**Experiment: To perform ASK Modulation & Demodulation using Scilab.**

**Scilab Code**

**Best Way:1**

clc

clear

close

Ac=10; *// Amplitude of carrier*

fc=0.1; *// Normalized frequency of carrier signal*

Am=2; *// Amplitude of modulating signal*

fm=0.01; *// Normalized frequency of modulating signal*

j=0;

x\_min=0;

step=0.01;

x\_max=300;

x\_axis=[x\_min:step:x\_max];

c\_t = Ac\*cos(2\*%pi\*fc\*x\_axis); *// Carrier signal*

m\_t= Am\*cos(2\*%pi\*fm\*x\_axis); *// Modulating signal*

b\_t=(sign(m\_t)+1)/2; *// Binary unipolar modulating signal*

s\_t=b\_t.\*c\_t; *// ASK signal*

subplot(4,1,1)

plot2d(x\_axis,m\_t,3)

xtitle('Modulating Signal','t----->','y----->')

a=gca()

a.x\_location="origin"

a.y\_location="origin"

subplot(4,1,2)

plot2d(x\_axis,c\_t,5)

xtitle('Carrier Signal','t----->','y----->')

a=gca()

a.x\_location="origin"

a.y\_location="origin"

subplot(4,1,3)

plot2d(x\_axis,b\_t,2)

xtitle('Binary polar modulating Signal','t----->','y----->')

a=gca()

a.x\_location="origin"

a.y\_location="origin"

subplot(4,1,4)

plot2d(x\_axis,s\_t,6)

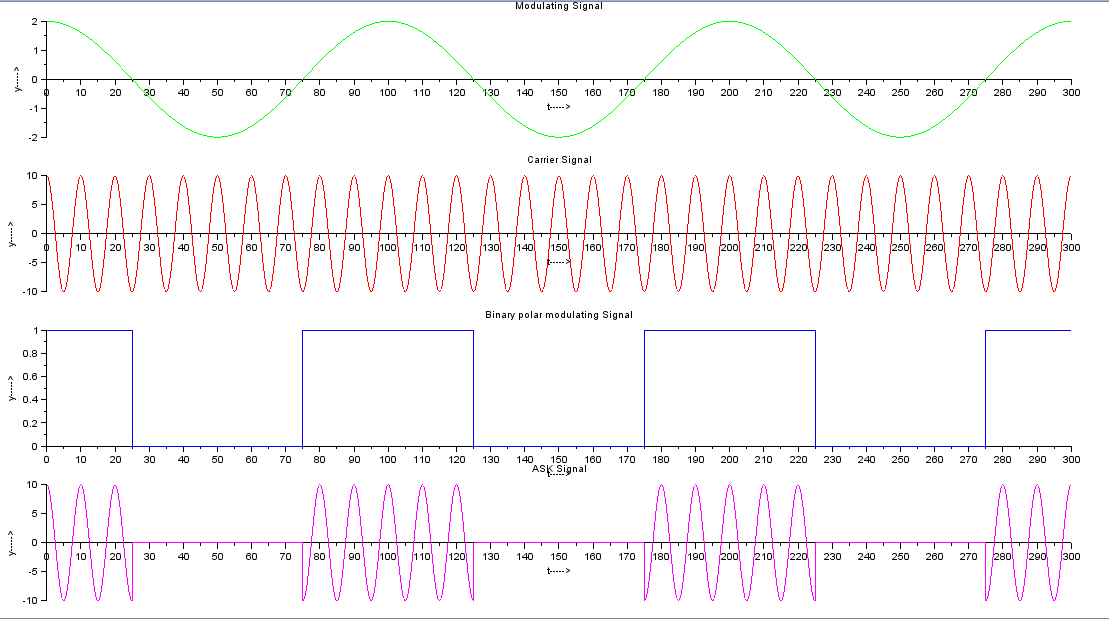
xtitle('ASK Signal','t----->','y----->')

a=gca()

a.x\_location="origin"

a.y\_location="origin"

**…**

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**Experiment: To perform PSK Modulation & Demodulation using Scilab.**

