

## Multiface two

### INTRODUCTION.

**MULTIFACE 2** is a true **MULTI**purpose Inter**FACE** for the **CPC** range with:

- 1) **Fully automatic** back up of any program once loaded into **RAM**
- 2) **8K RAM** extension - for software such as our **INSIDER**, or as a *buffer*, etc.
- 3) **MULTI TOOLKIT** to *study/modify/develop* programs, **POKE** infinite lives, etc.
- 4) **TRUE RESET BUTTON** which *clears the first 64K CPC RAM*.

### CONNECTING THE MULTIFACE.

The **CPC** **MUST** be switched **OFF** before attaching/removing the *Multiface*. *Multiface* is best plugged directly on to the **CPC** edge connector; it has a through connector to allow you to connect any other peripherals. Check all connections carefully **before** switching the **CPC** **ON**, or else **serious damage may occur** and your **guarantee will be VOID**.

*A proper attachment is vital* for the functioning of the *Multiface* - and a bad contact is the cause of 99% of all problems. If attaching/using the *Multiface* brings random coloured squares or other garbage on the screen, clean the edge connector with an ink eraser and re-connect the *Multiface*. If your system and the *Multiface* should still not work, switch the **CPC** **OFF**, remove any add-ons except the *Multiface*, and re-read these instructions carefully. Should you really not succeed, please phone us on **081-200 8870** or write to us, but do **NOT** return the *Multiface* until we ask you to. In such case, please use the original packing, state your *name, address, phone number*, and describe the *problem* and the whole *equipment* used. Please read the **guarantee** conditions as well.

### USING THE INVISIBILITY SWITCH.

*Multiface* has a **software switch** to make it (in)visible, to prevent possible clashes with other hardware/software. *Multiface* can **ALWAYS** be activated, irrespective if previously set **ON** or **OFF** - a program can **ALWAYS** be frozen, even with the *Multiface* set **OFF**. Upon powering up the **CPC**, or after pressing the *Multiface* reset button, the *Multiface* is set to **ON**. To set the *Multiface* **OFF**, just press the *stop button*, and press **r** to return. If a program fails to load with the *Multiface* attached, simply make the *Multiface* invisible.





## SAVING (contd.)

Once you have chosen the *Filename*, press **ENTER** (464) or **RETURN** (664/6128). The display will change to:

**<ESC>** **h**ypert**a**p**e** **d**isc **s**creen **p**rogram

Pressing **p** or **s** toggles between saving the *whole program* or *screen only*. The *whole program* is saved by *default*. As from any menu, you can back out with **ESC**.

If saving to *disc*, press **d**; please ensure the disc is *formatted* and has *sufficient space*: theoretically up to 128K on the 6128 with all banks active, but the *automatic compression* should always reduce this.

*Multiface* has a *full error-trapping* combined with on-screen prompts - thus, for instance, **DISC MISSING** will be displayed if the disc is not *formatted* or *inserted*, **DISC FULL** if there isn't enough space for the program to be saved. You can *abort* or *just swap discs*.

If *saving to tape*, make sure you are using a *long enough tape*, and that it is *in position*. You can choose between the normal *tape* (1000 baud) and *hypertape save* (2000 baud). Press Play & Record on your tape recorder, and then any key on the computer as usual.

When *saving* on the *Multiface* is complete you will be returned to the **MAIN MENU** and you can either *return* to continue the program or use any other function of the *Multiface*.

## RELOADING.

### Reloading programs.

To reload a *program* saved by the *Multiface*, ensure the *Multiface* is switched **ON** (you can always press the **RESET** button to switch it **ON**), and then type: *RUN"[filename]"*.

### Reloading screens.

To reload a *screen* you need to *type in* and **RUN** the following:-

```
10 MEMORY 16384
20 LOAD "[filename]"
30 CALL 32768
40 WHILE INKEY$ < > " ": WEND
50 MODE 1
```

Irrespective of what *screen mode* you are in (0,1,2), the saved *screen* will *appear properly* with all parameters, colours, etc., because the CRTC chip is *set correctly* by the special code saved along with screen and called by **CALL 32768**. The CRTC and the firmware may not agree over which *screen mode* they are in, hence line 50.

If you want *print* the *screen* to a *printer*, using your own special print routines, you have to load them into a convenient memory location *outside the range 16384 to 33000*. You could then modify *line 40* to call the print routine.

