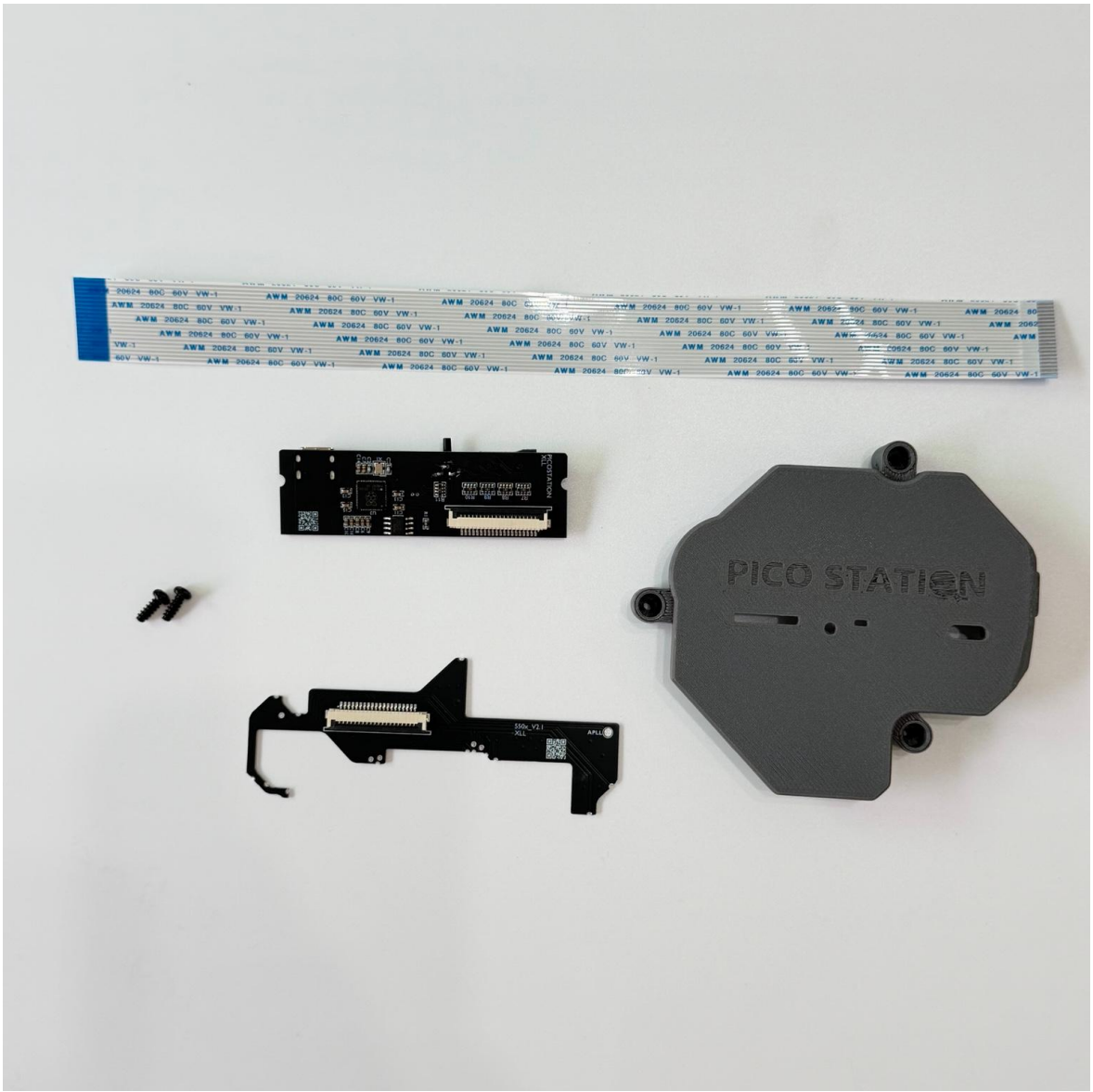
PicoStation RC5 + PU-18

USER MANUAL

For Sony PlayStation 1 PU-18 Motherboards Only



Actual package contents — PicoStation RC5 PU-18 kit

DOCUMENT CONTROL
Product: PicoStation RC5 ODE Kit
Compatibility: PU-18 only
Installation Board: 550X V2.1 QSB
Firmware: RC5 pre-installed
microSD: not included; exFAT required
Document Version: 2.3 (English Edition)
Fact Review: 11 Oct 2026

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MUST-READ BEFORE INSTALLATION

PU-18 only. This modification requires fine-pitch IC pin lifting, QSB soldering, two prepared vias, removal of one specified SMD resistor, an APLL jumper, and correct FFC installation. It is not suitable as a first soldering project.

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1. Product Overview

What is PicoStation?

PicoStation is an open-source optical drive emulator (ODE) for the original Sony PlayStation. It replaces the original CD-ROM mechanism and loads compatible disc images from a microSD card while the game continues to run on original PS1 hardware.

This retail configuration is specifically prepared for PU-18 motherboards and uses a 550X V2.1 QSB, one FFC ribbon cable, an RP2040-based PicoStation main board, and a custom 3D-printed drive-bay replacement mount. RC5 firmware is pre-installed.

Intended Use

For technically capable owners of compatible original PlayStation consoles who want to replace an ageing optical drive with a microSD-based ODE. Use only legally obtained disc images or backups that you are entitled to use.

2. Functions

- Loads compatible PlayStation disc images from microSD instead of the original optical drive.
- Runs games on original PS1 hardware.
- Uses the supplied 550X V2.1 QSB for the PU-18 motherboard instead of a full direct-wire installation.
- RC5 firmware is pre-installed on the supplied PicoStation main board.
- The custom 3D-printed mount keeps the microSD slot and USB-C service port accessible from the original disc-bay area.
- Maintained PicoStation software supports PU-18 / SCPH-55XX as a target platform.

3. Compatibility & Limitations

Item	Specification	Notes
Console	Original PlayStation / PS1	Internal modification kit
Motherboard	PU-18 ONLY	This retail kit is not for PU-8
Installation board	550X V2.1 QSB	Use the supplied matched QSB and FFC

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Item	Specification	Notes
Firmware	PicoStation RC5	Pre-installed
Storage	microSD, exFAT	microSD card not included
Disc image workflow	Cue-sheet-based images; BIN/CUE commonly used Cue-sheet	Current maintained README requires the cue-sheet name UNIROM.cue.
Game compatibility	Not guaranteed 100%	Upstream notes that some titles may fail, freeze or run poorly

Compatibility Note
Although the maintained PicoStation software also lists PU-8 as a supported target, THIS retail hardware kit is prepared for PU-18 only. Do not use this manual or supplied QSB on a PU-8 console.

