Driver:

The DA2 uses the ftdi_sio module. This can be found in the kernel config for kernels 2.6 and above

Device Drives ->
*   USB Support ->*
*   USB Serial Converter Support ->*
*   USB FTDI Single Port Serial Driver.*

Support for the DA2 custom VID / PID pair isn't included in the default kernel. There's two ways around this.

1) If you compile ftdi_sio as a module, you can specify the vid and pid when you load the module. To do this, execute the following commands (This will unload the ftdi driver, and reload it with support for the DA2 VID/PID)

> *rmmod ftdi_sio*
> *modprobe ftdi_sio vendor=0x0403 product=0xF248*

2) Alternatively, if you want to compile the driver into the kernel, you will have to set the VID and PID on the DA2 to the default values (VID=0x0403 PID=6001). This will require connecting them to a windows pc. Instructions to do this are given later on.

After loading the driver, if you connect your DA2 then type the following command:

> *dmesg*

At the end of the output, should be a line that contains the text:
"FTDI USB Serial Device converter now attached to ttyUSBx"

The device name (ttyUSBx) may be different. This is the name of the port assigned to the DA2. The drivers now correctly loaded, and you can use ttyUSBx as a standard serial port in linux.

Test Software:

Innovative Technology has a simple program designed to test the DA2 driver is correctly working using SSP. The DA2 needs to have power and a validator in ssp mode connected to it.

   1) Copy the file ssptest.tar.bz2 to your linux filesystem
   2) Extract the file
      tar jxf ssptest.tar.bz2
   3) This should create a subdirectory called ssptest. Change into this directory
      cd ssptest
   4) If your DA2 is /dev/ttyUSB0, you can skip this step:
     a. Edit ssptest.c, and change line 12 to contain the correct device name.
   5) Compile the program
      make
   6) There should be an executable called ssptest in the directory. If you run this you should get the following output.
      ./ssptest

```
7F
80
01
11
65
82
-------
Received
-------
7F
80
01
F0
23
80
```

This has sent an ssp sync command to the validator, and received the response (F0 =SSP_OK).

Setting Default VID / PID:

To do this you will need the program mprog available from:
http://www.ftdichip.com/Resources/Utilities.htm

1) Connect the DA2 to your windows pc and install the driver.
2) Install the Mprog software linked above.
3) Load Mprog (Start -> Programs -> Mprog 3.0a -> Mprog 3)
4) Click on Tools -> Read and Parse
5) Change the USB VID/PID Dropdown to 'FTDI Default'
6) Untick 'Only program blank devices'
7) Save the template (File -> Save as)
8) Program the DA2 (Device -> Program)
9) The message "Programmed Serial Number : FTxxxxxxx" should appear at the
   bottom

The DA2 now has the default VID and PID.