

Programmer's Guide

RS-232 Port Commands

FOR ANNOTATION PRODUCTS

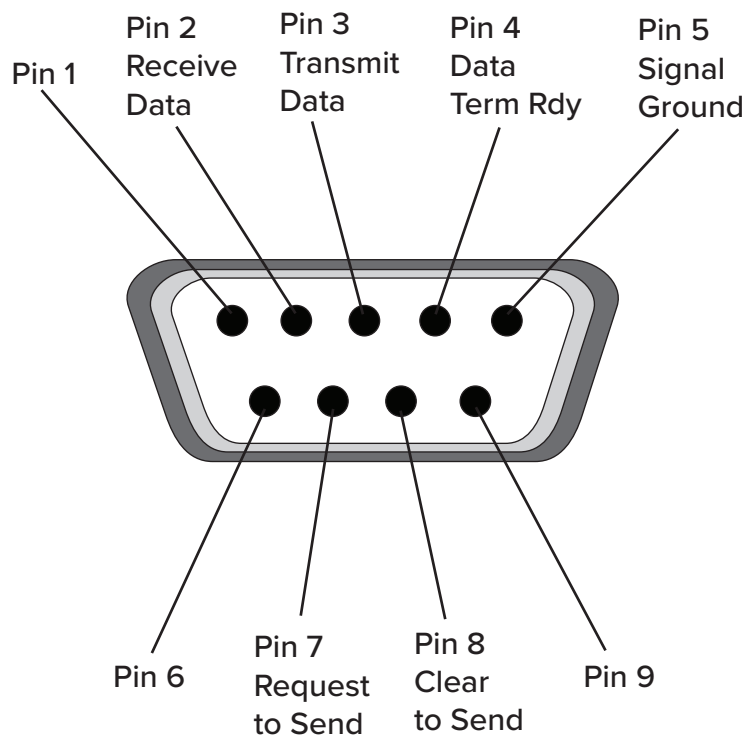


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Overview

Any Pointmaker brand products or Williams AV Annotation or Presentation systems can be sent commands via the programmable remote control system over the RS-232 port.

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

Note: The RS-232 commands listed here are a complete list for all products, but not all features are available in every product.

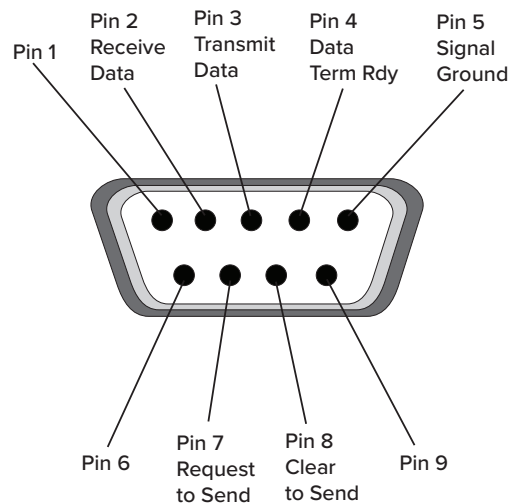
This document is intended as guidance for sending third-party control commands, and may need to be adjusted to fit your specific system setup.

For example, commands may need to be in HEX rather than ASCII characters. For some Crestron panels, the escape command is sent in HEX as "\x1B".

It is always recommended to test commands through a terminal program such as PuTTY prior to sending them from the third-party control system. Using a terminal program to send any commands as given in this guide will prove that the command protocol works, and what feedback the commands return. Then the third-party control system protocol can be modified accordingly.

For example, Crestron SIMPL modules will add their own header information to the command. This may need to be altered or even removed entirely in order for the command to work properly.