4. Package Contents

- 1 × PicoStation RC5 main board
- 1 × 550X V2.1 PU-18 QSB
- 1 × AWM 20624 FFC ribbon cable
- 1 × gray 3D-printed optical-drive replacement mount
- 2 × black mounting screws
- microSD card: NOT INCLUDED

5. Installation & Soldering Guide

Installation Level
Professional-level modification. Requires fine-pitch soldering, controlled IC pin lifting, magnification, and careful inspection. If you cannot positively identify a pin or solder point, stop and verify before applying power.

5.1 Tools

- Fine-tip temperature-controlled soldering iron; quality flux; fine solder; solder wick.
- Fine needle or precision blade, tweezers, magnifier or microscope.
- Digital multimeter and ESD-safe working setup.
- Suitable screwdrivers and isopropyl alcohol for cleaning.

5.2 Installation Procedure

1. Verify the kit and console

Confirm that the package contains the PicoStation main board, 550X V2.1 QSB, one FFC, 3D-printed mount and two screws. Test the console in its original condition when possible, then disconnect AC power and all external cables.

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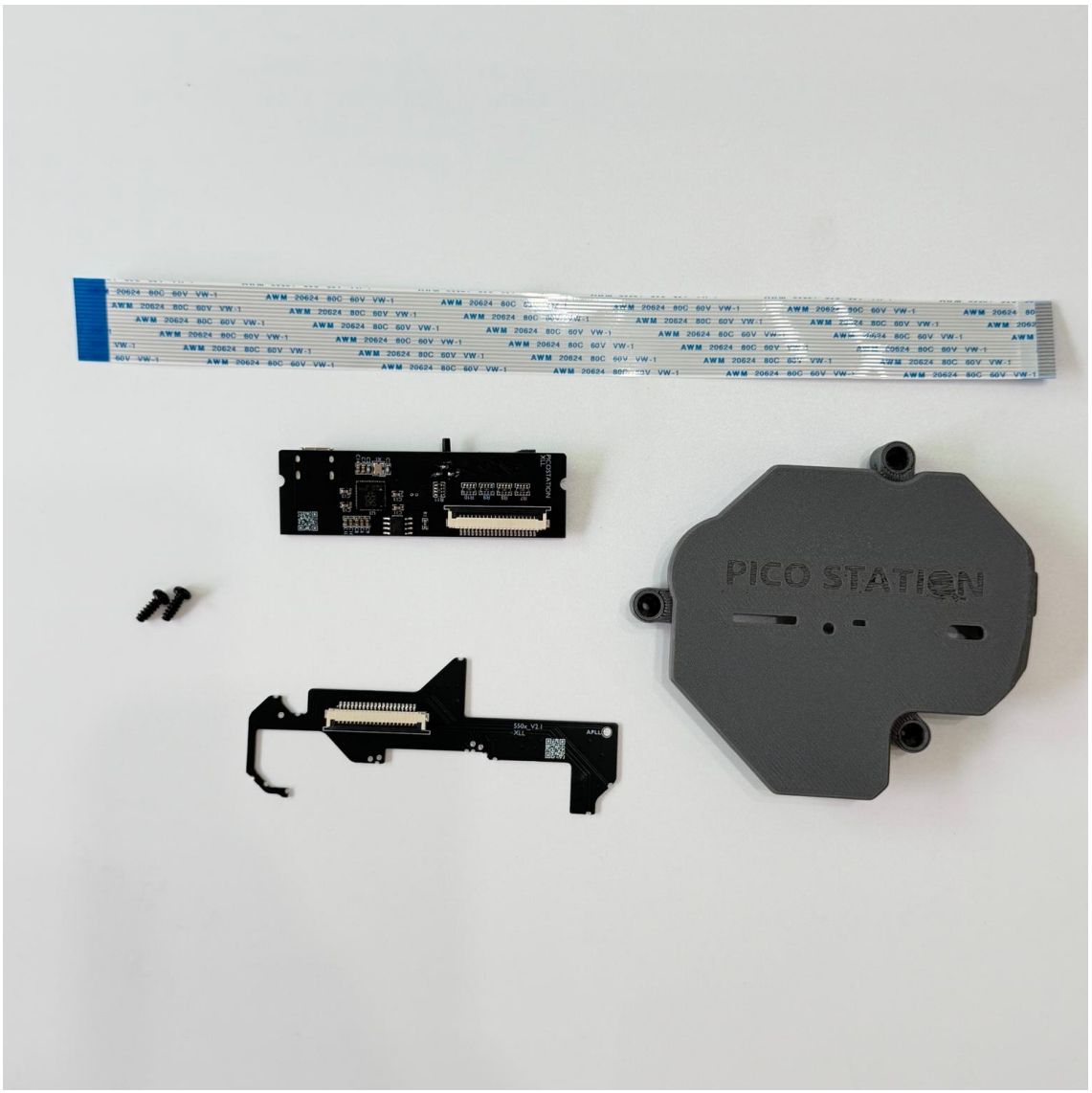


Figure 1. Actual package contents

2. Disassemble and confirm PU-18

Fully disassemble the PlayStation far enough to access both sides of the motherboard. Confirm the motherboard revision itself is PU-18. Do not rely only on the console shell model number.

3. Locate IC701

Locate IC701 on the component side. The chip is marked SONY CXD2545Q. Use the motherboard silkscreen pin-number references as the orientation basis.

