HARD TIPS

OUR TOP HARDWARE EXPERT DETAILS SOME SIMPLE FIXES

By Mark Fellows

Almost everyone has had it happen at least once. Nearly everyone has had it disappear mysteriously. It tends to reappear when you least expect it, or at the worst possible time. Reminds you of acne, doesn't it? Fortunately, your computer is not likely to have skin problems, but it can come down with a number of minor 'illnesses' that can be hard to diagnose and even harder to repair. In this issue we'll concentrate on the sometimes deceiving problems related to the Cartridge Port.

When a Cartridge Port device (RAM expander, utility or game cartridge, etc.) fails to work properly, the first instinct is to blame the device itself as being defective. If the device is covered under warranty, you will probably call the manufacturer and arrange to have the 'defective' unit replaced. If the manufacturer does not offer any troubleshooting advice and simply agrees to take the unit back, you are most likely in for a surprise in the near future. What kind of surprise? Well, if your 'defective' unit is like most others you will probably receive notification that the unit was not really defective at all! In this instance, most companies will send the same unit back to you, and some will charge you for the return postage and/or their time to evaluate the perfectly good device. In any case, you will most likely be right back where you started - with a device that does not work with your computer.
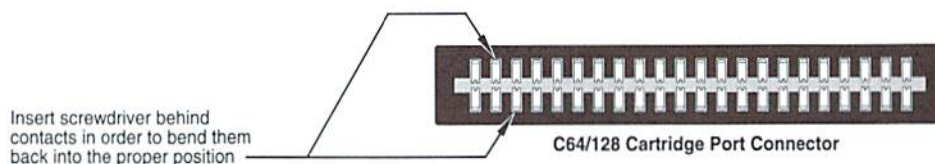
At CMD, we have found that over 90% of the problems that users report with our Cartridge Port devices (RAMLink, SwiftLink, SID) are actually the fault of the computer and not the device itself. Most computer-related problems will cause one or more of the following symptoms to appear:

Typical Symptoms: Device plugged into the Cartridge Port does not work or works intermittently; computer does not work with the device plugged in; device causes computer to reset, lock up, or act strangely - generating garbage or incorrect characters on the screen, and possibly corrupting disks or files.

The good news is that most of these problems can be solved by the user if a few simple troubleshooting procedures are applied. The causes and corrective procedures we give you in this article apply to all Cartridge Port devices, and should work regardless of the type of device that you have.

Causes and Corrective Actions

1. *Bent, loose or dirty Cartridge Port connector contacts.* Poor connections account for nearly all Cartridge Port problems. The Cartridge Port connections must make tight contact with the device to ensure proper operation. A single bent contact in the connector is enough to cause any device to either fail completely or operate intermittently. In any case, it is always good practice to take a jewelers screwdriver and bend all contacts on the connector slightly so that they will make tighter contact with the device. Refer to the diagram below:

Insert screwdriver behind contacts in order to bend them back into the proper position

C64/128 Cartridge Port Connector

The contacts in the computer's Cartridge Port connector and in the device can (and should) be cleaned using an electrical contact cleaner available at Radio Shack stores and other electronic supply houses. An aerosol type is best for reaching the contacts inside the Cartridge Port.

2. *Weak or intermittent computer power supply.* The number two cause for all sorts of unexplained computer problems. Occasionally, a faulty or old and 'tired' C-64/128 power supply will be adequate to power the computer by itself but will not be able to provide enough power to operate the additional circuitry of a cartridge port plug-in

device. In such cases, the easiest way to isolate the problem is to try your computer with another power supply.

Note: C-64's and 64C's were not designed to power Commodore REU's (1700, 1764, 1750) without the help of a heavy-duty power supply, whereas the C-128 and 128D can handle the added load of the REU without the need for a beefed-up supply.

3. *Faulty 'PLA' (or other chip) in computer.* An otherwise healthy and properly functioning computer may have a faulty chip that only affects the operation of the Cartridge Port. The PLA is almost always the culprit in these cases. If possible, try your Cartridge Port device on another computer to help isolate the problem.

Note: Determining which particular chip is at fault may require the help of an experienced technician. Replacing the faulty chip can also be difficult for the average user as it may involve soldering.

4. *Dirty or corroded computer power switch.* A faulty switch may not deliver adequate +5V power to the Cartridge Port connector, thus affecting the Cartridge Port device. Again, the best way to try to isolate the problem is to try the device on another computer.

Note: Determining whether or not the switch is at fault may require some specialized instruments. We recommend you obtain the help of a technician to troubleshoot at this level and to replace the soldered-in power switch if it is in fact at fault.