



TI-SmartView™ CE Emulator Software for the TI-84 Plus Family

This guidebook applies to software version 5.2. To obtain the latest version of the documentation, go to education.ti.com/go/download.

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What's New

What's New in TI-SmartView™ CE Software v5.2

Collect Data

- Vernier EasyData® CE App allows you to use Data Collection on the TI-84 Plus CE emulator. The Vernier EasyData® CE App for TI-84 Plus CE comes pre-loaded on the emulator in TI-SmartView™ CE. This App allows you to collect single sensor data similar to using the App on the calculator.

SmartPad™ CE v5.2

- Remote keypad support updated for TI-SmartView™ CE v5.2

Introduction to TI-SmartView™ CE Software

The TI-SmartView™ CE software allows you to display a TI graphing calculator for your entire classroom. Two workspaces are included to help enhance your classroom presentations.



Calculator Emulator Workspace

Allows you to:



- Display a Full Emulator View or a Key Pad with Large Display Screen View. With optional views to open or close.



- Key Press History
 - Displays images of keys pressed so students can follow along with the keys pressed.



- View³™
 - Teacher-controlled update of up to three additional emulated screens such as Graph, Table and Equation for multiple representations.

- Calculate and Graph
 - Same experience as on physical graphing calculator.
- Drag and Drop any emulated screen to your class presentation software.**
 - Build out your lessons with screens created during your class.

- Press emulator keys using a Remote Key Pad!
 - Run SmartPad™ CE App*** on your TI-84 Plus CE connected to the computer with your USB cable. When the TI-SmartView™ CE window is in focus on your computer, your calculator becomes a Remote Key Pad.
- Launch a separate Screen Capture Window
 - Capture and save emulator screens as computer files similar to TI Connect™ CE Screen Capture which captures screens from the graphing calculator.

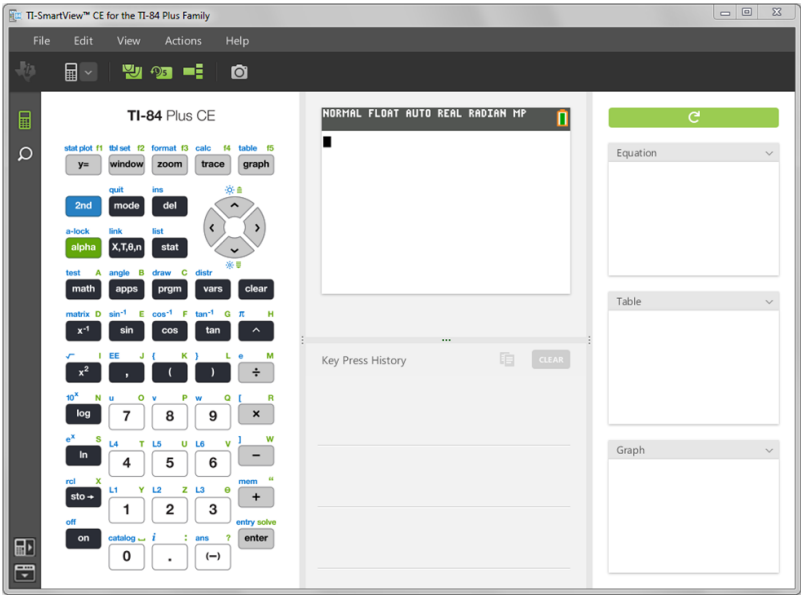


**Software such as Microsoft™ Office or other presentation software is supported.

***SmartPad™ CE App for TI-84 Plus CE is available to load to your calculator at education.ti.com/downloads.

Note: The Large Display Screen is not touch enabled. Use emulator keys as on the calculator.

Calculator Emulator screen



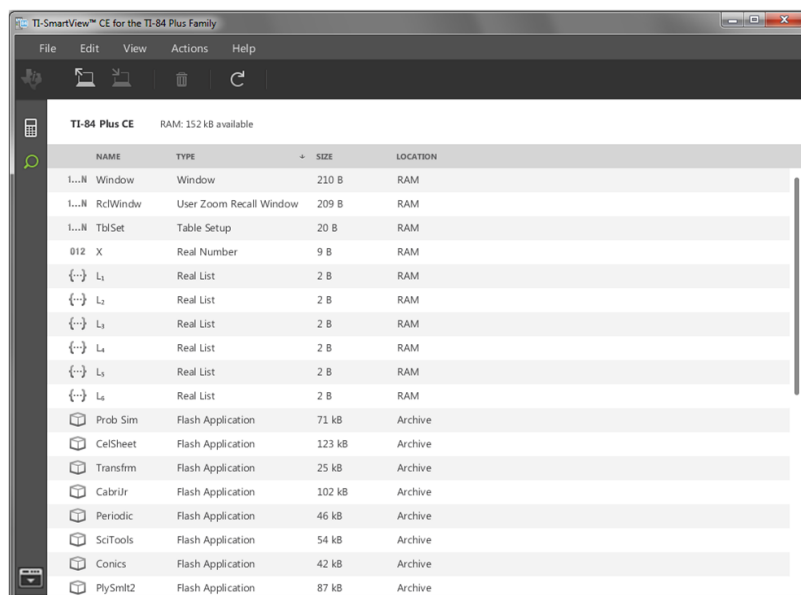


Emulator Explorer Workspace

Allows you to:

- Add single or multiple files to the emulator to set up for your classes:
 - Drag selected calculator files and/or your images (jpg, png, etc.) from your computer to your emulator for quick emulator set-up even during class instruction.
- Save files from the emulator to save or share to your students' calculators:
 - Drag selected calculator files to your computer to save files from a class presentation.
 - **Tip:** Once files are saved to your computer, you can drag those files to multiple connected student calculators using TI Connect™ CE Calculator Explorer for classroom sharing. TI Connect™ CE is free at education.ti.com/downloads.

