AT MULTI I/O
PLUS
IDE & FDD CONTROLLER

MODEL: CA8391/CA8392

USED FOR PORTS ONLY

FDD/IDE DISABLE

** USER'S MANUAL**

1. INTRODUCTION

The CA8391/CA8392 is the most advanced controller card built-in with both AT I/O and 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, a IDE hard disk controller and a floppy disk controller. All of the ports can be enabled or disabled according to your system requirements.

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

2. FEATURES

(A) 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 LPTZ (278).

- One game port Pl

(B) IDE/FDD PORTION

- Supports up to two "AT bus" (IDE) hard disk drives with 16 bits data transfer interface.

- Suppports up to two floppy disk drives of any combination of 360K. 1.2M - 5.25" and 720K. 1.44M - 3.5".

3. 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

4.   INSTALLATION   PROCEDURE

   (i)   Switch off all power of your system including any
             connected   peripherals.

   (ii)   Remove the cover of your system and the screw of a
             bracket from any 16 bits empty slot.

   (iii)   Carefully set the jumper of CA8391/CA8392 according
           to your system requirements.

   (iv)   Plug fhe CA8391/CA8392 into the empty slot as men-
             tioned in (ii) and line up the adapter with the screw
             hole in the rear plate of your system.

   (v)   Screw the bracket to fix the CA8391/CA8392 and con-
             nect the signal cables with the adapter and the
             external devices to be connected.

   (vi)   Replace your system cover and the installation proce-
             dure is now completed.

   NOTE: 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.

IC	Socket
1488	U16
1489	U5
82450	U10

5.   JUMPER SETTING

(A) JP3 - AT I/O AND FDD

```
                                    1 2 3 4 5 6        JP5
                              A
                          JP3  [ ][ ][ ][ ][ ][ ][ ]  [ ]
                              B
```

Select
- B   COM1 for JP7
- **A**   COM3 for JP7
- **B**   Enable COM1/COM3
- **A**   Disable COM1/COM3
- **B**   COM2 for JPB
- 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   E n a b l e   p r i n t e r   p o r t
- A   Disable printer port –
- B   E n a b l e   g a m e   p o r t
- A   Disable game port
- B   Enable FDD controller
- A   Disable FDD controller
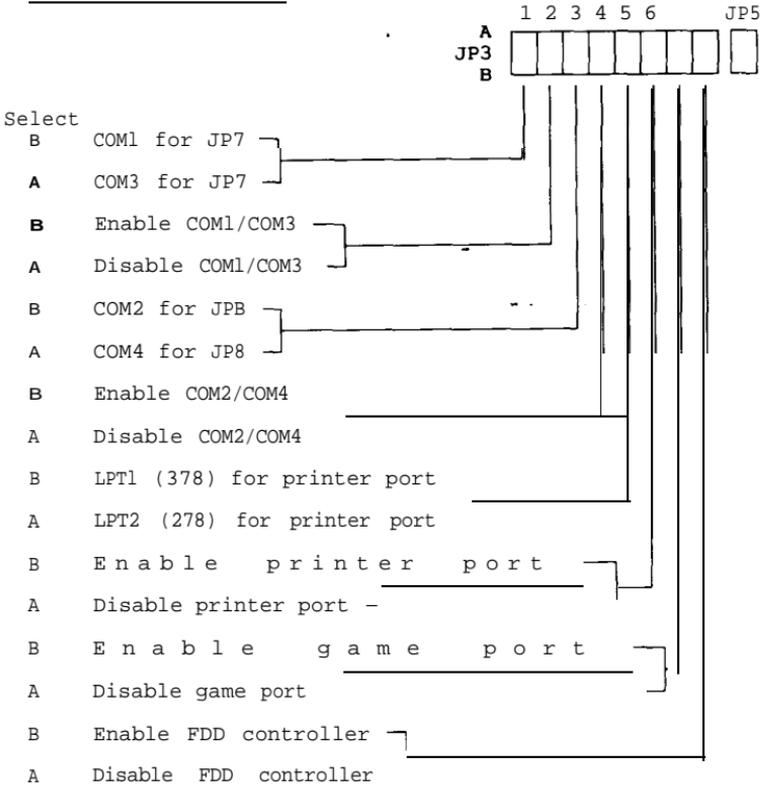
(B) JP5 - **IDE HARD DISK CONTROLLER**

