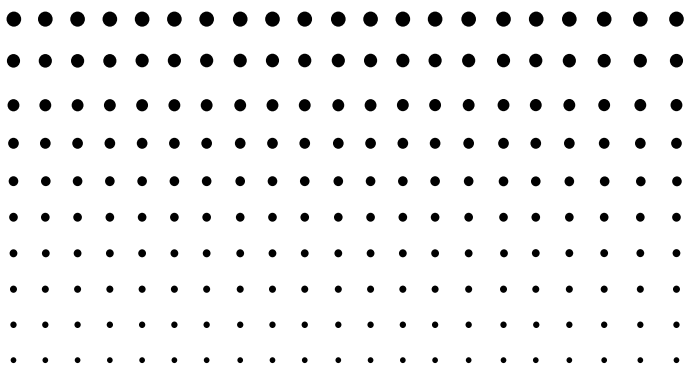


PROGRAM-LINK™

FA-124

User's Guide



CASIO Worldwide Education Website

<http://edu.casio.com>

CASIO EDUCATIONAL FORUM

<http://edu.casio.com/forum/>

CASIO®

Note

Display examples shown in this User's Guide are intended for illustrative purposes only. The actual text and values that appear on display may differ from the examples shown in this User's Guide.

Getting Started

- You can use FA-124 to develop programs using the same commands as those available on an fx-9860G Series calculator. You can store your programs on your computer, and use the FA-124's data communication functions to transfer them to your fx-9860G Series calculator when you need them.
- Once you establish a link with your computer over the USB cable that comes bundled with your fx-9860G Series calculator, you can use easy-to-understand Microsoft Explorer-like operations to transfer data (programs and variable data) between them.
- You can transfer data by putting your fx-9860G Series calculator into its communication standby state and then performing all operations on your connected computer.
- FA-124 provides the following capabilities.
 - Transfer of data between your fx-9860G Series calculator and computer
 - fx-9860G Series calculator data storage
 - Data transfer between your computer and a CASIO ALGEBRA FX Series or fx-7400/CFX-9850 Series graphic scientific calculator

Manual Conventions

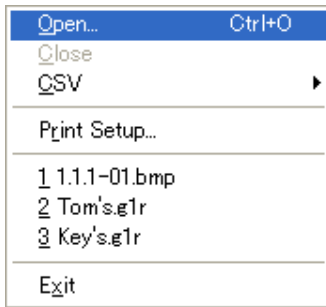
- The terms “FA-124” and “this software” as used in this manual refer to the FA-124 software.
- The term “calculator” as used in this manual refers to your CASIO Graphic Scientific Calculator.
- This manual explains only the procedures required to operate the FA-124 application software. It assumes that you are already familiar with the following computer operations.

- Pull-down menu operations, clicking, double-clicking, and dragging with the mouse
- Text input using the keyboard
- Icon and window operations

See the documentation that comes with your computer for full details on these operations.

- What actually appears on the display of your computer may differ somewhat if you are using a different operating system.
- Menu operations are notated within the text of this manual as hyphenated commands with the menu hierarchy progressing from left to right.

Example: Selecting the Open command from the File menu would be described as:
Select [File] - [Open].



Menu

- Any operation in this manual that is specifically identified as neither a computer nor calculator operation should be assumed to be a computer operation. All calculator operations are specifically identified as such.

System Requirements

- Operating Systems: Windows® 98 SE, Windows® Me, Windows® 2000, Windows® XP, Windows Vista™
* Operation on a computer running Windows® XP Professional x64 Edition is not supported.
* For Windows Vista™, operation is supported for the 32-bit version only. The 64-bit version is not supported.
- Computer: Computer with one of the Windows® operating systems pre-installed (Excluding computers with an upgraded operating system and self-built computers.)
- Account Type: Installation on Windows® 2000, Windows® XP, and Windows Vista™ requires administrator privileges.
- CPU: Intel® Pentium® III 500 MHz or higher recommended
- Disk Space: 50 MB for installation and uninstall
- Memory: RAM to support version of Windows® being used.
Does not include memory required for operating system.
- Other: USB port for direct connection. Do not connect via a USB hub.
Video adapter and monitor must support resolution of XGA (1024×768) or higher, 16-bit or higher system color.
Internet Explorer 6.0 or later.
CD-ROM drive.
Adobe Reader 6.0 or later.

Note

- Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.
- Intel and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
- Company and product names used herein are trademarks of their respective owners.

Contents

1. Installing the Software	E-6
Installing	E-6
Uninstalling	E-11
2. Connecting the Calculator to Your Computer	E-12
3. fx-9860G SD/fx-9860G – Computer Data Transfer	E-15
Toolbar Buttons and Icons	E-16
Menu Commands and Icons	E-18
Transferring Files from the fx-9860G SD/fx-9860G to Your PC	E-22
fx-9860G SD/fx-9860G Operation	E-22
Using FA-124	E-23
Batch Transferring Files	E-31
Adding a Flash Image or Memory Image	E-32
Exporting Flash Images and Memory Images	E-33
Importing a Flash Image or Memory Image	E-34
Importing a File.....	E-35
4. Data Transfer between a Computer and ALGEBRA FX Series or fx-7400/CFX-9850 Series	E-37
File Configuration	E-37
File Transfer	E-38
Back-up Data Transfer	E-41
5. Data Editing.....	E-42
Creating a New Catalog File (ALGEBRA FX, CFX-9850, fx-7400 Series only)	E-42
Creating a New Item (Program)	E-42
Displaying, Editing, and Printing Items	E-43
Deleting, Copying, and Moving Groups and Items	E-44
6. Data Conversion	E-45
7. Screen Capture	E-50
Capturing a Screen to Your Computer	E-50
Displaying and Printing a Captured Screen Image	E-52
8. Program Editor	E-53
Launching the Program Editor	E-53
Saving Programs	E-53
9. Data Transfer with an Old Model Calculator	E-54
10. Installing an Add-in	E-56
11. Optimizing the Storage Memory or Flash Image	E-58

1. Installing the Software

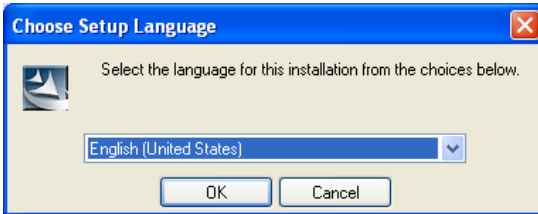
Installing

Use the procedures in this section to install the FA-124.

It is strongly recommended that you exit all Windows Programs before running the Install Wizard.

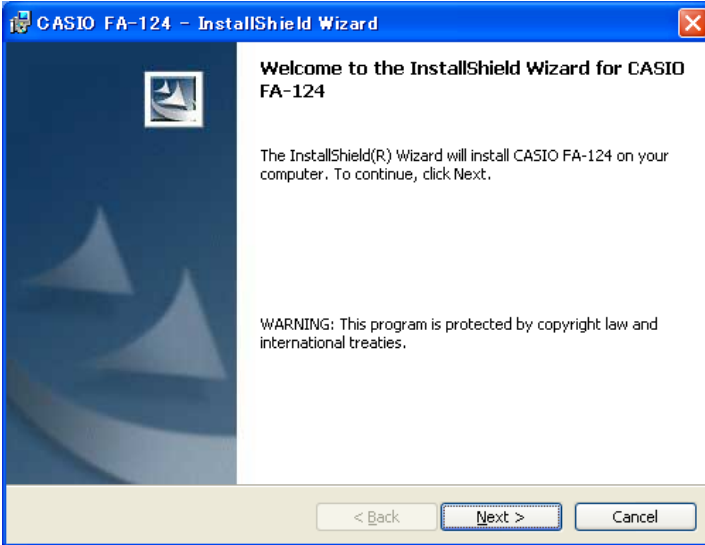
■ To install FA-124

1. Open the [FA-124] folder.
2. Double-click “CASIO FA-124” or “CASIO FA-124.exe”.
 - This displays a language selection menu.



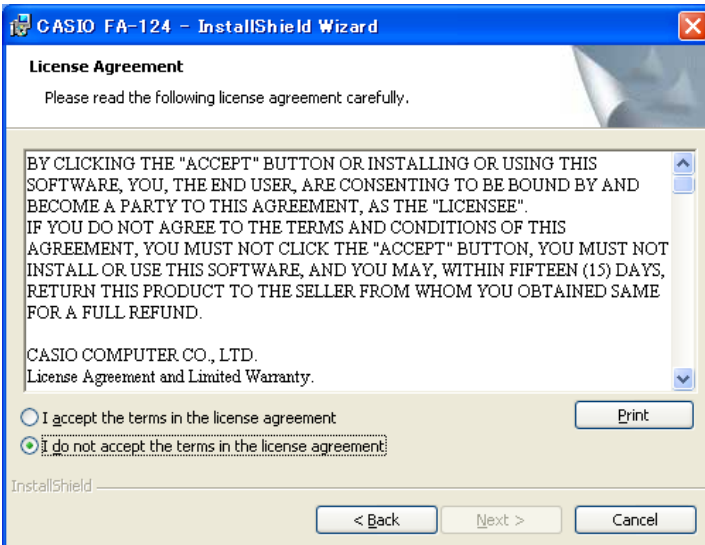
- The option you select here specifies the language of the screen text that appears during installation. The screen text language of the FA-124 application itself is English, regardless of what you select here.
- The setting you select here will determine the language version for installation of the FA-124 manual.

3. Select a language and then click the [OK] button.



4. Click the [Next] button.

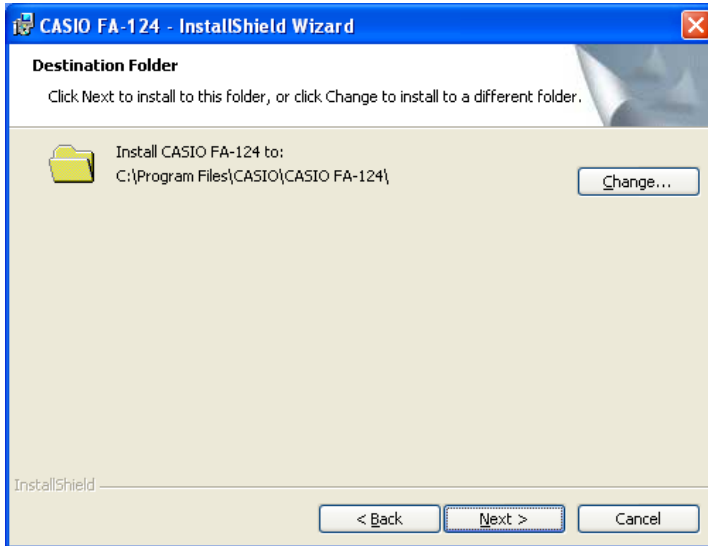
- This displays the end user license agreement (EULA).
- Selecting English, French, or German in step 3 above will cause the EULA to appear in the selected language. Selecting any other language will display the English EULA.



5. Carefully read the EULA.

6. If you agree to be bound by the terms and conditions of the EULA, choose "I accept the terms...", and then click [Next].

- If you do not want to agree, choose "I do not accept the terms..." and then click [Cancel] to exit the installation operation.



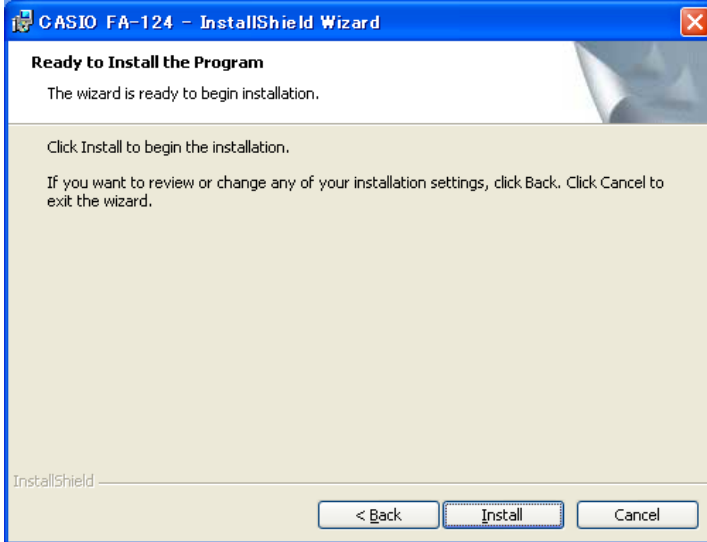
7. Perform either of the two following steps to specify the installation drive and folder.

