

Crestron **TPS Panels**
Pointmaker[®] Telestrator

Integration Guide



CRESTRON

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Boeckeler Pointmaker Telestrator

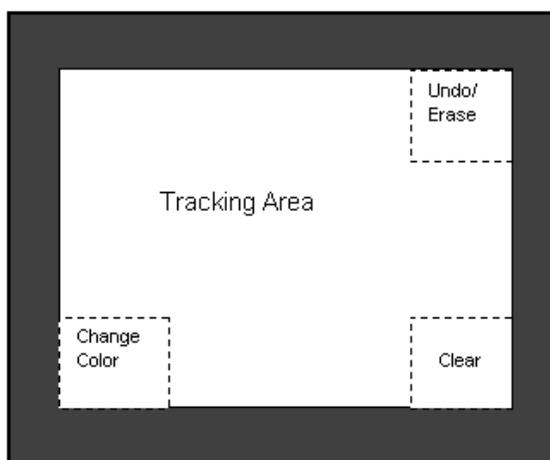
Introduction

Features and Functions

Crestron Isys™ TPS touchpanels can now be integrated with the Pointmaker® telestrator, or video annotation system by Boeckeler Instruments, enabling users to draw or write over a variety of video and computer images by pressing and dragging a finger over the touch screen. In this way the Isys touchpanel serves as both a video monitor and a digitizing tablet that can be used to draw attention to important details of an image. In addition, a solid background can replace the video input to create an “electronic chalkboard.”

The illustration below shows how the touch screen is divided into various areas, or zones, when the telestrator feature is active. The telestrator offers up to seven different line colors. Users can write and draw on the entire area of the video display. Pressing and releasing one of the corners results in the indicated action.

Touchscreen Area



NOTE: To enable Crestron control of the telestrator unit, the Crestron touchpanel or control system must be running before the telestrator powers up. This is because the telestrator sends out a query on startup that must be answered by the Crestron unit.

NOTE: TPS touchpanels require TPS software panel version 1.012 or higher. Refer to “Programming” on page 6 for programming software version requirements.

Connecting and Configuring the System

Before connecting the touchpanel to the telestrator, make sure that the telestrator is properly connected to the video source. Extensive information on connecting a variety of video and computer sources to the telestrator is available from the Pointmaker Web site, www.pointmaker.com. Click the Pointmaker logo to view a list of manuals in Adobe PDF format, and select the PDF manual for the PVI-83 model (this requires the Adobe *Acrobat Reader* plug-in). Download the first chapter, *Getting Started*, for installation instructions.

NOTE: Crestron recommends that you perform the direct connection procedure first (below), and that you use only one video source for all procedures in this section.

NOTE: Refer to Downloads | Product Manuals section (Doc. 5411) of the Crestron website (www.crestron.com) for Cresnet wiring instructions.

Touchpanel/Telestrator Direct Connection

Configure the Touchpanel

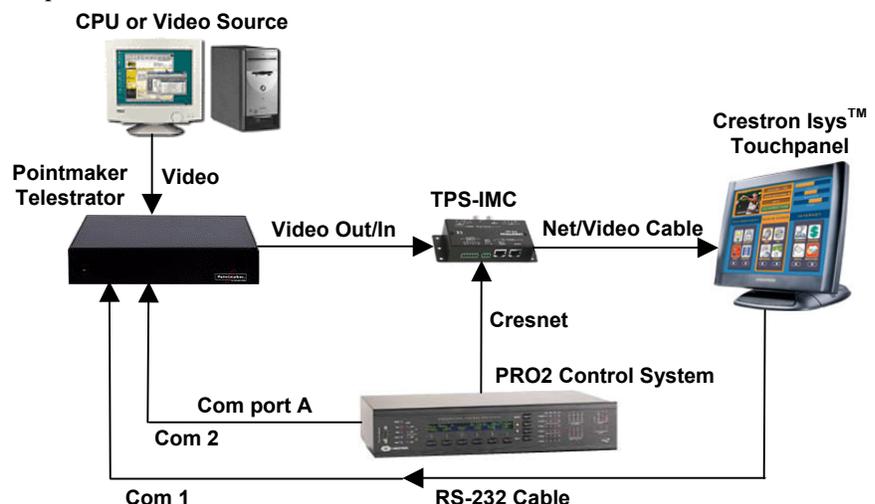
1. Put the touchpanel into setup mode and from the Main menu screen press **Setup**, then **RS-232**. Next press **RS-232 Port for Touch Output**. This will automatically set parameters such as baud rate, data bits, etc.