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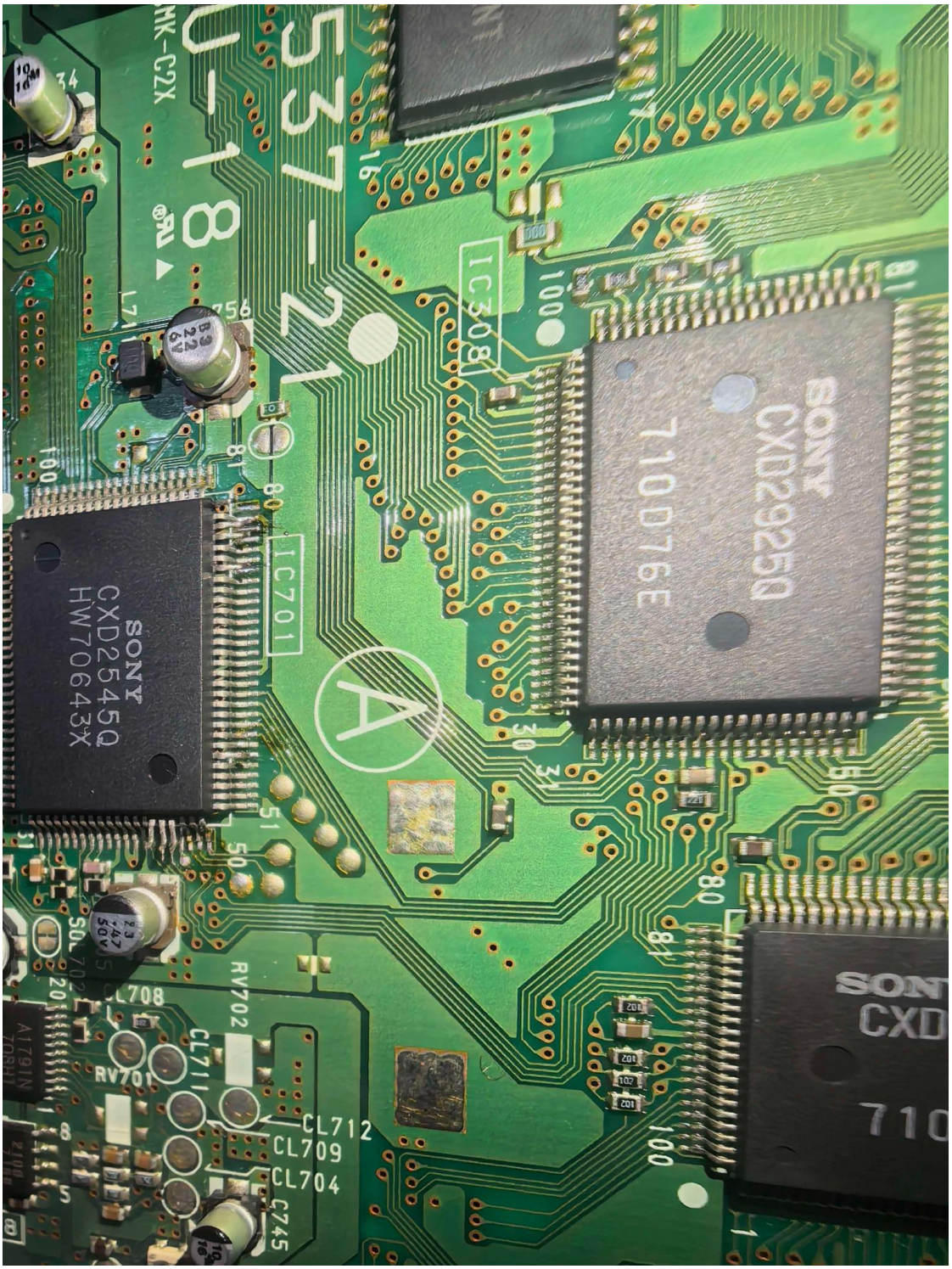


Figure 2. PU-18 IC701

4. Lift the eight required IC701 pins

Lift ONLY pins 45, 46, 47, 56, 74, 77, 78 and 80. Apply flux and work one pin at a time. Heat the pin briefly with a fine tip while gently lifting from underneath with a fine needle or blade. Do not pull a cold pin and do not disturb adjacent pins.

Pins	Edge in the photographed orientation	Quick reference
45 / 46 / 47	Lower edge	Near the 50 mark
56 / 74	Right edge	Between 51 and 75
77 / 78 / 80	Upper edge	Near the 80 mark

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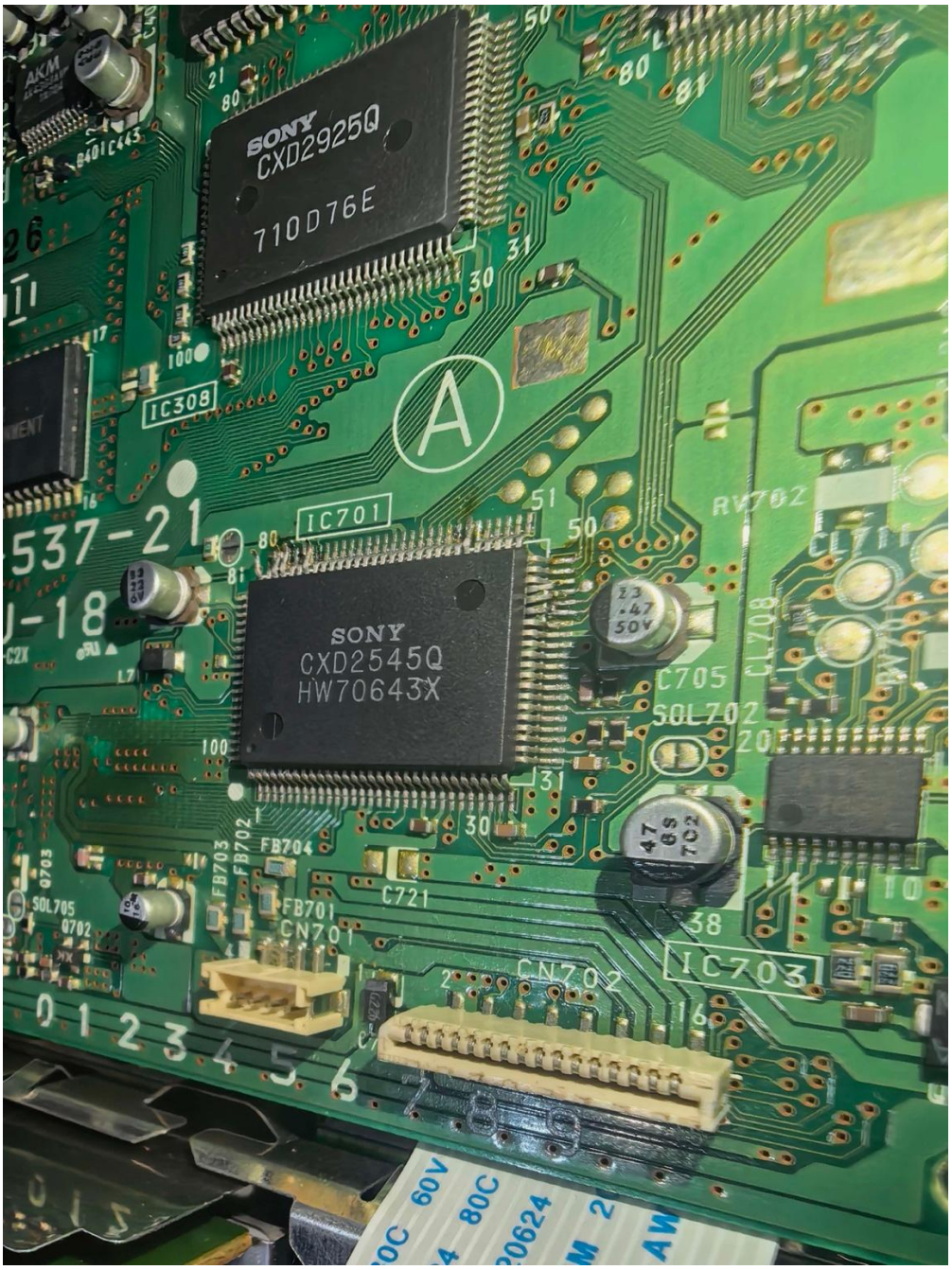


Figure 3. IC701 area after pin-lifting work — inspect each target pin under magnification

QC Check — IC701

All eight lifted pins must be physically separated from their original motherboard pads, with no contact to adjacent pins. Visual inspection under magnification is mandatory; continuity measurement is only a secondary check.

