Pointmaker
by Boeckeler

Pointmaker *PVI-X90*

Presentation System

User's Manual

Pointmaker® PVI™-X90

Presentation System

User's Manual

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SECTION ONE:
GETTING STARTED

INTRODUCTION

A Very Flexible Pointmaker

Powerful

The Pointmaker® PVI-X90 Presentation System by Boeckeler Instruments, Inc., combines the power of annotation with the features of a video scaler, switcher, and distribution amplifier. It converts incoming NTSC or PAL television-format video signals to outgoing non-interlaced computer video with higher scan rates. It handles the input of up to four different a/v components: e.g. document presenter, VCR, computer, DVD, camera, etc. Any one of those components can be easily selected for simultaneous display on up to six different computer monitors or projection systems. In addition, it supports up to ten different pointing/marking/controlling devices (digitizing tablet, touch screen, light pen, keyboard, mouse devices, etc.) for interacting with the displayed images.

Figure 1-1: Pointmaker Markings Over a Spreadsheet

Effortless Interaction

This Pointmaker model is especially powerful in classrooms, courtrooms or meeting environments where a number of people need to mark images during discussions or presentations. By locating controllers throughout the room and assigning a unique marker color to each, it's possible to achieve a smooth coordination of discussion and marking among all participants.

Making Your Point

Marker Multiplicity

The large variety of Pointmaker markers further enhances your ability to emphasize each point to an audience. To begin with, you can assign a variety of colors to the markers you create. Marker options include: varying line thicknesses (with or without drop shadows), text labels in multiple fonts and sizes, arrows or pointers of differing shapes and sizes. None of the markers affect the original images in any way. Markers actually exist on a clear layer above the image called an "overlay".

The figure below is a breakout of some digitizing tablet template commands, illustrating some of the marker options. Each item is available at the click of a button.

Pointers						Plain & Shadowed Line Styles			Background
↖	↗	↑	↓	·	+	Fine	Medium	Bold	**Source Video**
↙	↘	→	←	●	+	———	———	———	**Chalkboard**

Hide / Show Pointer	Clear All Markers	Clear Last Marker or Erase	Marker Colors					
Pointer On/Off	**Clear**	**Undo/Erase**						
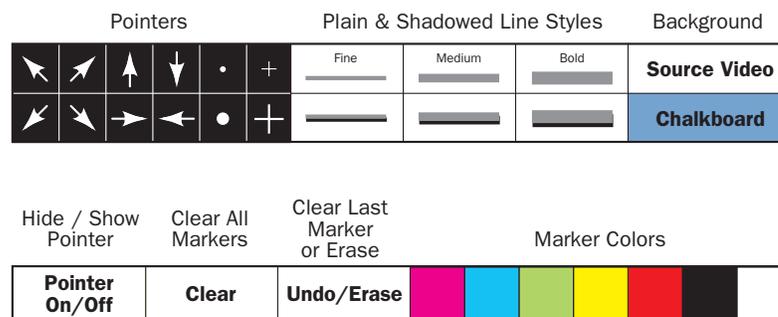
Figure 1-2: Breakout of PVI-X90 Template Commands

The keyboard controller supports some additional marker types: frames, a date/time stamp, and straight line drawing. Frames include boxes and circles. Frames can be sized in advance of a presentation, then used to frame or fill certain areas of the video image.

Marker Manipulation

One of the most powerful features for presentations using a Pointmaker is the ability to store up to 25 different marker overlays. They can be created and saved ahead of time, ready for quick recall during the presentation. For more on overlays, see *"Basic Marking Concepts" in "Section Five: Using Markers" on page 87*, and *"Manipulating Overlays" on page 107*.

As easily as the markers are created, so are they easily erased: either one at a time until the screen is clear, or all at once. And, if a video image is not desired, it's possible to quickly call up a solid background on the screen and use it like a chalkboard.

Ins and Outs

Making Connections

This diagram illustrates some of the possibilities available to you when you're ready to start connecting components to your PVI-X90.
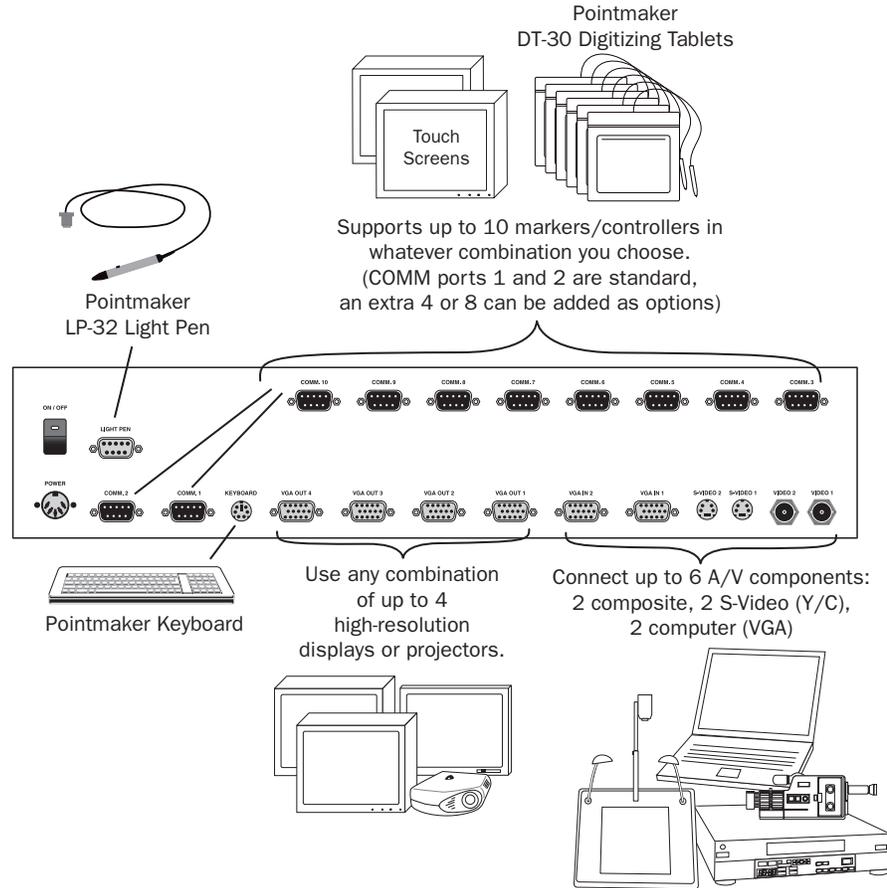
Figure 1-3: Component Connections

Audio Switching

The PVI-X90 handles audio switching through the optional COMM-4(A) expansion board. The 6 audio input ports follow the video inputs of the same name. The board also includes 4 controller ports, and a USB port for use as a command interface. *(See "Section Seven: Commands for RS-232 Control" on page 133)*
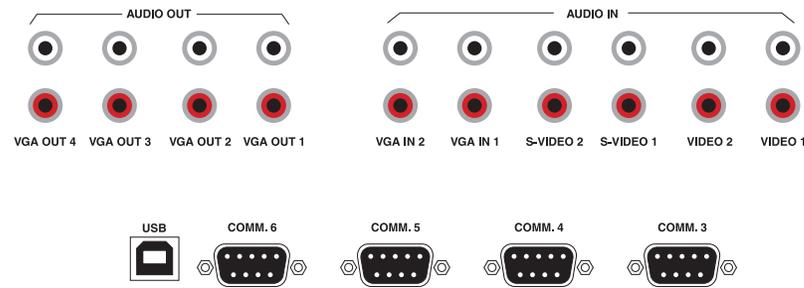
Figure 1-4: Ports of COMM-4(A)

Connection Overview

You can think of the component connections as falling into three groups:

- The video sources which will supply the Pointmaker with the images you want to mark over.

- The control devices which allow you to select and manipulate the markers. They also allow you to assign various display settings within the Pointmaker.

- The displays used to view the final output, such as monitors, projectors, big screens, LCD panels, etc.
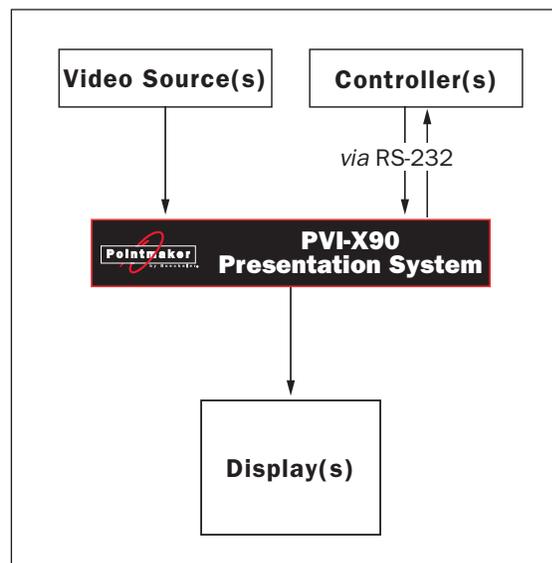
Figure 1-5: PVI-X90 Flow Diagram

In its base configurations, the drawing of lines and markers are controlled using a digitizing tablet (PVI-X90D), or standard light pen (PVI-X90L). Both

models include a keyboard. All PVI-X90 models are also compatible with most mouse devices and touch screens.

The Pointmaker PVI-X90 is compatible with many common computer standards for VGA, SVGA and Macintosh sources and displays, via HD-15 input/output connections. Scan rate compatibility ranges from 31.5 kHz to most SVGA scan rates up to 85 kHz. Most Macintosh scan rates are also handled, up to 48 kHz.

FEATURES

- **Video Scaling**

   Multiple formats of television-style interlaced video are changed to noninterlaced computer video.

- **Multiple Video Sources**

   Inputs for **2 composite, 2 S-Video, and 2 computer**.

   Supports **4:3 aspect ratio**.

   Easily switches from one input to another.

- **Multiple Video Outputs**

   Outputs for up to **4 displays** (monitors, panels, or projectors).

   Output resolutions: 640 X 480, 800 X 600, 1024 X 768, 1280 X 1024

   Picture quality adjustments: horizontal & vertical position and width, brightness, contrast, saturation, and hue.

- **Multiple Controllers**

   Inputs for up to **10 pointing/marking/controlling devices**.

- **Two types of marking tools**

   Freehand drawing tools in six different line options; fine, medium and bold, with or without a drop shadow.

   Pointers, including arrows, dots and cross hairs, which may be moved or anchored anywhere on the screen. Arrows may be preset to point in one of 8 different angles. Dots and cross hairs may be pre-selected in a small or large size.

- **Four additional marking tools in keyboard model**

   Straight line drawing mode allows underscoring, mapping or other-wise drawing a straight line. Three different line thicknesses are available: fine, medium and bold, with or without a drop shadow.

   Text can be typed on the video image in one of 6 different fonts, each available in one or more sizes. You can add a text background to fur-ther enhance the text on the video image.

Frames in the shapes of circles or boxes may be sized and positioned to call attention to an area within the frame. **Filled frames** allow you to block out portions of the video image, useful in classroom exams or in blocking out extraneous visuals.

An active date/time label can be placed on the video image to time an event.

- **The ability to position and anchor a combination of several markers and drawings on the screen at once.**

- **Options for clearing lines and pointers from an overlay all at once, one at a time (beginning with the most recently anchored marker), or selectively erased.**

- **Ability to attribute a different color to each marker on the screen. Up to 7 different colors are available for quick access. The color palette can be minimized by presetting selections in a palette menu.**

- **A drop shadow effect may be selected to further optimize the display of drawn lines.**

- **The ability to store up to 25 different marker overlays of Pointmaker markers so that presentations may be prepared in advance. You can scroll forward or backward a page at a time or enter an overlay number to quickly display the desired overlay using the keyboard or RS-232 commands.**

- **Compatibility with VGA, SVGA and Macintosh. (scan rates up to 85 kHz, Macintosh scan rates up to 48 kHz) PC compatibility includes many nonstandard video scan rates in Windows® 95/98. Connections in/out are HD-15 (high density).**

- **Sync generation allows the Pointmaker to automatically select the sync if no live video is desired. Instead of a live image, a solid background appears, ready to be used as you would use a whiteboard or chalkboard.**

- **Keyboard control provides you a quick way to select many of the menu options without having to go to the menu system. Instead, function keys provide choices for pointer type, background, marker colors, brightness levels, on-screen help, video source selection and more.**

- **Pen Proximity feature allows you to determine visibility of the active pointer as the pen is moved away from the tablet or screen. The pointer can be made to disappear as the pen is pulled away, or to remain on the video image, ready for positioning**

- **Brightness adjustment gives you the opportunity to set the brightness of the Pointmaker markers to coincide with the brightness level of the video signal, so that the markers are displayed optimally for standard video or for professional broadcasting.**

- **On-Screen Help to assist you in quickly setting up your presentations.**

PERIPHERAL DEVICES

Aside from whatever video input devices you select for use with your **PVI-X90**, peripherals for the Pointmaker fall easily into two categories:

- **Displays** - Big Screens, Projectors, LCDs, CRTs, etc.

- **Controllers** - Digitizing Tablets, Light Pens, Keyboards, Touch Screens, Mouse Devices, etc.

Boeckeler Instruments does not supply or sell display devices at the time of this writing. However, most VGA and higher resolution devices are supported. For information on display compatibility, see "Monitor Scan Rates" in the "Appendix" on page A-9. Remember that you can connect up to four different display devices.

We do offer a number of control devices for use with the **Pointmaker PVI-X90**. Some are included with certain models and some are sold separately. This section describes the basic operation of the most commonly used controllers. A complete list of commands for these controllers are found in "Quick Reference for Devices" in the "Appendix" on page A-5.

Digitizing Tablet

The *Pointmaker* **DT-30 Digitizing Tablet**, diagrammed below, comes standard with the **PVI-X90D**. In general, the tablet is used to draw, position pointers or make menu selections. The position and movements of the stylus (also called a pen) are represented on whatever display devices are activated. Additionally, most setup commands can be activated using the tablet rather than entering the menu system *(See "Menu Basics" on page 33)*.

Refer back to this section, if needed, for general instructions concerning the tablet's operation.
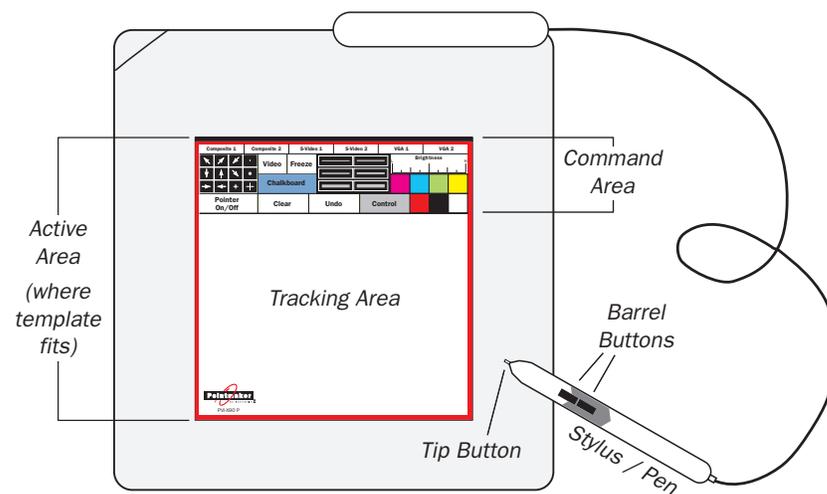
Figure 1-6: DT-30 Digitizing Tablet Overview

ACTIVE AREA

This is the area on the tablet that responds to the stylus. The template is placed here. This area measures 5" x 5" and includes the Command Area and the Tracking Area.

TRACKING AREA

This is the region within the tablet's Active Area that responds to the stylus movements. The Tracking Area corresponds to the screen area on the monitor or display. Pointmaker users draw and point with the stylus in the Tracking Area.
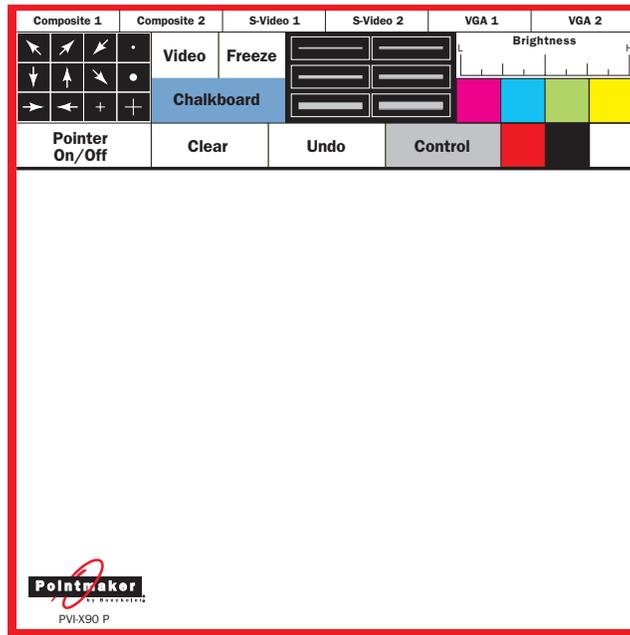
Figure 1-7: Sample Template for PVI-X90

COMMAND AREA

This is the top portion of the Active Area where Pointmaker commands can be activated. The PVI-X90 Template has image icons or words which stand for PVI-X90 commands and allow you to easily activate pointers, colors, and numerous other Pointmaker features.

TIP BUTTON

When pressed (clicked) on a Menu Strip icon, the Tip Button activates the function you select. When the Tip Button is pressed anywhere on the Tracking Area and dragged, pointing or drawing takes place.

BARREL BUTTONS

When clicked, this button anchors the active pointer, if a pointer is displayed.

BOTH BUTTONS

The Tip Button is used in combination with the Barrel Button to access the menu system where you can make selections not available from the tablet template. The menu is activated by pressing and holding the barrel button, while pressing the tip of the stylus into the drawing area for about five seconds. This feature is disabled if the keyboard is connected.

Marker and Cursor Movement

Unlike a mouse controller, a tablet allows users to make drawings and place pointers with absolute positioning. Absolute positioning means that the position of the stylus on the tablet surface corresponds directly to the position of the pointer on the screen. For example, if you place the stylus in the lower-left corner of the tablet active area, the active pointer will "jump" to the lower-left corner of the screen.

A complete list of commands for this controller is found in "Quick Reference for Devices" in the "Appendix" on page A-5. Marking is described in "Section Five: Using Markers" starting on page 85.

Light Pen

The Pointmaker LP-32 Light Pen, diagrammed below, comes standard with model PVI-X90L, but is also sold separately by Boeckeler Instruments. In general, the light pen is used to draw, position pointers or make menu selections by pressing it against a CRT display screen. It can also be used to access the menu system. The position and movements of the pen are represented on one or more of the connected display devices.

Refer back to this section, if needed, for general instructions concerning its use.

Barrel Button
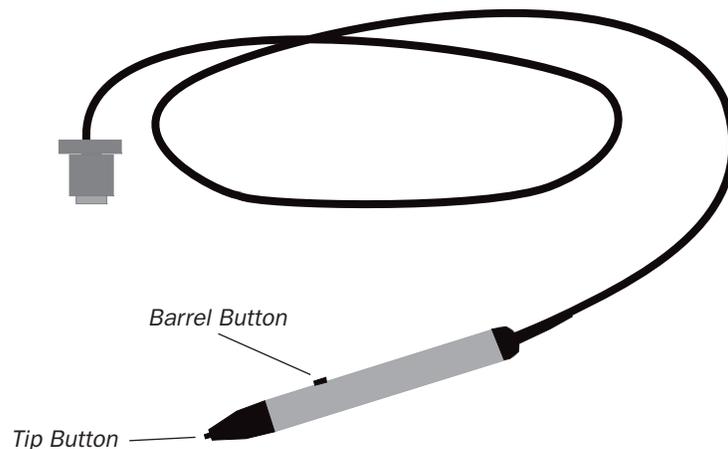
Tip Button

Figure 1-8: Pointmaker Light Pen Controller

TIP BUTTON

When the *Tip Button* is lightly traced (without the tip depressed) across the screen of the monitor, it's possible to move active (positionable) pointers to the location of your choice. Pointers are anchored by pressing the *Tip Button* into the screen and releasing. Freehand drawing is accomplished when the *Tip Button* is pressed into the screen while moving it, emulating the actions of a writing utensil.

BARREL BUTTON

When *clicked*, this button erases or undoes the most recently anchored marker. When *pressed*, this button clears all markers.

BOTH BUTTONS

The *Tip Button* is used in combination with the *Barrel Button* to either change the color of a marker or access the **menu system.** Menu access from the light pen is disabled if the keyboard is connected.

Marker and Cursor Movement

When operating the Pointmaker with the light pen controller, the active pointer may be moved anywhere on the screen by moving the light pen across the screen as one would move a writing utensil. The pointer or drawing will follow this movement.

Calibration of the light pen sets the margin (or offset) between the point that the light pen touches the screen and the point that drawing takes place. A greater offset allows presenters to draw without obscuring the view with their hand or finger. Choosing no offset causes the drawing to appear directly under the pen tip. Calibration is necessary each time a new monitor or display is connected to the Pointmaker. It can also be selected from the menu system any time you wish to re-calibrate. For calibration instructions, see *"Controllers Requiring Calibration" in "Section Four: Comm Port Devices Menu" on page 71*

A complete list of commands for this controller is found in "Quick Reference for Devices" in the "Appendix" on page A-5. Marking is described in "Section Five: Using Markers" starting on page 85.

Keyboard Controller

The Pointmaker KB-30 Keyboard, diagrammed below, comes standard with all **PVI-X90** models. It can be used to select, type, position, save and erase Pointmaker markers, along with changing their appearance. When the keyboard is attached, it becomes the only way to access the menu system.

Refer back to this section, if needed, for general instructions concerning its use.
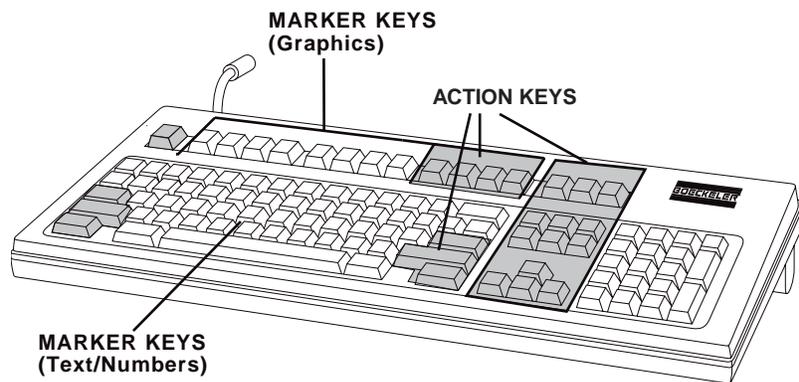
Figure 1-9: Pointmaker Keyboard Controller

MARKER KEYS

These keys allow operators to select markers and the appearance of those markers. Marker keys include

- **POINTERS [F1]**
- **LINE STYLE [F2]**
- **FRAMES [F3]**
- **SIZE FRAMES [F4]**
- **STRAIGHT DRAW [F5]**
- **FONTS [F6]**
- **TEXT BKGRND ON/OFF [F7]**
- **SHOW DATE/TIME [F8]**

Auxiliary functions associated with several of these keys are activated by pressing **CTRL + the marker key**. Auxiliary functions are:

- **POINTER ON/OFF [CTRL + F1]**
- **FONT SIZE [CTRL + F6]**
- **SET DATE/TIME [CTRL + F8]**

TEXT KEYS

Text and number keys on the Pointmaker keyboard controller are used to create labels or markers. Upper and lower case characters are available. Each line of type may be freely positioned until it is anchored *(See "Active & Anchored Markers" in "Section Five: Using Markers" on page 87)*.

ACTION KEYS

Action keys perform an action other than marking, such as positioning and anchoring a marker, changing the color of a marker, turning the Chalkboard on or off, entering the menu system or Help, moving to another marker overlay, or erasing a marker. These keys include

- **HELP [ESC]**
- **CHANGE COLOR [F9]**
- **CHANGE BRIGHTNESS [F10]**
- **CHALKBOARD ON/OFF [F11]**
- **OVERLAY ON/OFF [F12]**
- **MENU SYSTEM [PRINT SCREEN]**
- **GO TO OVERLAY # [SCROLL LOCK]**
- **ENTER KEY**
- **DROP [INSERT]**
- **ACTIVE MARKER OFF [HOME]**
- **PREVIOUS OVERLAY [PAGE UP]**
- **UNDO [DELETE]**
- **CLEAR ALL [END]**
- **NEXT OVERLAY [PAGE DOWN]**
- **CTRL**
- **SHIFT**
- **POSITIONING KEYS (LEFT, RIGHT, UP, AND DOWN).**

Marker and Cursor Movement

The POSITIONING (arrow) keys are the heart of movement when using the keyboard as a controller. The "active" markers it creates "float" above the overlay and may be positioned vertically by pressing the up and down keys, or horizontally using the right and left keys. Once the marker is where you want it, it is anchored on the overlay by pressing the DROP [Insert] or ENTER key.

POSITIONING keys are also used for sizing frames before they are anchored. You can also use them to navigate menus.