RS-232 (COMM Port) Pinout



RS-232 COMM Port Pinout

Understanding Commands

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

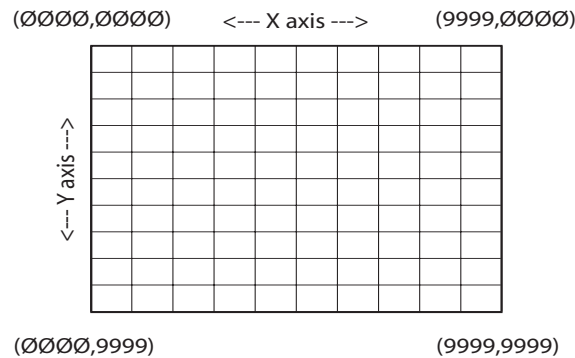
<ESC>(

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

NOTE: Hardware handshaking is required with the RS-232 port. You will need to use a null modem cable. Some places in the manual refer to entering a carriage return. This is usually accomplished by hitting the Enter key on your keyboard. Ø is used to designate zero.

X-Y Coordinate Grid

Numerous commands refer to a screen grid with coordinates based on an internal grid that is 10000 x 10000 units. The grid can be absolute, covering the entire screen area, or relative to a current position. The absolute grid coordinate of 0000,0000 is at the upper-left of the screen. The grid coordinate of 9999,9999 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. YYYYY = a numeric value for the vertical axis.



Screen Grid

Commands

(A) Autodetect Video Input

The "A" command tells the system whether to automatically detect what video input to switch to.

COMMAND	ACTION
<ESC>(A1	Enables Autodetect
<ESC>(A0	Disables Autodetect

NOTE: The Autodetect command is overridden by the Video Input Type (M) command.

(AI) Audio Input

The "AI" command allows you to assign which input the audio is coming from.

COMMAND	ACTION
<ESC>(AIV	This command selects HDMI audio input.

COMMAND	ACTION
<ESC>(AIA	This command selects USB audio input.

(AO) Audio Output

The "AO" command allows you to enable or disable audio output independently for analog (Audio) output and each of the digital (HDMI) audio outputs.

COMMAND	ACTION
<ESC>(AO2Ø	Audio output for HDMI is disabled.
<ESC>(AO2I	Audio output for HDMI is enabled.
<ESC>(AO2T	Audio output for HDMI is toggled between on and off.

(AOV) Audio Volume

The "AOV" command controls audio volume.

nnn refers to a 3 digit decimal number ranging from 0 to 100. It represents a percentage of the volume.

COMMAND	ACTION
<ESC>(AOVMnnn	Sets master volume
<ESC>(AOV2nnn	Sets HDMI audio output
<ESC>(AOVUnnn	Sets USB audio output

(B) Background

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

COMMAND	ACTION
<ESC>(BV	Video Background
<ESC>(BC	Chalkboard Background
<ESC>(BT	Video/Chalkboard Toggle
<ESC>(BLI	Display Text Background (on text and date/time labels)
<ESC>(BLØ	No Text Background (on text and date/time labels)

COMMAND	ACTION
<ESC>(BLT	Toggle Text Background (on text and date/time labels)

(CA) Calibrations

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

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

Examples:

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

(CD) Calibration Types

The "CD" command activates a calibration procedure.

COMMAND	ACTION
<ESC>(CDP	Activate USB PVI-PC20 calibration.
<ESC>(CDT	Activate Touchscreen calibration.
<ESC>(CDW	Activate Whiteboard calibration.

(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.

COMMAND	ACTION
<ESC>(CEB1	Enable Black
<ESC>(CEBØ	Disable Black
<ESC>(CEC1	Enable Cyan
<ESC>(CECØ	Disable Cyan
<ESC>(CEG1	Enable Green
<ESC>(CEGØ	Disable Green
<ESC>(CEHG1	Enable Green Highlight
<ESC>(CEHGØ	Disable Green Highlight
<ESC>(CEHP1	Enable Pink Highlight

COMMAND	ACTION
<ESC>(CEHPØ	Disable Pink Highlight
<ESC>(CEHY1	Enable Yellow Highlight
<ESC>(CEHYØ	Disable Yellow Highlight
<ESC>(CEP1	Enable Pink
<ESC>(CEPØ	Disable Pink
<ESC>(CER1	Enable Red
<ESC>(CERØ	Disable Red
<ESC>(CEW1	Enable White
<ESC>(CEWØ	Disable White
<ESC>(CEY1	Enable Yellow
<ESC>(CEYØ	Disable Yellow

(CL) Clear

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

COMMAND	ACTION
<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. The coordinates are: XXXX = a numeric value for the horizontal axis point and YYYY = a numeric value for the vertical axis point.