Emulator Explorer default screen



Using the TI-SmartView™ CE Calculator Emulator Workspace

The TI-SmartView™ CE Calculator Emulator workspace contains tools you can use to input calculations, plot variables and display graphs, tables and lists.

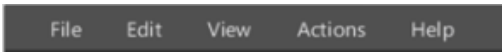



The screenshot shows the TI-SmartView™ CE Calculator Emulator workspace. The interface includes a menu bar (File, Edit, View, Actions, Help) and a toolbar with icons for file operations, calculator modes, and viewing options. The main workspace is divided into several panels:

- Calculator Panel (Left):** Displays the TI-84 Plus CE calculator interface. It includes a numeric keypad, function keys, and a display showing the expression $Y_1(-1)$ and the result -4 . Below the calculator, there are buttons for various calculator functions like stat , plot , format , calc , table , graph , zoom , trace , alpha , X,T,O,A , mode , 2nd , F1 , F2 , F3 , F4 , F5 , F6 , F7 , F8 , F9 , F10 , F11 , F12 , F13 , F14 , F15 , F16 , F17 , F18 , F19 , F20 , F21 , F22 , F23 , F24 , F25 , F26 , F27 , F28 , F29 , F30 , F31 , F32 , F33 , F34 , F35 , F36 , F37 , F38 , F39 , F40 , F41 , F42 , F43 , F44 , F45 , F46 , F47 , F48 , F49 , F50 , F51 , F52 , F53 , F54 , F55 , F56 , F57 , F58 , F59 , F60 , F61 , F62 , F63 , F64 , F65 , F66 , F67 , F68 , F69 , F70 , F71 , F72 , F73 , F74 , F75 , F76 , F77 , F78 , F79 , F80 , F81 , F82 , F83 , F84 , F85 , F86 , F87 , F88 , F89 , F90 , F91 , F92 , F93 , F94 , F95 , F96 , F97 , F98 , F99 , F100 .
- Key Press History Panel (Middle):** Displays a list of key presses, including α , trace , 1 , $($, ans , $(-)$, 1 , $)$, enter , α , trace , 2 , $($, ans , $(-)$, 1 , $)$, enter . It also includes buttons for A-lock , calc , f4 , L1 , Y , L , entry , solve , clear .
- Equation Panel (Right):** Displays the equation $Y_1 = \sin(X)$ and the result -5 . It includes buttons for Y1 , Y2 , Y3 , Y4 , Y5 , Y6 , Y7 , Y8 , Y9 , Y10 , Y11 , Y12 , Y13 , Y14 , Y15 , Y16 , Y17 , Y18 , Y19 , Y20 , Y21 , Y22 , Y23 , Y24 , Y25 , Y26 , Y27 , Y28 , Y29 , Y30 , Y31 , Y32 , Y33 , Y34 , Y35 , Y36 , Y37 , Y38 , Y39 , Y40 , Y41 , Y42 , Y43 , Y44 , Y45 , Y46 , Y47 , Y48 , Y49 , Y50 , Y51 , Y52 , Y53 , Y54 , Y55 , Y56 , Y57 , Y58 , Y59 , Y60 , Y61 , Y62 , Y63 , Y64 , Y65 , Y66 , Y67 , Y68 , Y69 , Y70 , Y71 , Y72 , Y73 , Y74 , Y75 , Y76 , Y77 , Y78 , Y79 , Y80 , Y81 , Y82 , Y83 , Y84 , Y85 , Y86 , Y87 , Y88 , Y89 , Y90 , Y91 , Y92 , Y93 , Y94 , Y95 , Y96 , Y97 , Y98 , Y99 , Y100 .
- Table Panel (Right):** Displays a table with columns X , Y_1 , Y_2 , Y_3 , Y_4 , Y_5 , Y_6 , Y_7 , Y_8 , Y_9 , Y_{10} , Y_{11} , Y_{12} , Y_{13} , Y_{14} , Y_{15} , Y_{16} , Y_{17} , Y_{18} , Y_{19} , Y_{20} , Y_{21} , Y_{22} , Y_{23} , Y_{24} , Y_{25} , Y_{26} , Y_{27} , Y_{28} , Y_{29} , Y_{30} , Y_{31} , Y_{32} , Y_{33} , Y_{34} , Y_{35} , Y_{36} , Y_{37} , Y_{38} , Y_{39} , Y_{40} , Y_{41} , Y_{42} , Y_{43} , Y_{44} , Y_{45} , Y_{46} , Y_{47} , Y_{48} , Y_{49} , Y_{50} , Y_{51} , Y_{52} , Y_{53} , Y_{54} , Y_{55} , Y_{56} , Y_{57} , Y_{58} , Y_{59} , Y_{60} , Y_{61} , Y_{62} , Y_{63} , Y_{64} , Y_{65} , Y_{66} , Y_{67} , Y_{68} , Y_{69} , Y_{70} , Y_{71} , Y_{72} , Y_{73} , Y_{74} , Y_{75} , Y_{76} , Y_{77} , Y_{78} , Y_{79} , Y_{80} , Y_{81} , Y_{82} , Y_{83} , Y_{84} , Y_{85} , Y_{86} , Y_{87} , Y_{88} , Y_{89} , Y_{90} , Y_{91} , Y_{92} , Y_{93} , Y_{94} , Y_{95} , Y_{96} , Y_{97} , Y_{98} , Y_{99} , Y_{100} .
- Graph Panel (Right):** Displays a graph of the function $Y_1 = \sin(X)$ on a coordinate plane. It includes buttons for Y1 , Y2 , Y3 , Y4 , Y5 , Y6 , Y7 , Y8 , Y9 , Y10 , Y11 , Y12 , Y13 , Y14 , Y15 , Y16 , Y17 , Y18 , Y19 , Y20 , Y21 , Y22 , Y23 , Y24 , Y25 , Y26 , Y27 , Y28 , Y29 , Y30 , Y31 , Y32 , Y33 , Y34 , Y35 , Y36 , Y37 , Y38 , Y39 , Y40 , Y41 , Y42 , Y43 , Y44 , Y45 , Y46 , Y47 , Y48 , Y49 , Y50 , Y51 , Y52 , Y53 , Y54 , Y55 , Y56 , Y57 , Y58 , Y59 , Y60 , Y61 , Y62 , Y63 , Y64 , Y65 , Y66 , Y67 , Y68 , Y69 , Y70 , Y71 , Y72 , Y73 , Y74 , Y75 , Y76 , Y77 , Y78 , Y79 , Y80 , Y81 , Y82 , Y83 , Y84 , Y85 , Y86 , Y87 , Y88 , Y89 , Y90 , Y91 , Y92 , Y93 , Y94 , Y95 , Y96 , Y97 , Y98 , Y99 , Y100 .

