

FCC WARNING

This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions in this manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a class B computing device pursuant to subpart J of part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a residential environment.

If this equipment does cause interference to radio or television reception which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the equipment with respect to the receiver
- Move the equipment away from the receiver
- Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications helpful: How to identify and resolve radio-TV interference problems. This booklet is available from the U.S. Government printing office, Washington DV 20402, stock number 004-000-00345-4.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. It is the responsibility of the user to correct such interference.

AT MULTI I/O PLUS IDE & FDD CONTROLLER

MODEL : CA8391 / CA8392

User's Manual

INTRODUCTION

The CA8391 / CA8392 is the most advanced controller card built-in with both AT I/O and IDE /FDD functions. It offers enhanced performance and compact in size while retaining a high degree of compatibility with your IBM PC/AT and compatible systems.

The CA8391 / CA8392 is equipped with 2 serial ports (one optional for CA8391), a parallel port, a game port, an IDE hard disk controller and a floppy disk controller. All of the ports can be enable or disable according to your system requirements.

With CA8391 / CA8392 you can save a slot and shorten the installation time for setting up of your system.

FEATURES

AT I/O PORTION

- Two asynchronous serial ports JP7 & JP8 (one optional for CA8391) which can be configured as COM1 / COM3 and COM2 / COM4 respectively.
- One parallel printer port P2 which can be selected as LPT1 (378) or LPT2 (278)
- One game port P1

IDE / FDD PORTION

- Supports up to two "AT BUS" (IDE) hard disk drives with 16 bits data transfer interface.
- Supports up to two floppy disk drives of any combination of 360K, 1.2M - 5.25" and 720K, 1.44M - 3.5".

CHECKLIST

Your CA8391 / CA8392 controller card contains the following:

- CA8391 card / CA8392 card
- User's Manual
- One 10 to 9/25 ways interface cable for CA8391:COM1 or Two 10 to 9/25 ways interface cables for CA8392:COM1 & COM2
- 34 ways flat cable for FDD
- 40 ways flat cable for IDE

INSTALLATION PROCEDURE

- Switch off all power of your system including any connected peripherals.
- Remove the cover of your system and the screw of a bracket from any 16 bits empty slot.
- Carefully set the jumper of CA8391 / CA8392 according to your system requirements.
- Plug the CA8391 / CA8392 into the empty slot as mentioned at above and line up the adapter with the screw hole in the rear plate of your system.
- Screw the bracket to fix the CA8391 / CA8392 and connect the signal cables with the adapter and the external devices to be connected.
- Replace your system cover and the installation procedure is now completed.



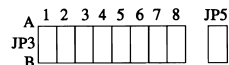
If you are using a CA8391 and want to expand the second serial port, you should insert the following IC into the correspondent IC sockets as below.

<i>IC</i>	<i>Socket</i>
1488	U16
1489	U5
82450	U10

Never plug in the game port cable, the printer cable or the serial cable when the power is on. Otherwise, this may cause damage to your card.

JUMPER SETTING

JP3 - AT I/O FDD



Select

- B COM1 for JP7
- A COM3 for JP7

- B Enable COM1/COM3
- A Disable COM1/COM3

- B COM2 for JP8
- A COM4 for JP8

- B Enable COM2/COM4
- A Disable COM2/COM4

- B LPT1 (378) for printer port
- A LPT2 (278) for printer port

- B Enable printer port
- A Disable printer port

- B Enable game port
- A Disable game port

- B Enable FDD controller
- A Disable FDD controller

IP5 - IDE HARD DISK CONTROLLER

Select

- B Enable IDE hard disk controller
 A Disable IDE hard disk controller

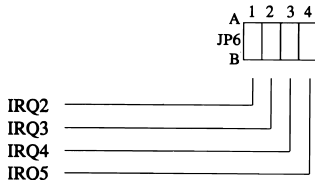
IP9 - INTERRUPT LEVEL FOR PRINTER PORT

Select

- 2 - 3 IRQ7 for printer port (default for LPT1)
 1 - 2 IRQ5 for printer port (default for LPT2)

IP6 - INTERRUPT LEVEL FOR SERIAL PORTS

- A SIDE Select interrupt level for COM1/COM3 (default IRQ4)
 B SIDE Select interrupt level for COM2/COM4 (default IRQ3)



