

# Manual for the gpib\_socket\_server compatible with the linux\_gpib driver.

Søren Koch

March 18, 2017

# Chapter 1

## Introduction

The `gpib_socket_server` program is intended to be used together with Elchemea data acquisition as well as RFCcontrol. The server must be run as root and exists in two versions.

This version is implemented in Perl and works with the drivers supplied by the `linux_gpib` project (<http://linux-gpib.sourceforge.net/>).

# Chapter 2

## Client commands

### 2.1 GPIB-server

The GPIB-server handles all communication with devices attached to the GPIB controller thus making interfacing with GPIB enabled devices simple as communication is simply through the tcp-IP socket interface. The server accepts the following commands:

- 'I': This command initializes the channel definitions (is automatically run at server start-up and is only intended if changes have been made to the channel definitions).
- 'D': Turns debug information on and off (printed on standard out, so redirect this somewhere sensible).
- 'R': This command reads from the specified device address. Arguments: `device_address`.
- 'W': This command writes a command string to the specified device. Arguments: `device_address`, `command_string` (remember quotes!).
- 'T': This command sets the GPIB communication delay to the specified number of milliseconds (default is 1 ms).
- 'C': Combined write and read command.
- 'K': This command reads a channel on the Keithley 2700 multimeter. Arguments: `address:board_number_channel_number` (the set-up is found in the channel definitions). Note that no space between the gpib address, the colon ':', the board number or channel number. Example: measure channel 4 on board 1 on gpib 16: *gpibclient K 16:104*
- 'B': Same as K, but in a burst mode instead with an additional argument specifying how many consecutive measurements to perform. Note that this blocks the keithley and gpib bus until the measurements has been performed and the result returned!
- 'V': Same as 'K' except that the channel set-up must be specified as an additional argument.

- 'Q': This command forces the server to quit gracefully (no core dump).

The channel definitions are located in the directory */etc/gpib/*. The *gpibclient* program supplied with the software and can be used to directly access the gpib-server: usage:

```
gpibclient I
gpibclient D
gpibclient C $address $command_str
gpibclient R $address
gpibclient W $address $command_str
gpibclient K $address:$channel
gpibclient T $delay
gpibclient B $address:$channel number_of_measurements_in_a_row
gpibclient V $address:$channel $set-up
gpibclient Q
```

In the list above, all name preceded by a '\$' is intended to be replaced by a number or string in actual use.