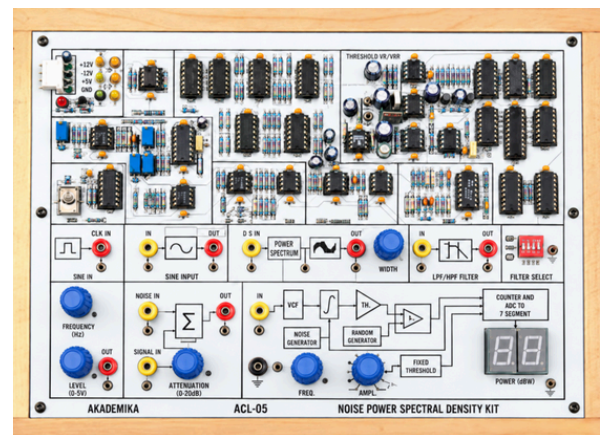


ACL-NP

Noise Power Spectral Density Measurement Kit



FEATURES

- Dedicated Noise Power Spectral Density trainer for studying noise behaviour in communication systems.
- Provides on-board noise generation and signal-conditioning sections.
- Includes a signal adder/summing stage for combining noise with test signals.
- Built-in filter sections allow observation of noise over selected frequency ranges.
- Provides variable control stages for changing signal/noise level during experiments.
- Includes a power measurement and display section for comparative noise analysis.
- Useful for understanding noise addition, filtering, bandwidth effects and power distribution.

SPECIFICATIONS

Clock generator

- Frequency : 2 MHz

Onboard signal

- Sine wave
- Frequency : 1 ~ 10 KHz
- Amplitude : 0 ~ 2 Vpp

Noise generator

Pseudo random noise source

- Number of bits : 32-bit
- Output amplitude : 0 ~ 1V
- Noise bandwidth : 2 MHz

Signal attenuator and adder

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

Low pass filter

- 4th Order butterworth filter

- Cut-off frequency : 3.4 KHz

Power Meter and Display

- Input Signal amplitude : 0 ~ 2 Vpp
- Timer : 1 ~ 15 seconds
- Display : 2 digits seven segment

Switch faults

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

Interconnection

- 2 mm banana socket

Test points

- 16 test points are provided on board to observe intermediate signals

Power supply

- GND, +5V, +12V, -12V

EXPERIMENTS

- To observe the effect of noise on various analog systems
- To calculate signal to noise ratio
- To calculate noise figure
- To calculate noise power and noise power spectral density
- To study the effects of low pass filter on noisy signal
- To study the effects of switch faults

