



U4L094

Electronic Fault Finding

Roll Call





Recap of the Lesson

✕ What is an Electronic Fault?



Electronic Fault

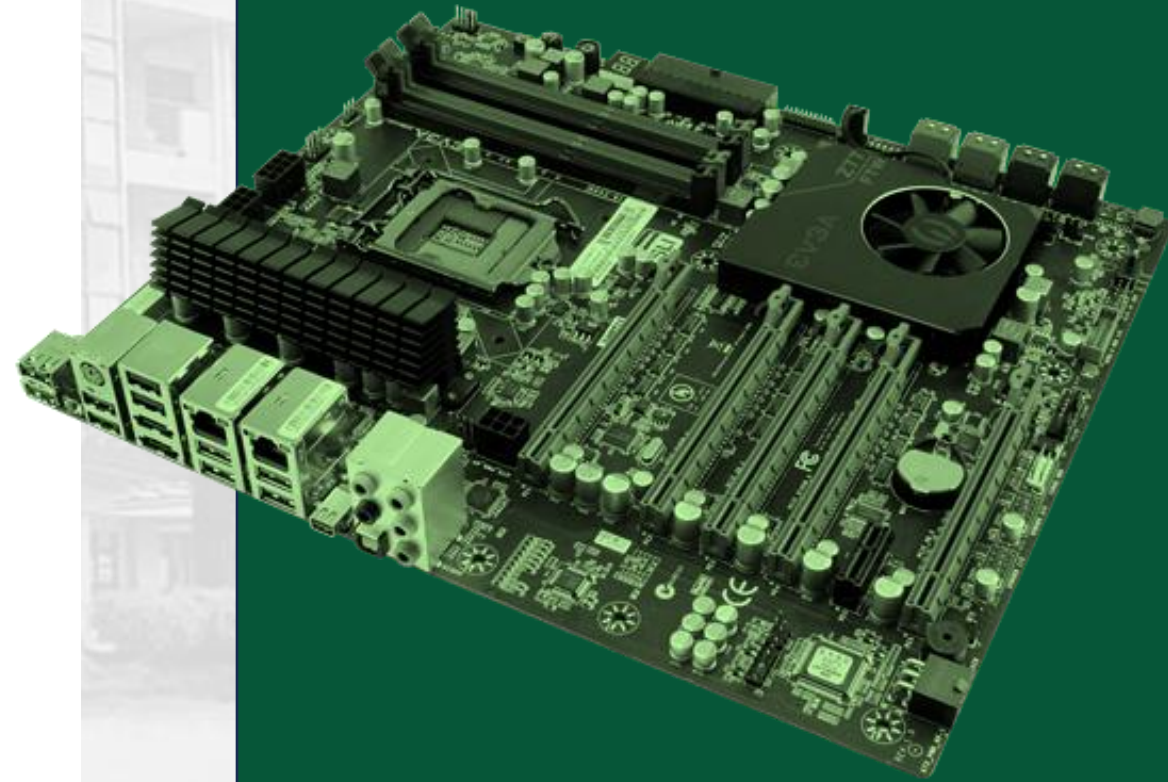
It is a defect that results in
**abnormality of electric
current.**

How do you know if
it's the motherboard
that's causing your
computer problems?



