

[Courseware \(/courses/HKUSTx/ELEC1200.1x/3T2014/courseware/\)](/courses/HKUSTx/ELEC1200.1x/3T2014/courseware/)

[Course Info \(/courses/HKUSTx/ELEC1200.1x/3T2014/info/\)](/courses/HKUSTx/ELEC1200.1x/3T2014/info/)

[Course Outline \(/courses/HKUSTx/ELEC1200.1x/3T2014/05fb01b36df14eb99ab54545dabc47f6/\)](/courses/HKUSTx/ELEC1200.1x/3T2014/05fb01b36df14eb99ab54545dabc47f6/)

[Grading Scheme \(/courses/HKUSTx/ELEC1200.1x/3T2014/6e2be4dac3e44b4d9f812e7b5a5d5a29/\)](/courses/HKUSTx/ELEC1200.1x/3T2014/6e2be4dac3e44b4d9f812e7b5a5d5a29/)

[Instructors \(/courses/HKUSTx/ELEC1200.1x/3T2014/674fdd6887fe4f4bb73b984df4a5675b/\)](/courses/HKUSTx/ELEC1200.1x/3T2014/674fdd6887fe4f4bb73b984df4a5675b/)

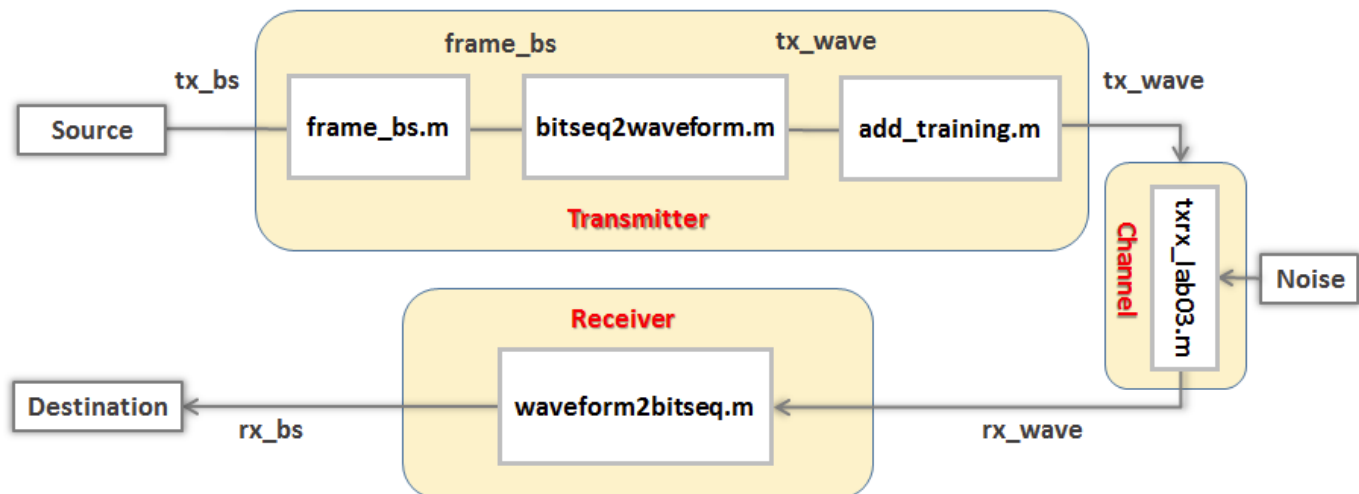
[Resources \(/courses/HKUSTx/ELEC1200.1x/3T2014/a6a8267fef364cccbccd0128d091f11c/\)](/courses/HKUSTx/ELEC1200.1x/3T2014/a6a8267fef364cccbccd0128d091f11c/)

[Discussion \(/courses/HKUSTx/ELEC1200.1x/3T2014/discussion/forum/\)](/courses/HKUSTx/ELEC1200.1x/3T2014/discussion/forum/)

[Progress \(/courses/HKUSTx/ELEC1200.1x/3T2014/progress/\)](/courses/HKUSTx/ELEC1200.1x/3T2014/progress/)

