

CA Series for PC/104 and CB Series for PC/104-Plus Quick Installation Guide

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Overview

Moxa offers a wide selection of PC/104 and PC/104-Plus serial boards that provide industrial-grade connections to multiple serial devices. The CA Serial Board Series is for PC/104 modules while the CB Serial Board series is for PC/104-Plus module.

Package Checklist

PC/104 or PC/104-Plus boards are shipped with the following items:

- Moxa multiport serial board (PC/104 module is for CA Series; PC/104-Plus module is for CB Series)
- Documentation and software CD
- Quick installation guide (printed)
- Warranty card

Please notify your sales representative if any of the above items are missing or damaged.

Hardware Installation

The PC/104 or PC/104-Plus MUST be plugged into the PC before the driver is installed. Follow these steps below.

CA Series		CB Series	
Step 1:	Turn the embedded computer off	Step 1:	Turn the embedded computer off
Step 2:	Set the I/O address, Interrupt vector, IRQ, and serial interface (Refer to the section: "Block Diagram, I/O Address, Interrupt Vector, Serial Interface")	Step 2:	Set interface (Refer to section: "Block Diagram, I/O Address, Interrupt Vector, Serial Interface")
Step 3:	Insert the module into the PC/104 slot	Step 3:	Insert the module into PC/104 slot.
Step 4:	Screw the control board in place	Step 4:	Screw the control board in place.
Step 5:	Connect the cables (Refer to the section: "Pin Assignments")	Step 5:	Connect the cables. (Refer to the section: "Pin Assignments")
Step 6:	Turn the embedded computer on	Step 6:	Turn the embedded computer on.

Software Installation

Follow these steps:

Step 1: Get the driver at www.moxa.com or from the CD.

Based on the OS type, choose the corresponding driver.

Step 2: Install Driver

- For Windows (Take the installation of Win7 as an example)
 - 2.1. Unzip and execute the .exe file
 - 2.2. Follow the instructions to install the drivers
Note: If your model is from the CB Series, then the installation is done. Otherwise, please do the following

steps for the CA Series models.

- 2.3. Follow the instructions of "Add Hardware Wizard"
- 2.4. Follow the instruction of "Found Hardware Wizard". This step is for mapping your driver and hardware device.
- 2.5. Repeat steps 2.3 and 2.4 to activate the other serial ports.
- For Linux
 - 2.1. Get the driver from CD and Unzip the file:

```
#mount /dev/cdrom /mnt/cdrom
#cd /
#mkdir moxa
#cd moxa
#cp /mnt/cdrom/<driver directory>/mxpcdrv.tgz
#tar xvfz mxpcdrv.tgz
```
 - 2.2. Install the driver:

```
#cd mxser
#./mxinstall
```
 - 2.3. Install the module driver, using the hardware settings that you have selected (This step is only for the CA Series)
For example: I/O address of 0x180, an INT vector of 0x1C0, and an IRQ of 10

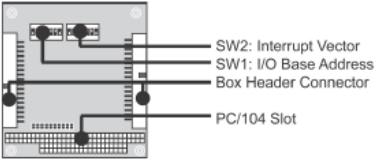
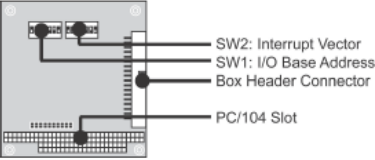
```
#modprobe mxpcdrv ioaddr=0x180 iovect=0x1C0 irq=10
```
 - 2.4. You can use the Moxa diagnostic utility to verify the driver's status:

