

INSTALLATION GUIDE

Crystal Castles

FREE PLAY + HIGH SCORE SAVE KIT | ORIGINAL ATARI ARCADE HARDWARE



CRYSTAL CASTLES INSTALLATION GUIDE

Original 6502 CPU transfer | Pin 1 | Optional ROM Saver | Settings and Wi-Fi

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Safety and Preparation

Confirm Crystal Castles operates properly before removing the original arcade PCB.

POWER OFF AND UNPLUG

Turn off the cabinet and disconnect the power before touching the game PCB. Use antistatic precautions and work on a clean, well-lit surface.

VERIFY BOARD OPERATION

Before installing the kit, verify the original Crystal Castles board works correctly. Photograph the PCB and label all connectors and cables before removing it from the cabinet.

WHAT THE KIT REQUIRES

The kit includes **one HighScoreSaves 6502 daughtercard**. A **compatible 6502 processor** is also required: transfer your existing CPU or obtain one separately through the product options.

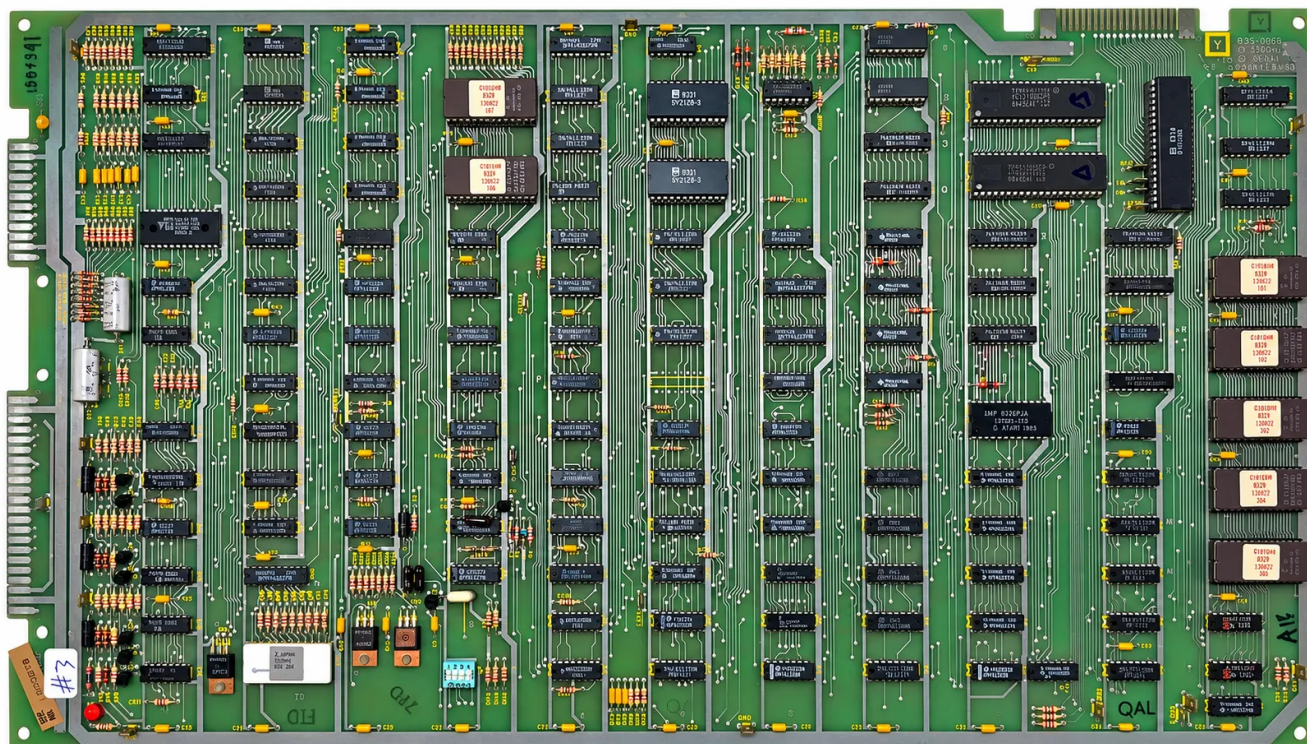
SOCKET AND PCB COMPATIBILITY

The kit installs at the original **6502 CPU location** of a compatible Crystal Castles PCB. The existing 6502 must be socketed for a plug-in transfer. If it is soldered in place, have qualified assistance before proceeding.

