual track times). Frox continues to augment the database and will, at specified times offer library updates to our system owners.

To exit the *CD Library* Browser, click on the FROX button (lower right hand corner) and make another selection (TV GRID, VIDEO, etc.).

> >

Manual Identification of CDs

6.6 MANUAL IDENTIFICATION OF CDS 'IN COLLECTION'

Compact discs may be 'keyed' into the library and recalled upon demand. Both manual and automatic procedures exist to enter discs into your personal filing area. In addition, the CDs recognized as being part of your collection may have the actual album graphics 'loaded' to replace the generic CD icon (see section 6.12, 'CD Cover Graphics').

The manual method for identifying compact discs as being part of 'your collection' was outlined in the latter part of section 6.5. To recap these steps, first locate the desired disc by browsing through the *CD Library* (title or artist searches are usually the most direct). Once the textual match is found, 'open' the title window
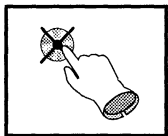
by clicking on the disc's title to view the artist, track and other specifics regarding the CD. Next, guide the hand icon to rest directly on the small CD graphic (covered by a large white 'X') and click - this removes the 'X' and marks this title as a CD you now own.

To confirm the manual entry of such CDs into your personal database file, click on the button labeled IN COLLECTION. The new discs added to your library will now be presented for review.
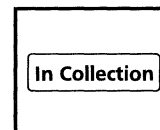
In Collection

☞ IMPORTANT NOTE. Frox recommends that the system be powered down after 30 to 50 active title searches in the library. This activity 'saves' all items recently logged into the personal 'In Collection' filing areas.

Automatic Identification of CDs

◄ ◄

6.7 AUTOMATIC IDENTIFICATION OF DISCS 'IN COLLECTION' OR 'IN PLAYER'

An automatic recognition procedure exists in your FroxSystem, aiding in the identification of the majority of your compact disc collection (and/or their positions as loaded within your CD player or changer). The auto scanning procedure is provided for any CD player or changer that features digital audio outputs (via fiber optical connection or coaxial cabling).

☞ NOTE: Analog-only CD components will not provide the necessary digital subcode information to allow the automatic 'matching' of discs to textual information. Only manual identification of discs into your collection is available with analog components.
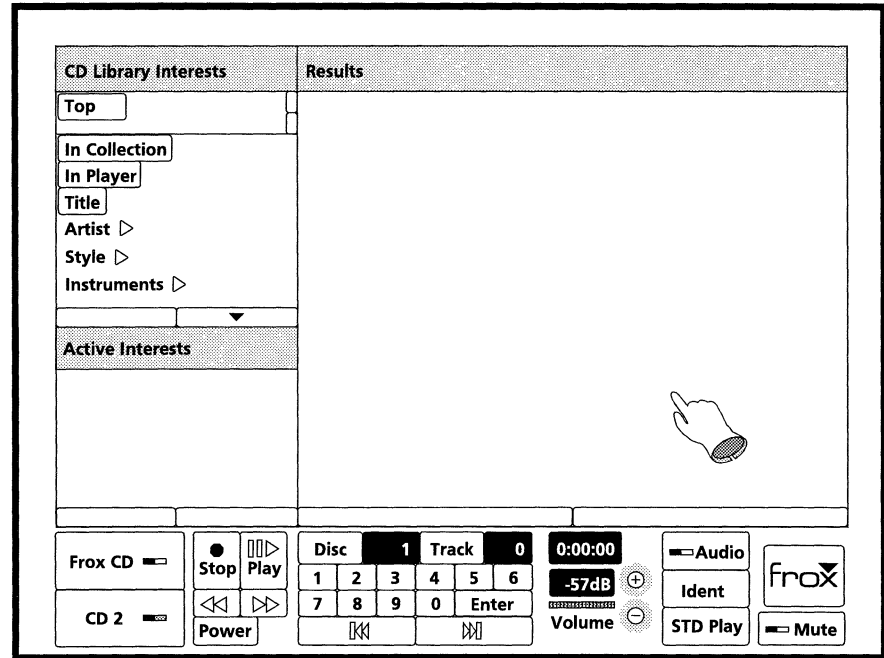
These automatic scanning routines will identify discs by creating 'matches' to the textual database, and add the discs recognized to the 'In Collection' filing area. Discs will achieve an 'identity' when scanned and will be added to the current 'In Player' status.

▷ ▷

Automatic Identification of CDs

To use the automatic recognition capabilities of the FroxSystem, follow these steps:

☐ (1) Load your player/changer with the desired disc(s).

☐ (2) Click on the button labeled IDENT (located to the left of the main FROX button). A menu of options will be presented, depending upon the type of component used. Most single play CD components offer a brief menu of choices, whereas multi-disc CD changers offer expanded selections related to the cartridge or carousel mechanism.
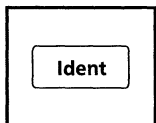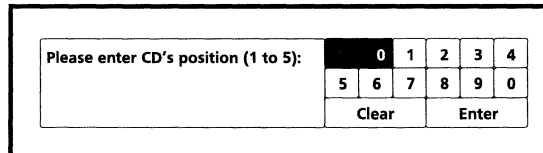
> Ident

Scan One CD - Select this button to identify any one of the CDs in your player or changer. The scanning process
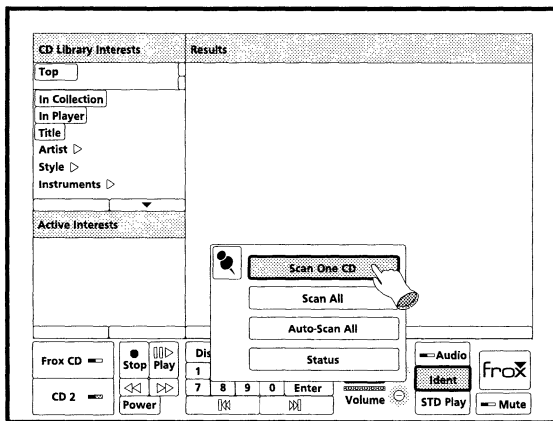
will begin immediately on single play components, offering a confirmation message reading 'Now scanning CD #1.' As this message is displayed, the FroxSystem will spin the disc, search tracks 1 through 5 (analyzing the digital audio subcode information and comparing this to the CD database). To interrupt the procedure at any time, click on the QUIT button on the far right hand side of the panel.

When using multi-disc CD components, you will be first asked to enter the CD's position within the changer

Please enter CD's position (1 to 5):	0	1	2	3	4
	5	6	7	8	9	0
	Clear		Enter		

(select the disc number via an on-screen keypad, then click on the ENTER button).

For both types of components, if there is a known 'match' between the disc and the system library database, the identity of the CD will be momentarily 'flashed' to you in the top of the Results area. The message, 'Scan completed. Quit to proceed' will appear; click on the QUIT button to return to the main control panel.

Occasionally the system will find two discs that appear to be similar in total time or content, and will present both discs to you in the Results area - with the request to choose the 'correct' one. In these instances, the system

163

Automatic Identification Of CDs

◄ ◄

could not automatically match your CD with the database, and will ask you to manually 'find' the disc via the following instructions:
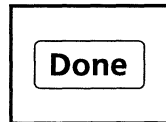
| Message:	Buttons:
'Find CD with browser. If found, click on it, then DONE, else NOT THERE.'	DONE NOT THERE

At this time, browse through the *CD Library* (title or artist searches are usually the fastest) and find your particular disc's listing within the database. You may have to make a few attempts with different 'filtered' requests before locating the proper disc listing. When you find the disc, click on the textual information in the Results panel and 'open' the information window (to view the tracks and other details), then select the DONE button at the bottom of the screen. This not only recognizes the disc and logs it 'into your collection,' but marks it as currently 'in player' for further playback choices.

Done

Should the disc not be found within the database (or it cannot be quickly located by your manual search), click on the NOT THERE button. The FroxSystem will then count the disc's individual tracks and label this CD as an 'Unknown CD #1' (or subsequent higher disc numbers). 'Unknown CD' listings will not appear as part of your 'In

Not There
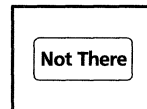
Collection' library, and are generally considered temporary in nature. In fact, any CD initially labeled as 'unknown' may be rechecked at a later time and replaced with the correct database information. (This is useful when you desire a 'rapid' scan of a new cartridge, for instance, and merely wants the FroxSystem to understand certain 'basic' information - i.e., how many discs and tracks are loaded, since features such as random play are not functional without this basic information).

Upon reaching the conclusion of your scanning session, click on the QUIT button to return to the main CD control panel.

Quit
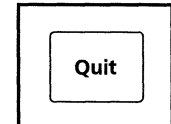
Confirm the results of your scanning activity by selecting the IN PLAYER button at this time. You will be presented with the disc's information, or the CD listing will be

➤ ➤
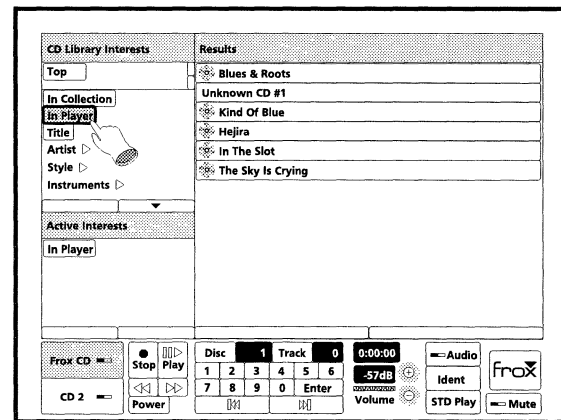
Automatic Identification Of CDs

referred to as an 'Unknown' disc. When reviewing any IN PLAYER listing(s) in the Results area (click on them), note that new playback controls have been added to the CD information area. These new features (PLAY ALL, PLAY TRACK) enable the user to either play this disc in entirety, or permit the selection of individual tracks for playback - plus adds the ability to rearrange or remove undesired tracks from the playlist. These features will be discussed in the section 6.8, 'Special CD Playlist Options').
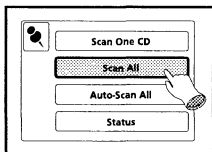
Scan All - Useful for multi-disc components, the FroxSystem will run the identification procedure for all discs in your changer. During the

scanning process, the system may pause and ask you to locate any and all discs that appear as unrecognized CDs for further review (specifically to manually locate the CD textual match in the library).

☞ IMPORTANT OPERATIONAL NOTE. For the automatic recognition process to work correctly, *all CD slots in a multi-disc changer must be filled* (the 100-disc Frox/ NSM changer is an exception to this rule). Should empty slots exist in a changer during the scanning procedure, the FroxSystem may assign a duplicate title(s) to the empty slot(s). This will impair proper operation of the component. Therefore, if one or more empty slots exists

in your CD changer or carousel-based component, select the SCAN ONE CD option from the IDENT menu and permit the FroxSystem to identify each disc independently.

☞ The SCAN ALL control functions the same as the SCAN ONE CD feature when selected on single disc players.

Auto-Scan All - The AUTO-SCAN ALL control, like the previous two choices, also

activates the FroxSystem scanning routine to identify and match discs to the CD database.
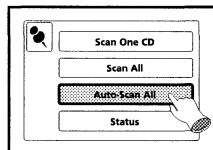
Unlike the other two methods, however, the scanning procedure in the AUTO-SCAN ALL routine will not be 'interrupted' to permit manual database searches. Instead, all discs that do not achieve an *immediate* match are tagged as 'Unknown CDs.'

'Unknown' discs, of course, may be reviewed at a later date and linked to the database via the SCAN ONE or SCAN ALL functions (allowing for manual searches through the library).

165

Automatic Identification Of CDs

◄ ◄

**Status** - Select the STATUS button at any time to confirm the count of 'identified' or 'unidentified' discs within your CD player or changer. The confirming message indicates which trays/slots are understood to contain identified discs, plus indications of the 'empty' slots within the component. Select the QUIT button to exit this panel and to return to the CD control area.
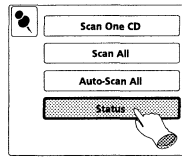
☞ To recap the two basic differences between the manual SCAN ONE CD/SCAN ALL and the AUTO SCAN operations:

☐ (1) The SCAN ONE or SCAN ALL modes provide 'interrupts' for manually locating a disc and matching it to its textual listing within the *CD Library* (should the disc not be found by the FroxSystem in its search procedure).

☐ (2) The AUTO scanning option instructs the FroxSystem to spin all disc(s) without interruption.

No manual searching through the database is allowed. Discs that do not 'match' up are assigned as 'Unknown CD(s)' within the component.

☞ Whenever you agree to a manual scanning operation, you will likely be asked to filter and browse through the library to locate that particular disc. When the textual match is located, the user will click on that CD title within the Results area, and then select the DONE button. If the disc cannot be found in the library (as may be the case with recent new releases not yet added to the database), choose the NOT THERE button. This CD can still be selected and enjoyed as an 'Unknown CD' within the Results listings. The identification procedure is now completed for that disc, ending the IDENT routine - or, the next disc is presented for scanning when using a multi-disc CD changer.

☞ Unknown CDs can be relabeled with the correct disc title and/or track listings; see section 6.11 for details.

