

General command:

1). reset all

For 8-Channel bias DAC:

2). setV channel xx yyyy mV

For Power supply unit:

3.1) setPV channel xx yyyy mV

3.2) getPV channel xx

3.3) setMaxI channel xx

3.4) getI channel xx

Things to keep in mind:

- minimize the usage of I2C bus
- make sure when not sending or reading, the I2C bus is silent
- optimize the voltage and current tracking performance, hopefully under 10 ms or 3 cycles

1). reset all	reset all DAC and ADC, set the outputs to 0
2). setV channel xx yyyy mV	convert the yyyy mV into correct value for ADC then to the DC mobo
3.1) setPV channel xx yyyy mV	convert the yyyy mV into correct value for ADC then to the DC mobo
3.2) getPV channel xx	read out the voltage sense pin from ADC, convert the results in mV
3.3) setMaxI channel xx	set the maximum allowed current in channel x, if the actual current exceeds this limit, shut down this channel and report a warning to the serial port.
3.4) getI channel xx	read out the current sense from ADC, convert the result in mA

**Board info:**

- 8-Ch DAC: TI DAC7678 (refer to Chap “Theory of operation” and the following example for the 2nd Command)
- 4-Ch ADC: TI ADS1015
- Arduino Nano every library: <https://www.arduino.cc/en/Reference/WireWrite>