

**Product Name :**  
Frequency Modulation and Demodulation Trainer

**Product Code :**  
ELB-COMS0002



## Description :

Frequency Modulation and Demodulation Trainer

## Technical Specification :

FM Transmitter and Receiver Trainer has been designed with a view to provide practical and experimental knowledge of Frequency Modulation & Demodulation Trainer technique as practically implemented in Analog Communication system on a SINGLE P.C.B. of size 300 x 400 mm.

To Study Theory of Frequency Modulation & Demodulation:

- Frequency Modulation via varactor / reactance Modulation
- Frequency Demodulation via Detuned Resonant/Ratio/Quadrature/Foster - Seeley/Phase locked loop detector
- Separate VCO circuit to demonstrate FM waveform

Feature:

The board consists of the following built-in parts:

**POWER SUPPLY:**

- $\pm 12$ DC IC Regulated power supply

FM Modulating signal generator:

- Sine wave

Frequency Range:

- 300 Hz to 3.4 KHz

Amplitude Range:

- 0 to 5 Vpp.

Modulator Type:

Varactor modulator (With carrier frequency adjustment):

- Reactance Modulator (With carrier frequency adjustment)

Demodulator (Detuned resonant detector):

- Quadrature detector
- Foster - Seeley Detector
- Ratio Detector
- Phase locked loop Detector

Mixer/Amplifier:

- 1 No. (With gain adjustment) Allows FM input signal to be amplitude modulated by a noise input to demodulation.

Low pass Filter:

- 3.4 KHz. Cut off frequency Amplifier (with adjustable gain)

VCO Circuit:

- FM Wave form demonstrate

Test Point:

- 78

Power supply requirement:

- 230V AC, 50 Hz.

On Board Switched Faults:

- 8 Nos.
- On Board Amplitude limiter with Amplitude control.
- Input - Output and Test points provided on board.
- A self contained Trainer.
- Effect of noise on the detection of FM signal may be investigated.
- Strongly supported by detailed Operating Instructions, giving details of Object, Theory, Design procedures, Report Suggestions and Book References.

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Weight:

- 6 Kg. (Approx.)

Dimension:

- W 412 x H 150 x D 310

Other Apparatus Required:

- Cathode Ray Oscilloscope 20MHz.
- Patch Cords

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