➤ ➤

Automatic Identification Of CDs

Many multi-disc CD components (particularly the Frox/NSM 100-disc changers) offer five additional choices in the IDENT routine, options relating to the type and number of CD cartridges used with the component
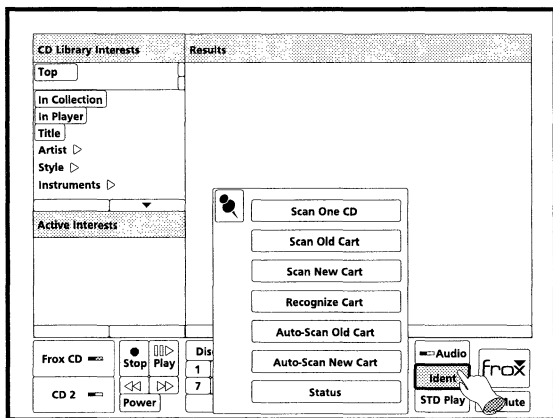
(additional multi-disc cartridges may be used with these components). The IDENT menu choices for these devices are as follows:

Scan One CD - The same procedure described earlier (allows the identification of a single disc anywhere in the CD changer, permitting manual searches through the database).
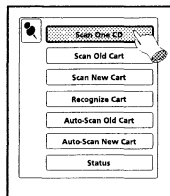
Scan Old Cart - Identifies CDs in a 'previously-scanned' cartridge (and numbered, as this is how the system keeps track of additional cartridges). Includes the manual 'interrupts' to permit searches for unknown CDs in the library.
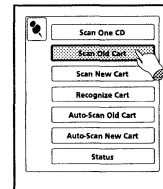
Scan New Cart - Identifies CDs in a new cartridge (one just loaded, or a new cartridge arrangement you'd like to scan and maintain); also permits the searching ability to locate unknown discs in the CD database.
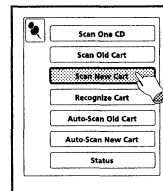
Recognize Cart - Identifies any previously-scanned multi-disc cartridge. This is useful when you have multiple CD cartridges already scanned and identified, but you'd like a 'rapid' method of discovering *which discs are loaded in a particular cartridge*. By 'recognizing' a cartridge the FroxSystem will pull the first CD from the cartridge, scan it and then, after retrieving the 'file' of all discs within that cartridge, log it with the complete listing of those specific 'In Player' discs.
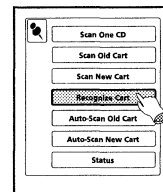
Place any cartridge in the changer; this section will ask that you identify the cartridge position in the component, particularly in the case of the 100-disc changers (position 1 refers to the 'left' cartridge, while position 2 refers to the 'right-hand' cartridge).

167

Automatic Identification Of CDs

◄ ◄

Auto-Scan Old Cart - Identifies CDs in a previously-scanned cartridge number automatically (does not provide the ability to 'interrupt' and search manually for unknown discs).
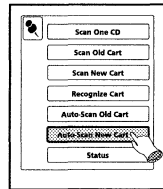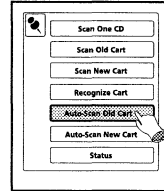
Auto-Scan New Cart - Identifies CDs loaded in a new cartridge (again, without the manual search ability to locate unknown discs).

Status - Provides a similar report as described earlier, indicating the number of 'slots' or positions in the changer known to contain 'identified' discs.
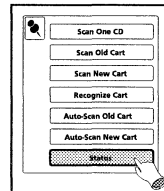
☞ REMINDER FOR MULTI-DISC CD COMPONENTS. When using multidisc CD components (cartridge or carousel-based changers), it is recommended that every position in the changer be loaded with a disc. If all slots are not filled, the FroxSystem MAY assign a duplicate title to an empty position when engaging the auto scanning modes. Select the SCAN ONE CD option whenever partially loading a multi-disc component and scan each disc *one at a time* until the cartridge/carousel is identified.

At any time during the identification routine, the QUIT button may be select to end the CD scanning procedure.

☞ IMPORTANT NOTE. Frox recommends that the system be powered down after 30 to 50 active title searches in the library. This activity 'saves' all items recently logged with the personal 'In Collection' filing areas.

➤ ➤

Special CD Playlist Options

6.8 SPECIAL CD PLAYLIST OPTIONS

Additional playback options are available for discs identified as being 'part of your CD collection'.

CDs that have been scanned and recognized offer the following new features to the system owner:

☐ (1) Identified discs may have individual tracks selected for playback from the on-screen listings.

☐ (2) Tracks of identified CDs may be rearranged in new playback arrangements.

☐ (3) Selected tracks of identified CDs may be deleted from future playback.

To use these features, first load any disc and identify it (the IDENT button). This confirms the CD as one in your collection, while also noting it as 'residing in your player.' Click on the desired CD component button

CD Library Interests — **Results**

- Top
- In Collection
- In Player
- Title
- Artist ▷
- Style ▷
- Instruments ▷

Active Interests
- In Player

Joni Mitchell: Hejira
Asylum: 2-1087
9 tracks; 51:23 total

Play All | Play Track

1. Coyote	(05:00)	9. Refuge Of The Ro...	(06:37)
2. Amelia	(06:00)		
3. Furry Sings The Bl...	(05:03)		
4. Strange Boy	(04:15)		
5. Hejira	(06:35)		
6. Song For Sharon	(08:30)		
7. Black Crow	(04:20)		
8. Blue Motel Room	(05:03)		

Frox CD — | ● Stop | ⑪▷ Play | Disc 1 Track 0 | 0:00:00 | ◼Audio | **froX**
CD 2 — | ◁◁ | ▷▷ | 1 2 3 4 5 6 / 7 8 9 0 Enter | -57dB ⊕ / Volume ⊖ | Ident
Power | ⑭ | ⑭ | | | STD Play | ◼ Mute

(should you have more than one configured to your system), then select the IN PLAYER button from the upper left hand choices to confirm that the discs are correctly loaded and identified.

All known disc(s) within your player will appear within the Results window, presenting the CD title(s) with the actual disc name (or those labeled as 'Unknown CDs').

Click on one of these listings at this time to view the individual disc's details.

Two buttons are offered to further integrate your 'textual' library information with your CD player's operation:

Play All - This button is added to any CD listing known to be within your player/changer at the present time. By selecting the PLAY ALL control, your CD component will begin playback of the disc in its entirety. Of course, the PLAY button at the bottom of the panel is still active and may be used at any time.
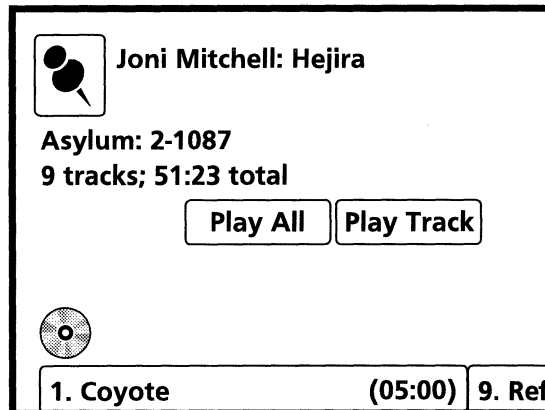

Joni Mitchell: Hejira

Asylum: 2-1087
9 tracks; 51:23 total

Play All   Play Track

1. Coyote   (05:00)   9. Ref

Play Track - Many (but not all) discs will offer a PLAY TRACK feature, whereby disc playback may begin from a selected track via the on-screen listings. To engage this control, first guide the on-screen hand to a desired track (it will light up to indicate correct positioning) and click directly on the track. This causes a green border to surround the track listing; next, click on the PLAY TRACK button. Your CD player/changer will begin disc playback from that specific track.

☞ By clicking on any track from discs that offer the PLAY TRACK feature, you'll note the appearance of one or more new controls related to individual track ordering:
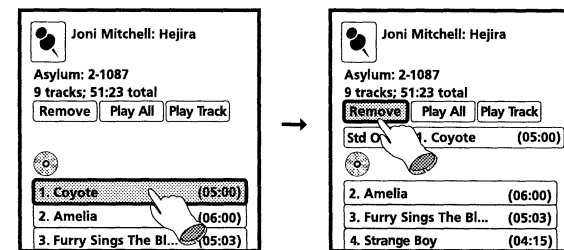
Remove - When selecting tracks from a CD's individual listings, you can 'remove' one or more tracks when listening to the disc. This is useful if you would like to 'skip' the playback of one or more songs from the disc at this or any future time.

>>

Special CD Playlist Options

To eliminate a track from the playback arrangement, click on the track (it will be surrounded by a green border) then select the REMOVE button. This song is now deleted from the playlist, and r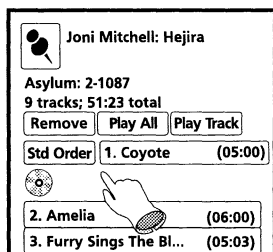epositioned to a new area outside of the main CD listings (to remind you that you have removed one or more songs). Continue to select additional tracks and the REMOVE button to eliminate other tracks.

Joni Mitchell: Hejira

Asylum: 2-1087
9 tracks; 51:23 total
[Remove] [Play All] [Play Track]
[Std Order] [1. Coyote   (05:00)]

2. Amelia   (06:00)
3. Furry Sings The Bl... (05:03)

Std (Standard) Order -
Returns the track listing(s) that have been removed or rearranged to their original playback order.

[Std Order]

2. Amelia
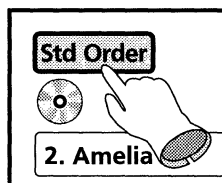
IMPORTANT NOTE. Not every CD listing offers individual track playback ability. Only those discs labeled as 'Unknown CDs' or discs with the track listings in native order will offer the PLAY TRACK feature. (Native order refers to discs that match up exactly to the on-screen track list. These CD listings are usually identified with tracks numbered - starting at '1.' and continuing until the last track is listed. Also, these native order discs usually contain individual track times within the track label). Some CD listings in the database have their tracks listed in *alphabetical* order, rather than actual order as the songs appear on the disc. These disc versions do not list track numbers or times; such discs may be played back ONLY in sequential order and do not offer the track-related playback features.

171

Special CD Playlist
Options

In addition to removing tracks from any disc, this panel provides the ability to rearrange any tracks into a new preferred listening order. Track one can be 'inserted' for playback between tracks three and four; track nine can be positioned at the beginning of the disc, and so forth.

The steps required to accomplish this are:

☐ (1) Click on the track you wish to position elsewhere (the border lights up to indicate the correct on-screen hand positioning, then is surrounded by a green border after being selected).
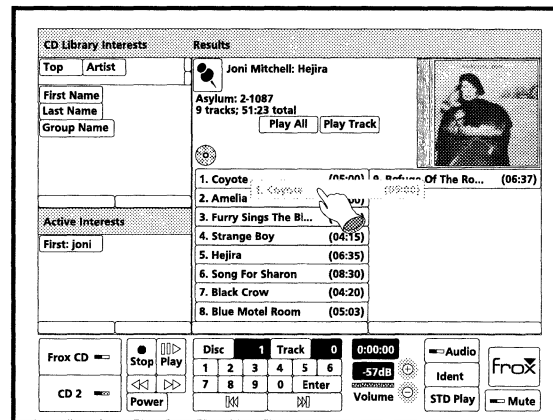
☐ (2) Carefully *click and hold the track* by keeping the wand's activation triggers in the continual 'firing' mode - then, by using the wand's thumb controller, *carry the track* to any new position within the track listings - and release the wand triggers when the track is in a new location. Try selecting track number one, for example, and then carrying it to some other area of the disc. This is an advanced wand technique, and it may take a few attempts to successfully relocate tracks into desired playback arrangements. Select the STD (STANDARD) ORDER control to return the playlist to its original state, or to make corrections while creating a new playback arrangement.

The combination of removal and rearranging of tracks will create preferred playlists from any disc in your collection. These modifications to the original playback order will be 'remembered' whenever the disc is subsequently loaded and identified as 'in your player.'

▷ ▷

Special CD Playlist Options

6.9 STANDARD PLAY, RANDOM PLAY AND MULTIPLAY OPTIONS

As noted, the FroxSystem integrates your personal CD collection with extensive control and playback options in the *CD Library* database. You can load a 100-disc changer, then instruct the system to sort all of your 'Jazz' discs separately from your 'Classical' collection, search for favorite CDs by artist name, even filter your collection to subcategories such as 'Piano Instrumentation.'

Once the CD identification procedure has been performed (so that the system understands which discs are currently loaded in your player/changer), three new playback options may be selected:
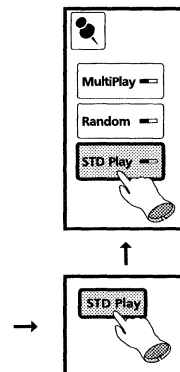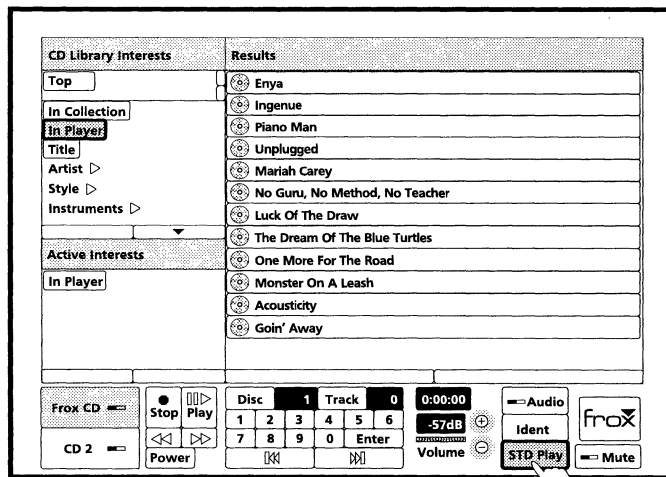
STD (Standard) Play - Permits the listening of one disc at a time (or the uninterrupted playback of the current sequence of discs as loaded in your carousel or cartridge-based changer).

173

Special CD Playlist Options

⋖⋖

MultiPlay - Allows for the sequential playing (first to last) of all CDs loaded in a compact disc changer; plus, enables sequential playback of only those discs arranged or 'filtered' in the Results window of the library panel. Discs must be scanned and identified before this feature may be used.