Motherboard

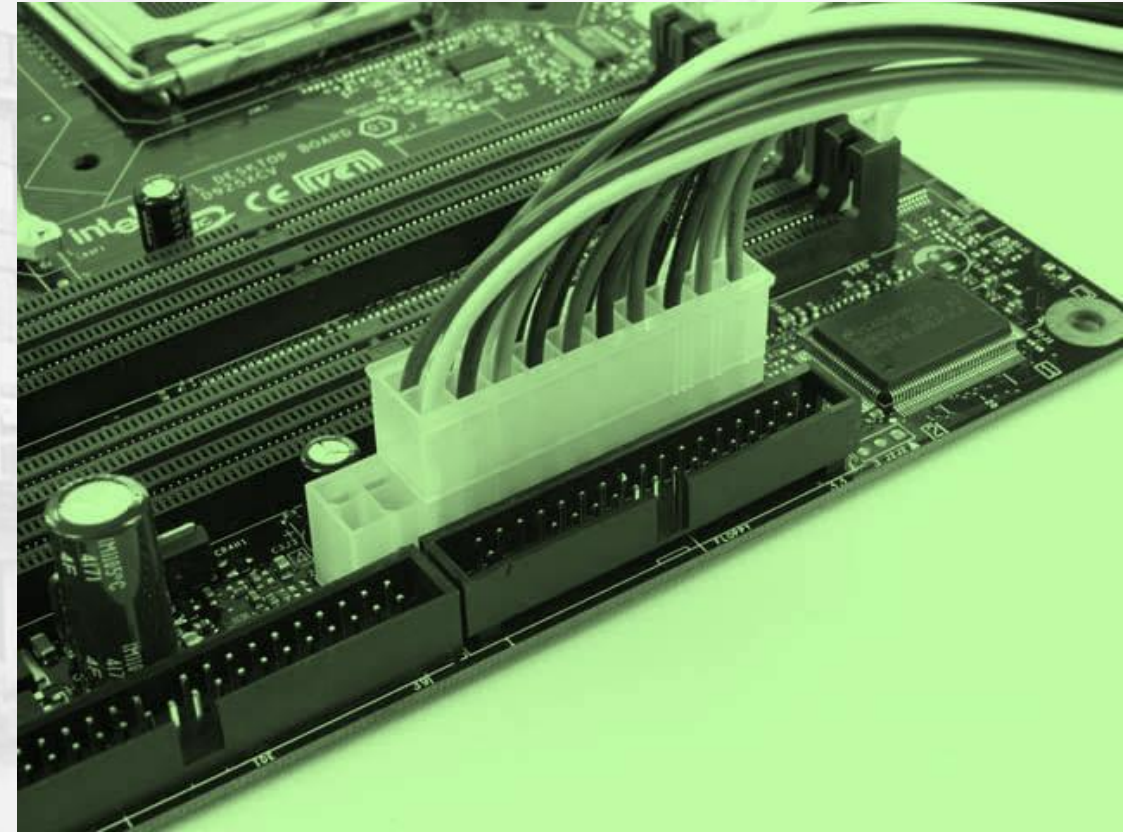
A motherboard is the main circuit board of a computer and is responsible for connecting all the components of a computer together. If a motherboard fails, it can result in a wide range of issues, including system instability, inability to boot, or random crashes.



Motherboard Issues

Diagnose a motherboard

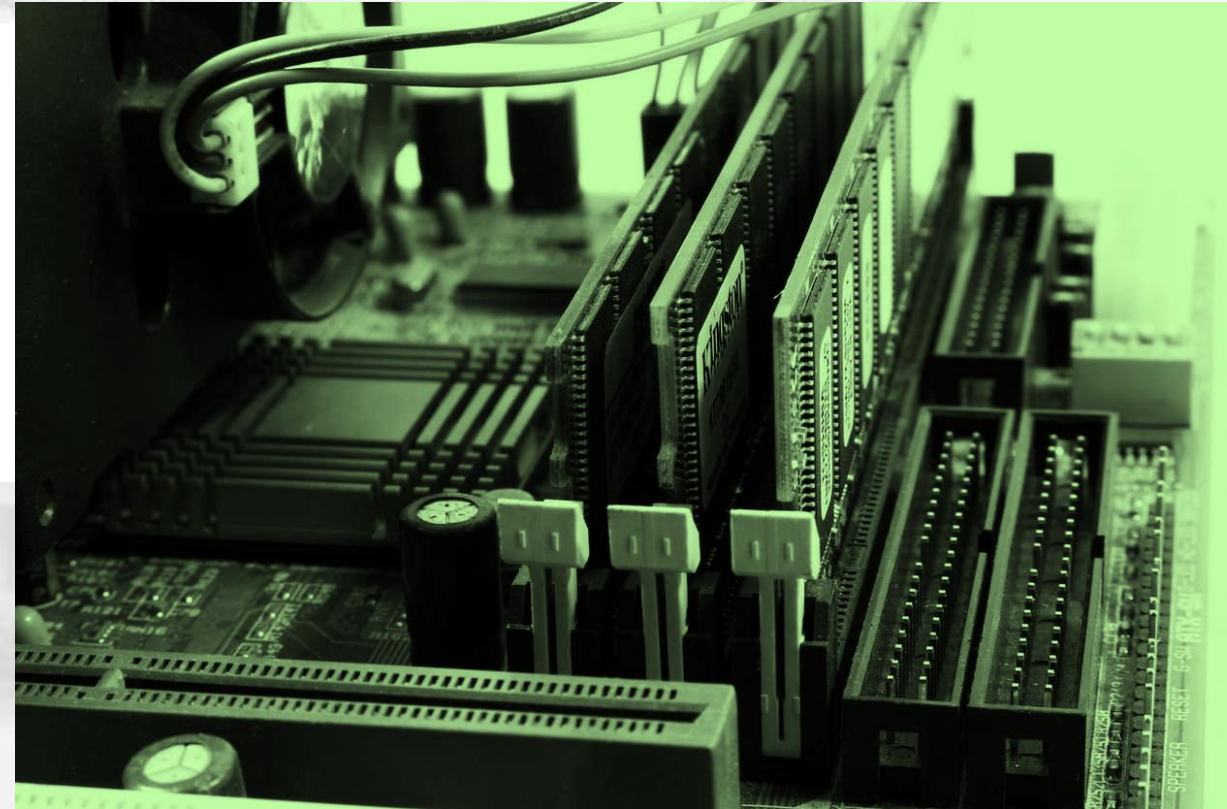
1. Check the power supply:
Make sure your computer is getting enough power. A faulty power supply can cause a wide range of issues, including motherboard failure.