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Identify the Original PCB

Compare the game board with this complete, unannotated Crystal Castles PCB reference photo.



Tap the PCB photo to enlarge

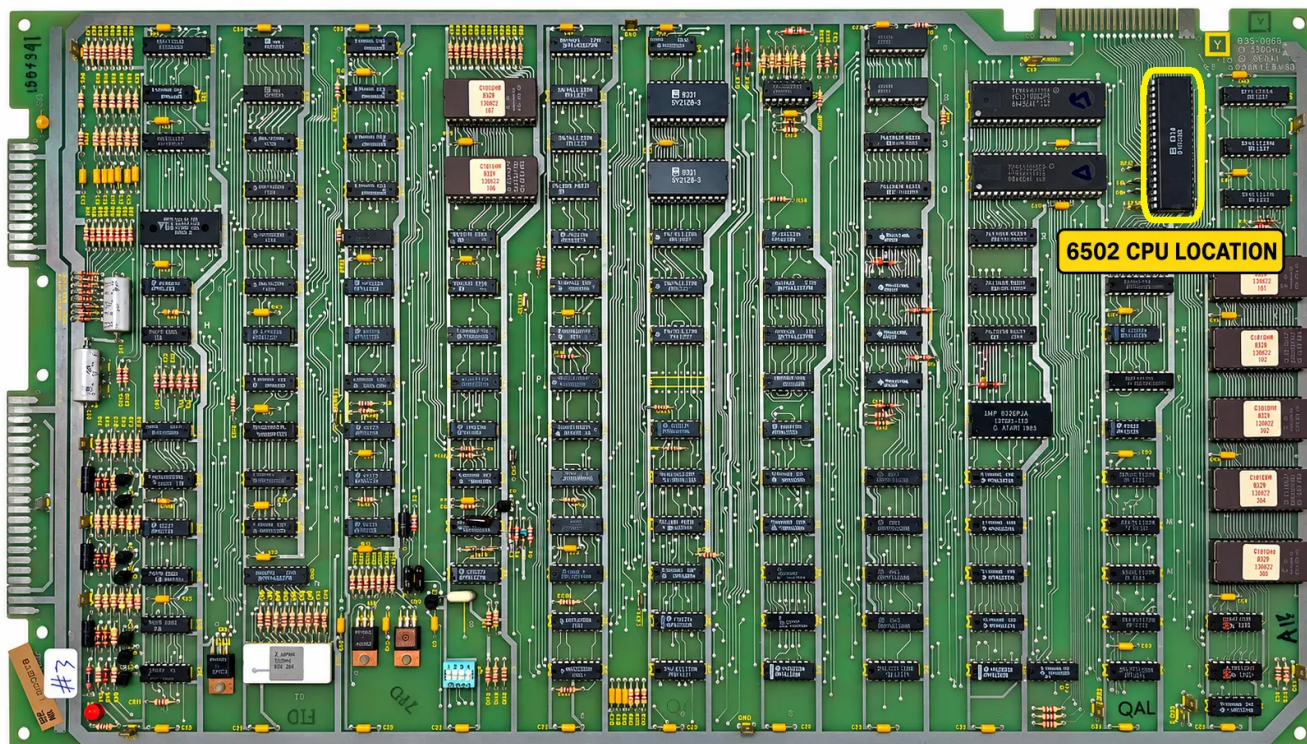
BEFORE YOU REMOVE COMPONENTS

Confirm that your PCB is a documented compatible original Crystal Castles game board. Review the highlighted 6502 location and the Pin 1 orientation on the following pages before lifting the CPU.

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Locate the Original 6502 CPU

The yellow outline identifies the processor to transfer to the HighScoreSaves kit.



