



**Sciencetech 2170J DSB-AM Modulation & Demodulation** is a comprehensive training solution for acquiring in-depth knowledge of the fundamental techniques used in DSB Amplitude Modulation and Demodulation. The implementation of DSB AM is tough, hence this board has been designed for beginners to get acquainted with concept of the real technology implementation.

Sciencetech 2170J DSB-AM Modulation & Demodulation comprises of following blocks :

- AC Source with variable amplitude and frequency
- Carrier Source
- DC Source/Level Shifter
- Balanced Modulator with adjustable gain
- Transistorized AM Modulator
- Envelope Detector with adjustable band filter

### Features

- On-board Audio Signal Generator with Amplitude and Frequency control
- On-board Carrier Generator
- Variable DC Source/Level Shifter
- Amplitude modulation using
  - Balanced Modulator
  - Transistorized AM Modulator
- Gain adjustment for Balanced Modulator
- Envelope detector for demonstration of demodulation method

### Scope of Learning

- Study of Amplitude Modulation using a Balanced Modulator.
- Study of Amplitude Modulation using a Transistorized AM Modulator.
- Observations of modulation index/modulation depth.
- Study of envelop detector and its utilization in AM detection.
- To establish a relationship between RC time constant of diode detector, carrier frequency and modulating signal frequency.

### Technical Specifications

#### Audio Signal Source

Type	: Sinusoidal
Frequency range	: 200 Hz to 3.5 KHz
Amplitude	: 0–5 V variable

#### Carrier Source

: 1 MHz

#### DC Source/Level Shifter

: 0–5 V variable

#### Balance Modulator

: DSB - AM

#### Transistorized Modulator

: DSB - AM

#### Envelope Detector

: With adjustable band filter

#### Test Points

: 14 nos.

#### Interconnections

: 2 mm Sockets

#### Power Supply

: 110-220 V,  $\pm 10\%$ , 50 / 60 Hz

#### Dimensions (mm)

: W 255 X D 155 X H 80

#### Weight

: 350 gm (approximately)

#### Operating Conditions

: 0-40°C, 85% RH

#### Product Tutorial

: Online (Theory, procedure, reference results, etc).

#### Included Accessories

: 2mm Patch Cord (Red) -5 nos.  
2mm Patch Cord (Black)-2 nos.  
Sciencetech 2170J Power Supply-1no.