

TLA-01: SIGNAL GENERATOR AND FREQUENCY MODULATION

This module forms the heart of the system, generating all the necessary signals for performing various experiment in Analog Communication, which includes all modulating and carrier signals.

It allows the student to examine the generator of various carrier signals and understand the functions of Function Generator & Sweep Generator. Detailed instruction manual is provided which explains the above functions at the circuit level.



Features :

- On-board Function Generator
- VCO Signals
- Audio Preamplifier
- Sweep Generator
- Spectrum detector (RF detector)

Technical Specifications :

- Onboard Sampling frequencies : Sine, Triangular, Square
- Amplitude : 0 to 2 Vp-p
- Frequency Range : 100 Hz to 9 KHZ
- Synchronous Square wave : Frequency x 4 and $\div 4$ of the signal adjustable amplitude

a) Voltage Control Oscillator

- Frequency Range : 1) 385 KHz to 1535 KHz
2) 385 KHz to 525 KHz
- Amplitude : Variable 0 to 1.5 Vp-p
- Output Impedance : 50 Ohm
- Inputs to VCO1 : Modulating signal; Marker; AFC (Automatic Frequency Control)

b) VCO 2 carrier frequency generator

- Frequency Range : 385 KHz to 1535 KHz
- Amplitude : Variable 0 to 1.5 Vp-p
- Output Impedance : 50 Ohm
- Inputs to VCO1 : Modulating signal

Audio Preamplifier

- Audio Inputs : Microphone
- Input impedance : 600 ohm
- Voltage Gain : 1 to 100
- RC filter : 3.4 KHz cutoff
- Max.Output for Oscilloscope : 5V

Sweep Generator

- Sweep Frequency : 10 Hz
- Sweep Depth : Adjustable
- Output for Oscilloscope : X axis

Spectrum Detector

- Minimum Input : 100mVp-p
- Input Level : Adjustable
- Interconnection : 2mm standard banana socket
- Power Supply : $\pm 12V$