Tap the annotated photo to enlarge

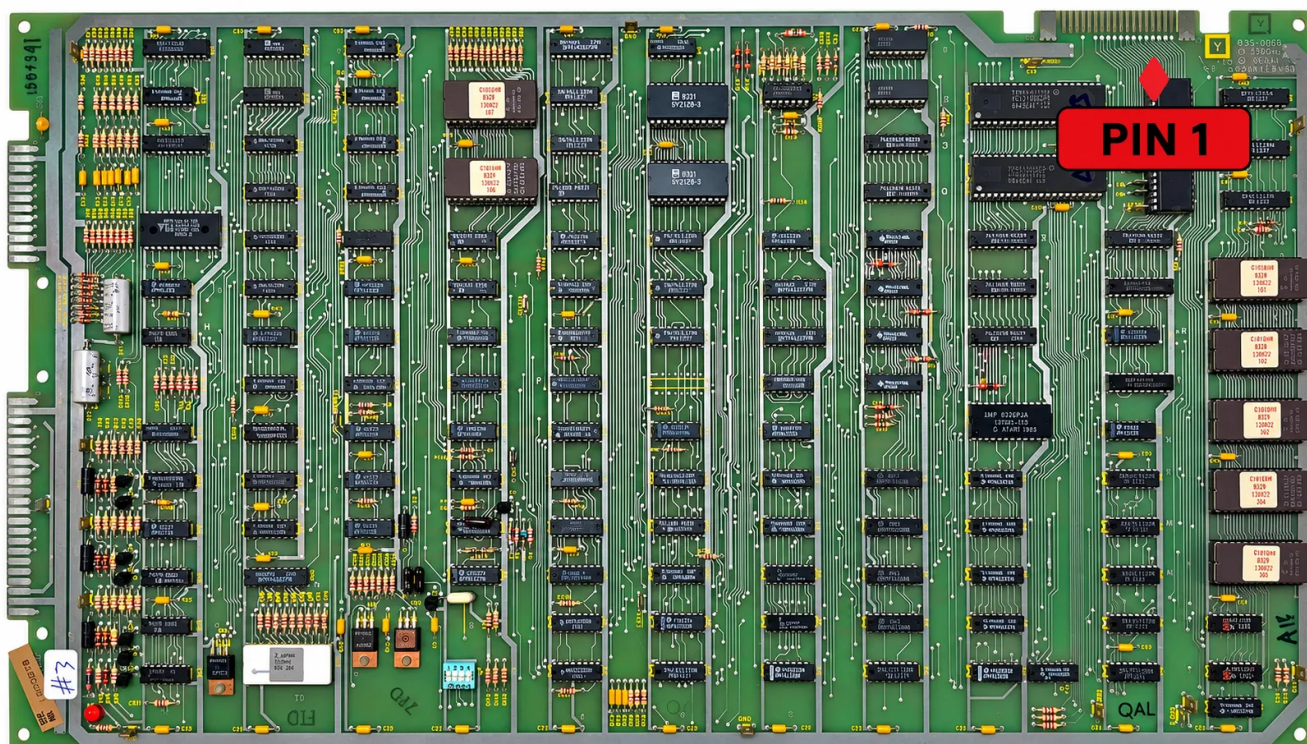
STEP 1 - FIND THE 6502 PROCESSOR

Locate the **6502 CPU** at the highlighted board position. Examine whether the 40-pin CPU is mounted in a socket. Photograph and note its current orientation before removal.

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Identify the 6502 Pin 1

Use the red arrow to record the original CPU orientation before transferring it to the kit.



Tap the Pin 1 photo to enlarge

STEP 2 - CHECK ORIGINAL CPU ORIENTATION

Use the supplied red **PIN 1** annotation to identify the orientation of the original 6502. When fitting it to the daughtercard, follow **Pin 1 marked on the kit socket**. Do not assume the board photo alone establishes how the CPU sits on the separate daughtercard.

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Transfer the 6502 onto the Kit

With the original board removed and unpowered, handle the 6502 and its pins carefully.

STEP 3 - REMOVE THE ORIGINAL 6502

With the power disconnected, use a suitable IC extraction tool to carefully lift the **socketed 6502 CPU** evenly from its original socket. Avoid bent legs or damage to the original PCB.

STEP 4 - FIT THE CPU ON THE DAUGHTERCARD

Align the 6502 notch/Pin 1 orientation to the **Pin 1 marking on the HighScoreSaves daughtercard socket**. Inspect that every pin enters its proper socket opening before pressing the CPU into place.

CPU SUPPLY OPTION

The original 6502 can be transferred if it is compatible and in working order. If a compatible CPU is unavailable, obtain the required 6502 processor separately rather than attempting to use an empty kit socket.

IMPORTANT - USE THE KIT PIN 1 MARKING

Always follow the Pin 1 mark on the HighScoreSaves daughtercard socket when installing the 6502. Never rely solely on its original PCB orientation to position it on the kit.

