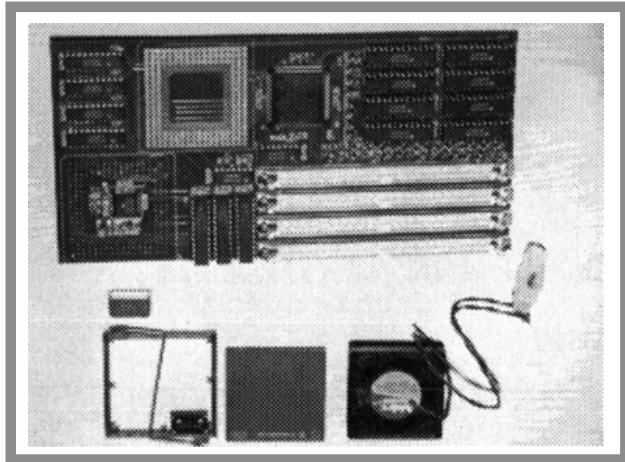


X-CALIBUR

TECHNICAL SPECIFICATIONS



128MB EXPANSION/ACCELERATION RAM UNIT
FOR THE COMMODORE AMIGA 4000/040

- Available at 25 and 33MHz. (25 MHz version is upgradeable)
- 4 to 5.5 times faster memory access than regular A4000/040.
- Holds up to 128 Mb of fast memory.
- Get up to 25% faster hard disk access.
- Does not require a zorro slot.
- Direct 68040 access.
- BBS support.
- Best technical support team.
- 1 year warranty



Management

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X-CALIBUR

WHAT IS IT?

X-CALIBUR is a 128 Mb expansion / acceleration RAM unit for the Amiga 4000 / 040.

Let us explain what we mean by that! It is a 128 Mb memory expansion because it allows you to add up to 128 Mb of fast RAM to your A4000 / 040 (not 030, sorry).

How can it accelerate at 25 MHz without changing the CPU at all? And not even your current memory?

Well first the X-CALIBUR uses 64 bits interleaved memory instead of regular 32 bits access, this is why we need to populate modules 2 at a time, in using two memory banks separated by half a clock we in fact cut the access time in half, resulting in double speed memory. The second thing is that the A4000 motherboard does not allow memory bursting, but our board does, so we again double our memory speed; in total we then have quadruple our memory speed at 25 MHz!!! And 5.4 times faster at 33MHz!!!

WHAT DOES IT MEAN TO ME?

It means your machine will be between 1.5 and 4 times faster than it was before depending on your applications, plus the added bonus of 128 Mb possible memory expansion.

WHO IS IT FOR?

Anybody needing to blow the 18 Mb memory limit and / or that needs to have a faster Amiga.

WHO IS RCS?

RCS is a Canadian based company who introduced the first 68040 accelerator on the A2000 in 1989, it was the "FUSION-FORTY". The first version was allowing 32 Mb of memory and ran at 25MHz, since then we have had a 28MHz version and our new 35MHz version allows 128 Mb and is the base of our X-CALIBUR design.

At RCS we are very proud about the quality of our products and we take a lot of pride in our customer technical support that is second to none.

We were the first on the 68040 market for the A2000, and we are now the first with an accelerator for the A4000. We believe that we offer the best in price/performance for an accelerator. Our "FUSION-FORTY" is renowned for it's reliability and such innovations as our plug&go ROM's. On the performance side our 28MHz "FUSION-FORTY" easily compete with competitors 33MHz board, in fact our 35MHz board on the A2000 is easily 40% faster than any competing boards!!!

We brought you this expertise on the A4000 X-CALIBUR, in fact our 25 MHz X-CALIBUR should outperform competitor 33MHz A2000 68040 systems!!! At 33 MHz our X-CALIBUR should perform like a 42.5 MHz 68040 using a conventional design!!!

At RCS our business is to make your Amiga's faster, if you need the fastest Amiga available then look no further, as you found the company to answer your needs.

Give us a call if you have any questions, or just to say hello!



BENCHMARKS

PERFORMANCE RESULTS

AIBB 6.0 (A4000 = 1.0)

X.CALIBUR 25 MHz 33 MHz

MemTest	4.02	5.3
TranTest	1.39	1.85
InstTest	1.57	2.08
FMatrix	1.97	2.61
Matrix	1.46	1.93
Sort	1.11	1.46
Sieve	1.94	2.56
EmuTest	1.19	1.58

TOASTER TEXTURE EXAMPLE:

A4000/040	2 Min 44 sec
A4000/040+ X-CALIBUR (25)	1 Min 32 sec
A4000/040+ X-CALIBUR (33)	1 Min 7 sec

X-CALIBUR MOST FREQUENTLY ASKED QUESTIONS

WHAT MEMORY SPEED DO I NEED?

80 ns 72 pins SIMM modules at 25MHz, 60 ns at 33MHz.

SHOULD I KEEP SOME MEMORY ON MY A4000?

Except for the chip memory we do not recommend to keep any fast memory, it would be recognised but this memory would be accessed at much lower speed, so keep this option for when you will expand past the X-CALIBUR 128 Mb memory limit ! (We believe it should not happen too soon.)

WHAT ACCELERATION SHOULD I EXPECT?

At 25 MHz, from 1.25 to 4 times faster: at 33 MHz, from 1.5 to 6 times faster!

WHAT TYPE OF MEMORY SHOULD I USE?

Standard 80 ns 72 pins SIMM modules at 25MHz, 60 ns one's at 33MHz. 32 or 36 bits (PC type) will work fine as long as you match them 2 by 2 as our design requires 64 bits wide memory.

Some 70 ns memory will work at 33MHz, but the price difference with the 60 ns is almost zero; so, it is better not to take any risk. Also try to buy modules that do not use more than 16 chips per module in order to avoid too high a capacitive load. Also, if you have a choice then do take golden plated contacts as they are not more expensive anyway.

HOW TO UPGRADE AT 33 MHz?

You will have to return the board to RCS, we will then increase the speed of certain parts plus we will provide a faster 68040 CPU. You will also have to get 60 ns memory modules, as the original 80 ns one's won't be fast enough anymore.

The maximum delivery delay would be a week, usually we can ship back the board the day after receiving it.

Contact RCS for upgrade pricing, as the price will vary with the passage of time.

I BOOTED AND HAVE ONLY CHIP MEMORY?

As installation pointed out, you have to check before reassembling your A4000; if it fails then check memory modules position and proper connection. Check also that you have a piece of plastic or paper between the 68040 daughterboard and the X-CALIBUR to avoid short circuiting the memory section, if that also is not the problem then remove the X-CALIBUR from the daughterboard and check for bend pins (See how to check it on our installation procedure).

If all those suggestions fail, please contact us at RCS. Please have the machine near you when you phone us.

Each unit has been individually tested, but a failure can happen anyway; be sure we will have you back on your feet as soon as possible. You do have a one year warranty on your X-CALIBUR.

We have included a program on the installation disk to allow us to try to diagnose the problem on the phone, if this fail we will have to replace the unit.

Amiga Hardware World

Everything about Amiga hardware...

~

<http://amiga.resource.cx>