Motherboard Issues

Diagnose a motherboard

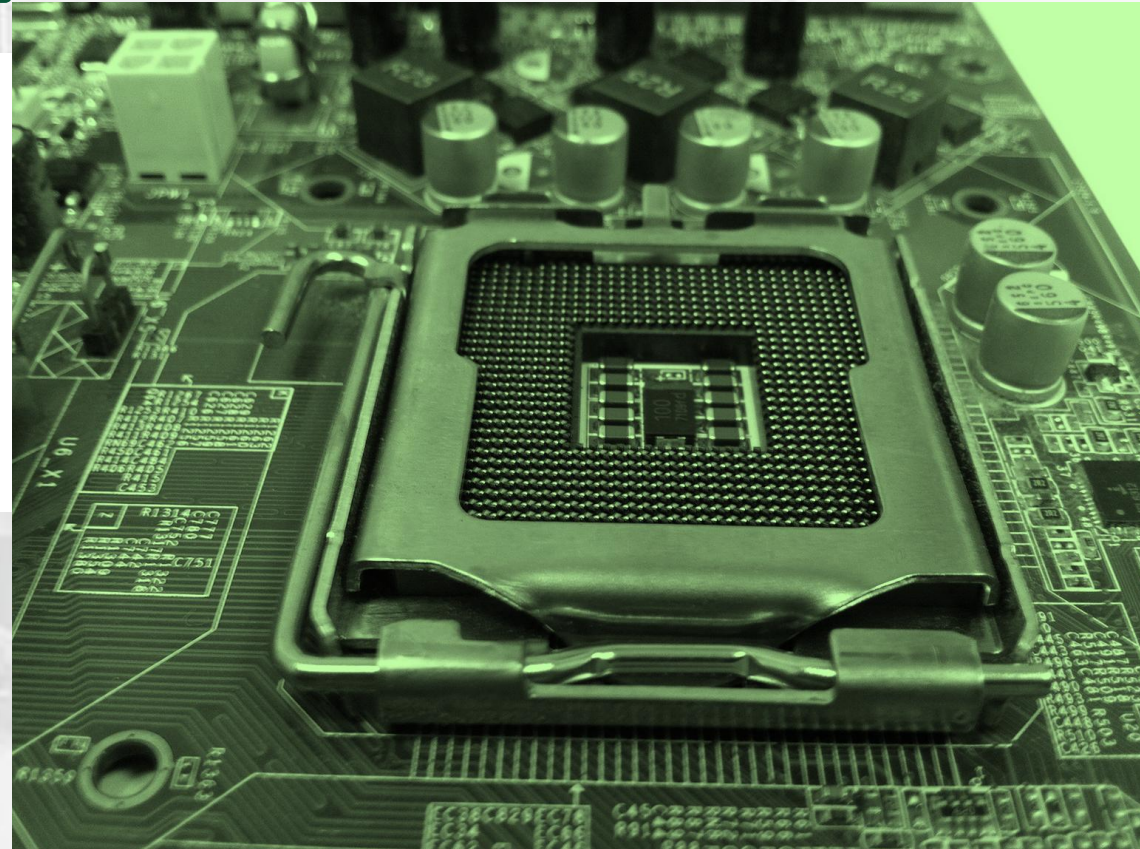
2. Check the RAM: Make sure all of the RAM is properly seated and that there are no bent or damaged pins.



