

Title

ASK modulation and demodulation.

Objective / Aim of the Experiment

To study the generation and detection of Amplitude Shift Keying (ASK).

Equipment Required

ASK Modulation and Demodulation Trainer Kit
Digital Storage Oscilloscope (100MHz, 1GSa/S)
Power supply
Probes
Patch cord
Connecting wires

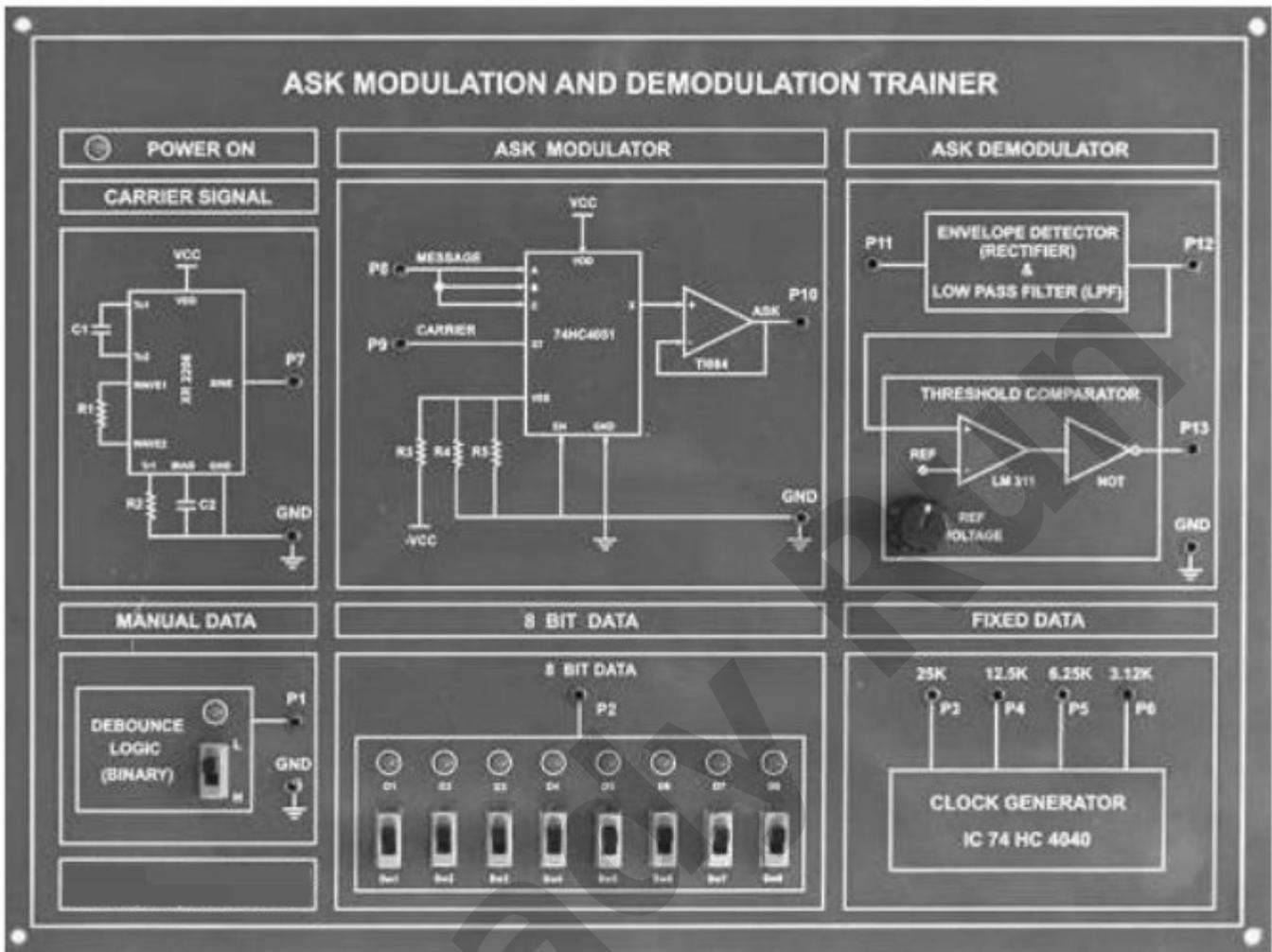
Theory

The binary ASK system was one of the earliest form of digital modulation used in wireless telegraphy. In a binary ASK system binary symbol 1 is represented by transmitting a sinusoidal carrier wave of fixed amplitude A_c and fixed frequency f_c for the bit duration T_b whereas binary symbol 0 is represented by switching of the carrier for T_b seconds. This signal can be generated simply by turning the carrier of a sinusoidal oscillator ON and OFF for the prescribed periods indicated by the modulating pulse train. For this reason the scheme is also known as on-off shift testing.

