BC Info Guide #4.

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                  Ïóòåâîäèòåëü ïî ïîðòàì ZX Spectrum
                    Guide to the ZX Spectrum ports

PORT            ADRESS          DECODING
hex/dec         A15 ... A0      A15 ... A0        READ          WRITE
-------------------------------------------------------------------------------
                              SYSTEM PORTS
-------------------------------------------------------------------------------
#00/0           xxxxxxxx00000000 xxxxxxxx00000000     -          Reg(B)
                                 xxxxxxxx0xx0xxx0      -          Pag(C)
#7E/126         xxxxxxxx01111110 xxxxxxxx0xx11xx0 Key(C)          -
#F6/246         xxxxxxxx11110110 xxxxxxxxxxxx0110      -          Brd(A)
#FE/254         xxxxxxxx11111110 xxxxxxxxxxxxxxx0 KeyTp(1,7-9)Prn(7)BrdTpSpk(1,7-9)
                                 xxxxxxxxxxxxxxx0 Key(D)          BrdSpk(D)
                                 xxxxxxxxxxxx110  KeyTp(A)        BrdTpSpk(A)
                                 xxxxxxxxxxx1xxx10 KeyTpPrn(6)    BrdTpSpk(6)
                                 xxxxxxxx1xxxxxx0 KeyTp(+1)       BrdTpSpk(+1)
                                 xxxxxxxx1xx11xx0 KeyTp(C)        BrdTpSpk(C)
#FF/255         xxxxxxxx11111111 xxxxxxxxxxxxxxxx Atr(1-2)        -
                                 xxxxxxxxxxxxx111 Atr(A)          -
                                 xxxxxxxxxxx1xxx11 Atr(6)         -
                                 xxxxxxxx???????? Atr(4,5)        Vid/Pag(4/5)
#1FFD/8189      0001111111111101 0001xxxxxxxxxx0x     -          PagPrn/FD(3/+3)
                                 00xxxxxxxxxxx01      -          Pag(7)
                                 00xxxxxxxx1xxx01 Trb-OFF(6)      Pag(6)
                                 0x0xx111xx1xxx01     -          Pag(?B)
#78FD/30973     0111100011111101 0x1xx000xx1xxx01     -          Pag(?B)
#7AFD/31485     0111101011111101 0x1xx010xx1xxx01     -          Vid(?B)
#7CFD/31997     0111110011111101 0x1xx100xx1xxx01     -          Vid(?B)
#7EFD/32509     0111111011111101 0x1xx110xx1xxx01     -          Rag(?B)
#7FFD/32765     0111111111111101 0xxxxxxxxxxxxx0x     -          Pag(2,8,9,A)
                                 0xxxxxxxxxxxx01      -          Pag(D)
                                 0xxxxxxxxxx11x0x     -          Pag(C)
                                 01xxxxxxxxxxxx0x     -          Pag(3,?5)
                                 01xxxxxxxxxxxx01     -          Pag(7)
                                 01xxxxxxxx1xxx01 Trb-ON(6)       Pag(6)
                                 0x1xx111xx1xxx01     -          Pag(?B)
#80FD/33021     1000000011111101 1x0xxxxxxx11x0x      -          CP/MPag(C)
#DFFD/57341     1101111111111101 xx0xxxxxxxxxxx0x     -          Pag(9)
                                 1x0xx111xx1xxx01     -          Pag(?B)
#EFF7/61431     1110111111110111 1110xxxxxxxx0xxx     -          PagVidTrbReg(8)
                                 1110xxxxxxxx0xx1     -          PagVidTrbReg(D)
-------------------------------------------------------------------------------
                            PERIPHERALS PORTS
-------------------------------------------------------------------------------
#1B/27          xxxxxxxx00011x11 xxxxxxxx0xx11xx1 Prn(C)          -
#1F/31          xxxxxxxx00011111 xxxxxxxxxxxxxxx1 Kjoy(7)         -
                                 xxxxxxxxx0xxxx1  Kjoy(D)         -
                                 xxxxxxxxx0xx11xx1 KjoyPrn(C)     -