Numbered callouts (1-8) point to specific features:

- File menu
- Calculator icon
- Equation editor
- Table editor
- Graph editor
- Key Press History panel
- Equation editor
- Table editor

Parts of the TI-SmartView™ CE Software Workspace

1	 <p>Menu Bar - Use these menus to perform all emulator functions, including:</p> <ul style="list-style-type: none">• File - file management• Edit - include copy key as font• View - change the displays• Actions - such as screen capture• Help - Help and links <p>Note: You can complete most of the actions in these menus by clicking icons in the toolbar.</p>
2	 <p>Toolbar- Use these toolbar icons to:</p> <ul style="list-style-type: none">• Select a different calculator model• Toggle displays of Large Display Screen, Key Press History on or off, and View^{3™}• Capture current emulator screen
3	<p>Workspace Panel - Use this panel to navigate between the Calculator Emulator workspace and the Emulator Explorer workspace.</p>
4	<p>Choose Emulator and Toolbar Positions</p> <ul style="list-style-type: none">• Emulator position Left/Right  - to switch between left and right-hand display of the graphing calculator screen. This is convenient when projecting an Interactive White Board.• Toolbar Top/Bottom  - to toggle the toolbar between the top and the bottom of the screen. This is convenient when projecting an Interactive White Board. <p>Note: You can change the visual layout and/or position of elements to optimise access, especially when using an Interactive White Board.</p>
5	<p>Emulator Panel - Use this panel to use the full emulator or the emulator keypad-only view.</p>
6	<p>Large Display Screen Panel/Key Press History Panel - Use this panel to display a large version of the calculator screen and/or to display key press history. You have the following display options:</p> <ul style="list-style-type: none">• Large Display Screen only• Large Display Screen + Key Press History• Key Press History only• Hide panel
7	<p>View^{3™} Panel - Use this panel to show three additional screens simultaneously.</p>

(This panel is hidden by default. Click  to show the View^{3™} Panel.)

You can select any three of the following screens:

- Equation (Y= editor)
- List (Stat List editor)
- Window
- Table
- Stat Plot
- [Blank]
- Graph



8

Resize Panels - Click and drag the vertical bar at the side of a panel to resize it.

Using the TI-SmartView™ CE Emulator Keyboard


The mouse takes the place of your finger pressing keys on the computer keyboard.


Click the keys on the TI-SmartView™ CE emulator as you would press the keys on the graphing calculator.

1. Click the arrow keys  on the emulator keyboard to move the cursor to the desired setting.
2. Click  to select it.

You must first place the keyboard in its alpha typing mode to type text using the computer keyboard.


By default, the graphing calculator keyboard is in its normal mode, in which keys are simply shortcuts to graphing calculator keys.

For example, pressing [A] on your computer keyboard is the same as clicking  on the graphing calculator. In this mode, you cannot enter the letters A to Z on the graphing calculator screen by typing these letters on your computer keyboard.

To enter a letter or other alpha character, first click  on the graphing calculator keyboard (or press [F7] on your computer keyboard) to put the graphing calculator in alpha mode. For example, typing [F7] [A] on your computer keyboard enters an A on the graphing calculator screen. After you type the character, the keyboard returns to its normal mode.


You can lock the alpha key to type more than one character in succession.

To lock the alpha key:


- Click  on the graphing calculator keyboard or press [F6] [F7] on your computer keyboard.

To return to the normal mode:


- Click or press [F7].

In alpha typing mode, pressing [0] to [9] on your computer keyboard acts as a shortcut to the alpha functions associated with these keys on the graphing calculator keyboard. Pressing [1] enters Y (the alpha character associated with ) on the graphing calculator screen. To type a number, be sure the keyboard is not in the alpha typing mode. These keys do enter the digits 0 to 9 in the normal mode.

You can hold down an arrow key to scroll the cursor continuously.

When you use an arrow key to move the cursor, you can hold down the key to scroll the cursor continuously, instead of having to press the key repeatedly. In the key press history and in a script, the icon for a repeating arrow key has a clock symbol  attached to it.

Pressing an arrow key multiple times in a row displays an arrow with a repeat counter.

When you press an arrow key multiple times in a row, one arrow key is displayed in the key press history; this arrow key  has a number attached to it that shows the number of times the arrow key was pressed.

Tip: When tracing along graphs or using Cabri™ Jr App to draw geometric shapes, the computer keyboard arrows may give you smoother continual action as opposed to using a mouse to click on the emulator arrows.

Dragging and Dropping a Screen to Another Application

You can drag and drop and paste any TI-SmartView™ CE screen into another application.

