

## 4.0 Operation

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The Hughes-JVC Model 200 Projector can be controlled by a Standard Remote, Technician Remote or a PC Terminal. The Standard Remote and Technician are supplied with the projector. Either remote performs the same functions described in the menu tree. The Technician Remote has the extra capability of accessing many setup functions directly from keys without going through the menu tree. A PC terminal requires a Null Modem cable and a terminal emulation program (such as Windows or ProComm-see *Section 4.11*) in order for it to emulate a VT-100 terminal.

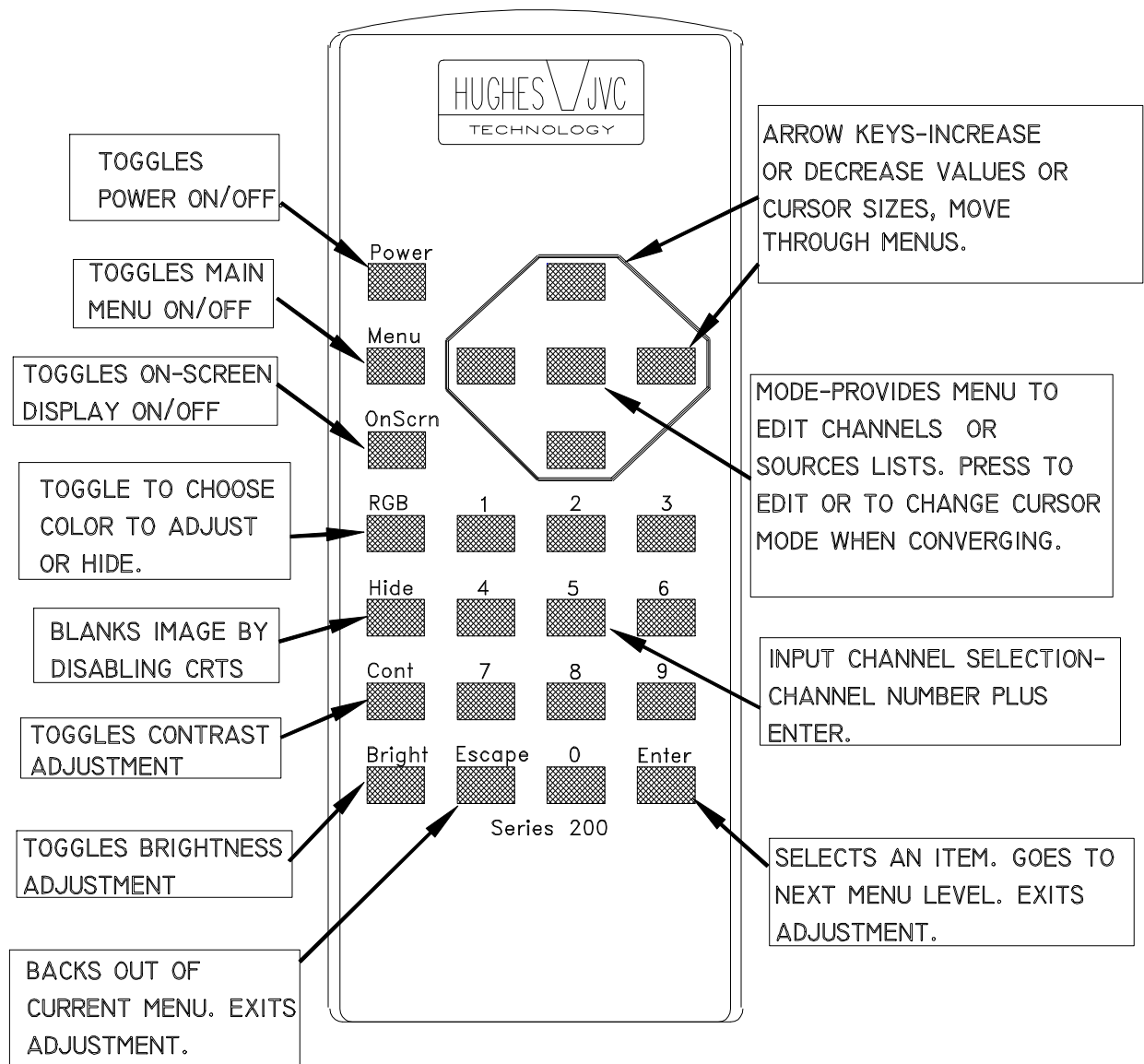
This chapter assumes the operator is using a Standard Remote or Technician Remote and is using the menu tree (not the direct access keys on the Technician Remote). All instructions are given with reference to reaching functions through the menu tree.

### 4.1 Standard Remote

An illustration of the Standard Remote is shown below in Figure 4-1.

The Standard Remote can be used as an infrared or tethered remote. If using the Standard remote as an IR, do not plug in the tether cable. If using with the tether, plug one end of the 8M tether cable into the remote and the other end into the phone jack (see *Figure 3-8*) on the projector rear panel. Both ends of the tether cable are terminated in phone jacks. The IR function is disabled when the tether cable is plugged into the remote. All setup, image, and raster adjustments are accomplished with the Standard Remote by navigating through the menu tree (*refer to Figure 4-3, Menu Structure Diagram*).

The Standard Remote, when operating using the IR transmitter, has a maximum range of approximately 16 meters **line of sight only**. It does not transmit effectively through a rear-screen window.



