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along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

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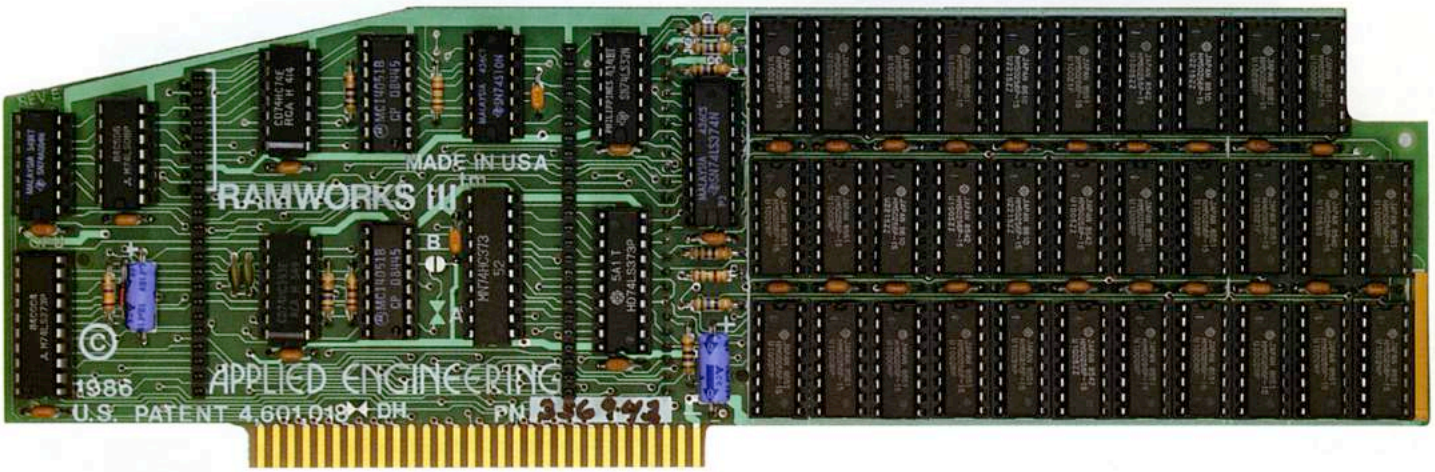
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RAMWORKS® III

COMPATIBLE WITH IIe



The best selling, most compatible, most recommended, most expandable card available

Applied Engineering has solved the most common problem that computer owners have—running out of memory. RamWorks III is the perfect solution because it offers the widest and biggest memory sizes available anywhere.

RamWorks III—A card that plugs into the Apple IIe auxiliary slot and functions EXACTLY like Apple's extended 80 column card but with RamWorks III you get more memory, 80 column text, a 5 year warranty and most importantly, room to grow without using more slots. A design so advanced there's a patent on it (U.S. Patent #4601018).

With the included RamDrive™ software, RamWorks III can also be used as an ultra high speed RAM disk. Depending on the memory size of the RamWorks III card, you can emulate up to 4 disk drives with one RamWorks III card. All at about 20 times faster than mechanical floppy drives and about 5 times faster than a hard disk.

RamWorks III can be used as a solid state disk with DOS 3.3, PASCAL, CP/M and ProDos (up to 5,700 blocks free)!

RamWorks III can be purchased in a wide range of sizes and is user upgradeable using either 64K RAMS or the new 256K RAMS. If you already have an extended 80 column card, no problem. Just unplug the 64K RAMS and plug them into the RamWorks III for an additional 64K. An RGB option is also available, you can order it with your RamWorks III card or add it on at a later date.

RamWorks III saves you time, money, slots and hassle. You'll have additional memory NOW and in the future.

The AppleWorks Amplifier

While RamWorks III is recognized by all memory intensive programs, NO other expansion card (RamFactor excepted) comes close to offering the multitude of enhancements to AppleWorks that RamWorks III does. Naturally, you'd expect RamWorks III to expand the available desktop, after all Applied Engineering was a year ahead of everyone else *including Apple* in offering more than 55K in AppleWorks and we still provide the largest AppleWorks desktops available. But a larger desktop is just part of the story. Just look at all the AppleWorks enhancements that even Apple's own card does not provide and RamWorks III does. With a 256K or larger RamWorks III, all of AppleWorks will automatically load itself into RAM dramatically increasing speed by eliminating all the time required to access the program disk drive. Now switch from word processing to spreadsheet to database at the speed of light with no wear on disk drives.