The TI-SmartView™ CE screens that you can drag and paste include the following:

- The screen above the keyboard in the Emulator Panel
- Large Screen
- View³™ panel screens

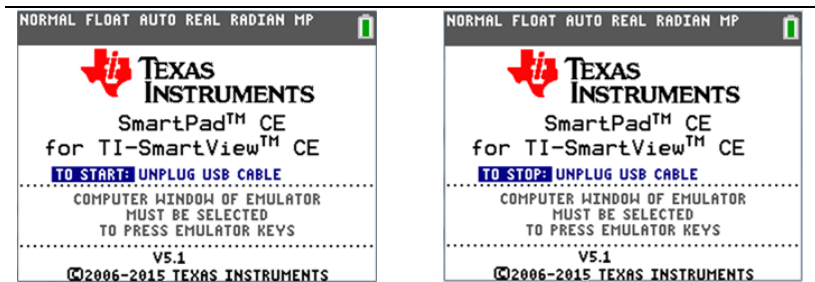
Note: You can drag a View³™ screen into Screen Capture and use Screen Capture as a history of important screens during a class session.

- Saved or unsaved screen captures

Connecting a Calculator as a Remote Keypad

The SmartPad™ CE App is available for the TI-84 Plus CE. To use the TI-84 Plus CE as a remote keypad for TI-SmartView™ CE:

1. Load the SmartPad™ CE App on your TI-84 Plus CE.
2. Connect your TI-84 Plus CE to your computer using a USB Computer cable which came with your calculator.
3. Launch TI-SmartView™ CE. Make sure the TI-SmartView™ CE window is in focus by clicking on the TI-SmartView™ CE window.
4. Run SmartPad™ CE App on your TI-84 Plus CE. Press [apps] and select SmartPad™ CE from the Apps menu. Read the information on the splash screen.



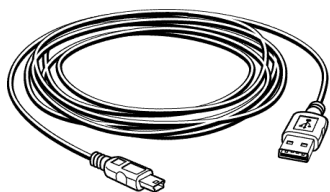
5. Press keys on the calculator's keypad which remotely press the emulator keypad on the TI-SmartView™ CE.
6. Disconnect USB cable from calculator to stop the App and remote keypad feature.
7. Reconnecting the USB cable and running the App again may be needed if the remote keypad connectivity is no longer responding.

Notes:

- The TI-84 Plus CE running the SmartPad™ CE App will not display the calculations or graphs. The calculator becomes a remote USB keypad for the emulator only.
- The TI-84 Plus CE will remain a remote keypad when the TI-SmartView™ CE window is in focus. Click on the TI-SmartView window prior to pressing keys on the calculator.
- The TI SilverLink cable is not supported in TI-SmartView™ CE.

USB Computer Cable

You must use the USB Computer Cable that comes with your TI-84 Plus CE graphing calculator to use SmartPad™ CE App. Other TI Connectivity Cables are not supported.



Additional information on connectivity

- **Emulator Link Menu - No Send/Receive**

The Link feature, [2nd \[link\]](#) on the emulators is disabled. To link files between a connected calculator and an emulator, please use Calculator Explorer in TI Connect™ CE and Emulator Explorer in TI-SmartView™ CE.

Drag calculator or emulator files to the computer first when transferring between Emulator Explorer in TI-SmartView™ CE and Calculator Explorer in TI Connect™ CE.

- **TI-SilverLink cable**

The TI SilverLink cable is not supported in TI-SmartView™ CE.

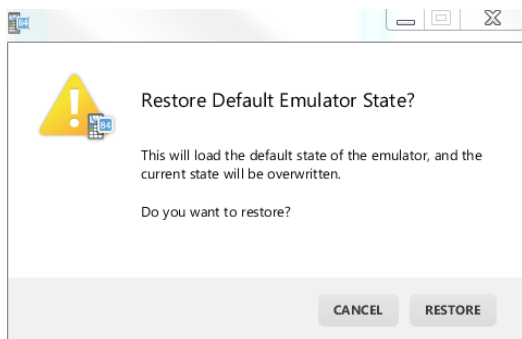
- **Bringing a calculator out of a TEST MODE setting**

TI-SmartView™ CE will not transfer a file to a connected calculator. Please send files between two calculators or use TI Connect™ CE to send a file to a calculator in TEST MODE to disable the TEST MODE.

Resetting the Emulator

To reset the emulator:

1. Click **Actions**.
2. Click **Reset Emulator**.
3. Click **Restore**.





Resetting the emulator:

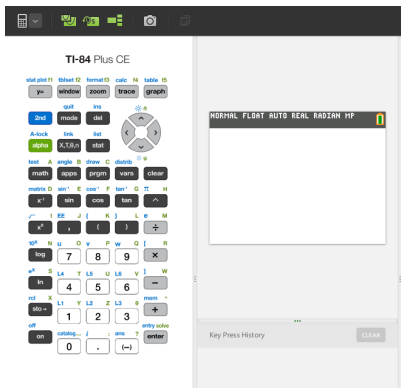
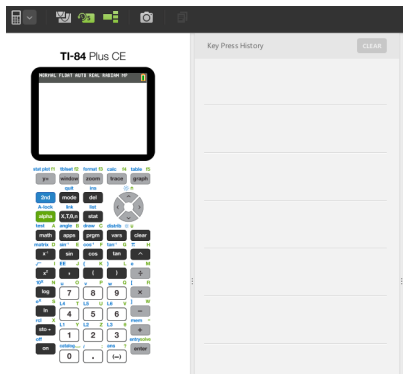
- Overwrites the current emulator state
- Returns the TI-SmartView™ CE Software to the factory-default setting
- Clears key press history

Choosing a Display Option

You can customise your display to show or hide optional panels and change the type of information displayed in each of them. By default, the TI-SmartView™ CE software displays the calculator emulator workspace in Large Display Screen.

