

PowerSense™ **Sending all the right signals**



Sense the Power...

Power over Ethernet Solutions

PowerSense™ Power over Ethernet Solutions

PoE Solutions

The Cutting Edge

Endspan Vs Midspan

Why Endspan

Why Midspan

PowerSense

- AX-8000 series

- AX-7524

- AX-6000 Series

- "Y" Splitters

- Transceivers

- Media Converters

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Delivering Power over Ethernet (PoE) to the Enterprise

Power over Ethernet is flourishing in the enterprise because it offers greater flexibility in the installation of network devices (vs. the use of standard power sources), and it can in many instances decrease network installation costs. It also adds an unprecedented level of safety and reliability for powered LAN devices.

What is PoE

PoE refers to the ability to power network devices directly over the existing data connection, eliminating the need for an external power supply for each device. With PoE, devices such as IP phones, wireless LAN access points, security cameras and other enterprise terminals can safely receive power over legacy Cat 5 or better LAN cabling with modifying the existing infrastructure. PoE is also a necessity for the VoIP solution as this service requires an alternative power supply source for IP phones.

Power of Ethernet consists of two essential components:

1. the power supplying equipment (PSE) and
2. the powered devices (PD).

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Modular approach to Power over Ethernet

Midspan hubs are power-supplying equipment. These hubs are patch panel-like devices that are installed between the existing Ethernet switch and the devices to be powered. They add power to the spare pairs of a data cable without disturbing the transmission of the data.

The products featured in those new technologies, VoIP Phones, Wireless LAN access points (the antennas) and IP Security cameras, are all devices that need to be powered.

Traditional powering techniques such as using wall adapters, batteries and/or individual power outlets are costly, un-secure and ineffective. The most cost effective and secure way to power these end devices is with PoE because:

- ✓ It uses existing data cabling (Cat 5, 5e or 6, horizontal and patch cables) infrastructure.
- ✓ It is powered by your network room so it is independent of external power conditions therefore adding an extra level of security to your systems.
- ✓ PoE technology is “smart” and allows data ports to be instantly upgraded with minimal cost.

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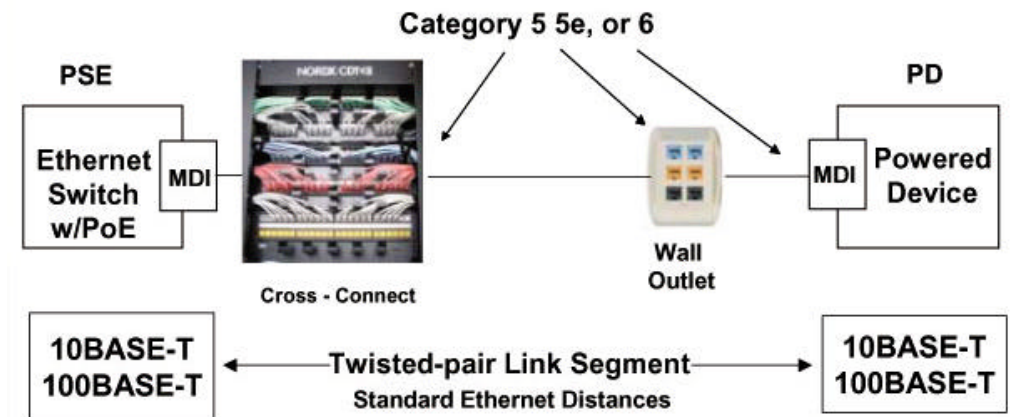
- Media Converters

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Power Originating in End-span (switch)



Powered Devices:

- VOIP Phones
- Wireless Access Points
- Security Cameras
- Emerging Products

Endspan is also known as a Powered Ethernet Switch, or an Ethernet Switch with powered ports-most Ethernet Switch companies are offering products like these for sale-Cisco, 3Com, Nortel, etc.. They are more expensive than non-powered Switches.

Please note: **PowerSense** is **NOT** a powered Switch.

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Midspan is also known as Power Injection or a Power Hub.