RamWorks III eliminates AppleWorks' internal memory limits, increasing the maximum number of records available from 1,350 to over 22,000. RamWorks III increases the number of lines permitted in the word processing mode from 2,250 to over 22,000. And RamWorks III (256K or larger) offers a built-in buffer, so you won't have to wait for your printer to stop before returning to AppleWorks. RamWorks III even expands the clipboard from 250 to 2,042 lines. And auto segments large files so they can be saved on two or more disks.

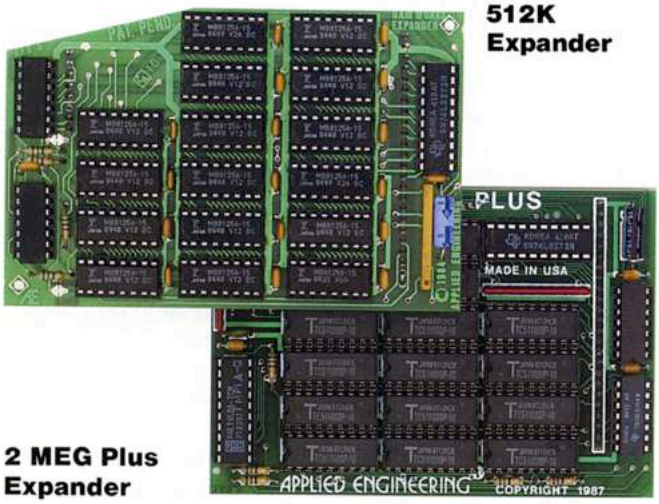
RamWorks III, nothing comes close to enhancing AppleWorks so much.

The Most Friendly, Most Compatible Card Available

Using RamWorks III couldn't be easier because it's compatible with more off-the-shelf software than most other RAM cards (RamFactor and GS-RAM excepted). Popular programs like AppleWorks, Pinpoint, Catalyst,

More on next page

MacroWorks, HowardSoft, FlashCalc, The VIP Professional, Managing Your Money, and SuperCalc 3a to name a few (and most hardware add on's like ProFile and Sider hard disks). RamWorks III is even compatible with software written for Apple cards. But unlike other cards, RamWorks III plugs into the IIe auxiliary slot providing our super sharp 80 column text in a completely integrated system while leaving expansion slots 1 through 7 available for other peripheral cards.



512K Expander

2 MEG Plus Expander

Should you ever run low on memory with RamWorks III (unlikely) you can add these expander cards to your RamWorks III at any time. And of course, the above expander cards are compatible with the original RamWorks too.

True 65C816 Bit Power

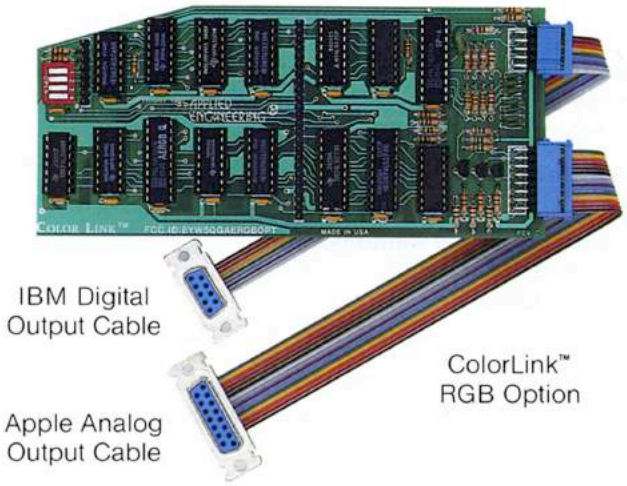
RamWorks III has a built-in 65C816 CPU port for direct connection to our optional 65C816 card. The only one capable of linearly addressing more than 1 MEG of memory for power applications like running the Lotus 1-2-3™ compatible program, VIP Professional. Our 65C816 card does not use another slot but replaces the 65C02 yet maintains full 8 bit compatibility.