A complete list of commands for this controller is found in "Quick Reference for Devices" in the "Appendix" on page A-5. Marking is described in "Section Five: Using Markers" starting on page 85.

Touch Screen

The touch screen, diagrammed below, is not supplied or sold by Boeckeler Instruments. Most touch screens on the market are compatible with the Pointmaker PVI-X90. It is a very popular and intuitive control device.

Some display devices have integrated touch screens. It's also likely that you can attach a touch screen to a display device you currently own. If you wish to use one with your Pointmaker, check with your dealer or contact Boeckeler Instruments directly for information regarding compatibility.

In general, the touch screen can be used to draw, position pointers or make menu selections by touching or dragging your finger on the screen. There are also five command areas which will activate Pointmaker functions when touched.

Refer back to this section, if needed, for general instructions concerning its use.
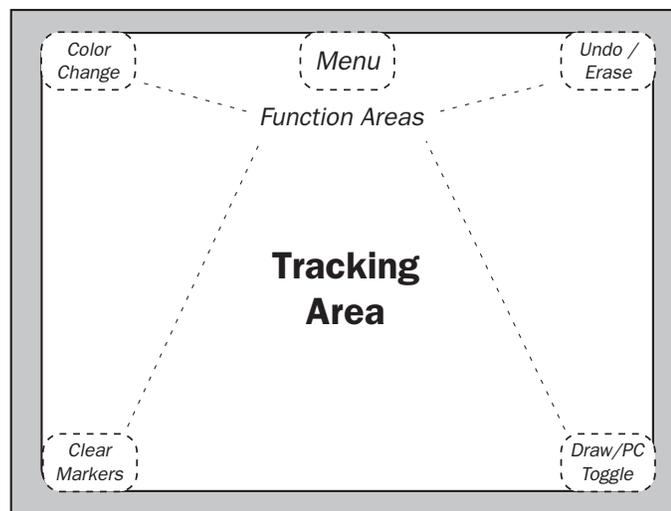
Figure 1-10: Touch Screen Controller

TRACKING AREA

The area on the touch screen where you draw and point using your finger or other pointer.

FUNCTION AREAS

The regions on the touch screen that, when tapped, activate a function. Tapping the upper-left corner changes the color of the next marker. Tapping the top center of the screen activates the menu system (disabled if the keyboard is attached). Tapping the upper-right corner will undo/erase the most recent marker. Tapping the lower-right corner will switch between drawing and

controlling a connected PC using the PVI-PC20 software. *(See "Section Six: PVI-PC20 Software Configuration and Use" on page 111)* Tapping the lower-left corner clears the screen of all markers.

Marker and Cursor Movement

When operating the Pointmaker with a touch screen, the pointer will be displayed and anchored any time you tap the screen (unless the pointer is disabled). A pointer can't be repositioned using the touch screen; however, it can be cleared or erased from the screen. Drawing takes place when you press a finger on the Tracking Area of the screen and drag across it. Menu selections are made by tapping the menu selection you desire.

Calibrating the touch screen enhances the intuitive feel of drawing on the display and should be done upon the first installation and whenever a new touch screen or monitor is used. *(See "Controllers Requiring Calibration" in "Section Four: Comm Port Devices Menu" on page 71)*

A complete list of commands for this controller is found in "Quick Reference for Devices" in the "Appendix" on page A-5. Marking is described in "Section Five: Using Markers" starting on page 85.

Mouse-type Devices

Numerous other drawing devices are compatible with the Pointmaker PVI-X90 Presentation System. They fall into the general categories of mouse controllers, trackballs, and wireless remote control devices. Boeckeler Instruments does not supply or sell any of these products. These devices may be used like a writing utensil to draw, position pointers, or move a cursor by "dragging" the device across a mouse pad or (in the case of remote controls) in midair when aimed at the display.

The diagram and definitions listed below are generalizations for how the device might function connected to the Pointmaker. Refer back to this section, if needed, for general instructions concerning their use.

Left Button

Right Button

Trackball
(underneath)
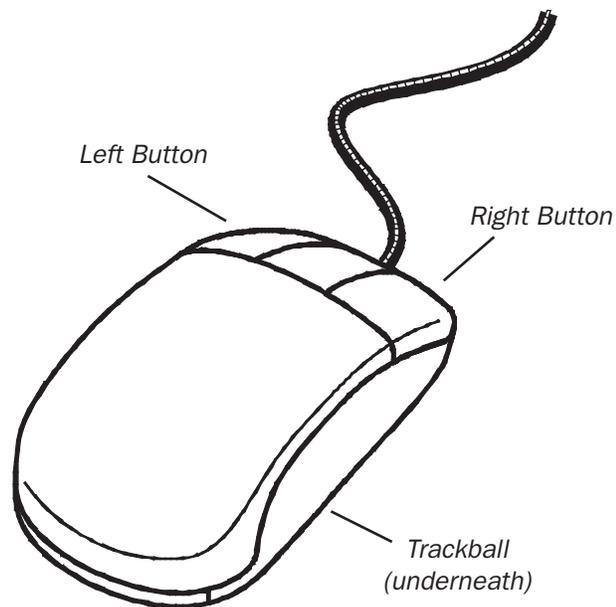
Figure 1-11: Mouse Device

There are so many of these types of devices that compatibility is probably best determined by simply trying the device. If it can be used as a mouse-type device on a personal computer, it is likely to work with the Pointmaker.

LEFT OR FIRST BUTTON

When *clicked*, the *Left* or *First Button* anchors pointers on the screen at the point they were positioned. Freehand drawing is accomplished when this button is pressed down while continuing to write or draw with the device across a smooth surface or in midair (in the case of a remote control).

RIGHT OR SECOND BUTTON

When *clicked*, this button erases the most recently anchored marker. When *pressed*, this button clears the screen entirely of markers.

BOTH BUTTONS

The two buttons can be used in combination to either change the color of a marker or access the ***menu system.*** Menu access from the mouse device is disabled if the keyboard is connected.

Marker and Cursor Movement

When operating the ***Pointmaker*** with the mouse device, the cursor or active pointer may be moved anywhere on the screen by moving the device's *track ball* or by moving the remote control in midair. The active pointer or cursor will move respectively. For example, "dragging" the mouse to the left on the mouse pad, rotating a track ball to the left or aiming the remote control to the left of the remote receiver will correspondingly move the pointer to the left on the screen. Directing the device to the right while drawing will draw a line to the right.

A complete list of commands for this controller is found in "Quick Reference for Devices" in the "Appendix" on page A-5. Marking is described in "Section Five: Using Markers" starting on page 85.

INSTALLATION

Installation of the Pointmaker PVI-X90 can be divided into the following four areas:

• **Connect Video Sources (composite/S-Video, computer)**

• **Connect Control Devices**

• **Connect Displays (monitors and/or projectors)**

• **Power Up (leaving PVI-X90 to last)**

Connecting Video Sources

The PVI-X90 supports video input from up to six different sources. (2 composite, 2 S-Video, and 2 computer). For these procedures, refer to *Figure 1-12:, "Cutaway of back panel showing video input connectors." on page 26*.

Connecting video sources for NTSC/PAL composite or S-Video (Y/C):

Four of the six possible video input connections are allocated to NTSC/PAL composite or to S-Video.

NOTE: Make all connections before applying power.

If connecting Composite Video:

1.   **Use a BNC cable to connect to a port labeled VIDEO 1 or 2.**

If connecting S-Video:

1.   **Use an S-Video cable to connect to a port labeled S-VIDEO 1 or 2.**
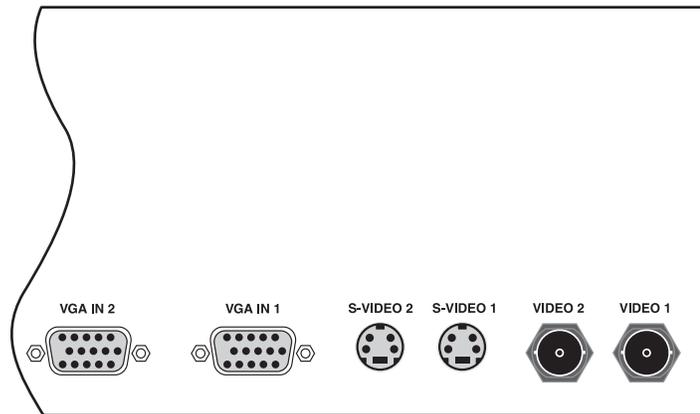
Figure 1-12: Cutaway of back panel showing video input connectors.

<u>**Connecting a computer source:**</u>

NOTE: Make all connections before applying power.

1. **Using a VGA cable, connect the Pointmaker VGA IN 1 or VGA IN 2 input connector (15-pin HD) to the monitor output port on the computer.**

    NOTE: If connecting a Macintosh, consult your Macintosh Users Manual for instructions concerning what cable is needed. The Pointmaker HD-15 VGA IN/OUT ports are female.

Connecting Audio (requires COMM-4(A) board)

The optional COMM-4(A) board adds audio switching capability to the PVI-X90. Simply connect the corresponding audio source for each video source you are using. The audio input signal will follow the video signal.
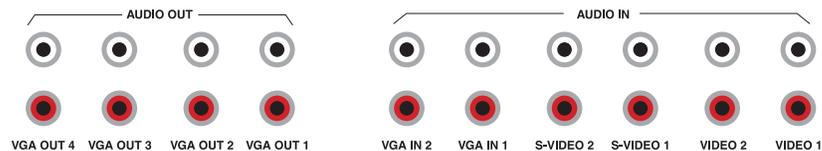
Figure 1-13: Audio Ports (optional)

Connecting audio inputs and outputs:

1. **Using a stereo audio cable (with RCA connectors at both ends), make connections from the audio ports of your video source to the matching Audio Input connectors on the back of the PVI-X90.**

   For example, use the Audio Input connectors labeled S-Video 1 to match the video source connected to the Video Input port labeled S-Video 1.

2. **Using a stereo audio cable (with RCA connectors on at least one end), make connections from the Audio Out ports to the matching video output display device, an audio amplifier, etc.**

   The Audio Out connectors carry the audio from whatever audio source is selected.

   If you deactivate a Video Output, it's corresponding Audio Out will be muted. *(See "Activating/Deactivating Video Outputs for Video Sources" in "Section Three: Display and Audio Menus" on page 58)*

Connecting Control Devices

The PVI-X90 allows up to 12 different control devices to be attached, including a keyboard and light pen. The following steps describe how to set up some of the most popular devices. For help in locating connectors on the Pointmaker, refer to *Figure 1-14:, "Cutaway example of back panel, showing controller connectors." on page 28*.

NOTE: **Be sure the Pointmaker is powered down before connecting or disconnecting any controllers.** It will automatically detect the controllers installed upon power up. If users change controllers or add a new controller, they will need to power down, install the new controller(s), then power up.
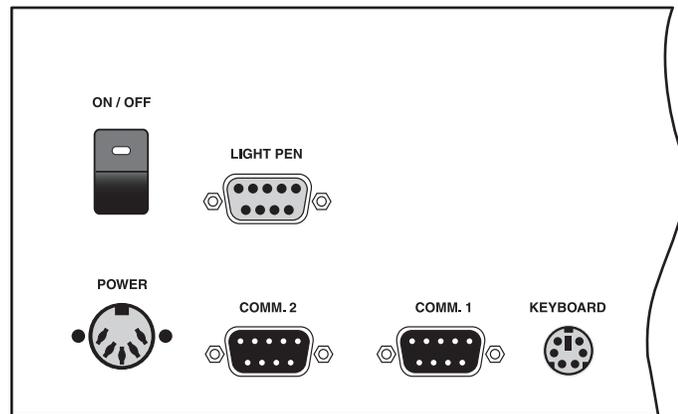
Figure 1-14: Cutaway example of back panel, showing controller connectors.

Connecting the KB-30 Keyboard:

NOTE: Make all connections before applying power.

NOTE: If you are connecting both the keyboard and the digitizing tablet, skip these instructions and proceed to the next section for connecting a digitizing tablet.

1. **Connect the Pointmaker keyboard cable to the KEYBOARD port on the back of the Pointmaker.**

    This is a female PS/2 port.

Connecting a DT-30 Digitizing Tablet:

Refer to *Figure 1-14:, "Cutaway example of back panel, showing controller connectors." on page 28* for help in making these connections.

1. **Connect the stylus to the digitizing tablet.**

2. **Using the RS-232 cable provided with the digitizing tablet, connect the female 9-pin connector to a COMM port on the back of the Pointmaker.**

3. **Connect the power cable (which runs off the tablet cable) to the keyboard adapter cable provided with the digitizing tablet.**

    There is only one way to plug in these connectors.

4. **Connect one end of the keyboard adapter cable to the female KEYBOARD connector on the back of the Pointmaker (for power).**

NOTE: If the keyboard is also being attached, connect the other end of the keyboard adapter cable to the Pointmaker keyboard. The extra cable that runs off the keyboard adapter cable is extraneous for applications where the Pointmaker keyboard is not connected.
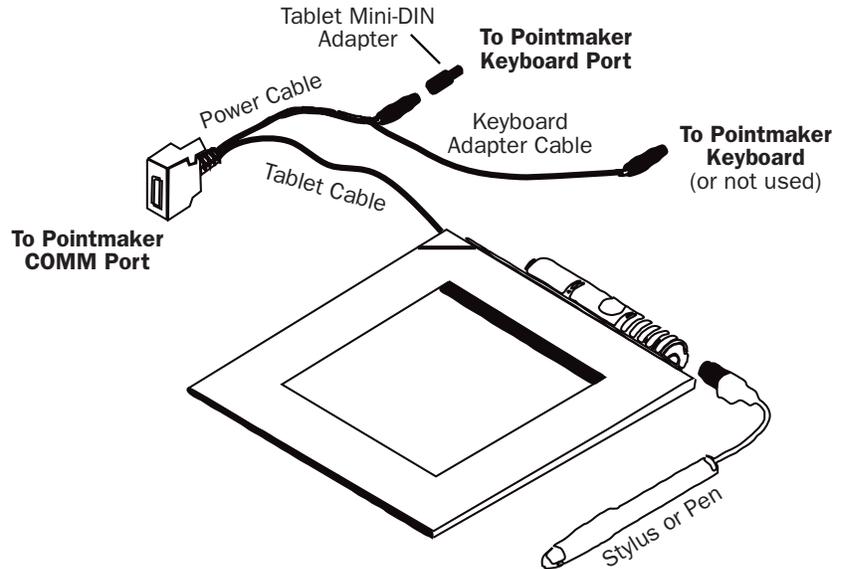
Figure 1-15: Connections for the Pointmaker Digitizing Tablet

Connecting the LP-32 Light Pen:

NOTE: Make all connections before applying power.

1. **Connect the light pen cable to the LIGHT PEN port on the back of the Pointmaker.**

    NOTE: The light pen should be calibrated upon first installation, and then anytime a new monitor is to be used with the light pen. *(See "Controllers Requiring Calibration" in "Section Four: Comm Port Devices Menu" on page 71)*

Connecting a Touch Screen

NOTE: Make all connections before applying power.

Upon first power up, or whenever a new monitor is connected, the touch screen should be calibrated.

NOTE: If the touch screen is to be your only or first control device, it's important to calibrate it at start up. Be sure to review *"Controllers Requiring Calibration" in "Section Four: Comm Port Devices Menu" on page 71* before you do the initial power up.

1. **Connect the RS-232 interface to a COMM port on the back of the Pointmaker.**

    As indicated in the diagram below, there will also be a video connection for the monitor.
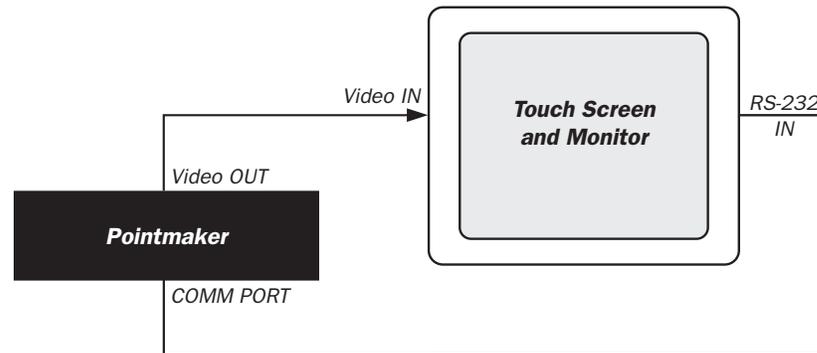
Figure 1-16: Typical Touch Screen Connections

NOTE: It is suggested that the touch screen not be operated concurrently with a light pen on the same monitor.
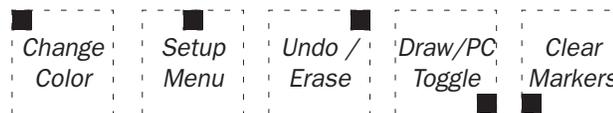
*Menu System is disabled if keyboard is attached.

Figure 1-17: Touch Screen Labels

If desired, copy the touch screen labels above, cut them out and affix them to the corresponding corners of the touch screen. This may help presenters unfamiliar with touch screen functions. Each label identifies the function of its assigned corner (the filled block in the corner of each square identifies the corner of the monitor where it should be placed).

NOTE: Stickers of touch screen labels are available from Boeckeler Instruments at (800) 552-2262 or (520) 745-0001.

Connecting a Mouse Device:

1. **Using the 9-pin adapter provided, connect the mouse pen/device cable to a COMM port on the back of the Pointmaker.**

<u>**Connecting a PC for Use with the PVI-PC20 Software:**</u>

1. *(See "Connecting the PC to the Pointmaker" in "Section Six: PVI-PC20 Software Configuration and Use" on page 115)*

Connecting Displays

The **PVI-X90** supports up to 4 high-resolution display devices, including CRT monitors, LCD panels, and projectors.
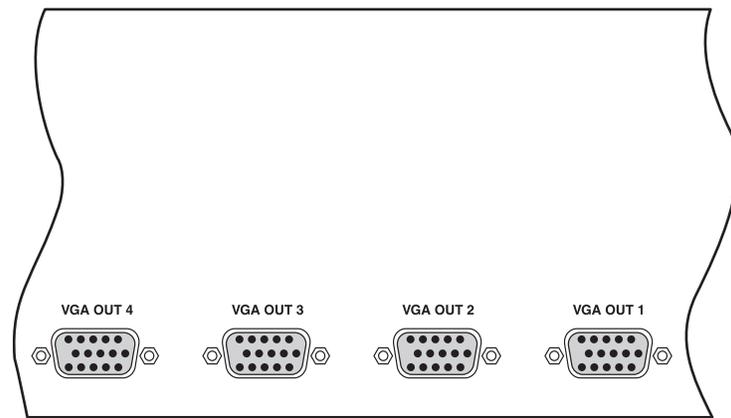
Figure 1-18: Cutaway of back panel showing video output connectors.

<u>**Connecting Monitors and/or Projectors:**</u>

NOTE: Make all connections before applying power.

1. **Using a VGA cable, connect one of the Pointmaker VGA OUT connectors (15-pin HD) to the input connector on the display (computer monitor or LCD projector).**

    On the power up procedure which follows, the Pointmaker will automatically sync with any installed monitors. If any monitors are added for a presentation, turn off the Pointmaker, connect the new monitor, then power up.

    NOTE: If connecting a Macintosh, most users will need to make this connection using a DB-15 to HD-15 cable. The Pointmaker HD-15 VGA IN/OUT ports are female.

ACTIVATION

Power Up

1. **Plug the power cord of the inline power supply into the back of the Pointmaker and then into any grounded outlet.**

2. **Plug the power cords from any video source(s), controller(s), and display(s) into any grounded outlet.**

3. **Turn on each of the connected units and then press the power button on the front panel of the Pointmaker.**

   NOTE: In order for the **Pointmaker** to properly sync with the video signals, the sources should be turned on first.

   After a moment, the display will show a video image. A copyright message will briefly appear. This is followed by port initialization. After initialization, users will be presented with a marker overlay displaying any previously anchored markers.

   NOTE: If no video sources are connected, the screen will display SEARCHING... until you either connect a video source or enter the Menu System and select CHALKBOARD as your background*(See "Selecting a Marking Background" in "Section Three: Display and Audio Menus" on page 53).*

   If this process is different for you, recheck installation or call Boeckeler Instruments for service at *(800) 552-2262 or (520) 745-0001.*

   NOTE: To bypass port initialization, press ESC.

Menu Basics

If the keyboard is installed, it is the only way you can enter the menu system. If the keyboard is not installed, you can access the menu system from one of the other control devices.

Default User Settings

If there are settings that you wish to use frequently, they can be saved as user defaults.

1. **First, make your selections for the settings you wish to save.**

2. **Re-boot the unit using the CTRL-ALT-DEL key command or cycle the power with the power switch.**

3. **When you see the Copyright screen during the boot process, press CRTL-ALT-ENTER(on the number pad) to save your personal defaults.**

   The screen will acknowledge that the settings have been saved.

4. **The settings can be recalled at any time by pressing CTRL-ALT-PgDn(on the number pad).**

Activating the Menu

Keyboard: Press Menu System[Print Screen] key.

> MAIN MENU
> _____
> ANNOTATION
> DISPLAY
> AUDIO
> COMM PORT DEVICES
> HELP
> EXIT MENU

Figure 1-19: PVI-X90 Main Menu

Digitizing Tablet: Press and hold the Barrel Button, then the Tip Button on the drawing area. Keep both pressed for about 5 seconds.

   NOTE: Press the tip button soon after the barrel button, or the PVI-X90 may interpret the barrel button press as a "clear" command.

Light Pen: Press Barrel Button, then Tip Button, pressing both together for about 5 seconds.

   NOTE: Press the tip button soon after the barrel button, or the PVI-83 may interpret the barrel button press as a "clear" command.

Touch Screen (or White Board): Tap upper center zone.

Mouse Device: Press Right (Second) Button, then Left (First) Button, pressing both together for about 5 seconds.

Making Menu Selections

Once the menu system is displayed, you can make selections from it to navigate to the option(s) you wish to change. A selection from the Main Menu causes a submenu to appear next to it. A selection from the submenu displays a second submenu of choices based on the selection you make. The entire menu system is an outline format that allows you to "drill down" to the specific option you wish to change. Whenever the Main Menu is visible, you can select directly from it to activate a different branch of submenus.

Digitizing Tablet: Move pen tip lightly across the active area of the tablet until your selection is highlighted. Push the tip in until your option is selected.

Light Pen: Click pen tip on screen over the option you want to select.

Keyboard: Use arrow keys to move to your selection and press the Enter key.

Touch Screen (or White Board): Tap the screen over the option you want to select.

Mouse Devices: Click Left Button on your selection.

ANNOTATION MENU
POINTERS
ERASE METHOD
LINE STYLE
COLOR PALETTE
BRIGHTNESS
PEN PROXIMITY
ENABLE POINTER TOGGLE

Figure 1-20: Sample Submenu (Annotation)

Exiting Menus

Exit a submenu by selecting any option in the Main Menu.

Exit the Main Menu by selecting EXIT.

Built-in Help Messages

The Pointmaker Help Menu that is accessed in the menu system offers operational help for auxiliary controllers such as the digitizing tablet, light pen, mouse device, and touch screen plus some more generalized help information. Keyboard help is accessed directly from the keyboard by pressing the **HELP [Esc]** key. If presenters elect to use a hard copy version of help instead, a master for index card-sized "*Quick Notes*" is provided at the conclusion of this section.

Accessing Help Messages

1. Activate the Main Menu.

2. Select the HELP option.

```
                HELP MENU

              LIGHT PEN

              MOUSE PEN

            REMOTE CONTROL

           DIGITIZING TABLET

            TOUCH SCREEN

         GENERAL INFORMATION
```
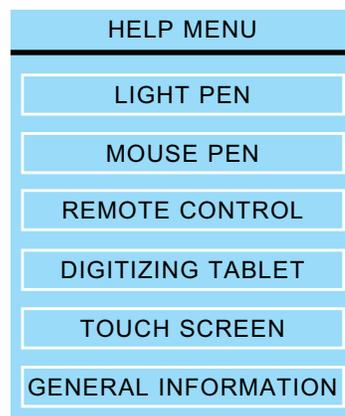
Figure 1-21: Help Menu

The Help Menu appears.

3. In the Help Menu, select the desired option.

Choosing the DIGITIZING TABLET option, for example, will display help messages that specifically pertain to tablet operating procedures.

4.   **In the Help Submenu, select the desired help topic.**

The Main Menu and Help Submenu will disappear, and the selected
Help Message will appear on-screen.

NOTE: The GENERAL INFORMATION option in the Help Menu
features topics that are not dependent upon controller operation.

5.   **To exit a help message, follow the simple exit instructions displayed in
each help message.**

You will be returned to the Help Submenu.

6.   **To back up one menu from the Help Submenu, select the PREVIOUS
MENU option.**

7.   **To exit all help menus, select any option in the Main Menu.**

Accessing Keyboard Help Messages

The keyboard must be attached for this help function to operate.

1.   **Press HELP [Esc], followed by the function key for which you desire
help.**

The Help Menu corresponding to the function key pressed will
appear on-screen.

