The VCC Plus User’s Handbook

Find the key your game is waiting for, read the lights on a disk drive, or bring a favorite setup back. Start with the question you have while the CoCo is running.



VCC Plus application icon with the Color Computer and its three color bars

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Find your way around

Chapter 1 of 10

You can tell quite a lot about a CoCo before pressing a single key. Look at the top of its window to see which machine you have. Look at the bottom to see whether it is running and what you have put in its drives. The part in between is yours to rearrange.

Bring the app onto your Mac

For the packaged edition, use a Mac running macOS 14 or later, with an Apple Silicon or Intel processor. Open the VCC Plus disk image in Finder. Copy **VCC Plus** to **Applications**, let the copy finish, eject the disk image, and open the copy in Applications. The disk image on the Mac delivers the app. A CoCo disk image, such as a DSK, is a file you put into one of its emulated drives.

The packaged setup used in this book includes the machine ROM, disk controller firmware and starter media. The first launch makes local working copies for you. Saving a BASIC program to your starter disk writes to your own copy. If your edition asks you to open a ROM, choose the appropriate CoCo 3 system ROM that you have available; the hardware section explains how this differs from choosing a cartridge. The development tools and the books work locally. Looking up a title in the Software Library and downloading that title are separate actions.

Read your desk

On a fresh installation with the supplied ROMs, VCC Plus starts in **Disk BASIC**. The small **Using your CoCo** card tells you how to get going with that particular setup. Click outside the card to put it away. The ⓘ button at the lower right brings it back. If someone else has already set up this Mac, look at the profile name and the attached media before changing anything.

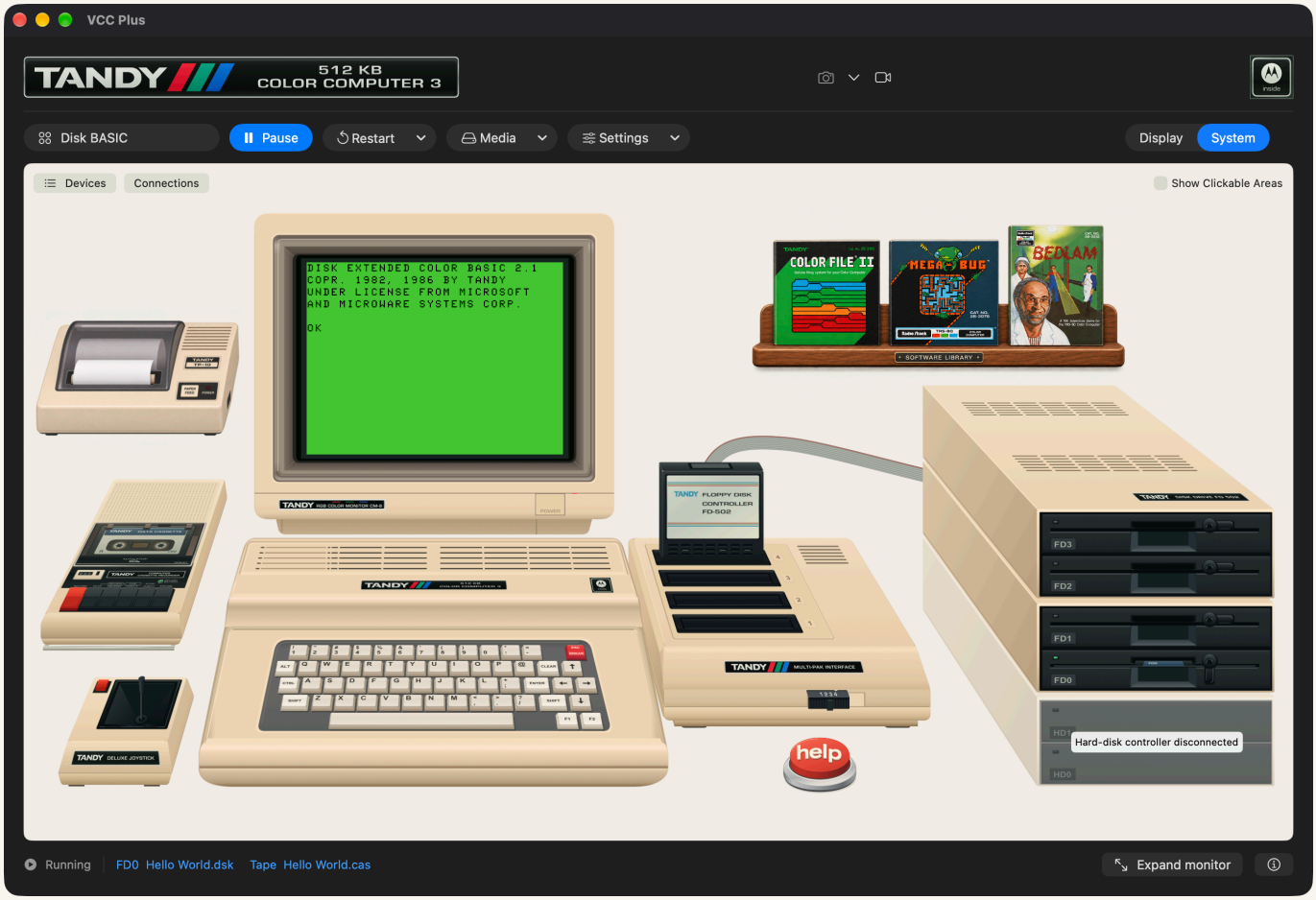


Figure 1: System view shows the running Disk BASIC setup, with Hello World.dsk in FD0 and Hello World.cas attached. Camera, capture options and video controls sit above the toolbar; the information button at the lower right opens the setup guide.

Start with three landmarks:

- **The nameplate and the badge.** The number on the left is the amount of RAM in this CoCo. The badge on the right identifies its processor. Click either to inspect Machine Settings. You can look and close the window without applying a change.
- **The screen.** The lettering inside the monitor comes from the CoCo. On a Disk BASIC startup screen, **OK** means BASIC is ready for a command. A game may draw its own title or ask you for a key instead. **Pause** in the toolbar means the machine is running and you can pause it. **Run** means you can start or resume it.
- **The bottom edge.** Read the status word at the left. A filename beside **FD0** identifies the disk image in floppy drive zero. Select that name to inspect the drive. A tape or hard-disk name opens its corresponding window. A name here tells you which medium is attached. To find a program *inside* it, use the guest's directory or loading instructions.

Locate a device without guessing

Choose **Display** → **Interactive System**. Move the pointer over the monitor's lower bezel, then over a drive face. The blue outline follows the target. **Show Clickable Areas** draws a thin dashed outline around all available targets. Turn it off when you want to see the artwork on its own.

Try one round trip. Click **Devices** at the upper left, find floppy drive zero and open its disclosure. Compare the filename there with the FD0 name below the picture. The list also reaches a Multi-Pak slot hidden behind a cartridge. **Connections** helps trace each group of drives back to its controller. Turn it on when you want to know how a disk request reaches a drive.

On the desk	What you can do there
Wooden bookshelf	Open the Software Library to look for something to run.
Keyboard case or joystick	Find input controls. Click the **screen** when you want to type into the guest.
Tape recorder or printer	Inspect the transport or open Printer Output. Export a new tape or save the captured printout when you want to keep it.
Monitor bezel	Choose a video signal. Click **Expand monitor** below the picture for a larger live display.
Multi-Pak switch and numbered slots	Inspect the startup slot and see which cartridge or controller occupies each position. An actual slot change may restart the CoCo.
Floppy or hard-drive face	Read its name and status. Open its drive window for all file choices.

Make room for the display

Choose **Display → Expand Monitor**, or press **Shift-Command-E** from System view. The monitor comes forward inside the same window. Choose **Return to System** to put it back. Try **Display → Conventional Display** if you want the picture to occupy most of the window as you work. The **System** and **Display** buttons in the toolbar make the same choice.

The running program, sound and attached media belong to the machine. Switching views lets you look at it another way. A custom hardware combination may require conventional controls. If you see **Custom configuration**, use **Cartridges…** to inspect the actual devices. Your installed cards can stay where they are.

Keep the emulator and this book side by side

In System view, click the red **help** button below the Multi-Pak to open the manual index. From either view, **Help → Manual Library…** brings the reader forward. Move the reader to one side and the emulator to the other. From a chapter, choose a numbered Contents entry to change chapters, or a topic below the current chapter to jump within it. Use **Book contents** to search this volume, or **Manual Library** to search the whole shelf. Select a figure to open it at full size and go Back to your place.

The reader remembers where you left it. Close and reopen the window, or quit and relaunch VCC Plus, then open Manual Library to continue. Each book keeps its own reading position. A topic link, search result or bookmark takes you to that specific location rather than restoring a different page. **Library Home** still returns to the shelf deliberately. These reading choices stay on this Mac; opening a book does not restore or run a CoCo program.

Keep a manual bookmark

While reading, choose the toolbar's **Bookmark this location** icon. Its filled bookmark symbol identifies a location already saved; clicking it again finds the existing bookmark instead of adding a duplicate. You can keep several useful places in each book. Reading farther changes your last-read position without moving those bookmarks.

Choose **Bookmarks**, the list icon beside it, to open the one bookmark list. **All Books** groups locations by book; **This Book** shows only the book you are reading. Bundled CMOC and LWTools reference manuals appear under their own names. The list is for the manuals, separate from Software Library's Favorites.

Select a bookmark to open it. Its actions menu also offers **Open**, **Open Book**, **Rename…** and **Remove Bookmark**. Rename supplies your own reminder while retaining the original section name. Removing a bookmark does not remove a book or its contents. If an updated book no longer has that exact section, the reader keeps the bookmark and reports **Location changed**. Use Open Book to find a new place deliberately.

Bookmarks and reading positions stay outside disposable document caches and are not included in update-check statistics.

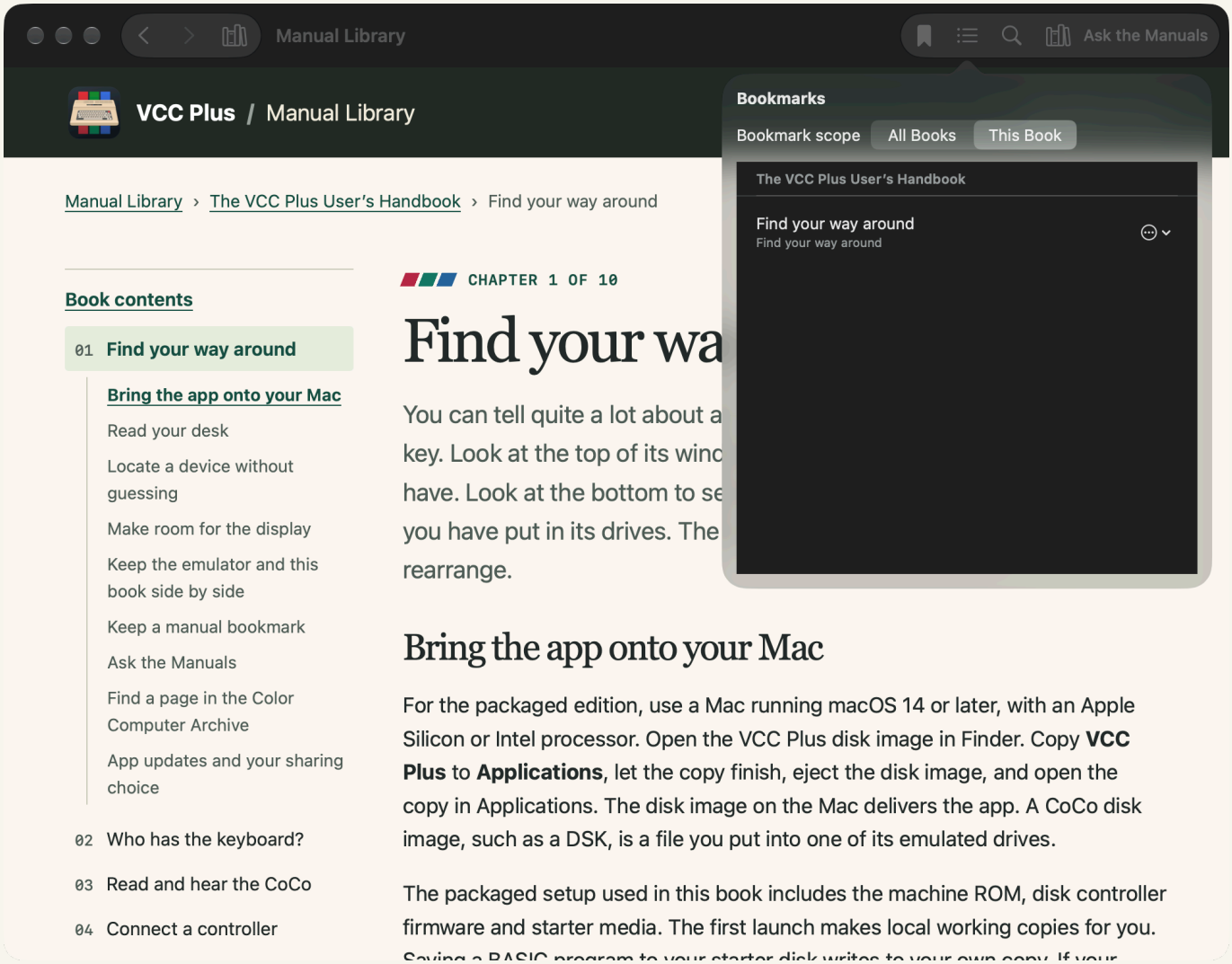


Figure 2: The Bookmarks popover offers All Books and This Book. Here This Book lists a saved location in the User's Handbook, with an actions menu beside it. The filled bookmark symbol identifies the saved reading location.

To find a word on the page you are reading, choose **Find on This Page** in the reader toolbar or press **⌘F**. The counter shows your place among the matches. Use **⌘G** for the next match and **⇧⌘G** for the previous one. Press **Escape** to return to the page.

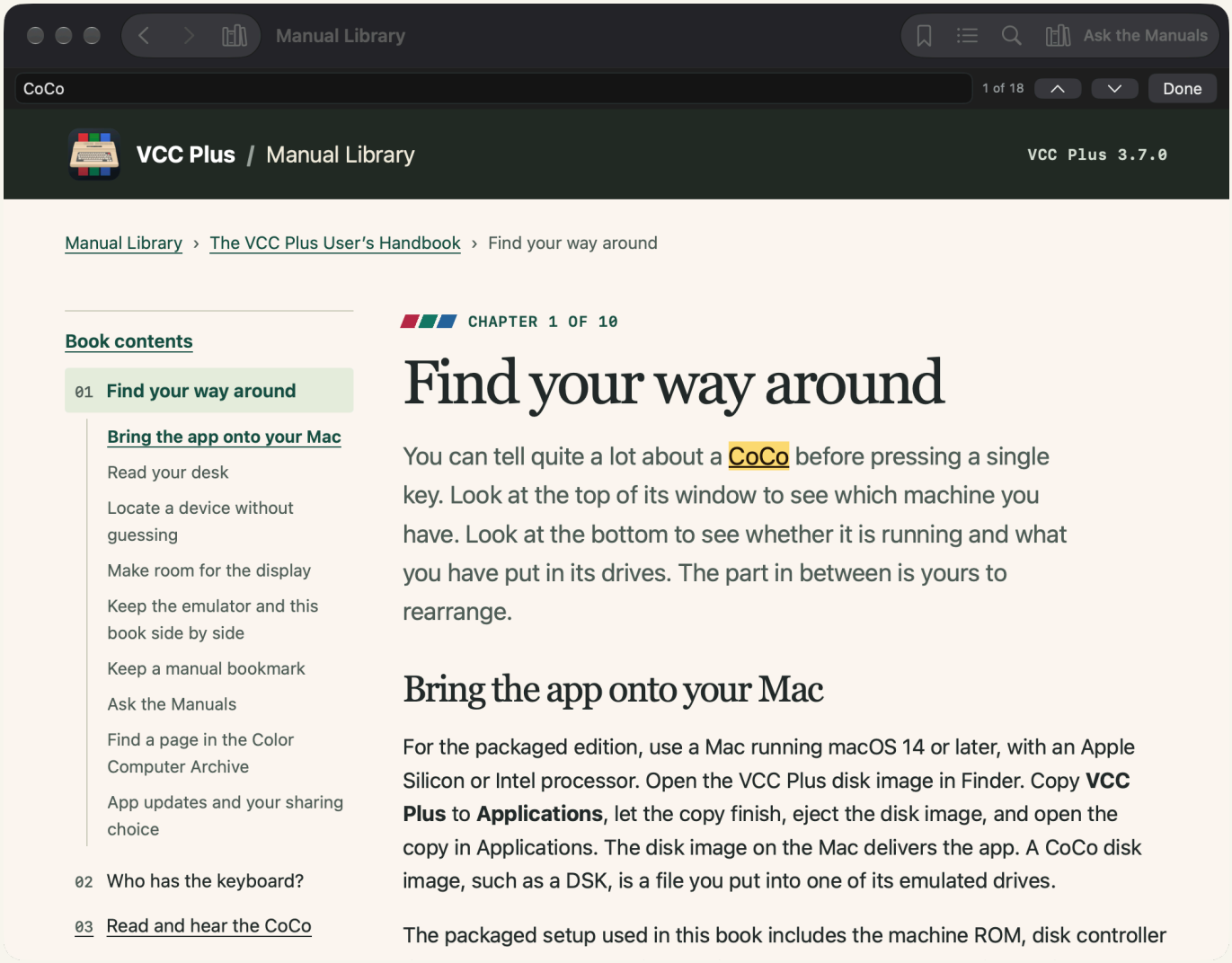


Figure 3: The magnifying glass beside Ask the Manuals opens page Find. Here the reader highlights the first of 18 matches for "CoCo."

The book window has its own keyboard focus. To send the next character to the CoCo choose **Input → Focus CoCo Display**. If you click the emulator's red close button while reading, choose **File → Show Emulator** (**Command-1**) to bring the same session back. A half-finished flight number makes a good way to prove this to yourself.

New to the green **OK** prompt? Get your first reply. Returning from a physical CoCo? Match the hardware to the Mac controls.

Ask the Manuals

Choose **Ask the Manuals** in the reader toolbar to search the twelve books written for VCC Plus and installed with the app. Type one or more keywords. Try `joystick keyboard` to find sections that mention both, or `PRINT@` to look up that exact command. Matching is case-insensitive and keeps punctuation in command names.

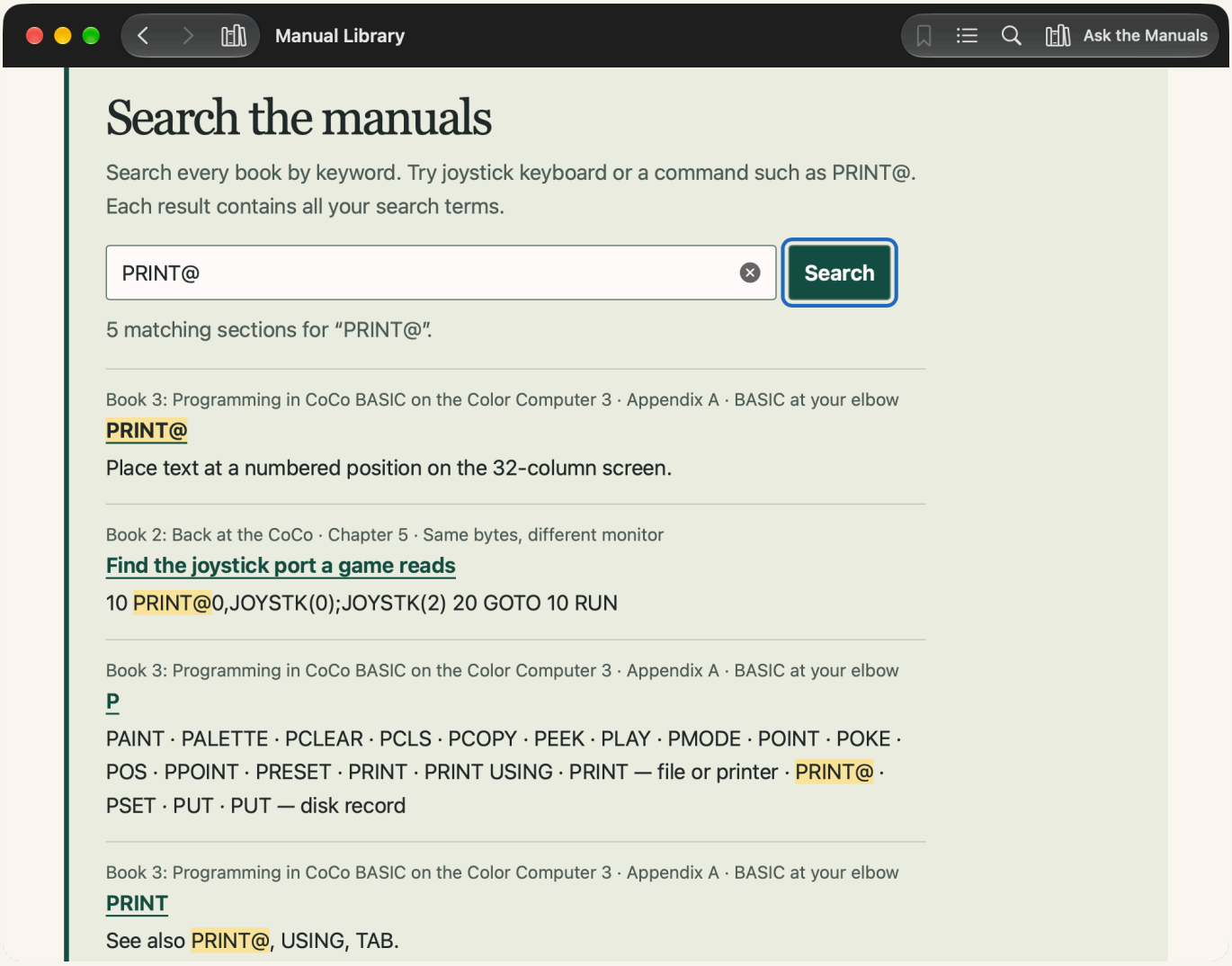


Figure 4: A PRINT@ search lists the command reference first, followed by examples that use it.

Select a section title to open it. Each result shows the book, chapter, and an excerpt with matching words highlighted. Choose **Back** to return to your results. The shelf in a browser uses the same offline search.

Find a page in the Color Computer Archive

Help → Archive Library... is the place to browse period manuals, magazines, diagrams and supporting documents. **Manual Library** contains the books written for VCC Plus; **Archive Library** searches the historical collection preserved by the Color Computer Archive. Reading either leaves the running CoCo and your development documents in place.

Browse a publication or search its pages

Leave **Search Archive** empty to browse. Choose **All Documents**, or a collection in the sidebar such as **Magazines**. Expand publication folders to see issues grouped by year where the filenames supply dates. At the bottom of the list, the previous/next result buttons move through further batches. In a narrow window, **Collections** opens the sidebar.

For a lookup across publications, choose **Entire Archive** in the scope picker and type a few words, such as `JOYSTK` or `MOTD strip buffer`. Results are matching pages or sections, grouped under their publication titles. To limit a search, choose the intended collection and select that collection in the scope picker. Typing a query does

not by itself open the first result. Click the page or section you want, or move the selection with the arrow keys. Clearing the query returns to the browse list.

A title opens with one click; no separate Read or Download button is required. If the file is not cached, the reader shows **Downloading...**, the amount received and verification progress. **Cancel** stops that transfer; **Try Again** retries a canceled or failed load. Verified cached originals and the installed index can be used offline. A first download still needs a connection and enough local storage. In compact view, **Browse** or **Results** returns from the reader to the list; Return can reopen the selected row.

Archive Library remembers your collection, search/scope, selection and useful list position after closing the window or relaunching. Each document also keeps its own reading position, including supported PDF zoom and text/image scroll. A search hit still opens the exact cited location; it takes precedence over an older remembered page. Clearing the query returns to your browse context. Reading history stays local and does not grant an assistant new access.

From Software Library, a title's Guides & References can bring you directly here. A Raaka-Tu walkthrough, for example, opens as text separate from the game's main manual. The source software selection and running CoCo remain in place.

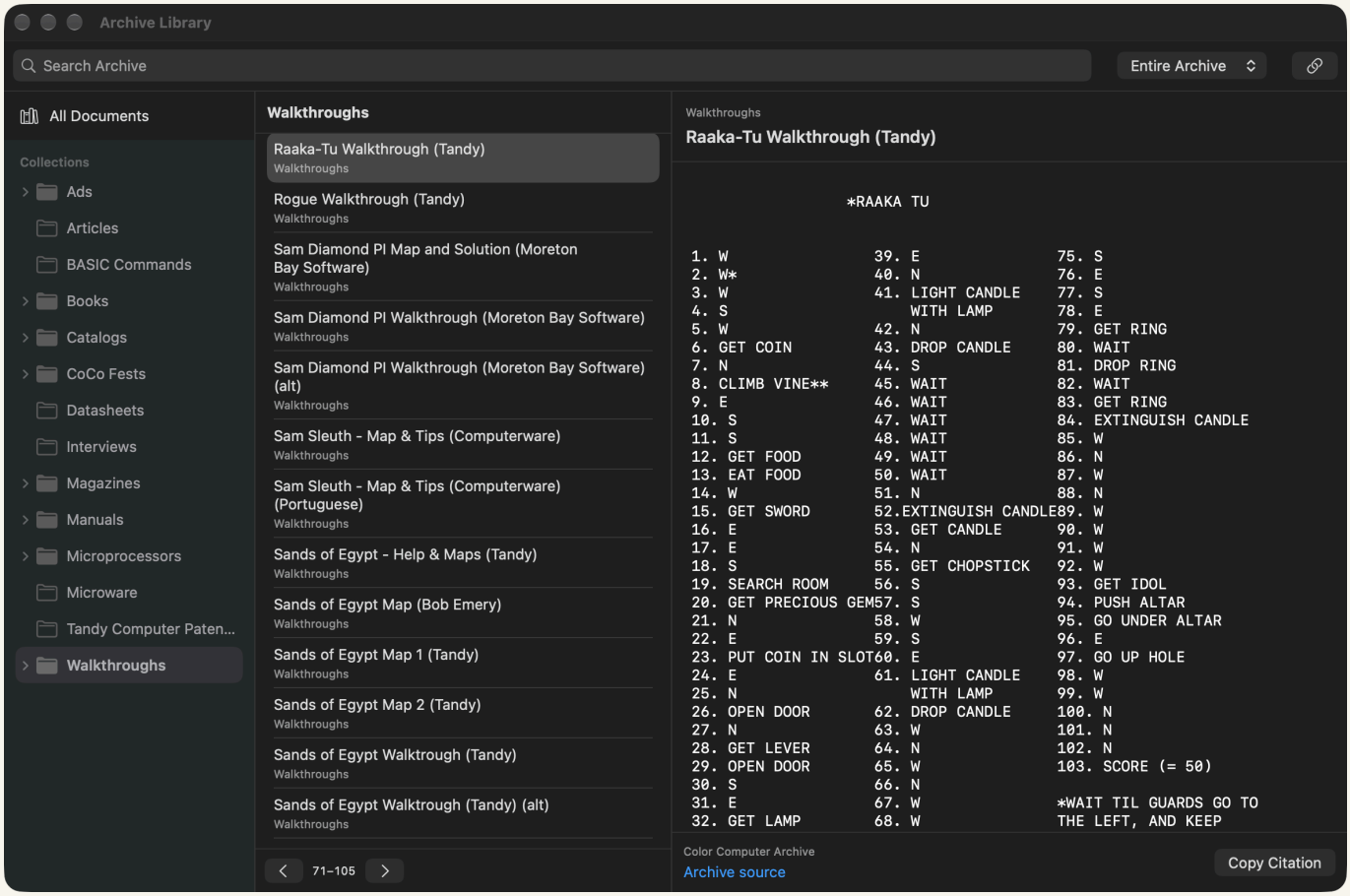


Figure 5: Raaka-Tu Walkthrough opens directly as text in Archive Library. Its Walkthroughs collection stays visible, and Archive source and Copy Citation retain the Color Computer Archive reference.

Read the kind of document you found

What opened	Controls to use
A PDF scan	Previous/next page, the page-number field, zoom and **Fit**. A search hit opens its cited physical PDF page. **Find in PDF** and **Find Next** search the PDF's own text layer; Command-F focuses the field.

What opened	Controls to use
A photograph, map or diagram	**Zoom in**, **Zoom out**, scrolling and **Fit Image**. Fitting changes the preview, not the original file.
Plain text, including a text listing	Select text and use the Mac's **Copy** command or Command-C. This is a read-only viewer; paste into an appropriate working document to edit it.
Indexed web, mail, word-processing or worksheet text	Read the extracted text in the app. Longer items have previous/next section controls and a section-number field. Worksheets retain row references and tabs when copied; this is not a live spreadsheet application.

Archive source opens the upstream document or parent archive. Use it when an edition cannot be displayed in the app, a cited PDF page cannot be opened, or you need the original layout rather than indexed text. A filename and a search excerpt alone do not prove a document is the edition you expected; check its title, collection, page and any ZIP member named above the reader.

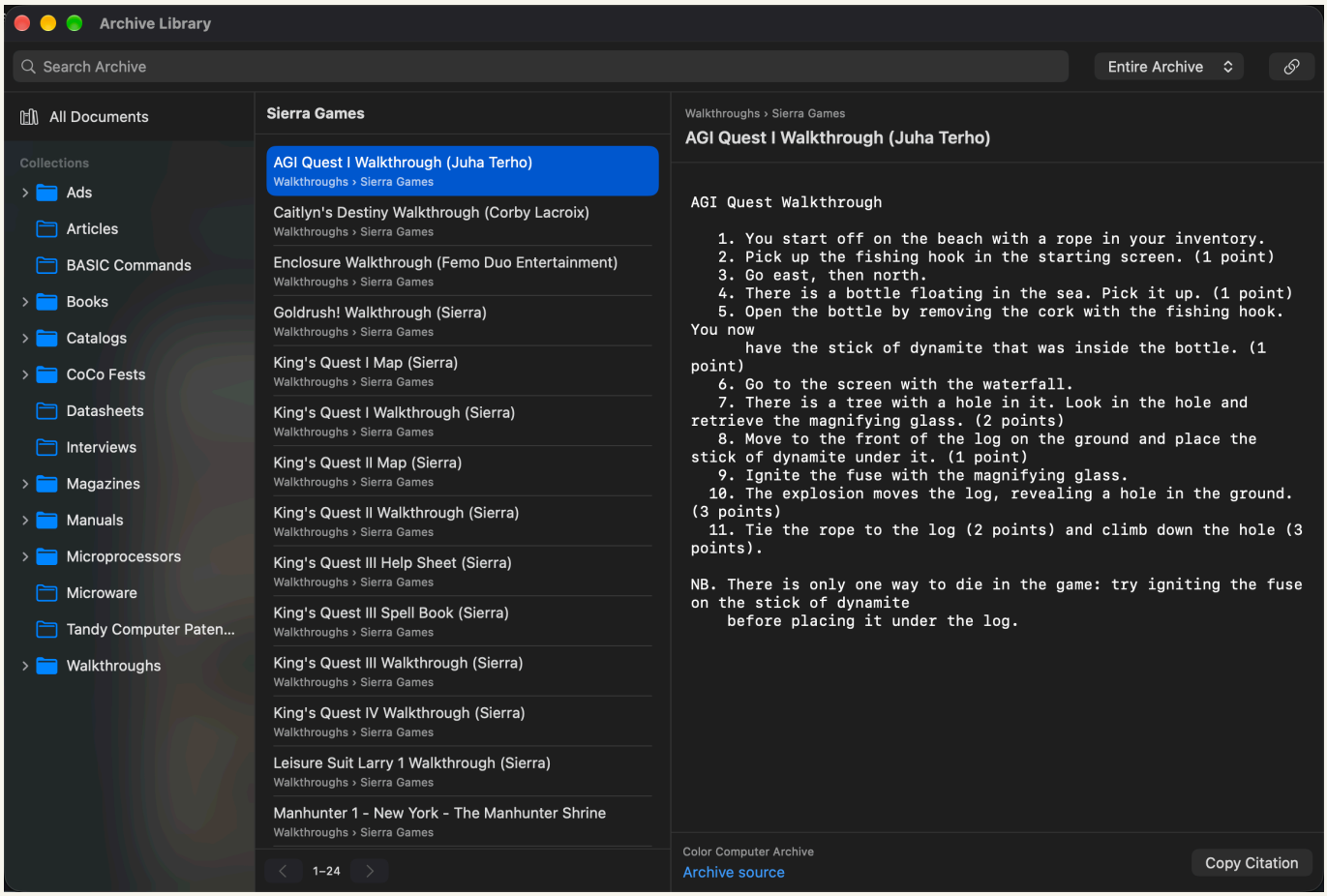


Figure 6: A walkthrough opens as selectable text inside Archive Library. It remains a historical reference rather than an editable guest program.