## THE JUMP COMMAND.

You can *jump* to execute code at any address in *CPC* ROM/RAM or *Multiface* ROM/RAM. You can do so either from the **MAIN MENU** - we call this **INDIRECT JUMP** - or by setting the *Multiface* to **JUMP DIRECTLY** upon pressing the **STOP** button and thus by-pass the *Multiface* **MAIN MENU** completely. The use of **JUMP** requires a **GOOD** knowledge of *m/c!*

### INDIRECT JUMP.

The address to **jump** to is poked into **&2000** (the low byte) and **&2001** (the high byte). A value **&80 - &8E** is poked into **&2002** to set the **screen mode** and **ROM setting** - please refer to **Info (Byte 19)** on Page 5. On a 6128, poke **&2003** with a value **&C0 - &C7** (please see **gel** on Page 5) to select which **bank of RAM** you wish to jump to. Address **&2004** can be ignored. To use any operating system calls, the *Multiface* must be **paged out** by instructions **LD, BC 65258** and **OUT (C),C**. To **page in**, use **LD BC, 65256** and **OUT (C),C**. Having set up these values, pressing **j** from the **MAIN MENU** will cause the code to **execute from the address selected** with all parameters as set up.

### DIRECT JUMP.

If you wish the *Multiface* to jump *directly* upon pressing the **STOP** button, **POKE** all the parameters described for the *indirect jump* plus the keyword **RUN (&52, &55, &4E)** into **&2005-7**. To disable the *direct jump*, press any key **while** pressing the **STOP** button.

## THE MULTI-TOOLKIT.

Pressing **t** from the main menu produces the following menu:

**<ESC>** **<RET>** poke **<SPC>** addr **r** **e**g **h** **e**x **w** **i**n **p**a **l** **i**n **f**o **s**e **t**

**ESC** - pressing **ESCAPE** returns you to the **MAIN MENU**.

**RETURN** (464 **ENTER** key) - to **PEEK & scroll** through the addresses, or to **POKE**.

If you type in a *number* (**0-255 Decimal, &00-&FF Hex**), **RETURN** will **POKE** it into the current address. If you wish to **PEEK** only, do **NOT** input any number, just press **RETURN**; by **RETURNING** repeatedly you can *step through* successive addresses.

**SPACE** - to enter a **new address**, in *decimal* or *hexadecimal*.

**hex** - to toggle between **hexadecimal** and **decimal**.

**reg** - to point to the **Z80 registers** as they were when the program was *frozen*.

They start from the *IY Register* (low, hi) and can be changed.

**window** - to open a 56 byte **window** with *full on screen editing* using cursor keys.

The *left/right* cursor keys move the cursor as you would expect; the *up/down* keys move the display up & down through memory, keeping the cursor in the middle line.

The address of the cursor is automatically reflected in the bottom line. The window can be closed by pressing **w** again.

**pal** - to point to the palette. The colours are the *hardware* colour numbers and are stored in 17 consecutive bytes. If you wish to make a permanent change to your colours, and altering the palette directly is ineffective you will have to alter either the program, or the system variables which control ink colours - a complex task... If you can't work out for yourself how to change the colours of a particular program, please **do not contact Romantic Robot** as we will not be able to help you.



## MULTI-TOOLKIT (contd.)

\* - The toolkit can only look at 64K of RAM at a time. By default the first 64K CPC RAM is available, except for &2000-3FFF being replaced by the *Multiface* own 8K RAM. The original CPC 8K block &2000-3FFF can be paged in instead by toggling \*

**sel** - to select - on CPC 6128 only - which RAM configuration (0-7) will be in the TOOLKIT

The numbers 0-7 follow the CPC hardware design and may appear slightly illogical.

1 puts the additional RAM Bank 4 in place of the original RAM Bank 4 at &C000-FFFF

2 puts the entire additional 64K RAM in place of the original 64K RAM (see \* above, though!)

3 puts the additional Bank 4 at &C000-FFFF and moves the original Bank 4 down to &4000 instead

4 puts the additional Ram Bank 1 at &4000-7FFF leaving the remaining original RAM intact

5 puts the additional Ram Bank 2 at &4000-7FFF leaving the remaining original RAM intact

6 puts the additional Ram Bank 3 at &4000-7FFF leaving the remaining original RAM intact

7 puts the additional Ram Bank 4 at &4000-7FFF leaving the remaining original RAM intact

0 restores the default set-up with the entire original 64K RAM being shown (see \* above, though)

Press **sel** followed by a number. Beneath the display on the bottom line, you will see the number of the currently selected RAM configuration.

