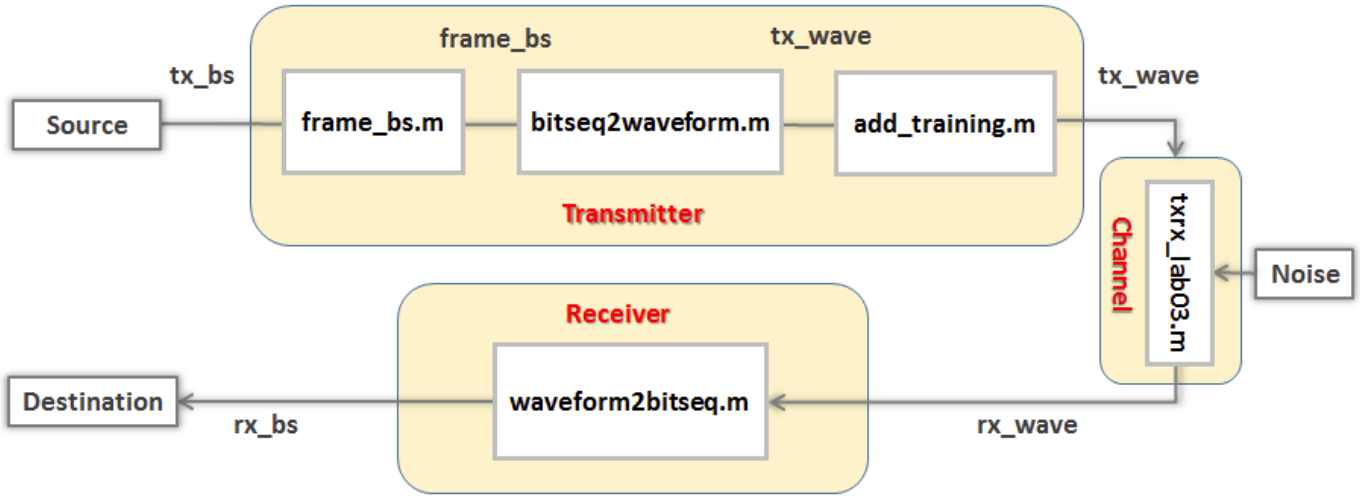
LAB 3 TASK 2 - FIND THE THRESHOLD (SANDBOX)

In this task, you will simulate the transmission of the frame signal and estimate the threshold value for detecting the bit sequence.



The window below contains the MATLAB code to simulate the transmission of a framed signal through the channel. Your task here is to plot the transmitted waveform `tx_wave` and the received waveform `rx_wave`, and estimate the threshold value by inspecting the received training sequence from the plot of `rx_wave`.

```
tx_bs = rand(1,1280) > 0.5; % generate random bit sequence
SPB=5;                      % bit time in samples

% transmitter %
tx_bs_frame = frame_bs(tx_bs);              % add start and stop bit and generate framed block
tx_wave = bitseq2waveform(tx_bs_frame,SPB); % create a samples waveform with SPB samples per bit
tx_wave = add_training(tx_wave);            % add a training sequence

%channel
rx_wave=txrx_lab03(tx_wave,15); % simulate channel with distance=15 cm

n=[1:3000];
figure(1);
%---your code here to generate plot of tx_wave---
plot(n, tx_wave(n));
```

Correct

Help

```
n=[1:3000];
figure(1);
plot(n,tx_wave(n));
grid on;                  % create grid
title('Channel Input');  % create plot title
xlabel('sample index');  % label X axis
ylabel('amplitude');     % label Y axis
figure(2);
plot(n,rx_wave(n));
grid on;                  % create grid
title('Channel Output'); % create plot title
xlabel('sample index');  % label X axis
ylabel('amplitude');     % label Y axis
```

Figure 1

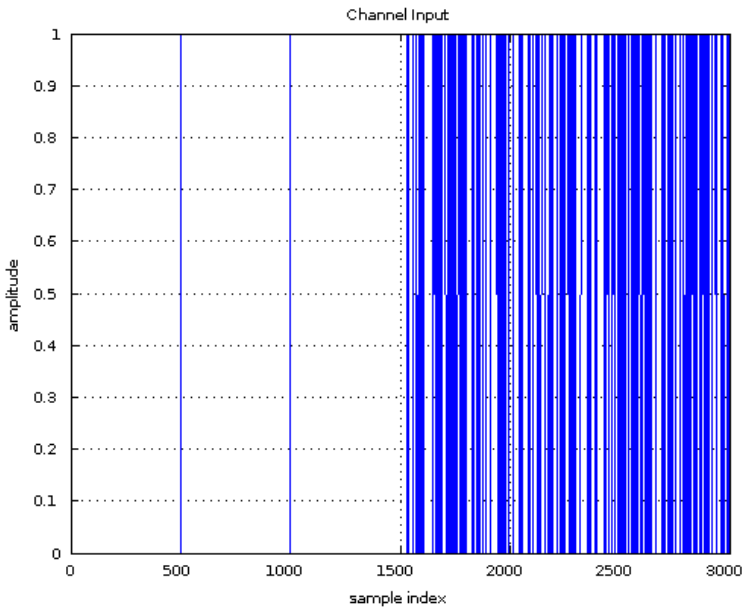
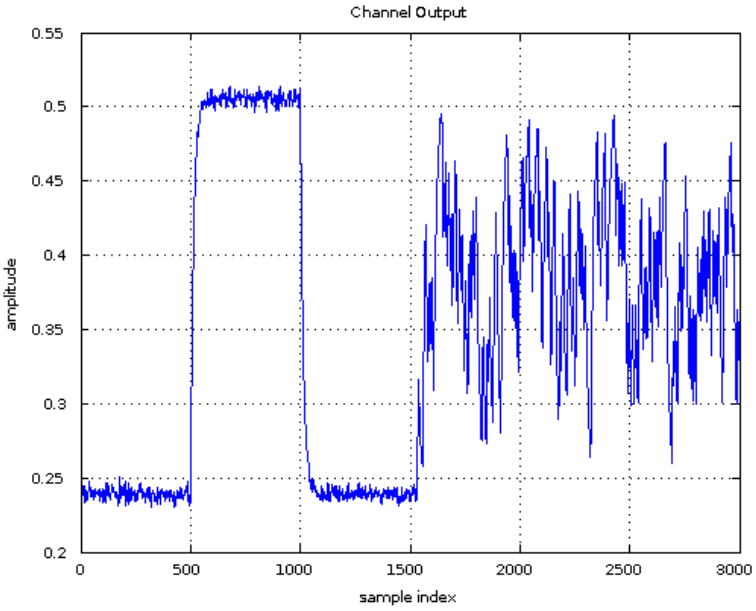


Figure 2

Help



Check Reset Hide Answer