**Figure 4-1.** The Standard Remote Control.

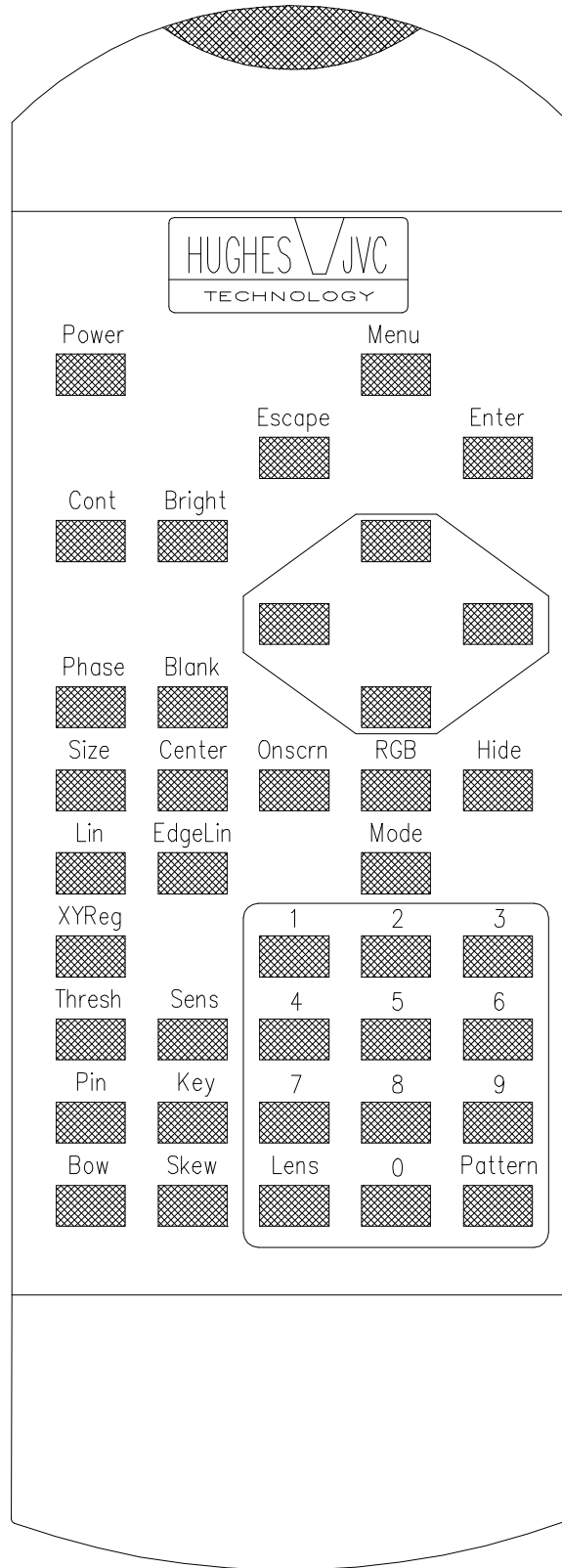
## 4.2 Technician Remote

The Technician Remote provides quicker access to some projector setup functions using keys that are directly on the remote. In the Menu Structure Diagram, Figure 4-3, these direct access functions are indicated by a ● symbol after the function name. There is no need to navigate through the menu structure to access these functions, as would be necessary when using the Standard Remote. This results in greater convenience and time saved when performing the complete projector setup procedures.

The Technician Remote can be used as an IR remote or with a tether, in the same manner as the Standard Remote. Inserting the tether cable disables the IR transmitter. An 8 meter tether cable is supplied with the Technician Remote.

Figure 4-2 shows the Technician Remote control keys. Table 4-1 indicates the functions and usage of each of the keys on the Technician Remote. Where necessary, notes about key usage have been provided.

The Technician Remote, when operating using the IR transmitter, has a maximum range of approximately 16 meters **line of sight only**. It does not transmit effectively through a rear-screen window.



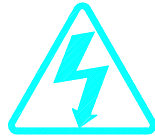
**Figure 4-2.** Technician Remote Control. Descriptions of key functions can be found in Table 4-1 on the next page.

Table 4-1. Technician Remote Control Key Functions

KEY	FUNCTION	USAGE
<b>Power</b>	Press ON to turn power on, and OFF to turn power off.	Press to turn power on or off
<b>Menu</b>	Toggles on/off Main Menu display.	Press once to display Main Menu, second time to hide Main Menu.
<b>Escape</b>	Cancels last command and retreats one menu level, cancels an input, exits adjustment	Press to back out of current menu.
<b>Enter</b>	Implements commands, chooses an item exits an adjustment, goes to next menu level	Press Enter when selection is highlighted or to exit an adjustment.
<b>Cont</b>	Contrast. Change the amount of image intensity.	Press <b>Cont</b> + left/right arrows to set level.
<b>Bright</b>	Brightness. Adjust until black portions of a projected image are black, but detail in color balanced areas is not lost.	Press <b>Bright</b> + left/right arrows to set brightness level.
<b>Arrows</b>	Used for increasing and decreasing control levels, cursor movement, convergence and geometry	
<b>Phase</b>	Horizontal and vertical Phase adjustment of the input image on the CRT raster.	Press <b>Phase</b> + left/right arrow keys to set H phase or up/down arrows to set V phase.
<b>Blank</b>	Blanking. Adjusts blanking levels at image edges. Press once for T/L and again for B/R.	Access T/L (top/left) or B/R (bottom/right) blanking from Timing. Adjust with arrows.
<b>Size</b>	Adjusts projected image height and width on screen.	Press <b>Size</b> + arrows to set ht/width.
<b>Center</b>	Adjusts image raster horizontally and vertically on screen.	Use UP/Down and left/right arrows to center.
<b>Onscrn</b>	Toggles on/off the "on screen" information display.	Toggles "on screen" display On/Off.
<b>RGB</b>	Color selection to adjust or hide	Toggle to desired color.
<b>Hide</b>	Blanks CRTs for all colors or selected color.	Toggles video or selected color on or off.
<b>Lin</b>	Horizontal and Vertical Linearity correction for improper grid spacing on an image.	Press <b>Lin</b> + Left/Right or Up/Down arrows to correct linearity distortion.
<b>Edge Lin</b>	Edge Linearity. Horizontal and Vertical edge linearity correction for improper grid spacing at image sides.	Press <b>EDGE</b> + Left/Right or Up/Down key to correct edge linearity distortion.
<b>Mode</b>	Provides menu to edit Channels or Sources lists.	Press to edit Channels or Sources.
<b>XYReg</b>	Enters Registration (XY) convergence adjustment.	Press XYReg. See Section 5.4.1.
<b>Numbers</b>	Selects the input signal channel and makes Menu selections.	Press channel or menu number.
<b>Thresh</b>	Enters Threshold convergence adjustment.	Press Thresh. See Section 5.4.2.
<b>Sens</b>	Enters Sensitivity convergence adjustment.	Press Sens . See Section 5.4.3.
<b>Pin</b>	Vertical and horizontal pincushion correction for distortion at the sides or top and bottom of an image	Press <b>PIN</b> + arrows to correct vertical and horizontal pincushion distortion.
<b>Key</b>	Keystone. Horizontal and vertical keystone correction for grid line distortion at the sides or top and bottom of an image with respect to the center line	Press <b>Key</b> + Left/Right or Up/Down keys to correct horizontal or vertical keystone.
<b>Bow</b>	Adjust picture bowing	Press Bow-use arrows to correct.
<b>Skew</b>	Corrects for slight yoke rotation.	Press Skew-use arrows to correct.
<b>Lens</b>	Projection lens Zoom/Focus.	Press <b>Lens</b> . Up/down arrows to zoom. Left/right arrows to focus.
<b>Pattern</b>	Displays test pattern menu.	Press Pattern. Select a test pattern.

