

\$40	( read_n / write )	ID \$08	MSX2+ FS-A1 Series	Z80B 5.37MHz
		ID \$D4	1chipMSX / Zemmix Neo	OCM-PLD v2.4 or later
\$41	( read_n / write )	BIT 0	Smart Command ID	CPL or \$FF (Null)
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$42	( read / write_n )	BIT 7	CPU Clock	Virtual DIP-SW1
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$43	( read / write_n )	BIT 7	Video Output (MSB)	Virtual DIP-SW2
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$44	( read / write_n )	BIT 7	Video Output (LSB)	Virtual DIP-SW3
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$45	( read / write_n )	BIT 7	Cartridge Slot-1	Virtual DIP-SW4
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$46	( read / write_n )	BIT 7	Cartridge Slot-2 (MSB)	Virtual DIP-SW5
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$47	( read / write_n )	BIT 7	Cartridge Slot-2 (LSB)	Virtual DIP-SW6
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$48	( read / write_n )	BIT 7	Current Mapper Size	Virtual DIP-SW7
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$49	( read / write_n )	BIT 7	Internal Mapper	Virtual DIP-SW8
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$4A	( read / write_n )	BIT 7	Internal MegaSD	Virtual DIP-SW8
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$4B	( read / write_n )	BIT 7	Internal MegaSD Mode	Virtual DIP-SW8
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$4C	( read / write_n )	BIT 7	Lock Mak for Toggles	CPU Clock
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$4D	( read / write_n )	BIT 7	Cartridge Slot-1	Video Output
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$4E	( read / write_n )	BIT 7	Cartridge Slot-2 (MSB)	Audio Mixer & CMT
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		
\$4F	( read / write_n )	BIT 7	Cartridge Slot-2 (LSB)	Hard Reset Key
		BIT 1		
		BIT 2		
		BIT 3		
		BIT 4		
		BIT 5		
		BIT 6		