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Install the Daughtercard

The kit replaces the 6502 in the original CPU socket while using the same orientation.

STEP 5 - ALIGN THE DAUGHTERCARD

Once the CPU is correctly installed on the kit, position the HighScoreSaves daughtercard above the **original 6502 CPU socket**. Match the correct orientation and align every connector pin with its matching socket contact.

STEP 6 - SEAT THE KIT EVENLY

Press the daughtercard straight into the original CPU socket using gentle, even pressure. **Never force it.** Stop and inspect if any pin is out of position.

STEP 7 - CHECK COMPONENT CLEARANCE

Inspect beneath the daughtercard. Make sure no pins or circuit-board components are touching in an unintended way. A **riser or additional socket** may be used if clearance is needed.

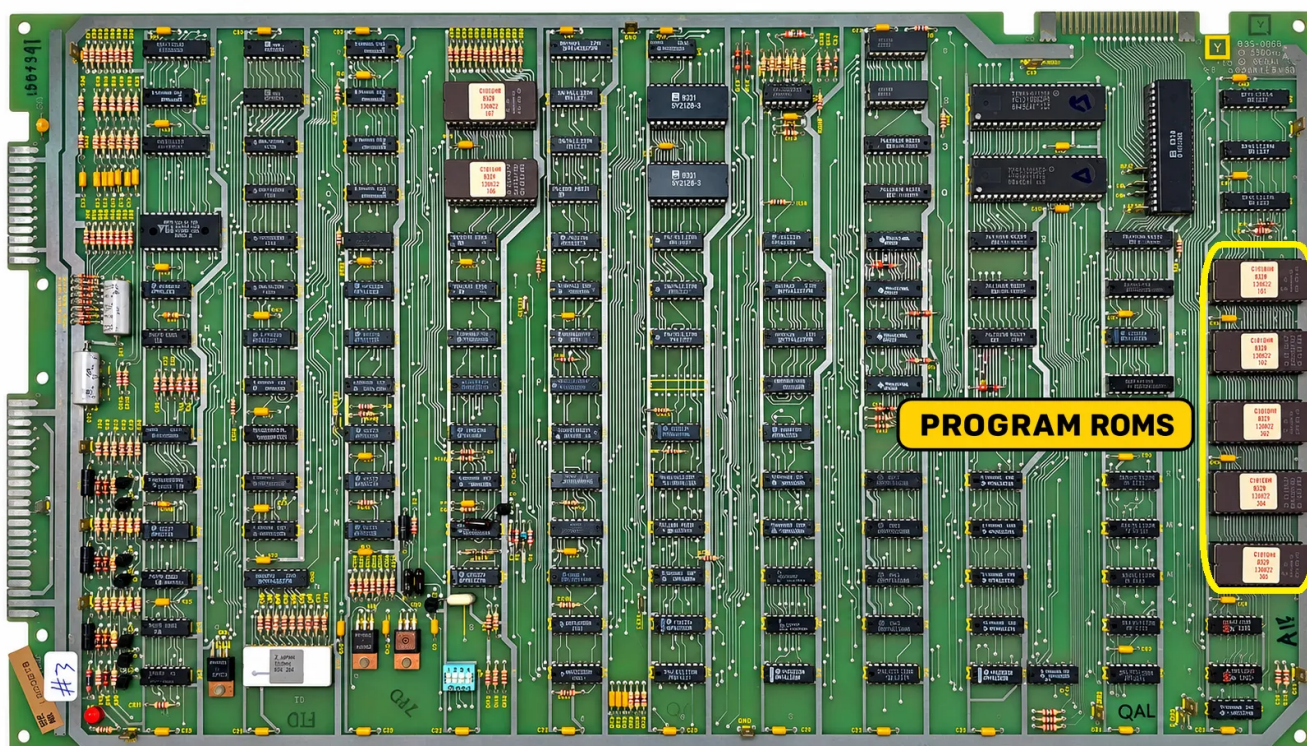
KEEP THE ORIGINAL CPU ORIENTATION

Before reconnecting power, compare the original Pin 1 photo against the actual Pin 1 marks on the daughtercard and its newly installed 6502.

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Optional Program ROM Saver

ROM removal is optional; the installation can be completed with all original program ROMs installed.