Shaded keys are available on both the Standard and Technician Remotes.

### 4.3 Power On Sequence



**CAUTION!!!** Before applying power or starting projector adjustments, read and learn the safety guidelines outlined in the Safety Information chapter at the front of this manual. Bear in mind that when the projector is turned off, the Xenon Arc Lamp is turned off but the cooling fans stay on for several minutes to cool the lamp. It is **crucial not** to unplug the projector or turn off the circuit breaker until these fans have stopped running.

Verify that the projector is connected to a 100-240 VAC, 20 Amp, 50/60 Hz, single phase source.

To turn on projector power:

1. Toggle the circuit breaker on the rear panel to the ON position. **CAUTION! This circuit breaker should normally be left in the ON position except in for maintenance purposes. If turned off in an uncontrolled sequence, the cooling fans also turn off and there is not enough time allowed for the arc lamp to cool. This could result in premature lamp failure. If it becomes necessary to remove power completely from the projector, DO NOT turn this circuit breaker off until the cooling fans have shut off automatically. Also, projector setup data is saved automatically once every hour and any data since the last automatic save would be lost.**

The LED light on the left rear of the projector glows orange. **NOTE:** If this light blinks red, a problem exists. If using a PC terminal on Port A (marked Terminal A), some information on the problem will be displayed on the monitor screen.

2. Press the Power key on the Remote. **NOTE:** The same Power key also turns projector power off. When turning power off this LED will blink again and it is not possible to turn power on until this LED stops blinking.

The orange LED, from Step 2, should now glow green. The ignitor circuit ignites the arc lamp and power is applied to the projector. A Hughes-JVC logo may appear on the screen for 5 seconds (this is the default setting and can be unselected under the Preferences menu). The screen then displays the external video or goes blank if no video signal is applied.

**CAUTION!** If a dark band is seen on the screen at power up or at any other time, turn power off and call your HJT Service Representative.

### 4.3 Inbetriebnahme



**VORSICHT!!!** Vor Einschalten des Gerätes oder Änderungen an den Projektoreinstellungen sollten die im Kapitel "Sicherheitsinformationen" am Anfang dieses Handbuchs besprochenen Sicherheitsrichtlinien sorgfältig durchgelesen werden. Denken Sie daran, daß beim Abschalten des Projektors die Xenonbogenlampe zwar auch abgeschaltet wird, die Ventilatoren jedoch zur Abkühlung der Lampe noch einige Minuten weiterlaufen. Das Netzkabel des Projektors **darf erst** gezogen oder der Hauptleistungsschalter erst umgelegt werden, wenn alle Ventilatoren zum Stillstand gekommen sind.

Der Projektor muß an eine Wechselstromquelle mit 100-240 V, 20 A, 50/60 Hz, einphasig, angeschlossen sein.

Der Projektor wird wie folgt eingeschaltet:

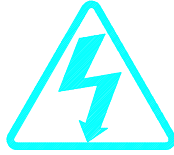
1. Der Hauptleistungsschalter an der Rückseite des Gerätes muß auf ON (EIN) stehen. Den Schalter gegebenenfalls umlegen. **VORSICHT!** Der Hauptleistungsschalter sollte stets auf ON (EIN) stehen und nur in Notsituationen umgelegt werden. Bei Betätigung des Schalters werden sämtliche Kühlventilatoren abgeschaltet. Die Lampe kühlt dadurch nicht ausreichend ab und kann in ihrer Lebensdauer beeinträchtigt werden. Da der Projektor einmal pro Stunde automatisch alle Einstellungen speichert, werden durch Umlegen des Schalters auch alle seit der letzten automatischen Speicherung vorgenommenen Änderungen gelöscht.

Das LED-Anzeigelämpchen links hinten am Projektor leuchtet orangefarben. **HINWEIS:** Wenn dieses Anzeigelämpchen rot blinkt, liegt eine Störung am Gerät vor. Bei Verwendung eines Endgerätes an Anschluß A (als Terminal A markiert) werden auf dem Monitorbildschirm Informationen zur Störung angezeigt.

2. Die Stromtaste an der Fernbedienung drücken. Die gleiche Taste wird benutzt zum ausschalten vom gerät. Das in Schritt 2 erwähnte orangefarbene LED-Anzeigelämpchen leuchtet jetzt grün auf. Die Bogenlampe wird über den Zündschaltkreis gezündet und der Projektor mit Strom versorgt. Auf dem Bildschirm erscheint 5 Sekunden lang das Hughes-

JVC-Logo. Anschließend erlischt die Bildschirmanzeige, oder Daten zum externen Videoeingang werden angezeigt.

### 4.3 Procédure de mise en service



#### **PRUDENCE !!!** Avant de mettre le projecteur

sous tension ou de le régler, lire et apprendre les directives de sécurité données dans le chapitre Sécurité, au début de ce manuel. Se souvenir que quand le projecteur est arrêté, la lampe à arc au xénon est éteinte, mais que les ventilateurs de refroidissement continuent à fonctionner pendant plusieurs minutes pour refroidir la lampe. Il est très **important de ne pas** débrancher le projecteur ou d'ouvrir le coupe-circuit avant l'arrêt des ventilateurs.

Vérifier que le projecteur est branché sur une alimentation entre 100 V et 240 V c.a., 50 à 60 Hz, monophasée, 20 A.

Pour mettre le projecteur en service.

1. Vérifier que le coupe-circuit à l'arrière du panneau est en position de marche. Si ce n'est pas le cas, mettre le coupe-circuit sur marche. **PRUDENCE ! Normalement, ce coupe-circuit doit être laissé sur marche, sauf en cas d'urgence. S'il est arrêté pour une raison quelconque, les ventilateurs de refroidissement s'arrêtent également et il n'y a pas assez de temps pour refroidir la lampe à arc. Ceci peut provoquer une défaillance prématurée de la lampe. Egalement, les données concernant le projecteur sont saisies une fois par heure et toutes les données depuis la dernière sauvegarde automatique sont perdues.**

A l'arrière gauche du projecteur, le voyant DEL est allumé orange. REMARQUE : si le voyant clignote rouge, il y a un problème. Si un terminal est branché sur le port A (marqué Terminal A), des renseignements sur le problème sont affichés sur l'écran du moniteur.