It's Popular

Popularity translates into great software support because software companies can't support all RAM cards, they can only support the ones their customers are likely to own. And software companies appreciate the fact that when they write software for RamWorks II in the IIe, they're also writing software for our memory expansion card for the IIc, Z-RAM. And our customer list reads like the Who's Who of Apple computing with just about every software company in the land buying one, including Apple Computer.

It's Reasonable

Applied Engineering's years of experience and wide product line really pays off, and because of our high sales levels we buy most of our I.C. chips factory direct. So don't let our low prices fool you, they're caused by high volume production. That's why we can offer the most memory for the least money.



It's In Color

The same slot that's used for memory expansion is also the slot that's used for RGB color display. RamWorks III lets you decide later to add RGB color. For only $129, an RGB option can be added to RamWorks III to give you double high resolution color graphics and 80 column text. All with razor sharp, vivid brilliance that's unsurpassed in the industry. The RGB option does not waste another valuable slot, but rather plugs into the back of RamWorks III with no slot 1 interference (works on the original RamWorks too).



You'll appreciate the multiple text colors (others only have green) that come standard. But the RamWorks III RGB option is more than just the ultimate in color output because unlike others, it's fully compatible with all the Apple standards for RGB output control, making it more compatible with off-the-shelf software. With its FCC certified design, you can use almost any RGB monitor because only the new RamWorks III RGB option provides both Apple standard analog and IBM standard digital outputs (cables included). And remember, you can order the RGB option with your RamWorks III or add it on at a later date.

More on next page

It Corrects Mistakes

Let's say you bought some other RAM card (and that's a mistake) and your RAM card is not being recognized by AppleWorks, Advanced VisiCalc, Flash-Calc, Supercalc 3A, or other programs and you want RamWorks III. No problem. The memory chips on the card that you have now, which is where most of the money is, can be unplugged and then plugged into the expansion sockets on RamWorks III.

It's Got It All

- 15 Day Money Back Guarantee
- 5 year no hassle warranty
- Super Sharp 80 Column Text (U.S. Patent #4601018) with or without RGB option
- Double high resolution graphics (with or without RGB option)
- Expandable up to 1 MEG (1024K) on main board
- Expansion Connector for possible future expansion to 16 MEG
- Can use 64K or 256K RAMS in any combination
- Linear Addressing Co-Processor Port
- Automatic AppleWorks Expansion up to 3017K desktop
- Accelerates AppleWorks
- Built-in AppleWorks printer buffer
- 100% compatible with all standard IIe software
- RamDrive™ and ProDrive,™ the ultimate disk emulator software, included free
- Compatible, RGB option featuring ultra high resolution color graphics and multiple text colors, with cables for both Apple and IBM type monitors
- Built-in self-diagnostic software
- Lowest power consumption (U.S. Patent #4601018)
- Takes only one slot—No slot 1 interference
- Software industry standard
- 16 bit option
- Advanced Computer Aided Design
- Used by Apple Computer, Steve Wozniak and virtually all software companies
- Displays date and time on the AppleWorks screen with any ProDos compatible clock
- Much, much more!

RamWorks III with 64K	
RamWorks III with 256K	
RamWorks III with 512K	
RamWorks III with 1 MEG	
RamWorks III with 1.5 MEG	
RamWorks III with 3 MEG	
512K Expander	
2 MEG Plus Expander with 1 MEG	
2 MEG Plus Expander	
RGB Option (can be added later)	
16 Bit Option, 65C802 (can be added later)	
16 Bit Option, 65C816 (can be added later).	

LOW COST SOFTWARE OPTIONS

RamDrive™ (now included FREE!)