Motherboard Issues

Diagnose a motherboard

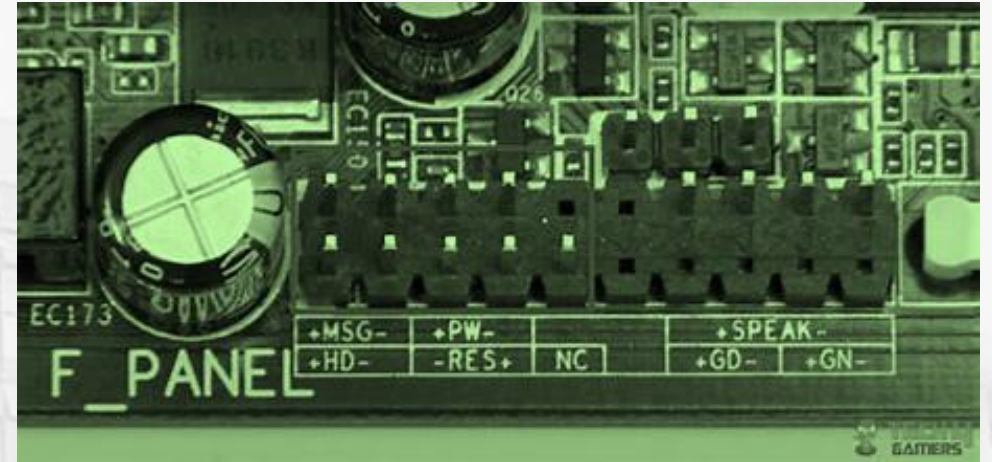
3. Check the CPU: Make sure the CPU is properly seated and that there are no bent or damaged pins.



Motherboard Issues

Diagnose a motherboard

4. Check the motherboard:
Look for any signs of physical damage, such as bent pins, burned components, or cracks in the board.



Motherboard Issues

Diagnose a motherboard

5. Check the BIOS: Check the BIOS for any error messages or warnings.

```
KDB: debugger backends: ddb
KDB: current backend: ddb
ACPI BIOS Error (bug): A valid RSDP was not found (20160527/tbxfroot-261)
panic: running without device atpic requires a local APIC
cpuid = 0
KDB: stack backtrace:
db_trace_self_wrapper() at db_trace_self_wrapper+0x2b/frame 0xffffffff81dedb20
kdb_backtrace() at kdb_backtrace+0x39/frame 0xffffffff81dedbd0
vpanic() at vpanic+0x126/frame 0xffffffff81dedc10
panic() at panic+0x43/frame 0xffffffff81dedc70
apic_init() at apic_init+0x111/frame 0xffffffff81dedc90
mi_startup() at mi_startup+0x108/frame 0xffffffff81dedcb0
btext() at btext+0x2c
KDB: enter: panic
[ thread pid 0 tid 0 ]
Stopped at kdb_enter+0x3e: movq    $0,kdb_why
db> ■
```


Motherboard Issues

Diagnose a motherboard

6. Check the peripherals: Make sure all of your peripherals are working properly. A faulty peripheral can cause a wide range of issues, including motherboard failure.



How Can I Test
If My
Motherboard Is
Failing?



Failing Motherboard

Ways to test your motherboard

Look for common signs of motherboard failure, such as the computer not turning on, random restarts, or blue screens of death.



Your PC ran into a problem and needs to restart. We're just collecting some error info, and then we'll restart for you.

25% complete



For more information about this issue and possible fixes, visit
<http://windows.com/stopcode>

If you call a support person, give them this info:
Stop code: CRITICAL_PROCESS_DIED

