

automitti user guide

automitti is a menu-bar app that puts Mitti on a switcher Mitti doesn't know about, so a Roland V-160HD, an Analog Way Pulse 4K or Midra 4K, an older Analog Way Midra or a LiveCore can drive it the way an ATEM does. It does the same for QLab 5.

Mitti already follows a Blackmagic ATEM: it rolls when the switcher takes it to air, does something you chose when it's taken off, and can make the switcher take at the end of a clip. automitti gives it that same behaviour on the switchers above. It also sends Mitti's one OSC feedback stream to as many places as you list, and serves a full-screen clip clock to any browser.

Released at v0.2.1, as a preview: try it with your own kit before a show depends on it. This is an AI-assisted codebase, directed and reviewed by a human author.

Run against real equipment: Mitti 2.8.18 and 2.8.19 (the emulated ATEM, Mitti's own Pause at End taken on the switcher, NDI tally, OSC, the HyperDeck clip list); Blackmagic's Switcher SDK 10.2.1, which is what Mitti's ATEM integration runs; and **QLab 5.5.10 with Wait cues only**.

Only against simulators: every switcher. The V-160HD driver has met a simulator written from Roland's documents; the Pulse 4K / Midra 4K driver, Analog Way's own simulator; the LiveCore and Midra drivers (new in v0.2.0), simulators written from openRCS's findings on a real NeXtage 16 and Pulse². **Several Mittis at once** (new in v0.2.0) was run with two Mitti simulators on the V-160HD simulator, not with two real Mittis.

Not verified yet: a Video cue actually playing in QLab, a QLab on another machine or a show-sized QLab workspace; two real Mittis at once; any real switcher with this code; Mitti playing on NDI tally rather than receiving it; Windows and Linux, which have no build.

What you need

- A Mac. The download is universal (Apple Silicon and Intel), signed and notarised by Apple, so it opens with no Gatekeeper warning.
- **Mitti**, or **QLab 5**, on this Mac or another one on the same network.
- One of the switchers below, on the same network. With none, the **Manual / HTTP** switcher lets you set the tally from the page or from Companion.
- For NDI tally only: the NDI runtime, which comes with [NDI Tools](#). automitti doesn't bundle it.

