COBRA
Power over Ethernet Products for IP Surveillance Applications

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Trend Datacom USA, Inc.

Presentation Agenda

- IEEE802.3af PoE Technology
  - Definitions and Implementations
- IP Surveillance and Security Devices
- LAN Power's COBRA PoE Product Line
- Putting it all together with COBRA
- Choosing the right PoE Technology

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IEEE 802.3af PoE Definitions

The IEEE 802.3af Standard of 2003 divides Power over Ethernet **(PoE)** Technology into two different classes:

Power Supplying Equipment (PSE) which may use either the Endspan PoE or Midspan PoE technology.

Powered Devices (PD's) must accept power from either Endspan or Midspan PSE's. The PD must not care whether power is coming to it via the Endspan or Midspan PoE technique. PD's include IP Surveillance Cameras, Access Control Devices, Biometric Scanners and many others

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IEEE 802.3af PoE Definitions

Power Supplying Equipment (PSE) can be either:

- **Endspan Technology** - Power originates from the Ethernet Switch, current flows along with the data on the 10Mb or 100 Mb data pairs on wires 1,2,3, and 6

OR

- **Midspan Technology** – Data from the Ethernet Switch flows into the Power (PoE) Hub which injects balanced current onto the non-data pairs, wires 4,5,7 and 8. The Data still travels on wires 1,2,3 and 6

- **PoE** works on all Cat 5, 5e or 6 LAN Data Cables

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IEEE 802.3af defines PoE Operation

The IEEE 802.3af Standard defines the operation of both the Power Supplying Equipment (PSE), whether Endspan or Midspan, and the Powered Devices (PDs) including IP Cameras, IP Security and Access Control

The Important functions of the PSE include:

1. Identify that the PD is enabled to receive the correct power level through a handshake called “Detect”
2. Send NO power if “Detect” is not established with the PD
3. Supply the correct power levels to the PD at all times
4. Shut down power *immediately* if the PD is disconnected from the powered cable link

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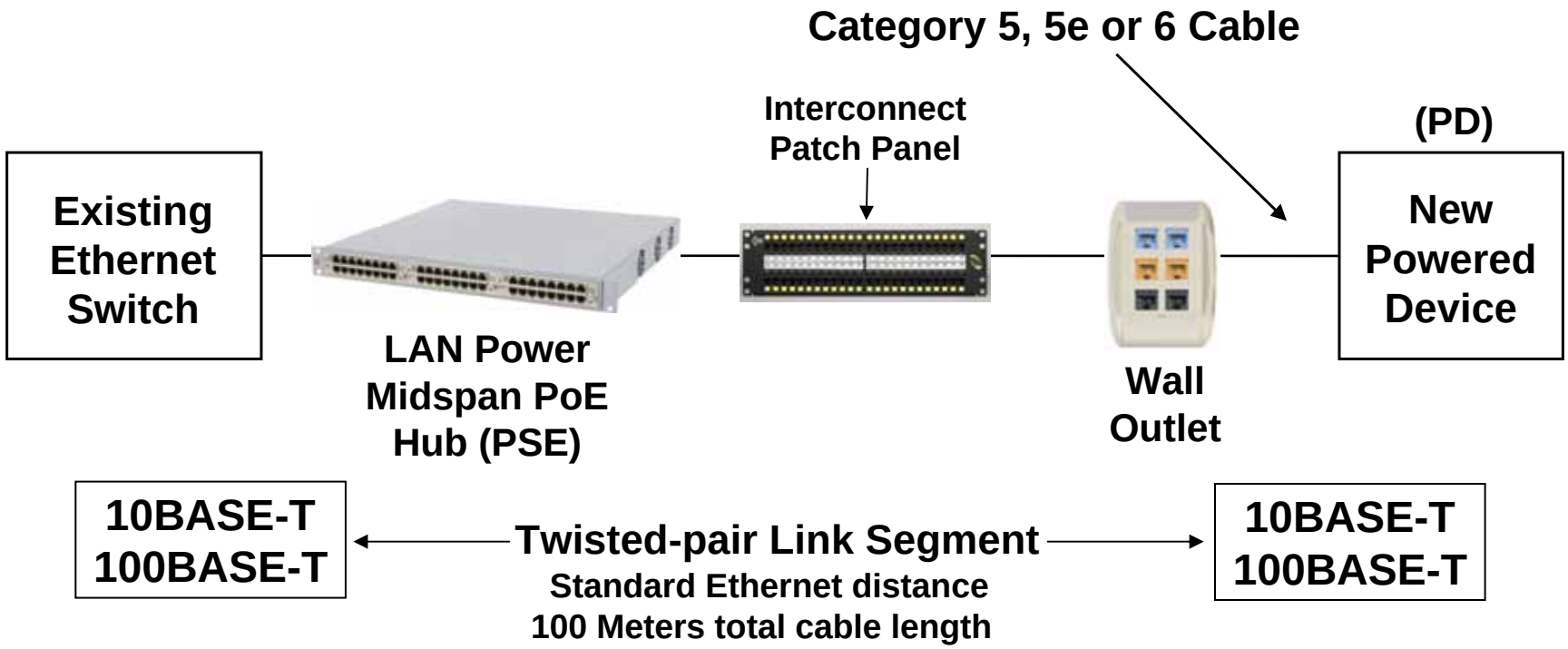
IEEE 802.3af Technology Implementation