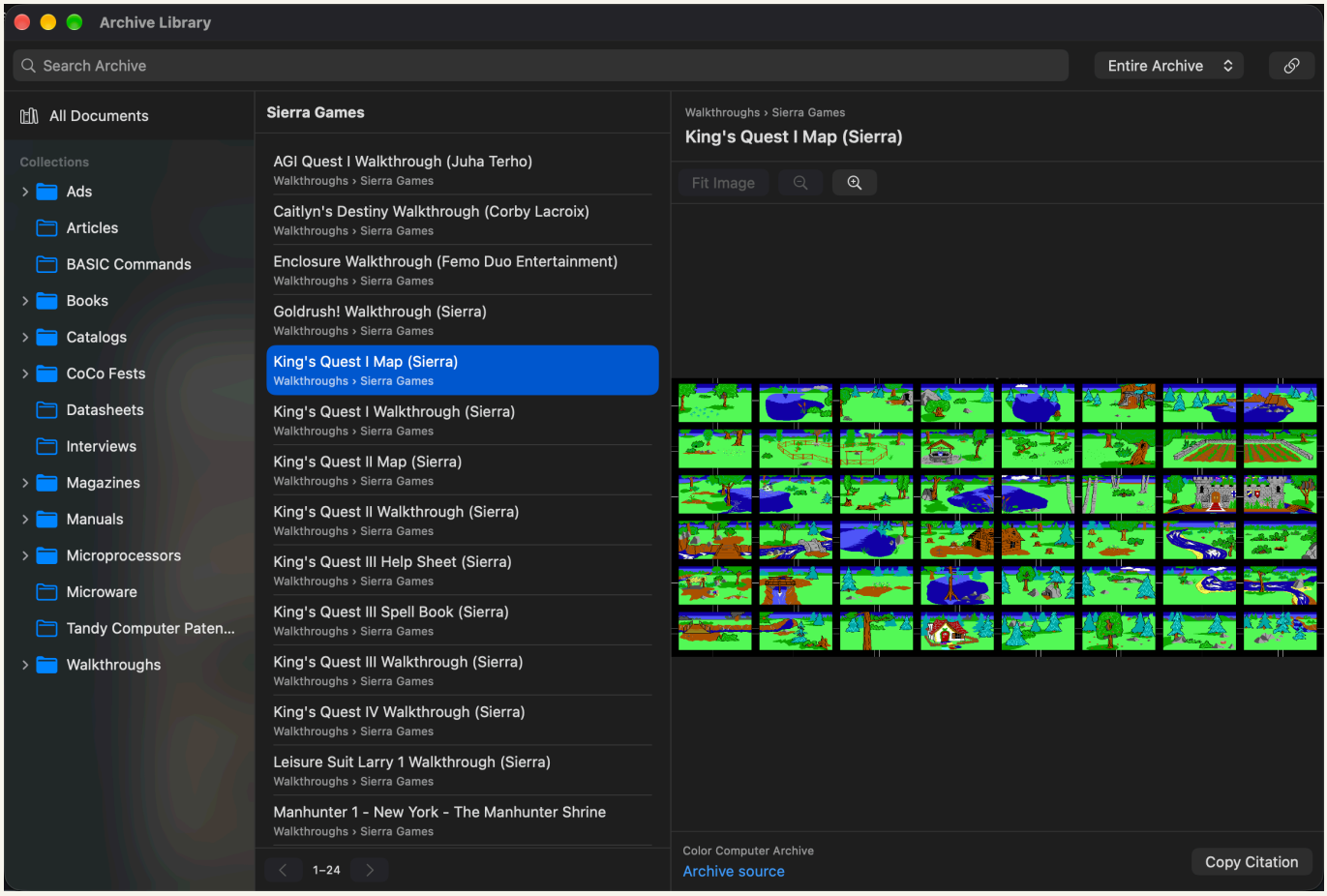


Figure 7: An archived Sierra map opens directly in the image reader with Fit Image and zoom controls.

Copy text without mistaking OCR for source code

An **OCR** match means the search index recognized words from a page image. It does not mean the displayed PDF has a selectable text layer, and it does not mean its program listing has been corrected. A search can find the right page even when **Find in PDF** reports no matching text. The image viewer itself has no OCR-to-code button.

If the PDF has selectable text, select the passage and press Command-C. Plain-text and indexed-text views also support selection and copying. Check copied program text against the scan: zeros and letter O, ones and letter I, quotes, punctuation, line wrapping and BASIC line numbers can be misread or rearranged. A selected paragraph, a search excerpt and a complete runnable program are different things. Preserve the original reference while you repair a working copy.

Use a reviewed example or snippet

On selected PDF pages, actions above the scan provide a reviewed source rendition associated with that exact publication edition and page range. These actions are available only where the index contains such a rendition. Their absence on another page is normal.

Action	What goes to your clipboard or workspace
Copy Snippet	The selected reviewed fragment as plain source text, including its stored line breaks. It can depend on definitions or surrounding code elsewhere in the article.

Action	What goes to your clipboard or workspace
Copy Example	The selected reviewed example's source text. Read its language and provenance before deciding where to paste it.
Open in BASIC Editor	A complete reviewed BASIC program in its own **BASIC Example** workspace. This action is offered for BASIC programs, not every listing.
Example source information or **Examples on this page**	The example title, language, author and provenance notes. When a page has several examples, choose the intended title before copying or opening it.

For a concrete fragment, search `MOTD strip buffer` and open **MOTD 1986 04**, **PDF page 4**. **Copy Snippet** supplies Strip's character constants. On **PDF page 12**, the buffer-setup snippet has different instructions and depends on definitions elsewhere in the listing. The provenance notes identify what was transcribed or checked; neither fragment is the whole Strip utility.

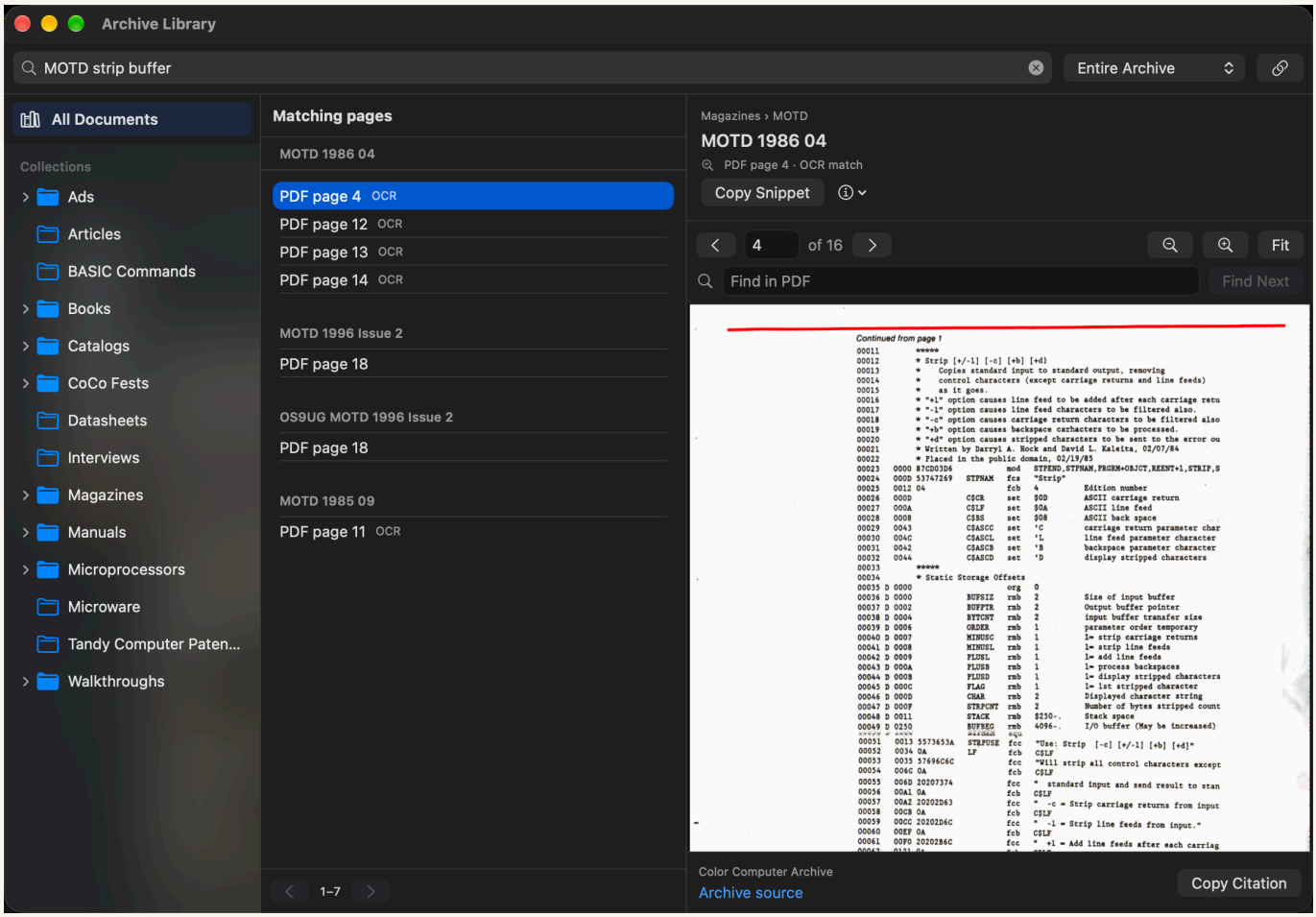


Figure 8: The Strip article opens at the cited physical PDF page. Copy Snippet and Example source information identify the reviewed source associated with that page; Copy Citation keeps the Archive reference.

For complete BASIC programs, the January 2005 *CoCo Nutz!* issue offers **Mini Data Base** and **Pill** on physical PDF page 13. Choose the title under **Examples on this page**, then **Open in BASIC Editor**. Each reviewed source has a separate, recoverable workspace. Reopening the same example can return to your existing edits or recovered draft. Use the editor's **Save** or **Save As...** to keep a named Mac source document.

Opening an example does not overwrite your main BASIC document, load the CoCo or execute the program. Inspect the source and the required environment first. **Load into CoCo** and **Run** are explicit editor actions. They validate the numbered source and retain the usual confirmation before replacing an unrelated guest BASIC program or taking over an assembly session. Save any program and variables you need before confirming replacement. The editor rechecks the source before transfer; if you changed it while deciding, review the current version again.

There are currently no direct **Open in C Editor** or **Open in Assembly Editor** buttons in Archive Library. For C or assembly material, copy the reviewed source or verified text, create or choose the intended document in the corresponding workspace, and paste there. Preserve an existing draft before replacing its contents. Add any required headers, symbols or surrounding project files deliberately; then compile or assemble and test through that workspace. Copying a listing does not configure its build or prove it runs on the selected processor.

A reviewed rendition records a specific review or correction, not a guarantee that every historical program works in every setup. If **Example information could not be read** or **This example is unavailable in this Archive index** appears, use the scan and its citation; do not substitute an unrelated listing just because its name is similar.

Keep the source of what you copied

Copy Citation is separate from copying code. It gives the publication, the current page or section, any ZIP member name and the original Color Computer Archive link. Keep the physical PDF page distinct from a printed page number. After pasting the source into your working document, copy the citation into your notes or an appropriate source comment, and keep the author/provenance from the example information as well. Copy Citation replaces the clipboard's previous contents.

The scan or asset may be delivered from VCC Plus hosting and cached locally. Its citation still identifies the Color Computer Archive as the source. Cached original bytes and a reviewed source rendition have separate identities: editing your example does not change the archived scan, and corrected code should not be described as an unchanged transcription unless its provenance says so.

Let an assistant search the Archive

The Archive window's connection control offers **Save Archive Search Connection…**. This separate, read-only connection permits Archive searches and citation lookup. It does not grant control of the CoCo or a development project, and finding a citation is not proof that the assistant read the scanned page or validated its code. Keep VCC Plus open, and use **Revoke Archive Access** when finished. For project-editing permissions, see Work with an assistant.

App updates and your sharing choice

VCC Plus → Check for Updates… asks the website whether a newer compatible download is available. **Updates & Privacy…** shows the current version and build, offers the same check, and lets you choose whether to check when the app opens. An available update offers a DMG download. Open that image and install the app yourself when your work is safely saved; checking does not replace the app or restart the CoCo. If the website cannot be reached, keep using the app and try again later.

The first check asks whether you will share basic platform information to help understand the types of Macs people use. **Share** includes macOS major/minor version, Apple Silicon or Intel processor family, primary language, configured region and a random installation ID. **Don't Share** leaves those optional details out. Either choice is remembered across app updates, and checks and downloads work either way. Your configured region is a preference, not a measurement of your physical location. The app does not send your documents, disks, assistant conversations, account name or hardware identifiers.

Change **Share basic platform information** in Updates & Privacy at any time. **Reset Installation ID** starts a new statistical identity; it does not erase earlier server history. The update service records checks and download-button selections in a private history. Website hosting and security logs are separate from optional app statistics.

Privacy Information opens the website's full description. DriveWire has equivalent commands and remembers its own sharing choice and installation ID independently.

Who has the keyboard?

Chapter 2 of 10

BASIC is asking for a flight number. You can see the question behind the source editor. If you press 4 now, will it answer the question or change the program you wrote? On a Mac, the place that receives your next keystroke has *keyboard focus*. You can move it deliberately.

Give the CoCo your next keystroke

Click inside the live CoCo picture, or choose **Input → Focus CoCo Display** (Option-Command-K). This brings the emulator forward and directs typing to the guest computer. On the toolbar, **Pause** means the CoCo is running. If the button reads **Run** and the status reads **Paused**, click Run before answering a guest prompt.

To operate the Mac controls, choose **Input → Focus Mac Controls** (Option-Command-U). The **Profiles** button receives focus. Press Space to open it, or use Tab and Shift-Tab to move between controls. If Tab skips buttons, check **System Settings → Keyboard → Keyboard navigation** on the Mac. Clicking inside a source document gives ordinary editing keys back to that editor.

The difference matters with Escape. In a Mac menu, Escape dismisses the menu. Inside the guest, it sends **Break**, which can interrupt a program. Command shortcuts belong to the Mac even while you're typing into the guest.

Finish an answer after reopening the window

Start in **Disk BASIC**. Save any BASIC program you want to keep. Follow KEYS.bas. In the app it opens in a separate **BASIC Example** window. In a browser, open the downloaded file in **Develop → BASIC Development…**. Choose **Run** in the window containing KEYS. Confirm replacement of the program in CoCo memory if prompted. Watch for the flight-number question.

1. Leave the question waiting and use the Mac's **Window** menu to return to the BASIC window you ran. In that editor you can see the numbered line that asks the question. Go to **Input → Focus Mac Controls**. Press Space to open Profiles, then close its window without loading a setup.
2. Choose **Input → Focus CoCo Display**. Type **4** and leave Return alone. Look for the digit on the question line.
3. Close the emulator window with its red close button. Keep VCC Plus open. Press **Command-1** (**File → Show Emulator**). You should see the digit you left behind.
4. Type **2** and press Return. The complete answer is 42. BASIC prints **FLIGHT 42** and returns to **OK**.



Figure 9: The emulator after reopening. The question contains 42, followed by FLIGHT 42 and OK.

Reopening the window brought back a running program halfway through an answer. A cold restart clears that memory, and quitting ends the session. If you've written something you want tomorrow, save the source or the guest program before quitting.

Match your keyboard to the program

Open **Input → Keyboard and Joysticks…** and find **Keyboard mode**. Changes take effect immediately and are remembered.

On a fresh installation the right joystick uses the sole connected controller, or Mouse if there is no unambiguous controller; the left joystick starts at None. This keeps ordinary typing available. A controller connected later can replace the fresh Mouse fallback until you make your own right-port choice. Existing saved input choices are preserved. See joystick sources to choose another source or port.

Mode	When to try it
Natural	Enter a BASIC listing or a letter. The printable keys follow the characters you type on your Mac layout, including punctuation.
CoCo	Follow a program's illustrated keyboard or a game that reads key positions. VCC Plus uses physical US CoCo positions, so punctuation can differ from the symbol printed on your Mac key.
Compact	Use character-based typing on a small keyboard. Tab sends **Clear** and the unshifted grave accent key sends **Break**.

Return is CoCo **Enter**, Home is **Clear**, and Escape is **Break**. F1 and F2 reach the emulated function keys. Hold Fn or Globe if macOS otherwise uses those keys for hardware controls. **Help → Keyboard & Shortcuts…** lists the modes, key equivalents and Mac shortcuts together. If letters such as Z or X disappear only inside the CoCo, check whether a keyboard joystick has claimed them.

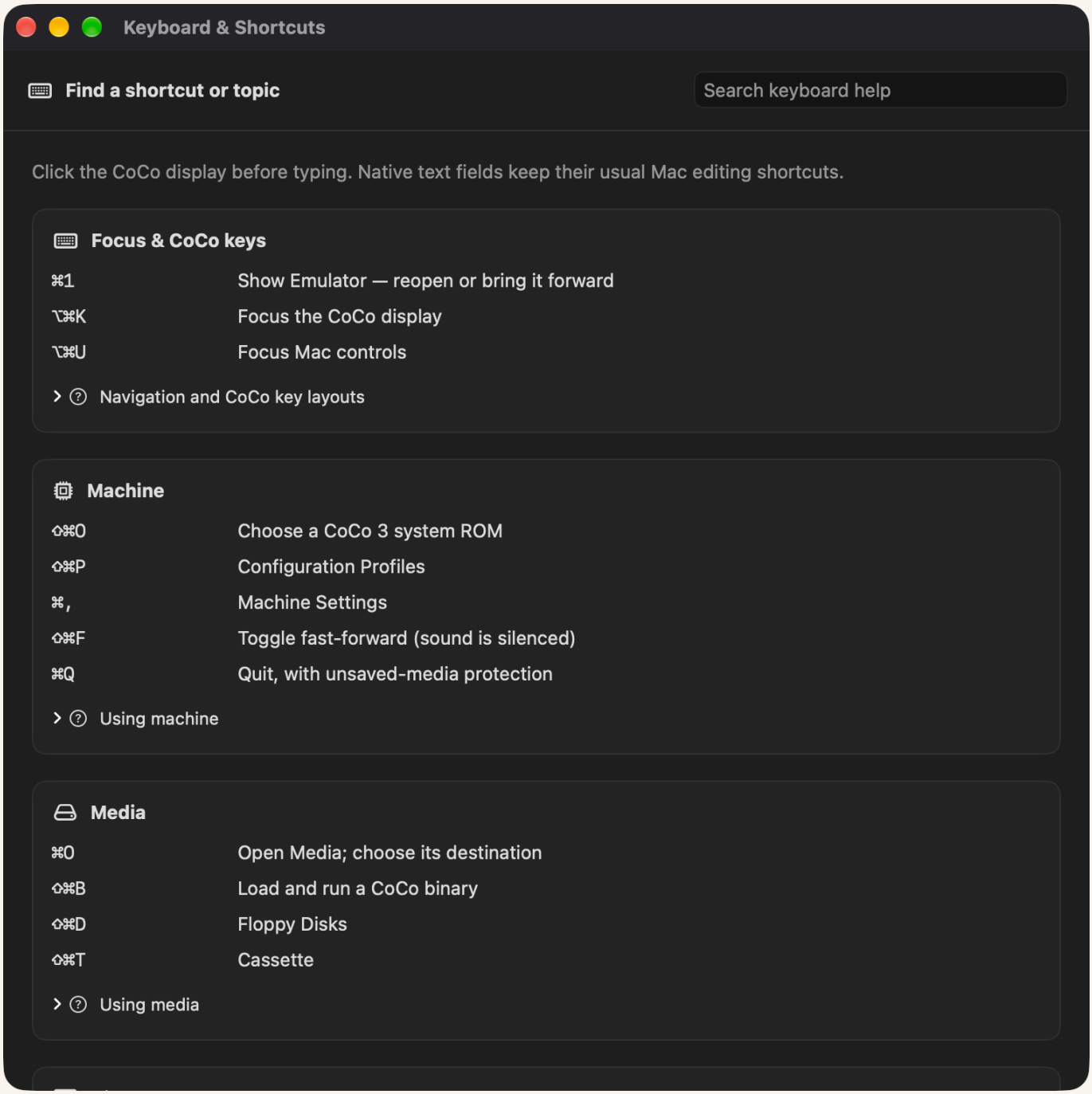


Figure 10: Keyboard and Shortcuts shows Mac focus commands beside the keys the guest receives.

Move text between the two computers

Choose the command for the place the text is going. Ordinary **Copy** and **Paste** in the source editor edit a Mac document. The separate commands under **Edit** communicate with the running CoCo.

What you want	What to choose
Take a guest message back to the Mac	**Copy CoCo Screen Text** (Shift-Command-C) copies the characters from a supported hardware text screen while running or paused. Paste into a Mac text field to read them. For a drawn game screen, save its picture.
Type clipboard text into a guest prompt	**Paste Text into CoCo** (Shift-Command-V) sends keystrokes. A newline in the clipboard sends Return, so check for extra lines before pasting at a command prompt.
Add numbered lines at BASIC's OK prompt	**Paste BASIC — Merge…** enters the numbered lines. Matching numbers replace existing lines. A number by itself deletes that line.
Start a fresh listing at BASIC's OK prompt	Save your old work, then choose **Paste BASIC — Replace…**. Confirmation sends NEW before the numbered lines. Copies previously saved to files survive.

The two BASIC paste commands leave you at the prompt so you can examine the listing before running it. **Edit → Cancel Paste**, pausing the emulator, or typing a CoCo key stops the remaining queued input. Already-entered lines have changed BASIC memory. For a program you want to edit and run repeatedly, keep a Mac source document in **BASIC Development…**.

VoiceOver can read the native menus, controls and media status. The **Devices** list in System view offers named controls alongside the drawing. For guest text, try **Copy CoCo Screen Text**; a game that draws its own lettering supplies pixels rather than hardware text characters.

Read and hear the CoCo

Chapter 3 of 10

Two pilots can run the same game, in the same kind of computer, and see different colors. The game draws a pattern in memory. The video signal decides how that pattern becomes a picture. Then the Mac decides how large to draw it. Here's how to tell which choice you're making.

See what the video signal changes

Choose a signal in **Display** on the Mac menu bar, in **Display → Display Settings…**, or under **Settings → Video Signal** in the main window. In System view the strip of bezel just below the monitor picture also opens the signal choices. Write down the current choice before trying another. A profile or a Software Library setup can select a signal when it starts a title.

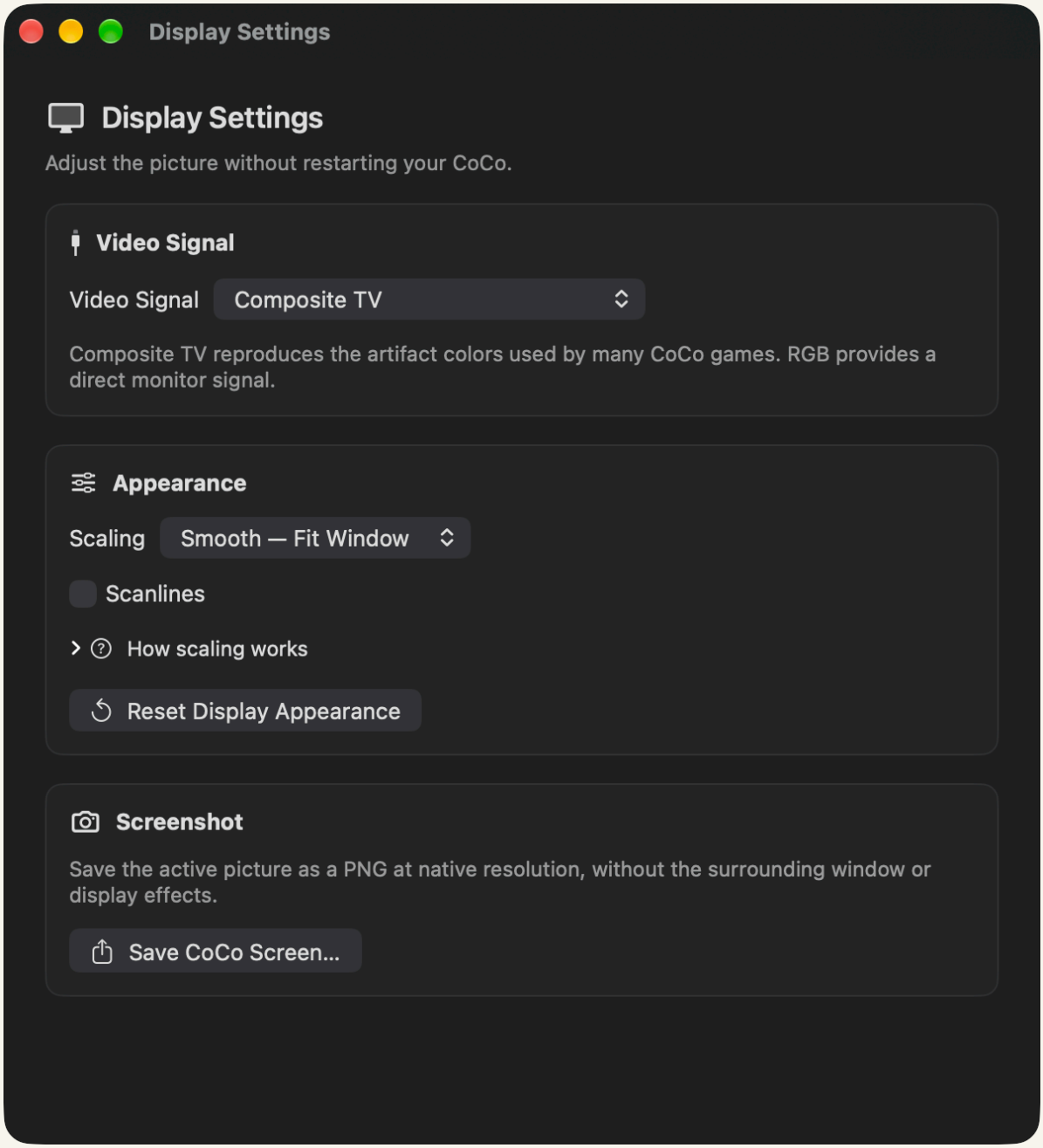


Figure 11: Display Settings brings the video signal and the Mac's display controls into one window.

RGB Monitor carries separate red, green and blue signals, as a CoCo 3 RGB monitor did. **Composite TV** recreates a TV picture in which very fine alternating bright and dark marks can appear colored. This is called *artifact color*. Some games drew their scenery with those patterns specifically to get colors from a TV. **Composite TV – Alternate Colors** reverses the artifact-color phase. Try it if you remember a familiar game's blue and orange the other way around.

Start in **Disk BASIC**, with your previous program saved. Follow LANDPAD.bas to open the game in a separate BASIC example window. If reading in a browser, open the downloaded listing in **Develop → BASIC Development...**. Choose the editor's **Run** and confirm replacement of the guest program if prompted. Your mission is to land under the beacon.

1. Choose **Display → Conventional Display**, then **Display → Composite TV**. Choose **Input → Focus CoCo Display** and press Space. Wait until two pads and a cross have finished drawing. Leave the landing keys, L and R, alone.

2. The left pad looks orange and the right one blue. Click **Pause** in the emulator. Choose **Display → Save CoCo Screen...** and name this picture **Composite.png**.
3. Choose **Display → RGB Monitor**. A paused CoCo still shows its last completed picture. Click the emulator's **Run**, give the CoCo a moment to draw, then **Pause**. The game waits for a landing key, so you can do this without losing your place. Save this picture as **RGB.png**.
4. Compare the pads. Both are made of bright vertical lines with one dark pixel between lines. The lines on the right begin on the opposite beat. On RGB you can see the stripes themselves. The beacon stays over the right pad in both pictures. Open the full-size images if the stripes blend at your reading size.

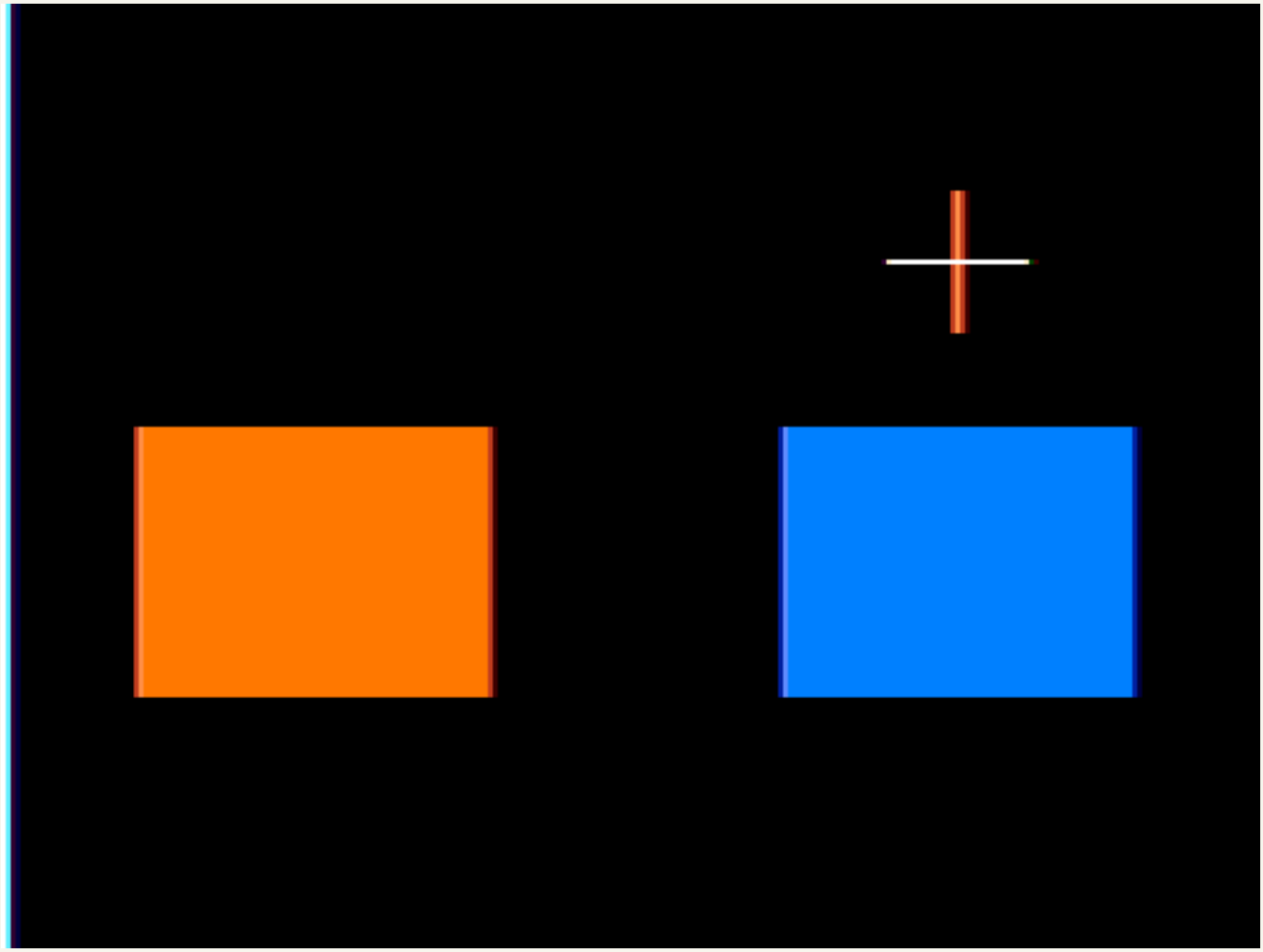


Figure 12: Composite TV. A cross above the blue right-hand pad marks the landing site. The left pad looks orange.