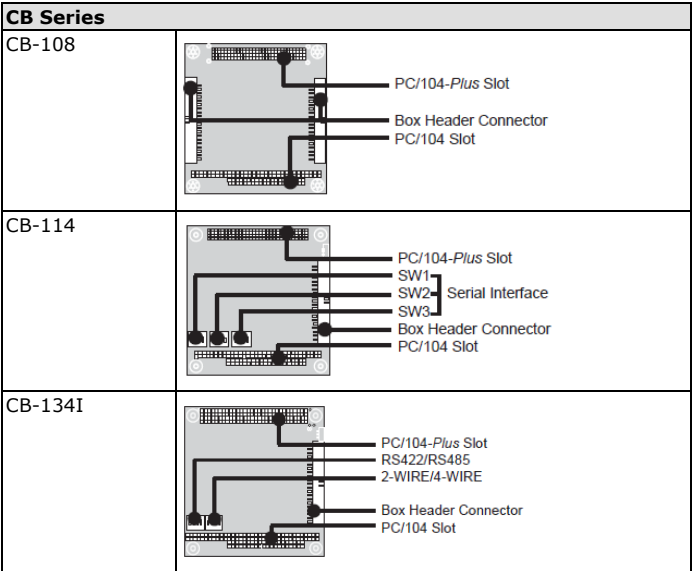
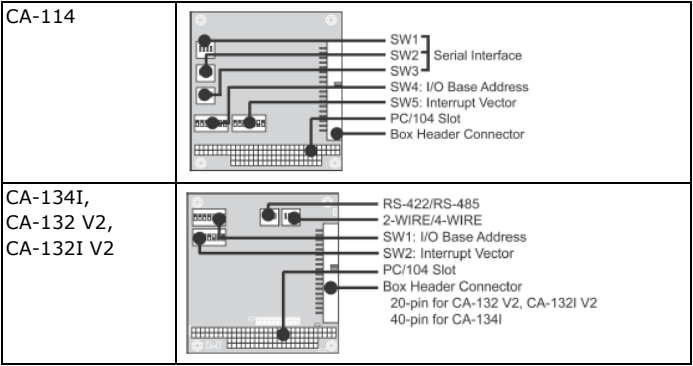
```
#cd /moxa/mxpcdrv/utility/diag
#./msdiag
```
 - 2.5 You can use the Moxa terminal utility to test the TTY ports:

```
#cd /moxa/mxpcdrv/utility/term
#./msterm
```

Block Diagram, I/O Address, Interrupt Vector, Serial Interface

Block Diagrams

CA Series	
CA-108	 <p>SW2: Interrupt Vector SW1: I/O Base Address Box Header Connector PC/104 Slot</p>
CA-104 V2	 <p>SW2: Interrupt Vector SW1: I/O Base Address Box Header Connector PC/104 Slot</p>

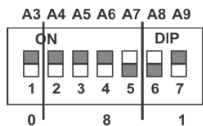


I/O Address (Only for the CA Series)

Use DIP switch SW1 to set port 1's I/O base address. The other ports will be configured automatically.



The default I/O base address is 0x180 and allows settings from 0x000 to 0x3FF.

Some popular settings are provided below:



For example, an I/O base address of 0x180 should be set as follows:

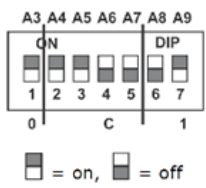
A3	A4	A5	A6	A7	A8	A9	Hex
ON	ON	ON	ON	OFF	OFF	ON	0x180

 = on,  = off

The other serial ports will be set automatically to 0x188, 0x190, 0x198, etc.

Interrupt Vector (Only for CA Series)

A3	A4	A5	A6	A7	A8	A9	Hex
8	1	2	4	8	1	2	Hex
ON	ON	ON	ON	ON	ON	ON	0×000
ON	ON	ON	ON	ON	ON	off	0×200
ON	ON	ON	ON	ON	off	off	0×300
ON	ON	ON	ON	off	off	off	0×380
ON	ON	ON	off	off	off	off	0×3C0
ON	ON	off	off	off	off	off	0×3E0
ON	off	off	off	off	off	off	0×3F0
off	off	off	off	off	off	off	0×3F8
off	ON	ON	ON	ON	ON	ON	0×008
off	off	ON	ON	ON	ON	ON	0×018
off	off	off	ON	ON	ON	ON	0×038
off	off	off	off	ON	ON	ON	0×078
off	off	off	off	off	ON	ON	0×0F8
off	off	off	off	off	ON	off	0×2F8



Use DIP switch SW2 to set port 1's interrupt vector.

