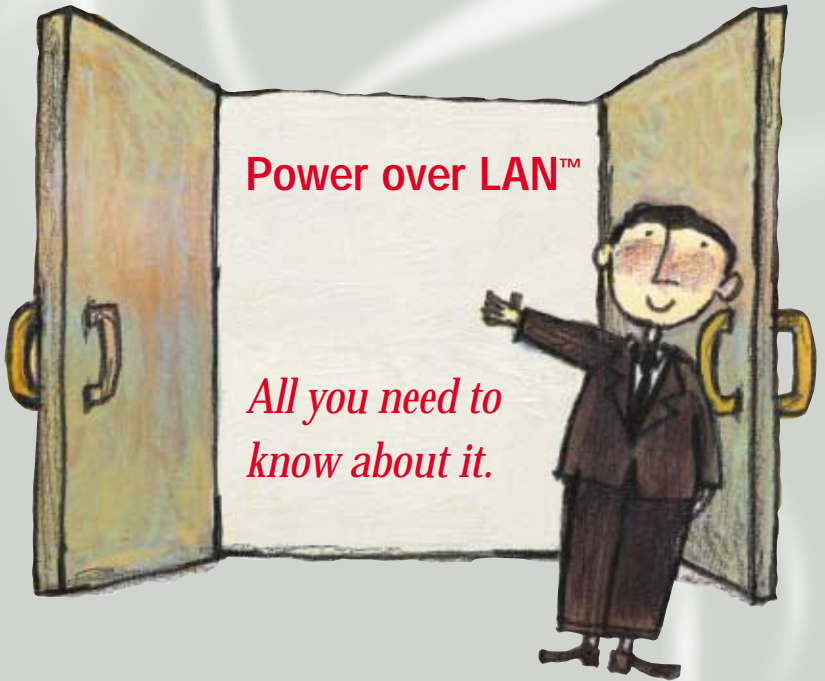


**PowerDsine**



**Power over LAN™**

*All you need to  
know about it.*



# New IEEE 802.3af Standard Powers the Future of the Ethernet

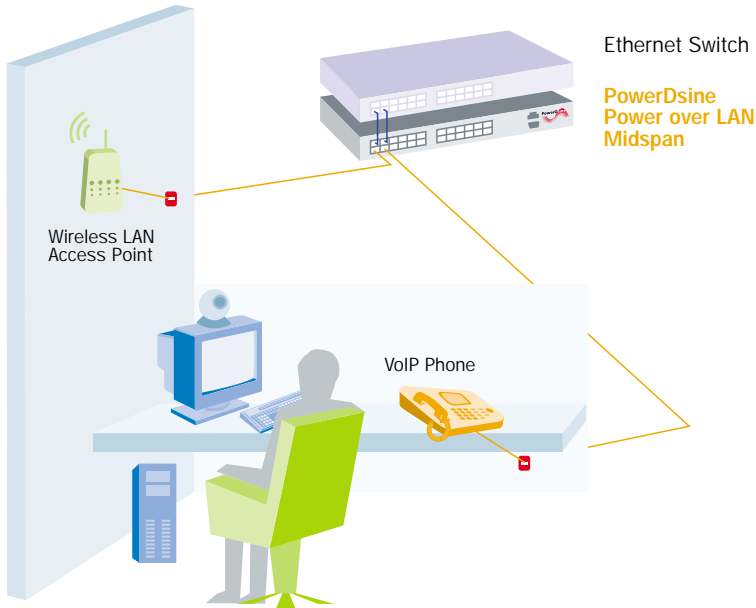
Ethernet cabling is the nervous system of our networks that delivers data and voice over ordinary Category 5 cables. However, to power the devices connected to our networks, we have always relied on separate power cabling. The need for a separate power source requires costly installation and extensive time in installations of more complex devices to the Ethernet, such as Wireless LAN access points, VoIP systems and Network cameras.

Now, thanks to the newly ratified IEEE 802.3af standard, the same Ethernet cable can power all of these devices.