RamDrive will give you a high speed solid state disk drive. The RamDrive software features audio-visual access indicators, easy setup for turnkey operation, and easy menu driven documentation. The program can be modified and is copyable. If you have a 64K RamWorks III, RamDrive will act as half a disk drive. If you have a 128K RamWorks III, RamDrive will act as a full disk drive. As you go past 128K of memory, RamWorks III will act as multiple disks, so all one megabyte can be as a solid state disk. Either way, your programs will load and save over 20 times faster. RamDrive is compatible with APPLESOFT, ProDos and DOS 3.3. The disk also includes a high speed RAM copying program. RamDrive is another disk drive only 20 times faster and no whirring, clicking or waiting!

CP/M RamDrive™

CP/M RamDrive is just like RamDrive, only for CP/M. CP/M RamDrive runs on any Z-80 card that runs standard CP/M, i.e. Applied Engineering Z-80 Plus, Microsoft Soft Card of PCPI. CP/M RamDrive will dramatically speed up the operation of most CP/M software because CP/M normally goes to disk fairly often. Fast acting software like dBase II, Wordstar and Turbo Pascal becomes virtually instantaneous when used with CP/M RamDrive.

Z-80 Plus, Microsoft version	
PCPI APPLI-CARD version	

VC IIe Expander

VC IIe Expander gives owners of Visicalc IIe and Advanced Visicalc IIe increased storage. When used with VC IIe you'll get 141K workspace (128K RamWorks III or larger required). When used with Advanced VC IIe you'll get 131K with a 128K RamWorks III, 253K with a 256 RamWorks III and 437K with a 512K RamWorks III.

VIP Professional

A new generation spreadsheet, with almost unlimited memory and unlimited power and a real Macintosh style interface. VIP Professional has the same commands and features as Lotus 1-2-3™. No other spreadsheet even compares. $249 list price.

Enhanced Apple IIe/IIc (requires 256K min. RamWorks or Z-RAM	
Apple IIGS	

Pinpoint's AppleWorks Accessories with Ram Enhancement Software for 128K Enhanced IIe/IIc

and C.O.D. 214/241-6060

RAMWORKS™

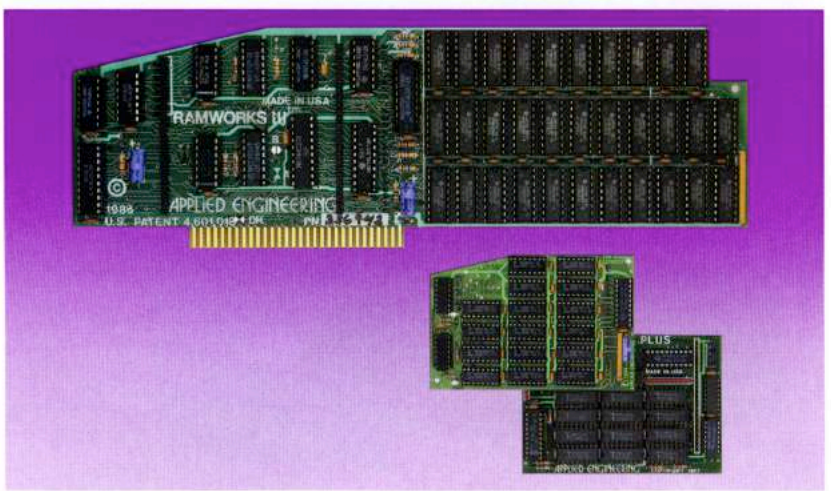
The industry standard for IIe expansion.

Add up to 3 MEG memory with the RamWorks® III expansion board.

You command vast power with RamWorks III™ – up to 48 times more memory than your IIe came with.

You work faster, more efficiently. Your IIe does things it could never do before.

Memory intensive software like AppleWorks runs faster. You can put Pinpoint or Beagle Brothers' TimeOut Series into RAM at the same time for instant response. And you can work with massive files without constantly going back to your disk drive.



RamWorks III **512K Expander** **2 MEG Plus Expander**

Run AppleWorks 20 times faster.

With 512K or larger RamWorks, *all* of AppleWorks (including printer routine) automatically loads into RAM.

The result? AppleWorks runs up to 20 times faster. You don't waste time accessing the program disk drive. You switch instantly from word processing to spreadsheets to database. Anytime. And without wear on disk drives.

