LAB 6 TASK 3 - EFFECT OF EQUALIZATION (1/1 point)

In this task, you will compare the eye diagrams of the received waveforms for different bit times (SPB) with and without equalization.

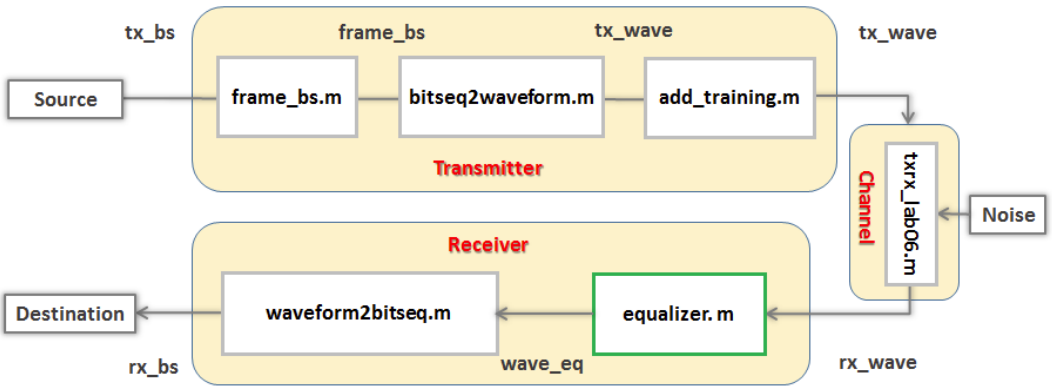


Figure 1

```
tx_bs=rand(1,1280)>0.5;      % generate a random bit sequence
SPBList = [20 15 10 3];

for i=1:4,

    % Revise the following code
    SPB = SPBList(i);
    a = 0.92;
    % Do not modify code below

    tx_wave = format_bitseq(tx_bs,SPB);  % create waveform following protocol
    rx_wave = txrx_lab06(tx_wave);       % simulate channel
    start_ind=find_start_lab06(rx_wave); % find start bit
    eq_wave = equalizer(rx_wave,a);      % equalize the received waveform