Connect the Telestrator to the Touchpanel

NOTE: The following steps are for tilt models only. Lectern/wall mounted touchpanels have video ports that allow for direct connection to the telestrator, without the TPS-IMC.

2. Using a 10-position net/video cable (included), connect the **Net/Video** port on the TPS-IMC (also included) to the **Net/Video** port on the touchpanel base. Then use an appropriate video cable (determined by the video source) to connect the Video **OUT** port on the telestrator to the corresponding Video **IN** port on the TPS-IMC.
3. Using a standard Crestron cable with a DB-9 female connector on one end and an RJ-11 connector on the other (Crestron #STCP-502), connect **COM 1** port on the telestrator to the **RS-232** port on the touchpanel base.

Touchpanel/Telestrator Direct Connection



4. Using a null-modem serial cable with DB-9 female connectors (Crestron #CNSP-134), connect **COM 2** port on the telestrator to **COM** port A on the control system (specified in the SIMPL Windows program).
5. Connect Cresnet cable to NET ports on control system and TPS-IMC.

Cresnet Connection

NOTE: Serial communication (refer to Direct Connection on page 2) must be established first before performing the following procedure.

Configure the Touchpanel

1. Put the touchpanel into setup mode and ensure that Port for Console RS-232 is selected.

Connect the System

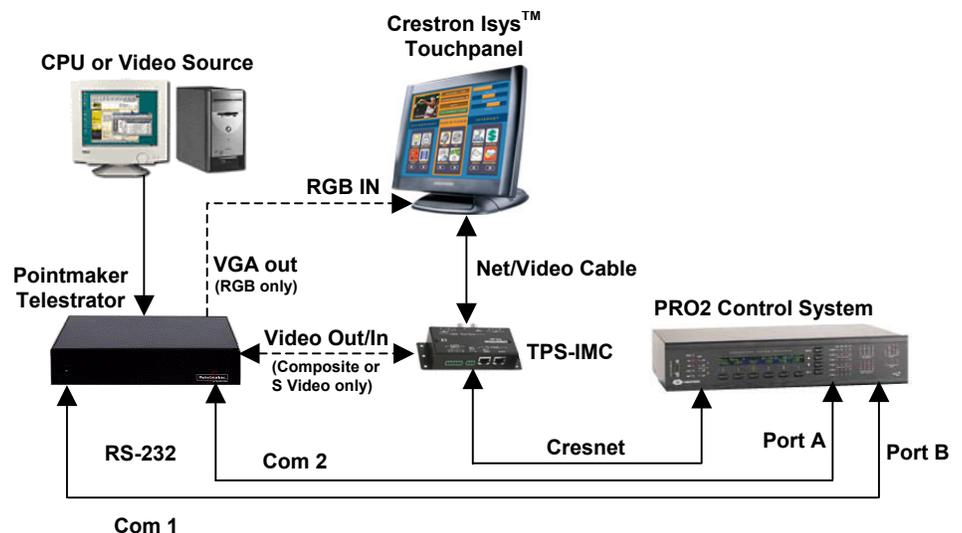
NOTE: The following steps are for tilt models only. Lectern/wall mounted touchpanels have video ports that allow for direct connection to the telestrator, with no TPS-IMC.

2. Using a null-modem serial cable with female connectors (Crestron #CNSP-134), connect **COM 1** port on the telestrator to a **COM Port B** on the control system (specified in the SIMPL Windows program) and **COM 2** on the telestrator to **COM Port A** on the control system.
3. Using a 10-position net/video cable (included), connect the **Net/Video** port on the TPS-IMC to the **Net/Video** port on the touchpanel base.
4. Use an appropriate video cable (determined by the video source) to connect the Video **OUT** port on the telestrator to the corresponding Video **IN** port on the TPS-IMC.

NOTE: For RGB, connect RGB cable from VGA out port on telestrator to RGB IN port on touchpanel. No video connection is required to TPS-IMC.

5. Connect Cresnet cable to NET ports on control system and TPS-IMC.

Cresnet Connection (Composite, S Video or RGB)



Ethernet Connection

NOTE: Serial communication (refer to Direct Connection on page 2) must be established first before performing the following procedure.

Configure the Touchpanel

NOTE: Make sure Ethernet communication is established between control system and the touchpanel before proceeding.