5. Position the 550X V2.1 QSB

Turn the motherboard bottom-side up. Position the 550X V2.1 QSB as shown. Its shape and solder openings should align naturally with the PU-18 motherboard. Do not force it into place.

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Figure 4. 550X V2.1 QSB positioned on the PU-18 motherboard

6. Prepare the two specified vias and solder the QSB

The official PU-18 QSB procedure requires the left and right marked via pads to be lightly scratched before soldering. Remove only enough solder mask to expose clean copper, pre-tin carefully, then solder the QSB. Recheck alignment before completing all joints.

> **Do Not Over-Scrape**
> Do not dig into the copper or enlarge the exposed area unnecessarily. Damaged vias or traces can make the motherboard difficult to repair.

7. Remove the specified resistor and connect APLL

Locate the oscillator area identified in the PU-18 reference guide (OSC V67.737 KDS813). Remove only the specifically indicated small resistor. Then connect the QSB pad marked APLL to the specified motherboard point above the removed resistor. Your actual installation uses a short purple insulated wire.

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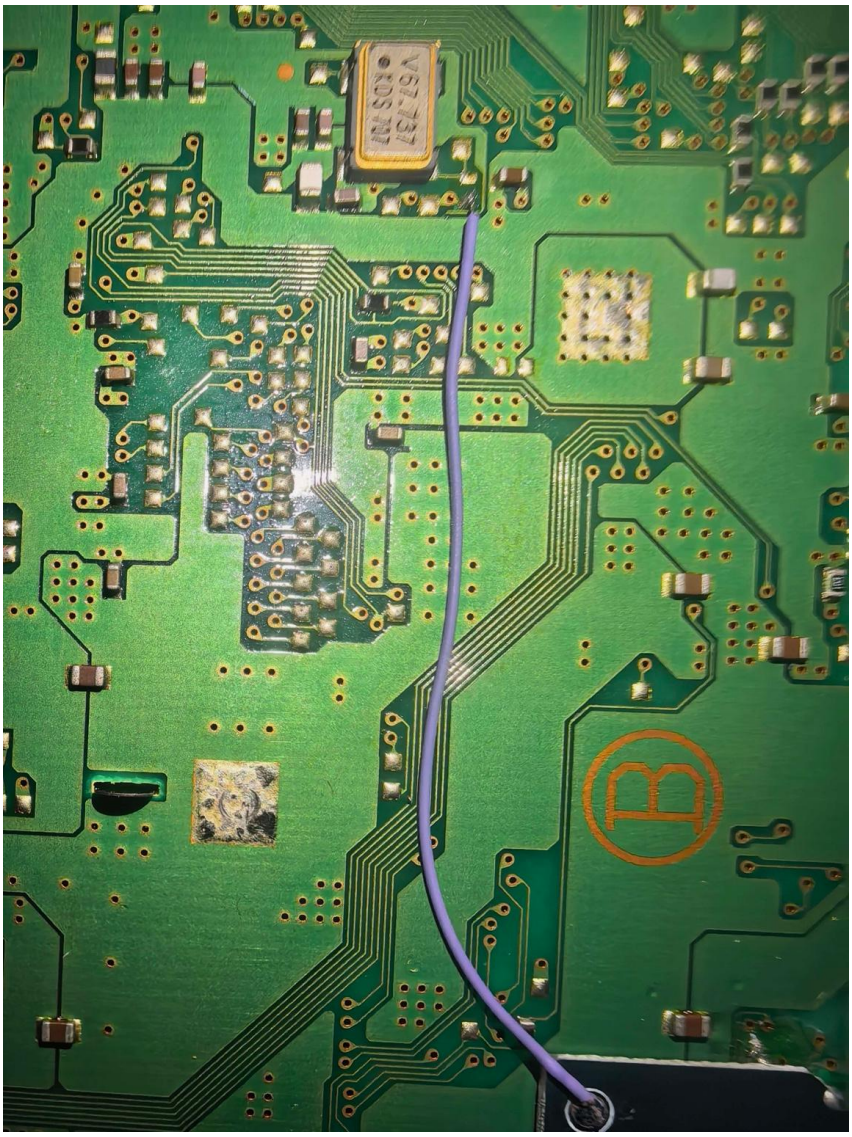


Figure 5. APLL jumper routing on the PU-18 motherboard

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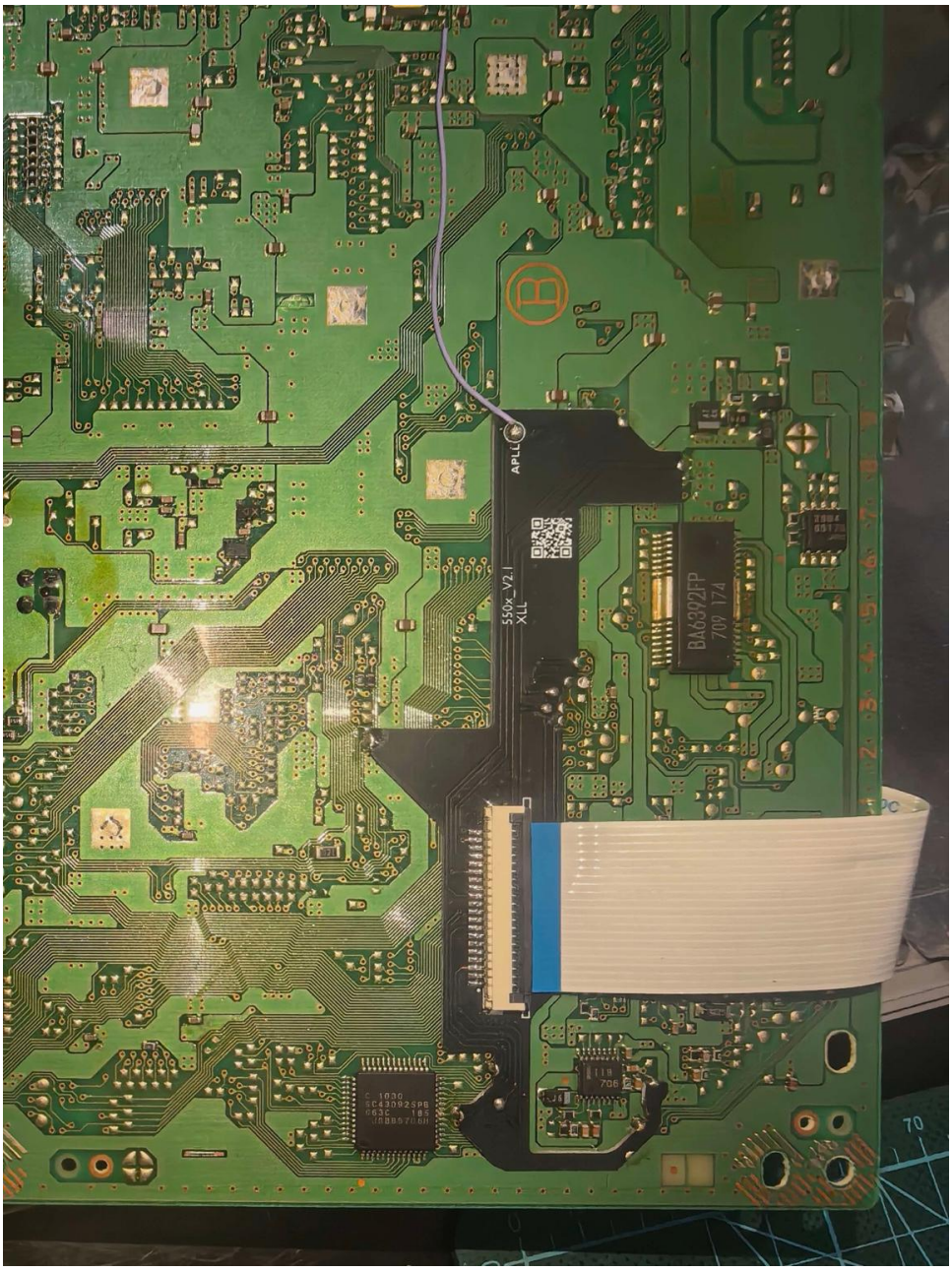