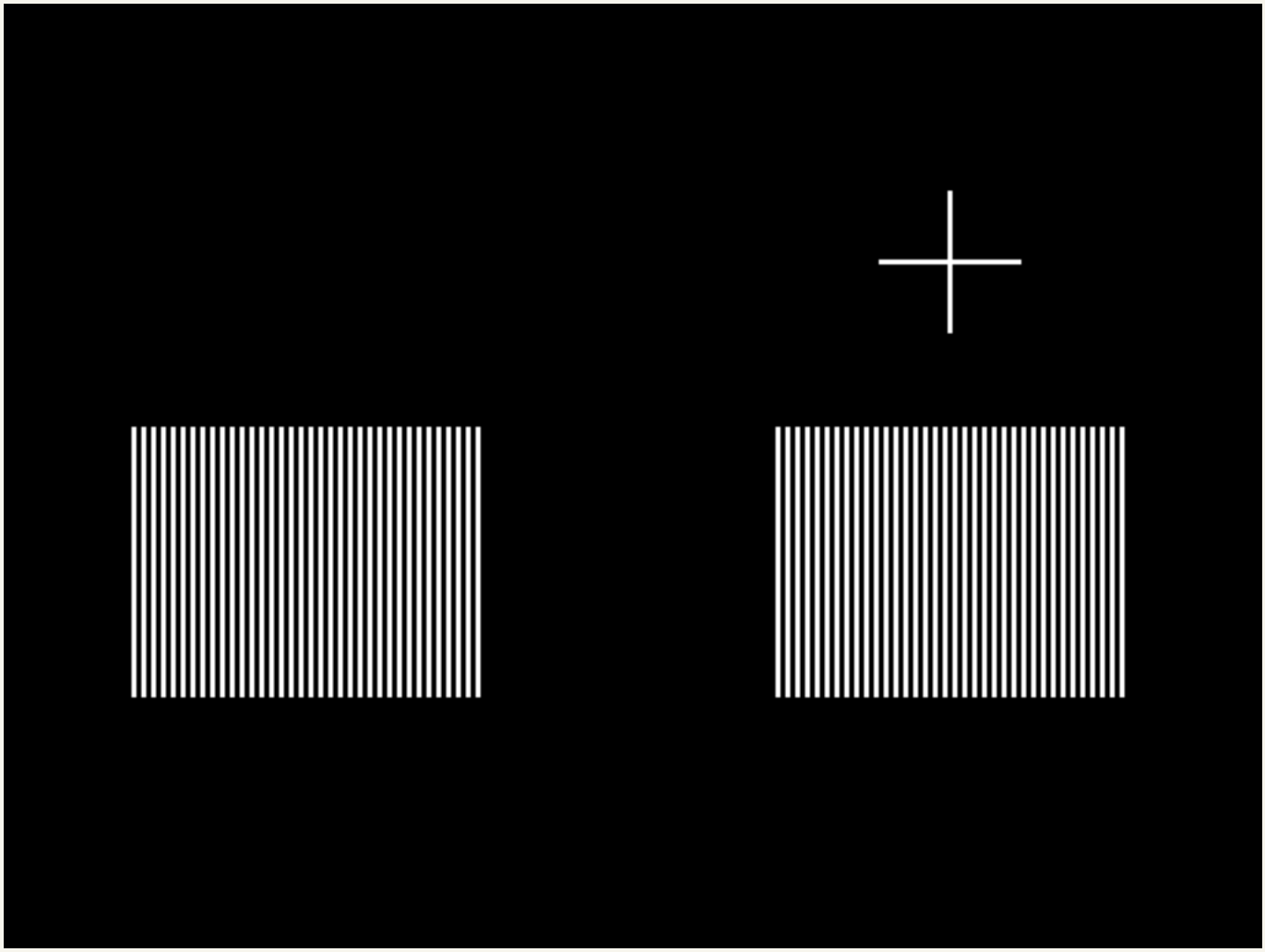


Figure 13: RGB Monitor. The same two pads show alternating bright and dark stripes, with the cross still on the right.

Give the monitor more room

Use **Display → Expand Monitor** in the illustrated System view to bring the live monitor forward in the same window. **Return to System** puts it back. **Conventional Display** gives the picture its own central area. All three presentations show the same machine. Drag a window corner to try a wider or taller shape. VCC Plus fits the picture while preserving its proportions; the extra space can land beside or above the picture.

Display → Display Settings... has three **Scaling** choices. Try them while the landing game is paused on RGB.

Choice	Look for
Smooth – Fit Window	The picture grows to fit. Softened pixel edges can make text and diagonal lines gentler at an in-between size.
Sharp – Fit Window	The same fit, with crisp pixel edges. Use this to inspect a game sprite or a tiny pattern.
Integer Pixels	Each source pixel gets a whole-number enlargement when there is room. A larger surround can appear because the next whole step would be too big. If even the original size cannot fit, the picture scales down proportionally.

Turn **Scanlines** on to add a horizontal line effect. It fades at small sizes to keep lettering readable. To compare settings precisely, hold the window size steady as you change one control at a time.

Save the CoCo picture or the Mac window

To take a picture, click the **camera icon** in the open header area between the machine nameplate and processor badge. Hover to see **Capture CoCo Screen**. The app saves a PNG directly to **Desktop** by default and shows a saved indicator with **Show in Finder**. You can keep playing rather than answering a Save dialog for every picture.

The shared disclosure beside the camera and video buttons has a **Screenshot Timer**: **None**, **5 Seconds** or **10 Seconds**. Choosing a timer changes the setting; it does not take a picture. Click the camera to use that timer. None captures immediately. A delayed capture shows its remaining seconds and **Cancel**. Keep using the CoCo until the timer finishes; the picture comes from that later moment, accompanied by a brief shutter sound. The timer is remembered for subsequent captures and launches. A guest reset or machine replacement cancels a pending timer, while switching Display/System presentation does not.

Save Screenshots and Videos To offers **Desktop**, **Documents** and **Other Location…**. Both kinds of capture use this one remembered folder. You can also change it in **Capture Settings…**. Filename collisions get a suffix rather than replacing an earlier capture. If saving fails, the captured picture remains available in Capture Settings for **Save Captured Image As…** or an explicit discard.

Display → Save CoCo Screen… remains the deliberate command with a native Save dialog. It freezes the picture at the moment you choose the command; the CoCo continues running while you choose its destination.

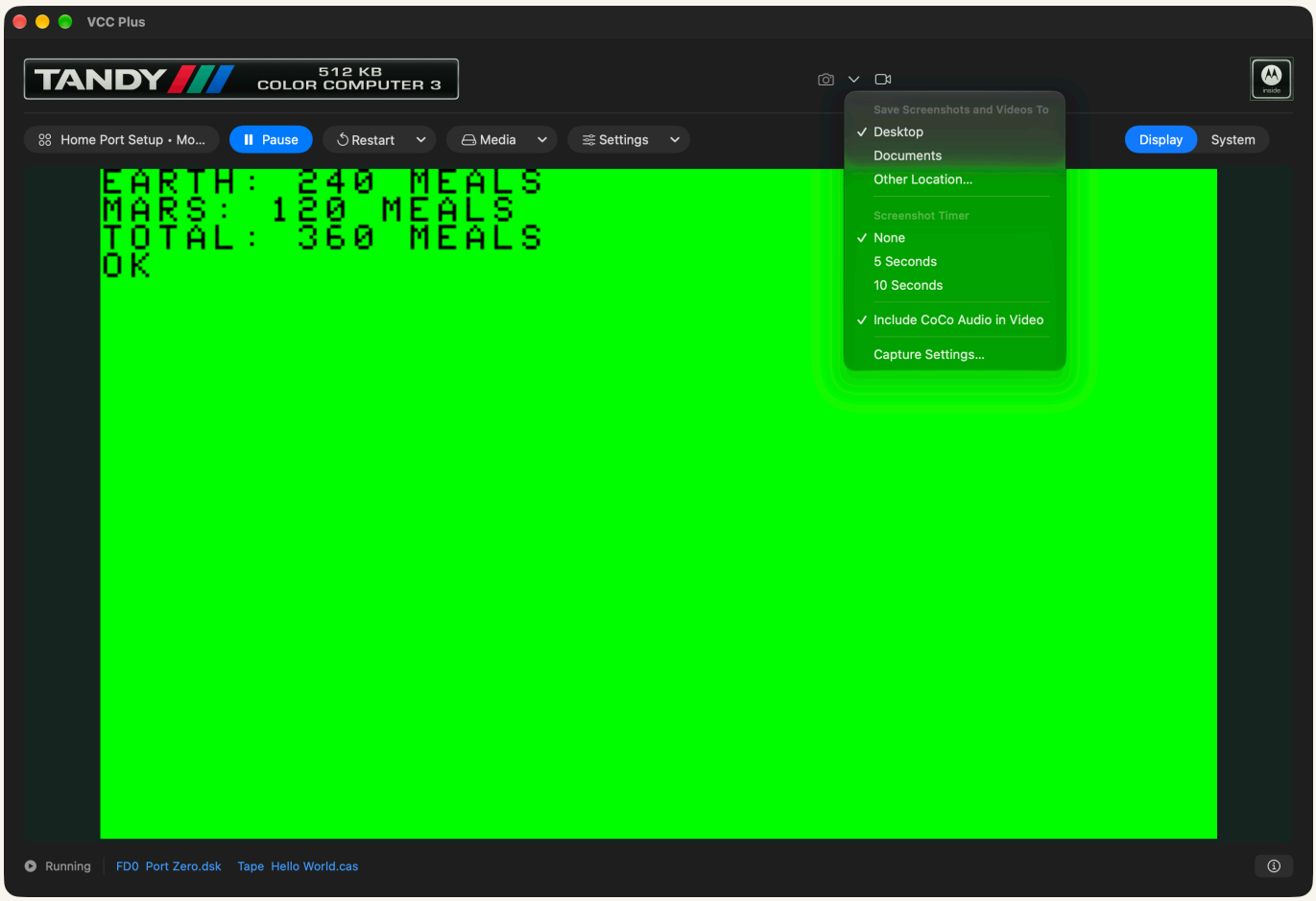


Figure 14: The shared capture options menu selects Desktop, Documents or Other Location for both screenshots and movies. Screenshot Timer offers None, 5 Seconds and 10 Seconds; Include CoCo Audio in Video controls the next movie. The camera and video buttons remain separate actions.

While still paused, change to **Integer Pixels** and choose **Display → Save CoCo Screen…** (Shift-Command-S). Save **RGB-Integer.png**. Open this and RGB.png in Preview at the same zoom. Both files in this exercise are 512

× 384 and their pixels match. Each is the active picture that came from the CoCo. Changing Mac scaling, the size of the window or the scanline effect changes how you see that picture on the Mac.

Both routes save **only the actual CoCo picture**. System artwork, the monitor case, toolbar, pointer and Mac desktop are excluded, even while System view is selected. A PNG retains the active picture's native raster dimensions; it does not bake in Mac window scaling or scanline effects.

To show someone a setting, a drive light, or the border around an integer-scaled picture, take a **Mac window screenshot** instead. Press Shift-Command-4, tap Space, then click the window you want. To share a text message for someone to read or search, try Copy CoCo Screen Text.

Finish the landing. Restore your scaling, choose **Composite TV**, click **Run**, and focus the CoCo display. Press **R**. The game prints **BEACON FOUND!** followed by **OK**. Pressing L instead gives **DARK PAD. TRY THE OTHER ONE!** and returns to BASIC. Restore your previous signal and presentation when you're done. For a closer look at the drawing trick, see Same bytes, different monitor.

Record the CoCo picture and sound

The separate **video icon** beside the camera starts **Record CoCo Video**. It records only the CoCo picture, with optional generated CoCo sound. System view, its hardware artwork, Mac windows, desktop and microphone are never part of the movie. The same controls are available through the Display menu.

A brief tape-start cue confirms that recording has begun. During recording, the icon becomes a red stop indicator and the elapsed time stays visible. Its hover explanation changes to **Stop Recording**. Reduced Motion uses a steady indication rather than the repeating pulse. Click Stop when your demonstration is complete. **Finishing…** means the app is completing the file; wait for the saved result before opening it.

The result is an **MP4** in the same remembered **Save To** folder as screenshots (Desktop by default). It uses H.264 video and stereo AAC sound. The fixed video canvas fits the current CoCo picture without cropping it; changing a guest video mode or resizing the Mac window does not record the surrounding UI. You can take a PNG while a movie is recording.

Include CoCo Audio in Video is on by default. Turn it off in the shared options or Capture Settings for a silent movie; the choice applies when the next recording starts. When it is on, the movie includes CoCo sound **even if local playback is muted or turned down**. The shutter and recording-start cues are Mac feedback only and never appear in saved movies or MCP audio/video captures. Your Mac speaker volume does not set the recorded audio level. A paused guest leaves a held picture and silence in the movie; choose Run to continue the guest. Ordinary soft/cold resets remain in the recording. Use normal emulation speed: fast-forward and recording are separate choices.

Recording keeps working files while the movie is being made and needs temporary space to complete the MP4. If a recording is interrupted or cannot be completed, open **Capture Settings → Retained Recordings**. **Recover MP4** tries to complete the retained movie, and **Show Files** locates its working data. Recovery may contain only completed fragments; do not delete those files while investigating a failure. A successful MP4 completion permits the app to remove its corresponding working file. Closing the app or replacing its machine while recording requires an explicit stop/save decision. Cancelling that decision keeps the current session.

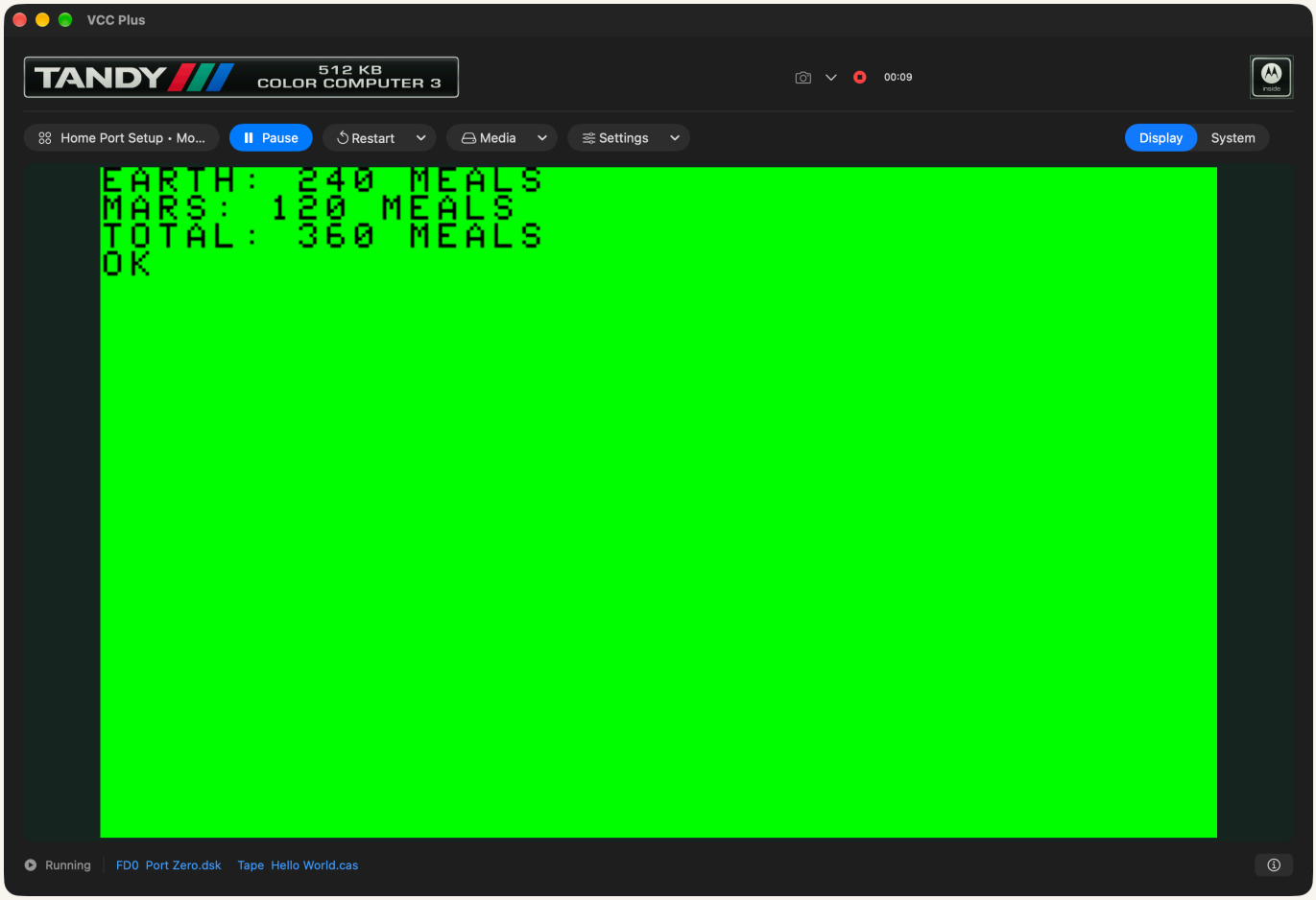


Figure 15: The video control becomes a red Stop button while a movie is recording, with the elapsed time beside it. The camera remains available for a still picture. The saved movie contains the CoCo picture rather than this Mac window.

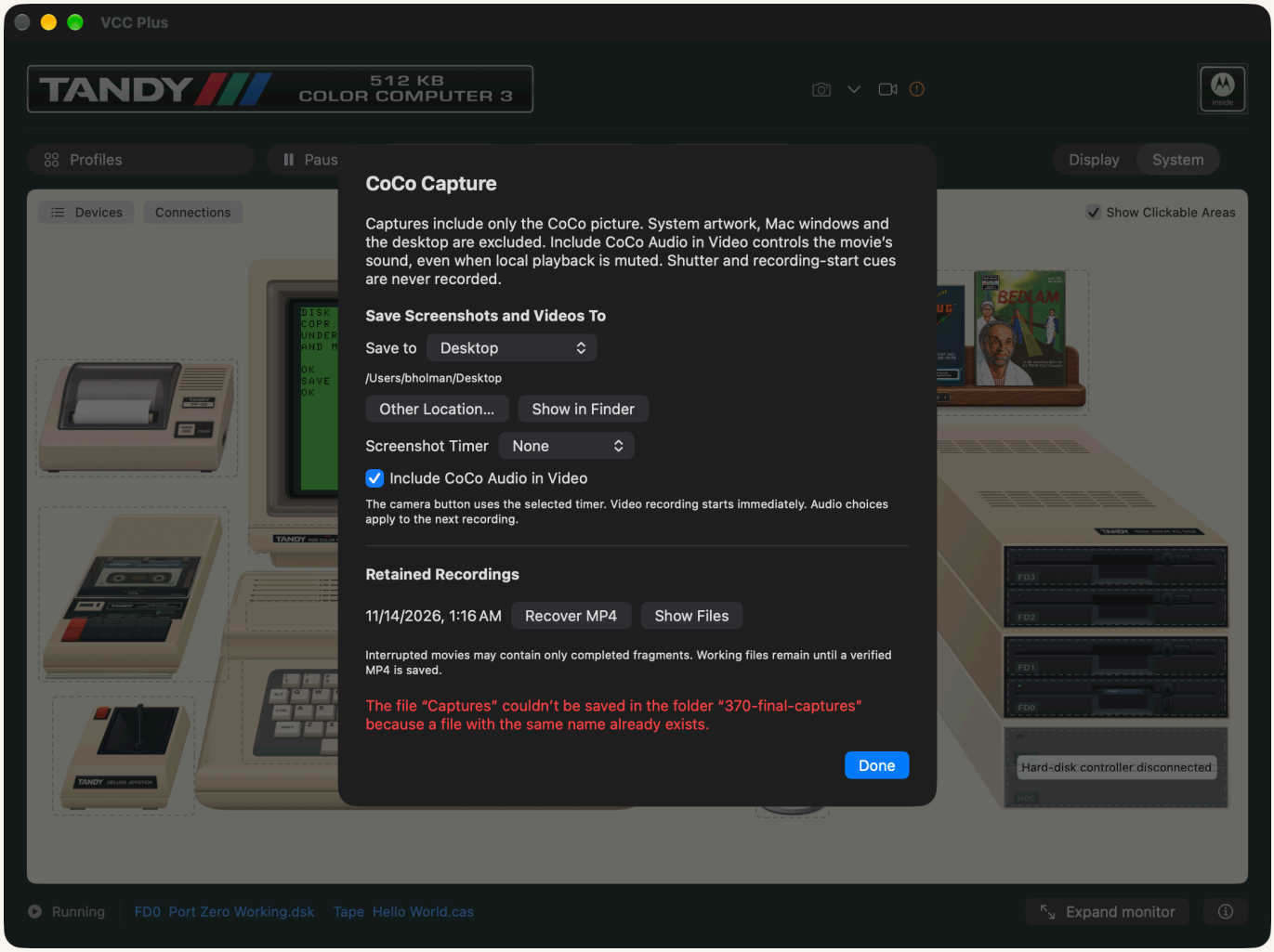


Figure 16: Capture Settings shares the save folder, screenshot timer and video-audio choice. This failed-export example retains the movie and offers Recover MP4 and Show Files; restore storage access before retrying.

Follow a sound from CoCo to Mac

Start with the state shown below the emulator. **Paused** means the machine has stopped executing. **Fast-forward • Sound silenced** means the CoCo is running ahead of real time with playback suppressed; tape and disk operations can still progress. Use **Machine → Fast-forward** to return to normal speed.

Open **Media → Cassette...** and look for **App sound**. Despite its home in the cassette window, this controls all CoCo playback, including a game or sound cartridge. Turn **Sound** on and raise **Volume**. At zero the label reads **Muted**. A moving game can therefore be silent while the emulator keeps running. Closing the cassette window preserves the tape transport and any recording. Use the tape's **Stop** if you mean to stop the recorder.

For a known example with both visible and audible results, see Give the pilot an arrival sound. The landing score in that exercise plays three notes and the program advances to its log. If you prefer a visual check, follow the landing text and log, and read the Sound switch, volume percentage and run state. Those checks tell you what the program and app are doing. To check the actual speaker path, listen to a known sound and check the Mac's selected sound output and system volume.

Connect a controller

Chapter 4 of 10

A game can wait at its opening screen even while you are moving a perfectly good joystick. There are two places to look. First, does VCC Plus see movement from your Mac device? Second, is that movement reaching the CoCo port the game reads? You can check both without guessing or restarting the game.

Choose the port the game reads

Open **Input → Keyboard and Joysticks…**. In System view you can also click the illustrated joystick, or choose it from **Devices**. The input window shows **Left CoCo joystick** above **Right CoCo joystick**. These are the two sockets on the emulated computer. A controller's own left and right thumbsticks are parts of a single device. Look for a port in the game's instructions, readme or manual. Choose the input source beside *that port*. **None** leaves it centered with buttons released. **Keyboard**, **Mouse** and **Controller** give you three ways to send movement into the socket. Changes apply immediately and are remembered. Note any previous assignment so you can put it back.

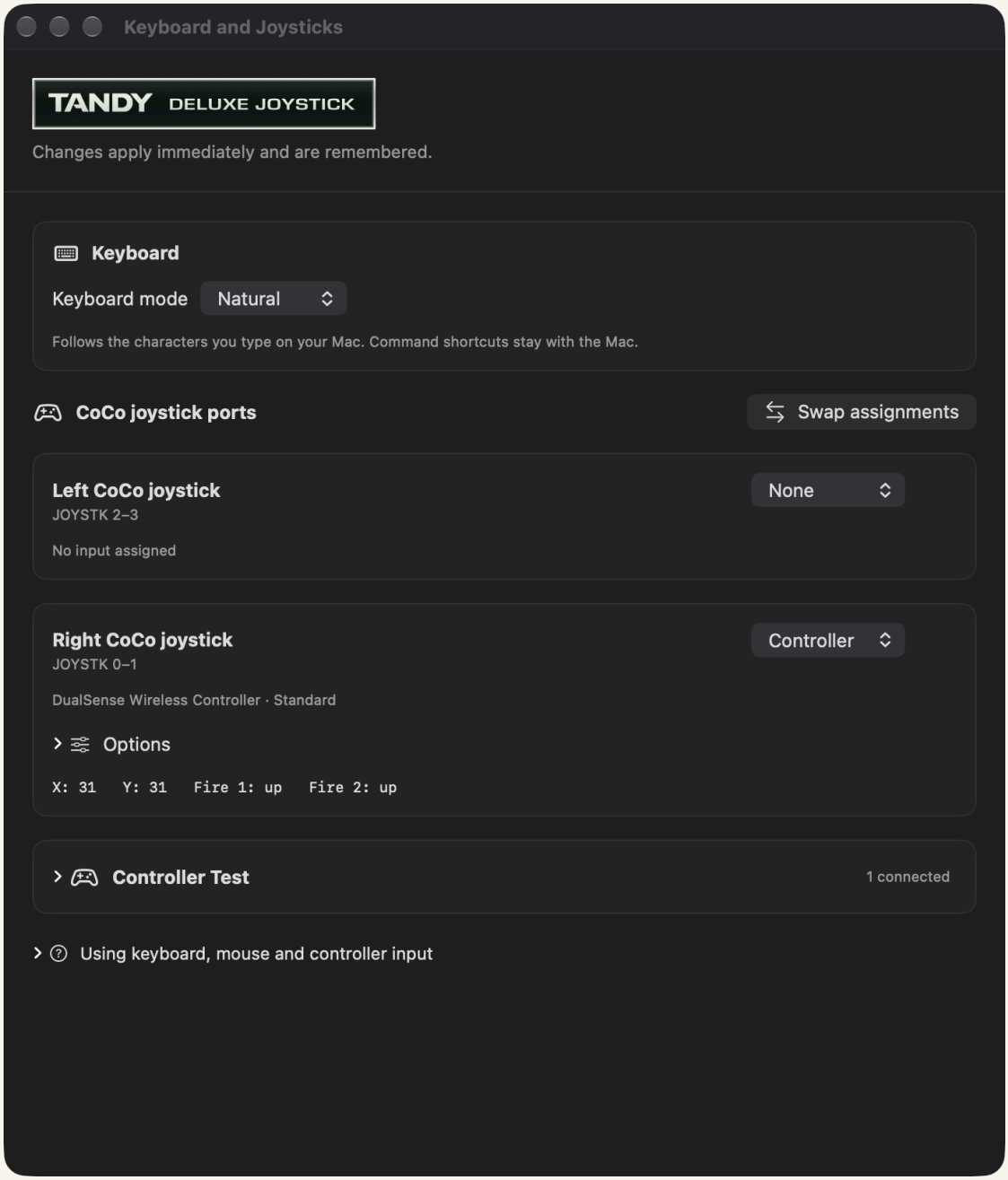


Figure 17: Keyboard and Joysticks shows separate CoCo ports. With fresh settings and one connected DualSense controller, Right selects that controller and Left remains None.

If you don't know which port a game reads, try one, then use **Swap assignments** to exchange the complete left and right setups, including their button choices. Click the live CoCo display before testing the game. Some games accept a keyboard command on the title screen and use the joystick only during play.

Follow a thumbstick and a fire button

1. Connect your USB controller or pair it in the Mac's Bluetooth settings. For a Logitech F310 on USB, set its underside switch to **D** and reconnect it. Open **Controller Test** in the input window. The connected device name should appear.

2. Move a stick and let it return to center. The *Left* and *Right* readings in Controller Test are the controller's two sticks. Watch one pair change and settle near zero. Press the physical button you want for firing; note which number appears under **Buttons**. This preview works before you assign the device to a CoCo port.
3. In the chosen CoCo port card select **Controller**. Expand **Options** and pick the device by name. The left stick is the usual starting point; choose **Use right stick** if you prefer. Set **Fire 1** to the number you just saw. If the software supports a second button, repeat for **Fire 2**.
4. Look at the *port card's* X, Y and Fire readings. Display focus may be needed for delivery to the guest. Centered values are around **31**. Moving left then right should take X toward **0** and **63**; Fire 1 goes from **up** to **down** while held. This check follows the movement all the way to the configured port. Some games use only one fire button.
5. If a resting stick jitters around the center, increase **Dead zone** a little. This ignores a small area around center. Too large a dead zone means you must push farther before movement begins. Test a small change, release the stick, and bring focus back to the game.

If the controller disappears, the assigned row can say **Remembered controller — disconnected**. The guest receives a centered stick with released buttons. Reconnect the device and check the readings again. A second device won't silently take over the missing one.

Play with a keyboard or mouse

With **Keyboard** chosen for a port, expand **Options** → **Keys**. The app offers the following layouts. The final two keys are Fire 1 and Fire 2, respectively.

Layout	Up, down, left, right	Fire buttons
Arrows	Arrow keys in those directions	Z, X
Letter keys	W, S, A, D	F, G
Numeric keypad	Keypad 8, 2, 4, 6	Keypad 0, decimal

Focus the CoCo display. Hold a direction for full deflection; release it to center. Those keys are now serving as a joystick. If typing Z at the BASIC prompt seems to do nothing, check *both* port assignments before changing the keyboard mode. Select **None** or a different source for the port to give its keys back to ordinary guest typing. If mapping both ports to the keyboard, choose different groups of keys.

With **Mouse** chosen for a port, click the CoCo picture and move over its area. The pointer's position sets the axes. Left is low X and the bottom is high Y. A left click is Fire 1 and a right click is Fire 2. Leaving the display centers the input and releases the buttons. The pointer still operates the Mac controls when you move back to them.

For a game-independent check, Point the right-port scanner uses the tested RADAR example. Hold left, center or right and tap A. The CoCo reports **WEST SIGNAL**, **CENTER SIGNAL** or **EAST SIGNAL**. Use the arrow-key layout for this exercise so A stays available to the program. To see left and right readings side by side, use Find the joystick port a game reads.

Match the guest's CoCo interface

Options → **CoCo interface** tells the emulated software which joystick interface to read. Start with **Standard** for games. **Software high resolution**, **Tandy high resolution** and **CoCoMax** are for programs that expect those ways of measuring input. Choose a special interface when the program's instructions call for it. Pairing a modern gamepad over Bluetooth, by itself, gives you no reason to change this setting.

If the character on screen still stands still, check in order. A blank **Controller Test** suggests a connection problem. A moving device preview but a still port preview points to the selected source, device or stick. A moving port preview with no response in the game points to focus, the chosen port, the game's start command or its expected CoCo interface. Restore the previous source and interface when you finish experimenting.

Keep a setup you like

Chapter 5 of 10

Suppose you lend a friend your CoCo desk. You leave a note saying "512 KB, disk controller in slot 4, practice disk in the first drive." That note is much like a VCC Plus profile. Your friend can put the desk back together. To read your program, they also need the disk you wrote it on.

Pick the machine that knows your disk

Open **Machine → Configuration Profiles...** or choose **Profiles** in the main window. Select a name first. You can read about the hardware, drives and startup instructions while the current machine keeps its place. **Load...** is the separate action that replaces the setup and clears RAM.

System profile	Where it starts	Which file or device answers?
Disk BASIC	Disk Extended Color BASIC	The first floppy is FD0. The recorder holds a separate starter cassette.
Hard Drive BASIC	RGB-DOS at a BASIC prompt	Drive 0 starts on the virtual hard disk in HD0. FD0 is also connected.
CoCo SDC	SDC-DOS at a BASIC prompt	The Mac folder stands in for an SD card. Its startup configuration mounts HELLO.DSK in SDC drive 0.
NitrOS-9 L2 V3.3.0	Boots its operating system from HD0	The system disk supplies /dd. HD1 uses the same working image that Hard Drive BASIC puts in HD0; OS-9 sees its OS-9 partition.

For the actual guest commands, try Which drive zero?. The info button on the emulator brings back instructions for the active setup. In particular, the hard-disk and SDC guides explain names that look surprisingly like ordinary floppy numbers.

