TECH NOTE :: CMD600 with Labview driver

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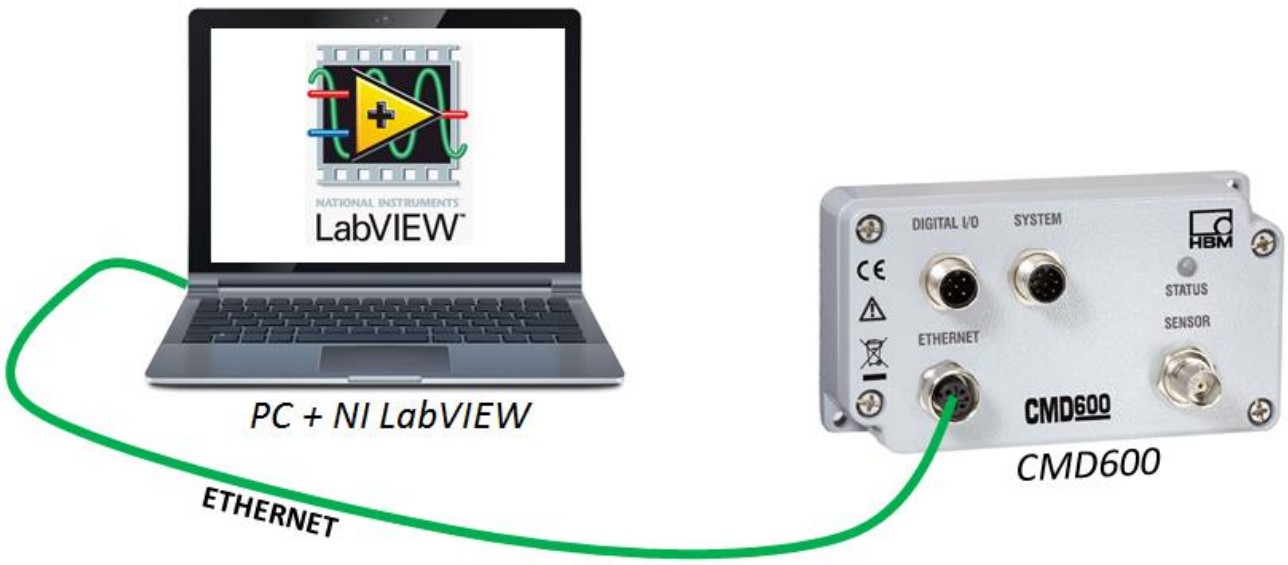
Brief description

This is an instruction to create Virtual Instruments (VI) in Labview for the CMD600 by using the CMD600-driver. The package of the driver contains many different VI templates to control the amplifier. It is advisable to study the detailed instruction given with the package of the driver. In addition basic experiences with Labview are advantageous.



Installation

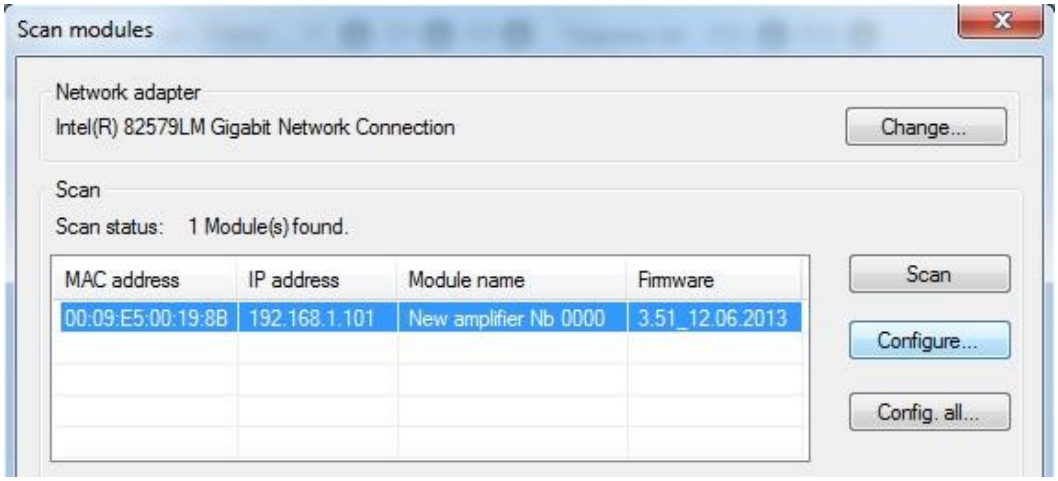
Network settings

Connect the CMD600 to a PC via Ethernet cable. Each unconfigured amplifier is delivered with a unique Ethernet address and factory default settings. The default IP address is 192.168.1.1 and Subnet mask 255.255.255.0. DHCP is enabled by default. Make sure that both, the amplifier as well as the PC share the same subnet. Otherwise a connection would not be possible. You can either assign static IP-addresses or set all participants in the network to DHCP mode.

