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Introduction to the TI Connect™ CE Software

The TI Connect™ CE software makes exchanging information between your graphing calculator and your computer quick and easy.

The TI Connect™ CE software includes three workspaces:

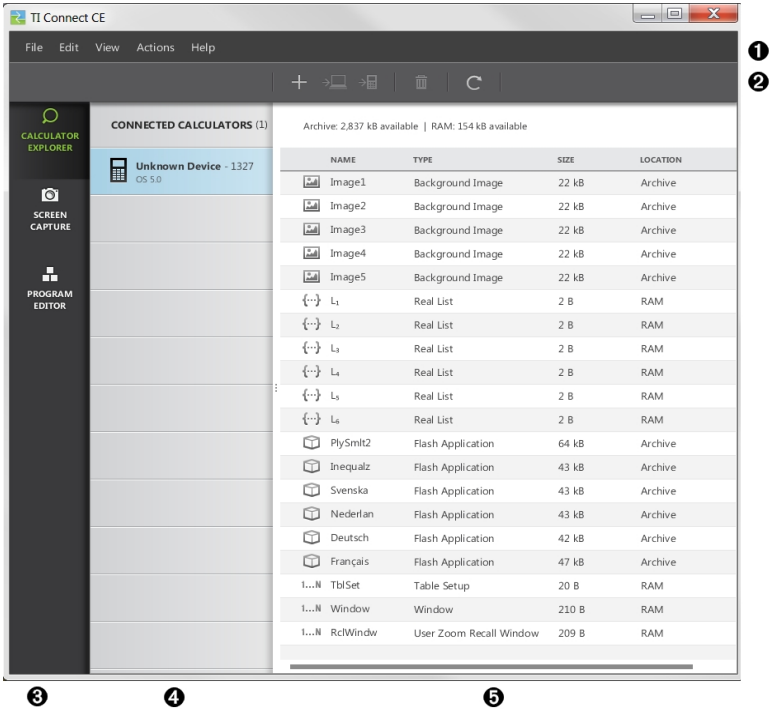
Calculator Explorer: allows you to manage calculator content

Screen Capture: allows you to manage screenshots

Program Editor: allows you to work with data variables

Using the TI Connect™ CE Software Window

The TI Connect™ CE software window contains tools you can use to exchange information between your calculator and your computer.



Parts of the TI Connect™ CE Software Window

- 1 **Menu Bar** - Use these menus to manage files and images, to view calculator information and to get help.

Note: You can complete most of the actions in these menus by dragging and dropping files from the content panel to your calculator or computer.

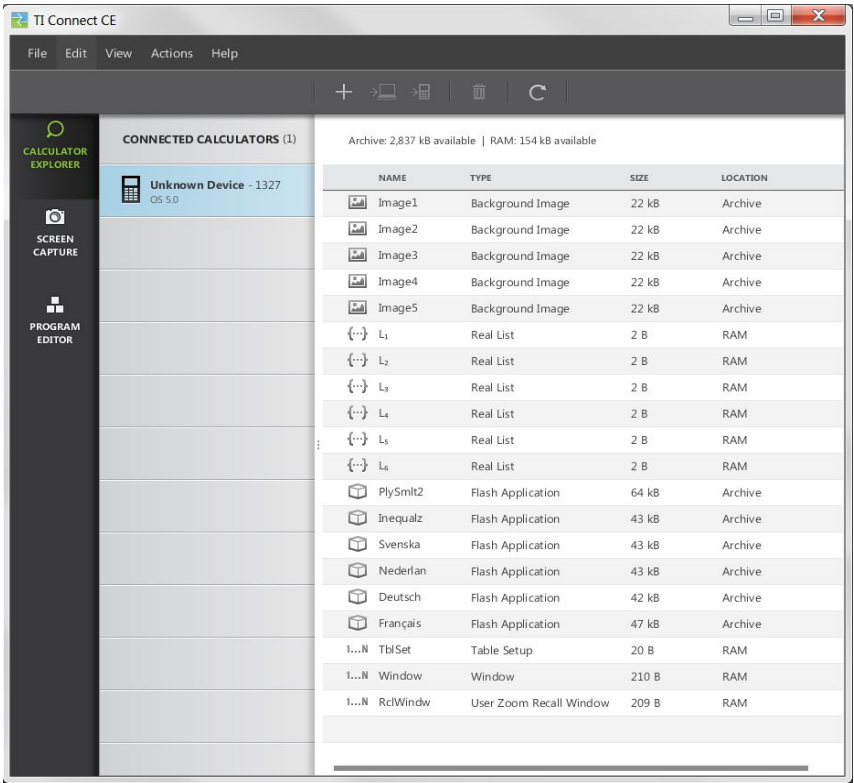
- 2 **Toolbar** - Use these icons to manage files and images.