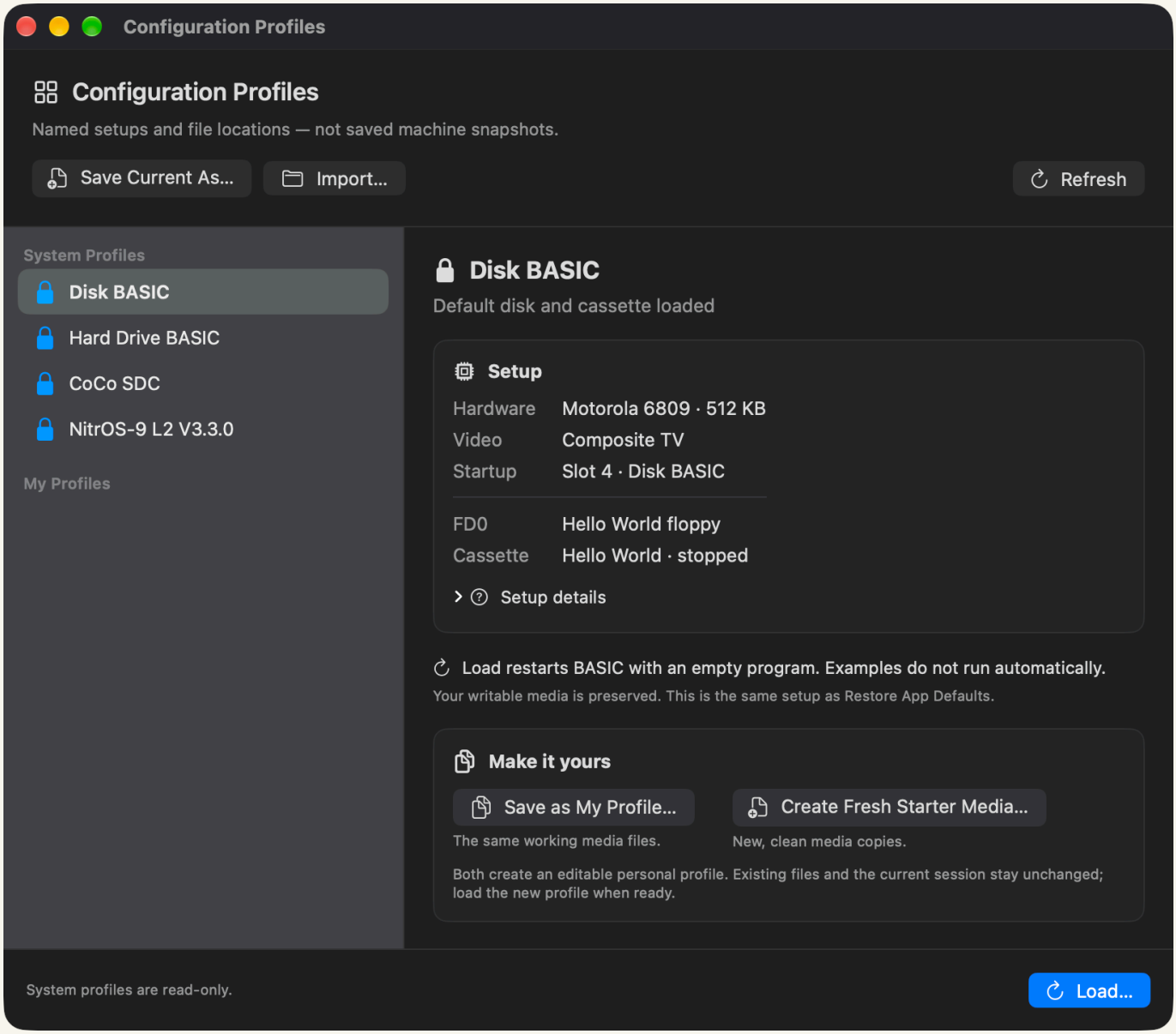


Figure 18: Select a system profile to read its hardware and media assignments before choosing Load.

Make a personal setup

Use **Save Current As...** to give the equipment on your desk a name. It appears under **My Profiles**. A personal profile remembers the processor and memory, performance settings, video output and sound, keyboard and joystick configuration, cartridge arrangement and the files assigned to devices.

If you want to start from one of the four locked system profiles instead, select it and choose how to make your personal copy:

- **Save as My Profile...** uses the same working media files as that system profile. A guest save on a shared disk can be seen the next time either profile mounts that disk.
- **Create Fresh Starter Media...** makes separate clean working copies. Use this for a new experiment if you want to leave your familiar disks in their present condition.

Creating either copy leaves you in your present session. Select the new name and choose **Load...** when you are ready to use it. Loading **Disk BASIC** restores the same standard setup as **Restore App Defaults...**, using your existing writable starter media. Choose fresh starter media when you want a clean starting disk.

Where is my work?

Where you put something	What brings it back
A source document saved in a Mac editor	Open that Mac document. A hardware restart can clear the guest copy while your saved source file stays on the Mac.
A numbered BASIC line entered at the green screen	It lives in the CoCo's RAM. Save it to a disk or tape, or read it into BASIC Development and save the Mac source, before a cold restart or profile load.
A program saved on an automatically saved, writable floppy	Mount the same Mac disk image and load the named file inside BASIC. Other profiles using that image can see later writes.
A temporary disk edit or a new cassette recording	Use **Save As…** for the disk or **Export Tape…** for the recording before leaving the setup. Look at the device's status for an unsaved change.
A drive assignment saved in a profile	Loading the profile reconnects the assigned file. Its contents come from that file as it exists now.

Try a prediction. Begin in **Disk BASIC**, with **512 KB** on the nameplate, at an empty BASIC prompt. Use a disposable, initialized FD0 with **Saves automatically** and room for a new file called PORTNOTE. If the name already exists, use a fresh practice disk.

1. Click the green screen and enter the first line below. Press Return. Enter the SAVE command and wait for **OK** before entering the remaining two lines.

```
10 PRINT "SAFE ON DISK"
SAVE "PORTNOTE"
20 PRINT "RAM ONLY"
LIST
```

2. Both numbered lines appear. Choose **Machine → Configuration Profiles… → Save Current As…**, enter **Home Port Setup**, then choose **Save**. Close Profiles. How many lines would you expect to get back if you loaded the profile now?
3. Follow Change memory and return to change RAM, load Home Port Setup and open the program you saved. You can also stop here. Until you restart, the working program still has both lines.

For the same distinction in OS-9, recover a log from a saved working image.

Manage the saved entry

Last loaded is a name to orient yourself. If you change equipment afterwards, select the personal profile and use **Actions → Update from Current…** to replace its stored configuration and file assignments. **Rename…** changes the name; **Delete…** removes that entry while keeping your ROMs, media files and current session.

For another Mac, choose **Actions → Export…** and take the resulting .vccprofile file with you. Bring the media files and ROMs you use as well. The exported profile contains local paths and controller identifiers. On the other Mac, choose **Import…**, name the new personal entry, then inspect its file references. Use **Replace** beside a moved file or card folder, or reconnect the original volume and use **Refresh**. Load the corrected profile to apply it. If a controller is unavailable, check its assignment in **Input → Keyboard and Joysticks…**.

Change the machine

Chapter 6 of 10

The emulator is halfway through a game. You want a larger picture, a faster processor or more memory. Which of those changes will take you back to the game's beginning? VCC Plus can change how it draws a running game immediately. It can also act as though you took the CoCo apart and installed different hardware. The wording of the Apply button tells you when you're about to do the latter.

Pause, reset or restart?

Choose	What the CoCo does	When to use it
Pause, then **Run**	Stops and resumes execution at the same point.	Read a fast-moving screen or leave a half-finished game where it is.
Restart → Soft Reset – Retain RAM	Starts the reset sequence while retaining the bytes in RAM. The ROM or running software decides what to do after reset.	Try the equivalent of pressing the CoCo's reset button. Save important work first.
Restart → Cold Restart – Clear RAM…	Clears RAM and starts the selected setup again after confirmation.	Start over on this machine, with its existing media.
Configuration Profiles… → Load…	Restarts with the saved machine and file assignments.	Change to different hardware or return to a setup you saved.

For the supplied NitrOS-9 system disk, see Go through the archive's menu for the extra step after Cold Restart. If the window disappeared, use **File → Show Emulator**. If the display got small, choose the presentation or resize the window. Both actions let the running program carry on.

Change memory and return

Continue the PORTNOTE experiment with two lines in RAM, one line saved to FD0 and a personal profile named **Home Port Setup**. If you're reading this section on its own, save your current BASIC program before trying a hardware change.

1. Open **Machine → Machine Settings…** (Command-comma). Under **Hardware**, select **2 MB** for **Memory**. Compare the pending configuration with the existing **512 KB** nameplate. **Revert** lets you abandon the edit here.
2. Choose **Apply and Restart…** and read the confirmation. Choose **Apply and Restart**, then close Machine Settings. The nameplate shows **2 MB**. If the machine was running, it runs again; if it was paused, choose **Run**. When BASIC is ready, enter `LIST`. Both numbered lines have gone.
3. Open **Machine → Configuration Profiles…**. Select **Home Port Setup** under **My Profiles**, choose **Load…**, then **Load Profile**. The restored machine is paused and the nameplate reads **512 KB**. In **Media → Floppy Disks…**, check that FD0 shows your practice filename and **Saves automatically**.
4. Choose **Run**. At the BASIC prompt, try `LIST`. The program area is empty. Now enter `LOAD "PORTNOTE"` and wait for **OK**. Enter `LIST`, then `RUN`, pressing Return after each. Only line 10 appears and the message **SAFE ON DISK** prints.

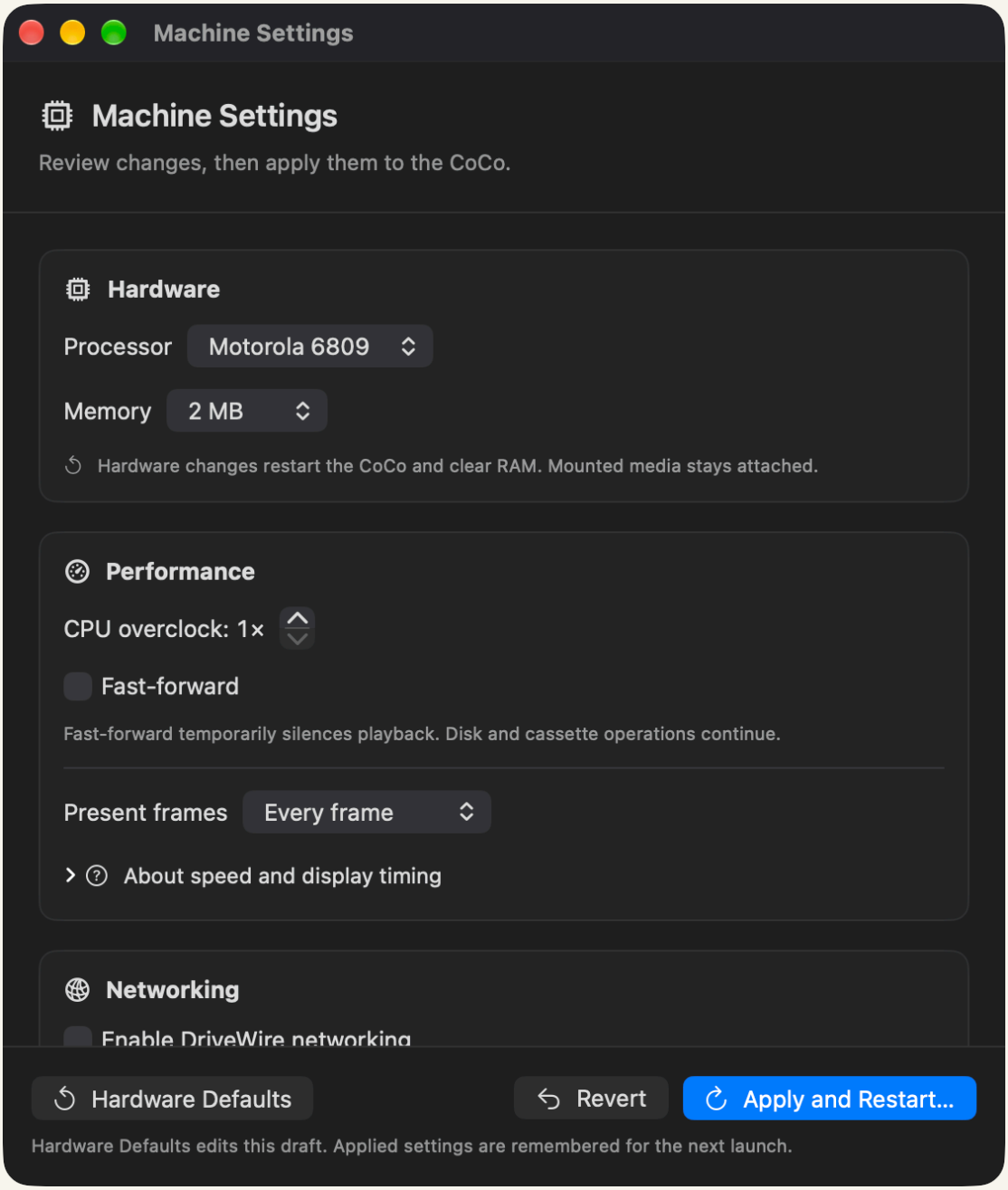


Figure 19: The Memory picker shows 2 MB. Apply and Restart is ready; the change is still a draft.

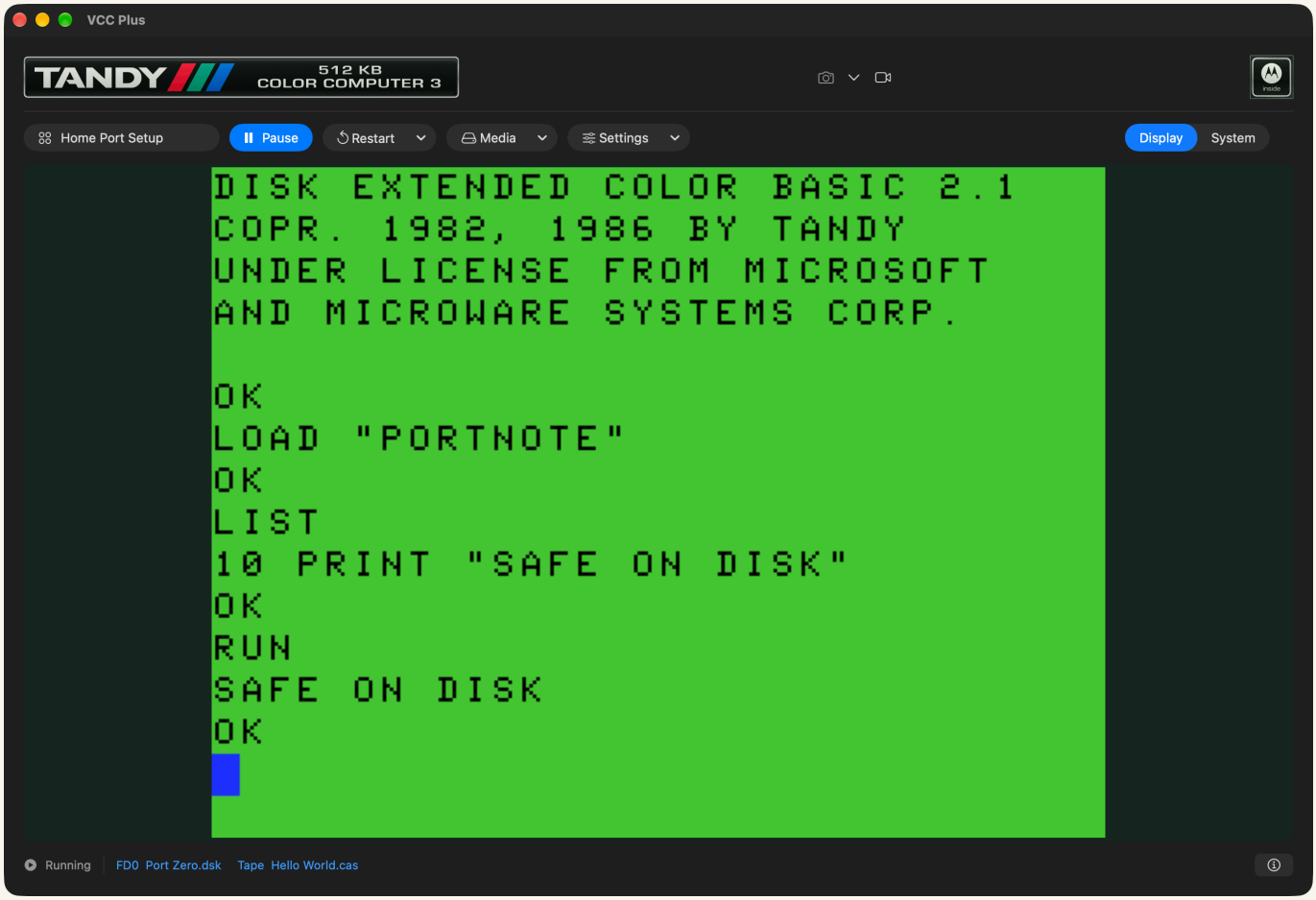


Figure 20: The 512 KB nameplate is back. After loading PORTNOTE from FD0, LIST shows a single line and RUN prints SAFE ON DISK.

You can now account for both lines. Line 10 went onto a disk before you changed the machine. Line 20 was typed after the save. The profile brought the right disk back to FD0. BASIC's LOAD brought the saved line back to RAM.

Choose the processor, memory and ROM

Motorola 6809 is the usual starting point. Choose **Hitachi 6309** when software calls for its additional instructions. The memory choices are **128 KB**, **512 KB**, **2 MB** and **8 MB**. Follow the title's requirements. For example, the Double Dragon Arcade Port on CoCo SDC calls for 2 MB. Extra RAM alone cannot make software written for the wrong processor run. Both processor and memory changes require a cold restart on a loaded machine.

A **ROM** holds code the CoCo can read at startup. **Settings → Open System ROM...** in the emulator toolbar chooses a 32 KiB CoCo 3 system ROM. The **Disk ROM** in the floppy controller is separate: it supplies disk commands. It takes an 8 or 16 KiB disk ROM. To return just one of those choices to the installed version, use **Restore Bundled System ROM...** or **Restore Bundled Disk ROM...** under Settings. Save guest work before changing ROMs.

Hardware Defaults prepares the usual 6809/512 KB draft. **Revert** puts the current applied settings back into the form. **Apply** remembers the settings for the next launch. To put the *complete* bundled Disk BASIC setup back, including its starter media assignments, use **Recovery → Restore App Defaults...**. **Settings → Run Diagnostic** starts a diagnostic preview. Return to your saved profile or to Disk BASIC when you want its normal startup screen again.

Speed, frames and sound

Performance has three controls. Change one at a time so you can tell what made a difference.

Control	What to expect
CPU overclock	**1×** is normal. Up to **16×** speeds the CPU when the CoCo program selects double-speed mode. Device and video timing keep their usual pace.
Fast-forward	Runs the whole machine ahead of real time as fast as the Mac permits. Playback is silent while this is on. Disk and cassette operations continue. The Machine menu also offers this switch.
Present frames	Every frame is the smoothest choice. Presenting every second through sixth frame reduces how often a picture reaches the Mac display. The CoCo still processes the intervening frames and its sound and devices continue.

Use **Apply** for edits in the Performance form. If a game suddenly becomes silent or races, check **Fast-forward** first. Picture size, sharpness and scanlines belong in **Display → Display Settings...**.

Let OS-9 connect

Enable DriveWire networking lets compatible OS-9 programs open outbound TCP connections through the FD-502's Becker port. The supplied NitrOS-9 setup has the guest drivers ready and defaults to networking on. Your explicit choice in Machine Settings applies across profiles. Turning it off closes active connections immediately.

A connection to the Mac shell gives a guest program the ability to run commands as your Mac user, starting in your home folder. Use it with a guest you trust. From the supplied OS-9 shell, `telnet macshell 2323` requests a session. The prompt on the Mac offers **Deny** or **Allow**. For the recognized NitrOS-9 setup you can also remember permission for programs running with that setup. **Start Mac Shell Session** lets you prepare one guest connection from the Mac. Ordinary internet access and permission to use this shell are separate choices.

Type `exit` at the Mac prompt to return to OS-9. **Stop Mac Shell Session** ends access from the Mac side. Use **Forget Mac Shell Permission** to remove a remembered grant. Read the prompt before typing: a command entered at the Mac shell can change real files on your Mac. See Ask which computer answered for the short host visit and return.

Find something to run

Chapter 7 of 10

Suppose you remember a green cover and a name, **Color File II**. You can look inside its manual before you decide whether to install the program. Or perhaps you have no title in mind and want a game for a CoCo 3. Both searches start at the wooden shelf in System view. **Media → Software Library…** opens the same window from either presentation.

Start with a curated game

The Library opens in **Getting Started**, a guided selection including **Bone Quest**, **Capital Quest** and **Quadrapassel**. Their **VCC Plus-exclusive** badge identifies this collection; they can also run on compatible real CoCo hardware. Their author and project links appear in the title details. Other Library titles retain their Color Computer Archive source credits.

On later visits the Library resumes your last browsing context: category, search, filters, view, selected title/edition and useful list position. It does not replay Play or change the CoCo's current setup. If the remembered view looks narrower than you expected, inspect the visible search and filters before starting over.

- **Bone Quest** teaches anatomy through a 28-structure identification quiz, with multiple choice and typed answers. Its setup uses **512 KB** and RGB video. Like Capital Quest, it appears under both **Education** and **Games**.
- **Capital Quest** quizzes you on all 50 U.S. states and capitals, using multiple choice or typed answers. Its setup uses **512 KB** and RGB video. It appears under both **Education** and **Games**, with Education as its primary category.
- **Quadrapassel** is a falling-block puzzle game. Its setup uses **128 KB** and RGB video. Read its manual for the keyboard, joystick and scoring choices.

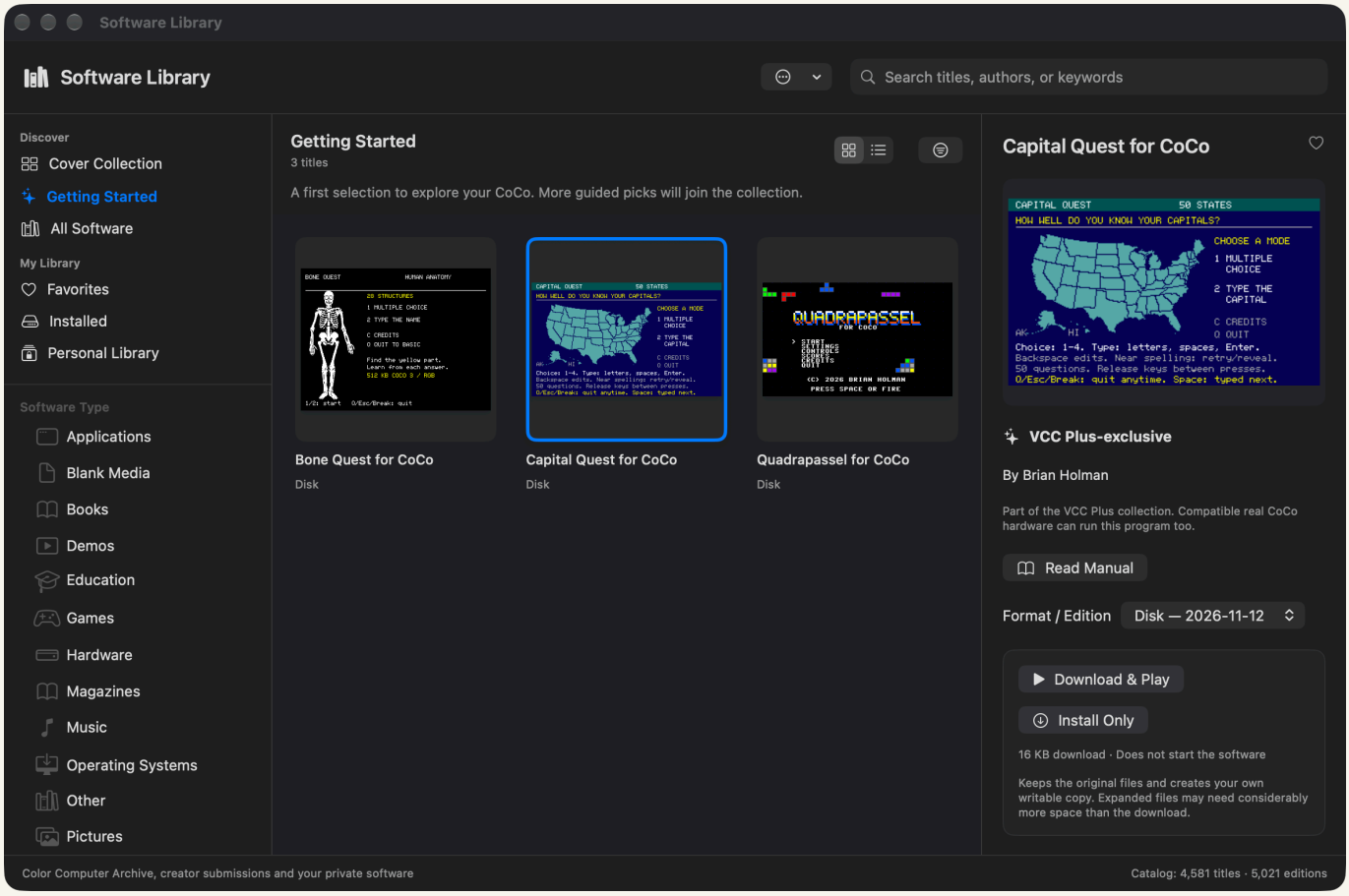


Figure 21: Getting Started shows Bone Quest, Capital Quest and Quadrapassel with their title screens. Capital Quest's details identify its author and VCC Plus collection, with Read Manual and Download & Play available.

Choose **Download & Play**, or **Play** after installation. The Library applies that title's verified setup, performs a **Cold Restart** and types **DOS** automatically. You do not need to choose a generic setup or enter the loading command yourself. Each title's specified requirements take precedence over Library defaults.

Save any guest program you want to keep first. If the current machine contains a program, an unfamiliar running setup or a RAM disk, review **Restart & Play** before continuing. Unsaved temporary media and recordings must be saved or exported before the switch. **Cancel** keeps the current session. Installed working disks retain their saved files; playing again does not replace them with the original download.

Match the game's manual to the disk edition you are playing. Capital Quest's **November 12, 2026 edition** adds **Q**, **Esc** and CoCo **Break** to quit from every screen. In typed mode, **Enter with a blank answer** reveals it as a miss; **V** reveals from spelling help. The edition chooser lets you install the new edition separately while keeping an earlier working disk and its saves. An explicit edition choice remains selected after a catalog update. **Read Manual** uses the selected edition's verified cached PDF; **Online Manual** describes the website's current edition. Opening either manual does not replace your working disk. In VCC Plus, the Mac's **Esc** key sends CoCo Break.

Find a title

1. Search for **Color File II** in the header. Typing opens **Search Results** across catalog and Personal Library titles, authors and keywords, even when you began in Getting Started or a different category. You can then apply filters to those results.
2. Select the title. The center of the window lists matches; the panel on the right describes your selection. Widen the window if you want more room. **Shelf** shows covers face out. **Table** makes it easier to scan names and formats.

3. Choose **Read Manual** if you want to recognize the title by its cover. You can also choose the heart beside the title to find it again under **Favorites**.

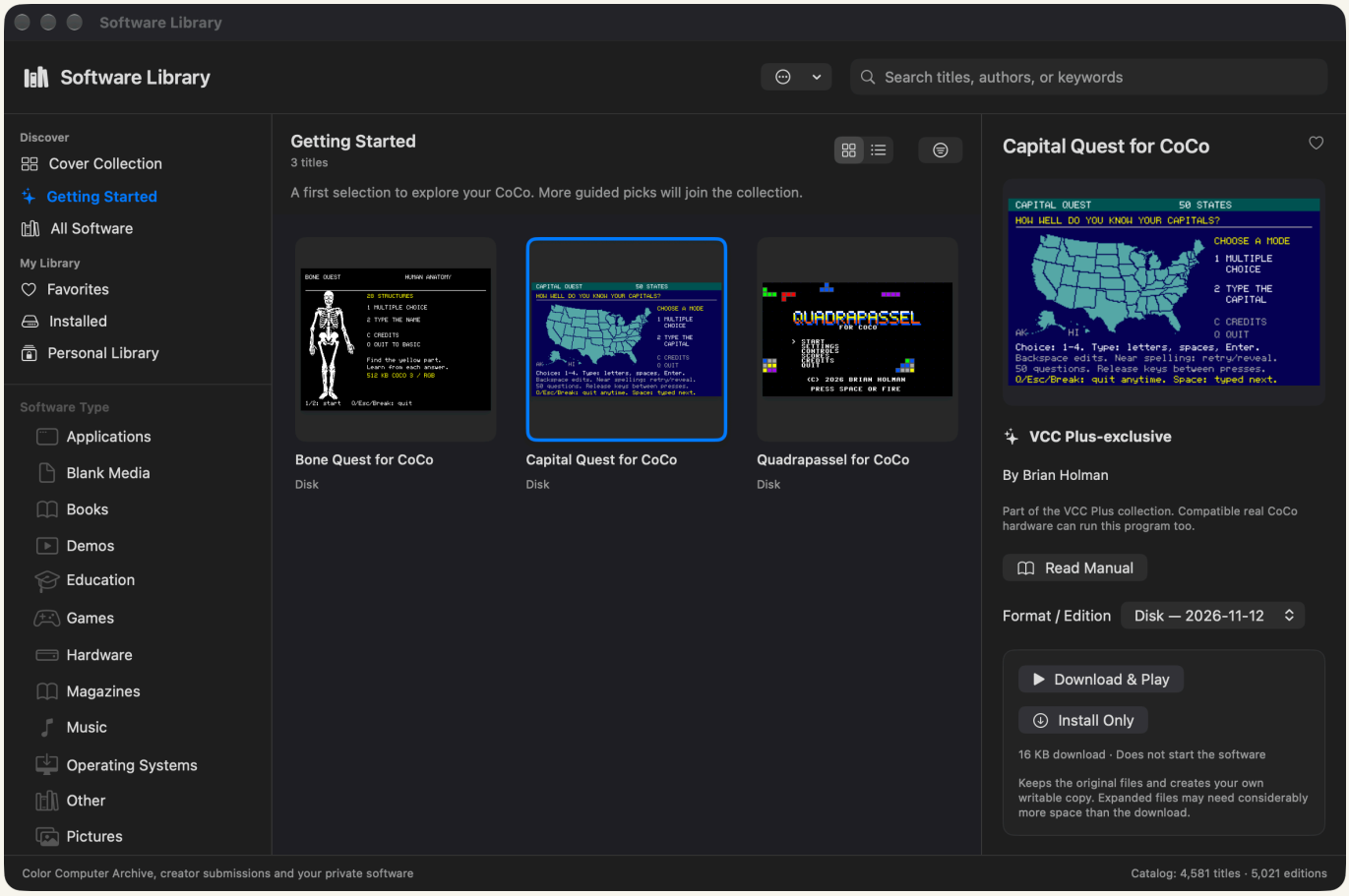


Figure 22: The Software Library has a sidebar for choosing where to browse, a list of matching titles, and details for the selected item.

Cover Collection is the illustrated selection. **Getting Started** offers a smaller place to begin. **Installed** lists editions you have installed on this Mac. To browse by subject, choose a **Software Type** such as Games, Education or Music. A title can belong to more than one category without appearing twice in a category's list. Personal matches appear first alphabetically with a **Personal** badge, followed by curated catalog titles alphabetically and then the other matching catalog titles alphabetically. If you choose modification date or download size as the sort, that choice applies to the remaining titles while the curated group stays alphabetical. To browse the way the Color Computer Archive organizes its collection, expand **Archive Folders**.

If a familiar title disappears, check the search box as well as the sidebar. For example, switching from Games to Education keeps the words you typed. Clear the search to see everything in Education. Typing a new search from a browse category opens the global results and clears that old scope and its filters. Filters you deliberately choose within Search Results remain as you refine the words. Clearing a global search returns to **All Software**. **Browse All Titles** on the empty-results screen clears the search and filters.

Choose a version that fits

Use **Filter and sort** to narrow the titles. **Software Type** answers "What is it for?" **Format** answers "What does it come on?" A game might come on a cartridge, cassette or disk. **System** helps find titles for a particular model. **Environment** distinguishes software intended for systems such as Disk BASIC or OS-9. Use **Setup** when you care how much of the startup the Library can do for you. Sort by title, modification date or download size.

Under **Advanced Filters**, **Processor** can narrow a search to software requiring a Hitachi 6309. **Hardware** and **Use** let you distinguish a requirement from support for an accessory; for instance, a game can offer joystick controls as an option. **Display** includes semigraphics modes. Some catalog entries have little descriptive information, so adding filters can hide a title that would work. When a release carries the **6847T1** badge, that is an Archive note about the video chip. Look in the edition's compatibility information for any VCC Plus checks.

A title can have several editions. Choose the format and edition in its detail panel before reading the setup or pressing Play. Under **Using this software**, look for the recommended machine, loading instructions and any known controls. Read **Compatibility** separately for requirements or limitations. **View on Color Computer Archive** takes you to the collection that preserved the software.

Project-owned titles instead provide **Visit Project**, their own author and license, and a separate **Online Manual**. Those links describe their actual source rather than attributing them to the Archive.

