

Expanding A Vic

Method A

8K STOREBOARD

Start Price  
£49 + VAT

8K Ram Board Expandable  
To 27K + 4K Rom

VICKIT 1

9 New Commands  
to simplify  
programming

VICKIT 3B

or

20 New Commands  
to simplify  
Hi res graphics

VICKIT 2

All 9 Commands of Vickit 1  
(Programmers Aids)  
Plus 10 hi res Commands of Vickit 3

SUPER CHARGER

8K Rom Expansion  
Takes Vickit 1  
Vickit 3A

ROM SWITCH BOARD

16K Rom Expansion  
2 x 8K Software  
selectable

VICKIT 1

VICKIT 3

VICKIT 1

VICKIT 3

4 SLOT MOTHER BOARD

4 Slots each with  
power switch

GAMES

Machine  
Code  
Monitor

4 SLOT MOTHER BOARD

4 Slots each with  
power switch

GAMES

Machine  
Code  
Monitor

4 SLOT MOTHER BOARD

4 Slots each with  
power switch

GAMES

Machine  
Code  
Monitor



Expanding A Vic

Method B

Start Price  
£24,99 + VAT

LOW COST 3K

3K Memory. Plus Expansion  
socket

MOTHER BOARD

4 Slots Expansion. Each  
slot switchable

8 or 16K MEMORY CARTRIDGE

SUPER CHARGER

8K Rom Expansion

VICKIT 1

9 New Commands  
to simplify  
programming

VICKIT 2

All 9 Commands  
of Vickit 1  
plus 10 commands  
of Vickit 3

VICKIT 3A

20 New "high res"  
commands

GAMES CARTRIDGE

MACHINE  
CODE  
MONITOR

VICKIT 1

9 New Commands  
to simplify  
programming

VICKIT 2

All 9 Commands  
of Vickit 1  
plus 10 commands  
of Vickit 3

VICKIT 3A

20 New "high res"  
commands

GAMES CARTRIDGE

MACHINE  
CODE  
MONITOR

ROM SWITCH BOARD

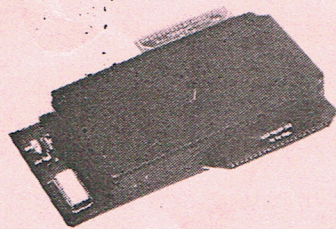
16K Rom Expansion  
2 x 8K Software Switchable

GAMES CARTRIDGE

MACHINE  
CODE  
MONITOR



## STACK STOREBOARD



### With 8K, expandable to 32K

The STOREBOARD fits into the memory expansion port at the rear of the VIC 20 and stands securely at the same level as the VIC. No extra power is necessary.

The STOREBOARD is designed to enable the user to increase the VIC memory from 5K to 32K, which is the maximum addressable memory on the VIC 20.

Supplied with 8K of RAM fitted, the STOREBOARD allows the user to increase the memory size of his computer: :-

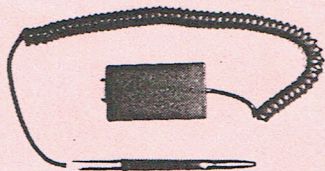
- a) whenever he *needs* more memory or,
- b) whenever he can *afford* it.

Upgrading the STOREBOARD is normally achieved by inserting a row of 4 chips, providing 8K of memory, into the sockets beneath the detachable cover. The RAM chips needed are supplied with the STACK 8K RAM Pack or 4K RAM Pack

A further feature of the STOREBOARD is a socket which allows the use of games ROMs or any of the VICKIT series of ROMs which offer graphics commands and aids to programming. The socket is positioned outside the cover to allow the easy exchange of EPROMs and ROMs.

The STOREBOARD is designed to allow users to use their 3K, 8K or 16K cartridges with it — just fit them into the expansion port on the rear of the unit!

## VIC-20 LIGHT PEN + NEW LIGHT PEN GAMES



Hold the LIGHT PEN + like a normal pen, point it at your TV screen and the pen tells your VIC-20 what it sees! Instead of pressing keys, touch the screen with your LIGHT PEN + and move your man in CHESS, create LIFE, play OTHELLO, play GO. Point the pen at your man and move him to his new position. Many games are already available for the LIGHT PEN + and many more are being developed. You can write programs which allow you to read with your LIGHT PEN + from the TV screen or place images or words on the screen, e.g. From a long list on your screen use the LIGHT PEN + to choose the facts and figures you want. The well-known game CONCENTRATION is supplied on cassette tape FREE with every LIGHT PEN +.

**Light Pen Go** (colour and sound)  
The program allows two players to play this traditional and fascinating Oriental game placing and removing pieces using the LIGHT PEN +.

**Light Pen Othello** (colour and sound)  
A two-player game placing and reversing pieces in this high strategy game using the LIGHT PEN +.

**Light Pen Draughts** (colour and sound)  
The program allows two players to play against each other using the pen to move and take, including kings and blocking of illegal moves. Requires a 3K RAM pack.

**Light Pen Concentration** (colour and sound)  
A two-player game in which a pack of cards are shown face down on the screen and turned over by the LIGHT PEN + in a search for pairs. Highest score wins.

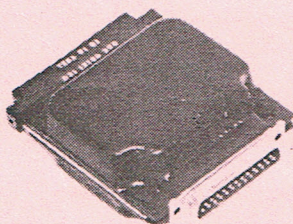
**Light Pen Life** (colour and sound)  
In this cult game pieces are placed in the universe and grow or die like bacteria colonies in life giving fascinating gliding or pulsing displays.