To use this feature, select your CD changer and click on the IN PLAYER button. Next, filter the list to a favorite style of music (choose, lets say, 'Jazz') - you'll be presented with a list of all Jazz CDs loaded in your changer. Leave the filtered list in full view (within the Results area of the panel) and click on the STD PLAY button. A pop-up 'window' will appear featuring three choices: click on the MULTIPLAY option. Only your Jazz CDs will now be played - in descending order, from top to the bottom of the list.
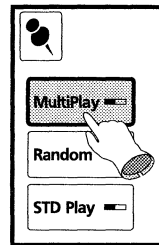
Random Play - Selection of the RANDOM choice (via the pop-up window, accessed by clicking on the STD PLAY button) will begin playback of your listed CDs in a true 'random order.' For example, the system might begin playing a selection from disc 1, then will randomly skip to disc 3, track 7 - then disc 5, track 2, and so forth. This will continue in such fashion until dismissed by the user.
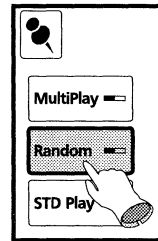
☞ As with the Multiplay feature, all discs must be scanned and identified prior to this feature being activated.

All three choices are configured by clicking on the lower right-hand button labeled STD PLAY (the default position). To select any other function, click on the STD PLAY button and a pop-up window will appear offering the additional MULTIPLAY and RANDOM play choices. The selection of any of these will change the main panel button to reflect your new desired playback method and automatically begins the process. To remove the pop-up, click on the small DISMISS PIN in the upper left-hand corner of the window.

☞ IMPORTANT REMINDER. Both the MultiPlay or Random play options requires identification of the CDs in the component prior to using either feature. Additionally, these features are only available on digital output CD components. Otherwise, only the Standard Play choice is available.

☞ When creating new playlists from the available IN PLAYER discs for either the MultiPlay and Random play choices, *always create your playlist first.* For example, filter to Classical discs only and leave the choices visible in the Results section of the panel. Upon engaging the MULTIPLAY or RANDOM play choices, only those listed discs will be selected for the playback activity.

➤ ➤

CD Track Playlists

6.10 CD TRACK PLAYLISTS

While discs may be arranged and 'filtered' to create broad playback categories (for example, one can randomly listen to all 'Jazz' discs loaded into a changer), the current software does not permit the creation of individual track 'playlists' - where the user could select a specific track from one disc, then another from a different CD, and so forth until a preferred playlist is created.

Development is continuing on this feature and will be offered to all FroxSystem owners in an upcoming version of the system software.

6.11 LABELING 'UNKNOWN CDS'

When discs are scanned and identified, compact discs that are not matched to the library database are labeled as 'Unknown CD #.' If desired, you may update your CD library collection and manually enter the correct title and track information for any unknown disc.

'Unknown' CDs feature a special button that allows you to relabel the title and track information of the disc. To perform this task:

☐ (1) Load an 'Unknown CD' into your component and identify it (run the IDENT procedure to 'instruct' the FroxSystem that this disc is now 'in' your player of choice). A digital-output CD player is required for this activity (refer to earlier sections regarding the identification procedures).

☐ (2) Click on the IN PLAYER button to view the various disc listings. Guide the hand icon over to any 'Unknown CD #' label and select it to 'open' the

▷ ▷
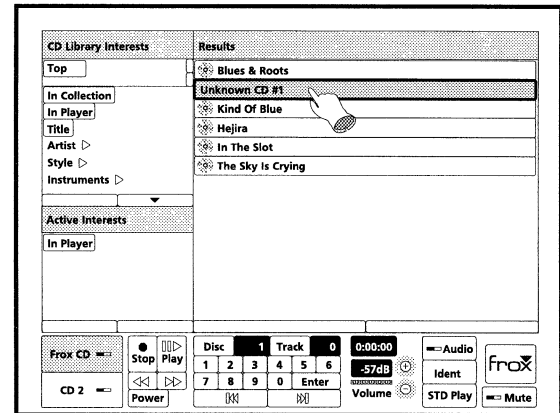
Labeling 'Unknown CDs'

disc information. Have the disc's jewel box ready for updating the title and track information.

☐ (3) Select the button labeled ENTER DATA, activating an on-screen keyboard in the upper right-hand area of the Results panel.

☐ (4) Click on any desired text to update - for example, choose the title of the CD (the border of the title 'lights' up when
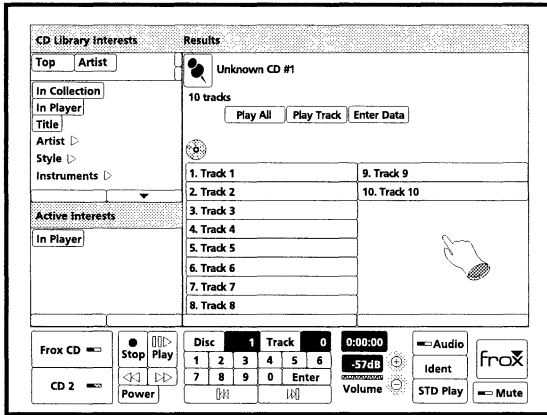
selected) - then click on the CLEAR button from the on-screen keyboard to erase the existing text. Next, enter the correct title of the disc with the keyboard. (For capitalization use the SHIFT button; select it again to return the typing to lower case letters. The SPACE control adds word spacing, while the DEL button will 'backspace' over any mistakes).
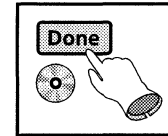
Follow these steps for each disc and/ or track label entry you wish to change. When finished typing in the new text for any label, select the DONE button. Your 'unknown' disc will now be identified by its new title.

☞ As a reminder, Frox continues to expand the CD database and actively seeks rare or obscure discs to add to the library. If you have compact discs that you would like entered permanently into the library, please contact Frox's Customer Service department at 800.525.5257.

177

CD Cover Graphics

6.12 CD COVER GRAPHICS

CD album graphics may be added as a final step to personalize your collection with the FroxSystem *CD Library* user interface.

Your discs must first be entered 'into your collection' via the manual or automatic methods, described earlier. Then, via videotape data transfer the individual album cover graphic artwork can be 'matched' to the disc listing. This procedure will replace the large generic CD graphic (found on the discs in your collection) with the actual album cover art.

Adding the CD cover graphics to the discs in your collection is a simple and straightforward process:

☐ (1) Identify all CDs as being 'part of your collection.' (Review sections 6.6 and 6.7 for details).

| In Collection |

☐ (2) Load the Frox *CD Covers* update video tape into your VCR (available from your dealer or directly from Frox). This tape should be labeled 'Version 3.0' release or a later edition.

>>

CD Cover Graphics

(3) Click on the FROX button and then select the INSTALLATION button (located on the second page of the navigator menu; choose the DOWN scroll bar to access this area). After a few seconds, the *Installation* panel will be presented.

| Audio Routing |
| sc | Reminders |

OdB ⊕
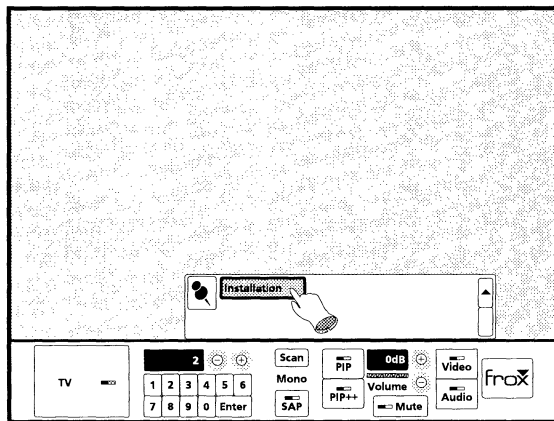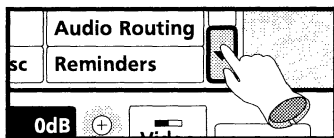
(4) Select the MAINTENANCE button.
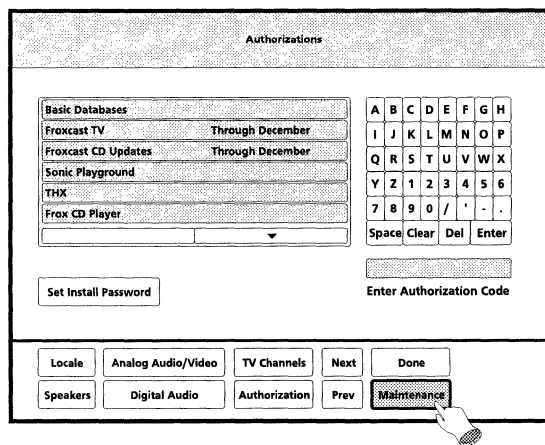
☐ (5) Click on the choice entitled CD COVERS.

Maintenance and Update	
Save Setup	Save the current system configuration.
Restore Setup	Restore the last system configuration.
System Update	Update system to a new software release.
CD Covers	Read CD cover images from videotape.
Converge	Show test patterns and controls for monitor setup.
Statistics	Show system statistics for diagnostic purposes.
Done	Return to installation.

The system will present these instructions:

'Start playing the CD Covers video tape in your VCR, then press Confirm to read CD Cover images for all CDs that are in your collection (# CD covers to be read). If you don't want to do this, press Cancel.'

☞ You must have a quantity of discs identified into the system prior to attempting this procedure; if the text reads '0 CD covers to be read...' exit from this menu, return to the *CD Library* area and identify discs into your collection.

☐ (6) Begin the VCR tape playback manually, then click on the CONFIRM button on this panel. A new screen will appear, allowing monitoring of the CD cover graphics as they are located, retrieved from the tape and loaded into your system.

> **Confirm**

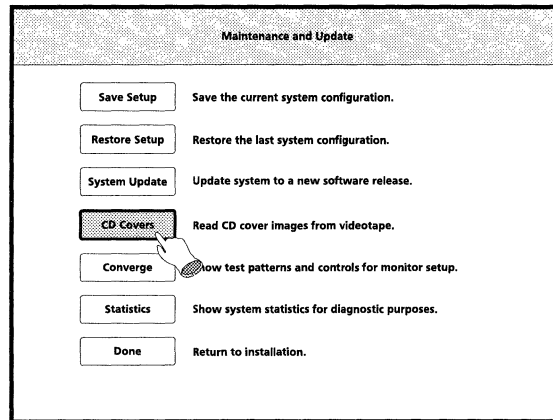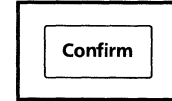☐ (7) Upon completion of the *CD Covers* videotape, select DONE to exit both the *Maintenance* and *Installation* panels.

> **Done**   Return to installation.
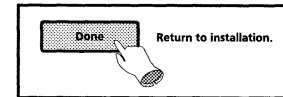
SPECIAL NOTE CONCERNING CD DATABASE/COVERS AVAILABILITY. At press time of this manual (late 1993) the FroxSystem's CD database contains textual information for over 30,000 CDs, plus individual cover graphics for approximately 10,000 discs. If you currently own an extensive CD collection, it is possible that some of your CDs are not within our database, nor will all covers appear and match up to all discs.

If you have compact discs that you would like entered into the library (for both textual and graphics), contact Frox's Customer Service at 800.525.5257. Arrangements can be made to enter your discs for release in an upcoming CD database/covers update.

> >

*The FroxSystem
Movie Library*

SECTION 7 - THE FROXSYSTEM MOVIE LIBRARY

Your FroxSystem features an on-screen movie library of 40,000 films released since the early 1900's (both foreign and domestic). Film studies can be performed at home with the easy-to-use 'browser' technique, allowing rapid access to desired films by movie title, type, actor or actress, director, cinematographer, critical rating, descriptive ratings, year produced, even home video format availability.

Movie Interests

| Top | People |

First Name
Last Name

Active Interests

Last: streis

Results

Hello, Dolly
The Prince of Tides
Melinda
Yentl
For Pete's Sake
A Star Is Born
What's Up Doc?
All Night Long
The Main Event
Funny Girl
Funny Lady
The Way We Were
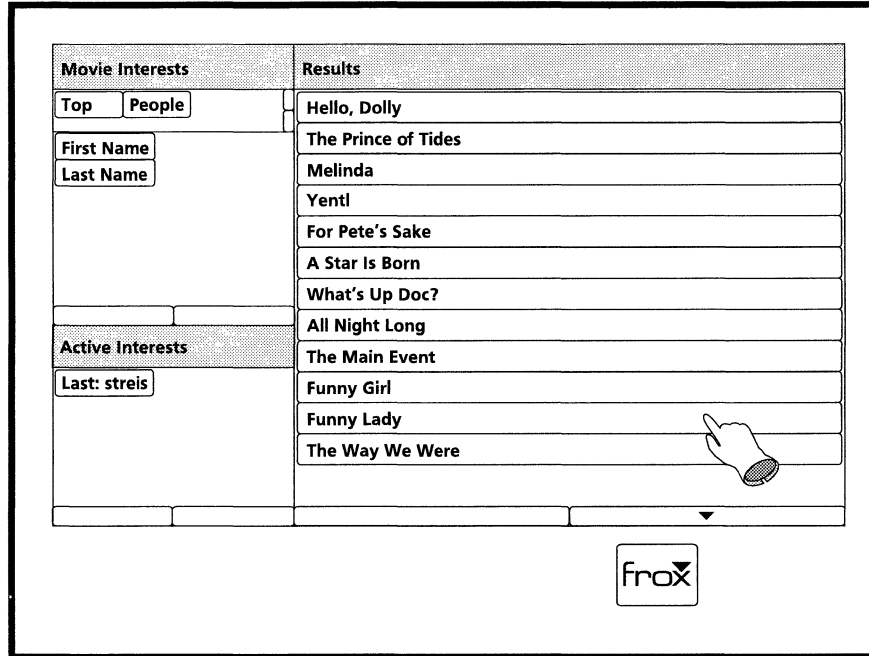
froX

The *Movie Library* is shipped complete with every FroxSystem, and is an important feature of our home theater ensemble. Periodic updates to the *Movie Library* database are a part of the FroxCast or FroxNet data services network. The updates to the database are scheduled to begin early 1994; contact your dealer or Frox for release details.