**PSK Scilab Code Best Way:**

clc

clear

close

Ac=10; *// Amplitude of carrier*

fc=0.1; *// Normalized frequency of carrier signal*

Am=2; *// Amplitude of modulating signal*

fm=0.01; *// Normalized frequency of modulaing signal*

j=0;

x\_min=0;

step=0.01;

x\_max=300;

x\_axis=[x\_min:step:x\_max];

c\_t = Ac\*cos(2\*%pi\*fc\*x\_axis); *// Carrier signal*

m\_t=Am\*cos(2\*%pi\*fm\*x\_axis); *// Modulating signal*

b\_t=sign(m\_t); *// Binary polar modulating signal*

s\_t=b\_t.\*c\_t; *// PSK signal*

subplot(4,1,1)

plot2d(x\_axis,m\_t,3)

xtitle('Modulating Signal','t----->','y----->')

a=gca()

a.x\_location="origin"

a.y\_location="origin"

subplot(4,1,2)

plot2d(x\_axis,c\_t,5)

xtitle('Carrier Signal','t----->','y----->')

a=gca()

a.x\_location="origin"

a.y\_location="origin"

subplot(4,1,3)

plot2d(x\_axis,b\_t,2)

xtitle('Binary polar modulating Signal','t----->','y----->')

a=gca()

a.x\_location="origin"

a.y\_location="origin"

subplot(4,1,4)

plot2d(x\_axis,s\_t,6)

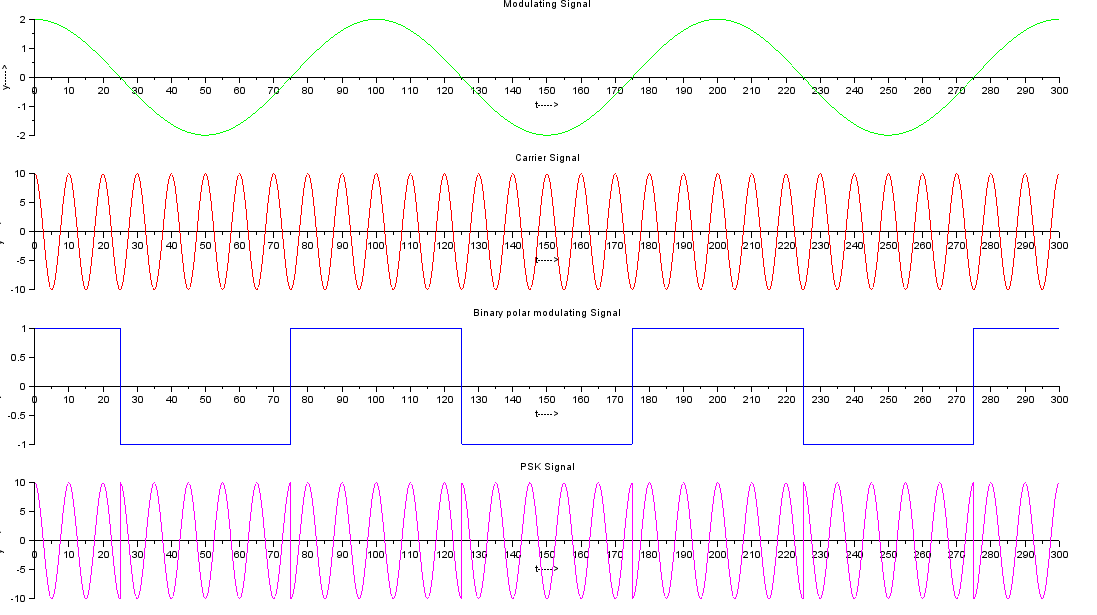
xtitle('PSK Signal','t----->','y----->')

a=gca()

a.x\_location="origin"

a.y\_location="origin"

**…**

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**…………**

**Experiment: To perform Signal Sampling and Reconstruction Techniques using Scilab.**

**Scilab Code**

clc;close;clear;

t=-10:.001:10;

fm=1;

y1=sin(2\*%pi\*fm\*t);

figure(1)

subplot(2,2,1)

plot2d(t,y1);

xtitle('Message Signal','t--->','');

fs=1.5;

Ts=1/fs;

n=-100:100;

y2=sin(2\*%pi\*fm\*n\*Ts);

*//figure(2)*

subplot(2,2,2)

plot2d3(n,y2);

xtitle('Sampled signal','n (nTs)--->','');

h=sinc(n/Ts);

t1=n\*Ts;

L1=length(h)

*//figure(3)*

subplot(2,2,3)

plot2d(Ts:Ts:L1\*Ts,h);

xtitle('Impulse response of LPF','t--->','');

y3=conv(y2,h)

