

Section Three: Commands for Using the RS-232 Port

INTRODUCTION

The following commands can be used to program A/V programmable remote control systems so that each *Pointmaker* PVI-64 model can be setup and operated from a remote device.

All commands begin with an escape (**ESC**) code followed by the forward parenthesis (**(**). This initiating command appears as follows:

ESC(

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

ADJUST TIMING (AT):

When enabled, the "AT" commands tell the *Pointmaker* to adjust the horizontal or vertical timing of the marker overlay. In the commands below, YYYYY = a numeric value for the vertical delay in units of nanoseconds. XXX = a numeric value for the horizontal delay in units of video lines.

To adjust vertical delay (in nanoseconds):

ESC(ATVYYYYY

To adjust horizontal delay (in lines of video):

ESC(ATXXX

BACKGROUND (B):

The "B" commands tell the *Pointmaker* which background to use.

For a video background:

ESC(BV

For a solid chalkboard background:

ESC(BC

For a video to chalkboard toggle:

ESC(BT

CLEAR (CL):

The "CL" commands tell the *Pointmaker* to clear the markers from the video overlay.

To clear markers :

ESC(CL

COLOR SELECTION & COLOR TAB (CS):

The "CS" commands tell the *Pointmaker* which colors to attribute to an active pointer or the next drawn line.

To select a new color (red is used as an example):

ESC(CSR

***NOTE:** To select a different color for markers, replace the "R" with the desired color code(s).*

Select White = **W**

Select Yellow = **Y**

Select Black = **B**

Select Cyan = **C**

Select Pink = **P**

Select Red = **R**

Select Green = **G**

Next Color = **N** (*Note: this command tells the Pointmaker to sequence forward to the next available color that has been enabled*).

To display the color tab:

ESC(CSD1

***NOTE:** The "Display Color Tab" command tells the Pointmaker to briefly display a small color sample of the new color on the preview monitor. This option may be desired if using a touch screen, or if the active pointer is turned off (usually the active pointer displays the active color).*

To disable the color tab:

ESC(CSDØ

To toggle the color tab on or off:

ESC(CSDT

DRAWING AREA (DA):

The "DA" commands tell the *Pointmaker* to designate the size of a drawing area, beginning at a certain XY pixel coordinate, and ending at a certain XY pixel coordinate. The pixel coordinate 00000000 is at the upper left of the screen. In the command below XXXX=a numeric value for the horizontal axis. YYYY= a numeric value for the vertical axis. The first coordinate series XXXXXXXY is the beginning point of the drawn line and the second series XXXXXXXY represents the end point of the drawn line.

To designate a drawing area:

ESC(DAXXXXXYYYYXXXXYYY

***EXAMPLE:** To begin the drawing area at the far upper left, one might enter the coordinates 0015 for the horizontal coordinate of the starting point, and 0035 for the vertical coordinate of the starting point. This data is immediately followed by the horizontal and vertical coordinates of the lower right corner of the drawing area; for example, if the horizontal coordinate for the endpoint is 1000 and the vertical coordinate for the endpoint is 0900, then the full command would appear as follows:*

ESC(DL0015003510000900

DRAW LINE (DL):

The "DL" commands tell the *Pointmaker* to draw a line beginning at a certain XY pixel coordinate, and ending at a certain XY pixel coordinate. The pixel coordinate 00000000 is at the upper left of the screen. In the command below XXXX=a numeric value for the horizontal axis. YYYY= a numeric value for the vertical axis. The first coordinate series XXXXXXXY is the beginning point of the drawn line and the second series XXXXXXXY represents the end point of the drawn line.

To draw a line:

ESC(DLXXXXYYYYXXXXYYYY

***EXAMPLE:** To begin drawing at the upper left, one might enter the coordinates 0025 for the horizontal coordinate of the starting point, and 0037 for the vertical coordinate of the starting point. This data is immediately followed by the horizontal and vertical coordinates of the end point; for example, if the horizontal coordinate for the endpoint is 0478 and the vertical coordinate for the endpoint is 0400, then the full command would appear as follows:*

ESC(DL0025003704780400

DROP POINTER (DP):

The "DP" commands tell the *Pointmaker* where to drop or anchor an active pointer (or cursor) using XY pixel coordinates. The pixel coordinate 00000000 is at the upper left of the screen. In the command below XXXX=a numeric value for the horizontal axis. YYYY= a numeric value for the vertical axis.

To drop (or anchor) an active pointer:

ESC(DPXXXXYYYY

EXAMPLE: To drop an active pointer in the upper left, one might enter the coordinates 0025 for the horizontal coordinates and 0037 for the vertical coordinates. The command, then, would appear as follows:

ESC(DP00250037

ECHO (E):

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

To enable an echo of all input:

ESC(EA

To enable an echo of all input except commands:

ESC(EC

To disable an echo:

ESC(EN

INTENSITY or BRIGHTNESS (I):

The "I" commands tell the *Pointmaker* at what level to set the intensity or brightness for markers or by how many increments to change that level. The levels can range between 000 and 256. In the command below, XXX = the desired numeric value for the brightness level. Positive or negative values may be coded.

To set a brightness level (use S) :

ESC(ISXXX

In the command below, XXX = the desired numeric value by which operators wish to adjust the brightness level. A negative value requires a minus sign before the numeric value XXX.

To change a brightness level (use C):

ESC(ICXXX - OR - ESC(IC-XXX

LINE STYLE (L):

The "L" commands tell the *Pointmaker* which style to attribute to a drawing line.

To select a new line style ("fine line" is used as an example):

ESC(LF

NOTE: To select a different line style replace the "F" with the desired style code.

