EECS 4215

Lab 3

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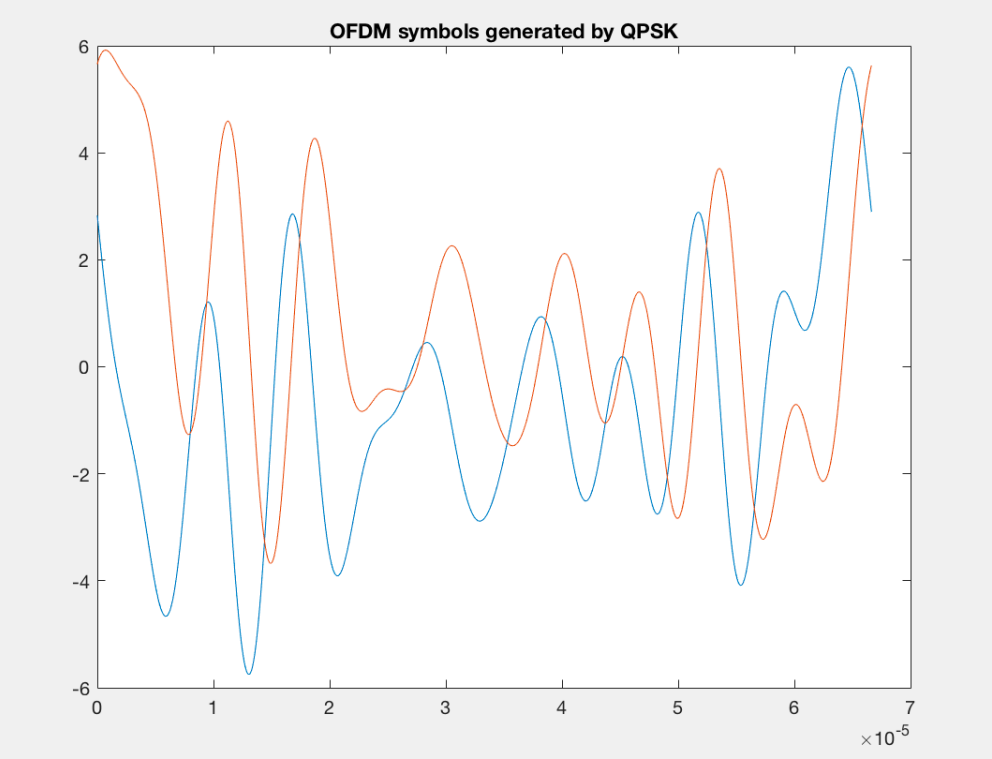
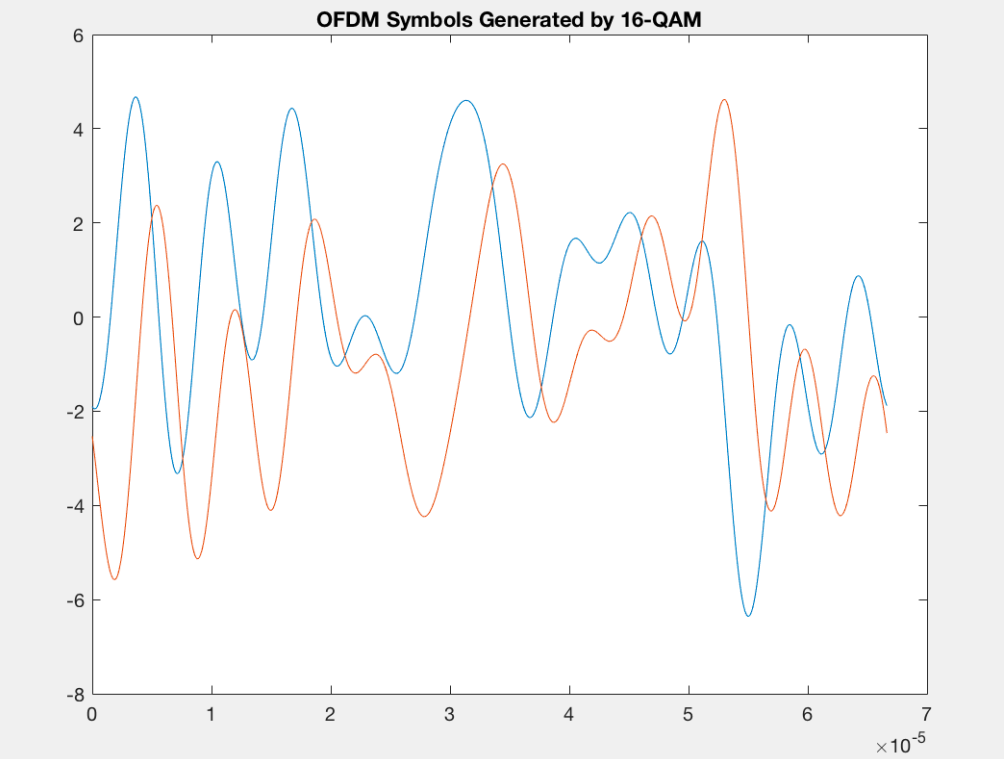
QPSK Plot:



16-QAM Plot:



Tester for ofdmSymbol and ofdmDemod use 16-QAM symbol

Generate a 16-QAM symbol:

```
k = 1/sqrt(10);

aqm_m = aqm16(k);

m1 = aqm_m(randi(16,1,12)); %choose 12 random modulation symbols
```

Below shows a 1x12 column vector: m1

Columns 1 through 4

0.3162 - 0.9487i 0.3162 - 0.9487i 0.3162 + 0.9487i 0.3162 - 0.9487i

Columns 5 through 8

0.9487 - 0.3162i 0.3162 - 0.9487i -0.9487 - 0.3162i 0.3162 + 0.3162i

Columns 8 through 12

0.3162 + 0.3162i -0.9487 - 0.9487i -0.3162 + 0.3162i 0.9487 - 0.3162i

Console Output 1:

Trial>> tester

Enter kth number 0~11: 3

0.3162 - 0.9487i

Console Output 2:

Trial>> tester

Enter kth number 0~11: 7

0.3162 + 0.3162i

Console Output 3:

Trial>> tester

Enter kth number 0~11: 11

0.9487 - 0.3162i

Tester for ofdmSymbol and ofdmDemod use QPSK symbol

Generate a QPSK symbol:

m2 = qpsk();

m2 = m2(randi(4,1,12));

Below shows a 1x12 column vector: m2

Columns 1 through 4

0.3162 + 0.3162i 0.3162 + 0.3162i -0.3162 + 0.9487i 0.9487 - 0.3162i

Columns 5 through 8

0.9487 - 0.3162i 0.3162 - 0.9487i 0.9487 - 0.3162i 0.3162 - 0.9487i

Columns 9 through 12

0.3162 + 0.3162i 0.3162 - 0.9487i 0.9487 - 0.3162i -0.3162 + 0.9487i

Console Output 1:

Trial>> tester

Enter kth number 0~11: 4

0.9487 - 0.3162i

Console Output 2:

Trial>> tester

Enter kth number 0~11: 8

0.3162 + 0.3162i

Console Output 3:

Trial>> tester

Enter kth number 0~11: 10

0.9487 - 0.3162i