

# ROMANTIC ROBOT

present

## MULTIFACE 3

### MANUAL

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### INTRODUCTION

MULTIFACE 3 is a multi-purpose interface designed exclusively for the SPECTRUM+3. It provides fully automatic and universal back-up/transfer of 48/128K programs from tape to disk, disk to disk, tape to tape and disk to disk. It also incorporates a comprehensive toolkit enabling you to study/modify/develop software. MULTIFACE 3 can copy screens to printer in 2 hi-res modes and it extends the use of DOS in 48 SPECTRUM mode. MULTIFACE is menu-driven, fully error-trapped with on-screen prompts and it largely uses a system of one-touch commands. It is very easy to use and does not really need a separate written manual. Nonetheless, the following few pages should help you to understand every aspect of MULTIFACE 3 operations so that you can use it to its fullest possible potential.

### GUARANTEE

This guarantee is in addition to and does not affect any statutory or other 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 unauthorized modifications, repairs or adjustments were made to the MULTIFACE.

3) The purchaser shall within 10 days complete the enclosed slip and send it to ROMANTIC ROBOT UK Ltd for registration.

The purchasers sole and exclusive remedy under this guarantee is for MULTIFACE repair or replacement. No other remedy incl. but not limited to, incidental or consequential damage or loss of whatsoever nature shall be available to the purchaser.

- 1.1 Switch off and unplug your computer and any peripherals which have independent power supplies. Remove any peripherals attached to the expansion port.
- 1.2 Firmly push the MULTIFACE connector onto the expansion port.
- 1.3 Attach the other peripherals, if any, making sure they are pushed well home. Check all connections carefully.
- 1.4 Plug in the computer and peripherals and switch on.
- 1.5 Test that all is well by pressing the Red STOP button. If a 2-line menu comes up at the bottom of the screen, all is well and you can explore MULTIFACE further or press r to return and carry on with whatever you wish.
- 1.6 If you get random coloured squares, or other garbage, switch off, disconnect everything from the mains, clean both sides of the expansion port and repeat 1.2-1.5.
- 1.7 In the unlikely event that the screen remains corrupted or menu does not come up, switch off, remove all other peripherals, reread the instructions and retry 1.2-1.5.
- 1.8 If you still get no success, switch off again, remove MULTIFACE and contact Romantic Robot. Please note that repairs under guarantee are only carried out free of charge if the guarantee was registered.

#### 1.9 Turning MULTIFACE 'o'n and 'o'ff

MULTIFACE 3 has a software operated switch to prevent it clashing with other software or hardware products. The switch is also vital to enable loading programs saved by any previous MULTIFACE model. As a rule, upon switching the Spectrum+3 on, the MULTIFACE of OFF and therefore "invisible". It is automatically switched ON anytime when you press the red button which has in fact a dual function: it both switches ON (but not OFF) and activates the MULTIFACE. Once the MULTIFACE is active, it remains ON as confirmed at the bottom right. To turn it off again, press o - when in the main menu - to change on to off; when you return to program, MULTIFACE will remain OFF. Remember, that MULTIFACE can always be activated by the red button, irrespective if it was ON or OFF before.

\*\*\*\*\*NB\*\*\*\*\*

*Sale of this product is not designed to encourage piracy! You May not use it to infringe copyright by selling or giving away copies, or originals of which you have kept copies. Piracy is theft and Romantic Robot wishes to make its position absolutely clear on this matter, if you are in any doubt as to whether it is legal to make back up copies of a particular commercial program even if solely for your own use, please contact the copyright owners. In order to protect copyright, back up copies taken with MULTIFACE THREE will not run when reloaded unless MULTIFACE is connected.*

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.....  
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Tel. 01-200 8870

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MULTIFACE does not save or transfer or change programs as such, it saves an image, a snapshot (in a compressed form) of the computer memory, frozen at the instant the red button was pressed. It does not therefore matter how you loaded a program in the first place, whether it was protected or not - as long as you can LOAD a program, MULTIFACE will save it. Upon reloading, everything is fully automatically restored and the program autostarts from the point at which it was stopped - make sure you have your hands at the fire button...

