Re: How PC parallel port Is connected internally?

Source: http://coding.derkeiler.com/Archive/General/comp.arch.embedded/2005−06/msg01372.html

- *From*: "Ali" <abdulrazaq@xxxxxxxxx>
- *Date*: 28 Jun 2005 20:45:27 −0700

>you have a number of device layers under NT. 64

Yeah you are right , sometimes called device stack, Actually it is
layered sructure from higher to lower level drivers including filter
drivers also.

>Since Windows is _already_ going to have something hooked in at that level in order to facilitate the very communications initially
required to participate in the PnP recognition of your external
device.

I know Jon you are pointing towards PnP manager which incorporates with
I/O Manager to provide hot plug−in [Play and Play , Device removal and
insertion]

The hardware i have used in the project is AT89S52 microcontroller
device from 8051 family produced by ATMEL. The device board
incorporates basic inputs (push−button, analog to digital converter
ADC0804), output(LED) , LM35 heat sensor and a IDC connectors so that
the user is able to easily connect his or her 8 bit interface for input
or output. The device is powered by external power supply. PC
Communicate with device through parallel port attached to port 1 of
microcontroller for sending data back and forth.

How My device [PowerCell Device] communicate with Parallel Port.
As mentioned above the data port (H378) of D25 is attached with port 1
of microcontroller for bidirectional communication. Provided interface
let user to perform either activity, I/O read or write.
When host interface [PC] wants to perform write operation then.
1) It throws data on Data register (Base Address + 0)of parallel port
which is connected with port 1 of microcontroller
NowWrite Val("&H378"), Val(xxx) ' send data to mC Port 1
2)It sends a high signal to microcontroller P3.3 (INT1) via parallel
port Control register (H37A), by raising the interrupt pin high on
microcontroller.
NowWrite Val("&H37A"), Val(WRITEmC)

3) microcontroller fetch data from its port 1 and then moves it to port
2 which is connected with PowerCell Relay Board via 10 Pin IDC.

Controller assembly :
MOV A, P1
MOV P2,A
4) clear the INT1

NowWrite Val("&H37A"), Val(CLEARmC) ' clear C0 , C1

When the host sends data to the device, the device must respond by sending a code that indicates whether it accepted the data or was too busy to handle it. On the other hand, when data is sent from the host to device, the device must respond turning the relay board LED's ON.

The question is do i have to upgrade my hardware too for writing a PnP driver? I mean it is working fine with NT Driver [Non PnP].
1) Do i have to upgrade my hardware in sense of interrupt generation because i'm not sure how kernel [NT] will discover that now PowerCell [my
device] is connected to DB−25 port instead of ordinary printer? and its

time to load my WDM driver and vice versa when removed.

I appreciate your time!
Cheers.
http://powercell.cjb.net/

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- ***References***:
  - ***Re: How PC parallel port Is connected internally?***
    - *From:* Ali
  - ***Re: How PC parallel port Is connected internally?***
    - *From:* Meindert Sprang
  - ***Re: How PC parallel port Is connected internally?***
    - *From:* Ali
  - ***Re: How PC parallel port Is connected internally?***
    - *From:* Tauno Voipio
  - ***Re: How PC parallel port Is connected internally?***
    - *From:* Ali
  - ***Re: How PC parallel port Is connected internally?***
    - *From:* chris
  - ***Re: How PC parallel port Is connected internally?***
    - *From:* Ali
  - ***Re: How PC parallel port Is connected internally?***
    - *From:* Jonathan Kirwan
  - ***Re: How PC parallel port Is connected internally?***
    - *From:* Ali

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  - *From:* Jonathan Kirwan

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