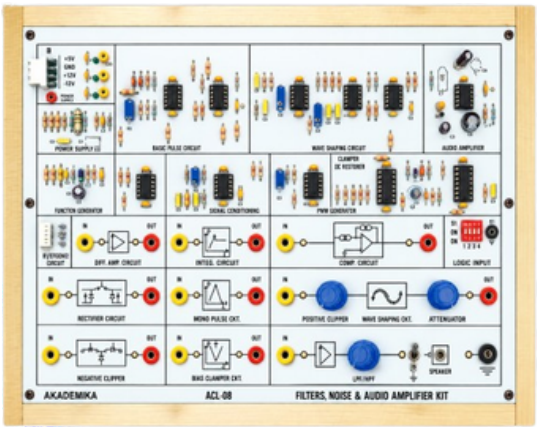
ACL-FIL

Filter /Noise and Audio Amplifier Kit



FEATURES

- Designed for practical study of filtering, noise and audio amplification.
- Demonstrates how different filters select, pass or reject frequency components.
- Allows observation of the effect of noise on signals.
- Provides signal conditioning and filtering before amplification.
- Mobile based interactive e-manual

SPECIFICATIONS

Output amplitude
- White noise source
- Output amplitude : Adjustable from 0 ~ 3Vpp

Signal attenuation network
- Adjustable from 0 to the maximum of input value signal + noise adder stage

Audio amplifier with loud speaker
- Output power : 0.5W
- Speaker : 8 Ω, 0.3W

Filters

High pass filter
- 3.4 KHz cutoff

Band pass filter
- Frequency range 7 ~ 13 KHz

Band reject filter
- Frequency range 7 ~ 13 KHz

Matched filter
- π section : 20 KHz cutoff
- T section : 20 KHz cutoff

Input voltage
- 0 ~ 2 Vpp

Output voltage
- 0 ~ 2 Vpp

Switch faults
- 4 switch faults are provided on board to study different effects on circuit

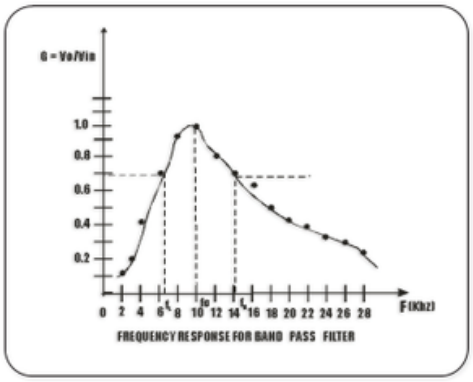
Interconnection
- 2mm banana socket

Test points
- 24 test points are provided on board to observe various intermediate signals

Power supply
- GND, +5V, +12V, -12V

EXPERIMENTS

- Examine the operation of a noise generator
- Examine the operation of a signal attenuation network
- Measurement of S/N ratio
- Measurement of noise figure
- Measurement of the frequency response and power output of an audio amplifier
- To calculate frequency response of high pass, band pass band reject and matched (T and π section) filters



Characteristics of band pass filter