Catalog No. FN-COCO-REV000

FUJINET®

COLOR COMPUTER

GETTING STARTED MANUAL

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GETTING STARTED

MANUAL

FUJINET

THE FUJINET COMMUNITY

A WORLDWIDE FREE-SOFTWARE PROJECT — FUJINET.ONLINE

WARNING

Before inserting or removing the FujiNet — or any Program Pak™ — be sure the Computer is OFF. Otherwise, the FujiNet or the Computer could be damaged.

THE COMMUNITY WANTS YOU TO KNOW…

This equipment has been certified to comply with the limits of pure fun, pursuant to a worldwide community of Color Computer owners who wanted their machines on the network. Everything in this manual — the device, its firmware, the CONFIG program, and the manual itself — is free software. Sources for all of it live at github.com/FujiNetWIFI.

This manual is typeset in loving tribute to the 1980 *TRS-80 Color Computer Operation Manual* (Catalog No. 26-3001/3002). TRS-80, Color Computer, and Program Pak are trademarks of their respective owners. FujiNet is a community project and is not affiliated with, endorsed by, or sponsored by Tandy Corporation or its successors.

 The television screens pictured in this manual are typeset in the genuine MC6847 character set, with text taken verbatim from the CONFIG source code.

Incorporating material from *FujiNet For CoCo: The Basics* by Rich Stephens, with thanks. Hardware by the FujiNet hardware contributors; the CoCoFuji cartridge design is open hardware.

10 9 8 7 6 5 4 3 2 1

TO OUR CUSTOMERS

Your FujiNet is an exciting tool for an infinite variety of uses with your TRS-80® Color Computer — loading software in an instant, storing a whole library on a fingernail-sized card, reading the news, checking the weather, calling bulletin boards, and playing games against real people on the other side of the world. Twenty years ago — make that forty — this capability would have required a room full of equipment and a telephone bill you don't want to think about.

In spite of its power, the FujiNet is quite simple to operate. In fact, *you* can determine exactly how "technical" a device you want it to be.

At the simplest level of operation, you plug the FujiNet into your Color Computer, turn the Computer on, and pick programs off a menu with the arrow keys. The built-in CONFIG program takes care of everything else. For this kind of use, this book has all the information you need to get started.

At a slightly more involved level, you may want to keep your own disk library on a microSD card, make new blank disks out of thin air, and copy software from the network into your own collection. Chapters 5 and 6 show you how.

If, however, you already know your way around a disk-equipped CoCo, you will feel right at home: the FujiNet speaks ordinary HDB-DOS, and DIR, LOAD, and RUN work exactly the way you remember. Browse the quick reference in the back and get right down to business.

The FujiNet has many features not found in any disk drive. A few minutes spent with this manual before pressing ENTER could save you hours later.

Important Information

This manual describes the **CoCoFuji Rev000** cartridge — the FujiNet model currently in production for the Color Computer family — running FujiNet firmware 1.5 with its matching CONFIG program. FujiNet is a living project: firmware updates arrive regularly, and a screen or menu may differ in detail from what is pictured here. When in doubt, the device in front of you is right and the book is behind the times.

If something in this manual does not match your device, or you get stuck in a way the *Troubleshooting and Maintenance* chapter does not cure, help is close at hand:

- The FujiNet web site: **fujinet.online** — downloads, documentation, and the firmware flasher
- The FujiNet Discord chat server — the link is at fujinet.online; the community is friendly and quick
- The FujiNet Users Group on Facebook
- Source code and issue trackers: **github.com/FujiNetWIFI**

You may find the following booklet, prepared by your fellow enthusiasts, helpful: *How to Identify and Resolve WiFi Problems on Computers Built Before WiFi.* (We're kidding. That's this booklet.)

CONTENTS

WELCOME TO FUJINET!

The FujiNet for the Color Computer — the **CoCoFuji** — is a Program Pak™-style cartridge that connects your Computer to your household WiFi network, and spends its life pretending to be something much humbler: a stack of disk drives.

The FujiNet system consists of:

- A **cartridge** that plugs into your Computer's cartridge slot, containing the FujiNet itself — a complete computer of its own — plus the HDB-DOS disk ROM your CoCo boots from
- A built-in **serial cable** that carries disk and network data to the Serial I/O jack on the back of your Computer
- **Four virtual disk drives** (drives 0 through 3), each holding a disk image loaded from the network or from a microSD card
- A **WiFi radio** for your household network — no telephone dialer, no monthly fee
- A **microSD card slot**, so your whole disk library can live inside the cartridge
- A **real-time clock**, a **printer port** of sorts, and a direct network channel for programs written to use them

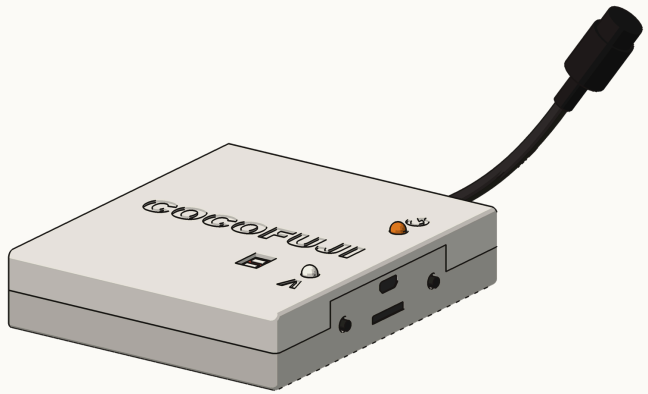


Figure 1. The CoCoFuji and its serial cable.