Power Inserted with an COBRA PoE Midspan Hub



Powered Devices can be:

- VoIP Phones
- Wireless Access Points
- IP Surveillance Cameras
- Security and Access Control

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The Surveillance and Security Market

More and more IEEE802.3af PoE devices are available each year:

- Remote IP Security Cameras
  - Power, control and video feeds w/UTP

- Magnetic card readers, motion detectors keypads, building automation controls

- RFID readers
  - Radio Frequency Identification

Security has become more important than ever before

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LAN Power 3 Slot PoE Chassis

- Hot Swappable 8 port modules – Use 1, 2 or 3 at a time (with a full 18 Watts PoE on ALL ports simultaneously)
- Short circuit protection w/ power isolation between ports - each port powers individually, not as a group
- Auto detection of power requirement for safety
- 10/100/1000Mb transparent data throughput
- 19” rack mount ready all metal chassis

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LAN Power 1 Slot PoE Chassis

- 1 Slot Chassis shown w/one 8 port PoE module installed. Chassis ships with 19” Rack mounts
- Module options for either Chassis include:
  - 8 port modules with output up to 18 watts per port and support 10Mb,100Mb or 1000Mb data links
  - 4 port High Watt modules output up to 36 watts per port and support for 10Mb, 100Mb or 1,000Mb links

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LAN Power Single Port PoE Injector

- 28 watts Output exceeds IEEE802.3af Specifications
- Supports 10,100 or 1000Mbs data links
- Extremely cost effective vs. traditional powering
- LED indicators show powering status
- Over voltage current and short circuit protected
- Ships with a wall mount bracket and power cord
- Use where a Single IP Camera needs PoE

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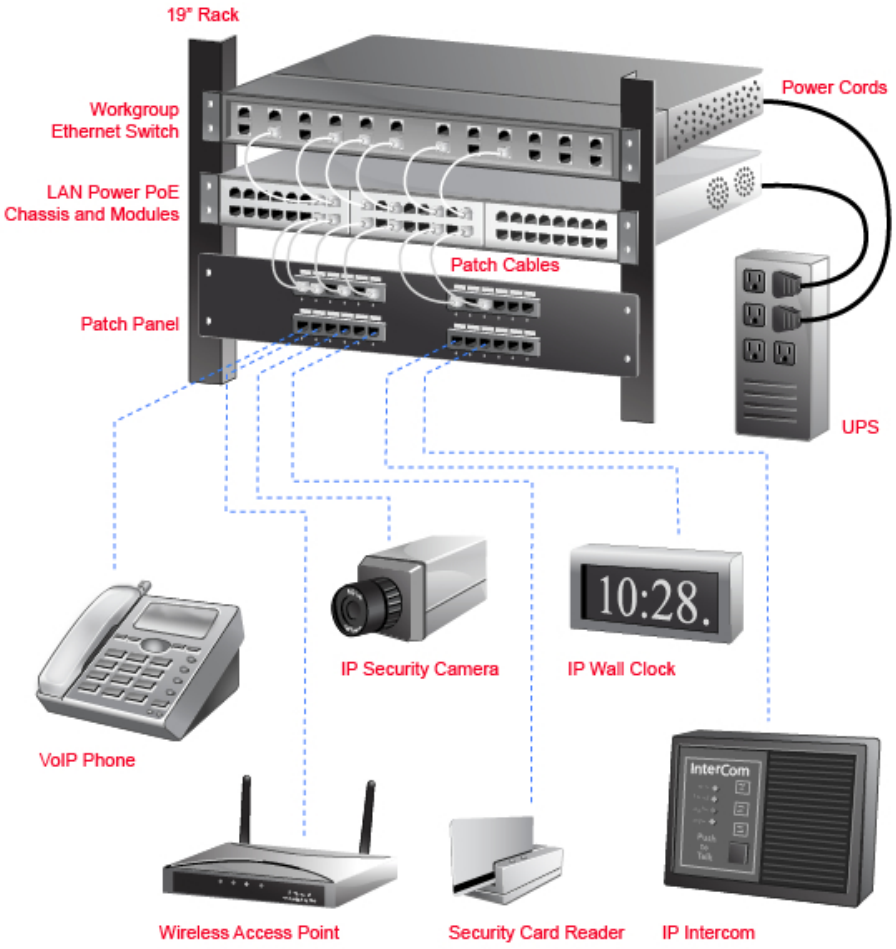
Putting It All Together with COBRA