2. Appuyer sur la touche POWER (Marche/arrêt) de la télécommande.

Le voyant DEL orange de l'étape 2 est maintenant vert. Le circuit de l'allumeur allume la lampe à arc et le projecteur est sous tension. Un sigle Hughes-JVC apparaît sur l'écran pendant 5 secondes. L'écran

devient alors vide ou le signal de vidéo externe est affiché sur l'écran.

## 4.4 Navigating the Menu

The basic procedure for navigating through the menu is shown at the top of the Menu Structure Diagram, Figure 4-3. To increase operator familiarity with the menu system, some examples are shown here in more detail for displaying the menu, making preference selections, and setup selections.

**Displaying the Main Menu:** The Main Menu displays on the screen when the Menu key is pressed unless another menu was previously selected. If another menu displays (*refer to the Menu Structure Diagram, Figure 4-3*) press Escape as often as necessary to back out to the Main Menu. The Escape key backs up from the menu displayed to the *previous* menu. The menus display on the screen for 10 seconds, then “time out” and go off the screen.

**Choosing Numbered Menus:** Menu selections are made with the Remote using menus with or without numbers. This optional selection is made under Preferences. Menus without numbers provide a display with less clutter and may be preferred when using Short Menu (see below). Numbered menus allow for faster access and may be preferred during projector setup.

To choose numbered menus:

1. Press Menu to display the main menu.
2. Use the up/down arrow keys to highlight #7, System, and press Enter (or press #7 at the Main Menu).
3. From the System menu, use the arrows keys to highlight #3, Preferences, and press Enter (or press # 3 at the System menu)).
4. From Preferences select #1 and press Enter to toggle the Numbered Menus box to select menus with or without numbers (checked box=menus with numbers).

**To Choose Full or Short Menus:** Full menus are necessary to perform timing, geometry, convergence, and maintenance. Short menus allow very limited menu selections such as picture settings and channel selection. The short menu is useful for situations such as when the projector is set up and operating, frequent channel changes are occurring, and changes in picture settings are often necessary. Short menus also prevent inadvertent changes from occurring to the timing, geometry, or convergence setup data when several operators are handling the remote. On most other occasions full menus are preferred.

To select short or full menus:

1. From the Main Menu select Full Menus.
2. Press Enter to toggle to full or short menus (checked box=Full Menus) .

For the full menu tree see Figure 4-3.

For the short menu tree see Figure 4-6.

Unless otherwise noted, the procedures in this manual use the Standard or Technician remote, the menu tree and numbered, full menus.

**Menu Selection Examples:** Two examples of selections made using numbered menus are shown below. Refer to the Menu Structure Diagram, Figure 4-3.

To select the test pattern for Linearity:

1. Press Menu (and Escape, if necessary) to display the Main Menu.
2. Press #7 to select the System menu.
3. From the System menu, press #1, Test Pattern.
4. From the Test Pattern list select X-hatch.
5. The standard crosshatch test pattern appears on the screen.

To select Linearity for adjustment purposes:

Continue from the above test pattern selection.

1. Press Menu and/or Escape to display the main menu.
2. Press #5, to display the Geometry menu.
3. Press # 7, Linearity.
4. The Linearity adjustment window appears on the screen.

**NOTE:** It is also possible to move from side to side in the menu tree. For example, when in #7, System menu (as in the first example above) to go to #4, Timing (as in the second example) press the left arrow three times to move 3 places to the left. To move back to the System menu, press the right arrow three times. During setup adjustments this feature can save time when moving between Picture, Timing, Geometry, and Convergence.

**Video Switchers:** A Video Switcher must be selected under Comm. Setup, Device Type. If the switcher is connected to Port A select a baud speed of 9600. If the switcher is connected to Port B select a baud speed of 19200. After the port selection and baud speed have

been selected, the system must be shut down (turn power off at the remote or the PC) and restarted for this change to become current. In order for the channel change switching to work properly, the VIC channel assignment must be edited to show that a switcher is being used; i.e. the third digit must be entered for the VIC that the switcher is connected to (refer to Section 5.3.1, Editing a Channel and Source).

## 4.5 Full Menu Structure

The Full Menu Structure is multi-level and allows access to commands for checking out and operating the Model 200 Projector.

To view the Main Menu, press Menu on the remote. The Main Menu displays on the screen. **NOTE:** If another menu is displayed, press Escape repeatedly until the Main Menu appears.

Menu screens remain active for approximately 10 seconds. After 10 seconds the menu "times out" and is cleared from the screen. To issue a command, press Menu and the number of your selection.