- **To use the default settings**

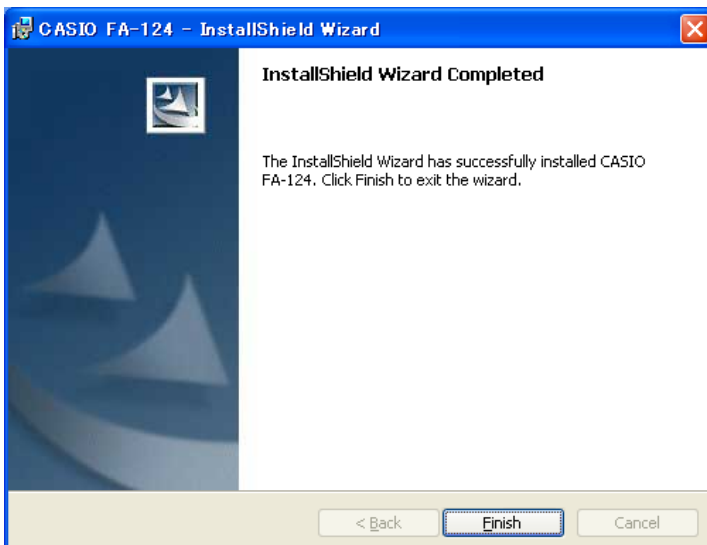
Simply click the [Next] button.

- **To specify a different folder**

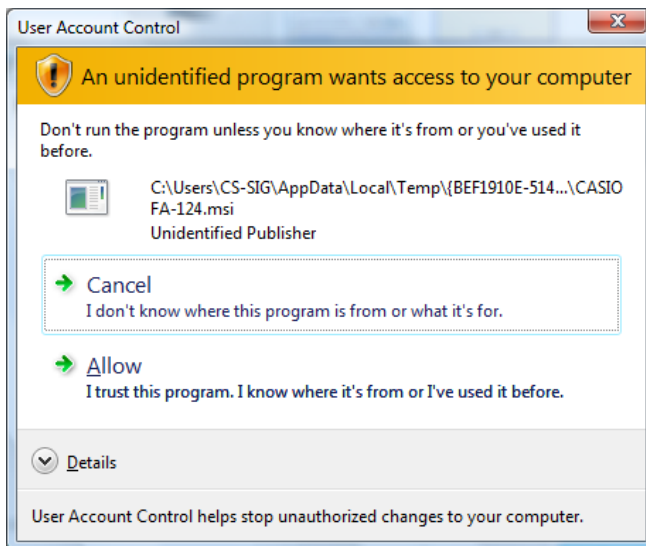
Click the [Change...] button. Select the folder you want and then click [Next].



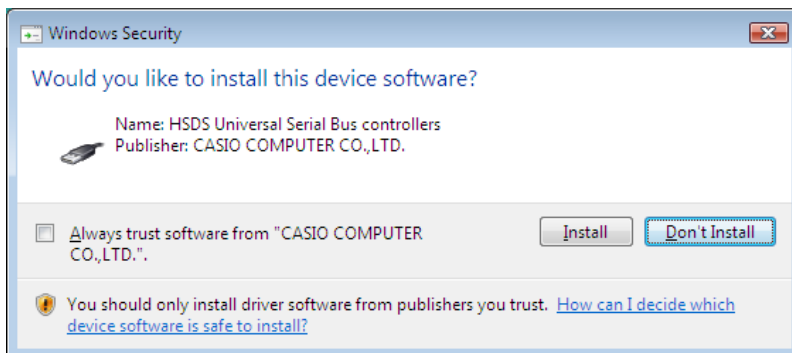
8. Click the [Install] button to start the installation.



- If your computer is running Windows Vista™
 - a. The dialog box shown below will appear when installation starts. Click “Allow”.



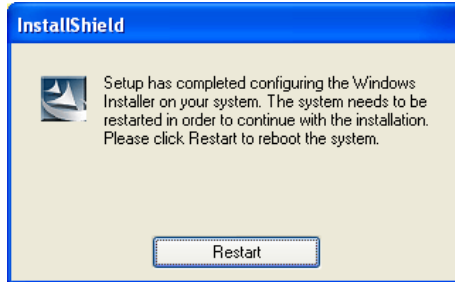
- b. The dialog box shown below will appear if the USB driver is not installed on your computer. Click the [Install] button.



9. When a message appears telling you that installation is complete, click the [Finish] button.
- This finalizes installation of the software on your computer.

Important!

If the message shown below appears during installation, re-start you computer. Installation will re-start when your computer starts up again.



Uninstalling

Perform the following steps if you ever need to remove FA-124 from your computer.

■ To uninstall

1. Display the Windows Control Panel.
 2. Click [Add/Remove Programs].
 3. In the list of applications on the dialog box that appears, select "CASIO FA-124".
 4. Click the [Add/Remove] button to start a program maintenance wizard.
 5. Click the [Yes] button.
- This completes the uninstall procedure.

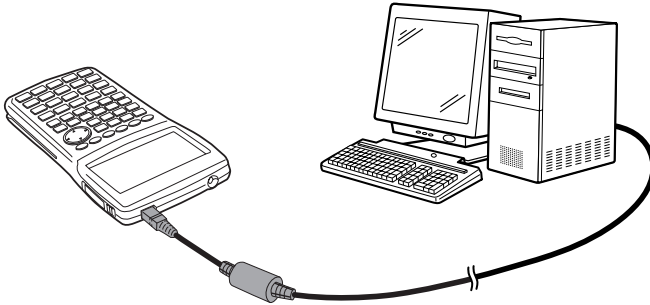
2. Connecting the Calculator to Your Computer

■ To connect your fx-9860G SD/fx-9860G to a computer

Important!

- Be sure to install the FA-124 before you connect the fx-9860G SD/fx-9860G to your computer. Connecting before you install the FA-124 can result in improper operation.

1. Use the USB cable that comes with your fx-9860G SD/fx-9860G to connect to the computer.
2. Connect the USB cable to your fx-9860G SD/fx-9860G.
 - This will automatically cause your fx-9860G SD/fx-9860G to turn on and enter data communication standby.
 - If your fx-9860G SD/fx-9860G does not enter communication standby at this time, perform the steps under “To set up your fx-9860G SD/fx-9860G for data communication” on page E-22.



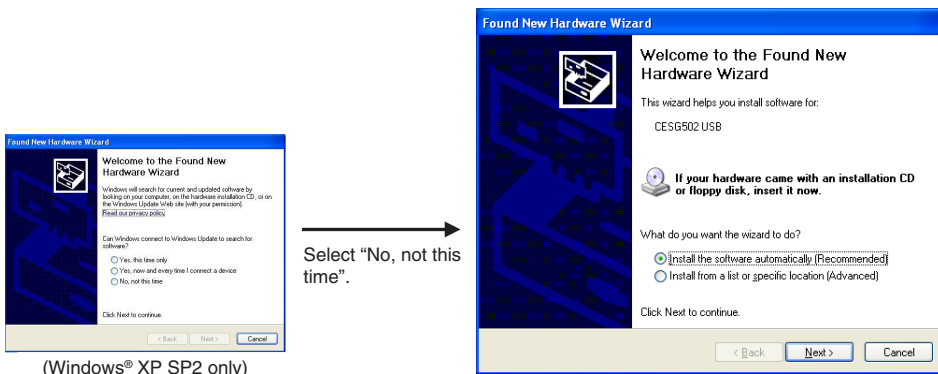
Attention Windows® XP Users

- See page E-13 after performing the above two steps.

• Windows® XP Users

After installing the FA-124, perform the following steps to install the USB driver on your computer.

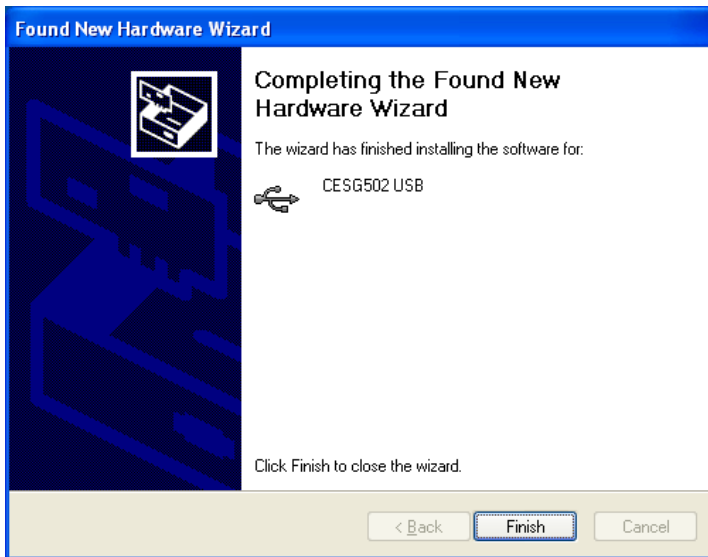
1. Connecting fx-9860G SD/fx-9860G to a computer running Windows® XP causes the screen shown below to appear on your computer display.



2. Select "Install the software automatically (Recommended)" and then click [Next].



3. Though a message appears to let you know that the software has not passed the “Windows Logo Test”, there is no need for concern. Simply click [Continue Anyway] and proceed with installation.



4. Click [Finish].

■ To connect an ALGEBRA FX Series or fx-7400/CFX-9850 Series calculator to your computer

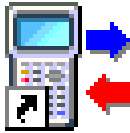
Note

- Be sure to use the SB-88 cable that comes with the FA-123 USB to connect an ALGEBRA FX Series or fx-7400/CFX-9850 Series calculator to a computer. Do not use the cable that comes with the FA-124.

1. Use the data transfer cable (SB-88) to connect the calculator to one of the computer's serial ports (COM1 to COM9).
2. Connect the data transfer cable to the calculator.

3. fx-9860G SD/fx-9860G – Computer Data Transfer

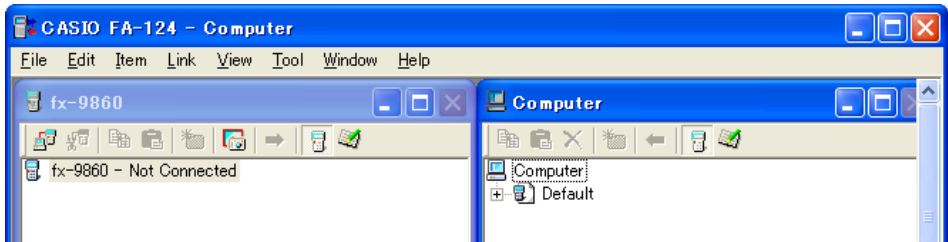
1. On your computer's desktop, double-click "FA-124".
 - This starts up FA-124.














CASIO FA-124

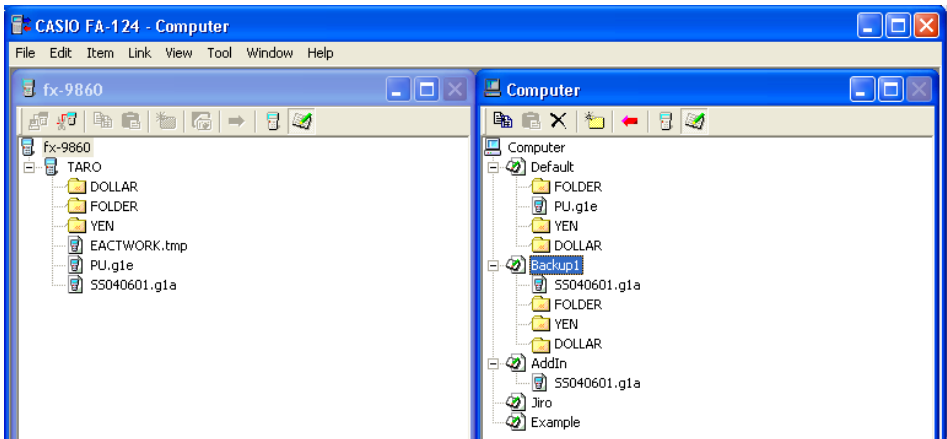
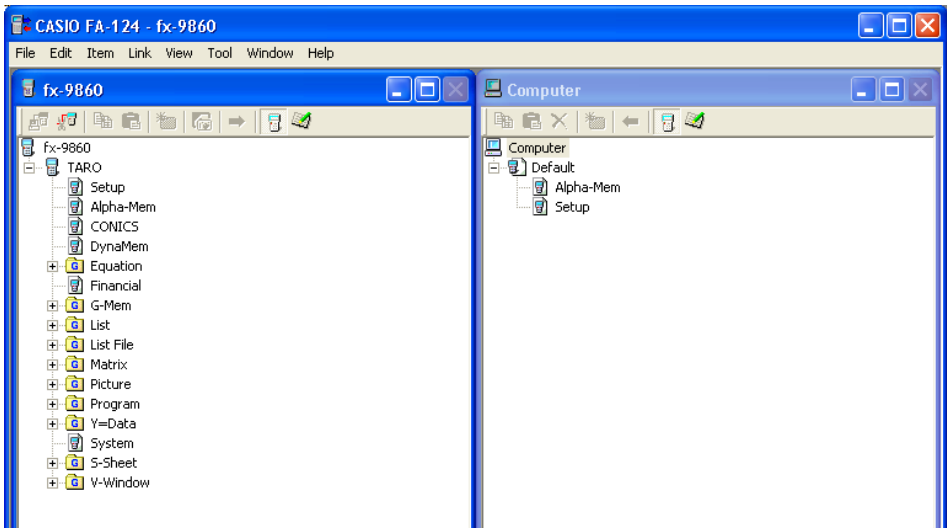
2. Select [Tool] - [Model Type] - [fx-9860].
 - This identifies the fx-9860G SD/fx-9860G as the connected graphic scientific calculator.
3. Select [Link] - [Communications].
 - This displays the port selection dialog box.
4. Select "USB" and then click [OK].
 - This specifies that the calculator is connected to the computer's USB port.
5. On FA-124, perform the data exchange and management tasks you want.