- 3 **Workspace Panel** - Use this panel to navigate workspaces (Calculator Explorer, Screen Capture, and Program Editor).

- ④ **Calculator List Panel** - Use this list to view all connected calculators and to select one calculator to display in the content panel.
- ⑤ **Content Panel** - Use this panel to view and manage the images and files on a connected calculator.

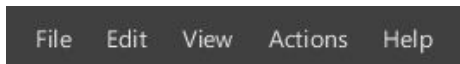
Using the Calculator Explorer Workspace

The Calculator Explorer workspace allows you to manage calculator content.



Parts of the Calculator Explorer Main Window

Menu Bar - Use these menus to manage files and images, to view calculator information and to get help.



Note: You can complete most of the actions in these menus by dragging and dropping files from the Content Panel to your calculator or computer.

Toolbar - Click these icons to add, transfer or delete files from your calculator.



- ➊ Add content from your computer.
- ➋ Send selected content to your computer.
- ➌ Send selected content to another connected calculator.
- ➍ Delete the selected file.
- ➎ Refresh the view of a connected calculator's contents.

Content Panel - Select files you want to manage from this panel.

Selecting a Connected Calculator

The TI Connect™ CE software allows you to simultaneously connect multiple calculators. Click on the calculator you want to work with to select it. The selected calculator becomes the default calculator for all TI Connect™ CE software actions.

Before you Begin

Connect the calculator to the computer and make sure it appears in the Content Panel.

Copying Calculator Files to the Computer


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

To copy a file from the calculator to the computer

1. Click on the file name to select it.
2. Drag and drop the file into a folder on your computer or onto your desktop.

Warning: Do not disconnect the cable during a transfer.

To copy a file from the computer to the calculator


1. Navigate to the desired file on your computer.
2. Drag the file to the Calculator List Panel and hover over the desired calculator.
3. Release the mouse button when you see .
4. Select a file name from the drop-down menu. This will be the name of the image on your calculator.
5. Click **Send**.

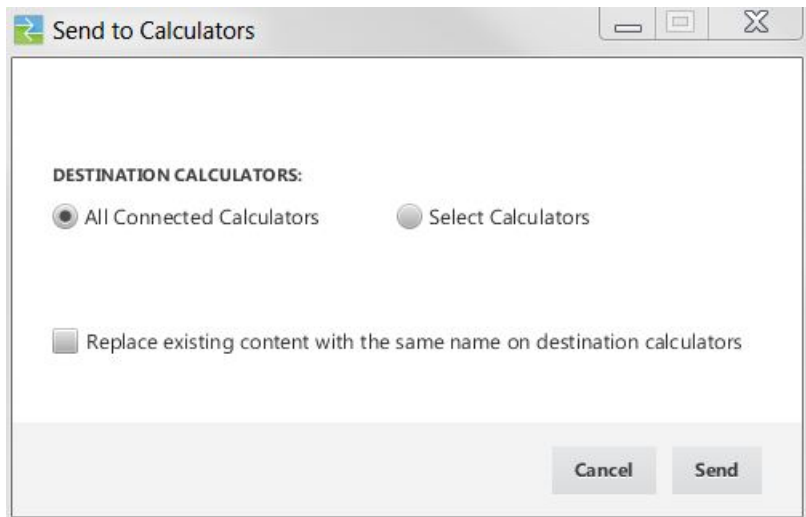
Sending Files to Connected Calculators

You can send files to calculators connected to TI Connect™ CE software.

