

Installation and User Manual for TV Circuit Board

1. Product Overview

This manual applies to the [Circuit Board Model] series of dedicated TV circuit boards, covering the installation process, operating specifications, and troubleshooting of core functional circuit boards such as power supply boards, signal processing boards, and backlight driver boards. Adopting high-precision components and optimized circuit design, this circuit board features low power consumption and high stability, and is a core component ensuring the normal operation of TV functions such as image display, sound output, and power supply. To ensure installation safety and equipment stability, please carefully read this manual before installation and use, and strictly follow all operating requirements.

2. Safety Warnings and Precautions

(1) Safety Guidelines for Installation Operations

1. Operators must wear anti-static wristbands or anti-static gloves. Do not directly touch precision parts such as solder joints and chip pins on the circuit board with bare hands to prevent electrostatic breakdown of electronic components by the human body; if no protective tools are available before operation, touch a grounded metal object first to discharge static electricity.
2. The installation environment must meet the following requirements: temperature 10°C-30°C, relative humidity 40%-60%, free of dust, oil stains, water vapor and corrosive gases, and away from heat sources (such as electric heaters, spotlights), water sources (such as faucets, humidifiers) and strong electromagnetic interference sources (such as routers, induction cookers).
3. Prepare tools with good insulation performance, including: appropriately sized cross/flat-head insulated screwdrivers, anti-static tweezers, wire strippers (if wiring is required), and a multimeter (recommended for testing circuit continuity). Do not use tools with exposed metal or damaged insulation.
4. Before installation, completely unplug the TV power plug, disconnect all external devices (such as set-top boxes, U disks), wait for the internal capacitors of the TV to fully discharge (at least 10 minutes), confirm no residual power remains before disassembling and installing, and strictly prohibit live operation.

(2) Safety Specifications for Use and Maintenance

1. After the circuit board is installed, before powering on, repeatedly check that the wiring is correct, the interfaces are firmly plugged in, there are no short circuits, loose connections, reverse connections, etc., ensure the heat dissipation channels are unobstructed, and no debris blocks the heat sink of the circuit board.
2. If abnormalities such as abnormal heating of the circuit board (case temperature exceeding 60°C), smoke, burning smell, flickering/black screen of the TV, or distorted sound occur during use, immediately cut off the power, unplug the power plug, stop using it, and contact professional after-sales service for maintenance. Do not disassemble the machine yourself.
3. It is forbidden to privately cut or weld circuit board lines, or replace components (such as capacitors, resistors, fuses) that do not meet the original factory-specified specifications, so as to avoid potential safety hazards such as short circuits and fires, and affect the equipment's warranty rights.
4. Avoid liquid splashing into the TV or onto the circuit board surface. If this accidentally happens, immediately cut off the power and send it for repair. Only after professional testing confirms it is dry and free of faults can it be powered on again for use.

3. Installation Preparation

(1) Preparation of Tools and Consumables

1. Core tools: Cross insulated screwdrivers (PH0/PH1), flat-head insulated screwdriver (2.0mm), anti-static tweezers, multimeter (DC voltage range $\geq 200V$), screw storage box (for classifying and storing disassembled screws);
2. Auxiliary consumables: Anti-static bag (for storing old circuit boards), insulating tape (for handling exposed wires), cable ties (for organizing flat cables), anhydrous alcohol (for cleaning interface stains, optional).

(2) Verification of Accessory List

1. TV circuit board (power supply board/signal processing board, etc., Model: [Specific Model]);
2. Supporting accessories: Fixing screws (4-8 pieces, configured according to the circuit board model), connecting flat cables (power flat cable, signal flat cable, backlight flat cable, etc., subject to actual accessories), interface protective cover (if any);
3. Attached documents: Product certificate, warranty card (please keep properly for after-sales rights protection).

(3) Preliminary Inspection

1. Inspect the appearance of the new circuit board: Confirm there is no deformation, damage, solder joint detachment, loose or missing components, no bending or oxidation of interface pins, and no scratches or ablation marks on the printed circuit.
2. Record the installation position and wiring method of the old circuit board: Before disassembly, take photos to retain the connection positions of each flat cable and interface (mark the interface name and flat cable direction) to avoid confusion during installation.

