Adjustable coaxial attenuator

Overview

RF Coaxial Attenuators and Terminations Learn how precision-engineered RF Coaxial Attenuators and Terminations from Molex optimize RF and microwave system.

Key Takeaways

Adjustable coaxial attenuators allow precise control of RF signal levels, offering continuous or stepwise attenuation for 50-Ohm and 75-Ohm systems.

Overview

Adjustable coaxial attenuators are RF components designed to reduce signal power in a controlled manner while maintaining impedance matching and minimizing reflections. Unlike fixed attenuators, which provide a single attenuation value, adjustable attenuators allow users to tune the attenuation to meet system requirements, making them ideal for testing, calibration, and signal conditioning in RF and microwave systems.

Types of Adjustable Attenuators

Continuously Variable Attenuators (Voltage Variable Attenuators, VVA)Provide smooth, continuous adjustment of attenuation. Often controlled via a DC voltage or mechanical knob. Suitable for applications requiring fine-tuning of signal levels across a wide frequency range.

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Step or Digital Attenuators

Offer discrete attenuation steps (e.g., 1 dB, 2 dB increments). Can be manually switched or digitally controlled. Useful for automated test setups or programmable RF systems.

Key Specifications

Impedance: Typically 50 Ohm or 75 Ohm to match coaxial systems. Frequency Range: Adjustable attenuators can operate from DC up to tens of GHz, depending on the model and connector type. High-frequency models may reach 65 GHz with 1.

85 mm connectors. Power Handling: Ranges from milliwatts to kilowatts, depending on design and cooling. High-power models often use aluminum finned heatsinks or stainless steel construction.

Connector Types: Common options include SMA, N, BNC, TNC, 2. 4 mm, 2. 92 mm, and 7/16 DIN, allowing integration with various RF systems.

Attenuation Range: Adjustable attenuators can cover 0 dB to over 100 dB, depending on the design.

Applications

Test and Measurement: Calibrating signal levels in RF test benches. Telecommunications and Broadcasting: Controlling signal strength to prevent overload or interference. Defense and Aerospace: Ensuring reliable signal performance in harsh environments with temperature and vibration extremes.

Laboratory and Research: Fine-tuning RF signals for experiments and prototyping.

Advantages

Flexibility: Adjust attenuation without replacing components. Precision: Maintain signal integrity and minimize reflections. Durability: Many models are designed for harsh environments, ensuring long-term reliability.

Adjustable coaxial attenuators are essential for RF engineers who need precise, reliable, and flexible control of signal levels across a wide range of frequencies and power levels. They complement fixed attenuators and are widely used in both commercial and high-performance applications.

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Article Content

RF Coaxial Attenuators and Terminations

Learn how precision-engineered RF Coaxial Attenuators and Terminations from Molex optimize RF and microwave system performance by managing and stabilizing signal power.

RF Attenuators

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

Amazon : Coaxial Attenuator

Browse precision coaxial attenuators with different attenuation levels. Perfect for signal adjustment.

RF Coaxial Attenuators

Pasternack RF coaxial attenuators include continuously variable attenuators, DC bias attenuators, fixed attenuators and step attenuators models. These RF attenuators are available in 50 Ohm and 75

Push Button Attenuators

We offer a robust portfolio of in-stock, adjustable RF attenuators and phase shifters for multiple applications, including test instrumentation, cellular communication,

Coaxial Attenuators Guide | Tyclon

Find premium coaxial attenuators for precise signal control. Explore BNC, N, SMA, and TNC models with varying attenuation (dB) ratings at Tyclon.

RF Attenuators | High Power, Fixed & Precision

Spectrum Control''s ultra-low VSWR 50-ohm coaxial attenuators are designed to minimize reflection, achieving VSWR as low as 1.1:1 and attenuation flatness of

Coaxial Continuously Adjustable Attenuator: Precision RF Control

Need precise RF signal control? Discover coaxial continuously adjustable attenuators for 1-18 GHz applications. Ideal for engineers and labs. Click to explore high-accuracy, wideband

Variable Miniature CVA

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Narda-MITEQ manufactures a wide variety of Continuously Variable Miniature, Frequency Flat and Level Adjust "CVA" Attenuators. Narrow band, octave band and wide band models are available.

Amazon : Sma Attenuator

TOJOIN SMA Male to Female Attenuator/Coaxial RF Attenuator, DC to 12.4GHz, 50Ohm, 2W, 20dB, SMA 12.4G Small Attenuator 2PCS, New Copper Attenuator Add to cart

Coaxial RF Attenuator

Freely Adjustable: The Coaxial Fixed Attenuator now provides versatile attenuation settings giving you the ability to adjust signal standards with precision. With attenuation values

Fixed RF Coaxial Attenuators

Molex fixed RF coaxial attenuators improve system efficiency, prevent damage to equipment, and reduce maintenance costs and system

TVA-20DC Variable Attenuator, 2-20 dB Attenuation, 5-2150 MHz

Our TVA-20DC Variable Attenuator is a easy to use device for adjusting the Signal level on a Coax Cable system or Satellite feed. It has an adjustable Pot for control and will provide up to 20 dB of

Cables, Coaxial Cable, Cable Connectors, Adapters, Attenuators ...

The adjustable types of attenuators can be switched attenuators with discrete levels of attenuation, or as continuously variable attenuators with analog adjustment.

Coax Cable Attenuator

Adjust To Meet Your Need: Our Coaxial Fixed Attenuator provides adjustable attenuation with a standard range of 1dB to 30dB, enabling users to finely tune signal standards to meet their

What Is a Coaxial Variable Attenuator and Why Is It Important?

A coaxial variable attenuator is a key component used to adjust the amplitude of RF signals without distorting the waveform. Whether you''re testing signal paths, protecting sensitive

Amazon .uk: Variable Attenuator

Variable Attenuator IEC 0-20db 5-1000MHz Coax Sockets 4.0 (259) £796 FREE delivery 20 Jun - 21 Jul on your first eligible order to UK or Ireland

Fixed Attenuator (Coaxial)

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Fixed Attenuator (Coaxial) RF Lambda''s fixed coaxial attenuators are used to adjust the signal level in any RF system. They are most commonly used to reduce high power signals in order to inject into

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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