What It Does

Instead of physical floppy disks, the FujiNet uses **disk images** — exact, byte-for-byte copies of disks, stored as files. Disk images can sit on the microSD card in the cartridge, on a file server on your own network, or on a public library across the internet. Your Color Computer can't tell the difference, and doesn't need to: as far as it knows, a real drive answered the call.

The CONFIG Program

When you power up, the FujiNet hands your Computer a friendly menu program called **CONFIG**. CONFIG is your control panel: it joins your WiFi network, browses disk libraries, loads disk images into drives, and gets out of the way. Chapters 4 and 5 give you the tour.

HDB-DOS

The cartridge carries **HDB-DOS**, a faithful extension of Tandy's Disk Extended Color BASIC. Everything you (or your books and magazines) know about disk BASIC still works: `DIR`, `LOAD`, `RUN`, `SAVE`, and friends. Chapter 6 covers the few pleasant differences.

A Tour of the Cartridge

Figure 2. Cartridge top: lamps, model switches, and markings.

Take a minute to get acquainted before you plug anything in. With the cartridge held label-up, connector to the left:

- **WiFi lamp (white)** — next to the **A** marking. It glows steadily once the FujiNet has joined your network.
- **Activity lamp (orange)** — next to the ↻ marking. It flickers when your Computer talks to the FujiNet, just like the busy lamp on a disk drive.
- **Model switches** — the small red switch block, visible through its window. These tell the FujiNet which Color Computer model it lives in (next chapter).
- **Button A** — the button on the outer edge nearest the **A** marking (closest to the front when installed). It is used when updating firmware.
- **Reset button (↻)** — the button at the other end of the outer edge. Pressing it restarts the FujiNet itself — not your Computer.
- **Micro-USB jack and microSD slot** — center of the outer edge. USB is for firmware updates and (optionally) power; the slot takes a microSD card, label up — push to seat it, push again to release it.

INSTALLATION

Carefully unpack your FujiNet. Save the packing material in case you ever need to transport it. This chapter takes you from the box to the first glowing screen. Take your time and follow each step — it's easier than it looks.

What You'll Need

- Your FujiNet cartridge, with its attached serial cable
- A TRS-80 Color Computer — model 1, 2, or 3 — or a Dragon 32/64, with its television or monitor
- A 2.4 GHz WiFi network, and its password
- Optionally, a **microSD card** for your own disk library

NOTE

A microSD card of 64 GB or less, formatted FAT32, from a reliable brand, is recommended. In reality 8 to 32 GB is more disk space than every CoCo program ever written. On most computers: insert the card, choose Format, choose FAT32, proceed.

Setting the Model Switches

The cartridge top has a small window with two numbered slide switches. They select the HDB-DOS ROM — and the serial speed — that matches your machine. Set them *before* you plug in, using a toothpick or a bent paper clip:

Your Computer	Switch 1	Switch 2
Color Computer 1	ON	ON
Color Computer 2	OFF	ON
Color Computer 3	ON	OFF
Dragon 32/64	OFF	OFF

Your FujiNet most likely arrived already set. If the seller knew your model, leave the switches alone.

Connecting the FujiNet

The Computer must always be turned OFF whenever the FujiNet is plugged in or removed. WARNING! Do not insert fingers or other objects into the cartridge slot. Doing so could damage your Computer.

1. Turn off your Color Computer.
2. If you have a microSD card, insert it into the FujiNet's card slot now — label up, push gently until it clicks.
3. Locate the cartridge slot on the right side of the Computer. Carefully insert the FujiNet with the label side up and the connector facing into the slot. It should slide smoothly into the recessed receptacle. If it resists, it may be upside down — it only goes in one way.
4. Plug the round 4-pin DIN plug on the FujiNet's cable into the jack marked **SERIAL I/O** on the back of the Computer. The plug only fits one way: rotate it gently until the pins line up, then press it home.
5. That's the whole installation. There is no power supply to connect — the FujiNet draws its power from the cartridge slot.

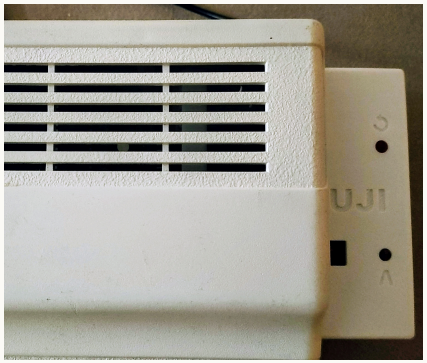


Figure 3. The FujiNet seated in the cartridge slot — label up.