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**.

```

1 tx_bs = rand(1,1280) > 0.5; % generate random bit sequence
2 SPB=5; % bit time in samples
3
4 % transmitter %
5 tx_bs_frame = frame_bs(tx_bs); % add start and stop bit and generate framed block
6 tx_wave = bitseq2waveform(tx_bs_frame,SPB); % create a samples waveform with SPB samples per bit
7 tx_wave = add_training(tx_wave); % add a training sequence
8
9 %channel
10 rx_wave=txrx_lab03(tx_wave,15); % simulate channel with distance=15 cm
11
12 n=[1:3000];
13 figure(1);
14 %---your code here to generate plot of tx_wave---
15 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

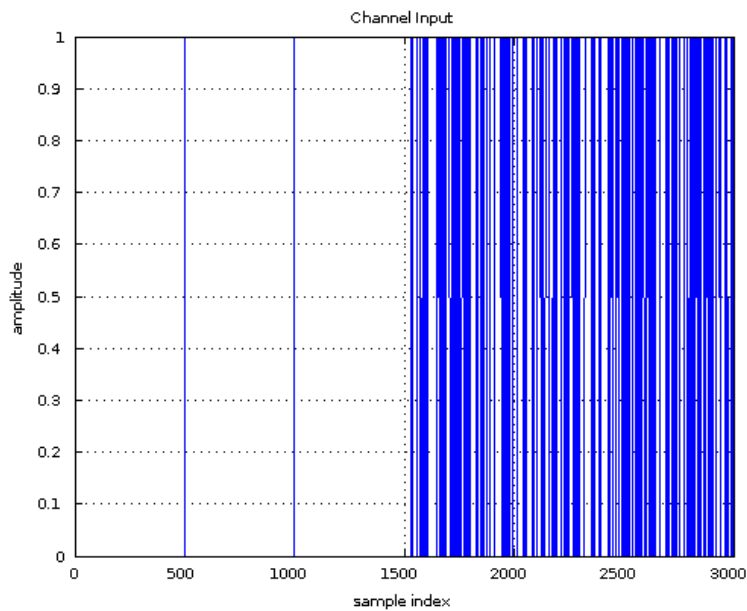
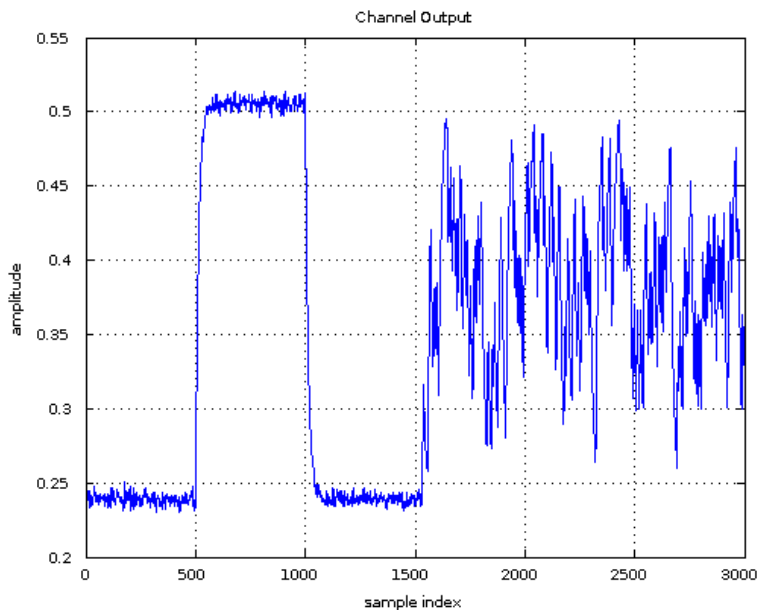


Figure 2

Help



Check

Reset

Hide Answer



EdX offers interactive online classes and MOOCs from the world's best universities. Online courses from MITx, HarvardX, BerkeleyX, UTx and many other universities. Topics include biology, business, chemistry, computer science, economics, finance, electronics, engineering, food and nutrition, history, humanities, law, literature, math, medicine, music, philosophy, physics, science, statistics and more. EdX is a non-profit online initiative created by founding partners Harvard and MIT.

© 2014 edX, some rights reserved.

Terms of Service and Honor Code (<https://www.edx.org/edx-terms-service>)

Privacy Policy (Revised 4/16/2014) (<https://www.edx.org/edx-privacy-policy>)

About & Company Info

About (<https://www.edx.org/about-us>)

News (<https://www.edx.org/news>)

Contact (<https://www.edx.org/contact>)

FAQ (<https://www.edx.org/student-faq>)

edX Blog (<https://www.edx.org/edx-blog>)

Donate to edX
(<https://www.edx.org/donate>)

Jobs at edX
(<https://www.edx.org/jobs>)

Follow Us

Twitter (<https://twitter.com/edXOnline>)

Facebook
(<http://www.facebook.com/EdxOnline>)

Meetup
(<http://www.meetup.com/edX-Global-Community>)

LinkedIn
(<http://www.linkedin.com/company/edx>)

Google+
(<https://plus.google.com/+edXOnline>)