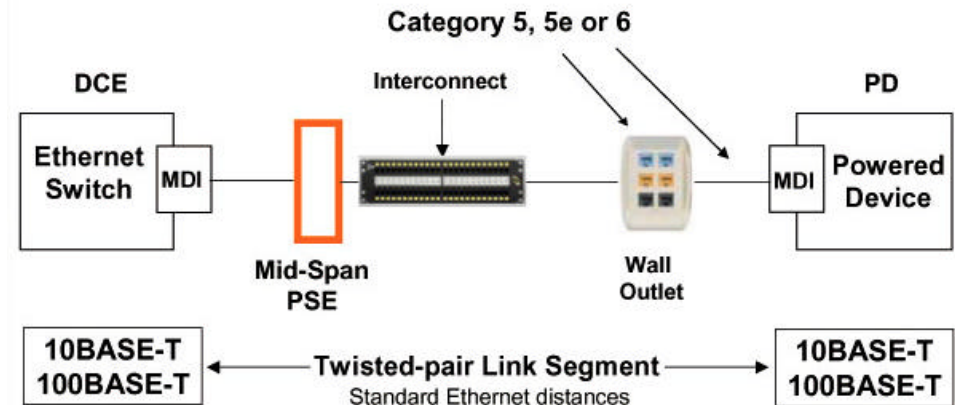
PowerSense is a Midspan Power Hub.

It is used with a non-powered Ethernet Switch that is already installed.

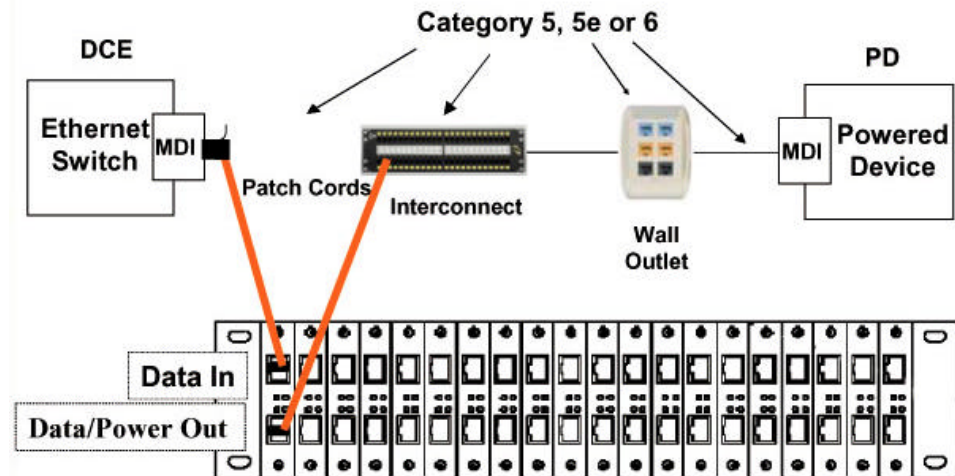
Midspan Hubs allow you to "add-on" the PoE function without the need to buy a new powered Switch.

This can save many \$\$\$\$ and increases flexibility in the system architecture.

Power Inserted in Mid-Span Hub



Power Inserted in Mid-Span



Power Hub installed in equipment rack with Ethernet Switch

Why customers choose **Endspan** PoE solutions

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Why Customers choose Endspan PoE

- ✓ BIG Budget available, to spend more on powered switch PoE implementation
- ✓ No existing Ethernet switches in place, buying new Ethernet switches anyway
- ✓ PoE required for End devices is all one type (generally IEEE or legacy Cisco CDP style)
- ✓ Limited space in 19" racks to mount Midspan units (more of a point in large scale implementations)
- ✓ Adversity to extra patch cords involved with connecting switch to Midspan units
- ✓ View Midspan and switch together as two separate potential points of failure
- ✓ Have been subjected to pressure from Switch Manufacturer to not induce any other products into network
- ✓ Customer views this as an "easy way" to implement PoE
- ✓ Do not need full power per port, application OK with limited power per port

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Why Customers choose Midspan PoE solution

