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OpenVMS Hobbyist

Multia Support - Notes Page

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Introduction

These notes were provided by [John Malmberg](#) in an e-mail he sent to me outside of the [comp.os.vms](#) newsgroup. I (DJE) did some proof-reading, minor edits and added the links where URLs are cited. In the text which follows, the "I" is John speaking.

Memory

The SIMMs must be parity. The reference manual at the [dreamtime link](#) below gives the complete specifications.

Purchasing Warnings

A caution or warning to those who are purchasing a MULTIA from an auction or private party:

Many of these people do not know how to pack the unit. Verify with them before shipment because the stand must NOT be attached to the unit during shipment. The hooks on the stand (which attach it to the unit) are fragile, and must be carefully protected with padding.

For the repair, I am trying the "Plastic Patch Kit" sold by some Radio Shack stores. I have had success with this stuff where the repaired break will be under stress. The Plastic Patch Kit does seem to work, how ever I have not tested it for severe stress. A good Epoxy kit may also work.

Sources

<http://www.cpumicromart.com/> has Multias, but beware, their shipping costs and prices vary widely. Do not count on them for timely answers to E-mails. If you are careful, you may get a good deal. One person on comp.os.vms reports that he had problems getting them to take responsibility for a defective unit that he received.

Heat Warnings (REQUIRED READING TO PREVENT GRIEF)

<http://www.netbsd.org/> has some valuable information about the MULTIA, concerning the MACHINE checking. They claim it is the result of a bad chip on the bottom of the system board.

According to them the stand is a required component of the cooling system, and you must make sure that the airflow is not restricted in any way. Additional or stronger fans are recommended by the writer of that article.

The chip that they have identified is a simple bus interface chip. I have not yet located a supplier of the recommended replacement. DIGI-KEY has the exact replacement.

Links

- <http://www.dreamtime.org/multia/>

Multia on LINUX information, including links to the service manual (PDF) and to the NetBSD information about preventing heat death.

- <http://www.digital.com/alphaem/techdoc.htm>

Contains PDF information for alpha assembly language programming and some hardware information that may or may not be applicable.

- <http://www.tccomputers.com/>

This site has been given as a reference for Multia compatible SIMMs and possibly other parts.

- <http://www.thechipmerchant.com/>

This site has been given as a reference for Multia compatible SIMMS.

Things for Additional Investigation

The **RAWRITE** program will not work reliably on WIN NT. It crashes with a 64K segment boundary fault. (DJE: RaWrite is a DOS program. It can be used with DOS, Win/3x and Win/9x. See the [Multia Support](#) page though, because there are some caveats for Win/9x.)

Multias with out floppy drives (or memory or disks) are available for \$50.00. (Or less if the vendor has a shipping creature that start counting at base 0 :-). The firmware supports MOP loading of the firmware update, but I am not sure on how to set up the image.

This way I can add node QTY0:: to my cluster with out having to move the floppy.

Another thing for me to investigate, is how hard it would be to actually wire up a standard PC floppy drive. My guess is that the connector layouts will be very close.

Recovering a Multia from Heat Death

Recovering a Multia from heat death the cheap way??

I have been told that the chip that dies has something to do with the cache. I have been looking at some of the logic diagrams for the Alpha SDK and sample motherboards at the Digital Alpha partners site, and as far as I can tell, this is not what the chip does. I still suspect that the chip is for access to hardware that OpenVMS can not use, so that it's removal may restore it. In any case the chip is available for about \$2.50 from DIGI-KEY (\$25 Min order). When I get some time, I will try removing it from the dead one I have.

I also need to find time to go to the T.I. web site and see if they will send me a free engineering sample of the replacement chip.

I have not found a vendor for the other recommended replacement chips.

Miscellaneous notes on the Firmware:

The two multias that I have originally came with different firmware. On the first one, the IDE controller was not recognized, but the system would switch to OpenVMS from the ARC console. The second one would not switch to the OpenVMS console from ARC, so I had to use UNIX instead. The second one did recognize that an IDE controller was present before the SRM was upgraded.

Some FAQ

Can I boot the Multia using a serial console?

The general consensus on comp.os.vms is that you can not. It may be possible to do some console functions, but as soon as OpenVMS boots, you will lose the serial ports. (DJE: OpenVMS does not recognize the COM ports on the Multia. Hence, no TTAu: or OPAu: ports like you have on most other Alphas.)

It appears that after OpenVMS is installed, and you have the networking set up, you can run it with no monitor attached. A keyboard is required, I do not know about the rodent.

What are the shared interrupt conflicts on the Multia?

There have been mentions of this by the generous folks from OpenVMS Midnight Aviation Division on comp.os.vms. I have not found anything specifically documented.

Can I connect up a IDE hard drive on the Multia and boot from it?

No. The SRM console does not seem to recognize the IDE controller, so that effectively rules out a boot.

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[OpenVMS Hobbyist Page](#)

[OpenVMS Freeware Page](#)

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[Using Zip and Unzip on OpenVMS](#)

[The REAL Story about "tarballs"](#) (GZIP and TAR for OpenVMS)

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