Toolbar Buttons and Icons





The following describes FA-124 toolbar buttons and icons.


-  — Establishes a connection between your fx-9860G SD/fx-9860G and FA-124.
-  — Disconnects your fx-9860G SD/fx-9860G from the FA-124.
-  — Copies the currently selected folder(s) or file(s).
-  — Pastes copied folder(s) or file(s).
-  — Deletes the currently selected image(s), folder(s) or file(s).
-  — Creates a new folder.
-  — Displays variables stored in memory.
-  — Displays folders and files currently in storage memory.
-  — Transfers all fx-9860G SD/fx-9860G data to the image specified on the computer window.
-  — Transfers all files in the flash image or memory image selected on the computer window to the fx-9860G SD/fx-9860G.
-  — Captures the fx-9860G SD/fx-9860G screen.



 — Icon for folders and files in the flash image.

 — Icon for data groups and files in the memory image.

 — Icon for a folder.

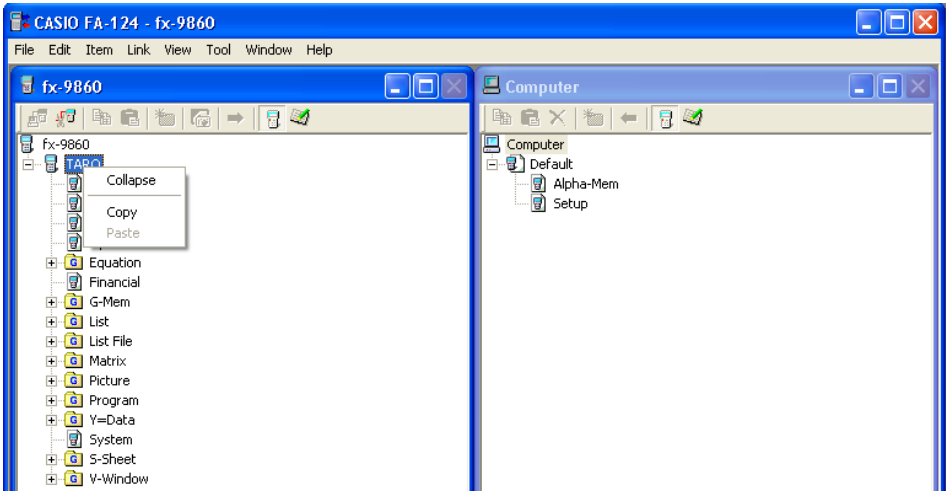
 — Icon for files or variables.

 — Data group icon.

Menu Commands and Icons

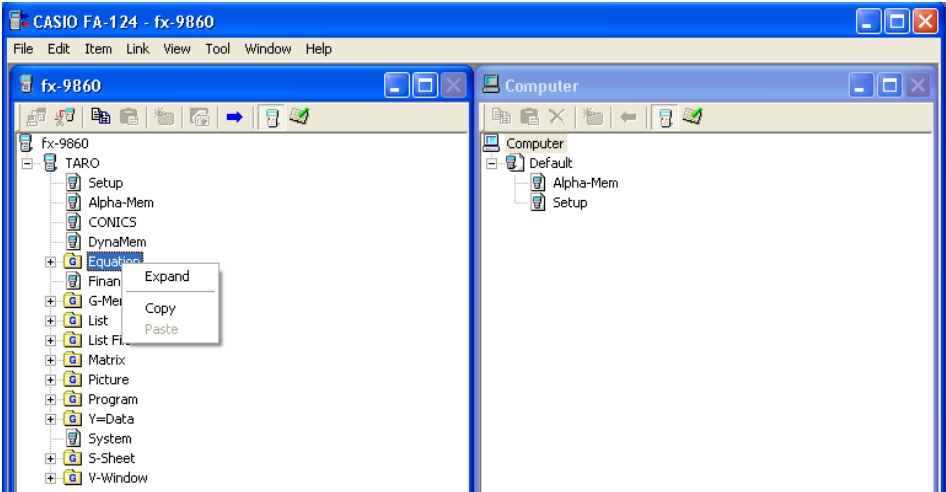
The following describes the shortcut menus that appear when you right-click with the mouse.

■ Right-clicking [User Name] (fx-9860)



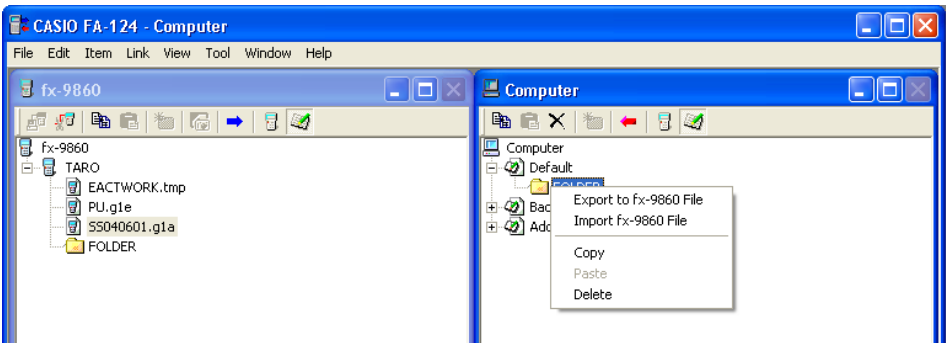
- Collapse/Expand — Collapses/expands data groups.
- Copy — Copies the currently selected data group(s), folder(s) or file(s).
- Paste — Pastes copied data group(s), folder(s) or file(s).

■ Right-clicking (fx-9860)



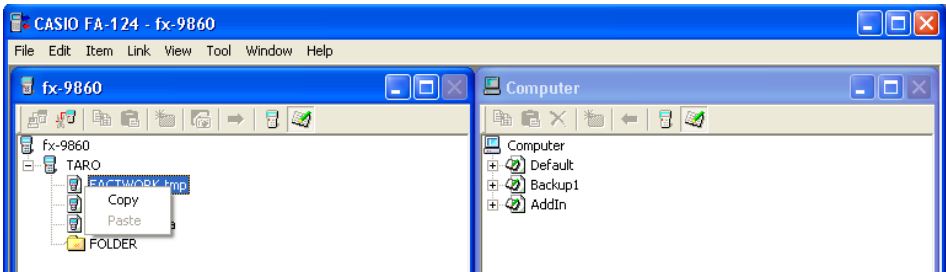
- Collapse/Expand — Collapses/expands data groups.
- Copy — Copies the currently selected data group(s), folder(s) or file(s).
- Paste — Pastes copied data group(s), folder(s) or file(s).

■ Right-clicking (Computer)



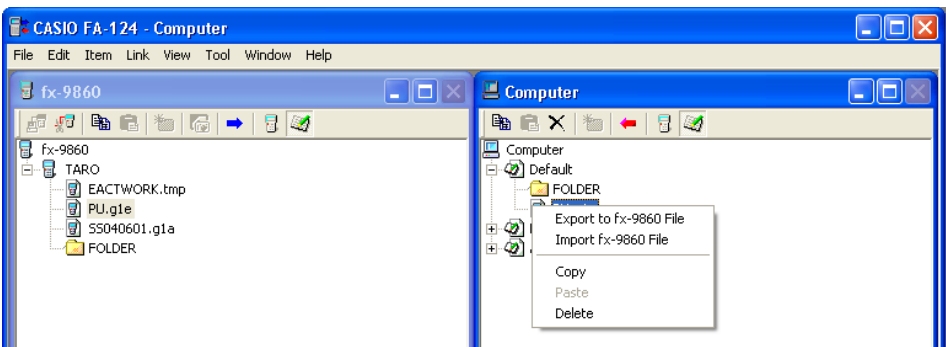
- Export to fx-9860 File — Exports the files in the selected folder to an external file.
- Import fx-9860 File — Imports an external file to an image.
- Copy — Copies the currently selected folder.
- Paste — Pastes copied file.
- Delete — Deletes the currently selected folder.

■ Right-clicking (fx-9860)



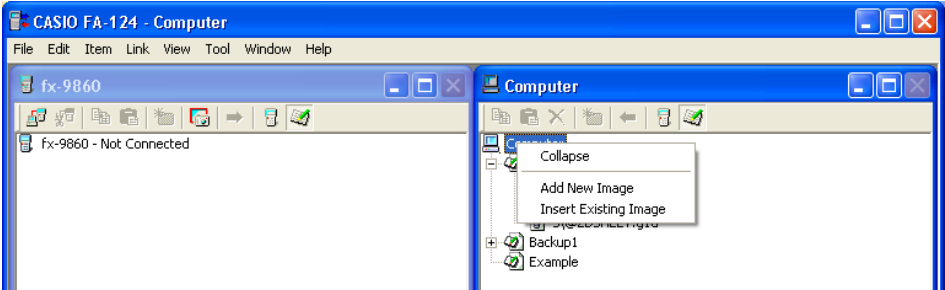
- Copy — Copies the currently selected file.
- Paste — Pastes copied file.

■ Right-clicking (Computer)



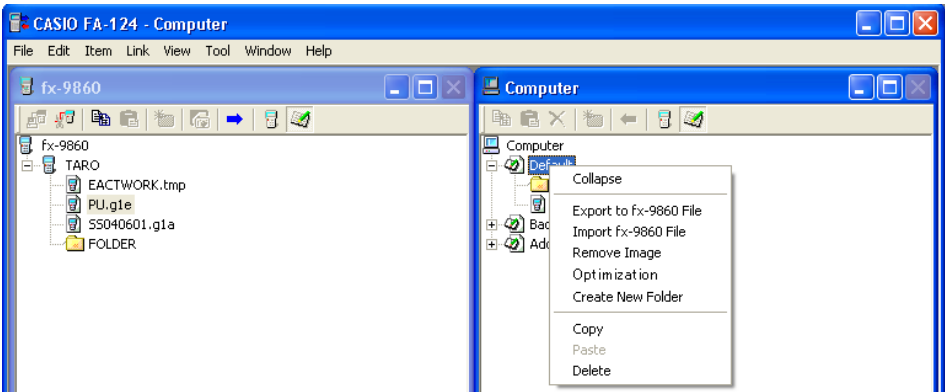
- Export to fx-9860 File — Exports the selected file to an external file.
- Import fx-9860 File — Imports an external file to an image.
- Copy — Copies the currently selected file.
- Paste — Pastes copied file.
- Delete — Deletes the currently selected file.

■ Right-clicking Computer



- Expand/Collapse — Expands/Collapses the currently selected flash or memory image.
- Add New Image — Adds a new image.
- Insert Existing Image — Inserts an existing image.

■ Right-clicking or



- Expand/Collapse — Expands/Collapses the folder tree.
- Export to fx-9860 File — Exports the selected image to an external file.
- Import fx-9860 File — Imports an external file to an image.
- Remove Image — Removes the currently selected image.
- Optimization — Optimizes the storage memory or flash image.
- Create New Folder — Creates a new folder. (Storage memory only)
- Copy — Copies the currently selected flash or memory image.
- Paste — Pastes a previously copied data group.
- Delete — Deletes the currently selected flash or memory image.

Transferring Files from the fx-9860G SD/fx-9860G to Your PC

First set up your fx-9860G SD/fx-9860G for data communication, and then perform the transfer operation on your computer using FA-124.

fx-9860G SD/fx-9860G Operation

Use the following procedure to put your fx-9860G SD/fx-9860G into a standby state for data communication.

