Courseware   **Course Info**   **Course Outline**   **Grading Scheme**   **Instructors**   **Resources**   **Discussion**   **Progress**
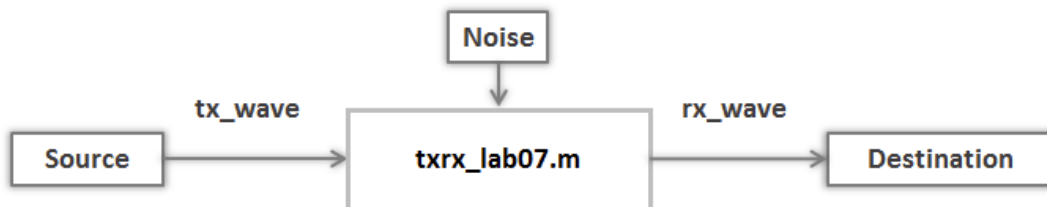
Help

LAB 7 TASK 4 - CHANGE THE TRANSMISSION DISTANCE

You will investigate the effect of the transmission distance on the distribution of the received signal.


```
1 % Copy your code from Task 3 below
2
3
4
```

Unanswered

[Run Code]

[Check] [Save]   *You have used 0 of 10 submissions*

INSTRUCTIONS

Step 1: Copy your code from Task 3

Copy your code in Task 3 where you generated the empirical and predicted histograms for the received signal when IN=0 and IN=1, respectively.

Step 2: Effect of the transmission distance

In Task 3, you generated the histograms when the distance between the transmitter and receiver is set to 8. Try adjusting the transmission **distance=8** to **distance=10**, **distance=12**, **distance=14**, and observe the resulting histograms corresponding to different transmission distances. You do not need to submit your work for this task. Based on your

Lab 7 Task 4 - Change the Transmission Dist...
observation, **answer the question below** for credit.

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LAB 7 TASK 4 - QUESTION 1 (1 point possible)

Suppose our communication system uses infrared light signals to transmit bit streams in a classroom. The experimental conditions were as follows:

1. The lights in the classroom were turned on during the measurement.

2. The distance between transmitter and receiver was 10cm.

Under these conditions, we observed the following histograms of the received signals for IN=1 and IN=0, which are plotted in one plot for easier comparisons.
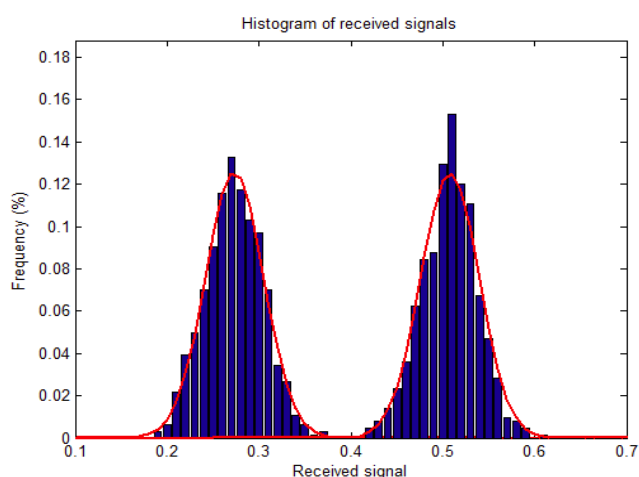

Suppose now that the experimental conditions are changed. In particular:

1. The lights in the classroom are turned off. This reduces the background light intensity and also reduces the power in the noise, since the classroom lighting is the primary source of noise in the channel.

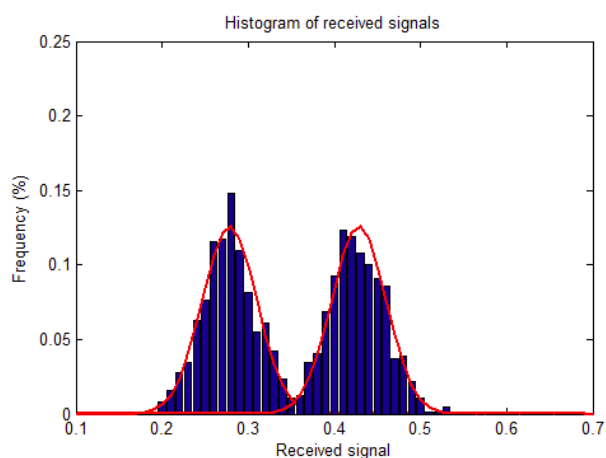2. The distance between transmitter and receiver is increased to 18cm.

Which one of the following figures is most likely to be obtained as the distribution for the received signal under the new conditions.
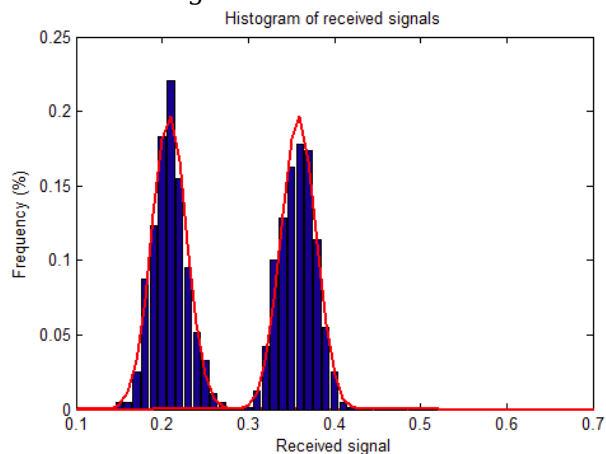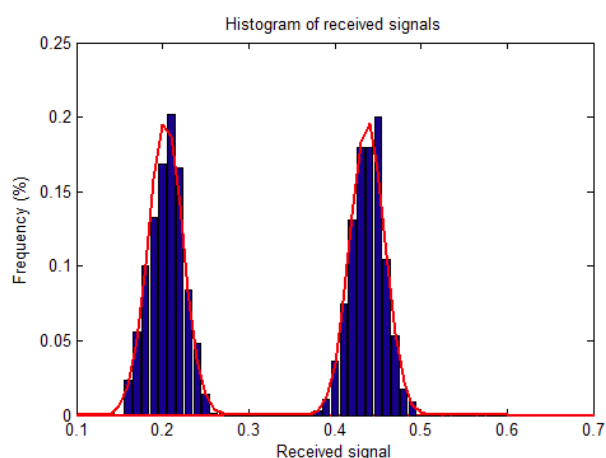
(A)
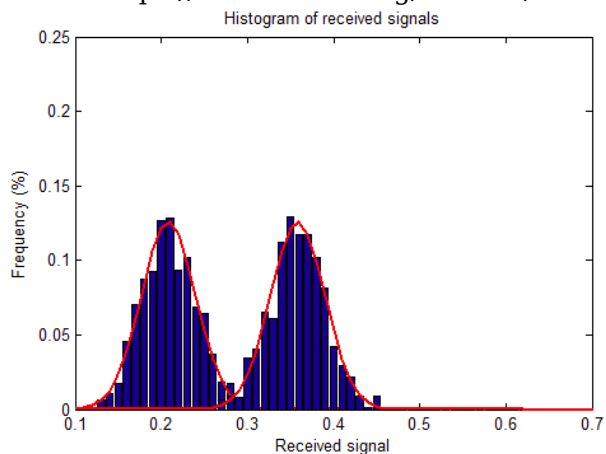
(B)

(C)

(D)

Please select the correct answer.

- A
- B
- C
- D

Check   Save   *You have used 0 of 2 submissions*

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