## 2.1 How to LOAD programs before saving

It is essential to understand the differences between the 4 options available on the Spectrum+3, namely the +3 BASIC 128/48 mode and 48 BASIC locked mode. When you switch on or reset the Spectrum+3, you can select:

- 2.1.1 LOADER - goes into 128K mode, attempts to autoboot from disc and if it fails it proceeds to load from tape. In order to autoboot, the program must either be called "DISK" or the disk must contain a special "bootstrap" sector. This is important to remember and, when using MULTIFACE for saving, use the name "DISK" for the program you wish to autoboot (see 2.4).

- 2.1.2 +3 BASIC - defaults to 128K mode and DOS; you can then

- 2.1.2.1 load from disc - type LOAD "name" and press <ENTER>

- 2.1.2.2 load from tape - type LOAD "T:name" (or LOAD "T:" and LOAD ") and press <ENTER>

- 2.1.2.3 change to 48 BASIC - type SPECTRUM and press ENTER;  
to load from tape - press j to obtain LOAD, then  
type " " (or "name") and <ENTER>

IMPORTANT!: Although the above 48 BASIC is unlocked, it does not itself give you any access to the disc operating system in BASIC. MULTIFACE, on the other hand, CAN even in this mode fully use the DOS which is extremely useful. Thus to

load from disc - press d in the main menu and then  
load a program.

- 2.1.3 Calculator - not really suitable for MULTIFACE use

- 2.1.4 48 BASIC - locks the Spectrum into a 48K mode where the disc operating system is NEVER available. This means that whilst you can use the MULTIFACE, you will only be able to save to tape; the disk option (just as the DOS option in the main menu) will not even be displayed. If you still wish to save to disc, you must first save to tape, switch off/reset, select +3 BASIC or LOADER, reload the saved program from tape and then save to disc.

In summary, you can use

- 2.1.5 LOADER to 1) load from tape & later save to tape/disc

- 2) load autobooting programs from disc and later save to tape or disc

- 2.1.6 +3 BASIC to load any 48/128K program from tape or disc and save to tape/disc, even in 48 SPECTRUM mode

- 2.1.7 48 BASIC but load/save 48K programs from/to tape only

Or, in other words, if you have a

- 2.1.8.1 48K program on tape, use LOADER or +3 BASIC, but not 48 "locked" BASIC (it can't save to disc)

- 2.1.8.2 128K program on tape, use LOADER or +3 BASIC

- 2.1.8.3 48/128 program on disc, use +3 BASIC - or LOADER if the program autoboots; do not use 48 BASIC

- 2.2.1 At any instant you wish to save a program or screen, press the RED button.
- 2.2.2 The main menu will appear at the bottom of the screen with 5-8 options, depending on which mode you are in. In LOADER and +3 BASIC in 128 and SPECTRUM mode:

```

return save tool print dos alter clear
                                on

```

In 48 locked mode:

<u>return</u> <u>save</u> <u>tool</u> <u>print</u>	<u>LOCKED</u>
	On

- ### 2.3 'C'learing before saving

Before you proceed to save, decide first whether you wish to save the entire RAM, incl. the additional RAM banks, or not - this will influence the saving/loading time and the amount of code saved. When the Spectrum is switched on or reset, RAM banks 1,3,4,6 are marked throughout by E5 characters for RAM disc use (M Drive). It is good practice to clear these banks before loading (see also 2.5.3) to make sure that a program will load into a 'clean' computer. Obviously, with 128K programs, the extra RAM banks are important, but not all may be used - hence clear before loading. In 48K programs, the extra RAM banks are irrelevant and you can clear then any time, even after loading (except for the 48 locked mode with nothing to clear). Please note, that bank 7 is never cleared as the SPECTRUM+3 uses it as workspace.