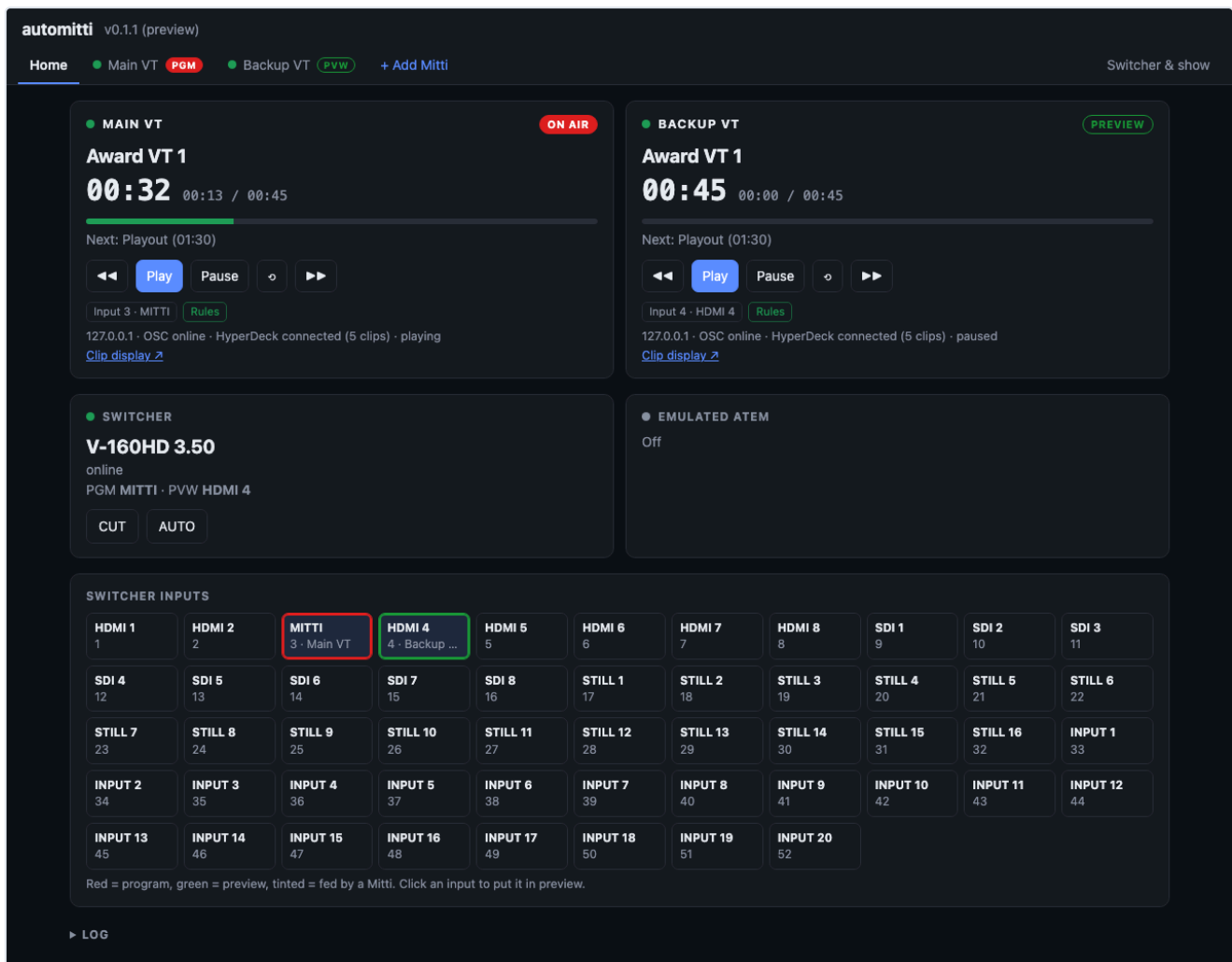
Switcher	How automitti talks to it
Roland V-160HD	LAN control, TCP 8023, with the unit's network password
Analog Way Pulse 4K / Midra 4K (QuickVu, Pulse, Eikos, QuickMatrix)	AWJ, TCP 10606
Analog Way LiveCore (Ascender 16/32/48, NeXtage 08/16, SmartMatrix Ultra)	Analog Way's mnemonic protocol, TCP 10500
Analog Way Midra (Pulse ² , Eikos ² , Saphyr, SmartMatrix ² , QuickMatrix, QuickVu)	the same protocol, TCP 10500
Manual / HTTP	none: the page, or POST /api/switcher

Install and start it

1. Open the disk image and drag **automitti** to Applications.
2. Open it. It lives in the menu bar; its window has a **Network interface** and a **Port** (8710 unless you change it).
3. Press **Start server**, then **Open**. The control page opens in your browser at `http://<this Mac>:8710/` , and any other machine on the network can open the same address.

Everything else is set on that page and saved in `~/Library/Application Support/automitti/config.json` . You can change it from a browser on another machine mid-show without restarting anything. A settings file from v0.1.x is carried across as the first Mitti.

The control page



- **Home** shows every Mitti together: its clip and countdown, the next clip, its tally, which switcher input it's on and what's driving it (**ATEM**, **NDI** or **Rules**). Below are the switcher, with **CUT** and **AUTO**, and its inputs; click an input to put it in preview.
- **A tab per Mitti**, with **+ Add Mitti** next to them. A tab holds that Mitti's settings, its transport (previous, **Play**, **Pause**, rewind, next) and cards for its NDI tally, rules and feedback relay.
- **Switcher & show** holds what every Mitti shares: the switcher, the emulated ATEM, the network and the clip display colours.