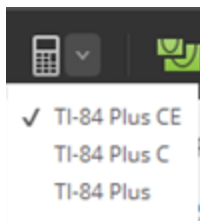
Displaying the Calculator Screen

1. Click  to view the calculator screen above the keyboard in the Emulator Panel.
2. Click  again to show the Keypad + Large Display Screen.

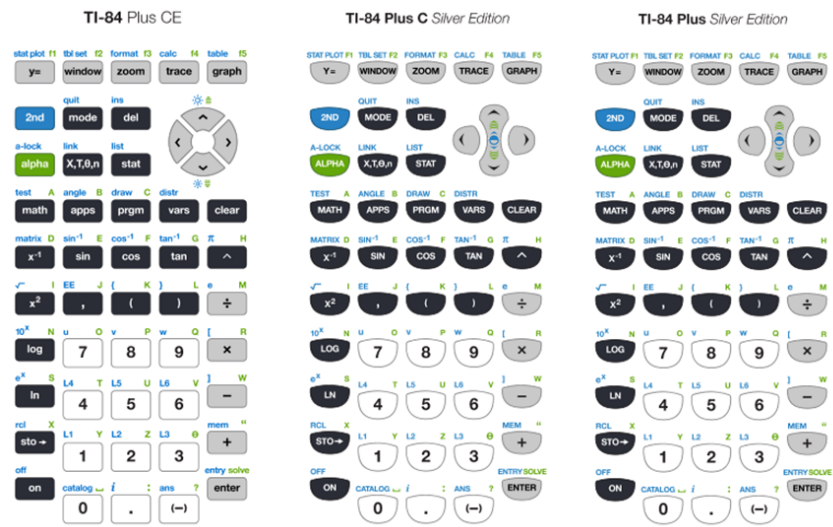


Choosing an Emulator Type

Click the down arrow on  to choose an emulator type.



Each emulator type displays its relevant calculator model.



Changing the Calculator Faceplate

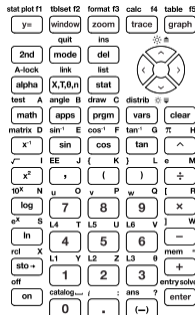
To change the faceplate:

1. Click **View**.
2. Hover over **Calculator Faceplate**.
3. Click on a calculator faceplate name.

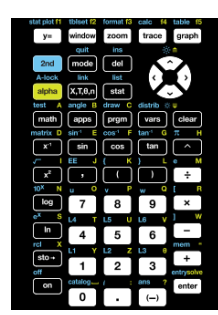
Light




Outline



Dark



Showing or Hiding the Key Press History

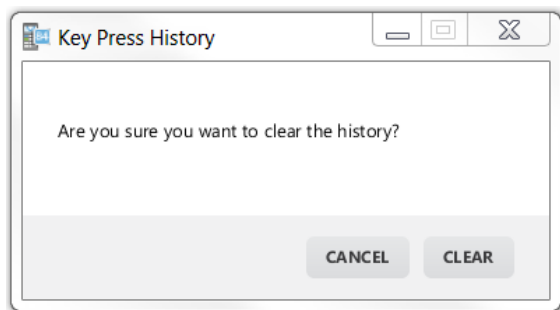
Click  to show or hide key press history.

Click **CLEAR** in the panel next to Key Press History to clear the history.







-
- 1** Click here and drag to resize the Key Press History panel. **2** Click here to clear the Key Press History.
-

When you press clear, you will see this information box:



Copying the Key Press History to Another Application

You can copy all or only a selected portion of the key press history to another

application such as a word processor. You can copy the key graphics  as they are shown in the key press history panel, or you can copy the key presses as font text characters   .

Note: When you copy keys as font text characters, those characters use the **TI84PlusCEKeys** font. This font is installed on your computer automatically when you install the TI- SmartView™ CE software.

Copying Keys as Graphics or Font Characters

1. Select the key(s) you want to copy.
To select keys in the Key Press History Panel, use one of the following methods:

Key	Method
– A single key:	Click on a key.
– Multiple keys:	Click on a key. Press and hold Ctrl on your computer keyboard. Click other keys to select multiple keys.
– Multiple keys in a sequence:	Click on a key. Press and hold Shift on your computer

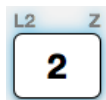
Key	Method
	keyboard. Press another key. Note: This allows you to select those two keys plus all of the keys between them.
– All keys:	Click on a key. Right click. Click Select All .

Note: This is what a key looks like before and after you select it.

Before:



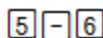
After:



- Right-click the selected key(s).
- Click **Copy** (to copy keys as graphics).

-or-

Click **Copy As Font** (to copy keys as font characters).




- Switch to another application.
- Paste the keys at the appropriate location.

Note:

- You can also drag the selected keys as graphics to the other application.
- You can re-size the key graphics after you paste them into a new application.
- In some applications, the characters pasted as a font may be shown in the font that is in effect at that location, so they may not look anything like graphing calculator keys. If necessary, apply the **TI84PlusCEKeys** font to the characters. See the help file for the destination application you are using for details on how to apply a font to the characters.

Displaying the View^{3™} Panel

- Click  to display the View^{3™} panel.
- Click the title bar of each screen to choose from these display options:
 - Equation (Y= editor)
 - List (Stat List editor)
 - Window

- Table
- Stat Plot
- [Blank]
- Graph

- Click the green teacher-controlled update button in the View^{3™} panel to refresh the View^{3™} screens. This updates the view for your students during investigations.



Update detected



Updating or cancel



No update detected

- View content in the selected screens, or repeat step 2 to change the screen type.

Changing the Size of the TI-SmartView™ CE Screen

Click and drag the edge of a panel to change the size of the Emulator Panel, the Large Display Screen or the View³™ Panel.