Tap the program ROM photo to enlarge

OPTIONAL - REMOVE HIGHLIGHTED PROGRAM ROMS

The program ROMs highlighted by the **yellow outline at the right edge** of the PCB may optionally be removed when using the HighScoreSaves ROM Saver. This is **not required** for installing or testing the kit.

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ROM Removal and Storage

Do not remove the original program ROMs unless you choose the optional ROM Saver step.

ALWAYS DISCONNECT POWER

Switch off and unplug the game before removing any chips. If the board is already back in the cabinet, remove it again safely before proceeding.

ONLY THE MARKED PROGRAM ROMS

The photo on page 8 identifies **five program ROMs along the far right side** with a yellow outline. Do not remove adjacent logic ICs or other components based on their physical proximity.

PRESERVE EACH ORIGINAL ROM

If you choose removal, extract each ROM carefully with an appropriate IC tool. Keep original ROMs in antistatic packaging and label their board positions for future reinstallation.

WHEN IN DOUBT, LEAVE THE ROMS INSTALLED

These ROMs are an optional removal, not an installation requirement. Verify that the daughtercard is operating correctly first. Avoid changing unnecessary original hardware.

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Reassembly and First Power-On

Inspect the daughtercard and all wiring before applying power.

STEP 8 - VERIFY THE CPU AND SOCKET

Confirm the daughtercard is fully seated, 6502 Pin 1 is correct, no pins are bent, and the underside of the card has sufficient clearance from neighboring components.

STEP 9 - REINSTALL THE GAME PCB

Install the PCB back in the cabinet. Reconnect each cable following the photographs and labels captured before disassembly. Double-check connector alignment.

STEP 10 - POWER ON AND TEST

Reconnect power and start Crystal Castles. Check that the game starts normally and that gameplay responds as expected. If the board fails to start, switch off power before investigating.

IF THE GAME DOES NOT START

With power disconnected, verify the original 6502 socket connection, daughtercard seating, both Pin 1 orientations and all disconnected cables. Do not begin by removing additional ROMs.

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Settings Menu Access

The HighScoreSaves settings menu is entered at game startup.

ACCESS THE SETTINGS MENU

With the cabinet powered off, **press and hold Player 1 Start (P1)** while turning on the game. Release P1 when the on-screen message instructs you to do so. The kit then enters its settings menu.

OPTIONAL STARTUP PROMPT

An optional setting can display a menu-entry window for approximately **5 seconds** each time the game starts. This feature can be enabled or disabled through the kit settings.

SAVE YOUR SETTINGS AND TEST

Follow the on-screen prompts when changing settings. Save the selected configuration, restart the game and confirm it still boots normally and runs as expected.

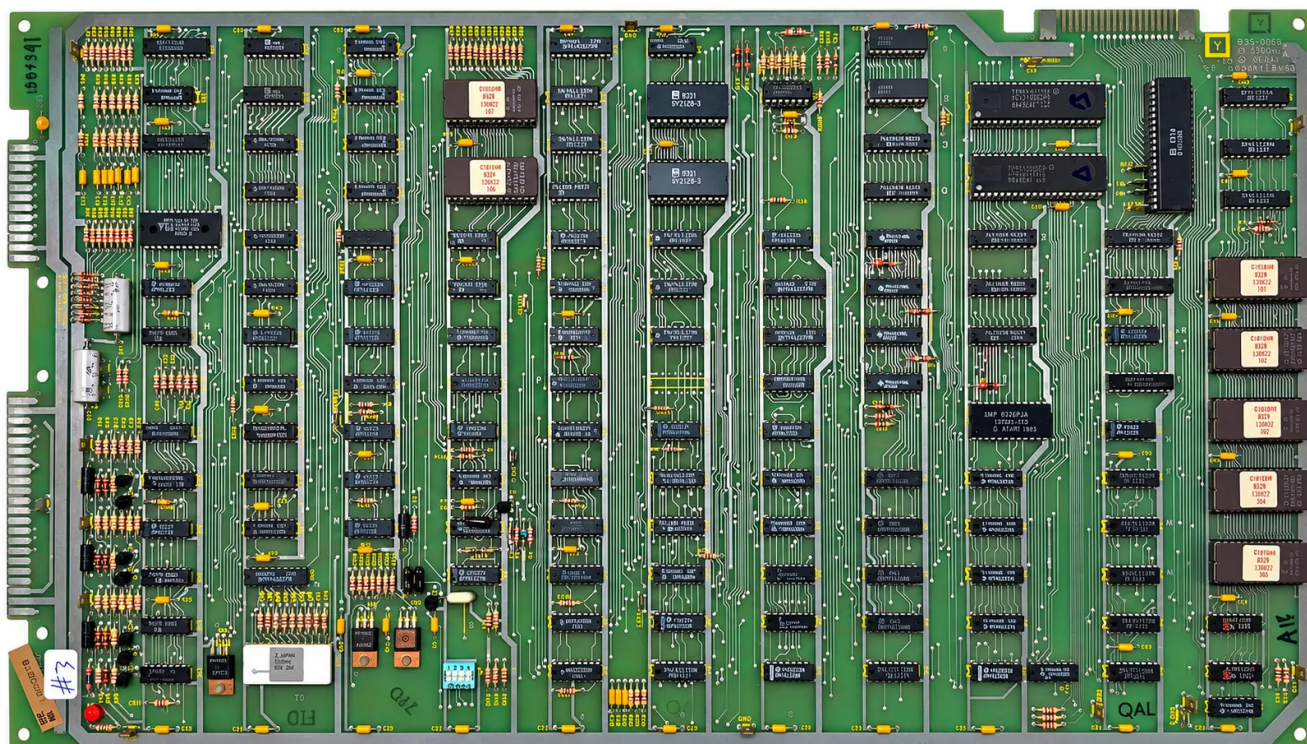
NEED MORE INFORMATION?

