

Multiface One

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ROMANTIC ROBOT UK LTD
present
multiface one

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**MULTI-PURPOSE INTERFACE
FOR THE ZX SPECTRUM**

INTRODUCTION.

MULTIFACE ONE comprises three interfaces in one box:

- 1) Fully universal and 100% automatic SAVE facility for tape, microdrive, wafadrive, Beta, Discovery and indirectly (via tape) for other disc systems
- 2) Joystick interface – Kempston compatible (IN 31)
- 3) 8K RAM extension – fully accessible, usable as a RAM disk, buffer etc. Also used by MULTIFACE for MULTI TOOLKIT routines, buffer & other purposes.

CONNECTING MULTIFACE ONE.

Ensure that the power supply is disconnected before attaching or removing MULTIFACE ONE. Firmly push the MULTIFACE onto the edge connector – please see notes on compatibility how to connect MULTIFACE. Make sure the switch on the right is ON – DOWN!, otherwise the MULTIFACE will be inoperative. Plug the joystick, if any, into the 9-way socket on the left of MULTIFACE. Check all connections carefully before attaching the power supply and switching the Spectrum on. If these points aren't observed, serious damage may occur and your guarantee will be void. A proper attachment is vital for the functioning of MULTIFACE. If pressing the button produces random coloured squares or other garbage, clean the edge connector contacts and push MULTIFACE the furthest possible onto the connector. If your system and MULTIFACE still would not work, disconnect power supply, remove any add-ons except MULTIFACE, read all the instructions and try again. If unsuccessful please ring 01-6259463 or 0892-834783 or write to us. If really necessary, we will ask you to send the MULTIFACE to us. In such case please use original packaging, state your name, address, phone, and describe the problem & the whole equipment used. Please note any repairs are carried free of charge only if guarantee was registered (see conditions).

INSTRUCTIONS FOR USE.

1) Push the red button to activate MULTIFACE ONE

2) Select function by pressing the relevant key (inversely printed) of the 6 commands displayed:

exit – to exit to BASIC to either:

- a) leave the program and MULTIFACE ONE entirely
- b) study/alter/customize the program

All efforts are made to preserve program intact. The main pre-condition is the existence of standard system variables or else the Spectrum will crash. Successful exit gives full access to a program. To restart it, if needed, you need to know starting line or address. By re-activating the MULTIFACE, a program can then be saved, etc.

return – to continue the program

save – to proceed to SAVE routines:

- a) Input the name of program – up to 9 characters or just press ENTER to input RUN automatically; BETA accepts 7 characters or defaults to BOOT.
- b) Choose saving to: tape, cartridge, wafer, disc MULTIFACE automatically detects if DISCOVERY or BETA is attached & follows the right procedure. You can save program or screen only by pressing p or s. Programs are automatically compressed to take less room and load faster. Screens are left intact, as they would need an expanding program.

tool – to access MULTI TOOLKIT routines

quit – to return to the opening menu

ENTER+SPACE – to PEEK/POKE; SPACE clears address

hex – to toggle between hex and decimal display

reg – to display registers (held at 16358-16383)

window – to open window to show 128 bytes. Select poking address (flashing) with cursor keys.

text – to see the window in ASCII characters

copy – to COPY screen to a printer: for interfaces with COPY command (Kempston E, Lprint III, etc.)

jump – not to return but jump to another address. The address to jump is at 8192 & 8193 (low, hi). You can jump to Spectrum ROM/RAM & to M1 8K RAM. As MULTIFACE RAM overshadows ZX ROM (8192-16383) address 8194 determines paging status: if 0, 8K RAM remains paged, poking 1 unpages the RAM: any other value disables the jump command entirely.

In most cases MULTIFACE ONE needs not to be attached to re-load programs it saved. The only limitation if not present is a distortion at the top of the screen which is usually restored during running of program. A screen is always saved as part of program to allow you to run programs without MULTIFACE ONE attached. You must not infringe copyright when using MULTIFACE and if in any doubt, consult the copyright owner(s).

NOTES ON COMPATIBILITY.