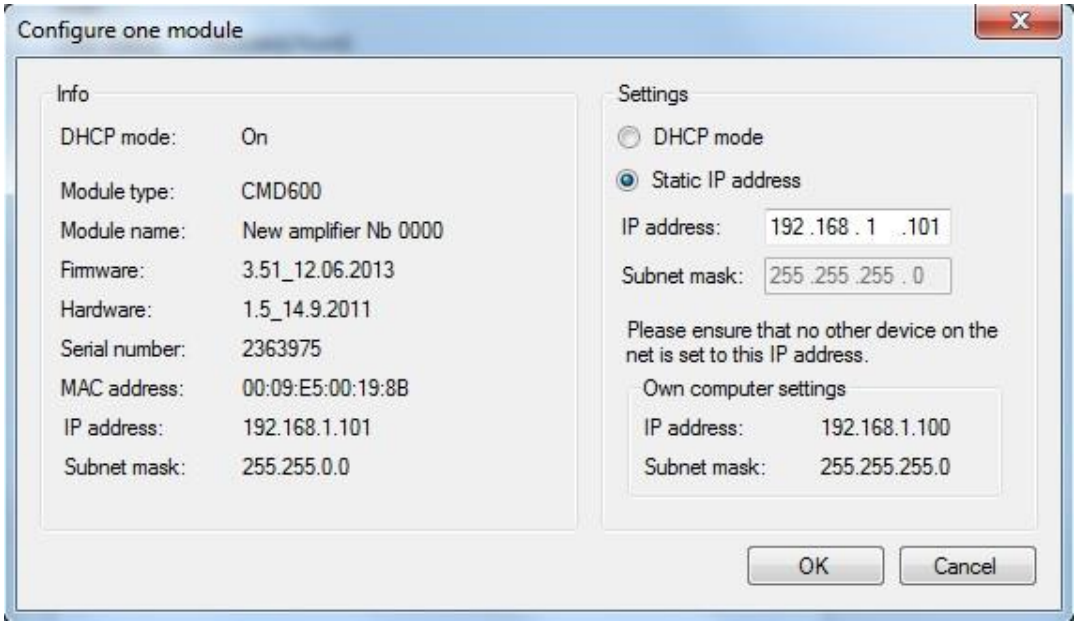
Assign a static IP-address

Start the CMD Assistant and click "*Scan for modules…*" in the "*Device*" tab

Afterwards select your device and press "Configure…".



Then you can assign a matching static IP-address. Your own computer settings are given in the configurations window as well.