**info** - to display a series of bytes relating to the status of the computer at the moment the STOP button was pressed. You can find out crucial information about the CRTC and some system variables. 23 bytes contain the information and the first 16 of these show the contents of registers R0 to R15 of the 6845 as follows:

|         |   |
|---------|---|
| R0      | Total number of horizontal spaces available (0-255)   |
| R1      | Number of characters displayed horizontally (0-255)   |
| R2      | Horizontal sync position (0-255)  |
| R3      | Length of synchronisation (0-15)  |
| R4      | Total number of rows available (0-127)  |
| R5      | Vertical sync (0-31)  |
| R6      | Number of characters displayed vertically (0-127)   |
| R7      | Vertical sync position (0-127)  |
| R8      | Interface mode (0-3)  |
| R9      | Scanning (0-31)   |
| R10     | Start line of cursor scan (0-31)  |
| R11     | End line of cursor scan (0-31)  |
| R12     | Most significant byte of starting address of video RAM, offset from 16383 (0-16383)   |
| R13     | Least significant byte of starting address of video RAM, offset from 16383 (0-16383)  |
| R14     | Most significant byte of cursor position  |
| R15     | Least significant byte of cursor position   |
| Byte 17 | Screen start address in the system variables (LSB)  |
| Byte 18 | Screen start address as above (MSB)   |
| Byte 19 | Mode/Rom setting. This is bitwise information with bit 7 always set, bits 6-4 should always be reset, bit 3 controls the selection (0) or de-selection (1) of upper ROM, bit 2 as bit 3 but for lower ROM and Bits 1 & 0 being mode control bits. |

| bit 1 | bit 0 | Mode    |
|-------|-------|---------|
| 0     | 0     | 0       |
| 0     | 1     | 1       |
| 1     | 0     | 2       |
| 1     | 1     | Illegal |

Byte 20 Information as to RAM page selected (C0-C7)

Byte 21 Interrupt mode (0-2)

Byte 22 Interrupts enabled (1) or disabled (0).

Byte 23 Basic ROM type.

## POKING INFINITE LIVES.

To start with, please ensure that you are not *infringing copyright*. To **POKE**, say, **31000,0**: First **load** and **RUN** a program as usual. Then **push** the **Multiface STOP** button and select the toolkit by pressing **t**. When the toolkit menu appears, press **SPACE** and type **31000**. Once you type **5** digits (address is *always* 5 digits in decimal), the cursor automatically moves to the **value** (no need to press **RETURN**), so type **0** (value is 1-3 digits long) and this time press **RETURN**. Finally press **q** to **quit** the toolkit and **r** to **return** to the program.

## SOFTWARE AND HARDWARE COLOUR NUMBERS.

| Colour         | Soft | Hard | Hex | Colour         | Soft | Hard |
|----------------|------|------|-----|----------------|------|------|
| Black          | 0    | 20   | A4  | Blue           | 1    | 4    |
| Bright Blue    | 2    | 21   | 15  | Red            | 3    | 28   |
| Magenta        | 4    | 24   | 18  | Mauve          | 5    | 29   |
| Bright Red     | 6    | 12   | C   | Purple         | 7    | 5    |
| Bright Magenta | 8    | 13   | D   | Green          | 9    | 22   |
| Cyan           | 10   | 6    | 6   | Sky Blue       | 11   | 23   |
| Yellow         | 12   | 30   |     | White          | 13   | 0    |
| Pastel Blue    | 14   | 31   |     | Orange         | 15   | 14   |
| Pink           | 16   | 7    |     | Pastel Magenta | 17   | 15   |
| Bright Green   | 18   | 18   |     | Sea Green      | 19   | 2    |
| Bright Cyan    | 20   | 19   |     | Lime           | 21   | 26   |
| Pastel Green   | 22   | 25   |     | Pastel Cyan    | 23   | 27   |
| Bright Yellow  | 24   | 10   |     | Pastel Yellow  | 25   | 3    |
| Bright White   | 26   | 11   |     |                |      |      |

## GUARANTEE.

This guarantee is in addition to and does not affect any statutory rights of consumers or purchasers. **ROMANTIC ROBOT** guarantee that if within **6 MONTHS** of the date of purchase the **Multiface** proves to be defective by reason of faulty design, workmanship or materials, it will be repaired or replaced free of charge provided that:

- 1) It has not been in any way misused, used with unsuitable equipment or subjected to deliberate accidental or consequential damage..
- 2) No unauthorised modifications, repairs or adjustments were made to the **Multiface**
- 3) A dated proof of purchase will be provided to confirm that the **Multiface** is still under guarantee; for units ordered directly from us, please supply details of the original order instead.

The purchaser's sole and exclusive remedy under this guarantee is the **Multiface** repair or replacement. No other remedy, including but not limited to, incidental or consequential damage or loss of whatsoever nature shall be available to the purchaser.

Designed and manufactured by **ROMANTIC ROBOT UK Ltd.**  
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