Figure 6. Completed 550X V2.1 QSB installation with APLL and FFC

8. Insert the single FFC into the QSB

Open the QSB ZIF lock carefully. Insert the ONE supplied FFC straight and fully. In the verified installation photo, the blue reinforced end remains visible at the connector. Close the lock evenly and do not force the cable.

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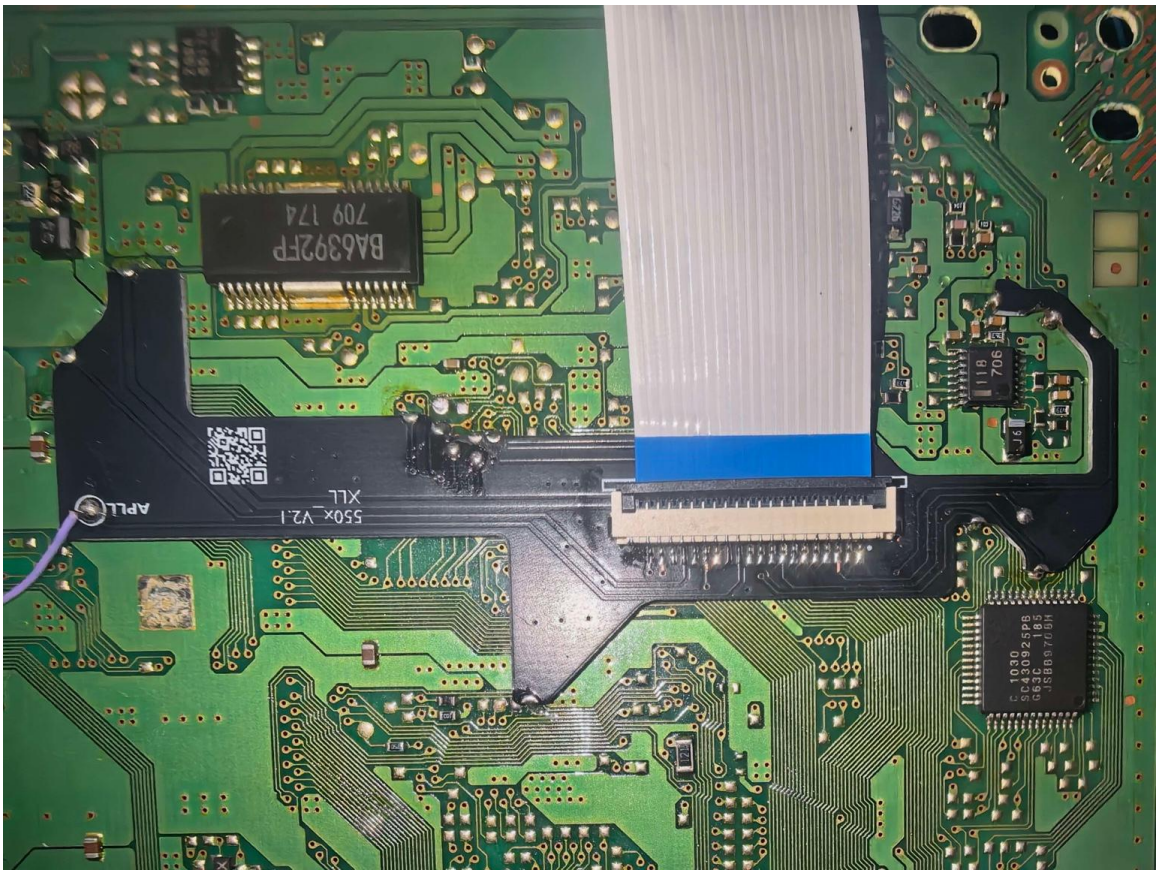


Figure 7. FFC inserted into the 550X V2.1 QSB — blue reinforcement visible

9. Route the FFC safely

Route the ribbon in a smooth curve without sharp creases. Keep it clear of screw posts, metal edges and areas where the shield or shell can pinch it. Do not automatically copy xStation-specific case trimming unless it is actually required by this PicoStation mount.

10. Connect the FFC to the PicoStation main board

Open the PicoStation ZIF connector and insert the other end of the same FFC. The verified product photo again shows the blue reinforced section visible at the connector. Confirm the ribbon is square, fully seated and locked.

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Figure 8. PicoStation main board connected to the single FFC inside the chassis

11. Install the PicoStation board into the 3D-printed mount

Fit the PicoStation main board into the supplied gray mount. Align the microSD opening, USB-C opening, PCB mounting points and FFC exit. Use the two supplied black screws where shown. Do not overtighten screws into the printed plastic.