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

(CPF) Freeze

The "CPF" command freezes the current video image being displayed..

COMMAND	ACTION
<ESC>(CPFØ	Turns the freeze off (video is live)
<ESC>(CPF1	Activates the freeze

COMMAND	ACTION
<ESC>(CPFT	Toggles the command from whatever is current

(CPI) Read Specific Image From USB

The "CPI" command reads an image from the USB flash drive. This command uses the current Directory and Prefix assigned for capturing images. The nnnnn part of the command also automatically sets the index number.

COMMAND	ACTION
<ESC>(CPInnnnn	Read the requested image from the USB location nnnnn is the index number of the image

(CPN) Read Specific Image From TFTP

The "CPN" command reads an image from the TFTP server. This command uses the current Directory and Prefix assigned for capturing images. The nnnnn part of the command also automatically sets the index number.

COMMAND	ACTION
<ESC>(CPNnnnnn	Read the requested image from the TFTP location nnnnn is the index number of the image

(CPP) Print Current Image

The "CPP" command prints the current image.

COMMAND	ACTION
<ESC>(CPP	Print the current image

(CPRD) Read Current Image from USB

The "CPRD" command reads the current image from the USB flash drive based on the current file Capture settings.

COMMAND	ACTION
<ESC>(CPRD	Read the current image from the USB location

(CPRS) Read Current Image from SMB

The "CPRS" command reads the current image from the SMB location based on the current file Capture settings.

COMMAND	ACTION
<ESC>(CPRS	Read the current image from the SMB location

(CPRT) Read Current Image from TFTP

The "CPRT" command reads the current image from the TFTP location based on the current file Capture settings.

COMMAND	ACTION
<ESC>(CPRT	Read the current image from the TFTP location

(CPSD) Store Current Image to USB

The "CPSD" command stores the current image to the USB flash drive based on the current file Capture settings.

COMMAND	ACTION
<ESC>(CPSD	Store the current image to the USB location

(CPSS) Store Current Image to SMB

The "CPSS" command stores the current image to the current SMB destination.

COMMAND	ACTION
<ESC>(CPSS	Store the current image to the SMB location

(CPST) Store Current Image to TFTP

The "CPST" command stores the current image to the current TFTP destination.

COMMAND	ACTION
<ESC>(CPST	Store the current image to the TFTP location

(CPW) Read Specific Image From SMB

The "CPW" command reads an image from the SMB server. This command uses the current Computer and Share names assigned for capturing images. The nnnnn part of the command is the index number of the image you want to read.

COMMAND	ACTION
<ESC>(CPWnnnnn	Read the requested image from the SMB location nnnnn is the index number of the image

(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 Menu System.

COMMAND	ACTION
<ESC>(CSB	Select Black
<ESC>(CSC	Select Cyan

COMMAND	ACTION
<ESC>(CSD1	Display Color Change - display a sample block of the new color. May be desired if a pointer is not being displayed. May not be desired if you wish to change colors during a live broadcast.
<ESC>(CSDØ	Do not display color change
<ESC>(CSDT	Toggle color change display
<ESC>(CSE	Select Previous Color
<ESC>(CSG	Select Green
<ESC>(CSHG	Select Green Highlight Color
<ESC>(CSHP	Select Pink Highlight Color
<ESC>(CSHY	Select Yellow Highlight Color
<ESC>(CSMH	Select Highlight Color Mode
<ESC>(CSMM	Select Multiplex Color Mode
<ESC>(CSMT	Toggle between color modes
<ESC>(CSN	Select Next - get next available color
<ESC>(CSP	Select Pink
<ESC>(CSR	Select Red
<ESC>(CSW	Select White
<ESC>(CSY	Select Yellow