2.   **To exit the help press ENTER.**

PVI-PC20 Software Installation (PC only)

*(See "Installing the PVI-PC20 Software" in "Section Six: PVI-PC20 Software
Configuration and Use" on page 115)*

SECTION TWO: ANNOTATION MENU

ANNOTATION SETTINGS

This section describes all of the options available in the Annotation Menu. Also included, when applicable, are instructions for making the same selections using other controllers.

> NOTE: Keep in mind that when the keyboard is attached, it becomes the **only** way to access the menu system. However, once the menu is activated, other controllers (tablet, light pen, etc.) can make selections from it.

Instructions for operating the menu system are covered earlier in this manual. *(See "Menu Basics" in "Section One: Getting Started" on page 33)*

Pointers

There are several ways to select a pointers: from the tablet template, keyboard, or menu system. Instructions for using the pointers are covered in detail in *"Section Five: Using Markers" starting on page 85*.

1.　**Activate the menu system.**

   (See "Activating the Menu" in "Section One: Getting Started" on page 34)

   The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2.　**Select Annotation.**

ANNOTATION MENU
POINTERS
ERASE METHOD
LINE STYLE
COLOR PALETTE
BRIGHTNESS
PEN PROXIMITY
ENABLE POINTER TOGGLE

Figure 2-1: Annotation Menu

The Annotation menu appears.

3. **Select the POINTERS option.**

POINTERS
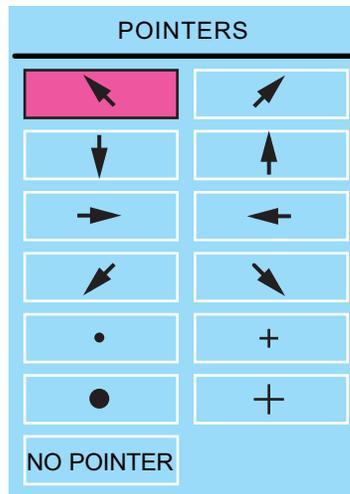
NO POINTER

Figure 2-2: The Pointers dialog.

The Pointers dialog appears.

4. **Select the pointer desired.**

The selected pointer will highlight.

NOTE: Select "No Pointer" if you want the pointer hidden from view.

5. **Exit the menu system.**

Selecting an Erase Method

This option allows you to select the method you prefer for erasing markers: using a "block" eraser to remove any parts you choose, or using the "Undo" command to remove the most recently anchored marker. The block eraser has three sizes: small, medium, and large.

1. **Activate the menu system.**

    (See "Activating the Menu" in "Section One: Getting Started" on page 34)

    The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2.   **Select Annotation.**

The Annotation menu appears. *(See Figure 2-1:, "Annotation Menu" on page 41)*

3.   **Select Erase Method.**

```
ERASE METHOD
─────────────
SMALL ERASER
MEDIUM ERASER
LARGE ERASER
UNDO
```
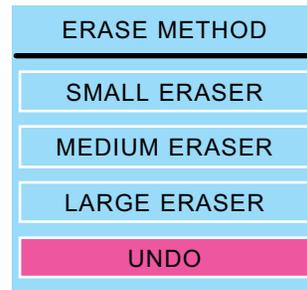
Figure 2-3: Erase Method dialog

The Erase Method dialog appears.

4.   **Select either an eraser size or Undo.**

Both methods cannot be used at the same time.

5.   **Exit the menu system.**

Caution: When changing from undo to eraser mode, all current annotations are deleted.

Selecting a Line Style

This selection gives you a choice of three line thicknesses, with or without line shadows.

1.   **Activate the menu system.**

(See "Activating the Menu" in "Section One: Getting Started" on page 34)

The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2.   **Select Annotation.**

The Annotation menu appears. *(See Figure 2-1:, "Annotation Menu" on page 41)*

3. **Select the Line Style option.**
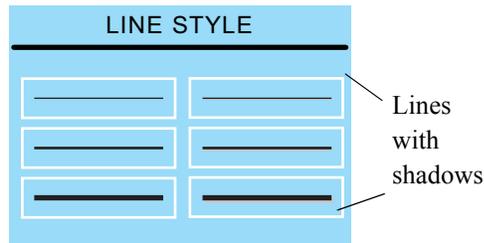
Figure 2-4: Line Style dialog

The Line Style dialog appears.

4. **Select the line style you desire.**

5. **Exit the menu system.**

Customizing the Color Palette

With this menu, you can select which colors (out of a pool of 7) are available during a presentation. It also lets you set an option for displaying the currently selected color on-screen.

During a presentation, control devices (other than the tablet) select colors by cycling through whatever colors are enabled in this menu. Each time a button on the controller is pressed, the next color in the cycle is activated. If you only like to use two or three colors out of the seven, it's more efficient to turn the others off. The Color Palette menu gives you that ability.

1. **Activate the menu system.**

    (See "Activating the Menu" in "Section One: Getting Started" on page 34)

    The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select Annotation.**

    The Annotation menu appears. *(See Figure 2-1:, "Annotation Menu" on page 41)*

3. **Select the COLOR PALETTE option**.
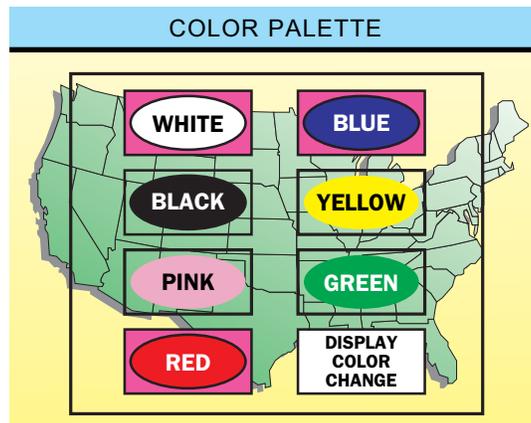
Figure 2-5: Color Palette Menu

The Color Palette Menu appears.

4. **Select the colors you wish to use during the presentation.**

   A minimum of one color must be selected. If only one color is selected, users will be able to deselect this color only after a second color is chosen.

   Only the colors surrounded by a solid fill will be available to the user during the presentation.

5. **Enable or disable the DISPLAY COLOR CHANGE option.**

   When this option is enabled, a small block of color will briefly appear in the lower-right of the screen each time you change colors during a presentation, making it easy for touch screen users to tell which color is currently selected.

   For broadcasters and certain other presenters, the color block appearing on-screen may not be desirable. In these cases it is advised that the DISPLAY COLOR CHANGE option be disabled.

   NOTE: Because there is no need for a color block display with the Pointmaker digitizing tablet, the DISPLAY COLOR CHANGE option has no affect when using that controller.

6. **Exit the menu system.**

Changing Colors Using the Digitizing Tablet:

> Digitizing Tablet users do not need to access the menu system to select a marker color. They may simply press the tablet icon depicting the color desired. Choices made on the tablet override any selections made in the Color Palette Menu.

Setting an Overlay Brightness Level

This option lets you select a brightness level for all displayed markers on any particular overlay, helping you create optimum contrast between Pointmaker graphics and the video image. This makes it possible to assign a different brightness level for each of the 25 overlays. For more on overlays, see *"Manipulating Overlays" in "Section Five: Using Markers" on page 107*.

Brightness is most easily controlled from the keyboard or the Presenter template. Controllers other than the keyboard must use the menu system to change the brightness level.

> NOTE: Adjust the brightness after placing at least one marker on the current overlay.

1.   **Activate the menu system.**

     (See "Activating the Menu" in "Section One: Getting Started" on page 34)

     The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*
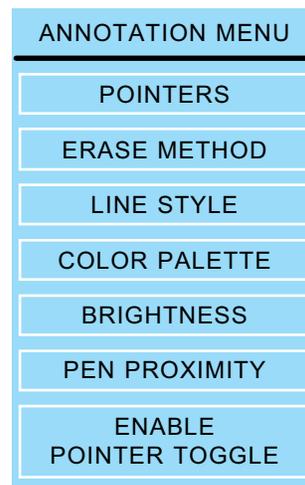
2.   **Select Annotation.**

     The Annotation menu appears. *(See Figure 2-1:, "Annotation Menu" on page 41)*

3.   **Select the BRIGHTNESS option.**

Figure 2-6: Set Brightness dialog

The Brightness Menu appears.

4.   **Adjust the sliding scale using any of the following methods:**

- Move the colored slider by dragging it left or right.

- Click on the plus or minus at each side of the scale to move the slider in small increments.

- Click on the scale itself to move the slider to the desired location.

Adjust the brightness controls until the marker displays the desired brightness level.

NOTE: Moving the cursor to the left will decrease brightness. Moving the cursor to the right will increase brightness. If the brightness is set too high for the monitor, the markers will smear across the image.

5.   **Exit the menu system.**

Setting a Brightness Level Using the Keyboard

1.   **Repeatedly press the CHANGE BRIGHTNESS [F10] key until the marker displays the desired brightness level.**

To scroll backwards through the brightness options, press SHIFT + CHANGE BRIGHTNESS [F10].

NOTE: Brightness selections on the keyboard override any settings made in the menu system.

Changing Pen Proximity

When Pen Proximity is activated, the active pointer will disappear as the pen tip is moved away from the digitizing tablet or as the light pen is moved away from the monitor. When Pen Proximity is deactivated, the active pointer will remain on-screen even when the pen is pulled away from the tablet or monitor glass.

> NOTE: This assumes the active pointer has not been turned off *(See "Turning the Active Pointer On/Off" in "Section Five: Using Markers" on page 91)*.

Changing Pen Proximity

1. **Activate the menu system.**

   (See "Activating the Menu" in "Section One: Getting Started" on page 34)

   The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select Annotation.**

   The Annotation menu appears. *(See Figure 2-1:, "Annotation Menu" on page 41)*

   Notice that the Pen Proximity selection is displayed near the bottom.

   NOTE: If the Pen Proximity option box displays a solid fill, it is active. If it is not filled, Pen Proximity is inactive.

3. **Select the PEN PROXIMITY option to turn it on or off.**

   The fill in the Pen Proximity box will reflect the new status selected.

4. **Exit the menu system.**

Pointer Toggle

The ENABLE POINTER TOGGLE option gives you the ability to hide the pointer during a presentation. You might want to engage this option if you expect to be drawing most of the time, rather than pointing, or if you need a pointer only occasionally. If it is activated, you can turn the pointer on or off during a presentation. When deactivated, the pointer remains visible at all times.

1. **Activate the menu system.**

    (See "Activating the Menu" in "Section One: Getting Started" on page 34)

    The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select Annotation.**

    The Annotation menu appears. *(See Figure 2-1:, "Annotation Menu" on page 41)*

3. **Select the Enable Pointer Toggle option to turn it on or off.**

    NOTE: If the Enable Pointer Toggle button has a solid fill, it is active. If it is not filled, it is inactive.

4. **Exit the menu system.**

    <u>**To toggle the pointer off or on during a presentation:**</u>

Light Pen:

1. **First press the barrel button, then press the tip button so that both buttons are pressed until the pointer disappears. Then release both buttons. To make the pointer reappear, repeat the same procedure.**

    NOTE: This button combination is also used to change pointer color and to activate the Menu. Color change requires that the tip button be clicked, rather than pressed. Menu activation requires that the barrel button and tip button are pressed together for at least 5 seconds (a longer period of time than required to make the pointer disappear).

Mouse:

1. **First press the second button, then press the first button so that both buttons are pressed until the pointer disappears. Then release both buttons. To make the pointer reappear, repeat the same procedure.**

Digitizing Tablet:

1. **Use the pen to click on the POINTER ON/OFF icon on the tablet Menu.Strip. The pointer will disappear. To make the pointer reappear, repeat the same procedure.**

Touch Screen

1. **Because there is no active pointer on a touch screen, the ENABLE POINTER TOGGLE is inactive.**

   If users wish to turn off the pointer, they can select NO POINTER in the Pointer Selection Menu.

SECTION THREE:
DISPLAY AND AUDIO MENUS

THE DISPLAY MENU

Selecting a Marking Background

The Background Menu allows you to switch between whatever source video you are currently displaying and a solid background or "chalkboard." There are several ways to switch between the backgrounds: using the tablet template, the keyboard, or the menu system. The procedures for the tablet and keyboard are covered in detail in *"Using The Chalkboard" in "Section Five: Using Markers" on page 105*. The instructions in this section describe how to change the background using the menu system.

1. **Activate the menu system.**

   (See "Activating the Menu" in "Section One: Getting Started" on page 34)

   The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select the Display option.**

<div align="center">

DISPLAY MENU
BACKGROUND
VIDEO SETUP
ZAP ON
TOUCH SCREEN CORNERS ON
CONTROL PANELS

</div>

Figure 3-1: The Display Menu.

The Display menu appears.

3. **Select the BACKGROUND option.**

> ### BACKGROUND MENU
> ---
> | SOURCE VIDEO |
>
> | CHALKBOARD |
>
> | AUTO CHALKBOARD |
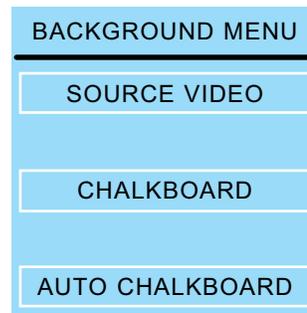
Figure 3-2: Background Menu

The Background Menu appears.

4.   Select the background desired.

Auto Chalkboard will cause the chalkboard to activate whenever there is no video source present.

NOTE: When Auto Chalkboard is activated, the unit will display "Pointmaker Chalkboard" at the bottom of the screen immediately after the initialization process at startup.

5.   Exit the menu system.

You can now draw over the selected background.

Video Setup

The Video Setup Menu gives the user a number of options for selecting and controlling the video sources connected to the PVI-X90.

Selecting the Input Source to be Displayed

This command allows you to select from among the video components connected to the Pointmaker.

The PVI-X90 starts in the DEFAULT mode, which automatically detects the video inputs and outputs on power up. If multiple video sources are connected, the source with the highest resolution is given priority, provided there is a display that supports that source. Priority from first to last is: Macintosh, SVGA, VGA, RGB (NTSC or PAL), Y/C (NTSC or PAL), and composite (NTSC or PAL).

You can override the default selection by choosing a different video mode. If there is an output, but no input, the PVI-X90 will display the chalkboard.

1.   **Activate the menu system.**

(See "Activating the Menu" in "Section One: Getting Started" on page 34)

The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2.   **Select the DISPLAY option.**

The Display menu appears. *(See Figure 3-1:, "The Display Menu." on page 53)*.

3.   **Select the VIDEO SETUP option.**

VIDEO SETUP MENU
VIDEO INPUT
OUTPUT FORMAT
VIDEO OUTPUT
SCALER POSITION
VIDEO DIGITIZER
MENU OUTPUT
GRAPHICS OUTPUT

Figure 3-3: Video Setup Menu

The Video Setup menu appears.

4.   **Select the VIDEO INPUT option.**

VIDEO INPUT
COMPOSITE 1
COMPOSITE 2
Y/C 1
Y/C 2
VGA 1
VGA 2
DEFAULT
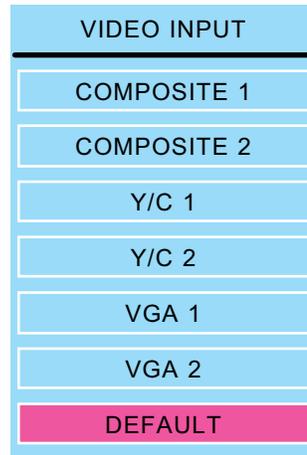
Figure 3-4: Video Input Menu

The Video Input Menu appears.

5.   Select the INPUT SOURCE you wish to be scaled and displayed.

NOTE: VGA input is passed through the Pointmaker without changes.

Digitizing Tablet:

The tablet template allows the direct selection of any video input by clicking on the appropriate command.

NOTE: Composite 1 & 2 are labeled Video(1) and Video(2) on the back of the Pointmaker.

Composite 1	Composite 2	S-Video 1	S-Video 2	VGA 1	VGA 2

Figure 3-5: Template Cutaway of Video Input Switches

6.   Exit the menu system.

Selecting the Output Format for Video Sources

The OUTPUT FORMAT determines the output resolution of your selected video input source.

1.   Activate the menu system.

(See "Activating the Menu" in "Section One: Getting Started" on page 34)

The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select the DISPLAY option.**

   The Display menu appears. *(See Figure 3-1:, "The Display Menu." on page 53)*.

3. **Select the VIDEO SETUP option.**

   The Video Setup menu appears. *(See Figure 3-3:, "Video Setup Menu" on page 55)*

4. **Select the OUTPUT FORMAT option.**

Figure 3-6: Output Format Dialog

The Output Format dialog appears.

This dialog has a transparent background to allow for visual feedback as you make selections.

5. **Select the resolution and frequency you desire.**

6. **Exit the menu system.**

Activating/Deactivating Video Outputs for Video Sources

You can assign which output ports will display your source signal.

1. **Activate the menu system.**

    (See "Activating the Menu" in "Section One: Getting Started" on page 34)

    The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select the DISPLAY option.**

    The Display menu appears. *(See Figure 3-1:, "The Display Menu." on page 53)*.

3. **Select the VIDEO SETUP option.**

    The Video Setup menu appears. *(See Figure 3-3:, "Video Setup Menu" on page 55)*

4. **Select the VIDEO OUTPUT option.**

```
┌──────────────────────────┐
│      VIDEO OUTPUT         │
│ ════════════════════════ │
│  ┌────────────────────┐  │
│  │        VGA1        │  │
│  └────────────────────┘  │
│  ┌────────────────────┐  │
│  │        VGA2        │  │
│  └────────────────────┘  │
│  ┌────────────────────┐  │
│  │        VGA3        │  │
│  └────────────────────┘  │
│  ┌────────────────────┐  │
│  │        VGA4        │  │
│  └────────────────────┘  │
└──────────────────────────┘
```

Figure 3-7: Video Output Menu

The Video Output menu appears.

5. **Select the video output ports you wish to send the selected video input to.**

6. **Exit the menu system.**

Adjusting the Scaler Position for Video Sources

The Video Scaler Position selection allows you to adjust the horizontal and vertical position and width of your video output.

1.   **Activate the menu system.**

(See "Activating the Menu" in "Section One: Getting Started" on page 34)

The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*
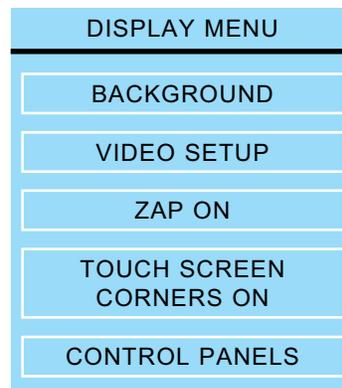
2.   **Select the DISPLAY option.**

The Display menu appears. *(See Figure 3-1:, "The Display Menu." on page 53).*

3.   **Select the VIDEO SETUP option.**

The Video Setup menu appears. *(See Figure 3-3:, "Video Setup Menu" on page 55)*

4.   **Select the SCALER POSITION option.**
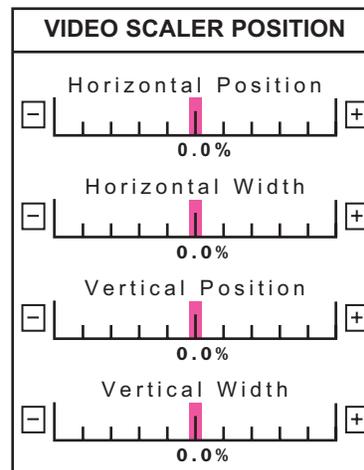
Figure 3-8: Video Scaler Position dialog

The Video Scaler Position dialog appears.

This dialog has a transparent background to allow for visual feedback as you make selections.

5.   **Adjust any of the sliding scale parameters using any of the following methods:**

• Move the colored slider by dragging it left or right.

• Click on the plus or minus at each side of the scale to move the slider in small increments.

- Click on the scale itself to move the slider to the desired location.

6.   'Exit the menu system.

Selecting Video Digitizer Options for a Video Source

The Video Digitizer Menu allows you to adjust the brightness, contrast, saturation and hue of your video output.

1.   Activate the menu system.

(See "Activating the Menu" in "Section One: Getting Started" on page 34)

The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2.   Select the DISPLAY option.

The Display menu appears. *(See Figure 3-1:, "The Display Menu." on page 53)*.

3.   Select the VIDEO SETUP option.

The Video Setup menu appears. *(See Figure 3-3:, "Video Setup Menu" on page 55)*

4.   Select the VIDEO DIGITIZER option.
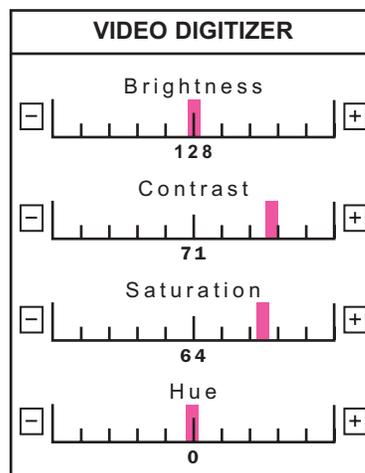
Figure 3-9: Video Digitizer Dialog

The Video Digitizer dialog appears.

This dialog has a transparent background to allow for visual feedback as you make selections.

5. **Adjust any of the sliding scale parameters using any of the following methods:**

    - Move the colored slider by dragging it left or right.

    - Click on the plus or minus at each side of the scale to move the slider in small increments.

    - Click on the scale to move the slider to that location.

6. **Exit the menu system.**

Menu Output

This is where you assign which output monitors will display the menu system whenever it is activated.

1. **Activate the menu system.**

    (See "Activating the Menu" in "Section One: Getting Started" on page 34)

    The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select the DISPLAY option.**

    The Display menu appears. *(See Figure 3-1:, "The Display Menu." on page 53)*.

3. **Select the VIDEO SETUP option.**

    The Video Setup menu appears. *(See Figure 3-3:, "Video Setup Menu" on page 55)*
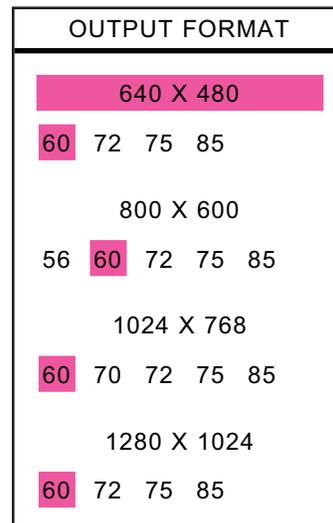
4. **Select the MENU OUTPUT option.**

MENU OUTPUT

VGA 1

VGA 2

VGA 3

VGA 4
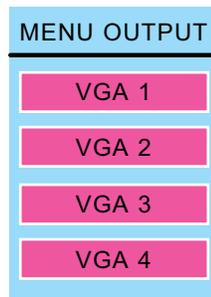
Figure 3-10: Menu Output dialog

The Menu Output dialog appears.

5. **Select which video outputs should display the menu system when it is displayed.**

By default, all four video outputs are set to display the menu system. There is a solid color fill inside any button that is activated. Activate any button to disable the display of the menus for the selected output. The buttons toggle on or off each time they are activated.

6. **Exit the menu system.**

Graphics Output

This command allows you to assign which output monitors will display the currently selected graphic input.

1. **Activate the menu system.**

   (See "Activating the Menu" in "Section One: Getting Started" on page 34)

   The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select the DISPLAY option.**

   The Display menu appears. *(See Figure 3-1:, "The Display Menu." on page 53)*.

3. **Select the VIDEO SETUP option.**

   The Video Setup menu appears. *(See Figure 3-3:, "Video Setup Menu" on page 55)*
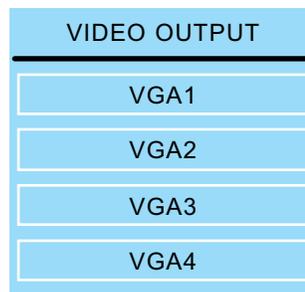
4.   **Select the GRAPHICS OUTPUT option.**

GRAPHICS OUTPUT

VGA 1

VGA 2

VGA 3

VGA 4
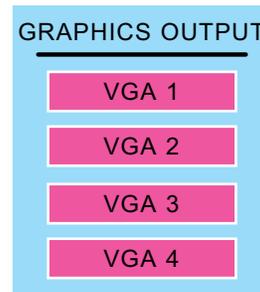
Figure 3-11: Graphics Output dialog

The Graphics Output dialog appears.

5.   **Select which video outputs should display the current graphics.**

By default, all four video outputs are set to display graphics. There is a solid color fill inside any button that is activated. Activate any button to disable the display of graphics for the selected output. The buttons toggle on or off each time they are activated.

6.   **Exit the menu system.**

Turning Zap Icon On/Off

This selection toggles the display of the Zap icon on and off. When turned on, it is displayed in the lower right hand corner of the screen. This is useful if you are switching between other video sources that are not connected to the PVI-X90. With the Zap icon displayed, it will be clear when you are displaying video from the PVI-X90.

Figure 3-12: Zap Icon

1.   **Activate the menu system.**

(See "Activating the Menu" in "Section One: Getting Started" on page 34)

The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select the DISPLAY option.**

   The Display menu appears. *(See Figure 3-1:, "The Display Menu." on page 53)*.