Warning: Do not disconnect the cable during a transfer.

To send files to connected calculators

1. Click the file to select it.
2. Click .



- **DESTINATION CALCULATORS:** Select whether you want to send the file to all connected calculators or just selected calculators (from a check list).


To send files to select calculators

1. Select the **Select Calculators** button in the dialogue box.
2. Check the boxes next to the calculators you want to select.
3. Click **Send**.

Deleting Calculator Files

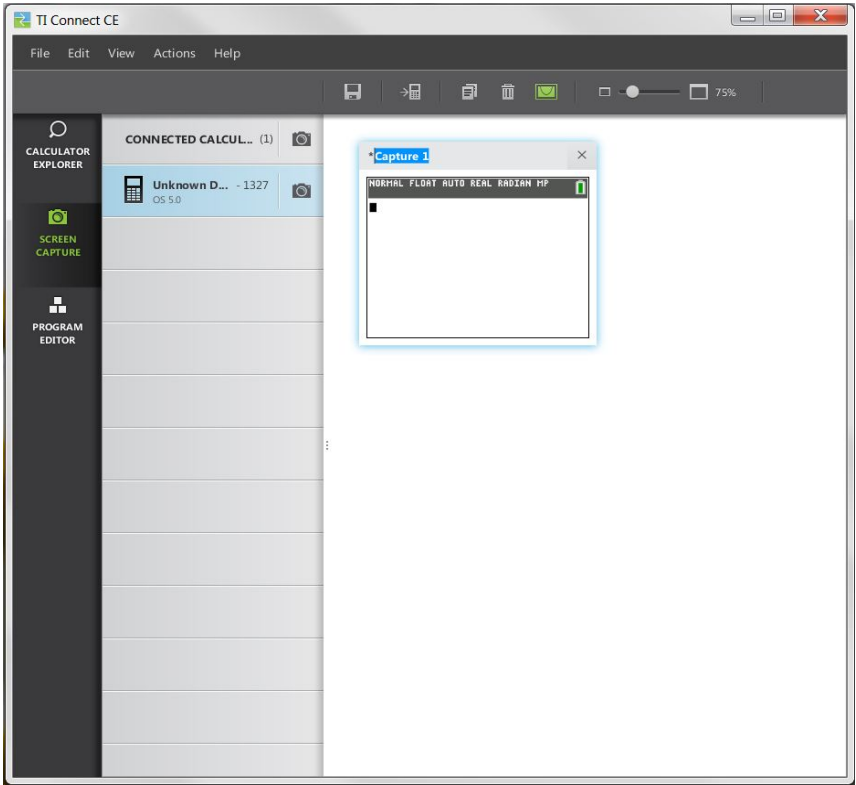
You can delete data, files and programs from your calculator.

To delete files from the calculator

1. Click on the file name to select it.
2. Press .

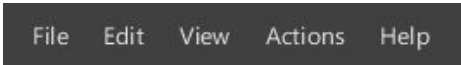
Using the Screen Capture Workspace

The Screen Capture workspace allows you to manage calculator screenshots.



Parts of the Screen Capture Window

Menu Bar - Use these menus to manage files and images, to view calculator information and to get help.



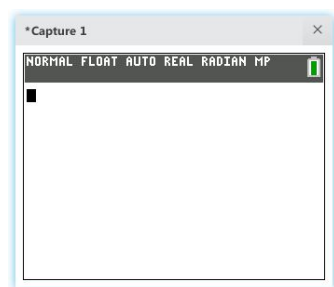
Note: You can complete most of the actions in these menus by dragging and dropping files from the content panel to your calculator or computer.