Note: All of these are left/right actions, except the Key Press History which is pull up or down to size.

Emulator and Toolbar positions



Emulator position Left/Right - to switch between left and right-hand display of the graphing calculator screen. This is convenient when projecting an Interactive White Board.



Tool Bar Top/Bottom - to toggle the toolbar between the top and the bottom of the screen. This is convenient when projecting an Interactive White Board.

Always in Front

Select this option in the View Menu to keep the TI-SmartView™ CE windows in front of any other computer software window open. Similar to having the calculator sitting on your desk, on top of your papers! Position the window on your computer desktop where it is best to remain "Always in Front."

To turn off "Always in Front," deselect the menu item in the View menu. There is no toolbar icon for this feature and no indicator other than the menu check mark when active.

Notes:

The TI-SmartView™ CE Emulator Workspace window and Screen Capture windows will both be "Always in Front" and toggle in front depending on their position.

"Always in Front" is not recommended when in full screen mode since all other windows will be behind the full screen of TI-SmartView™ CE.

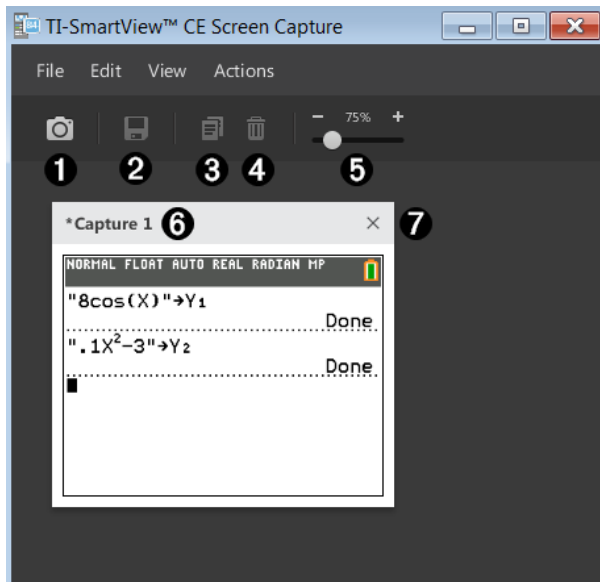
Using Screen Capture

You can capture the current graphing calculator screens using the TI-SmartView™ CE screen capture tool.

To use screen capture:

- Click  on the toolbar.

This window appears:



Parts of the Screen Capture Workspace

1	Capture	<p>Click here to take an emulator screen capture.</p> <p>Actions > Capture Screen</p> <p>Note: A border is automatically added to each image when you capture it, but you can remove the border by clicking View > Hide Screen Capture Borders. (If you have multiple images, this removes the border from every image.)</p> <p>With screen capture you can:</p> <ul style="list-style-type: none">capture up to 44 screens at a time (to capture additional images, delete images from the Screen Capture window),automatically store screen captures in memory until you close the main TI-SmartView™ CE window. <p>Closing Screen Capture gives a prompt to save your screen captures. You can start a new Screen Capture session during a TI-SmartView™ CE session.</p>
2	Save	<p>Click here to save selected screen captures.</p> <p>File > Save As</p>
3	Copy	<p>Click here to copy selected screen captures to the clipboard.</p> <p>Edit > Copy</p>
4	Delete	<p>Click here to delete selected screen captures.</p> <p>Edit > Delete</p>
5	Resize	<p>Slide the dot along the bar to adjust the current screen capture preview size.</p> <p>View > Scale Screen Captures</p> <p>Note: Screens save at the percentage in view.</p>
6	Rename	<p>Rename a screen capture by highlighting the title and typing in a new name.</p>
7	View	<p>View screen captures here.</p>

Dragging and Dropping a Screen to Another Application

You can drag and drop and paste any TI-SmartView™ CE screen into another application.

The TI-SmartView™ CE screens that you can drag and paste include the following:

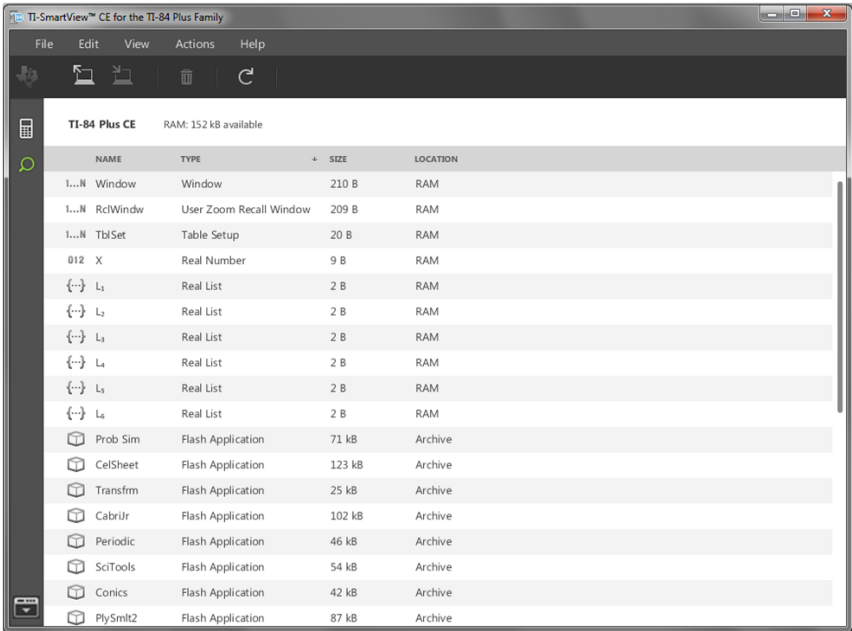
- The screen above the keyboard in the Emulator Panel
- Large Screen
- View^{3™} panel screens

Note: You can drag a View^{3™} screen into Screen Capture and use Screen Capture as a history of important screens during a class session.