- ✓ Have existing Ethernet switches in place, buying new Ethernet switches to get the PoE function would be a waste of resources and dollars both in the actual dollars for purchase and the set-up time to customize the switch for user's network.
- ✓ PoE required for the End devices is of mixed types because of different requirements for different brands and models of End devices.
- ✓ An Endspan switch will never have that Mix 'n' Match capability, it only [support] one PoE style for that one particular powered Ethernet switch.
- ✓ No limitation on rack space to mount the actual Midspan PoE hubs.
- ✓ Overall dollars spent are less with Midspan PoE.
- ✓ No adversity to patch cord connectivity between switch and Midspan hub.
- ✓ View PoE enabled switch as a single point of failure and that is bad, want to separate the two functions so that repairability is maintained should one function or the other experience failure.
- ✓ Not subject to or able to ignore pressure from Switch Manufacturer to not introduce any other products into the network
- ✓ Cost Savings – Installing PowerSense is far less costly than upgrading to a PoE switch, or buying a brand new one. Other factors that lowers the cost is the fact that Midspan installation is considerably easier than switch installation

Why would you consider using PowerSense™

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Specific reasons for considering PowerSense Midspan PoE

- ✓ Simplicity, scalability & flexibility – From single port to 24 port, with individual modularity by port
- ✓ Want ability to intermix module styles within a single chassis to support different PoE requirements from single wiring closet
- ✓ Want full power per port or the User's application demands full power per port at all times
- ✓ Want hot swapability by port or by multi-port module in case of a power fault condition
- ✓ Want ability to power custom PoE protocols for specific products in the market
- ✓ Standards Compliance – All products comply with the IEEE 802.3af standard, enabling full interoperability with common powered devices and ensuring the safety of non-PoE terminals), even in the face of faulty power provision that could have resulted in electric damage.
- ✓ Want ability to upgrade modules to new technology types such as support for high Wattage End devices or Gigabit Ethernet connectivity yet maintain investment in chassis
- ✓ Cost Savings – Installing PowerSense is far less costly than upgrading to a PoE switch, or buying a brand new one, Midspan installation is considerably easier than switch installation
- ✓ Minimal Network Downtime – Installation of PowerSense ensures that your organisation productivity remains as high as possible, keeping network downtime to a minimum.
- ✓ Compatibility – Interoperability with any 10/100 Mbit Ethernet switch and with virtually any type of powered device
- ✓ Future-Proof Investment – The deployment of a PowerSense Midspan effectively extends the life span of your network equipment, saving the need to swap out non- PoE switches

Our product name is PowerSense™

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PowerSense Midspan Hubs are particularly outstanding in the industry providing these unprecedented features:

- ✓ Handshake technology only applies power when required
- ✓ Using “hand-shake” technology, it “Senses” if the attached device will accept “Power” and then only applies it if certain criteria are met.
- ✓ If the device is unplugged, the power is dropped.
- ✓ If no device is connected, no power is applied.
- ✓ If the device does not comply with the handshake protocol, no power is applied.
- ✓ All power is current limited and fused.
- ✓ The lights on the PowerSense modules, tell you if the port has established the handshake protocol and if power is being supplied to the end device.
- ✓ Centralized Power Distribution – The PowerSense Midspan, backed by a central UPS, provides a cost-effective distribution of backed-up power and ensures uninterrupted network operation, even in cases of electrical power outages.

Advanced Replacement Warranty

All PowerSense products have a full 2 year warranty for product quality & durability. We also offer an Advanced Replacement Warranty which means that if a PowerSense product needs to be replaced, a new unit will be immediately shipped.

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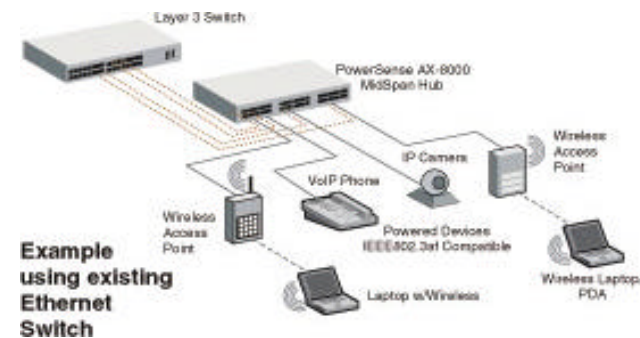
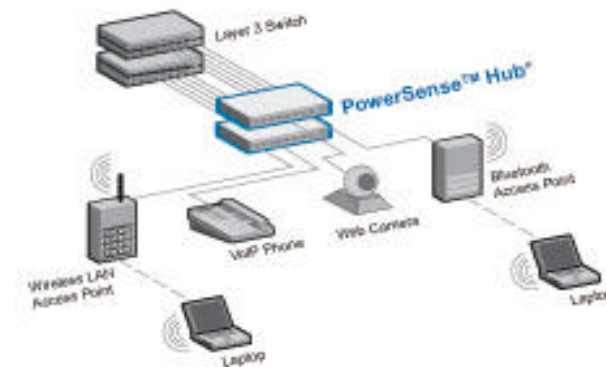
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Midspan is capable of mix and match voltage and protocol styles and will be preferred for many of these new applications.