1. Put the touchpanel into setup mode and ensure that Port for Console RS-232 is selected.

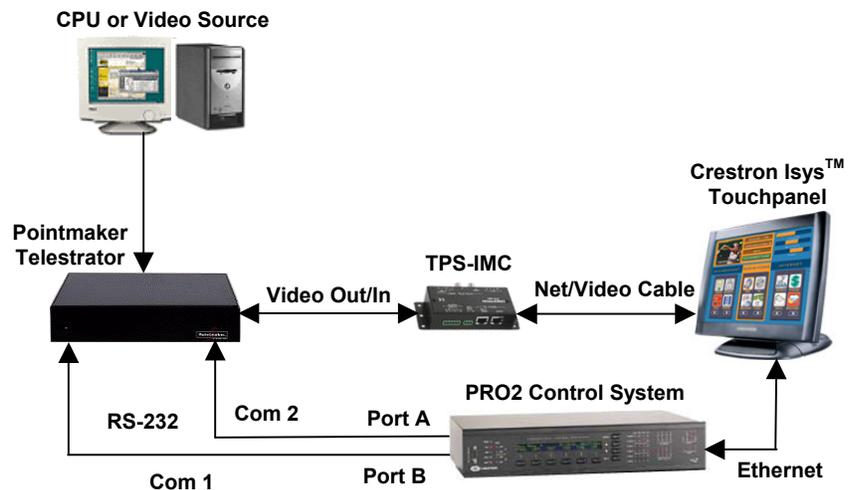
Connect the System

NOTE: The following steps are for tilt models only. Lectern/wall mounted touchpanels have video ports that allow for direct connection to the telestrator, with no TPS-IMC.

NOTE: To port video, a Crestron power supply (CNPWS-75) is required for the TMC-IMC.

2. Using a null-modem serial cable with female connectors (Crestron #CNSP-134), connect **COM 1** port on the telestrator to a **COM Port B** on the control system (specified in the SIMPL Windows program) and **COM 2** on the telestrator to **COM Port A** on the control system.
3. Connect the **LAN** port on the control system to the Ethernet network and, using an Ethernet cable with RJ-45 connectors, connect the **LAN** port on the touchpanel base to the Ethernet network. (To connect the two LAN ports directly, use an Ethernet crossover cable.)
4. Using a 10-position net/video cable (included), connect the **Net/Video** port on the TPS-IMC to the **Net/Video** port on the touchpanel base.
5. Use an appropriate video cable (determined by the video source) to connect the **Video OUT** port on the telestrator to the corresponding **Video IN** port on the TPS-IMC.

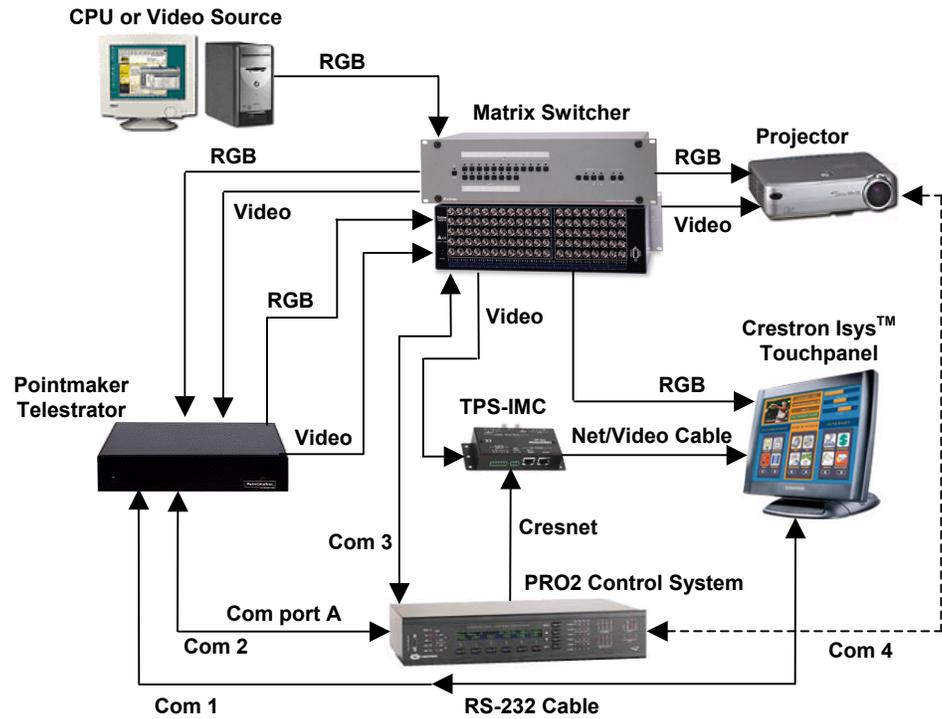
Ethernet Connection



Typical Audio/Video Configuration

The following graphic illustrates a typical AV configuration using a direct connection (refer to page 2), a matrix switcher and projector. This configuration allows for whatever is drawn on the touchpanel to be duplicated on a projector screen.

