REPLAY REPORT

A Survey of Vine Micros Products

Those of you who have met me know that I am an unrepentant Acorn/BBC microcomputer fan, in part because of the grip of the school market which Acorn have acquired. With some reluctance last year, I traded in the ageing Model B for the latest, at the time, go-faster version, the MASTER. However, I was pleased to find both that the software compatibility was excellent and that most of my ROMs would still work. On the other hand, I found that the availability of the ROM sockets was limited, especially if you want to keep the sideways RAM active, since normally fitting more than one extra ROM involves switching out some of the 64K of sideways RAM. If you run out of ROM sockets and try loading your own (not pirated) disc copies of some of the better ROMs into sideways RAM, then some ROMs will corrupt themselves in the interest of preventing unauthorised copy. Some of the heavily-protected educational tapes still cannot be converted to run from disc even though five-year olds have little patience with cassette loading systems! Consequently, I was quite pleased when Vine Micros asked me to review some of their products which, on the face of things, seemed to be the answer to most of my problems. The products, all for the BBC MASTER, were Replay, 'Write-Protect' Module, and ROMboard 3 Overlay Board.

ROMboard 3 Overlay Board: Starting with the Overlay Board, I was impressed with the packaging and protection of the small board supplied. It is designed to allow up to three extra ROMs to be installed within the machine which, instead of displacing RAM, overlay any of the eight built-in ROMs in the 1Mbit ROM. The documentation which is supplied is comprehensive and contains full fitting details. The installation is quite straightforward, involving no soldering whatsoever. The only proviso is that the 1Mbit ROM must be socketed. Quite what you do if you buy the board and then discover that IC24 is soldered in place, I don't know. Ring Vine Micros, I suppose. My 1Mbit ROM was socketed, so I had to tackle the only frightening bit of the installation which was prising it out. Thoughts of 'how do I explain to the kids that the computer won't work anymore' did cross my mind, but, in fact, the operation was painless. Vine Micros do put a disclaimer in their documentation at this point, so, presumably, the thought crossed their minds as well. The ▶

MASTER

FOR THE BRITISH BROADCASTING CORPORATION MASTER SERIES MICROCOMPUTER

TAPE TO DISC TRANSFER UTILITY

IMPORTANT

THIS PRODUCT WILL ONLY FUNCTION ON A MASTER COMPUTER WHICH HAS A SOCKETED 1Mbit ROM AND IS ALREADY FITTED WITH VINE MICROS' OVERLAY ROMBOARD.

CONTAINS

REPLAY BOARD WITH ROM FITTED, USER GUIDE, INSTALLATION INSTRUCTIONS, GAME IMPROVEMENT SHEETS.

Vine Micros

VINE MICROS, MARSHBOROUGH, NR. SANDWICH, KENT, CT13 0PG.

MADE IN GREAT BRITAIN

◀ instructions have clearly been written by someone who has experience of carrying out the installation, as there is even a warning about a possible foul on the Econet connector advising use of masking tape to prevent any electrical contact. In fact, on my machine, there was no foul.

In use, the board has been completely transparent. Any of the three extra sockets can be selected to overlay any of the 1Mbit ROMs. Vine Micros advise fitting switches in the select lines so that the extra ROMs can be paged in and out. This is almost essential as the Acorn-designed architecture of the 1Mbit ROM means that odd bits of code are tucked into unexpectedly-odd corners, eg, the Terminal ROM contains part of the Operating System, and View contains part of Basic. To be fair, Vine Micros do warn of this and using the switches means that View can be safely replaced by your preferred Word Processor, such as Wordwise, whenever desired. Certainly, I have found the overlay board a worthwhile asset, solving the problem of fitting extra ROMs while retaining RAM for data storage.

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We have been asked to point out that the views expressed in this article are the personal views of the reviewer and do not reflect MOD, RAF or Establishment policy.