                                 xxxxxxxxx0x0xxx11 Kjoy(6)        -
#1F#3F#5F#7F    xxxxxxxx0BA11111 xxxxxxxxx0xxxxxxx 8255(5)        8255(5)
                                 xxxxxxxxx0xxxxx11 8255(9)        8255(9)
#7B/123         xxxxxxxx01111011 xxxxxxxxxxxxx011     -          Prn(A)
                                 xxxxxxxx0xx110x1     -          Prn(C)
#FA/250         xxxxxxxx11111010 xxxxxxxxxxxxx010 IO(A)          IO(A)
#FB/251         xxxxxxxx11111011 xxxxxxxxxxxxx0xx Prn(8,D)       Prn(8,D)
                                 xxxxxxxxxxxxx011 Prn(A)          PrnDAC(A)
                                 xxxxxxxx1xx110x1     -          Prn(C)
#0FFD/4093      0000111111111101 0000xxxxxxxxxx0x Prn(?3/+3)     Prn(?3/+3)
#2FFD/12285     0010111111111101 0010xxxxxxxxxx0x     -          8272status(?+3)
#3FFD/16381     0011111111111101 0011xxxxxxxxxx0x 8272data(?+3)  8272data(?+3)
#7DFD/32253     0111110111111101 0xxxxx0xxxxxxx0x ADC(A)          -
#7FFD/32765     0111111111111101 0xxxxx1xxxxxxx0x IDE,ADC(A)      -
#BFFD/49149     1011111111111101 10xxxxxxxxxxxx0x     -          AYdat(2,3,?5,A)
                                 10xxxxxxxxxxxx01     -          AYdat(7)
                                 1x1xxxxxxxxxxx0x     -          AYdat(D)
                                 101xxxxxxxxxxx0x     -          AYdat(8,9)
                                 101xxxxxxx1xx0x      -          AYdat(C)
                                 101xxxxxxx1xxx01     -          AYdat(6)
#FFDD/65501     1111111111011101 xxxxxxxxxx0xxx01     -          Prn(6)
```

```
#FFFD/65533   1111111111111101 11xxxxxxxxxxx0x AYdat(2,3,?5,A)  AYadr(2,3,?5,A)
                               11xxxxxxxxxxx01 AYdat(7)         AYadr(7)
                               111xxxxxxxxx0x  AYdat(8,9,D)     AYadr(8,9,D)
                               111xxxxxxx1xx0x AYdat(C)         AYadr(C)
                               111xxxxxxx1xxx01 AYdat(6)        AYadr(6)
----------------------------------------------------------------------------------
                                SHADOW PORTS
----------------------------------------------------------------------------------
#77            xxxxxxxx01110111 xxxxxxxx0xx10111       -        VidTrbReg(A)
#xx77          xLxxxxKJ01110111 xLxxxxKJ0xx10111|_____WRITE_ONLY(A)_____|L|K|J|
#BD77/#FF77 (#0177-Soft port) xLxxxxK10xx10111| L,K=0->Pal,PLLFC,Shdw-on |0|0|1|
#BF77/#FF77                    xLxxxx110xx10111| L=0  ->Pal,PLLFC   -on   |0|1|1|
#FD77/#FF77 (#4177-Soft port) x1xxxxK10xx10111| K=0  ->         Shdw-on  |1|0|1|
#FE77/#FF77                    x1xxxx1J0xx10111|J=0>Pag-off,CP/Mrom>CPU0-3|1|1|0|
#3FF7-#FFF7    BA111111111110111 BAxxxx111xx10111       -        RAMPag(A)
#FEE7/#FFE7    1111111A11100111 xxxxxxxAxxx00111 Reserved(A)     Reserved(A)
----------------------------------------------------------------------------------
SMUC (Scorpion & MOA Universal Controller)
----------------------------------------------------------------------------------
#18E6-#7FFE    0ED11CBA111GF110 ISA:xx1IHGFEDCBA ISA:#200-#3FF   ISA:#200-#3FF
#5FBA/24506    0101111110111010 0x011xxx101xx010 Version         -
#5FBE/24510    0101111110111110 0x011xxx101xx110 Revision        -
#7EBE/32446    0111111010111110 0x111xx0101xx110 8259           8259
#7FBA/32698    0111111110111010 0x111xxx101xx010 VirtualFDD     VirtualFDD
#7FBE/32702    0111111110111110 0x111xx1101xx110 8259           8259
#D8BE/55486    1101100010111110 1x011xxx101xx110 IDE-Hi         IDE-Hi
#DFBA/57274    1101111110111010 1x011xxx101xx010 DS1685RTC      DS1685RTC
