

# ANALOG COMMUNICATION TRAINERS

## ACT-3000



### Description : Curriculum Outlines:

1. Design and implementation of second order RF filters and RF oscillators.
2. Design and implementation of AM and FM modem.
3. Design and implementation of DSB/SC and SSB modem.
4. Design and implementation of TDM and FDM multiplexer and demultiplexer.
5. Design and implementation of ADC and DAC converter.
6. Design and implementation of frequency converter and signal recovery.

### Features : Curriculum Objectives:

1. To understand the basic theory of analog communication system.
2. Design and implementation ability training of analog modem.
3. To understand the applications of balanced modulator circuit.
4. To understand the applications of analog modem.

**Specification : Module One: Second Order Active Filters and RF Oscillators  
(ACT-3000-01)**

Chapter 1: Second Order Active Filters

Experiment 1 : second Order Low-Pass Filter

Experiment 2 : second Order High-Pass Filter

Experiment 3 : second Order Bandpass Filter

Chapter 2: RF Oscillators

Experiment 1 : Colpitts Oscillator

Experiment 2 : Hartley Oscillator

**Module Two: AM Modulation and Demodulation  
(ACT-3000-02)**

Chapter 3 AM Modulator

Experiment 1 : AM Modulator

Chapter 4 AM Demodulator

Experiment 1 : AM Diode Detector

Experiment 2 : AM Product Detector

**Module Three: DSB-SC and SSB Modulation and Demodulation  
(ACT-3000-03)**

Chapter 5 DSB-SC and SSB Modulator

Experiment 1 : DSB-SC Modulator

Experiment 2 : SSB Modulator

Chapter 6 DSB-SC and SSB Demodulator

Experiment 1 : DSB-SC Demodulator

Experiment 2 : SSB Demodulator

**Module Four: FM Modulation and Demodulation  
(ACT-3000-04)**

Chapter 7 FM Modulator

Experiment 1 : LM566 FM Modulator

Experiment 2 : MC4046 FM Modulator

Chapter 8 FM Demodulator

Experiment 1 : LM565 FM Demodulator

Experiment 2 : MC4046 FM Demodulator

**Module Five: TDM Multiplexer and Demultiplexer  
(ACT-3000-05)**

Chapter 9 TDM Multiplexer

Experiment 1 : Waveform Generator

Experiment 2 : TDM Multiplexer

Chapter 10 TDM Demultiplexer

Experiment 1 : TDM Demultiplexer

**Module Six: FDM Multiplexer and Demultiplexer  
(ACT-3000-06)**

Chapter 11 FDM Modulator

Experiment 1 : FDM Signal Generator  
Experiment 2 : DSB-SC Modulated Signal Generator  
Experiment 3 : FDM Multiplexer

[Chapter 12 FDM Demodulator](#)

Experiment 3 : FDM Demultiplexer

**Module Seven: ADC and DAC Converter  
(ACT-3000-07)**

[Chapter 13 Analog-to-digital Converter](#)

Experiment 1 : ADC0804 Analog-to-digital Converter

Experiment 2 : ADC0809 Analog-to-digital Converter

[Chapter 14 Digital-to-analog Converter](#)

Experiment 1 : Unipolar DAC 0800 Digital-to-Analog Converter

Experiment 2 : Bipolar DAC 0800 Digital-to-Analog Converter

**Module Eight: Frequency Converter and Signal Recovery  
(ACT-3000-08)**

[Chapter 15 Frequency Converter](#)

Experiment 1 : Frequency Multiplexer

Experiment 2 : Up/Down Frequency Converter

[Chapter 16 Signal Recovery](#)

Experiment 1 : Carrier Signal Recovery Circuit

Experiment 2 : Clock Recovery Circuit