



CHAPTER 1

INTRODUCTION

The multiple 8255 I/O card is programmable peripheral interface for PC/XT, PC/AT or compatibles. The interface card provides 192 parallel input output interface for PC/XT, PC/AT or compatibles. The interface card provides 192 parallel input output (PIO) programmable line, and six independent 16 bits counter/clock.



The features of the Multi-8255 adapter are:

- Programmable I/O control functions.
- Up to 192 parallel I/O lines.
- Maximum of 2.35MHZ count rate.
- Six independent 16 bits counters.
- Support several operating modes, which are programmable.
- Port address selectable.





CHAPTER 2

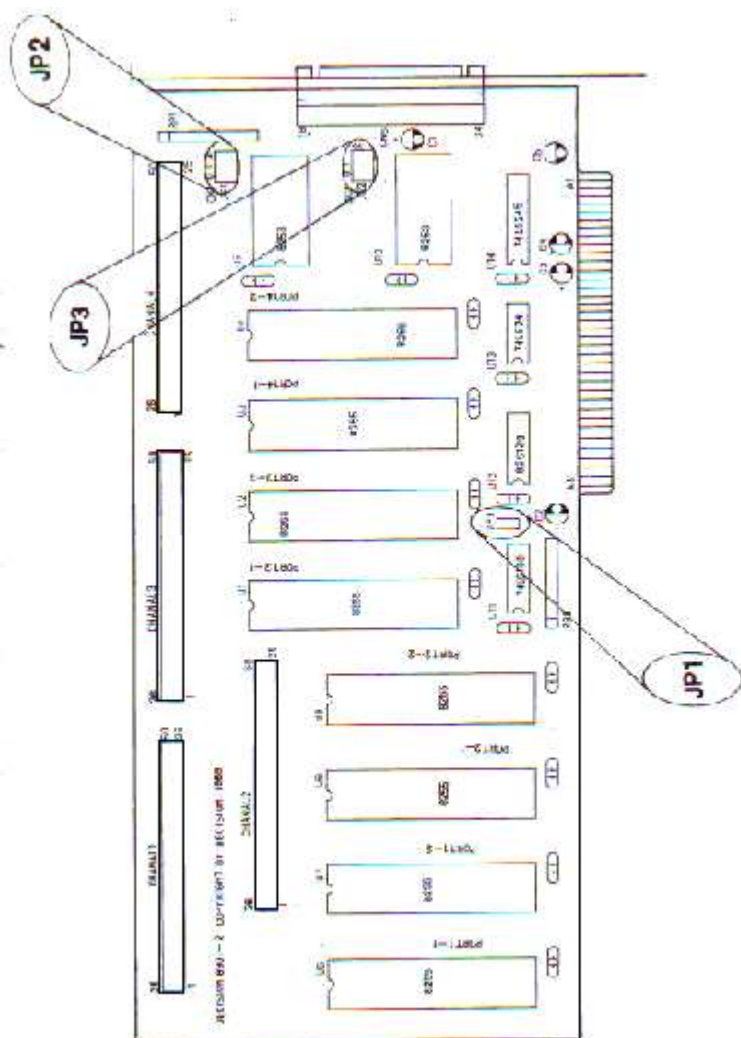
HARDWARE CONFIGURATION

2.1 Configuration for jumpers setting

Before you use the multi-8255 I/O card, you must ensure that the I/O address and the clock are set correctly. Observe the figure bellows the proper settings for the multi-8255 I/O card are described in the following:



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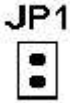
1. I/O Address

The JP1 is used to select I/O port address, the address mapping of 8255 chips and 8253 chips are shown in the followings:

Address Mapping

Chip No.	JP1 short	JP1 open
8255 (1)	280-283	300-303
8255 (2)	284-287	304-307
8255 (3)	288-28B	308-30B
8255 (4)	28C-28F	30C-30F
8255 (5)	290-293	310-313
8255 (6)	294-297	314-317
8255 (7)	298-29B	318-31B
8255 (8)	29C-29F	31C-31F
8255 (1)	2A0-2A3	320-323
8255 (2)	2A8-2AB	328-32B

JP1: Open



Select &H300 - &H32B as I/O port address. The I/O functions are shown in the following:

&H300: Port 1A input/output buffer.

&H301: Port 1B input/output buffer.

&H302: Port 1C input/output buffer.

&H303: Port 1 control register.

&H304: Port 2A input/output buffer.

&H305: Port 2B input/output buffer.

&H306: Port 2C input/output buffer.

&H307: Port 2 input/output buffer.



&H308: Port 3A input/output buffer.

&H309: Port 3B input/output buffer.

&H30A: Port 3C input/output buffer.

&H30B: Port 3 control register.

&H30C: Port 4A input/output buffer.

&H30D: Port 4B input/output buffer.

&H30E: Port 4C input/output buffer.

&H30F: Port 4 control register.

&H310: Port 5A input/output buffer.