Toolbar - Click these icons to save, send, copy, delete, edit and store files.



- ❶ Save a file to the computer.
- ❷ Send a file to a calculator.
- ❸ Copy a file.
- ❹ Delete a file.
- ❺ Add or remove a border from all screenshots
- ❻ Change the size of all screenshots.
- ❼ View the screenshot size.

Content Panel - View screenshots in the content panel.




Capturing and Using Images

In the Screen Capture workspace, you can capture screens from your calculator and view them as images.

Before you Begin

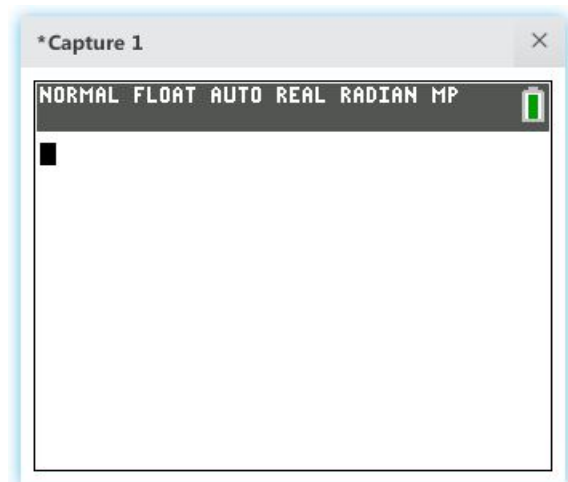
Connect the calculator to the computer and make sure it appears in the Content Panel.

To Capture Calculator Screens

1. On the TI Connect™ CE software Workspace Panel, click the **Screen Capture** workspace.
2. Display the screen on your calculator that you want to capture.
3. Click  next to the desired calculator in the Calculator List.


Saving Images as Files

The Screen Capture workspace lets you save captured or existing images from your calculator. You can save images to your connected calculator as a PNG.




Note: The asterisk at the beginning of an image name indicates that the image is not saved.

To save an existing image

1. Click the image.
2. Click .



To save multiple images

1. Click **Edit > Select All**.
2. Click .

To rename a screenshot

1. Place your cursor at the beginning of the image name field.
E.g.: Capture 1.
2. Double-click the name to select it.
3. Type in a new image name.

To save a new screenshot as a PNG file


1. Click the image.
2. Click .
3. Navigate to the location where you want to save the file.
4. Use the default file name or type a new file name.
5. Click .

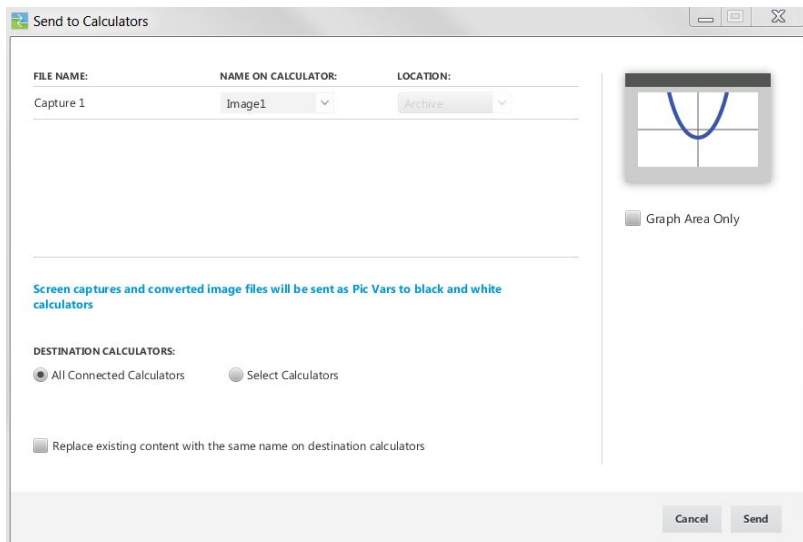
Sending Images to Connected Calculators

You can send images to your connected calculator. Do not send flipped, rotated, or resized images, as they become distorted when you try to view them on a calculator.