■ To set up your fx-9860G SD/fx-9860G for data communication

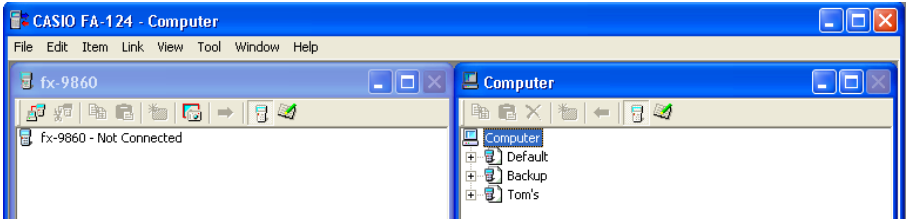
1. From the Main Menu, enter the **LINK** mode.
2. Specify USB as the cable type.
[F4] (CABL) [F1] (USB)
3. Turn on Wakeup.
[F5] (WAKE) [F1] (ON)
4. Turn off the calculator.
5. Connect the USB cable.

Using FA-124

The following procedures explain how to perform various data transfer and other operations using FA-124.

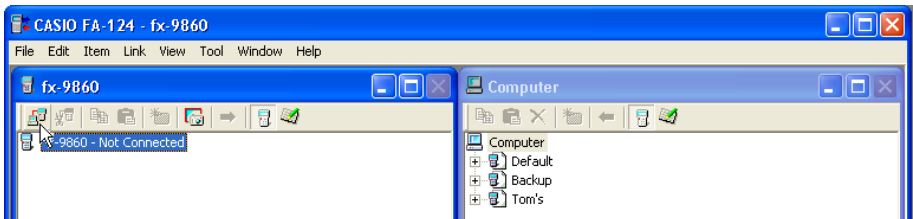
■ To establish a connection between your fx-9860G SD/fx-9860G and FA-124

1. After setting up your fx-9860G SD/fx-9860G for data communication (page E-12), start up the FA-124.



- This displays the fx-9860 window on the left, and the computer window on the right.

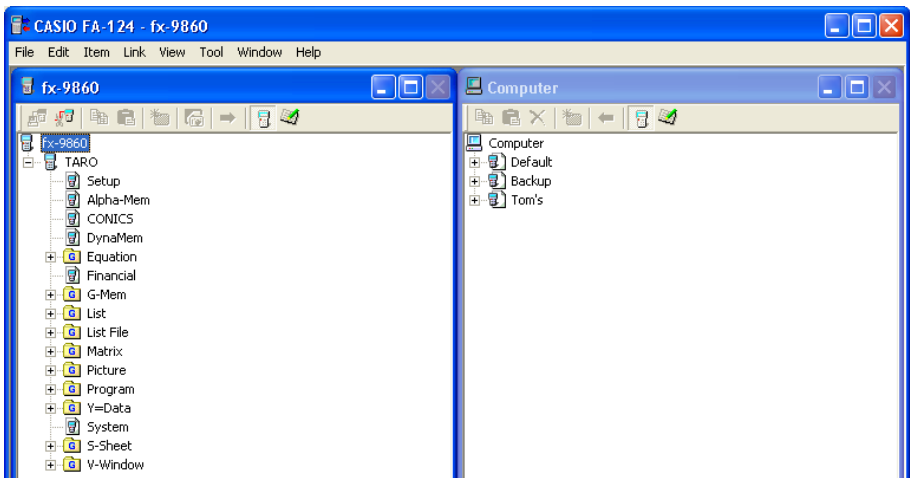
2. Click the  (Connect) button on the fx-9860 toolbar. (PC)





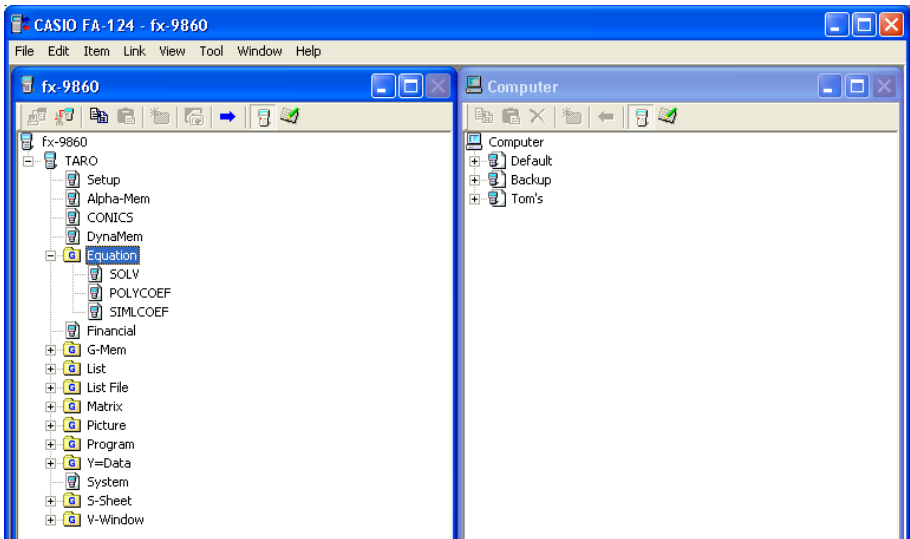
- At this time, your fx-9860G SD/fx-9860G screen will show this.

```
Receiving...
AC :Cancel
```

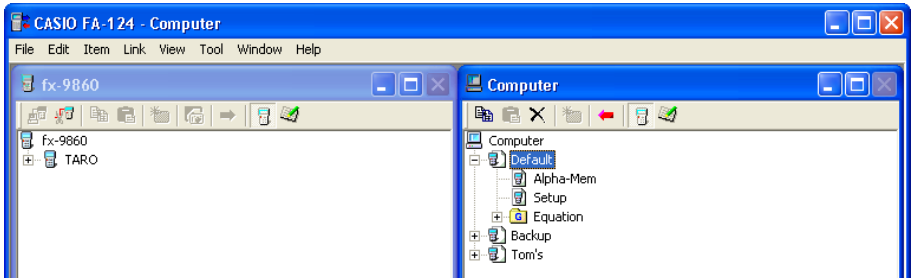
3. After the connection is established, the fx-9860 window will show data groups and data, while the computer window will show flash images and memory images.



- On the computer window toolbar, click  to display main memory data, or  for storage memory data.
- Double-clicking a data group on the fx-9860 window will display the data contained in the data group.



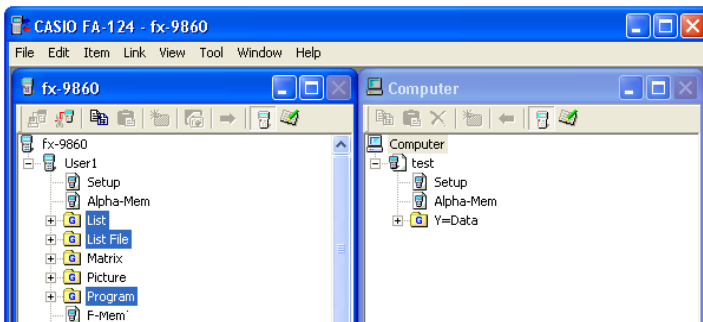
- Double-clicking a flash image or memory image on the computer window will display its data group. Double-clicking a data group will display the files contained in the data group.



- See the following for information about the various data transfer operations you can perform after establishing a connection.

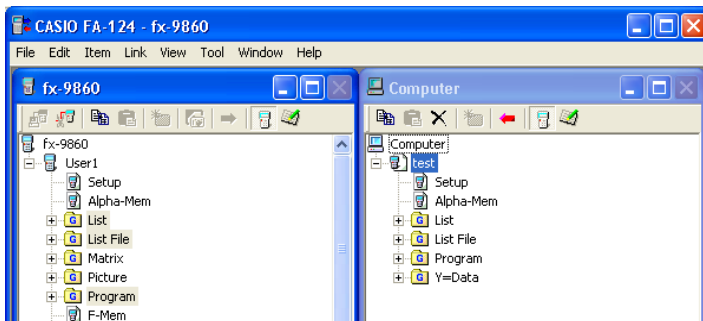
■ To transfer a data group from the fx-9860G SD/fx-9860G to a computer

1. Start up FA-124 and establish a connection with your fx-9860G SD/fx-9860G.
2. On the fx-9860 window, select the data group you want to transfer.



- To select multiple data groups, hold down the computer keyboard's [Ctrl] key as you click each one.

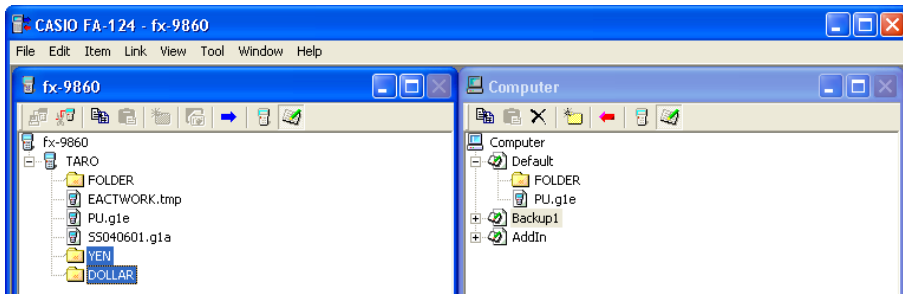
3. Use your mouse to drag the selected data group to the computer window memory image to transfer it.



4. If you want to transfer other data groups, repeat steps 2 and 3.
5. After you are finished, terminate the connection between your fx-9860G SD/fx-9860G and computer.

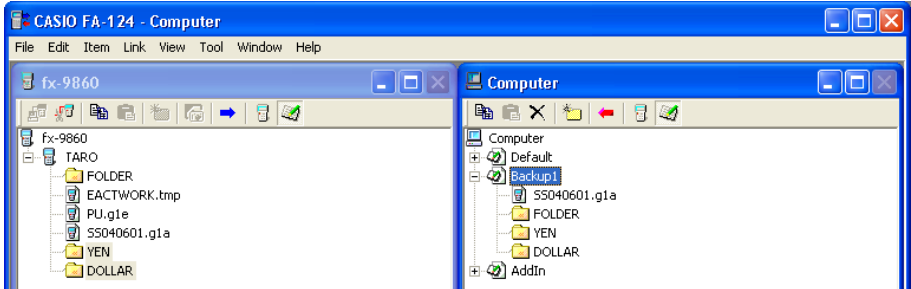
■ To transfer folders from the fx-9860G SD/fx-9860G to a computer

1. Start up FA-124 and establish a connection with your fx-9860G SD/fx-9860G.
2. On the fx-9860 window, double-click the data group to expand it.
3. Select the data you want to transfer.



- To select multiple data items, hold down the computer keyboard's [Ctrl] key as you click each one.

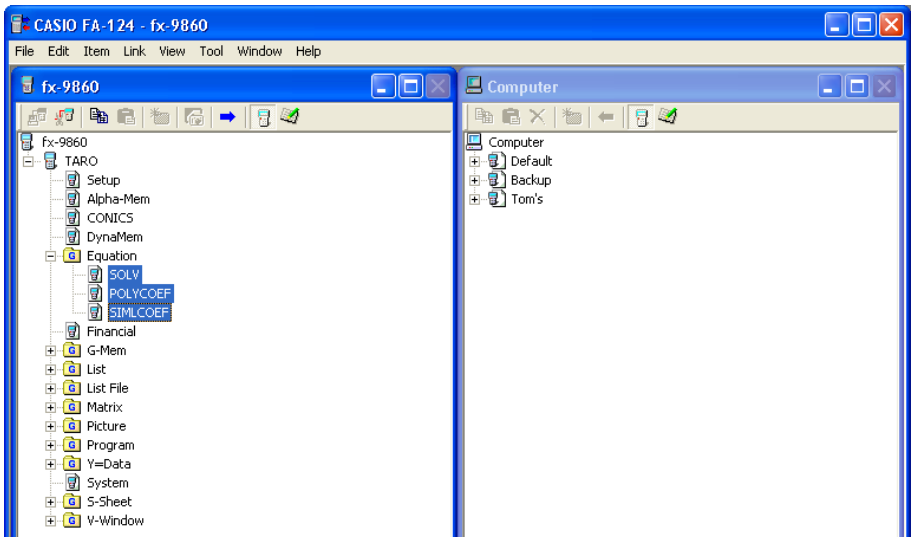
4. Use your mouse to drag the selected data to the computer window memory image to transfer it.
 - This will create the data group associated with the data in the memory image and store the data inside the data group.