Entering The Movie Library

‹ ‹

7.1 ENTERING THE MOVIE LIBRARY

To access the *Movie Library* browser, click on the button labeled MOVIES from the main Frox navigator menu (after selecting the FROX button).

Video	Preferences	Dubbing
TV Schedules	Movies	Audio Routing
TV Grid	Compact Dis\	minders
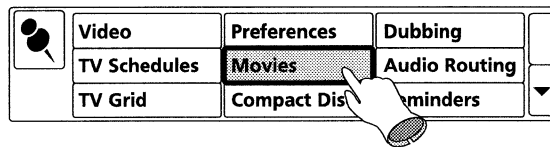
Presented is the standard panel used for most FroxSystem database libraries (including the *CD Library* and *TV Schedules* browsers).
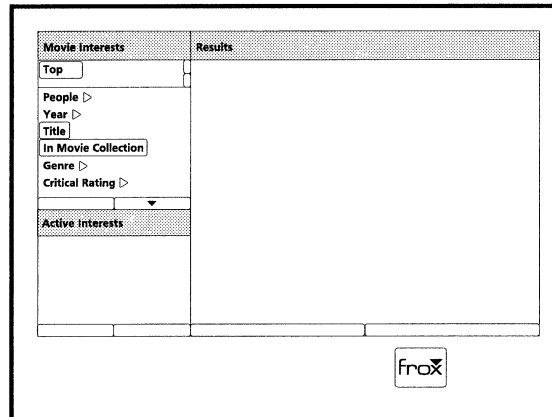
The browser is divided into three main sections: (1) Movie Interests in the upper left-hand area; (2) Active Interests - located in the lower left-hand corner; (3) Results - the center and right-hand areas of the screen.
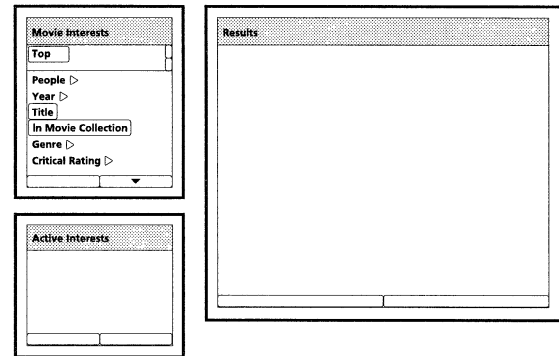
Begin using the browser by clicking on any top-level interest label or button (PEOPLE, YEAR, TITLE, GENRE, CRITICAL RATING, etc.). Your choice will either cause a list of results to appear in the right-hand side of the panel, or more browser choices will be offered to guide you through deeper layers about your request.

Entering The Movie Library

The browser is actually quite simple to use. Here are three tips to start with:

☐ (1) TO ACCESS any Interest topic - click on either the text with arrow, the text box itself OR the small arrow (>) within the topic box (the arrow is lit separately by positioning the hand directly on it, versus on the overall interest box). This small arrow often points the way to deeper layers of information.

People ▷

90's ▷

90's ▷
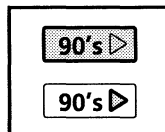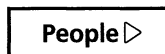
☐ (2) TO CLEAR AND RESET the Interest Section (upper left-hand corner) - click on the TOP button directly under the screen header. This routes you back to the original starting point.

Top

☐ (3) TO REMOVE any Active Interest selected (your topics are confirmed via text buttons that appear in the lower left-hand area of the screen) - click on each topic you wish dismissed.

Active Interests
Comedy
90's
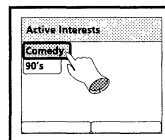
As with other system browsers, there are two primary types of controls (in addition to the normal 'button'-type of control):

Text with Arrows - Certain movie categories require additional delineation before results can be presented. Any text followed by an 'arrow' indicates the presence of additional information layers; these controls are activated by positioning the on-screen hand directl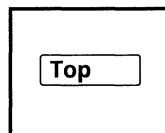y over the text OR the arrow (the arrow will 'light up' to indicate proper positioning) and click. New information layers will be presented for further selection.

People
Year ▷
Title
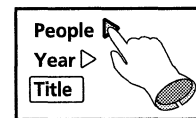
A good example is found in the label GENRE; this text with arrow will activate like a standard feature button, but instead of presenting any results of your request (as one might expect when clicking on a primary feature button), additional 'layers' of information regarding this topic will instead be revealed.

183

Buttons with Arrows - Certain feature buttons combine the primary request with an 'arrow' icon to indicate additional related information. Both the feature box and the arrow icon offer interesting choices for the end user.

For example, select the YEAR button on the *Movie Library* browser and view the decade listings. Positioning the on-screen hand directly over one of the decade buttons causes the border to 'light up;' click on this choice and you will be presented with the complete list of movies released during that decade.
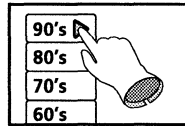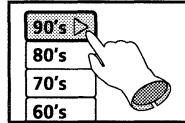
However, by positioning the on-screen hand directly over the arrow within the decade box, then clicking on the 'arrow' only will cause an additional layer of information to appear - in this instance, a list of individual years for your selection. Access to these deeper layers will permit a more-precise result of your inquiry regarding movies released in a specific year.

☞ Select the TOP button to reset the Interest section and return to the original starting point of the browser. Click on any item in the Active Interests area to clear the Results window.

> >

Movie Library Information

7.2 LAYERS OF MOVIE LIBRARY INFORMATION

Your feature or button selections will uncover the deeper 'layers' of information that can be explored. The following are just a few of the information layers found within the *Movie Library* browser:

Top Layer:	Second Layer:	Third Layer (or Result of Inquiry):
People ->		
	Cast ->	The ability to search favorite actor/actress by first or last name using an on-screen keyboard
	Director ->	Search for favorite director
	Cinematographer ->	Favorite cinematographer queries
	Screenplay ->	Browse through favorite screenplay writers
	Author ->	Search for favorite author
	Composer ->	Your desired film score composers
	Producer ->	Favorite film producers
Year ->		
	90's ->	Each may be sorted to individual years within the decade
	80's ->	
	70's ->	
	60's ->	
	... etc.	
Title ->		
		Presents an on-screen keyboard to search by the movie's title
In Movie Collection ->		
		A personalized filing area for movies you own

185

*Movie Library
Information*

≺ ≺

Top Layer:	Second Layer:	Third Layer (or Result of Inquiry):
Genre ->		
	Action	Primary categories of films by type
	Adventure	
	Biography	
	Classic	
	Comedy	
	Dance	
	Documentary	
	... etc.	
Critical Rating ->		
	*, **, ***, ****	The popular critical rating, one to four 'stars,' four the best
MPAA Rating ->		
	G, PG, R, NC17, etc.	The Motion Picture Association of America film ratings
Format ->		
	B&W, Colorized, etc.	Special release interest type
Studio ->		
		The ability to search by preferred studios (by name)
Descriptive Ratings ->		
	Profanity	Descriptions of film situations, intent, themes
	Nudity	
	Violence	
	Adult Situations	
	... etc.	
Language ->		
	English, French, etc.	Foreign language releases of films
Availability >		
	VHS, Beta, Laserdisc	The availability by format of your favorite film

➤ ➤

*Movie Library
Information*

As you select items from the upper left-hand area of the browser panel, the topics will be confirmed in the Active Interests area (the lower left-hand corner of the screen). At the same time, the detai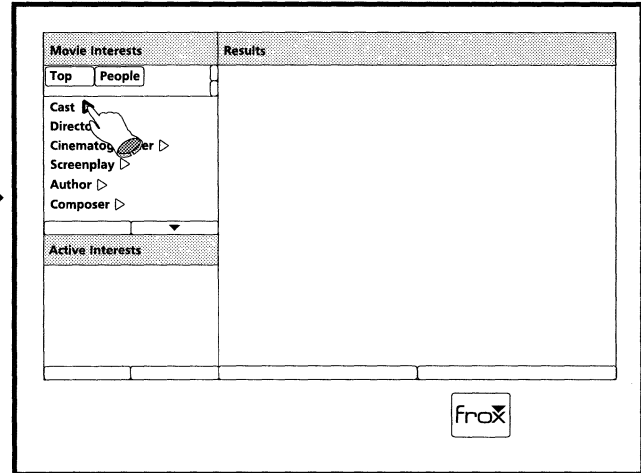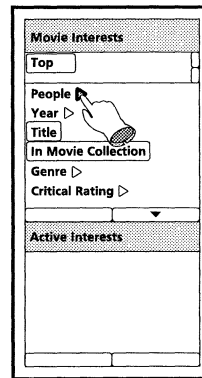ls of your inquiry will appear in the large Results area. Multiple information requests may often be combined, achieving filtered results on interrelated (or diverse, if desired) subjects.

Using The Movie Library Browser

≺ ≺

## 7.3 BROWSING THROUGH THE MOVIE LIBRARY

Let's look at an example of the *Movie Library* browser in action:

Example - *You'd like to review how many films starring Barbra Streisand are available; also, you just bought a copy of 'A Star Is Born' and would like to enter this 'in your movie collection' file.*

Movie Interests
Top
People
Year ▷
Title
In Movie Collection
Genre ▷
Critical Rating ▷

Active Interests

→

Movie Interests   **Results**
Top | People
Cast
Directo
Cinemato...er ▷
Screenplay ▷
Author ▷
Composer ▷

Active Interests

FroX

These are both relatively simple procedures with the browser:

☐ (1) Select the MOVIES choice from the navigator panel (the FROX button).

☐ (2) Guide the on-screen hand to the PEOPLE text and click. This presents a second-level listing with all categories of 'people involved in filmmaking.' Choose the first listing, CAST.

☐ (3) It is often useful to analyze, for a moment, which name request might be more specific than others (as the end result can
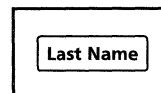
Last Name

be more rapidly obtained, or results more clearly defined). Entering her first name, 'Barbra' will result in many more answers (since there are far more artists with the same first name when compared to her last name). Her last name is much more 'unique' and will achieve a quicker result when browsing through the library. Click on the button, LAST NAME.

☐ (4) An on-screen keyboard is now presented to enter the artist's name. The keyboard features all letters of the alphabet, numbers and frequently-used punctuation. A SPACE control exists for word spacing, while an ERASE button is used for corrections. Once the desired title or name is 'typed' in (by guiding the on-

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

Using The Movie Library Browser

screen hand to each letter/number, then clicking on each to enter it), the OK button activates the search process.

☞ In many instances you need enter only partial names or titles for rapid sortation results (rather than having to type out the entire artist's name or show title). At least 3 characters must be entered before the request will be honored.

Continuing with our example, enter the letters S-T-R-E-I-S (that's probably enough) and hit the OK button.

☐ (5) A list of movies starring Barbra Streisand will, in seconds, be revealed in the Results area. (Of course, other artists that have the last name beginning with STREIS - these, too, will be presented for your review). Each movie listing may now be selected, clicked on and 'opened' to reveal the movie's details (synopsis, rating, etc). A 'scroll' bar is presented under the last movie listing to access multiple 'pages' of movie information. Note the presence of foreign releases of her films, as well.
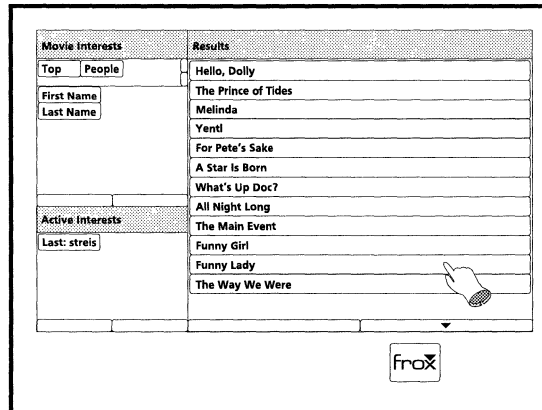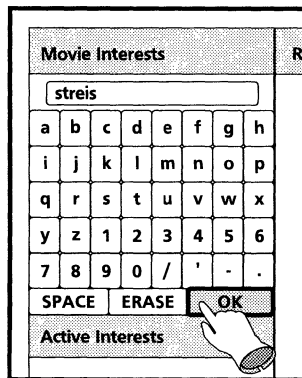
☞ TROUBLESHOOTING NOTE: If no results appear at this time, one of two things has occurred - the name entered has been misspelled or there are 'no movies at all' starring anyone with the last name 'Streisand.' In this example, the former is far more likely. Try steps 1-4 again, perhaps using a different spelling variation.

189

Using The Movie Library Browser

◄ ◄

☐ (6) Browse through the list until the film 'A Star Is Born' is located. Click on this title to reveal the movie's details.

For Pete's Sake
A Star Is Born
What's Up Doc?
All Night Long
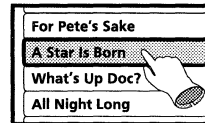
☞ Note the small 'laserdisc' icon above the synopsis (this disc icon is used in both the *CD* and *Movie Libraries* for 'in collection' identification). This icon has a white 'X' through it, indicating that prior to this time you did not own the movie. In our example you just purchased a copy of this movie (and would like to file it within your system's personal 'In Collection' area) - simply guide the hand icon to rest on the small laserdisc icon and click. This removes the white 'X' and notates this film as one you currently own.