Failing Motherboard

Ways to test your motherboard

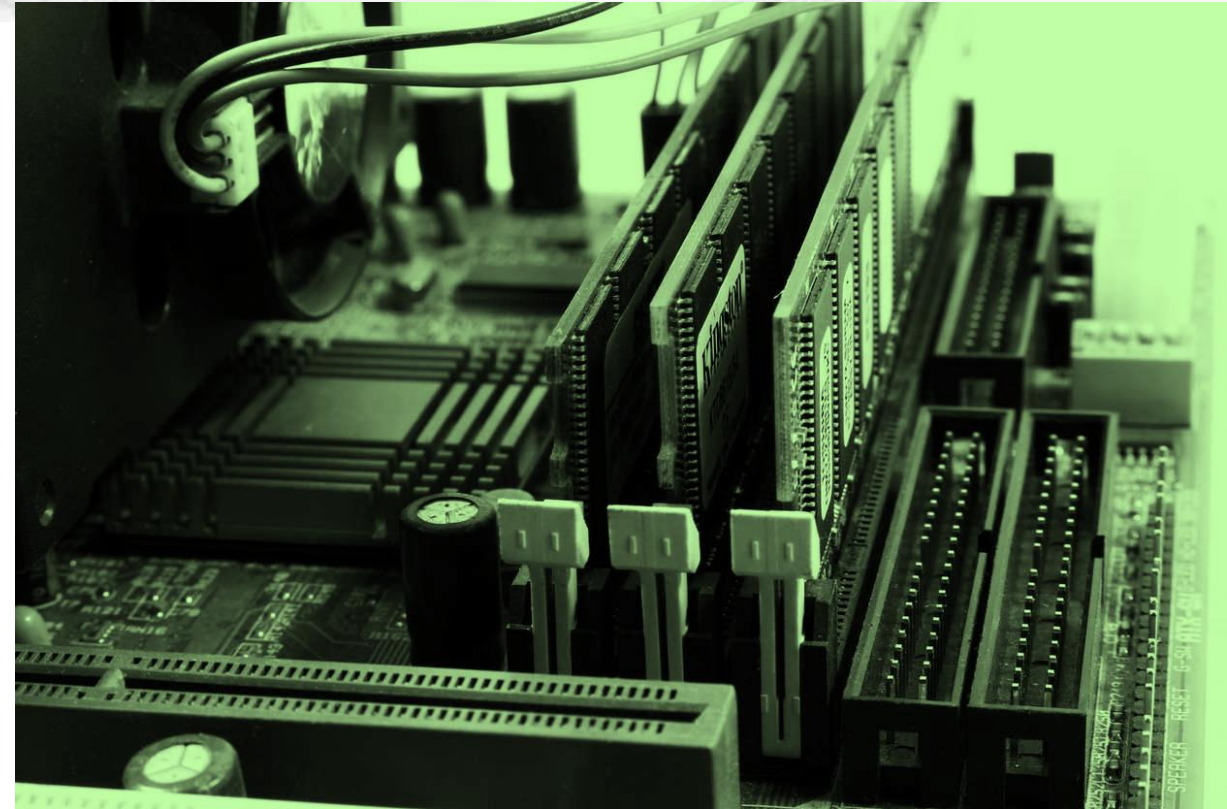
Check the motherboard's BIOS (Basic Input/Output System) for any errors or warning messages. To do this, restart your computer and press the appropriate key to enter the BIOS setup menu.

```
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```


Failing Motherboard

Ways to test your motherboard

Try testing the motherboard's components individually. For example, you can remove the RAM and test each stick individually. You can also try testing the hard drive and graphics card, as well as the power supply. If any of these components test fine, then the problem is likely with the motherboard.



How Can I Tell If
My Motherboard
Is Fried?



