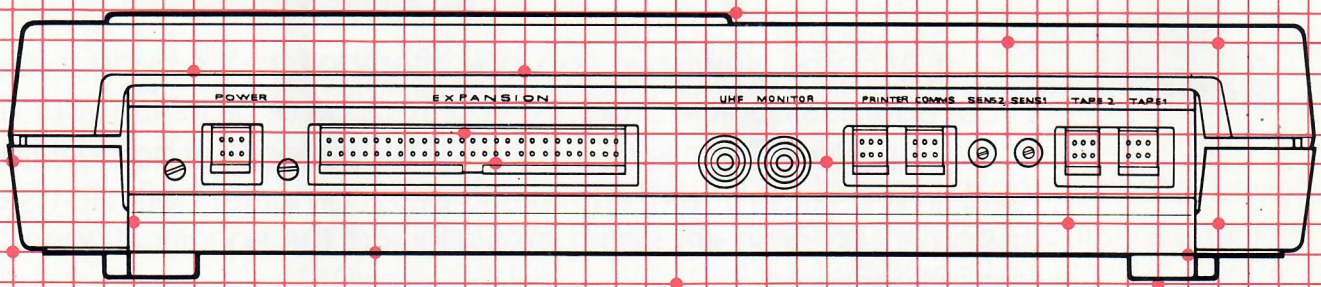
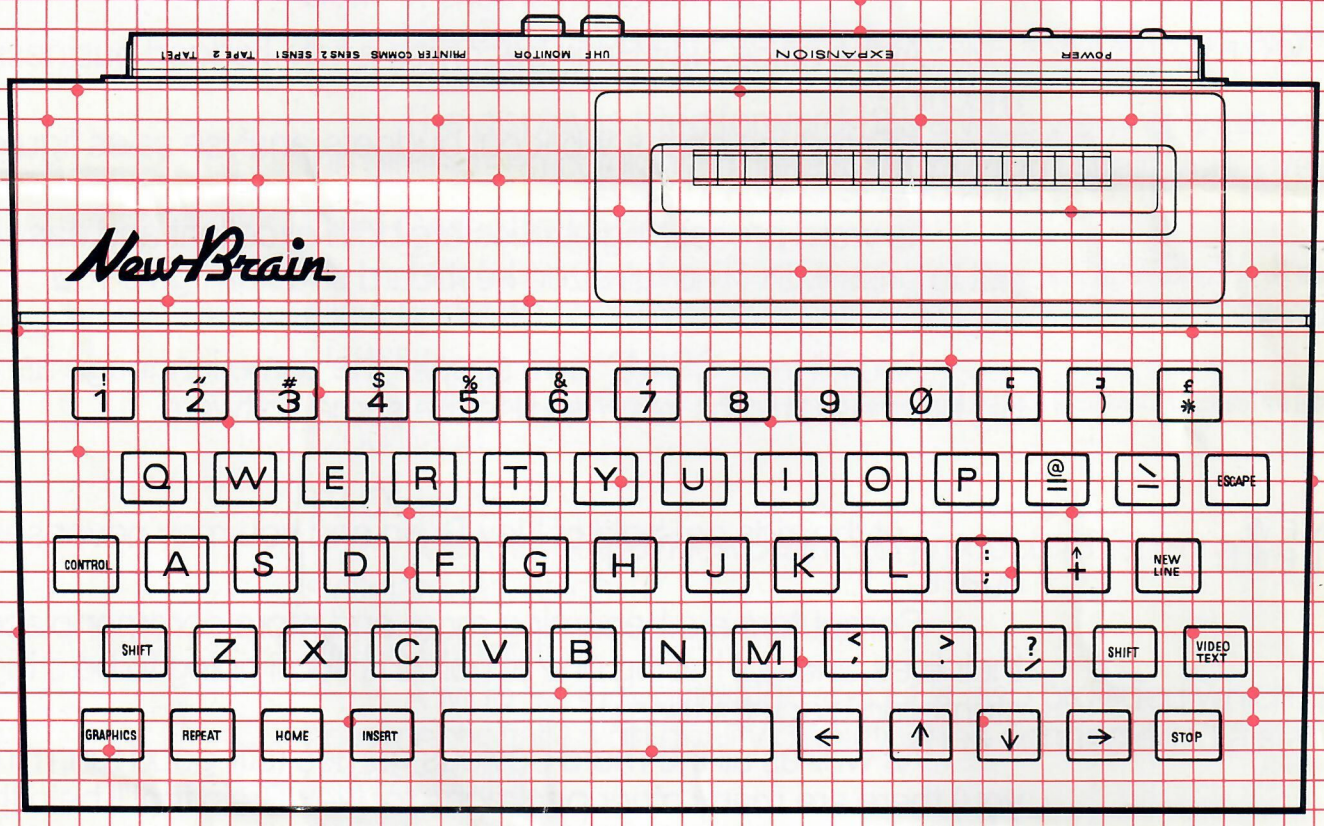
New Brain