Edits are a draft. **Unsaved changes** appears with **Save** and **Discard**, and nothing changes until you save.

1. Connect the switcher

In **Switcher & show** → **Switcher**, choose the switcher and fill in its address. The page shows its status; once it's online its inputs appear on Home, with their names.

- **V-160HD**: set a 4-character NETWORK PASSWORD on the unit (MENU → LAN CONTROL) and enter it here. The unit allows **one** LAN client, so RCS over LAN can't run at the same

time.

- **Pulse 4K / Midra 4K:** optionally limit it to some screens (S1, S2), and choose the layer that preview and program selects write to.
- **LiveCore:** optionally limit the screens, choose the layer for selects, and set the **take time**. A take sweeps the T-bar over that time, because the LiveCore's own take commands stall over this protocol; 0 makes it a cut.
- **Midra (Pulse², Eikos²...):** the frame has no input names, so type them in order. A Pulse² takes **one** control session, so close RCS2 or openRCS first. A Midra refuses an input with no signal, and automitti tells you when it does.
- **Manual / HTTP:** set the number of inputs. Program and preview come from the page or from `POST /api/switcher` with `{"action": "program" | "preview" | "cut" | "auto", "input": n}`, which Companion's HTTP action can send.

What counts as on air. On the V-160HD, the switcher's own tally. On the Analog Way switchers, an input is on air while it's a source of a layer in what a screen is showing, and **during a take both sides count**, so a clip rolls as the mix starts rather than after it.

2. Connect Mitti

Open the Mitti's tab and fill in **This Mitti**:

- **Name:** its tab and its clip display title.
- **Its switcher input:** a number or the input's name, such as 3 or HDMI 3.
- **Mitti address:** 127.0.0.1 when Mitti is on this Mac. **Mitti OSC port** is 51000.
- **Feedback listen port:** 51010 for the first Mitti. Each Mitti needs its own.
- **Read clips over HyperDeck:** gives the clip display the next clip's running time.

Then, in Mitti:

- **Preferences → OSC:** set *Feedback To* to automitti and the feedback port above. On the same Mac, choose **Custom**, 127.0.0.1, port 51010. Mitti saves an entry picked from its Bonjour list (automitti-51010) as a bare IP address, so after the Mac changes network Mitti keeps sending to the old one and automitti shows it offline.
- **HyperDeck control on**, for the clip durations.

3. Choose how Mitti follows the switcher

Pick **one** of these per Mitti. Two at once both act on every take.

Way	In Mitti	In automitti
ATEM (the most complete)	Integrations → ATEM → <i>automitti</i> , and the input it is on	Switcher & show → Emulate an ATEM
NDI tally	Integrations → NDI	the Mitti's tab → Send NDI tally to this Mitti , and its NDI source
Rules over OSC	OSC on (it already is, for feedback)	the Mitti's tab → Enable rules , <i>Send over OSC</i>
Rules over HyperDeck	HyperDeck control on	Enable rules , <i>Send over HyperDeck</i>

ATEM. automitti answers on the network as an ATEM whose inputs, names, program, preview and tally are the real switcher's. Mitti finds it over Bonjour. Every option Mitti has for an ATEM then works unchanged, and when Mitti's Pause at End asks for a CUT or an AUTO, the real switcher does it. Every Mitti can use the one emulated ATEM at once, just as several can share a real one. It uses UDP 9910, one per machine, so don't run it where ATEM Software Control is connected to a real ATEM.

NDI tally. automitti joins the Mitti's NDI output as a metadata-only receiver (no video crosses the network) and reports it on program while its input is on air. **Find NDI sources** fills in the list.