Typical AV Control Flow for Direct Connection



Video and RGB connections between the matrix switcher, touchpanel and projector are typical BNC to BNC or DB15 to BNC. Control connections between the control system, matrix switcher and projector are typical null-modem serial cables with female connectors (DB9).

Telestrator Setup

NOTE: The following procedure assumes that the telestrator is connected to a power source.

1. Connect keyboard and appropriate devices (direct connection, refer to page 2) to telestrator.
2. Power up Telestrator.
3. Press Print Screen key on keyboard to open the Setup menu on TPS display.
4. Using arrow keys, move to Hardware Setup and press Enter.
5. Using arrow keys, move to Serial Port and press Enter.
6. Using arrow keys, move to Control Port and press Enter.
7. Using arrow keys, move to COM1 and select com settings of 9600 (baud rate), NONE (parity), and 1 (STOP BIT).
8. Repeat step 6 for COM2.
9. Make sure control port is enabled on both COM 1 and COM2.
10. Press Enter to save settings and return to Setup menu.
11. Using arrow keys, move to Hardware Setup and press Enter.
12. Using arrow keys, move to Serial Port and press Enter
13. Using arrow keys, move to PointMaker to PointMaker Link and press Enter.
14. Using arrow keys select COMM Ø to disable link.
15. Press Enter to save settings and return to Setup menu.
16. Using arrow keys, move to Hardware Setup and press Enter.
17. Using arrow keys, move to Calibration and press Enter.
18. Using arrow keys, move to Touch Calibration and press Enter.
19. Touch areas on screen when prompted to calibrate.
20. Press Enter on keyboard to Save Settings and return to Setup Menu.
21. Using arrows, move to Exit to exit setup.

Programming

You can create a program that allows you to control the telestrator through a Crestron control system using the Crestron programming tool SIMPL™ Windows. This tool is intended for users with different levels of programming knowledge. The flexibility of the tool is proportional to the degree of programming expertise (i.e., the more flexible, the more a programmer needs to know and account for).

The following are minimum software version requirements for the PC:

- SIMPL Windows version 2.01.05, or later. Requires SIMPL+ Cross Compiler version 1.1.
- VT Pro-e version 2.4 or later.
- Crestron Database version 15.7.3 or later.

SIMPL Windows Programming

With a touchpanel RS-232, Cresnet or Ethernet connection, you can create a SIMPL Windows program to route the serial data and to transmit the touch output settings to the touchpanel. In the Configuration Manager, add the appropriate Plug-in Control Card or DPA Module to the control system and drag and drop the Cresnet or Ethernet-enabled touchpanel (the Cresnet ID or IP addresses). You will also need to drag and drop the following symbols:

- Boeckeler Pointmaker Fixed Commands (Symbol Lib, Project Modules)
- Boeckeler Pointmaker Drawing Grid (Symbol Lib, Project Modules)
- Serial Send (Logic, Serial)

