

Mnemonic	Description	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5
OUTA	output from register A	tbd	IO address			
OUTI	output from immediate operand	tbd	IO address	operand		
IN_A	input to register A	tbd	IO address			
IO_X	prefix for extended opcodes	tbd				
	<b>MMU</b>					
SEL_BA	select IO bank, A = bank, > \$0F = none, \$FF = IO opcodes disabled	OUT_A	bank r. addr.			
SEL_BI	select IO bank, operand = bank, > \$0F = none, \$FF = IO opc. disabled	OUT_I	bank r. addr.	operand		
	to enable the IO opcodes use LDA #\$10, STA bank reg.					
	<b>general IO</b>					
OUTC	output from memory count delimited, A = count (0 = 256 bytes!)	IO_X	tbd	IO address	addr. low	addr. high
OUTCI	output from indirect memory count delimited, A = count (0 = 256 bytes!)	IO_X	tbd	IO address	(zp addr.)	
OUTZ	output from memory until source = \$00, excluding \$00 byte	IO_X	tbd	IO address	addr. low	addr. high
OUTN	output from memory ored with \$7F until source > \$7F	IO_X	tbd	IO address	addr. low	addr. high
IN_C	input to memory count delimited, A = count (0 = 256 bytes!)	IO_X	tbd	IO address	addr. low	addr. high
IN_CI	input to indirect memory count delimited, A = count (0 = 256 bytes!)	IO_X	tbd	IO address	(zp addr.)	
	<b>SD-card support</b>					
OUTS	output sector (512 bytes) from memory to SD card	IO_X	tbd	addr. high		
OUTSI	output sector (512 bytes) indirect from memory to SD card	IO_X	tbd	hi(zp addr.)		
OUTSII	output sector (512 bytes) indirect from memory to SD card, ZP + \$200	IO_X	tbd	hi(zp addr.)		
OUTCMD	output command (6 bytes) from memory to SD card	IO_X	tbd	addr. low	addr. high	
SPIEND	SPI end slave select / chip select to SD card	IO_X	tbd			
IN_S	input sector (512 bytes) from SD-card to memory	IO_X	tbd	addr. high		
IN_SI	input sector (512 bytes) from SD-card to indirect memory	IO_X	tbd	hi(zp addr.)		
IN_SII	input sector (512 bytes) from SD-card to indirect memory, ZP + \$200	IO_X	tbd	hi(zp addr.)		
IN_WB	input from SD-card, wait while \$00 (busy) with timeout	IO_X	tbd			
IN_WT	input from SD-card to A, wait until < \$FF (token) with timeout	IO_X	tbd			
IN_R	input remaining 4 bytes of response, skip CRC	IO_X	tbd	addr. low	addr. high	
SKIP	skip bytes, A = count (0 = 256 bytes!), stuff \$FF on write	IO_X	tbd			
	all commands set & keep slave select active except SPIE					
	low address of sector IO is always \$00, the indirect pointer is 1 byte only!					

Mnemonic	Description	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5
	<b>cross memory copy &amp; swap service</b>					
SEL_BA2	select IO bank 2 (XM target), A = bank, > \$0F = none,	OUT_A	bnk2 r. addr.			
SEL_BI2	select IO bank 2 (XM target), operand = bank, > \$0F = none	OUT_I	bnk2 r. addr.	operand		
XM_C	cross memory copy, A = page count	IO_X	tbd	src pg. addr.	tgt pg. addr.	
XM_CI	indirect cross memory copy, A = page count	IO_X	tbd	src(zp addr)	tgt(zp addr)	
XM_S	cross memory swap, A = page count	IO_X	tbd	b pg. addr.	b2 pg. addr.	
XM_SI	indirect cross memory swap, A = page count	IO_X	tbd	b(zp addr)	b2(zp addr)	
	copies or swaps full pages, the indirect pointers are 1 byte only!					
	<b>Processor Status</b>	tbd = to be determined				
IN_A	flags = NZ of last byte except IN_WT: CMP #\$FF of last byte					
IN_WB	flags = NZ of last byte, Z cleared if end of busy, else set (timeout)					
IN_WT	flags NZ = CMP #\$FF of last byte, Z cleared if token, else set (timeout)					
all else	flags = no change					