Warning: Do not disconnect the cable during a transfer.

To send screenshots to connected calculators

1. If you have not already done so, capture the screen.
2. Click the screenshot to select it.
3. Click .



- **FILE NAME:** This may differ from the **NAME ON CALCULATOR** depending on what you named the screenshot on your computer.
- **NAME ON CALCULATOR:** select the background image (it should be the default but you may change the background image name using this menu).
- **GRAPH AREA ONLY:** On the right-hand panel, select whether you want to send just the graph area or the entire screen. When sending a screenshot back to a calculator, it is best to send the graph area only.
- **DESTINATION CALCULATORS:** Select whether you want to send the image to all connected calculators or just selected calculators (from a check list).

Note: Screenshots and converted image files will be sent as pic vars to black and white calculators.

To send files to multiple calculators

1. Select the **Select Calculators** button on the dialogue box.
2. Check the boxes to next to the calculators you want to select.
3. Click **Send**.

Sending Screenshots to Computer Applications

Using the Screen Capture workspace, you can drag and drop captured images into many computer applications. This feature lets you use calculator images in your documents.

To drag and drop images into computer applications

1. Open or capture the image.
2. Drag and drop the image to an open document or presentation software application.

Converting and Sending Background Images

The TI-84 Plus CE can display background images and pic vars. These variables are displayed in the graph area.

Note: All information about background images also applies to the TI-84 Plus C Silver Edition and the TI-83 Premium CE.

Working with Background Images

The TI Connect™ CE software automatically converts any image you send to a connected calculator into a background image. Your image may not display in the graph area as you expect, given the conversion to the 83 x 133 pixel dimensions. The conversion to the background image uses 16-bit colour.

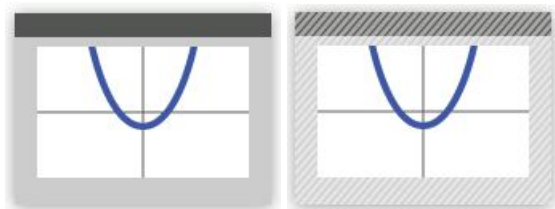
You can also upload a background image into the TI-84 Plus CE emulator view in TI-SmartView™ software.

On the TI-84 Plus CE, a background image displays as the background in the graph area only. A background image will appear scaled for the MODE screen settings of Full, Horizontal, and Graph-Table. This preserves any mathematical modelling done on a background. You cannot edit a background image while working on the TI-84 Plus CE. Background images run from and are stored in the archive memory.

Cropping an Image

A screenshot of the graph area includes the full screen of the TI-84 Plus CE, the status bar, the graph border and the graph area.

TI Connect™ CE software allows you to crop the image to a Graph Area Only size to create a background image. You can crop an image in the Send to Calculators dialogue box.



Graph Area Only



Graph Area Only

Working with Pic Vars

You can create and modify pic vars. Pic vars display from the upper-left-hand corner of the graph area and do not scale for the MODE screen settings: Full, Horizontal, and Graph-Table. You can open and view pic vars in the Screen Capture workspace. You can save them as computer files with the file extension *.8ci.


Pic vars run from and are stored in RAM memory but they can be stored in Archive memory. This difference is important when clearing RAM.

Note: TI Connect™ CE software will not convert a pic var (*.8ci) to a background image (*.8ca).

Sending a Background Image to a Connected Calculator

You can send a background image and display it in the graph area of the TI-84 Plus CE.



1. Open the TI Connect™ CE software.
2. Choose the Calculator Explorer workspace.
3. Connect the TI-84 Plus CE to the computer using the cable.
4. Turn on the TI-84 Plus CE.
5. Choose the image you want to convert.
6. Drag the picture to the Calculator List Panel and hover over the desired calculator.
7. Release the mouse button when you see  Copy.
8. Select an Image# name from the drop-down menu (Image0 - Image9). This will be the name of the image on the TI-84 Plus CE.