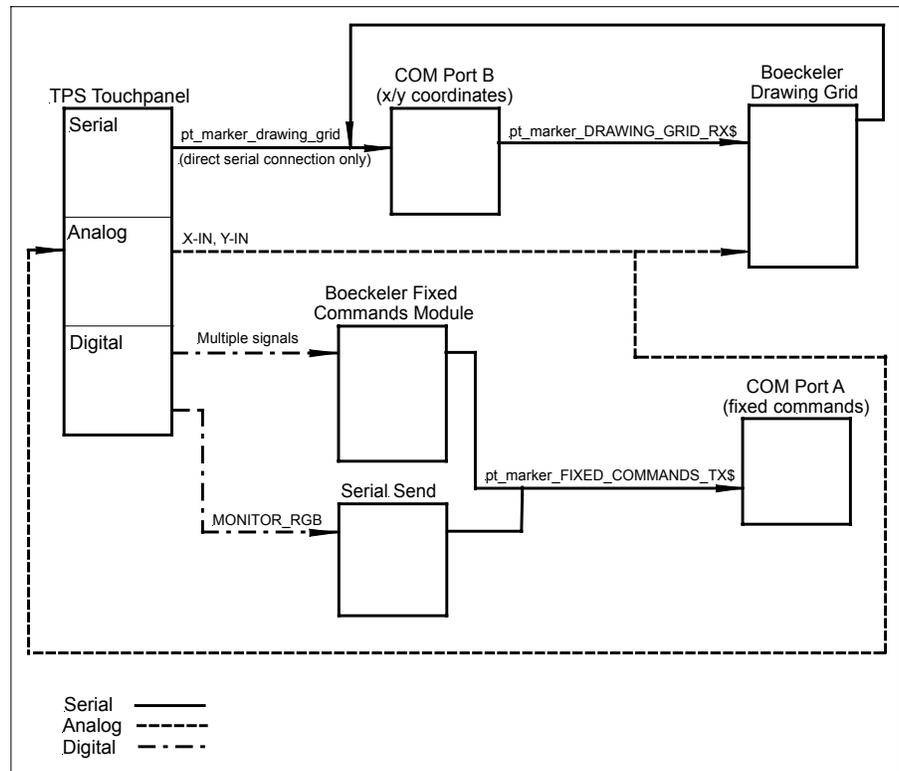
NOTE: A sample project that includes the Boeckeler symbols is available on the Crestron website (ftp.crestron.com/Macros). Look for Pointmkr.exe.

NOTE: Ethernet connections require proper Ethernet setup. Refer to Appendix: Ethernet Setup on page 12 for more information.

A block diagram that represents signal flow for the SIMPL Windows project is shown below. The telestrator commands from the touchpanel are received on any serial join, which may be selected in VT Pro-e in the Pad Area as shown in the graphic on page 9. It is represented in the diagram below as:

pt_marker_drawing_grid.

Block Diagram of SIMPL Windows Project



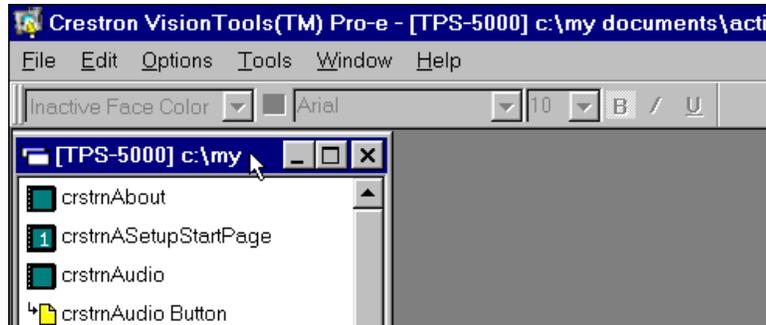
VT Pro-e Programming

The telestrator and PC configuration must be programmed in VT Pro-e and the project uploaded to a touchpanel..

An RGB object must be created on a page in the VT Pro-e project. To create an RGB object, perform the following steps.

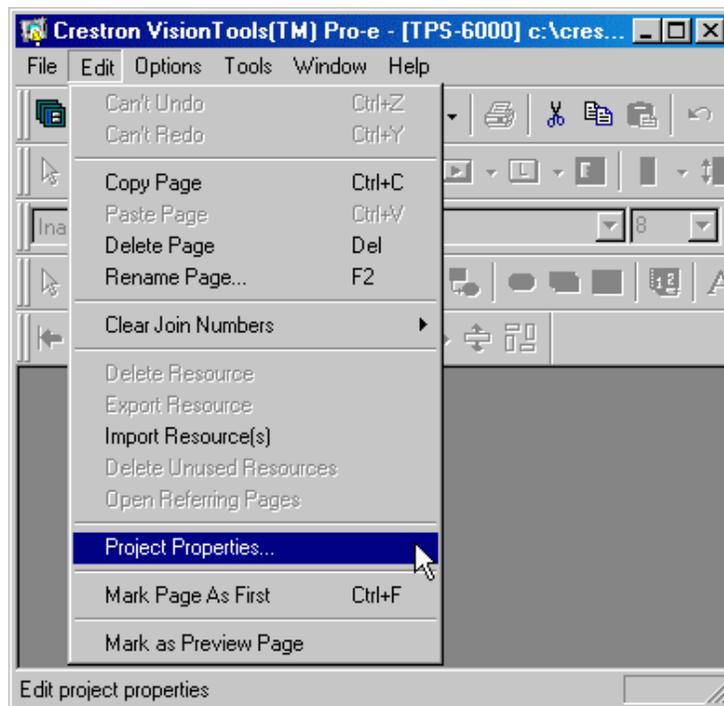
1. In VT Pro-e, open the touchpanel project.
2. As shown below, make sure that the project window is the active window.