Failing Motherboard

Indicators

If your computer won't power on at all, it could be a problem with the motherboard. In this case, you may want to try using a different power supply, but if that doesn't work, it's likely that the motherboard is the issue.



Failing Motherboard

Indicators

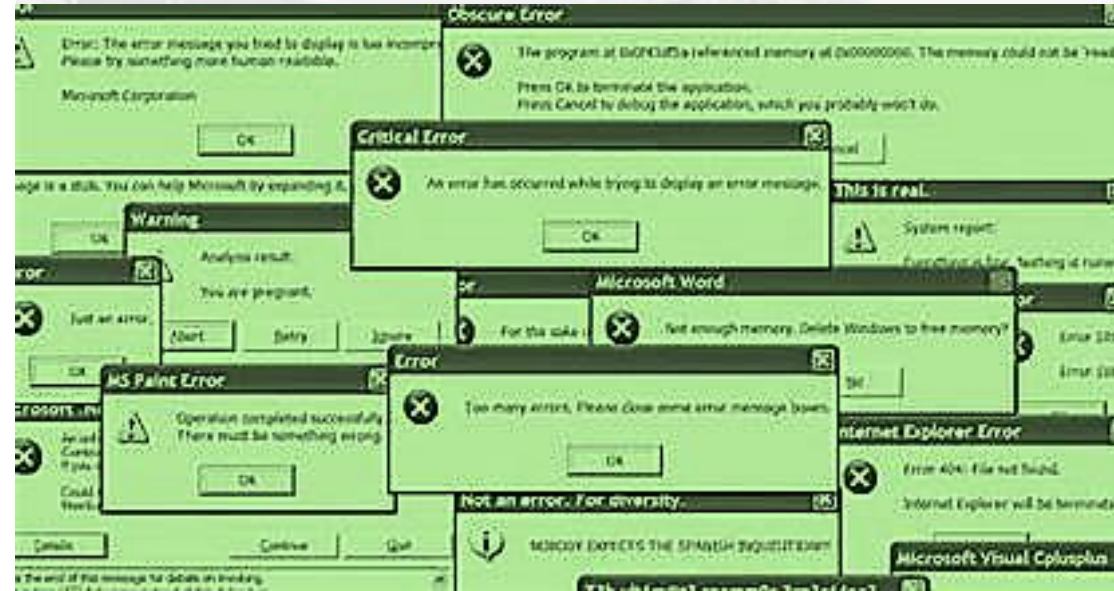
Another sign is if your computer powers on, but the screen remains black. This could mean that the motherboard is not sending a signal to the display, which could indicate a problem with the motherboard.



Failing Motherboard

Indicators

If your computer is displaying error messages or crashing frequently, it could be a sign of a failing motherboard. In this case, you may want to try updating the motherboard's