Replay: The next product for review was the Replay board. Way back in the days of BBC model 'A's, Vine Micros brought out a product to enable programs to be saved to disc easily — a boon for those whose ability to decipher 6502 code was limited. Over the years, this product has been progressively upgraded. Once again, the Replay board looked well-designed and arrived well-packaged. The instructions are well-presented with clear diagrams and a comprehensive manual. Although it is possible to buy a stand-alone version, the example I obtained required the Overlay board to be fitted. Again, there are warnings of possible inadvertent electrical contact. Once fitted internally, again without soldering, the small red activation button is located at a convenient external spot, and a small sigh of relief is breathed, as always, after poking around inside the case. Vine Micros claim that the system is completely invisible. Certainly, I have experienced no clashes at all to date and my machine has behaved perfectly normally, any irrationality being solely due to the operator, up to the point when the Replay Button is pressed.

Prior to pressing the red Replay Button, the system must be used to format its own dedicated disc. Replay uses a double density 18 sector disc format peculiar to itself. The programs on the disc are coded as well so that the system cannot be used for piracy — an important point. Once the disc is formatted, programs can be run entirely normally either from DFS, ADFS or Tape. At any time thereafter, the Red Button can be pressed. Programs are instantly frozen, even halfway through a screen refresh. There is then an option to simply continue, ideal if you have to answer the telephone, or to save to disc. Saving to disc can involve up to the full 128k of memory, and, after saving, the program carries on exactly from where it left off — even halfway through that screen refresh. Thereafter, there is the option to reload the program at that point. It is also possible to edit the file, and, for many popular games, Vine Micros provide e list of pokes to give extra lives etc. Moreover, it is also possible to recall the screen in order to print it out. Suddenly some of the more difficult adventures/games become possible, ending hours of frustration for the children (and me) and, of course, shouts of 'I can't come for tea, I'm in the middle of...'

The only problem area with some programs is that the 6845 video controller chip has some write-only registers which require initialising prior to reloading. Vine Micros provide code within Replay for many popular programs and provide hints to let you work out your own solution for other programs. Certainly, Replay has successfully transferred every program I have tried, and replayed them successfully. As far as my family are concerned, the little Red Button is a magic wand — we don't understand how it works, but are always impressed with the results.

Write-Protect Module: The last product I received for review is the 'Write-Protect' Module. With this product, the built-in sideways RAM banks can be isolated so that they cannot be written to. Data or programs can be loaded into the RAM, the RAM write-protected, and thereafter the data remains incorruptible until switch-off or selection of write-protect off. The smallest of all the products, it again arrived well-protected and documented. Again, it was of simple plug-in design, taking somewhat less than five minutes to install, even though it is not just a simple switch. As part of the installation procedure, it is necessary to decide how many of the MASTER's RAM banks are to be protected. To change this decision requires delving back inside the computer to alter links. Once fitted, write-protecting is simply a matter of throwing a switch. Vine Micros' documentation is so complete that they even warn that BAS128 uses the sideways RAM for program storage end so cannot be used with write-protect on.

Overall: So, are the products worth buying? between them, they certainly solved all the problems I listed in my opening paragraph. All the products are well-designed and require a minimum of experience to fit — common sense and the ability to read English are all that is needed. The 'write-protect' switch is very cheap and excellent value on its own. If you really cannot get along with View and want something like Wordwise or Inter-Word fitted permanently, then the Overlay Board is invaluable. And, finally, either on its own or in conjunction with the Overlay Board, Replay is the answer to the game player's dreams. To answer my own question — Yes, they're well worth the money.

Graham Evens

Dave Somers

PLAY IT AGAIN SAM

When upgrading to the Master from the humble B, users might be faced with the problem of trying to transfer their tape based software to disc.

Vine Micros' Replay system

The Replay system consist of a small piece of firmware on a plug-in board which plugs into the computer, and a 28 page A5 instruction manual. It is available for use either in a stand-alone format or for use with their ROMboard 3 system. To use either version your 1 megabit IC *must* be socketed.