(DCT/DCA) Device Type COMM

The "DCT" and "DCA" commands help you control the recognition of device types connected to COMM ports. Normally, at startup, the autodetect for each COMM port causes the system to run through a list of procedures until it can determine the device type connected to each one. The DCT command allows you to limit the initialization process for a designated port to only look for a specified device. The DCA command allows you to activate initialization of a COMM port immediately, without having to restart the system.

COMMAND	ACTION
<ESC>(DCTptt	Port "p" has device type "tt" assigned to it p is a numeric value of 0-9 designating ports 1-10 tt is a numeric value designating the device type corresponding to the table below Example: <ESC>(DCT223
<ESC>(DCAp	Port "p" is to be initialized immediately p is a numeric value of 0-9 designating ports 1-10

NOTE: In the table below, "tt" is the two digit number assigned to the device type.

TT	DEVICE TYPE	DESCRIPTION
00	Mouse	Microsoft mouse
01	Mouse 3	Microsoft plus (Logitech 3 button)

TT	DEVICE TYPE	DESCRIPTION
02	Mouse B	Microsoft Ballmouse
03	Mouse MS	Mouse Systems mouse
04	Mouse A	Air Mouse
05	Digitizer A	ACECAD Acecat II digitizer
06	Mouse A2	Air Mouse Generation II
07	Autodetect	No mouse detected
08	Touch Scr I	Elographics Intellitouch Touch Screen
09	Touch Scr A	Elographics Accutouch Touch Screen
10	Touch Scr M	Microtouch Touch Screen
11	Touch Scr K	Keytec Touch Screen TS-232-B
12	Touch Scr S	Symbios Touch Screen SYM93C2000
13	Touch Scr C	CalComp 1000 DrawingSlate III
14	Touch Scr D3	Dynapro SC3 Touch Wall
15	Touch Scr W	Wacom IV protocol (for PL-300 LCD Tablet)
16	Touch Scr B	Smart Technologies Smart Board
17	Touch Scr H	Hampshire TSHARC-12 Touch Screen Controller
18	Mouse F W	Interlink Electronics Freedom Writer
19	Touch Scr P	Smart Technologies Smart Board w/ PNP
20	Touch Scr D4	Dynapro SC4 Touch Controller
21	Skip	
23		Wacom Intuos 2 4 x 5
24		Genius Basypen 3 x 4
25		Magictouch Touch Screen
26		Fujitsu Touch Screen
27		Egalax
28		Irtouch
29		Gunze
30		Control port
31		Multiport port
32		PVI to PVI link

TT	DEVICE TYPE	DESCRIPTION
33		Codec port

(DL) Draw Line

The "DL" command draws a line using the XY coordinate grid. 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.

COMMAND	ACTION
<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. The coordinates are: XXXX = a numeric value for the horizontal axis point and YYYY = a numeric value for the vertical axis point.

COMMAND	ACTION
<ESC>(DPXXXXYYYY	Drop an active marker at coordinates XXXX and YYYY Example: <ESC>(DP00250037

(DUI/DUP) Device Type USB

The "DUI" and "DUP" commands help you assign a device type to whatever you connect to a USB port. Normally, when you plug something into the USB port, the system reads the vendor and product ID from the devices. Then it scans its list of device types for that vendor and product ID. If it finds it in the list, it initializes the port for that device type.

The DUI command allows you to link a vendor and product ID to one of the device type codes listed below, so it will be recognized by the system. The DUP command allows you to assign a USB port to one of the device types listed. This can be less reliable if someone makes a change in the USB chain causing the port number to change.