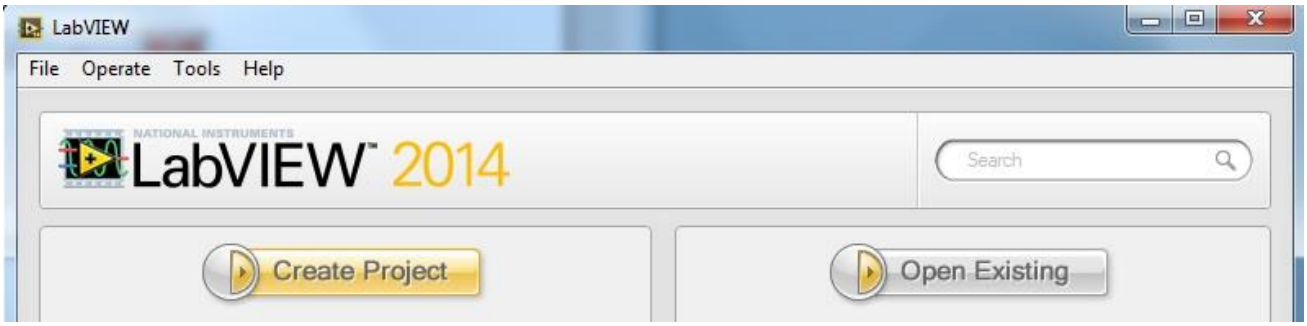


NI Labview

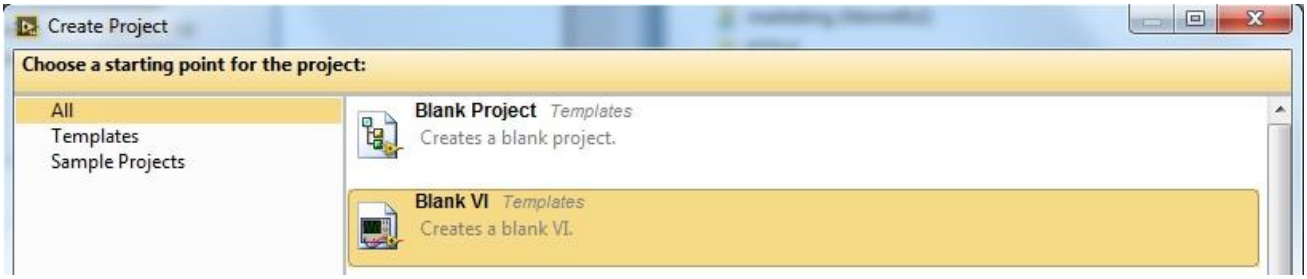
Installation
Install the program Labview of the company National Instruments and run the program.

Important Note: To use the CMD600-driver without any issues, a program version of 9.0.1 or higher is required!

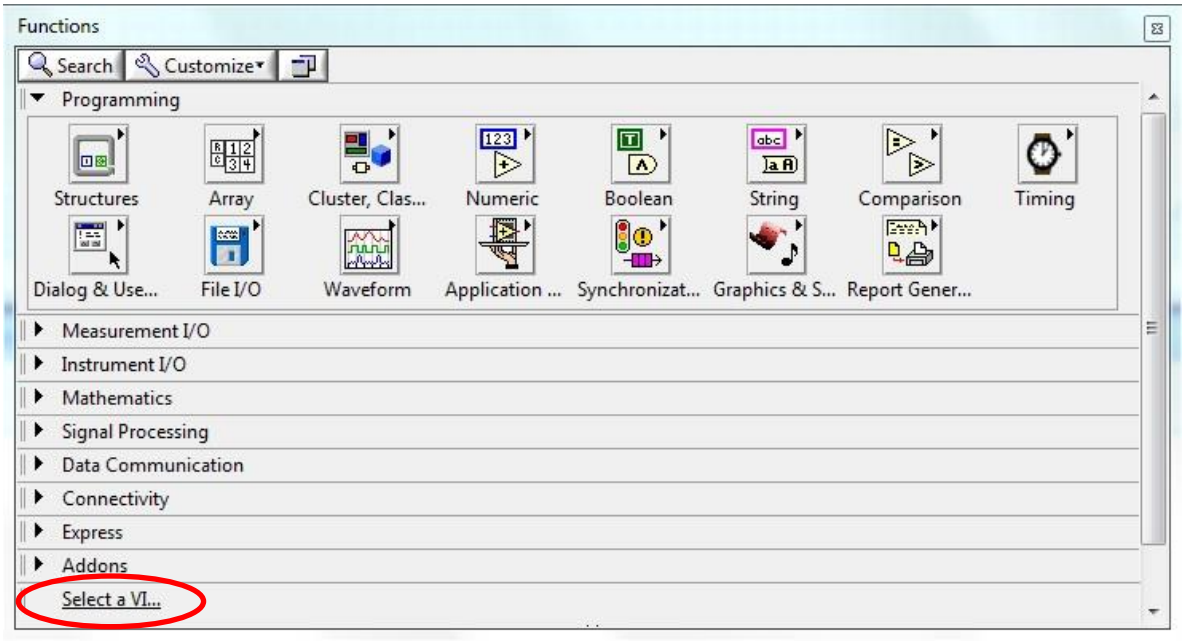
Start of program
In the opening window select „*Create Project*“ at first.