Rules. automitti runs Mitti's ATEM behaviour from its own side:

Setting	Choices
On program	Play · Do nothing
On preview	Do nothing · Rewind to the top
Taken off air	Do nothing · Pause · Stop and rewind · Stop and load the next cue
Cue ends	Do nothing · CUT · AUTO
End lead	how many seconds before the end <i>Cue ends</i> fires

4. Several Mittis

Press **+ Add Mitti** for a second one: main and backup, or one per kind of content. Each gets its own tab, switcher input, feedback port, relay list, NDI tally and rules, and each can use a different one of the ways above. All of them share the one switcher and the one emulated ATEM.

- A new Mitti gets the next free feedback port (51011, 51012...) and shows up in Mitti's *Feedback To* list as `automitti-51011`. Two Mittis set to the same port are flagged on both.
- Remove a Mitti from the foot of its tab.
- Over HTTP, `POST /api/player` takes `"device"`: the Mitti's id (from its tab's address, `#/device/<id>`) or its name. Without it, the request goes to the first Mitti.

This is new in v0.2.0, and so far it's only been run with **two Mitti simulators** on the V-160HD simulator: a cut to each one's input rolled that Mitti and only that one. Check it with your own Mitti's first.

5. QLab instead of Mitti

A Mitti's tab can drive **QLab 5** instead: set **Player** to QLab. QLab has no ATEM or NDI integration, so the **rules are what roll it**, and you'll need to turn on **Enable rules**. *Play* GOes the cue list, or resumes a clip that was paused; *Cue ends* takes the switcher off it; *Taken off air* can pause or stop it.

- **QLab address** and **QLab OSC port** (53000). automitti uses OSC over TCP.
- **OSC passcode**. A new QLab 5 workspace makes up a 4-digit passcode and gives connections without one no access. Copy it from *Workspace Settings* → *Network* → *OSC Access*; it needs **Control** for the rules to work.
- **Workspace** and **Cue list**: left empty, it takes the first workspace open and the current list.
- **Cue types that are clips**: Video unless you add others. Light, audio and fade cues between two videos are skipped, and the clip display's *Next* is the next video.

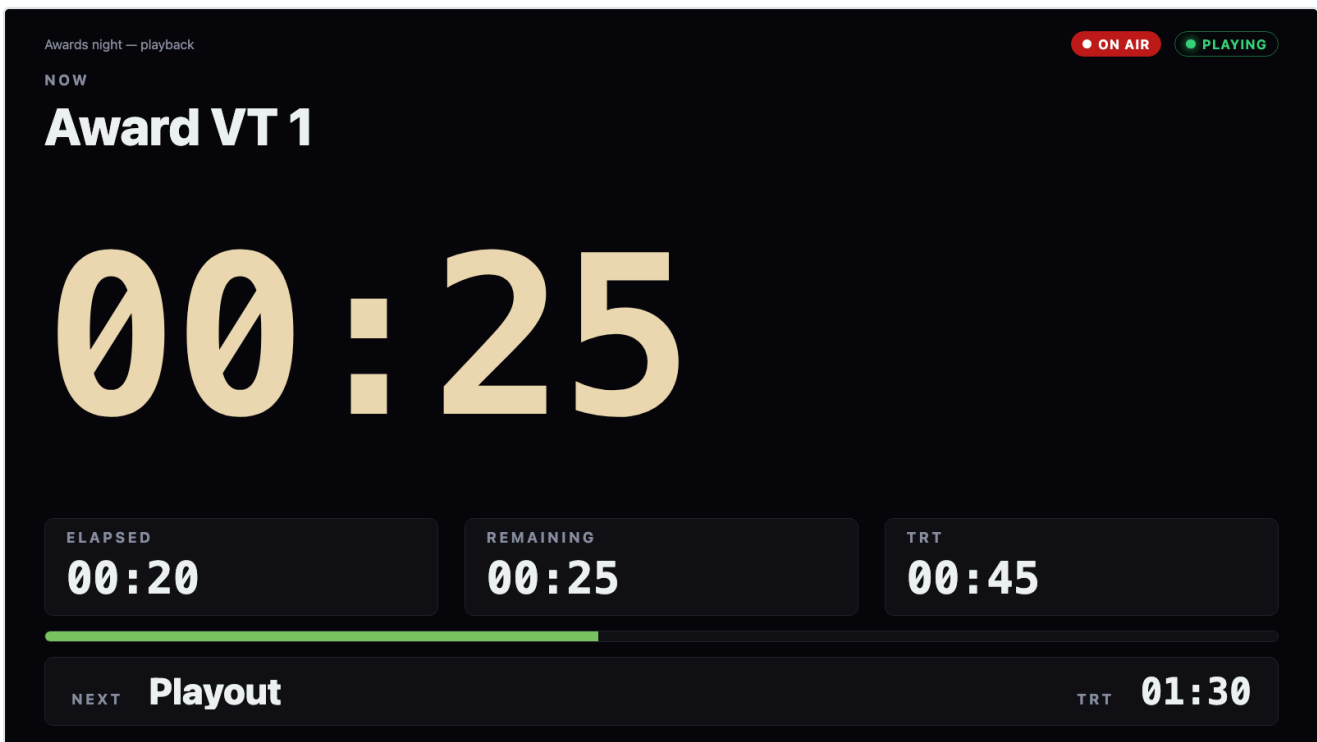
QLab answers nothing while no workspace is open, and the tab says so until one opens. A wrong passcode locks you out for a few seconds, so automitti tries once and then waits 30 s.