&H311: Port 5B input/output buffer.

&H312: Port 5C input/output buffer.





&H313: Port 5 control register.

&H314: Port 6A input/output buffer.

&H315: Port 6B input/output buffer.

&H316: Port 6C input/output buffer.

&H317: Port 6 control register.

&H318: Port 7A input/output buffer.

&H319: Port 7B input/output buffer.

&H31A: Port 7C input/ output buffer.

&H31B: Port 7 control register.

&H31C: Port 8A input/output buffer.

&H31D: Port 8B input/output buffer.





&H31E: Port 8C input/output buffer.

&H31F: Port 8 control register.

&H320: Counter 1A input/output buffer.

&H321: Counter 1B input/output buffer.

&H322: Counter 1C input/output buffer.

&H323: Counter 1 control register.

&H328: Counter 2A input/output buffer.

&H329: Counter 2B input/output buffer.

&H32A: Counter 2C input/output buffer.

&H32B: Counter 2 control register.

&H308: Port 3A input/output buffer.





&H309: Port 3B input/output buffer.

&H30A: Port 3C input/output buffer.



JP1: Close (Default)

JP1



Select &H280 - &H2AB as I/O port address. The I/O functions are shown in the followings:

&H280: Port 1A input/output buffer.

&H281: Port 1B input/output buffer.

&H282: Port 1C input/output buffer.

&H283: Port 1 control register.

&H284: Port 2A input/output buffer.

&H285: Port 2B input/output buffer.

&H286: Port 2C input/output buffer.

&H287: Port 2 control register.



&H288: Port 3A input/output buffer.

&H289: Port 3B input/output buffer.

&H28B: Port 3 control register.

&H28C: Port 4A input/output buffer.

&H28D: Port 4B input/output buffer.

&H28E: Port 4C input/output buffer.

&H28F: Port 4 control register.

&H290: Port 5A input/output buffer.

&H291: Port 5B input/output buffer.

&H292: Port 5C input/output buffer.

&H293: Port 5 control register.





&H294: Port 6A input/output buffer.

&H295: Port 6B input/output buffer.

&H296: Port 6C input/output buffer.

&H297: Port 6 control register.

&H298: Port 7A input/output buffer.

&H299: Port 7B input/output buffer.

&H29A: Port 7C input/output buffer.

&H29B: Port 7 control register.

&H29C: Port 8A input/output buffer.

&H29D: Port 8B input/output buffer.

&H29E: Port 8C input/output buffer.





&H29F: Port 8 control register.

&H2A0: Counter 1A input/output buffer.

&H2A1: Counter 1B input/output buffer.

&H2A2: Counter 1C input/output buffer.

&H2A3: Counter 1 control register.

&H2A8: Counter 2A input/output buffer.

&H2A9: Counter 2B input/output buffer.

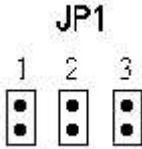
&H2AA: Counter 2C input/output buffer.

&H2AB: Counter 2 control register.



2. Clock Selection

JP2: JP2 is used to select clock of 8253 (1).



JP2-1 = Short (default):

Select internal clock to counter 1A

JP2-2 = Short (default):

Select internal clock to counter 1B.

JP2-3 = Short (default):

Select internal clock to counter 1C.

JP2-1 = Open:

Select external clock to counter 1A.



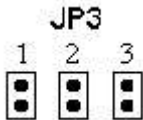
JP2-2 = Open:

Select external clock to counter 1B.

JP2-3 = Open:

Select external clock to counter 1C.

JP3: JP3 is used to select clock of 8253 (2).



JP2-1 = Short (default):

Select internal clock to counter 2A.

JP2-2 = Short (default):

Select internal clock to counter 2B.

JP2-3 = Short (default):





Select internal clock to counter 2C.

JP2-1 = Open:

Select external clock to counter 2A.

JP2-2 = Open:

Select external clock to counter 2B.

JP2-3 = Open:

Select external clock to counter 2C.



2.2 Hardware Installation

Your multi-8255 I/O card is designed to be inserted in any available slot in your PC/XT, PC/AT, or compatibles. In order to gain access to the expansion slots and the programs switches on the main board, follow the steps listed below:

1. Set the multi-8255 I/O card switch.
2. Turn off all power of your computer and all peripheral devices before installing your multi-8255 I/O card.
3. Remove the cover of the computer.
4. Insert your reconfigured card into any available slot. Make sure your I/O card is firmly seated in the chosen slot.
5. Replace the cover of the computer.
6. You are now ready to use your multi-8255 I/O card for several applications.



2.3 Pin Assignment

There are four 50 pins I/O connectors, where CN1, CN2, CN3, CN4 corresponds to 8255 I/O ports, and CN5 corresponds to 8253 counter.





