

\$40	( read_n / write )	ID \$08 ID \$D4	MSX2+ FS-A1 Series 1chipMSX / Zemmix Neo	Z80B 5.37MHz 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		
		BIT 0	CPU Clock	Virtual DIP-SW1
		BIT 1	Video Output (MSB)	Virtual DIP-SW2
		BIT 2	Video Output (LSB)	Virtual DIP-SW3
		BIT 3	Cartridge Slot-1	Virtual DIP-SW4
		BIT 4	Cartridge Slot-2 (MSB)	Virtual DIP-SW5
		BIT 5	Cartridge Slot-2 (LSB)	Virtual DIP-SW6
\$43	( read / write_n )	BIT 6	Current Mapper Size	Virtual DIP-SW7
		BIT 7	Current MegaSD Mode	Virtual DIP-SW8
\$44	( read / write_n )	BIT 0	Lock Mak for Toggles	CPU Clock
		BIT 1		Video Output
		BIT 2		Audio Mixer & CMT
		BIT 3		Cartridge Slot-1
		BIT 4		Cartridge Slot-2
		BIT 5		Hard Reset Key
		BIT 6		Internal Mapper
\$45	( read / write_n )	BIT 7		Internal MegaSD
		BIT 0	Lights I/O	Led 1 Status
		BIT 1		Led 2 Status
		BIT 2		Led 3 Status
		BIT 3		Led 4 Status
		BIT 4		Led 5 Status
		BIT 5		Led 6 Status
\$46	( read / write_n )	BIT 6		Led 7 Status
		BIT 7		Led 8 Status
\$47	( read / write_n )	BIT 0	PSG Volume Level	BIT 0 (LSB)
		BIT 1		BIT 1
		BIT 2		BIT 2 (MSB)
		BIT 3	PSG Mute	Status
		BIT 4	Master Volume Level	BIT 0 (LSB)
		BIT 5		BIT 1
		BIT 6		BIT 2 (MSB)
\$48	( read only )	BIT 7	Master Mute	Status
		BIT 0	OPLL Volume Level	BIT 0 (LSB)
		BIT 1		BIT 1
		BIT 2		BIT 2 (MSB)
		BIT 3	OPLL Mute	Status
		BIT 4	SCC-I Volume Level	BIT 0 (LSB)
		BIT 5		BIT 1
\$49	( read only )	BIT 6		BIT 2 (MSB)
		BIT 7	SCC-I Mute	Status
		BIT 0	CPU Custom Speed Level	BIT 0 (LSB)
		BIT 1		BIT 1
		BIT 2		BIT 2 (MSB)
		BIT 3	Turbo MegaSD (tMSD)	Status
		BIT 4	Turbo Pana Redirection (tPR)	Status
\$4A	( read only )	BIT 5	VDP Speed Mode	0=Normal, 1=Fast
		BIT 6	Next Mapper Size	0=2048kB, 1=4096kB
		BIT 7	Next MegaSD Mode	Status
\$4B	( read only )	BIT 0	Pseudo Stereo	Status
		BIT 1	External Clock Mode	0=Sync to CPU, 1=3.58Mhz
		BIT 2	Machine Type ID	BIT 0 (LSB)
		BIT 3		BIT 1
		BIT 4		BIT 2
		BIT 5		BIT 3 (MSB)
		BIT 6	NTSC/PAL Type	0=Forced, 1=Auto
\$4C	( read only )	BIT 7	Forced Video Mode	0=60Hz (NTSC), 1=50Hz (PAL)
		BIT 0	Right Inverse Audio	Status
		BIT 1	Free	\$FF (Null)
		BIT 2		\$FF (Null)
		BIT 3 - 7		\$FF (Null)
		BIT 0		\$FF (Null)
		BIT 1		\$FF (Null)
\$4D	( read / write_n )	BIT 2		\$FF (Null)
		BIT 3	64kB VRAM Slot ID (Page 0)	BIT 0 (LSB)
		BIT 4		BIT 1
		BIT 5		BIT 2
		BIT 6		BIT 3 (MSB)
		BIT 7		BIT 4 (MSB)
\$4E	( read only )	BIT 0	OCM-PLD version X.Y(.Z) (main range 0.0 - 25.5)	BIT 0 (LSB)
		BIT 1		BIT 1
		BIT 2		BIT 2
		BIT 3		BIT 3
		BIT 4		BIT 4
		BIT 5		BIT 5
		BIT 6		BIT 6
\$4F	( read only )	BIT 7		BIT 7 (MSB)
		BIT 0	I/O Revision ID (0 - 31)	BIT 0 (LSB)
		BIT 1		BIT 1
		BIT 2		BIT 2
		BIT 3		BIT 3
		BIT 4		BIT 4 (MSB)
		BIT 5	OCM-PLD version (X.Y).Z (sub range .0 - .3)	BIT 0 (LSB)
\$40	( read_n / write )	BIT 6		BIT 1 (MSB)
		BIT 7		Status

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
\$19	( 025 )	Set Display Mode 31Khz VGA Mode (60Hz only)
\$1A	( 026 )	Set Display Mode 31Khz VGA+ Mode (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 )	Set Internal Audio Mute
\$25	( 037 )	Set Internal Audio Original Volume (like the official firmware)
\$26	( 038 )	Set Internal Audio Max Volume (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
...	...	
\$80	( 128 )	Null Command (useful for programming)
\$B0 .. \$B7	( 176 .. 183 )	Set Master Volume 0 .. 7 (max is default)
\$B8 .. \$BF	( 184 .. 191 )	Set PSG Volume 0 .. 7 (max is default)
\$C0 .. \$C7	( 192 .. 199 )	Set SCC-I Volume 0 .. 7 (max is default)
\$C8 .. \$CF	( 200 .. 207 )	Set OPLL Volume 0 .. 7 (max is default)
\$D0	( 208 )	Force NTSC Mode
\$D1	( 209 )	Standard NTSC/PAL Mode (bound by R#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
...	...	
\$F9	( 249 )	Reserve Slot-0 Primary Mode (warm reset to set)
\$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	\$FF (Null)
		BIT 7	JIS2 Enabler	0=JIS1+JIS2, 1=JIS1 only
\$4F	( write_n only )	BIT 0 - 6	Free	\$FF (Null)
		BIT 7	F4 Device Mode	0=Normal, 1=Inverted

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+J)PRNSCR] or [DIP-SW2/3]
	Audio Mixer & CMT	[(SHIFT+J)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