Read a manual before installing

Read Manual opens a PDF. Turn pages with the arrows, enter a page number, open the thumbnails or choose **Fit Page** to bring a whole page back into view. **Find Next** can locate words in a searchable document. On a scan with no searchable text, use the thumbnails to spot the contents page. **Read Instructions** opens a text document, often the readme the author supplied with the download. For the SDC edition of **Double Dragon Arcade Port**, check the controls in the title panel as well as the readme before trying to get past its arcade title screen.

Reopening the same software manual resumes its own saved reading position, including supported PDF zoom or text scroll. A different edition's manual keeps its own position. This does not change the selected working disk or rerun the software.

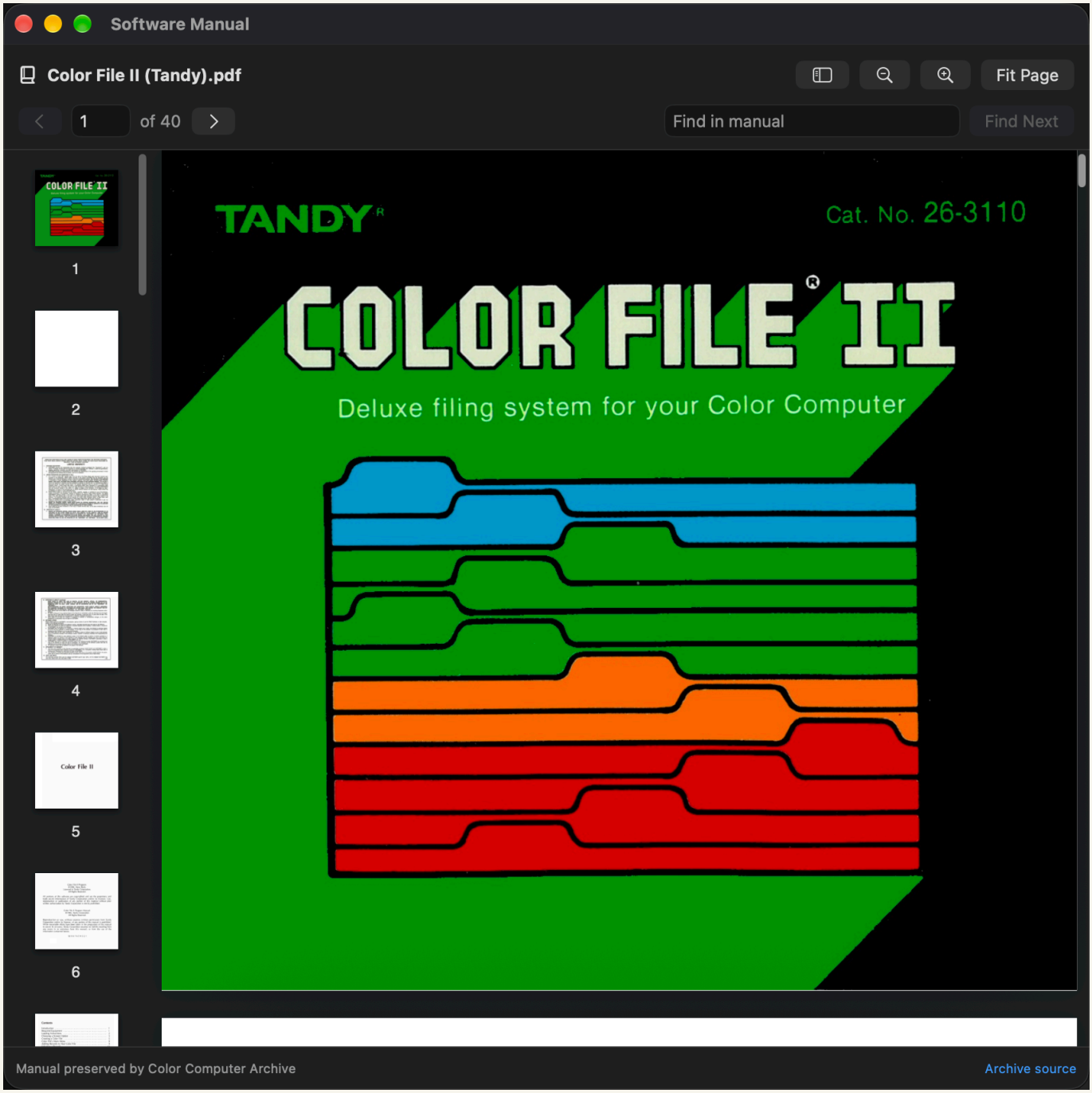


Figure 23: Color File II's original green cover in the Software Manual window. Page thumbnails are open on the left; the page field, search, zoom and Fit Page controls are above it. Cover by Tandy, preserved by the Color Computer Archive.

The catalog on your Mac lets you browse before downloading a program. Covers and software documents are fetched as needed and cached locally. Expect to need a connection the first time you open one. **Help → Manual Library...** has the bundled VCC Plus books for offline reading, including this handbook.
Looking for a magazine review, a tutorial or another edition of a manual? Open **Help → Archive Library...** and search the publication pages for the software title. Find a page in the Color Computer Archive.

Follow a guide or reference

Some titles have **Guides & References** below their manual and setup information. These are reviewed links to supplementary material in the Archive: a walkthrough, map, tutorial or useful reference. For example, Raaka-Tu's

walkthrough is separate from its main manual. A walkthrough or solution can say **Contains spoilers** so you know what you are opening.

Select the document once. Archive Library opens the actual text, image or cited publication page in its existing reader; there is no second Read button. The Software Library keeps its title/edition selection and the CoCo keeps running. A page-specific reference opens that page even if you read farther last time. A document-only reference can resume that document's own remembered position. The original Color Computer Archive credit and citation remain available there.

The links apply to the selected software edition. An entry with no reviewed association has no empty Guides & References section. A missing or changed reference reports that it is unavailable rather than opening an unrelated title. You can still search Archive Library directly for more material.

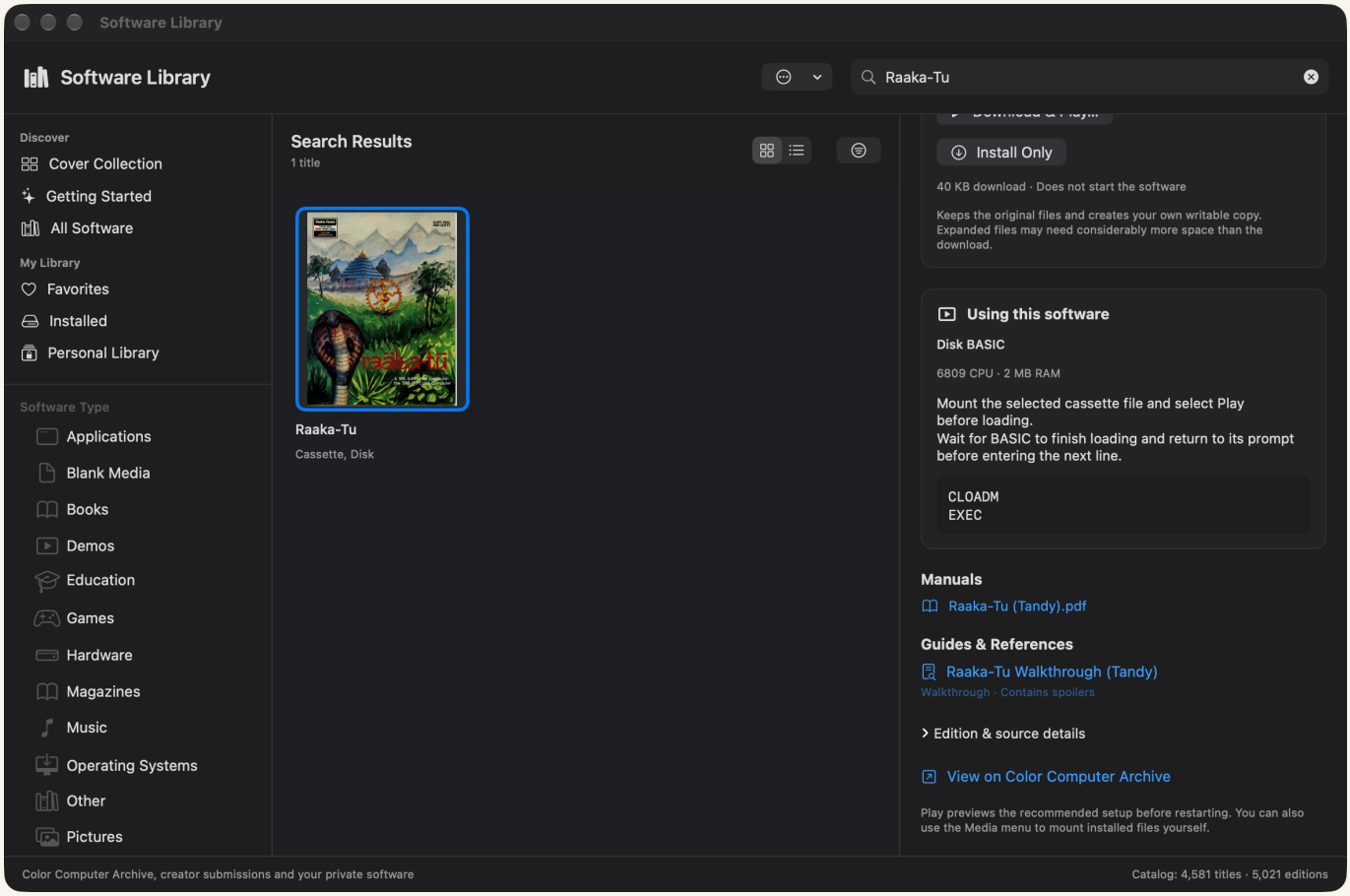


Figure 24: Raaka-Tu lists its main PDF under Manuals and a separate Raaka-Tu Walkthrough under Guides & References. The walkthrough is marked Contains spoilers. The game artwork and supporting documents are preserved by the Color Computer Archive.

Add software you own privately

Select **Personal Library** under My Library and choose **Add Software...** below the heading. This button stays available as your collection grows; an empty library also offers it beside the invitation to add your first software. From any other category, use **Library Actions**, the ellipsis icon beside the search controls, and choose **Add Personal Software...**. Select individual files, one folder or a ZIP, then choose **Review Files**. This creates a private collection on this Mac. It is useful for a purchased program, a personal project or another title you do not want to submit for public distribution.

The CoCo still has an active community of developers who sell their software. Much historical software is generously shared, but availability does not mean every creator has given permission to redistribute their work. Support the developers whose programs you enjoy, buy from their authorized stores, and respect their wishes

about copying and sharing. Personal Library gives you a convenient home for software you have purchased or otherwise obtained with permission, without adding it to the public catalog.

One example is Nickolas (Nick) Marentes, whose store offers both commercial games and freely available titles. The screenshots in this section show Brian Holman's personal copies of Nick's PAC-MAN tribute and PopStar Pilot, with their cover images credited to Nick. Brian bought software from Nick around his visit to CoCoFEST 2015. These examples illustrate organizing a private collection; the games are not included with VCC Plus.

In **Files & Details**, confirm the title and select the members you want to keep. Author/publisher, software version, category and notes are optional. Supporting manuals and images can stay with the software. Unrecognized files are not treated as runnable media, and nested archives are not expanded automatically.

Choose one standard **Category** from the dropdown; it starts at **Other**. The category supplies the fallback illustration and places the entry in the matching browse category. Existing unrecognized categories become Other.

In **Cover Image**, select an imported image, choose **Choose Image…** to browse for a local picture, or drop an image onto the preview. The preview preserves the picture's proportions. Save the entry to keep the change; Cancel leaves its previous image in place. **Remove Cover** restores the category illustration. After import, the detail panel's **Cover Image** menu and image drop area let you replace the cover directly. Pictures are copied into this Mac's private library; the source image, software files and saved games stay unchanged. Your chosen cover also appears in the matching DriveWire library through its local connection.

Launch Setup starts with **Use reviewed launch settings** off. You can leave the entry in Manual Setup, or review its machine setup, processor, RAM, video, media assignments and optional keyboard loading commands. Assign a multi-disk set to the intended FD0–FD3 or HD0–HD1 roles; a cassette or ROM cartridge has its own role. Commands are CoCo keyboard input, not Mac shell commands. Leave a sequence blank when you do not know it rather than guessing. A single imported floppy defaults to FD0. Multi-disk sets need explicit assignments; existing saved drive choices are preserved.

The command editor accepts multiple lines: press Return to start the next line. For a disk BASIC program, enter the loading and running commands separately:

```
LOAD "PROGRAM"
RUN
```

Replace `PROGRAM` with the program's disk filename. Ordinary `LOAD` discards the rest of its command line, so `LOAD "PROGRAM":RUN` is not an automatic startup sequence. Once machine settings and media assignments are reviewed and saved, the entry offers **Play…** even with no keyboard commands. Play opens the configured CoCo with its media ready; supported saved commands are entered automatically, or you can load the program yourself. **Set Up…** remains for entries without reviewed media assignments. An explanation appears in the editor when entered commands need manual entry. Each supported line uses ordinary emulated keyboard input and the normal readiness checks.

Choose **Add to Personal Library**. Import copies the selected files without changing the purchased source folder, starting software or reconfiguring the guest. An identical set offers **Open Existing** or **Add Separate Copy**. The originals, writable working media and supporting assets are retained separately.

Find these entries under **Personal Library** in My Library. They say **Personal Library — Private on This Mac**. **All Software** and the standard categories include both personal and catalog entries. Typing in the top search field opens **Search Results** across both collections, even when you started in Getting Started or Personal Library. Previous category and format filters are cleared when global search begins; filters you choose within results remain visible. Clearing the search returns to All Software.

Matching personal titles appear first, alphabetically, with a lock and **Personal** badge on cards, table rows and details. Mixed shelves group Personal Library above Catalog; the catalog retains its normal curated/category sorting. Same-named personal and catalog editions stay separate. **Personal Library** itself shows only private entries, and Favorites can include either collection. A deliberate **Play** or **Set Up…** still uses the normal replacement and unsaved-media safeguards. For a stored binary, use **Show Files in Finder**, then **File → Load Binary…** to choose it explicitly.

Edit Details... changes the description and reviewed setup without rebuilding working disks or losing saved games. **Show Files in Finder** opens the writable Working folder. Go up one folder in Finder to see the retained entry and its originals/assets; back up the complete entry when you want to preserve it. **Remove from Library...** hides its listing but retains its files and saves, so no disk space is reclaimed. Use Finder for a deliberate permanent deletion only after the media is no longer in use. App and public-catalog updates preserve the private collection. Import does not upload files or submit a title for public distribution. A matching current **DriveWire for VCC Plus** can browse your personal disk entries through the local companion connection. Insert Disk makes a separate writable DriveWire copy, preserving the originals and emulator's working disk. Add, edit and remove personal listings in VCC Plus.

Favorites and selected editions are shared between the two apps. After changing your entries, cover images or choices in VCC Plus, close and reopen DriveWire's Software Library to see the latest collection. Changes to a DriveWire disk stay in its separate copy; they do not overwrite your emulator's working disk. To use those changes in VCC Plus, save that disk copy and explicitly open or import it.

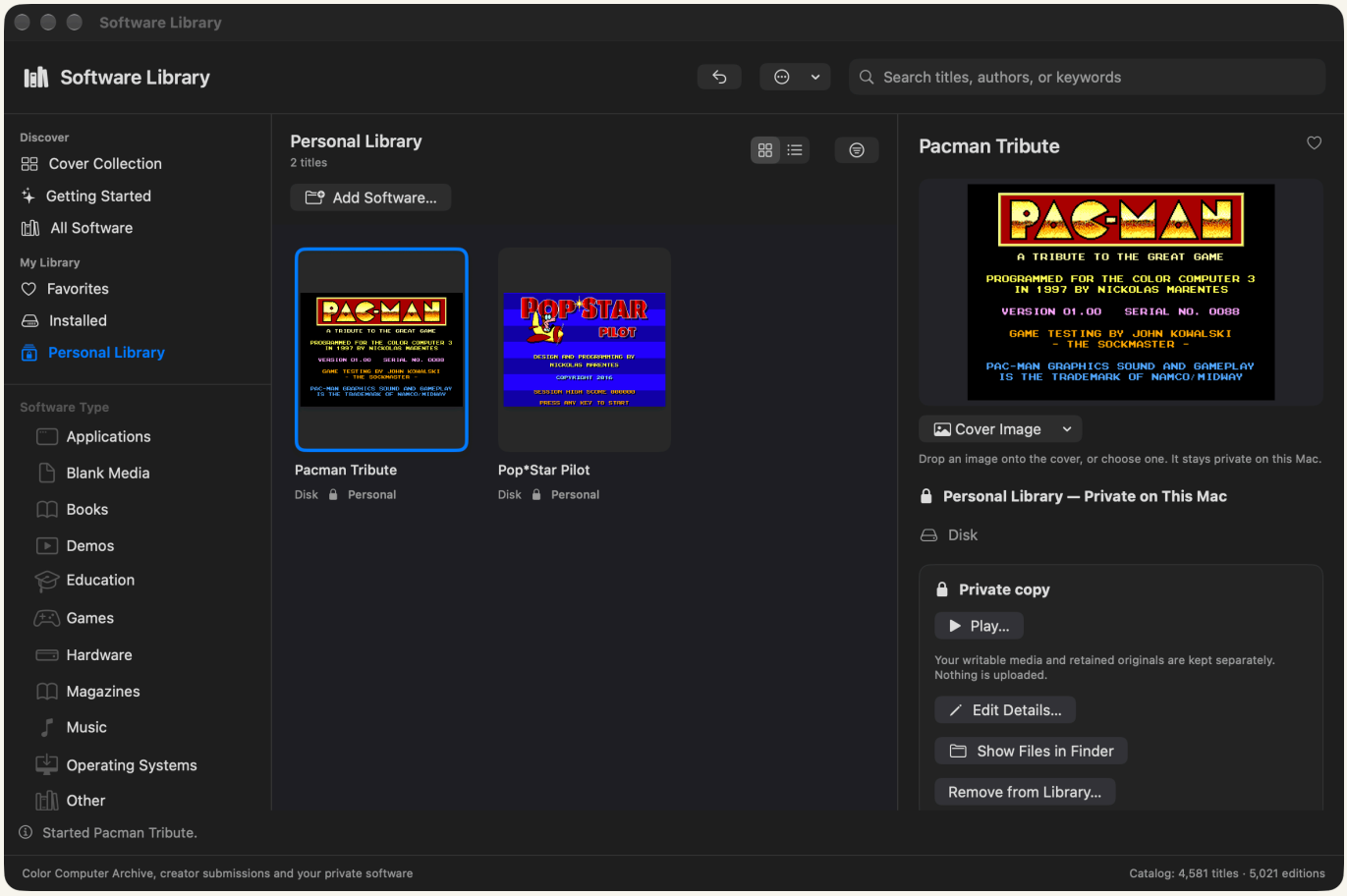


Figure 25: Personal Library keeps Brian's PAC-MAN tribute and PopStar Pilot together with custom cover images, Personal badges and a saved Play setup. Games and cover images by Nickolas Marentes; these personal copies are not bundled with VCC Plus.

Offer software or request its removal

Creators can use **Library Actions → Submit Software...** to open the website's submission form. This is a separate choice from adding a private copy. Provide the title, author, version or historical details, software package or link, contact information and any supporting manuals or artwork. Identify included third-party material and review the permission statement before submitting.

Submission grants the permissions stated in that form to **Dezota LLC, operating VCC Plus**; it does not transfer your copyright or automatically make the program open source. The website returns a reference for the review

queue. Submission, approval and inclusion in a published VCC Plus release are separate steps. Opening the form sends no software or message by itself.

The submission page links to **Request Software Removal or Withdraw a Submission** in the website feedback service. You can identify a direct submission or an Archive-sourced title and provide evidence that you hold the rights or are authorized to act. A verified rights holder can withdraw future VCC Plus distribution even if the software remains on Color Computer Archive. VCC Plus controls its own catalog and downloads, not the Archive's independently operated website. A removal request does not remotely erase users' existing copies.

For an ordinary bug report or suggestion, use **Help → Feedback...** instead. It opens the website with VCC Plus preselected, lets you review the information and submits only when you choose to send it.

Open a personal source project

Bone Quest, Capital Quest and Quadrapassel offer **Open Source...** under **Learn from the source**. Choose a new folder on your Mac. The Library downloads and verifies the published starter, prepares a writable personal copy, and opens its known project in **C Development**. A starter can specify a build configuration; Quadrapassel opens in **Release**.

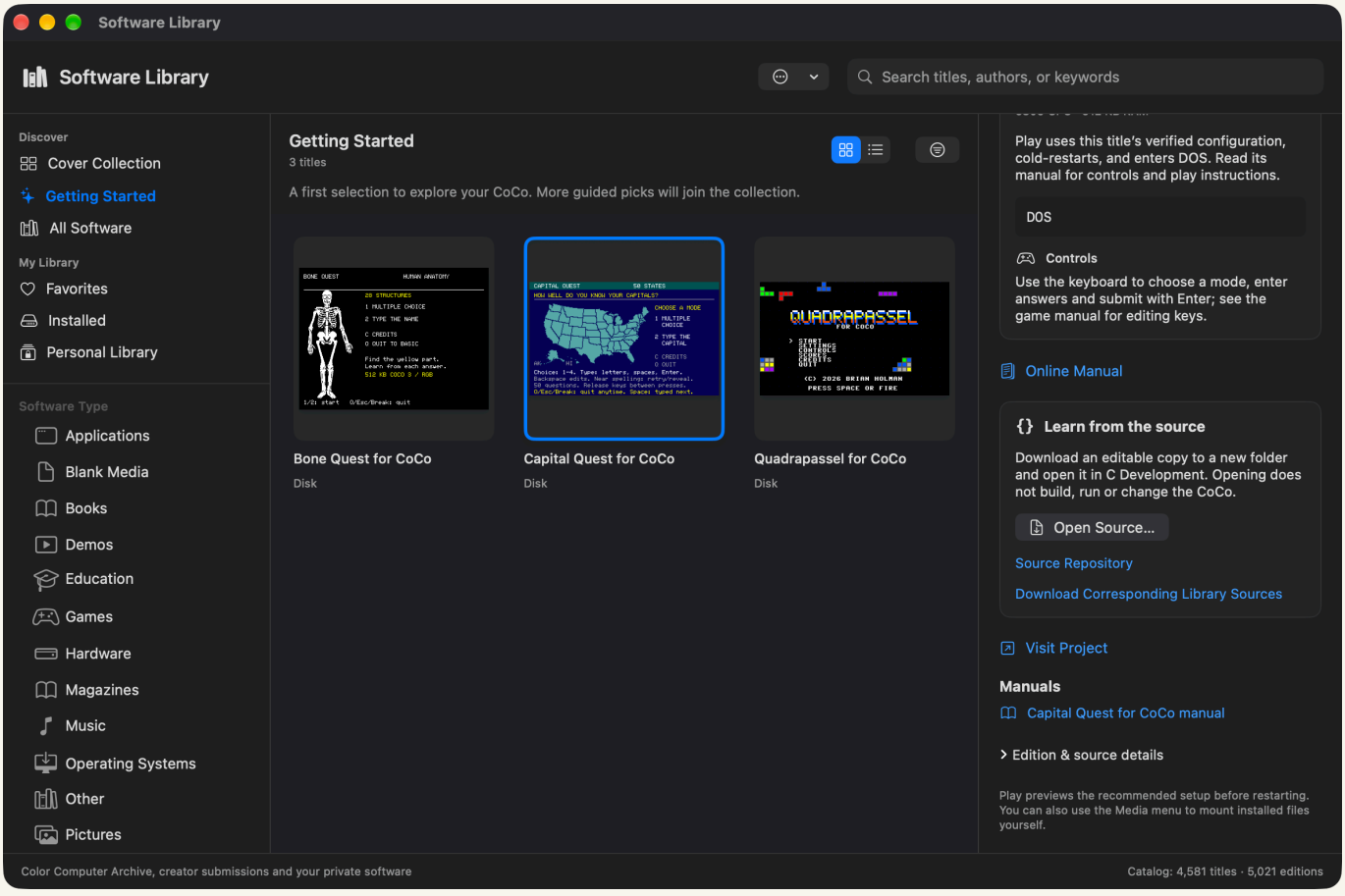


Figure 26: Capital Quest's detail panel is scrolled to its DOS startup, keyboard controls, Online Manual and Learn from the source. Open Source creates a personal copy; the repository and corresponding library sources are separate links.

Opening source does not evaluate its Makefile, build or run the program, mount a disk or restart the CoCo. When you choose **Build**, the C workspace uses the project's build recipe. Read its source and project documentation before making changes.

If another C project has unsaved edits, choose **Save All**, **Cancel** or **Discard Changes** in its review sheet. Cancel leaves the old editor and its drafts open while retaining the newly downloaded folder. If you changed projects

during the download, the Library keeps that new workspace and offers **Show Source Folder** so you can open the imported project when ready. Existing personal project folders are never overwritten or merged.

Source Repository opens the project's online history. **Download Corresponding Library Sources** is a separate download of the matching library source and notices; it is not automatically unpacked into the starter. **Read Manual** uses the verified PDF in the Library's normal download storage, while **Online Manual** opens the website reading edition.

Install, play or finish the loading yourself

- **Install Only** downloads and verifies the selected edition and prepares working files. You can keep using the current CoCo while deciding when to play. If a download fails, use **Try Again**.
- **Download & Play…**, or **Play…** for an installed Archive edition, previews the recommended setup. Read the processor, RAM, video and mounted media. A package with several starting files may ask you to **Choose Starting Media** first. Use the author's loading notes to choose the file. The verified curated game flow described above handles its setup and DOS command directly.
- **Download & Set Up…**, or **Set Up…**, prepares an edition that needs manual loading. The preview tells you what it will mount. Once the guest is ready, follow the displayed instructions, using the game's own manual to choose a program or answer a prompt.

Save any program you want to keep before confirming the restart. RAM will be cleared. You can still **Cancel** at the preview and use the installed files later. When you confirm an automatic start, watch the CoCo screen; **Stop Automatic Loading** stops further automatic input if you prefer to take over. Click the CoCo display when it is time to type or play.

Come back with your files

Return to Previous Setup… is available when the Library captured your previous configuration. It restores that hardware and those media assignments through a restart. A program that was sitting in RAM before your visit needs to be reloaded from its saved copy. See how a returning profile brings its disk home.

Under **Installed**, **Show Files in Finder** opens the working copy, including writable media that can hold a saved game. The original download is kept separately. **Remove from Library…** removes the installation record while preserving the files on this Mac. Installing again makes a fresh working copy; use Finder to locate any previous save you want to keep playing.

Put the right file in the right device

Chapter 8 of 10

A .dsk file in Finder can hold a dozen CoCo programs. Picking that file is like sliding a floppy into a drive. You still have to tell the guest which program to open. There are three names worth checking before a save: the Mac file, the device holding it, and the filename *inside* the disk.

Open a file or return to one

Choose **File → Open Media...** or drop a file from Finder onto the emulator. Check the proposed destination before continuing. A cartridge goes in a cartridge slot, a tape in the recorder and a disk in a drive. The **Media** menu takes you straight to a device. The pictures and named **Devices** controls in System view are other ways to get there.

File → Open Recent Media remembers files you opened and their destinations. If the file moved, locate it again; a remembered name supplies no copy of its contents. **Clear Recent Media** clears that menu. To start a CoCo block-format binary directly, use **File → Load Binary...**. The loader writes the program's address ranges into guest memory and starts it without a reset. Save your current program first. Canceling the binary picker leaves the emulator paused.

When opening a floppy image from Finder or Open Media, choose **Edit Disk Image** to inspect its files, or **Insert into Floppy Drive** to put it in FD0–FD3. Insertion offers **Keep current state**, **Pause**, or **Run**. Run resumes the computer after insertion succeeds; you still choose what to load or boot from the disk.

Before inserting offers **No Reset** (the default), **Soft Reset**, or **Cold Restart**. Soft Reset restarts the guest without clearing RAM, although its ROM reset routine may change RAM; Cold Restart clears the current program and memory. Save anything you need first. The chosen reset occurs after the disk is validated and replacement safeguards succeed, before insertion. The separate execution choice determines whether the machine runs or remains paused afterward. Opening the editor performs no reset.

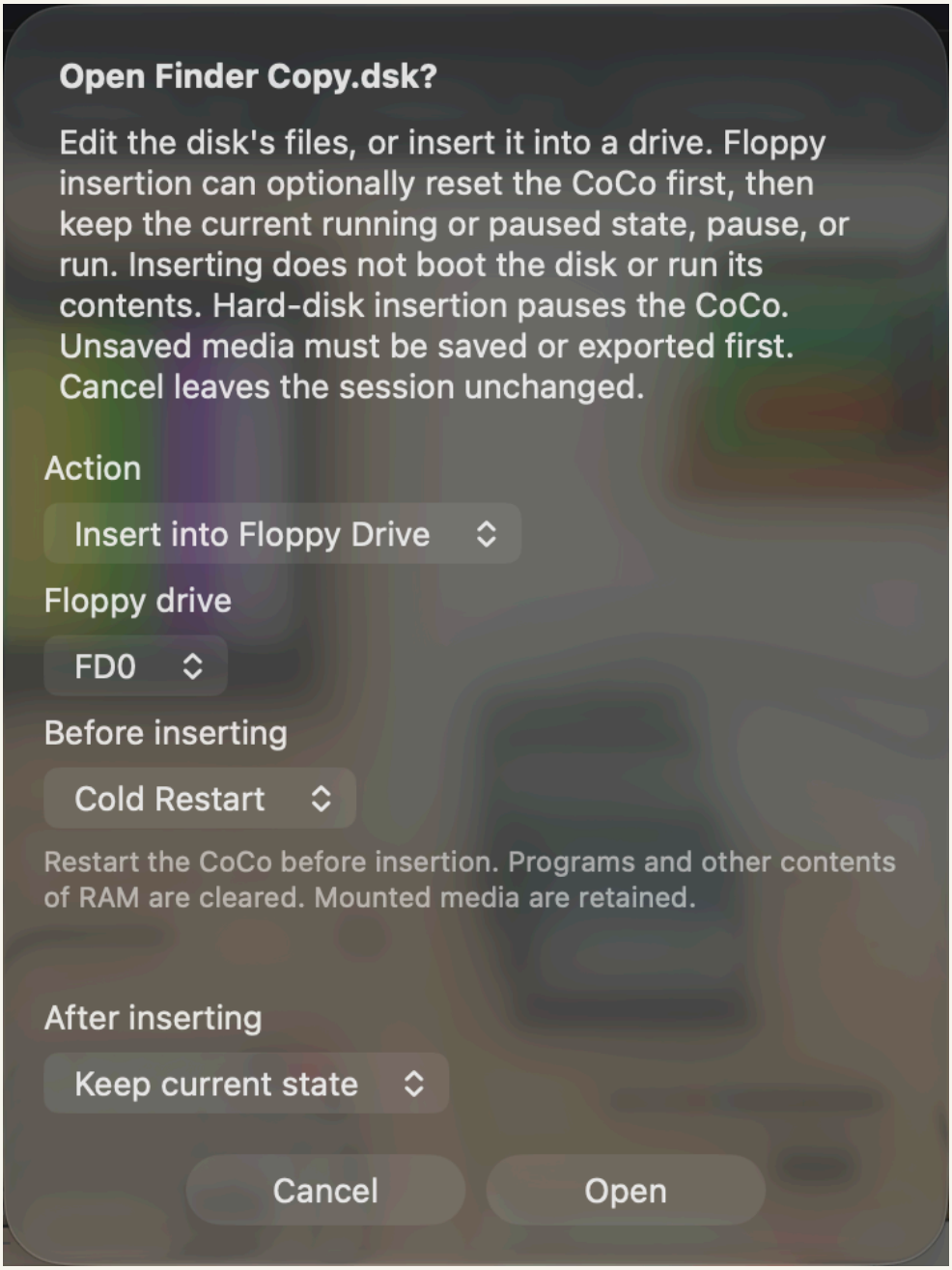


Figure 27: Opening a disk from Finder offers Edit Disk Image or insertion into a selected floppy. Before inserting selects No Reset, Soft Reset or Cold Restart; After inserting independently selects the execution state.

Keep a floppy safe

Open **Media → Floppy Disks...**. The FD-502 serves four drives, **FD0–FD3**. Read the filename and state beside the drive you intend to use. Choose **Insert...** for an empty drive or **Replace...** for an occupied one. Media and save-mode changes pause the CoCo; click **Run** when you're ready. An ordinary automatic save continues while the CoCo runs.