Note: The Image# name you choose becomes the image name on your calculator. Note this Image# name (or make it part of the file name on your computer) for identification purposes when you want to send or share this file.

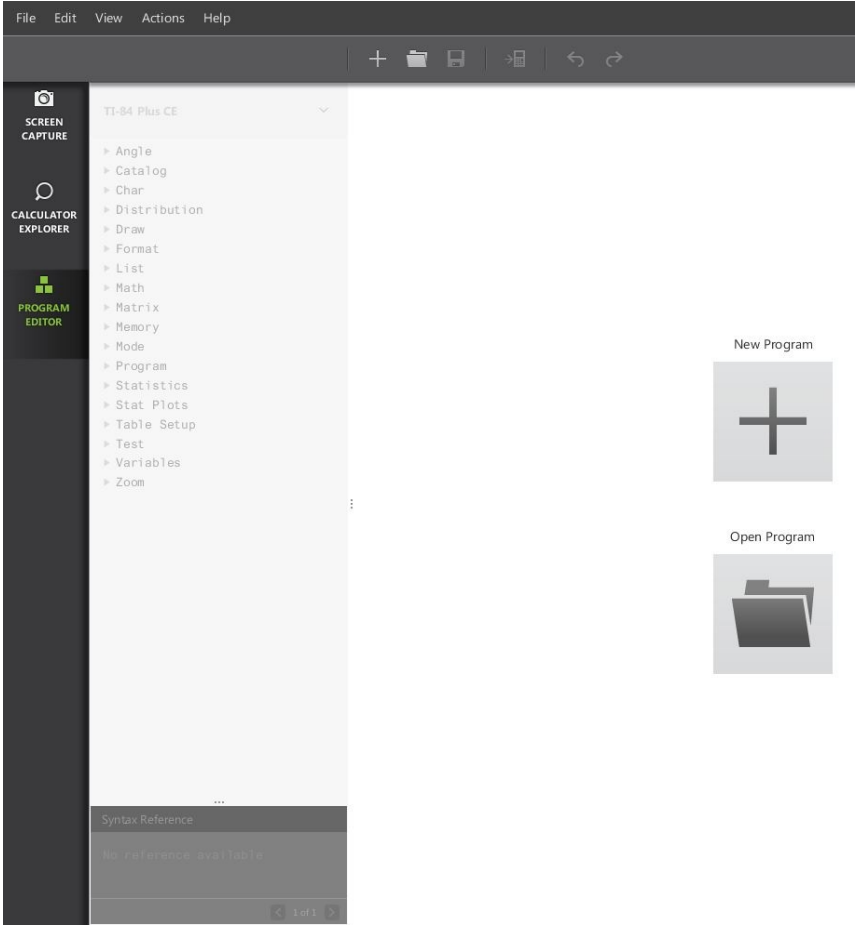
9. Click **Send**.
 - To save the background image to your computer, drag the Image# from the Calculator Explorer to your desktop or to the folder where you want to save it.

- To display your new background image in the graph area of the TI-84 Plus CE, press **[2nd]** **[FORMAT]**, change the **Background** setting to the Image# you just sent to the calculator (example: Image5), and press **[GRAPH]**.



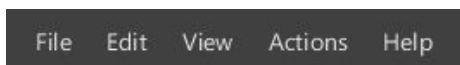
Using the Program Editor Workspace

The Program Editor Workspace allows you to work with data variables.



Parts of the Program Editor Workspace

Menu Bar - Use these menus to manage files and programs and to get help.



Note: You can complete most of the actions in these menus by dragging and dropping files from the content panel to your calculator or computer.

Toolbar - Click these icons to add, open, and save programs and to send programs to your calculator.



Content Panel - Use this panel to create, view and edit programs.

Catalogue Panel - Use this panel to select your calculator type and then choose from lists (by category) to create programs.

Syntax Reference Panel - Use this panel to view the proper syntax of each command, together with required and optional arguments.