No other expansion board, not even Apple's, gets so much out of AppleWorks.

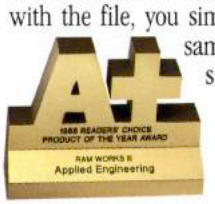
RamWorks III gives you a huge AppleWorks desktop — 366K with the 512K RamWorks III and on up to 2,251K with the 3 MEG RamWorks III (even after *all* of AppleWorks automatically loads in memory).

RamWorks eliminates AppleWorks' internal memory limits. While AppleWorks 2.0 and 2.1 make up to 6,350 database records available, you get up to 22,500 with RamWorks. Instead of AppleWorks' 7,250 word processing lines, you get up to 22,500 lines. And clipboard capacity zooms from AppleWorks' 255 lines to 2,042 lines. If your IIe has a ProDOS clock, the time and date will be automatically stamped on your files and displayed on screen.

RamWorks boards include an AppleWorks printer buffer — up to 105K in the 512K model — so you can keep working while your printer is printing. Also, you don't have to buy a separate print buffer, a savings of up to

Auto-segments large files.

RamWorks automatically segments large files so they can be saved on two or more disks. When you need to work with the file, you simply load in the same sequence you saved it.



Add up to 3 MEG without using a single expansion slot.

RamWorks III, even when it's carrying its full 3 MEG of new memory, fits in your IIe's auxiliary slot. Your valuable expansion slots 1 through 7 are free for other peripheral cards.

If you don't need all of that power now, you can start with as little as 64K. It's easy to add additional memory to the expandable RamWorks III board as your needs grow.

You can go to 1 MEG on the main board using standard RAMs. That's more memory that many people ever use. (1 MEG is about 500 pages of text.)

For even more power, snap a 512K, 1 MEG or 2 MEG Expander Card™ into the RamWorks III low profile connector. The Expander Card won't interfere with Slot 1.

Recover your investment in the wrong card.

Most of it, anyway.

If you bought someone else's RAM card — one that's not recognized by your programs — RamWorks III can help recoup your loss. Pull the 64K or 256K memory chips off you old card and plug them into RamWorks III.

Truly compatible.

RamWorks III is compatible with more off-the-shelf software than any other RAM card. It is recognized by all memory intensive programs for the IIe.

Its power enhances AppleWorks, Beagle Brothers' TimeOut Series, Tax Preparer, Springboard Publisher, Sensible Speller, ProFILER, Managing Your Money, SuperCalc 3a, VIP Professional and many, many more...even software written specifically for Apple cards.

RamWorks III is compatible with most hardware add-ons like ProFile and Sider hard disks.

Of course, RamWorks III is fully compatible with all IIe's — enhanced or unenhanced, American or European.

Easy to install and use.

RamWorks III quickly plugs into your IIe's auxiliary slot. You get memory expansion and super-sharp 80 column text (U.S. Patent 4601018).

RamWorks III comes with everything you need to get up and running. The easy-to-understand manual shows you how to get the most from your new memory. The two accompanying 5.25″ disks include a Hi-Res memory chip test, AppleWorks enhancement program, ProDOS and DOS 3.3 RamDrive™ and other useful utility software.

Superior color graphics, more readable text.

The ColorLink™ RGB Option gives brilliant, sharp graphics and text.

It means all Apple standards for RGB output control. So it's compatible with more off-the-shelf software.

You can use Apple or IBM RGB monitors. ColorLink provides Apple standard analog and IBM standard digital RGB outputs (cables included).

ColorLink offers four text colors so you can use the one that's easiest on

IIe

your eyes (others offer only green).

The ColorLink option plugs into the back of RamWorks III (or can be used in conjunction with piggy-back memory expanders), so it won't interfere with Slot 1.

You can order ColorLink with your RamWorks III board or add it later.

Optional 16 bit power.

You can explore powerful programming possibilities with Applied's optional 65C816 Card. It's capable of linearly addressing more than 1 MEG.

It connects to RamWorks III's built-in CPU port. Instead of using another slot, AE's 65C816 Card simply replaces the 65C02. It maintains complete 8-bit compatibility.