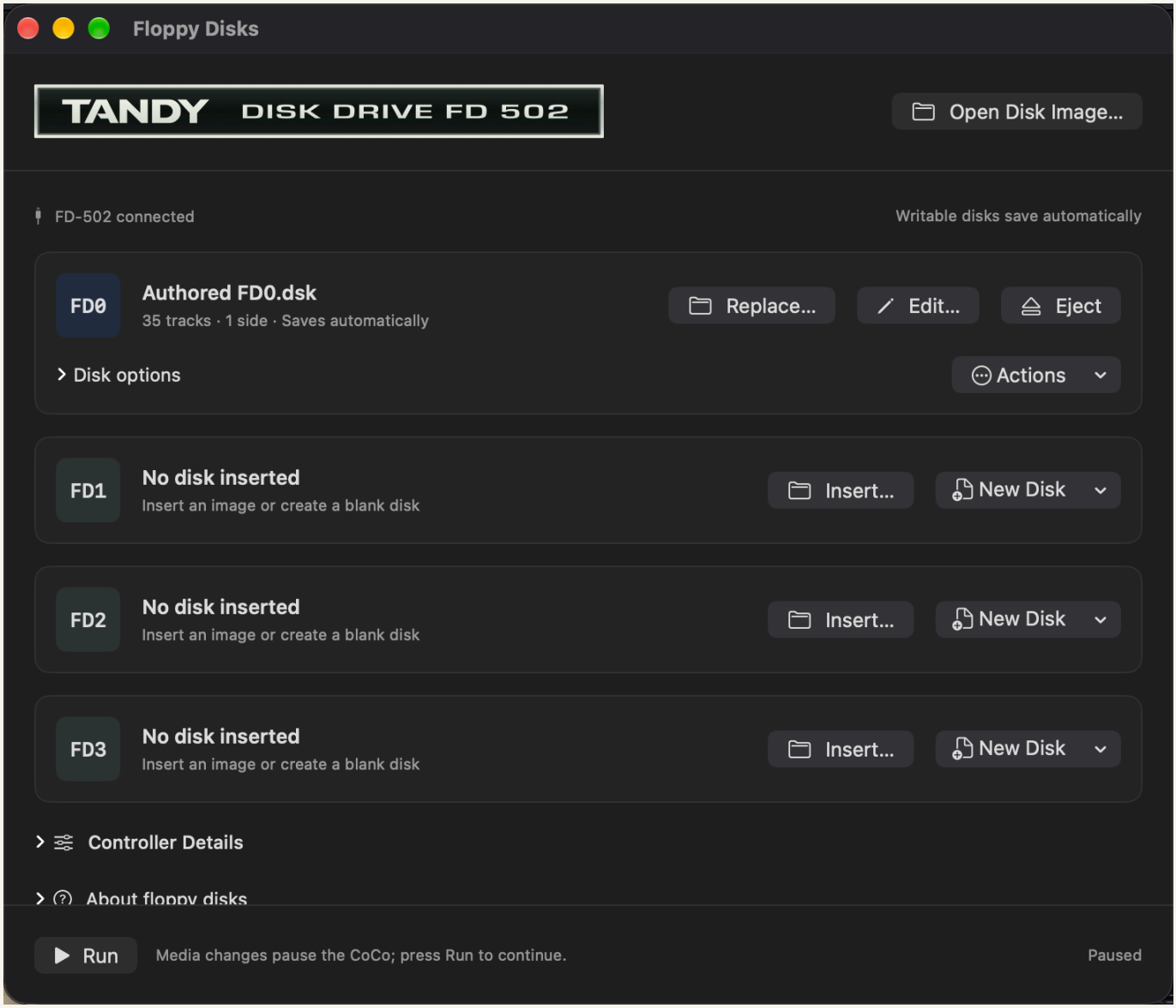


Figure 28: The floppy window identifies each drive separately. Read FD0's filename and save mode together before writing.

What you want	What to do
Save ordinary work	Mount a writable image and check for **Saves automatically**. When a guest program writes a file, VCC Plus saves the changed image to its Mac file.
Examine an original safely	Open **Disk options** and enable **Write protected**. The guest can read the image. A read-only Mac file or a protection flag in the image header can lock this switch.
Let the game write, but decide later whether to keep the result	On a writable disk, turn on **Temporary changes** before the game writes. **Save As...** keeps a copy and retains that mode. Turning the mode off can write pending changes to the assigned file.
Keep a disk after a save error	Read the affected drive's message. If you disconnected its volume, reconnect it and choose **Retry Save**. If someone edited the file elsewhere, choose **Save As...** under a different name to preserve both versions.

What you want	What to do
Deliberately leave changes behind	**Discard Changes and Eject...** gives up pending in-memory edits. Any writes that already reached the Mac file are part of that file.

An unavailable assignment and a failed write call for different actions. At startup, **Retry Remembered Disks** looks for the assigned files again. You can also choose a replacement or eject the outdated assignment. During a save failure the app keeps the changed disk in memory so you can rescue it. A read/write light reports real activity on the named drive. A warning in the drive row tells you when action is needed.

New Disk offers **Standard DSK**, **DMK Track Image** and **VDK Disk Image**. Each creates a blank, single-sided 35-track disk in memory. For a *new, empty practice disk in FD0 only*, use the Disk BASIC command `DSKINI0` to format it, then choose **Save As...** to give it a Mac filename. Formatting an existing disk destroys its directory and files. The FD-502 can also open compatible JVC and OS-9 floppy images. **Save As...** preserves the mounted format. For a ready-made, protected example, follow Put the practice disk in FD0.

For a working-copy exercise you can do entirely offline, change one copy and reopen both.

Controller Details shows the controller ROM, selected drive, track, sector and motor status. Choose a compatible disk ROM here when supplying your own. Disabling this controller ejects all four disks and cold-restarts the CoCo. Resolve pending writes first.

Edit the files inside an image

Choose **Edit...** beside an occupied **FD0–FD3** in Floppy Disks or **HD0/HD1** in Virtual Hard Disks to open the native Disk Image Editor. The machine pauses and stays locked while you edit its current disk, including temporary changes. **Open Disk Image...** in Floppy Disks opens an unmounted floppy or hard-drive image without inserting it or disturbing the CoCo. If that file is already mounted in a floppy or hard drive, including through a file alias, VCC Plus uses the mounted-disk lock. An image assigned to another device or an SD card folder must be unassigned before standalone editing.

The file table shows names, sizes, types and filesystem details. The SF Symbols toolbar imports and exports files, renames or deletes entries, creates OS-9 folders, and offers Undo/Redo. Double-click a folder to enter it, or a file to export it. Drag ordinary Mac files into the table to import them. Drag selected regular files to a Finder folder to export copies. Open the intended OS-9 folder first. Total, Used and Free show actual allocation space, including allocation rounding and filesystem overhead. Disk BASIC excludes its reserved directory track from Total.

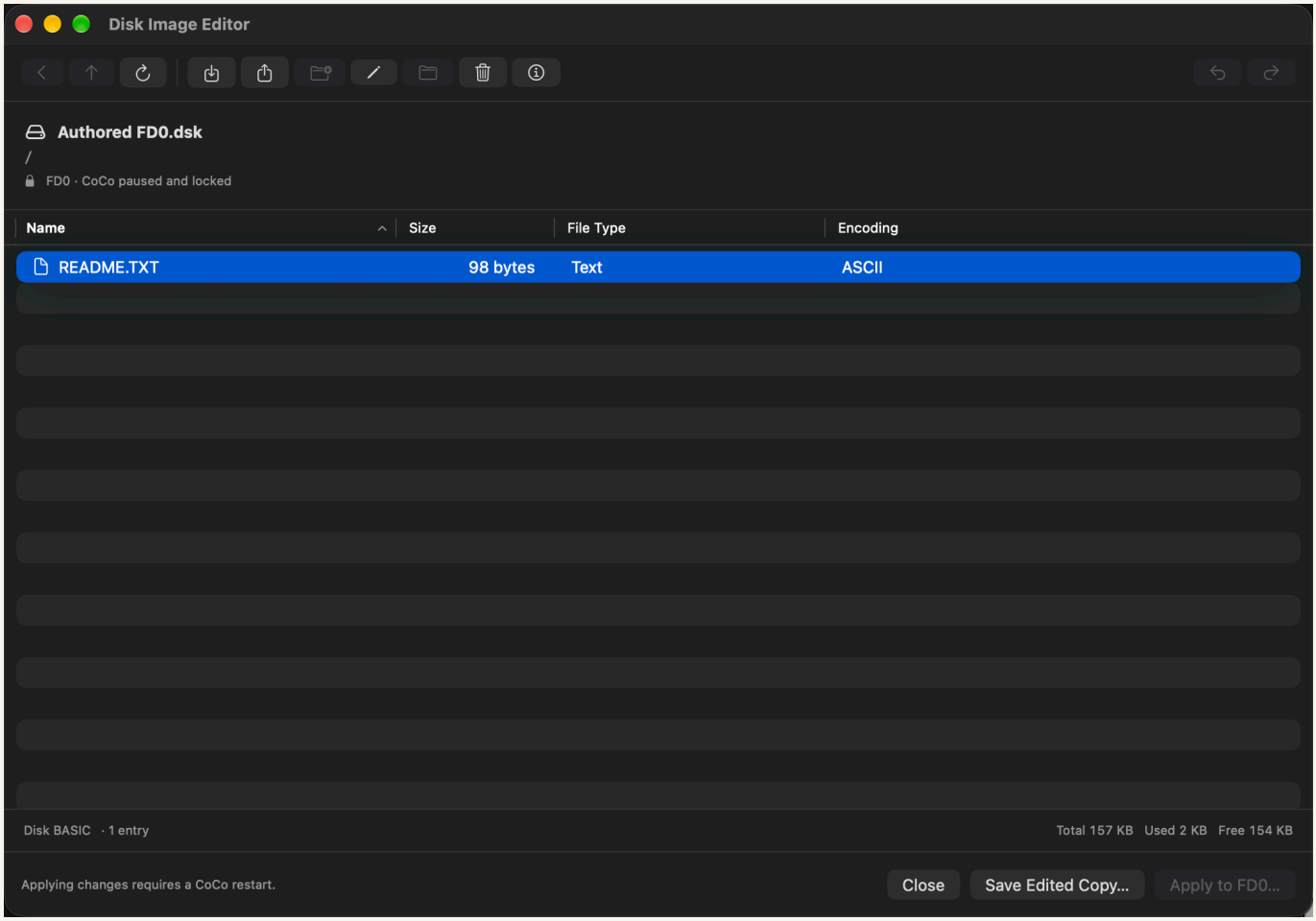


Figure 29: The Disk BASIC table shows file type and encoding, with total, used and free file space below. OS-9 folder controls are unavailable for this filesystem.

Edits stay in a private working copy. **Save Edited Copy...** keeps a separate image. **Save Changes...** updates an unmounted writable source after checking for external changes. For a mounted disk, **Apply to FDn...** or **Apply to HDn...** asks for **Restart and Apply**: the running guest program and memory will be cleared to prevent stale filesystem information. Save programs and recordings you need first. Cancel or Discard Changes leaves the original disk intact. Closing a mounted editor leaves the CoCo paused.

For an OS-9 file or folder, **Info** opens one File Information sheet for owner/public read, write and execute permissions, single access, and ownership. Group ID and User ID are each 0–255; together they represent the OS-9 owner ID shown as `group.user` in the table. File versus Directory stays fixed. Save Changes updates the working copy and supports Undo; Cancel leaves it alone. Applying or saving the image is still a separate action.

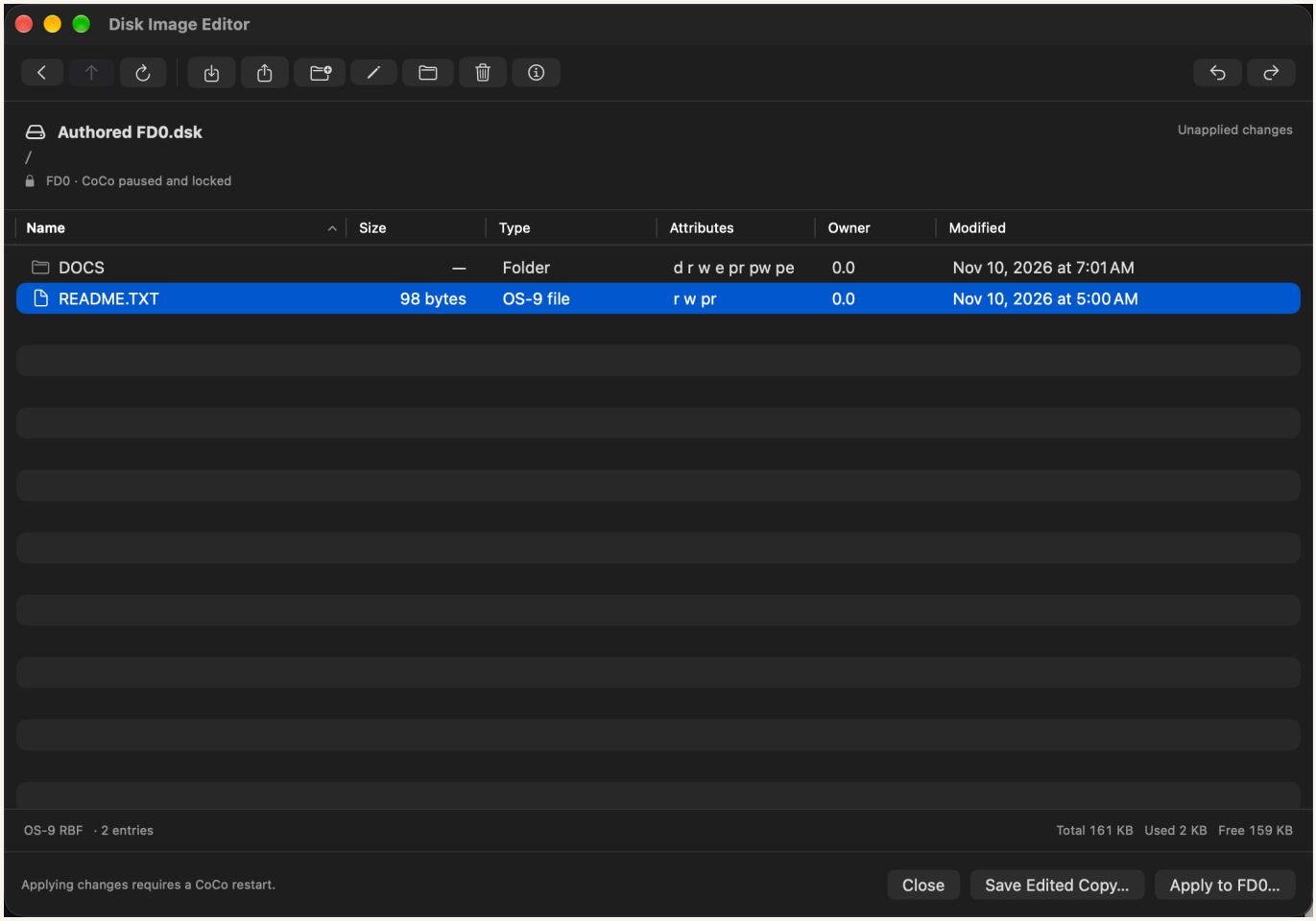


Figure 30: The OS-9 view adds attributes, group.user ownership and modification dates. Folder actions become available for this filesystem.

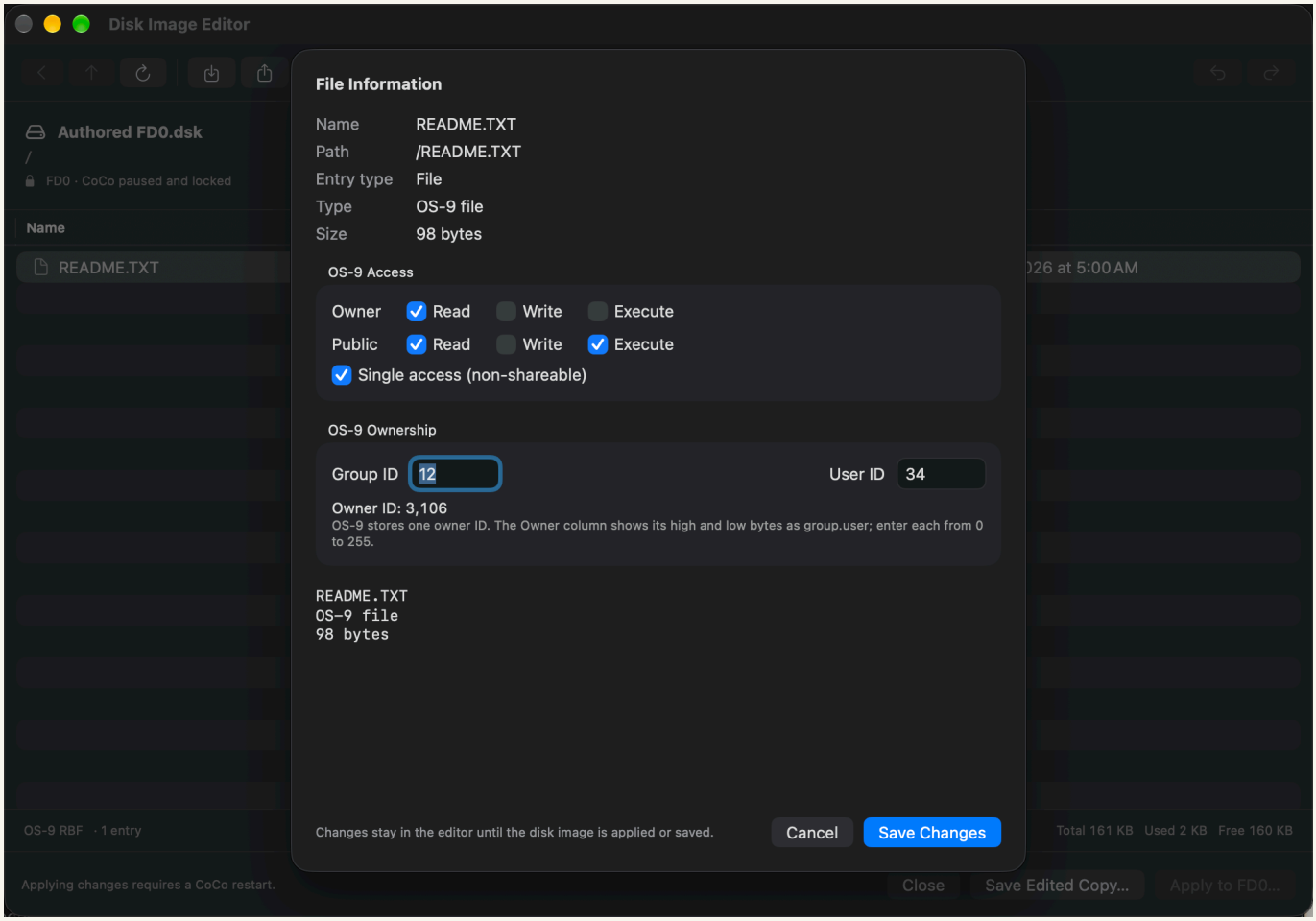


Figure 31: One OS-9 File Information sheet edits owner/public permissions and group/user ownership. These values are an example; saving the sheet updates only the working copy.

For an image with more than one recognized filesystem, the **Volume** picker selects **OS-9** or an **HDB-DOS disk** number. Disk numbers start at zero and keep their original positions even when an unformatted, unsupported or boot-reserved slot is omitted from the list. A numbered disk that overlaps declared OS-9 boot data is protected rather than offered for editing. Changing the selection visits that volume's root; it neither inserts a different disk nor starts the guest. Your private edits in the other volumes remain in the working copy. Total, Used and Free describe only the selected filesystem. **Save Edited Copy...** saves the complete image, including every other volume and preserved region.

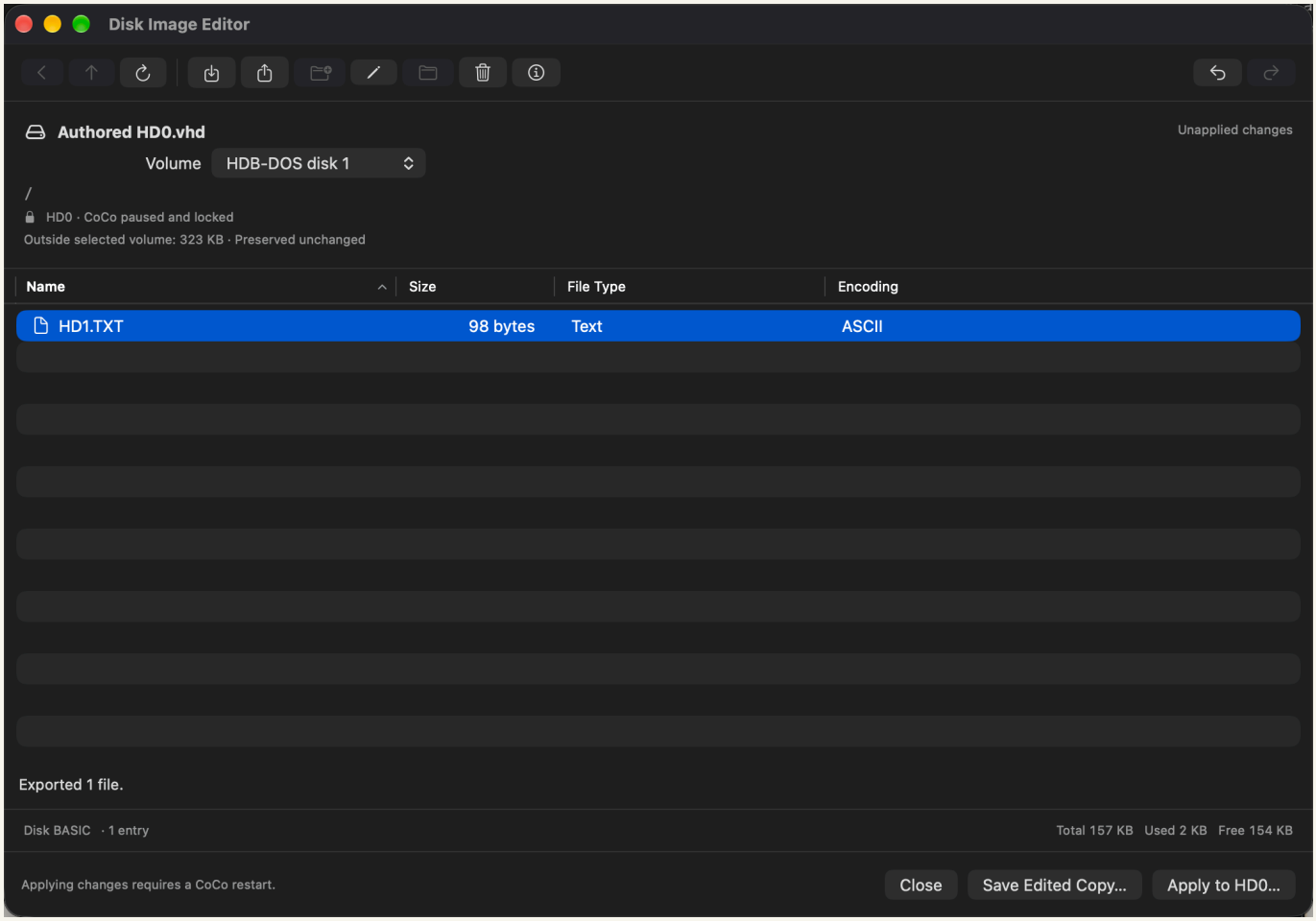


Figure 32: An authored small test image in HD0 contains multiple volumes. HDB-DOS disk 1 is selected inside HD0; its number does not mean the HD1 drive. The CoCo is paused and locked, and applying changes requires a restart. Save Edited Copy keeps the complete image.

The editor supports raw images up to **512 MiB**. OS-9 volumes use 256-byte sectors and allocation clusters of 1, 2, 4, 8, 16, 32, 64, 128 or 256 sectors. Numbered HDB-DOS volumes contain standard 35-track Disk BASIC filesystems; they begin at the start of the image or immediately after its declared OS-9 region. Arbitrary partition offsets and encoded containers such as DMK and VDK are not supported for editing. The editor does not format, repartition, convert or repair images. Individual imported or exported files are bounded to **16 MiB**.

A larger ordinary Disk BASIC floppy may contain supplementary tracks with application data. The editor preserves those bytes unchanged and excludes them from free file space. You can still add files within the normal filesystem's available space. Disk BASIC import metadata does not convert bytes: choose ASCII or Binary / Tokenized to match the file you already have.

Move files between OS-9 folders

Select one or more files and choose **Move To...** in the toolbar or context menu. Browse to a destination folder within this same disk image. Select a folder and choose **Open Folder**, or double-click it; the displayed destination path changes as you browse. **Root** returns to the disk's root, and **Up** visits the parent. Choose **Move Here** when the displayed path is the destination you want. **Command-Down Arrow** opens the selected folder, **Command-Up Arrow** goes up, **Return** activates Move Here and **Escape** cancels.

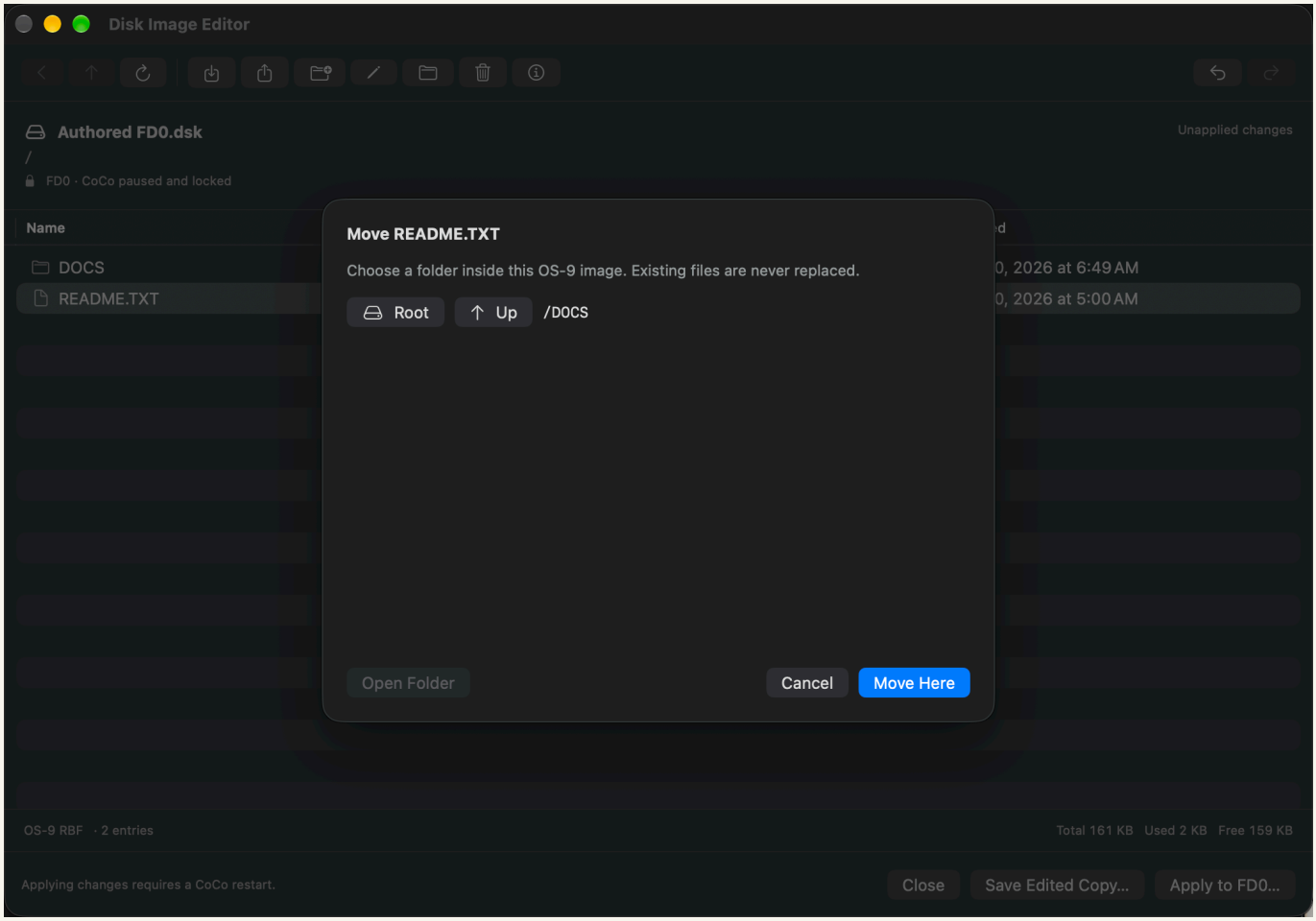


Figure 33: Move To browses folders inside the current OS-9 disk. The displayed /DOCS path is the destination; Move Here completes the move.

The chooser gives keyboard and VoiceOver users the same move operation as dragging selected files onto a folder in the table. To move a file back toward the root, use the chooser and visit the appropriate parent folder.

A move keeps the file's contents, permissions and ownership. It changes the working copy in one operation; **Undo** returns the selected files to their previous locations, and **Redo** repeats the move. As with other edits, the original image changes only when you save or apply it.

Choose a different folder from the current parent. A destination that already contains a matching filename is refused without overwriting either file; rename one of them before retrying. Folder destinations must belong to the same image. This operation moves regular files, not folders or Disk BASIC entries. A selected folder can be opened or inspected without being moved.

Send a floppy copy to a real CoCo

DriveWire for VCC Plus is a separate application for serving disk images to a real Color Computer. Install the matching public version of both apps. They keep separate windows and sessions; using one does not replace the other.

DriveWire opens the last-used personal profile and remembers its connection and disk references automatically. Its editable **Default** profile is a place to begin; **Profiles...** lets you create and explicitly switch named setups. For its complete connection, profile and recovery workflow, read the separate DriveWire companion guide.

1. Open DriveWire for VCC Plus and connect the serial session used by your real CoCo. VCC Plus does not start or reconnect that session for you.

2. In VCC Plus, open **Media → Floppy Disks...**. On the occupied source row, choose **Actions → Send a Copy to DriveWire...**.
3. Choose the receiving DriveWire session and its target **DW0–DW3** slot. Check the displayed filename if that slot is already occupied.
4. Choose **Send Copy**. On the first transfer, DriveWire asks **Allow disk copies from VCC Plus?** Choose **Allow for This Connection** or **Decline**.
5. Wait for the received confirmation. Return the real CoCo to BASIC or reset it before using changed media so its software cannot reuse old disk information.

The copy includes the source drive's current in-memory bytes, including changes that have not yet reached its Mac file. Sending does not pause or restart VCC Plus, change the source's save mode, or clear an unsaved-changes indication. The two mounted disks are independent afterward. Transfers accept compatible raw, sector-aligned disk images up to 16 MiB; an encoded track image needs a suitable raw copy. Ordinary DriveWire hosting can still use larger images.

Permission lasts only for that receiving serial connection. Disconnecting it or closing its session window removes the grant. A later send still identifies its target slot and filename; refresh if the destination changed while you decided. A disk in the shared editor or in the middle of a transaction cannot be replaced.

Before replacing a DriveWire disk, the receiver keeps its current bytes as a recovery copy. In DriveWire choose **File → Show Received Disks...**. The received copy has its own folder; **Recovery → Previous Disk.dsk** inside that folder holds the displaced image. To go back, stop guest disk activity and deliberately insert that recovery image. The original Mac source remains separate.

DriveWire's **Edit...** opens the same Disk Image Editor interface described above, with its own served-drive safeguards. Its **Software Library...** uses the same library interface restricted to disk images. VCC Plus maintains the single catalog, verified downloads and installation records; DriveWire inserts a separate writable copy. Loading instructions and hardware requirements still apply to the real CoCo. Matching public versions are released together, but each application has its own build number.

Use a virtual hard disk

In **Media → Virtual Hard Disks...**, check whether the hard-disk controller is connected, then pick **HD0** or **HD1**. It accepts raw VHD, OS9 and IMG sector images. A virtual hard disk controller has no boot ROM of its own. The **Hard Drive BASIC** and **NitrOS-9** profiles supply working combinations. Look up the guest's drive names in Which drive zero?.

The hard-disk rows offer protection, temporary changes, **Save As...**, save retry and discard for the same reasons as the floppy rows. **Edit...** opens the mounted image with the same pause, lock and restart-before-applying safeguards as a floppy. Use the editor's volume selection to distinguish an OS-9 filesystem from a numbered HDB-DOS Disk BASIC volume in an image that contains both; the guest's drive names are a separate naming system. See Edit the files inside an image. **Actions → New Disk...** asks for a capacity in KiB. It creates an empty drive in memory. Use the guest's formatting or partitioning tools to prepare it for the particular operating system, then use **Save As...** to keep its Mac file. If you want a ready-to-use disk, start from the appropriate system profile.