#F8BE-#FFBE    11111CBA10111110 1x111xxx101xx110 IDE#1Fx/#3F6   IDE#1Fx/#3F6
#FFBA/65466    1111111110111010 1x111xxx101xx010 SYS            SYS
----------------------------------------------------------------------------------
Beta 128 Disk Interface
----------------------------------------------------------------------------------
#1F#3F#5F#7F   xxxxxxxx0BA11111 xxxxxxxx0BAxxx11 WD1793(6,7,8,D) WD1793(6,7,8,D)
                               xxxxxxxx0BAx11x1 WD1793(C)       WD1793(C)
                               xxxxxxxx0BA11111 WD1793(A)       WD1793(A)
                               0xxxxxxx0BAxxx11 WD1793(9)       WD1793(9)
#FF/255        xxxxxxxx11111111 xxxxxxxx1xxxxx11 FDsys(6,7,8,D) FDsys(6,7,8,D)
                               xxxxxxxx1xxx11x1 FDsys(C)        FDsys(C)
                               xxxxxxxx1xx11111 FDsys(A)        FDsysPLLFC(A)
                               0xxxxxxx111xxx11 FDsys(9)        FDsys(9)
----------------------------------------------------------------------------------
ATM IDE
----------------------------------------------------------------------------------
#FE0F/#FF0F    1111111A00001111 xxxxxxxA00001111 IDEdat-Lo/Hi(A) IDEdat-Lo/Hi(A)
#FF2F/65327    1111111100101111 xxxxxxxx00101111 IDEerror(A)     IDEparam(A)
#FF4F/65359    1111111101001111 xxxxxxxx01001111 IDEsect(A)      IDEsect(A)
#FF6F/65391    1111111101101111 xxxxxxxx01101111 IDEstartsect(A) IDEstartsect(A)
#FF8F/65423    1111111110001111 xxxxxxxx10001111 IDEcyl-Lo(A)    IDEcyl-Lo(A)
#FFAF/65455    1111111110101111 xxxxxxxx10101111 IDEcyl-Hi(A)    IDEcyl-Hi(A)
#FFCF/65487    1111111111001111 xxxxxxxx11001111 IDEdevice(A)    IDEhead(A)
#FFEF/65519    1111111111101111 xxxxxxxx11101111 IDEcomnd(A)     IDEstatus(A)
----------------------------------------------------------------------------------
                           PERIPHERALS DEVICES PORTS
----------------------------------------------------------------------------------
#0B/#6B        xxxxxxxx0AA01011 xxxxxxxx0Ax01011 Z80DMA         Z80DMA       *1
#0E/14         xxxxxxxx00001110 xxxxxxxx0000xxxx PC<->ZXDrBeep  PC<->ZXDrBeep*2
#1F/31         xxxxxxxx00011111 xxxxxxxxx0xxxxx  KempstonIF     -            *1
                               xxxxxxxx0xxxxxx1 Kempston-M     -            *1
                               xxxxxxxx00011111 AMIGA-MOUSE    -            *1
#3F/63         xxxxxxxx00111111 xxxxxxxx0xxxxxx  LIGHT PEN      -            *1
#B7/183        xxxxxxxx10110111 xxxxxxxx10110111 XTR modem      XTR modem
#EF/239        xxxxxxxx11101111 xxxxxxxx1xx01xxx C-DOS modem    C-DOS modem
#F7/247        xxxxxxxx11110111 xxxxxxxxxxx0xxx       -        DIGITIZER(VMG)
----------------------------------------------------------------------------------
MB-02+(*3)
----------------------------------------------------------------------------------
#0003-#0F03    xxxxDCBA00000011 xxxxDCBA0xx00011 RTC-72421      RTC-72421
#07/11         xxxxxxxx00000111 xxxxxxxx0xx00111 IDEcontrol     IDEcontrol
#0B/11         xxxxxxxx00001011 xxxxxxxx0xx01011 Z80DMA         Z80DMA
#0F#2F#4F#6F   xxxxxxxx0BA01111 xxxxxxxx0BA01111 WD2797         WD2797
#13/19         xxxxxxxx00010011 xxxxxxxx0xx10011 FDcontrol      -
                               xxxxxxxx00010011       -        FDcontrol
#17/23         xxxxxxxx00010111 xxxxxxxx0xx10111 memsel         memsel
#1B#3B#5B#7B   xxxxxxxx0BA11011 xxxxxxxx0BA11011 8255-2         8255-2
```

```
#1F#3F#5F#7F  xxxxxxxx0BA11111 xxxxxxxx0BA11111 8255-1            8255-1