CONNECTOR CN1: 8255 (U6) and 8255 (U7)



PIN	1	1PA0	PIN	26	GND
	2	1PA1		27	2PA0
	3	1PA2		28	2PA1
	4	1PA3		29	2PA2
	5	1PA4		30	2PA3

	6	1PA5		31	2PA4
	7	1PA6		32	2PA5
	8	1PA7		33	2PA6
	9	1PB0		34	2PA7
	10	1PB1		35	2PB0

	11	1PB2		36	2PB1
	12	1PB3		37	2PB2
	13	1PB4		38	2PB3
	14	1PB5		39	2PB4
	15	1PB6		40	2PB5

	16	1PB7		41	2PB6
	17	1PC0		42	2PB7
	18	1PC1		43	2PC0
	19	1PC2		44	2PC1
	20	1PC3		45	2PC2

	21	1PC4		46	2PB3
	22	1PC5		47	2PB4
	23	1PC6		48	2PC5
	24	1PC7		49	2PC6
	25	GND		50	2PC7





CONNECTOR CN2: 8255 (U8) and 8255 (U9)



PIN	1	3PA0	PIN	26	GND
	2	3PA1		27	4PA0
	3	3PA2		28	4PA1
	4	3PA3		29	4PA2
	5	3PA4		30	4PA3
	-----			-----	
	6	3PA5		31	4PA4
	7	3PA6		32	4PA5
	8	3PA7		33	4PA6
	9	3PB0		34	4PA7
	10	3PB1		35	4PB0
	-----			-----	
	11	3PB2		36	4PB1
	12	3PB3		37	4PB2
	13	3PB4		38	4PB3
	14	3PB5		39	4PB4
	15	3PB6		40	4PB5
	-----			-----	
	16	3PB7		41	4PB6
	17	3PC0		42	4PB7
	18	3PC1		43	4PC0
	19	3PC2		44	4PC1
	20	3PC3		45	4PC2
	-----			-----	
	21	3PC4		46	4PB3
	22	3PC5		47	4PB4
	23	3PC6		48	4PC5
	24	3PC7		49	4PC6
	25	GND		50	4PC7





CONNECTOR CN3: 8255 (U1) and 8255 (U2)



PIN	1	5PA0	PIN	26	GND
	2	5PA1		27	6PA0
	3	5PA2		28	6PA1
	4	5PA3		29	6PA2
	5	5PA4		30	6PA3
	-----			-----	
	6	5PA5		31	6PA4
	7	5PA6		32	6PA5
	8	5PA7		33	6PA6
	9	5PB0		34	6PA7
	10	5PB1		35	6PB0
	-----			-----	
	11	5PB2		36	6PB1
	12	5PB3		37	6PB2
	13	5PB4		38	6PB3
	14	5PB5		39	6PB4
	15	5PB6		40	6PB5
	-----			-----	
	16	5PB7		41	6PB6
	17	5PC0		42	6PB7
	18	5PC1		43	6PC0
	19	5PC2		44	6PC1
	20	5PC3		45	6PC2
	-----			-----	
	21	5PC4		46	6PB3
	22	5PC5		47	6PB4
	23	5PC6		48	6PC5
	24	5PC7		49	6PC6
	25	GND		50	6PC7



CONNECTOR CN4: 8255 (U3) and 8255 (U4)



PIN	1	7PA0	PIN	26	GND
	2	7PA1		27	8PA0
	3	7PA2		28	8PA1
	4	7PA3		29	8PA2
	5	7PA4		30	8PA3
	-----			-----	
	6	7PA5		31	8PA4
	7	7PA6		32	8PA5
	8	7PA7		33	8PA6
	9	7PB0		34	8PA7
	10	7PB1		35	8PB0
	-----			-----	
	11	7PB2		36	8PB1
	12	7PB3		37	8PB2
	13	7PB4		38	8PB3
	14	7PB5		39	8PB4
	15	7PB6		40	8PB5
	-----			-----	
	16	7PB7		41	8PB6
	17	7PC0		42	8PB7
	18	7PC1		43	8PC0
	19	7PC2		44	8PC1
	20	7PC3		45	8PC2
	-----			-----	
	21	7PC4		46	8PB3
	22	7PC5		47	8PB4
	23	7PC6		48	8PC5
	24	7PC7		49	8PC6
	25	GND		50	8PC7



CONNECTOR CN5: 8255 (U5) and 8255 (U6)



PIN	1	1PA0	PIN	26	5V
	2	1ACK		27	GND
	3	1AGAT		28	-5V
	4	1AOUT		29	GND
	5	GND		30	+12V
	-----			-----	
	6	1BCK		31	GND
	7	1BGAT		32	-12V
	8	1BOUT		33	GND
	9	GND		34	GND
	10	1CCK			

	11	1CGAT			
	12	1COUT			
	13	GND			
	14	2ACK			
	15	2AGAT			

	16	2AOUT			
	17	GND			
	18	2BCK			
	19	1BGAT			
	20	2BOUT			

	21	GND			
	22	2CCK			
	23	2CGAT			
	24	2COUT			
	25	GND			