First of all, you have to check the raw data of signal from sender and receiver. You have to notice whether the signal we transmitted and received is correct or not. In the beginning, your signal must be sent in frequency domain, so make sure your signal generation code is correct.

Before the correlation part, I’ll explain the structure of the preamble, a sts has 16 bits and a lts has 64 bits, and the whole preamble looks like [40X16 32 the second half of the lts lts lts], let’s see the figure of the raw transmitted and received data (point out the preamble), the correlation will find the peak, which passed the threshold, and it will be the first payload signal called payload\_ind. Remember the preamble made by sts and lts, therefore the lts\_ind is payload\_ind – 160, which is 32+64+64.

There is an important thing you have to do is to filter the data in the front because there may be some interference and in order to make the correlation efficiently, we just pick entire two sets of the signal for decoding. Notice that you cannot capture other sets’ part of signal, which means your two sets of signal must be complete.

If your peak is not found, there are some possible reasons below. First, the interference from other teams’ signal, if there are some users transmit and receive the signal simultaneously, or the gain and the frequency you choose are not proper, or your index is incorrect, or the raw data is incorrect. You also can adjust the threshold lower to get the peak.

Please double check every factor that may cause the negative result. Or you can try to get more collections of the data for matching the correct signal.

After you got the correct signal, you have to check the figure of the channel estimation. It may look like a sine wave.