Creating a New Program

When no programs are open the Content Panel displays only the new program and open program icons.

To create a new program

- Click the **New Program** icon.



To open an existing program

1. Click the **Open Program** icon.
2. Navigate to the appropriate folder.
3. Click **Open**.



Editing a var name

New program names are PROG##. The numbers run in sequence, e.g.: PROG01, PROG02.

To change the program name

- ▶ Click inside the **Var Name** box and type in a new name.

VAR NAME:

Protecting Your Program

TI Connect™ CE software allows you to protect your program from being edited after the program is sent to a connected calculator.

To protect your program


- ▶ Click the check box next to the lock icon.



Saving a Program to Your Computer

The asterisk at the beginning of a program name indicates that the program is not saved.

To save a program

1. Click .
2. Navigate to the appropriate folder.
3. Click **Save**.

Closing a Program

To close a program

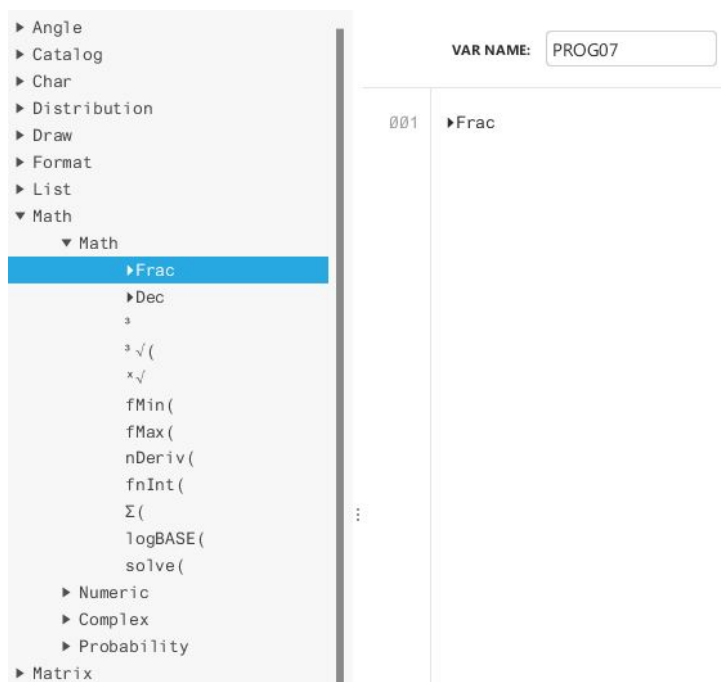
- ▶ Click the **x** by the program name.

Using the Catalogue Panel

The catalogue panel contains a list of calculator commands, functions, variables and symbols that you can use to create programs.

To expand or collapse a catalogue level

- Click the triangle beside each catalogue entry.



To place a catalogue entry in the content panel

- Drag and drop the catalogue entry into the content panel.

-OR-

- Double-click the catalogue entry.

Note: Either of the above will place the catalogue entry after the cursor.


Using the Syntax Reference Panel

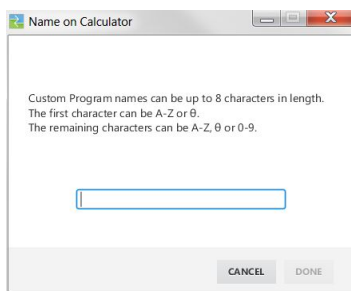
The syntax reference panel displays the syntax of each catalogue entry, including required and optional arguments.

Sending a Program to a Calculator

You can send a program to a connected calculator.

To send a program to a connected calculator

1. If you have not already done so, save the program.
 2. Click .
- **FILE NAME:** This may differ from the **NAME ON CALCULATOR**, depending on what you named the program on your computer.
 - **NAME ON CALCULATOR:** select the program name (it should be the default but you may change the program name by clicking **Custom**).



- **LOCATION:** Choose whether you save the program in the calculator's RAM or archive.
- **DESTINATION CALCULATORS:** Select whether you want to send the program to all connected calculators or just selected calculators (from a check list).