#A3-#BF       xxxxxxxx101CBA11 xxxxxxxx101CBA11 IDE#1Fx           IDE#1Fx
--------------------------------------------------------------------------------
NemoIDE
--------------------------------------------------------------------------------
#10-#F0       xxxxxxxxCBA10000 xxxxxxxxCBA10000 IDE#1Fx           IDE#1Fx
#11/17        xxxxxxxx00010001 xxxxxxxxxxxx001 IDE-hi             IDE-hi
#C8/200       xxxxxxxx11001000 xxxxxxxxCBA01000 IDE#3F6           IDE#3F6
--------------------------------------------------------------------------------
SOUNDRIVE v1.02
--------------------------------------------------------------------------------
#0F/15        xxxxxxxx00001111 xxxxxxxxx0001111 -                 L channel A
#1F/31        xxxxxxxx00011111 xxxxxxxxx0011111 -                 L channel B
#3F/63        xxxxxxxx00111111 xxxxxxxxx0111111 -                 L Rg8255
#4F/79        xxxxxxxx01001111 xxxxxxxxx1001111 -                 R channel C
#5F/95        xxxxxxxx01011111 xxxxxxxxx1011111 -                 R channel D
#7F/127       xxxxxxxx01111111 xxxxxxxxx1111111 -                 R Rg8255
--------------------------------------------------------------------------------
SOUNDRIVE v1.05 (SOUNDRIVE/COVOX)
--------------------------------------------------------------------------------
#0F#1F#4F#5F/xxxxxxxx0B0A1111 xxxxxxxxxB0Axxx1 -                  LA,LB,RA,RB
/#F1#F3#F9#FBxxxxxxxx1111B0A1 xxxxxxxxxxxB0A1 -                   LA,LB,RA,RB
--------------------------------------------------------------------------------
ZXMMC+ (*4)
--------------------------------------------------------------------------------
#1F/31        xxxxxxxx00011111 xxxxxxxx00011111 KempstonIF        CScard
#3F/63        xxxxxxxx00111111 xxxxxxxx00111111 SPIRegRX          SPIRegTX
#5F/95        xxxxxxxx01011111 xxxxxxxx01011111 RS232status       -
#7F/127       xxxxxxxx01111111 xxxxxxxx01111111 RS232RegRX        RS232RegTX
--------------------------------------------------------------------------------
KEMPSTON mouse Turbo by VELESOFT (A=0/1 -> MASTER/SLAVE mouse)(*1)
--------------------------------------------------------------------------------
#1F/#7F       xxxxxxxx00011111 xxxxxxxx0AA11111 AMIGAmou/FULLERjoy -
#7ADF/#FADF   1111101011011111 Axxxx0x011011111 KmouTrb_B          -
#7BDF/#FBDF   1111101111011111 Axxxx0x111011111 KmouTrb_X          -
#7EDF/#FEDF   1111111011011111 Axxxx1x011011111 KmouTrb_detect     -
#7FDF/#FFDF   1111111111011111 Axxxx1x111011111 KmouTrb_Y          -
--------------------------------------------------------------------------------
8 bit IDE by Pera Putnik(*5)
--------------------------------------------------------------------------------
#2B-#EF       xxxxxxxxCB101A11 xxxxxxxxCBx0xAxx IDE#1Fx           IDE#1Fx
--------------------------------------------------------------------------------
ZX LPRINT-III
--------------------------------------------------------------------------------
#7B/123       xxxxxxxx01111011 xxxxxxxx0xxxx0xx ROMCS-off         /STROBE
#FB/251       xxxxxxxx11111011 xxxxxxxx1xxxx0xx -                 DATA(/TxD)
                               00xxxxxx1xxxx0xx ROMCS-on,BUSY,DSR -
--------------------------------------------------------------------------------
D40/80 (Didaktik 40/80)
--------------------------------------------------------------------------------
#81#83#85#87  xxxxxxxx10000BA1 xxxxxxxx10000BA1 WD2797            WD2797
#89#8B#8D#8F  xxxxxxxx10001xx1 xxxxxxxx10001xx1 -                 FDsys