- ✓ Voice over IP Phone systems
- ✓ Wireless LAN systems
- ✓ IP security camera systems
- ✓ RFID tag readers
- ✓ IP Print Servers
- ✓ Bar code Scanning
- ✓ Alarm systems & sensors
- ✓ Smoke detectors & thermostats
- ✓ Stage lighting & audio speakers
- ✓ Industrial clocks and time keeping
- ✓ Bluetooth access points
- ✓ Security access controls including badge readers
- ✓ Lighting controls and In-Flight Entertainment systems
- ✓ Any product that is PoE enabled, e.g. electric razors & electric guitars



This PoE enabled electric razor is one of many devices on the market today that work with power over the Ethernet.

AX-8000 Series - Versatility is the Name

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The AX-8000 series PowerSense PoE Hubs

- ✓ The 8000 series is preferred for non-IEEE applications.
- ✓ Supports over 50 different manufactures, e.g. Alcatel, Avaya, 3Com, Cisco, Dell, Ericsson, HP, Nortel, Polycom, Siemens & Sony
- ✓ Each port is hot swappable
- ✓ 12V and 24V modules often used for camera applications.
- ✓ High wattage (20 Watt) modules also available.
- ✓ Power supply sized for "fully loaded" chassis
- ✓ Auto-ranging 90-240 volt power supplies
- ✓ Solid metal chassis
- ✓ 2 Year Warranty
- ✓ Rent and get Life-Time warranty (conditions apply)

AX-8000 Series - 10 & 20 slot Chassis

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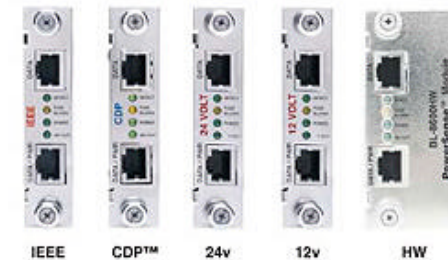
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- ✓ AX-8000 series holds 10 or 20 single port modules
- ✓ Modular by port
- ✓ Each port is hot swappable
- ✓ Mix and Match different module styles within the same chassis
- ✓ Custom fit for your exact PoE requirement
- ✓ Rent for approx. 39c per port/per day
(based on 20 ports over 2 years rental)



- ✓ 67 Modules available, covering over 50 brands
- ✓ IEEE802.3af standard protocol 48v (15.4 W) AX-8500
- ✓ Cisco Discovery Protocol (CDP) 48v (15.4W) AX-8600
- ✓ 24 Volt Proprietary Protocol (15.4W) AX-8400
- ✓ 12 Volt Proprietary Protocol (15.4W) AX-8300
- ✓ HW High Wattage Modules (20W) take 2 slots



AX-8000 Series - Single Port Model

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AX-8351(12v) and the 8551(IEEE) are most commonly purchased models

For the Customer who wants to power one end device, we have the PowerSense Single Port Model.

All Module styles are available as self contained Single Port Models.

A Good fit when there is only one or two end devices to be powered from a single wiring closet.



