

FRANK GADEK
TOPIC: SOME THOUGHTS ON AVAILABLE KAYPRO ITEMS
DATE: Tuesday, December 25, 2007

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**SOME OF MY THOUGHTS ON BRIEF INVENTORY & MAINTENANCE
EXPERIENCES OF AVAILABLE KAYPRO ITEMS THAT HAVE BEEN
POSTED ON WWW.VINTAGE-COMPUTER.COM**

SOME BACKGROUND CONSIDERATIONS

A] I offer the following to try to give you as much information as I can that you may need about these items, so that we both economize as realistically as possible concerning our time and resources.

B] Please let me know what else you need to know about these items.

C] Naturally, all are offered in “**good faith**” and “**as is.**” They are about 25 years old and may not have been designed to last that long. Certainly any plastic parts can be a concern as they age and become more brittle. Shipping may cause some loosening of chips and other parts.

D] 1] Of course, I can accept **no liability in any way and of any kind** with respect to these items, since there are so many factors involved. This is **assumed and is a condition** of any use of the information and items I offer.

2] As many know, today there can be some people who like to take advantage of situations for their own personal gain like in copyright matters. This can inhibit the free flow of information and items. Protections must be involved to minimize such negative events.

E] However, I could offer some informal “chats” [e.g., on the website, by phone at your expense at a mutually agreeable time, snail mail, email, etc.] about these items, if you buy them, so that you are not left completely on your own.

F] However, it has been about 10 - 15 years since I was actively involved with them, so I am not as familiar with them as I was then.

G] In addition, although I am retired, I am involved with many other activities and have several other important priorities [e.g., our downsizing, maintenance / repair of our home – our biggest retirement asset, my science, technology and society {STS} research projects, etc.].

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H] So my time and resources are very limited, as yours are probably too.

I] Therefore, all this has to be ultimately worthwhile for me and you, both time and money wise. It all comes down to your own particular personal situation

J] 1] I will probably use our local www.palmbusinesscenter.com for eBay auctions and they have a store on this eBay site. You can check them out. They have a good local reputation from their other businesses in the past, so they will probably continue to be honest and customer oriented to maintain this long hard won reputation. They take about 30% for their services.

2] I suggested a webcam to show you before they would ship one of these Kaypro "8" 's that it is still working before they ship it. However, DSL has still not reached our very rural area in Eastern PA yet and probably for not another 6 – 12 months, so this option may not be very viable.

3] I will also check out any other reasonable sources for disposal of these items like the marketplace on this website.

4] A] I have also spent as you can see some considerable time on this project due to the very gratifying initial response. More time by me will be required in order for you to get what you expect [e.g. further checking items, check computer disks for any of my private files, sort & gather items for delivery to Palm Business Center, etc.].

B] However, some of this relates to my STS research [e.g. the Kaypro era is a very good specific and very personal example of the dramatic effects of STS], so some of this time can serve several purposes, within limits.

5] So the bottom line is that I would need at least several thousand dollars ultimately for all or almost all of these items together to make it worthwhile.

6] If you are serious about your Kaypros, then these items can be very critical to you to keep them operating, if just spare parts are considered.

7] Naturally, the Kaypro "8" 's are a very unique part of portable computer history, especially since they were never commercially available, but were made by individual users to try to keep current with the dramatically evolving computer industry.

8] I have found no Kaypro "8" 's or sources for any of the upgrade / modification parts.

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9] If you look at the details required for such upgrade / modifications of Kaypro 4 [IV] computers to Kaypro "8" 's, you can easily see they are quite involved and require much expertise, dexterity, patience, etc. Trying to put a price on doing all these upgrades / modifications would be very difficult. However, it is not necessary. No one would realistically pay any reasonable price for such efforts.

10] If you just want one of the several standard issue Kaypro 2 [II] or 4 [IV] Kaypros available to just play around with for \$25 to \$50 or "free to a good home," then these items are not as of serious interest to you.

SOME SPECIFIC DETAILS / CONSIDERATIONS

Some of you may already know about what is below, so just ignore it. For those who do not know about what is below, it may be very useful in your Kaypro and other computer adventures.