PIN ASSIGNMENT OF PORTS

PARALLEL PRINTER PORT (P2)

LINE NAME	DB-25 (FEMALE) CONNECTOR PIN	IBM MATRIX PRINTER
STROBE (-)	1	1
D0	2	2
D1	3	3
D2	4	4
D3	5	5
D4	6	6
D5	7	7
D6	8	8
D7	9	9
ACK (-)	10	10
BUSY	11	11
PE	12	12
SLCT	13	13
AUTOFD (-)	14	14
ERROR (-)	15	32
INIT (-)	16	31
SLCT IN (-)	17	36
GROUND	18-25	16, 19-30, 33
NC		15, 18, 34

SERIAL PORT (JP7 & JP8)

SIGNAL NAME	PIN NUMBER	RS-232C INTER-FACE PIN NUMBER
CN (IN)	1	8
RX (IN)	2	3
TX (OUT)	3	2
DTR (OUT)	4	20
SG	5	7
DSR (IN)	6	6
RTS (OUT)	7	4
CTS (IN)	8	5
RI (IN)	9	22

GAME PORT (PI)

<i>PIN NUMBER</i>	<i>LINE NAME</i>
2	BUTTON 4
3	POSITION 0
6	POSITION 1
7	BUTTON 5
1, 8, 9, 15	VCC
4,5,12	GROUND
10,11,13,14	NC

FLOPPY DISK CONTROLLER (JP1)

<i>PIN</i>	<i>SIGNAL NAME</i>
2	REDUCED WRITE
4	UNUSED
6	UNUSED
8	INDEX
10	MOTOR ENABLE 1
12	DRIVE SELECT 0
14	DRIVE SELECT 1
16	MOTOR ENABLE 0
18	DIRECTION SELECT
20	STEP
22	WRITE DATA
24	WRITE ENABLE
26	TRACK 0
28	WRITE PROTECT
30	READ DATA
32	HEAD 1 SELECT
34	DISKETTE CHANGE
1, 3, 5.....33	GROUND

IDE HARD DISK CONTROLLER (JP2)

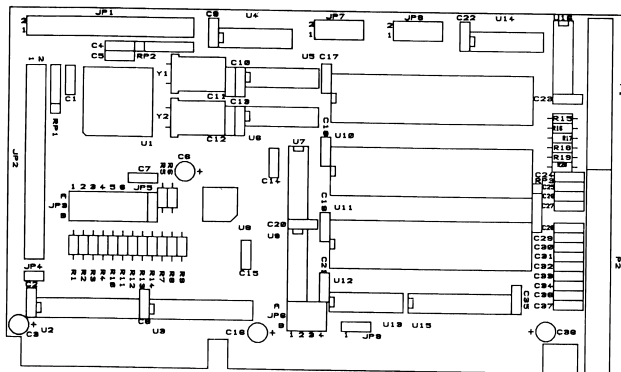
<i>PIN</i>	<i>SIGNAL NAME</i>
1	RESET
17	HD0
15	HD1
13	HD2
11	HD3
9	HD4
7	HD5
5	HD6
3	HD7
4	HD8
6	HD9
8	HD10
10	HD11
12	HD12
14	HD13
16	HD14
18	HD15
23	HIOW
25	HIOR
27	IOCHRDY
28	HALE
31	IRQBUS
32	IOCS16
35	HA0
33	HA1
36	HA2
37	HCS0
38	HCS1
39	SLV ACT
20, 29, 34	UNUSED
2,19, 21, 22,	GROUND
24, 26, 30, 40	GROUND



JP4 is the hard disk select LED.

The IDE (AT BUS) hard disk controller can only interface to the IDE type hard disk. Connecting the ST412/506 hard disk to the IDE hard disk controller could result in damage to the hard disk or system. Check your system manual to ensure the system has an IDE hard disk drive before using the IDE hard disk controller.

BLOCK DIAGRAM OF CA8391 / CA8392



Remark:

IBM PC/AT is registered trademark of International Business Machines Corporation.

The above information represents the best of our knowledge. We may have erroneous information and we reserve the right to change the specification without prior notice