For the stand-alone version the megabit chip is removed and placed on the socket provided on the Replay board, then the Replay board inserted into the 1 MBit socket on the main circuit board.

For the version for use with the Romboard 3 system, the Replay firmware is inserted into the middle of the three sockets on the board, and the connecting wires from it placed over the selection pins to overwrite the Operating System ROM and any other ROM not already overlaid.

In both cases, a header containing from the board is placed over IC15. A red push button is attached to the Replay board via a long lead, so that it can be placed somewhere convenient; it is used to activate the system.

The idea behind Replay is simplicity itself. Most tape to disc transfer systems attempt to transfer individual file from tape to disc one at a time. However, this does not usually work due to the protection methods employed. With Replay, you load the program in as normal (ie the program is operational), then, press a button and save of all of the computer's memory to disc. To retrieve the program off disc it is then a case of loading the program as previously saved back into the computer's memory and re-starting it from the point where it was saved. Simple, eh?

Replay uses a special disc format system, so it is first neccessary to format a disc for use with it. To get as much data onto the disc as possible, it is written with 18 sectors per track (as opposed to the usual 8 for DFS and 16 for ADFS). This means that you must use high quality discs — cheaper ones cannot support this many sectors and produce disc errors.

Once the program has been loaded off tape and is running correctly, the red button should be pressed. The computer is now "frozen" and there are a variety of options available from here, the whole of the computer's RAM can be saved to the Replay format disc, the Replay utilities menu can be accessed, the screen's position can be moved around, and the sound can be turned on or off.

Once the computer's memory has been saved to the Replay disc, the computer will carry on as if nothing had happened. To manipulate the memory saved, the Replay button is pressed and the utility menu accessed. From here it is possible to carry out a number of ancillary functions on the files saved.

Most programs, especially games, only use the standard 32 Kbytes of RAM. When Replay saves the computer's Memory it saves the 32 Kbytes of main memory, shadow screen memory, and the contents of Sideways RAM banks 4,5,6, and 7. This obviously occupies a lot of disc space, and some of it may not be neccessary, and so there is the facility to instruct Replay to ignore parts of the memory that were saved, thus freeing vital disc storage space.

If you already know what memory the program is going to occupy, Replay can be configured to save only that part and not the superfluous remainder.Also, it is possible to modify the saved programs. Replay comes with several sheets full of "pokes" to perform on several popular games to provide infinite lives, etc.

To re-load a program from disc into the computer's memory it is neccessary to enter the Replay utilities menu, then hit a key corresponding to the name of the program saved. After the few seconds it takes to reload, the program will continue exactly where you left off!

With the original version of the Replay system for the BBC Model B, certain software was designed to refuse to load if Replay was fitted.
On the Master this will never happen because there is no way to detect the presence (or absence) of Replay. The hardware has been designed so that its presence it totally transparent to the computer and to the software.

Another very useful facility is that when a program has been stored using Replay you can retrieve the screen and store this on a

CONTINUES ▶

New Prices!!
Master Replay:
S/C version £35.00
Add-on vers. £27.00
Romboard 3 £16.00
Romboard 4 £25.00
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Master to B conversion £14.95

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All include VAT, p&p
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normal format DFS or ADFS formt disc. (Throughout this supplement the screen shots were "grabbed" this way onto a Replay disc then transfered to an ADFS format disc.)

Once nice touch is that Replay will work with the Opus Challenger disc drive system.

Some tape software requires operating system version 1.20 (OS 1.20), and hence will not work correctly on the Master. To circumvent this problem, when using Replay in conjunction with their Romboard 3 it is possible to insert OS 1.20 and have this as the Master's new operating system. The Replay system incoporates all the software neccessary for this to be achieved.

Using Master Replay certainly makes tape to disc transfer less of a headache. This system has a professional apperance and performs extremly well.

Master Replay costs £41.95 for the self-contained version or £36.95 for the Romboard 3 version. The Master to B conversion kit costs £14.95. All these prices include VAT and postage and the address is: Vine Micros, Marshborough, Sandwich, Kent, telephone 0304 812276 (Vine Micros say that their products are available from a few other suppliers too, so check your local Acorn shop).