Cassette based games for use with STACKS! Commodore Approved LIGHT PEN +.

## ANALOGUE JOYSTICK

Programming the VIC-20? Why not write your very own games! The ANALOGUE JOYSTICK will add another dimension to the games you write. It gives you full Joystick control in ANY direction — and it fires too! Move your spaceship in a figure of eight or loop the loop — you are not restricted to up, down, right, left any longer!

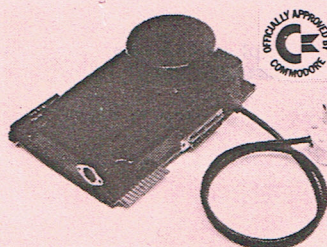
## STACK LOW COST RS232 INTERFACE



The STACK LOW COST RS232 interface provides the standard serial connection for the VIC 20.

All the user need do is plug the interface into the user port on the VIC 20 and connect his serial device to the standard connector on the interface.

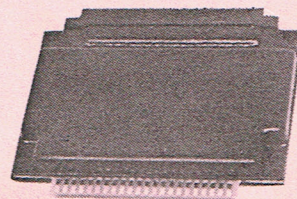
## STACK FULL RS232 INTERFACE



This fully implemented (true levels) bi-directional interface will allow the VIC 20 to operate as a Mainframe terminal, drive a Qume daisywheel, drive a paper tape punch, etc.

## Low Cost 3k Memory

The lowest costing memory addition gives you 6 1/2 k of user memory on your VIC-20. Also allows you to use those quality games which demand 3k of Hi-Res Graphics! Socket at rear allows you to stack up further accessories.



**AUTUMN\*  
SPECIAL  
OFFER**

**16k + 3k  
MEMORY & BATTERY  
BACK UP  
only £69.00 + VAT**

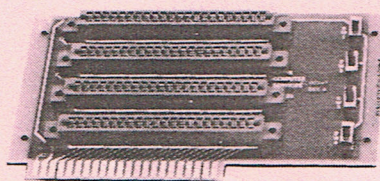
### VIC 16k + 3k MEMORY UNIT

- Includes 16k of Battery Protected RAM
- Memory Expansion Port Reproduced
- Cartridges can be copied into this unit and kept until erased.

ONLY

**£69.00 + VAT!**

## STACK 4 SLOT MOTHERBOARD

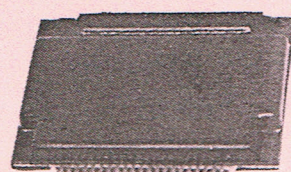


The 4 SLOT MOTHERBOARD has been developed by STACK to cater for the demand amongst VIC 20 users for a low-cost cartridge motherboard.

The 4 SLOT MOTHERBOARD fits into the port at the rear of the STACK STOREBOARD or the STACK LOW COST 3K MEMORY and enables the VIC 20 user to use up to 4 cartridges, in addition to the extra memory on the STOREBOARD.

Each slot is switchable thus allowing the use of either one cartridge, all 4, or any other combination at the same time.

## STACK ROM SWITCH- CARTRIDGE



The STACK ROM SWITCH-CARTRIDGE is socketed to take up to four 4K ROMs.

The VIC 20 has 8K of space in its memory map for ROMs and this board allows a block of two 4K ROMs to be enabled at a time.

Switching from block to block is achieved from software, utilising the top two bytes of user memory. Reading or writing to either of these two addresses will select the corresponding 8K block.



## STACK VICKIT SERIES

A series of ROMs which greatly simplifies programming and enhance the qualities of your VIC-20. Fits into Stack ROM SWITCHBOARD or STACK STOREBOARD or 3k RAM CARTRIDGE ‡

### VICKIT II

VICKIT II is a 4K (4096) byte EPROM which provides 21 new commands and statements for the VIC 20. Nine of these are used when entering and debugging a program and are also available with the original VICKIT. The other 12 greatly simplify the programming needed to produce high resolution graphics on the VIC 20.

The twelve statements are:

TEXT	DRAW	POINT
GRAPHICS	PUT	CIRCLE
LINE	FILL	RESET
CLEAR	SET	INVERT

The commands will greatly simplify the work of entering and debugging your programs.

When the VICKIT has been installed and enabled the VIC 20 will work as before but will have 9 new commands added to the VIC 20 BASIC language.

The nine commands available are:

AUTO	HELP	OFF
DELETE	FIND	RENUMBER
DUMP	TRACE	STEP

### VICKIT

### VICKIT 3

20 statements for programming high resolution graphics:-

#### GRAPHICS

CLEAR  
SCREEN  
BORDER  
GROUND  
TEXT  
SET  
RESET  
INVERT  
POINT

#### LINE

CIRCLE  
DRAW  
FILL  
PUT  
COPY  
FONT  
WRITE  
OFF  
SWITCH

‡ For the cost of VICKIT or VICKIT II plus £1.72 p&p  
STACK will fit it in your 3k RAM cartridge FREE!

### SUPER CHARGER

An 8K ROM expander with its own expansion port. This device will allow the use of two 4K ROMS at the same time.

eg. VICKIT I with VICKIT III

### SUPER CHARGER PLUS

An 8K ROM expander with its own expansion port PLUS 3K of RAM.

This device **is** similar to SUPER CHARGER but provides the 3K RAM necessary for using VICKIT II or VICKIT III.