

If you have made a typing error, or if you want to put another message at a new starting address, type S, to re-enter the S command at the beginning, in the same way that the 'M' command is re-entered. You will have to enter the new address before making your correction, or starting your new message.

The repeating keyboard with the fast scrolling screen works as in the 'M' command, to allow you to review a message quickly.

Remember that, having entered the starting address, the escape command is accessed by typing STOP (Symbol Shift and A).

## Z - Disassembler

This command will disassemble any part of RAM or ROM, either to the screen alone, or to both the screen and the ZX Printer. It provides a display that includes the Hex address of the first byte of the instruction, the Hex values of the bytes that relate to that instruction and the Z80 mnemonic for that instruction. The full set of Z80 mnemonics can be disassembled.

The command takes the form: 'Z aaaa bbbb' where 'Z' is the command mode, 'aaaa' is the hex starting address and 'bbbb' is the hex end address of the part of memory you wish to disassemble.

Type Z to access the command.

Type 0000 the address of the start of the ROM.

Type 0020 the end address.

Having typed in the end address, the screen will scroll and display.

PRINTER?

Your response to this is similar to the Basic "Scroll?" command. If you wish to use the printer, type ENTER; but if you only require a screen display, type 'N' (for NO).

Type N for screen display only.

The disassembly will appear on the screen thus:

```

XZ0000 0020
PRINTER?
0000 F3
0001 AF
0002 1FFFF          DI
                                XOR
                                A
                                LD,FFFF
  
```

```

0005 C1CB11          JP 11CB (SCSD)
0008 2A5D5C          LD HL,(SCSD)
000B 225E5C          LD (DE),HL
000E 1843           JR 0055
0010 C3F215          JP 15F2
0013 FF            RST 38
0014 FF            RST 38
0015 FF            RST 38
0017 FF            RST 38
0018 2A5D5C          LD HL,(SCSD)
001B 7E            LD A,(HL)
001C CD7D00          CALL 007D
ENTER for more; X for end
  
```

16 lines of disassembly will be displayed when using the screen only, followed by the message:

ENTER for more; X for end.

Pressing ENTER will display the next 16 lines, unless the end address is reached, when the prompt and cursor will be returned.

Typing 'X' in response to the above message will also return the prompt and cursor.

If you are disassembling to the Printer, the routine will continue, uninterrupted, until it reaches the end address. The Printer can be stopped by using the Break key in the normal way, which will return you to BASIC. You will then need to access the Monitor as described on Page 2.

If you try to disassemble to the Printer when it is not connected, the screen display will be produced on its own, the routine stopping when it has reached the end address.

All disassembled addresses and values are in Hex. Relative jumps show the address to which the jump will go, with the offset value shown with the hex coding for that instruction.

The only instructions that are displayed in a slightly different form from the published Zilog mnemonics are "JP (HL)" and the IX and IY counterparts "JP (IX)" and "JP (IY)". As these instructions jump to the address actually held in the register, the brackets are not shown in the display, which makes the action of the instruction a little clearer.