4. Installation Process

(1) Disassembling the Old Circuit Board

1. Place the TV flat on a workbench covered with a soft cloth pad, with the screen facing down (to avoid pressure scratches on the screen), remove the fixing screws of the TV back cover, gently pry open the back cover buckles, take off the back cover and place it in a safe area.
2. Locate the target old circuit board (for example, the power supply board is usually near the power interface, and the signal board is near the HDMI interface), observe and record the positions of all connecting wires: The flat cable interface is usually marked with "VCC", "GND", "Signal +", etc., or distinguished by color. Take photos for retention before disassembly.
3. Pinch the flat cable connector with tweezers or hands (do not pull the flat cable), gently pull out all connecting flat cables. If the interface has a buckle, press the buckle first before plugging and unplugging to avoid damaging the interface pins.
4. Unscrew the screws fixing the old circuit board, gently take out the old circuit board, put it into an anti-static bag for proper storage (if repair or return is needed), and avoid random placement that may cause component damage.

(2) Installing the New Circuit Board

1. Take the new circuit board out of the anti-static bag, check again that the appearance is normal, then gently put it into the TV according to the original installation position, align with the screw fixing holes, and stably fix the circuit board with the supporting screws. The screw tightening force should be moderate (to ensure the circuit board is not loose), avoiding excessive tightness that may damage the circuit board.
2. Refer to the preliminary photos or circuit board interface marks to connect the flat cables one by one:
 - Power flat cable: Align with the "+/-" positive and negative pole marks of the interface, ensure the flat cable direction is correct, insert it to the bottom and fasten the buckle to avoid short circuits caused by reverse connection;

- Signal flat cable: When connecting the signal processing board to the main board/screen, align with the interface pins, gently push in, and confirm there is no looseness (for example, the HDMI signal flat cable should be fully inserted into the interface with no exposed pins);
 - Backlight flat cable: If it is a backlight driver board, distinguish the positive and negative poles, connect them according to the marks, and avoid backlight failure caused by reverse connection.
3. Organize the flat cables: Fix the excess flat cables with cable ties to avoid winding of flat cables, blocking the heat sink, or contacting the heating area of the circuit board, and ensure the flat cables are not bent or squeezed.

(3) Back Cover Reset and Inspection

1. Re-inspect the circuit board installation: Confirm all interfaces are correctly connected, screws are firmly fixed, the circuit board is not tilted, components are not collided, and there are no residual tools or debris inside the TV.
2. Fasten the TV back cover: Align with the body buckles, gently press to make the back cover fit the body, then tighten the back cover fixing holes one by one with the original screws to ensure the back cover is not loose and has no gaps.

5. User Operation Guide

(1) Initial Power-On Debugging

1. Connect the power supply: Insert the TV power plug into a well-grounded power socket, ensuring the socket voltage is consistent with the rated voltage of the circuit board (usually 220V~50Hz).
2. Power-on test: Press the TV power button and observe the power-on response:
 - Power supply board: If the TV indicator light is on normally and there is no abnormal heating or odor of the body, it indicates the power supply board is supplying power normally;
 - Signal processing board: After power-on, connect a signal source (such as a set-top box), check if the picture is clear, the color is normal, and switch channels and adjust the volume to test the function;
 - Backlight driver board: Confirm the screen backlight is uniform with no dark areas or flickering.

3. Parameter verification: Enter the TV settings interface to check if parameters such as resolution, refresh rate, and audio output are normal. If parameter abnormalities occur, you can restore factory settings (operation path: Settings - System - Restore Factory Settings) or contact after-sales service for debugging.

(2) Daily Use Operations

1. Power on and off: Control power on/off through the TV power button or remote control power button. If not in use for a long time, it is recommended to unplug the power plug to save energy and reduce standby power consumption.
2. Connection of external devices: For external interfaces supported by the circuit board (HDMI, USB, AV, etc.), connect the devices in the power-off state, and power on for use after the connection is completed. Avoid hot plugging and unplugging that may damage the interface.
3. Basic function operations: Adjust parameters such as volume, brightness, and contrast through the remote control, and switch signal sources (such as HDMI1/HDMI2, AV). For specific operations, refer to the main TV manual; no additional independent operation of the circuit board is required.

(3) Advanced Operations (For Professional Personnel Only)

1. Circuit detection: If it is necessary to detect the working status of the circuit board, a multimeter can be used to measure the voltage of key interfaces (such as the output voltage of the power supply board: 12V, 24V, etc.). The measurement must be performed in the power-off state to avoid short circuits.
2. Parameter debugging: Some circuit boards (such as signal processing boards) support engineering mode debugging, which needs to be entered through a specific combination of keys (refer to the operation method corresponding to the TV model). Only professional personnel can adjust parameters such as white balance and signal gain; ordinary users are prohibited from operating.