- Saved or unsaved screen captures

Using TI-SmartView™ CE Emulator Explorer Workspace

Emulator Explorer workspace allows you to manage emulator files, add content from your computer to your emulator and send selected content to your computer.



Parts of the TI-SmartView™ Emulator Explorer Main Workspace



① Add calculator files from computer to emulator.

② Send selected calculator files to computer.

③ Delete selected calculator files.

④ Refresh the view of the emulator's contents.

Note: When changing the workspace to Emulator Explorer, refresh the view of the emulator files to update any changes made in the emulator.

Copying Emulator Files to the Computer

You can copy most data, files and programs from your emulator to your computer as a backup, to send to others or to free up emulator memory.

To copy a file from the emulator to the computer

1. Click on the file name to select it.

2. Click

-or-

Drag and drop the file into a folder on your computer or onto your desktop.

To copy a file from the computer to the emulator

1. Click

2. Navigate to the desired calculator file on your computer.

Note: You can also drag your images (.jpg, .png, etc.) to convert to emulator/calculator Background Images as well.

3. Click on the file to select it.

4. Click **Open**.

Deleting Emulator Files

You can delete data, files and programs from your emulator.

To delete files from the emulator

1. Click on the file name to select it.

2. Press .

Computer Keyboard Shortcuts



















































You can use your computer keyboard to press a key, instead of pressing that key on the TI-SmartView™ CE keyboard image.

For example:

If you want to enter the "log" function on the emulator keypad, use the table below to find the computer key to press.



- Press [N] on your computer keyboard (notice that the emulator key upper left is the alpha letter N.)

stat plot f1  [F1]	tblset f2  [F2]	format f3  [F3]	calc f4  [F4]	table f5  [F5]
 [F6]	quit  [Shift] + [m]	ins  [Delete]	 [←]	 [↑]
A-lock  [F7]	link  [Shift] + [x]	list  [Shift] + [s]	 [↓]	 [→]
test A  [A]	angle B  [B]	draw C  [C]	distr  [shift] + [v]	 [Backspace]
matrix D  [D]	\sin^{-1} E  [E]	\cos^{-1} F  [F]	\tan^{-1} G  [G]	π H  [Shift] + [^]
$\sqrt{}$ I  [I]	EE J  [,]	{ K  [Shift] + [(]	} L  [Shift] + [)]	$e^{}$ M  [/]
10^x N  [N]	u O  [7]	v P  [8]	w Q  [9]	\int R  [Shift] + [*]
e^x S  [S]	$L4$ T  [4]	$L5$ U  [5]	$L6$ V  [6]	\int W  [-]
rci X  [X]	$L1$ Y  [1]	$L2$ Z  [2]	$L3$ θ  [3]	mem "  [Shift] + [+]
off  [Shift] + [~]	catalog \hookrightarrow  [0]	i :  [.]	ans ?  [Shift] + [-]	entry solve  [Enter]

Compatibility with Graphing Calculators

Please refer to the TI-84 Plus CE Getting Started Guide for compatibility with graphing calculators.

Note: In general, TI-84 Plus CE graphing calculator files are compatible with other TI-84 Plus and TI-83 Plus models.

Apps, Operating Systems and some data files with unsupported numeric types do not share between models.

TI-Basic programs may need to be modified to display correctly on the high resolution colour screen models.

Data Collection Using Vernier EasyData® App on the TI-84 Plus CE Emulator

Vernier EasyData® CE App allows you to use Data Collection on the TI-84 Plus CE emulator. The Vernier EasyData® CE App for TI-84 Plus CE comes pre-loaded on the emulator in TI-SmartView™ CE. This App allows you to collect single sensor data similar to using the App on the calculator.

Tips:

- Make sure you are familiar with collecting data using the EasyData® App on the calculator prior to using TI-SmartView™ CE to collect data.
- Make sure you are familiar with the EasyData® CE App menu (**File>New**) or the **Scan** shortcut key feature. You will use these features in the emulator to connect a sensor to the emulator while the sensor is connected to the computer.




Using Vernier Sensors with TI-SmartView™ CE and EasyData® CE App

If you already use Vernier sensors with the TI-84 Plus CE or TI-8x family calculator with a mini-USB port, the sensor connects to the mini-USB port on the calculator.




Vernier sensors used with the TI-8x family (mini-USB) need the appropriate adapter to connect (USB) to the computer for data collections demonstrations.

Adapters

Connect Sensor Type to Computer

Name	Adapter	Description
Easy to Go!		Use this adapter to connect an EasyTemp or EasyLink™ adapter to a computer for data collection. See more
Go!Link		Use this single-channel interface adapter to connect most Vernier sensors to your computer. See more
Go!Motion to Computer Cable		Use this cable to connect a Go!Motion or CBR 2 to a computer. It is included with Go!Motion. See more

Connect Sensor Type to Calculator

Name	Adapter	Description
EasyLink™	 The EasyLink adapter is a small, black, rectangular device with a green "EasyLink" logo on the left and a single cable extending from the right.	Use this adapter to link Vernier sensors to your TI-84 Plus CE graphing calculator. EasyLink™ is a single-channel interface that plugs into the USB port of a TI-84 Plus graphing calculator or TI-Nspire™ Handheld. See more
Go!to Easy Adapter (mini USB)	 The Go!to Easy Adapter is a black cable with a mini-USB connector on one end and a standard USB-A connector on the other.	Use this adapter to connect a Go!Temp or Go!Link™* to the USB port of a TI-Nspire™ handheld or TI-84 graphing calculator. See more
Go!Motion to Calculator Mini-USB port	 The Go!Motion to Calculator Mini-USB port cable is a black cable with a Mini-USB connector on one end and a standard USB-A connector on the other.	Use this 72" cable to connect a Go!Motion or CBR 2 to the USB port of a TI-Nspire™ handheld or TI-84 graphing calculator. The cable has a USB Mini-A plug that connects to the calculator and a standard-B USB plug that connects to the Go!Motion or CBR 2. The cable is included with a CBR 2. See more

If Using for Classroom Demonstrations

Data collection using the EasyData® App is only supported on the TI-84 Plus CE emulator for classroom demonstration purposes. If your class is using any TI-8x Family calculator running the latest Vernier EasyData® App for that calculator, the demonstration of data collection using TI-SmartView™ CE and the TI-84 Plus CE will be parallel to the calculator experience on TI-8x Family calculators.