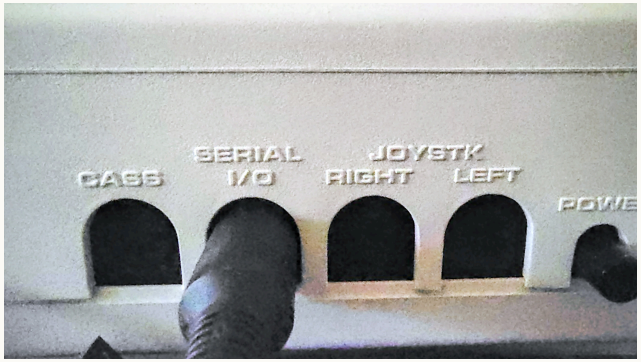


Figure 4. The serial plug in the SERIAL I/O jack — mind the look-alike CASS jack next door.

First Power-Up

Turn on your television (or monitor), then turn on the Computer. Three things happen, in quick succession:

1. The familiar green BASIC screen appears for a moment, announcing Extended Color BASIC and **HDB-DOS**:

Figure 5. The power-up message. Wording varies with your model and switch setting.

2. The FujiNet splash screen appears while CONFIG comes over the serial cable:

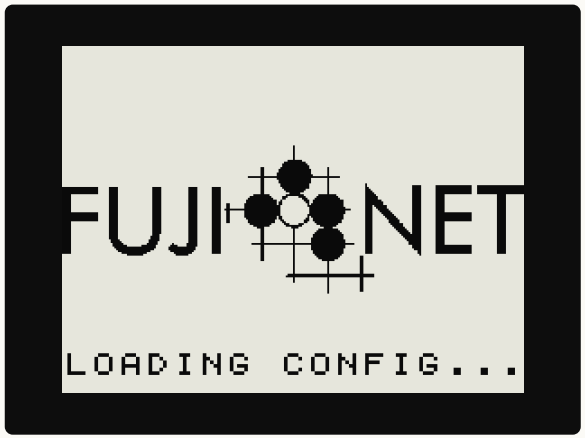


Figure 6. CONFIG on its way over the serial cable. On a television set, the sharp edges bloom with color fringes — that's normal.

3. A few seconds later the CONFIG program appears — on the very first power-up, it begins by scanning for WiFi networks (next chapter).

If the Message Does Not Appear

A. Make sure the television is turned on and tuned to the Computer (channel 3 or 4, antenna switch to COMPUTER — see your Operation Manual).

B. Check that the FujiNet is firmly seated in the cartridge slot, and the serial plug is firmly seated in the **SERIAL I/O** jack.

C. Make sure your microSD card, if any, is properly inserted.

D. If the BASIC screen appears but CONFIG never loads, check the model switches against the table on the previous page — a wrong setting makes the FujiNet talk at the wrong speed.

E. Turn off the entire system, recheck all connections, and try again. For further assistance, see **Troubleshooting and Maintenance**.

Do not insert or remove the FujiNet, its serial plug, or the microSD card while the Computer is in use — to do so could cause abnormal operation, or damage.

Where Things Stand

From now on, every time you switch on your Computer, the FujiNet boots CONFIG. When you leave CONFIG (Chapter 5), your Computer restarts into plain HDB-DOS BASIC with your chosen disks loaded — exactly like a CoCo with a well-stocked multi-drive system. Pressing the Computer's RESET button brings back BASIC; typing DOS ENTER at the OK prompt brings back CONFIG.

JOINING YOUR NETWORK

The first time your FujiNet wakes up, its first order of business is introductions: it scans the airwaves and lists every WiFi network it can hear, strongest first.

Choosing a Network

Figure 7. The network list. Stars show signal strength — three is excellent, one means "move closer."

The bright bar marks your place. In CONFIG, menu keys are shown in *reverse video* — where the screen shows a bright letter, that's the key to press.

- ↑ ↓ — move the bar through the list
- ENTER — join the highlighted network
- H — type the name of a hidden network
- R — rescan the airwaves
- S — skip WiFi setup entirely (you can return later)

Entering the Password

Pick your network and CONFIG asks for the password. Type it carefully — capitals count. Like on a big computer, what you type starts out lowercase; hold SHIFT for capitals. The screen echoes a ♦ for each character (up to 64), and the left arrow key ← erases a mistake:

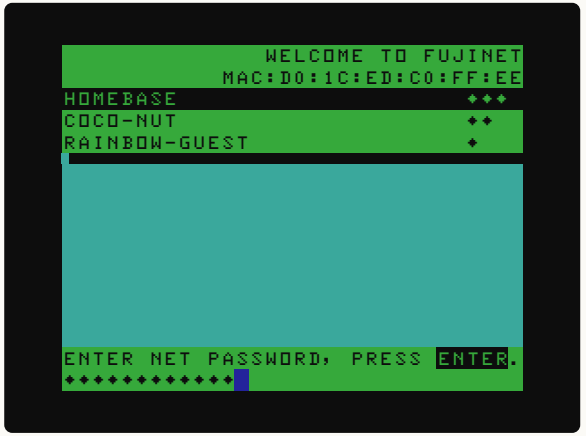


Figure 8. Passwords echo as asterisks. The blue block is the cursor.

