Tasks:

1. Perform 2D mapping and generate a PL 2D mapping plot.
2. Go to specific points on the 2D mapping plot by clicking on the 2D mapping plot.

Equipment set:

1. GVSM002-EC galvo mirror module;
2. 2. Arbitrary Function Generator: AFG1022 - controlling galvo mirror;
3. 3. Oscilloscope: Tektronix MSO54 - feedback circuit from galvo mirror module;
4. 4. SPAD PicoHarp 300 - photon counting module

Basically, we use labview to control function generator to output command signals to Galvo drivers (X and Y) to control the Galvo mirrors position. But there is minor error between the actual position and the demanded position (Where we want the mirrors to be). So we need to read the error signals from the Galvo drivers using oscilloscope and use labview to correct it.

Here are the details of the channels:

**Red channels** are control signals.

CH1: Voltage to drive the Galvo X driver.

CH2: Voltage to drive the Galvo Y driver.

**Green channels** are diagnostic signals.

CH1: Voltage that gives the actual X position of the Galvo mirror.

CH2: Voltage that gives the demanded X position of the Galvo mirror.

CH3: Voltage that gives the actual Y position of the Galvo mirror.

CH4: Voltage that gives the demanded X position of the Galvo mirror.

**Black channels** are the measurement data from detectors.

CH1: Spectrum data from the detector.

**Basically we want these functions:**

* Perform 2D mapping and generate a PL 2D mapping plot.
* Save the spectrum for each mapping points.
* Go to specific points on the 2D mapping plot by clicking on the 2D mapping plot.