Movie Interests | **Results**

Top

People ▷
Year ▷
Title
In Movie Collection
Genre ▷
Critical Rating ▷

Active Interests

Last: streis

A Star Is Born '76 ** PG (220 min) Cast: Gary Busey, Paul Mazursky, Barbra Streisand, Kris Kristofferson. Dir: George Cukor.
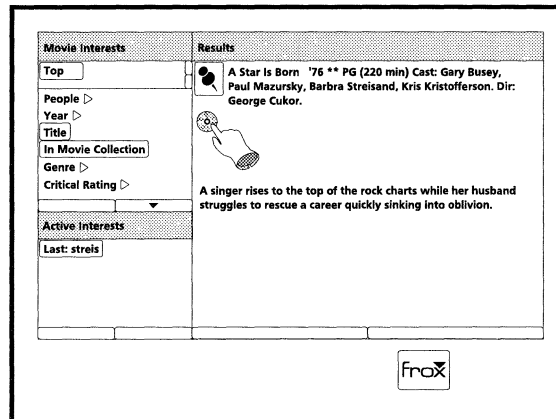
A singer rises to the top of the rock charts while her husband struggles to rescue a career quickly sinking into oblivion.

froX

☐ (7) Guide the hand to the small DISMISS PIN graphic in the upper left hand corner of the Results window, and click on it to close the information window. You'll note that the original list of Streisand films returns, with the 'A Star Is Born' film now featuring a small laserdisc graphic adjacent to the movie's title (thus indicating it is now part of your personal film library).

Active Interests
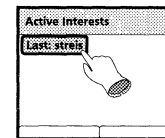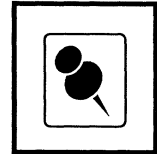
Last: streis

To clear the screen and prepare to search for another movie title, click on all items in the Active Interests portion of the panel (in this example, click on the button labeled LAST: STREIS). This clears all results from the right hand side of the screen. Lastly, click on the button labeled TOP in the upper left hand corner - this resets all windows and returns you to the initial browsing level.

With practice one can combine a variety of interests and obtain interesting results. For example, selecting GENRE and then COMEDY presents all the various films categorized as comedies within the library. Perhaps you'd like to search for some of the vintage comedy films made in the 1940's and 50's - click on TOP (to clear the panel), then choose YEAR and click on both the 40's and 50's buttons. You'll now be able to view countless comedy films released during these two decades. Other sortations or filters may be performed at this time to locate a specific title, actor or actress, etc.

➤ ➤

Using The Movie Library Browser

The creation of additional interest filters could be continued almost indefinitely, but at some point you run out of logical combinations. The *FroxSystem* may often reveal a result of such combinations, but rather than 'filtering' the list of items, an 'additive' approach may be used. Something like 'Horror and Comedy films' seems illogical and should never be combined, however, the system if requested will search through the two items and present ALL Horror AND Comedy films for your review.

☞ MOVIE DATABASE NOTES: Many films of the last three decades listed in the *Movie Library* contain more substantive information than those from earlier years. Recently-released movies often provide enhanced synopsis outlines, additional information on the film's screenwriter, cinematographer, and other obscure facts. Earlier films (generally prior to the 1970s) usually feature only the major actors/actresses, director and brief synopsis.

Finally, while accuracy is a constant goal, it is possible that the library information may be in error, or incomplete. We invite you to bring to our attention any missing or erroneous information that can be corrected in a future *Movie Library* update.

To exit the *Movie Library* browser, click on the FROX button (lower right hand corner) and engage another selection (TV GRID, VIDEO, etc.).

Notes

▷ ▷

*Video Dubbing
Procedures*

SECTION 8 - VIDEO DUBBING

The FroxSystem provides a control panel to facilitate easy recording ('dubbing') from one video component to another. As with many other areas of the system, your video components must provide infrared remote capability for the FroxSystem to successfully manage your recording requests. Otherwise, you will have to operate your video components manually when using the *Dubbing* screen.

To enter this panel, click on first the FROX button, then select the DUBBING choice at the top right of the navigator menu.

The *Video Dubbing* screen presents the various video components connected to your system for dubbing purposes.
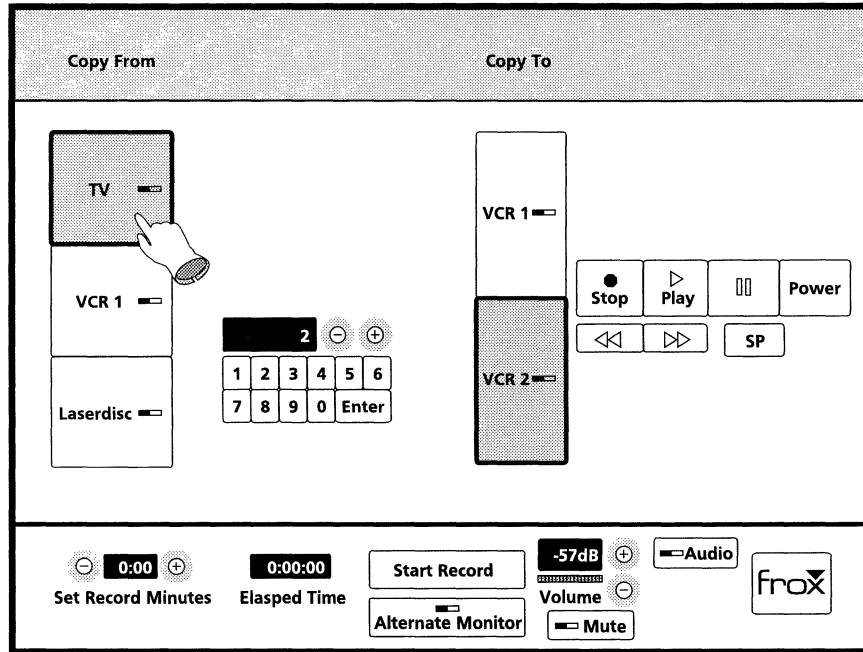
☞ NOTE ON AUDIO DUBBING. Audio component dubbing is not currently supported by the FroxSystem. The software protocol to enable coping from one audio device to another is scheduled for release in 1994. Contact your dealer or Frox at 800.525.5257 for additional details.

SECTION 8

*Video Dubbing
Procedures*

◄ ◄

8.1 VIDEO DUBBING PROCEDURES

The video dubbing panel is divided into three parts: the left-hand playback components labeled 'Copy From,' your available 'Copy To' components arrayed along the right hand side of the screen, and the primary activation controls across the bottom.

Video dubbing is quite easy with the FroxSystem; here are the basic steps:

☐ (1) Click on any playback video component from the left-hand choices labeled "Copy From."

The system will present the playback component's primary controls to change channels, operate your laserdisc player, and so forth directly from the panel. Also, as you choose your desired 'Copy From' component you'll immediately be able to 'hear' each component's audio as a confirmation of its selection. You may at this time 'cue up' the playback component, then select the 'pause' or 'still' controls to begin your recording at a specific point from the source material.

> >
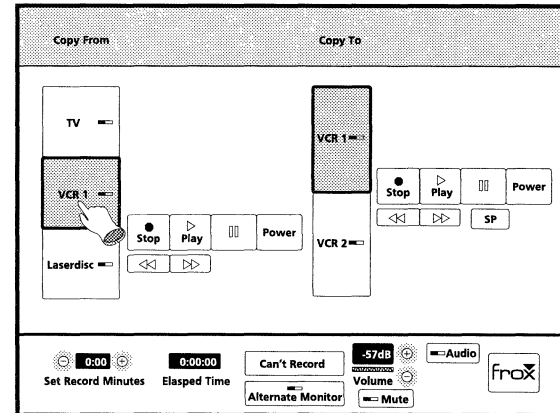
*Video Dubbing
Procedures*

☐ (2) Choose the 'Copy To' component - in most cases this will be a video cassette recorder.

Note the text within the large activation button at the bottom of the screen - it will indicate either START
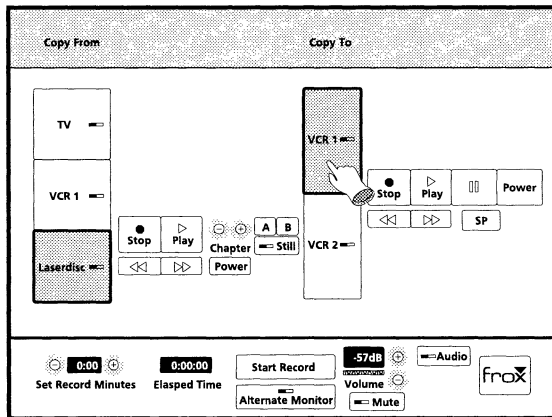
RECORD or CAN'T RECORD. Based upon configuration, your FroxSystem will present only those component(s) that may be used for dubbing purposes. Select from the various 'Copy From' and 'Copy To' components at this time to understand which dubbing activities are allowed (the text on the activation button will change to START RECORD on the components enabled for dubbing).

☐ (3) Insert a blank (recordable) tape in your 'Copy To' video recorder and select your desired recording speed (SP mode/2 hour - LP/4 hour - SLP/6 hour on standard T-120 video tapes). Insure all components are 'powered up' and ready to go, with the source material properly loaded (or correct channel entered) in the 'Copy From' component.

☐ (4) Move the hand icon to the 'Set Record Minutes' meter in the lower left of the screen and click on the '+' button until your desired recording length is set.

☞ Often it is useful to 'overestimate' the recording time if you're unsure about the program's exact length. The meter increments in 5 minute time periods per click of the FroxWand.

☐ (5) Click on the START RECORD button. After a short delay, the system will simultaneously start both playback and recording components.

195
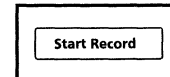
Video Dubbing Procedures

☞ If the system does not initiate the recording process within approximately 20 seconds, check (a) your 'blank' video tape to see if the recording 'tab' has been removed along the tape's spine; (b), confirm the 'Set Record Minutes' meter has been set with at least 5 minutes of recording time.

Once the recording begins, an 'Elapsed Time' meter adjacent to the 'Set Record Minutes' control will begin tracking the recording in progress. The activatio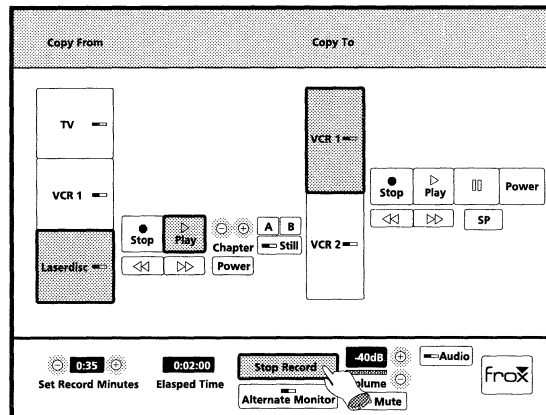n control button has now changed to read STOP RECORD. At any time during the recording you may click on the STOP RECORD button to end the activity. You may also adjust the 'Set Record Minutes' meter while the recording is in progress to set a different recording length.

☞ While you are not able to view your recording in progress, you can listen to the audio as it is being routed from the source component. (If you cannot hear the source's audio, click on the AUDIO button and select the proper source component from the list across the top of the audio window). Volume and audio processing may be changed at any time while in the *Dubbing* panel, as this will not adversely affect the recording in progress.
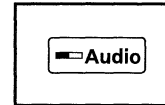
☞ All video dubbing is best performed by remaining in this panel. At best, dubbing is considered a 'proactive' task, successfully accomplished when closely monitored by the system owner. It is possible, however, for you to use other areas of the FroxSystem when performing certain dubbing activities (such as recording from one VCR to another - then selecting the TV control panel to watch television). We encourage experimentation on your particular system configuration prior to engaging an important 'first-attempt' recording.

Also, your PIP and PIP++ features are disabled when dubbing from one source component to another.

➤ ➤

Video Dubbing Procedures

☞ SPECIAL NOTE REGARDING TV-TO-VCR DUBBING. When setting up a recording from TV to your VCR, the recording will be made by using your VCR's internal TV tuner (and not the FroxSystem's TV tuner). This implies that a television recording may be started in the *Dubbing* panel and will remain as a 'background' activity, allowing the user to exit the *Dubbing* panel, enter the *Video* area and then enjoy other television programming (via the Frox internal TV tuner). However, if only one cable converter box is configured and shared by both your VCR and the FroxSystem's tuner (not a preferred configuration - we advise a dedicated cable converter for each video tuner and recorder), then the system will instruct the sole cable converter to tune to the selected channel and begin the recording process. No other television channel viewing is possible in this instance.

197

Alternate Monitor

Restrictions

‹‹

8.2 ALTERNATE MONITOR RESTRICTIONS

Many system installations offer the Alternate Monitor choice, whereby the system user interface is presented on standard television sets (rather than on data-rate, graphics monitors usually required with the FroxSystem).
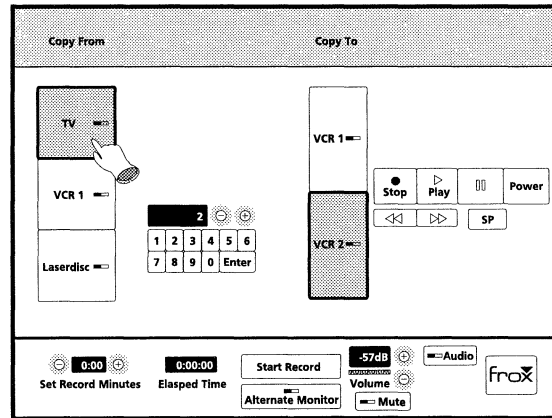
This software was created to allow access to the many important FroxSystem features on a regular television set (located in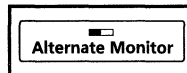 the bedroom, for example). An ALTERNATE MONITOR button may be configured immediately below the START/CAN'T RECORD button on this panel, allowing the user to turn on and off this software program to create additional dubbing routines. The F2 button on the face of the FroxWand also turns on and off the Alternate Monitor software.

☞ In general, video dubbing is not permitted when the Alternate Monitor software is on and active.

The exception to this rule is the previously-discussed 'TV-to-VCR' dubbing routine, which sets up the VCR's internal television tuner for recording purposes. All other video components will be labeled with the CAN'T RECORD control when the ALTERNATE MONITOR button is turned on.

To record from other video components, select the ALTERNATE MONITOR button to turn off the software feature and follow the standard dubbing procedures.