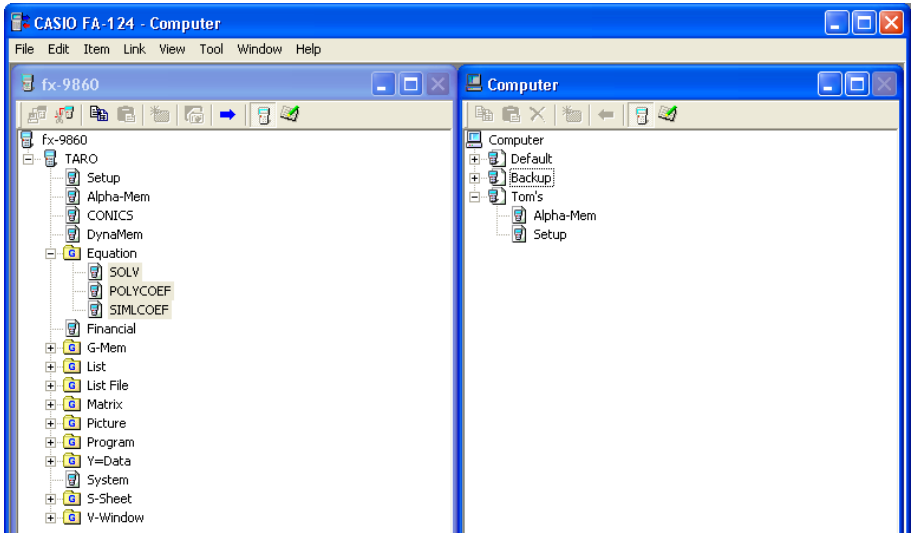
5. If you want to transfer more data, repeat steps 2 and 4.
6. After you are finished, terminate the connection between your fx-9860G SD/fx-9860G and computer.

■ To transfer a file from a computer to the fx-9860G SD/fx-9860G

1. Start up FA-124 and establish a connection with your fx-9860G SD/fx-9860G.
2. On the computer window, double-click the memory image to expand it.
3. Double-click the data group to expand it.

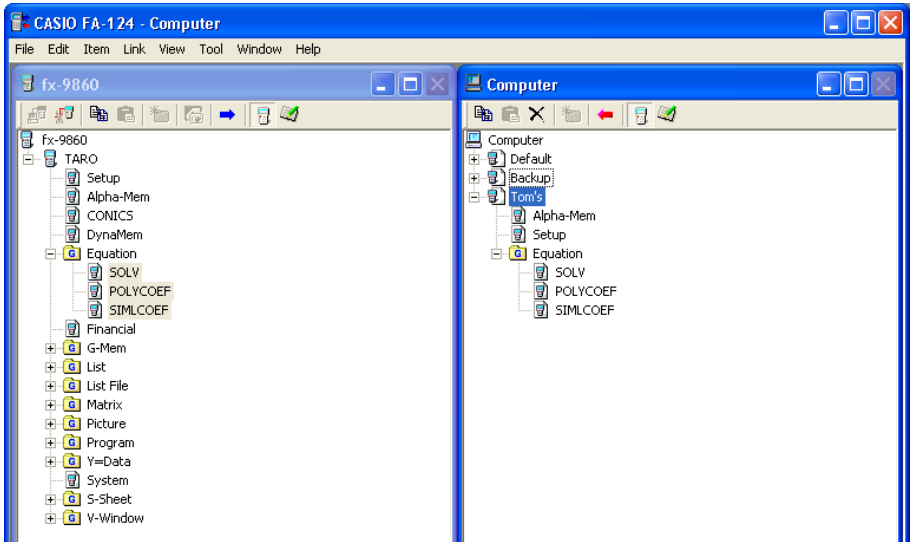


4. Select the file you want to transfer.



- To select multiple files, hold down the computer keyboard's [Ctrl] key as you click each one.



5. Use your mouse to drag the selected file to the fx-9860 window icon to transfer it.

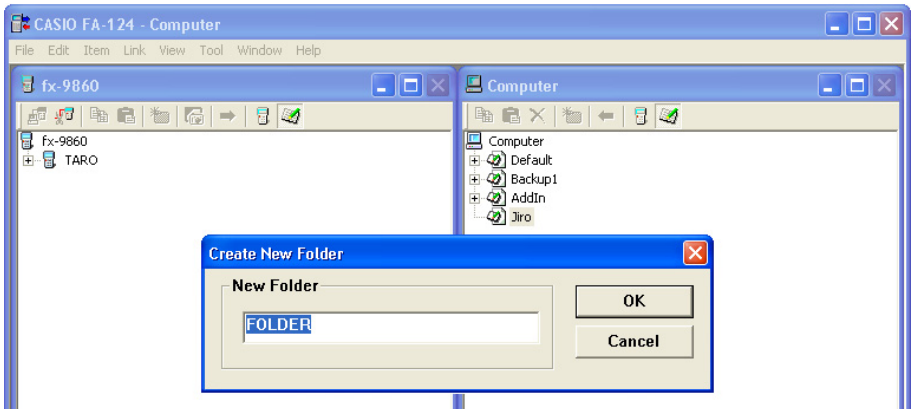


- You can also transfer a single data group by dragging it to the fx-9860 window.

6. If you want to transfer other files, repeat steps 3 and 5.
7. After you are finished, terminate the connection between your fx-9860G SD/fx-9860G and computer.


■ To create a new folder

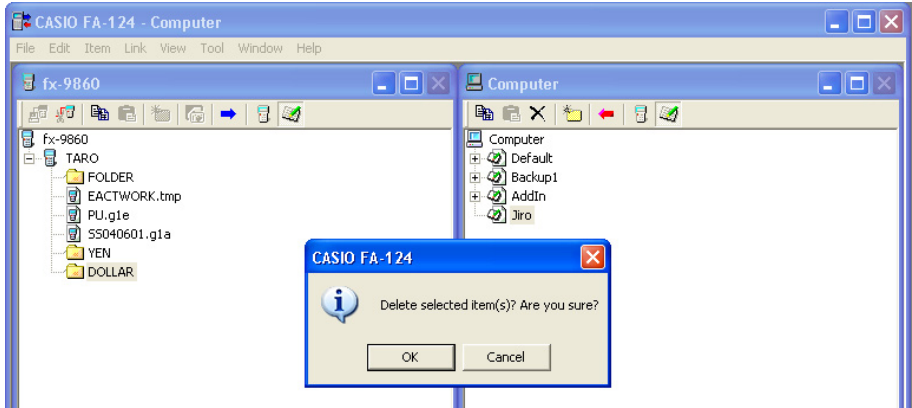
1. On the fx-9860 window (storage memory only) or the computer window, click the tool bar  button.
2. Click the  (New Folder) button.



3. On the dialog box that appears, type in the name you want to assign to the new folder ("FOLDER" for this example) and then click [OK].

■ To delete a flash or memory image, folder, or file

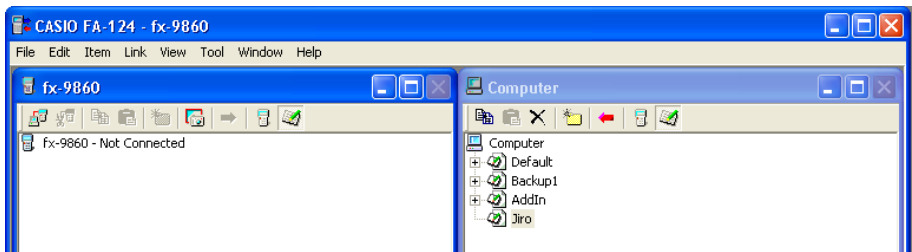
1. On the computer window, select the flash image, memory image, folder, or file you want to delete.
2. On the computer window, click the toolbar  (Delete) button.



3. On the confirmation dialog box that appears, click [OK] to delete or [Cancel] to cancel.

■ To terminate the connection between your fx-9860G SD/fx-9860G and FA-124



1. After data transfer is complete, click  (Disconnect) on the fx-9860 window toolbar. Your computer screen will show this.





Batch Transferring Files

You can use the data backup feature to transfer all fx-9860G SD/fx-9860G data to a computer for backup. You can later transfer the data back to the fx-9860G SD/fx-9860G when required.

■ fx-9860G SD/fx-9860G → Computer


1. Connect the fx-9860G SD/fx-9860G unit to your computer.
2. On the fx-9860 window, click  fx-9860.
3. On the computer window, click the transfer destination image icon.
4. On the fx-9860 window toolbar, click the  button to backup all fx-9860G SD/fx-9860G data to the specified image.

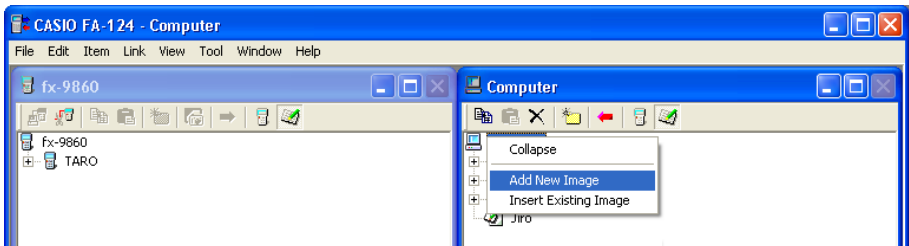
■ Computer → fx-9860G SD/fx-9860G

1. Connect the fx-9860G SD/fx-9860G unit to your computer.
2. On the computer window, click the image icon of the data you want to transfer.
3. On the fx-9860 window, click  fx-9860.
4. On the computer window toolbar, click the  button to transfer all files in the specified image to the fx-9860G SD/fx-9860G.

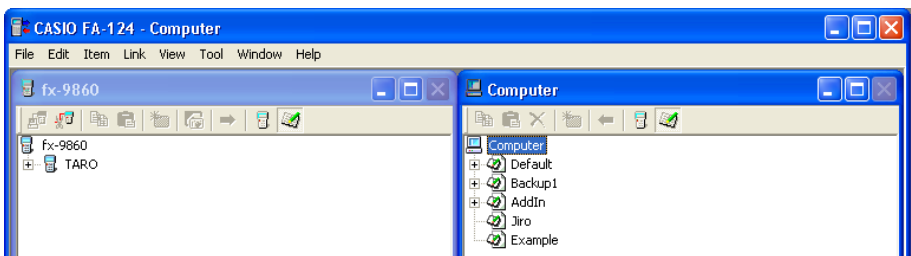
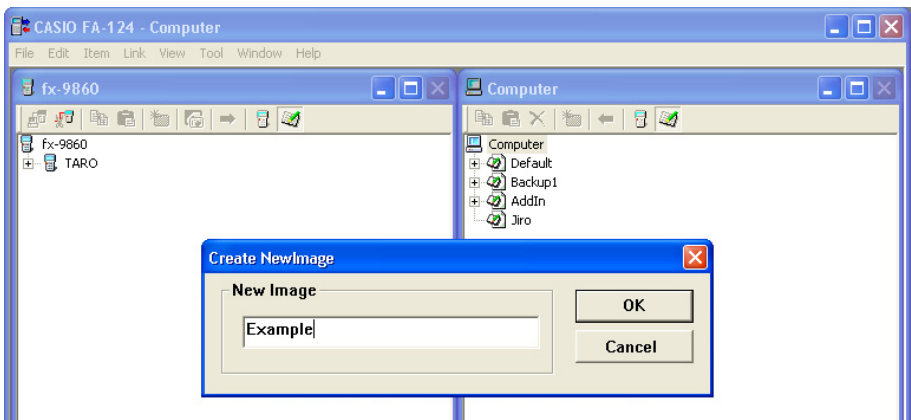
Adding a Flash Image or Memory Image

Use the procedure below when you want to add a flash image or memory image to the computer window. The following procedure shows how to add a flash image. The procedure for adding a memory image is virtually identical.

1. On the computer window, click the toolbar  button.
2. Right-click [Computer], and then select [Add New Image] from the shortcut menu that appears.



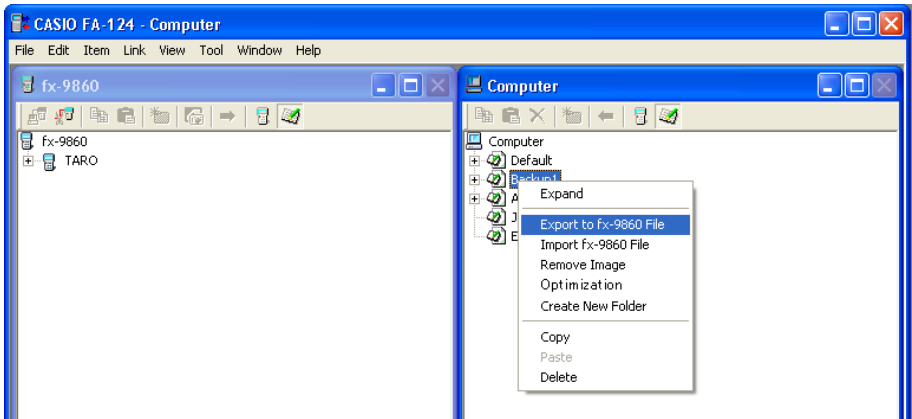
3. Type in the name you want to assign to the image, and then click [OK].