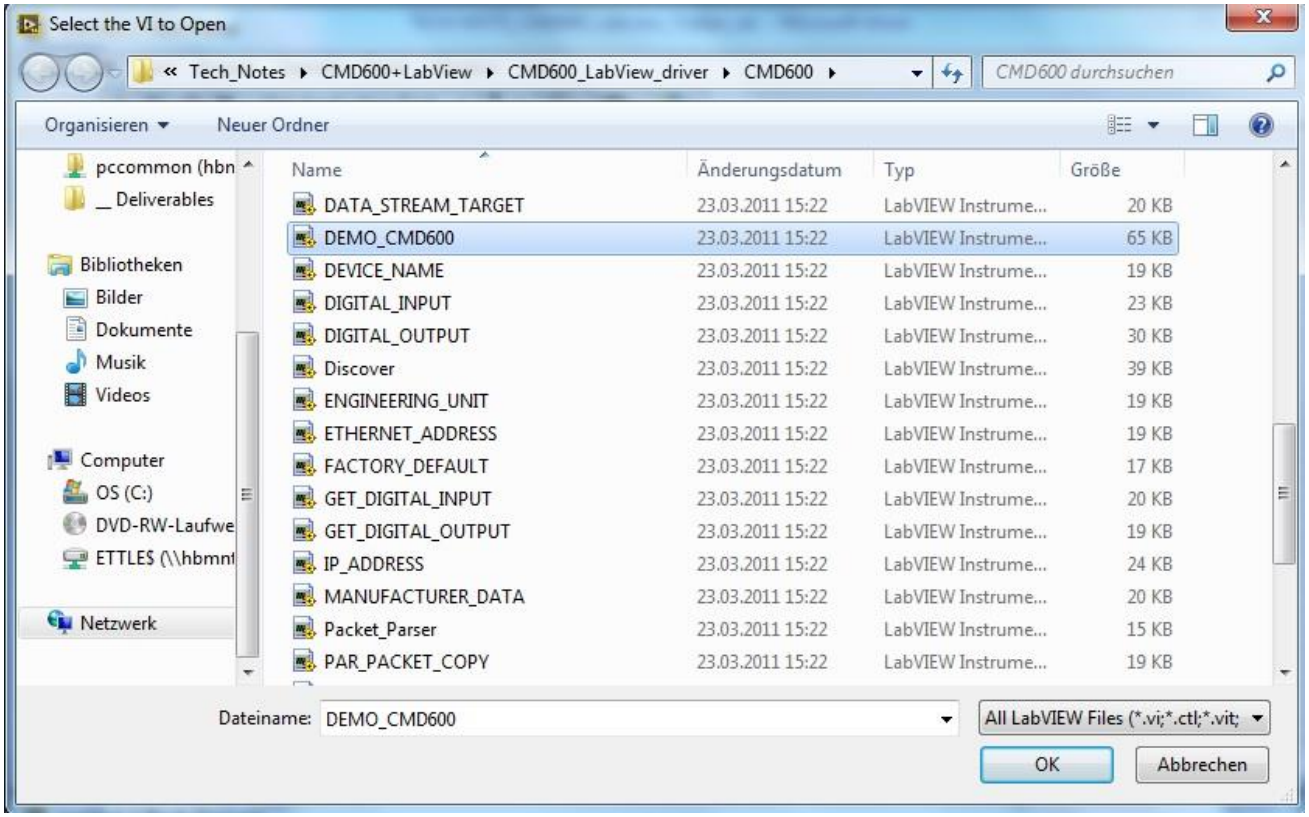
Afterwards generate a blank VI.



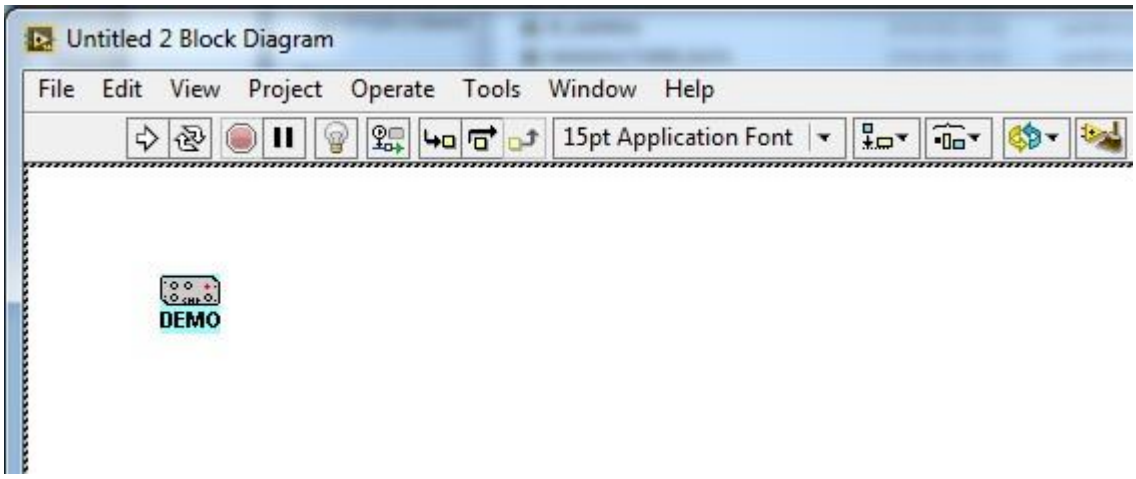
CMD600-driver
In the functions palette there is the possibility to load existing VIs and to use them as so called SUB Vis within a VI. Therefor go to “*Select a VI…*” in the functions palette.