*//t1=-10:.01:10;*

*//plot2d(t1,sinc(t1))*

*//figure(4)*

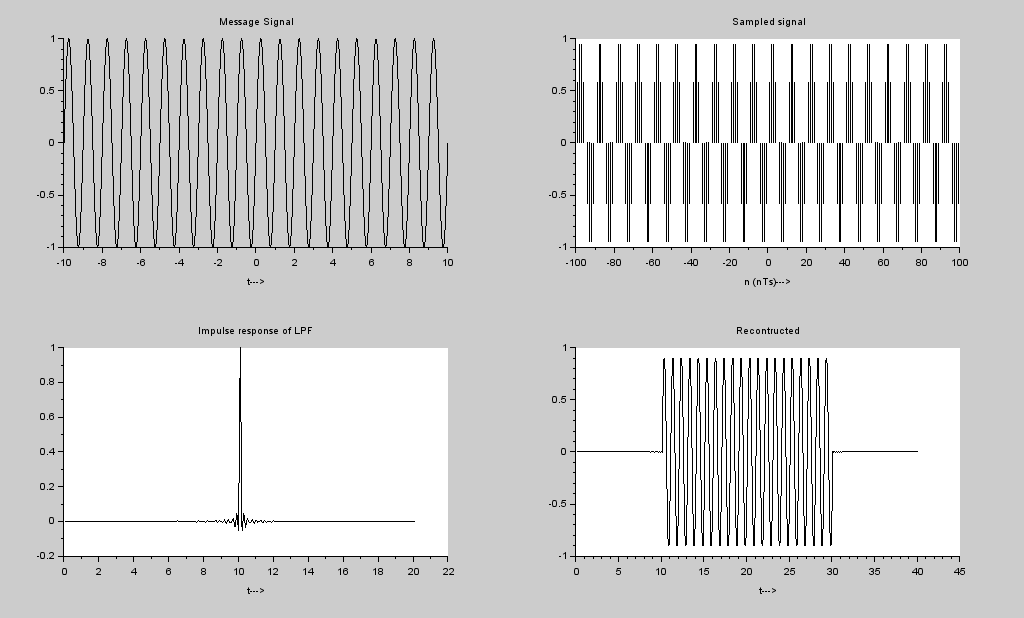
L=length(y3);

subplot(2,2,4)

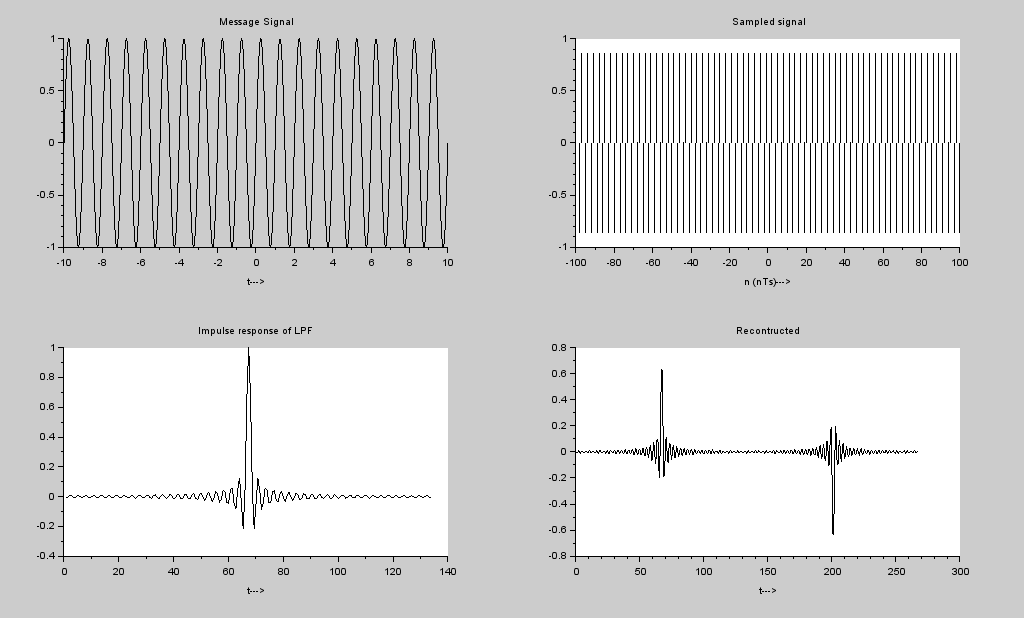
plot2d(Ts:Ts:L\*Ts,y3);

xtitle('Recontructed','t--->','');

fm=1Hz, fs= 10 sample/sec , fs > 2fm



fm=1Hz, fs = 1.5 sample/sec , fs < 2fm

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