Message Passing and Receiving Using Modulator and Demodulator (Part 1: Transmitter Side)

Lab Report 9

Data Communication [D]

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(a) Generate a function which will convert a text message into binary bit sequence.

```
function dn = asc2bin(txt)
dec=double(txt);
p2=2.^(0:-1:-7);
B=mod(floor(p2'*dec),2);
dn=reshape(B,1,numel(B));
end

clc;
clear all;
close all;
Transmitted_Message= '20-42595-1';
%Converting Information Message to bit%
x=asc2bin(Transmitted_Message); % Binary Information
bp=.000001; % bit period
disp(' Binary information at Transmitter :');
disp(x);

%XX representation of transmitting binary information as digital
signal XXX
bit=[];
for n=1:1:length(x)
 if x(n)==1
 se=5*ones(1,100);
 else x(n)=0;
 se=zeros(1,100);
 end
 bit=[bit se];
end
t1=bp/100:bp/100:100*length(x)*(bp/100);
subplot(4,1,1);
plot(t1,bit,'lineWidth',2.5);grid on;
axis([ 0 bp*length(x) -.5 6]);
ylabel('amplitude(volt)');
xlabel(' time(sec)');
title('Transmitting information as digital signal');
%XXXXXXXXXXXXXXXXXXXXXXX Binary-ASK modulation
XXXXXXXXXXXXXXXXXXXXXXXXXX%
A1=5; % Amplitude of carrier signal for information 1
A2=0; % Amplitude of carrier signal for information 0
br=1/bp;
% bit rate
f=br*10; % carrier frequency
t2=bp/99:bp/99:bp;
```

```
ss=length(t2);
m=[];
for (i=1:1:length(x))
 if (x(i)==1)
 y=A1*cos(2*pi*f*t2);
  else
 y=A2*cos(2*pi*f*t2);
 end
 m=[m y];
end
t3=bp/99:bp/99:bp*length(x);
subplot(4,1,2);
plot(t3,m);
axis([ 0 bp*length(x) -6 6]);
xlabel('time(sec)');
ylabel('amplitude(volt)');
title('Modulated Signal at Transmitter');
```