This is new in v0.2.0, and checked on a real **QLab 5.5.10 with Wait cues only**: joining, play, pause, resume, stop and rewind, a clip running out, and a take onto QLab's input GOing the cue with its end AUTOing back. **A Video cue actually playing hasn't been checked**, and nor has a pre-wait, a clip inside a Group, or a QLab on another machine. [QLAB.md](#) has the details.

6. Send Mitti's feedback on

Mitti sends its OSC feedback to one address. Under **Feedback relay destinations**, use **Add destination** for each thing that wants it, whether that's Companion's Mitti module (51001, 51002...), a Stream Deck or another machine, and every packet is re-sent to each, byte for byte.

7. The clip display



Open `http://<this Mac>:8710/display?device=<id or name>` full screen on any browser; each Mitti's tab links to its own. It shows the current clip, a big countdown, the elapsed time, running time and a progress bar, the next clip and its running time, and an on-air or preview chip from the switcher's tally. The countdown turns amber under 30 s and red under 10 s; change both under **Switcher & show** → **Clip displays**, with **Show frames**. Add `&frames` to the address for frames on one screen only.

When something is wrong

- **Mitti doesn't see the emulated ATEM, or connects to the wrong address.** Mitti uses the first IPv4 address Bonjour gives it, which on a Mac with ZeroTier or Tailscale is often the VPN. Set **Switcher & show** → **Network** → **Announce on address** to the show network.
- **Mitti shows offline after a network change.** Its *Feedback To* is a stale address; see [Connect Mitti](#).
- **"Answered, but not as a HyperDeck."** ZeroTier owns TCP 9993, the HyperDeck port, so Mitti's HyperDeck emulation can't start. Only the next clip's running time is lost, until that clip has once been current.
- **The V-160HD won't connect.** Close RCS: the unit takes one LAN client.
- **A Pulse² won't connect.** Close RCS2 or openRCS: it takes one control session.
- **Mitti acts on every take twice.** It has two ways on at once, such as its own ATEM integration and automitti's rules. Pick one.

- **"UDP 9910 is in use."** ATEM software or another emulator on this Mac holds the ATEM port, and there's one per machine. Close it, or run automitti on another Mac.

Protocol research, the driver contract and how to add your own switcher or player are in the [README](#) and the other files in [docs/](#).

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<https://github.com/stoatworks-labs/automitti>