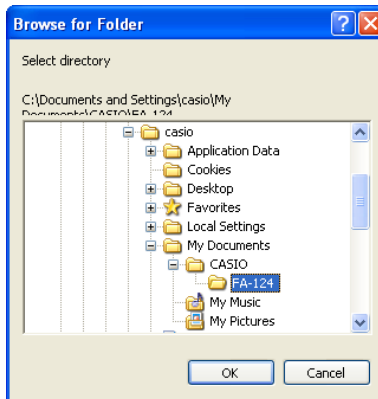
Exporting Flash Images and Memory Images

A flash image or memory image can be saved to a file (fx-9860 data file), and then stored on a computer's hard disk.

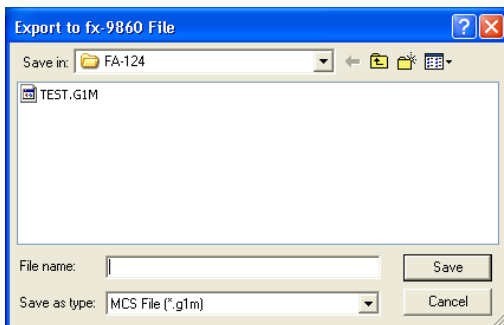
1. On the computer window, click the image you want to export.
2. Right-click with the mouse.



3. On the shortcut menu that appears, select [Export to fx-9860 File].
 - Flash image: The dialog box shown below appears. Select the save destination directory, and then click [OK]. The file is saved using the same name as the flash image.



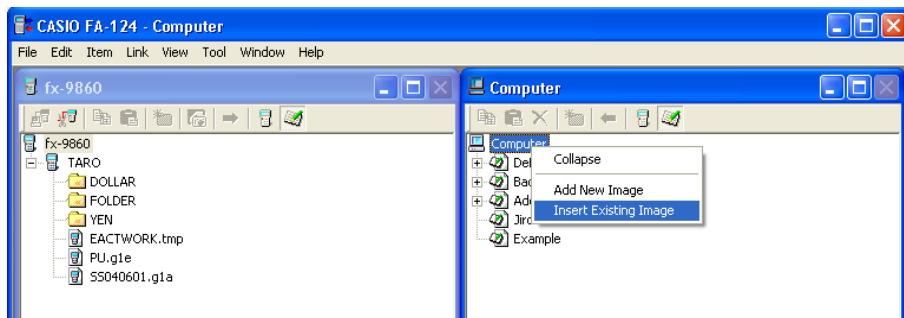
- Memory image: The dialog box shown below appears. Type in the file name, and then click [Save].



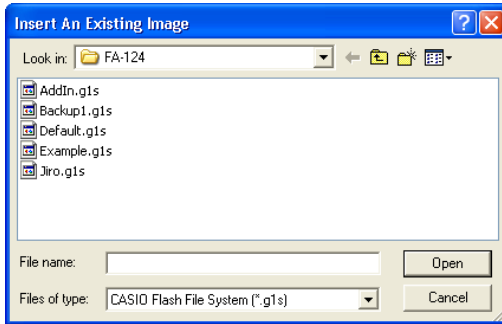
Importing a Flash Image or Memory Image

Use the FA-124 to import a flash image or memory image stored in a file on a computer's hard disk.

1. Right-click with your mouse.
2. On the shortcut menu that appears, select [Insert Existing Image].



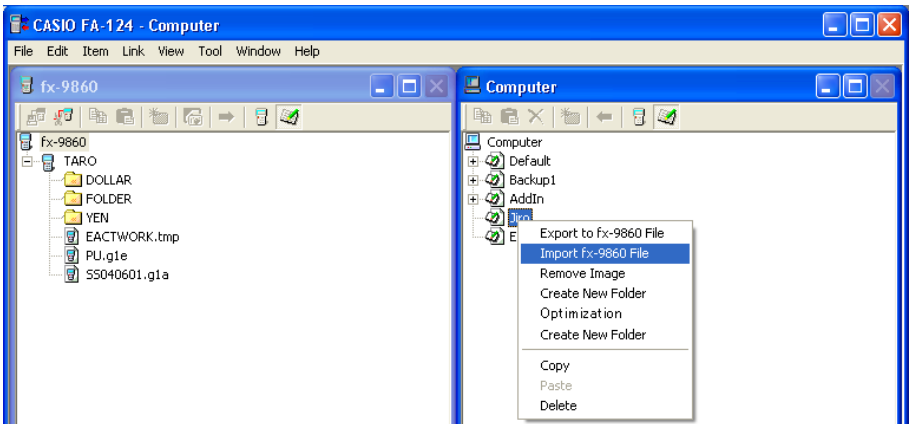
3. On the file dialog box that appears, select the image you want to import, and then click [Open].
 - This imports the image to the computer window and displays in.



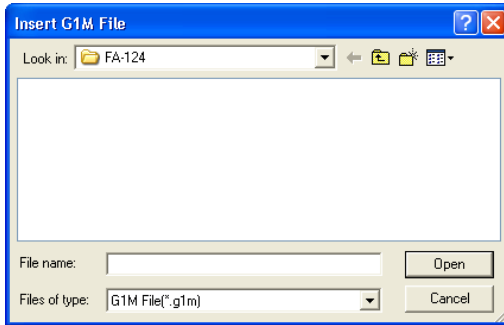
Importing a File

Use this procedure to import a file from a computer hard disk. Importing a file adds its data to the flash image or memory image.

1. On the computer window, select the destination flash image or memory image.
2. Right-click with your mouse.



3. On the shortcut menu that appears, select [Import fx-9860 File].



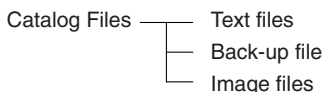
4. On the file dialog box, select the file you want to import, and then click [Open].

- This will add the imported file data to the flash image or memory image.

4. Data Transfer between a Computer and ALGEBRA FX Series or fx-7400/CFX-9850 Series

File Configuration

FA-124 files are called “catalog files,” which can be one of three different types.



• Text files

This type of file consists of two parts: a group and the multiple items stored under it. Except for graphic data, all items can be displayed on a computer screen, and programs can be edited on the computer.

Group	Item	ALGEBRA FX Series (A)	CFX-9850/fx-7400 Series (B)	Display	Editing	CSV Conversion	(A)-(B) Conversion
Program	Program name	YES	YES	YES	YES	NO	YES
Matrix	MatA - MatZ	YES	YES	YES	NO	YES	YES
List	List1 - List20	YES	YES (1-6)	YES	NO	YES	YES
List File	File1 - File6	YES	YES	YES	NO	YES	YES
Y=Data	Graph Function	YES	YES	YES	NO	NO	YES
	Recursion Function	YES	YES	YES	NO	NO	YES
	V-Window	YES	YES	YES	NO	NO	NO
	RightV-Window	YES	NO	YES	NO	NO	NO
	Graph Factor	YES	YES	YES	NO	NO	NO
	Table Range	YES	YES	YES	NO	NO	YES
	Recursion Range	YES	YES	YES	NO	NO	YES
Graph Memory	G-Mem1 - G-Mem20	YES	YES (1-6)	NO	NO	NO	NO
V-Window Mem	V-Win1 - V-Win6	YES	YES	YES	NO	NO	NO
Picture	Pict1 - Pict20	YES	YES (1-6)	NO	NO	NO	NO
DynaMem		YES	YES	NO	NO	NO	NO
Equation	Simul Equation	YES	YES	YES	NO	NO	NO
	Poly Equation	YES	YES	YES	NO	NO	NO
Alpha Memory (A - Z, r, θ)		YES	YES	YES	NO	NO	YES
F-Mem n	f1 - f20	YES	YES (1-6)	YES	NO	NO	YES
CAS (A - Z, r, θ)		YES	NO	NO	NO	NO	NO
Algebra	ANS	YES	NO	NO	NO	NO	NO
	Input Replay	YES	NO	NO	NO	NO	NO
	Output Replay	YES	NO	NO	NO	NO	NO
	Equation	YES	NO	NO	NO	NO	NO

Data from an older model CASIO Graphic Scientific Calculator is converted to CFX-9850/fx-7400 Series format data.

• Back-up file

This file contains the data produced when you back up all of the data in calculator memory.

• Image files

This type of file contains the data produced when you use the screen capture function to create a bit pattern of the screen and save the bit pattern to your computer. Image data is saved as a bmp format file.

Note

- Graph files saved as the above file format cannot be opened using FA-124.

File Transfer

The procedures described here can be used to upload calculator data to your computer, and to download programs and data from your computer to your calculator.

Note

- For details on how to operate your calculator during file transfers, see the section of the calculator's User's Guide titled "Data Communications."

■ Types of transfers

There are two ways to transfer items.

- Transfer of a single data item. Transferred data items can be individually opened and manipulated in the catalog window, and programs can be edited on the computer.
- Transfer of all data to back up computer memory contents. Backed up data contents cannot be viewed or edited on the computer.

■ Before transferring data

• To connect the calculator to your computer

1. Use the data transfer cable (SB-88) to connect the calculator to one of the computer's serial ports (COM1 to COM9).
2. Connect the data transfer cable to the calculator.

• To specify the connected calculator type

1. On the FA-124 Tool menu, select [Model Type].
 - This will display a submenu of graphic scientific calculator names.
2. Select the name of the calculator you connected to your computer.

Note

- Starting up FA-124 will display the window for the currently selected graphic scientific calculator.

• To switch the communication port

1. On the FA-124 Link menu, select [Communications].
 - This will display the port selection dialog box.
2. Select the port where the calculator is connected (COM1 to COM9).
3. Click [OK].

■ Transferring files from your calculator to your computer

1. Select [Link] - [Receive] on the computer screen.
2. Select the calculator data you want and then send it.

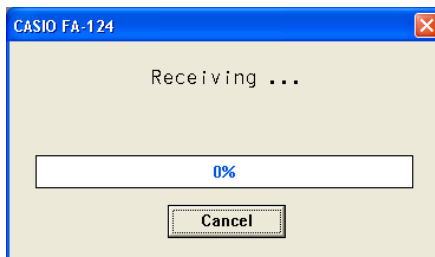
Example: Use the following procedure to send data from the ALGEBRA FX.

Select [Transmit] in the **LINK** mode.

Select [Select] and then select the data item you want to send.

Select [Trans] and then select [Yes].

Data transfer starts at this time, with its progress indicated by a dialog box on the computer screen.

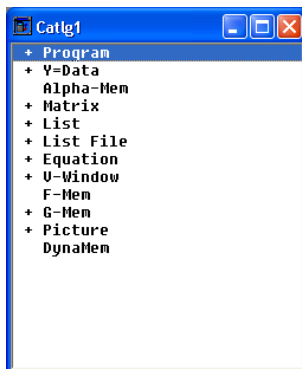


Sample screen

Note

- The message "Transmit ERROR" appears if the computer is not set up to receive data.

3. When data transfer is complete, a new catalog window appears on the screen.

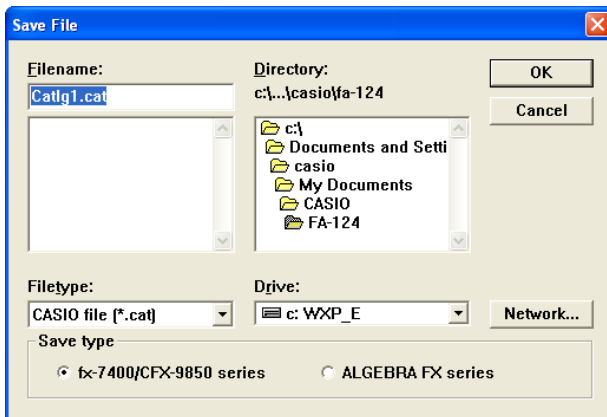


Sample screen

4. Save the data as a file.

Select [File] - [Save].

Specify a file name and click [OK] to save it as a catalog file.



Note

- Selecting [File] - [Save] displays a dialog box you can use to specify the file name, drive, and directory. You can also use the “Save type” box to specify the file format.
- Double check the following items whenever data transfer is not performed correctly.
 - Check for proper connection of the communication cable.
 - Check that the port was correctly selected using [Link] - [Communications].
 - Make sure the correct [Tool] - [Model Type] is selected.

■ **Transferring files from your computer to your calculator**

1. Select [File] - [Open] and open the catalog file that you want to use for the transfer.

Note

- Selecting [File] - [Open] causes a dialog box to appear. This dialog box can be used to specify a file name and also to specify a drive and directory.