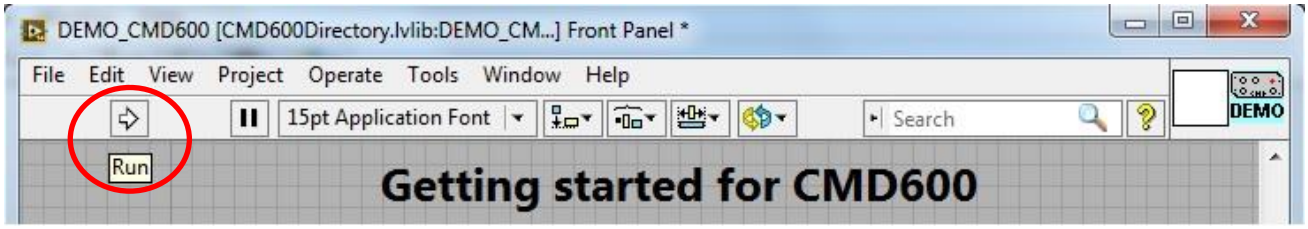
Go to the directory of the unpacked CMD600-driver. Now you have the choice between several different VIs for controlling the amplifier. This TechNote is presenting the demo VI as an example to not extent the length of this document. Select the corresponding VI and confirm by clicking "*OK*". ´



Now you can place the SUB VI with your mouse at any position within the block diagram. After that the graphical user interface of the demo is opened automatically.



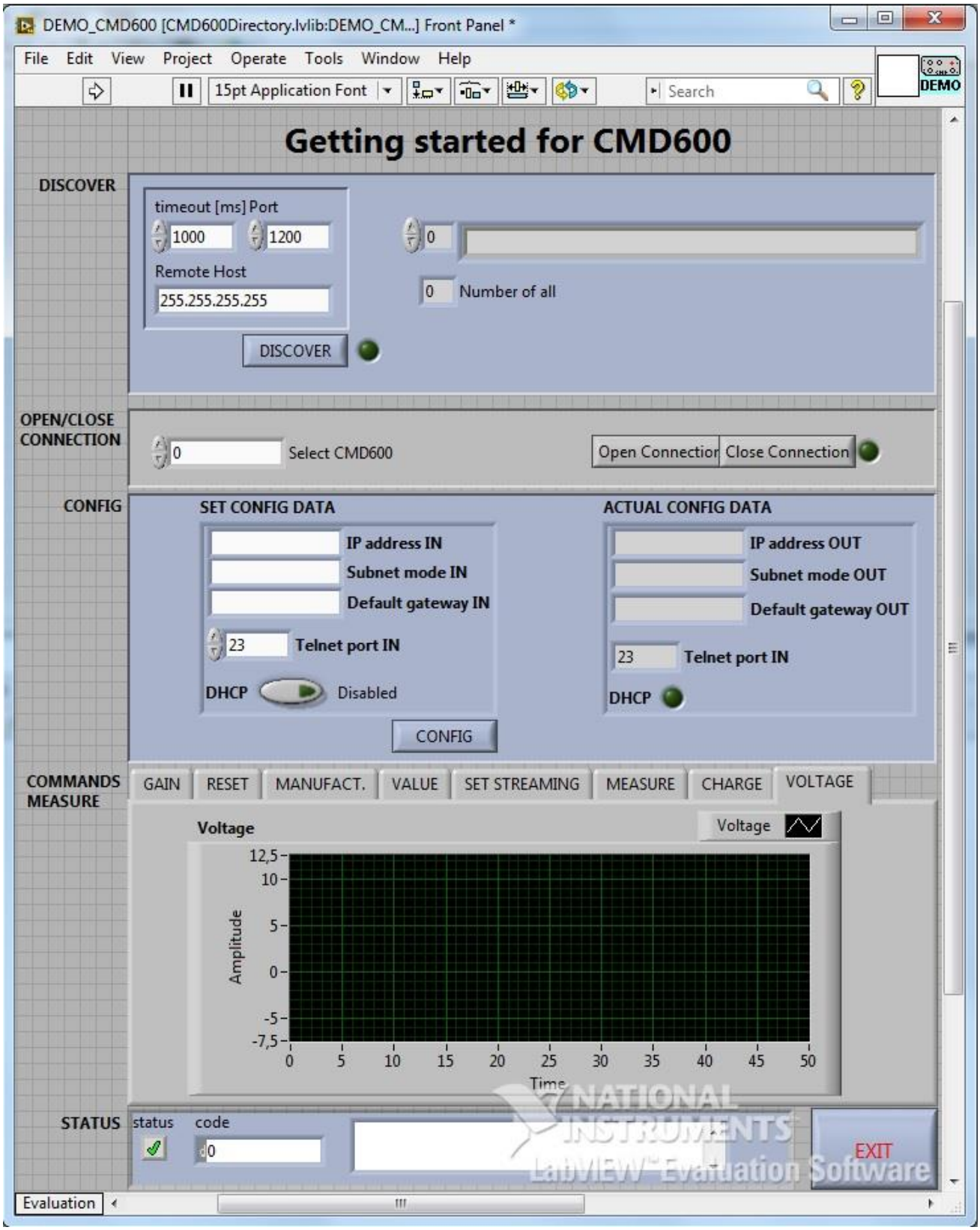
To run the program, press the arrow symbol in the top left corner.