COMMAND	ACTION
<ESC>(DUIvvvpppptt	Vendor number "vvv" and Product ID "pppp" has device type "tt" assigned to it. vvv and pppp are four digit numeric values. tt is a numeric value designating the device type corresponding to the table below Example: <ESC>(DUI2237002317
<ESC>(DUPpptt	Port "pp" is a numeric value of 0-14 designating ports 1-15. tt is a numeric value designating the device type corresponding to the table below Example: <ESC>(DUP0528

NOTE: In the table below, "tt" is the two digit number assigned to the device type.

TT	DEVICE TYPE	DESCRIPTION
00	Detected	None detected

TT	DEVICE TYPE	DESCRIPTION
01	Mouse	Boot mouse
02	Superpen	UCLogic Superpen digitizing tablet
03	Graphire 6x8	Wacom Graphire 6x8 digitizing tablet
04	Graphire 4x5	Wacom Graphire 4x5 digitizing tablet
05	Intuos 6x8	Wacom Intuos 6x8 digitizing tablet
06	Intuos 4x5	Wacom Intuos 4x5 digitizing tablet
07	Hyperpen 6x8	Aiptek Hyperpen 6x8 digitizing tablet
08	Elotouch	Elotouch touch controller (smartset protocol)
09	TSHARC	Hampshire TSHARC touch controller
10	Dynapro SC4	Dynapro SC4 touch controller
11	3M EXII	3M EXII touch controller
12	Magic Touch	Keytec Magic Touch controller
13	Wacom PL	Wacom PL protocol touch panels
14	Sympodium	Smart Technologies sympodium switches
15	Keyboard	Basic keyboard
16	Hub	USB Hub
17	Printer	Basic printer
18	Smart Board1	Smart Technologies 1st USB cable
19	Fujitsu	Fujitsu touch controller
20	Smart Board2	Smart Technologies 2nd USB cable
21	Cintiq 21UX	Wacom Cintiq 21UX – also Intuos 3
22	Smart Bd SC9	Smart Technologies SC9 USB controller
23	EELY eITouch	EELY eITouch touch controller
24	3M SCxxx	3M Microtouch SCxxx Series touch controller
25	Intuos3 4x5	Wacom Intuos 3 4x5 digitizing tablet
26	Intuos3 6x8	Wacom Intuos 3 6x8 digitizing tablet
27	Intuos3 9x12	Wacom Intuos 3 9x12 digitizing tablet
28	Intuos312x12	Wacom Intuos 3 12x12 digitizing tablet
29	Intuos312x19	Wacom Intuos 3 12x19 digitizing tablet
30	Intuos3 6x11	Wacom Intuos 3 6x11 digitizing tablet
31	SCSI MSD	SCSI Mass Storage Device
32	Egalax	Egalax touch controller
33	NextWindow	NextWindow touch controller
34	NextWin Ctrl	NextWindow touch controller – control interface
35	Bamboo 4x6	Wacom Bamboo 4x6 digitizing tablet

TT	DEVICE TYPE	DESCRIPTION
36	BambooFun4x6	Wacom Bamboo Fun 4x6 digitizing tablet
37	BambooFun5x9	Wacom Bamboo Fun 5x9 digitizing tablet
38	Gyrati Mouse	Gyration Mouse
39	Gyration Kbd	Gyration Keyboard
40	SB Carrera	Smart Board Carrera
41	Promethean	Promethean
42	Quanta	Quanta Computer Optical Touch controller
43	Wacom DTU	Wacom DTU (e.g. DTU-2231) Graphire protocol
44	Quanta 2	Quanta 2 Computer
45	Panasonic	Panasonic Electronic Pen

NOTE: This is not a complete list. Devices are added periodically. Contact Williams AV for the most up-to-date list.

(E) Echo

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

COMMAND	ACTION
<ESC>(EA	Echo all input
<ESC>(EC	Echo all except commands
<ESC>(EN	Disable echo
<ESC>(EO	Echo "OK" on command "OK <cr> <lf>"

(EM) Erase Method

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

COMMAND	ACTION
<ESC>(EMØ	Erase Method: "UNDO"
<ESC>(EM1	Erase using Small eraser
<ESC>(EM2	Erase using Medium eraser
<ESC>(EM3	Erase using Large eraser

(ESP, ESA) Video Streaming (Presenter)

The "ESP" and "ESA" commands give you control over the video streaming features of the Presenter. The ESP setting is not applied until the ESA command is sent.