**Power over LAN™  
is the answer to it all.**



# Installing IP Phones, Wireless LAN or Security Cameras?



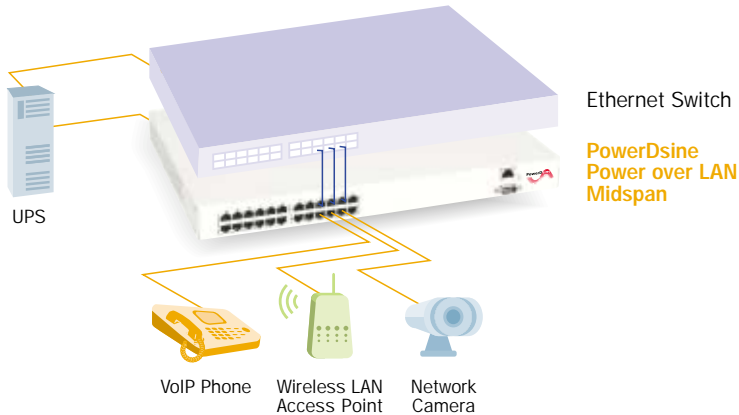
## HEAR IT FROM THE EXPERTS!

*"The 802.3af standard will provide the first global standard for power. Thousands of new and innovative products will emerge to take advantage of having the proven robustness and reliability of Ethernet along with power on the same connector. In ten years no one will be able to remember when Ethernet ports didn't supply power."*

Steve Carlson, Chair of the 802.3af Task Force

# What is Power over LAN?

## Typical Network Installation



Power over LAN integrates the power source onto the same cable infrastructure as the IP data, eradicating the need to have AC power available at all the locations.

When used in conjunction with a centralized uninterrupted power supply (UPS), Power over LAN ensures continuous operation during power failures by providing a distributed UPS solution. Power over LAN technology saves the time and cost of installing separate power cabling, AC outlets and wall warts, and eliminates the need for dedicated UPS for individual devices.

The power delivered over the LAN infrastructure is automatically activated

when a compatible terminal is identified, and blocked to legacy devices that are not compatible, thereby creating a safe power solution. The power is injected by either a dedicated patch-panel like device, residing between an ordinary Ethernet switch or hub and the terminals (midspan) or by new generation Ethernet switches (endspans).

So compelling are the benefits of Power over LAN technology that most leading vendors have already incorporated it into their next generation devices. The majority of IP telephone sets and wireless LAN access points are already equipped to receive their operating power via the LAN.

# New IEEE 802.3af Power over Ethernet Standard It's here to stay!

IEEE 802.3af-2003 is the global standard for remotely powering Ethernet devices over LAN infrastructure, which was ratified in July 2003.

It defines the specifications to deliver power over standard Ethernet cables, and specifies the way to build Ethernet power sourcing equipment and powered terminals.

The specification involves delivering 48 volts, 15.4W of DC power over existing cable plant, including Category 5, 5e or 6 horizontal and patch cables, patch-panels, and connecting hardware, without requiring modification.

Power is carried on two wire pairs to comply with safety standards and existing cable limitations. 802.3af power sourcing equipment contains a detection mechanism to prevent sending power to noncompliant devices. Only terminals that present an authenticated Power over Ethernet signature based on the 802.3af standard will receive power, preventing damage to other equipment.

## HEAR IT FROM THE EXPERTS!

*"The 802.3af standard provides a stable basis from which vendors can continue to reduce the cost of installing and upgrading network devices; this can be a hidden cost in the deployment and scaling-up of wireless LANs and VoIP in particular, and so improves the investment case for both these technologies. PowerDsine's strong contribution to this standard shows them to be the key innovator in the Power over Ethernet field."*

Richard Webb,  
Market Analyst for  
Infonetics Research

## 802.3af defines Midspan and Endspan devices:

- Midspan – Separate power injector supplying power on spare pairs 4,5 (+) and 7,8 (-)
- Endspan – Ethernet switch integrating Power over LAN circuitry (DIMM's, SIP's and Chip-sets)



Power over LAN Midspan



Power over LAN Ethernet Switches

# How Power over LAN will Upgrade Your Network

## Cost Savings *Incredible ROI*

- Quick, cost-effective installation that uses existing data network cables without the need for additional power sockets or wiring
- Saves up to 50% of the overall installation cost by eliminating the need to install separate electrical wiring and power outlets
- Centralized power management for improved energy efficiency, reduced electrical costs and enhanced troubleshooting capabilities
- Cost-saving backup protects against overloads and shorted circuits
- Investment protection for legacy systems