```

Correct

```
SPB = SPBList(i);
a = 0.92;
```

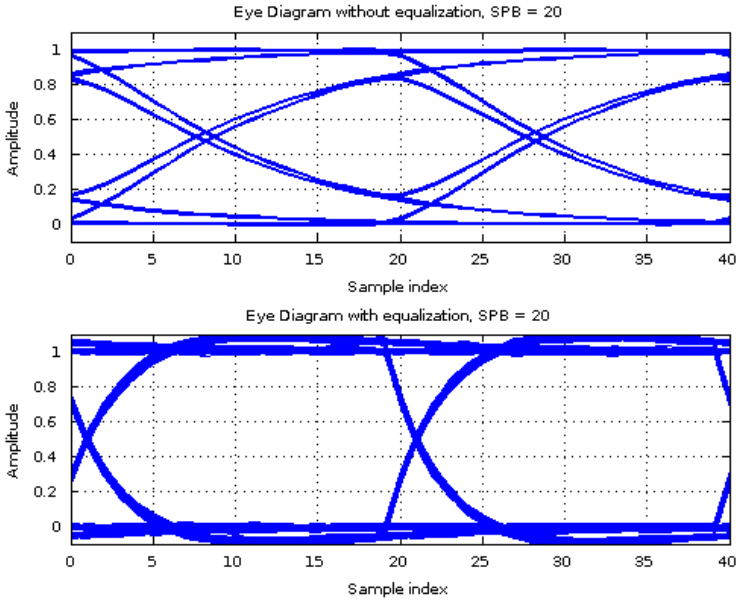


Figure 2

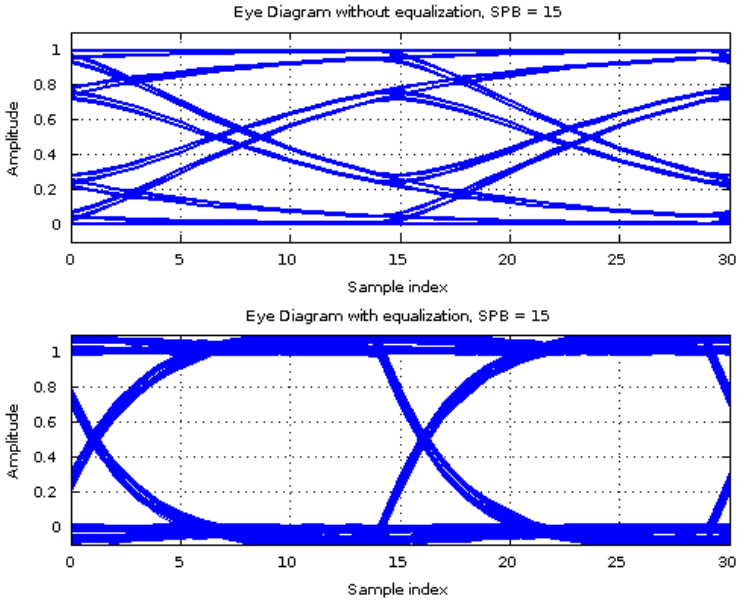


Figure 3

Help

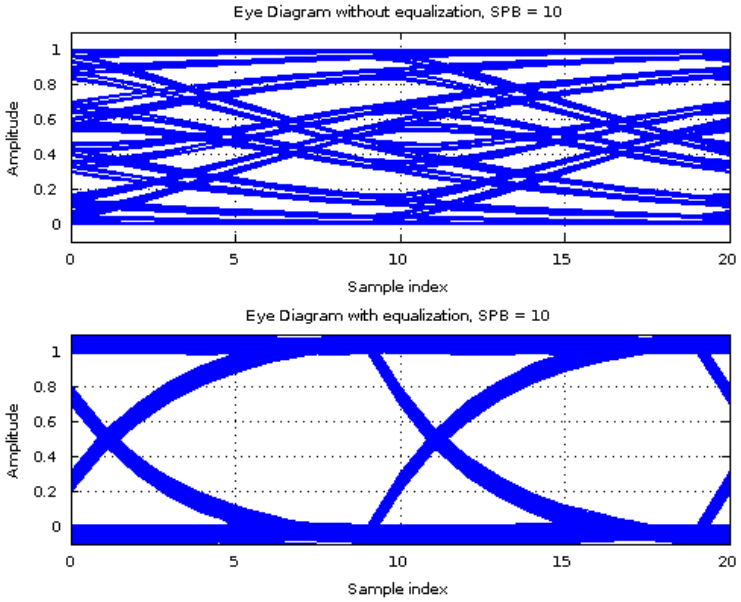
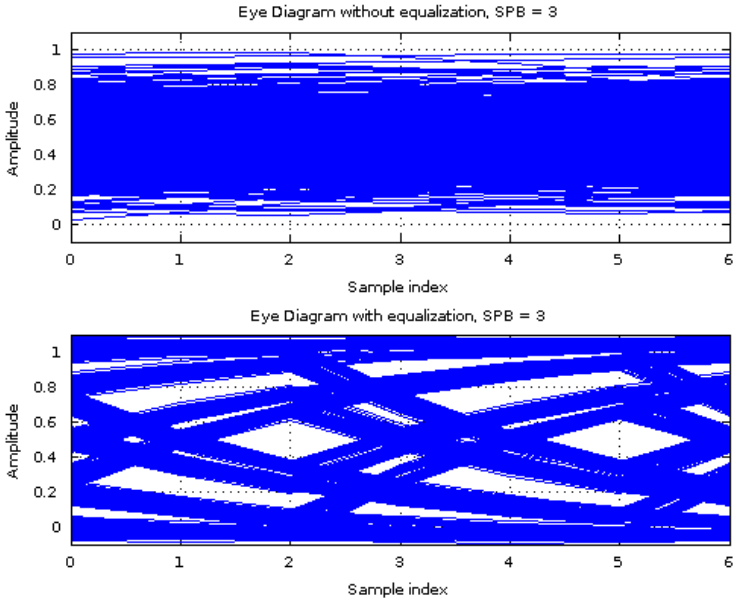


Figure 4



Check Reset Save Hide Answer *You have used 2 of 10 submissions*

INSTRUCTIONS

Step 1: Run the code as presented

The code in the above window is similar to that in Task 2. You wrote the code for the equalizer in Task 2. This code is now provided for you in this task as the matlab function

eq_wave = equalizer(rx_wave,a)

which takes in the received waveform **rx_wave**, applies the equalizer from Task 2 to the waveform with parameter **a**, and returns the result in **eq_wave**. The vectors **rx_wave** and **eq_wave** have the same size.

After you click on the **Run Code** button, MATLAB will return four figures, each containing 2 by 1 array of subplots. All of the subplots will be identical. They are all the eye diagram for the unequalized waveform received when the bit time is 20 samples.

Step 2: Plot the eye diagrams for different bit times

Help

To complete this task, you should modify the code so that it plots the eye diagrams of the unequalized and equalized received waveforms for the four bit times listed in **SPBList:** 20, 15, 10 and 3 samples.

Modify the code under the comments starting with:

```
% Revise the following code
```

Step 3: Submit your work

Once you have completed your work, click on the **Check** button to submit your answer.