Press ENTER and the FujiNet joins up. The white WiFi lamp comes on, and you land on the Host Slots screen — Chapter 5.

The network and password are remembered inside the FujiNet (and, if a microSD card is present, in a file called `FNCONFIG.INI` on the card). From now on it reconnects all by itself, every time, before the television warms up.

NOTE

The FujiNet's radio speaks 2.4 GHz WiFi only. If your router runs one network name across both 2.4 and 5 GHz bands and the FujiNet has trouble joining, give the 2.4 GHz band its own name in your router's settings.

The Configuration Screen

Any time you want the FujiNet's vital signs, press **C** from the Host Slots or Drive Slots screen (Chapter 5):

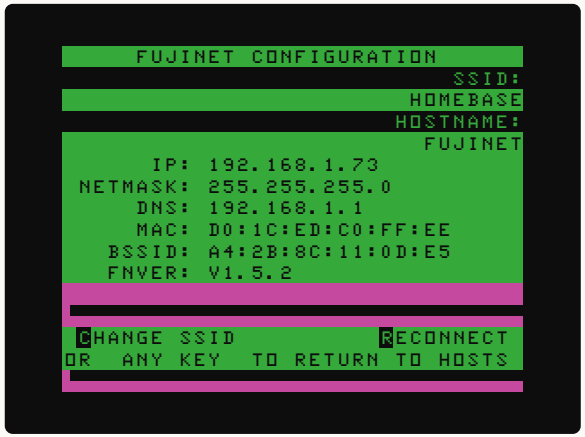


Figure 9. The Configuration screen: your network name, the FujiNet's address on your network, and the firmware version.

- **C** — change to a different WiFi network (back to the scan screen)
- **R** — reconnect to the current network
- Any other key — return to the Host Slots screen

The Web Control Panel

Note the **IP** line — that is your FujiNet's address on your own network. While the Computer is on, the FujiNet serves a full settings page to any web browser in the house. From a modern computer or phone, visit:

```
HTTP://192.168.1.73
```

(your address will differ — read it off the Configuration screen). From that comfortable chair you can rename the device, manage WiFi, choose printer emulations, adjust options, and update firmware.

A Word About the Clock

Once it is on the network, the FujiNet quietly keeps the real date and time, fetched from the internet. Software written for the FujiNet — and OS-9 users with the right driver — can read it any time. Your CoCo finally knows what day it is.

THE CONFIG PROGRAM

Here is the heart of the matter. CONFIG manages two short lists, and once you can read them, you can do everything.

A **host** is any place disk images live: a public library on the internet, a file server on your own network, or the microSD card in the cartridge (which always goes by the name `SD`). The FujiNet remembers eight of them — the **host slots**.

A **drive slot** is one of the four disk drives your Computer sees — drives 0 through 3, just as in Disk BASIC. Loading a disk image into a drive slot is the FujiNet's version of sliding a floppy into a drive.

The Host Slots Screen

Figure 10. The Host Slots screen. Slot 1 is the microSD card; the others hold network libraries.

Out of the box, slot 1 is `SD` and slot 2 is a public library. The keys:

- ↑ ↓ — move the bar; 1—8 jumps straight to a slot
- E — edit the highlighted slot: type a host name (up to 32 characters) and press ENTER
- ENTER — open the highlighted host and browse it
- → — switch to the Drive Slots screen
- C — the Configuration screen (Chapter 4)
- L — the Game Lobby (end of this chapter)
- BREAK — leave CONFIG and start computing

Fill your empty slots with libraries worth visiting. Type names in upper or lower case — they're the same to a server:

- `TNFS.FUJINET.ONLINE` — the community's main library; CoCo software lives in the `COCO` folder
- `APPS.IRATA.ONLINE` — applications and on-line services
- `FUJINET.PL` — a well-stocked European mirror

NOTE

These libraries are TNFS file servers — a simple file-sharing protocol beloved of 8-bit machines. A current list of public servers is kept at fujinet.online/tnfs-server-status. You can also run a free TNFS server on a modern computer in your own home and serve your collection across the room — see the FujiNet wiki.

Browsing a Host

Highlight a host, press ENTER, and CONFIG opens its catalog. Entries ending in `/` are folders:

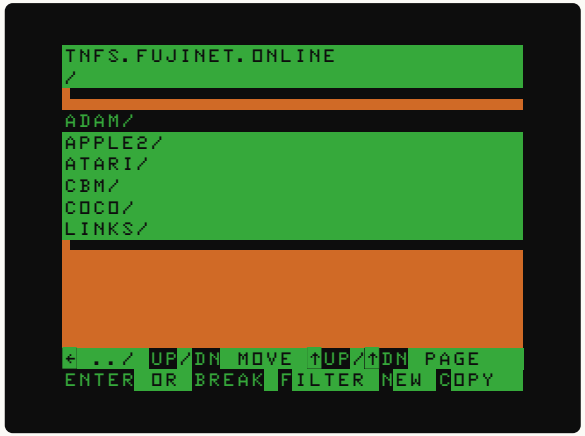


Figure 11. Browsing a library. The host's name and your place in its folders are shown at the top.

