

Using an iseg VHQ High Voltage module at the NSCL

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The iseg VHQ high voltage (HV) module is a VME module with two channels of HV. The module has manual controls on the front panel and can be controlled with these if remote control of the module is not needed. The VME interface provides the user with full functionality of the module by interacting with through the VME bus. At the NSCL this interaction is done with a Tcl package. To make the interface easier to use, a graphical interface has been created.

Most people will find the graphical interface an easy and adequate way of interacting with the VHQ module, therefore the remainder of this document will address how to use that interface. If you need more information about the Tcl library it is available at <http://docs.nscl.msu.edu/daq/modules/>.

In order to interact with the VHQ module through the VME bus it is necessary to set a VME base address. The VHQ module stores the base address in an EEPROM that is accessible when the module is powered up. In order to access the module set the module with:

- Control switch set to manual
- HV on/off switch set to off
- Kill Switch set to ENABLE

Once those switches are set turn on the VME crate. The LCD screen should now display "AB - dd", which corresponds to a base address of 0xdd00. To change the address use the switches below the LCD panel, the left switch changes the upper bit and the right switch changes the lower bit.

After setting the base address, flip the control switch to "DAC" and the HV on/off switch to "ON". Before using the graphical interface a configuration file must be written. A minimal example for the file could look like:

```
set name test_hv; # PS short name
set base 0xdd00 ; # Base Address
set maxv 2000 ; # Max voltage in Vs
set maxi 100 ; # Max current in uA
set description "Full Name" ;
set resi 0.1 ; # Current res.
```

Of course the values above should be replaced so they reflect a particular setup. At this point the GUI can be started by typing:

```
/usr/opt/daq/current/contrib/vhqpanel/vhqapp.tcl config.cfg
```

The control panel allows you to set a potential, a ramp speed, and a current limit for each channel. After setting those three values, press "RAMP" to turn on the HV. "Save" and "Restore" will allow you to save or open configuration files. "Lock" will disable the controls to avoid accidentally changing values. The control panel also gives values read from the VHQ module. Those values include the current HV status, such as whether the channel is ON, Ramping or Stable.

If more information is needed please look to <http://docs.nsl.msui.edu/daq/modules/>.

This document is intended as a simple introduction to using the iseg VHQ at the NSCL, it should not be seen as a substitute for reading user manual.

Please help ensure complete and accurate documentation, if find an error or omission please report it to daqdocs@nsl.msui.edu .