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

(C) **JP9** - **INTERRUPT LEVEL FOR PRINTER PORT**

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

(D) **JP6 - 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)
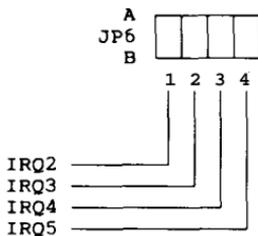
6. **PIN ASSIGNMENT** OF **PORTS**

(A) <u>PARALLEL PRINTER PORT (P2)</u>

LINE NAME	DB-25 (FEMALE) CONNECTOR PIN	IBM MATRIX PRINTER
STROBE (-)	1	1
DO	2	2
Dl	3	3
D2	4	4
D3	5	5
D4	6	6
D5	7	7
D7	8	8
ACK (-)	10 9	10 9
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

(B) <u>SERIAL PORT (JP7 & JP8)</u>

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

(C) GAME PORT (Pl)

PIN NUMBER	LINE NAME
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

(D)   FLOPPY DISK CONTROLLER (JPl)

PIN	SIGNAL N A M E
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

(E) **IDE HARD DISK CONTROLLER (JP2)**

PIN	SIGNAL NAME
1	RESET
17	HDO
15	HD1
13	HD2
11	HD3
9	HD4
5	HD5
3	HD6
	HD7
4	HD8
6	HD9
8	HDlO
10	HDll
12	HD12
14	HD13
16	HD14
18	HD15
23	HIOW
25	HIOR
27	IOCHRDY
28	HALE
31	IRQBUS
32	IOCSl6
35	HA0
33	HA1
36	HA2
37	HCSO
38	HCSl
39	SLV ACT
20, 29, 34	UNUSED
2,19,21,22,	GROUND
24,26,30,40	GROUND

NOTE : JP4 is the hard disk select LED.
The IDE (AT bus) hard disk controller can only inter-
face 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.

7. BLOCK DIAGRAM OF CA8391/CA8392
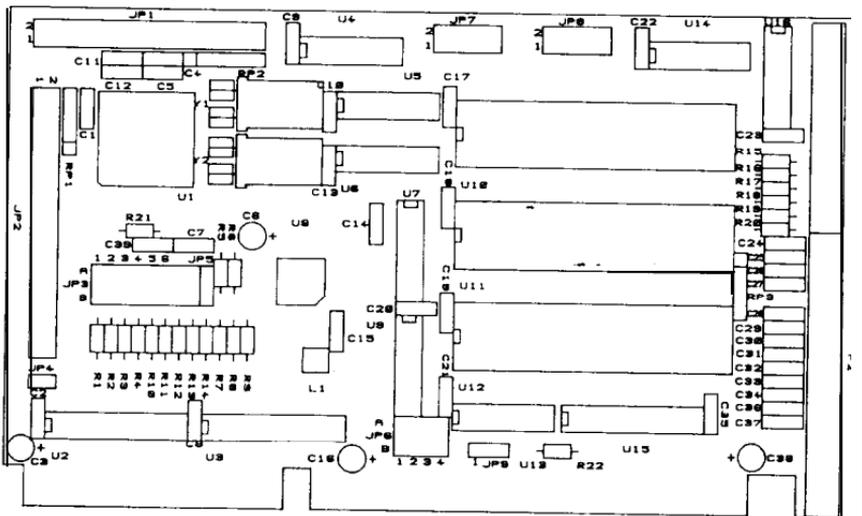
Remark: IBM PC/AT is registered trademark of International Business Machines Corporation.

> 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.

8. FCC WARNING

This equipment generates and uses radio frequency energy and if
not installed and used in accordance with the manufacturer's in-
structions, it may cause interference to radio and television
reception. 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 instal-
lation. However there is no guarantee that interference will not
occur in a particular installation.

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

Reorient the receiving antenna.

Relocate the computer with respect to the receiver.

Plug the computer into a different outlet so that the com-
puter and receiver are on different branch circuits.

Move the computer away from the receiver,

Ensure that the card mounting screws, attachment connector
screws, and ground wires are tightly secured.