LAN Power's COBRA PoE Midspan Hubs work with existing non-powered Ethernet Switches already in place, saving Customers both Time and Money.



LAN Power PoE End User Cost of approximately $35-$40 per port vs. $400 to install a new electrical outlet for each powered device

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LAN Power - More PoE benefits

- PoE Technology safely supplies 48v current from a central wiring closet so the IP Cameras don't need an individual 110v power outlet

- PoE Technology uses either the Data pairs or the Unused pairs of a Cat 5, 5e or 6 Data cable, & provides 48v for powering IP Cameras without adding any Network overhead or loss of Network speed

- Centralized UPS power back-up can provide 100% uptime for IP Cameras receiving in-line power without having to purchase a UPS for each Camera. This saves additional budget dollars and adds reliability

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Choosing PoE: Endspan vs. Midspan

Why choose Endspan PoE ?

- Customer is buying New Ethernet Switches anyway
- PoE required for the End devices is all one type
- Have limited 19” Rack space available
- Have available $$ budget to spend $$ on new Ethernet Switches with PoE built in (Endspan)
- Dislike extra patch cords required w/Midspan PoE
- “Pressure” from Switch Vendor to do it this way
- Don’t need full power per port, limited power is OK
- View that Midspan is “Something else to go wrong”
- View that this is the “Easy way” to get PoE

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Choosing PoE: Endspan vs. Midspan

Why Choose Midspan PoE ?

- Have perfectly good Ethernet Switches in place, don't have budget to replace w/ PoE Switches or budget for man hours to do all the set-up required on New Switches
- PoE required for End devices is only needed in certain places, no reason to buy PoE for all Network ports
- Rack space is available to mount PoE Midspan Hubs
- Desire to stretch IT budget – Midspan PoE costs less
- No issues with patch cord connectivity w/ PoE Hubs
- PoE Switches are a Single point of failure, wish to separate data/power functions, should a repair be needed
- Can ignore any "pressure" against Midspan Technology

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Choosing PoE: Why pick LAN Power?

Why Choose a COBRA Power PoE Midspan?

- Want modularity by multiport module
- Want to mix module types in a single Chassis
- Applications demand full power for IP Cameras, up to 18 watts on all ports simultaneously
- Applications call for High power for PTZ Cameras or Housings, up to 36 watts on all ports at once
- Applications call for Gigabit Data links for Cameras
- Want hot-swap capability by multiport module for quickest mean time to repair a power fault if caused by a lightning strike or power surge
- Want Flexibility, Simplicity and Value

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Why Choose LAN Power PoE?

LAN Power's COBRA PoE is for Customers who…

- Have existing Ethernet Switches in place, don't want to replace them, want to save $$, but now need PoE capabilities for IP Security Cameras
- Have smaller PoE port count requirements for IP Security Cameras or Access Control devices. Don't always need a full 24 ports of PoE as available on powered Ethernet Switches
- Appreciate the value of a Modular PoE Solution for growth and maintenance reasons. Want to eliminate any power-related unit downtime by hot-swapping out a PoE module

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Why Choose LAN Power PoE?

LAN Power's COBRA PoE is for Customers who…

- Plan on purchasing IP Cameras which require a Gigabit Ethernet connection and PoE powering
- Want to avoid costly set-up and re-programming of newly purchased Ethernet Switches
- Have PTZ IP Cameras requiring higher wattages that can't be met with powered Ethernet switches.
- **Switches are limited in total power capacity, often around 200 watts, which divided by 24 ports is only about 8 watts per port of power with all 24 ports active, many PTZ Cameras need more**

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Thanks again for your interest in IP Surveillance Installation Technology and in LAN Power Systems' COBRA PoE Products

Find additional information at
www.lan-power.com

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