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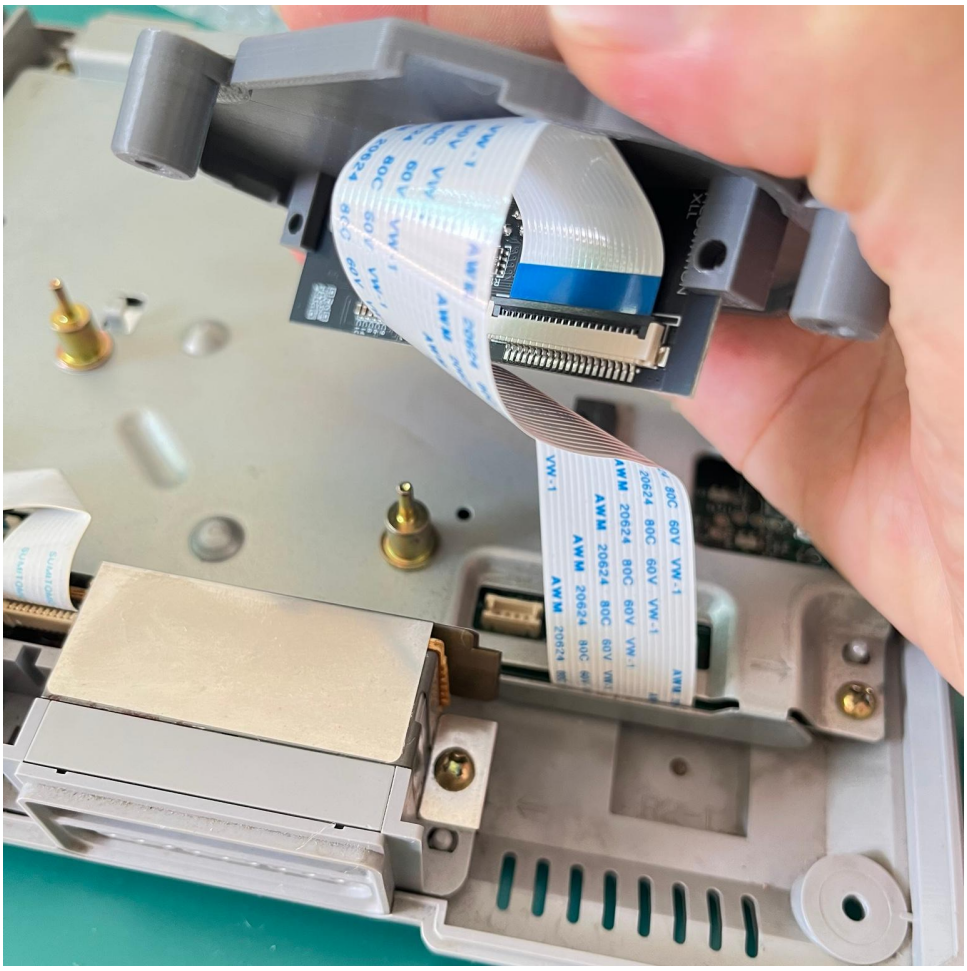


Figure 9. PicoStation PCB and FFC inside the 3D-printed mount

12. Fit the replacement mount into the optical-drive bay

Place the assembled mount in the original optical-drive area. Make sure it sits flat, the FFC is not trapped, no exposed PCB contacts the metal shield, and the access openings remain unobstructed.

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Figure 10. 3D-printed PicoStation assembly installed in the PS1 chassis

13. Close the lid and perform the first power-on test

Insert a correctly prepared microSD card, make sure the disc-lid switch indicates CLOSED, then power on. Do not complete final reassembly until the PicoStation menu boots and a test game launches successfully.

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Figure 11. Final installed appearance — microSD and USB-C remain accessible

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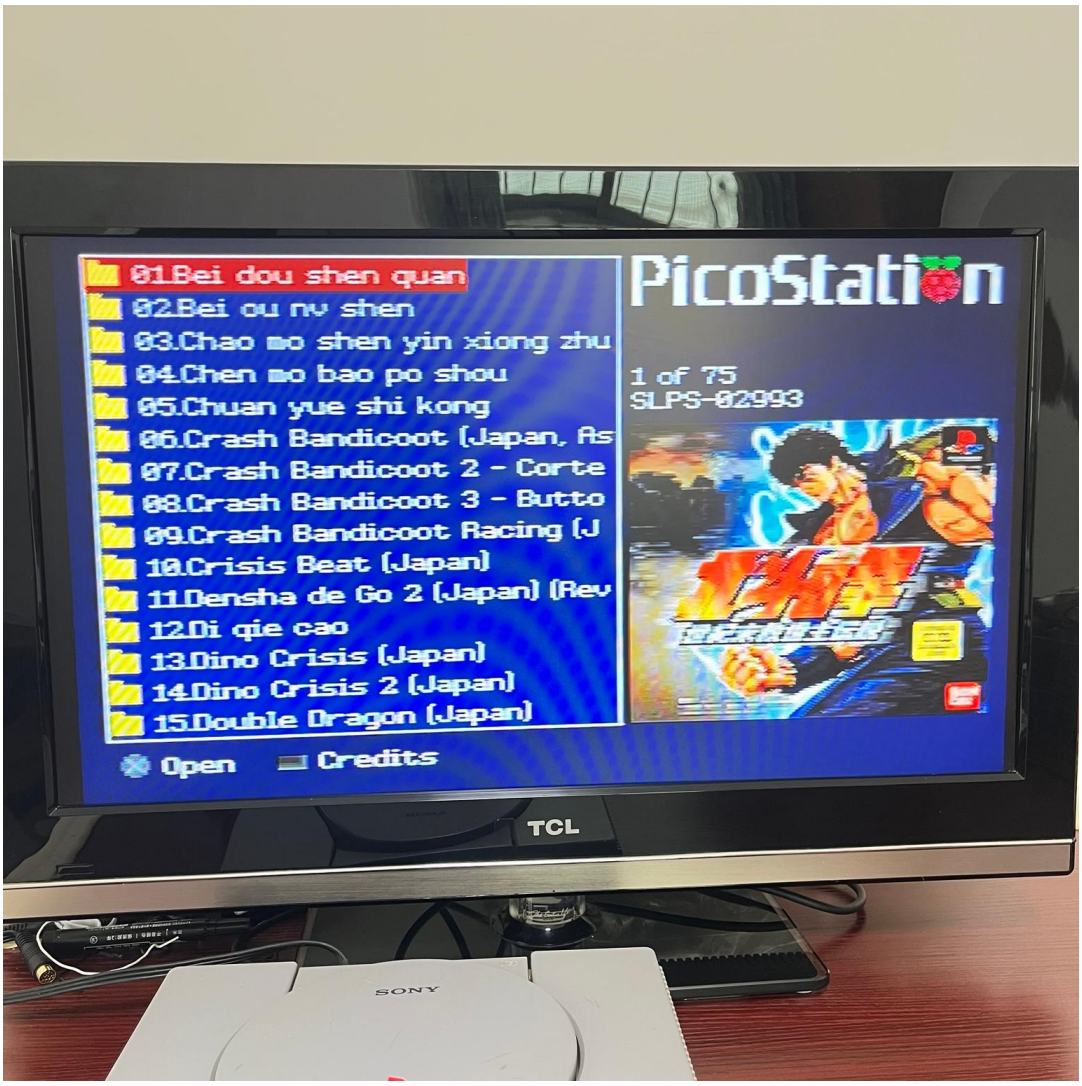