Romboard 3

Vine Micro's Romboard "3" enables the software in the Megabit ROM (IC24) to be replaced with that of your choice, within limitations. But for you to be able to use Romboard 3, it is necessary for your Megabit chip to be *socketed* , so that you can remove it carefully from its socket. It should then be placed in the socket provided on Romboard 3, which is in turn placed in the Megabit socket on the main circuit board.

The board contains three sockets to take the firmware you want to overlay. There are three leads with a header which corresponds to each socket on the board; these should be placed over a pin on the board corresponding to the bank of the Megabit ROM that you wish overlayed.

Using this board makes it possible to replace thesoftware supplied with the Master with that of your choice. For example, when it comes to word-processing, you could replace View with Wordwise or InterWord depending upon your personal preferences.

However, not all of the software can be overlayed (unless you know what you are doing). The terminal software (bank &F) contains part of the operating system, View (bank &E) contains the enhanced graphic plot functions, and the DFS (bank &9) contains the SRRAM commands (although later version of the Megabit chip are reported to have these as part of the operation system).

However, with a little bit of care it is possible to customise your Master to suit your needs.

Romboard 4

Vine Micro's Romboard 4 is a clever piece of hardware that sits *inside* your Master microcomputer, and does the same job as a two ROM cartridges, but more!

Fitting the Romboard 4 is fairly straightforward. The circuit board has a 28 turned-pin header which simply plugs into IC 37. Then a header from the board then has to be clipped over IC 20.

The board has five sockets on it (including one to replace IC 37 which the board occupies). You plug your ROM firmware into these sockets, and then by setting the selector switches, place it wherever you like, overlaying either the cartridge ports and/or the sideways RAM banks. You could fit four ROMs to the board and, for example, overlay two of them into one of the cartridge ports, and the other two the two banks of sideways RAM. That still leaves you with one cartridge port and two banks of RAM.

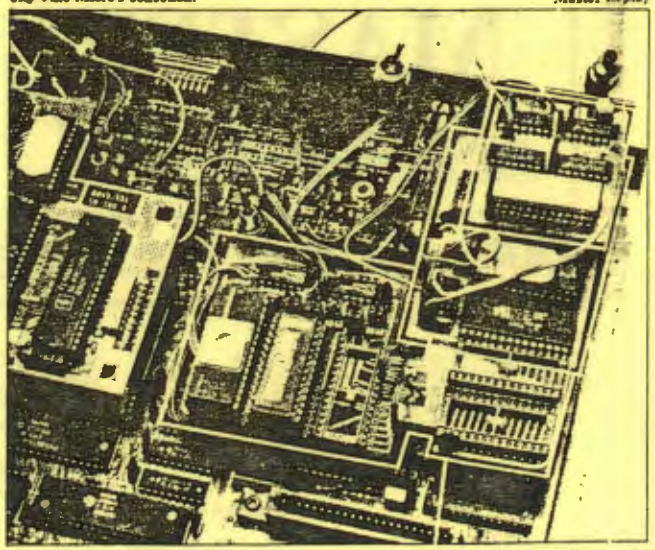
The board also has another switch which can be used to make the sideways RAM read-protected, write-protected, or treated as normal.

Because the board fits internally, it can accommodate the newer PAL-ROM combinations such as InterWord or SpellMaster.

Romboard 4 is an extremely useful piece of hardware. The hardest part is setting up the selector switches correctly, but the clear examples in the accompanying documentation help greatly. It would be ideally suited for use in education as the board (and the ROMs) fit internally, providing good protection and security for them.

Romboard 3 costs £19.95 and Romboard 4 costs £24.95; both are available from: Vine Micros, Marshborough, Sandwich, Kent, CT13 0PG, telephone 0304-812276.

The Vine Micro's collection: **Master Replay**



Romboard 4 **Romboard 3**