The RamWorks basic® alternative.

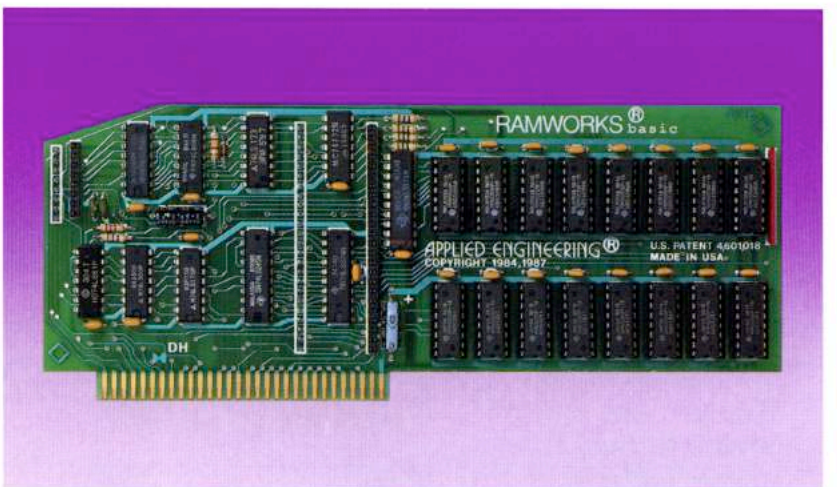
Need power but not all the capabilities of RamWorks III? Look at RamWorks basic. It has the same performance features as RamWorks III, it's attractively priced and it's available with up to 512K memory on the main board, and can use all the RamWorks III "piggy-back" options.

Backed by the leader.

Applied Engineering has been designing and building Apple enhancements for over 8 years. We invented large RAM cards for the Apple. Today, our innovative technology leads the field. We sell more Apple enhancements than anyone else, including Apple Computer. So you know we'll be around to solve problems and answer questions.

It's got it all:

- 5 year warranty — parts and labor
- Super sharp 80 column text (U.S. Patent 4601018) with or without RGB option
- Supports Double Hi-Res graphics (with or without RGB option)
- Expandable up to 1 MEG (1024K) on main board
- Can use 64K or 256K RAMs in any memory block
- Linear addressing co-processor port
- Automatic AppleWorks Expansion — from 366K on a 512K RamWorks III and 2,251K on a 3 MEG RamWorks III
- Accelerates AppleWorks operation
- Built-in AppleWorks printer buffer
- 100% compatible with all standard IIe software
- RamDrive™ and ProDrive™, the ultimate disk emulator software included free
- Compatible RGB option featuring ultra-high resolution color graphics and multiple text colors, available with cables for both Apple and IBM type monitors
- Self-diagnostic software included
- Lowest power consumption (U.S. Patent 4601018)
- Takes only one slot — No slot 1 interference
- Software industry standard
- 16 bit option



RamWorks basic® Expansion Board

- Advanced computer aided design
- Used by Apple Computer, Steve Wozniak and virtually all software companies
- Displays date and time on the AppleWorks screen with any ProDOS compatible clock
- Much, much more!

RamWorks basic with ZeroK
RamWorks basic with 64K
RamWorks basic with 256K
RamWorks basic with 512K
RamWorks III with ZeroK
RamWorks III with 64K
RamWorks III with 256K
RamWorks III with 512K
RamWorks III with 1 MEG
RamWorks III with 1.5 MEG
RamWorks III with 3 MEG
512K Expander
2 MEG Plus Expander with 1 MEG
2 MEG Plus Expander with 2 MEG
65C816 16 Bit Card
ColorLink RGB Option

CP/AM MEGDrive™

CP/AM MEGDrive is just like RamDrive, only for CP/AM. CP/AM MEGDrive runs on any Z-80 card that runs standard CP/AM, e.g. Applied Engineering Z-80 Plus, Microsoft Soft Card or PCPI. CP/AM MEGDrive will dramatically speed up the operation of most CP/M software because CP/M normally goes to disk fairly often. Fast acting software like dBASE II, WordStar and Turbo Pascal becomes virtually instantaneous when used with CP/AM MEGDrive.