Figure 12. Successful PicoStation menu boot

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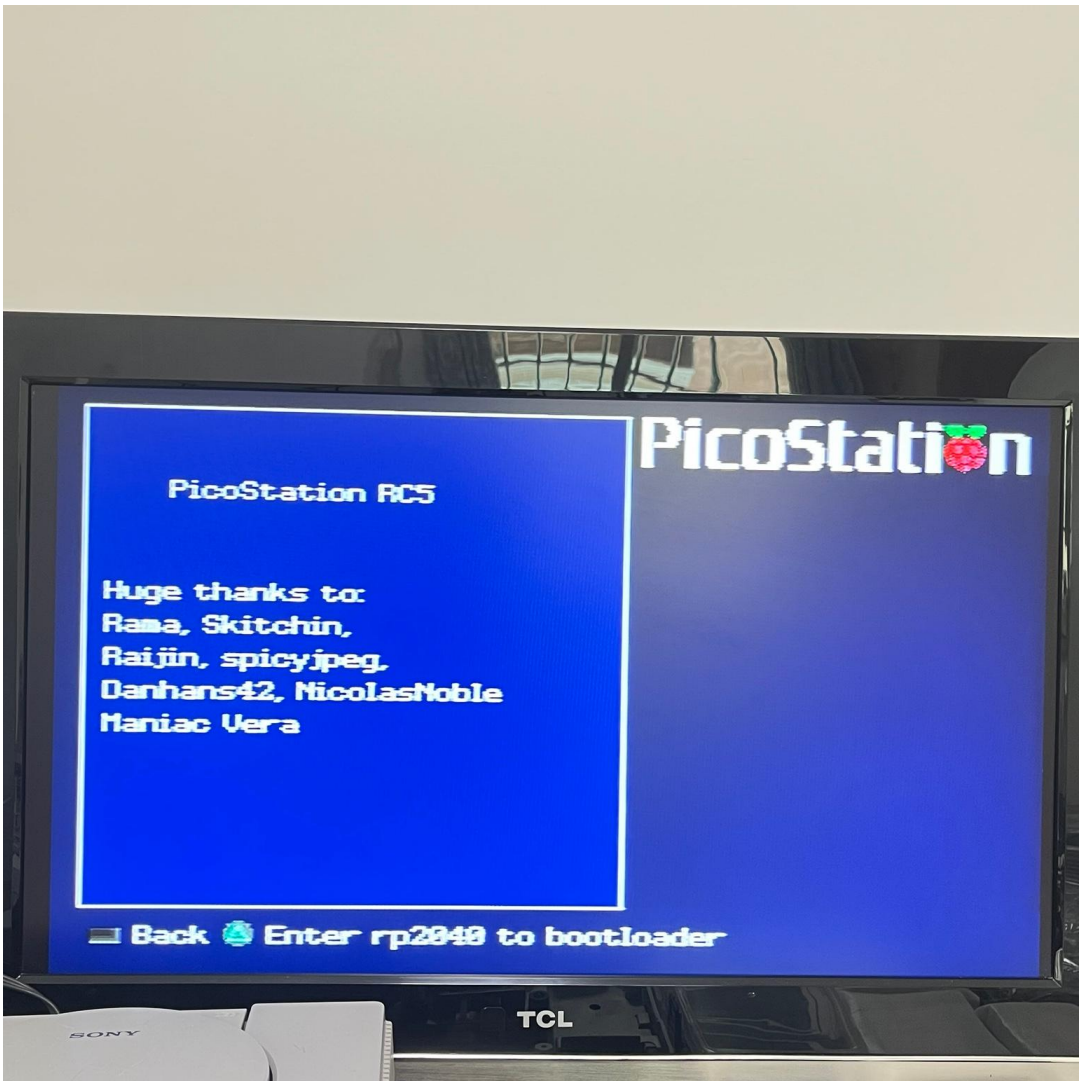


Figure 13. RC5 screen on the verified unit

5.3 Final Installation QC

- Motherboard revision positively confirmed as PU-18.
- IC701 pins 45, 46, 47, 56, 74, 77, 78 and 80 are lifted and isolated.
- 550X V2.1 QSB is aligned and all required joints are sound.
- Two specified vias were prepared without trace damage.
- Specified resistor was removed and APLL connected to the correct point.
- One FFC is fully seated at both ends with the verified orientation.
- No cable is sharply folded or trapped by metalwork or shell parts.
- PicoStation board is secure in the 3D mount; microSD and USB-C remain accessible.
- Console boots PicoStation and a known-good test image launches.

6. microSD Setup & Operation

The maintained PicoStation README explicitly requires exFAT and states: “rename your cue-sheet to UNIROM.cue”.

- Use a genuine, reliable microSD card.
- Format the card as exFAT.
- Use a valid cue-sheet-based disc image set. For BIN/CUE sets, keep every required data/audio track.
- For BIN/CUE sets, verify that each FILE entry in the CUE matches the actual referenced filename.
- For the maintained software, rename the cue-sheet used for boot/loading to UNIROM.cue, as specified by the current README.
- Safely eject the card from the computer before removal.
- For this retail kit, insert or remove the microSD with the console powered off. For normal operation, make sure the PS1 lid/door switch reports CLOSED before booting.

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Compatibility Limitation
The maintained PicoStation project states that compatibility and reliability are improved, but some games may still fail to work, freeze randomly or run poorly. Do not advertise 100% game compatibility.

7. Firmware & USB-C Service Port

This retail kit is supplied with PicoStation RC5 firmware pre-installed. At the time this manual was prepared, the maintained megavolt85/PicoStation Release page marks RC5 as Latest.

On this retail hardware, the USB-C port is intended for firmware/service access; normal game storage is on microSD.

- Do not reflash a working unit without a clear reason.
- Verify that any firmware file is intended for the hardware configuration being used.
- Do not flash an OC/overclock build unless the hardware has been specifically modified for it and the firmware build is confirmed for that modification.
- Use a proper USB data cable for firmware service.

8. Troubleshooting

Symptom	Primary checks	Action
Original PS1 BIOS/CD Player screen instead of PicoStation	Lid switch, FFC, QSB, IC701, APLL	Power off. Confirm lid-closed state, reseat the FFC, inspect QSB joints, the eight lifted pins, two prepared vias and APLL.
Black screen after installation	Shorts, FFC orientation, IC701, APLL	Power off immediately. Do not repeatedly power-cycle. Inspect for bridges, damaged pins/traces, incorrect FFC seating and APLL errors.
microSD not detected	Card quality, exFAT, seating	Power off, reinsert the card, confirm exFAT, then test a known-good genuine card.
Game appears but will not start	CUE/BIN names, required tracks	Verify every FILE entry inside the CUE exactly matches the real BIN filename and all tracks are present.
Music missing	Multi-track image, microSD	Use a complete clean image and test another reliable card.
Random freezes or one title behaves poorly	Image quality, card, upstream compatibility	Try a clean image and another reliable card. Some titles are still known to fail, freeze or run poorly.
USB-C not detected by PC	USB data cable, bootloader procedure	Disconnect console power, use a known-good data cable and follow the verified RP2040 firmware-service procedure.
Problem began after firmware flashing	Firmware selection	Restore the verified standard RC5 build for this kit. Do not use unrelated or OC firmware on standard hardware.