BETA

MULTIFACE is compatible with version 4.0 and higher. It must be put between Spectrum and Beta interface. Furthermore a small modification inside MULTIFACE is needed. It can be carried out free of charge if the unit is returned to ROMANTIC ROBOT UK Ltd or can be easily performed with a screwdriver and scissors. Unscrew two screws on the back of MULTIFACE and lift the back gently. Looking at the PCB with parts up, you will see a short arc-like wire next to joystick socket. By cutting it you disable joystick interface which else interferes when BETA accesses disks. You can also put a switch across the wire, switch OFF when saving/loading and then ON to use the joystick. The modification will not invalidate your guarantee.

MICRODRIVE

MULTIFACE is attached to the back of Interface One. It is compatible with all issues of Interface One.

OPUS

MULTIFACE sits between Spectrum and Discovery. The through connector on the side of Discovery cannot be used, it is non-standard. Discovery is housed in two different cases – go for the higher one, if you can.

TAPE

MULTIFACE can save to tape anytime either if plugged directly to Spectrum or to the above peripherals. As further described, the tape can then be transferred onto other disc systems, if required.

WAFADRIVE

MULTIFACE can be put between Spectrum and wafadrive (preferably) or at the back of wafadrive. Wafadrive is automatically initiated by MULTIFACE when needed. Early wafadrive models are not fully compatible with all peripherals. If you encounter any difficulties, look at the RS 232 edge connector on the back of the wafadrive – it is located at the bottom right side. Looking in you should see purple, red & white wires attached to the top of the bus. If not, contact your dealer or Rotronics to have your unit updated.

KEMPSTON

Optionally, MULTIFACE can have software for Kempston disk interface (instead of Beta). In such case there is also another command in the first MULTIFACE menu:

kemp – to initialize the Kempston interface if used with the 128K Spectrum (48K mode)
MULTIFACE is between Spectrum & Kempston interface.

GENERAL HINTS and TIPS.

MULTIFACE can be activated anytime. It is immaterial what kind of program is inside the Spectrum, whether it was typed in or loaded. MULTIFACE saves computer contents (compressed RAM image), not programs as such. Saving is always in 4 parts: reloading BASIC, main code, screen & operating code. There is a full abort facility at all program stages. You can also BREAK whenever using peripherals; the error trapping should always bring you to the current menu. Different systems have different error trapping. Beta & Wafadrive inform you if the name under which a program is to be saved already exists: both allow you to overwrite existing files or rename the ones being saved. Discovery overwrites existing files automatically. You may need to crunch a disk every now and then, as MULTIFACE does not crunch itself. All three systems will not attempt saving a program if there is not enough room left to start with. On microdrives the overwriting facility is replaced by a format option. Formatted cartridge is named after a program. All error reports on microdrives such as 'Microdrive not present', 'File already exists', etc. are substituted universally by 'I/O Error'.

The switch on the side makes MULTIFACE "invisible". It can prevent possible clashes with other hardware or software products. It can also be useful to RUN software saved with previous MULTIFACE ONE versions. Obviously, MULTIFACE is unusable while switched off.

GUARANTEE.

This guarantee is in addition to and does not in any way affect any statutory or other rights of consumer purchasers. ROMANTIC ROBOT UK Ltd guarantee that if within 6 months from the day of supply the MULTIFACE ONE proves to be defective by reason of faulty design, workmanship or materials it will be repaired or replaced free of charge provided:

- 1) The purchaser shall within 10 days complete the slip below and send it us for registration.
- 2) MULTIFACE ONE has not been in any way misused, nor used with unsuitable equipment nor subjected to deliberate, accidental or consequential damage.
- 3) No modifications, repairs or adjustments were made to the MULTIFACE ONE.