Power over LAN

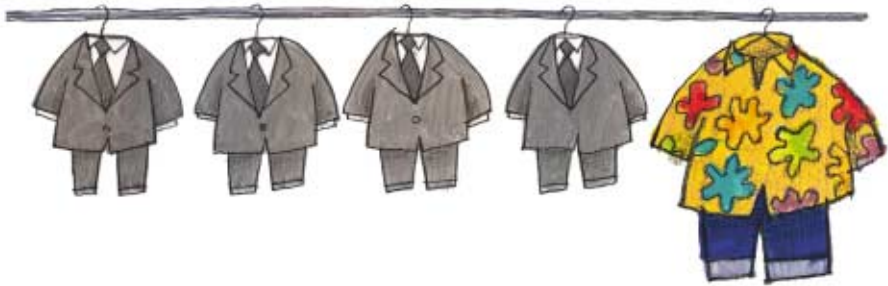
*never leaves you* in the dark.



## Reliability is Key *A single UPS & no downtime*

- Continuous operation even in the event of power failure by delivering battery backed-up uninterrupted power via the LAN by acting as a distributed UPS
- Intelligent device detection that checks attached devices to ensure they can accommodate power signals
- Remote access and management via SNMP Web-based control – ability to disable power off premises (night time & weekend) improving network security

**Relax.** Make your life easy.



## No Hassle *Installations become easy & convenient*

- Easy, plug-and-play installation with no configuration required
- No need to provide electrical outlets in unusual places
- Removes the necessity to find different power supply adaptors
- Hassle-free deployment – leave it to the device to supply adequate power as required
- Cross-vendor compatibility

# Power over LAN Applications



## IP Phones –

99.999% increased reliability. Get a dial tone even during power outage.

By connecting a UPS to a Power over LAN midspan in the communications room, the entire network, including the remotely located resources, is capable of continuous operation during a power outage.



## Wireless LAN –

No need to provide electrical outlets in unusual places.

Wireless LAN infrastructure is dramatically simplified by eliminating the need for separate electrical wiring systems and allowing wireless hubs to be installed in previously inaccessible locations.

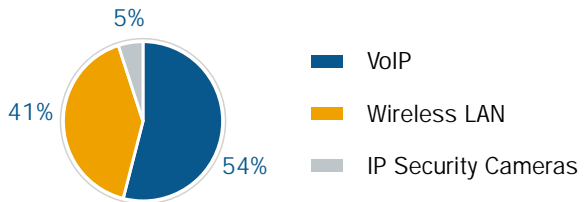


## IP Security –

Dramatically reduce installation costs with Power over LAN

Significantly reduces the time and cost of installation. You do not need an electrician to install AC sockets.

Power over LAN Applications



PowerDsine Power over LAN is compatible with all major vendors such as: Cisco, 3Com, Nortel, Avaya, Mitel, Alcatel, Siemens, Proxim, D-link, Axis, Sony, Panasonic.

For other Power over LAN™ compatible devices, please visit our online compatibility guide <http://www.powerdsine.com/SelectionGuide.pdf>

# The Solution

## Power over LAN Midspan

### What is a Midspan?

A midspan is a patch-panel-like device, residing between an ordinary Ethernet switch and the terminals. Power over LAN midspans add power on the spare wire pairs of a Cat5 cable. Data is routed through the midspan without any modification or interference.



NET. **Work.**

# Why PowerDsine?

## Market Leadership

PowerDsine's midspans are already installed in more than two million ports worldwide.

PowerDsine's technology is marketed under the company's own midspan solutions that are distributed under the PowerDsine brand in Europe and North America, in addition to its private labeled midspans offered by more than 16 OEMs.

PowerDsine's success has been underpinned by the Power over LAN technology embedded in more than 13 major vendors' Ethernet switches, including Avaya, Nortel Networks and 3Com.

PowerDsine has also pioneered a service to test and certify end-terminal Power over LAN compliant network devices to ensure conformance with the IEEE 802.3af standard.



Global Influence. **Universal Power.**

# PowerDsine Power over LAN 6000 Series



*PowerDsine 6000 Series Midspans*



*SNMP remote network management tool*

## Features:

- Operates IEEE 802.3af compliant, Cisco and other legacy detection terminals
- Guaranteed safe and reliable power over Category 5 cable
- Full product line of 1, 6, 12 and 24 port units
- LED port status indicators
- Automatic power management
- Advanced auto-sensing algorithm for non-powered device protection
- Over current protection ensures safe structure wiring
- Standard 19" rack mountable
- Optional web-based SNMP management

For more technical details visit us at: [www.powerdsine.com](http://www.powerdsine.com)



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