COMMAND	ACTION
<ESC>(ESPØ	Video streaming off
<ESC>(ESP1	Video streaming on
<ESC>(ESPT	Video streaming toggle between the two settings

COMMAND	ACTION
<ESC>(ESA	Apply the last "ESP" setting

(FS) Frame Size

The "FS" command defines an active frame.

COMMAND	ACTION
<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 0001 to 9999.

(FT) Frame Type

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

COMMAND	ACTION
<ESC>(FTB0	Box Frame
<ESC>(FTB1	Filled Box Frame
<ESC>(FTC0	Circle Frame
<ESC>(FTC1	Filled Circle Frame
<ESC>(FTN	Next Frame

(HI) HDCP Input setting for each HDMI input port

The "HI" command designates which HDMI input ports will allow HDCP sources to be passed to the video outputs. See also the VIH command.

COMMAND	ACTION
<ESC>(HI50	HDCP input is off.
<ESC>(HI51	HDCP input is on.
<ESC>(HI5T	Toggle between the two modes.
<ESC>(VIHH0	Turn HDCP 2.2 Off
<ESC>(VIHH1	Turn HDCP 2.2 On
<ESC>(VIHHT	Toggle HDCP 2.2 On/Off

(I) Marker Intensity or Brightness

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

COMMAND	ACTION
<ESC>(ISXXX	Set the brightness level (absolute). XXX is numeric value between 0 and 999.

COMMAND	ACTION
<ESC>(ICXXX	Increases brightness level (relative). XXX is numeric value between 0 and 999.
<ESC>(IC-XXX	Decreases brightness level (relative). XXX is numeric value between 0 and 999.

(IFD) Set Image File Directory

The "IFD" command sets the directory for the image file to be saved.

COMMAND	ACTION
<ESC>(IFDccc...	Set the file directory. ccc... is no more than 16 characters, terminated with a carriage return.

(IFI) Set Image File Index

The "IFI" command sets the image file index, designating where the numbering of saved images will start.

COMMAND	ACTION
<ESC>(IFInnnnn	Set the image file index. nnnnn is a five digit number. The combination of image file prefix and index must be equal to or less than 8 characters.

(IFP) Set Image File Prefix

The "IFP" command sets the image file prefix to be used for saved images.

COMMAND	ACTION
<ESC>(IFPccc...	Set the image file prefix. ccc... is less than or equal to 3 characters, terminated with a carriage return. The combination of image file prefix and index must be equal to or less than 8 characters.

(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, you will also need to send the command designating which controller (COMM #) is the priority user.

COMMAND	ACTION
<ESC>(IMO	Assigns Open Mode.
<ESC>(IMS	Assigns Selective Mode.
<ESC>(IMP	Assigns Priority User Mode.

COMMAND	ACTION
<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.

COMMAND	ACTION
<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.
<ESC>(LW	Line style changes to wide.
<ESC>(LSW	Line style changes to wide with a shadow.
<ESC>(LP	Line style switches to the previous line style.
<ESC>(LN	Line style switches to the next line style.

(K) Keyboard Input

The "K" command allows for common keyboard actions.

COMMAND	ACTION
<ESC>(Knn	where nn is a two-digit hexadecimal number

Some commonly used examples:

COMMAND	ACTION
<ESC>(KC8	up arrow
<ESC>(KCB	left arrow
<ESC>(KCD	right arrow
<ESC>(KDØ	down arrow
<ESC>(KØD	Enter

(M) Video Input Type

The "M" commands tell the system which type of video input is being used or switched to, so that the proper signal is output from the system. All "M" commands override "A" (autodetect) commands.