PLEASE NOTE THE MANY "VERY SERIOUS AND EVEN LETHAL POWER CONSIDERATIONS" WHEN WORKING WITH ELECTRIC ITEMS.

WITH THE KAYPRO, CERTAINLY THE CRT & BOARD, ALONG WITH THE POWER SUPPLY COULD CAUSE VERY SERIOUS INJURY AND EVEN DEATH, IF YOU DO NOT DO WHAT IS REQUIRED.

In addition, if you do not have very much electronic background, then it may be best to hire someone else who has such sufficient background to do work on your Kaypro. You can very easily and quickly cause a great deal of very expensive damage, besides disappointment, if you are not careful enough.

Also, even if you know what to do sufficiently, doing it is another matter. Not only do you need the special parts and tools, but you also need the dexterity and patience to work with such tiny and delicate items like boards and chips.

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Many of the very good books on working with electronics and computers can help you appreciate and learn about such matters. Some of these even older books can be found on Amazon and similar websites. Check my website for more sites to explore for such books.

1] A] 6 Kaypro "8" 's were all turned on, disks inserted in all drives and directory of all 4 drives appeared on screen. This was done on 2.5 MHz and 5 MHz.

B] 1] Only one Kaypro "8" would not work on 5 MHz – got garbage on screen, but it was fine on 2.5 MHz. My log notes indicated this happened suddenly years ago. I swapped some chips but it is still the same. Perhaps, the easiest, if there is sufficient interest, but there are 5 other fully working Kaypro "8" 's already available, would be to try 1 of the 4 spare mainboards. Microcornucopia indicates that Q1 & C6 may need to be added. They also indicate that some modified / upgraded Kaypro boards just do not run 5 MHz reliably.

2] One Kaypro has the display on the CRT screen slightly tipped to the right. This can be adjusted. A TV repair place could probably do it. The Kaypro Technical Manual indicates how to do this. I can even do this if it is a big concern.

3] Otherwise, all 6 Kaypros are fine, which is a tribute to the ruggedness and reliability of these computers!

C] Naturally, as you might expect, since these computers had not been used for 10 – 15 years, it took the a few minutes "to wake up" and perform as expected. After a few tries, they were all working just fine, including the TEAC disk drives.

2] It may be best to divide up the spare parts into **reasonable "repair / maintenance" packages** so more individuals can benefit. Obviously, for the very useful diagnostic / trouble shooting technique to determine what might be wrong with a computer of **just swapping good parts for what parts you think might be bad**, until you come upon the bad part, you need sufficient good parts. I would suggest some packages contain the following depending on how many parts are available for each item [e.g., I have only 2 CRT"s + their boards:

1 CRT + board

1 main board

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1 power supply

Selection of most useful chips – e.g. “B” versions of Z80 – CPU, SIO, PIO
+ other chips Microcornucopia found to fail or to cause issues with
Kaypros

Keyboard coiled cord

Power cord

Teac half height half power disk drive or a Tandon if you prefer [?]

Parallel printer port cable

Carrying case

3] Other packages could be:

The Kaypro service manuals and disk drive manuals

Microcornucopia information – small upgrade / modification manual /
booklet, pertinent articles from their journal, etc.

Additional software disks from Profiles, KUG, Microcornucopia, etc.

Disk drive test programs and Dysan Special diagnostic disk + some
Tandon drives – DSDD, SSDD and parts – if you still want to use
them - Teacs could also be included, but they have been very
reliable – it was the early Tandons that were the big issue and so
needed to be tested – external disk drive cases with power supply
& fan

You could even design your own package from the inventory list and what
you need / want.

4] Actually, with many of these spare parts, you could build a couple of
additional Kaypro “8” ‘s but without the Kaypro case. You could creatively make
your own style of case for your new special Kaypro “8.” Of course you would
have to “jerry rig” the connecting cables between the main components and have
the software.

**SOME SPECIFIC CONSIDERATIONS WITH RESPECT TO WHAT WOULD BE
MOST USEFUL & NEEDED**

These items are based on my experience since the 1980’s and the information I
have accumulated, especially from Microcornucopia.