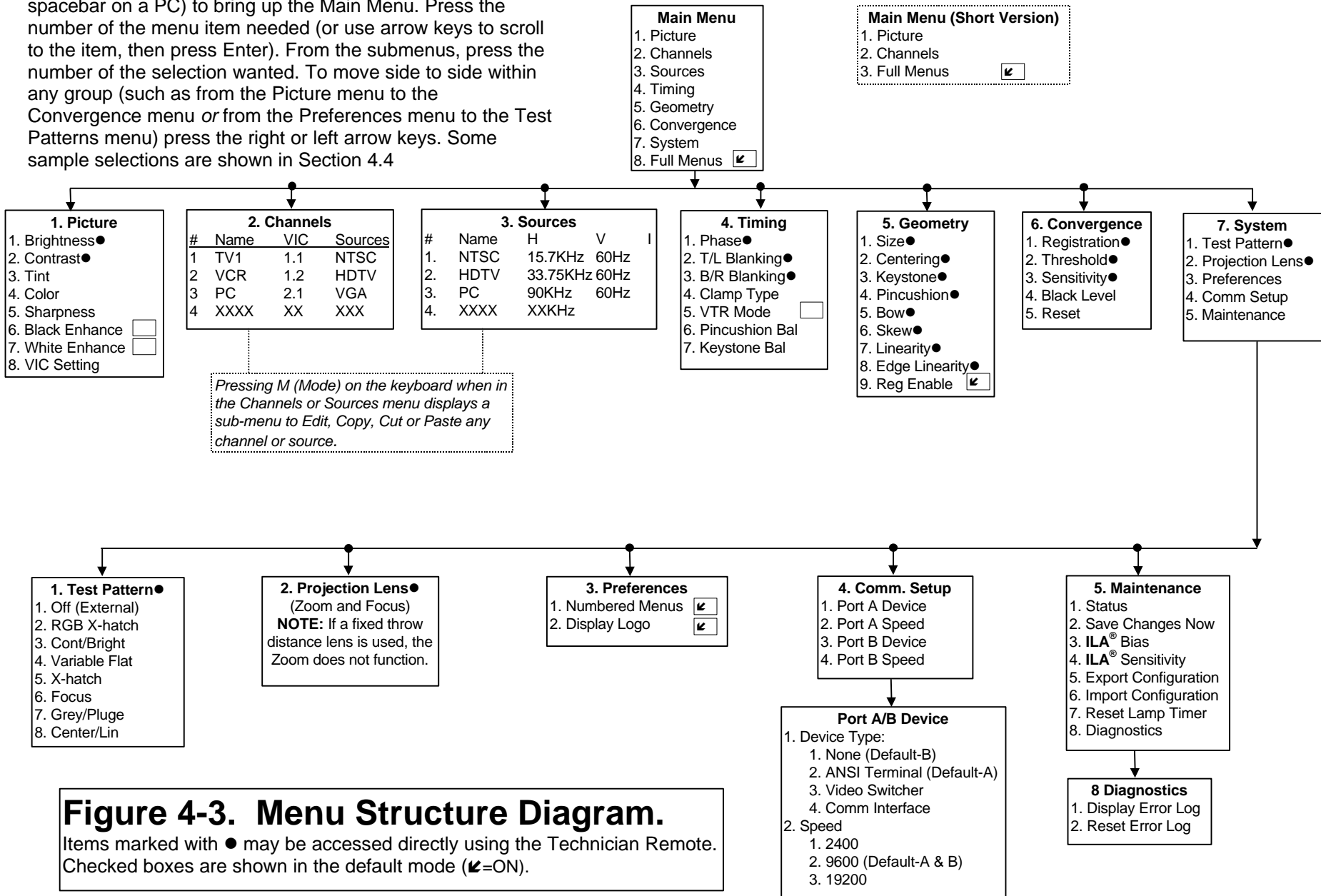
Figure 4-3 shows the Main Menu Structure and the submenus. For a description of each menu item see Section 4.9.

After becoming familiar with navigating the menu the next step is to select a channel. This is covered next in Section 4.6. Be sure that the channel selected has a source file set up to handle the type of video or graphic source to be viewed. Observe the list of sources on the selected channel to confirm this. See Section 4.6 and the Glossary for the meaning of the terms "channel", "source" and "source file".

If there is no source file on the selected channel to handle the source to be viewed, the proper source file may be attached from another channel to the selected channel. To do this refer to Section 4.7, "Attaching a Source". **NOTE:** VGA and Line Doubled Video sources should be on separate channels. The parameters for these two sources are very close and the Autoselect feature in the Model 200 will not be able to distinguish between them.

If there is no acceptable source file set up on any other channel to attach to the selected channel, a source file must be set up to handle the source to be viewed. The procedures for setting up source files are covered in Chapter 5.

**Navigating the Menu:** Press Menu on the Remote (or spacebar on a PC) to bring up the Main Menu. Press the number of the menu item needed (or use arrow keys to scroll to the item, then press Enter). From the submenus, press the number of the selection wanted. To move side to side within any group (such as from the Picture menu to the Convergence menu or from the Preferences menu to the Test Patterns menu) press the right or left arrow keys. Some sample selections are shown in Section 4.4



## 4.6 Selecting a Channel (Refer to Figure 4-4, below)

A channel is an Autoselect group of up to 20 source files (within any one VIC slot or port) set up to accept up to 20 different video sources. (**NOTE:** The term “source” and “source file” are often used interchangeably. A “source” is a specific type of video or graphics input such as NTSC or VGA. A “source file” is a memory data set in the projector set up to handle a specific video source.). Each source contains different geometric and convergence parameters (see Attaching a Source, below), thus source files must be set up to match each source the projector could receive.

In the procedures in Chapter 5 Timing, Geometry, Convergence, Black Level, Threshold, and Sensitivity are set up for a particular source. The resultant data is stored in a source file. If desired, the operator can then “attach” this source file and its geometric and convergence data to a different channel as shown in “Attaching a Source” below. (**NOTE:** The geometry and convergence settings should not be adjusted on any of these attached sources.

Adjustments made to geometry or convergence data on attached sources will alter the data on the original source and any other attached sources. A more detailed description on attaching sources is provided in the next section “Attaching a Source”).

Whenever the incoming video source changes in the active channel, the projector automatically selects and switches to the source file within that channel that most closely matches the incoming video source.

To select a channel from the menu system :

1. Press Menu to display the Main Menu.
2. From the Main Menu, press #2, Channels.
3. Use the number keys and press the number of the channel desired, then press Enter once to highlight (select the channel) and again to make the channel active or scroll the list with the arrow keys to the channel desired and press Enter.
4. If the selected channel contains source files for more than one video source, the source file that most closely matches the incoming video source will automatically be selected.

**NOTE:** If the channel number desired is known, it may be selected without using the menu system (press the number of the channel, then press Enter).

**Active Channel:** To determine what channel is **active** (on screen) press Enter, with no numbers preceding it, and the **active** channel number displays on the screen for 3

seconds (provided the Onscrn display mode is ON). In the Channels menu the **active** channel is shown with a **pointer** to the **left** of the number (as long as the **active** channel number is on the screen list).

**NOTE:** It is important not to confuse the **active** channel with the **highlighted** channel. The **active** channel is the channel that is on screen. The **highlighted** channel is the channel that has been scrolled to with the arrow keys or selected by pressing its number and Enter, but has not yet been made **active** by pressing Enter again. Pressing the channel number and Enter "**highlights**" the channel on the Channels list and pressing Enter again makes it "**active**" (on screen). Sources may be attached (see "Attaching a Source" below) to the **highlighted** channel, while another channel is **active**.