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Figure 14. If the console stays in the original PS1 menu, recheck the ODE installation path

9. Care & Maintenance

- Power the console off before inserting/removing the microSD card or touching internal connectors.
- Keep the product dry and away from condensation, liquids and excessive humidity.
- Do not expose the console to excessive heat or block normal ventilation.
- Do not sharply fold, crush or pull the FFC cable.
- Do not overtighten screws into the 3D-printed mount.
- Clean external surfaces only with a soft dry cloth. Do not spray liquid cleaner into the console.
- If instability develops after previously normal operation, stop use and inspect the FFC, QSB and solder joints before further testing.

10. FAQ

Question	Answer
Is this kit compatible with PU-8?	No. This retail hardware kit is PU-18 only.
Is a microSD card included?	No. Prepare your own reliable microSD card.
Which filesystem should I use?	exFAT.
What disc-image format should I use?	Use a properly prepared cue-sheet-based disc image set. For BIN/CUE sets, keep every required data/audio track.
What should the cue-sheet be named?	The maintained PicoStation README states UNIROM.cue.

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Question	Answer
Does every PlayStation game work?	No 100% compatibility claim should be made. Some titles may still fail, freeze or run poorly.
Do I need to close the disc lid?	Yes. The lid/door signal must indicate closed for normal operation.
What is USB-C used for?	Primarily firmware/service access. Games are stored on microSD.
Can I use OC firmware?	Only when the hardware has been specifically modified and the build is confirmed for that modification. Otherwise use standard RC5.

11. Safety Warnings

WARNING
Installation requires opening the console and modifying electronic assemblies. Incorrect installation can damage the console or the PicoStation hardware.

- Disconnect the AC power cord before opening or servicing the console.
- Use ESD precautions when handling the motherboard, QSB and PicoStation PCB.
- Never hot-plug or hot-unplug the internal FFC.
- Do not probe, bridge or short unknown points while the console is powered.
- Stop immediately if you observe smoke, unusual odor, excessive heat or repeated power faults.
- Keep screws and other small parts away from children.

12. Compliance & Disposal Information

Compliance Status — Confirmed
The manufacturer/seller confirms that controlled compliance documentation is available for the marketed PicoStation RC5 + PU-18 configuration, supporting CE marking, UKCA marking, applicable EMC and RoHS requirements, and FCC compliance requirements. The controlled file set includes applicable test reports and/or declarations for the marketed configuration. Exact standards, report numbers, laboratories and declaration details must be taken from the controlled compliance files.

EU General Product Safety Regulation (GPSR)

For products within the scope of Regulation (EU) 2023/988 (GPSR) and placed on the EU market, Article 16 requires an economic operator established in the Union to be responsible for the applicable tasks. The exact role of the EU contact listed in this manual must match the controlled product-compliance documentation and the actual supply-chain arrangement.

CE / UKCA / FCC / EMC / RoHS / WEEE

Controlled compliance files for the marketed PicoStation RC5 + PU-18 configuration support CE marking, UKCA marking, applicable EMC and RoHS requirements, and FCC compliance requirements. Use the controlled files for the exact standards, report/declaration numbers, laboratories and marking details.

Where local WEEE rules require separate collection, do not dispose of electronic assemblies with unsorted household waste. Use an approved e-waste collection or recycling route.

13. Manufacturer, EU Representative & Contact

The manufacturer and EU representative details below are provided for this marketed product configuration. Where EU law requires a specific “responsible person” or other economic-operator role, the role shown on the product/packaging and in the controlled compliance documentation takes precedence.

Manufacturer	Guangzhou Sanxiu Technology Co., Ltd.

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Manufacturer	Guangzhou Sanxiu Technology Co., Ltd.
Address	CN, Guangdong Province, Guangzhou City, Tianhe District, No. 288 Zhongshan Avenue (Middle), Room 416, Floor 4, Unit A21, 440106
EU Representative	YQY INTERNATIONAL CONSULTING
EU Address	79 Rue de Patay, 75013, Paris, France
EU Contact Phone	+33 7 48 57 84 59
EU Email	services@yqyic.fr
AliExpress Store	OldMan
Technical Support	Gamania331@gmail.com
Working Hours	09:00–18:00 (GMT+8), 7 days a week

14. Technical Reference Basis

Fact review completed 11 Oct 2026. This manual separates upstream project facts from product-specific photographed hardware. PU-18 electrical-modification steps use the original PicoStation FAQ and the xStation PU-18 installation guide that the FAQ explicitly references. RC5/software statements use the maintained megavolt85/PicoStation repository and release page. Product-specific QSB, FFC orientation, package contents and mechanical installation are based on the supplied retail-kit photographs. Version-specific direct-wire community diagrams are not used as the wiring authority for this 550X V2.1 QSB kit.

PicoStation maintained repository	https://github.com/megavolt85/PicoStation
PicoStation releases	https://github.com/megavolt85/PicoStation/releases
Original PicoStation FAQ (archived)	https://github.com/paulocode/picostation_faq
xStation PU-18 installation guide	https://github.com/x-station/xstation-releases/wiki/xStation-ODE-installation-guide-for-the-PU-18-Playstation-1-motherboard
xStation PU-18 PDF	https://github.com/x-station/xstation-releases/blob/main/PU-18_Install_Guide.pdf
PicoStation PU-18 community cross-check	https://github.com/tzmwx/PICOSTATION-PU8-PU16-PU18
Raspberry Pi RP2040 bootloader reference	https://www.raspberrypi.com/documentation/microcontrollers/
EU GPSR — Regulation (EU) 2023/988	https://eur-lex.europa.eu/eli/reg/2023/988/oj/eng
EU EMC Directive 2014/30/EU (current consolidated text)	https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02014L0030-20260530
EU RoHS Directive 2011/65/EU (current consolidated text)	https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02011L0065-20260701
EU WEEE information	https://environment.ec.europa.eu/topics/waste-and-recycling/waste-electrical-and-electronic-equipment-weee_en
UKCA / CE regimes — GOV.UK (2026 guidance)	https://www.gov.uk/guidance/ukca-marking-roles-and-responsibilities
FCC Part 15 measurement / authorization reference	https://apps.fcc.gov/oetcf/kdb/forms/FTSSearchResultPage.cfm?id=21079&switch=P

Source Boundary

The xStation material is used only for PU-18 motherboard modification steps that the original PicoStation FAQ explicitly points to: IC701 pin lifting, QSB positioning, the two prepared vias, the specified resistor removal and APLL connection. xStation-specific main-board mounting, spacers, SD setup and firmware procedures are not treated as PicoStation RC5 instructions. Community direct-wire material is used only as a secondary cross-check where clearly identified and is not the wiring authority for this retail QSB kit.

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