CMD600-driver demo VI

User interface

The demo VI is in general divided into 5 parts. The complete window is designed in a similar way so that in each part there are input parameters on the left side, the command button is below and the response is on the right side. In the next section the functions of every single part is explained.



Functional overview

DISCOVER:
The Discover window is used to search all devices connected to the PC and to receive all main data from each device. It should always be used as the first command.

OPEN/CLOSE CONNECTION:
The Open/Close connection window is used to establish the TCP/IP session with the desired CMD600. It uses the port and IP received from the Discover command. It enables the CMD that should be addressed to be selected. The Open command should always be used before any other commands. Similarly it should be stopped before exit (close connection).

STATUS & EXIT:
The Status window shows the results of the commands used. The Exit button on the right side exits the application.

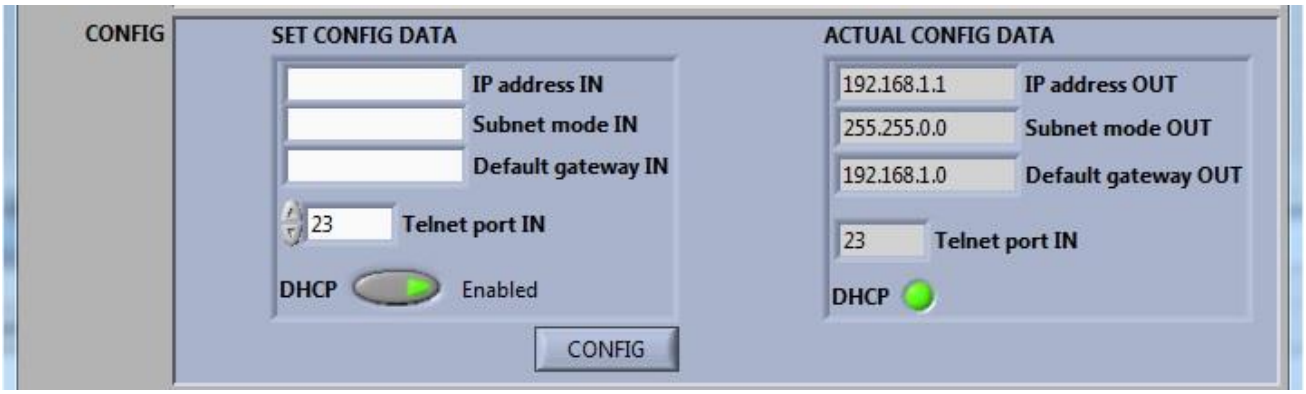
COMMANDS MEASURE:
The main part of the application consists of the commands:

- Gain
- Reset
- Manufacturer
- Value
- Set Streaming
- Measure

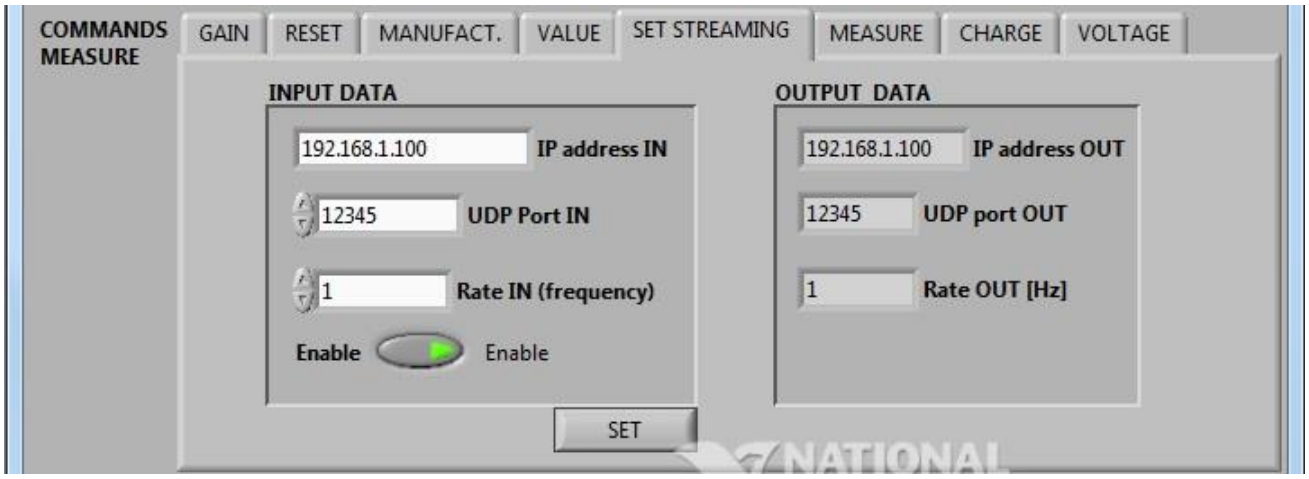
Settings
To get a better overview, exemplary network settings are listed here first.

IP-address CMD600	192.168.1.101
IP-address PC	192.168.1.100
Default gateway	192.168.1.1
Subnet	255.255.0.0

1. Press the button “Discover” to get access to your amplifier.
2. Get connected to the device with the corresponding number by pressing “*Open connection*”.
3. Enter the network settings or activate the DHCP button. Afterwards press “*Config*” to apply the settings for the device.

