The Center for Cyber Defenders

Expanding computer security knowledge

Redesigning Client/GUI & Server

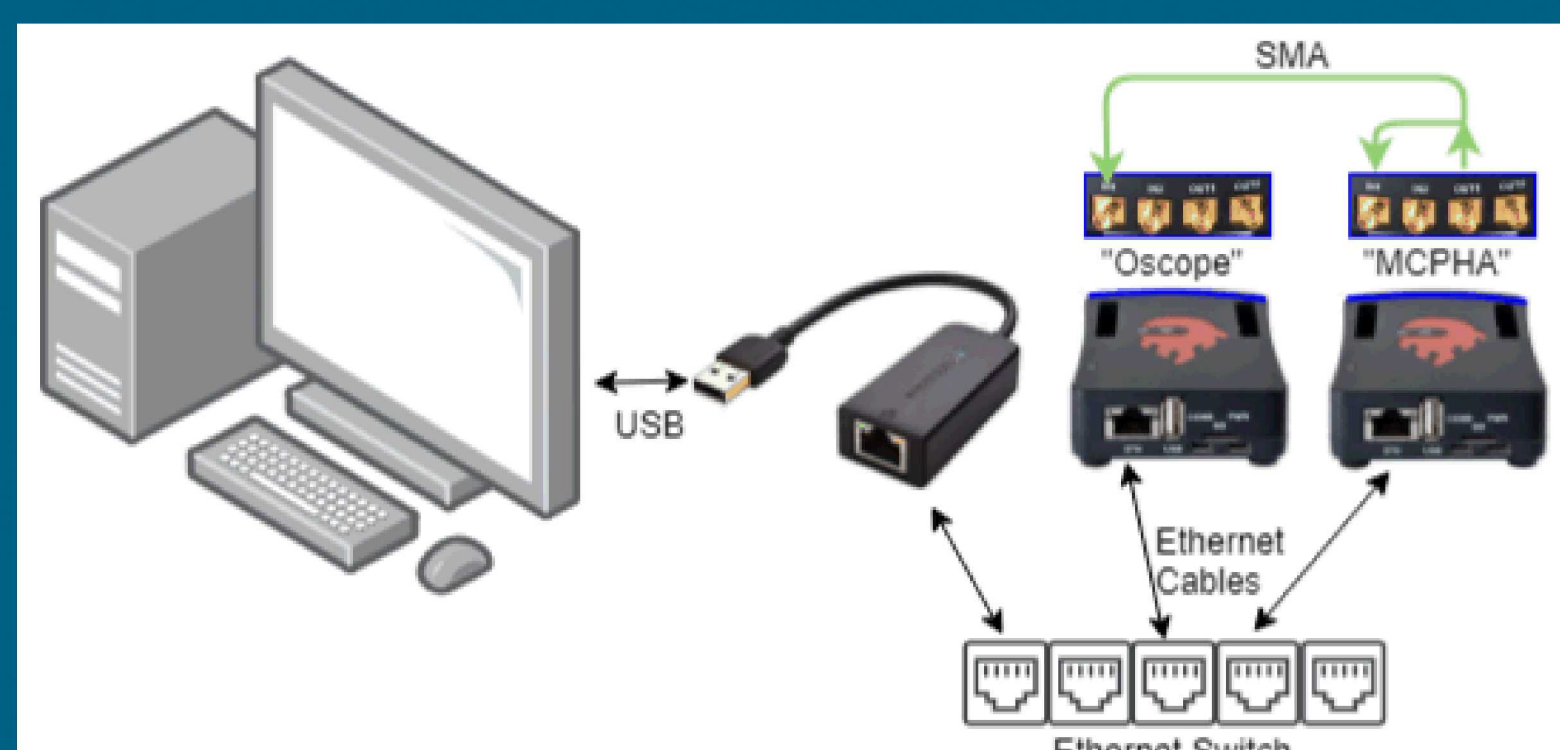Dustin Campbell, Georgia Institute of Technology, M.S CmpE May 2020

Project Mentor: David Ryan, 05867

Problem Statement:

