

# Troubleshooting

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# Understanding the LEDs

The lights on a Compute Module 4 (CM4), typically a **red Power (PWR) LED** and a **green Activity (ACT) LED**, indicate its operational status and can help diagnose boot problems.

## LED Meanings

The behavior of the LEDs depends on the specific carrier board and software configuration, but generally follow these patterns:

### Red Power (PWR) LED

- **Solid ON:** The CM4 board is receiving sufficient power (usually 5V or 12V, depending on the carrier board power input).
- **OFF or Flickering:** Suspect a power supply issue. The power source may be faulty or not providing enough current.

### Green Activity (ACT) LED

The green LED indicates the system's activity, particularly eMMC access, and can flash specific patterns to signal errors during the boot process.

- **Flashing Irregularly:** Normal read/write activity is in progress, indicating the system is running or booting.
- **Solid ON (after initial power-on):** The system has halted, and it's generally safe to power off the device. It may also be a sign of a non-booting state on some setups.
- **Solid OFF:** The system may be off, or there might be an issue preventing it from accessing the boot media.
- **Specific Flash Patterns:** These patterns diagnose early boot issues. For example:
  - **3 flashes:** start.elf (bootloader file) not found.
  - **4 flashes:** start.elf found but cannot be launched (potentially corrupted).
  - **7 flashes:** kernel.img not found.
  - **8 flashes:** SDRAM not recognized (may require a firmware update).