See the Helpful Resources page for the correct Crystal Castles kit product page, installation references and support contact information.

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PCB Reference - Enlarged

This is the same unannotated Crystal Castles PCB used for identification on page 3.

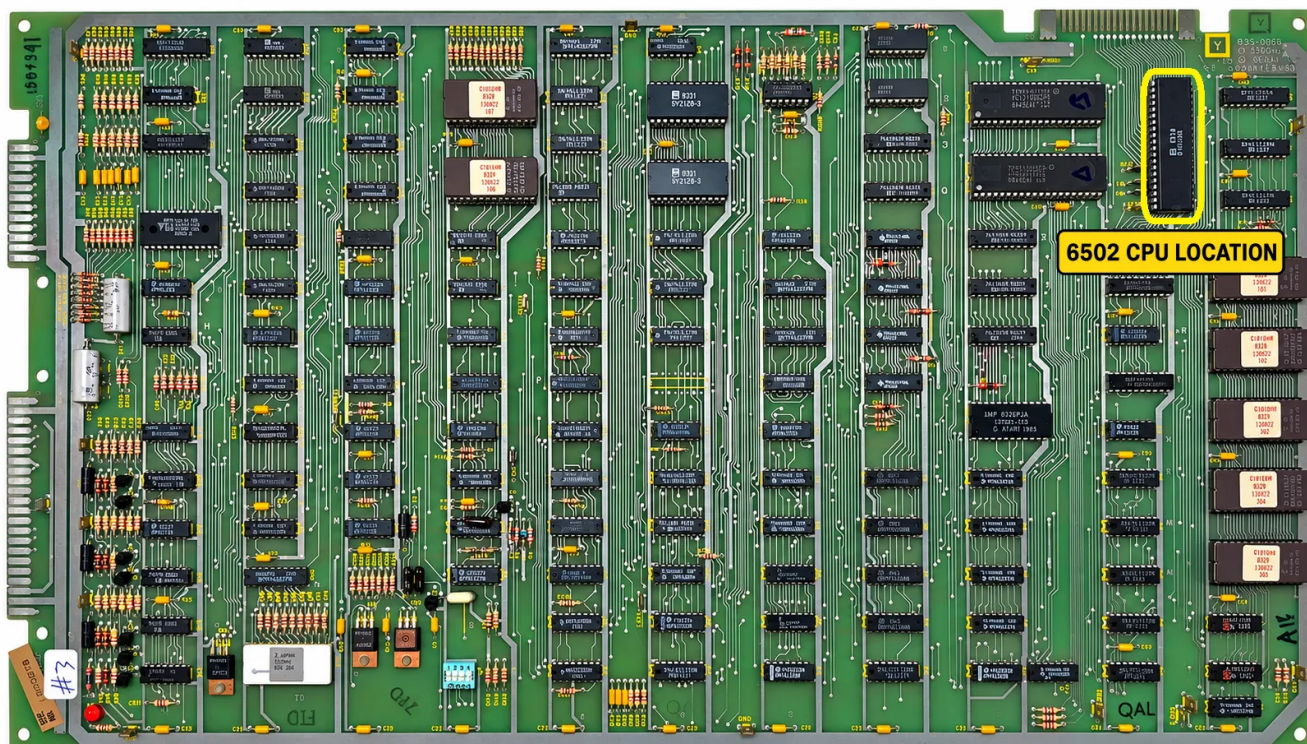


[Return to PCB identification](#)