POWER
EXPANSION
UHF MONITOR
PRINTER COMMS SENS2 SENS1 TAPE2 TAPE1


New Brain
ESCAPE
CONTROL
NEW LINE
SHIFT
SHIFT
VIDEO TEXT
GRAPHICS
REPEAT
HOME
INSERT
STOP

WHY YOU NEED A NEWBRAIN

Look around and you'll see why.

The computer is playing an increasing role in people's lives.

And, with the advent of the micro-chip, the age of the personal computer is now well and truly underway.

NewBrain is a fully-fledged portable personal computer designed for business, professional, scientific and technical use as well as for educational and home applications.

It's designed to the highest specifications, built in Britain and forms the basis of a system that can grow as your needs grow.

AROUND THE HOME

At home NewBrain can look after the family's budget, keep your address book in order, file your recipes or organise your diary.

And NewBrain is designed to feel perfectly at home with the first time user, so you don't have to be a computer boffin to use it, if you are a computer boffin, take a look at the specifications, you'll be impressed.

AT WORK

At the office, NewBrain becomes a fully-fledged business machine.

It'll produce charts, work out budgets, analyse sales figures and double check invoices.

Its word processing abilities are both excellent and easy to get to grips with. (The full sized keyboard shouldn't give your secretary any problems.)

And it'll take CP/M,™ so it speaks the same language as most big business micros, and can use the same software.

A NEW FRIEND

Let the kids get hold of NewBrain and you may never see it again.

Computers are becoming more and more commonplace in their lives, and not having one at home is soon going to be a big stumbling block for them.

As well as all the more devious games (still good fun, mind you) there are many other packages for NewBrain that'll help them with their education, and at the same time teach them the language of the computer.

Which, like it or not, is the language of the future.

Take a look through this brochure and you'll see that NewBrain is a real computer, not a toy.

Its extensive range of peripherals give unlimited scope for expansion, making sure that your computer will grow with your family in the future.

The Z80A:-

The most powerful 8-bit microprocessor around, this allows NewBrain to take advantage of the wide range of readily available software.

32K RAM:-

32K of memory is standard on all models. Select an 80 column video display and 28K of RAM is available for user program and data.

Select a 40 column display and this rises to over 30K.

29K ROM:-

29K of resident systems software including BASIC, operating systems, Maths pack, Screen Editor and Graphics Package.

Keyboard:-

NewBrain has a full size standard pitch typewriter keyboard, which has been designed to accept the high burst rate of the professional touch typist, as well as being easy for the beginner.

Built-in Display (Model AD):-

NewBrain's built in vacuum fluorescent display has large easily read letters.

The display is tilted forward, has a wide viewing angle and the blue-green colour will make sure you don't strain your eyes.

Dual Cassette Ports:-

Two tape recorders can be connected to NewBrain–these allow updating and copying of files to be done with the minimum of fuss.

Full motor drive control is provided, and data is transferred at 1200 baud.

TV Output:-

With this output NewBrain can produce a display on a standard television.

Video Output:-

A wide band width video output is also provided which gives an exceptionally high quality display when connected to a standard video monitor.

Communications:-

There are two software driven communication interfaces.

1. RS232/V24: Bi-directional, transfer speed software selectable for input and output between NewBrain and other NewBrains, other computers, computer peripherals, modems, visual display terminals and other services.

2. RS232/V24: Uni-directional, provided for connection to a printer.

Expansion Connector:-

Provides almost limitless expansion capabilities for NewBrain.

NewBrain
POWER
EXPANSION
UHF
MONITOR
PRINTER
COMMS
SENS2
SENS1
TAPE2
TAPE1
ROUTINE SIZE
ESCAPE
NEW LINE
VIDEO TEXT
SHIFT
STOP
CONTROL
SHIFT
GRAPHICS
REPEAT
HOME
INSERT

1 Power Connector.
2 Video text key used in conjunction with the NewBrain video text module.
3 Cursor control keys for line and screen editing. These keys repeat automatically if held down.
4 Repeat key.
5 Graphics key enables the 64 viewdata graphics symbols to be produced, or other graphics symbols, according to mode of use.
6 Shift key operates as standard typewriter shift, allowing the generation of all 96 upper and lower case ASCII/ISO printing characters. Shift lock is provided under software control.
7 Control key enables all 32 ASCII/ISO control codes to be generated.
8 Hardwearing ABS case.
9 Dual cassette interface connectors for program and data storage.
10 Tape output level controls.
11 RS232/V24 interface connector for VDUs, modems etc.
12 RS232/V24 printer interface connector.
13 Composite video connector for standard video monitor.
14 TV connector for domestic TV set.
15 Expansion connector.
16 16 character blue-green display represents characters in ASCII/ISO 64 character 'teletype shift'.