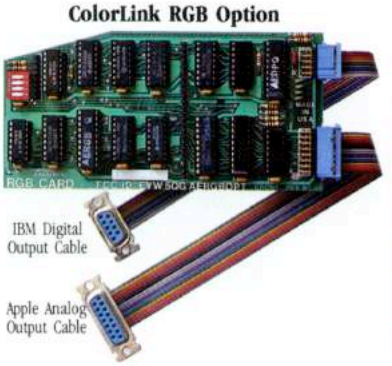
Z-80 Plus, Microsoft version
PCPI APPLI-CARD version

VC IIe Expander

VC IIe Expander gives owners of VisiCalc IIe and Advanced VisiCalc IIe increased storage. When used with VC IIe you'll get 141K workspace (128K RamWorks III or larger required). When used with advanced VC IIe you'll get 235K with a 256K RamWorks III and 437K with a 512K RamWorks III.

VC IIe Expander

ColorLink RGB Option



Comparison Between RamWorks,™ RamFactor,™ GS-RAM Plus™ and GS-RAM Ultra™

Many of the features and benefits of RamWorks III™, RamFactor™, GS-RAM™, GS-RAM Plus™ and GS-RAM Ultra™ are the same; however, there are differences that we would like to point out so that you can make the best choice.

Most importantly, RamWorks III is specially designed for the Apple IIe while GS-RAM, GS-RAM Plus and GS-RAM Ultra are specially designed for the Apple IIGS. These three cards will not work on a II+, Franklin or Laser. That leaves RamFactor as the source of most of the confusion, since it is compatible with the IIe, II+, IIGS, Franklin, Laser 128 and most compatibles.

For the most powerful AppleWorks enhancements, stick with RamWorks III for the IIe and GS-RAM, GS-RAM Plus or GS-RAM Ultra (the major difference is capacity) for the IIGS. For other applications, RamFactor reduces disk access time and storage and can be battery backed-up. See the accompanying chart for further comparison.

Capability	RamWorks® III	RamFactor™	GS-RAM™ GS-RAM Plus™ GS-RAM Ultra™
Computer compatibility	Apple IIe	Apple II+, IIe, IIGS and compatibles	Apple IIGS
Maximum memory on main card	1 Megabyte	1 Megabyte	1.5 MEG GS-RAM 6 MEG GS-RAM Plus 4 MEG GS-RAM Ultra
Expander cards (for expansion beyond main card)	512K, 2 MEG	RamFactor 4 MEG, "Y" connector for 2 RamFactors	2 MEG RAM
Compatible slot	Auxiliary slot	Slots 1-7 except 3	Memory expansion
RAM disk	Disk based	EPROM/disk based	IIGS Control Panel
Software standard	Yes	Yes	Yes
Battery back-up	No	Yes	No on main board*
AppleWorks compatibility	All versions	Versions 1.3, 2.0, 2.1 and 3.0	Versions 2.0, 2.1 and 3.0
Maximum number of records in database in AppleWorks	22,500	22,500	22,500
Maximum number of lines in word processor in AppleWorks	22,500	22,500	22,500
Lines in WP and DB clipboard in AppleWorks	2,042	2,042	2,042
Autoload AppleWorks	Yes	Yes	Yes
Displays time on screen with ProDOS clock	Yes	Yes	Yes
Auto-segments large files	Yes	Yes	Yes
AppleWorks printer buffer	Yes	No	Yes
Fully socketed and user upgradeable	Yes	Yes	Yes
16 bit option (65C816)	Yes	No	N/A
Memory chip types for expansion	64Kx1 256Kx1	256Kx1	256Kx1 GS-RAM 1 MEGx1 GS-RAM Plus 256Kx4 GS-RAM Ultra

Comparisons made using AppleWorks 2.1, however, similar performance is obtained using older AppleWorks versions with RamWorks.
*RamKeeper provides the GS-RAM, GS-RAM Plus and GS-RAM Ultra with battery back-up.

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Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

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We're here to make your life easier. How can we help you today?

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