Project Window Active (Example)



3. Select **Edit | Project Properties** to open the “Project Properties” window (refer to graphic below).

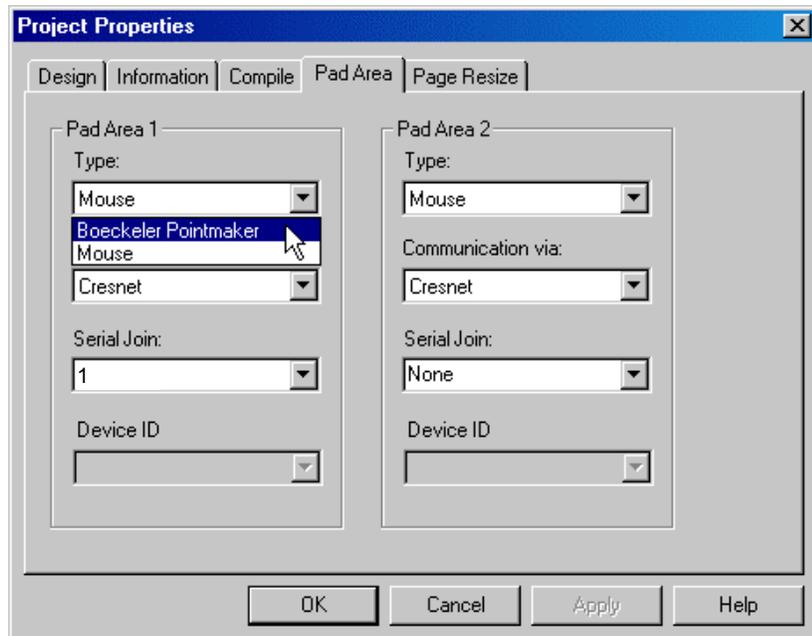
Select Project Properties



4. In the “Project Properties” window, select the *Pad Area* tab (refer to graphic on next page).

5. In the *Type* drop-down list of the desired Pad Area, select **Boeckeler Pointmaker** (Pad Area 1 is shown below).

Select Boeckeler Pointmaker in Pad Area 1



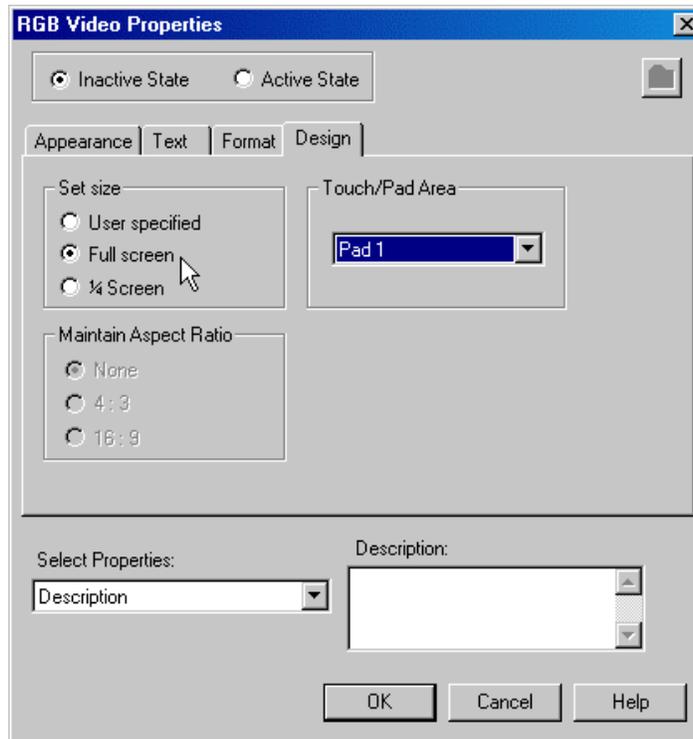
6. In the *Communication via* drop-down list under Pad Area 1, select Serial, Cresnet or TCP/IP (for Ethernet communication):
 - a. If **Serial** is selected, proceed to step 7.
 - b. If **Cresnet** is selected, select the serial join number (specified in “SIMPL Windows Programming” on page 7) to reference the assigned touchpanel serial output from the **Serial Join** drop-down list.
 - c. If **TCP/IP** is selected, select the serial join number (specified in “SIMPL Windows Programming” that begins on page 7) to reference the assigned touchpanel serial output from the *Serial Join* drop-down list. Select the desired device ID from the *Device ID* drop-down list (specified during step 3 of VT Pro-3 Programming that begins on page 7).
7. In the “Project Properties” window, click **OK**.
8. Open (or create) a page and select **Draw | RGB Window** (or from the *Objects Drawing* toolbar, click the **Draw RGB Window**  button).
9. Position the cursor on the page and drag out a box of the desired size.
10. Double-click the RGB window to display the “RGB Video Properties” window (refer to graphic on next page) and set parameters, as with any other VT Pro-e object.
11. In the “RGB Video Properties” window, select the *Design* tab.