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1] A] In all the years since the early 1980's and for all the heavy use these 6 Kaypro "8" 's had, there was never any issue with the CRT's and their boards. So you may not want to consider getting a spare one.

B] Certainly one of the readily available standard issue Kaypros for \$25 - \$50 could be used for a spare CRT. But you may not know the history of these computers and the CRT's may be ready to fail.

C] You might be able to use other types of CRT's but they probably will not fit into the Kaypro case. Also, you will have to check with sufficiently knowledgeable people on this. Microcornucopia did provide directions on how to build and connect a board to allow for an external CRT.

2] A] Power supplies have also been similar, except for their solder connections. Microcornucopia suggested, based on all their experience, to resolder all these connections as a preventative. I did and never have had any issues "after" resoldering, but not before.

B] Note that these power supplies also have a fuse. Check it if you believe you have a power supply failure. There apparently were some situations where some questionable repair places put in new power supplies. They then added to the removed replaced power supplies, a new good fuse and resold these power supplies to others - after just replacing the fuse!

C] You probably could use one of the many computer power supplies available today, but they may not fit into the Kaypro case. You will have to check with sufficiently knowledgeable people on this.

3] Power cords – you may be able to use one of the many available for many computer related items. You will have to check with sufficiently knowledgeable people on this.

4] A] 1] Although the coiled keyboard cable looks like a telephone cable, it is **not**. It has to do with the **impedance** of the gauge of the wire used I believe. If you could match this impedance with the proper gauge wire, you may be able to make one yourself. Again, you will have to check with sufficiently knowledgeable people on this. I have never heard of anyone doing this however.

2] It was very creative by Kaypro to use such commonly available telephone connectors for their computers. However, the wiring is not the same as noted above.

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B] Since it is detachable and relatively small, it is one of those things that are easily lost. Compaq portables designed their system to minimize such losses.

5] A] Working modified / upgraded to Kaypro "8" main boards – PRICELESS! They were difficult to get in the past and now probably more so, unless you get a standard one from one of the inexpensive standard issue Kaypros for \$25 - \$50.

B] Certainly working Kaypro "8" boards are probably almost nonexistent today.

C] Note that these boards worked and may also now. I can test them if you are serious about them and require it. They were used as "test beds" for a wider variety of projects to try to see what caused issues with some of these Kaypro computers.

6] Keyboards – I have never had any issue with them.

7] A] 5 ¼" floppy disks – I did see on the web that there may be some obscure company that may still make and / or repair them. Some may also still offer new 5 ¼" disks. Check the web site lists on my website.

B] I have many storage boxes of used such 5 ¼ " disks, but they would have to be wiped clean of data, since they contain a lot of information that should not be released from my many professional, volunteer, personal, etc. activities, like many of our hard drive systems today. One suggestion was to just pass a strong magnet over each and it should do the trick. Of course, they would then have to be formatted, which is not big deal. Something to think about!

8] A] So in many cases, after checking for the obvious issues that might be causing your computer to not operate correctly [e.g., loose connections, power source, improper procedures, bad disks, etc. – many good computer repair books run you thru a **process** to do this], what I have found, especially with the Kaypro "8" 's, since **heat** can be an issue [because the upgrades / modifications really push the original design of the system to the limit], is that properly **swapping** some main specific chips can help to get the computer system operating correctly again. Microcornucopia notes some of these chips.

B] Obviously, the **Z80 CPU [U63]** is a prime candidate for replacement. In the Kaypro "8" 's it should be the "**B**" **version**, but all "B" 's may not be the same or appropriate, especially over time and prolonged heat conditions.

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C] Other chips to be swapped from Microcornucopia and from my experience are:

U43 & U47 - but they are proprietary and not commonly available commercially.

I can develop a list of others, if there is interest.

D] So a good supply of most of these important chips can be very useful in determining which chip is the issue. I have found that **JDR Microdevices in California** still sells many of these very common chips very inexpensively – less than \$1, some only \$0.25.