- ## 2.4 Naming a program

Having pressed s to proceed to saving, the prompt will change by asking for a filename. Unlike on normal disc files, UP TO 7 letters/digits ONLY can be used. Letters can be typed both in lower and upper case but will be always taken as upper case only. Usual rules for filenames apply, with the exception that you cannot use extensions. The following are all legal filenames:

DISK            NEVER12            WRIGGLE

These are not:-

```

Disk.bin      (no extensions allowed)
Never m       (no spaces allowed)
Wiggler       (too long)
my,prog       (no punctuation marks allowed)

```

Remember, that the name "DISK" will autoboot a disk.

- 2.4.1 If you suddenly decide NOT to save the program at this stage, pressing a will take you back to the Main Menu, whilst r will return you to the program.

- ## 2.5 Saving menu options

Upon ENTERING the filename, the display will change and you will see the following prompts:-

```

_abort      tape      disk          128K (or 48K)
(screen or program)  compress ON (or OFF)

```

Once again, you can abort to return to the main menu.

- 2.5.1 'P'rogram or 'S'creen saving

Pressing p or s lets you save the whole program or just the screen (see 4.2). Program is saved by default.

- ### 2.5.2 'C'ompressing

MULTIFACE automatically compresses the whole RAM. The compression can be disabled by pressing c, but the only reason to do so is for disassembling the actual files saved by the MULTIFACE (true RAM image) - for m/code enthusiasts only! Please note that when saving screens the compression is automatically turned off to preserve screens in their traditional - and compatible - format.

## Saving (contd)

### 2.5.3 Selecting the 48/128 'K' format

You do not really need to select the above option, but It can save loading/saving time and room on disc/tape.

MULTIFACE can at this stage, no matter if you clear In the main menu or not, save either the original 48K Spectrum blocks 5,2,0 or the entire 128K (blocks 0-7). Obviously choosing the 48K option in a 128K program would not make sense, but with 48K programs this will ensure that absolutely minimal amount of bytes will be saved. It must be noted though, that while it's safe to use the 48K option with most 48K programs (always with the pre-Spectrum+3 programs or with pure m/code ones), you cannot use it when saving BASIC programs written in Spectrum+3 BASIC - these use RAM 7 without "letting you know" and the 48K option cuts out bank 7 completely.

The main difference between the clear option in the main menu and the 48K option is, that clear does not clear bank 7 but it clears banks 1,3,4,6 (which are always used - either as a RAM disc or as RAM banks in 128K programs - and would therefore be saved by the MULTIFACE with the rest). If you clear and then use 128K option, MULTIFACE will compress the entire RAM, incl. the extra banks, and this may take a bit of time and room. If you use 48K option, it does not matter whether you cleared before or not; the MULTIFACE will waste no time in compressing anything else but the BASIC banks 5,2,0 and save just these - it is faster and more effective.

There are two reasons to use clear:

- a) before LOADING a 128K program - the program may not use all 8 RAM banks and it is best to clear them first
- b) when you have a 48K BASIC program and are not sure if it uses RAM bank 7 or not - it is safer to clear and use 128K option.

Please note, that in the locked 48 BASIC mode there is no 128K option and thus 48K option is not switchable.

### 2.5.4 Saving to 't'ape or 'd'isc

Having decided to save a program or screen, compress or not and use 48 or 128K mode (the defaults are a compressed program in 128K mode - or 48K in the locked mode), you can save to tape or disk.