- ↑ ↓ — move the bar. At the top or bottom of a full screen, keep going — the next ten entries page in. Hold SHIFT with ↑ or ↓ to leap a whole page.
- ENTER — open the highlighted folder, or choose the highlighted disk image
- ← — back out to the enclosing folder
- F — type a filter, like `W*.*`, to show only matching entries; `!` followed by text hunts through every folder beneath you. Enter an empty filter to clear it.
- BREAK — back to the Host Slots screen

A long file name scrolls back and forth by itself if you let the bar rest on it for a few seconds. Folders with more than one screenful show `[...]` at the edge of the list.

Loading a Disk

Step into the `COCO` folder, put the bar on something promising, and press ENTER:

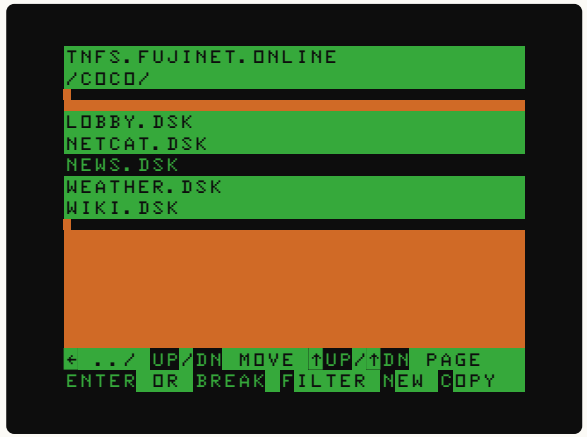


Figure 12. The community's CoCo shelf — programs written for the FujiNet (Chapter 7).

CONFIG asks which drive slot the disk should go in, and shows the file's details while you decide:

Figure 13. Choosing a drive slot. Drive 0 is the one your Computer boots from.

- ↑ ↓ — choose a drive slot (0 through 3)
- ENTER — load it **read-only** (R/O): nothing can write on it. Like a floppy with the notch covered.
- W — load it **read/write** (R/W): programs can save onto the image
- BREAK — never mind

> **NOTE**
>
> **Public libraries don't allow writing, so load their disks read-only — that's the ENTER key. Save W for images on your own SD card or your own server.**

When the disk is in, you return to the catalog right where you were — load another disk into another drive, or press BREAK to back out to the Host Slots screen.

The Drive Slots Screen

From the Host Slots screen, → brings up the other list — what's in the drives right now:

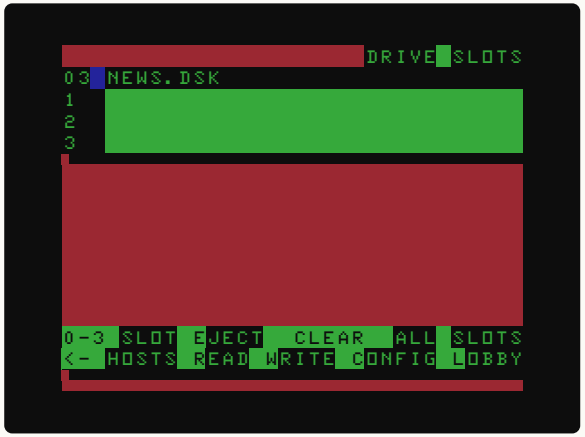


Figure 14. Drive Slots. Reading a line: drive number, the host it came from, a colored mode block, and the image's name.

The small colored block on each line is the mode indicator: **blue** means read-only, **yellow** means read/write, and **black** means the drive is empty.

- 0–3 or ↑ ↓ — choose a drive
- R / W — flip the highlighted drive between read-only and read/write
- E — eject the highlighted image
- CLEAR — eject everything
- ← — back to the Host Slots screen

Leaving CONFIG

When your disks are loaded, press BREAK (from either the Host Slots or Drive Slots screen). CONFIG announces `MOUNTING ALL SLOTS...`, your Computer restarts into HDB-DOS BASIC — and if the disk in drive 0 has a BASIC program named `AUTOEXEC.BAS` on it (or is an OS-9 disk with a boot track), it runs automatically. Otherwise you land at the friendly `OK` prompt with your disks ready: type `DIR` ENTER and see.

Making New Disks

A disk system that can't make new disks would be a sad thing. Yours makes them out of nothing at all. While browsing a host you can write to (your SD card, say), press N. CONFIG asks two questions in the menu area:

- `ENTER # OF DRIVES TO CREATE` — how many 157K virtual diskettes to put in the image. Answer `1` (multi-disk images are an HDB-DOS power feature).
- `ENTER FILENAME:` — name it. `.DSK` is added for you if you forget.

The new image appears in the current folder, blank as the day it was born, ready to load read/write — HDB-DOS images need no formatting. Switch to it (Chapter 6) and `SAVE` away.