☞ CAUTION FOR ALTERNATE MONITOR USERS. Dubbing, in general, should only be attempted when viewing the system through the recommended data-rate video display monitors and projection equipment. When using a standard NTSC television monitor in the system, your FroxSystem's video image may become 'scrambled' or blanked when the Alternate Monitor software is turned off. Should this occur, select the F2 button on the FroxWand (turning back on your Alternate Monitor software) - or 'hard power cycle' the entire FroxSystem to restore the system default status.

Please review section 3.12 of this manual for additional information regarding the Alternate Monitor benefits and restrictions.
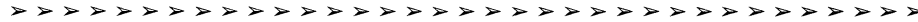
>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> *Transcoding Restrictions*

8.3 INSTALLATION NOTE - TRANSCODING RESTRICTIONS

☞ INSTALLERS NOTE. All video components should be installed with either *all composite* or *all S-video cabling*. The FroxSystem does not generally 'convert' or transcode one signal type to another when in the dubbing activity. If all video components feature the higher-bandwidth S-video pathway, the installation can take advantage of the inherent additional performance delivered by these components. Otherwise, connect all video components via the composite video inputs/outputs on the Video Preprocessor.

Notes

Audio Routing

SECTION 9 - AUDIO ROUTING

Your FroxSystem features the ability to route analog or digital audio signals throughout the house. Elaborate custom installations often feature sophisticated multiroom audio routing capabilities, with a variety of configurations available for the end user to select from. The FroxSystem at the release of Version 3.0 supports the simultaneous routing of any four audio sources (analog or digital) to as many as 16 independent destinations (or zones).

Each source component (VCR, CD, laserdisc player, etc,) can be located in the primary home theater area, and then accessed and controlled by other family members within the alternate zone area(s). The FroxSystem integrates with a wide variety of television monitors for total system operation in the multiroom areas (using the FroxWand with standard infrared repeaters). Other options include the installation of one or more AudioAccess™ in-wall keypads for additional multiroom control options in the remote areas.
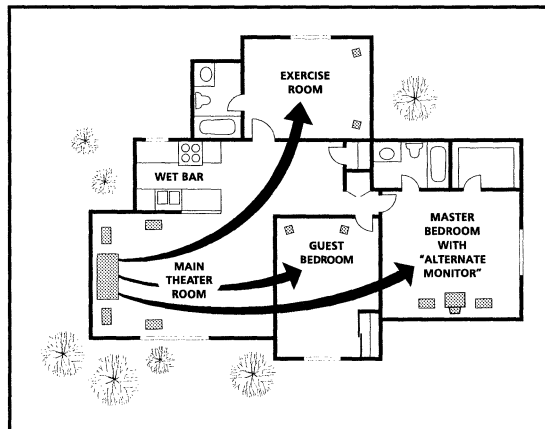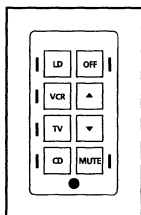
9.1 ON-SCREEN ROUTING

Click on the AUDIO ROUTING button on the Frox
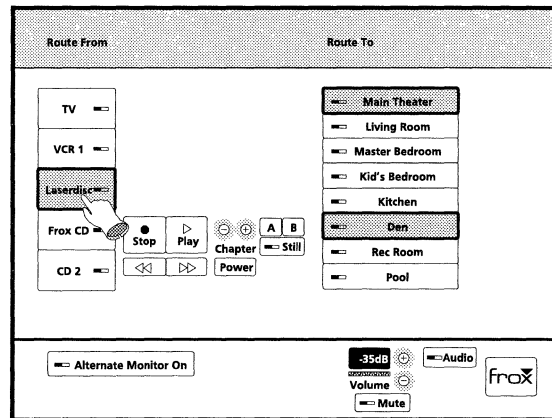
navigator menu to enter the routing control panel. Like the *Dubbing* screen, this user interface panel allows for the selection of desired components (arranged on the left-hand side of the screen), with room destinations listed along the right. To initiate a new mulitroom audio

routing, simply click on any component to access its audio and device control panel. Next, activate the desired room destinations by selecting one or more listening areas within the 'Route To' choices along the right side of the panel. Rooms may be 'grouped' into preferred listening areas at any time by choosing the source component, then clicking on the desired destinations.

This panel may be selected and used in either the main theater room or multiroom listening areas. As the FroxSystem only provides one common video display output, all areas of the house will 'see' the same user interface when using other monitors with infrared repeaters.

>>

On-Screen Routing

For example, if someone is watching a movie in the main theater, and another individual in a remote room uses a FroxWand and begins navigating through other areas, the

theater's video 'follows' the actions by the individual in the remote area. This is, of course, an undesirable situation that can be solved by using in-wall keypad control instead of infrared operation (see section 9.2).

☞ Note that each time a new component-to-room combination is initiated or even changed, a momentary 'pause' in the audio output will be heard in all routed areas. This is due to the 'loading' of the new audio routing request and clearing of the old routing 'program' from the FroxSystem's digital audio processors.

203

Alternate Monitor
Installations

≺ ≺

9.2 ALTERNATE MONITOR INSTALLATIONS

Some system installations offer the Alternate Monitor choice, whereby the system user interface is presented on standard NTSC television sets (rather than on data-rate, graphics monitors usually required with the FroxSystem). This software was created to allow access to the many important FroxSystem features on a regular television set (located in the bedroom, for example). An ALTERNATE MONITOR button may be presented in the lower left corner of the *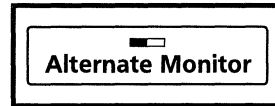Routing* panel, allowing the user to turn on and off this software program when using the FroxSystem on regular television sets in areas other than the main theater.

Alternate Monitor

The many FroxControl graphics, digital audio, digital video and data services may be viewed on such monitor(s) via the ALTERNATE MONITOR button or by depressing the F2 button on the FroxWand. The F2 button turns on or off the FroxSystem feed to a standard television set (in some installations turning on and off the standard monitor, as well).

F2

PWR
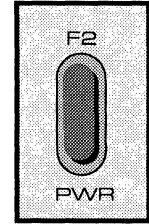
☞ When using the Alternate Monitor option, a number of system features are disabled: *the FroxVision digital video imaging, most PIP options, video dubbing capability and the viewing of any component connected to the FroxSystem's Video Input #2.* All components, however - including the component installed in the Video Input #2 pathway - may be controlled and have its audio routed to remote listening rooms.

Please review section 3.12 of this manual for additional information regarding the Alternate Monitor benefits and restrictions.

➤   *Routing With Keypad Control*

9.3 ROUTING WITH KEYPAD CONTROL

Your installation may offer multiroom control via in-wall keypads. These 8-button in-wall pads allow the user to select desired components and route the audio to their current location.
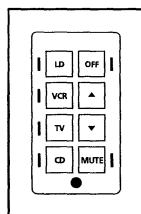
☞ Unlike the video interruption restrictions when using the FroxWand and IR repeaters in remote rooms, the keypad control is 'buried' beneath the user interface level. No interruption of video activity will occur when accessing other source component using the in-wall keypads.

To activate any keypad function, depress the desired control in the multiroom area. Note that many activities are combined for ease of use (accessing the Frox 100-disc CD Changer button via keypad, for instance, will place the component into the play mode).

The current set of keypad operations available on a per-zone basis are as follows:

Unassigned	Next Disc
Volume Up	Previous Disc
Volume Down	Disconnect Zone
Channel/Track Up	Random Play
Channel/Track Down	Television
Mute	Main VCR
Main System Power	Second VCR
Play	Laserdisc
Pause	Main CD Player
Stop	CD Player #2
Fast Forward	CD Player #3
Rewind	Tuner
	Tape

Any of these operations may be configured to the 8-keypad buttons within each audio zone. See your installer to modify any preconfigured keypad routing.

205

Routing With Audio Processing

9.4 ROUTING WITH AUDIO PROCESSING

Audio may be sent to remote rooms in the house with desired processing. In most instances the routed audio will be forwarded with minimal audio processing (stereo signals with volume and muting capability only). Other advanced audio sonic effects (THX, EQ, etc.) may be routed with your desired music under the following conditions:

☐ (1) The audio processing (like the audio routing structure itself) is always associated to the chosen source component; that is, the source component must be selected first, then processing selected and 'associated' to it for routing to other
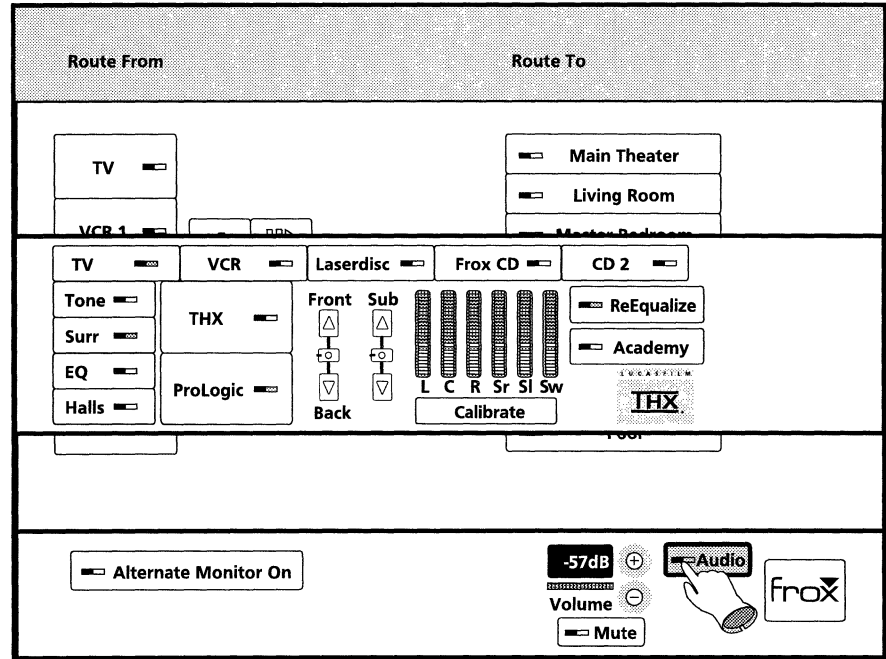
rooms. Select the component desired, then click on the AUDIO button located on the *Routing* screen to change to a desired audio processing.

Route From	Route To
TV	▭ Main Theater
	▭ Living Room
VCR 1	Master Bedroom

TV	VCR	Laserdisc	Frox CD	CD 2

Tone		Front	Sub	▭ ReEqualize
Surr	THX			▭ Academy
EQ				LUCASFILM
Halls	ProLogic	L C R Sr Sl Sw	THX
		Back	Calibrate

▭ Alternate Monitor On

-57dB ⊕
Volume ⊖
▭ Mute

Audio

froX

➤ ➤

Routing With Audio Processing

☐ (2) The audio source component must be routed to the main theater room AND the remote room(s) to receive any advanced audio processing. In other words, if a laserdisc audio signal is routed to the main theater and the master bedroom, *both areas will receive the same processing* (THX, for example). Both rooms, of course, should contain the full complement of THX-certified amplifiers and loudspeakers for best results (otherwise, if the bedroom only had left/right speakers, the film's dialogue would be missing due to the THX processing).

> Main Theater
>
> Living Room
>
> Master Bedroom
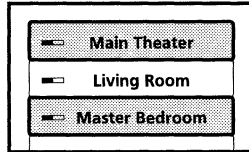
☐ (3) When any audio signal from a source component is routed to more than one room, *all rooms receive exactly the same signal.* This means that all rooms share the exact same digital audio processing and the identical volume setting.

☐ (4) Sufficient DSP (Digital Signal Processors) resources within the FroxSystem must be available for routing any advanced audio processing (THX, EQ, Halls, etc.) to remote destinations.

207

Additional Audio Routing
Restrictions

9.5 ADDITIONAL AUDIO ROUTING RESTRICTIONS

Three other general audio routing restrictions exist within the FroxSystem that the system owner should be aware of:

☐ (1) No more than 4 audio sources can be 'active' and routed at any one time.

☐ (2) No more than 2 analog audio sources can be active at any one time. Also, the analog source components connected to the Aux Input #1 and the Video Input #1 cannot be active at the same time (as well as any component connected to Aux Input #2 and Video Input #2). See you dealer/installer for assistance.

☐ (3) When controlling the FroxSystem via additional infrared FroxWand remotes (with IR repeaters and monitors in multiroom areas), note that the audio will always 'track' with the primary video image *to the main theater area* - in addition to the alternate monitor room(s). The exceptions to this are (a), remaining in the *Audio Routing* screen and operating the components and audio destinations via that panel; (b), using in-wall keypads for direct system control. For example, if you are in the bedroom enjoying the on-screen *CD Library* browser on an Alternate Monitor, IR commands from that room will properly route the CD audio to your location - but the routing *will include and activate the main theater area's audio as well* (since the system assumes the audio should always be associated with the on-screen visual image). In this instance be sure to manually turn off the main theater amplification equipment, as the theater's audio will become an active zone. Otherwise remain in the *Audio Routing* screen only or use in-wall keypads to bypass this restriction.

➤ ➤

Error Messages

9.6 ERROR MESSAGES

The FroxSystem will alert the user to situations that may result when performing complex or advanced routing requests. Error messages are presented if any requested audio routing cannot be established. Also, in certain situations the system will respond to your current routing request, but will 'shut down' other routing configurations automatically if the request is outside of the normal system operating parameters. The most common error messages are as follows:

'Note: only 2 audio sources from the Video Preprocessor can be used at once, so <a source component> has been disconnected.'

'Note: <your desired component> and <another component> cannot be used at the same time, so <the other component> has been disconnected.'

'There is an insufficient number of DSPs installed to perform the requested task. Please contact your Frox dealer.'

'You may only use a maximum of 4 audio sources at a time.'