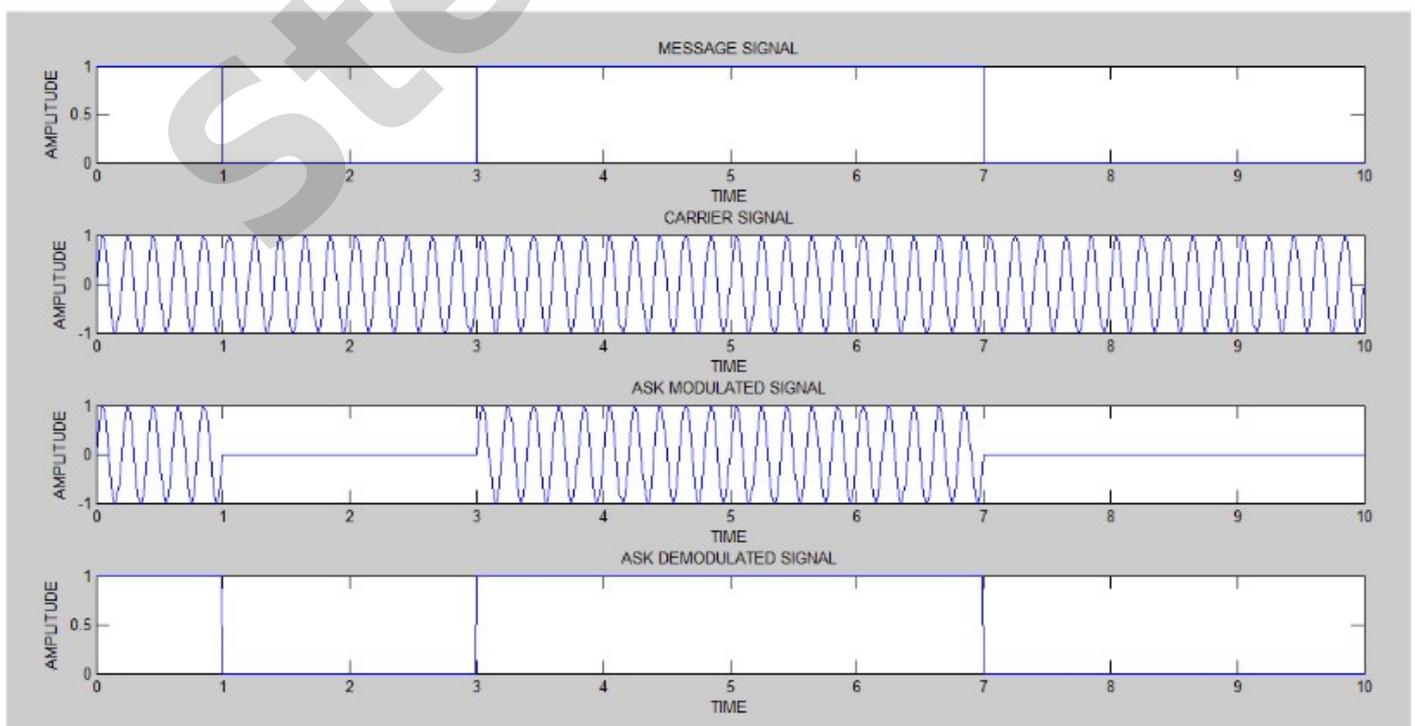
Procedure

1. The connections are given as per the block diagram.
2. Connect the power supply in proper polarity to the kit and & switch it on.
3. Set the amplitude and frequency of the carrier wave as desired.
4. Set the message data bit.
5. Observe the waveforms at the
Message data
Carrier signal
ASK modulator output
ASK demodulator output
6. Plot it on graph paper.

Block Diagram / Circuit Diagram



Graph



Observation Table

Signal	Amplitude	Time period	Frequency
Message Signal			
Carrier Signal			
ASK Modulated Signal			
Demodulated Output			

Result

ASK Modulation and Demodulation is verified from the hardware kit and its waveforms are studied.

Conclusion

From the above experiment, the amplitude of demodulated signal is obtained as

Precautions

- 1) Do not use open ended wires to connect 230V, 50Hz power supply.
- 2) Check the connection before giving the power supply.
- 3) Observations should be done carefully.
- 4) Disconnect the circuit after switched off the power supply