> **NOTE**
>
> **Only create new disk images on your own SD card or your own local server — public libraries politely refuse.**

Copying a Disk

Found something on a network library you'd like to keep on your own card? Highlight the file in the catalog and press C. CONFIG asks which host to copy *to* — pick `SD` — then lets you walk the destination's folders. When you're standing in the right folder, press C again and the FujiNet does the rest, no Computer memory required:

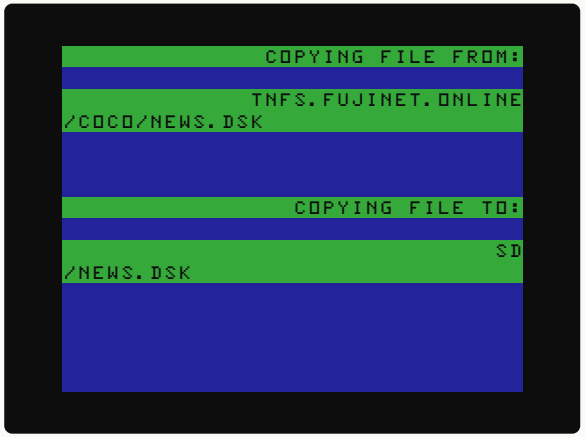


Figure 15. A copy in progress — straight from the library to your card.

The Game Lobby

Press L from the Host Slots or Drive Slots screen and CONFIG asks `BOOT TO LOBBY? Y/N`. Answer Y and your Computer boots into the **Lobby** — a live directory of on-line, multi-player games being played right now on FujiNet-equipped computers everywhere: Five Card Stud, Battleship, Fujitzee, and more. Pick a table and you're seated — against an Atari in Poland, an Apple II in California, and a CoCo down the street. Yes, real people. Yes, on your Color Computer.

Figure 16. The Lobby. Pick a table — bots are always seated, people drop in all evening.

> **NOTE**
>
> **If your firmware doesn't offer the L key yet, no matter: load `LOBBY.DSK` from the `COCO` folder of `TNFS.FUJINET.ONLINE` into drive 0 and leave CONFIG with BREAK.**

CONFIG at a Glance

Key	Does
ENTER	open / choose / load read-only
W	load read/write — careful
E	edit a host slot; eject a drive
← →	hosts screen and drives screen; in the catalog, ← backs out of a folder
F N C	filter, new image, copy (in the catalog)
C L	configuration screen, Lobby
CLEAR	eject all drives
BREAK	back out; from the main screens, leave CONFIG and boot

USING HDB-DOS

This is where the fun really begins. When you leave CONFIG, your Computer is an ordinary disk-equipped CoCo — as far as it knows. The disk system it boots is **HDB-DOS**, a widely used extension of Tandy's Disk Extended Color BASIC, and everything from your books, magazines, and memory works unchanged. The FujiNet team did not write HDB-DOS and treats it as the well-finished classic it is.

Old Friends

All the Disk BASIC commands behave exactly as documented in 1981:

- `DIR` — list the disk in drive 0
- `DIR 1` — list the disk in drive 1
- `RUN"GAME"` — load and run a BASIC program
- `LOADM"PROG.BIN"` then `EXEC` — machine language, the long way
- `SAVE"MINE"` — save your BASIC program
- `BACKUP`, `COPY`, `KILL`, `RENAME`... — all present

RUNM

HDB-DOS adds a one-step launcher for machine-language programs. Instead of `LOADM` followed by `EXEC`:

`RUNM"PROG.BIN"` ENTER

DRIVE

To make a different drive the default, HDB-DOS uses a `#` where Disk BASIC's plain `DRIVE` command would go. To switch to the disk image in drive slot 1:

`DRIVE #1` ENTER

FLEXIKEY

HDB-DOS can replay the last line you typed, one character at a time — wonderful after a typo:

- → — recall the last line you typed, one character per press
- SHIFT → — recall the whole rest of the line at once
- ← — erase one character, as always
- SHIFT ← — throw away the whole line you're typing

Saving Your Work

Remember the mode blocks from Chapter 5: a disk loaded **read-only** (blue) refuses `SAVE` and `KILL` just as a write-protected floppy would. To save, use an image on your own card loaded with W (yellow). The recipe for a fresh workspace:

1. In CONFIG, browse to your SD card, press N, and make `MYDISK.DSK`.
2. Load it into drive 1 read/write.
3. Leave CONFIG with BREAK.
4. `SAVE"WORK:1"` — or `DRIVE #1` first, and just `SAVE"WORK"`.

NOTE

HDB-DOS has more features than this chapter — many of them, like multi-disk `DRIVE` banks, are power tools. The complete HDB-DOS manual is free at cloud9tech.com. For questions about HDB-DOS itself, that manual is the authority.

Getting Back to CONFIG

Press the Computer's RESET button (right rear corner of the case), then type D□S ENTER. The FujiNet serves CONFIG again, with your drives just as you left them. (Powering off and on works too.)

THE PROGRAM LIBRARY

Disk images were only the beginning. A growing shelf of programs is written *for* the FujiNet — they talk through its network channel directly, no modem heard from. You met the Lobby in Chapter 5; here are the daily drivers, all free in the `COCO` folder at `TNFS.FUJINET.ONLINE`. Load one into drive 0, leave CONFIG, and it runs by itself.