3. **Activate the ZAP ON button.**

   When active, the button contains a solid color fill. Each activation of the button toggles it to the opposite state.

4. **Exit the menu system**

Turning Touch Screen Function Areas On/Off

This selection activates/deactivates the touch sensitive function areas used with the touch screen controller. *(See "Touch Screen" in "Section One: Getting Started" on page 20)* When activated, the function areas are sensitive to touch. When deactivated, they will not respond to touch.
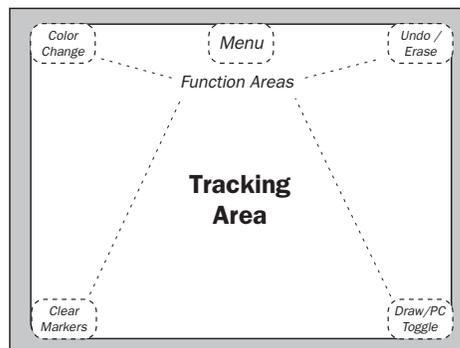
Figure 3-13: Touch Screen Controller

1. **Activate the menu system.**

   (See "Activating the Menu" in "Section One: Getting Started" on page 34)

   The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select the DISPLAY option.**

The Display menu appears. *(See Figure 3-1:, "The Display Menu." on page 53)*.

3.   **Activate the TOUCH SCREEN CORNERS ON button.**

When active, the button contains a solid color fill. Each activation of the button toggles it to the opposite state.

4.   **Exit the menu system**

Control Panels (UTROL Option)

This selection activates/deactivates the display of Control Panels which have been downloaded into the PVI-X90 using the optional UTROL-MT software for A/V remote control. If this option has not been purchased and programmed into the PVI-X90 before it was shipped to you, this menu selection will not be available.

1.   **Activate the menu system.**

(See "Activating the Menu" in "Section One: Getting Started" on page 34)

The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2.   **Select the DISPLAY option.**

The Display menu appears. *(See Figure 3-1:, "The Display Menu." on page 53)*.

3.   **Activate the CONTROL PANELS toggle button.**

When active, the button contains a solid color fill. Each activation of the button toggles it to the opposite state.

When active, the root control panel will be available upon exiting the menu system.

NOTE: The control panel function, when activated, will initialize its settings before the standard Pointmaker initialization *(See "Configuring Device Types" in "Section Four: Comm Port Devices Menu" on page 75)*. If the root control panel: 1) contains comm port commands, and 2)the Pointmaker is rebooted with the CONTROL PANELS button in the active state, the control panel's programming will override whatever the current comm port settings are. The device type setting for those serial ports will be changed to "Untried," since the Pointmaker's initialization procedure for those ports will be locked out.

4.   **Exit the menu system**

THE AUDIO MENU

(The audio section applies only to units with the COMM-4(A) board installed.) The Audio Menu contains selections for adjusting the gain of the audio inputs. There is also a master gain adjustment which affects all of the audio input ports.

Adjusting Gain

1.   **Activate the menu system.**

     (See "Activating the Menu" in "Section One: Getting Started" on page 34)

     The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2.   **Select the AUDIO option.**

AUDIO MENU
COMPOSITE 1 GAIN
COMPOSITE 2 GAIN
YC 1 GAIN
YC 2 GAIN
VGA 1 GAIN
VGA 2 GAIN
MASTER GAIN
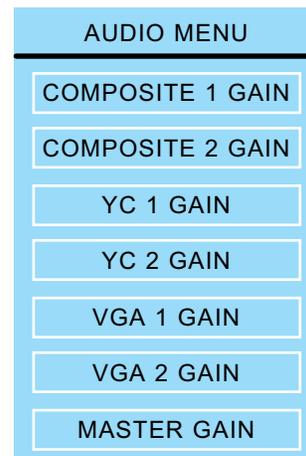
Figure 3-14: The Audio Menu

     The Audio Menu appears.

3.   **Select the input you wish to adjust or select the master gain.**

Figure 3-15: Sample Audio Gain slider

The appropriate gain adjustment dialog appears.

Make the changes you desire by either clicking on the decibel scale where you want the level to be, or by dragging the indicator to the level you desire.

SECTION FOUR:
COMM PORT DEVICES MENU

COMM PORT OPERATIONS

This section covers the various settings and options available through the use of the COMM ports on the PVI-X90.

Controllers Requiring Calibration

Controllers which require calibration are: light pen, remote control, touch screen and white board.

If you are using any of these as your initial controller, Boeckeler recommends calibrating them upon first power up. They can also be calibrated at any time using the selections in this part of the menu system if you are using the digitizing tablet or keyboard as your initial controller.

Calibrating the Light Pen, Remote Control, Touch Screen or White Board at Start Up:

1. **Power up the Pointmaker and wait for the copyright message to appear.**

2. **During the 8-second copyright message, activate the controller:**

    A. by depressing and releasing the light pen tip button at any location.

     - OR -

    B. by touching the left button on the remote control

     - OR -

    C. by tapping once on the touch screen

     - OR -

    D. by tapping once on the White Board.

3. **Follow the calibration instructions displayed on the screen.**

    After the calibration is complete, the Pointmaker will complete its startup and be ready for use.

Calibrating the Light Pen, Remote Control, Touch Screen or White Board Using the Menu System:

1. Activate the menu system.

(See "Activating the Menu" in "Section One: Getting Started" on page 34)

The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. Select the COMM PORT DEVICES option.

Figure 4-1: Comm Port Devices Menu

The Comm Port Devices menu appears.

3. Select the CALIBRATION option.
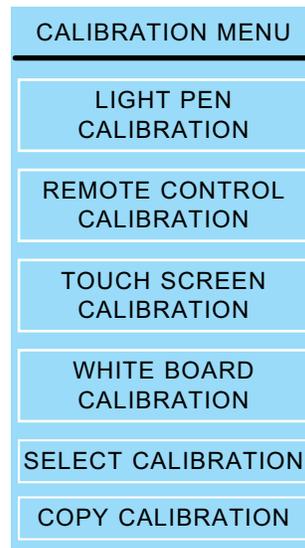
Figure 4-2: Calibration Menu

The Calibration Menu appears.

4. **In the Calibration Menu, select the controller to be calibrated.**
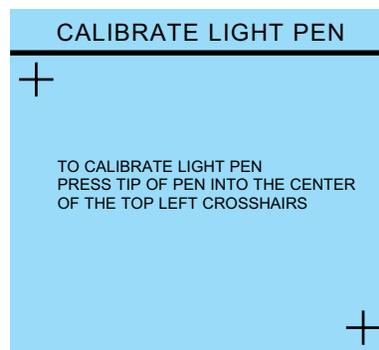
Figure 4-3: Calibrate Light Pen Screen

The appropriate calibration screen appears.

5. **Follow the calibration instructions displayed.**

   After users perform final calibration procedures, the Calibration Procedure display will automatically disappear, and users will be returned to the menu system.

6. **Exit the menu system.**

Storing (Copying) a Calibration

Background Information: The PVI-X90 has nine memory locations where calibrations can be stored for later recall. They are numbered 1 through 9. Location 0(zero) is considered the default memory location, and stores whatever calibration was last done. If you anticipate changing calibrations on a frequent basis, storing your calibrations in locations 1-9 makes it easy to change the active calibration without 1) going through the calibration procedure, and 2) having to reboot the PVI-X90.

```
┌─────────────────────────────────┐
│        COPY CALIBRATION         │
│ ─────────────────────────────── │
│  SELECT CALIBRATION #           │
│  TO COPY CALIBRATION TO         │
│                                 │
│  1  2  3  4  5  6  7  8  9      │
│                                 │
│  WARNING: THIS WILL             │
│  OVERWRITE THE STORED           │
│  CALIBRATION IN THAT            │
│  NUMBER                         │
└─────────────────────────────────┘
```
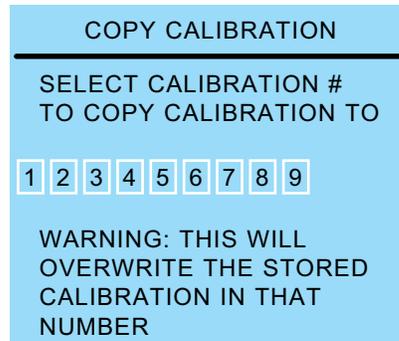
Figure 4-1: Copy Calibration dialog

To store a copy of the last manual calibration (stored in location 0) into whatever memory location you choose, select the Copy Calibration command from the Calibration Menu. Then, select the numbered button for your desired memory location. If there was a calibration previously stored in the location you select, it will be overwritten.

> Note: You will probably want to make a written record of which calibrations you have stored in each location since the PVI-X90 keeps only the location number.

Select a Calibration

When you are ready to use a calibration you have previously stored, choose Select Calibration from the Calibration menu. Then, select the numbered button for the memory location you desire. The calibration stored in that location becomes the active calibration.

```
┌─────────────────────────────────┐
│        SELECT CALIBRATION       │
│ ─────────────────────────────── │
│  1  2  3  4  5  6  7  8  9      │
└─────────────────────────────────┘
```
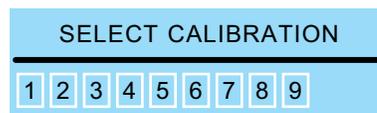
Figure 4-2: Select Calibration dialog

Serial Port Settings

Serial ports are used for two main purposes: 1) connecting controller/marker devices 2) connecting to other systems (remote control, a second Pointmaker, a PC). This section explains the options available to you for each purpose.

The Serial Port dialog also allows you to assign a priority system to control users if multiple controller/markers are connected.

Configuring Device Types

Initialization of Device Types

Serial ports are "initialized" when the PVI-X90 is powered on. During this process, the PVI-X90 attempts to determine what device type (controller/ marker) is connected to each port. This procedure can be lengthy since the PVI-X90 accommodates a wide range of devices, and in its default detection mode (autodetect), it will run through the entire list of possibilities for each port. Using the settings available in the Serial Ports menu, it is possible for you to limit the initialization process for a designated port so that the PVI-X90 looks for only the device type you specify. This speeds up the initialization process considerably.

Integrating the PVI-X90 with Other Systems

Since only controller/marker device types are able to be recognized during the initialization process, all other devices must be set up manually. The PVI-X90 allows you to manually adjust communication settings for up to two of its ports *(See "Setting Comm Port Parameters" on page 78)*. This allows the PVI-X90 to be integrated with:

1) an A/V system as a remote control command station where it can both control A/V devices and mark over any images presented;

2) a remote control system which can send commands to the PVI-X90, controlling its various functions *(See "Section Seven: Commands for RS-232 Control" on page 133)*;

3) a PC, allowing you to control some PC functions from the PVI-X90 and to save or print PC images with their Pointmaker markings *(See "Section Six: PVI-PC20 Software Configuration and Use" on page 111)*.

Boeckeler offers an A/V remote control system (UTROL-MT) which allows you to create A/V control panels on your PC and download them into the PVI-X90, where they become seamlessly integrated into it's menu system. Contact your dealer for details.

Designating a Device Type

1. **Activate the menu system.**

   (See "Activating the Menu" in "Section One: Getting Started" on page 34)

   The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*
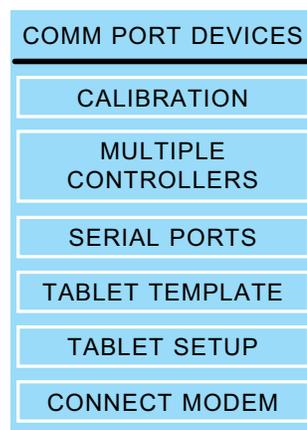
2. **Select COMM PORT DEVICES.**

   The Comm Port Devices Menu appears *(See Figure 4-1:, "Comm Port Devices Menu" on page 72)*.

3. **Select SERIAL PORTS.**

MAIN MENU		SERIAL PORTS	
ANNOTATION	1	Control Port	➤
DISPLAY	2	unknown	➤
COMM PORT DEVICES	3	Mouse 3	➤
	4	Digitizer A	➤
HELP	5	Autodetect	➤
EXIT	6	Light Pen	➤
OPEN			
SELECTIVE			
PRIORITY USER			
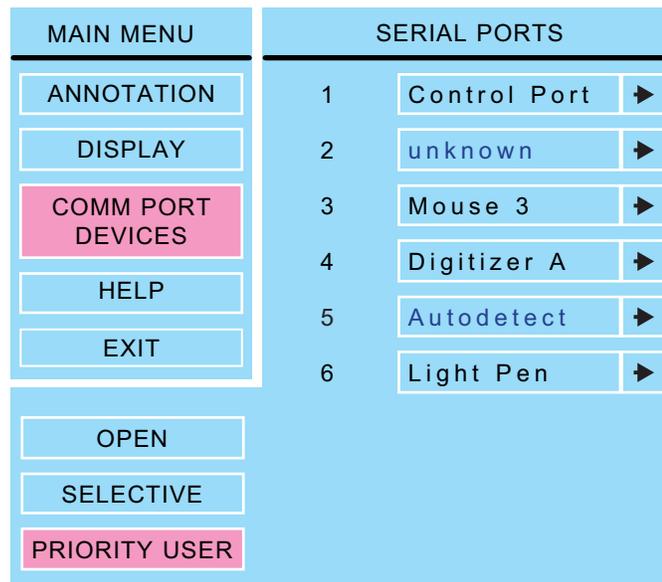
Figure 4-3: Serial Ports Dialog

The Serial Ports dialog appears.

NOTE: All the serial ports installed on your PVI-X90 are listed by port number, with the device type displayed to the right of each number. If the device type is in blue, it has been assigned through the autodetect procedure at startup.

4. **Select the device type you wish to have permanently assigned.**

   If the device type can be permanently assigned (some types cannot), the color changes from blue to black. With the device permanently assigned, the next time the PVI-X90 is powered up, the autodetect

procedure will skip this port. If the assigned device needs initialized at startup, it will be initialized according to the device type listed.

NOTE: If the device type listed for a port cannot be permanently assigned (for example: device type "unknown" or if you try to assign more than one port for use with other systems *(See "Integrating the PVI-X90 with Other Systems" on page 75))*, or you just wish to select a different type, there are two ways to change it. The next two steps describe how.

5. **(optional) Select the arrow to the right of the device type you wish to change.**

MAIN MENU	DEVICE SELECT, PORT 2	
ANNOTATION	Page Up	
DISPLAY	Calcomp TS	?
	Computer	?
COMM PORT DEVICES	Control Port	?
	Digitizer A	?
HELP	Do Not Use	?
	Dynepro SC3	?
EXIT	Dynepro SC4	?
	Freedom Writer	?
	Intellitouch	?
	Page Down	
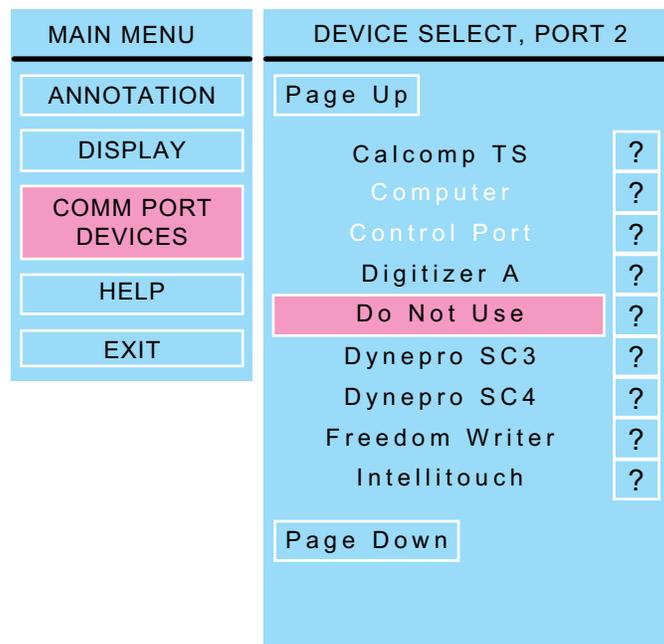
Figure 4-4: Device Select Dialog

The Device Select dialog appears.

This dialog presents a scrolling list of all device types currently supported by the PVI-X90 in alphabetical order. The Page Up and Page Down buttons allow you to quickly scroll through the names until you find the device type you desire. When you locate and select the name you wish to assign, it will move to the center of the list, where it will be highlighted. The new device type is now assigned.

Device types which cannot be selected are in white.

When a "?" button is selected, a screen with further information about that device type will be displayed.

If a device type that is used for communicating with other systems is selected, an arrow button will replace its "?" button. Selecting that arrow button will activate the dialog for setting port parameters.

You can return to the Serial Ports dialog to make further changes by selecting Comm Port Devices and then selecting Serial Ports.

NOTE: If you are designating a port for use with another system you will need to set Comm Port parameters before exiting the menu system*(See "Setting Comm Port Parameters" on page 78)*.

NOTE: The PVI-X90 must be rebooted for the new device type assignments to be made permanent.

6.   **(optional) Select the device type name you wish to change.**

When the device type name, instead of the arrow to its right, is activated, the device type will change without having to display the Device Select submenu. This method is only recommended for those with more extensive experience in assigning device types. Each time the name is selected, it causes a different device type to appear. The list of devices available using this method is an abbreviated version of the list seen in the Device Select dialog.

A click on the right side of the name moves forward one device. A click on the left side of the name moves backward one device. (If you are using the keyboard to select, it moves backward through the list only.) Keep clicking until the device type you desire is displayed. It will be assigned permanently when the PVI-X90 is rebooted.

NOTE: If you are designating a port for use with another system you will need to set Comm Port parameters before exiting the menu system*(See "Setting Comm Port Parameters" on page 78)*.

NOTE: The PVI-X90 must be rebooted for the new device type assignments to be made permanent.

7.   **Exit the menu system and recycle the power on the PVI-X90.**

The PVI-X90 implements the new settings.

<u>Setting Comm Port Parameters</u>

If you are assigning a port for communicating with another system *(See "Integrating the PVI-X90 with Other Systems" on page 75)*, you must select either **Control Port** or **PVI to PVI** as your device type. The PVI-X90 supports assigning only one port for each type.

Control Port: Choose this option if the PVI-X90 is being used as an A/V remote control command station, if it is being controlled remotely using RS-232 commands, or if it is being connected to a PC for use with the PVI-PC20 software.

PVI-to-PVI: Use this selection if the PVI-X90 is being used to connect to another Pointmaker system.

1. **Select the appropriate device type in the Device Select dialog for the port where you are connecting the other system***(See "Designating a Device Type" on page 76)***.**

    Where a question mark is usually found, you will instead see an arrow**.**

    NOTE: If the device type you desire for connecting to other systems is unavailable, check to see if it is assigned to another port. Remember, only one use of each is allowed.

2. **Activate the arrow next to the device type to set its communication parameters.**

Control Port PORT #3		
BAUD RATE	**PARITY**	**STOP BITS**
9600	NONE	1
4800	EVEN	2
2400	ODD	
1200	SPACE	
600	MARK	
300		
110		

Figure 4-5: Control Port Dialog

The corresponding dialog appears.

Select the desired baud rate, parity, and stop bits.

NOTE: Factory settings are 9600 baud, no parity, 1 stop bit. Data bits, which cannot be manually set, are 8 data bits.

3. **Exit the menu system and recycle the power on the PVI-X90.**

The PVI-X90 implements the new settings.

Prioritizing Controller/Marker Usage

If desired, you can prioritize who's controller/marker has precedence when more than one is installed.

Three different modes are available:

> **OPEN mode:** Allows all installed controllers to draw and point at any time. All users may change the appearance of markers, including clearing markers. However, while one user is drawing, no other user can mark or change the appearance of markers.

> **S**ELECTIVE mode: Adds slightly more organization, requiring a user to first select CONTROL on the tablet or touch screen before they begin marking. Again, while one user is drawing, no other user can mark or change the appearance of markers. This option only works with digitizing tablets and touch screens. Other controllers continue to work in the OPEN mode.

> **PRIORITY USER mode:** This mode allows one pre-assigned user to take and release control of marking functions. On first use, the Priority User assigned in this menu is in control. While in control, a small "zap" character icon will appear in the lower-right corner of the screen. When the Priority User is in control, no other user can take control of marking functions. The Priority User can release control to other users by again selecting CONTROL on the tablet or touch screen. Use is then similar to the SELECTIVE mode: users must select CONTROL in order to mark or change marker appearance. The Priority User can take exclusive control at any time by selecting CONTROL. This option only works with digitizing tablets and touch screens. Other controllers work in the OPEN mode.

To Set a Priority Mode:

1. **Activate the menu system.**

   (See "Activating the Menu" in "Section One: Getting Started" on page 34)

   The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select COMM PORT DEVICES.**

The Comm Port Devices Menu appears *(See Figure 4-1:, "Comm Port Devices Menu" on page 72)*.

3. **Select SERIAL PORTS.**

The Serial Ports dialog appears *(See "Serial Ports Dialog" on page 76)*.

4. **Select a priority mode.**

If you select PRIORITY USER, identify the user by selecting their port number. It will highlight in pink when selected.(COMM port numbers are printed on the back of the PVI-X90 unit.)

5. **Exit the menu system.**

Setting the Tablet Template

If you have a DT-30 digitizing tablet, you can select which paper template to use, or you can assign certain PC functions to some of the tablet icons. You can only use the PC functions and PC templates if you have installed the PVI-PC20 software and have uninstalled the keyboard *(See "Section Six: PVI-PC20 Software Configuration and Use" on page 111)*.

With a keyboard installed, you can only use the PVI-X90 with the Presenter and Broadcaster templates.

Selecting the Appropriate Template

The PVI-X90 with digitizing tablet ships with all three templates. When you select a paper template to use, you must also select the same template in the PVI-X90 menu system.

The Presenter template includes more options than the Broadcaster template. The Broadcaster template features only the most commonly used marking functions preferred for on-air use.

1. **Activate the menu system.**

(See "Activating the Menu" in "Section One: Getting Started" on page 34)

The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select COMM PORT DEVICES.**

The Comm Port Devices Menu appears *(See Figure 4-1:, "Comm Port Devices Menu" on page 72).*

3. Select TABLET TEMPLATE.

<div align="center">

TABLET TEMPLATE MENU

PRESENTER

BROADCASTER

PC

NOTE: CHANGING FROM
ONE TEMPLATE OPTION TO
ANOTHER WILL REQUIRE A
CORRESPONDING CHANGE OF
THE PAPER TEMPLATE
INSERTED IN THE DIGITIZING
TABLET.

</div>
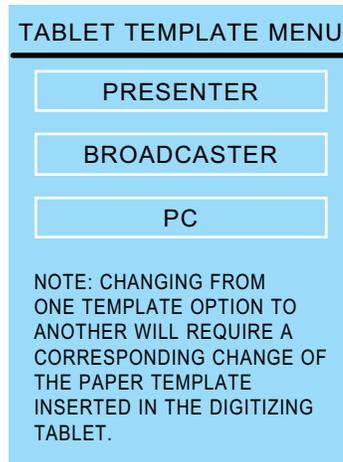
Figure 4-6: Tablet Template Menu

The Tablet Template Menu appears.

4. Activate the template you'll be using by selecting it.

The background of the selection turns pink.

5. Exit the menu system.

You can now use the corresponding paper template in the tablet.

Customizing Pointmaker Tablet Template Buttons

You can customize each button in the top row of the PC tablet template to perform two functions: a Pointmaker marking function and/or a PC function. For example, you can program icon "#1" to display the next overlay of markers AND minimize an active PC application.

You can assign both types of functions using the PVI-PC20 Setup window *(See "Button Properties" in "Section Six: PVI-PC20 Software Configuration and Use" on page 121).* Also, you can assign four Pointmaker functions through the menu system. You may prefer this latter method if all you want to do is assign the most common Pointmaker paging functions.

NOTE: You are able to use PC tablet templates when you have uninstalled the keyboard and activated the PVI-PC20 software.

1. **Activate the menu system.**

    (See "Activating the Menu" in "Section One: Getting Started" on page 34)

    The Main Menu appears. *(See Figure 1-19:, "PVI-X90 Main Menu" on page 34)*

2. **Select COMM PORT DEVICES.**

    The Comm Port Devices menu appears *(See Figure 4-1:, "Comm Port Devices Menu" on page 72)*.

3. **Select TABLET SETUP.**

```
         TABLET SETUP MENU

    BUTTON 1      FIRST OVERLAY
    BUTTON 2      PREV OVERLAY
    BUTTON 3      NEXT OVERLAY
    BUTTON 4      LAST OVERLAY
    BUTTON 5      NO OPERATION
    BUTTON 6      NO OPERATION
    BUTTON 7      NO OPERATION
    BUTTON 8      NO OPERATION
    LAST OVERLAY       25
```

Figure 4-7: PC Tablet Setup Menu with Factory Settings

The Tablet Setup Menu appears.

4. **Select a Button (#1-8), then repeatedly click on it to cycle through the options until the desired function appears inside the button.**

5. **Repeatedly click on the LAST OVERLAY # entry until the desired number appears.**

6. **Exit the menu system.**

SECTION FIVE:
USING MARKERS

OVERVIEW

This section covers marking procedures you might follow while making a presentation. It is assumed that you have basic familiarity with the operational buttons of your control device, and how to use them to anchor a marker and draw *(See "Peripheral Devices" in "Section One: Getting Started" on page 11).*

Basic Marking Concepts

Markers

Pointmaker Video Markers make it possible to create a variety of graphic shapes (including text), called markers, which can be placed over a video image. Available markers include: pointers, freehand drawing, typed text, straight line drawing, sizeable frames, and a date/time label.

