**PC Boot FAILURE Troubleshooting Guide**

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| **Power Supply Diagnostic Checks** | |
| \* If a computer is powered on, quickly powers off, the most probable issue is with the power supply.  - Verify power supply and cable connections are securely connected | |
|  | Remove and reinsert battery (if laptop), then Power off and unplug the machine |
|  | Test the Wall Outlet |
|  | Plug power supply (PSU) into a different outlet or use a different power cable |
|  | If possible, replace the PSU with a known working one to see if the problem persists. |

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| **BIOS / Startup Diagnostic Checks** | |
| \* The absence of any display output could be due to a failure to complete POST (Power-On Self-Test)  This could also be a software or firmware problem preventing a proper boot. | |
|  | Access BIOS by pressing appropriate key **(F10/F2/Del/Esc)** |
|  | Listen for beep codes during startup (beeping sounds are part of the POST process where BIOS checks for hardware functionality before fully booting) |
|  | NO Beep: Possible PSU, MB or CPU Failure |
|  | 1 Beep: System is Booting Normally // 1 LONG Beep: Graphics Card Error |
|  | CONTINUOUS Short Beeps: Possible PSU, MB or Memory Failure |
|  | 2 Beeps: POST Error (Memory or MB Failure) |
|  | 3 Beeps: Memory (RAM) Failure |
|  | 4 Beeps: MB or System Clock Failure |
|  | 5 Beeps: CPU Failure |
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| List of abc <https://www.lifewire.com/amibios-beep-codes-2624543> | |
|  | If you can get it to stay powered on, access the BIOS and check for any irregular configurations. Update the BIOS if necessary |
|  | Perform hardware diagnostics in BIOS menu |
|  | Reset the BIOS by removing the CMOS battery for a few minutes and then reinserting it, or use the clear CMOS jumper if the motherboard has one |
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| \* Disable the GPU (See Hardware Diagnostics Checks for GRAPHICS CARD) | |
|  | In the BIOS, locate the section for Integrated Graphics (see Advanced, Chipset, or Peripherals tab) |
|  | Set the Primary Display Output or Initial Display Output to IGPU or Onboard Graphics instead of PCIe or PEG (dedicated GPU) [Save & Exit BIOS] |
|  | Locate the appropriate video output (VGA, HDMI, DVI, DisplayPort) on the MB I/O panel |
|  | Plug your monitor's cable (HDMI, VGA, etc.) into the corresponding port on the motherboard |
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| \* If the system now stays on and displays video without shutting down, it points toward a potential GPU issue. If you suspect the dedicated GPU is defective, try installing another known working GPU to confirm the issue. If you've confirmed the dedicated GPU is not the issue, re-install it and switch display back to the PCIe slot. To do this, simply reverse the steps, ensuring that the GPU is securely re-installed, power cables are reconnected, and the monitor is plugged into the GPU’s output ports | |
|  | Plug your monitor's cable (HDMI, VGA, etc.) into the corresponding port on the motherboard |
|  | Reset the BIOS/CMOS settings to default by removing the CMOS battery or using the jumper method (Some motherboards require a BIOS update to use or configure onboard graphics) |
| **Motherboard Connectivity Diagnostic Checks** | |
| \* A computer that shuts down quickly could indicate a loose or faulty motherboard connection | |
|  | Check for visible signs of damage (e.g., burnt components or damaged capacitors) and remove external peripherals except monitor/keyboard |
|  | Open the computer case and check that the 24-pin ATX power connector and the 4/8-pin CPU power connector are securely connected to the motherboard. |

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| **Hardware Diagnostic Checks** | |
| \* If computer powers on, does NOT display an image and quickly shutdowns, hardware components may not be seated properly | |
|  | Disconnect all external devices (printers, external drives, etc.) except for the keyboard, mouse, and monitor. Attempt to boot and see if the system stays on. If so, reconnect the peripherals one by one to find the faulty device |
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| \* If the system stays powered on but there’s still no display, the issue could be with the graphics card | |
|  | Try connecting the system to a different monitor or use the onboard graphics (if applicable) to rule out a GPU failure (*If your motherboard has a VGA, DVI, HDMI, or DisplayPort connector on the rear panel, it supports onboard graphics.* SEE BIOS Diagnostic) |
|  | Remove and Reseat RAM modules |
|  | Reseat any other removable components, such as the graphics card. |
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| \* Computers often fail to boot properly if there is a RAM or CPU issue | |
|  | If reseating the RAM doesn't resolve the issue, try booting the system with one RAM stick at a time, or replace the RAM with known working sticks. |
|  | Ensure the CPU cooler is securely mounted and that thermal paste has been applied correctly. Replace the cooler or CPU as necessary |

Recommended Next Steps

- If no resolution, prepare for:

\* Component replacement

\* Potential motherboard repair/replacement

\* Data recovery if hard drive is functional

Downloadable Bootable Diagnostic Tool Programs

Utilities to Create a BDT USB [https://rufus.ie/en/#google\_vignette](https://rufus.ie/en/" \l "google_vignette)

Hardware Troubleshooting ***[https://www.hirensbootcd.org/#google\_vignette](https://www.hirensbootcd.org/" \l "google_vignette)***

<https://www.ultimatebootcd.com/>

Memory Specific <https://www.memtest86.com/>

HP Hardware Testing FYI <https://support.hp.com/lt-en/document/ish_2854458-2733239-16>

HP PC Hardware Diagnostics <https://support.hp.com/us-en/help/hp-pc-hardware-diagnostics>

**Create Bootable USB**

Download HP Cloud Recovery Tool

>> Insert USB drive

>> Launch tool

>> Select "Download HP PC Hardware Diagnostics"

>> Choose USB drive

>> Wait for completion

Use the diagnostic USB:

Shut down PC

>> Insert USB

>> Power on

>> Press F2 repeatedly

>> Select USB boot option

>> Follow on-screen diagnostics

Alternative: Download UEFI diagnostics directly from HP Support Assistant if available on working PC.

Diagnostic Tools:

General: PW Removal / Partitioning and Disk Utilities / Backup & Data Recovery

PSU Supply Issues: PSU Voltage Test / UBCD: Power Supply Tester / Hiren’s Hardware Monitor

RAM Issues: Memory Integrity / Memory Test / Memory Diagnostic

Motherboard/CPU: CPU Stress Test / System Stability / Component Verification

Storage Drive: SMART Status / Bad Sector Scan / HDD Diagnostic

BIOS/Firmware: BIOS Update Utility / System Diagnostics / BIOS Configuration Tool