

Re: Sata cabling

Source:

<http://www.tech-archive.net/Archive/WinXP/microsoft.public.windowsxp.hardware/2009-03/msg00413.html>

- *From:* "Gerry" <gerry@xxxxxxxxxx>
 - *Date:* Sat, 21 Mar 2009 19:17:50 -0000
-

Paul

The computer is a desktop with a Gigabyte 915/910 Series motherboard. The two drives are a Seagate and a Maxtor. The cable connectors do not match any illustrated in your links. Both ends are identical and push vertically down onto the motherboard. On one side of each end of the cable is a spring loaded metal plate but I would not say it locks. The cable stays in place.

--

Gerry

~~~~

FCA

Stourport, England

Enquire, plan and execute

~~~~~

Paul wrote:

Gerry wrote:

I have had a disk connection problem which seems to relate to failing sata cables. The BIOS has failed intermittently to detect one or both hard drives. The problem was more obvious with the master drive so I replaced the cable 14 days ago and there was no further problem until this morning. The problem this morning was the slave drive so I have replaced the cable for that drive. It has now been working for a bit over two hour. The problem first became apparent a month ago when I found the system would freeze after it had been running some time. Resetting sometimes worked and sometimes resulted in a failed boot. Eventually the system would boot but the problem would happen again some hours later or the next day. Sometimes there have been Event Viewer reports –mainly ID: 11 referring to the Controller. Often the problem is unreported. This is probably because the Error is

Re: Sata cabling

occurring before Event Viewer starts. From a friend I got these comments.

"In my view, the SATA 'Connector' is an engineering blunder. A sort-of flat sleeve slides over a notched part on the edge of the board whereupon sit some exposed/un-insulated traces. Flat conductors encased within a plastic bit are slid into contact with them. There is no mechanism but friction to keep the 'connector' in place. Entirely inadequate. It is not designed for repeated make/break insertion/removal. If subjected even to a low number of such operations (design spec is 50), it will fail. (5 000 for an eSATA connector). If I have to repeatedly disconnect-connect a drive during testing, I replace the cable as a matter of routine." I am interested in knowing whether others have encountered this problem and how common place it is?

TIA

The SATA connector design was centered around "server backplane" applications, making it easy to "plug" a drive into a backplane, for a cable free installation. The usage of the connectors for desktops, was an afterthought. (The SATA committee has done a few things, showing a lack of judgment, like their naming conventions.)

In a backplane application, the drive goes "straight down" onto the connector, avoiding wiggling and breaking of the wafer. Mechanical guidance of the drive insertion, helps prevent problems. Motherboard/desktop applications, on the other hand, have less protection from that (depending on the connector brand). I've even heard of some users, managing to pull the connector right off the motherboard (Asrock).

The initial connector design had no positive retention features. Later connectors fixed that. (But for the locking latch type, both the motherboard connector and the cable must be compatible. A locking latch cable with a non locking motherboard, won't help.) My current computer uses no locking latch, but they did manage to incorporate retention into the design.

The cable won't fall off if I wiggle it. It has a moderate insertion force to install it (spring loaded dimple ?).

SATA connectors incorporate keying, in the form of the L shaped plastic.

http://upload.wikimedia.org/wikipedia/commons/thumb/e/ef/SATA_Data_Cable.jpg/150px-SATA_Data_Cab

Western Digital SecureConnect, was something that shipped before cables had lock latches. They used mechanical features present on their brand of hard drive, to guide the connector into the drive. So that solves the problem at the hard drive end. Notice that at this point in

Re: Sata cabling

time, the drive was still using "Molex" power. AFAIK, other drive brands would not have the square holes, to fit this cable. The square holes help guide the connector during insertion.

<http://www.wdc.com/en/library/sata/2579-001075.pdf>

All of this means, people will have seen a variety of user experiences. All the way from "no problems here", to "my cable keeps falling off, so I glued it on" :-)

Paul