2. Click on a group and item to select it for transfer.

- To select all the contents of the catalog file, select [Edit] - [Select All].
- To select all the items in a group, double-click on the group.
- To select multiple groups and items, hold down the computer keyboard’s [Ctrl] key and click. Hold down the [Shift] key while clicking on groups or items to select them.

3. Set up the calculator to receive data.

Example: Use the following procedure to receive data with the ALGEBRA FX.

Select [Receive] in the **LINK** mode.

4. Select [Link] - [Transmit].
 - Double check to make sure that both units are set up correctly for data transfer and then click [OK].
 - Data transfer starts at this time, with its progress indicated by a dialog box on the computer screen.
5. If a received file has a name of a file already stored in calculator memory, a dialog box appears asking if you want to overwrite the existing file. Select [Yes] or [No] in response to the dialog message.

Note

- The message “Transmit ERROR” appears if the calculator is not set up to receive data.

6. When data transfer is complete, the dialog box closes.

Note

- Double check the following items whenever data transfer is not performed correctly.
 - Check for proper connection of the communication cable.
 - Check that the port was correctly selected using [Link] - [Communications].
 - Make sure the correct [Tool] - [Model Type] is selected.

Back-up Data Transfer

■ To back up calculator data

1. Select [Link] - [Receive] on the computer screen.
2. Select [Backup] in the calculator’s **LINK** mode.

Example: Use the following procedure to back up data from the ALGEBRA FX.
Select [Transmit] in the **LINK** mode.
Select [Backup] and then select [Yes].
3. Now proceed with step 3 under “Transferring files from your calculator to your computer”.

■ To transfer backed up data to the calculator

1. Select [File] - [Open] and then select the back-up data file.
2. Now proceed with step 3 under “Transferring files from your computer to your calculator”.

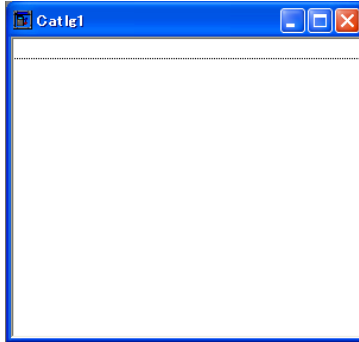
Note

 - In the case of back-up data, no confirmation message appears to ask if you want to replace previously backed up data with new data if you assign a file name that is already assigned to back up data in memory.

5. Data Editing

Creating a New Catalog File (ALGEBRA FX, CFX-9850, fx-7400 Series only)

1. Select [File] - [New] - [Model Type], and then on the sending unit select [Model Type].



Sample screen

2. Input data to create a new program or copy (or move) data from another catalog window.

- For details on creating a program, see “Creating a New Item (Program)”.
- For details on copying or moving data, see “Deleting, Copying, and Moving Groups and Items”.

3. Select [File] - [Save As] to save the data.

Creating a New Item (Program)

Note

- A program is the only type of item that can be newly created.

1. On the Item menu, select [New].

fx-9860G SD/fx-9860G: On the computer window, select the flash memory image and then select [Item] - [New].

ALGEBRA FX, CFX-9850, fx-7400 Series: Open the catalog file, and then select [Item] - [New].

- Input the item name (program name) in the dialog box that appears on the screen.
- The following are the characters you can use in a file name:
A through Z, *r*, *θ*, spaces, [], { }, ' , " , ~, 0 through 9, ., +, -, ×, ÷
- The above operation creates a program group and creates the item inside the program group (ALGEBRA FX, CFX-9850, fx-7400 Series).

Note

- If a program group already exists, the item is created inside the existing program group (ALGEBRA FX, CFX-9850, fx-7400 Series).

2. Double-click on the item to launch the program editor.
3. Input the contents of the program.
 - See “8. Program Editor” for details on inputting program contents.
4. Select [File] - [Close] to quit the program editor.
5. Select [File] - [Save] to save the catalog file.

Note

- Program passwords are ignored by this software.
- When a program with password is transferred from the calculator to the computer, the password is ignored.
- You cannot edit a BASE program.

Displaying, Editing, and Printing Items

■ To display and edit an item

1. While an item is selected, select [Item] - [Open] to display the contents of the item.
 - In addition to using [Item] - [Open], you can also double click on an item to display its contents.
 - If the item is a program, you can use the program editor to edit its contents.

Note

- You cannot display the contents of G-Mem, Picture, or Dyna-Mem items.
- You can only edit RUN programs. You cannot edit BASE programs. Program passwords are ignored by the software.

■ Printing

1. While an item is displayed, select [File] - [Print].
2. Specify the printer, print options, number of copies, and enlargement factors, and then start the printing.
 - You can use the preview function to display an image of the printout on the screen.

Note

- You can print approximately 70 characters on an A4 size sheet of paper when the font size is 10. To print more data, reduce the size of the printout.

Deleting, Copying, and Moving Groups and Items

■ To delete a group and item

Select the group and item to be deleted and then select [Edit] - [Delete], or press the [Delete] key.

■ To copy a group and item to another catalog file

1. Select the group and item to be copied and then select [Edit] - [Copy].
2. Open the destination catalog file and then select [Edit] - [Paste].

Note

- You could also drag the group and item to the designation window.
- Copying data between two catalog files that are different formats can cause some of the data to be lost.
- Available formats depend on graphic scientific calculator model.

■ To move a group and item to another catalog file

1. Select the group and item to be copied and then select [Edit] - [Cut].
2. Open the destination catalog file and then select [Edit] - [Paste].

Note

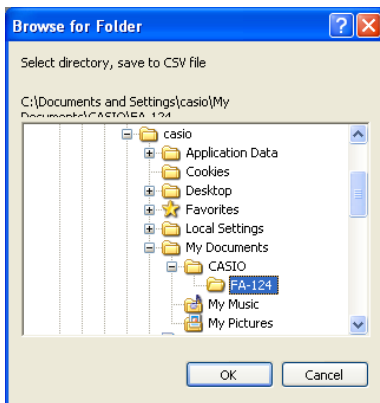
- You could also drag the group and item to the destination window while holding down the [Ctrl] key.

6. Data Conversion

- On the fx-9860G SD/fx-9860G, you can convert between List, File, Matrix, and Spreadsheet data and csv format data.
- On an ALGEBRA FX, CFX-9850, fx-7400 Series calculator, you can convert between List, File, and Matrix data and csv format data.
- You can also convert data between fx-9860 format and older model (ALGEBRA FX, CFX-9850, fx-7400 Series) format.

■ To convert calculator data to csv format

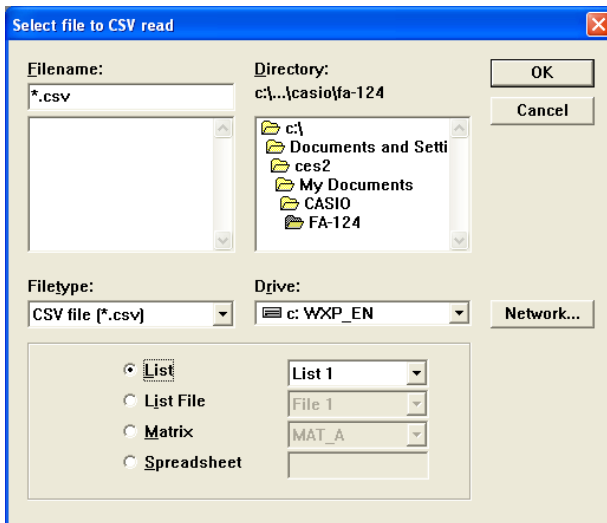
1. Select the data you want to convert.
2. On the File menu select [CSV]. On the submenu that appears, select [Save as CSV].
fx-9860G SD/fx-9860G: On the computer window, select the file you want to convert (List, File, Matrix, Spreadsheet).
ALGEBRA FX, CFX-9850, fx-7400 Series: Select the data you want to convert from the catalog file List, File, or Matrix format data.
3. On the dialog box that appears, select the destination directory.



4. Click [OK] to convert the data.
 - Data that contains complex numbers cannot be converted.

■ To convert csv data to calculator data

1. Select [File] - [CSV-Load from CSV].
2. Select the csv data you want to convert.
3. Select the type of calculator data you want to convert to.



- When converting to fx-9860G SD/fx-9860G Spreadsheet data, input up to eight characters for the file name.

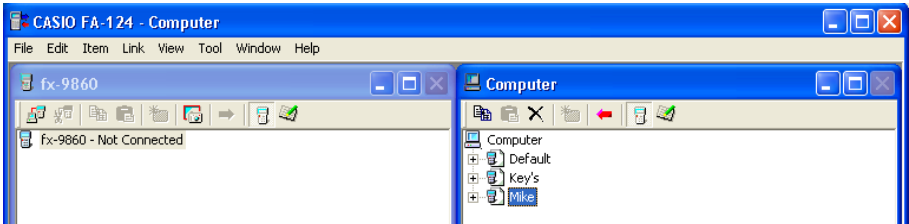
4. Click [OK] to start data conversion.
5. One of the following happens when conversion is complete.
 - fx-9860G SD/fx-9860G: The converted data is created.
 - ALGEBRA FX, CFX-9850, fx-7400 Series: A new catalog file is created.

- Conversion is not performed if the selected csv format file is not compatible with the graphic scientific calculator data format.

■ Converting data between fx-9860 format and ALGEBRA FX, CFX-9850, or fx-7400 Series format

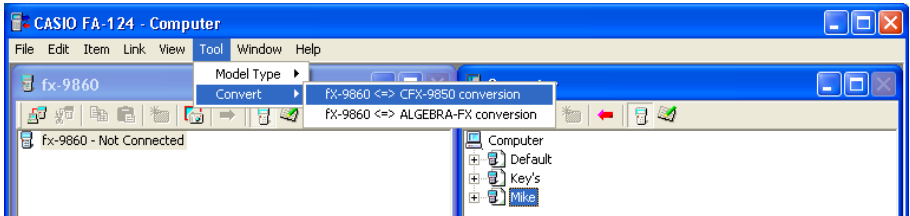
• Converting from fx-9860G SD/fx-9860G to ALGEBRA FX, CFX-9850/fx-7400 Series

1. On the computer window, select the image to be converted.



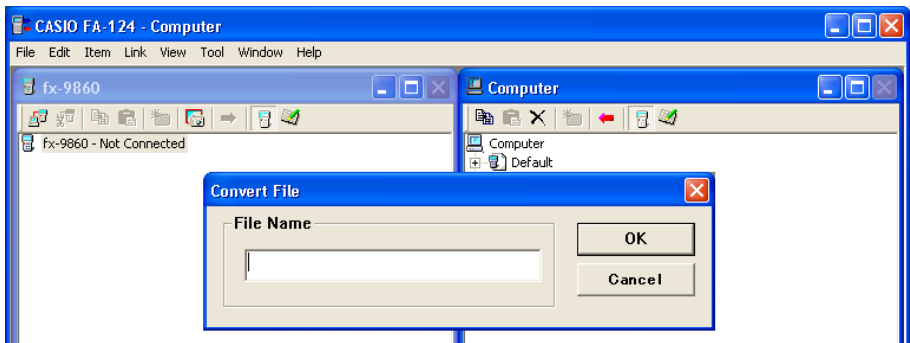
2. When converting to ALGEBRA FX Series: select [Tool] - [Convert] - [fx-9860 <=> ALGEBRA-FX conversion].

When converting to CFX-9850/fx-7400 Series: select [Tool] - [Convert] - [fx-9860 <=> CFX-9850 conversion].



• This will displays a file name input dialog box.

3. Type in the file name, and then click [OK].

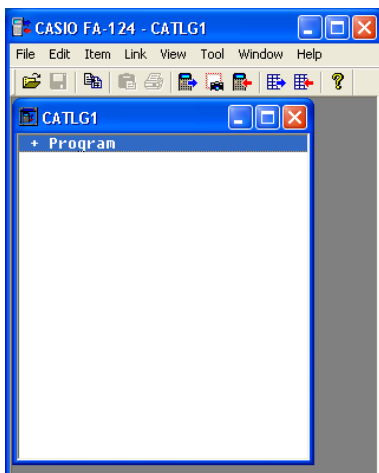


• The converted catalog file (with extension ".cat") will be stored at My Documents\Casio\FA-124 on your computer's hard disk.