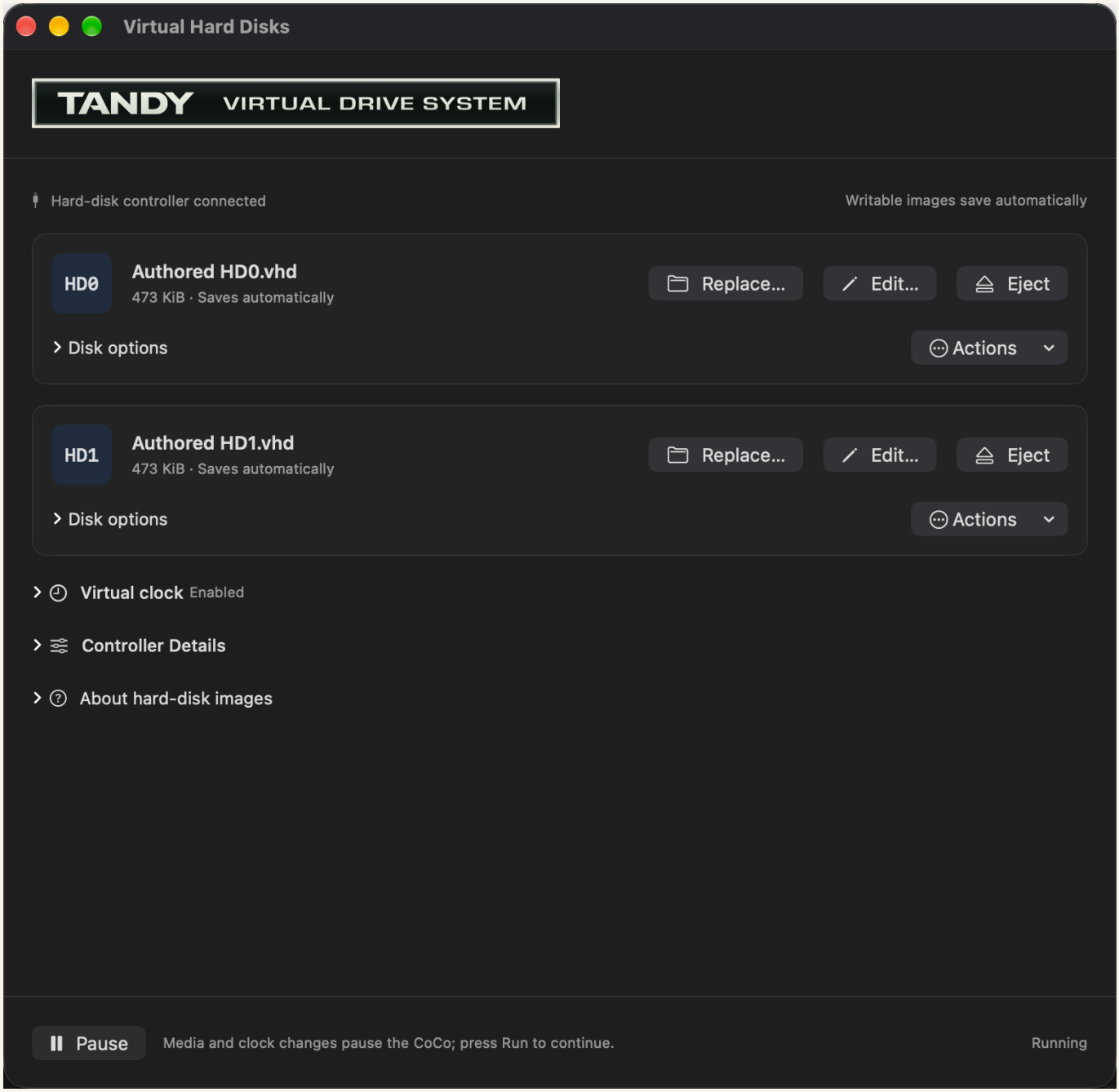


Figure 34: Virtual Hard Disks offers Edit beside both HD0 and HD1. These authored small test images demonstrate the controls; your working images may be much larger. Edit pauses and locks the machine before opening the mounted disk.

The **Virtual clock** starts from Mac local time. **Clock enabled** exposes it to supporting guest software. **Allow guest to set the virtual clock** lets the guest adjust the time for that emulated session. The Mac keeps its own clock. After media or clock changes, check for **Paused** before entering a guest command.

Follow the cartridges and card folder

A cartridge is hardware attached to the CoCo. The **Multi-Pak** is the box that gives it four slots. Open **Cartridge → Cartridges...** to choose **Single cartridge** or **Multi-Pak**, then choose a device for each slot. The app keeps the single-cartridge assignment while the Multi-Pak is in use. Floppy and virtual hard disk are separate controllers and each uses a slot; four floppy drives still need just one floppy controller. Assigning an existing controller or sound device to another slot moves it there.

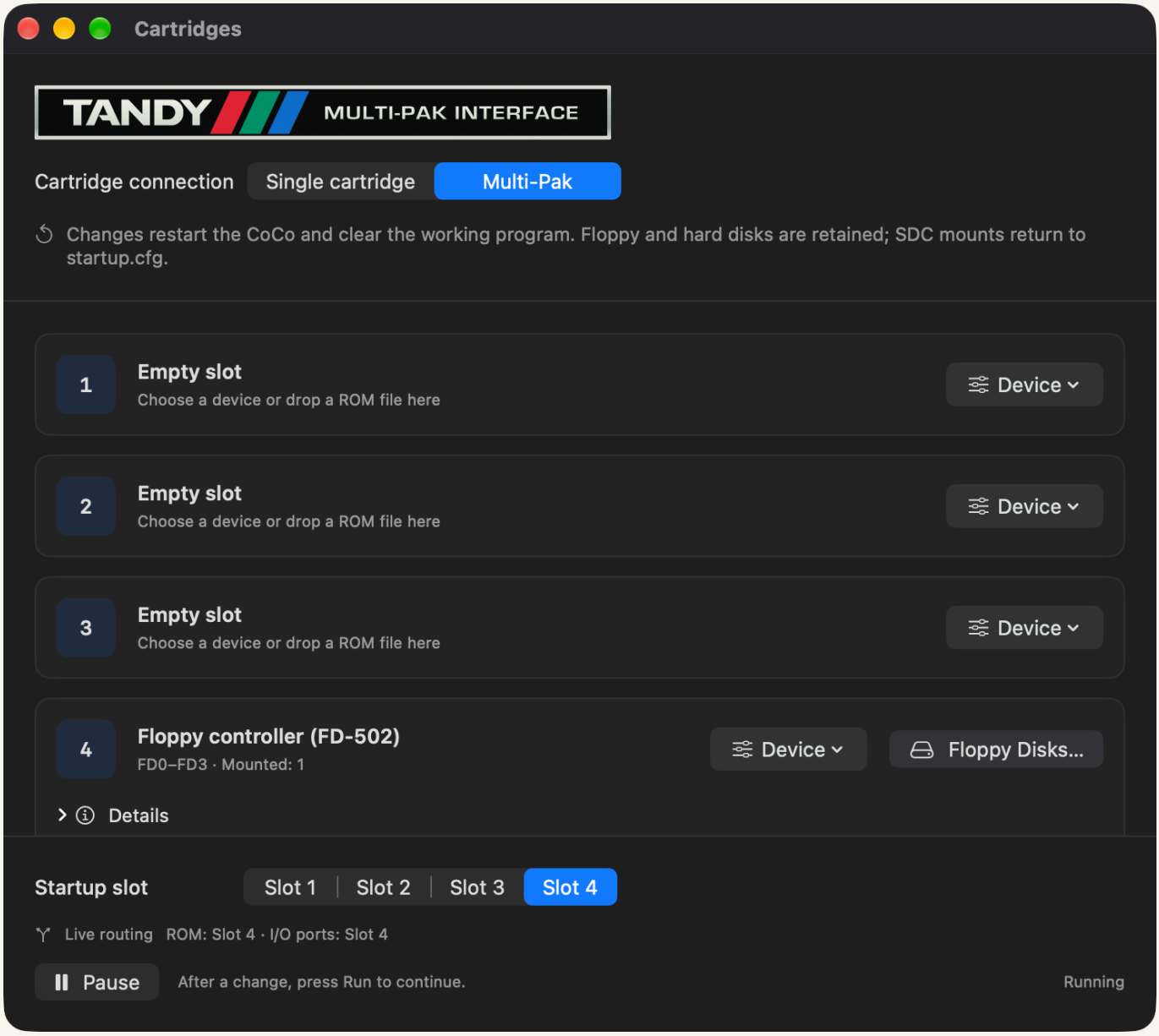


Figure 35: Cartridges and Multi-Pak shows the slot assignments and separates the startup selection from the live ROM and I/O slots.

- **ROM Cartridge...** takes the cartridge's raw program ROM, such as a .ccc game. Choose its slot as the **Startup slot** to boot the cartridge. Software can subsequently select one slot to supply ROM code and a different slot for input/output. Read the live **ROM** and **I/O ports** labels when a device appears to be in the right place but a program cannot see it. Watch the Multi-Pak for a worked example.
- **CoCo SDC** has an SDC-DOS ROM and an **SD card folder**. Use **Choose Folder...** for the directory holding your disk images and **Show SD Card Folder in Finder** to see its files. Select this slot to boot SDC-DOS. **Protect SD card files (read-only)** blocks guest writes and file-management changes; leave it on for a collection you want to preserve. With protection off, the guest can change real files in that folder. The profile remembers folder, ROM and protection. On restart, the card's startup.cfg supplies the startup mounts. SDC0 and SDC1 are on the card, independent of FD0–FD3.
- **Orchestra-90** provides stereo output to supporting software. Its optional 8 KiB ROM adds the cartridge's own music program; select that slot at startup to use it. **Speech/Sound** requires its two internal ROMs and a program that issues speech or sound commands. It has no boot program; leave the disk controller selected at startup when using it with a disk program. Expand the assigned slot to choose or replace its ROMs, then check the app's Sound and volume settings.

- The **512 KB RAM disk** works with software written to use it. Its contents survive a reset but disappear when you remove its last assignment, load a profile or quit. Save anything valuable to persistent media first. A saved profile remembers the device. Custom layouts such as this use the conventional controls.

Changing the cartridge layout cold-restarts the CoCo and clears the working program. Floppy and hard-disk media are retained, and SDC mounts return to their startup configuration. Check the slot details for missing files before loading a different profile to fix a connection.

Play or record a tape

Choose **Media** → **Cassette…** and **Insert…** to select CAS or WAV. **Play** readies the tape; the CoCo starts its motor when the guest reads it. Use **Rewind** to return to the beginning. Tape position counts bytes on CAS and samples on WAV. **Fast CAS** speeds supported ROM loads and can be changed while stopped. For the guest loading sequence, see Cue up the cassette.

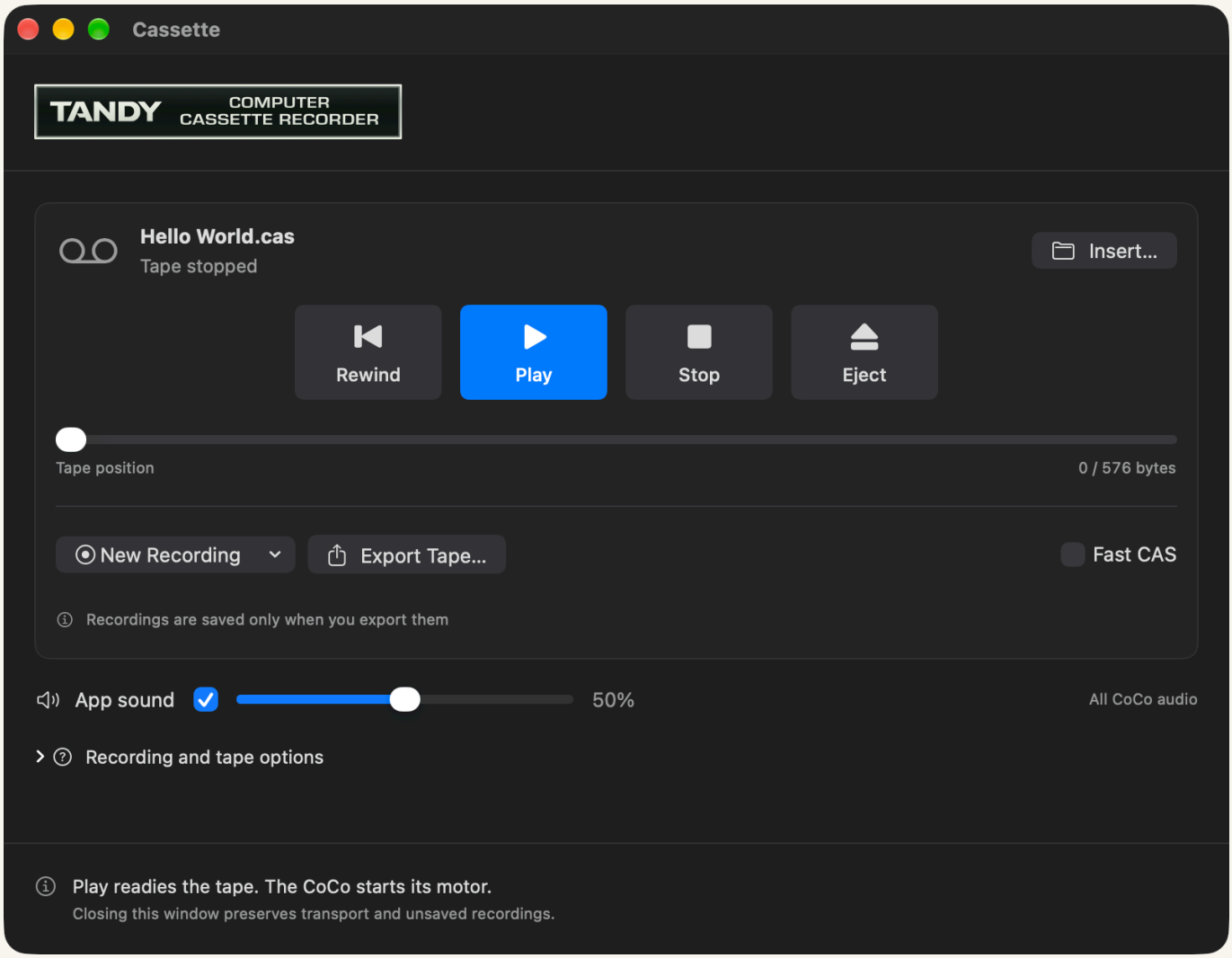


Figure 36: The cassette window shows the inserted tape, transport buttons and tape position.

Scroll below the transport to **App sound** for the Sound switch and Volume slider. They affect all CoCo audio, including cartridges, rather than just the tape. A short window can keep this row below the visible area.

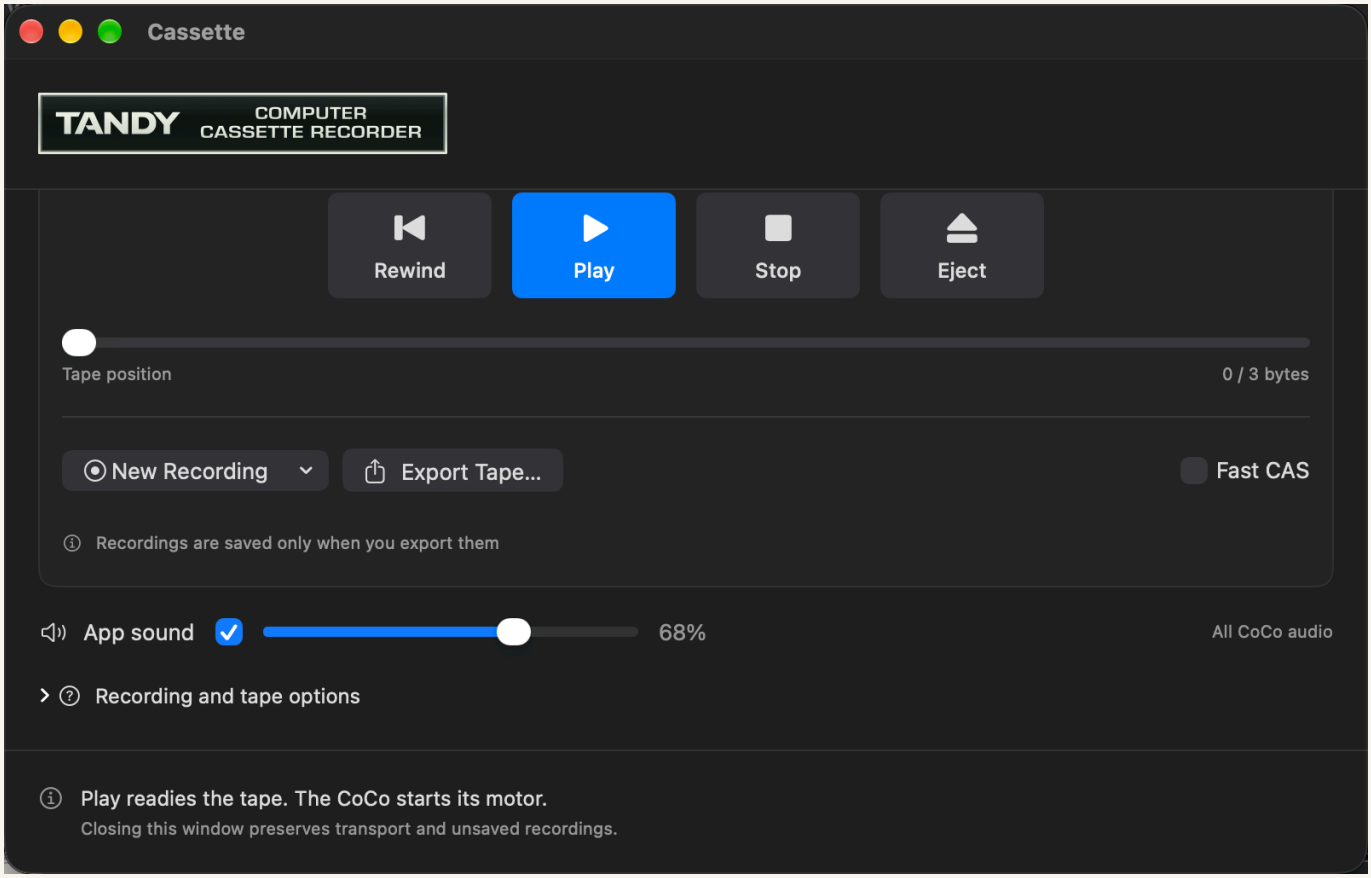


Figure 37: Below the cassette transport, App sound controls the emulator's sound and volume.

New Recording → **CAS** or **WAV** prepares a new in-memory tape in place of the inserted tape. Once the guest finishes recording, stop the transport and choose **Export Tape...** to give the recording a Mac file. **Discard...** deliberately gives up an unsaved recording. You can close the cassette window while a tape runs. Reopen it from **Media** or the tape status to check transport, position or a recording needing export.

Catch output from the printer

Click the illustrated printer or choose **Media** → **Printer Output...**. Start capture *before* asking a guest program to print. The TP-10 picture marks the CoCo's serial printer connection. The window collects the bytes the program sends there. **Follow Output** keeps the newest text in view; **7-bit BASIC Text** ignores the high bit when displaying or saving text. Control codes appear as visible markers.

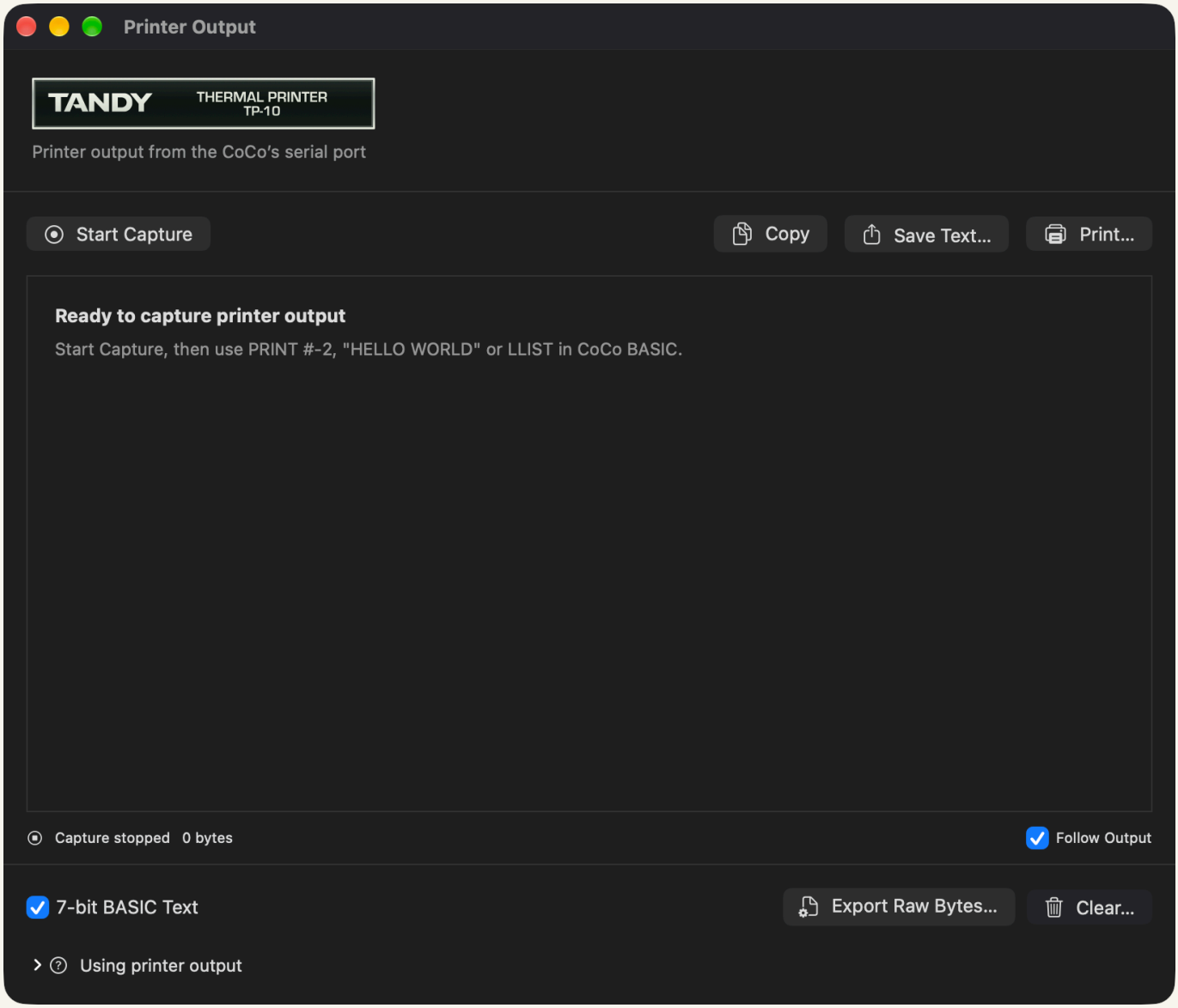


Figure 38: Printer Output offers capture, text saving and the Mac print dialog. Capture first, then ask your CoCo program to print.

Copy, **Save Text...** and **Print...** operate on all captured text; Print opens the Mac print dialog. **Export Raw Bytes...** preserves the actual bytes, including control codes. Use it for data that is unsuitable as text. The preview shows the latest 64 KiB and capture holds up to 1 MiB. When the capture fills, additional bytes are dropped: stop, save and clear before starting another. Closing the window keeps capture and its output. **Clear...** stops capture and discards the session's collected output after confirmation. A guest program that needs printer graphics may emit control codes instead of a printed picture here.

Try a print job you can count. At a Disk BASIC prompt, open an empty Printer Output window and choose **Start Capture**. Give the CoCo keyboard focus. Enter the line below, then press Return.

```
PRINT #-2,"FLIGHT TEST"
```

Open Printer Output again. The captured text reads **FLIGHT TEST** and the status shows **12 bytes**. The two words and their space account for ten characters; the print stream also ends the line. Choose **Clear...**, read the warning, and choose **Cancel**. The 12 bytes are still there. Choose **Stop Capture**. Use **Save Text...** if you want a Mac copy of the result.

Find a workbench or a reference

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There are three ways to write the Earth or Mars program. In BASIC you can read the question in a numbered line. In C you can find the function that asks it. In assembly you can see the machine instruction that handles a key. All three editors open from **Develop**. Each sends work to the same CoCo you see in the emulator window. Save a guest program you want to keep before loading another.

Choose an editor

- **BASIC Development…** opens numbered BASIC source. Use it to try a short program, bring a listing back from the guest, or stop before a particular statement.
- **C Development…** opens a project folder. Choose this when your work includes C source, headers, libraries or data files that must be built together. A Makefile gives the build tools their instructions.
- **Assembly Development…** opens assembly source or a project folder. Choose this when you want to work directly with processor instructions, registers and addresses. A single source file is enough to get started.

Build in C or **Assemble** in assembly creates machine code; **Run** starts the program in the guest. In BASIC the CoCo already contains the language interpreter, so the editor can load and run numbered lines directly. In all three workspaces, editing a file on the Mac and interacting with the running program use different windows. Choose **Input → Focus CoCo Display** to answer a guest prompt.

Find a word in the file you are editing

In BASIC, C or Assembly Development, press **⌘F** or click the editor's **Find in File** magnifying glass. Type the text you want. **⌘G** selects the next occurrence; **⇧⌘G** goes back. Use **Match Case** when capitals matter. To search for something you can already see, select it in the source and press **⌘E**.

Suppose you want to change a greeting in a personal copy of Earth or Mars. Press **⌥⌘F**, find the old wording and enter your replacement. **Replace** changes the selected occurrence. **Replace All in File** changes every match in this file, including matches in comments and quoted text. Check the match count first. One **Undo** reverses the whole Replace All. **Escape** returns you to the source.

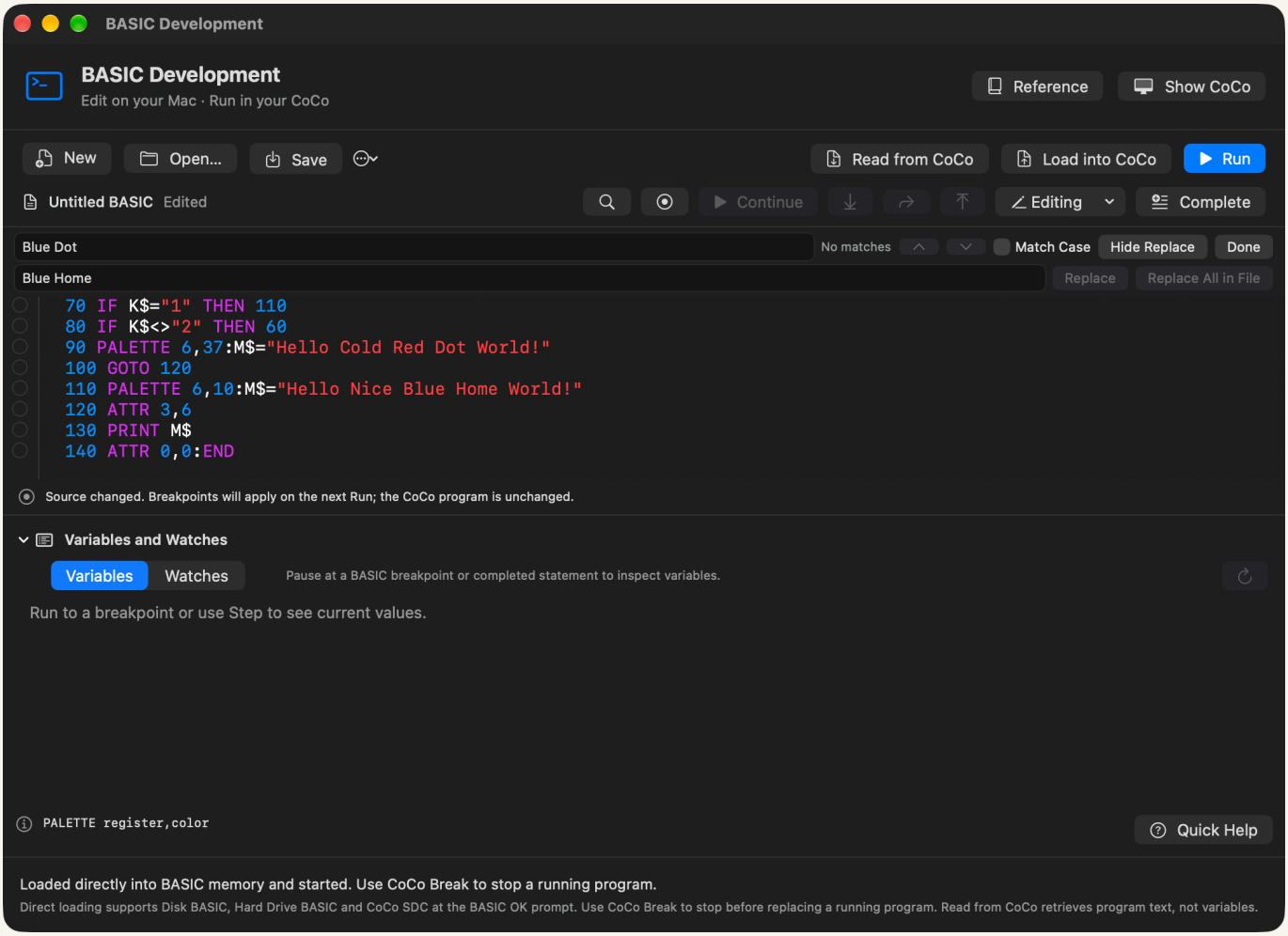


Figure 39: After Replace All, the BASIC editor shows "No matches" for Blue Dot. Line 110 now says Blue Home. The message beneath the source confirms that the running CoCo program is unchanged.

Finding works in an unsaved source buffer and in a read-only C header. Replacement requires an editable file. The change belongs to the Mac source. To see a new greeting on the CoCo, run the edited program. In C, **Find in Project** is a separate search across files. Press ⇧⌘F or use the magnifying-glass tab immediately to the right of the folder at the top of the left sidebar.

Bring a BASIC program into the editor

If you have been typing a program at the green screen, return to the BASIC prompt and choose **Read from CoCo**. You now have its listing in the editor. Click **Save** to keep a Mac source file. The listing contains the program, while variables belong to the current run. In the other direction, **Load into CoCo** transfers the editor listing and leaves BASIC ready; **Run** transfers it and starts it. Direct loading is supported at the BASIC prompt in Disk BASIC, Hard Drive BASIC and CoCo SDC. If a guest program is still running, use CoCo Break before replacing it.

Use **New** for a starter or **Open...** for a saved source file. Tab accepts a faint suggested keyword ending. Under **Editing**, **Go to Line...** finds a numbered line, **Check Source** can take you to a problem, and **Renumber...** updates the numbers and recognized references. Use the **...** menu beside Save to make a copy or export a disk or cassette. The export dialog shows which command to type in the guest. Disk export can also install a DOS bootloader so you can start that disk by typing DOS. Put VOYAGE on a disk follows a program from source into portable media.

A breakpoint is a request to pause **before** a place in the program. Set one beside a numbered line, then Run. **Continue** lets BASIC run to its next stop. **Step Into** advances by a BASIC statement and follows a subroutine; **Step Over** lets the subroutine finish; **Step Out** returns to its caller. At a BASIC stop, inspect **Variables** or add a name under **Watches**. Their values belong to that point in the program. Stop before the subtraction shows how to tell whether a line has done its work yet.

Follow a C build from source to the guest

Choose **New** for a project or **Open** for an existing project directory. The simple starter asks Earth or Mars. **Hello Disk** is the example to open when you want to read data from disk. Select source files in the project navigator. Use **Go to Definition** on a name, Back to return, and **Find in Project** to search across files. Completion suggests identifiers; parameter hints show the arguments a function expects. Headers from the installed libraries can be read in the editor.

Save All writes project edits. Select **Debug** when you want source stops and named variables. Click **Build**, read the first error under **Issues** if the build fails, then choose **Run** or **Launch Disk**, according to the project. The menu beside Build also has **Rebuild**, **Clean**, **Build Disk** and **Show Build Products**. **Build History** helps recover the output from an earlier attempt. If a source file has changed outside the editor, compare or preserve your draft before using **Reload File from Disk**; **Save Selected Copy…** gives it a different destination.