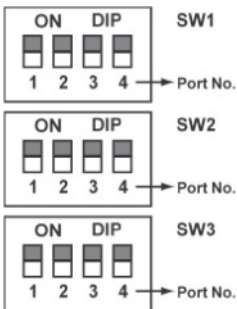
The default interrupt vector is 0×1C0, with SW2 set as follows:

A3	A4	A5	A6	A7	A8	A9	Hex
ON	ON	ON	ON	OFF	OFF	ON	0×1C0

Serial Interface

CA Series

CA-114



Interface	RS-232	RS-422	RS-485 (4w)	RS-485 (2w)
SW1	-	-	ON	OFF
SW2	-	ON	OFF	OFF
SW3	ON	OFF	OFF	OFF

CA-134I, CA-132 V2, and CA-132I V2

Interface	2-wire/4-wire	RS-422/RS-485
RS-422	-	OFF
4-wire RS-485	OFF	ON
2-wire RS-485	ON	ON

CB Series**CB-114**

Interface	RS-232	RS-422	RS-485 (4w)	RS-485 (2w)
SW1	-	-	ON	OFF
SW2	-	ON	OFF	OFF
SW3	ON	OFF	OFF	OFF

CB-134I

Interface	2-wire/4-wire	RS-422/RS-485
RS-422	-	OFF
4-wire RS-485	OFF	ON
2-wire RS-485	ON	ON

Pin Assignments**RS-232****(CA-108/CB-108, CA-114/CB-114, and CA-104)**

NOTE Note that there are two 40-pin box header connectors on the CA-108/CB-108, of which each connects to 4 serial ports.

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	DCD0	11	DCD1	21	DCD2	31	DCD3
2	DSR0	12	DSR1	22	DSR2	32	DSR3
3	RxD0	13	RxD1	23	RxD2	33	RxD3
4	RTS0	14	RTS1	24	RTS2	34	RTS3
5	TxD0	15	TxD1	25	TxD2	35	TxD3
6	CTS0	16	CTS1	26	CTS2	36	CTS3
7	DTR0	17	DTR1	27	DTR2	37	DTR3
8	-	18	-	28	-	38	-
9	GND0	19	GND1	29	GND2	39	GND3

RS-422, 4-wire RS-485**(CA-132, CA-132I, CA-114/CB-114, and CA-134I)**

With regard to the CA Series, pins 21 to 40 apply to CA-114 and CA-134I only.

Pin	Signal	Pin	Signal	Pin*	Signal*	Pin*	Signal*
1	TxD0-(A)	11	TxD1-(A)	21	TxD2-(A)	31	TxD3-(A)
3	TxD0+(B)	13	TxD1+(B)	23	TxD2+(B)	33	TxD3+(B)
5	RxD0+(B)	15	RxD1+(B)	25	RxD2+(B)	35	RxD3+(B)
7	RxD0-(A)	17	RxD1-(A)	27	RxD2-(A)	37	RxD3-(A)
9	GND0	19	GND1	29	GND2	39	GND3

2-wire RS-485

(CA-132, CA-132I, CA-114/CB-114, and CA-134I)

With regard to the CA Series, pins 21 to 40 apply to the CA-114 and CA-134I only.

Pin	Signal	Pin	Signal	Pin*	Signal*	Pin*	Signal*
5	Data0+(B)	15	Data1+(B)	25	Data2+(B)	35	Data3+(B)
7	Data0-(A)	17	Data1-(A)	27	Data2-(A)	37	Data3-(A)
9	GND0	19	GND1	29	GND2	39	GND3