drivers or reinstalling the operating system, but if that doesn't work, it's likely that the motherboard is the problem.



**How Do I
Troubleshoot A
Motherboard
Issue?**



Failing Motherboard

Troubleshoot

Power supply: Ensure the power supply is delivering the correct voltage to the motherboard. Use a multimeter to measure the voltage at the motherboard's power connectors.



Failing Motherboard

Troubleshoot

RAM: Remove the RAM sticks and test them individually in another motherboard. If they work fine, it means the motherboard is faulty. If not, the RAM is faulty.



Failing Motherboard

Troubleshoot

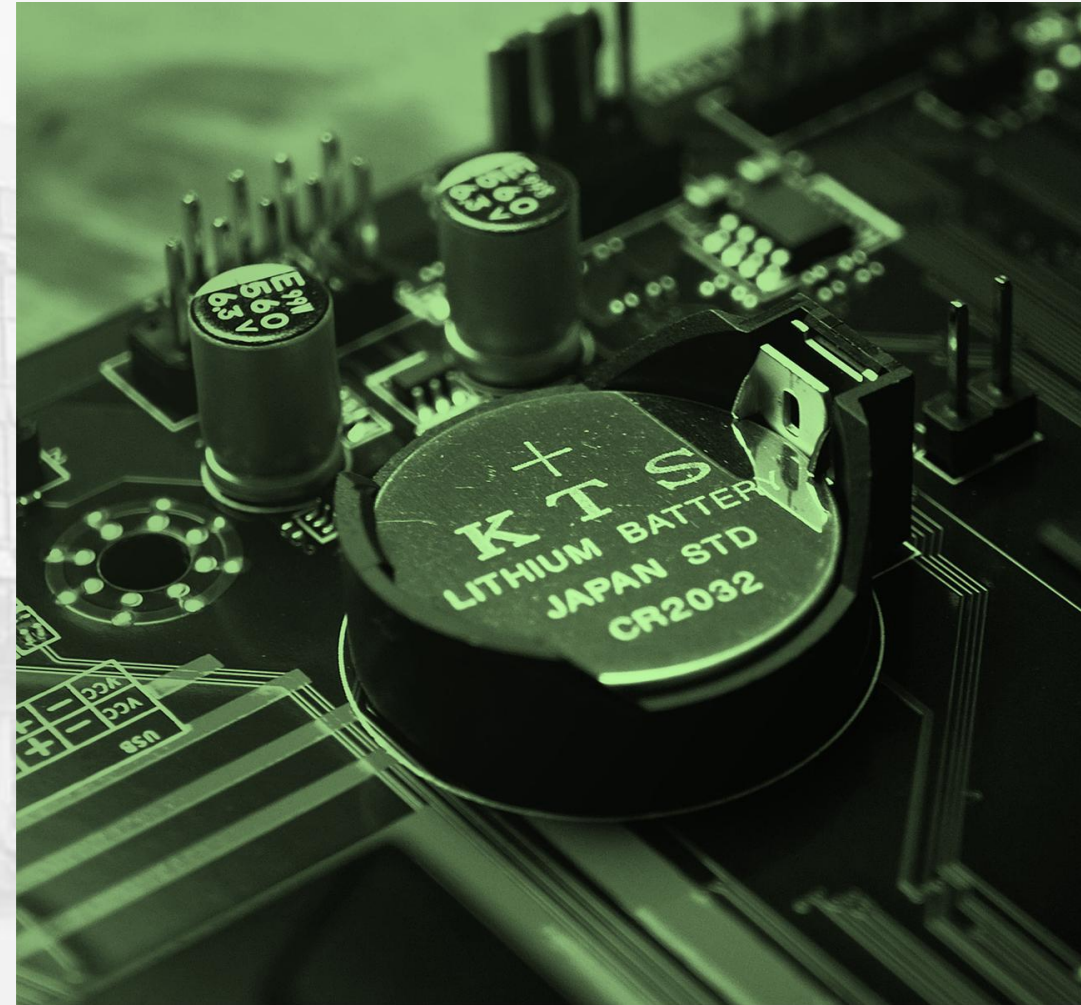
CPU: Remove the CPU and test it in another motherboard. If the CPU works fine, it means the motherboard is faulty. If not, the CPU is faulty.