News — `NEWS.DSK`

A wire-service reader. Pick a topic — world news, business, science, technology, sports — scroll the headlines, and read whole stories on your CoCo. On a CoCo 1 or 2 it offers 32- and 42-column displays (the latter with real lowercase); a CoCo 3 can use its native 40- and 80-column screens.

Figure 17. The News topic menu.

Weather — `WEATHER.DSK`

Current conditions and forecasts, anywhere you can name. It finds your location automatically (by your network address), shows temperature, humidity, wind, dew point, sunrise and sunset — and switches between Fahrenheit and metric on a keypress.

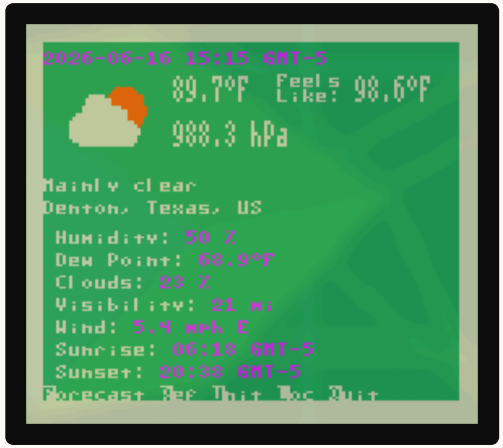


Figure 18. Weather, with a forecast a keypress away.

Wiki — WIKI.DSK

Wikipedia, on a Color Computer. Type a subject, pick from the matching articles, and read — the soft 42-column font with true lowercase makes long articles a pleasure. Forty years on, your CoCo contains the sum of human knowledge. Approximately.

Figure 19. Wikipedia in 42 columns of real lowercase.

Netcat — NETCAT.DSK

A simple, solid terminal program for the telnet bulletin boards that are alive and well today. Give it an address in the form `N:TELNET://BBS.EXAMPLE.COM:23` and you're calling — no telephone, no long distance. Recent versions speak VT-52 with a 42-column display, so full-screen boards look right.

Figure 20. Netcat dialing a telnet BBS.

And More

The shelf keeps growing — browse the `COCO` folder now and then. Programmers: the network channel that powers these programs is yours too, from BASIC or C or assembly. Start at github.com/FujiNetWIFI and the **fujinet-lib** library; the community Discord is full of people who will happily get you started.

[PHOTO: full-setup.jpg]

the whole setup: CoCo with CocoFuji installed, serial cable to the rear, TV showing CONFIG

Figure 21. The complete outfit — disks and programs alike, conjured out of thin air.

TROUBLESHOOTING AND MAINTENANCE

If you have problems operating your FujiNet, check the following table of symptoms. Hopefully, you'll find the cure as well. If you still can't remedy the problem, bring it to the community (page 4) where it will be promptly puzzled over, free of charge.

Symptom	Cure
CONFIG doesn't appear when you turn the Computer on.	1. Cartridge not seated. Power off, reseat it, try again. 2. Serial plug not in the SERIAL I/O jack (or in the cassette jack by mistake — they're neighbors and the cassette DIN has 5 pins). 3. Model switches set for the wrong machine — check the table in Chapter 2. 4. Television not tuned to the Computer (channel 3/4, antenna switch).
Garbage, or BASIC appears but `DOS` hangs.	1. Wrong model switch setting — the FujiNet is talking at the wrong speed. 2. Dirty cartridge contacts. Power off and reseat the cartridge.
The network scan finds nothing, or won't connect.	1. The FujiNet hears 2.4 GHz networks only. Give your router's 2.4 GHz band its own network name. 2. Hidden network? Press H and type its name exactly. 3. Passwords are case-sensitive — SHIFT for capitals.

Symptom	Cure
A host slot won't open.	1. Check the spelling (E to look). 2. Try a known-good host: `TNFS.FUJINET.ONLINE`. 3. For `SD:` is a card inserted and clicked home? Is it FAT32?
A disk won't boot, or a program won't load.	1. The Computer boots drive 0 — is your disk there? 2. Not every image is bootable; many are data disks. `DIR` it and `RUN` what you find.
Can't `SAVE` — `?WP ERROR` or similar.	1. The image is loaded read-only. In CONFIG's Drive Slots screen, highlight it and press W (mode block turns yellow). 2. Public libraries never accept writes — copy the image to your SD card first (Chapter 5).
The white lamp never lights.	The FujiNet hasn't joined a network — run through Chapter 4. The lamp is also off for a few seconds at every power-up while it reconnects: patience.

Updating the Firmware

New firmware arrives regularly with new features. Updating takes a modern computer, the free **FujiNet-Flasher** program (from fujinet.online/download), and a USB cable with a **micro-USB** end.