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6502 Location - Enlarged

The yellow outline locates the original 6502 CPU to remove and transfer.

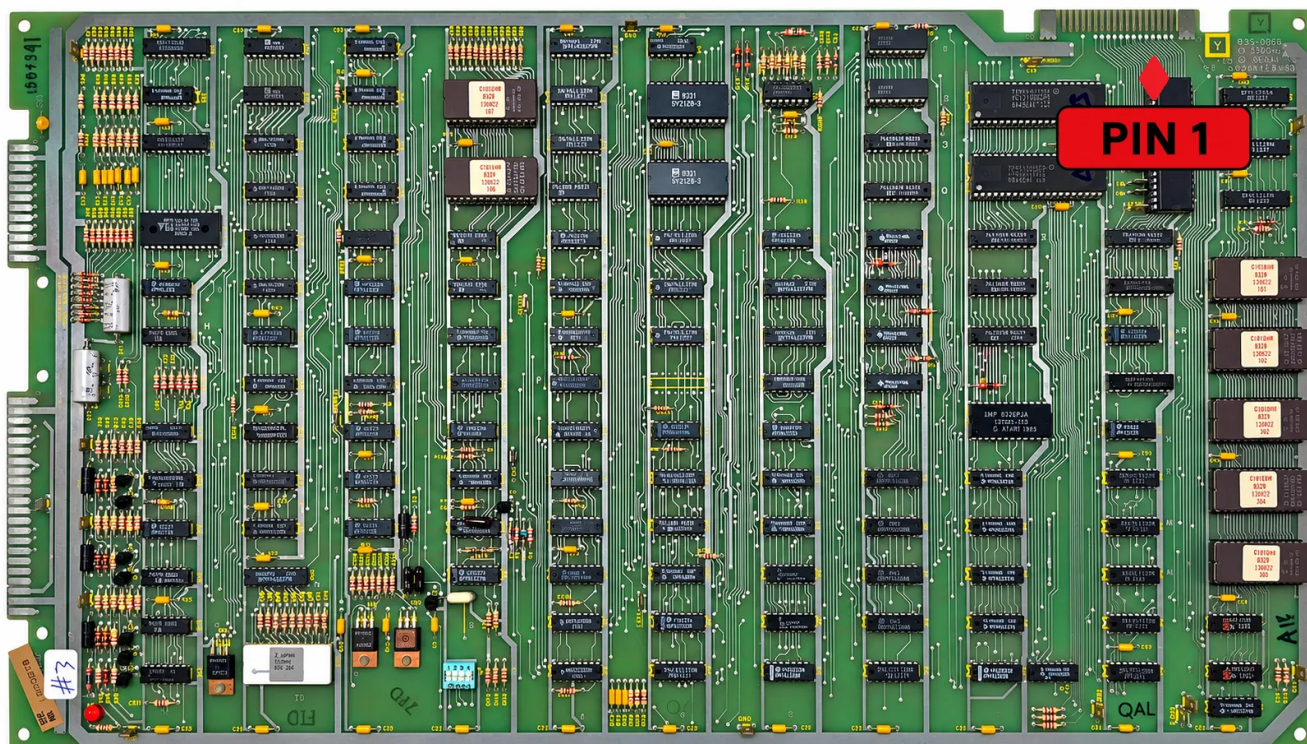


[Return to 6502 CPU location](#)

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6502 Pin 1 - Enlarged

The red annotation identifies Pin 1 on the original CPU for removal reference.

