

Audio Isolator

FOX SQ22



Product Introduction

This is a professional stereo audio isolator specifically designed to address ground loop noise and long-distance signal transmission issues in multimedia systems. Under normal conditions, the shield voltage of audio or stereo signal transmission cables should be 0V. However, when ground loops occur, the voltage fluctuates around 0V, causing audio distortion, low-frequency humming, and high-frequency crackling from vehicle sparks. In severe cases, when transmission distances exceed 100 meters, high ground loop voltages may damage signal sources or receiving equipment, potentially endangering user safety. This product employs a built-in high-quality isolation transformer to achieve current isolation, effectively eliminating the aforementioned issues. It supports long-distance transmission (>100m without attenuation) and features a -20 dB attenuation DIP switch for convenient signal level matching. Combining a compact design with passive operation, it is suitable for home theater, automotive audio, professional PA systems, and broadcast environments.

Product Features

- ✧ Complete Ground Isolation: Built-in dual-channel 1:1 audio isolation transformers provide current isolation, eliminating ground potential noise, hum, and spark interference while protecting equipment from high-voltage damage;
- ✧ Long-Distance Transmission Support: Optimized design enables lossless transmission over 100 meters, with impedance matching ensuring signal integrity and preventing distortion or phase shift;
- ✧ -20 dB Attenuation: Integrated attenuation switch (0 dB / -20 dB selectable) facilitates matching high/low-level sources, preventing overload and distortion;
- ✧ Passive Design: No external power required, plug-and-play compatibility with any stereo system;

- ✧ Professional Connectivity: XLR inputs/outputs (gold-plated), compatible with 3.5mm adapters; TRS connectors available as an option;
- ✧ Noise Suppression: >60 dB ground loop noise attenuation, EMI/RFI shielded enclosure, flat frequency response up to 80 kHz;
- ✧ Safety Protection: Built-in >4 kV ESD/TVS protection against surge and static damage, compliant with safety standards;
- ✧ Portable and Rugged: Metal housing, compact dimensions, operates in 0°C~50°C environments, easily integrated into fixed or mobile systems.

Specification

Category	Parameter Item	Parameter Description
Audio Performance	Channels	2 (Stereo: Left/Right Independent Isolation)
	Frequency Response	20 Hz~80 kHz (± 0.5 dB); Low-frequency optimized with no roll-off
	Total Harmonic Distortion (THD)	< 0.001% (1 kHz, 0 dBu input)
	Signal-to-Noise Ratio (SNR)	> 100 dB (A-weighted)
	Maximum Input/Output Level	+26 dBu (no attenuation); +26 dBu
	Impedance (Input/Output)	600 Ω / 600 Ω (balanced)
	Phase Shift	< 0.5° (full frequency range)
Isolation and Noise Suppression	Isolation Type	Current-isolated 1:1 audio transformer (600:600 Ω impedance ratio)
	Isolation Voltage	> 4 kV (input/output); >1 kV continuous withstand voltage
	Ground Loop Noise Suppression	> 60 dB (50/60 Hz hum); >40 dB high-frequency interference (hiss)
	Maximum Transmission Distance	> 100 m (no significant attenuation, standard XLR cable)
	EMI/RFI Shielding	Metal shielded enclosure + internal

		filter circuit (>30 dB suppression)
	Attenuation Switch	-20 dB fixed attenuation (DIP switch: ON/OFF); 0 dB bypass mode
Interfaces and Connectivity	Input Connector	2 x XLR female connectors (gold-plated, balanced)
	Output Connector	2 x XLR male connectors (gold-plated, balanced)
	Compatible Adapters	3.5mm TRS to RCA (optional);
	Cable Compatibility	Standard audio cable (RG-58 or better for long distances)
Physical and Environmental	Dimensions (L x W x H)	70 mm x 36 mm x 100 mm
	Weight	0.45 kg
	Enclosure Material	Metal housing, blue spray-painted
	Operating Temperature	0°C~50°C
	Storage Temperature	-20°C~70°C
	Humidity	5%~95% (non-condensing)
Power and Safety	Power Requirements	None (passive design, no batteries or external power required)
	Safety Features	Short-circuit protection; overvoltage protection (prevents damage from >100V ground loop voltage)
Installation and Control	Mounting Method	Plug-and-play (input source → this device → receiving device)
	Control Elements	Side DIP switch (-20 dB attenuation);
	Compatible Systems	Car audio, home stereo, professional PA, long-distance broadcasting