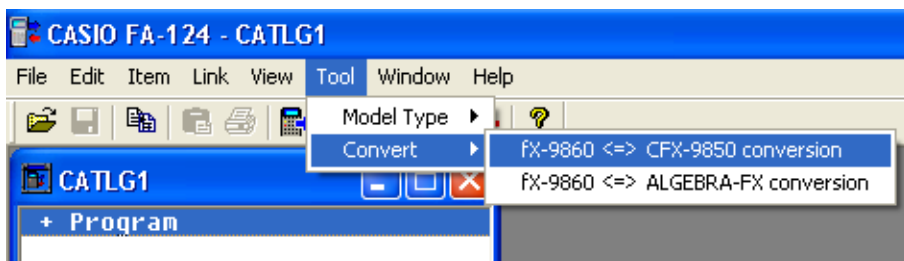
- When converting to ALGEBRA FX Series: select [Tool] - [Model Type] - [ALGEBRA FX series].
When converting to CFX-9850/fx-7400 Series: select [Tool] - [Model Type] - [fx-7400/CFX9850 series].
- Select [File] - [Open], and then open the converted catalog file. (See “Transferring files from your computer to your calculator” on page E-40.)

• Converting from ALGEBRA FX, CFX-9850/fx-7400 Series to fx-9860G SD/fx-9860G

- Open the catalog file you want to convert.

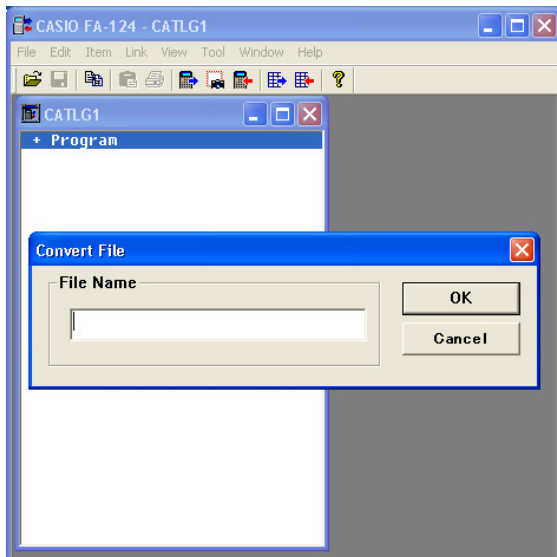


- When converting from ALGEBRA FX Series: select [Tool] - [Convert] - [fx-9860 \Leftrightarrow ALGEBRA-FX conversion].
When converting from CFX-9850/fx-7400 Series: select [Tool] - [Convert] - [fx-9860 \Leftrightarrow CFX-9850 conversion].



- This will display a file name input dialog box.

3. Type in the file name, and then click [OK].



- The converted image file (with extension “.g1r”) will be stored at My Documents\Casio\FA-124 on your computer’s hard disk.

4. Select [Tool] - [Model Type] - [fx-9860].

5. Use the procedure under “Importing a Flash Image or Memory Image” (page E-34) to import the converted image.

Note

- For information about how data is converted, see “9. Data Transfer with an Old Model Calculator” (page E-54).

7. Screen Capture


The screen image of the calculator can be captured as a bit pattern and transferred to your computer.

Note

- For details on how to operate your calculator for screen capture, see the section of the calculator's User's Guide titled "Data Communications."

Capturing a Screen to Your Computer

• fx-9860G SD/fx-9860G

1. On the fx-9860G SD/fx-9860G, turn on manual image transfer.
 - In the **LINK** mode, press **F6** (CAPT) **F2** (PC) **EXIT**.
2. On the fx-9860G SD/fx-9860G, display the screen you want to transfer.
3. In FA-124, click  button on the fx-9860 window toolbar.
4. On the fx-9860G SD/fx-9860G, press **SHIFT** **7** (CAPTURE).
5. The screen transferred to the computer will be displayed after transfer is complete.

• ALGEBRA FX Series

1. Set up the calculator to send a screen shot to a computer.
 - Use the calculator's **LINK** mode set up (**CTRL** **F3** (SET UP)) to specify Direct (direct send) for the H-Copy item.
2. On the calculator, display the screen you want to send to the computer.
3. On the FA-124 menu bar, select [Link] - [Screen Capture].
4. On the calculator, press **CTRL** **F6** (H-COPY) to send the screen shot.

• **CFX-9850/fx-7400 Series**

1. Set up the calculator to send a screen shot to a computer.
 - On the calculator's **LINK** mode, press **F6** (IMGE) and then turn on the Image Set Mode. In the case of a color calculator, you can select either MONO or COLR for the Image Set Mode.
2. On the calculator, display the screen you want to send to the computer.
3. On the FA-124 menu bar, select [Link] - [Screen Capture].
4. On the calculator, press **F0** to send the screen shot.
 - The screen shot is shown on the display of your computer after the transfer operation is complete.



Sample screen

5. Save the data in a file.
 - Select [File] - [Save As].
 - Specify a file name and save the file.
 - To change the format of the image file, specify the file type and then save the file.

Note

- Selecting [File] - [Save As] causes a dialog box to appear. This dialog box can be used to specify a file name and also to specify a drive and directory.

Displaying and Printing a Captured Screen Image

■ To display a captured screen image

Select [File] - [Open] and open the image file to display the image.

■ To print a captured screen image

1. While the image is on the display, select [File] - [Print].
2. Specify the printer, print options, number of copies, and enlargement factors, and then start the printing.
 - You can use the preview function to display an image of the printout on the screen.

8. Program Editor

The program editor lets you edit the contents of programs.

Launching the Program Editor

Create a new program or select an existing program to launch the program editor.

• Command Input

You can input commands using any one of the three following methods.

- Selecting a command from the PRGM menu
- Inputting commands from the keyboard
- Displaying the calculator window and using the mouse to click on its keys

Note

- To display the calculator window, select [View] - [Calculator]. Select [View] - [Calculator] again to clear the calculator from the display.
- The calculator independent font (i.e. $\sqrt[3]{\square}$) is included in the FA124GRF font and FA124ALG font, and cannot be input from the keyboard.
- Special characters will not appear normally on the display if the FA124GRF font and FA124ALG font is not installed correctly.

Saving Programs

Use the following procedure to save a program after inputting or editing it.

1. Select [File] - [Close] to quit the program editor.
2. Select [File] - [Save] to save the catalog file.

9. Data Transfer with an Old Model Calculator

Using this software to transfer data to the computer from an older model calculator automatically converts the data to the format used by fx-9860G SD/fx-9860G and then stores it on disk.

• Old Model Calculator

fx-7700GB CFX-9800G
 fx-8700GB
 fx-7700GE
 fx-7700GH
 fx-9700GE
 fx-9700GH

The following table shows how data is converted.

Statistics SD X-data f-data	→ LIST1 → LIST2
Statistics REG X-data Y-data f-data	→ LIST3 → LIST4 → LIST5
Variable Mem Defm	→ disappear
Range	→ View Window Mem1
Factor	→ Y=DATA
Table Function	→ Y=DATA, Graph Function, Table Setting
Table Recursion	→ Y=DATA, Recursion Function, Recursion Setting
Graph Function	→ Y=DATA, Graph Function
Dynamic Graph	→ Y=DATA, Graph Function
Editor	→ Program

The following applies to data conversion between fx-9860G SD/fx-9860G data and older model calculator data.

- **Attempting to transfer the following type of data from the fx-9860G SD/fx-9860G to the CFX-9850 will cause an error (Transmit ERROR).**
 - More than six List, G-Mem, Pict, or F-Mem items
 - A list with more than 255 elements
 - A list that contains complex numbers

- **Attempting to transfer the following type of data from the fx-9860G SD/fx-9860G to the CFX-9850 will transfer the data, but the data will not be stored in CFX-9850 memory.**
 - Table setting data
 - Recursion data
 - Equation data
 - Financial data
 - Spreadsheet data
 - Geometry data
 - Add-in application data
 - Hard copy memory
 - Setup data

- **The following shows how graph line type data and line color data is converted.**
 - fx-9860G SD/fx-9860G → CFX-9850
 - Normal → Blue
 - Thick → Red
 - Thick Dotted → Green
 - Dotted → Green
 - CFX-9850 → fx-9860G SD/fx-9860G
 - Blue → Normal
 - Red → Thick
 - Green → Dotted

- **Sending View Window x -dot data from the fx-9860G SD/fx-9860G to the CFX-9850 will cause the data to become corrupted.**

- **The following shows what happens to Setup data in D-Mem.**
 - fx-9860G SD/fx-9860G → CFX-9850: Setup data is corrupted.
 - CFX-9850 → fx-9860G SD/fx-9860G: Setup data is returned to its default.

10. Installing an Add-in


fx-9860G SD and fx-9860G support installation of the three types of add-ins described below.

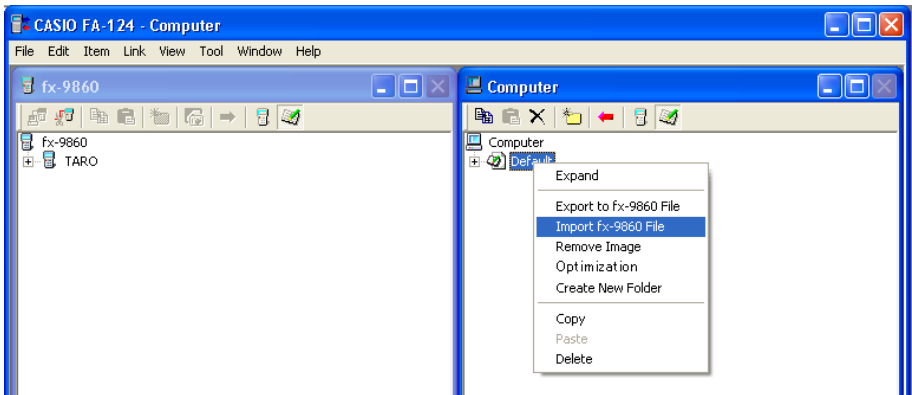
- Add-In Applications: You can install new applications as required.
- Add-In Languages: You can install languages for on-screen messages.
- Add-In Menus: You can install application menus in various languages.

The procedure for installing an add-in is identical to the normal file import operation.

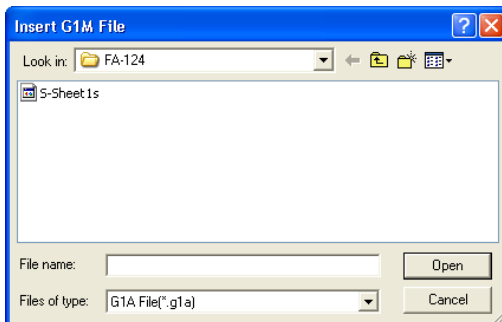
Uninstall is also the same as deleting a normal file.


■ To install an add-in

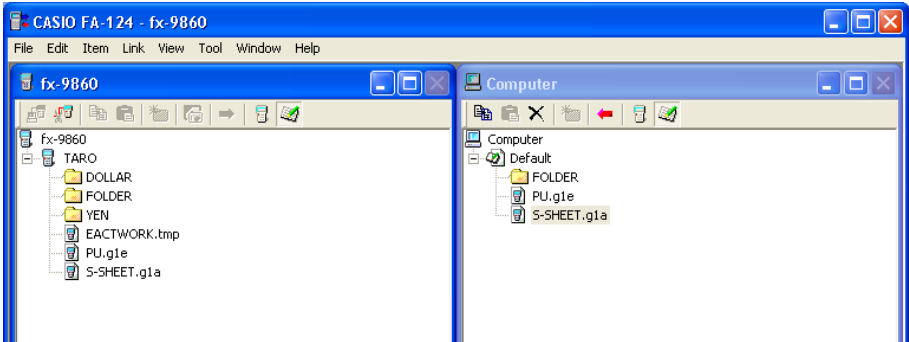
1. Connect the fx-9860G SD/fx-9860G to your computer.
2. On the computer window, click the toolbar  button.
3. Select the flash image icon, and then right-click with your mouse.



4. On the shortcut menu that appears, select [Import fx-9860 File].



5. Select the file you want to install, and then click [Open].
 - This will cause the file to appear on the computer window.
6. Drag the file and drop it into the  [User Name] icon on the fx-9860 window.
 - This will install the add-in on the fx-9860G SD/fx-9860G.




■ To uninstall an add-in

- You can uninstall an add-in by using the fx-9860G SD/fx-9860G **MEMORY** mode to delete the its file.



11. Optimizing the Storage Memory or Flash Image

Storage memory or the flash image can become fragmented after many store and load operations. Fragmentation can cause blocks of memory to become unavailable for data storage. Because of this, you should perform the storage memory or flash image optimization procedure periodically, which rearranges the data in the storage memory or flash image and makes memory usage more economical.

■ To optimize the flash image

1. On the computer window, click the  button on the toolbar.
2. Select the flash image icon, and then right-click with your mouse.
3. On the shortcut menu that appears, select [Optimization].

■ To optimize storage memory

1. Connect the fx-9860G SD/fx-9860G to your computer.
2. On the fx-9860 window, click the  button on the toolbar.
3. Select the  [User Name] icon, and then right-click with your mouse.
4. On the shortcut menu that appears, select [Optimization].

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