NOTE: Full screen RGB video is recommended. If full screen RGB video is not used, calibration of the screen is required.

12. As shown in the graphic below, make sure that **Full Screen** is selected and, in the *Touch/Pad Area*, select **Pad 1** (or Pad 2, if appropriate).

NOTE: Pad 2 may be used if a second (or alternative setup) mouse driver is needed.

RGB Video Properties Window



13. Save, Compile, and load the project to the touchpanel.

Additional Programming Example

A Crestron module is available that provides button controls for parameters such as color, line thickness, etc. Button options such as screen overlay, video source, chalk, undo and clear are also included. The user can save up to nine overlays for the video source(s) selected. The chalk option displays a solid-colored chalkboard. An example of the screen created in VT Pro-e for the project is shown below.

Example Screen in VT Pro-e Project



NOTE: The module requires a Cresnet connection (refer to page 3).

The module can be downloaded from the Downloads | FTP Site | MACROS Library of the Crestron website (www.crestron.com). Look for Pointmkr.exe.

NOTE: Crestron software and any files on the website are for Authorized Crestron dealers only. New users may be required to register to obtain access to certain areas of the website (including the FTP site).

Appendix: Ethernet Setup

Ethernet devices that are addressed by the control system may have their IP IDs set either in the SIMPL Windows program or through the Crestron Viewport using a PC. Ultimately, each IP ID is converted into an actual IP address through an IP table that exists inside the control system. The IP Table is an internal list of information that contains the IP IDs and associated IP addresses of all Ethernet devices in the program. The IP Table is accessed by the control system to identify and locate Ethernet devices, for purposes of communication. Follow this procedure to add a control system to the touchpanel's IP table.

1. Using the Crestron Viewport, (**Remote | TCP/IP | Connect** or **Remote | Remote Console | Connect**) establish communication with the touchpanel.
2. As shown below, use the **ipt** (IPTABLE) command to display the current IP table for the CIP interface on the touchpanel.

IP Table

The screenshot shows a terminal window titled "Crestron Viewport - Connected to '192.168.010.147' on Port 41795 (Crestron Terminal Protocol)". The window has a menu bar with "File", "Edit", "Setup", "Diagnostics", "Functions", "File Transfer", and "Remote". The "Outgoing:" section shows the command "ipt" entered. The "Incoming:" section shows the output of the command: "Crestron Terminal Protocol Console opened", "TPS>ipt", and an IP table with the following content:

CIP_ID	DeviceID	IP Address/SiteName
4		192.168.010.147

The terminal also shows "TPS>|" and "Port Settings: Connected to '192.168.010.147' on Port 41795 (Crestron Terminal Protocol)".

3. As shown on the next page, using the **addm** (ADDMASTER) command to add a CIP node to the master list of the touchpanel, enter the information in the following format with spaces (no period or underscore) between the entries: CIP ID from SIMPL Windows (example of **4** is shown), IP address of touchpanel (example of **192.168.010.147** is shown), and Device ID (example of **4** is shown).

NOTE: The Device ID of the control system **MUST** match the CIP ID.

Add Device ID to Table

```

Crestron Viewport - Connected to "192.168.010.147" on Port 41795 (Crestron Terminal Protocol)
File Edit Setup Diagnostics Functions File Transfer Remote

Outgoing:
ipt
addm 4 192.168.010.147 4

Incoming:
Crestron Terminal Protocol Console opened
TPS>ipt
IP Table: CIP_ID DeviceID IP Address/SiteName
           4         4      192.168.010.147

TPS>

Port Settings:
Connected to "192.168.010.147" on Port 41795 (Crestron Terminal Protocol)

```

- As shown below, use the **ipt** command to display the updated IP table on the touchpanel.

