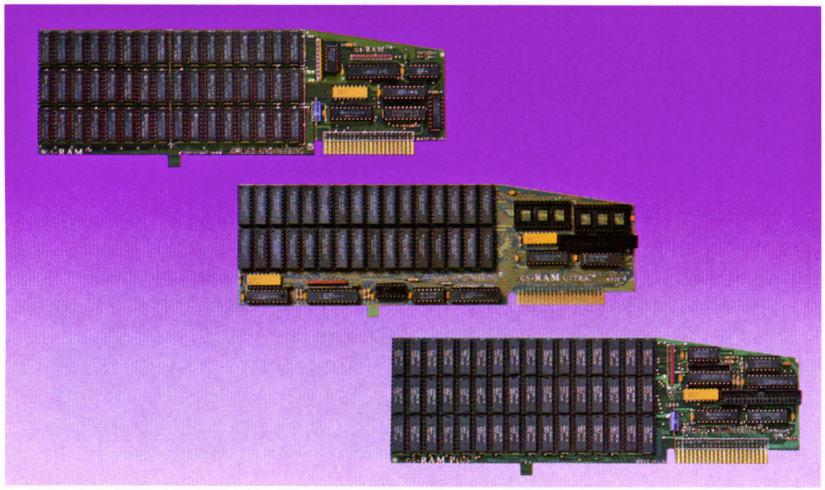
GS-RAM™, GS-RAM PLUS™ AND GS-RAM ULTRA™

Now expand the IIGS with up to 8 MEG of "Instant On" memory with GS-RAM Plus and RamKeeper.

Applied Engineering's IIGS memory cards, the GS-RAM™, GS-RAM Plus™ and GS-RAM Ultra™ are the ONLY large capacity IIGS memory cards that are fully DMA compatible. Others are either totally non-compatible or compatible only in certain specific configurations.

That difference in a memory card is critical. Here's why: DMA (Direct Memory Access) tremendously speeds up computer operations by bypassing the microprocessor. All addressing and control logic is contained on our cards, enabling a DMA device to bypass the microprocessor and go straight to the heart of things...the computer's memory.

AE's full DMA compatibility means GS-RAM, GS-RAM Plus and GS-RAM Ultra run all GS software, support all *current and future* DMA peripherals, and don't require you to adjust the size of your RAM disk everytime you use a DMA device...something every other large capacity memory card requires you to do.



GS-RAM
Up to 1.5 MEG on one card

GS-RAM Ultra
Up to 4 MEG on one card

GS-RAM Plus
Up to 6 MEG on one card

Software.

Both GS-RAM, GS-RAM Plus and GS-RAM Ultra come complete with Applied Engineering's own powerful enhancement software.

Disk caching software is included, tremendously speeding up the computer's access to the 3.5 Drive and running most applications up to *seven times faster.*

Super Hi-Res diagnostic utility software is also included free. It graphically shows the location of bad or improperly installed chips and even tests for CAS before RAS chips.

Your free software also includes AE's exclusive AppleWorks Expander program that dramatically enhances the capabilities and speed of AppleWorks. The Expander eliminates disk access time by allowing all of AppleWorks, including print functions, to automatically load into RAM. You can even load Pinpoint or the TimeOut Series into RAM for instant response.

This powerful software:

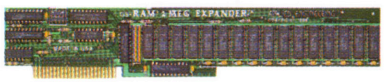
- Allows AppleWorks to recognize up to 8 MEG on the desktop
- Increases word processor lines from 7,250 to 22,500
- Increase database records from 6,350 to 22,500
- Increases clipboard capacity from 255 lines to 2,042
- Automatically loads AppleWorks (including print functions) into RAM
- Automatically segments files for saving large files on multiple floppies
- Provides a built-in print buffer

RamKeeper option.

Coupled with Applied Engineering's RamKeeper, your GS-RAM, GS-RAM Plus or GS-RAM Ultra actually gives you an internal "electronic hard disk" with an instant-on Finder and emergency power backup. RamKeeper even supports an Apple IIGS memory card (and most others) alone or in combination with one of our cards. See the RamKeeper page in this catalog for more details on how this $189 wonder gives your IIGS all the speed and power it was meant to have.

Compare our features:

- GS-RAM expands from 256K to 1.5 MEG
- GS-RAM Plus expands from 1 MEG to 6 MEG
- GS-RAM Ultra expands from 256K to 4 MEG in 256K increments
- GS-RAM Ultra includes ROM sockets for future EPROM uses-currently under development
- Full DMA compatibility in *any* configuration
- 5-year warranty - parts and labor
- 6 RAM banks (most cards have only 4)
- Piggyback memory expansion port
- Ultra-fast disk caching on ProDOS 8 *and* ProDOS 16
- Free graphic Super Hi-Res diagnostic software
- Free AppleWorks Enhancement software
- No soldered-in RAM chips
- Accepts GS Expander for additional 2 MEG
- No configuration blocks to set
- RamKeeper option available for permanent storage
- 15-day money-back guarantee
- Proudly made in the U.S.A.



GS Expander™ adds up to 2 MEG to either card.

IIGS

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.