1. Power off your Color Computer. You may leave the cartridge installed or bring it to your desk — USB powers it safely either way.
2. Install the flasher. On Windows you may also need the SiLabs "CP210x Universal" USB driver — the flasher's page links to it.
3. Connect the USB cable from your computer to the FujiNet's micro-USB jack.
4. Start the flasher, choose the serial port it found, leave the speed at 460800, and choose platform **Tandy CoCo** and the newest firmware version.
5. Click **Flash FujiNet Firmware**, then press and hold the FujiNet's **A button** until the progress log shows writing has begun. Release, and let it finish.
6. Disconnect the cable before powering up your CoCo.

NOTE

Nightly test builds are also published. They are provided 100% as-is with no guarantee — use them only if you enjoy troubleshooting (some of us do).

The flasher also has a **Serial Debug Output** button: with the USB cable connected, it shows a running log of everything the FujiNet is doing — the first thing the community will ask for if you report a mystery.

Maintenance

Your FujiNet requires little maintenance.

- Keep it free of dust, and treat the cartridge slot with the same respect as any Program Pak: Computer OFF before inserting or removing.
- The microSD card is the only moving part, so to speak. Push to seat, push to release — never pull.
- If the case needs cleaning, use a damp, lint-free cloth. The printed case does not care for solvents.
- The serial cable is captive. If it ever fails, the cartridge is open hardware — the community can show you the two solder joints.

Pressing the Reset Button

The small button at the ↻ marking restarts the FujiNet itself — not your Computer. You will rarely need it: if the FujiNet ever seems asleep (lamps frozen, CONFIG unresponsive), press it once, wait a few seconds, and press the Computer's RESET, then type DOS ENTER.

SPECIFICATIONS

Power

Supply	+5 VDC from the cartridge slot (diode-isolated)
Alternate supply	micro-USB, 5 VDC — safe to use together
Processor	ESP32 (two 32-bit cores, 240 MHz) — rather more computer than the computer

Serial Interface

The captive cable carries DriveWire protocol over the Color Computer's built-in serial port ("the bit-banger"), at a speed set by the model switches:

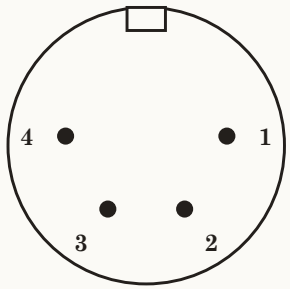
Model setting	Speed
Color Computer 1	38,400 baud
Color Computer 2 / Dragon	57,600 baud
Color Computer 3	115,200 baud

Storage

Drive slots	4 (drives 0–3)
Host slots	8
Virtual diskette	161,280 bytes (35 tracks × 18 sectors × 256 bytes) — "157K"
microSD	FAT32, 64 GB or less recommended
Network	WiFi 802.11 b/g/n, 2.4 GHz; TNFS, HTTP and friends over WiFi

Serial Plug Pin Location

Looking at the 4-pin DIN plug on the FujiNet's cable (solder side — the view you'd see looking *into* the SERIAL I/O jack on the Computer):



Pin	Signal	Direction
1	CD — Carrier Detect	FujiNet to Computer
2	RD — Receive Data	FujiNet to Computer
3	GND — Signal Ground	—
4	TD — Transmit Data	Computer to FujiNet

The pinout is the Color Computer's own — see the *Serial Interface* page of your Operation Manual, where the same drawing appears facing the other way.

CUSTOMER INFORMATION

Service Policy

The FujiNet community's worldwide network of enthusiasts provides quick, convenient, and friendly help for this device, in most instances within hours, on the Discord server and the user groups listed on page 4. Because there is no warranty department, there is also no warranty-void sticker: opening the case is not a violation, it's encouraged. The following limitations also apply:

1. If any of the screws on your FujiNet are broken, the community will cheerfully tell you where to buy more (they are ordinary M3s).
2. If your FujiNet has been modified, the community will want to hear all about it.

Software License

The FujiNet firmware, the CONFIG program, this manual, and the hardware design are free software and open hardware, licensed under the GNU General Public License v3 (and compatible licenses). You may use, copy, study, modify, and share them. Source for everything is at github.com/FujiNetWIFI — and your improvements are welcome back.

LIMITED WARRANTY

For a period of FOREVER from the date of delivery, the FujiNet community warrants to the original purchaser — and to everyone the purchaser shares it with — that the software shall remain free, the source shall remain open, and the schematics shall remain published.

EXCEPT AS SPECIFICALLY PROVIDED ABOVE, EVERYTHING IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL THE COMMUNITY BE LIABLE FOR LOSS OF PROFITS OR BENEFITS — ONLY OF EVENINGS, WHICH YOU WILL SPEND PLAYING WITH YOUR COLOR COMPUTER.

Unlike 1980: when something bothers you, you can read the source, fix it yourself, and send a pull request. Statements made by community members regarding the FujiNet's capacity or suitability are usually enthusiasm, which is warranted in full.

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WEB: FUJINET.ONLINE
SOURCE: GITHUB.COM/FUJINETWIFI

CHAT
DISCORD — LINK AT
FUJINET.ONLINE

GROUPS
FUJINET USERS
ON FACEBOOK

LIBRARY
TNFS.FUJINET.ONLINE
/COCO