AX-7524 - SNMP Managed 24 Port PoE Hub

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24 port SNMP Managed Midspan PoE Hub

- ✓ Detection compliant per IEEE802.3af
- ✓ Status LEDs - 2 per port
- ✓ Holds up to three 8 port modules w/all ports 15.4 watts
- ✓ Over voltage/current, short circuit protection
- ✓ Transparent throughput of 10/100Mb data signal
- ✓ 19" rackmount ready all metal chassis
- ✓ Web server interface - monitor, disable/enable and reset device on individual port

AX-6000 Series

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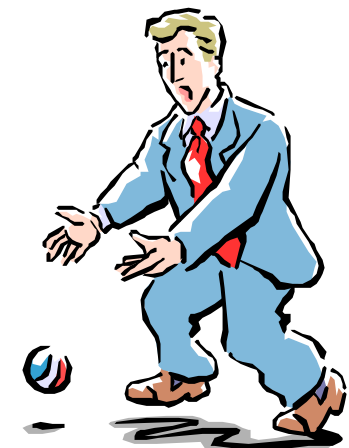
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The AX-6000 series PowerSense PoE Hubs

- ✓ All ports are fused and current limited w/voltage isolation between modules.
- ✓ Hot swappability allows the End user to quickly change out the module to repair the fault. With competitive Non-modular solutions, the entire chassis would need to be replaced.
- ✓ Our most cost effective, multi-port solution
- ✓ Power supply sized for "fully loaded" chassis
- ✓ High power (37 watt), four port module available
- ✓ 1Gbit module available
- ✓ Auto-ranging 90-240 volt power supplies
- ✓ Solid metal chassis
- ✓ 2 Year Warranty
- ✓ Rent and get Life-Time warranty (conditions apply)



AX-6524 - 24 Port

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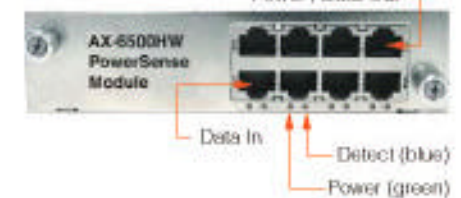
3 Slot (24 port) PowerSense Chassis AX-6524



- ✓ Most popular PowerSense product for IEEE802.3af apps.
- ✓ Holds up to three 8 port modules w/all ports 15.4 watts
- ✓ Auto detection of power requirement for safety
- ✓ Transparent throughput of 10/100Mb data signal
- ✓ 19" rackmount ready all metal chassis
- ✓ Rent for approx. 15c per port/per day (based on 24 ports over 2 years rental)

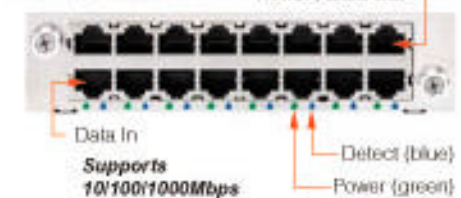
AX-6500HW4

4 Port High Power Module



AX-6500GIG

8 Port Gigabit Module



AX-6108 - 8 Port

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1 Slot (8 port) PowerSense Chassis AX-6108



- ✓ Holds one removable 8 port module
- ✓ For IEEE802.3af applications w/8 ports or fewer
- ✓ Same features as 3 slot chassis but costs less \$\$
- ✓ Optional 19" rackmount kit (2 metal ears)

AX-6551 - Single Port

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Single port PowerSense Chassis AX-6551

- ✓ Fully compliant with IEEE802.3af
- ✓ Diagnostic LED's
- ✓ Non-Vented case
- ✓ IOL Test report
- ✓ Full protection OTP, OCP & OVP
- ✓ Optional Legacy detection
- ✓ Ideally suited for IP Telephones, Wireless Network access points, security camera, IP print servers & Bluetooth access points.



PowerSense™ - Delivering the Awards

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News Press Release

PowerSense Awarded "Best of Show" at the East INTERNET TELEPHONY® Conference & EXPO 2006

PowerSense Midspan PoE Hubs Singled Out for Innovation and Quality at Leading VoIP Event

TMC reports that the conference was attended by over 8,000 people at the Ft. Lauderdale / Broward Convention Center in Ft. Lauderdale, Florida and was the best-attended VoIP conference ever held to date.