To send programs to multiple calculators

1. Select the **Select Calculators** button in the dialogue box.
2. Check the boxes to next to the calculators you want to select.
3. Click **Send**.

Maintaining Your Calculator

Updating the Calculator Operating System

TI Connect™ CE software lets you download operating systems for graphing calculators.

Before you begin

- Backup your calculator files (RAM, archive, and apps).
- Make sure your calculator is turned on and securely connected to the computer.
- If you have multiple calculators connected with USB computer cables, disconnect all of them except the one you intend to update.

Warning: Do not disconnect the cable during a transfer.

To update graphing calculator operating systems

1. Click **Actions > Send OS**.
2. Navigate to the OS file on your computer.
3. Click **Open**.

Getting Calculator Information

TI Connect™ CE software allows you to get information about your calculator's type, product ID, OS version, RAM, archive, language, ROM version and hardware version.

To view calculator information

- ▶ Click **View > Calculator Information**.



CALCULATOR TYPE: Unknown Device

PRODUCT ID: 1300001327

OS VERSION: 5.0.0.346

RAM: 262 kB (154 kB available)

ARCHIVE: 4,194 kB (2,837 kB available)

LANGUAGE: ENGLISH

ROM VERSION: 5.0.0.346

HARDWARE VERSION: 8

CLOSE

Compatibility with Graphing Calculators

Note: Not all TI-84 Plus CE graphing calculator files are compatible with other TI-84 Plus family graphing calculator files because of the high resolution of the colour screen. In general, numeric files (not limited to lists, variables, matrices, and functions) are shared between these graphing calculators but apps are not shared between these graphing calculators, even if they have the same title. When not compatible, the computer file extensions for the TI-84 Plus CE are different to a similar variable from the TI-84 Plus/TI-84 Plus Silver Edition graphing calculators.

File Type	Link from TI-84 to TI-84 Plus CE	Link from TI-84 Plus CE to TI-84	84P computer file type	TI-84 Plus CE computer file type
Operating System	No	No	8xu	8cu
Apps	No	No	8xk	8ck
AppVar*	Yes	Yes	8xv	8xv
Programs - TI Basic*	Yes	Yes	8xp	8xp
Assembly Programs*	Yes	No	8xp	8xp
Pictures	No	No	8xi	8ci
Background Images	N/A	No	N/A	8ca
Group Files	Yes	Yes	8xg	8cg
User Zoom	Yes	Yes	8xz	8xz
String	Yes	Yes	8xs	8xs
Table	Yes	Yes	8xt	8xt
Function file	Yes	Yes	8xy	8xy
GDB*	Yes	Yes	8xd	8xd

File Type	Link from TI-84 to TI-84 Plus CE	Link from TI-84 Plus CE to TI-84	84P computer file type	TI-84 Plus CE computer file type
List	Yes	Yes	8xl	8xl
Matrix	Yes	Yes	8xm	8xm
Number	Yes	Yes	8xn	8xn
Complex	Yes	Yes	8xc	8xc
Window Setup	Yes	Yes	8xw	8xs
Certificate	No	No	8xq	8cq
Backup	No	No	8xb	8cb

* Programs created using commands available only in the latest OS version will not transfer to graphing calculators with an earlier OS version.

* App vars and programs should be reviewed for use after the transfer between the TI-84 Plus family graphing calculators. Some app vars may not set up an app as expected. Some programs will need to be modified due to the difference in screen resolution and new commands.

** You may receive a version error if you used DOT-THIN line style. Change the line style to avoid the error.

Legal Information

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Support and Service

Texas Instruments (TI) Support and Service

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Home page: education.ti.com

For technical questions

Phone: 1-972-917-8324

For product (hardware) service

Customers in the US, Canada, Mexico, Puerto Rico and Virgin Islands:

Always contact TI Customer Support before returning a product for service.

All other customers: Refer to the leaflet enclosed with your product (hardware) or contact your local TI retailer/distributor.

