



**Sciencetech 2208, Armstrong Frequency Modulator and Demodulator** is a self contained Analog Communication board which provides an in-depth study of basic Armstrong method of Frequency Modulation. It consists of an FM modulator which uses Armstrong method of Frequency modulation with the help of a DSB-SC Balanced Modulator, Carrier wave phase shifter and a Operational Amplifier based adder. Also a Demodulator section which demodulate the FM wave with PLL detector and a filter followed by an amplifier. Three different experiments show how FM wave generated using AM wave and then demodulated to extract the original modulating wave.

## Features

- A self contained platform
- Functional blocks indicated on board mimic
- Input - Output and Test points provided onboard
- Built in DC Power Supply
- On board audio oscillator, carrier oscillator, modulator, phase shifter, amplitude adjusts & filter circuits
- Compact size
- Balanced modulator which allows audio input signal to be amplitude modulated (DSB-SC) by carrier input prior to frequency modulation, with balance adjustment
- Online Product Tutorial

## Scope of Learning

### To study:

- Observe the Double Sideband Suppressed carrier AM generation
- Armstrong Frequency Modulator
- Operation of Phase-Locked Loop detector as a FM demodulator

## Technical Specifications

### Audio Oscillator (Message Signal)

Function	:	Sine
Output	:	0-10 VPP
Frequency	:	200Hz - 10 KHz

### Carrier Output Frequency

Function	:	Sine & Cosine
Output	:	0-10 Vpp
Frequency	:	2KHz- 100 KHz
FM Modulator	:	Armstrong Frequency Modulator
FM Demodulator	:	Phase Locked Loop detector
Low Pass Filter	:	10 KHz cut off frequency.
Output Amplifier	:	1 No. with adjustable Gain
Test Points	:	7 nos
Power Supply	:	230 V $\pm$ 10%, 50Hz
Power Consumption	:	2 VA (approximately)
Interconnections	:	2 mm Banana sockets
Dimensions (mm)	:	W 420 x D 255 x H 100
Weight	:	2.4 Kg. (approximately)
Product Tutorial	:	Online on <a href="http://www.SciencetechLearning.com">www.SciencetechLearning.com</a>

### Included Accessories

Patch cord 16"	:	14 nos.
Mains cord	:	1 no.