PowerSense™ - “Y” Splitting Cables

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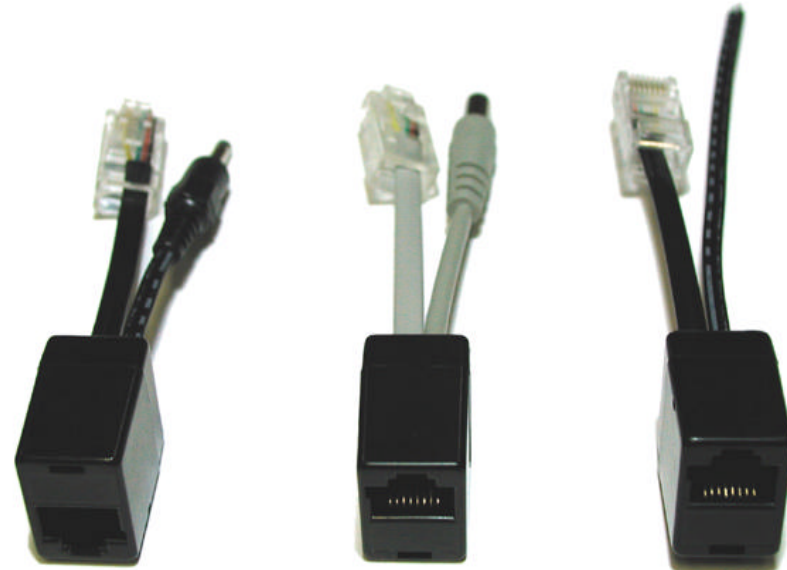
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PoE to non-PoE cameras

AX-820Y-XX

Data / Power “Y” Splitting Cables



Use a 12volt Module, AX8300, in any 8000 series chassis or in a single port model. Use the Y cable at the Camera. It separates the data back to an RJ45 and the power back to a power pin. You can run a non-PoE enabled camera using this approach.

PowerSense™ - Transceivers

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Transceivers and 10Base-T Hub

Transceivers enable the connection of a legacy AUI port to 10Base-T, Thinnet, or Fiber Optic media. The transceiver is powered from the host and requires no external power supply.

Our 8 port 10 Base-T Hub has an AUI port which accepts a UTP, Fiber Optic or BNC Transceiver.

All metal construction, made in USA. Specified for use by many U.S. Government Agencies. Includes 110v/12v power supply.



AX-50	UTP Transceiver 10Base-T, AUI to RJ-45, side port
AX-50R	UTP Transceiver 10Base-T, AUI to RJ-45, rear port
AX-70	Fiber Transceiver 10Base-FL, AUI to ST
AX-80	Thinnet Transceiver 10Base2, AUI to BNC
AX-509	Ethernet Hub with 8 RJ-45 10Base-T ports and 1 AUI port

PowerSense™ - Media Converters

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Media Converters allow for connection of dissimilar Ethernet cabling types.



AX-200	Converter 10Base-T/10Base2, RJ-45 to BNC
AX-270	Converter (half/full duplex) 10Base-T/10Base-FL, RJ-45 to ST
AX-280	Converter 10Base2/10Base-FL, BNC to ST
AX-5270SC	Converter 100Base-TX to FX, RJ-45 to SC Connector
AX-5270ST	Converter 100Base-TX to FX, RJ-45 to ST Connector
AX-1912MCR	Media Converter Rack, holds 12 Converters. Fits 19" wide rack. Use with multi-lead power supplies listed below.
AX-270P4U	Converter Power Supply, 4 lead, 1 each 110 Volt Plug In
AX-270P8U	Converter Power Supply, 8 lead, 1 each 110 Volt Plug In

Our International Coherent Services

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Helpdesk - 1300 765 543

- ✓ Monday - Friday, 9 - 5 business hours
- ✓ Sales & customer support
- ✓ After-market sales
- ✓ Remote access maintenance
- ✓ 48 hr Advanced Warranty Replacement Scheme
- ✓ Ask us about our "Easy Cash Flow" rental plan options

On site solutions

- ✓ Site surveys / assessments
- ✓ On site maintenance
- ✓ On site training
- ✓ Disaster recovery

Wireless Design

- ✓ Analysis
- ✓ Customisation
- ✓ System upgrades

Other services include

- ✓ WPBX & PABX
- ✓ Messaging & Paging Systems
- ✓ Video conferencing
- ✓ W-VOIP
- ✓ Micro communications
- ✓ BAR-code systems
- ✓ Wireless LAN
- ✓ RF tagging
- ✓ Facilities management and Stress management solutions



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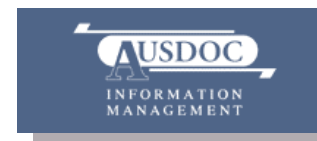
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Mikhaël van Aken

Communications Development Manager