Failing Motherboard

Troubleshoot

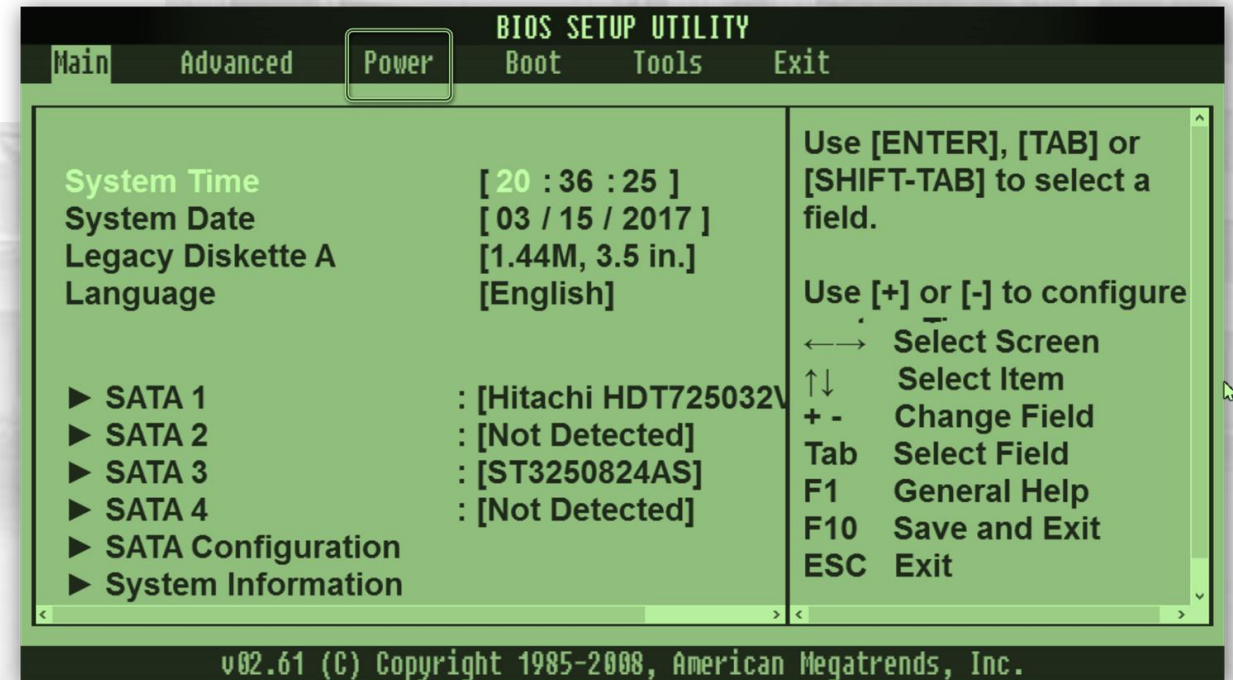
CMOS battery: Remove the CMOS battery for a few minutes and then put it back. This will reset the BIOS settings to their default values.



Failing Motherboard

Troubleshoot

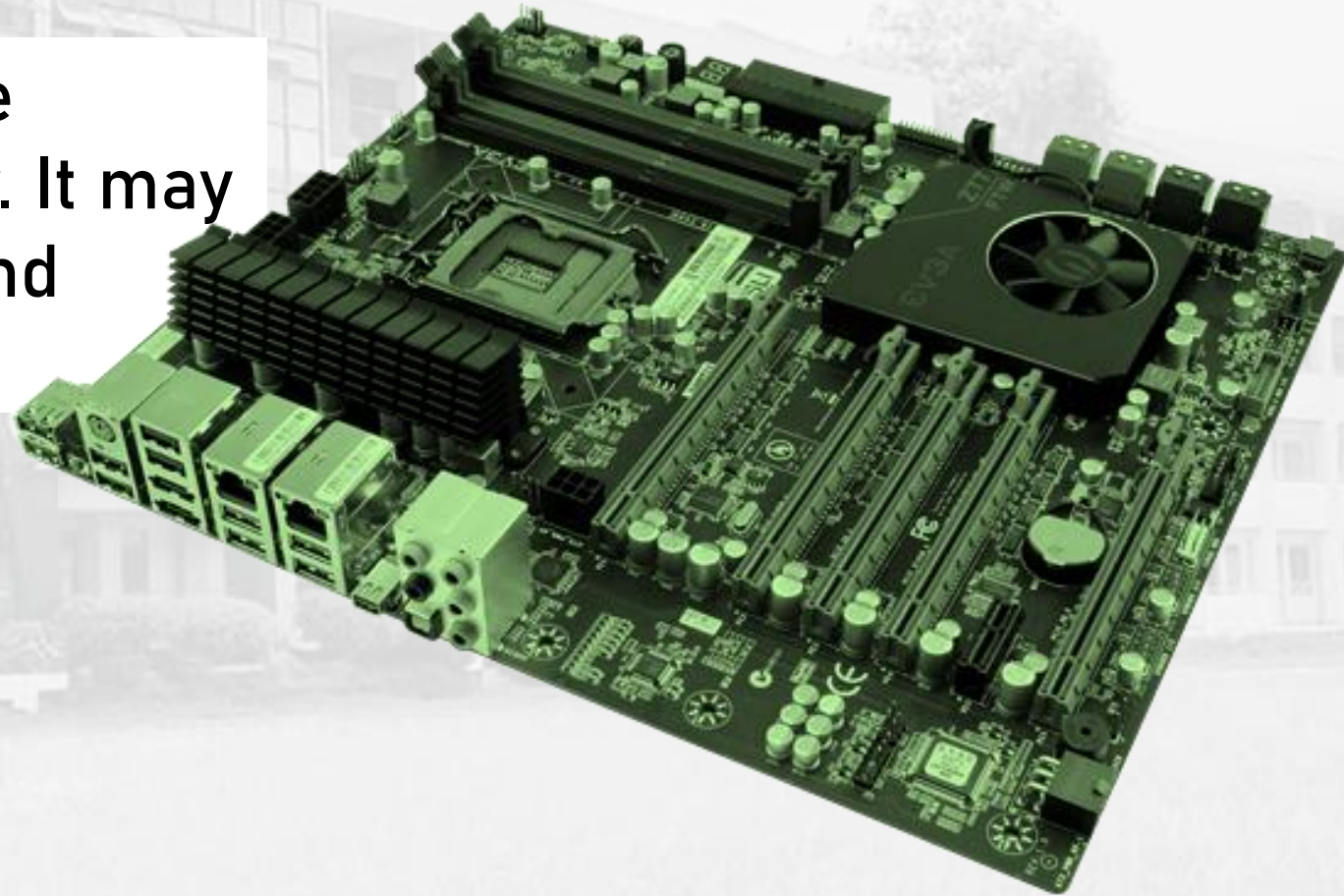
BIOS: Update the BIOS to the latest version. This can fix bugs and improve compatibility.



Failing Motherboard

Troubleshoot

Motherboard manual: Read the motherboard manual carefully. It may contain troubleshooting tips and known issues.



Failing Motherboard

Troubleshoot

Internet: Search online for similar problems and solutions. There are forums dedicated to motherboard troubleshooting.