The **active** channel is displayed on the upper right of the Channels menu. An illustration of the Channels menu and **active/highlighted** channels is shown in Figure 4-4 below.

This column shows the Video Input Card being used for the channel and source. The first number is the VIC slot, the second number is the VIC port, and the third number is the switcher port, if any.

**Highlighted** channel-not selected yet. Move the highlight with arrow keys.

Pointer shows the **active** (on screen) channel, provided it is on the screen list. Pointer moves to another channel after the operator selects a new channel and

MAIN			
CHANNELS		CH 3 [SVGA2]	
#	Name	VIC	Sources
1	VTR-1	1.1	NTSC
2	CAM-1	1.2	NTSC
3	PC	3.1	VGA SVGA1 SVGA2
4	MAC	3.2	MAC33 MAC45
5	HD-LD	1.3.14	HDTV
6	CABLE	2.1	NTSC

Indicates **active** channel (3) and **active** source (SVGA2).

List of sources that Channel 3 is set up for.

Pointer shows **active** source (SVGA2) for Channel 3.

**Figure 4-4.** Channel List, showing **active** channel and source.

## 4.7 Attaching a Source (*Refer to Figure 4-5, below*)

A source is defined as a video input signal with a specific set of parameters such as horizontal/vertical scan rates, interlaced or noninterlaced scanning, and sync type/polarity. This section covers “attaching” a source that has been previously set up for a different channel.

The setup procedures for new sources are covered in Chapter 5. Briefly, when setting up a source file for a new video source, the operator connects the video source to the rear panel input jacks, selects the channel to receive the video source, names the channel to show the source type, selects the VIC slot and/or VIC port to handle that source (if the projector uses more than one VIC or a multi-port VIC), then follows the adjustment procedures in Chapter 5 to set up a source file to handle that specific source. Once a source has been set up, it can be “attached” to another channel.

To “attach a source” means that an original source and its geometry and convergence parameters are being used by another channel. The attached sources are using the *same* source files. *They are the same source files, not copies.* Geometry and convergence settings should not be adjusted on attached sources because all attached sources will then be altered by the same adjustment. This is only true for geometry and convergence. Timing and picture settings come into the attached source at the default levels and may be adjusted without affecting the original source or any other attached source. Two identical sources can be located in two different channels with two distinctly different picture settings for use with possibly different room environments. For example, different brightness and contrast settings could be used for the same source in two different channels, saving the time of repeatedly adjusting contrast and brightness.

It is possible to use one channels’ source file parameters as starting points to set up new sources in another channel. To do this, the first channel may be “copied” to a second channel. Follow the procedure in Section 5.12, “Backing up settings”. In this manner, each channel (groups of source files) can be customized to suit whatever purposes are needed.

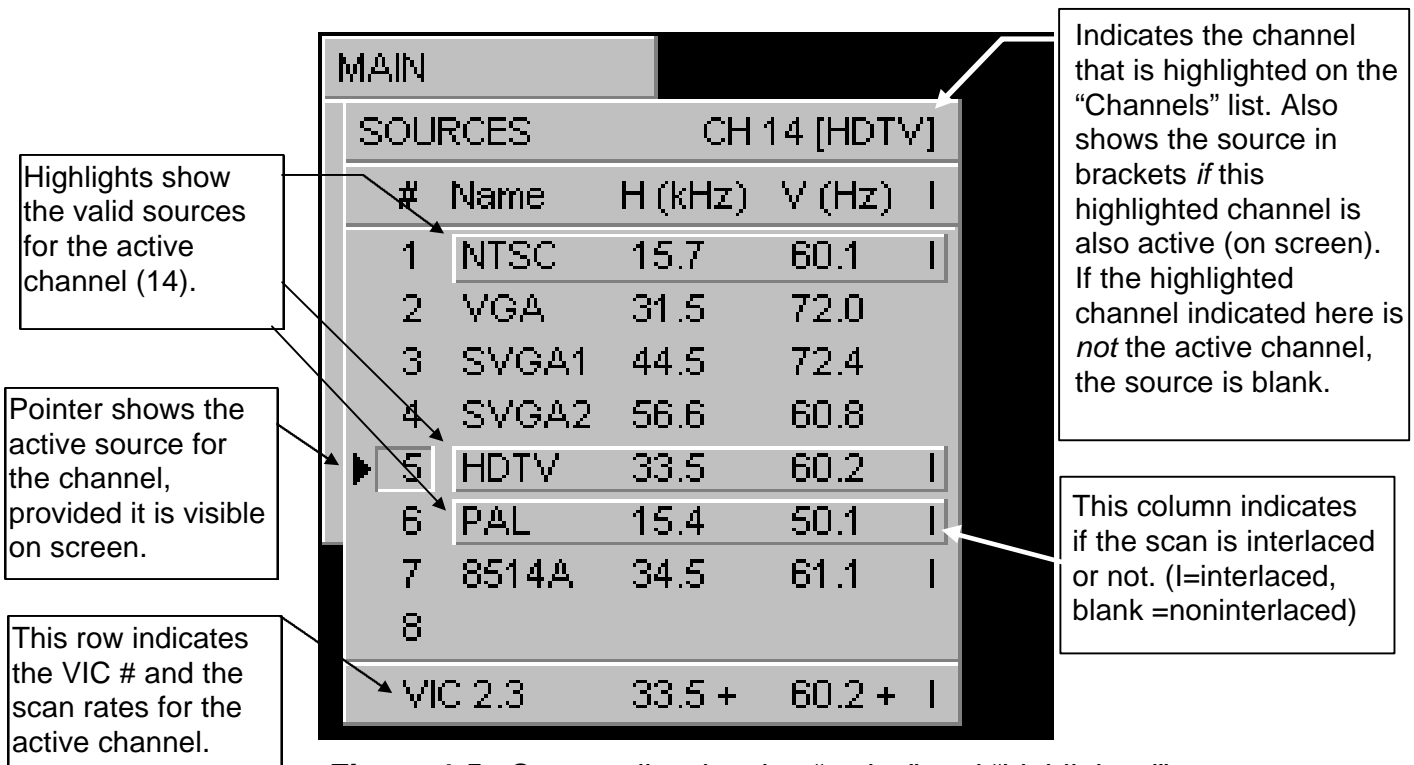
Each channel is capable of handling up to 20 different video sources. There are 99 channels (groups of source files) available. The maximum number of channel/source combinations is 200.

