



bdplay user guide

bdplay adds a **USB** entry to the BirdDog PLAY's source dropdown and **plays video, stills and PDFs from a USB stick straight out of HDMI** — hardware decoded, in order or shuffled, looping until you stop it.

The PLAY is an NDI/SRT *decoder*: it has no notion of local media. This turns one into a signage player **without giving up anything** — select NDI again and the stock decode path comes straight back.

USB Media Player100.88.59.79bdplay dev

Drive

testmedia · local · 5 playable file(s)

▶ Everything on the stick

stills (2)

house-slides.pdf

opening-titles.mp4

sponsor-reel.mp4

stills/schedule.png

stills/welcome.jpg

Play in order ▾

☒ Loop

☒ Include subfolders

Stills (s): 10

PLAY

STOP

◀ PREV

NEXT ▶

RESCAN

EJECT

Status

State

playing

Now playing

house-slides.pdf

Position

1 / 5

Order

order

Output

1920x1080

PDF rendering

available

exFAT

available

Log

17:05:18 [info] bdplay dev starting (addr=:8091)

17:05:18 [info] kernel filesystems: vfat=true ntfs=true exfat=false

17:05:18 [info] PDF rendering via /userdata/bd-play/bdpdf (PDFium)

17:05:18 [info] exFAT support via /userdata/bd-play/mount.exfat-fuse

17:05:18 [info] fixed media directory: /userdata/bd-play/testmedia

17:05:18 [info] birdUI already patched

17:05:18 [info] library: 5 playable item(s) in 2 folder(s) on /userdata/bd-play/testmedia

17:05:18 [info] control UI on http://birddog-021d3:8091/

17:05:30 [info] stopping BirdDogRunner.service to take the display

17:05:32 [info] play: 5 item(s), order=order loop=true dwell=8s mode=1920x1080

17:05:32 [info] rendering house-slides.pdf at 1920x1080

17:05:33 [info] rendered 3 page(s) of house-slides.pdf in 1.354s

Before you rely on this: every claim here was **measured on a real BirdDog PLAY** — hardware video decode, HDMI audio, stills, PDF rendering, the exFAT mount and the display handover with BirdDog's own decoder are all confirmed working on hardware.

That is **one unit on one firmware version**. It has not been tested across the range of PLAY and Pod firmwares in the field, and **USB hotplug with a physical stick is still unverified** — testing used a loop device and internal storage.

This codebase was created with AI assistance, directed and reviewed by a human author.

Installing

The easy way is a checkbox in the **PLAY Patcher**, which assembles the firmware package in your browser — no toolchain, nothing to build.

☒ **Tailscale**

Current stable arm64 build into `/userdata/tailscale`, with a systemd unit. **No auth key is baked in** — it would sit in cleartext in the archive. SSH in afterwards and run `tailscale up`. Stock firmware has no `/dev/net/tun` and ships no kernel modules at all, so you get userspace-networking. Inbound still works — SSH, the web UI and the `:8080` API are all reachable over the tailnet, measured at ~195 Mbps against a 920 Mbps wired baseline. Enough for NDI|HX and SRT, not for full-bandwidth NDI.

☐ **NDI KVM endpoint**

Installs `bdkvm` to `/userdata/bd-kvm` under its own self-supervising unit, rather than behind BirdDog's 1.0.34-only hooks (which `bdup.sh` deletes on every vendor update). Needs a USB keyboard or mouse attached and an NDI source selected to do anything.

☒ **USB media player**

Adds a USB entry to the source dropdown and plays video, stills and PDFs off a USB stick, hardware-decoded straight to HDMI — in order or shuffled, looping until you stop it. Control it from that page, or from `http://<play>:8091/`.
Selecting USB stops BirdDog's decoder to take the display, and switching back to NDI restores it. This is the only option here that edits a firmware file: it adds one `<option>` to `videoset.html`, keeps a pristine backup beside it, and `bdplay -unpatch-ui` restores it byte-for-byte.
Includes PDF (PDFium) and exFAT support. Adds about 13.7 MB to the package.

☐ **Reboot when finished**

Off by default. Without it the installer restarts `BirdDogRunner` itself, so video comes back without a reboot.

BUILD

Build tag

web

Names the file and is logged on the device as the installed build.

Tailscale tarball (optional)

