



TOPIC:	QNX 6 Installation	PRODUCT(s):	DSerial-550 (ISA)
		REVISION:	A00

Installation

- Before installing the card into the system you must check for available resources. To get a general idea of the IRQ and COM port addresses in use you can you will have to check several different locations:
 - COM port addresses and IRQs in use can be found by executing the command `sin ar | grep devc-ser8250` which will return the arguments of process `devc-ser8250` (eg. `devc-ser8250 -u1 3F8,3 -u2 2F8,4` - which tells us that IRQs 3 and 4 are in use as are IO addresses 3F8 and 2F8)
 - In addition certain IRQs may be reserved by the PCI system bus. Executing the command `pci -v | grep Interrupt` will return a listing of all the interrupt line values.
- Set the jumpers on the card to any IRQ and COM port addresses NOT found in the previous step.
NOTE: The DSerial-550 is shipped with factory default jumper settings of COM1/IRQ 3 for Port A and COM2/IRQ 4 for Port B.
- With the power turned off, insert the DSerial-550 card into any free ISA slot in your PC. Make sure the card is well seated. Turn your PC on and start QNX 6.
- If jumpered correctly QNX will automatically detect the presence of the DSerial-ISA card and create two devices in the folder `/etc/dev/` called `Ser[x]` and `Ser[x+1]` (where x will be the first available COM port while enumerating at boot-up).
NOTE: QNX will always enumerate Port A before Port B (i.e. `Ser[x]` will always refer to Port A and `Ser[x+1]` will always refer to Port B).
- To verify that the card has been installed you may check in either the `/etc/dev/` folder, or in QNX's System Information (Launch>Utilities>System Information). Within the System Information listing you will find a process named `"devc-ser8250"`. By selecting this process you will have access to several different information tabs. Selecting the Arguments tab (Args) will provide you with the exact arguments that were passed to the `devc-ser8250` process at boot-up. From here you can easily determine which port is assigned to which serial device by referring to the card's resources.
For example, given the process command `"devc-ser8250 -u1 3F8,3 -u2 2F8,4 -u3 a000,5"` we can see that Com1 and Com2 were mapped to devices Ser1 and Ser2 respectively and our serial port at a000 was mapped to device Ser3.

Testing

Testing the card's functionality can be done by using QNX's own terminal program, Qtalk, and a loopback connector. To test a port, attach the loopback connector and open up a Qtalk session by executing the command `"qtalk -m /dev/ser3 -b 115200,8,n,1"` on the port. While the loopback connector is attached any characters entered in Qtalk should be echoed back to the screen. Removing the loopback connector should prevent character echoing from occurring.

Troubleshooting

If for some reason the card was not picked up by QNX at boot-up you can manually add the port by using the `devc-ser8250` command.

Example: Say we have two serial ports residing at physical addresses=3e8 and 2f8, using IRQ=5 and 10, respectively, and neither of which is allocated a serial device in the `/etc/dev/` folder. If we have determined that Ser1 and Ser2 already exist in the `/etc/dev/` folder (this is done by inspecting the folder `/etc/dev/` for all serial devices), we can add two new serial devices by running the command:

```
devc-ser8250 -u3 3e8,5 -u4 2f8,10
```

This is a very simple example of adding two new serial devices using the `devc-ser8250` command. Full documentation of all the options associated with this command can be found in the QNX 6 RTOS Utilities Reference.