

Moxa Smartio/Industio, PC/104-Plus Multiport Serial Board QNX 6 Built-In Driver Installation Guide (PCI, UPCI, PCIe Only)

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Description:

Moxa multiport serial board uses 16550 compatible UART chip; it can be driven by QNX 6 serial driver devc-ser8250 – which supports 8250s, 16450s and 16550s. QNX 6 provides flexible enumeration architecture to load OEM driver for different PCI adapter. To configure the Moxa board with devc-ser8250, Moxa provide complete configuration files to help you install driver quickly. This document will show you how to do this.

Package:

mxser: QNX configuration file for enum-devices.
enum-start.sh: Shell script for configure Moxa board.
QNX6_mxser.pdf: This document.
mxconf: configuration utility.

Procedure:

1. Copy `driv_qnx6_smart_builtin_v1.0_build_XXXXXXXXX.zip` to `/tmp`.
2. Run `"cd /tmp; unzip driv_qnx6_smart_builtin_v1.0_build_XXXXXXXXX.zip"`.
3. Run `"cd /tmp/qnx6_smart"`.
4. Create directory `/etc/system/enum/oem`. If exist, skip this step.
5. Copy `mxser` into `/etc/system/enum/oem`.
6. Copy `enum-start.sh` into `/usr/local/bin`.
7. Copy `mxconf` into `/usr/sbin`, if there is software configurable board.
8. Run `"chmod +x /usr/local/bin/enum-start.sh"`.
9. Reboot:

How to check driver status:

Run `"pidin arg | grep 8250"` to check devc-8250 process status. You should see the extra devc-ser8250 process in list. (The original one is for COM1/COM2). It's process parameter should include `"-c14745600,16"` and `"-uX"` – which mean the Moxa board uses 14.7456MHz oscillator and new device node start at `X`. In the `/dev` directory, you also can see the new device node have been created. For instance, if the parameter is `"-u3"`, then the device nodes are `/dev/ser3 ~ /dev/ser10` for 8 ports board, `/dev/ser3 ~ /dev/ser6` for 4 ports board, `/dev/ser3 ~ /dev/ser4` for 2 ports board. If you can't see the extra devc-ser8250 process for Moxa board, please check the above procedure. You also can use `pci -v` to make sure Moxa board can be detected by BIOS and QNX. If Moxa board is not in `"pci -v"` list, please shutdown QNX and turn off power. Then check your hardware installation procedure with Moxa board manual.

Software configuration for serial interface:

This section is only for some boards which can switch serial interface with software tool, such as CP-114EL, CP-114EL-I, CP-132EL and CP-132EL-I. `mxconf` is the program for switching serial interface and terminator. The usage is showed as follow:

Usage: `mxconf [OPTIONS] dev#`

`dev#` - device name.

Options:

- l - list configurable device.
- i inf - set serial interface (rs232/rs422/rs485-2w/rs485-4w).
- r term - set terminator. (off/on)
- p n1,... - specified ports.
- h - show this usage message.

'device name' can be showed with -l option. Running driver without option shows device settings.
The following are some examples.

List configurable devices:

```
# mxconf -l
Device Name      Module Name      Port#
dev0             CP-114EL        4
```

Show a device's setting:

```
# mxconf dev0
Port Name  Interface  Terminator
Port0     rs232     off
Port1     rs232     off
Port2     rs232     off
Port3     rs232     off
```

Switch serial interface to rs485-2w for all ports:

```
# mxconf -i rs485-2w dev0
```

Switch serial interface to rs485-2w for port0 and port3:

```
# mxconf -i rs485-2w -p 0,3 dev0
```

Support product list:

2/4/8 Ports PCI Express

CP-102E, CP-102EL, CP-132E, CP-132EL-I, CP-104EL, CP-104EL-A, CP-114EL, CP-114EL-I, CP-118EL, CP-118EL-A, CP-168EL, CP-168EL-A,

2 Ports PCI and UPCI

CP-102U, CP-102UL, CP-132U-I, CP-132UL, CP-132, CP-132I, CP-132S, CP-132IS, CP-102, CP-102S, CP-102UF, CP-112UL.

4 Ports PCI and UPCI

CP-104UL, CP-104JU, CP-134U, CP-134U-I, C104H/PCI, C104HS/PCI, CP-114, CP-114I, CP-114S, CP-114IS, CT-114I CP-114UL, POS-104UL

8 Ports PCI and UPCI

CP-118U, CP-168U, C168H/PCI, CP-118U-I, CP-138U, CP-138U-I

PC/104-Plus

CB-108, CB-114, CB-134I

-End-