NI_USB_GPIB_HS Adapter Configuration Manual for Linux

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1 Introduction

This manual guides step by step how to set up a NI_USB_GPIB_HS adapter under a linux operating system (e.g. Ubuntu). It is an edited summary of following links:

- https://twiki.cern.ch/twiki/bin/view/Main/GpibLinux

- http://www.cl.cam.ac.uk/~osc22/tutorials/gpib_usb_linux.html

- http://rfpoweramp.wordpress.com/2014/07/26/setting-up-ni-gpib-usb-hs-under-linux/

2 NI_GPIB_USB_HS

You might need for every step Superuser rights.

2.1 Linux GPIB Package

step 1:   update all programm packages:

```
sudo apt-get update
```

step 2:   download the GPIB package from http://sourceforge.net/projects/linux-gpib/?source=dlp and unpack the file (tar -zxvf <packagename>)

step 3:   install the package with:

```
sudo ./configure && sudo make && sudo make install
```

The package is correctly installed if no error occurs while importing it in Python (preferable Python 2.7).

```
import Gpib
```

2.2   Load and set up Kernel Module

step 1:   load Kernel module **ni_usb_gpib.ko** (usually at
           /lib/modules/3.13.0-35-generic/gpib/ni_usb →where the number of the x.xx.x-xx-
           generic directory can be different)

```
cd /lib/modules/x.xx.x−xx−generic/gpib/ni_usb
sudo modprobe ni_usb_gpib
```

step 2:   change entry in file **/etc/gpib.conf**

```
board_type = "ni_usb_b"
name = "gpib0"
```

step 3:   copy the **ni_usb_gpib** shell script from the downloaded Linux GPIB package (you will
           find it usually in /linux-gpib-x.x.xx/usb/ni_usb_gpib) to /lib/udev.

step 4:   create a new udev[1] rule:
           create filename "**99-linux_gpib_ni_usb.rules**" in directory
           /etc/udev/rules.d/ with following content:

```
SUBSYSTEM=="usb", ACTION=="add", ENV{DEVTYPE}=="usb_device",
ATTR{idVendor}=="3923", ATTR{idProduct}=="709b", MODE="660",
GROUP="plugdev", SYMLINK+="usb_gpib"
SUBSYSTEM=="usb", ACTION=="add", ENV{DEVTYPE}=="usb_device",
ATTR{idVendor}=="3923",ATTR{idProduct}=="709b",
RUN+="/lib/udev/ni_usb_gpib"
KERNEL=="gpib[0−9]∗", ACTION=="add", MODE="660", GROUP="plugdev"
```

           Notice the specific idProduct number "709b", for NI_USB_GPIB_HS adapter only!
           All idProduct numbers for connected devices can be checked in the terminal with the **lsusb**
           command.

step 5:   update udev rules:

```
sudo udevadm control −−reload−rules
```

3   How to use the Adapter

To get full access to the adapter interface after plug in do:

- sudo gpib_config
- sudu spyder

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[1]for further information visit http://en.wikipedia.org/wiki/Udev