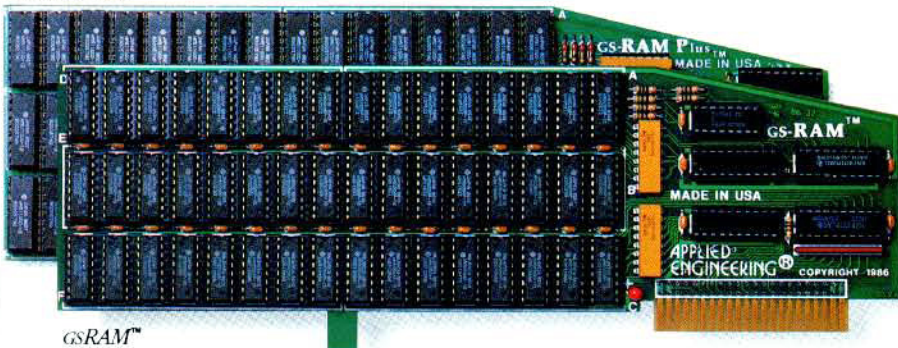


Insist on GSRAM™ When You Buy Your IIGS™

Expand the IIGS RAM and ROM with the GSRAM or GSRAM Plus
with ROM Pak. Available now with 256K to 8 MEG!

GSRAM Plus™



GSRAM™

Remember the 16K cards for the II+ and the 64K cards for the IIe? At the time, that much memory seemed like a lot. But when the owners of these memory cards came to us for more memory, many had to throw away their smaller Apple memory cards or try to sell them. Most of our customers told us that had they known about Applied Engineering's larger memory cards when they bought their Apple, they would have purchased them at the same time.

GSRAM and GSRAM Plus are available now, allowing up to 8 MEG of memory expansion. That's 8 times the memory capacity of Apple's card and just look at the benefits that only GSRAM and GSRAM Plus have over Apple's card:

- Lower cost
- Has 6 RAM banks (Apple's card has 4)
- Has memory expansion port
- Has ROM expansion port
- No configuration blocks to set
- No soldered in RAM chips
- Expandable to 8 MEG
- Expands AppleWorks internal limits
- Built-in Hi-Res self-diagnostic software
- 5 year hassle free warranty (Apple has a 90 day warranty)
- Made in USA

GSRAM for More AppleWorks Power

Only GSRAM and GSRAM Plus eliminate AppleWorks internal memory limits, increasing the maximum number of records available from 6,000 to over 25,000 and only GSRAM and GSRAM Plus increase the number of lines permitted in the word processing mode from 6,000 to over 15,000. And only GSRAM and GSRAM Plus offer a built-in printer buffer so you can continue using Appleworks while your printer is printing. GSRAM and GSRAM Plus even expand the number of lines in the clipboard from 255 to 2047 and will auto segment large files so they can be saved on two or more disks. You can

even have Pinpoint or Macroworks and your favorite spelling checker in RAM for instant response. GSRAM and GSRAM Plus will even display the time and date right on the AppleWorks screen. Nothing comes close to enhancing AppleWorks so much.

Turn Your IIGs into a Giant

Simply plug GSRAM into the IIGS memory expansion slot and you've got up to 8 megabytes of RAM at your fingertips—all of it instantly and automatically recognized by the IIGS. GSRAM is compatible with all IIGS software, including AppleWorks, as well as BASIC®, ProDos, DOS 3.3, PASCAL®, "C" and CP/M®.

Grow by Bytes or Megabytes

We offer GSRAM in two configurations so you can increase your memory 256K at a time (GSRAM) or a megabyte at a time (GSRAM Plus). Both offer full compatibility, lower cost than other boards, and easy expandability. And both are extremely low in power consumption. A fully expanded GSRAM operates at only 375 ma, and GSRAM Plus at only 270 ma (even with 6 megabytes on board!)

GSRAM—for Normal Memory Requirements

GSRAM is available with 256K, 512K, 1 MEG or 1.5 MEG of memory already on board. If you don't need the full 1.5 MEG now, you can choose a GSRAM with less memory and expand it up to 1.5 MEG in the future—or upgrade to GSRAM Plus for a small charge.



Steve Wozniak, the creator of Apple Computer

"In quality, performance, compatibility, expandability and support, Applied Engineering's GSRAM and GSRAM Plus are number one."

With an optional piggyback card, you can expand GSRAM even higher than 1.5 MEG! (Other cards are only expandable to 1 MEG.)

GSRAM Plus—for Growing by Leaps and Bounds

GSRAM Plus is the first Apple memory card to use 1 MEG RAM chips on the main board. It's available with 1 to 6 MEG on board. If you don't need the whole 6 MEG now, you can buy a GSRAM Plus with less memory and easily expand it in the future.

GSRAM Plus can be expanded up to 8 MEG with an optional piggyback card.

Easy Expansion

Both GSRAM and GSRAM Plus use standard RAM chips that are readily available and just plug right in. So unlike other cards, you'll find expanding your GSRAM or GSRAM Plus easy, convenient and very economical. And with our optional ROM expansion module you can even increase the IIGS's ROM space and all in just one slot.

Quality and Support of the Industry Leader

Applied Engineering is the largest supplier of Apple peripherals in the world. We invented the first large RAM cards for the Apple. With a 5-year "no-hassle" warranty and outstanding technical support, you can be sure GSRAM and GSRAM Plus will deliver the performance you're looking for—or return them within 15 days for a full refund.

GSRAM with 256K	\$169
GSRAM with 512K	\$219
GSRAM with 1 MEG	\$299
GSRAM with 1.5 MEG	\$379
GSRAM with 2-8 MEG	CALL
GSRAM PLUS with 1 MEG	\$459
GSRAM PLUS with 2 MEG	\$759
GSRAM PLUS with 3-8 MEG	CALL

Order today!

See your dealer or call Applied Engineering today, 9 a.m. to 11 p.m. 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 6¼% sales tax. Add \$10.00 outside U.S.A.

AE APPLIED ENGINEERING™

The Apple enhancement experts.

(214) 241-6060

P.O. Box 798, Carrollton, TX 75006

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

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

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.

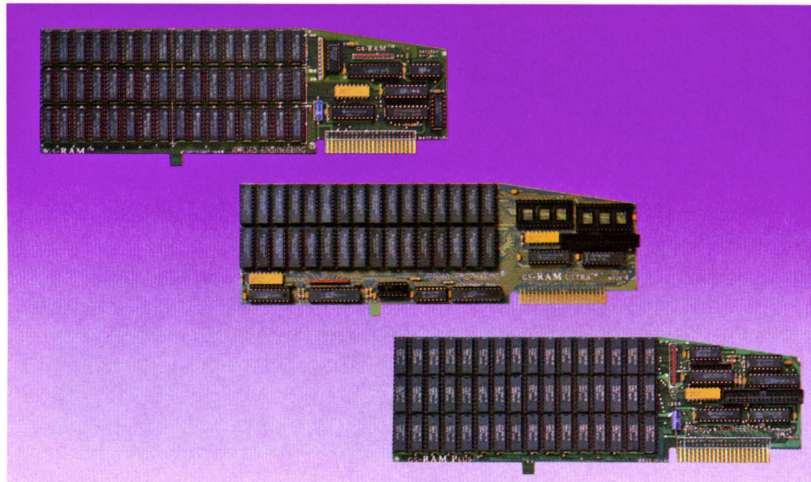
This powerful software:

- Allows AppleWorks to recognize up to

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.

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



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

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.

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.

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.



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

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.