# Arcade1Up Pac-Man → Batocera

*Countercade Conversion*





Original Cabinet · Custom Hardware · Hundreds of Classic Games

## Project Overview

**One-line takeaway:** A factory Arcade1Up Pac-Man Gen 1 countercade fully converted with a Raspberry Pi 4 running Batocera Linux — driving the original 8" vertical LCD through a custom LVDS driver PCB — delivering hundreds of classic arcade and console games inside the original cabinet.
**Purpose:** Transform an off-the-shelf Arcade1Up countercade into a custom multi-game retro arcade system. The original factory PCB and software were removed and replaced entirely with a Raspberry Pi 4 running Batocera Linux (2022). The cabinet's original 8" vertical display, speakers, and aesthetics are fully preserved. This project runs completely offline.

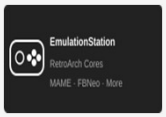
## Hardware Components


### Raspberry Pi 4

The heart of the build. Replaces the stock Arcade1Up PCB entirely. Runs Batocera Linux from a MicroSD card and drives all display, audio, and input via USB and HDMI.


### Arcade1Up Pac-Man Gen 1 Cabinet

Original countercade shell preserved intact. The 8" vertical LCD panel, original speakers, and cabinet wiring are all reused. Only the factory game PCB was removed and replaced.




### Custom LVDS Driver PCB

A third-party PCB interfaces the Raspberry Pi's HDMI output with the cabinet's original 8" vertical LVDS panel. Also handles audio routing to the original cabinet speakers — preserving the full stock look and sound.

## Controls & Input

**Player 1 — USB Encoder Board:** The original Arcade1Up buttons and joystick were removed and replaced with 8 arcade buttons and 1 joystick, all wired to a USB encoder board. The encoder presents as a standard USB gamepad — Batocera detects it automatically with no driver needed.

**Player 2 — USB Controller:** A second USB gamepad controller is connected for two-player games. Batocera supports multiple simultaneous input devices out of the box.

**Bluetooth Keyboard & Mouse:** A Bluetooth keyboard and mouse combo is paired for navigation, system configuration, EmulationStation menu management, and any admin tasks — no wired clutter needed.

## About Batocera Linux

### Batocera Linux (2022)

Batocera is a free, open-source retro-gaming Linux distribution. It boots directly into EmulationStation with no desktop OS overhead. This build uses the 2022 release configured for Raspberry Pi 4.

### EmulationStation Frontend

Polished graphical game library browser with theme support, scraper metadata (box art, descriptions), and per-system organization. Designed for couch/arcade navigation with a controller — no mouse or keyboard required for gameplay.

## Emulated Systems & Game Library

**ARCADE**

- MAME (Multiple Arcade Machine Emulator)
- FinalBurn Neo (FBNeo)
- Capcom CPS1 / CPS2
- Neo Geo MVS / AES

**CONSOLES**

- NES / Famicom
- SNES / Super Famicom
- Sega Genesis / Mega Drive
- Sega Master System
- Atari 2600 / 7800

**HANDHELDS & MORE**

- Game Boy / GBC / GBA
- Sega Game Gear
- TurboGrafx-16
- PlayStation 1 (PSX)
- And many more…

## Display, Audio & Power

**Display:** Original Arcade1Up 8" vertical LCD panel. The custom LVDS driver PCB accepts HDMI from the Pi and drives the panel's native LVDS interface. Batocera's screen rotation is configured for vertical (portrait) orientation.
**Audio:** Original Arcade1Up cabinet speakers. The same driver PCB routes audio from the Pi to the stock speaker wiring, preserving the cabinet's original sound system with no modifications to the speaker or wiring.
**Power:** The Raspberry Pi 4 is powered from the Arcade1Up cabinet's original power supply. The build reuses the cabinet's internal wiring for a clean, self-contained system with a single power switch.

## Key Features

### Hundreds of Games

Massive multi-system library spanning arcade classics, consoles, and handhelds — all organized and browsable from EmulationStation.

### Original Display Preserved

Stock 8" vertical LCD fully reused via LVDS driver PCB. The cabinet looks 100% factory from the outside.

### Fully Offline

No Wi-Fi, no internet. Self-contained arcade system — just plug in and play.

### 2-Player Ready

Player 1 USB encoder + Player 2 USB controller for head-to-head classics. Bluetooth keyboard for admin.

### Original Audio

Stock cabinet speakers preserved and driven through the same custom PCB that handles the display.

### Instant Boot

Batocera boots directly to EmulationStation in under 30 seconds — no desktop, no setup, just games.