To attach a source to a channel:

1. Press Menu to display the Main Menu.
2. From the Main Menu select Channels.
3. From the Channels list, press the number of the channel to attach the source to. If the channel is not highlighted press Enter to highlight the channel. Do not

press Enter if the channel is already highlighted (this would make the channel “active”).

4. Press the right arrow key to move to the Sources list.
5. Use the arrow keys and scroll to highlight the source desired.
6. Press Enter. This attaches the highlighted source to the channel that is highlighted in the Channels list. Do not make any adjustments to geometry or convergence on these “attached” sources. Any adjustments will also alter the original source and other attached sources.



**Figure 4-5.** Sources list showing “active” and “highlighted” sources.

**Active Source:** The **active** source is the video source that the **active** channel displays on the screen. It is indicated by a pointer on the left in the Sources list in Figure 4-5 (provided the **active** channel and source are shown on the screen list). The **active** source is also shown on the Sources list in the upper right corner. The other **highlighted** sources shown are additional valid sources for the **highlighted** channel (14).

## 4.8 Picture Settings

To change picture settings:

1. From the Main Menu select #1, Picture.

2. Press the number of the selection to be adjusted.
3. Use the left/right arrow keys to increase or decrease the settings for Brightness, Contrast, Tint, Color, or Sharpness. Tint, Color, and Sharpness are active only for Composite (NTSC) or S-Video inputs. Contrast can be adjusted by individual color, if preferred. To do this, toggle the RGB key to highlight the color desired and use the left/right arrow keys to adjust. **NOTE:** Repeatedly pressing the RGB key toggles from RGB (all colors on screen) to Red then Green then Blue then back to all colors.
4. The Black and White Enhance feature is a toggle to enhance black and/or white detail. After selecting the proper levels for the picture settings in Step 3 above, toggle the Black Enhance and/or White Enhance ON (indicated by the checked box) and select whichever toggle level provides the best picture.
5. Accessing VIC Settings brings up a submenu that allows the operator to select which VIC to use when setting up a new channel/source (provided the projector uses more than one VIC).

## 4.9 Menu Item Definitions

This section defines the menu items available through the Main Menu and submenus.

### Main Menu

1. Picture--Displays picture adjustments and VIC settings.  
A small window contains the adjustment name and the current data value. When the value is highlighted the user may enter a new value directly.
  - (1) Brightness--Adjustment for picture brightness
  - (2) Contrast--Adjustment for picture contrast
  - (3) Tint--Adjustment for picture tint
  - (4) Color--Adjustment for picture color
  - (5) Sharpness--Adjustment for picture focus
  - (6) Black Enhance--Toggle to boost the black level. Default is OFF.
  - (7) White Enhance--Toggle to boost the white level. Default is OFF.
  - (8) VIC Settings--Video Input Card settings.
2. Channels--Displays the channel numbers, channel names, VICs, and some of the sources attached to

each channel. Pressing M (mode) provides the following sub-menu for editing purposes:

- (1) COPY--copies (without changing) the highlighted channel's name, VIC path, and list of sources into the paste buffer in preparation for pasting to another channel.
- (2) CUT--same as copy above except that the highlighted channel is reset to factory defaults (name is blank, VIC is unassigned and no source is attached).
- (3) PASTE--pastes the contents of the paste buffer into the highlighted channel.
- (4) EDIT--allows editing of the channel name and VIC. Right and left arrows move the cursor to the point for editing, pressing ENTER chooses the field to edit, up/down arrows or dialog boxes allow for changing the character or the input port. Pressing ENTER accepts the change.

3. Sources--Displays input sources, horizontal and vertical rates sync type/polarity, interlaced or noninterlaced scanning. Contains a submenu for editing, copying, cutting or pasting any source information in the same manner as the Channel list menu above. Indicates active source with a pointer. Highlights the sources that are attached to the channel that is highlighted on the Channel list.

4. Timing--Displays the timing menu and adjustments.

- (1) Phase--adjustment for picture phase.
- (2) T/L Blanking--adjustment for top/left blanking.
- (3) B/R Blanking--adjustment for bottom/right blanking.
- (4) Clamp Type--pick list for type of clamping preferred. Default is Back Porch.
- (5) VTR Mode--toggle for VTR on or off. The default for this setting is OFF.
- (6) Pincushion Bal--Balances the pincushion distortion equally on both sides or top and bottom so that the Pincushion adjustment can perform a proper correction.
- (7) Keystone Bal--Balances the keystone distortion equally on both sides or top and bottom so that the Keystone adjustment can perform a proper correction.

5. Geometry--Displays the following raster adjustments:

- (1) Size--value adjustment for width and height.

- (2) Centering--Value adjustment for red, green and blue, horizontal and vertical centering.
- (3) Keystone--value adjustment for left, right, top, and bottom keystone correction.
- (4) Pincushion--value adjustment for left, right, top, and bottom pincushion correction.
- (5) Bow--value adjustment for left, right, top, and bottom bow correction.
- (6) Skew--value adjustment for the red, green and blue horizontal and vertical center.
- (7) Linearity--value adjustment for red, green, and blue, vertical and horizontal linearity correction.
- (8) Edge Linearity--value adjustment for red, green, and blue, horizontal and vertical edge linearity correction.
- (9) Reg Enable--menu toggle to enable convergence (XY Registration). This box should be checked only when doing Geometry procedures and for specific maintenance by service personnel. The default is ON.

6. Convergence--Displays the following convergence parameters:

- (1) Registration--XY adjustment for red, green and blue.
- (2) Threshold--red, green, and blue adjustment for varying the brightness of the dark areas of the screen.
- (3) Sensitivity--red, green, and blue adjustment for varying the brightness of the bright areas of the screen.
- (4) Black Level--G2 adjustment for red, green, and blue.
- (5) Reset--menu for Registration, Threshold, and Sensitivity. Resets Registration to 128, Threshold to 64, and Sensitivity to 128. It is also color-selectable.