Single Sensors Data Collection

Single-sensor data collection is supported in the TI-84 Plus CE emulator (similar to the TI-84 Plus CE calculator).

If a sensor is supported using the EasyData® App on the calculator via mini-USB, the emulator in TI-SmartView™ CE provides a demonstration tool for data collection similar to the experience on the calculator.

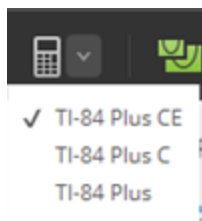
- CBR 2™ (Calculator-Based Ranger™) is supported with the USB cable.
- CBL 2™ (Calculator-Based Laboratory™ system) is **not** supported.
- The latest Vernier EasyData® CE App for TI-84 Plus CE comes pre-loaded in the emulator.
- Older versions of the App are blocked in Emulator Explorer for the best data collection experience.

Using TI-SmartView™ CE to Demonstrate Data Collection

1. Launch TI-SmartView™ CE.

Tip: If you are running any other computer software that also collects data using Vernier USB sensors, we recommend that you close all other data collecting software so TI-SmartView™ CE recognises the single sensor for your data collection session. Otherwise, your computer operating system will “decide” which sensors it will recognise. You may not see your sensor connect to TI-SmartView™ CE until you close other software.

2. Click the down arrow on  to choose an emulator type.



3. Connect one sensor to your computer via standard USB.

Advanced Feature: You can have several sensors connected to your computer ports. You can use the TI-SmartView™ CE Actions menu (**Actions>Select Data Collection Sensor**) to switch between sensors. Use the EasyData® CE App menu (**File>New**) to connect the new sensor to the emulator.

4. Run the EasyData® CE App on the TI-84 Plus CE emulator.

Note: The latest Vernier EasyData App for the TI-84 Plus CE emulator (v 5.2 or higher) comes pre-loaded in TI-SmartView™ CE (v 5.2 or higher).

5. EasyData® launches on the emulator. You should see the name of the sensor (or link connection) on the splash screen. The sensor name will then appear in the meter screen similar to the calculator experience.

If EasyData® App does not recognise the sensor connected to the computer, use either **Scan** or **File>New** in the EasyData® App on the emulator to connect the sensor.

6. Use EasyData® App features as on the CE emulator to collect and analyse the data.
7. When data collection is complete, **QUIT** the EasyData® App in the emulator to continue to use TI-SmartView™ CE.
 - Data from the data collection experiment is stored to lists in the emulator when quitting the EasyData® CE App.
 - You may leave the sensor plugged into your computer as needed.

While EasyData® CE App is running on the CE emulator you may do the following:

Switch Emulator Workspace	You may switch emulators while EasyData® is running; however, the data experiment will stop and the sensor will disconnect from the CE emulator running the EasyData® App. When you return to the CE emulator, you will need to reconnect the sensor to EasyData® CE App using either File>New or the “ Scan ” shortcut key in the EasyData® App and begin a new data collection experiment. Previous experiment data may or may not be stored. Always “ QUIT ” the EasyData® CE App to store experiment data to the emulator lists.
View^{3™} and Apps	View ^{3™} is not available (disabled) for all Apps other than the Inequality Graphing App. View ^{3™} only displays screens from the [™] Operating System and does not display App screens. We recommend that you keep View ^{3™} closed when not using this feature or if the feature is disabled as when most Apps are running on the emulator.
Switch to Emulator Explorer Workspace	If EasyData® is running in the CE emulator and if you need to use Emulator Explorer, please quit the EasyData® App and then use Emulator Explorer.
Capture Screens	You can capture EasyData® CE App screens while running an experiment using Screen Capture.
Close and Re-open TI-SmartView™ CE	You may close TI-SmartView™ CE while EasyData® is running; however, the data experiment will stop and the sensor will disconnect from the CE emulator running the EasyData® App. When you return to the CE emulator, you will need to reconnect the sensor to the EasyData® CE App using either File>New or the “ Scan ” shortcut key in the EasyData® App and begin a new data collection experiment. Previous experiment data may or may not be stored. Always “ QUIT ” the EasyData® CE App to store experiment data to the emulator lists.

Additional help

If you need additional help using the EasyData® App with the calculator to collect data, please see http://www2.vernier.com/manuals/easydata_guidebook.pdf for details.

General Information

Texas Instruments Support and Service

General Information: North and South America

Home Page:	education.ti.com
KnowledgeBase and e-mail inquiries:	education.ti.com/support
Phone:	(800) TI-CARES / (800) 842-2737 For North and South America and U.S. Territories
International contact information:	education.ti.com/support/worldwide

For Technical Support

Knowledge Base and support by e-mail:	education.ti.com/support or ti-cares@ti.com
Phone (not toll-free):	(972) 917-8324

For Product (Hardware) Service

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For All Other Countries:

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For information about the length and terms of the warranty or about product service, refer to the warranty statement enclosed with this product or contact your local Texas Instruments retailer/distributor.