#91/145       xxxxxxxx10010001 xxxxxxxx10010xx1 -                 8255off&reset
#99/153       xxxxxxxx10011001 xxxxxxxx10011xx1 -                 8255on
#1F#3F#5F#7F  xxxxxxxx0BA11111 xxxxxxxx0BAxxxxx 8255             8255
--------------------------------------------------------------------------------
divIDE (*1)
--------------------------------------------------------------------------------
#A3-#BF       xxxxxxxx101CBA11 xxxxxxxx101CBA11 IDE#1Fx           IDE#1Fx
#E3/227       xxxxxxxx11100011 xxxxxxxx11100011 -                 divIDEcontrol
--------------------------------------------------------------------------------
GENERAL SOUND
--------------------------------------------------------------------------------
#B3/179       xxxxxxxx10110011 xxxxxxxx10110011 Data             Data
#BB/187       xxxxxxxx10111011 xxxxxxxx10111011 Status           Comnd
--------------------------------------------------------------------------------
+D (Issue 4)
--------------------------------------------------------------------------------
#E3#EB#F3#FB  xxxxxxxx111BA011 xxxxxxxx11BA01x WD1772            WD1772
#E7/231       xxxxxxxx11100111 xxxxxxxx110011x -                 romsel
#EF/239       xxxxxxxx11101111 xxxxxxxx110111x -                 FDsysLPTstrobe
#F7/247       xxxxxxxx11110111 xxxxxxxx1110011x LPTdata          LPTbusy
--------------------------------------------------------------------------------
ZX Interface 1
```

```
--------------------------------------------------------------------------------
#E7/231       xxxxxxxx11100111 xxxxxxxxxxx00xx1 MicrodriveData    MicrodriveData
#EF/239       xxxxxxxx11101111 xxxxxxxxxxx01xx1 Status            Comnd
#F7/247       xxxxxxxx11110111 xxxxxxxxxxx10xx1 NetRS232Data      NetRS232Data
--------------------------------------------------------------------------------
ZXMC-1 (ZX Multi Card-1 by Kamil' Karimov v1.2)
--------------------------------------------------------------------------------
#00EF/239     0000000011101111 0000000011101111 Version           -
#00DF/223     0000000011011111 0000000011011111 Version           -
#FE/254       xxxxxxxx11111110 xxxxxxxx11111110 Key               -
#08EF-#0FEF   00001CBA11101111 00001CBA11101111 SDcard            SDcard
#80DF-#87DF   10000CBA11011111 10000CBA11011111 PCKey             -
#E0EF-#E7EF   11100CBA11101111 11100CBA11101111 ZXMCRTC           ZXMCRTC
#F8EF-#FFEF   11111CBA11101111 11111CBA11101111 ISACOM1           ISACOM1
#FADF/64223   1111101011011111 1111101011011111 Kmou_B            -
#FBDF/64479   1111101111011111 1111101111011111 Kmou_X            -
#FFDF/65503   1111111111011111 1111111111011111 Kmou_Y            -
--------------------------------------------------------------------------------
ZXMC-2 (ZX Multi Card-2 by Kamil' Karimov)
--------------------------------------------------------------------------------
#00F7/247     0000000011110111 0000000011110111 Version           -
#FE/254       xxxxxxxx11111110 xxxxxxxx11111110 Key               -
#08EF-#0FEF   00001CBA11101111 00001CBA11101111 SDcard            SDcard
#80DF-#87DF   10000CBA11011111 10000CBA11011111 PCKey             -
#BFF7/49143   1011111111110111 1011111111110111 GLUKRTCData       GLUKRTCData
#DFF7/57335   1101111111110111 1101111111110111         -         GLUKRTCAdress
#E0EF-#E7EF   11100CBA11101111 11100CBA11101111 ZXMCRTC           ZXMCRTC
#EFF7/61431   1110111111110111 1110111111110111         -         GLUKRTCon/off
#F8EF-#FFEF   11111CBA11101111 11111CBA11101111 ISACOM1           ISACOM1
