Calibration Procedure for the TAC

You calibrate the TAC by correlating different time delay between the START and STOP pulse and the measured pulse height by the DAQ. Using the setup shown below, introduce a fixed delay between the START and STOP pulse, the STOP pulse can be delayed with an adjustable gate.

1. Select the TAC time scale that was used to collect your data.

2. Using two of the outputs from discriminator 1, name one A and the other B. Connect A to Ch1 of your oscilloscope and set the trigger to a negative pulse and the threshold to -100mv. (note: a pulser + seperate discriminator may also be used. See photo.)

3. Select the time scale of the gate to match the time range of the TAC.

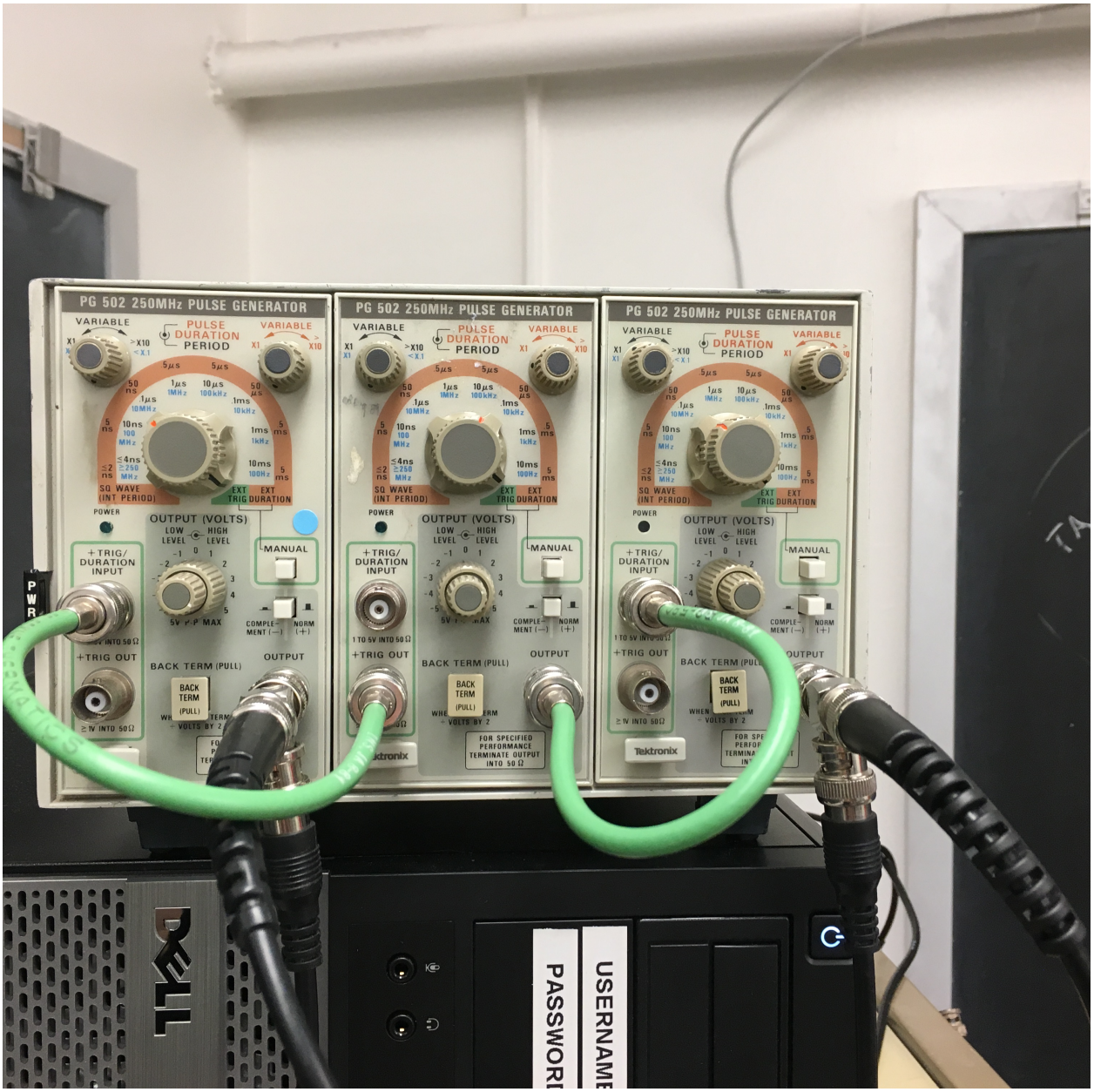
4. Connect B the input/start of the gate generator out and the appropriate output of the gate to Ch2 of the oscilloscope.

5. Observe and measure the time difference between the negative square pulse from CH1 and CH2. Adjust the delay between the output of A & B with the set screw on the gate generator.

6. Pick a time delay and connect A to the START and the output of the gate to the STOP input of the TAC.

7. Start a data acquisition run and record the time delay used and the maximum pulse height in digital units (du).

8. Repeat step 5-7 to collect several data point and produce a calibration curve to compute the conversion factor between du and time.


PG 502 250MHz PULSE GENERATOR
PG 502 250MHz PULSE GENERATOR
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VARIABLE
PULSE DURATION PERIOD
VARIABLE
OUTPUT (VOLTS)
LOW LEVEL
HIGH LEVEL
MANUAL
+TRIG/ DURATION INPUT
+TRIG OUT
BACK TERM (PULL)
OUTPUT
POWER
SQ WAVE (INT PERIOD)
EXT TRIG DURATION
COMPLE-MENT (–)
NORM (+)
FOR SPECIFIED PERFORMANCE TERMINATE OUTPUT INTO 50 Ω
Tektronix
DELL
USERNAME
PASSWORD