TECHNICAL SPECIFICATIONS

The NewBrain is a fully specified professional computer built to the highest standards of engineering and reliability. Chosen by leading OEM suppliers. Designed to facilitate easy expansion for use with the CP/M operating system, and the addition of 5¼" floppy and Winchester disks, 12" green phosphor professional standard monitor, 80 cps professional quality dot matrix printer with pin addressable graphics.

Z80A cpu and COP 420M input/output microprocessors. 32K RAM expandable to 2 Mbytes. 29K ROM. Dual Cassette Ports. UHF TV port. CCITT Monitor Port Video 40/80 Character x 25/30 lines.

256,320,512,640 x 250 Pixels. Expansion Port. V24 Bi-directional Port. V24 Printer Port. 16-character display (AD only).

Software: Enhanced BASIC (ANSI x 3.2/78) Independent Operating System (12 device drivers). Multi Page Screen Editor (32 Control Commands). Maths (10 Significant Figures). Graphics (Absolute & Relative Plotting, Line & Arc Drawing, Shading, 20 English Language Commands).

SOFTWARE

NewBrain comes complete with some pretty impressive software: the BASIC compiler, an enhancement of the ANSI standard language, a powerful operating system, floating point Maths Pack accurate to ten significant figures, the Screen Editor which provides cursor control for editing plus screen and line formatting, and the Graphics Pack, allowing you to draw lines and arcs with ease as well as giving a full plotting capability.

All this software is included in the ROM and additional ROM slots are available in the ROM buffer expansion module.

This additional software can either extend or replace the existing software and includes Z80 Assembler, COMAL, language systems, the Statistics Package, and the Text Processing package.

CP/M,™ the world's most popular operating system for disk based micros is soon to be available with NewBrain.

So, a very wide range of applications programs and languages are already available.

™ CP/M is the registered trade mark of Digital Research Inc.

PERIPHERALS AND EXPANSION

NewBrain expansion boxes connect to both models and may be clipped under the main module or built up into separate stacks.

ROM Buffer Expansion Module:-

This module provides the additional expansion circuitry required to begin to build with NewBrain.

Memory paging circuitry enabling up to 4 Megabytes of memory to be addressed.

Parallel input and output ports for interfacing, communications and control, e.g. of laboratory equipment.

Input and output analogue ports for joystick controls and laboratory apparatus.

Two fully autonomous multi-speed V24 ports.

Read Only Memory expansion space for software such as the Assembler package, the COMAL language and professional applications such as the Statistics Package and the Text Processor.

Memory Expansion Modules:-

These modules contain 64K, 128K, 256K or 512K of memory. A maximum of four modules may be connected to increase RAM to an astounding 2 Megabytes.

Multiple Communications (Network) Modules:-

These modules contain 8, 16 or 32 additional bi-directional V24 ports so that NewBrains may be connected together allowing sharing of expensive peripherals at minimal cost. These also allow for communications between a NewBrain and a multitude of peripherals and services. (See diagram opposite.)

PERIPHERALS

Disk Memory Module:-

These modules support 5¼" floppy disk drives storing from 100K bytes to 640K bytes and Winchester disk drives storing from 6-18 Megabytes. Each module will support up to four drives.

Battery Back-up Module:-

This module, using rechargeable batteries, protects NewBrain from failure of mains power supply and provides a fully charged battery life of about 1¼ hours. The standard NewBrain power supply is used for recharging the batteries even while NewBrain is being used.