#FADF/64223   1111101011011111 1111101011011111 Kmou_B            -
#FBDF/64479   1111101111011111 1111101111011111 Kmou_X            -
#FFDF/65503   1111111111011111 1111111111011111 Kmou_Y            -
--------------------------------------------------------------------------------
Keyboard Proface (*1)
--------------------------------------------------------------------------------
#FA/250       xxxxxxxx11111010 xxxxxxxxxxxxx0x0         -         Pro/Keyface
#FE/254       xxxxxxxx11111110 xxxxxxxxxxxxxxx0 Pro/Keyface        -
--------------------------------------------------------------------------------
SAM COUPE Sound SAA1099 (*1)
--------------------------------------------------------------------------------
#00FF/255     0000000011111111 xxxxxxx011111111         -         Data
#01FF/511     0000000111111111 xxxxxxx111111111         -         Adress
--------------------------------------------------------------------------------
DMA USC (DMA Ultra Sound Controller)
--------------------------------------------------------------------------------
#0777-#3777   00BA011101110111 00BA0x1101110xxx         -         Channel
#0C77-#FC77   DCBA110001110111 DCBAxx0001110xxx 8237              8237
#3D77-#FD77   BA11110101110111 BAxxxx0101110xxx         -         8253-1
#3E77-#FE77   BA11111001110111 BAxxxx1001110xxx         -         8253-2
#3F77-#FF77   BA11111101110111 BAxxx1x1101110xxx        -         Volume
#F777/63351   1111011101110111 11xx0x1101110xxx         -         DMAIntMask
--------------------------------------------------------------------------------
COM ports by VIC
--------------------------------------------------------------------------------
#80F7-#83F7   100000BA11110111 1000xxBAxxxx0xxx         -         8253
#90F7/#91F7   1001000A11110111 1001xxxAxxxx0xxx 8251-1            8251-1
#A0F7/#A1F7   1010000A11110111 1010xxxAxxxx0xxx 8251-2            8251-2
#B0F7/#B1F7   1011000A11110111 1011xxxAxxxx0xxx 8251-3            8251-3
--------------------------------------------------------------------------------
GLUK CMOS RTC
--------------------------------------------------------------------------------
#BFF7/49143   1011111111110111 1011xxxxxxxx0xxx DS1685Data        DS1685Data
#DFF7/57335   1101111111110111 1101xxxxxxxx0xxx         -         DS1685Adress
#EFF7/61431   1110111111110111 1110xxxxxxxx0xxx         -         on/off
--------------------------------------------------------------------------------
Profi COM port & Soft XT keyboard
--------------------------------------------------------------------------------
#E0FB/57595   1110000011111011 1110000x1xx1x011         -         XTKey
#E8FB/59643   1110100011111011 1110100x1xx1x011 Reg               Reg
#EAFB/#EBFB   1110101A11111011 1110101A1xx1x011 8251             8251
#ECFB-#EFFB   111011BA11111011 111011BA1xx1x011 8253             8253
--------------------------------------------------------------------------------
ZX Interface 2
--------------------------------------------------------------------------------
```

```
#EFFE/61438   1110111111111110 xxx0xxxxxxxxxx0 Right Joystick         -
#F7FE/63486   1111011111111110 xxxx0xxxxxxxxx0 Left Joystick          -
-------------------------------------------------------------------------------
ISA COM1/Modem(8250/*82450/*82550) by Kondratyev (A=0 IRQ4-ON, A=1 IRQ4-OFF)
-------------------------------------------------------------------------------
#F0EF/#F8EF   1111A00011101111 xxxxA000xxx0xxxx RBR/DivLchLSB          THR/DivLchLSB
