EXPERIMENT

AIM: To study Frequency Shift Keying (FSK) Modulation.

APPARATUS: MATLAB Simulink.

BLOCK DIAGRAM:

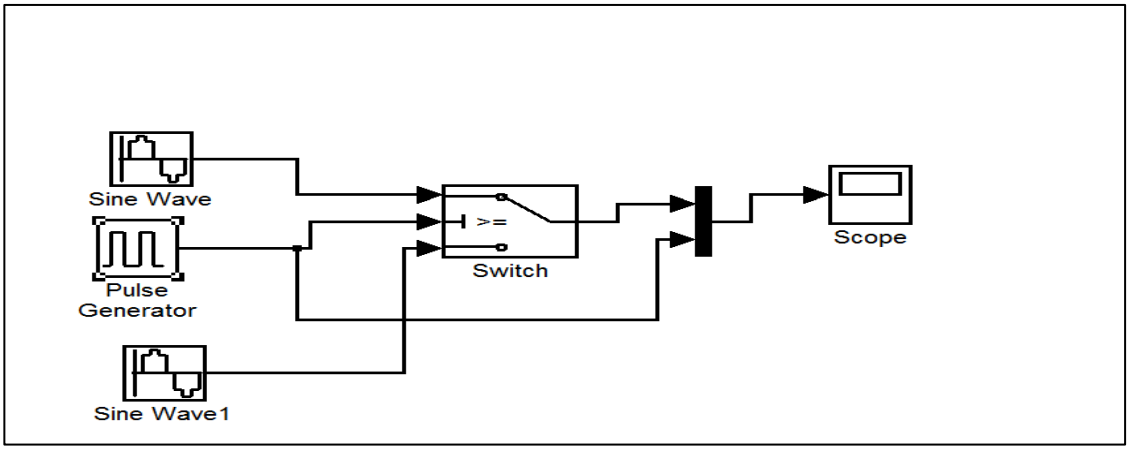

Fig.1: Block Diagram of FSK Modulator in Simulink MATLAB

THEORY:

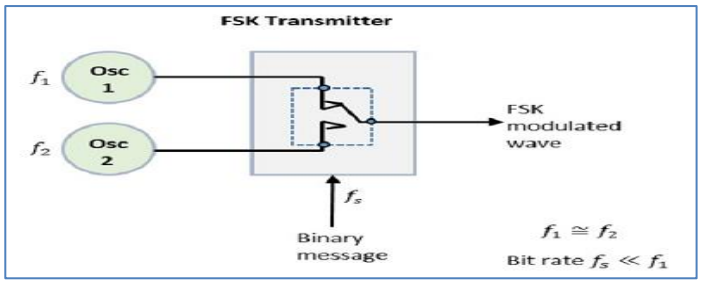

Fig.2: Basic principle of FSK modulator block

Frequency-shift keying (FSK) is a frequency modulation scheme in which digital information is transmitted through discrete frequency changes of a carrier wave. The simplest FSK is binary FSK (BFSK). BFSK uses a pair of discrete frequencies to transmit binary (0s and 1s) information. With this scheme, the "1" is called the mark frequency and the "0" is called the space frequency. If the incoming bit is 1, a signal with frequency f1 is sent for the duration of the bit. If the bit is 0, a signal with frequency f2 is sent for the duration of this bit. This is the basic principle behind FSK modulation.

WAVE FORM

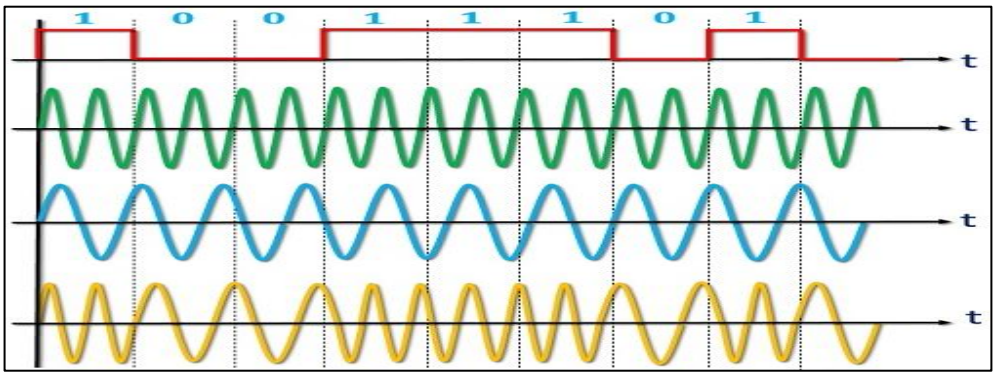

Fig.3: Waveform of FSK Modulator

First waveform is Digital bit stream according to it switching process will be proceed. Second and third waveforms are HIGH frequency carrier wave & LOW frequency carrier waveform respectively. Fourth is FSK modulation wave , here when input bit stream is 1 then get HIGH frequency and 0 then LOW frequency.

PROCEDURE:

Modulation:

1. Connect all the blocks in Simulink according to given steps.(Which is given in FSK_designingStep document).
2. After designing entire diagram click on RUN.
3. Observe the waveforms at output of modulator using virtual scope.

OBSERVATION TABLE:

To observe waveform in Simulink by selecting different frequencies as per given Table.

Higher Frequency	Lower Frequency
100Hz	400Hz
1KHz	2KHz
2KHz	5KHz

RESULT:

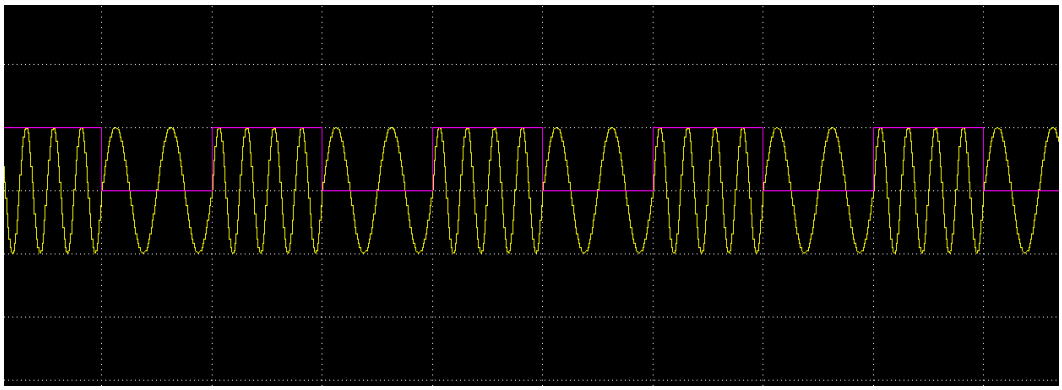

Fig.4: Simulink Waveform of FSK Modulator for 2Hz Low & 4Hz High frequencies

CONCLUSION: