

SilentPower OMNI LAN

Optically Isolated Switch with Master Clock Integration



Overview

SilentPower's OMNI LAN is a purpose-built, optically isolated network switch for high-performance AV and audiophile systems. It incorporates all the benefits of the LAN iPurifier Pro, while introducing an expanded architecture optimised for multi-device environments.

Key Features

- **Internal Optical Fibre:**
Eliminates electrical noise by converting to an optical (light) signal, surpassing traditional galvanic isolation. It converts incoming data to light and back again, to create complete electrical separation between input and output. This eliminates electrical noise, interference, and stray currents from reaching a user's most sensitive components, thereby improving timing at the conversion stage – resulting in greater precision, enhanced system efficiency, and a more immersive, true-to-source AV experience.
- **Triple-Stage Isolation:**
The 'Standard' RJ45 ports implement a first stage of isolation via transformer coupling. This provides effective electrical separation between

the connected router and non-critical devices that a user has connected. The second stage is an internal optical isolation path that removes residual electrical noise across the frequency spectrum. The final stage is found in the 'PurePort' RJ45 outputs, which incorporate additional isolation transformers to ensure clean signal delivery to critical AV components.

- **Real-Time Data Analytics:**
Built-in dynamic dashboard shows both incoming and outgoing port data speeds. It is also viewable from your phone.
- **Versatile Integration:**
Users have 13 ports available: 4 'Ultra-Pure' ports benefitting from 3 stages of isolation, including the internal optical isolation path purposefully designed for their most critical AV components, while the 9 'Standard' ports include one stage of galvanic isolation designed for less critical devices such as routers, set top boxes, NAS drives, and consoles.
- **10MHz Clock Sync:**
The internal Global Master Timing (GMT) clocking architecture mitigates jitter at the source. Its ultra-stable clocking can also serve as a master clock source across an entire AV ecosystem, with dedicated BNC clock input and output for seamless integration into timing-critical installations.

Key benefits and Applications

1. Professional AV Installations

- **Home Theatres & Screening Rooms**
 - Reduces network-induced jitter and noise for uncompromised audio and video quality.
 - Maintains accurate timing for synchronised audio-visual playback in multichannel or immersive sound systems.

- **Broadcast & Mixing Studios**
 - Ensures clean signal delivery to sensitive equipment like digital audio converters, master clocks, and dedicated streamers.
 - Mitigates potential ground loops and interference that can compromise recording integrity.
- **Live Performance Venues**
 - Provides stable, noise-free broadcast quality network connections to AV processing racks, digital mixing consoles, and streaming servers.
 - Enables master clock synchronisation for distributed digital audio systems via its 10 MHz clock input and output.

2. Custom Integration & Smart Home Systems

- **Residential Smart Homes**
 - Supplies robust, interference-resistant networking between AV controllers, distributed audio systems, and streaming endpoints across the property.
 - Integrates seamlessly with automation systems, helping ensure consistent signal regardless of device count or cable length.
- **Enterprise/Commercial Installations**
 - Protects against network and power noise in conference rooms, control systems, digital signage, or distributed PA systems.
 - Rack-mount capability and configurable grounding modes allow installation in professional equipment racks or technical rooms for large-scale integration.

- **Multi-room Audio/Video Distribution**
 - Offers 13 ports (including SFP optical and M12 industrial options) for flexible integration into complex, zoned AV networks.
 - Four “Ultra-Pure” ports with full triple-stage isolation are dedicated to the most sensitive endpoints (DACs, streamers, processors), while nine standard ports serve less critical links (routers, set-top boxes).

Technical Specifications

- **Electrical characteristics**
 - Bandwidth: 1000Mbps
 - Jitter: 0.05ms
 - Packet Loss Rate: <0.1%
 - General
 - Power Supply Requirement: DC 9V/1.5A – 15V/0.9A (centre +ve)
 - Power Consumption: <0.5W idle, 14W max
- **Physical characteristics**
 - Dimensions: 214 x 157 x 41mm (8.4 x 6.2 x 1.6")
 - Net Weight: 1.06kg (2.34lbs)
 - Limited warranty: 12 months

Contact Us

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