#F1EF/#F9EF   1111A00111101111 xxxxA001xxx0xxxx IER/DivLchMSB          IER/DivLchMSB
#F2EF/#FAEF   1111A01011101111 xxxxA010xxx0xxxx IIR                    -
#F3EF/#FBEF   1111A01111101111 xxxxA011xxx0xxxx LCR                    LCR
#F4EF/#FCEF   1111A10011101111 xxxxA100xxx0xxxx MCR                    MCR
#F5EF/#FDEF   1111A10111101111 xxxxA101xxx0xxxx LSR                    -
#F6EF/#FEEF   1111A11011101111 xxxxA110xxx0xxxx MSR                    -
#F7EF/#FFEF   1111A11111101111 xxxxA111xxx0xxxx ScratchReg*            ScratchReg*
-------------------------------------------------------------------------------
KEMPSTON mouse (*1)
-------------------------------------------------------------------------------
#FADF/64223   1111101011011111 xxxxxx10xx0xxxxx Kmou_B                 -
#FBDF/64479   1111101111011111 xxxxx011xx0xxxxx Kmou_X                 -
#FFDF/65503   1111111111011111 xxxxx111xx0xxxxx Kmou_Y                 -
-------------------------------------------------------------------------------
USSR KEMPSTON mouse
-------------------------------------------------------------------------------
#FADF/64223   1111101011011111 xxxxx0x01x0xxxx1 Kmou_B                 -
#FBDF/64479   1111101111011111 xxxxx0x11x0xxxx1 Kmou_X                 -
#FFDF/65503   1111111111011111 xxxxx1x11x0xxxx1 Kmou_Y                 -
-------------------------------------------------------------------------------
                               COMPUTERS
-------------------------------------------------------------------------------
1/+1 - ZX Spectrum(issue 1-2/3-6) 6 - Scorpion ZS256 Turbo+  B - Scorpion GMX
2    - ZX Spectrum +128,+2        7 - KAY-1024SL/Beta Turbo   C - Quorum 128/+
3/+3 - ZX Spectrum +2a,+2b/+3     8 - Pentagon 128(1991)      D - Pentagon-1024SL
4    - Timex Computer 2048        9 - Profi-1 (v3.x)            (ver. 28.09.2006)
5    - Didaktik Gama              A - ATM Turbo-2+
-------------------------------------------------------------------------------
                               CODES
-------------------------------------------------------------------------------
??    - äåøèôðàöèÿ íåèçâåñòíà (unknown decoding)
?5    - íåò ïîäòâåðæäåíèÿ ñîîòâåòñòâèÿ äåøèôðàöèè äëÿ êîìïüþòåðà ¹5
        (not confirm that the decoding for a computer #5(Didaktik Gama))
*?    - íåò ïîäòâåðæäåíèÿ ñîîòâåòñòâèÿ ïðèíàäëåæíîñòè ê óñòðîéñòâó
        (not confirm that the supplies to the device)
Atr   - ïîðò àòðèáóòîâ (video attributes port)
Brd   - ïîðò áîðäþðà (border port)
Key   - ïîðòû êëàâèàòóðû (keyboard port)
Kjoy  - ïîðò êåìïñòîí äæîéñòèêà (kempston joystick port)
Kmou  - ïîðò êåìïñòîí ìûøè (kempston mouse port)
Pag   - ïîðò ñòðàíèö ïàìÿòè (memory paging port)
Pal   - ïîðò ïàëèòðû (videopalette port)
PLLFC - ïîðò ÎÇÓ ÔÀÏ× (port RAM Phase-Locked-Loop Frequency Control)
Prn   - ïîðòû ïðèíòåðà (printer ports)
Reg   - ðåãèñòð óïðàâëåíèÿ (managetment port)
Shdw  - ðåæèì îòêðûòèÿ òåíåâûõ ïîðòîâ (mode open shadow port)
Tp    - ïîðò ìàãíèòîôîíà (tape port)
Trb   - ïîðò òóðáîðåæèìà (turbo mode port)
TRD   - ðåæèì TR-DOS(TR-DOS mode)
Vid   - ïîðò âèäåîðåæèìà (videomode port)
-------------------------------------------------------------------------------
                               INFO
-------------------------------------------------------------------------------
*1 - http://velesoft.speccy.cz/zxporty-cz.htm
*2 - http://www.zxspectrum.00freehost.com/zxpc.html
*3 - http://www.8bc.com/sinclair/index.html
*4 - http://www.zxbada.bbk.org/zxmmc/index.htm
*5 - http://www.ppest.org/zx/simpif.htm
```