Amplitude Shift Keying

clear;

clc;

b =[0 1 0 1 1 1 0];

n = length(b);

t = 0:.01:n;

for i = 1:n

bw(i\*100:(i+1)\*100) = b(i);

end

bw = bw(100:end);

sint = sin(2\*pi\*t);

st = bw.\*sint;

subplot(3,1,1)

plot(t,bw)

grid on ;

axis([0 n -2 +2])

subplot(3,1,2)

plot(t,sint)

grid on ;

axis([0 n -2 +2])

subplot(3,1,3)

plot(t,st)

grid on ;

axis([0 n -2 +2])

<https://www.rfwireless-world.com/source-code/MATLAB/ASK-modulation-matlab-code.html>

Phase Shift Keying

b = [0 1 0 1 1 1 0];

n = length(b);

t = 0:.01:n;

for i = 1:n

if (b(i) == 0)

b\_p(i) = -1;

else

b\_p(i) = 1;

end

end

for j = 1:n

bw(j\*100:(j+1)\*100) = b\_p(j);

end

bw = bw(100:end);

sint = sin(2\*pi\*t);

st = bw.\*sint;

subplot(3,1,1)

plot(t,bw)

grid on ;

axis([0 n -2 +2])

subplot(3,1,2)

plot(t,sint)

grid on ;

axis([0 n -2 +2])

subplot(3,1,3)

plot(t,st)

grid on ; axis([0 n -2 +2])

Frequency Shift Keying

b = [0 1 0 1 1 1 0];

n = length(b);

t = 0:.01:n;

for i = 1:n

{

if (b(i) == 0)

b\_p(i) = -1;

else

b\_p(i) = 1;

end

end

for j = 1:n

{

bw(j\*100:(j+1)\*100) = b\_p(j);

if (b\_p(j)=-1;

bw(j\*100:(j+1)\*100)=bw((j\*100:(j+1\*100)).\*sint;

else

bw(j\*100:(j+1)\*100)=bw(j\*100:(j+1)\*100).\*sin2t;

}

end

bw = bw(100:end);

subplot(3,1,1)

plot(t,sint)

grid on ;

axis([0 n -2 +2])

subplot(3,1,2)

plot(t,sin2t)

grid on ;

axis([0 n -2 +2])

subplot(3,1,3)

plot(t,bw)

grid on ;

axis([0 n -2 +2])

clear;

clc;

b = input('Enter the Bit stream \n '); %b = [0 1 0 1 1 1 0];

n = length(b);

t = 0:.01:n;

x = 1:1:(n+1)\*100;

for i = 1:n

if (b(i) == 0)

b\_p(i) = -1;

else

b\_p(i) = 1;

end

for j = i:.1:i+1

bw(x(i\*100:(i+1)\*100)) = b\_p(i);

end

end

bw = bw(100:end);

wo = 2\*(2\*pi\*t);

W = 1\*(2\*pi\*t);

sinHt = sin(wo+W);

sinLt = sin(wo-W);

st = sin(wo+(bw).\*W);

subplot(4,1,1)

plot(t,bw)

grid on ; axis([0 n -2 +2])

subplot(4,1,2)

plot(t,sinHt)

grid on ; axis([0 n -2 +2])

subplot(4,1,3)

plot(t,sinLt)

grid on ; axis([0 n -2 +2])

subplot(4,1,4)

plot(t,st)

grid on ; axis([0 n -2 +2])

Fs=1;

figure %pburg(st,10)

periodogram(st)

for j = 1:n

bw(j\*100:(j+1)\*100) = b\_p(j);

end

b =[0 1 0 1 1 1 0];

n = length(b);

t = 0:.01:n;

for i = 1:n

bw(i\*100:(i+1)\*100) = b(i);

end

bw = bw(100:end);

sint = sin(2\*pi\*t);

st = bw.\*sint;

subplot(3,1,1)

plot(t,bw)

grid on ;

axis([0 n -2 +2])

for i = 1:n-1

if (b(i) == 0){

bw(i\*100:(i+1)\*100)=-1}

bw=(i\*100:(i+1)\*100);

sint1 = sin(2\*pi\*25\*t);

st1 = bw.\*sint1;

subplot(3,1,2)

plot(st1,bw)

grid on ;

axis([0 n -2 +2])

}

else{

bw(i\*100:(i+1)\*100)= 1;

bw=(i\*100:(i+1)\*100)

sint2 = sin(2\*pi\*50\*t);

st2 = bw.\*sint2;

subplot(3,1,3)

plot(st1,bw)

grid on ;

axis([0 n -2 +2])

}

end

end