Control Devices

Markers are created or placed using one or more control or marking devices. The most commonly used controllers are: digitizing tablets, keyboards, light pens, touch screens and mouse devices. Each type of device has its own strengths and weaknesses when used in a presentation.

Active & Anchored Markers

An active marker is a special kind of marker that "floats" over the image until it is anchored or "fixed" into a location assigned by the user. While it is active, its attributes can be altered. Depending on the type of marker being created, some of those attributes are: position, color, size, line thickness, and shape. Once a marker is anchored, its attributes cannot be changed. It can only be removed and re-created or covered with another marker.

Any markers created with the keyboard are active markers. All other control devices (except the touch screen) have only one type of active marker available: pointers.

Overlays

Markers never alter the displayed video images because they are actually placed on a clear layer above the image called an overlay. The Pointmaker can store up to 25 different overlays and each overlay can hold any combination of

markers. A user can prepare overlays in advance of a presentation and then recall them at will when they are needed. Once an overlay is recalled, it can be changed or erased. When the Pointmaker is powered down, it will automatically save the overlays in its memory.

Instructions for marking are divided into the following categories:

- **Assigning Marker Appearance**

- **Marking**

- **Clearing Markers**

- **Using the Chalkboard**

- **Displaying Different Overlays**

ASSIGNING MARKER APPEARANCE

While the marker is still active, and before you begin to draw or place markers, you can change the appearance of your drawing or next marker in one of several ways.

- **Assign Marker Color**

- **Assign Line Style**

- **Assign Pointer Type**

- **Turn Pointer On/Off**

Assigning Marker Colors

The color that the active marker displays is the color that the marker will be anchored in. You can anchor markers of different colors on a single overlay.

The colors available during a presentation are based on those activated in the Color Palette menu *(See "Customizing the Color Palette" in "Section Two: Annotation Menu" on page 44)*.

If the color of the markers does not change from black, the brightness level is too low and must be increased before selecting the color *(See "Setting an Overlay Brightness Level" in "Section Two: Annotation Menu" on page 46)*.

From Any Controller

Activate the Change Color command from your control device.

(see "Quick Reference for Devices" in "Appendix" on page A-5)

All markers anchored from this point on will appear in the newly selected color.

NOTE: If the pointer has been disengaged, and the Display Color Change option in the Color Palette Menu has been activated, a small block of color will briefly appear in the lower right of the screen to help you identify the new marker color. The Display Color Change block does not appear when using the digitizing tablet.

NOTE: In mouse devices, be careful to click the tip (or first) button rather than press it. Pressing the tip (or first) button could inadvertently toggle the pointer on/off or cause the menu system to appear.

Assigning Line Styles

You can have drawn lines of different styles on a single overlay. Once you draw the line, or anchor a straight line, you cannot change that line style. However, you can erase or undo the drawing and begin again. *(See "Clearing Markers" on page 101)*

You can change line style directly from the digitizing tablet or from the keyboard. You can also change the line style from other devices by accessing the menu system. When the keyboard is installed, you can only access the menu system from the keyboard.

From Digitizing Tablet

1. **Click the pen tip on the desired line style icon on tablet.**

    All lines drawn from this point on will appear in the newly selected line width and style.

From the Keyboard

1. **Activate the Line Style command.** *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

    A small sample of the active line style will appear briefly in the lower-right hand corner of the screen.

2. **Repeatedly activate the Line Style command until the desired line style appears in the on screen sample.**

    You can scroll backwards through the line options, by activating the Reverse Toggle command.

    All lines drawn from this point on will appear in the newly selected line width and style.

From the Menu System

(See "Selecting a Line Style" in "Section Two: Annotation Menu" on page 43)

Selecting Pointers

Select a pointer type while the pointer is active, or positionable. After you anchor the pointer, you cannot change that pointer's type. However, you can erase or undo the anchored pointer and begin again *(See "Clearing Markers" on page 101)*.

From the Digitizing Tablet

1. **Click the pen tip on the desired pointer icon on tablet.**

   The corresponding active pointer appears on screen, ready for positioning or anchoring.

From the Keyboard

1. **Repeatedly activate the POINTERS command until the desired pointer type appears on screen.** *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

   You can scroll backwards through the pointer options, by activating the Reverse Toggle command.

   The pointer you selected appears on screen, ready for positioning.

From the Menu System

(See "Pointers" in "Section Two: Annotation Menu" on page 41)

Turning the Active Pointer On/Off

Sometimes a presenter chooses not to have the pointer showing during a presentation. This command allows you to turn the visibility of the pointer off or on. When the active pointer is turned off, you can still anchor pointers.

Since touch screens and whiteboards do not display active pointers, you do not need to use the Pointer On/Off command with those devices.

NOTE: An alternative to the Pointer On/Off command, is using the Pen Proximity feature available on the tablet template or through the menu system. When active, this feature causes the active pointer to disappear each time you remove your drawing device from proximity

of the tablet or screen drawing surface *(See "Changing Pen Proximity" in "Section Two: Annotation Menu" on page 48)*.

From the Digitizing Tablet

1.   **Press the Pointer On/Off icon on the tablet Menu Strip.**

     The pointer disappears.

2.   **To make the pointer reappear, repeat the procedure.**

From the Keyboard

1.   **Activate the Pointer On/Off command.** *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

     The pointer disappears.

2.   **To make the pointer reappear, repeat the procedure.**

     NOTE: To turn off all active markers, including active frames, use the keyboard Active Marker On/Off command.

From the Menu System

Pointers are turned off in the same dialog where they are selected. *(See "Pointers" in "Section Two: Annotation Menu" on page 41)*

MARKING

This section covers pointing and drawing procedures. The following outline lists the procedures in the general order that most presenters use them.

- **Entering the Marking Mode**

- **Pointing (with positionable or anchored pointers)**

- **Drawing**

- **Typing Text (keyboard installed)**

- **Framing (keyboard installed)**

- **Stamping the Date/Time**

Entering the Marking Mode

The Pointmaker is in the marking mode by default. The only time it is not in marking mode is when a menu is displayed. In the Marking mode, the image from the video source is displayed along with any stored markers. An active pointer is also displayed, unless it was disabled during setup *(See "Turning the Active Pointer On/Off" on page 91)*.

> NOTE: There is only one exception to always being in the Marking mode, and that occurs when you are using the digitizing tablet with the PVI-PC20 software, and you are in the PC Control mode. PC Control mode disengages the Marking mode, and controls the computer's on screen cursor like a standard PC mouse *(See "Switching Tablet Modes" in "Section Six: PVI-PC20 Software Configuration and Use" on page 131)*.

Pointing

You can move the pointer around the screen, using it to direct the viewer's attention without anchoring it. You can also position and anchor several pointers on the overlay, giving you the opportunity to point in a more lasting manner on several areas of the image.

Before using or anchoring a pointer, you may want to select a new pointer type *(See "Selecting Pointers" on page 91)*. Or you may change the pointer color *(See "Assigning Marker Colors" on page 89)*.

From Any Controller

1. **Position the pointer anywhere on the video image to direct attention to an image detail.**

    Refer to instructions for your particular control device *(See "Peripheral Devices" in "Section One: Getting Started" on page 11)*.

2. **If desired, reposition the same active pointer anywhere on the image to make your second point, and continue as often as desired.**

3. **If desired, anchor the active pointer.**

    Refer to instructions for your particular control device *(See "Peripheral Devices" in "Section One: Getting Started" on page 11)*.

    The pointer is anchored and a new active pointer appears on screen, identical to the first.

    NOTE: Active pointers are not displayed for touch screens, only anchored markers.

4. **Repeat any of these steps as often as desired.**

Drawing

You can draw on the Pointmaker overlay simply by beginning to draw. The drawing feature allows you to circle important parts of the image, write on the image, or underscore particular parts of text. You can draw freehand curves or straight lines.

To draw, you can use the digitizing tablet stylus on the tablet drawing area, the light pen on the CRT monitor screen, your finger on a touch screen, or a magic marker on the SMART Board. You can also use other mouse devices to draw. You cannot freehand draw using the keyboard, but you can use it for straight line drawing.

Before drawing, you may wish to change the drawing line color *(See "Assigning Marker Colors" on page 89)*. Or you may which to change the width and style of the drawing line *(See "Assigning Line Styles" on page 90)*.

Drawing Freehand

1. **Position the active pointer (if one is displayed) anywhere on the video image where the drawing is to begin.**

NOTE: If you are using a touch screen or white board, position a finger or marker pen.

2. **Activate the Draw command from your particular drawing device.**

    (See "Peripheral Devices" in "Section One: Getting Started" on page 11)

3. **Reposition the active marker (if one is displayed) and repeat the above procedures for another drawn line.**

    NOTE: You may create as many drawings as desired.

Straight Line Drawing

This feature works only using the keyboard. *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

1. **Activate the Straight Draw command from the keyboard.**

    A cursor appears representing the first endpoint of the straight line.

2. **Using the arrow keys, position the cursor where you want the line to begin, and anchor it.**

    A second cursor appears, joined by a line to the first endpoint.

3. **Position the second cursor where the line is to end and anchor it.**

    The line segment is complete.

4. **If desired, draw another straight line by positioning the new active cursor and anchoring it.**

    NOTE: You may anchor as many lines as desired.

Typing Text Labels

This feature works only using the keyboard. *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

Anytime you press an alphanumeric key on the keyboard, a text label begins. Before you anchor a line of text, you can choose to display it in one of six (6) fonts, each of which offers one or more sizes. These fonts are (in order): TI Roman (4 sizes); Helvetica (4 sizes); TI Dom Casual (4 sizes); Fargo (3 sizes); Symbol (1 size); and Map (1 size). Symbol and Map fonts are charted in Section Five: Appendices.

1. **Position the active marker anywhere on the image.**

2. **Create a line of text by pressing the desired text keys.**

    NOTE: Do not anchor this line of text yet, since only an active (or positionable) line of text will display the font options.

3. **Select the desired font by repeatedly activating the Fonts command until the font appears on screen.**

    You can scroll backwards through the font options, by activating the Reverse Toggle command.

4. **Select a font size by repeatedly activating the Font Size command until the correct size appears on screen.**

    You can scroll backwards through the size options, by activating the Reverse Toggle command.

5. **Turn the text background on or off by activating the Text Background On/Off command.**

    NOTE: The color of the background is always blue.

6. **Position the active label anywhere on the video image, then anchor the label.**

    The line of text is anchored. You can anchor a new line of text immediately below the previously anchored text line by not moving the cursor. Or you can position the second line of text anywhere on the screen.

    NOTE: To create a paragraph of several lines of text, remember that text does not wrap, so press ENTER or DROP [Insert] at the end of each line.

7. **Exit text typing mode by pressing any other function key.**

Sizing and Anchoring Frames

This feature works only using the keyboard. *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

The Pointmaker features four frame types: box frame, circle frame, solid box frame, and solid circle frame. Frames remain active (sizeable and positionable) until you anchor them.

Before anchoring a frame, you may want change the frame color *(See "Assigning Marker Colors" on page 89)*.

1. **Select a frame type by repeatedly activating the Frames command until the desired frame appears.**

    You can scroll backwards through the font options, by activating the Reverse Toggle command.

    The active frame appears, ready for sizing and positioning. A crossed line displayed within the boundaries of an active frame represents a solid frame. The frame will be filled with the color of the active marker after you anchor it.

2. **Enter the Sizing mode by activating the Size Frames command.**

    The frame is now sizeable.

3. **Size the frame using the keyboard or other controller.**

    Upward commands make the frame taller. Downward commands make the frame shorter. Leftward commands makes the frame wider. Rightward commands make the frame narrower.

    For finer control in sizing, activate the Fine Positioning command.

4. **Store the size by pressing the ENTER or DROP [Insert] key.**

    The sized frame is ready for positioning.

5. **Position the sized frame anywhere on the image, then anchor it by pressing the ENTER or DROP [Insert] key.**

    A new active frame appears, identical to the first.

6. **If desired, size and position the new active frame anywhere on the video image to frame a second area.**

7. **Exit Frames by pressing any other function key.**

Stamping the Date/Time

This feature works only using the keyboard. *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

You can "stamp" an overlay with the current date and/or time, depending on which display mode you selected in the Set Date/Time Menu.

While active (or positionable) the date/time stamp is represented by an icon. The numerical date and/or time will appear as soon as you anchor the icon. You can anchor only one Date/Time stamp on each overlay. To reposition a stamp, activate the command again. The old stamp disappears and the new stamp appears, ready for positioning.

Before anchoring a date/time stamp, you may want to select a new color for the stamp's text *(See "Assigning Marker Colors" on page 89)*.

1. **Activate the Show Date/Time command.**

    A date/time icon appears.

2. **Position the date/time icon anywhere on the video image.**

3. **To select a solid or transparent label background, activate the Text Background On/Off command.**

4. **Anchor the date/time label.**

    The current date/time label appears. A date/time cursor also appears on screen, ready for the next action.

Setting Date/Time Label Options

This feature works only using the keyboard. *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

The Date/Time function has a menu for setting its options. The menu lets you set the current date and time. It also allows the selection of which label is to be displayed: DATE, DATE/TIME, or TIME.

1. **Activate the SET DATE/TIME MENU by pressing CTRL + SHOW DATE/TIME [F8].**

```
          SET DATE/TIME MENU

              11-09-2002

               04:50 pm

           SET DATE & TIME

         DISPLAY DATE & TIME

         DISPLAY DATE ONLY

         DISPLAY TIME ONLY

                EXIT
```
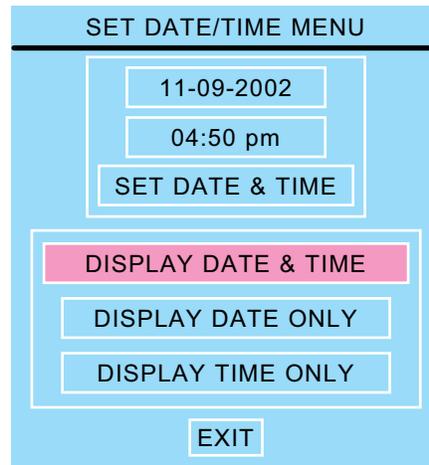
Figure 5-1: Set Date/Time Menu

The Set Date/Time Menu will be displayed on-screen.

The top section of the menu is for changing and setting the date/time. The bottom portion allows the user to select which label is to be placed on the overlay. When the menu opens, the EXIT command will be highlighted. Use the POSITIONING KEYs to move the highlight to the appropriate box for your selection.

2. **Set the date and/or time if necessary. If they are correct, skip this step.**

Setting the Date & Time:

(1) Use the POSITIONING KEYs to move the highlight to the box with the date inside.

(2) Enter the correct date.

 The cursor will move across the screen as each number is entered.

(3) Press ENTER to accept the entry.

 The highlight will move down to the time box.

(4) Enter the correct time.

 The cursor will move across the screen as each number is entered.

(5) Press "a" for am or "p" for pm.

 The highlight will move down to the Set Date & Time box.

(6) Press ENTER to set the changes.

Setting the Date:

(1) Use the POSITIONING KEYs to move the highlight to the box with the date inside.

(2) Enter the correct date.

The cursor will move across the screen as each number is entered.

(3) Press ENTER to accept the entry.

The highlight will move down to the time box.

(4) Press ENTER to accept the current time.

The highlight moves down to the Set Date & Time box.

(5)   Press ENTER to set the changes.

Setting the Time:

(1) Use the POSITIONING KEYs to move the highlight to the box with the time inside.

(2) Enter the correct time.

The cursor will move across the screen as each number is entered.

(3) Press "a" for am or "p" for pm.

The highlight will move down to the Set Date & Time box.

(4) Press ENTER to set the changes.

3. **Use the POSITIONING KEYs to highlight one of the three display options: DISPLAY DATE & TIME, DISPLAY DATE ONLY, or DIS-PLAY TIME ONLY.**

4. **Press ENTER to activate your selection.**

The selected box will fill with color to indicate it is activated.

5. **Use the POSITIONING KEYs to highlight the EXIT command.**

6. **Press ENTER to exit the menu.**

The entries you make will remain until you enter this menu to change them.

CLEARING MARKERS

After you anchor markers (drawings, lines, frames, and pointers), you may want to clear the screen of all or some of the markers before proceeding to the next point of discussion. You can erase markers in one of the three following ways:

• **Clearing All Markers**

• **Undoing the Most Recent Marker**

• **Erasing Markers**

If you don't want to clear markers, but just need to temporarily remove the marker overlay, then use the Marker Overlay On/Off command *(See "Turning Off the Marker Overlay" on page 108)*.

Clearing All Markers

Follow these instructions to clear the entire screen of markers.

From the Digitizing Tablet

1. **Select the CLEAR icon on the tablet Menu Strip.**

    All markers disappear. An active pointer remains on screen unless the pointer was disengaged.

    NOTE: Markers are cleared even if you are in PC Mode.

From Other Controllers

1. **Activate the Clear command for your particular controller.**

    All markers disappear. An active pointer remains on screen unless the pointer was disengaged.

Undoing a Marker

Follow these instructions to undo a marker, beginning with the most recently anchored marker or line segment. You can repeat this command as often as needed until the screen is clear of markers.

From the Digitizing Tablet

1. **Press the tip button on the UNDO icon located on the tablet Menu Strip.**

   The most recently anchored marker disappears. An active pointer remains on screen unless the pointer was disengaged.

   NOTE: You can undo markers even if you are in PC Mode.

From Other Controllers

1. **Activate the Undo command for your particular controller.**

   The most recently anchored marker disappears. An active pointer remains on screen unless the pointer was disengaged.

Erasing Markers

Follow these instructions to erase markers from the overlay, wiping them clear like a traditional eraser. You activate Erase mode from the menu system, but you erase the markers using your drawing device.

When you are in Erase mode, you can no longer undo markers. Conversely, when you are in Undo Mode, you cannot erase markers.

NOTE: Entering Erase mode clears markers from any overlays that you might have stored.

Activating Erase Mode

(See "Selecting an Erase Method" in "Section Two: Annotation Menu" on page 42)

Erasing Markers

Follow these instructions to erase markers. Be sure you are in Erase mode before implementing these procedures. *(See "Selecting an Erase Method" in "Section Two: Annotation Menu" on page 42)*

From the SMARTBoard[®]

1. **After marking, activate the Undo/Erase command by picking up the eraser.**

2. **Wipe the eraser over your markers.**

    The markers disappear as you wipe. When you finish erasing, lift the eraser from the board. Lifting the eraser closes the eraser function, and enters Marking mode. If you need to erase again, repeat steps 1-3.

From Other Drawing Devices

1. **After marking, activate the Undo/Erase command for your particular controller.**

    A square eraser appears on screen, ready for positioning.

2. **Drag the eraser over the markers**

    The markers disappear as you wipe. When you lift the drawing device (that is, your finger or stylus), the Pointmaker closes the eraser function, and enters Marking Mode. If you need to erase again, repeat the steps.

USING THE CHALKBOARD

You can mark on a solid background (chalkboard) or the video image. When turned on, the chalkboard will continue to be displayed even when you select a new marker overlay. Also, the chalkboard will remain on screen until you turn it off. The chalkboard is most easily selected from the digitizing tablet or keyboard, but it can also be selected from the menu system.

Activating the Chalkboard

Use these procedures to turn on the chalkboard.

From the Digitizing Tablet

1. **Select the CHALKBOARD icon on the tablet template.**

    The chalkboard command is only available on certain templates. The chalkboard appears.

2. **To exit the Chalkboard, select the VIDEO icon.**

    The video source returns.

From the Keyboard

1. **Activate the CHALKBOARD ON/OFF command.** *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

    The chalkboard appears.

2. **To exit the Chalkboard, repeat step 1.**

    The video source returns.

From the Menu System

1. **Activate the menu system.**

    (See "Activating the Menu" in "Section One: Getting Started" on page 34)

    The Main Menu appears.

2.   **Select the BACKGROUND option.**

Figure 5-1: Background Menu
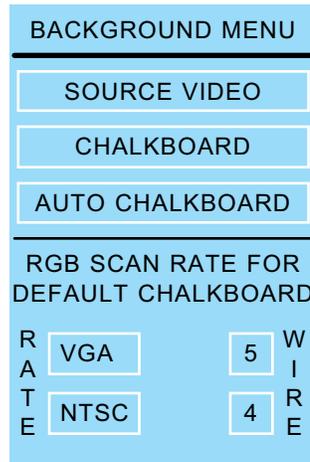
The Background Menu appears.

3.   **Select the CHALKBOARD option.**

4.   **Exit the menu system.**

The chalkboard appears, along with any markers you may have already anchored.

5.   **To exit the Chalkboard, repeat steps 1-3, but select the VIDEO SOURCE option instead of CHALKBOARD.**

The video source returns, along with any markers you may have anchored on the chalkboard.

MANIPULATING OVERLAYS

With the keyboard installed, you can display one of 10 stored marker overlays. Also, you can temporarily turn off the marker overlay, without affecting the markers you store there.

If you have the PVI-PC20 software installed and active, and you use a VGA source, you can page through 25 overlays from the keyboard or the tablet.

This section covers the following overlay functions:

- **Paging Through Overlays (in sequence or out-of-sequence)**

- **Turning an overlay Off/On**

Paging Through Overlays

Use these instructions when the keyboard or tablet is installed and you wish to display a new overlay. After you display a new overlay you can add or clear markers from that overlay. Overlays are saved automatically.

From the Keyboard

To go to the next or previous overlay

Activate the Next Overlay or Previous Overlay command. *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

The next or previous overlay of markers is displayed, and an overlay # briefly appears in the corner of the screen.

To go to an out-of sequence overlay

1. **Activate the Go To Overlay # command.** *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

   A small "#" sign appears in the lower-right corner, followed by an underscore prompting you to type a number.

2. **Type in the overlay number.**

   The overlay corresponding to the number appears. This selection is confirmed by a brief display of the overlay number in the lower-right corner of the screen.

NOTE: If you do not respond within a few seconds, the overlay does not change.

From the Digitizing Tablet

These instructions assume that you have installed and programmed the PVI-PC20 software *(See "Section Six: PVI-PC20 Software Configuration and Use" on page 111)*, and that you are using a VGA source. It is also assumed that you have selected the PC Control tablet template in the menu system *(See "Setting the Tablet Template" in "Section Four: Comm Port Devices Menu" on page 81)*.

1. **Select the POINTMAKER CONTROL icon.**

2. **Select the Previous (<) or Next (>) icon on the tablet Menu Strip.**

    The next or previous overlay of markers appears, #1 through 25.

    NOTE: If the Pointmaker PVI-PC20 software is open and the PC image is from a paginated application (such as PowerPoint), these commands will display the next or previous page in that application in tandem with the next or previous overlay of Pointmaker markers. If this is desired, be sure that the first page of markers matches the first page of the application before changing to a new page. The best way to sync up first pages is to first select the << icon (or "First Page" icon) on the tablet, then, using the PC mouse, go to the first page (or slide) of the application. The overlay and application are now in sync.

2. **To go to the first or last page, select the First Page (<<) or Last Page (>>) icon located on the tablet Menu Strip.**

    The first or last overlay of markers appears.

Turning Off the Marker Overlay

When the keyboard is installed, you can turn off the Pointmaker overlay to view the video image without any markers. When you turn the overlay on again, the markers you anchored on that overlay will reappear. You can only activate this command from the keyboard.

1. **Activate the Marker Overlay On/Off command.** *(see "Quick Reference for Keyboard" in "Appendix" on page A-6)*

    The markers disappear.

2. **Activate the Marker Overlay On/Off command again.**

The markers reappear.

SECTION SIX:
PVI-PC20 SOFTWARE
CONFIGURATION AND USE

OVERVIEW

The PVI-PC20 Input Device Software comes standard with all PVI-X90 models. The features it offers are:

- PC Control Using DT-30 Digitizing Tablet

- Customization of Two Template Icons

- Save or Print Displayed PC Images with Markers

Dual Control   This software makes it possible to use the DT-30 Digitizing Tablet for two purposes: image annotation and PC control. Icons on the template make it easy to switch modes between POINTMAKER CONTROL and PC CONTROL.

1	2	PC Control	Pointmaker Control

Figure 6-1: PVI-PC20 Template Buttons Cutaway

Customize Icon Use   The software also allows you to customize two icons on the template by choosing from a list of common PC functions. For example, you can program the icons to minimize an application, page forward, page back, or close an application. Function keys can also be assigned.

Saving & Printing   Any images from the PC can be saved or printed along with the currently displayed markers. Numerous file formats are available for saving files. A default format can be assigned for quick saves during presentations.

SETUP

The ability to switch to PC CONTROL Mode and the ability to customize and use the two tablet icons in the top row of the template is dependent on the PVI-PC20 input device software being:

- installed

- active (can be minimized)

- connected to an available PC COM port.

Installation

Connecting the PC to the Pointmaker

1. **Using the provided null modem RS-232 cable, connect a COMM port on the back of the Pointmaker to a COM port on the computer.**

    Make a note of which port numbers are used on each unit.

