

Adjustable Step Attenuator



AI Overview

An adjustable step attenuator is used to precisely control the strength of an electrical signal in discrete steps, ensuring accurate signal levels and protecting sensitive equipment. Function An adjustable step attenuator is a passive electronic device that reduces the amplitude of a signal in fixed, discrete increments (e.g., 0.5 dB, 1 dB, 10 dB) rather than continuously. It operates by switching between different resistor networks or sections, often using relays, PIN diodes, or FETs, to insert or bypass attenuation stages. This allows for repeatable and programmable signal reduction without distorting the waveform, maintaining signal integrity across a wide frequency range (). Applications Laboratory and Test Environments Step attenuators are commonly used in labs to dynamically adjust signal strength during experiments or measurements. They allow engineers to test circuits under controlled signal levels and calibrate instruments accurately (). RF and Microwave Systems Coaxial step attenuators are designed for high-frequency applications, such as radio frequency (RF) and microwave signals. They maintain impedance matching and minimize signal reflections, which is critical for communication systems, radar, and satellite equipment (). Communication Equipment In wireless systems, step attenuators help balance signal levels between transmitters and receivers, preventing overloading or weak signal issues. They are often used in base stations, mobile devices, and automated test setups to ensure stable and reliable signal transmission (). Automated and Programmable Systems Digital step attenuators (DSAs) can be controlled via software or microcontrollers, enabling rapid and precise adjustments in automated test equipment, electronic warfare setups, and 5G or satellite communication systems (). Advantages Precision: Provides accurate, repeatable attenuation in defined steps. Protection: Prevents damage to sensitive components by limiting signal amplitude. Programmability: Can be integrated into automated systems...

Article Content

Step Attenuators

These series of step attenuators are available with BNC connectors and include RF dB attenuation values that range from 1 dB to 110 dB. The frequency range of our step attenuators is from DC to 2

RF & Microwave Attenuators

This brochure eases selection of Keysight attenuators by providing a brief overview and specifications of fixed, manual, and programmable step attenuators.

RF Demystified—What Is an RF Attenuator? | Analog Devices

Types of Attenuators From the key functional perspective, attenuators can be classified as fixed attenuators with an unchanging level of attenuation and variable attenuators with an adjustable level

TOJOIN RF Step Attenuator Step-Adjustable Attenuator Push

Push-button step attenuators are commonly used in electronic communication equipment or laboratories to adjust signal strength to suit different signal transmission needs. It has the characteristics of

RF Attenuators

Over 400 coaxial, surface mount, and MMIC attenuator models for 50-Ohm & 75-Ohm system including fixed attenuators, high-power attenuators, digital step / programmable attenuators, voltage variable

Amazon : Step Attenuator

TOJOIN RF Step Attenuator Step-Adjustable Attenuator Push-Button Step Attenuator, SMA Attenuator 0-90dB, DC to 2.5GHz, 50 ohm RF Attenuator, SMA Female Attenuator 1PCS

Step Attenuators

Select Fairview Microwave's Step Attenuators from over 1 million in-stock rf and microwave products with same-day shipping. These Step Attenuators and other rf, microwave and millimeter wave

Push Button Attenuators

RF Variable Attenuators and Adjustable Phase Shifters We offer a robust portfolio of in-stock, adjustable RF attenuators and phase shifters for multiple applications, including test instrumentation, cellular

Programmable Attenuators

Programmable Attenuator Modules Single- and Multi-Channel Designs Mini-Circuits'' compact programmable attenuators are designed with wide attenuation ranges and fine step sizes for precise

Manually Variable Attenuators

Manually Variable Attenuators Manually controlled variable attenuators are passive devices that require no external power source to operate. A majority of our

RF Programmable Attenuator 1-3800MHz Digital Module 0-31dB Adjustable ...

ATTENUATION RANGE AND STEP SIZE: The RF programmable attenuator has a attenuation range of 0 to 31dB and a step size of 1dB. Attenuation Range and Step: Attenuation

Rotary Stepped Attenuator 0-90dB

Annew-Tech''s Rotary Stepped Attenuators can adjust the attention value from 0 to 90dB. Frequency range DC-6G. Annew-Tech always in pursuit of high-quality.

TOJOIN RF Step Attenuator Step-Adjustable Attenuator Push

This push-button stepping attenuator is a device used to adjust the signal strength, it uses the way of pressing buttons to gradually adjust the amount of signal attenuation.

DAT Digital Step Attenuators

Mini-Circuits DAT Digital Step Attenuators provide adjustable attenuation from 0 to 15.5dB in 0.5dB steps. The control is a 5-bit serial/parallel interface, and the attenuators operate with

Attenuators

The Narda-MITEQ Thumb Wheel Attenuators can be panel mounted and requires purchase of separate field installable mounting kit. The Rack Mounting Kit accommodates all attenuator series housings.

RF Variable Attenuators

Variable attenuators provide continuously or step-adjustable loss to set path gain or emulate fading while maintaining good return loss. They are used for AGC loops and test fixtures, specified by

RF Attenuators | Analog Devices

ADIsimRF is an easy-to-use RF signal chain calculator. It calculates Cascaded Gain, Noise Figure, IP3, P1dB and Power Consumption. The number of stages

TOJOIN RF Step Attenuator Step-Adjustable Attenuator Push

Each time a key is pressed, the signal attenuator will increase (or decrease) a certain attenuation value, so that the strength of the signal can be adjusted. Push-button step attenuators are commonly used

44x2K, 45x2K, 46xK Precision Step Attenuators Technical Data Sheet

Each section contains a precision attenuator module that is electro-mechanically switched in or out to provide the required attenuation. All models use in-line, female K Connectors™.

RF Attenuators | Analog Devices

RF Attenuators Analog Devices" RF attenuators are available in a broad range of architectures and form factors, giving designers the flexibility to select a part that best aligns with their system requirements.

RF Step Attenuator: Adjustable Attenuation Gives Precise ...

When dealing with radio-frequency signals, it often comes in handy to have an easy way to attenuate a signal level in discrete steps. For example, you might want to reduce the output of an RF generator

The 29 Best Radio Frequency Attenuators of 2026

We recommends Top-Rated Radio Frequency Attenuators Deals You Can Buy Online for July 2026 on Amazon, As Tested by CherryPicks Editors and analyzed 406 customer reviews to

Attenuator Circuit Designs: Passive to Programmable

Key Takeaways Passive attenuators use resistor networks for signal reduction without power, while active attenuators can include components like MOSFETs and PIN diodes for

Contact Us

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