6. Common Fault Troubleshooting

Fault Phenomenon	Possible Causes	Troubleshooting and Solution Methods
The TV does not turn on at all, and the indicator light is off	1. The power plug is not plugged in tightly or the socket has no power; 2. The power supply board wiring is loose/reversely	1. Check the power plug and replace the socket for testing; 2. Re-plug the power supply board flat cable after power-off to

	<p>connected; 3. The power supply board fuse is blown; 4. Power supply board failure</p>	<p>confirm the positive and negative poles are correctly connected; 3. Use a multimeter to detect if the power supply board fuse is on/off; if blown, contact after-sales service for replacement; 4. If the above methods are ineffective, replace the power supply board or send it for repair</p>
<p>There is sound but no picture when turned on, and the screen is black</p>	<p>1. The backlight driver board wiring is loose; 2. The backlight flat cable is reversely connected; 3. Backlight driver board failure; 4. Screen failure</p>	<p>1. Re-plug the backlight flat cable after power-off and fasten the buckle; 2. Check if the positive and negative poles of the backlight flat cable are reversely connected and adjust according to the marks; 3. Use a multimeter to detect the output voltage of the backlight driver board; if there is no voltage, it is a driver board failure; 4. If the driver board is normal, contact after-sales service to detect the screen</p>
<p>The picture is garbled, stuck, and the signal is unstable</p>	<p>1. The signal processing board flat cable is loose; 2. Signal source failure; 3. Oxidation of the signal processing board interface; 4. Processing board chip failure</p>	<p>1. Re-plug the signal flat cable after power-off and clean the interface oxidation layer with anhydrous alcohol; 2. Replace the signal source (such as replacing the set-top box, U disk) for testing; 3. Check if the connection between the signal processing board and the main board is firm; 4. If the fault persists, contact after-sales service to repair the processing board</p>

<p>Distorted sound or no sound</p>	<p>1. Poor connection of the audio flat cable; 2. Failure of the audio interface of the signal processing board; 3. Speaker failure</p>	<p>1. Re-plug the audio flat cable after power-off and confirm the interface is tightly plugged; 2. Connect external headphones for testing; if there is sound from the headphones, it is an audio interface failure; 3. If there is no sound from the headphones, check the signal processing board or contact after-sales service to detect the speaker</p>
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7. Maintenance

1. Regular cleaning: Every 3-6 months, after power-off, open the TV back cover, gently clean the dust on the circuit board surface with a soft brush (avoid touching components), ensure no dust accumulates on the heat sink, and maintain good heat dissipation.
2. Environment maintenance: Keep the TV use environment dry and ventilated, avoid long-term exposure to humid and dusty environments, and prevent oxidation and short circuits of circuit board components.
3. Extending service life: Avoid long-term continuous operation of the TV (it is recommended to stop for 30 minutes after every 4-6 hours of operation) to reduce the aging speed of circuit board components; try to unplug the power plug during thunderstorms to avoid damage to the circuit board by lightning strikes.
4. Warranty description: The warranty period of this circuit board is [XX months] (from the date of purchase). For faults caused by non-human factors during the warranty period, you can enjoy free repair or replacement services with the warranty card; man-made damage (such as private modification, falling, liquid immersion) is not covered by the warranty.

8. Disclaimer

1. The company shall not be liable for any circuit board damage, equipment failure or safety accident caused by failure to follow the operating specifications in this manual;
2. All problems caused by private disassembly, modification of the circuit board or use of non-original accessories shall be borne by the user, and the product warranty service will be terminated at the same time;

3. The content of this manual is compiled based on the current version of the product. If the product is upgraded subsequently, the relevant operations may be adjusted. Please refer to the latest version of the manual for details, and no separate notice will be given;
4. The company shall not be liable for compensation for circuit board damage caused by force majeure (such as earthquakes, fires, lightning strikes, etc.).

9. After-Sales Service

For technical support or maintenance services, please contact us through the following methods:

- Official customer service hotline: [Phone Number] (Working hours: Monday to Sunday 8:30-19:00)
- Official after-sales website: [Website Address] (You can query after-sales outlets and download the latest manual)
- Offline service outlets: [Detailed Address, you can log on to the official website to query nearby outlets]