Installing the PVI-PC20 Software

Installation for the Pointmaker PVI-PC20 input device software for use with the DT-30 Digitizing Tablet:

1. **Insert the *PVI-PC20 Software* CD or floppy disk into the appropriate disk drive.**

2. **Click the START icon in the Windows tool bar, and select RUN.**

3. **Type in the drive letter of the CD-ROM or floppy drive and type SETUP.EXE (e.g., D:\Setup.exe).**

4. **Select OK.**

    The *PVI-PC20 input device software* will be installed.

5. **When installation is complete, click OK to close installation.**

Setting Pointmaker COMM Port Parameters

This is a very important step for establishing communications between the Pointmaker and your PC. *(See "Serial Port Settings" in "Section Four: Comm Port Devices Menu" on page 75)*

Setting PVI-PC20 Communication Parameters

1. **Click on the START button on the Windows tool bar, then PRO-GRAMS>PVIPC20.**

    The ***PVI-PC20 Setup Window*** will appear on screen.
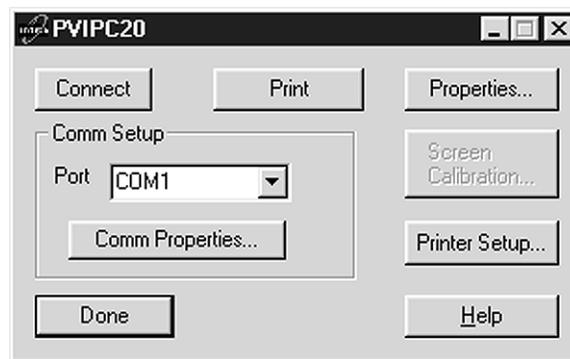
Figure 6-2: PVI-PC20 Setup Window

2. **In the PVI-PC20 Setup Window, click on the PORT pop-up menu to display the list of PC COM ports.**

3. **Click on the COM port number where the Pointmaker cable is connected to your PC** *(See "Connecting the PC to the Pointmaker" on page 115)*.

4. **When the desired port is displayed (e.g., COM 2), click on the COM PROPERTIES button.**

    The corresponding Com Properties Window will be displayed.
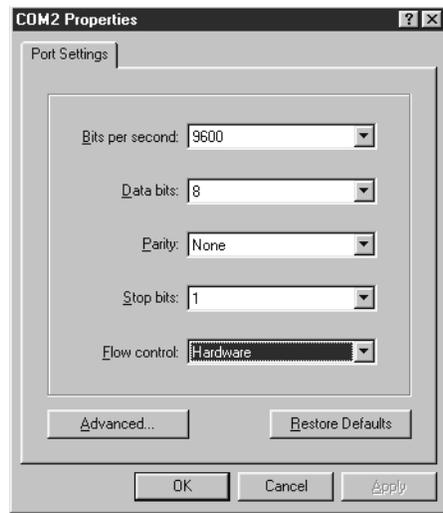
Figure 6-3: COM Properties Window

5. **Set the parameters to match those of the Pointmaker** *(See "Serial Port Settings" in "Section Four: Comm Port Devices Menu" on page 75)*.

   NOTE: FLOW CONTROL should always be set to HARDWARE.

6. **If desired, select the ADVANCED button to adjust the buffer.**

   NOTE: These adjustments should be considered fine tuning to either help establish stable connections or to attempt improved performance.

   Lower settings can correct connection problems. Higher settings can improve performance.

7. **When finished making selections in the COM Properties Window, click OK.**

   You will be returned to the PVI-PC20 Setup Window. Settings made in the COM Properties Window will be saved.

8. **Select the Done button to exit this window.**

CONNECTING/DISCONNECTING

To utilize any of the PVI-PC20 software features, the PC needs an active communications link with the Pointmaker. Once you are through using it, the link should be closed.

These instructions assume that the Setup procedures *(See "Setup" on page 115)* have been completed.

Establishing Communications with the Pointmaker

1. **Click on the START button on the Windows tool bar, then PRO-GRAMS>PVIPC20.**
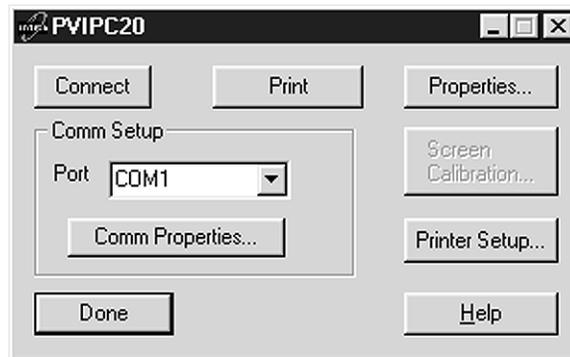
Figure 6-4: PVI-PC20 Setup Window

The ***PVI-PC20 Setup Window*** will appear on screen.

2. **In the PVI-PC20 Setup Window, click the CONNECT button.**

The PVI-PC20 software will establish communications with the Pointmaker. The CONNECT button will change to DISCONNECT. This indicates that the software is now ready for use.

NOTE: The application must remain open and the connection must be intact in order for the PVI-PC20 features to be used. Its window can be minimized if you prefer.

Closing Communications with the Pointmaker

Once you are finished using the PVI-PC20 software, the communications link should be closed. Then exit the application.

1. **In the Setup Window, click the DISCONNECT button.**

    The PVI-PC20 will close communications with the Pointmaker. The DISCONNECT button will change to CONNECT. This indicates that the connection has closed.

2. **If you are finished using the PVI-PC20 software, click the DONE button in the PVI-PC20 Setup Window.**

    The application will close.

SETTING PROPERTIES

Button Properties

Two of the buttons on the digitizing tablet can be customized to perform various PC or Pointmaker functions *(See "Button Assignment Options" on page 123)*.

1. **Open or maximize the PVI-PC20 application.**

    The **PVI-PC20 Setup Menu** will appear *(See Figure 6-2:, "PVI-PC20 Setup Window" on page 116)*. It can be connected or disconnected *(See "Connecting/Disconnecting" on page 119)*.

2. **Click on the PROPERTIES button.**

Figure 6-5: Button Properties Window
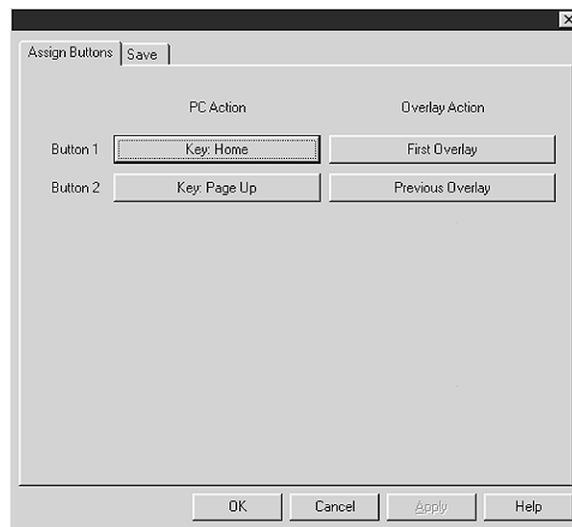
The Button Properties Window will appear.

The options in this window allow you to assign an action to either of the buttons found on the digitizing tablet template *(See Figure 6-1:, "PVI-PC20 Template Buttons Cutaway" on page 113)*.

Assigning PC or Pointmaker Actions

Only one type of action can be assigned to each button. It must be either a PC Action or an Overlay (Pointmaker) Action.

> **If you wish to assign a PC Action, continue with step 3. If you wish to assign an Overlay Action, skip to step 6.**

Assigning PC Actions to Template Buttons

3.   **Click the desired button number in the PC Action column.**
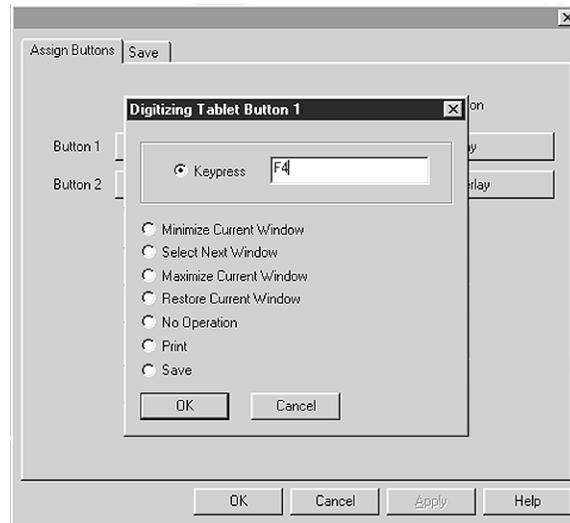
Figure 6-6: PC Action Window for Button 1

> The corresponding PC Action Window will appear.

4.   **In the PC Action Window, select the PC action that will be performed when the corresponding template icon is clicked.**

> A function key can be assigned by selecting the Keypress option. Then position the cursor in the entry box and press the desired key combination. Otherwise, select from among the radio button options underneath it.

> NOTE: Keep in mind that the actions triggered by function keys are dependent on which program is active at the time you press it.

5.   **Click OK to accept the setting.**

> The PC Action Window will close, leaving the Button Properties Window.

> **If you wish to set more PC actions, return to step 3. If you wish to assign Overlay Actions, move to step 6. Otherwise, click OK on the Assign Buttons Window to exit this process.**

6.   **Click the desired button number in the Overlay Action column.**
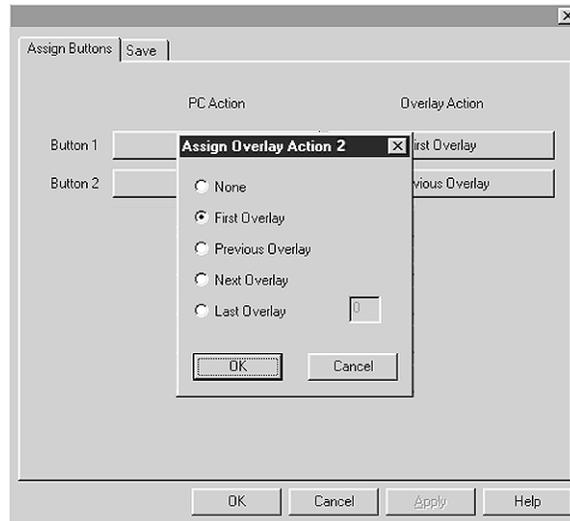
Figure 6-7: Overlay Action Window for Button 2

The corresponding Overlay Action Menu will appear.

7.   **In the Overlay Action Window, select the overlay action that will be performed when the corresponding template icon is clicked.**

8.   **Click OK to accept the setting.**

The PC Action Window will close, leaving the Button Properties Window.

If you wish to assign a PC Action, go back to step 3. If you wish to assign an Overlay Action, return to step 6. Otherwise, click OK on the Assign Buttons Window to exit this process.

Button Assignment Options

PC Actions   **Minimize Current Window**

Minimizes the open application. If no application is open, this command will have no effect.

Select Next Window

Selects the next open application by highlighting the icon for that application in the Windows task bar.

Maximize Current Window

Maximizes the application selected in the Windows task bar.

Restore Current Window

Restores to full screen the maximized or displayed application.

No Operation

Designates a "no function" zone on the tablet.

Print

Prints the entire screen as it is displayed, including any displayed application and the Pointmaker marker overlay. Automatically prints to printer selected in PVI-PC20 Print Setup Menu.

Save

Saves the entire screen as it is displayed, including the Pointmaker markers. Saves to the format and file location that are set in the PVI-PC20 Save Menu *(See "Setting Save Properties" on page 124)*.

Overlay Actions   **First Overlay**

Goes to first overlay of markers. This will always be Overlay #1.

Previous Overlay

Goes to previous overlay of markers. If users are on Overlay #1, this will cycle back to Overlay #25.

Next Overlay

Goes to the next overlay of markers. If users are on Overlay #25, this will cycle forward to Overlay #1.

Last Overlay

Goes to the last overlay of markers, as designated in the PVI-X90 Hardware Setup Menu>Tablet Setup. Factory setting for the last overlay is Overlay #25.

None

Has no affect on the marker overlay. Used automatically if a PC action is assigned to the button.

Setting Save Properties

If one of the template buttons is assigned to save the currently displayed image, this section explains how to set properties for saving images.

1.   Open or maximize the PVI-PC20 application.

The **PVI-PC20 Setup Menu** will appear *(See Figure 6-2:, "PVI-PC20 Setup Window" on page 116)*. It can be connected or disconnected *(See "Connecting/Disconnecting" on page 119)*.

2. **Click on the PROPERTIES button.**

    The Button Properties Window will appear *(See Figure 6-5:, "Button Properties Window" on page 121)*.

3. **Select the SAVE tab.**
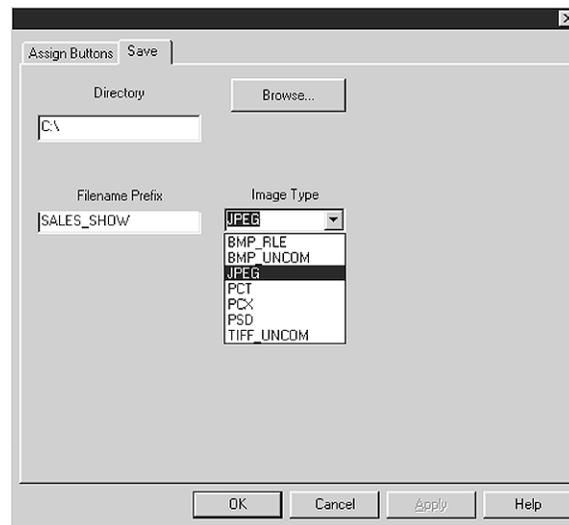
Figure 6-8: Save Properties Window

The Save Properties Window will appear.

4. **Set the directory where images are to be saved.**

    You can either type the directory location in the box under "Directory" or click the Browse button and navigate to the directory you desire.

5. **Type the prefix name for your saved files in the FILENAME PREFIX box.**

    NOTE: A saved file will be given this name with a number appended to it. Numbers begin with 1 and with each save the filename increases by 1 digit. For example, if the prefix is "Sales_Show" the images will be saved in sequence as "Sales_Show1," "Sales_Show2,"*"Sales_Show3,"* etc.

6. **Select the default file format for saved images using the IMAGE TYPE pull down menu.**

The selected format will be displayed in the IMAGE TYPE window, and is now the default setting anytime you save a displayed image.

NOTE: Formats listed with "UNCOM" are uncompressed images, which offer the fullest resolution, but also create larger files.

7. Click OK.

The Save Properties window will save your settings and close, revealing the PVI-PC20 Setup Window *(See "PVI-PC20 Setup Window" on page 119)*.

Setting Print Defaults

Displayed images, including markers, can be printed by selecting the PRINT button on the PVI-PC20 Setup Window *(See "PVI-PC20 Setup Window" on page 119)*. They can also be printed by clicking a digitizing tablet icon that has been assigned the "print" PC Action *(See "Assigning PC Actions to Template Buttons" on page 122)*.

1. Open or maximize the PVI-PC20 application.

The PVI-PC20 Setup Window will appear.

2. Click on the PRINTER SETUP tab.

The standard Print Setup Window will appear.

3. Make whatever settings you desire for printing your displayed images.

4. Click OK.

The Print Setup window will save your settings and close, revealing the PVI-PC20 Setup Window.

CALIBRATING THE PC WITH THE POINTMAKER

The calibration feature in the PVI-PC20 software is offered for two reasons:

- To maximize the accuracy of Pointmaker-generated markers over PC-generated images

- To ensure that the tablet stylus will operate the PC cursor as accurately as it does the Pointmaker cursor.

You don't have to calibrate the Pointmaker with the PC screen. However, we recommend it in order to get the most accurate alignment for drawing and pointing with the Pointmaker tablet or other Pointmaker controllers.

Calibrating the PC Screen with the Pointmaker Overlays

1. **Open or maximize the PVI-PC20 application.**

    The PVI-PC20 Setup Menu will appear *(See "PVI-PC20 Setup Window" on page 119)*.

2. **Be sure the communication connection is established between the PC and the Pointmaker** *(See "Establishing Communications with the Pointmaker" on page 119)***.**

3. **Using the tablet stylus, select the small cross hairs pointer on the template.**

    NOTE: Other pointers may be used, but the small cross hairs pointer will give you greater targeting accuracy. Be sure you are in POINTMAKER CONTROL Mode, or you will not be able to select pointers *(See "Switching Tablet Modes" on page 131)*.

4. **Using the PC mouse, click the SCREEN CALIBRATION button in the PC Setup Window.**
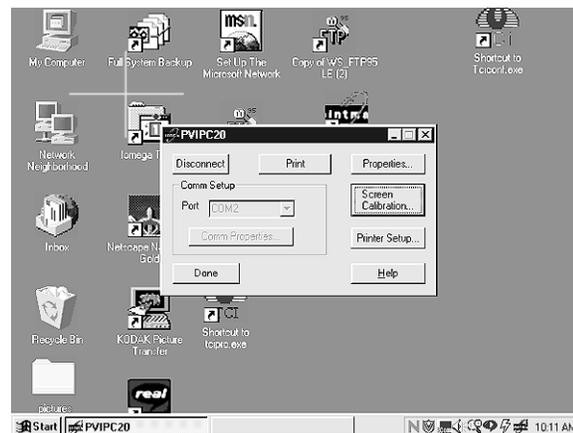
Figure 6-9: First Screen Calibration Target

A large cross hairs target will appear in the upper left of the PC screen.

5. **Using the tablet stylus, align the center of the small cross hairs cursor over the center of the large cross hairs target, then click the pen tip into the tablet.**
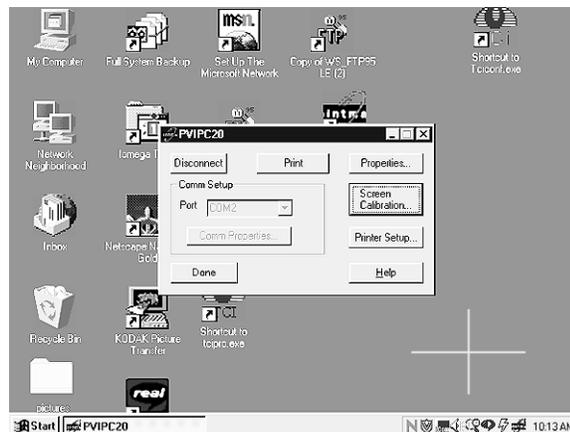
Figure 6-10: Second Screen Calibration Target

The target will disappear and another large cross hairs target will appear in the lower right of the PC screen.

6. **Again, using the tablet stylus, align the center of the small cross hairs cursor over the center of the large cross hairs target, then click the pen tip into the tablet.**

The target will disappear and the calibration process ends. The screen is now calibrated. The PVI-PC20 Setup Menu will remain on screen so that you can make any other selections.

NOTE: Boeckeler recommends recalibrating the screen anytime a new PC monitor or display is used.

SWITCHING TABLET MODES

PC Control and Pointmaker Control

The PVI-PC20 software enables the Pointmaker DT-30 Digitizing Tablet to do double duty. Along with controlling Pointmaker annotations and functions, it can also be used as a mouse device for the PC.

PC Control

1. **Open or maximize the PVI-PC20 application.**

   The PVI-PC20 Setup Menu will appear *(See "PVI-PC20 Setup Window" on page 119)*.

2. **Be sure the communication connection is established between the PC and the Pointmaker** *(See "Establishing Communications with the Pointmaker" on page 119)*.

3. **Minimize the application.**

4. **Click the PC CONTROL icon on the digitizing tablet template.**

    The tablet may now be used as a PC mouse device. It can no longer be used to draw and drop pointers, but instead, can be used to make desktop and application selections, just as a PC mouse would.

Pointmaker Control

1. **Click the POINTMAKER CONTROL icon on the digitizing tablet template.**

    The tablet may now be used as a Pointmaker annotation device.

    NOTE: The Pointmaker Control mode is not dependent upon the PVI-PC20 software in any way. Only in the PC CONTROL mode is it necessary for the PVI-PC20 software to be running with an established communication link between it and the Pointmaker *(See "Establishing Communications with the Pointmaker" on page 119)*.

SECTION SEVEN: COMMANDS FOR RS-232 CONTROL

INTRODUCTION

The following commands can be used to program A/V programmable remote control systems allowing the **PVI-X90** to be operated from a remote device.

All commands begin with an ASCII escape (<Esc>) code (generated using the Esc key on your keyboard), followed by a forward parenthesis "(". The initiating code then appears as follows:

<Esc>(

All other characters which follow this command require a combination of alphanumeric codes.

X-Y Coordinate Grid

Numerous commands refer to a screen grid with coordinates based on an internal grid that is 1Ø24 x 1Ø24 units. The grid can be absolute, covering the entire screen area, or relative to a current position. The absolute grid coordinate of ØØØØØØØØ is at the upper-left of the screen. The grid coordinate of 1Ø231Ø23, then, is in the lower-right. Relative grid coordinates can include negative numbers to indicate positions above or left of a current position. In the illustration below, XXXX = a numeric value for the horizontal axis. YYYY = a numeric value for the vertical axis.
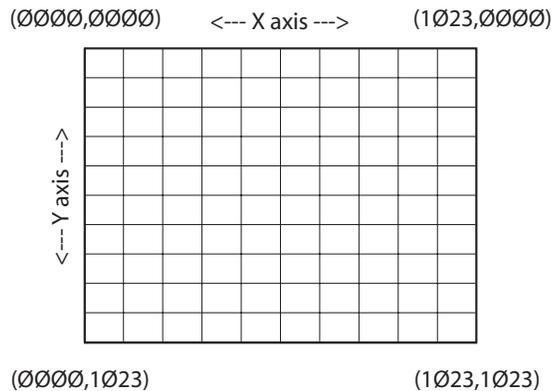
Figure 7-1: Screen Grid

COMMANDS

(A) Autodetect Monitor

The "A" command tells the Pointmaker whether to automatically detect what type of monitor is being used.

<Esc>(A1	Enables Autodetect
<Esc>(AØ	Disables Autodetect

NOTE: The Autodetect command is overridden by the Monitor (**M**) command.

(B) Background

The "B" command tells the Pointmaker which background to use.

<Esc>(BV	Video Background
<Esc>(BC	Chalkboard Background
<Esc>(BT	Video/Chalkboard Toggle
<Esc>(BL1	Display Text Background(on text and date/time labels)
<Esc>(BLØ	No Text Background(on text and date/time labels)
<Esc>(BLT	Toggle Text Background(on text and date/time labels)

(C) Active Marker Off/On

The "C" command turns the visibility of the active marker off or on. If off, note that it will reappear if the pointing device is moved. Unlike turning the *pointer* off or on, turning the *active marker* off or on will affect any active marker, not just an active pointer. This includes an active frame, active text label, and active date/time label.

<Esc>(CØ	Turn active marker off.
<Esc>(C1	Turn active marker on.
<Esc>(CT	Toggle active marker visibility.

(CA) Calibrations

The "CA" command assigns a calibration to a selected port.

<Esc>(CA0pnn	Port "p" has calibration "nn" assigned to it p is a numeric value of 0-9 designating ports 1-10 nn is a numeric value 1-10 designating calibrations 1-10

. Examples:

<Esc>(CA0004	Utilize Cal #4, Port 1
<Esc>(CA0505	Utilize Cal #5, Port 6
<Esc>(CA0806	Utilize Cal #6, Port 9

(CE) Color Enable

The "CE" command determines what colors are available from the color palette. Refer to the "CS" commands for how to change the color of a marker using this enabled palette.

<Esc>(CEW1	Enable White
<Esc>(CEWØ	Disable White
<Esc>(CEB1	Enable Black
<Esc>(CEBØ	Disable Black
<Esc>(CEP1	Enable Pink
<Esc>(CEPØ	Disable Pink
<Esc>(CEG1	Enable Green
<Esc>(CEGØ	Disable Green
<Esc>(CEY1	Enable Yellow
<Esc>(CEYØ	Disable Yellow
<Esc>(CEC1	Enable Cyan
<Esc>(CECØ	Disable Cyan
<Esc>(CER1	Enable Red
<Esc>(CERØ	Disable Red

(CL) Clear

The "CL" command clears the markers from the video overlay.

<Esc>(CL	Clears All Markers

(CM) Marker Move

The "CM" command moves an active marker (pointer, frame, label or text or date/time label) using the XY coordinate grid. *(See "X-Y Coordinate Grid" on page 135)* The coordinates are: XXXX = a numeric value for the horizontal axis point and YYYY = a numeric value for the vertical axis point.

<Esc>(CMXXXXYYYY	Move an active marker to coordinates XXXX and YYYY Example: <Esc>(CMØØ25ØØ37

(CS) Color Selection

The "CS" command handles color attributes of an active marker. These commands will force an "enable" of the color selected without having to enable that color using the "CE" commands or going to the Setup Menu.