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

PROGRAMMING TIPS

MULTIFACE has 8K ROM for its own software and 8K RAM as a buffer. You can use the RAM for your own m/code or data, but not for BASIC. The RAM must be 'paged' to be accessed. Paging has to be done in m/code, IN & OUT in BASIC cannot be used. You can use this block move routine to move bytes within both 48K & 8K RAM:

```

1 RESTORE: GO TO 20: REM block move routine
5 LET hi=INT (i/256): LET lo=i-hi*256: RETURN
20 INPUT "Start address: ";i: GO SUB 5: LET shi=hi : LET slo=lo
30 INPUT "Destination address: ";i: GO SUB 5: LET dhi=hi:LET dlo=lo
40 INPUT "Length of block in bytes: ";i: GO SUB 5: LET bhi=hi: LET
blo=lo
50 FOR i=23296 TO 23296+17: READ a: POKE i,a: NEXT i: REM the loop
places the whole routine to printer buffer; routine is relocatable
60 RANDOMIZE USR 23296
70 DATA 243,219,159
75 DATA 33,slo,shi: REM starting address of block to be moved
80 DATA 17,dro,dhi: REM block destination address
85 DATA 1,blo,bhi; REM length of block to be moved
90 DATA 237,176,219,951,251,201

```

As an example, to move a screen into MULTIFACE RAM: draw a screen, GOTO 1 in above program (do not RUN), input 16384 as start address, 8192 as destination address and 6912 as length. RUN the program again, input 8192 as start, 16384 as destination addresses, 6912 as length, and the screen will then re-appear.

There are many other ways of exploiting the extra RAM, for example to put in tools such as assemblers, monitors, etc. NEW does not affect the extra RAM and its contents remain unchanged until switched off. On the other hand to SAVE its contents you need to move the whole RAM (8192 bytes) or any part thereof to the Spectrum RAM and SAVE it from there.

You can jump direct to your own routines in 8K RAM & bypass MULTIFACE operating system. The push-button will then have a new effect: it will still BREAK any program whilst preserving all registers, etc. & will give you the option to jump straight to program held in M1 8K RAM – normally M1 uses over 2500 bytes when the button is pressed, but with direct jump you are left with the area of 8210-16354 free RAM (with the only exception of 11743-11746 used to exit back to BASIC; by writing your own exit routine instead (restore all registers and interrupt status, return) you can use the entire area. To program direct jump, poke 8192 & 8193 with the jump address and 8195-8197 with a special identification code RUN (82, 85, 78 in decimal). The value of 8194 is in this case irrelevant. Whenever you push the button you'll jump to the predefined address and not to MULTIFACE menu. To return to MULTIFACE standard menu & operation, press the red button and BREAK key at the same time. To disable direct jump completely, change the bytes 8195-8197 to anything else but RUN. In standard mode MULTIFACE uses 8210-10753 as a buffer (8210-12722 if you proceed to SAVE) & overwrites anything in there.

¹ correct: 31

USING OTHER DISC SYSTEMS

MULTIFACE is fully automatic with Discovery and Beta or Kempston disc systems – by pressing a single key you can SAVE onto any of these direct. However, you can also SAVE to other systems by saving onto tape first & then transferring to disc. You will need two programs – to SAVE and to LOAD from disc. Kempston owners would (if, say, without automatic option) use MULTIFACE to SAVE to tape, switch off, remove MULTIFACE, attach Kempston interface & disc, and RUN:

```

10 CLEAR VAL "24751"
20 LOAD ""CODE: PRINT #4: SAVE "name3"CODE VAL "24752",x
30 LOAD ""CODE: PRINT #4: SAVE "name2"CODE VAL "16384",y
40 LOAD ""CODE VAL "16464": PRINT #4: SAVE "name1" CODE VAL
"16464",VAL "1906"

```

Variable x in line 20 is the length of the main code (maximum 40783), y in line 30 the length of screen (maximum 6912). Both blocks are usually compressed and a tape header reader, such as in TRANS-EXPRESS, will reveal their actual lengths. The third block is always 1906 bytes long. The whole saving BASIC program should be as short as possible.

All PRINT #4 statements represent the syntax used by Kempston. These, and the rest of the lines 20-40, should be replaced by syntax used in other systems. You also need a BASIC program to reload from discs. Here again is one for the Kempston interface:

```

10 CLEAR VAL "24751": PRINT #4: LOAD "name3"CODE
20 PRINT #4: LOAD "name2"CODE
30 RANDOMIZE USR VAL "24792": PRINT #4: LOAD "name1"CODE
40 RANDOMIZE USR VAL "24795"

```

Again, other syntax would be used for loading from different systems than PRINT #4 as used by Kempston.