

FM Transmitter and Receiver Trainer has been designed with a view to provide practical and experimental knowledge of Frequency Modulation / Demodulation technique as practically implemented in Analog Communication system on a SINGLE P.C.B. of size 300x400mm.



### 1. Object:

To Study Theory of Frequency Modulation & Demodulation:

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

### 2. Feature:

The board consists of the following built-in parts:

01. POWER SUPPLY :  $\pm 12$ DC IC Regulated power supply.
02. FM Modulating signal generator : Sine wave  
Frequency Range : 300 Hz to 3.4 KHz  
Amplitude Range : 0 to 5 Vpp.
03. Modulator Type : Varactor modulator (With carrier frequency adjustment)  
: Reactance Modulator (With carrier frequency adjustment)
04. Demodulator : Detuned resonant detector.  
: Quadrature detector  
: Foster - Seeley Detector  
: Ratio Detector  
: Phase locked loop Detector
05. Mixer/Amplifier : 1 No. (With gain adjustment) Allows FM input signal to be amplitude modulated by a noise input to demodulation.
06. Low pass Filter : 3.4 KHz. Cut of frequency Amplifier (with adjustable gain)
07. VCO Circuit : FM Wave form demonstrate
08. Test Point : 78
09. Power supply requirement : 230V AC, 50 Hz.
10. On Board Switched Faults : 8 Nos.
11. On Board Amplitude limiter with Amplitude control.
12. Input - Output and Test points provided on board.
13. A self contained Trainer.
14. Effect of noise on the detection of FM signal may be investigated.
  - Good Quality, reliable terminal/sockets are provided at appropriate places on panel for connections/ observation of waveforms.
  - Strongly supported by detailed Operating Instructions, giving details of Object, Theory, Design procedures, Report Suggestions and Book References.
  - Weight : 6 Kg. (Approx.)
  - Dimension : W 412 x H 150 x D 310

### Other Apparatus Required:

- Cathode Ray Oscilloscope 20MHz.
- Patch Cords

Note: Specifications are subject to change.

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