<Esc>(CSR	Select Red
<Esc>(CSW	Select White
<Esc>(CSB	Select Black
<Esc>(CSP	Select Pink
<Esc>(CSG	Select Green
<Esc>(CSY	Select Yellow
<Esc>(CSC	Select Cyan
<Esc>(CSN	Select Next sequence forward to the next available color that has been enabled. *(See "(CE) Color Enable" on page 138)*
<Esc>(CSD1	Display Color Change display a sample block of the new color. May be desired if a pointer is not being displayed. The option may not be desired if users wish to change colors during a live broadcast.
<Esc>(CSDØ	Do not display color change

<Esc>(CSDT	Toggle color change display

(DL) Draw Line

The "DL" command draws a line using the XY coordinate grid. *(See "X-Y Coordinate Grid" on page 135)* The first coordinate series XXXXYYYY is the beginning point of the drawn line, and the second series XXXXYYYY represents the end point of the drawn line.

<Esc>(DLXXXXYYYYXXXXYYYY	Draw a Line

(DP) Drop Marker

The "DP" command drops an active marker (pointer, frame, label or cursor) using the XY coordinate grid. *(See "X-Y Coordinate Grid" on page 135)* The coordinates are: XXXX = a numeric value for the horizontal axis point and YYYY = a numeric value for the vertical axis point.

<Esc>(DPXXXXYYYY	Drop an active marker at coordinates XXXX and YYYY Example: <Esc>(DPØØ25ØØ37

(E) Echo

The "E" command tells the Pointmaker to echo the input over the RS-232 link, in full, in part or not at all.

<Esc>(EA	Echo all input
<Esc>(EC	Echo all except commands
<Esc>(EN	Disable echo

(EM) Erase Method

The "EM" command activates your choice of erase methods.

ESC(EM0	Erase Method: "UNDO"
ESC(EM1	Erase using Small eraser
ESC(EM2	Erase using Medium eraser
ESC(EM3	Erase using Large eraser

(FS) Frame Size

The "FS" command defines an active frame.

<Esc>(FSXXXXYYYY	Designating the size of an active frame. XXXX = a numeric value for the horizontal dimension. YYYY = a numeric value for the vertical dimension. Units range from ØØØ1 to 1Ø24.

(FT) Frame Type

The "FT" command tells the Pointmaker which type of frame to display on-screen.

<Esc>(FTBØ	Box Frame
<Esc>(FTB1	Filled Box Frame
<Esc>(FTCØ	Circle Frame
<Esc>(FTC1	Filled Circle Frame
<Esc>(FTN	Next Frame

(I) Marker Intensity or Brightness

The "I" command sets the intensity or brightness level for markers. Positive or negative values may be coded.

<Esc>(ISXXX	Set the brightness level (absolute). XXX is numeric value between -256 and 256.

<Esc>(ICXXX	Increases brightness level (relative). XXX is numeric value between -256 and 256.
<Esc>(IC-XXX	Decreases brightness level (relative). XXX is numeric value between -256 and 256.

(IM) Identify Mode for Multiple Users

The "IM" command designates the mode to use when multiple digitizing tablets or touch screens are installed. When PRIORITY USER mode is selected, users will also need to send the command designating which controller (COMM #) is the priority user.

<Esc>(IMO	Assigns Open Mode.
<Esc>(IMS	Assigns Selective Mode.
<Esc>(IMP	Assigns Priority User Mode.
<Esc>(IMCXX	Sets COMM port for Priority User. XX = the COMM port (01-10) The port selected should be connected to a digitizing tablet or touch screen.

(L) Line Style

The "L" command determines the line style to use when drawing a freehand line, straight line or frame.

<Esc>(LF	Fine or thin line.
<Esc>(LSF	Fine or thin line with drop shadow.
<Esc>(LM	Medium line.
<Esc>(LSM	Medium line with drop shadow.
<Esc>(LB	Bold line.
<Esc>(LSB	Bold line with drop shadow.

(M) Input Port and Chalkboard Generation

The "M" commands are designed to tell the PVI-X90 several things about the incoming video signal:

• which input port to activate

- if the incoming signal is NTSC or PAL (for Composite and S-Video only)
- the resolution and scan rate for generating the chalkboard when it's activated(VGA only)

Command Structure for Composite and S-Video(Y/C) Ports

1) Command Prefix:
    <Esc>(M

2) Port Type and Number:
    C or Y (composite or Y/C)
    1 or 2 (port 1 or 2)

3) Video Standard:
    N (NTSC)
    P (PAL)

Commands for Composite and S-Video Inputs

<Esc>(MC1N	Composite, Port 1, NTSC
<Esc>(MC1P	Composite, Port 1, PAL
<Esc>(MC2N	Composite, Port 2, NTSC
<Esc>(MC2P	Composite, Port 2, PAL
<Esc>(MY1N	S-Video(Y/C), Port 1, NTSC
<Esc>(MY1P	S-Video(Y/C), Port 1, PAL
<Esc>(MY2N	S-Video(Y/C), Port 2, NTSC
<Esc>(MY2P	S-Video(Y/C), Port 2, PAL

VGA Ports: Chalkboard Resolution & Sync

The MV command designates a VGA port and is followed by the VGA port number, then a three digit number (000 to 075 from the Chalkboard Generation Table below).

When formulating a command for one of the VGA inputs, it is **required** to enter one of the three digit numbers from the table below. It uses the associated resolution and scan rate only if there is no video input. Otherwise, the autodetect feature on the PVI-X90 will sense the video input and match it's resolution when generating the chalkboard, overriding the command. Therefore, if you have a video input, it makes no difference what three digit number you enter in the command. Composite sync is 4 wire, H/V (horizontal/vertical) sync is 5 wire.

.

Sample Commands for VGA Inputs

<Esc>(MV1018	VGA, Port 1, VGA 640 x 480, 37.9 kHz, 72 Hz, Composite sync
<Esc>(MV2009	VGA, Port 2, SVGA 800 x 600, 35.2 kHz, 56 Hz, H/V sync

Chalkboard Generation Table

Resolution	Sync	command
VGA 640 x 350, 31.5 kHz, 70 Hz	composite	000
VGA 640 x 350, 31.5 kHz, 70 Hz	H/V	001
VGA 640 x 400, 31.5 kHz, 70 Hz	composite	002
VGA 640 x 400, 31.5 kHz, 70 Hz	H/V	003
VGA 640 x 480, 31.5 kHz, 60 Hz	composite	004
VGA 640 x 480, 31.5 kHz, 60 Hz	H/V	005
Mac 640 x 480, 35.5 kHz, 67 Hz	composite	006
Mac 640 x 480, 35.5 kHz, 67 Hz	H/V	007
SVGA 800 x 600, 35.2 kHz, 56 Hz	composite	008
SVGA 800 x 600, 35.2 kHz, 56 Hz	H/V	009
SVGA 1024 x 768 interlaced, 35.5 kHz, 87/43 Hz	composite	010
SVGA 1024 x 768 interlaced, 35.5 kHz, 87/43 Hz	H/V	011
SVGA 1024 x 768, 48.4 kHz, 60 Hz	composite negative	012
SVGA 1024 x 768, 48.4 kHz, 60 Hz	H/V negative	013
SVGA) 1024 x 768, 48.4 kHz, 60 Hz	composite positive	014
SVGA 1024 x 768, 48.4 kHz, 60 Hz	H/V positive	015
SVGA 1280 x 1024, 63.9 kHz, 60 Hz	composite	016
SVGA 1280 x 1024, 63.9 kHz, 60 Hz	H/V	017
VGA 640 x 480, 37.9 kHz, 72 Hz	composite	018
VGA 640 x 480, 37.9 kHz, 72 Hz	H/V	019
Mac 832 x 624, 44.9 kHz, 67 Hz	composite	020
Mac 832 x 624, 44.9 kHz, 67 Hz	H/V	021
SVGA 1152 x 900, 61.8 kHz, 66 Hz	composite	022

Chalkboard Generation Table

Resolution	Sync	command
SVGA 1152 x 900, 61.8 kHz, 66 Hz	H/V	023
SVGA 1152 x 900, 71.7 kHz, 76 Hz	composite	024
SVGA 1152 x 900, 71.7 kHz, 76 Hz	H/V	025
SVGA 1024 x 768, 56.5 kHz, 70 Hz	composite	026
SVGA 1024 x 768, 56.5 kHz, 70 Hz	H/V	027
SVGA 800 x 600, 37.9 kHz, 60 Hz	composite	028
SVGA 800 x 600, 37.9 kHz, 60 Hz	H/V	029
SUN 1280 x 1024, 81.0 kHz, 76 Hz	composite	030
SUN 1280 x 1024, 81.0 kHz, 76 Hz	H/V	031
SVGA 800 x 600, 48.1 kHz, 72 Hz	composite	032
SVGA 800 x 600, 48.1 kHz, 72 Hz	H/V	033
VGA 640 x 400, 37.9 kHz, 85 Hz	composite	034
VGA 640 x 400, 37.9 kHz, 85 Hz	H/V	035
SVGA 1024 x 768, 60 kHz, 75 Hz	composite	036
SVGA 1024 x 768, 60 kHz, 75 Hz	H/V	037
SVGA 1024 x 768, 68.7 kHz, 85 Hz	composite	038
SVGA 1024 x 768, 68.7 kHz, 85 Hz	H/V	039
SVGA 1152 x 864, 67.5 kHz, 75 Hz	composite	040
SVGA 1152 x 864, 67.5 kHz, 75 Hz	H/V	041
VGA 640 x 480, 37.5 kHz, 75 Hz	composite	042
VGA 640 x 480, 37.5 kHz, 75 Hz	H/V	043
VGA 640 x 480, 43.3 kHz, 85 Hz	composite	044
VGA 640 x 480, 43.3 kHz, 85 Hz	H/V	045
SVGA 800 x 600, 46.9 kHz, 75 Hz	composite	046
SVGA 800 x 600, 46.9 kHz, 75 Hz	H/V	047
SVGA 800 x 600, 53.7 kHz, 85 Hz	composite	048
SVGA 800 x 600, 53.7 kHz, 85 Hz	H/V	049
SVGA 1280 x 1024, 80 kHz, 75 Hz	composite	050
SVGA 1280 x 1024, 80 kHz, 75 Hz	H/V	051
SVGA 1600 x 1200, 75 kHz, 60 Hz	composite	052
SVGA 1600 x 1200, 75 kHz, 60 Hz	H/V	053

Chalkboard Generation Table

Resolution	Sync	command
APOLLO 1024 x 800, 63.9kHz, 76 Hz	composite	054
APOLLO 1024 x 800, 63.9kHz, 76 Hz	H/V	055
DEC 1024 x 864, 54.0 kHz, 60 Hz	composite	056
DEC 1024 x 864, 54.0 kHz, 60 Hz	H/V	057
IBM 1360 x 1024, 70.8 kHz, 67 Hz	composite	058
IBM 1360 x 1024, 70.8 kHz, 67 Hz	H/V	059
DEC 1024 x 768, 57.4 kHz, 72 Hz	composite	060
DEC 1024 x 768, 57.4 kHz, 72 Hz	H/V	061
SGI 1280 x 1024, 76.9 kHz, 72 Hz	composite	062
SGI 1280 x 1024, 76.9 kHz, 72 Hz	H/V	063
Mac 832 x 624, 49.7 kHz, 75 Hz	composite	064
Mac 832 x 624, 49.7 kHz, 75 Hz	H/V	065
SVGA 1280 x 1024, 91.1 kHz, 85 Hz	composite	066
SVGA 1280 x 1024, 91.1 kHz, 85 Hz	H/V	067
SVGA 1600 x 1200, 81.3 kHz, 65 Hz	composite	068
SVGA 1600 x 1200, 81.3 kHz, 65 Hz	H/V	069
SVGA 1600 x 1200, 87.5 kHz, 70 Hz	composite	070
SVGA 1600 x 1200, 87.5 kHz, 70 Hz	H/V	071
SVGA 1600 x 1200, 93.8 kHz, 75 Hz	composite	072
SVGA 1600 x 1200, 93.8 kHz, 75 Hz	H/V	073
SVGA 1600 x 1200, 106.3 kHz, 85 Hz	composite	074
SVGA 1600 x 1200, 106.3 kHz, 85 Hz	H/V	075
HDTV 1920 X 1080, 60Hz	H/V	076
HDTV 1920 X 1080, 60Hz	composite	077
HDTV 1920 X 1080, 60Hz, interlaced	H/V	078
HDTV 1920 X 1080, 60Hz, interlaced	composite	079
HDTV 1920 X 1080, 30Hz	H/V	080
HDTV 1920 X 1080, 30Hz	composite	081
HDTV 1920 X 1080, 50Hz	H/V	082
HDTV 1920 X 1080, 50Hz	composite	083
HDTV 1920 X 1080, 50Hz, interlaced	H/V	084

Chalkboard Generation Table

Resolution	Sync	command
HDTV 1920 X 1080, 50Hz, interlaced	composite	085
HDTV 1920 X 1080, 25Hz	H/V	086
HDTV 1920 X 1080, 25Hz	composite	087
HDTV 1280 X 720, 60Hz	H/V	088
HDTV 1280 X 720, 60Hz	composite	089
HDTV 1280 X 720, 30Hz	H/V	090
HDTV 1280 X 720, 30Hz	composite	091
HDTV 1280 X 720, 50Hz	H/V	092
HDTV 1280 X 720, 50Hz	composite	093
HDTV 1280 X 720, 25Hz	H/V	094
HDTV 1280 X 720, 25Hz	composite	095
HDTV 1920 X 1035, 60Hz, interlaced	H/V	096
HDTV 1920 X 1035, 60Hz, interlaced	composite	097
HDTV 720 X 483, 60Hz	H/V	098
HDTV 720 X 483, 60Hz	composite	099

(MO) Video Output

The "MO" commands indicate which VGA Out ports are enabled.

<Esc>(MO1	VGA OUT 1
<Esc>(MO2	VGA OUT 2
<Esc>(MO3	VGA OUT 1 and 2
<Esc>(MO4	VGA OUT 3
<Esc>(MO5	VGA OUT 1 and 3
<Esc>(MO6	VGA OUT 2 and 3
<Esc>(MO7	VGA OUT 1, 2, and 3
<Esc>(MO8	VGA OUT 4
<Esc>(MO9	VGA OUT 1 and 4
<Esc>(MOA	VGA OUT 2 and 4
<Esc>(MOB	VGA OUT 1, 2 and 4
<Esc>(MOC	VGA OUT 3 and 4

<Esc>(MOD	VGA OUT 1, 3 and 4
<Esc>(MOE	VGA OUT 2, 3 and 4
<Esc>(MOF	VGA OUT 1, 2, 3 and 4

(O) Offset for Light Pen

The "O" commands tell the Pointmaker how far to offset the light pen marking relative to where the pen touches the screen using the XY coordinate grid *(See "X-Y Coordinate Grid" on page 135)*. The coordinates are: XXXX = a numeric value for the horizontal axis point and YYYY = a numeric value for the vertical axis point.

<Esc>(OXXXXYYYY	Move the offset to coordinates XXXX and YYYY Example: <Esc>(OØØ25ØØ37

NOTE: A negative pixel value can also be used. That is, the offset may be commanded in a negative direction horizontally (to the left of the pen tip) or in a negative direction vertically (above the pen tip). A combination of a negative and positive command would appear as follows, where the offset is adjusted slightly to the left and below the pen tip.

<Esc>(0-ØØ25ØØ37

(PA) Pass-through

The "PA" command enables the video image to "pass-through" the system without displaying the marker overlay.

<Esc>(PA1	Enable pass-through. (overlay is hidden)
<Esc>(PAØ	Disable pass-through. (overlay is displayed)
<Esc>(PAT	Toggle pass-through.

(PT) Pointer Type

The "PT" command controls the display of pointer types contained in the Pointmaker.

<Esc>(PTC	Displays Circle

<Esc>(PTDL	Display Down Left Arrow
<Esc>(PTDØ	Display Down Arrow
<Esc>(PTDR	Display Down Right Arrow
<Esc>(PTL	Display Left Arrow
<Esc>(PTN	Hide Pointer
<Esc>(PTP	Display Cross Hairs
<Esc>(PTR	Display Right Arrow
<Esc>(PTSC	Display Small Circle
<Esc>(PTSP	Display Small Cross Hairs
<Esc>(PTT1	Enable pointer toggle.
<Esc>(PTT2	Turn pointer off.
<Esc>(PTT3	Turn pointer on.
<Esc>(PTT4	Toggle pointer on/off.
<Esc>(PTT5	Display next pointer selects next pointer in the sequence.
<Esc>(PTTØ	Disable pointer toggle.
<Esc>(PTUL	Display Up Left Arrow
<Esc>(PTUØ	Display Up Arrow
<Esc>(PTUR	Display Up Right Arrow

(PX) Proximity On/Off

The "PX" command controls the pen proximity feature of digitizing tablets and light pens. When proximity is on, active pointers disappear when the pen is lifted from the drawing area. When proximity is off, active pointers remain on-screen when the pen is lifted.

<Esc>(PX1	Turn proximity on.
<Esc>(PXØ	Turn proximity off.
<Esc>(PXT	Toggle proximity.

(R) Restart Pointmaker

The "R" command restarts the Pointmaker. Options include saving current settings and markers in memory (a soft boot), or clearing memory of all settings and markers (a hard boot).

<Esc>(RS	Restart saving current settings and markers in memory.
<Esc>(RH	Restart clearing current settings and markers.

(S) Date/Time Marker

The "S" command controls options concerning the date/time marker. It displays as an active marker.

<Esc>(STØ	Displays date/time marker in time only mode.
<Esc>(SDØ	Displays date/time marker in date only mode.
<Esc>(SDT	Displays date/time marker in time only mode.
<Esc>(SDS*MMDDYYYY*	Set the date. M=month, D=Day, Y=year
<Esc>(STA*HHMM*	Set time as a.m. H=hour, M=minute
<Esc>(STP*HHMM*	Set time as p.m. H=hour, M=minute

(SA) Audio Settings

The "SA" command affects the audio signal of one of the six audio input ports or of the master gain. There are two main branches of the SA command: setting the gain to an absolute value (SAnS), or incrementing or decrementing the gain relative to its current setting (SAnC).

<Esc>(SAnSmm	Set the gain of an audio input port n is the number of the audio input port mm is a value in decibels (from -51 to 09)
<Esc>(SA7Smm	Set the master gain mm is a value in decibels (from -51 to 09)
<Esc>(SAnCmm	Adjust the gain of an audio input port n is the number of the audio input port mm is a value in decibels (from -60 to 60)

<Esc>(SA7Cmm	Adjust the master gain mm is a value in decibels (from -60 to 60)

(SC) Scaled Video Adjustments

The SC commands affect various parameters of the scaled video.

<Esc>(SCBnnn	Sets the brightness on the scaled video image. nnn is a 3 digit decimal number. Range 0 to 255
<Esc>(SCCnnn	Sets the contrast on the scaled video image. nnn is a 3 digit decimal number. Range -128 to 127.
<Esc>(SCFØ	Freezes the current video image (Ø stands for zero)
<Esc>(SC1	Cancels the freeze command, allowing the video image to return to normal
<Esc>(SCT	Toggles the video freeze command
<Esc>(SCHnnn	Increases/decreases the height of the scaled video image from its base(100%) setting. nnn is a percentage value divided by 10. (The height range will not extend below 90% or above 110%) Example: to decrease the height of the video image by 5.3%, you would send the command <Esc>(SCH-053. Range -100 to 100 (-10.0% to 10.0%).
<Esc>(SCOnn	Sets the output format for the scaled video image. nn is a 2 digit decimal number. Choices are:
	00 - 640 x 480 at 60 Hz vertical frequency
	01 - 640 x 480 at 72 Hz vertical frequency
	02 - 640 x 480 at 75 Hz vertical frequency
	03 - 640 x 480 at 85 Hz vertical frequency
	04 - 800 x 600 at 56 Hz vertical frequency
	05 - 800 x 600 at 60 Hz vertical frequency
	06 - 800 x 600 at 72 Hz vertical frequency
	07 - 800 x 600 at 75 Hz vertical frequency
	08 - 800 x 600 at 85 Hz vertical frequency
	09 - 1024 x 768 at 60 Hz vertical frequency
	10 - 1024 x 768 at 70 Hz vertical frequency
	11 - 1024 x 768 at 72 Hz vertical frequency
	12 - 1024 x 768 at 75 Hz vertical frequency
	13 - 1024 x 768 at 85 Hz vertical frequency

	14 - 1280 x 1024 at 60 Hz vertical frequency
	15 - 1280 x 1024 at 72 Hz vertical frequency
	16 - 1280 x 1024 at 75 Hz vertical frequency
	17 - 1280 x 1024 at 85 Hz vertical frequency
<Esc>(SCSnnn	Sets the saturation on the scaled video image. nnn is a 3 digit decimal number. Range -128 to 127.
<Esc>(SCUnnn	Sets the hue on the scaled video image. nnn is a 3 digit decimal number. Range -128 to 127.
<Esc>(SCWnnn	Adjusts the width of the scaled video image by the percentage value divided by 10 indicated by the decimal number nnn. For example, to increase the width of the video image by 5.3% you would send the command <Esc>(SCX053. Range is -100 to 100 (-10.0% to 10.0%).
<Esc>(SCXnnn	Adjusts the horizontal position of the scaled video image by the percentage value divided by 10 indicated by the decimal number nnn. For example, to move the video image to the right by 5.3% you would send the command <Esc>(SCX053. Range is -100 to 100 (-10.0% to 10.0%).
<Esc>(SCYnnn	Adjusts the vertical position of the scaled video image by the percentage value divided by 10 indicated by the decimal number nnn. For example, to move the video image up by 5.3% you would send the command <Esc>(SCY-053. Range is -100 to 100 (-10.0% to 10.0%).

(SR) Scaled Video Adjustments - Relative

The SR commands offer relative adjustments of various scaled video parameters.

| <Esc>(SRBnnn | Increases/decreases the brightness on the scaled video image relative to its current setting. nnn is a 3 digit signed decimal number.
 Range -255 to 255 |
| <Esc>(SRCnnn | Increases/decreases the contrast on the scaled video image relative to its current setting. nnn is a 3 digit signed decimal number.
 Range -128 to 127 |

<Esc>(SRHnnn	Increases/decreases the height of the scaled video image relative to its current setting. nnn is a percentage value divided by 10. (Note: The absolute height range will not extend below 90% or above 110% of the unit's factory setting.) Example: to decrease the height of the video image by 5.3%, you would send the command <Esc>(SRH-053. Range -100 to 100 (-10.0% to 10.0%).
<Esc>(SRSnnn	Increases/decreases the saturation on the scaled video image relative to its current setting. nnn is a 3 digit decimal number. Range -128 to 127.
<Esc>(SRUnnn	Changes the hue on the scaled video image relative to its current setting. nnn is a 3 digit decimal number. Range -128 to 127.
<Esc>(SRWnnn	Increases/decreases the width of the scaled video image relative to its current setting. nnn is a percentage value divided by 10. (Note: The absolute width range will not extend below 90% or above 110% of the unit's factory setting.) Example: to decrease the width of the video image by 5.3%, you would send the command <Esc>(SRW-053. Range -100 to 100 (-10.0% to 10.0%).
<Esc>(SRXnnn	Adjusts the horizontal position of the scaled video image relative to its current setting. nnn is a percentage value divided by 10. (Note: The adjustment is limted to a 10% total change either left or right of the unit's factory setting.) Example: to lower the position of the video image by 5.3%, you would send the command <Esc>(SRX-053. Range -100 to 100 (-10.0% to 10.0%).
<Esc>(SRYnnn	Adjusts the vertical position of the scaled video image relative to its current setting. nnn is a percentage value divided by 10. (Note: The adjustment is limted to a 10% total change either above or below the unit's factory setting.) Example: to lower the position of the video image by 5.3%, you would send the command <Esc>(SRY-053. Range -100 to 100 (-10.0% to 10.0%).

(SU) Menu System Visibility

The first set of "SU" commands control the visibility of the menu system. These commands supercede the touch screen and digital tablet ability to display the menu system. The keyboard command to display the menu will override these commands.

<Esc>(SUØ	Turn menu visibility off.
<Esc>(SU1	Turn menu visibility on.
<Esc>(SUT	Toggle menu visibility on/off.

(SUG) Graphics Display

The "SUG" command controls which video outputs can display graphics.

<Esc>(SUG1	VGA OUT 1
<Esc>(SUG2	VGA OUT 2
<Esc>(SUG3	VGA OUT 1 and 2
<Esc>(SUG4	VGA OUT 3
<Esc>(SUG5	VGA OUT 1 and 3
<Esc>(SUG6	VGA OUT 2 and 3
<Esc>(SUG7	VGA OUT 1, 2, and 3
<Esc>(SUG8	VGA OUT 4
<Esc>(SUG9	VGA OUT 1 and 4
<Esc>(SUGA	VGA OUT 2 and 4
<Esc>(SUGB	VGA OUT 1, 2 and 4
<Esc>(SUGC	VGA OUT 3 and 4
<Esc>(SUGD	VGA OUT 1, 3 and 4
<Esc>(SUGE	VGA OUT 2, 3 and 4
<Esc>(SUGF	VGA OUT 1, 2, 3 and 4

(SUM) Menu System

The "SUM" command displays the Main Menu.

<Esc>(SUM	Activate the menu system.

(SUO) Menu System Display

The "SUO" command controls which video outputs can display the menu system.