- 2.5.4.1 To save to disc, press d: please ensure the disc is formatted and has sufficient space. MULTIFACE combines a thorough error-trapping with on-screen prompts - thus for instance, *DRIVE NOT READY* appears if the disk is not formatted or inserted, *FILE TOO BIG* if there is not enough space for the file to be saved in which case the amount of K needed as opposed to available on the disk flashes above. *WRITE PROTECTED* warns that protection tab on the disk prevents it to be used for saving. In all of these cases just insert another suitable disk and press ENTER to continue.
- 2.5.4.2 If saving to tape, make sure the tape is in position and is long enough. Press Play & Record on your tape recorder, then press <ENTER>.
- 2.6 When saving is complete, you will be returned to the Main Menu and you can then either return to continue the program or use any other function of MULTIFACE 3.

- #### 4 PRINT and ALTER

- #### 4.1 'P'rint command
- Pressing p dumps a screen to a printer via the Spectrum printer port provided your printed has EPSON graphics compatibility. By using the TOOLKIT to poke the relevant addresses, you can choose a large or shaded copy, set line feed, all margins and even line spacing:
- 2008H (8200 decimal): 01 - Large Copy with CR and LF  
(carriage return + line feed)  
F1 - Shaded copy with CR and LF  
00 - Large Copy with CR only  
F0 - Shaded Copy with CR only
- 200BH (8203 decimal): 08 - sets left margin (0-255)
- 200CH (8204 decimal): 23 - sets bottom margin (0-23)
- 200DH (8205 decimal): 0 - sets top margin (0-23)
- 200E-2010H (8206-8): 27,51,23 (ESC "3" n) - sets line spacing in n/216; some printers require a different syntax - say 27,65,3 (ESC "A" n - in n/32) for Brother HR5
- 2011-2014H (8209-12): 27,76,0,3 (ESC "L" n m) - sets the graphic mode
- #### 4.2 'A'lter screens (in 128K mode only!)
- SPECTRUM+3 allows the use of two different screens - in addition to the standard 16384-23296 screen, there is a provision for a second screen at 49152-56064. MULTIFACE allows to see/save/print both screens (see 2.5.1, 4.1) and the a key lets you swap them at will. The screen shown is the one that can be saved or copied. Since the 2nd screen area may not always be used as a screen, you may end up getting a black square or garbage - just press a again to call back the original screen.

## DOS and TOOLKIT

### 4.3 'D'OS (Disc Operating System)

MULTIFACE can access the DOS any time except when you are in 48 BASIC. There are two main reasons to use it:

### 4.4 'L'oading from disc

You can load any program from disc here, even when you are in the +3 BASIC SPECTRUM mode! You may simply find it more convenient upon switching the SPECTRUM+3 on to press the MULTIFACE red button, choose dos and load a program - rather than selecting Loader or +3BASIC and then typing in all necessary Spectrum syntax, etc. Also see 3.2 for loading multi-part programs - invaluable!

### 4.5 'E'rasing files

You may find it necessary to erase files from disk at times - MULTIFACE may say that FILE is TOO BIG to save and display the amount of K required. You can at such stage use dos to erase: MULTIFACE will show you a file at a time in the bottom line with its name and length and ask you yes/no to erase it or not. You can in a way catalogue discs by using no all the time, as files will infinitely scroll in the bottom line. You can abort erasing and then abort again to go to the main menu.

### 5.1 Accessing The Toolkit

Press t from the main menu to obtain the toolkit menu:  
quit ENTpoke SPcaddr reg win hx txt pr s

### 5.2 Quit

You can quit any time back to the main menu.

### 5.3 ENTER key

ENTER has a twofold role - it lets you both PEEK & POKE:

#### 5.3.1 If you type in a number (0-255 Decimal, &00-&FF Hex), pressing ENTER will POKE it into the current address.

#### 5.3.2 If you wish to PEEK only, do NOT input any number, just press ENTER. By pressing ENTER repeatedly, you can step through successive addresses. You can again POKE any time by inputting a number before pressing ENTER.

#### 5.3.3 SPACE key

Pressing the SPACE key enables you to enter an address (in Hex or Decimal - see 5.4) which you wish to inspect or alter. You will now be able to alter and inspect successive addresses as detailed in 5.3.1-5.3.2 above.