Project Settings divides the decisions into five groups:

- **Build** chooses **Generate from settings** or **Custom Makefile**. Generated projects expose the binary name, addresses, stack and release optimization. For an existing Makefile, leave the build target empty to use Make's default goal, or specify one defined by the author. Check artifact locations, clean target and parallel jobs here. Review a Makefile before running it on your Mac.
- **Sources** specifies project modules, include directories, defines and build flags. An include directory is where the compiler looks for a header named by the source.
- **Libraries** selects bundled libraries or builds project-local library subprojects. A project can depend on its own copy of a library. Check its version and build settings before substituting another copy.
- **Resources** builds data the program needs from input files and generation rules. A missing data file may let the C code compile yet leave its disk unusable.
- **Disk & Run** specifies disk contents, any DOS bootloader, and the launch method. **Quickload executable** starts a binary directly; **Mount disk in FD0** supplies a disk and can type the chosen startup commands. Use the latter when the program needs files on that disk. Review the preview before replacing an existing Makefile with a generated one.

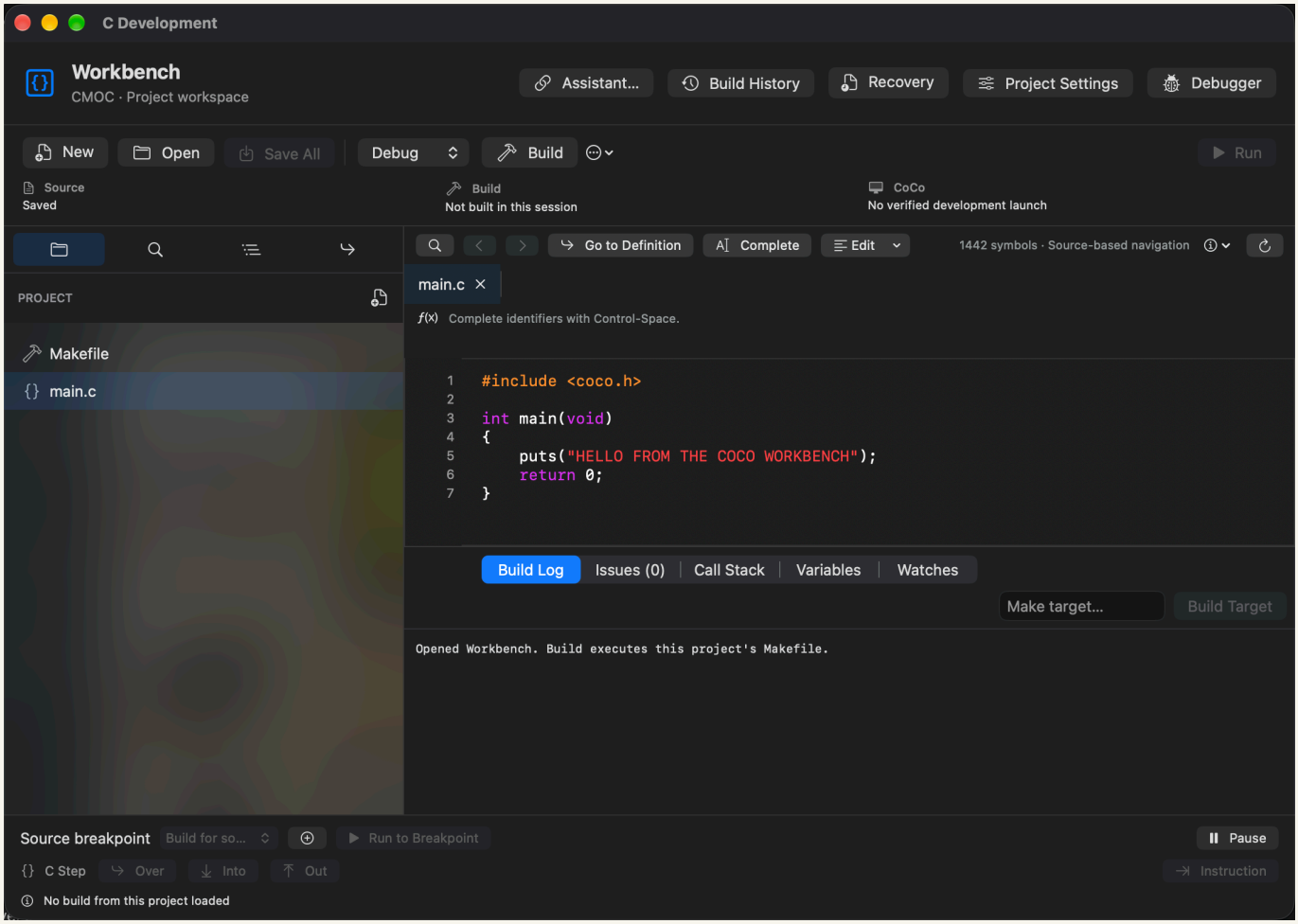


Figure 40: C Development with a small source project open. Assistant… shares the intended project; Build History, Recovery and Project Settings are separate controls. Opening the folder has not compiled or run its program.

At a C source breakpoint, step through C source or select a row in **Call Stack**. Each row represents one active function call. Select its frame to see its source, then **Variables** or **Watches** to inspect the values available in that call. Expand a structure, array or pointer to see its contents. A recursive function can have several rows, each with different locals. Execution resumes from the current stop even while you are looking at a caller. **Show Current Frame** returns from a selected caller to the active stop; the screenshot above shows an opened project, rather than a paused debug session.

For a guided first session, run the single-key C starter. For a two-file mystery, stop just after Hello Disk opens its data file.

An inherited Makefile can build a correct program without retaining enough information for C debugging. Preserve the matching object files, compiler intermediate files, listing and linker map in its Debug recipe. The debugger can then distinguish an executable function entry from a mapped C statement. An unavailable local is a limit of the retained evidence, not a value of zero. See Keep custom-Make debug evidence.

Stop at the first assembly instruction

Use **File → Open Source...** for a single file, or **Open Project Folder...** for a larger program. Select the **Target** processor. Both machines understand the 6809 instruction set; programs using 6309-only instructions need the Hitachi processor in the running machine as well. **Assemble** checks the source and creates the binary. Read **Build details** for the listing and diagnostics, or select a diagnostic to go to its location.

Choose **Debug from Entry** to stop at the first instruction, or **Run** to start without that initial stop. **Set Stop** on an instruction you want to examine, then **Continue** to reach it. **Step** lets the machine execute an instruction. An

instruction may change one register without producing anything visible on the CoCo screen. To see the moment it happens, open a three-instruction program and follow A.

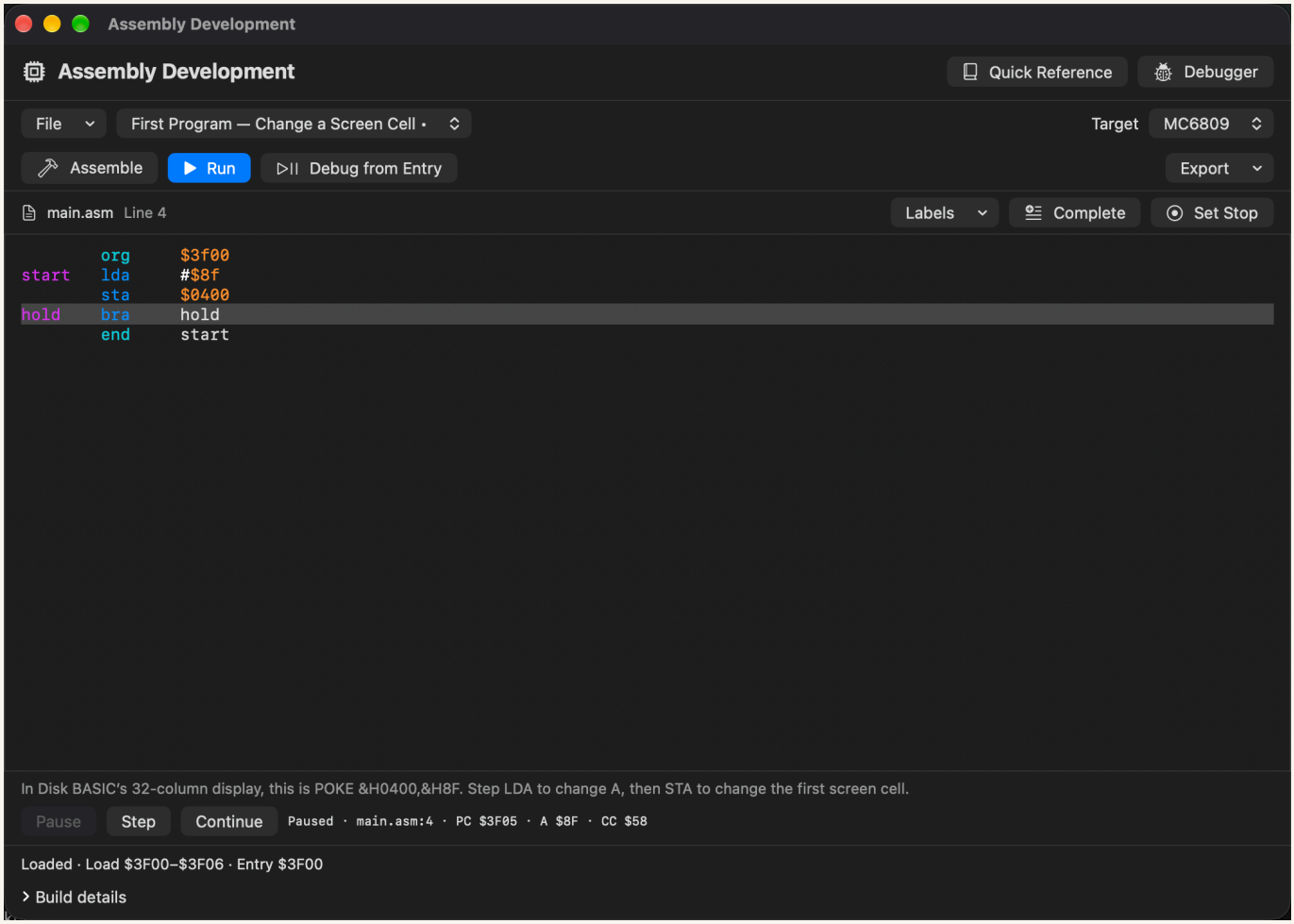


Figure 41: In Assembly Development the example has stored a character in screen memory. The highlight is at the following branch; the footer shows the current program counter and registers.

Project Settings… explains how to edit the project's settings file. It names the main source and, for linked projects, any additional modules and linker script. A custom Makefile project names its recipe, target and output binary. The app asks before executing that recipe. The native assembler-and-linker route can verify source stops against the assembled bytes; use the machine debugger to inspect the output of a custom recipe.
Export Binary… saves the binary for quickloading later. **Export Disk Image…** puts the named binary on a disk and shows the full command to load and execute it. Selecting **Install DOS bootloader** adds DOS as a second way to start it. This workflow targets a BASIC machine; an OS-9 executable uses a different format.

Look inside the machine

To try the machine debugger with a known result, catch a store one instruction before RAM changes.
Debug → Show Debugger examines the shared machine, even if the program has no source file. **Pause Execution** stops it where it is. **Step Instruction** advances one CPU instruction. A BASIC line or C statement can require many instructions. Choose the language workspace when you want to follow the listing you wrote.

- **Inspector** answers "Where is the CPU now?" Follow the program counter (PC) in disassembly, or open an assembler listing in Source view. Inspect registers or set an address breakpoint. In Memory, compare the CPU's mapped address with physical RAM. The MMU view shows how the machine maps blocks of RAM

into the CPU's address space. Navigating is safe; **Set PC** changes the next instruction, and editing a byte alters the machine.

- **Memory Tools** answers "What is in this range?" Select an address space and range to disassemble it or export the bytes. OS-9 interpretation can identify calls and module headers when examining OS-9 code.
- **Graphics Preview** answers "What would these bytes look like as pixels?" Start with the current video page. Switch to a chosen address, select an address space and graphics mode, then inspect a pixel and jump to its byte. Zoom changes the preview alone. The BASIC graphics chapter gives the two-page drawing a purpose.
- **Trace** answers "What happened just before this instruction?" Set bounds or triggers, start a new trace and reproduce the event. Stop recording, select a sample and compare its before/after registers. Markers, optional screen and scheduler events, and export help you compare two points in time.

Which debugger controls change the machine?

Go, **Follow PC**, **Show in Memory** and the MMU's RAM backing buttons change what you inspect. The MMU maps the CPU's address space in 8 KB windows. Its two task columns show programmed banks. **Effective read** tells you what currently supplies the bytes the CPU reads. A ROM overlay can hide RAM at the same CPU address. Select the RAM backing address to see that underlying memory.

A breakpoint's address is a logical CPU address in this session. Uncheck its **Enabled** box to pass it without losing its location. **Set PC Here** redirects execution when the machine resumes. **Write** in the memory inspector edits a RAM byte. Use a practice session for either change.

In **Memory Tools**, Start and End are hexadecimal and the ending byte is included. For physical RAM, the assumed CPU origin determines the targets shown for relative branches. **Disassemble** previews up to 128 rows. **Export Binary…** writes the whole selected range as raw bytes. A disk BASIC loadable binary also needs its load and execution information; for that use the assembly workspace's export.

For a graphics byte, click a point in the preview or enter its X and Y in **Pixel Inspector**. **Show Byte in Memory** opens the corresponding location. **Highlight step changes** helps locate a changed pixel after stepping.

In **Trace**, set the maximum sample count and optional start and stop addresses before choosing **Start New**. This replaces the earlier capture. Starting or stopping the trace leaves the CPU's run state alone. During review, use **Go** for a sample number and **Mark A** and **Mark B** for two points of interest. Choose **Export CSV…** for the selected sample range before clearing it or starting another capture.

Choose the right kind of help

For a BASIC command or an assembly mnemonic, choose the corresponding **Quick Reference** under **Develop** or **Help**. Search the name, check its syntax and the supported BASIC environment or processor, then open the example in its own editor document. Examples are useful even if your main project is already open.

For a worked lesson to read alongside the machine, use **Help → Manual Library…**. For a particular game's controls or an application's reference card, use the Software Library's manual or readme. **Help → Keyboard & Shortcuts…** covers Mac and CoCo keys. **About VCC Plus** and **Licenses & Notices…** identify the people and projects behind the emulator, its artwork and the tools you build with.

Work with an assistant

Develop → Connect to ChatGPT… opens the BASIC connection controls. For the same BASIC document, use **More file actions → Local Assistant Access…**. In C Development choose **Assistant…** for the open project; in Assembly Development use **File → Local Assistant Access…**. These controls share the intended document or project. Choose a read-only connection when you want advice. A review-and-run connection permits the actions named in its local consent window; inspect proposed source changes and any request to execute a custom Make recipe before approving them. The connection file is a private access credential. Keep it out of your source repository.

An existing connection keeps its original scope and advertised tools after an app update. If a newly supported feature is absent, inspect the connection's capabilities and export an appropriate new connection from the workspace. Refreshing an assistant client's tool list and approving a larger project scope are separate actions. The connection field guide explains recovery and permission choices.

For C projects edited outside VCC Plus, an assistant can request a project refresh. Clean shared tabs can update without discarding drafts. New files, changed build recipes or a wider support scope can open a native review listing the concrete changes. Approval adopts those inputs; it does not itself run Make or launch the CoCo. Resolve a conflicting unsaved draft locally before asking the assistant to rebuild.

With **Allow Disposable Playtests**, a C connection can use a separate, owned 512 KB guest, choose MC6809 or HD6309 when advertised, retain its writable test disk, and reopen that disk for save/reload checks. This leaves your shared emulator session separate. The assistant can inspect verified stops and globals, capture the actual framebuffer, and use declared graphics buffers when a project supplies the necessary build evidence. A C statement stop and a function-entry stop provide different debugging information.

Audio capture requires the corresponding permission in the exported connection. It records a bounded *following* interval of the disposable guest and advances that guest during recording; a picture capture does not advance it. The audio interval releases held keys, so a clip alone does not prove a continuously held movement test. Ask for the actual processor, build, input, images and audio timing in a test report. When a request budget is exhausted, the owned playtest can still be stopped and its disk retained. See Vibe Coding with ChatGPT for the complete workflow.

Get back to a working setup

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Before reaching for Restart, read the status at the bottom of the emulator. Then ask where the last good copy of your work lives. Those two observations can turn a scary moment into a small repair.

My keys do nothing

1. If the emulator window is missing, choose **File → Show Emulator** (**Command-1**). A visible BASIC editor is a different window.
2. Read the toolbar. **Run** is an invitation to resume. If a debugger deliberately stopped your program, switch back to its source window first and look at the highlighted line. Continue there when you are ready.
3. Choose **Input → Focus CoCo Display**. At a BASIC input question, type a digit and look for it *before* pressing Return. In a game, consult its manual or readme for the key or joystick port it expects.
4. If only a few keys go missing, open **Input → Keyboard and Joysticks…**. An assigned keyboard joystick can consume arrows and fire keys. If punctuation lands in surprising places, check Keyboard mode. Find the keyboard again separates window focus from input mapping.

Run and Restart are unavailable while Disk Image Editor is open. A mounted disk's editor deliberately pauses and locks the machine. Finish its private edits with the appropriate save/apply action, or close it and decide whether to discard them. Closing releases the lock and leaves the CoCo paused. Click Run when you are ready; see Edit files inside a disk image.

The picture, speed or sound seems wrong

A game is in black and white. Try **Display → Composite TV** while the game waits for input. Allow a frame to be drawn. If orange and blue appear on opposite sides from the colors you remember, try the alternate composite phase. For a CoCo 3 program designed for an RGB monitor, select **RGB Monitor**. Compare the two landing pads.

The monitor has empty space around it. Check **Display Settings…**. Integer Pixels leaves room when another whole multiple of the image would be too large. A fit-to-window choice uses more of the space while respecting the picture's shape. In System view, Expand Monitor gives some of the desk space back to the screen.

Time races or a tone goes quiet. Look for **Machine → Fast-forward**. Return to normal speed, check Run/Pause, and open **Media → Cassette…** to inspect app sound and volume. The cassette transport and app sound control different things. Your Mac's selected sound output and its own mute or volume still apply. If the game alone sounds wrong, check the title's required sound cartridge.

I cannot see the program or the drive I expected

What you see	First check	Where to go
A Software Library search turns up empty	Select **All Software**, clear filters and shorten the title. The Cover Collection shows a subset.	Find a title
BASIC lists somebody else's files	Read the active profile and the mounted filename. FD0, a hard-disk volume numbered zero and an SDC mount numbered zero can each answer a directory request in their own setup.	Which drive zero?
The filename is remembered but the drive is unavailable	Check that the device's controller is connected; then locate the original Mac file if	Floppy file safety

What you see	First check	Where to go
	it moved. Reconnect external storage or choose the correct replacement.	
The controls show a controller but a cartridge starts instead	Check the Multi-Pak startup switch and the live routing. A running program can select a different ROM or I/O slot.	See a live route change
A game ignores a moving stick	Check for activity in the Mac controller preview, then in the expected CoCo port. Look up the fire button or start key in the game's instructions.	Assign a port

A save needs attention

Leave the affected medium attached while you investigate. Read the message on its drive row. **Write protected**, **Temporary changes**, and a failure to write the backing file each call for a different response.

- **Protected.** The guest can read the image. To keep the original as a master, make a writable practice copy and attach that for future writes.
- **Temporary changes.** Edits are in the mounted working copy. Use the drive's save-to-another-file action and give the result a recognizable name *before* ejecting or changing profiles.
- **Failed save or changed file on the Mac.** If another program changed that image, save the emulator's version under a separate name so you can compare the copies. If a disconnected volume caused the failure, reconnect it and retry. Read a discard confirmation all the way through before choosing it.
- **Tape recording needs export.** Open **Media → Cassette…**, stop recording and export the tape to a Mac file. Closing and reopening the recorder window lets you return to the same transport. A cassette attached beside a program in RAM does not by itself save that program.

Busy lights can flash during a perfectly good save. Look for an actual message before taking recovery action. For a practice run in which the fate of each line is visible, see Keep your work.

A picture or movie did not finish saving

Open **Capture Settings…** from the camera disclosure or Display menu. For a failed still picture, **Save Captured Image As…** keeps the picture from the original click rather than taking a new one. A disconnected or read-only capture folder can be changed deliberately; the app does not silently send the file to a different destination.

For a movie, look under **Retained Recordings**. Try **Recover MP4** after restoring storage access or choosing a writable Recordings Folder. **Show Files** locates the retained working movie. Partial recovery may stop at the last completed fragment. Keep those files until you have checked the recovered MP4. Recording and finalizing a long movie need free space; a failed completion is not a reason to delete other media or restart the guest.

Record the CoCo picture and sound

I want my old machine back

If the Software Library changed your setup to play a title, use **Return to Previous Setup** there. If you made a personal profile earlier, select it under **Machine → Configuration Profiles…** and review its files before **Load…**. Both routes bring back equipment and media assignments. Loading the saved program *inside* the guest is a separate step.

For a familiar Disk BASIC setup, first save your Mac source, guest program, temporary images and recordings as needed. Read **Machine → Restore App Defaults…** before confirming. For a pristine starter disk you can experiment on, choose **Create Fresh Starter Media…** from the appropriate built-in profile and give the new setup a different name. Preserve your existing working disk for its saved files.

If you have already restarted and the numbered lines are gone, a matching source document or a copy saved inside an image can bring them back. Opening the same profile over and over cannot reconstruct unsaved RAM. Compare the restart choices before the next experiment.

Look up a control

Appendix A

If you remember a word from a button, search this book from **Book contents**. If you remember which menu you opened, use the directory below. When something has gone wrong and you have no idea what the control is called, start with Get back to a working setup.

Emulator window and menus

Look here	For this job
VCC Plus, **Help**, **Window**	Open Help → Manual Library… for the offline books and Ask the Manuals, Keyboard & Shortcuts for key maps, or a language Quick Reference. About VCC Plus and Licenses & Notices give the project credits and terms. Select an open window by name in Window.
Help → Archive Library...	Browse period publications or search their pages. Use **Copy Citation** to keep the source of a passage.
Help → Release History...	Read the app's official version calendar. The same history is available from **About VCC Plus**. The bundled books follow the app's official release version.
Help → Feedback...	Open the website's feedback form with VCC Plus preselected. Review the information before submitting. Software submissions and rights-holder removal requests use the Library contribution journey.
VCC Plus → Check for Updates..., **Updates & Privacy...**	Check for a newer Mac download, choose automatic launch checks, and change optional platform sharing.
File → Show Emulator	Bring the CoCo back after closing the window. Command-1 also works.
File → Open Media..., **Open Recent Media**	Choose a Mac file and its destination. Inspect the device before asking the guest to load anything.
Media → Floppy Disks... → Open Disk Image...	Browse or edit a supported disk's files without inserting it. A mounted floppy still uses the paused-machine safeguards.
File → Open ROM..., **Load Binary...**	Change the system firmware or load a compatible machine-language program. A cartridge ROM goes in **Cartridges...** instead.
Edit	Copy a guest text screen, paste text, merge or replace BASIC, or cancel a paste. Inside a Mac editor, use its ordinary editing commands.
Machine	Configuration Profiles, Machine Settings and restart decisions, Fast-forward and Restore App Defaults. You can open Machine Settings with Command-comma.
Display	Switch between System, expanded monitor and conventional Display, choose video signal, scaling or scanlines, or save a PNG.

Look here	For this job
Input	Direct keys to the CoCo or to Mac controls. **Keyboard and Joysticks…** chooses keyboard layout and port assignments.
Cartridge	Choose a single cartridge or Multi-Pak layout, devices and startup slot in Cartridges…. Attached disk controllers add shortcuts to their drive windows.
Media	Open the Software Library, recorder, printer, floppy or virtual hard-disk windows. For sound output and volume, use Cassette….
Develop	Open **BASIC Development…**, **C Development…** (⌥⌘C) or **Assembly Development…**. Choose a workbench. **BASIC Quick Reference…** and **Assembly Quick Reference…** provide syntax and examples. The C API directory is in the C manual. For all three editors, see Find and Replace.
Develop → **Connect to ChatGPT…**; **Local Assistant Access…** / C **Assistant…**	Share the intended BASIC document, C project or assembly project. Review the connection's scope, recipe permissions and optional disposable tests locally.
Debug	**Show Debugger** (⌥⌘D) opens the machine inspector. **Pause Execution** or **Continue Execution** (⌥⌘R) changes whether the CPU runs. **Step Instruction** (⌥⌘I) advances one instruction when paused. See the source listing controls or choose a language-level step.

Visible controls on the desk

Control	Where it leads
Profile name or **Profiles**	Saved setups. A modified setup can be saved separately before you load another one.
Run / Pause	Change whether the CPU is executing. At a deliberate source stop, use the source debugger when you want to continue stepping there.
Restart	Soft Reset or Cold Restart. Read the consequence for RAM before choosing.
Media, **Settings**	Shortcuts to device and machine windows. Open Printer Output or the tape recorder to keep a guest print job or a recording.
Devices, **Connections**, **Show Clickable Areas**	Find a target, reveal its wiring, or see where you can click. For a partly covered cartridge, use the Devices list.
Expand monitor, **Return to system**	Enlarge the live monitor and put it back while the program continues.
ⓘ, **FD**, **HD**, **Tape** in the footer	Read the current profile's guide or inspect the named attachment. If there is a warning, follow A save needs attention.
Wooden shelf	Browse software. The separate Manual Library is in Help.
Header **camera** and shared options	Take a PNG using the remembered None/5/10-second timer. Choose the shared Save To folder and optional video audio in the menu; only the camera starts the screenshot.

Control	Where it leads
Header **video / Stop Recording**	Record a CoCo MP4 with optional CoCo audio. Red state and elapsed time identify an active recording. Host shutter/start cues are excluded from the movie.

Inside settings and inspectors

If you know the control's name	Open this section
Advanced Filters, **Edition**, **Environment**, **Format**, **Setup**	Choose a version that fits
Apply and Restart, **Cold Restart**, **Soft Reset**	Pause, reset or restart? and the memory experiment
Build History, **Call Stack**, **Launch Disk**, **Project Settings** (C)	Follow a C build
Capture, **Follow Output**, **Export Raw Bytes**	Catch output from the printer
Clock enabled, **Allow guest to set the virtual clock**	Use a virtual hard disk
Controller Test, **Dead zone**, **Fire 1**, **Fire 2**, **Swap assignments**	Follow the thumbstick and fire button
CPU overclock, **Fast-forward**, **Present frames**	Speed, frames and sound
Create Fresh Starter Media, **Save as My Profile**, **Save Current As**	Make a personal setup
Debug from Entry, **Set Stop**, **Export Binary**	Stop at the first assembly instruction
Enable DriveWire networking, **Forget Mac Shell Permission**	Let OS-9 connect
Edit…, **Open Disk Image…**, **Restart and Apply**	Edit files inside a disk image
Volume in Disk Image Editor	Choose the OS-9 filesystem or numbered HDB-DOS disk inside a hard-drive image
Move To… in Disk Image Editor	Move selected OS-9 files to another folder in the same image; Undo restores their original locations.
Export Tape, **Fast CAS**, **New Recording**, **Rewind**	Play or record a tape
Graphics Preview, **MMU**, **Memory Tools**, **Set PC**, **Trace**	Look inside the machine
Hardware Defaults, **Memory**, **Restore Bundled System ROM**	Choose processor, memory and ROM
Install Only, **Download & Play**, **Stop Automatic Loading**	Install or play
Getting Started, **Restart & Play**	Start a curated game with its verified memory, video and loading setup
Open Source…, **Show Source Folder**	Make a personal source project and open it without building or running
Read Manual, **Online Manual**	Read a cached PDF or visit the project's online reading edition

If you know the control's name	Open this section
Library Actions, **Add Personal Software…**, **Personal Library**	Keep privately owned software on this Mac, with retained originals and writable working media.
Submit Software…	Offer a title for public inclusion or follow the removal/withdrawal link. Opening a form does not submit files.
Guides & References	Open a related walkthrough, map or software reference in Archive Library.
Manual **Bookmark this location**, **Bookmarks**	Keep one bookmark list with All Books / This Book filters. Automatic reading resume is separate.
Capture Settings…, **Recover MP4**	Choose the shared capture folder, screenshot timer and video audio, or inspect a retained recording.
Live ROM, **I/O ports**, **SD card folder**, **Startup slot**	Follow cartridges and the card folder
Read from CoCo, **Renumber**, **Step Out**, **Watches** (BASIC)	Bring a BASIC program into the editor
Read-only connection, **Review and Run**, **Allow Disposable Playtests**, project refresh	Choose assistant permissions and refresh the right project
Save As, **Temporary changes**, **Write protected** on a drive	Keep a floppy safe
Scanlines, **Smooth**, **Sharp**, **Integer Pixels**	Give the monitor more room
Update from Current, **Rename**, **Replace**, **Export** a profile	Manage the saved entry

Use an assembler listing in the machine debugger

Choose **Debug → Show Debugger → Inspector**, switch the code view from **Disassembly** to **Source**, and choose **Open Listing…**. Supply the final absolute LWASM listing for the program already loaded in the CoCo. Opening the listing changes what you see. The machine keeps its program, memory and run state.

- **Follow PC** selects a line when the program counter exactly matches a listed address. Turn it off to keep a line in view while you browse.
- **Find Next** searches source text and filenames. An addressed row has a breakpoint circle. Several listing lines can share an address, and the CPU will stop at that address regardless of which of those lines you selected.
- Control-click an addressed row for **Show Disassembly** or **Show in Memory**. Compare the listed instruction with the current mapped bytes when a stop looks wrong. **Set PC Here** changes where execution resumes and is available only when editing is allowed.

The standalone importer reads addresses from the listing and does not check the loaded bytes against it. A relocatable object listing contains section offsets that still need a linker map. Use the linked assembly project workflow or C source debugger for projects built in those workspaces. They associate the final build with the code that is launched.

Practice files

Open KEYS.bas to try the half-entered flight number. Open LANDPAD.bas to compare composite and RGB. In the app, each link opens a separate editable BASIC example. In a browser it downloads the source file. Running an example transfers its program into the emulated computer. Save any guest program you want to keep first.

The saved-line exercise works directly at the BASIC prompt. It needs an initialized, writable **practice** floppy in FD0. You can create a profile with fresh starter media first. The expected result is one saved line on disk and one later edit that exists only in RAM.

The hardware behind the controls

Appendix B

The Color Computer 3 put a working computer inside the keyboard case. A cable carried its picture to a TV or a monitor. Adding storage could mean adding two separate pieces of equipment: a controller that fit in the expansion slot, and a drive that plugged into the controller. That separation explains why there are both cartridge settings and drive settings in VCC Plus.

Historical reading

- Tandy Corporation. *Introducing Your Color Computer 3*. 1986. The opening hardware tour shows the computer, keyboard and display choices behind the illustrated desk.
- Tandy Corporation. *TRS-80 Multi-Pak Interface Owner's Manual*. 1983. The equipment setup and slot selector explain how an owner chose among cartridges. Compare the physical switch with the startup and live slot readings in VCC Plus.
- Tandy Corporation. *Tandy Color Computer 3 BASIC Quick Reference Guide*. 1986. Commands, pp. 2–17, and functions, pp. 18–22. Useful beside the input and graphics exercises in this handbook.
- *Color Computer Disk BASIC Quick Reference Guide*. InterTAN Canada Ltd., 1987. Disk commands, pp. 3–8, and errors, p. 9. The BASIC disk commands operate on files inside the image attached on the Mac.
- Lindner, Tim, producer. *CoCo SDC*. Fourth version, February 2023. Hardware and software by Darren Atkinson. The card, virtual drives and command summary give the hardware background for the CoCo SDC profile.

The Color Computer Archive preserves historical documentation that informed this book. The lessons and programs here were written for VCC Plus.

Choose another book

If the two computers on your desk still seem like one, make the guest answer a question. If you have a real CoCo disk collection, take a protected disk for a practice visit. To write something you can play, fly Planet Explorer.

The pictures of controls and guest output in this handbook come from VCC Plus. Some window titles identify the isolated practice session. The app version, theme, profile or connected device can change what appears on your own desk. Historical software and its cover art in Software Library examples retain their original credits. See artwork credits.

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The CoCo 3 and CM-8 monitor presentation in VCC Plus's skeuomorphic System view was inspired by SockMaster's "pic of CoCo 3 and CM-8 monitor," published on CoCopedia. VCC Plus's artwork was designed and rendered independently. The remaining hardware illustrations were independently designed using historical photographs and renderings as references.

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