7. System--Displays the System menu and its six sub-menus as shown below:

- (1) Test Pattern--Provides selection of nine different test patterns as described in Section 5.2 in Chapter 5.
- (2) Projection Lens--value adjustment for zoom and focus.
- (3) Preferences--provides operator to select menus with or without numbers:

- 1). Numbered menus--toggle On or Off. The default is ON.
- 2). Display Logo--On or Off. The default is On and displays the HJT Logo at startup.
- (4) Comm Setup--menu selection for type of device for port A/B and baud speed. The defaults for Port A are ANSI Terminal and 9600 Baud. The defaults for Port B are None and 9600 Baud. If a Video Switcher is being used, it must be selected for either Port A or B from the Comm. Setup menu. Select a speed of 9600 Baud for Port A or 19200 for Port B.
- (5) Maintenance--provides a sub-menu below for maintenance purposes:
  - 1) Status--displays projector parameters such as; software revision, VIC types, channel information, lamp hours, projector (system controller) hours.
  - 2) Save Changes Now--saves all current parameters. This is usually done automatically once every hour and during a POWER-OFF sequence.
  - 3) ILA® Bias--red, green, and blue ILA® light valve bias adjustment. Must be done whenever light valve components are replaced or **ILA®** sensitivity is changed.
  - 4) **ILA®** Sensitivity--value adjustment for light valve bias frequency.
  - 5) Export Configuration--dialog for saving the projector's setup data to an external host for backup. This backup data can be imported whenever a System Controller board is replaced.
  - 6) Import Configuration--used with #5 "export" above.
  - 7) Reset Lamp Timer--dialog--confirmation.
  - 8) Diagnostics--provides a sub-menu for; Beam current measurement, display system error log, reset system error log, and display HW IIC status.

## 4.10 Short Menu Structure

Short Menus allow very limited menu selections and prevent inadvertent changes in setup data when several operators are using the remote.

To use short menus:

1. Press Menu to display the Main Menu.
2. From the Main Menu select Full Menus.
3. Press Enter to toggle to Short Menus. An X in the box indicates that Full Menus are selected.
4. The short menu is now displayed.
5. From the Main Menu press the menu number desired.
6. Press the item number desired.

For more information on the individual menu items, refer to the Menu Definitions in Section 4.9 above.

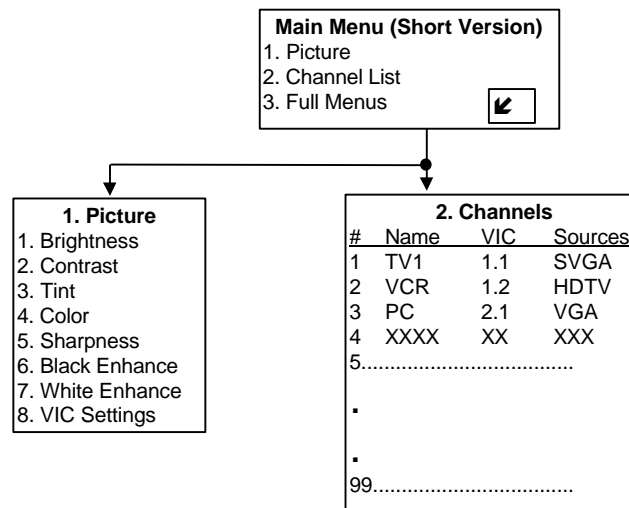


Figure 4-6. Short Menu Tree.

## 4.11 Keyboard/Remotes Command Equivalents

The Model 200 can also be controlled by a VT-100 terminal. If a VT-100 is not available, it can be emulated with a PC with Windows (or ProComm for DOS) as follows: Access Windows Program Manager, select TERMINAL, select the SETTINGS menu. From SETTINGS menu, select TERMINAL EMULATION. Verify DEC VT-100(ANSI) is selected. If not, select it. **NOTE:** A Null Modem

cable is needed to connect between the projector and the terminal. Table 4-2 shows the equivalent commands for the terminal and both remotes.

**Table 4-2. VT-100 Terminal and Remote Command Equivalents**

Action	Keyboard Input	Standard Remote Keys	Technician Remote Keys	Dec.	Hex.
Power OFF (All)	CTRL + F			6	6
Power ON (All)	CTRL + U			21	15
Power ON/OFF	CTRL-P	Power	Power	16	10
Power ON/OFF-Electronics only	CTRL + E			5	5
Power ON/OFF Lamp	CTRL + L			12	0C
Left Arrow	Left Arrow	Left Arrow	Left Arrow	27 91 68*	1B 5B 44*
Right Arrow	Right Arrow	Right Arrow	Right Arrow	27 91 67*	1B 5B 43*
Up Arrow	Up Arrow	Up Arrow	Up Arrow	27 91 65*	1b 5B 41*
Down Arrow	Down Arrow	Down Arrow	Down Arrow	27 91 66*	1B 5B 42*
Back out of menu	Esc	Escape	Escape	27	1B
Blanking	B		Blank	66	42
Bow, H & V	U		Bow	85	55
Brightness	I		Bright	73	49
Center, H & V (RGB)	P		Center	80	50
Change channel	Number + Enter	Channel # + Enter	Channel # + Enter	48-57	30-39 + 0D
Color	Y			89	59
Contrast (RGB)	C		Cont	67	43
Edge, H & V (RGB)	E		EdgeLin	69	45
Enter	Enter	Enter	Enter	13	0D
Escape	Esc	Escape	Escape	27	1B
Hide	F	Hide	Hide	70	46
Keystone, H & V	K		Key	75	4B
Lens adjust	A		Lens + Arrows	65	41
Linearity, H & V (RGB)	L		Lin	76	4C
Menu	Spacebar	Menu	Menu	32	20
Mode	M	Mode	Mode	77	4D
Numeric	0-9	0-9	0-9	48-57	30-39
Onscreen	O	Onscrn	Onscrn	79	4F
Phase	H		Phase	72	48
Picture sharpness	X			88	58
Picture tint	Z			90	5A
Pincushion, H & V	N		Pin	78	4E
RGB toggle	R	RGB	RGB	82	52
Size, H & V	S		Size	83	53
Test pattern display	T		Pattern	84	54
Skew, H & V (RGB)	W		Skew	87	57
Threshold	D		Thresh	68	44
Sensitivity	V		Sens	86	56
Registration	G		XYReg	71	47
Redraw Terminal Screen				124	7C

The Arrow keys are a sequence of Decimal or Hex numbers representing the sequence of Escape, Left Bracket, and A, B, C, or D depending on which arrow was pressed. The first number represents the Escape key, the second number represents the Left Bracket, and the third number represents the letter corresponding to the Arrow Key pressed.