



## VISCOUNT ZX 16K RAM PACK

### Instructions for use

This Ram Pack will expand the memory capacity of your Sinclair Personal Computer to 16K bytes (1k byte @ 1024 units of storage, i.e. 1024 characters). The ZX 16K Ram is not expandable in stages and is, therefore, supplied with the 16K of memory built in. Just plug onto the expansion edge connector at the back of your computer. It will take its power from the existing power supply.

### IMPORTANT

Please ensure that the computer is switched off before plugging or unplugging the memory or you may damage the Ram pack or computer-also the computer's operation will be interrupted for a short while and it may become stuck in a 'non communicative' state. You will then need to switch off and on again anyway. Programs in the computer will most certainly be lost; so if you think a particular program may need a lot of memory, it is wise to plug on the Ram Pack before entering it. As a guide, the computer's internal memory can handle 30-60 lines of program, but large arrays or a lot of data can cut this down considerably.

The computer can, theoretically, handle up to 960 program lines when fitted with the expansion pack. In practice, with the exception of programs with a lot of data, no program is likely to need this much. In fact, the only evidence the user sees of the Ram Pack's operation - apart from almost never running out of memory - is that the inverse 'K' takes a little longer to appear after switching on. This is because the computer tests the memory after the switch on to see how much there is. The results of the test are not directly available, however, the following simple machine code program can be used to reassure the operator that he or she really has the memory available:-

## VISCOUNT 16K MEMORY TEST PROGRAM

1 POKE	18000,33
2 POKE	18001,11
3 POKE	18002,0
4 POKE	18003,57
5 POKE	18004,68
6 POKE	18005,77
7 POKE	18006,201
8 PRINT	(USR (18000) - 16373)/1024; "K"

If run on your computer without the RAM Pack the answer will be 1K which is the amount of memory present in the system. However, with the 16K Ram Pack the answer will be 16K. Please note that this program does not say how many bytes are free for a program, only how many are available to the computer, which will use some of them for the display file stack, etc.

Now you have the chance to fully utilise your computer

Enjoy yourself!