### 5.4 'H'ex or Decimal

This toggles the bottom display and input line between Hex and Decimal. When you input a number, please ensure which mode you are in: MULTIFACE has no way of knowing whether a number was meant to be in Hex or Decimal and thus 10 will be in 10 in Decimal but 16 in Hex, etc.

### 5.5 'R'egisters

At the moment of pressing the red button, MULTIFACE stores the contents of all the registers in its own RAM. Pressing r allows you to inspect and alter them at will. Each successive location stores the contents of a single 8 bit register or of half a 16 bit register. In all cases, registers are stored in INTEL format with the low byte first, followed by the high byte. The order in which they are stored is as follows:

PC IY IX BC' DE' HL' AF' BC DE R- I- HL AF SP  
Thus on pressing r, you will see the memory location 16356 (&3FE4), its contents and letters 'pC' - the low byte of the PC pair. Press <ENTER> to see the next address (16357), its value and letters 'Pc', i.e. the high byte of the PC register.

## TOOLKIT (contd)

### 5.6 'W'indow

Pressing w opens a window with 16 lines of 8 bytes each. The window opens 'around' the current address used in the bottom line and shows it flashing in the 5th line.

#### 5.6.1 Window Full Screen Editing

The window is not just a passive display. Full screen editing is possible, making peeking and poking so much easier. When you scroll/move through the window in any direction, the cursor movement is reflected in the bottom line and the address and value (corresponding to the flashing window cursor) change accordingly. Thus if you find an address in the window by moving the flashing cursor, it will be simultaneously shown at the SPACE/ENTER, the window will open around it. You can use the cursor keys for moving a byte or a line at a time. The left & right cursor keys move the cursor as you would expect, but the up and down cursors scroll the whole display, keeping the cursor where it is. In other words, by using the up cursor you actually decrement addresses, whilst the down cursor increments. There are two more 'hidden keys' for editing:

minus moves the whole page (128 bytes) backwards

next moves the whole page forward (see also 5.8)

### 5.7 'T'ext

The window contents are by default shown in Hex, irrespective of the status of the bottom line - the h key has no effect on the window. However, the TOOLKIT has another powerful feature in translating the window into ASCII codes - which is what the t key does. By toggling it you can view everything as text - this is very handy in revealing messages (and easily modifying them) or just showing the code makes no sense as text.

### 5.8 'P'rint

You can print out the window contents. MULTIFACE uses ASCII DUMP here and prints out characters/numbers only. To print out a longer section of code, use SPACE/ENTER to input the start address, print the window, go to next window, print again, etc. Line feed can be turned on/off by poking 8200 with 1/0.

### 5.9 'S'elect a RAM bank

The TOOLKIT operates within a 64K area of which the bottom 48K is strictly defined but the remaining top 16K is switchable and can be used as a viewing/working area for all 8 RAM banks (Nos. 0-7). As a rule:

    0- 8191 (&0000-&1FFF) is the old Spectrum BASIC ROM  
    8192-16383 (&2000-&3FFF) is the MULTIFACE's 8K RAM  
    16384-32767 (&4000-&7FFF) is Spectrum RAM block No.5  
    32768-49151 (&8000-&BFFF) is Spectrum RAM block No.2  
    49152-65535 (&C000-&BFFF) defaults to showing RAM No.0, but pressing s followed by a number 0-7 will page the corresponding RAM here and you can inspect/alter it. Upon leaving the toolkit RAM No.0 will be automatically paged back here (see also Spectrum manual p.182, etc.).

## 6.0 THE USE OF EXTRA 8K RAM

The MULTIFACE's 8K RAM extension can be accessed and used for other purposes. This, however, requires a good knowledge of machine code plus further information on how to access the RAM extension - this is available on request and can be forwarded to you if you send a SAE.