

**Frequency Division Multiplexer/Demultiplexer Sciencetech 2211** demonstrates FDM technique. It basically fulfills the need for communication of two different inputs through a single channel by Frequency Division Multiplexing method. Sciencetech 2211 has the provision for onboard modulating signal as well as voice input. For reducing the complexity same carriers are used for demodulation also. In actual FDM communication method carrier is obtained through the modulated output only. But the basic concept remains the same. DSB-SC modulation technique is used for modulation and demodulation.

## Features

- Self contained and easy to operate
- Two variable modulating (sinusoidal) input channels with provision of voice inputs
- Two DSBSC modulators for frequency band translation of two test signals
- Two Carrier Generators
- Two sets of audio input amplifier
- One adder/transmission amplifier
- Two Demodulators
- Two low pass filters for smooth output
- 2 Sets of audio O/P amplifier

## Scope of Learning

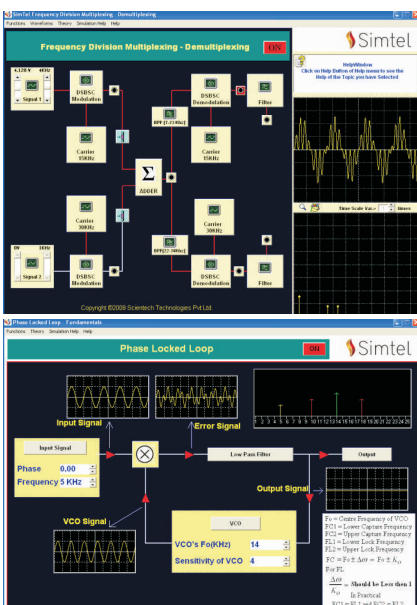
### Study of:

- Frequency Division Multiplexing / Demultiplexing with sinusoidal & audio inputs
- Fourier Spectrum of FDM
- DSBSC Modulation/Demodulation

### Technical Specifications

<b>Crystal Frequency</b>	: 4.096 MHz
<b>Carrier Generator</b>	: Sine wave 100 KHz & 200 KHz
<b>Modulating Input</b>	
<b>Frequency</b>	: Sine wave 200 Hz-10 KHz (variable)
<b>Audio Input Amplifier</b>	: Gain of 100 (approx.)
<b>Modulator / Demodulator</b>	: DSBSC Modulator/Demodulator
<b>Low Pass Filters</b>	: Second Order Butterworth filters with a cut off frequency of 10 KHz
<b>Audio Output Amplifier</b>	: Output Amplifier with a gain of 20
<b>Test points</b>	: 30 nos
<b>Interconnection</b>	: 2mm banana socket
<b>Power Supply</b>	: 220V/110V, 50 Hz / 60 Hz
<b>Power Consumption</b>	: 3 VA (approx.)
<b>Dimensions (mm)</b>	: W 326 x D 252 x H 52
<b>Weight</b>	: 3.5 Kg. (approximately)
<b>Operating Conditions</b>	: 0-40°C, 85% RH
<b>Product Tutorial</b>	: Online on
<b>Included Accessories :</b>	
Patch cord 16"	: 15 nos.
Headphone	: 2 nos.
Microphone	: 2 nos.
Mains cord	: 1 no.

**Simtel 10** - Analog Communication Interactive Software (optional)



### Topics

- Fourier analysis
- Amplitude Modulation: Standard Amplitude Modulation, DSBSC Modulation, SSB Modulation
- Frequency Division Multiplexing
- Frequency Modulation: Direct Modulation, Indirect Modulation
- Pulse Modulation: Pulse Amplitude Modulation, Pulse Width Modulation, Pulse Position Modulation
- Phase Locked Loop
- Super Heterodyne Receiver

For more details refer Simtel 10 Catalog