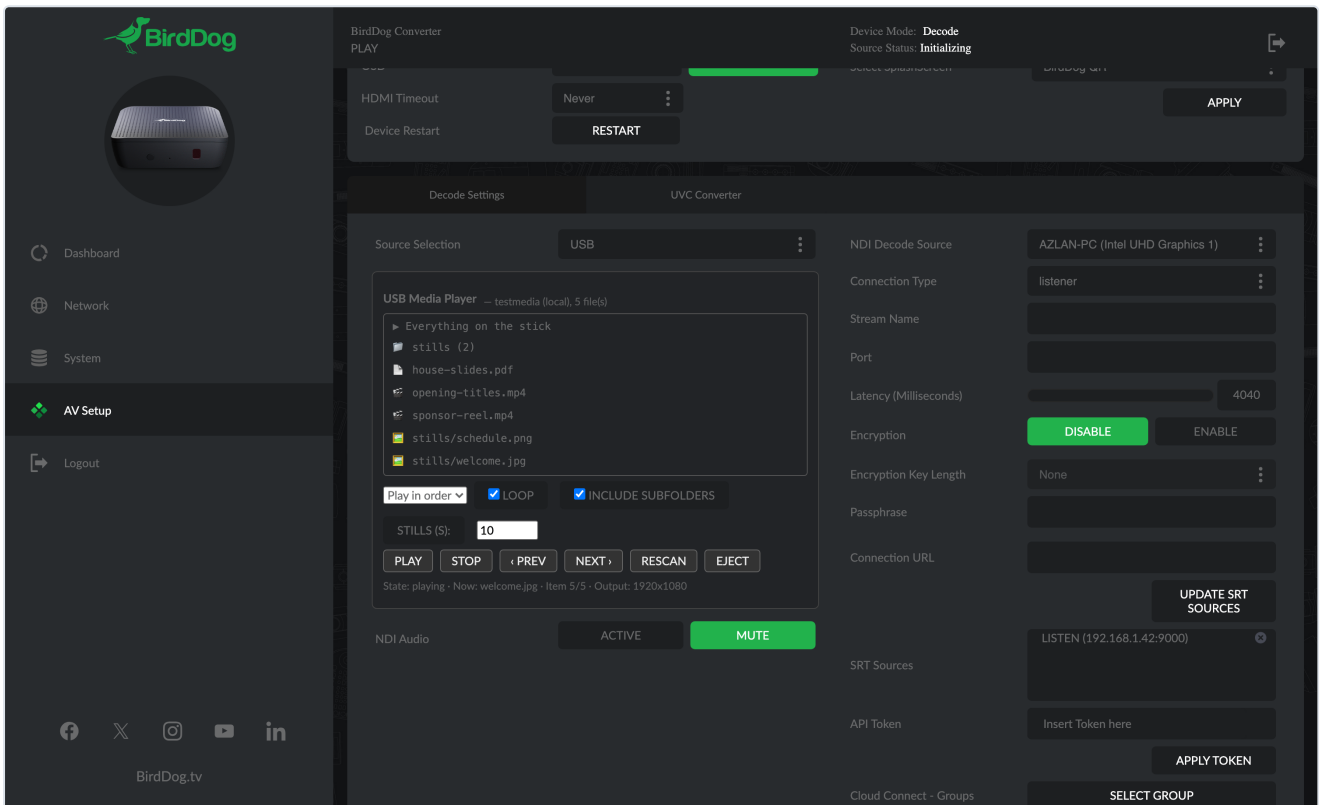
Choose file No file chosen

To install by hand, copy the binary and its service unit onto the unit over SSH (**port 9031** on stock BirdDog firmware) and enable the service.

On start it patches the video settings page to add the USB option. `bdplay -unpatch-ui` removes it again — the stock page is untouched apart from one added option.

Using it

Open the PLAY's own web UI, go to the video settings page, and pick **USB** from Source Selection. A panel appears with the stick's contents.



There is also a standalone control page on port 8091, which additionally shows the log — use that if the injected panel does not appear, and use it first when something will not play, because the log answers most of those questions.

Everything is drivable from the API too, so a Companion button or a cron job works.

What it plays

Type	Formats	How
Video	mp4, mov, mkv, avi, ts, m2ts, mpg, webm, wmv	Hardware H.264/HEVC/VP8/VP9 — ~11% of one core at 1080p
Stills	jpg, png, bmp, gif, webp, tif	Scaled to the panel with aspect preserved, held for a configurable dwell
PDF	pdf	Pages pre-rendered to images, then played as stills — 3 pages at 1080p in ~1.3 s
Office	pptx, docx, ...	Not rendered. Listed with "export to PDF" rather than silently ignored

PowerPoint is deliberately out of scope. Rendering it on-device would mean either a full office suite — which will not fit or perform on 2 GB and four small cores — or a partial renderer that misdraws SmartArt, charts and embedded fonts, **looking broken in exactly the situations where a deck matters.** Exporting to PDF is one step and renders exactly as authored.

Playback options

- **Selection** — one file, one folder (optionally including subfolders), or the whole stick.
- **Order** — as listed (**natural sort, so slide2 precedes slide10**) or random.
- **Loop** — on by default.
- **Dwell** — how long each still or PDF page holds the screen.

Random reshuffles the whole set each cycle rather than picking independently, so every file plays once per cycle instead of some repeating while others starve — and **the reshuffle never puts the item that just played at the front of the next cycle.**

If something will not play

Symptom	Cause
The USB option does not appear	The UI patch did not land. Use the standalone control page on port 8091.
A file is listed but will not play	Read the log on that page — it answers most of these.
A PowerPoint file is listed and does nothing	Deliberate. Export it to PDF.
The stick was not picked up	Hotplug with a physical stick is the one path still unverified. Re-seat it, or reboot with it in.
NDI stopped when I selected USB	Correct — the stock decoder hands over the display. Select NDI again and it comes back.

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Latest version of this guide: stoatworks-labs.com/software/bdplay/guide/ · Source and issues:

<https://github.com/stoatworks-labs/bd-play-usb-player>