See your dealer/installer or Frox Technical Support at 800.525.5257 for additional information on advanced routing requests.

Notes

> >

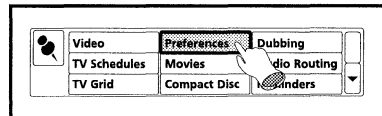*Preferences*

SECTION 10 - PREFERENCES

The Preferences area of the system is used to customize various features in the FroxSystem. Both the FroxWand speed/sensitivity adjustments and *Advanced PIP* (PIP++ control) selections are located in this panel.
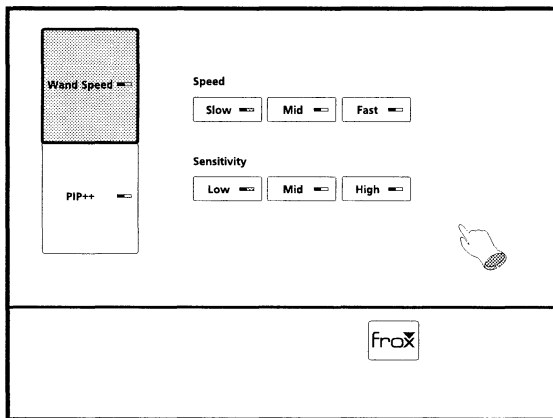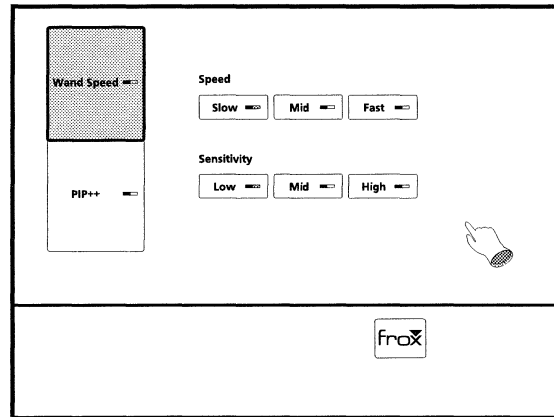
To enter this area, click on the FROX button and select the PREFERENCES choice from the navigator menu.
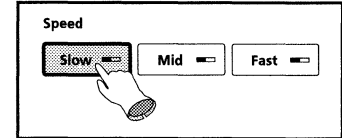
FroxWand Speed and Sensitivity

10.1 FROXWAND SPEED AND SENSITIVITY

```
Wand Speed ▬□      Speed
                    Slow ▬□   Mid ▬□   Fast ▬□

                    Sensitivity
PIP++      ▬□       Low ▬□    Mid ▬□   High ▬□

                                            ☞

                                    froⓍ
```

The wand's 'feel' as it relates to the on-screen hand's movement can be modified to accommodate your individual tastes. The predetermined factory setting may be changed at any time by entering the *Preferences* portion of the FroxSystem and choosing other speed/sensitivity settings.

Many first-time system operators will prefer the SLOW wand speed, while more proficient users opt for the MID or FAST speeds. Experiment with these settings to discover your preferred speed.

```
Speed
  Slow ▬□    Mid ▬□   Fast ▬□
      ☞
```

The sensitivity of the system as it relates to the reception of IR (Infrared) signals from the FroxWand is also adjustable. In many installations the room environment can have an adverse impact on the reception of wand commands. Also, if the FroxSystem is located in a room that receives a great deal of sunlight or other synthetic lighting, false commands can occur. (This may include IR commands from other manufacturer's remote controls, causing undesired behavior from the FroxSystem).

212

>>>

FroxWand Speed and Sensitivity

The three wand sensitivity settings - LOW, MID and HIGH - are chosen based on the following conditions:

Sensitivity

| Low ━ | Mid ━ | High ━ |
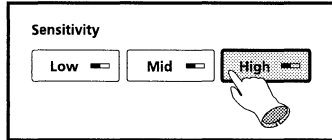
☐ The LOW sensitivity setting will block out any stray light or unfamiliar IR signals that do not fall within the strict specification of valid FroxWand IR commands. When using this setting, insure your FroxWand has fully-charged batteries (otherwise the wand response may have a 'sluggish' feeling).

☐ The HIGH sensitivity setting will attempt to rapidly interpret any signal (including foreign IR codes similar to the FroxWand commands) and will respond quickly to wand requests. This is an excellent choice for maximum wand battery life, as the system reacts rapidly to all wand IR commands. Use this setting when ambient lighting is at a minimum.

☐ The MID sensitivity setting attempts to achieve a happy medium between absolute rejection or reception of unwanted IR commands.

☞ Note that in any mode, should the wand's response begins to feel 'sluggish' (or even 'jerky') as the hand moves across the video landscape, the wand's batteries are likely reaching the end of their useful life. Changing from the LOW or MID settings to the HIGH sensitivity level can often extend the life of the batteries for a short period of time and will permit continued system operation. Replace the batteries as outlined in section 1.1 when the wand movement becomes sluggish in *all three sensitivity modes.*

213

Advanced PIP Selections

≺ ≺

10.2 ADVANCED PIP SELECTIONS

The *Advanced PIP* (Picture-In-Picture) control located on the *Video* panel is also configured in the *Preferences* area of the system. *Advanced PIP* offers any of these four 'flavors' of picture-in-picture processing:
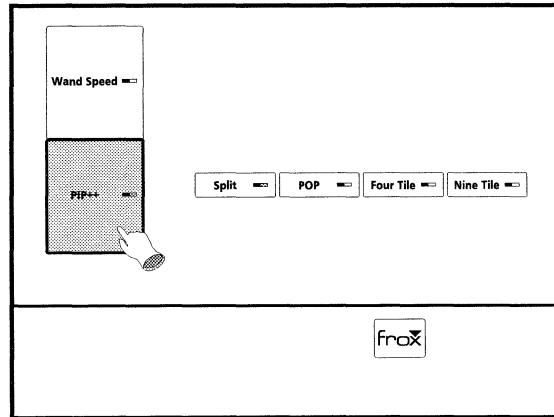
SPLIT - two live images, full screen, divided equally in size.

POP - (Picture-Outside of-Picture) - one image, appx. 2/3 size of a normal image, with three images positioned outside and to the right of the main one.

FOUR TILE - Four equal-sized screens divided into quadrants, featuring strobed (still) images from available channels/sources.

NINE TILE - Nine smaller screens of equal size, containing one live source and strobed images from additional channels/sources.

To change your advanced picture-in-picture choice, enter the *Preferences* control panel. A button labeled PIP++ will be presented - click on this control. The four types of advanced picture-in-picture options will be offered. Make your selection at this time and the PIP++ button on the *Video* control stripe will be configured to this choice.

Review section 3.9 for complete details on the operation of your desired PIP feature.

System Software Upgrades

SECTION 11 - SYSTEM SOFTWARE UPGRADES

The FroxBoot Compact Disc Booting Utility allows installers/users to update the FroxSystem software by transferring data from a compact disc (CD) to the FroxSystem hard disk drive. Additionally, FroxBoot provides quick recovery from most hard drive failures and unrecoverable system crashes.

☞ FroxBoot requires that a CD player with a coaxial or fiber-optic digital output be connected to any of the eight digital inputs on the Media Processor. In the case of a 100-disc Frox (CDC-01) or NSM branded changer, the serial control cable must also be connected to the FroxCD serial port on the Media Processor in order for proper control and data transfer.

☞ CD album covers are not backed up by V3.0, but must, in the event of a crash or system software upgrade, be re-read from the CD Covers Tape.

☞ When installing V3.0 for the first time, it will be necessary to reinstall the entire system including preferences, CDs in collection, and devices, since FroxSystem software versions 2.0 and prior did not back this information up the way V3.0 does.

☞ We strongly recommend that only your FroxSystem dealer/installer or Frox technical support perform the internal PROM removal and replacement. Contact Frox at 800.525.5257 for important advice and assistance.

Converting From V2.0 to V3.0

◄ ◄

11.1 CONVERTING FROM V2.0 TO V3.0

☞ The V3.0 upgrade includes a set of PROMs and a FroxCD. The existing hard drive in the Media Processor need not be replaced in order to upgrade to V3.0. The V3.0 software will, when fully installed, make a backup copy of all the preferences, CDs in collection, TV schedules, and installation information on a "read-only" partition on the hard drive. In the event that the system experiences a fatal crash and must be restarted by reloading from the FroxCD, this saved information will be recovered, avoiding the inconvenience of reinstalling the entire system. The same custom information is saved upon upgrading to later releases of FroxSystem software.
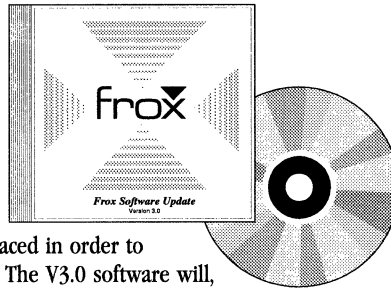
To run any software version labeled V3.0 or later, you must have a set of PROMs installed that are labeled version 2.0 or later. The PROMs are located in the Media Processor on the motherboard near the fan. There are four PROMs which are socked integrated circuits (ICs). Make certain that the power is OFF on the Media Processor and Video Preprocessor when inspecting or changing PROMs (or any other hardware inside either component).

☞ Keep the grounded AC power cord connected to the Media Processor and Video Preprocessor while disconnecting the AC power from the external power strip. Power should not be restored until the PROM installation is complete and the cover has been returned to the Media Processor.
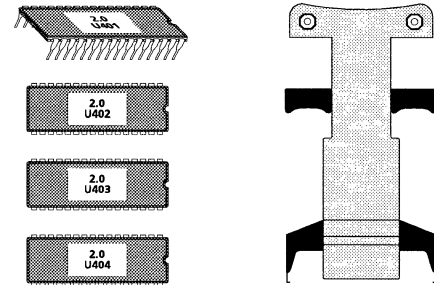
Installer's Notes - To Install New PROMs

☐ 1) Read Appendix A, entitled "General Electrostatic Procedures" found in the FroxSystem Installation Manual. Be sure to follow all of the rules outlined.

☐ 2) Turn off power to the Media Processor and Video Preprocessor.

☐ 3) Remove the three screws located along the top of the rear panel of the Media Processor, and slide the top cover out of its mounting, towards the back of the unit. The top cover has a very snug fit, so some exertion is normal to remove it.

216

➤ ➤

Converting From V2.0 to V3.0

☐ 4) Locate the four PROMS. If facing the front of the Media Processor the PROMs are in increasing numeric order from right to left. The rightmost PROM is the one closest to the fan. Also note that the dimple on the end of the PROM must face towards the front of the Media Processor.

☐ 5) Using the PROM puller, remove the PROMs. Grasp each PROM with the puller, and squeeze the handle until the PROM pops out of its socket. Then lift the puller away from the motherboard. As an aid to memory, lay the PROMs down on a flat surface in the same orientation that they came out.

☐ 6) Inspect the new PROMs to verify that the pins are not bent.

☐ 7) Install the new PROMs.

☞ It is critical that all pins fit inside the socket. It may be required to slightly align the pins on a flat surface so that they fit comfortably in their sockets. Place each PROM lightly in its socket at first; inspect it carefully so that all pins are seated properly, then press down on the whole surface of the PROM to seat it firmly.

☐ 8) Inspect your work. Do the PROMs increase in numeric order from right to left? Are the PROM dimples all facing the front of the Media Processor? Are all the pins in their sockets, and the chips seated firmly?

☐ 9) Restore the cover to the Media Processor. Return the three screws to the unit.

Loading Software From The Frox CD

11.2 LOADING SOFTWARE FROM THE FROXCD

Initial loading of V3.0 from the FroxCD

☐ 1) Turn on the power to the Media Processor and Video Preprocessor simultaneously. It is best if they are ganged together on a power distribution strip.

☐ 2) As soon as possible, but not more than 15 seconds after applying power, hold down the F1 button on the FroxWand and aim it at the front of the Media Processor. Continue to hold it down until at least five seconds after the Media Processor light has lit. At this point you will see the screen painted blue-grey, and the following words will appear briefly on the screen:

FroxBoot (CD booting utility 2.0 PROM)

If there is a software or hardware problem with the Media Processor hard disk, you will then see this text:

The disk in your FroxSystem could not be read.
Contact your Frox service center, or
to use the FroxBoot CD booting utility,
squeeze-click the FroxWand now.

If the problem is only software, FroxBoot will fix it. If it is hardware, FroxBoot will tell you about this later.

If you have a Frox CD Changer, you will then see this screen:

You have a Frox CD changer.
Place the FroxBoot CD in slot 100 in the changer.
Then use the FroxWand SEL up/down buttons to select the desired track.
(Refer to FroxBoot instructions to determine which track you need.)
Select the track, then squeeze-click the FroxWand.
If you do not want to boot from your Frox CD changer, press the F2 button now to boot from any other CD player.

If you do not have a Frox CD Changer, you will see:

No Frox CD changer found.
Insert the FroxCD in any CD player with digital output that is connected to the FroxSystem.
(Refer to FroxBoot instructions to determine which track you need.)
Select and play the desired track.

If there is a Frox CD changer installed, and you want to use it to boot, check its connections, cycle its power, then restart the booting procedure.

☐ 3) Follow the appropriate on-screen instructions for your CD player.

➢ *Loading Software From The FroxCD*

To determine the track you should use on the FroxCD refer to the chart below.

Track Numbers	Description
1, 3	Designed to bring your system up to limited functionality quickly. These tracks do not include the CD or movie databases. Loading time for these tracks is on the order of four to five minutes.
2, 4	Designed to bring your system up to full functionality. These tracks include all databases. Loading time for these tracks is on the order of 15 to 30 minutes.
5	Format boot. Select this track only to completely format a hard drive. Note: This process erases all information on the hard drive in preparation for initial data loads.