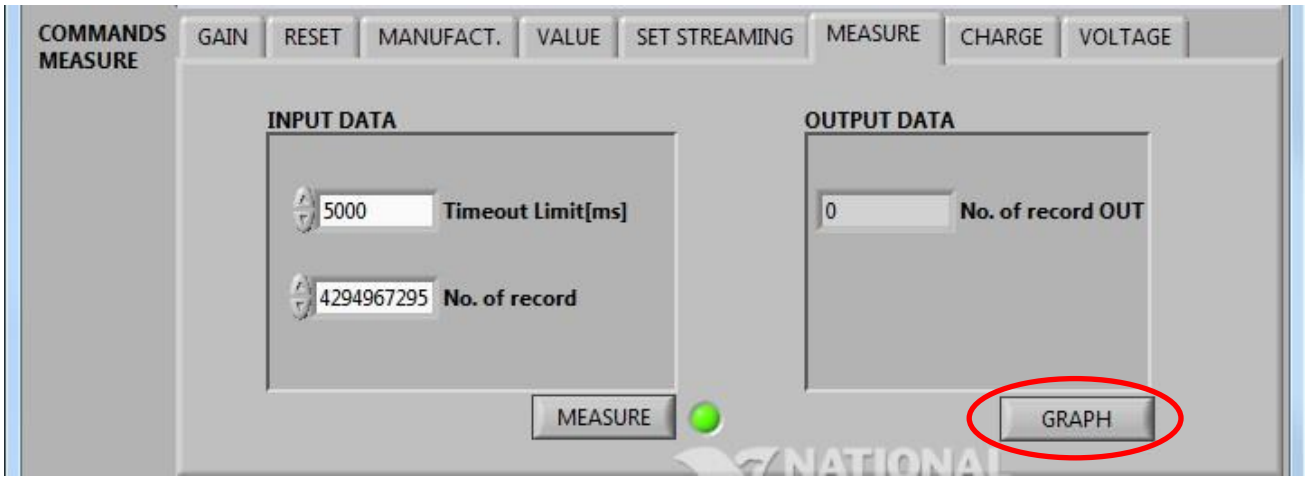


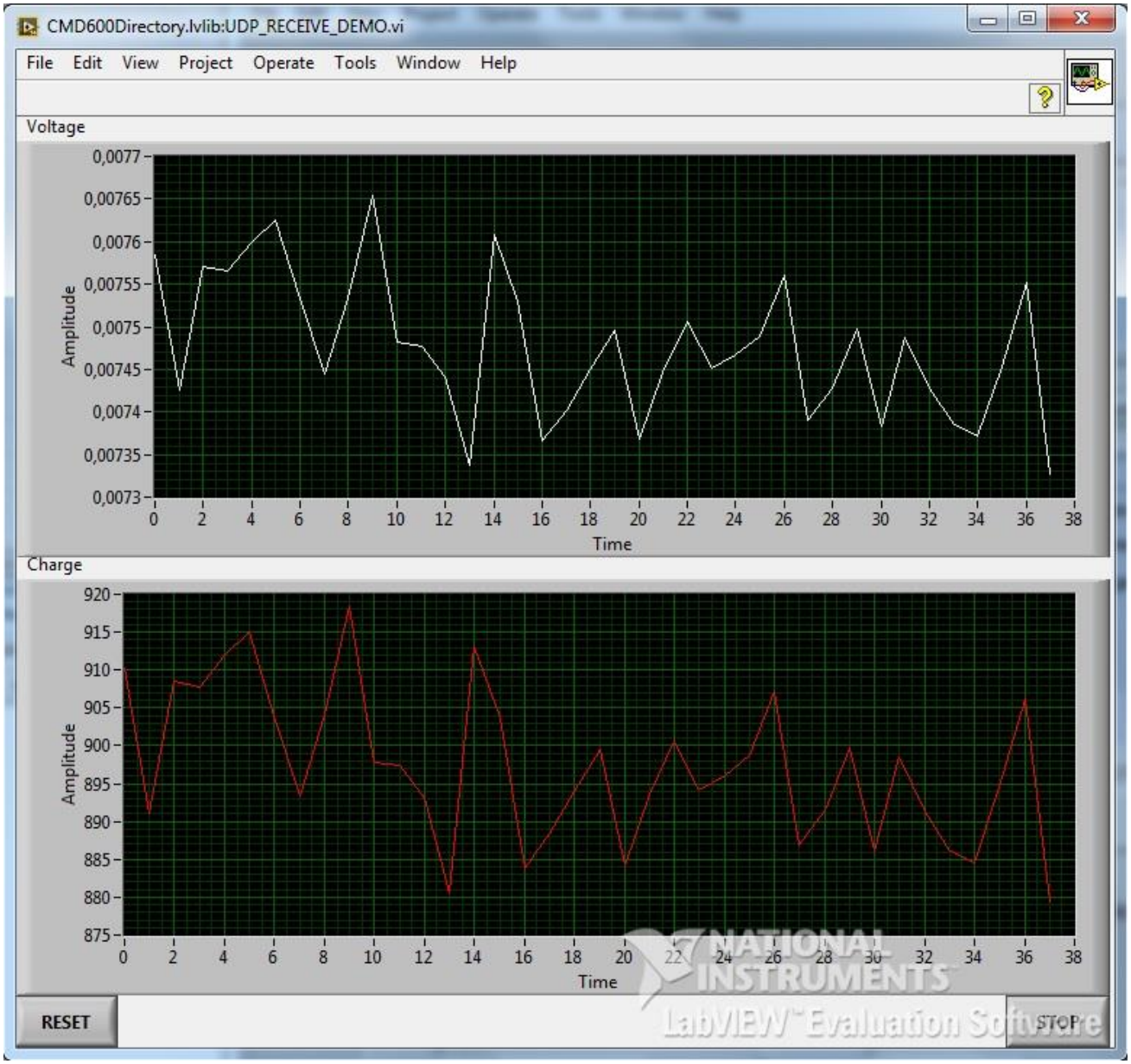
4. Specify the device that should receive the data from the amplifier in the “Set Streaming” tab. In this case it is the PC with the IP-address 192.168.1.100.



5. In the “Measure” tab a measurement can be started by clicking the “Measure” button. The “Graph” visualizes the measurement values as continuous lines in real time (see screenshot on the next page).

   Note: Of course a sensor has to be connected to receive any measurement values.





Disclaimer

These examples are for illustrative purposes only. They cannot be used as the basis for any warranty or liability claims.