<Esc>(SUO1	VGA OUT 1
<Esc>(SUO2	VGA OUT 2
<Esc>(SUO3	VGA OUT 1 and 2
<Esc>(SUO4	VGA OUT 3

<Esc>(SUO5	VGA OUT 1 and 3
<Esc>(SUO6	VGA OUT 2 and 3
<Esc>(SUO7	VGA OUT 1, 2, and 3
<Esc>(SUO8	VGA OUT 4
<Esc>(SUO9	VGA OUT 1 and 4
<Esc>(SUOA	VGA OUT 2 and 4
<Esc>(SUOB	VGA OUT 1, 2 and 4
<Esc>(SUOC	VGA OUT 3 and 4
<Esc>(SUOD	VGA OUT 1, 3 and 4
<Esc>(SUOE	VGA OUT 2, 3 and 4
<Esc>(SUOF	VGA OUT 1, 2, 3 and 4

(T) Text Label

The "T" command controls active text labels. Labels can be composed of single characters or text blocks. This command also allows you to set font and size.

<Esc>(TTc	Displays any single character. "c" is any displayable character.
<Esc>(TBccc...	Displays a block of characters. "ccc..." is however many displayable characters you choose to display - limited by screen display area.

Font selection commands can be assigned to the active text label after it is visible on the screen.

<Esc>(TFØ	Change font to TI Roman.
<Esc>(TF1	Change font to Helvetica.
<Esc>(TF2	Change font to TI Dom Casual.
<Esc>(TF3	Change font to Fargo.
<Esc>(TF4	Change font to Symbol.
<Esc>(TF5	Change font to Map.
<Esc>(TN	Change to the next font.
<Esc>(TP	Change to the previous font.

Font size commands can be assigned to the active text label after it is visible on the screen:

<Esc>(TSØ	Small works with: TI Roman, Helvetica, TI Dom Casual, Fargo, Symbol, Map
<Esc>(TS1	Medium works with: TI Roman, Helvetica, TI Dom Casual, Fargo
<Esc>(TS2	Large works with: TI Roman, Helvetica, TI Dom Casual, Fargo
<Esc>(TS3	Extra Large works with: TI Roman, Helvetica, TI Dom Casual

(TA) Template Change

The "TA" command designates which template layout is activated for use with the digitizing tablet.

<Esc>(TAØ	Presenter template.
<Esc>(TA1	Broadcaster template.
<Esc>(TA2	PC template.

(TC) Touch Screen Corner Control

The "TC" commands tell the Pointmaker to enable or disable the corner function areas on a touch screen *(See "Touch Screen" in "Section One: Getting Started" on page 20)..*

<Esc>(TCØ	Disable corner function areas
<Esc>(TC1	Enable corner function areas
<Esc>(TC2	Toggle corner function areas

(U) Undo/Erase

The "U" command erases the last created anchored marker. Each time this command is given, an anchored marker will be erased from the overlay, beginning with the most recently anchored marker.

<Esc>(U	Undo the last anchored marker.

(V) Select an Overlay

The "V" command tells the Pointmaker which overlay to display.

<Esc>(V#	Display overlay number specified. replace # with overlay number desired.
<Esc>(VN	Display next overlay.
<Esc>(VP	Display previous overlay.

NOTE: To hide the overlay, see the Pass-through (PA) command.

(Z) Zap Icon

The "Z" command allows you to turn the Zap Icon on and off. When on, it is displayed in the lower right corner of the screen.

<Esc>(ZØ	Turn Zap Icon off.
<Esc>(Z1	Turn Zap Icon on.
<Esc>(ZT	Toggle Zap Icon

APPENDIX

TROUBLESHOOTING GUIDE

Boeckeler's quality inspectors test each Pointmaker for software and hardware performance prior to shipment. Therefore, most problems which presenters encounter are related to installation. The table below describes common problems and their solutions. If, after referring to this table, a problem still exists, call Boeckeler Instruments, Inc., at (800) 552-2262 or (520)745-0001 and ask for technical assistance.

There are no user serviceable parts in the Pointmaker.
Do not open the cabinet.

Special Note: The Pointmaker can be returned to factory default settings by pressing CTRL + ALT + END.

> WARNING: executing this command will erase all user settings including calibrations, COMM port settings, etc.

Soft boot: CTRL-ALT-DEL is the same as cycling power

Table 1: Troubleshooting

Symptoms	Possible Solutions
The green indicator light on the front of the Pointmaker does not light up.	1. Check that the Pointmaker is plugged into a live outlet.
No image on monitor.	1. Check that the monitor is plugged into a live outlet. 2. Check that the monitor is switched on. 3. Check that the monitor brightness and contrast controls are properly adjusted.
The Pointmaker markers appear to bloom.	1. Adjust system parameters on the video output device, monitor or camera (if in use) such as contrast, gain, brightness, color, light and intensity. 2. Decrease brightness of Pointmaker markers or use a different marker color.

Table 1: Troubleshooting

Symptoms	Possible Solutions
Monitor lights up but does not display a picture.	1. Check that the video source and Pointmaker are each plugged into a live outlet. 2. Check that the video source and Pointmaker are both switched on. 3. Check that the proper cables are connected to the proper connectors on the video source, the Pointmaker and the monitor. Some sources and monitors have multiple output and input connectors. Consult your computer manuals for correct connection information. 4. Bypass the Pointmaker by connecting the monitor directly to the video source. If the video image still does not appear, have the video source and monitor checked.
Monitor automatically adjusts brightness so that video image is dull while markers are bright.	1. Monitor is automatically adjusting for the overall brightness level of the markers and the video image. On the Pointmaker, enter the Setup Menu and select the BRIGHTNESS option to tone down the settings on the brightness scale. If using the keyboard, press the CHANGE BRIGHTNESS [F10] key to decrease brightness. The monitor will adjust accordingly.
Digitizing tablet, light pen, or mouse device will not operate properly.	1. *(See "Peripheral Devices" in "Section One: Getting Started" on page 11)*; *(See "Installation" in "Section One: Getting Started" on page 25)* 2. If the light pen is drawing over a dark image and drawing becomes erratic, increase the brightness on the monitor.
Monitor displays a scrambled picture.	1. Check the horizontal hold control on the video monitor for proper adjustment. 2. Monitor is not compatible with video source. Use compatible system. 3. Check to be sure that the video in and out connectors on the Pointmaker are secure.
Touch screen will not operate properly.	1. *(See "Peripheral Devices" in "Section One: Getting Started" on page 11)*; *(See "Installation" in "Section One: Getting Started" on page 25)*. ALSO refer to the manufacturer's operating instructions that came with the controller. For touch screens, calibration from copyright message may be needed.

QUICK REFERENCE FOR DEVICES

This section contains tables for quick reference to the device commands for the PVI-X90. Tables are arranged alphabetically by function.

The list below outlines the devices covered in this section.

- **DT-30 Digitizing Tablet**
- **LP-32 Light Pen**
- **KB-20 Keyboard**

- **Touch Screen (or White Board)**
- **Mouse devices**

Quick Reference for Digitizing Tablet

The commands in this table are for the DT-30 digitizing tablet when used with the Pointmaker PVI-X90. If a function you want is not listed in this table, then you must select that function in the menu system.

COMMAND	OPERATION
Anchor a Marker	Click Barrel Button when marker is in desired position.
Brightness, Change	(Presenter Template only) Click pen tip on brightness scale, left
Chalkboard Mode	Click pen tip on Chalkboard icon. To return to Video Source background, click on Video icon. This option on not available on Broadcaster template.
Clear Markers	Click pen tip on Clear icon.
Color, Change Marker	Click Tip Button on Menu Strip icon; in menu system, click tip button while cursor is over desired option.
Control	(On Presenter Template only) Click Tip Button on Control icon to take control when multiple tablets (or touch screens) are installed and you have activated Selective or Priority User mode in the menu system.
Draw	Press Tip Button anywhere on Tracking Area of tablet and drag.
Line Thickness, Change	Click pen tip on icon displaying desired line thickness.
Page Through Overlays	(PC Template only) Click icon displaying page forward arrows, page backward arrows, or icons for going to the first or last overlay of markers.
PC Mouse Mode	(Operational on PC only when PVI-PC-20 software is installed and activated.) On PC template, click pen tip on PC Control icon. Use tablet like PC mouse on computer screen (e.g., click on a desktop icon to open an application). To return to Pointmaker marking, click pen tip on Pointmaker Control icon.
Pen Proximity	(Broadcaster Template only) Click pen tip on Pen Proximity icon to turn this feature on or off. When activated, the active pointer disappears as the pen tip is pulled away from the screen. The pointer reappears when the pen tip is brought close again to the screen.

COMMAND	OPERATION
Point	Lightly drag Tip Button across Tracking Area to position pointer. To keep pointer positionable, do not click or press any stylus button.
Pointer Selection	Click pen tip on desired pointer icon.
Undo/Erase Marker	Click pen tip on Undo icon. If Erase Mode is activated in the menu system, this command activates Erase Mode instead of undoing a marker.
Video Mode, Change	Click pen tip on icon displaying desired video format, for example, Composite or Y/C.
Menu System, Access	(Operational only when keyboard not installed.) Press Barrel Button, then Tip Button, pressing both together for about 5 seconds.

Quick Reference for Light Pen

The commands in this table are for the LP-32 light pen when used with the Pointmaker PVI-X90. If a function you want is not listed in this table, then you must select that function on the digitizing tablet or in the menu system.

COMMAND	OPERATION
Anchor a Marker	Click the Tip Button into the screen and release.
Clear Markers	Press Barrel Button.
Color, Change Marker	Press Barrel Button, then click Tip Button. Each click cycles to another color in the Color Palette. To change Color Palette, go to menu system.
Draw	Press Tip Button on the screen and draw while pressing.
Point	Lightly drag Tip Button across Tracking Area to position pointer. To keep pointer positionable, do not click or press any button.
Undo/Erase Marker	Click Barrel Button. If Erase Mode is activated in the menu system, this command activates Erase Mode instead of undoing a marker.
Menu System, Access	(Operational only when keyboard not installed.) Press Barrel Button, then Tip Button, pressing both together for about 5 seconds.

Quick Reference for Keyboard

The commands in these tables are for the KB-20 keyboard when used with the Pointmaker PVI-X90.

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MARKING COMMAND	KEY
Date/Time Display	[F8]
Date/Time Setup	Ctrl + [F8]
Font Selection for Text Labels (typed text)	[F6]
Font Size for Text Labels (typed text)	Ctrl + F6

MARKING COMMAND	KEY
Frame Selection (circular or boxlike)	[F3]
Frame Sizing Activation	[F4]
Frame Sizing Keys	Positioning Keys
Line Style	[F2]
Pointers	[F1]
Pointer (Active) On/Off	Ctrl + [F1]
Straight Line Draw	[F5]
Text Labels (typed text	AlphaNumeric Keys
Text Background On/Off	[F7]

ACTION (OPS) COMMAND	KEY
Active Marker On/Off	[Home]
Anchor Marker	Insert [Drop]
Change Brightness	[F10]
Chalkboard On/Off	[F11]
Clear All Markers	Clear [End]
Color Change of Active Marker	[F9]
Delete a Marker (undo)	Undo [Delete]
Help	[Escape]
Next Overlay	[Page Down]
Overlay of Markers On/Off	[F12]
Overlay, Go to #	[Scroll Lock]
Positioning Marker or Cursor	Positioning Keys
Positioning Marker, Fine Control	Ctrl + Posit. Key
Previous Overlay	[Page Up]
Recall Settings: at boot-up copyright screen:	Ctrl + Alt + Page Down(on Num Pad)
Reverse Toggle Order	Shift + Function Key
Save Settings: at boot-up copyright screen:	Ctrl + Alt + Enter(on Num Pad)
Select	[Enter] or [Drop]
Menu System	[Print Screen]
Video In Composite 1	Ctrl + [F9]
Video In Composite 2	Ctrl + [F10]
Video In Y/C 1	Ctrl + [F11]
Video In Y/C 2	Ctrl + [F12]
Video In VGA 1	Ctrl + [Print Screen]
Video In VGA 2	Ctrl + [Scroll Lock]

Quick Reference for Touch Screens and White Boards

The commands in this table are for a compatible touch screen or white board, when used with the Pointmaker PVI-X90. If a function you want is not listed in this table, then you must select that function on the digitizing tablet or in the menu system.

COMMAND	OPERATION
Anchor a Marker	Quickly tap screen where you want the marker anchored.
Clear Markers	Tap lower right corner.
Color, Change Marker	Tap lower left corner.
Control	Tap upper left corner to take control when multiple touch screens (or tablets) are installed and you have activated Selective or Priority User mode in the menu system.
Draw	Press and drag finger.
Point	Lightly drag finger across Tracking Area to position pointer. To keep pointer positionable, do not tap or press.
Undo/Erase Marker	Tap upper right corner. If Erase Mode is activated in the the menu system, this command activates Erase Mode instead of undoing a marker.
Menu System, Access	(Operational only when keyboard not installed.) Tap upper center zone.

Quick Reference for Other Mouse Devices

The commands in this table are for a compatible mouse device when used with the Pointmaker PVI-X90. If a function you want is not listed in this table, then you must select that function on the digitizing tablet or in the menu system.

COMMAND	OPERATION
Anchor a Marker	Click the Left (First) Button.
Clear Markers	Press Right (Second) Button.
Color, Change Marker	Press Right (Second) Button, then click Left (First) Button. Each click cycles to another color in the Color Palette.
Draw	Press Left (First) Button and draw while pressing.
Point	Lightly drag mouse across pad to position pointer. To keep pointer positionable, do not click or press any button.
Menu System, Access	(Operational only when keyboard not installed.) Press Right (Second) Button, then Left (First) Button, pressing both together for about 5 seconds.
Undo/Erase a Marker	Click Right (Second) Button. If Erase Mode is activated in the menu system, this command activates Erase Mode instead of undoing a marker.

MONITOR SCAN RATES

As noted in the introduction, the Pointmaker® PVI-X90 is compatible with most computer video standards. When used with the Microsoft Windows 95/98/NT operating system, certain video display settings may not be compatible with the Pointmaker. Compatible scan rates are listed below.

If your application includes operation with Windows 95/98/NT, and the Pointmaker markers scroll vertically up or down the screen, try changing the display setting of the computer system. Adjusting the display setting of the computer can provide a different video scan rate, one of which may be compatible with the Pointmaker.

Current Compatible Scan Rates

Resolutions are noninterlaced unless otherwise noted.

Video Resolution	Interlaced	Horiz. Scan Rate (kHz)	Vert. Scan Refresh Rate (Hz)
NTSC (composite) 525 lines per frame	+	15.734	60
NTSC Y/C 525 lines per frame	+	15.734	60
NTSC RGB	+	15.734	60
VGA 640 x 350		31.5	70
VGA 640 x 400		31.5	70
VGA 640 x 400		37.9	85
VGA 640 x 480		31.5	60
VGA 640 x 480		37.9	72
SVGA 800 x 600		35.2	56
SVGA 800 x 600		37.9	60
SVGA 800 x 600		48.1	72
XGA 1024 x 768	+	35.5	87/43
SVGA 1024 x 768		48.4	60
SVGA 1024 x 768		56.4	70
DEC 1024 x 768		57.4	72
SVGA 1024 x 768		60.0	75
SVGA 1024 x 768		68.7	85
APOLLO 1024 x 800		63.9	76
DEC 1024 x 864		54.0	60
SVGA 1152 x 864		67.5	75
SVGA 1152 x 900		61.8	66
SVGA 1152 x 900		71.7	76
SVGA 1280 x 1024		63.9	60
SGI 1280 x 1024		76.9	72
SUN 1280 x 1024		81.0	76
SVGA 1280 x 1024		91.1	85
IBM 1360 x 1024		70.8	67
SVGA 1600 x 1200		75.0	60
SVGA 1600 x 1200		81.3	65
SVGA 1600 x 1200		87.5	70
SVGA 1600 x 1200**		93.8	75
SVGA 1600 x 1200**		106.3	85
Mac 640 x 480		35.5	67
Mac 832 x 624		44.9	67
Mac 832 x 624		49.7	75

GLOSSARY

ACTIVE MARKER

-- a mode in which a marker can be altered. Mainly associated with markers created using the keyboard, all of which begin as active markers. All other control devices (except the touch screen) have only one type of active marker: pointers.

ANCHORED MARKER

-- a marker which has been "fixed" onto an overlay. It cannot be altered or moved. It can only be erased, cleared, or covered with another marker. If an active marker is *anchored*, another identical active marker appears on-screen.

BACKGROUND

-- text background refers to the area immediately surrounding a line of text or a text label. For video background, see Chalkboard.

BLOOM

-- markers or text which enlarge or blur on the monitor due to excessive brightness.

BUTTON/ICON, TABLET

-- the square or rectangular zone on the tablet Menu Strip that represents a **PVI-X90** function. When this zone is clicked on with the pen tip, that function is engaged.

CHALKBOARD

-- the solid area behind the Pointmaker markers when in the Chalkboard mode. Presenters may choose a source background or a solid background.

CLEAR

-- the function for removing all markers from an overlay at once.

CLICK

-- the action of quickly depressing and releasing a button on the Pointmaker auxiliary controller, as opposed to a press of the button.

COLOR PALETTE

-- a user-defined group of colors which may be attributed to each active marker before anchored. From 1 to 7 colors are available.

COM(M) PORT

-- a serial port typically on a computer (COM), and designated as a COMM port on Pointmakers. Serial devices that connect to these ports (such as a

mouse or touch screen), send and receive data in single bits of information one after the other, thus the term serial.

CONNECTOR

-- hardware installed on cable ends to provide cable attachment to an input or output device. Input and output device ports which mate with this hardware are also called connectors.

CONTROLLER

-- a device that controls the creation, selection, positioning, anchoring and clearing of markers on the Pointmaker overlay. Popular options include light pens, digitizing tablets, touch screens, keyboards and mouse devices.

DRAW

-- the Pointmaker feature which allows presenters to freehand draw or write over a video or computer image.

DROP SHADOW

-- the Pointmaker option which allows presenters to attribute a shadow to drawing lines, frames or straight lines for the purpose of creating a line that stands out from the video image. Most colors have a black drop shadow. Black has no drop shadow.

EIA RS-170

-- the specifications describing monochrome electrical performance standards issued by the Electronic Industries Association (EIA). Also referred to as RS-170 (Recommended Standard). The EIA standard is used in North and South America, Japan and most of Asia.

FONT

-- a particular style of text such as Helvetica or Times Roman. The six (6) fonts installed in the Pointmaker are available in one or more sizes.

FRAME

-- the marker used to frame an image with a sizeable box or circle (available only on the keyboard). Filled frames are also available and would be used to block out certain areas of the image.

ICON/BUTTON, TABLET

-- see *button/icon*.

MARKERS

-- pointers (arrows, cross hairs, dots), frames, date/time labels, freehand draw-ings and straight lines which can be placed and anchored on a Pointmaker marker overlay.

NTSC

-- the commonly accepted term describing the composite color version of the EIA RS-170 video standard. The color version of EIA RS-170 is in process of standardization by the Electronics Industries Association (EIA). NTSC is used in North and South America, Japan and most of Asia.

OFFSET

-- the Pointmaker option which allows presenters to set the margin between the point the optional light pen touches the screen and the point where freehand drawing is to begin.

OVERLAY

-- a combination of one or more markers placed on the screen using the capabilities of the Pointmaker. These markers overlay a chosen video image. While the markers are visible, the actual overlay is invisible, allowing users to mark directly on top of a video image (or solid background if selected).

POINTERS

-- the 8 different arrows, 2 cross hairs and 2 dot pointers which may be selected and placed on a Pointmaker overlay, in any number and in combination with other markers. Pointers are considered markers. However, not all markers (such as frames) are pointers.

PRESS

-- on the keyboard, the action of pressing then releasing the function key. On the auxiliary controller (light pen, etc.), a press is the action of depressing and not releasing a button until the desired effect takes place on the screen (as opposed to a click of the button).

PROXIMITY

-- a feature of the Pointmaker that affects the light pen or digitizing tablet. When proximity is activated, the active pointer automatically disappears each time the pen is lifted from the drawing area.

UNDO / ERASE

-- the keyboard function or button action on the auxiliary controller which allows presenters to erase anchored markers on an overlay one at a time, beginning with the most recently anchored marker.

VIDEO SOURCE

-- a device from which the Pointmaker receives a video image to mark over. Examples of video sources include VHS recorder/players, cameras, VGA computers, television sets, teleconference equipment, slide-to-video converters, visual presenters and more.

SYMBOL FONT CHART (KEYBOARD)

MAP FONT CHART (KEYBOARD)
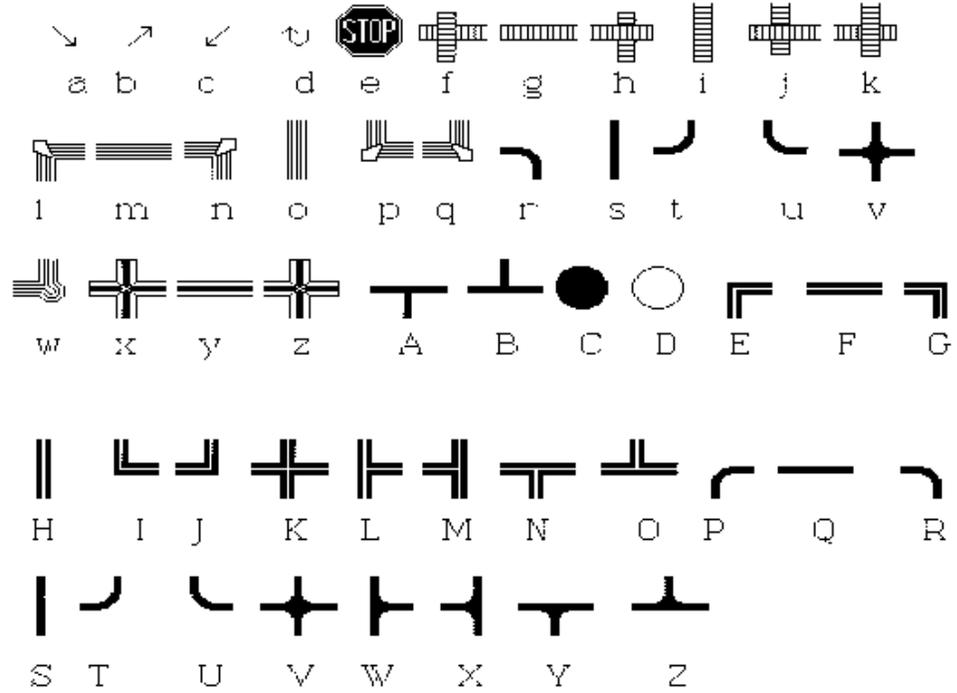
RS-232 PINOUT (COMM PORT-MALE)
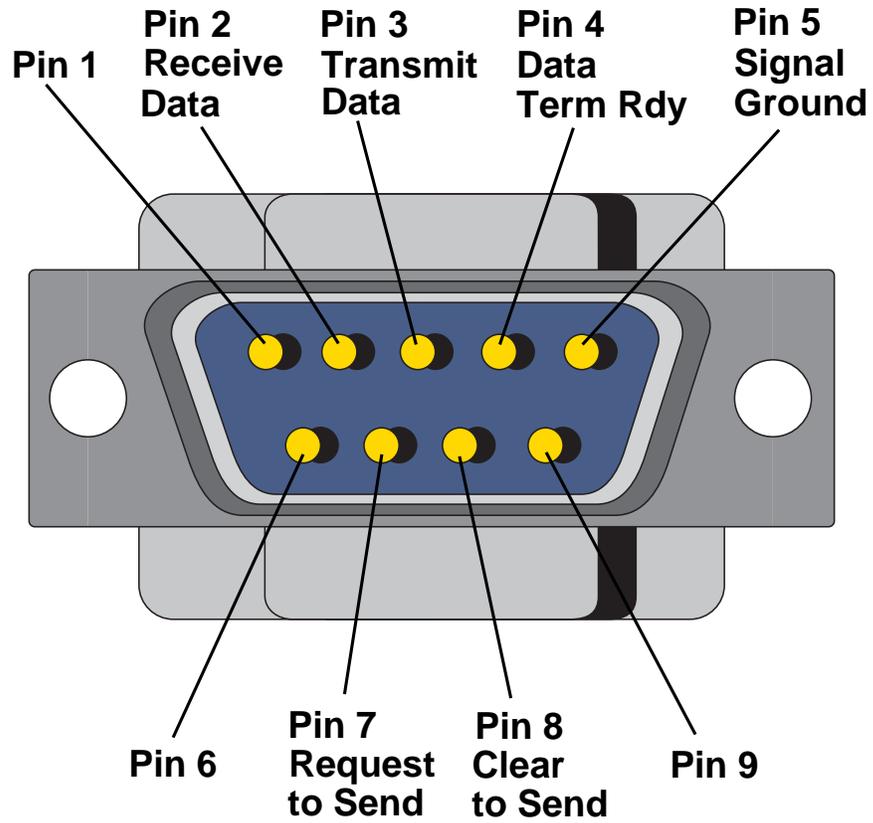
Figure A-1: **RS-232 Pinout (COMM Port-Male)**

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