E] Microcornucopia even recommended cooling [and even heating – hair drier??] certain chips to see if that caused the issue to occur or to disappear. Cooling they suggested could be done by a cooling spray that comes in compressed gas cans [e.g., Radio Shack?] or even an ice cube in a plastic bag, so moisture does not get on the chip.

F] So another package could be a collection of these most important chips for the Kaypro “8.” Naturally, I also have the original chips that came with these systems before the upgrades / modifications.

G] As noted earlier, I have a big collection, especially since some of the main boards could only be obtained “unpopulated” and you had to populate them yourself.

H] These chips, as many of you know, can be **very sensitive to static electricity**, especially if they are not handled appropriately [e.g., ground yourself before touching them, use a wrist strap ground, use antistatic foam / bags / aluminum foil when storing chips, etc – many of the computer repair books list these and other guidelines.]

I] I am more confident about the chips that have been kept in the original antistatic tubes and foam when I got them. Therefore these should bring a higher price.

J] The other chips, are probably ok, but I am less certain.

K] If there is enough realistic interest, then I could do a rough inventory and offer them in packages I feel appropriate and / or that you would specify.

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9] A] Another complication is that Kaypro apparently was continually changing things on even their established basic systems like the Kaypro 2 [II] and Kaypro 4 [IV] over time and not sufficiently making this known to the users and even dealers. Microcornucopia was great at publishing some of these “oddities.” They noted many times the errors they found, even in some of the Kaypro schematic diagrams, so they published their own schematics and details of how the system operated.

B] One obvious example was that when you bought a Kaypro 2 [II], it may really be a Kaypro 4 [IV] except for a particular chip [U47]. This information was very useful for upgrades / modifications. Further information is given in other areas of my website.

10] Obviously, disk drives can be swapped, but they seem to be much more reliable than in the distant past. Certainly the TEACS were much better than the earlier Tandons. However, even the 3.5” disk drives and disks are fast disappearing, so 5 ¼” disk drives may be an issue with respect to replacement.

11] Microcornucopia chips, boards, etc. – cannot find any on the web, so probably almost impossible to get now. Anyone know of any sources? I have done many web searches in many ways and have not found any.

B] I understand from www.vintage-computer.com that the **1984**, but **not the 1983 Kaypro II and IV's** that I am involved with, have a “**KayPlus**” option that is still available today to upgrade them like Microcornucopia.

12] Please note, in case you do not know, about copying documents, software, etc., **copyright laws have to be obeyed**. There is such a thing as “fair use” within limits. Staples told me that they now require formal written approval by the copyright holder before they will copy any copyrighted documents. Their penalty could be that they lose all of their copy equipment!!! There are some very good comments again on www.vintage-computer.com, that also indicate how serious this has become for some.

B] I do not know how the Kaypro scanned downloaded materials are being handled on many web sites. Since they are available and are later versions than my Kaypro technical manuals, mine are not as valuable.

C] Certainly companies like Kaypro, Microcornucopia, Perfect Software, etc. that have gone out of business are a special case. I found on the web something called “**abandoned**” **copyrighted material**. But apparently the law is still not defined very well.

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D] Naturally, the argument could be made that in such situations, the chances of getting into trouble are slim, if you do copy such material, but why risk it financially and time wise? I certainly do not want to get involved in such copying. However, if some are interested, these original manuals and documents I have could be put up for bid on eBay, etc.

E] Any reliable and documented information others may have might be very helpful to all of us confronting these copyright issues.

13] If there is sufficient interest, I can do an inventory of my computer repair and related books which can be sold individually or in groups, along with eBay, but naturally they cannot be copied. However, I have found a number readily available on the internet and Amazon, so that might be the best way to obtain them.

So hope this is of interest and use.

I look forward to whatever input you might like to make in this project.

All the best with your Kaypro adventures.

Frank

P.S.

Please also note that the following are also available for those who want to make use of what these Kaypros actually used in that time period.

Old **acoustic coupler modem** 300 baud!

3 **dot matrix printers** with parallel ports for ribbon cables for Kaypros – and some supplies of printer cartridges.

I have an enormous number of parallel port cables, both shielded and unshielded also.