Updated IP Table

```

Crestron Viewport - Connected to "192.168.010.147" on Port 41795 (Crestron Terminal Protocol)
File Edit Setup Diagnostics Functions File Transfer Remote

Outgoing:
ipt
addm 4 192.168.010.147 4
ipt

Incoming:
Crestron Terminal Protocol Console opened
TPS>ipt
IP Table: CIP_ID DeviceID IP Address/SiteName
           4         4      192.168.010.147

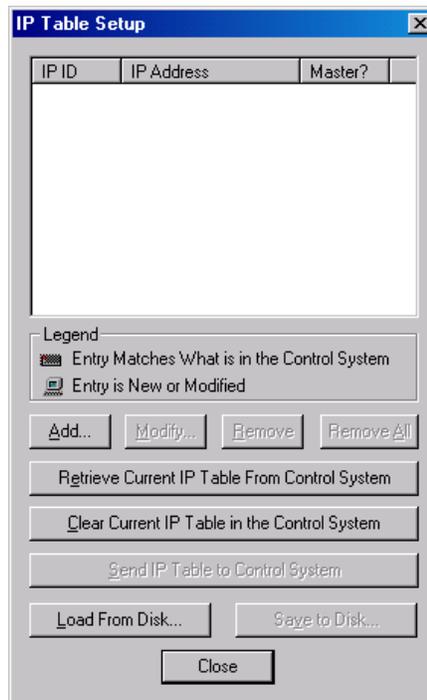
TPS>

Port Settings:
Connected to "192.168.010.147" on Port 41795 (Crestron Terminal Protocol)

```

NOTE: Do the following steps to add the touchpanel's IP ID and IP address to the IP table of the control system. Make sure you establish communication with the control system before proceeding (the control system (for example, PRO 2) prompt appears in the *Incoming* field of Viewport).

- Select **Functions | Setup IP Table** from Viewport. The "IP Table Setup" window opens. Refer to graphic on next page.

“IP Table Setup” Window

- Click **Retrieve Current IP Table From Control System**. The current IP address appears in the IP field as shown below.

IP Field

IP ID	IP Address	Master?
 03	192.168.010.147	FALSE

- Click **Add**. The “Add IP” window appears as shown below.

“Add IP” Window

- Select the appropriate IP ID from the “IP ID” pulldown.
- Enter the appropriate IP Address in the “IP Address” fields.
- Click **OK**.

Problem Solving

Troubleshooting

The table below provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

Telestrator Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Unable to draw, TxD LED does not illuminate on control system.	SIMPL Windows programming error.	Check SIMPL Windows program. Refer to the SIMPL Window help file for more information.
	Incorrect cable connections.	Check cable connections, make sure COM ports are connected correctly.
	Wrong Cresnet ID set.	Set correct Cresnet ID.
		Use 'Restore' command in Viewport. You would need to reestablish ethernet connection with touchpanel if you reboot or power down system after using Restore (IP address and IP mask need to be reentered for touchpanel).
Unable to draw, but TxD LED illuminates on control system.	Telestrator not working correctly.	Use 'Restore' command in Viewport. You would need to reestablish ethernet connection with touchpanel if you reboot or power down system after using Restore (IP address and IP mask need to be reentered for touchpanel).
		Disconnect touchpanel from telestrator serial port, connect Microsoft compatible serial mouse (DB9 connector) to port and attempt to draw. If unable to draw, check telestrator setup. Refer to "Telestrator Setup" in this guide.
		Run "Calibration". Refer to "Telestrator Setup" for more information.
	Telestrator ports not properly initialized.	Power down and up the telestrator.
	Telestrator not set up properly.	Check telestrator setup. Refer to "Telestrator Setup" in this guide.
	Incorrect cable connections.	Check cable connections, make sure COM ports are connected correctly.

Further Inquiries

If after reviewing this Integration Guide, you cannot locate specific information or have questions, please take advantage of Crestron's award winning customer service team by calling:

- In the US and Canada, call Crestron's corporate headquarters at 1-888-CRESTRON [1-888-273-7876] or 1-201-767-3400.
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3. Return freight charges following repair of items under warranty shall be paid by CRESTRON, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

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