

\$40	(read_n / write)	ID \$D4	\$08 1chipMSX / Zemmex Neo	MSX2+ FS-A1 Series	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			
		BIT 7			
\$42	(read / write_n)	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	
		BIT 6	Current Mapper Size	Virtual DIP-SW7	
		BIT 7	Current MegaSD Mode	Virtual DIP-SW8	
\$43	(read / write_n)	BIT 0	Lock Mask of the 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	
		BIT 7		Internal MegaSD	
\$44	(read / write_n)	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	
		BIT 6		Led 7 Status	
		BIT 7		Led 8 Status (SM-X : Led-8 only)	
\$45	(read / write_n)	BIT 0	PSG Volume Level	BIT 0 (LSB)	
	BIT 1	BIT 1			
	(read only)	BIT 2	PSG Mute	BIT 2 (MSB)	
	BIT 3	Status			
	(read / write_n)	BIT 4	Master Volume Level	BIT 0 (LSB)	
	BIT 5	BIT 1			
	BIT 6	BIT 2 (MSB)			
	(read only)	BIT 7	Master Mute	Status	
\$46	(read / write_n)	BIT 0	OPLL Volume Level	BIT 0 (LSB)	
	BIT 1	BIT 1			
	(read only)	BIT 2	OPLL Mute	BIT 2 (MSB)	
	BIT 3	Status			
	(read / write_n)	BIT 4	SCC-I Volume Level	BIT 0 (LSB)	
	BIT 5	BIT 1			
	BIT 6	BIT 2 (MSB)			
	(read only)	BIT 7	SCC-I Mute	Status	
\$47	(read only)	BIT 0	CPU Custom Speed Level	BIT 0 (LSB)	
		BIT 1		BIT 1	
		BIT 2		BIT 2 (MSB)	
		BIT 3		Status	
		BIT 4		Turbo MegaSD (TMSD)	
		BIT 5		Turbo Pana Redirection (TPR)	
		BIT 6		Status	
		BIT 7		VDP Speed Mode	
\$48	(read only)	BIT 0	Turbo Pana	Status	
		BIT 1	Current Keyboard Layout	0=JP, 1=Non-JP	
		BIT 2	CMT (Cassette Magnetic Tape)	Status	
		BIT 3	Lights Mode	0=Auto, 1=ON	
		BIT 4	Red Mode (Led 0)	Status	
		BIT 5	Last Reset Flag	0=Cold, 1=Warm	
		BIT 6	Reset Required Flag	Status	
		BIT 7	MegaSD Blink	Status	
\$49	(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	(0=1chipMSX, 1=Zemmex Neo,	BIT 1	
		BIT 4	2=SM-X, 3-14=Free, 15=Unknown)	BIT 2	
		BIT 5		BIT 3 (MSB)	
		BIT 6	NTSC/PAL Type	0=Forced, 1=Auto	
		BIT 7	Forced Video Mode	0=60Hz (NTSC), 1=50Hz (PAL)	
\$4A	(read only)	BIT 0	Right Inverse Audio	Status	
		BIT 1	Pixel Ratio 1:1 for LED Display	BIT 0 (LSB)	
		BIT 2		BIT 1	
		BIT 3		BIT 2 (MSB)	
		BIT 4	Centering YJK Modes/R25 Mask	Status	
		BIT 5	Assignment of Legacy Output	0=To VGA, 1=To VGA+	
		BIT 6	Internal Slot-1 Linear	Status	
		BIT 7	Internal Slot-2 Linear	Status	
\$4B	(read only)	BIT 0	Free	\$FF (Null)	
		BIT 1			
		BIT 2			
		BIT 3			
		BIT 4			
		BIT 5			
		BIT 6			
		BIT 7			
\$4C	(read only)	BIT 0	CPU Clock	Hard DIP-SW1	
		BIT 1	Video Output (MSB)	Hard DIP-SW2	
		BIT 2	Video Output (LSB)	Hard DIP-SW3	
		BIT 3	Cartridge Slot-1	Hard DIP-SW4	
		BIT 4	Cartridge Slot-2 (MSB)	Hard DIP-SW5	
		BIT 5	Cartridge Slot-2 (LSB)	Hard DIP-SW6	
		BIT 6	Internal Mapper	Hard DIP-SW7	
		BIT 7	Internal MegaSD	Hard DIP-SW8	
\$4D	(read / write_n)	BIT 0	64kB VRAM Slot ID (Page 0)	BIT 0 (LSB)	
		BIT 1		BIT 1	
		BIT 2		BIT 2	
		BIT 3		BIT 3 (MSB)	
			BIT 4	64kB VRAM Slot ID (Page 1)	BIT 0 (LSB)
			BIT 5		BIT 1
			BIT 6		BIT 2
			BIT 7		BIT 3 (MSB)
\$4E	(read only)	BIT 0	OCM-PLD main version X.Y.(z) (range 0.0.z - 25.5.z)	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	
		BIT 7		BIT 7 (MSB)	
\$4F	(read only)	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	OCM-PLD sub version (x.y).Z (range x.y.0 - x.y.3)	BIT 4 (MSB)
			BIT 5		BIT 0 (LSB)
			BIT 6		BIT 1 (MSB)
			BIT 7		Status
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	

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 for LED TV or LED Display (SM-X: VGA / HDMI AV)		
\$1A	(026)	Set Display Mode 31KHz VGA+ for CRT Monitor (legacy output) (SM-X: VGA+ / HDMI AV)		
\$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"		
\$47	(071)	Vertical Offset 16 (useful for Ark-A-Noah)		
\$48	(072)	Vertical Offset 17		
\$49	(073)	Vertical Offset 18		
\$4A	(074)	Vertical Offset 19 (default)		
\$4B	(075)	Vertical Offset 20		
\$4C	(076)	Vertical Offset 21		
\$4D	(077)	Vertical Offset 22		
\$4E	(078)	Vertical Offset 23		
\$4F	(079)	Vertical Offset 24 (useful for Space Manbow)		
\$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)		
\$83	(131)	Set Internal Slot-1 Linear OFF (default)		
\$84	(132)	Set Internal Slot-1 Linear ON (requires SCC-I preset)		
\$85	(133)	Set Internal Slot-2 Linear OFF (default)		
\$86	(134)	Set Internal Slot-2 Linear ON (requires SCC-I or ASCII-8K/16K preset)		
\$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		
\$D4	(212)	Null Command (reserved)		
\$D5	(213)	Restore Default Turbo Mode		
\$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		