SMART COMMANDS TABLE		
\$00	( 000 )	Null Command (reserved)
\$01	( 001 )	Set Turbo Pana Redirection OFF (default)
\$02	( 002 )	Set Turbo Pana Redirection ON
\$03	( 003 )	Set Standard Speed 3.58MHz
\$04	( 004 )	Set Custom Speed 4.10MHz
\$05	( 005 )	Set Custom Speed 4.48MHz
\$06	( 006 )	Set Custom Speed 4.90MHz
\$07	( 007 )	Set Custom Speed 5.39MHz
\$08	( 008 )	Set Custom Speed 6.10MHz
\$09	( 009 )	Set Custom Speed 6.96MHz
\$0A	( 010 )	Set Custom Speed 8.06MHz (aka "Turbo 10MHz") (default)
\$0B	( 011 )	Set Turbo MegaSD OFF
\$0C	( 012 )	Set Turbo MegaSD ON (default)
\$0D	( 013 )	Set External Slot-1 + External Slot-2
\$0E	( 014 )	Set Internal SCC-I Slot-1 + External Slot-2
\$0F	( 015 )	Set External Slot-1 + Internal SCC-I Slot-2
\$10	( 016 )	Set Internal SCC-I Slot-1 + Internal SCC-I Slot-2
\$11	( 017 )	Set External Slot-1 + Internal ASCII-8K Slot-2
\$12	( 018 )	Set Internal SCC-I Slot-1 + Internal ASCII-8K Slot-2
\$13	( 019 )	Set External Slot-1 + Internal ASCII-16K Slot-2
\$14	( 020 )	Set Internal SCC-I Slot-1 + Internal ASCII-16K Slot-2
\$15	( 021 )	Set Japanese Keyboard Layout
\$16	( 022 )	Set Non-Japanese Keyboard Layout
\$17	( 023 )	Set Display Mode 15KHz Composite/S-Video
\$18	( 024 )	Set Display Mode 15KHz RGB w/ Audio Out (requires a VGA to SCART cable)
\$19	( 025 )	Set Display Mode 31Khz VGA for LED TV or LED Display (50Hz+60Hz)
\$1A	( 026 )	Set Display Mode 31Khz VGA+ for CRT Monitor (legacy output) (50Hz+60Hz)
\$1B	( 027 )	Set VDP Speed Normal Mode (default)
\$1C	( 028 )	Set VDP Speed Fast Mode (V9958 only)
\$1D	( 029 )	Reserve MegaSD OFF (warm reset to set)
\$1E	( 030 )	Reserve MegaSD ON (warm reset to set)
\$1F	( 031 )	Set MegaSD Blink OFF
\$20	( 032 )	Set MegaSD Blink ON (default)
\$21	( 033 )	Set Lights Mode OFF w/ Auto LEDs Control (default)
\$22	( 034 )	Set Lights Mode ON + Red Led OFF
\$23	( 035 )	Set Lights Mode ON + Red Led ON
\$24	( 036 )	Internal Audio Preset #1 "Mute Sound"
\$25	( 037 )	Internal Audio Preset #2 "Middle Sound"
\$26	( 038 )	Internal Audio Preset #3 "High Sound" (default)
\$27	( 039 )	Set CMT OFF (default) (disabled w/ MSX turbo-R BIOS)
\$28	( 040 )	Set CMT ON (requires a cassette recorder) (disabled w/ MSX turbo-R BIOS)
\$29	( 041 )	Lock Turbo Toggles
\$2A	( 042 )	Unlock Turbo Toggles
\$2B	( 043 )	Lock Display Toggles
\$2C	( 044 )	Unlock Display Toggles
\$2D	( 045 )	Lock Audio Mixer & CMT Toggles
\$2E	( 046 )	Unlock Audio Mixer & CMT Toggles
\$2F	( 047 )	Lock Slot-1 Toggles
\$30	( 048 )	Unlock Slot-1 Toggles
\$31	( 049 )	Lock Slot-2 Toggles
\$32	( 050 )	Unlock Slot-2 Toggles
\$33	( 051 )	Lock Slot-1 & Slot-2 Toggles
\$34	( 052 )	Unlock Slot-1 & Slot-2 Toggles
\$35	( 053 )	Lock Hard Reset Key
\$36	( 054 )	Unlock Hard Reset Key
\$37	( 055 )	Lock Mapper Toggle
\$38	( 056 )	Unlock Mapper Toggle
\$39	( 057 )	Lock MegaSD Toggle
\$3A	( 058 )	Unlock MegaSD Toggle
\$3B	( 059 )	Lock All Toggles
\$3C	( 060 )	Unlock All Toggles (default)
\$3D	( 061 )	Set Pseudo-Stereo OFF (default)
\$3E	( 062 )	Set Pseudo-Stereo ON (requires an external sound cartridge)
\$3F	( 063 )	Sync External Bus Clock to CPU Speed (default)
\$40	( 064 )	Set External Bus Clock 3.58MHz
\$41	( 065 )	Set Turbo Pana 5.37MHz
\$42	( 066 )	Set Right Inverse Audio OFF (default)
\$43	( 067 )	Set Right Inverse Audio ON
\$44	( 068 )	Internal Audio Preset #4 "Emphasis PSG Sound"
\$45	( 069 )	Internal Audio Preset #5 "Emphasis SCC-I Sound"
\$46	( 070 )	Internal Audio Preset #6 "Emphasis OPLL Sound"
...	...	
\$7F	( 127 )	Pixel Ratio 1:1 for LED Display (default is 0) (range 0-7) (60Hz only)
\$80	( 128 )	Null Command (useful for programming)
\$81	( 129 )	Assign Legacy Output to VGA
\$82	( 130 )	Assign Legacy Output to VGA+ (default)
\$B0 .. \$B7	( 176 .. 183 )	Set Master Volume 0 .. 7 (default level is 7)
\$B8 .. \$BF	( 184 .. 191 )	Set PSG Volume 0 .. 7 (default level is 4)
\$C0 .. \$C7	( 192 .. 199 )	Set SCC-I Volume 0 .. 7 (default level is 4)
\$C8 .. \$CF	( 200 .. 207 )	Set OPLL Volume 0 .. 7 (default level is 4)
\$D0	( 208 )	Force NTSC Mode
\$D1	( 209 )	Standard NTSC/PAL Mode (bound by Control Register 9) (default)
\$D2	( 210 )	Force PAL Mode
\$D3	( 211 )	Restore Default Keyboard Layout only
\$D4	( 212 )	Null Command (reserved)
\$D5	( 213 )	Restore Default Turbo Mode only
\$D6	( 214 )	Set Centering YJK Modes/R25 Mask OFF (default)
\$D7	( 215 )	Set Centering YJK Modes/R25 Mask ON
...	...	
\$F9	( 249 )	Reserve Slot-0 Primary Mode (warm reset to set) (internal OPLL disabled)
\$FA	( 250 )	Reserve System Logo ON (warm reset only)
\$FB	( 251 )	Cold Reset
\$FC	( 252 )	Warm Reset w/ Mapper 2048kB
\$FD	( 253 )	Warm Reset
\$FE	( 254 )	Warm Reset w/ Mapper 4096kB
\$FF	( 255 )	Restore All Default + Reserve Default Mapper & MegaSD

I/O Reserved to IPL-ROM			
\$4E	( write_n only )	BIT 0 - 6	Free
		BIT 7	JIS2 Enabler
\$4F	( write_n only )	BIT 0 - 6	Free
		BIT 7	F4 Device Mode

More info at MSX Assembly Page! < [http://map.grauw.nl/resources/msx\\_io\\_ports.php#switch\\_io](http://map.grauw.nl/resources/msx_io_ports.php#switch_io) >

R/W Logic	Positive	0 = OFF 1 = ON	( read / write )
	Negative	0 = ON 1 = OFF	( read_n / write_n )

Toggles	CPU Clock	[F12] or [DIP-SW1]
	Video Output	[(SHIFT+)+PRNSCR] or [DIP-SW2/3]
	Audio Mixer & CMT	[(SHIFT+)+PGUP/PGDOWN/F9/F10/F11] & [SCRLCK]
	Cartridge Slot-1	[SHIFT+F12] or [DIP-SW4]
	Cartridge Slot-2	[SHIFT+SCRLCK] or [DIP-SW5/6]
	System Reset	[HARD RESET KEY] Fast or Long-Click (normal or full reboot)
	Internal Mapper	[DIP-SW7] only
	Internal MegaSD	[DIP-SW8] only