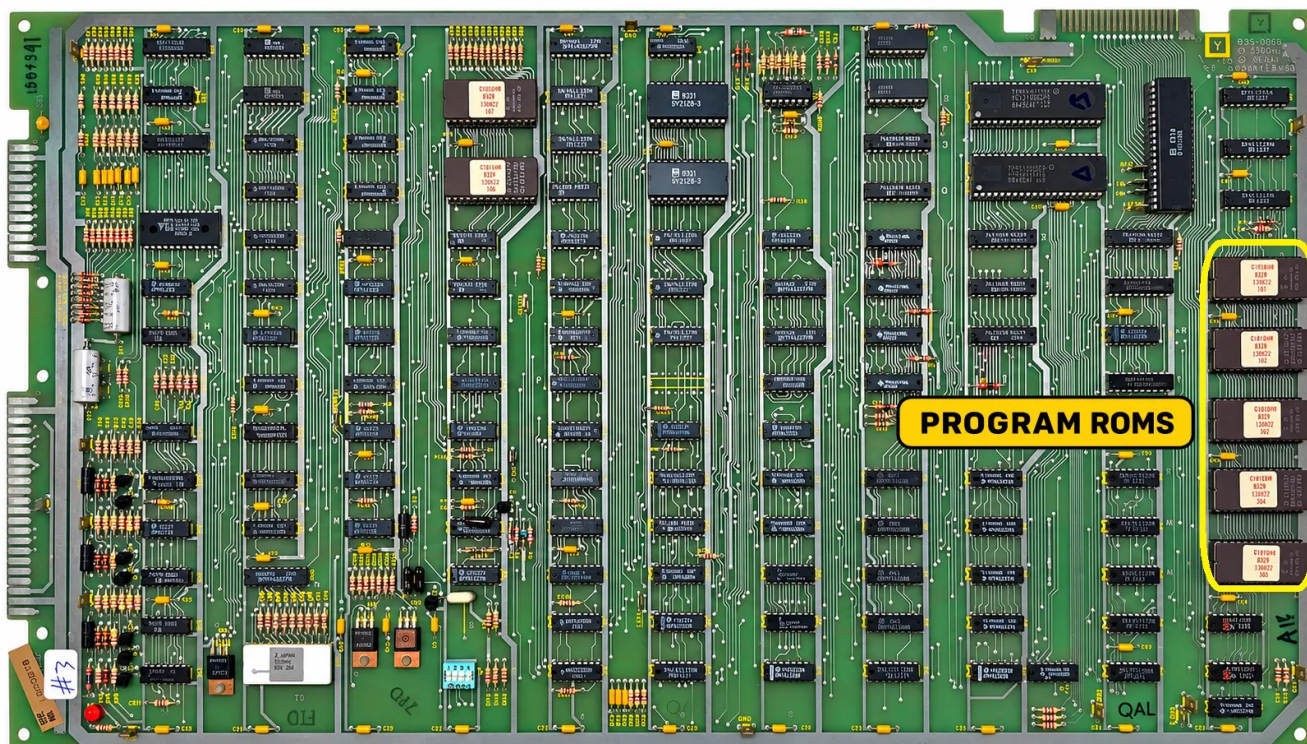


[Return to Pin 1 instructions](#)

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Program ROMs - Enlarged

Only the five program ROMs within the yellow outline are identified for optional removal.



[Return to ROM Saver instructions](#)

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Wi-Fi Setup

Only for Wi-Fi Enabled HighScoreSaves kits; standard kits do not require wireless setup.

CHECK YOUR KIT VERSION

If your Crystal Castles kit is a Wi-Fi Enabled version, follow the connection instructions supplied with that specific hardware. The standard kit does not need Wi-Fi to operate.

FIRST VERIFY THE PCB INSTALLATION

Confirm Crystal Castles boots correctly and that the daughtercard is fully seated before working on any wireless settings. Wi-Fi configuration is separate from correct CPU installation.

Standard vs. Wi-Fi Enabled Kit

Learn the differences and requirements for the kit versions.

Global High Scores

View online leaderboard information for supported Wi-Fi games.

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Helpful Resources

Reference links for the Crystal Castles kit and HighScoreSaves customer support.

Crystal Castles Free Play and High Score Save Kit

Matching product, kit options and CPU information.

Installation Guides

HighScoreSaves installation document library.

Tips and Tricks

Helpful PCB setup and troubleshooting references.

Standard and Wi-Fi Enabled Kits

Compare standard and wireless kit versions.

Global High Scores

Learn about supported online leaderboards.

Contact HighScoreSaves

Ask about installation with useful PCB photographs.