RS-232 commands remain the same for each device and model, so models with identical features continue to function with no code change. With this unit, each Video Input port on the back panel is labeled with a unique number to simplify port locating and troubleshooting for the system integrator. Notes are included to clarify the correspondence to the new labels.

NOTE: Composite and Y/C are available but only at half their normal resolution.

COMMAND	ACTION
<ESC>(MH1	1st HDMI port (labeled port 5 on rear panel)

(ME) Verify Dialog Response

The "ME" command allows you to respond to the Verify dialog.

COMMAND	ACTION
<ESC>(MEØ	Responds "OK"
<ESC>(ME1	Responds "Retry"
<ESC>(ME2	Responds "Cancel"

(PA) Pass-through

The "PA" command enables the video image to pass-through the system without displaying the marker overlay.

COMMAND	ACTION
<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 system.

COMMAND	ACTION
<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.

COMMAND	ACTION
<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. 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.

COMMAND	ACTION
<ESC>(PX1	Turn proximity on.
<ESC>(PXØ	Turn proximity off.
<ESC>(PXT	Toggle proximity.

(R) Restart

The "R" command restarts the device. Options include saving current settings and markers in memory (a soft boot), or clearing memory of all settings and markers (a hard boot).

COMMAND	ACTION
<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.

COMMAND	ACTION
<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>(SDSMMDDYYYY	Set the date. M=month, D=Day, Y=year
<ESC>(STAHHMM	Set time as a.m. H=hour, M=minute

COMMAND	ACTION
<ESC>(STPHHMM	Set time as p.m. H=hour, M=minute

(SCO) Scaler Output Format

The "SCO" command is used to set the scaler output to the desired format.

COMMAND	ACTION
<ESC>(SCOnn	Setting "nn" is the numeric value taken from the table below to designate the format to be output by the scaler Example: <ESC>(SCO09

RESOLUTION	SCALE
640 x 480 @ 60 Hz	00
640 x 480 @ 72 Hz	01
640 x 480 @ 75 Hz	02
640 x 480 @ 85 Hz	03
800 x 600 @ 56 Hz	04
800 x 600 @ 60 Hz	05
800 x 600 @ 72 Hz	06
800 x 600 @ 75 Hz	07
800 x 600 @ 85 Hz	08
1024 x 768 @ 60 Hz	09
1024 x 768 @ 70 Hz	10
1024 x 768 @ 72 Hz	11
1024 x 768 @ 75 Hz	12
1024 x 768 @ 85 Hz	13
1280 x 1024 @ 60 Hz	14
1280 x 1024 @ 72 Hz	15
1280 x 1024 @ 75 Hz	16
1280 x 720P @ 60 Hz	17
1920 x 1080P @ 60 Hz	18
1280 x 800 @ 60 Hz	19
1440 x 900 @ 60 Hz	20
1680 x 1050 @ 60 Hz	21
1400 x 1050 @ 50 Hz	22
1400 x 1050 @ 60 Hz	23

RESOLUTION	SCALE
1280 x 720 @ 59.94 Hz	24
1920 x 1080 @ 59.94 Hz	25
1280 x 720 @ 50 Hz	26
1920 x 1080 @ 50 Hz	27
3840 x 2160 @ 30 Hz	28
3840 x 2160 @ 60 Hz	29

(SUM) Menu System

The "SUM" command displays the Main Menu.

COMMAND	ACTION
<ESC>(SUM	Activate the menu system.

(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.

COMMAND	ACTION
<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.

COMMAND	ACTION
<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.

COMMAND	ACTION
<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:

COMMAND	ACTION
<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.

COMMAND	ACTION
<ESC>(TAØ	Presenter template.
<ESC>(TA1	Broadcaster template.
<ESC>(TA2	PC template.

(TC) Touch Screen Corner Control

The "TC" commands enables or disables the corner function areas on a touch screen (see Touch Screen Command Areas).