If the software is loading properly, two horizontal bars are drawn at the bottom of the screen. A red cursor zips along the top of each. When data is read from the CD, it is posted to the top visual display. When data is read into memory, or onto disk, it is posted to the bottom one. Each word of FroxSystem code is written in a single pixel on the screen, and the pixels are drawn one after another. This is a visual reference for the process your FroxSystem is undertaking.

Loading V3.0 and Future Software Releases Onto a V3.0 Hard Drive

There are two ways to load software "on top" of V3.0:

☐ 1) Place the existing V3.0 FroxCD (or a future release of software) in the CD player, and begin the procedure "Loading V3.0 from the FroxCD" from step 1.

☐ 2) With the V3.0 FroxCD (or a future release of software) in the CD player, go to the *Maintenance* screen in *Installation*. Click on the SYSTEM UPDATE button. Doing this will complete steps 1 and 2 from the "Loading V3.0 from the FroxCD" procedure above. Proceed from step 3.

Recovering From Fatal Crashes

Recovery from fatal system crashes is simple with FroxBoot.

If the crash occurs in FroxSystem V2.0 or any prior release, follow the instructions from the beginning of the "Converting from V2.0 to V3.0" section above. Once again, it will be important to change the PROMs in the Media Processor if current PROMs are not installed.

If the crash occurs in FroxSystem V3.0 or any subsequent release, follow the procedure "Loading V3.0 from the FroxCD" described above.

219

Error Messages and
How to Recover

11.3 ERROR MESSAGES AND HOW TO RECOVER

Media Processor Hard Drive Failures

If during FroxCD installation you see the screen:

(MinBoot — CD booting utility 1.0 Beta)
(Relabeling the disk...)
ERROR WRITING DISK LABEL
Call your Frox service center.

This message means that FroxSystem software V3.0 could not write to your Media Processor drive. Most likely the hard disk drive is defective.

ERROR WRITING TO DISK
(The disk could not write fast enough.)
Call your Frox service center.

This message indicates that the Media Processor hard disk writes too slowly and can't keep up with the rate of data flowing off of the CD. This could occur if the disk encounters numerous soft errors while writing, or it could mean that the disk in the Media Processor is not a standard SCSI disk. Call your Frox service center.

Media Processor Hard Disk Software Failures

If during installation you see the screen:

Critical information on the disk in your Media Processor could not be read.
Contact your Frox service center.
Or, to use the FroxBoot CD booting utility,
squeeze-click the FroxWand now.

This message indicates that some important components of software on the disk have been lost, and must be restored. It is unlikely to be a disk hardware problem. Proceed with FroxBoot.

➤ ➤

Error Messages and How to Recover

Problems Reading The CD

If you see the screen:

ERROR READING CD.
Problems could include:
◆ *scratches on the FroxCD:*
   try playing another track, or different disc.
◆ *poor connection to player:*
   check the wiring.
◆ *player can't read the disc properly:*
   try a different player.

Try the booting sequence again from the beginning.
Click on the FroxWand to continue.

A similar message to this might occur elsewhere in the booting sequence and substitutes the following for the last line:

Try the booting sequence again from the beginning.
Cycle the FroxSystem power, while holding down the F1 button to continue.

Scratches on the CD can render portions of it unreadable. This is why multiple copies of the data are distributed over the CD, allowing you to bypass problem areas. Use care when handling these discs, as they are sensitive to scratches or other surface imperfections.

Poor connections to the CD player can also result in problems reading the CD. Long fiber-optic cables can sometimes cause loss of data. With coaxial cables, grounding can be a problem. Check the connections for corrosion or try a different cable. Switch to an optical cable if available.

There is a possibility that some CD players experience problems reading FroxCDs. While there is no evidence to suggest that this is a common problem, if a CD player is having trouble transferring data, try a different player.

Notes

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

>> *Troubleshooting*

SECTION 12 - TROUBLESHOOTING

The following tips can assist the user in troubleshooting the FroxSystem. We at Frox encourage experimentation to uncover the particular attributes of your system, but stand ready to answer any question you may have regarding your installation.

Our toll-free Customer Support number - 800.525.5257 - is available Monday through Friday, 8:30 am until 5:00 pm PST.

SECTION 12

Troubleshooting

12.1 GENERAL

☐ *My FroxSystem is 'locked'; I cannot activate any function or controls.*

The Frox processors, like any computer occasionally require 'rebooting' (or power cycling from the main AC source). Carefully disconnect power from the Media Processor, wait approximately 5 seconds, and restore power. Your system will return to full functionality after performing a systems-wide check of the hardware and operating software. There is no loss of user preferences, settings and library customizations when performing an AC power cycle.
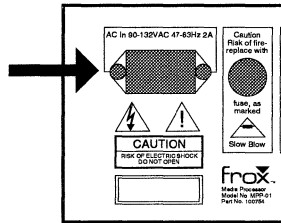
☐ *The on-screen hand movement is slow, even intermittent (or pauses for a few seconds prior to moving).*

Try changing to the HIGH sensitivity setting in the *Preferences* area of the system. Next, check the wand batteries and replace if low. In the situation regarding hand 'pauses' the
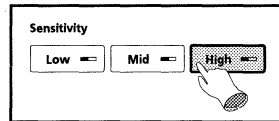
system is merely updating its database and has 'stopped' for a moment until the update is completed.

☐ *The Frox navigation panel (or other info popup) cannot be removed from the screen.*

Click on the small 'pin' icon in the upper left hand corner of the panel.

☐ *When using an alternate monitor (a regular TV monitor, instead of a VGA graphics, data-rate monitor), the picture suddenly changed colors dramatically and/or I have lost picture completely.*

The F2 button on the FroxWand has been depressed accidentally; select the F2 button to restore the image to your alternate TV monitor. If this does not correct the system and restore the proper image, power cycle ('reboot') the FroxSystem.

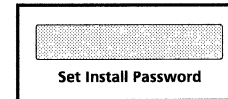> *Troubleshooting*
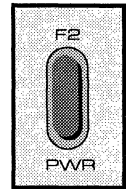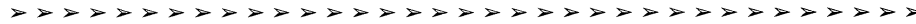
☐ *I can't use PIPs on my alternate monitor (non-Frox, regular TV monitor). One of my video components will not work when the alternate monitor is activated.*

The FroxSystem was originally designed to work with either Frox or other major-branded graphics-capable (data rate) TV monitors. Normal television sets and monitors do not offer sufficient bandwidth or resolution for the enhanced FroxVision digital image; however, the Frox software engineers developed a method for viewing the principle Frox features (particularly the on-screen user interface) on a regular TV. The 'trade-offs' for using an alternate monitor is (1) the inability to view PIPs, (2) loss of the use of any component connected into Video input/output #2, (3) inability to dub from components associated with the second video input, and (4) the lack of any line-doubled, improved video imaging known as

FroxVision. All other system features are available when using the alternate monitor. Of course, replacing the regular set with a data-rate monitor is an option to restore the full feature complement in any room using the FroxSystem.

☐ *I cannot enter and make changes in the Installation area.*

Your Frox dealer/installer entered a 'lockout' password at completion of your system configuration. Contact your dealer/installer or Frox for additional information or assistance.

> **Set Install Password**

Troubleshooting

12.2 VIDEO

☐ *Closed Captioning information will not activate.*

Click on the CAPTION button on the *Video* panel, then guide the on-screen hand directly over the video image and click (removing all control panels). The Closed Captioning information will appear in a moment (as long as the program material contains the properly-encoded information).
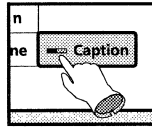
☐ *My laserdisc/VCR will not operate.*

Check to see if the small infrared emitter(s) attached to the component's IR sensors are still securely fastened. Occasionally the emitter will fall off and require repositioning. Also, check the software installation sequence to ensure your component is properly selected and configured.

☐ *Certain channels or video components look better than others; how do I make the appropriate adjustments for best results?*

Your installer will initially set up your monitor and adjust each channel and component connected to the FroxSystem (with respect to color saturation, hue, contrast and brightness). It is common that monitors and projectors

'drift' and change over time, and may require readjustment to obtain the best image possible.

☞The FroxSystem software can be manipulated to aid in achieving the very best picture:

To obtain the optimum image from your antenna or cable feed: Select the VIDEO button and run the AFT SCAN program for the fine tuning of all channels. If color intensity is too weak, first manually adjust the FINE TUNE control until a 'herringbone' pattern results in the
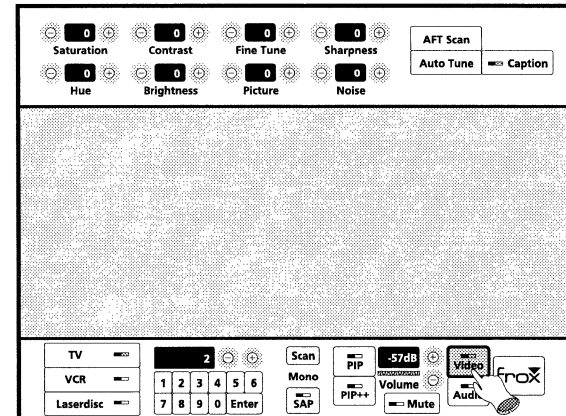
picture, then back off the control one or two settings down. Next, decrease CONTRAST by one or two settings (0 or -1); then, increase the SATURATION control (as

➤ *Troubleshooting*

needed) for the desired color intensity. Color HUE may be used to shift the colors more toward the green ('+' settings on the meter) or toward the red ('-' settings on the meter). PICTURE and BRIGHTNESS may then be used sparingly to increase overall brightness intensity (note that BRIGHTNESS adjusts only the video image on that channel, while PICTURE will increase both the video and the user interface on all channels and components. Adjust the BRIGHTNESS control first, when necessary. Finally, adjust SHARPNESS and NOISE parameters as required.

To obtain the optimum image from your laserdisc or VCR: Select the VIDEO button and engage the AUTO TUNE control to evaluate and reset all video parameters. Next, determine if contrast/brightness levels are appropriate (in some instances reducing the CONTRAST setting and increasing the BRIGHTNESS control will result in an improved image; experiment with these together for best results). Adjust SATURATION (color intensity) and HUE (color shift: '+' to green, '-' to red) to desired levels, then finish with SHARPNESS ('more sharp' or 'less sharpness') and NOISE reduction parameters. Note that the FINE TUNE control has no effect on any video component.

☐ *Certain video tapes 'bend' slightly at the top of the screen. Also, there's a small black bar at the bottom of the screen when watching video tapes. Why?*

Both are related to the inherent playback instabilities of any VCR and the system used by Frox for video digitization. The FroxSystem converts analog video signals (from your VCR, TV, LD player, etc.) into digital formats, after which proprietary FroxVision de-interlacing methods can be employed to enhance the video image, remove NTSC scanning lines and other noise-related artifacts. On video sources with stable playback 'sync' signals (usually LD players, broadcast TV signals, and high quality, 'semi-professional' VCRs), the very best picture quality can be obtained from the FroxSystem's digital processing. Signals from average-to-poor video playback components (typically lower-priced VCRs) often lack this stability due to inferior tape transports, and thus require additional software and hardware solutions to obtain the best possible picture.

Troubleshooting

The image from video cassette components is 'cropped' by the system software slightly at both the top and bottom of the screen, in order to minimize the 'tearing' or 'flagging' artifacts from these devices. Performance from VCRs can be greatly enhanced with the addition of an external device known as a time base corrector (or TBC). Contact your installer or Frox for further information and recommendations.

☐ *On occasions when watching television, a 'red' image suddenly turns 'green'. Is there a problem with my system? How do I correct this?*

The SATURATION control is simply turned too high, causing an overload (or 'clipping') within the system's digital video processors. Engage the VIDEO button and reduce the saturation control until the proper color value is obtained (while maintaining desired overall color intensity and balance).

⊖ ▮ 0 ⊕
Saturation

>>>

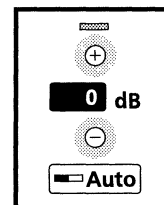*Troubleshooting*
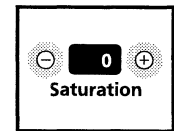
12.3 AUDIO

☐ *I cannot get sound from my laserdisc player.*

Reduce the volume control to a safe level, then click on the button labeled DIGITAL. This will change the FroxSystem's input to ANALOG and permit playback of only the analog audio tracks of the disc (as in some cases only the analog soundtrack is available).

| Digital |

| Analog |
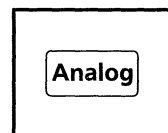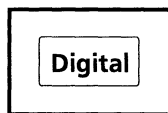
☐ *My audio system 'pops' loudly on certain musical passages.*

The component's audio input signal is too high for the system. Select the AUDIO processing button and turn on any available Auto Input Trim control (even manually reduce the input level by 1 or 2dB increments). Review Section 4.4, 'Auto Input Trim Adjustment' for further guidance.

⊕

0 dB

⊖

◼▭ **Auto**

Troubleshooting ◄

12.4 FROXCAST/FROXNET

☐ *I am a FroxCast/FroxNet subscriber and did not receive my (daily, weekly) TV schedules.*

FroxCast and FroxNet TV schedules are broadcast frequently during the day but only *received* by your system when it is in the 'off' mode. Insure that the system is shut off via the FroxWand when not in use (during your normal sleeping periods, for example). Our method of transmitting FroxCast TV schedules forwards three consecutive days of information, four days in advance. This insures that at least once over a three-day period, your system will be 'powered off' and will receive the desired schedules. Contact our customer service department at 800.525.5257 for additional assistance.

☐ *I selected a television event in the listings and requested 'Tape it.' The recording did not work.*

Check to see if a blank tape was properly inserted into your VCR. Also, is the IR emitter correctly positioned over the component's IR sensor (has it fallen off or been removed)? Review the *Reminders* section to insure there are no conflicts with your recording request. Finally, was the VCR left in a 'powered on' state (it must be for the timeshifting recording process to work properly).