The goal of this project is to enable better detection algorithms while optimizing for power consumption and performance by replacing the current implementation of the client/GUI. The updated version has more features and updated server code to support additional functionality.
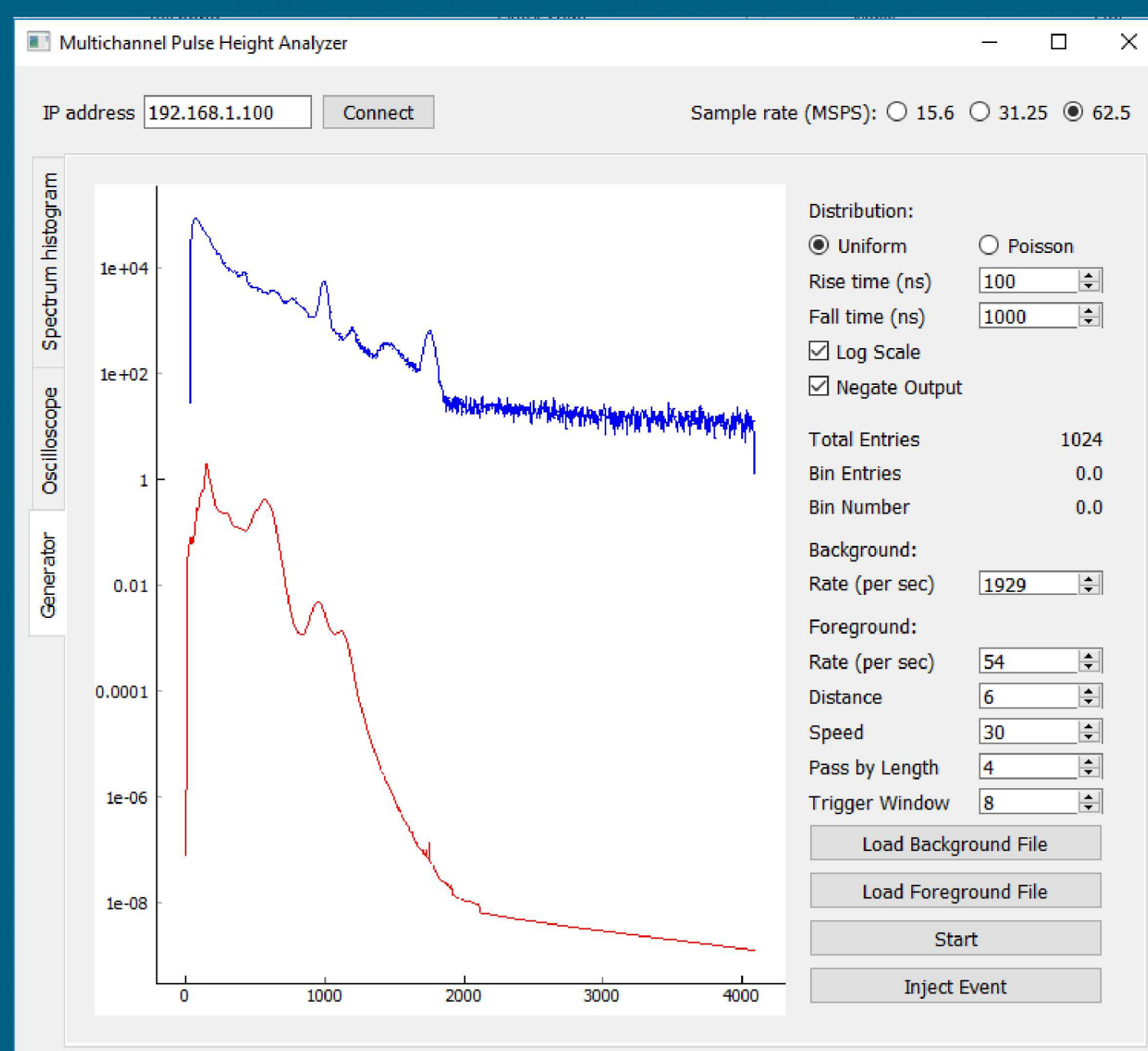
Objectives & Approach:

Using the setup shown below, two Red Pitayas were used as a O-scope and signal generator during the development process.
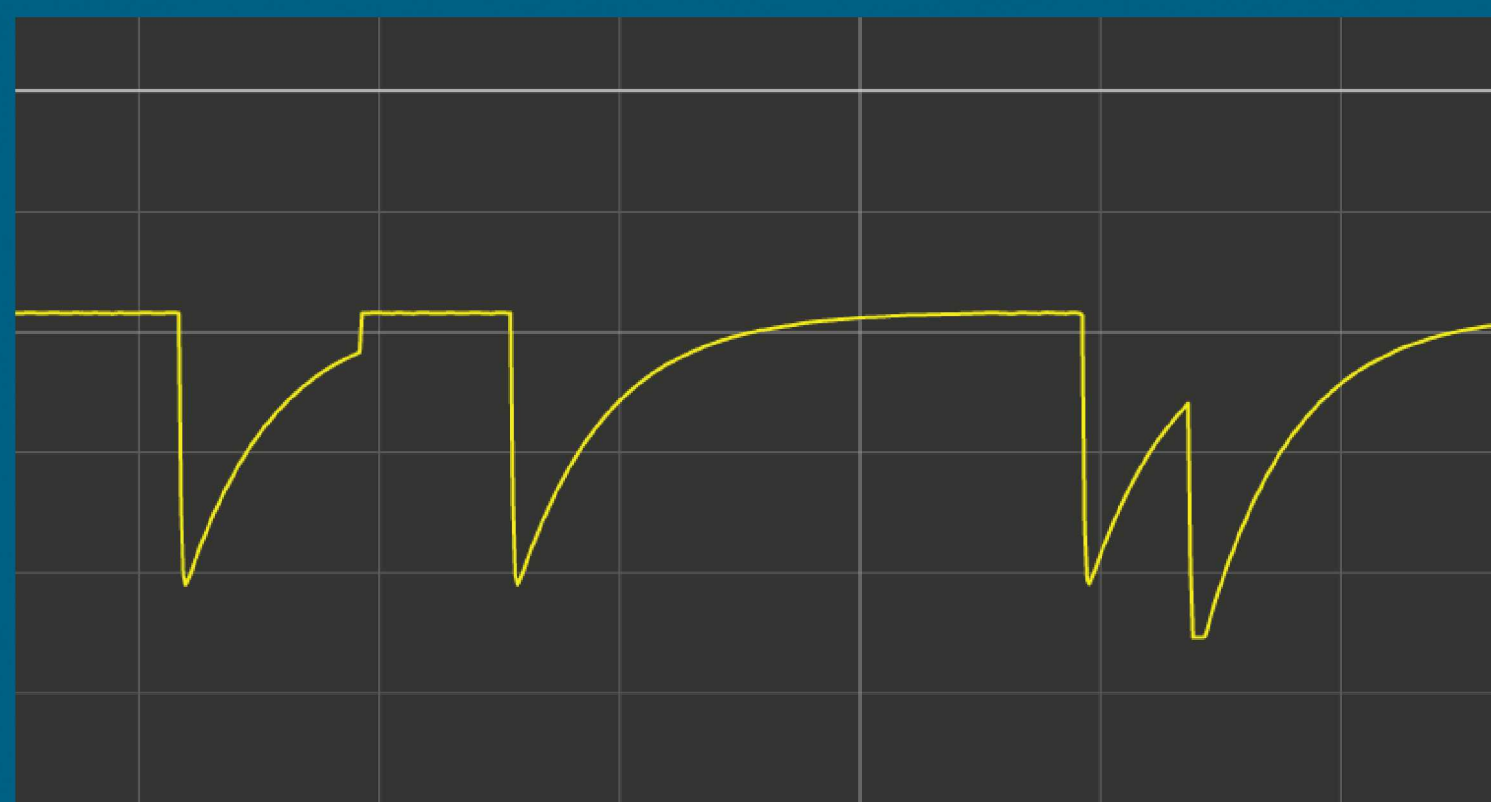

The signal generator Pitaya runs the server, which receives commands from the local machine running a python script/GUI.

Results:

The following GUI was developed in Python:

The client/GUI can be used to create various types of pulse as shown below:

Impact and Benefits:

This system will allow the Mercury team to evaluate the accuracy of other systems designed to filter-out background signals and identify sources of radiation.