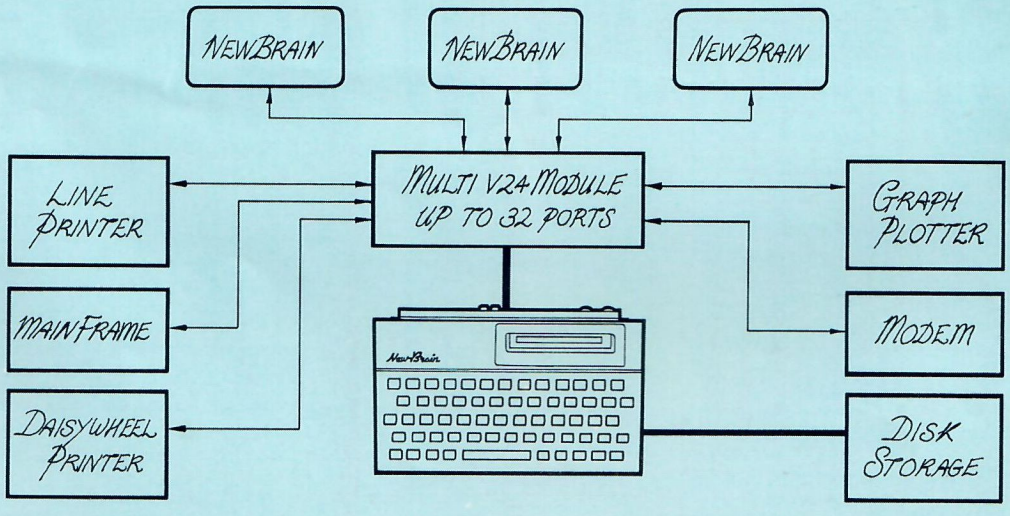
Videotext Module:-

This module enables communications between NewBrain and Teletext, Prestel and other Viewdata and Videotext services.

These expansion modules will be introduced progressively throughout the coming months and further expansion modules are in development.

The range of peripherals that you will have to choose from is impressive.

It includes dot matrix and daisy wheel printers, 9" and 12" monitors plus 5¼" floppy disk drives (100K bytes and 640K bytes) and 5¼" Winchester disk drive (6-18 Megabytes).



HOW NEWBRAIN COMPARES WITH THE REST

name & model	BBC A	BBC B	Spectrum	VIC 20	**NewBrain A**	**NewBrain AD**	TRS80 III	Apple II	Pet 4000	Pet 8000
Price inc. VAT	299	399	125	159	**229**	**263**	919 (16K)	689	632	1029
RAM supplied Kbytes	16	32	16	5	**32**	**32**	16 (level II) 48		16	32
max. RAM Kbytes	32	32	48	32	**2000**	**2000**	48	64	32	32
ROM supplied Kbytes	32	32	16	20	**29**	**29**	16	12	18	18
RS232/V24	no	yes	e	e	**yes**	**yes**	e	e	*	*
RS232/V24 printer	no	yes	s	s	**yes**	**yes**	s	e	*	*
parallel inter	no	yes	no	no	**e**	**e**	ptr.	e	yes	yes
2nd cassette	no	no	no	no	**yes**	**yes**	no	no	yes	yes
built in line display	no	no	no	no	**no**	**yes**	no	no	no	no
prof. key board	t	t	no	t	**t**	**t**	t	t	t	t
auto rpt. cursors	yes	yes	yes	yes	**yes**	**yes**	yes	no	yes	yes
repeat key	no	no	no	no	**yes**	**yes**	no	no	no	no
character set	256	256	133	512	**512**	**512**	320	128	137	137
monitor output	yes	yes	no	no	**yes**	**yes**	b	yes	b	b
UHF/tv output	yes	yes	yes	yes	**yes**	**yes**	no	e	no	no
inverse char.	yes	yes	yes	yes	**yes**	**yes**	yes	yes	yes	yes
block graphics	yes	yes	yes	yes	**yes**	**yes**	yes	yes	yes	yes
Greek/foreign	no	no	no	no	**yes**	**yes**	yes	no	no	no
high res. graph (h)	320	640	256	with RAM	**640**	**640**	no	280	no	no
high res. graph (v)	256	256	192	with RAM	**250**	**250**	no	192	no	no
max. char. resol (h)	40	80	32	22	**80**	**80**	64	40	40	80
max. char. resol (v)	32	32	24	25	**30**	**30**	16	24	25	25
colour	8	8	8	16	**no**	**no**	no	no	no	no
sound	yes	yes	yes	yes	**no**	**no**	yes	yes	yes	yes
expansion port	yes	yes	yes	yes	**yes**	**yes**	yes	yes	yes	yes
width	400	400	233	406	**275**	**275**	318	394	440	440
depth	350	350	144	203	**155**	**155**	474	457	480	480
height	60	60	30	76	**49**	**49**	546	114	425	425

KEY: t — typewriter s — special e — extra cost * — IEEE488 b — built in monitor.

Grundy Business Systems Ltd.,
Grundy House, Somerset Road, Teddington, TW11 8TD.