COMMAND	ACTION
<ESC>(TCØ	Disable corner function areas
<ESC>(TC1	Enable corner function areas

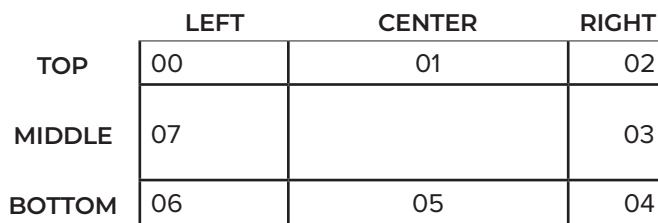
COMMAND	ACTION
<ESC>(TC2	Toggle corner function areas

(TCA) Touch Screen Function Areas

The "TCA" commands assigns commands to the seven touch screen function areas (see Touch Screen Command Areas).

COMMAND	ACTION
<ESC>(TCAnnxx	Setting "nn" is the numeric value taken from the table below which designates the position each touch screen area Setting "xx" is the numeric value taken from the second table below which designates the function assigned to the area Example: <ESC>(TCA0309 <i>(middle-right, get image)</i>

NN	TOUCH SCREEN AREA
00	top-left
01	top-center
02	top-right
03	middle-right
04	bottom-right
05	bottom-center
06	bottom-left
07	middle-left



Touch screen areas location diagram

XX	FUNCTION
00	none
01	clear
02	undo
03	next color
04	freeze / unfreeze
05	print

XX	FUNCTION
06	color mode
07	save image
08	send image
09	get image
10	select (for PC connection)
11	main menu
12	next video
13	previous video
14	video input selection
15	audio volume
16	clear
17	undo

(TCL) Touch Screen Area Label Color

The "TCL" commands enables or disables touch screen labels. and, if displayed, in which color.

COMMAND	ACTION
<ESC>(TCLØ	Touch area labels are off.
<ESC>(TCLB	Touch area labels are shown in blue.
<ESC>(TCLW	Touch area labels are shown in white.
<ESC>(TCLY	Touch area labels are shown in yellow.

(TR) Touch Screen Right Click Emulation

The "TR" commands enables or disables the right click emulation.

COMMAND	ACTION
<ESC>(TRØ	Disable touchscreen right click emulation
<ESC>(TR1	Enable touchscreen right click emulation

COMMAND	ACTION
<ESC>(TRT	Toggle touchscreen right click emulation

(U) Undo/Eraser

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.

COMMAND	ACTION
<ESC>(U	Undo the last anchored marker.

(V) Select an Overlay

The "V" command tells which overlay to display.

COMMAND	ACTION
<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.

(VCD) Display Change of Video Input

The "VCD" command tells whether to display a change of video input on the monitor.

COMMAND	ACTION
<ESC>(VCDØ	Do not display a change in the video input
<ESC>(VCD1	Display a change in the video input
<ESC>(VCDT	Toggle between the two modes

(VI) Video Input

The "VI" command chooses a video input.

COMMAND	ACTION
<ESC>(VIN	Next video input
<ESC>(VIP	Previous video input

(VIH) Enable or Disable HDCP Input

The "VIH" is a master switch for handling HDCP Input. If it is turned off, no HDCP content can pass through the device. If it is turned on, HDCP sources are handled according to your current "HI" settings.

This setting may not be available on all devices.

COMMAND	ACTION
<ESC>(VIHØ	HDCP input is off
<ESC>(VIH1	HDCP input is on
<ESC>(VIHT	Toggle between the two modes

(VSW) Initiate Wait Before Video Switching

The "VSW" command tells the system to blacken the video output for two seconds or until a video switch has completed. With a black video output, the user does not see any video artifacts when the switcher makes the video switch. This means the switcher has two seconds in which to make this switch before the video will display again. The user should have a wait of 200ms to 500ms between sending the video switch wait command and sending the switch command to the switcher. This wait is necessary to ensure that the device has seen the command and blacked out the video before the switcher has started the video switch.

COMMAND	ACTION
<ESC>(VSW	Initiates Video Switch Wait for two seconds.