Fine Line = **F**

Medium Line = **M**

Bold Line = **B**

Fine Line with Drop Shadow = **SF**
Medium Line with Drop Shadow = **SM**
Bold Line with Drop Shadow = **SB**
Fine Line with Outline = **OF**
Medium Line with Outline = **OM**
Bold Line with Outline = **OB**

OFFSET FOR LIGHT PEN (O):

The letter "O" commands tell the *Pointmaker* how far to set the light pen offset margin, in terms of numbers of pixels. The pixel distance of 00000000 represents "no offset margin". In the command below XXXX=a numeric value for the number of pixels in the horizontal axis. YYYY= a numeric value for the number of pixels in the vertical axis.

To change the offset margin on the light pen :

ESC(OXXXXYYYY

***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 above the pen tip, and to the right.*

ESC(O-00250037

PALETTE SELECTION (PS):

The letter "PS" commands tell the *Pointmaker* which color palette (or color scheme) to use -- primary or pastel. Once a palette is chosen, colors selected with the CS command will conform to the new palette. For example, choosing "red" with the CS command, while having the pastel palette active, will produce a pastel red.

To change to a primary color palette:

ESC(PSØ)

To change to a pastel color palette:

ESC(PS1)

PASS THROUGH (PA):

The "PA" commands tell the *Pointmaker* either to turn off the video marker overlay and let the video image alone "pass through" the system, or to turn on the video marker overlay, so that the markers can be viewed along with the video image. **NOTE:** *Pressing any button on a Pointmaker controller while this command is engaged will have no effect. An RS-232 command to disengage the pass through mode must be made before marking functions can resume.*

To enable the pass through mode:

ESC(PA1)

To disengage the pass through mode:

ESC(PAØ)

To toggle the pass through mode:

ESC(PAT)

PLAYBACK (PB):

The "PB" commands tell the *Pointmaker* how to play back an overlay of markers. **PLAYBACK NEXT** displays only one marker at a time, each alone. **PLAYBACK ADD** progressively adds a marker to the overlay each time this command is given. **PLAYBACK ALL** plays back all markers in the order they were drawn or anchored.

To playback the next marker or PLAYBACK NEXT:

ESC(PBN

To playback an added marker or PLAYBACK ADD:

ESC(PBD

To playback all markers or PLAYBACK ALL:

ESC(PBA

POINTER MOVE (CM):

The "CM" commands tell the *Pointmaker* where to move the active pointer using XY pixel coordinates. The pixel coordinate 00000000 is at the upper left of the screen. In the command below XXXX=a numeric value for the horizontal axis. YYYY= a numeric value for the vertical axis.

To move a cursor or active pointer :

ESC(CMXXXXYYYY

EXAMPLE: To position an active pointer in the upper left, one might enter the coordinates 0025 for the horizontal coordinates, and 0037 for the

vertical coordinates. The command, then, would appear as follows:

ESC(CM00250037

POINTER TYPE (PT):

The "PT" commands tell the *Pointmaker* which type of pointer to display on screen, or to turn on or off the active pointer.

To select a new pointer type (a left arrow is used in the example):

ESC(PTL

***NOTE:** To select a different pointer type, replace the "L" with the desired pointer.*

Left Arrow = **L**

Right Arrow = **R**

Up Left Arrow = **UL**

Down Right Arrow = **DR**

Football "O" = **O**

Football "X" = **X**

Dot = **SC**

Cross hairs = **P**

Left Carat = **CL**

Right Carat = **CR**

Up Carat = **CU**

Down Carat = **CD**

No Pointer = **N**

Next Pointer = **T5** (***NOTE:** This command tells the Pointmaker to sequence forward to the next pointer type).*

To turn the pointer off:

ESC(PTT2

To turn the pointer on:

ESC(PTT3

To toggle the pointer on or off:

ESC(PTT4)

To turn active pointer on for program video:

ESC(PTT6)

To turn active pointer off for program video:

ESC(PTT7)

PROXIMITY ON/OFF (PX):

The "PX" commands tell the *Pointmaker* either to turn on or off the pen proximity feature that affects digitizing tablets and light pens. When proximity is on, active markers will disappear as soon as the pen is lifted from the drawing area. When proximity is off, active markers will remain on screen, whether the pen is near or far from the drawing area.

To enable proximity:

ESC(PX1)

To disengage proximity:

ESC(PXØ)

To toggle proximity on and off:

ESC(PXT)

RESTART POINTMAKER (RS):

The "RS" command tells the *Pointmaker* to initiate a soft restart (marker overlays and menu settings will be saved). The "RH" command initiates a hard restart, clearing all stored markers. Also menu options will be reset at factory settings.

To initiate a soft restart on the *Pointmaker* :

ESC(RS)

To initiate a hard restart on the *Pointmaker* :

ESC(RH)

START-UP OPTIONS & REDETECT (SU):

The "SU" commands tell the *Pointmaker* how, during start-up, it will detect devices that are plugged into the COMM ports. "Keep Current Settings" may save a little time during start-up, but should be used if devices are unlikely to change. Newly installed devices require "Autodetect" or "Redetect Now."

To autodetect on start-up:

ESC(SUA)

To keep current settings on start-up:

ESC(SUK)

To redetect COMM ports now:

ESC(SUR)

SETUP MENU (SUM):

The "SUM" command tells the *Pointmaker* to display the *Setup Menu* from which selections can be made to set the color palette, brightness, videoconference connections, etc.

To display the Setup Menu :

ESC(SUM

UNDO/ERASE (U):

The "U" commands tell the *Pointmaker* to undo or erase an anchored marker. Each time this command is given, an anchored marker will be erased from the overlay, beginning with the most recently anchored marker.

To undo/erase a marker :

ESC(U