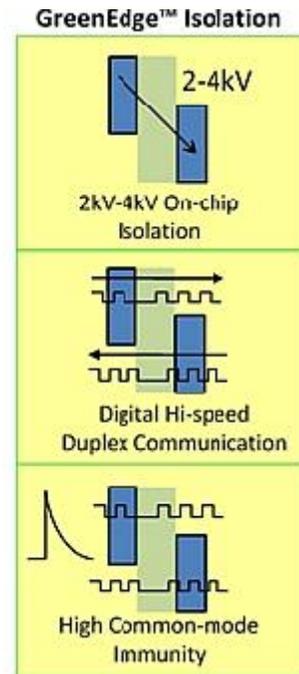


A block diagram of the system with AS1860

GreenEdge™ technology

- **On-Chip Digital Isolation (2kV-4kV)**
 - Enables SoC integration in bulk CMOS
 - System design optimization, elimination of Optos
- **High-Speed Duplex Communication**
 - Breaks architectural barrier in power-system designs
 - Enables architecture that has better efficiency, lower EMI/noise, lower cost and enables platform level value added features
- **High Common-mode Immunity**
 - Error-free communication under severe FMC/UII stress
- Learn more at GreenEdge Technology & Benefits
 - <http://www.akrossilicor.com/content/greenedge>



This single-package solution offers high efficiency and reliability as well as low system costs and board real estate.



Traditional Designs



Board Area
~ 6700mm²



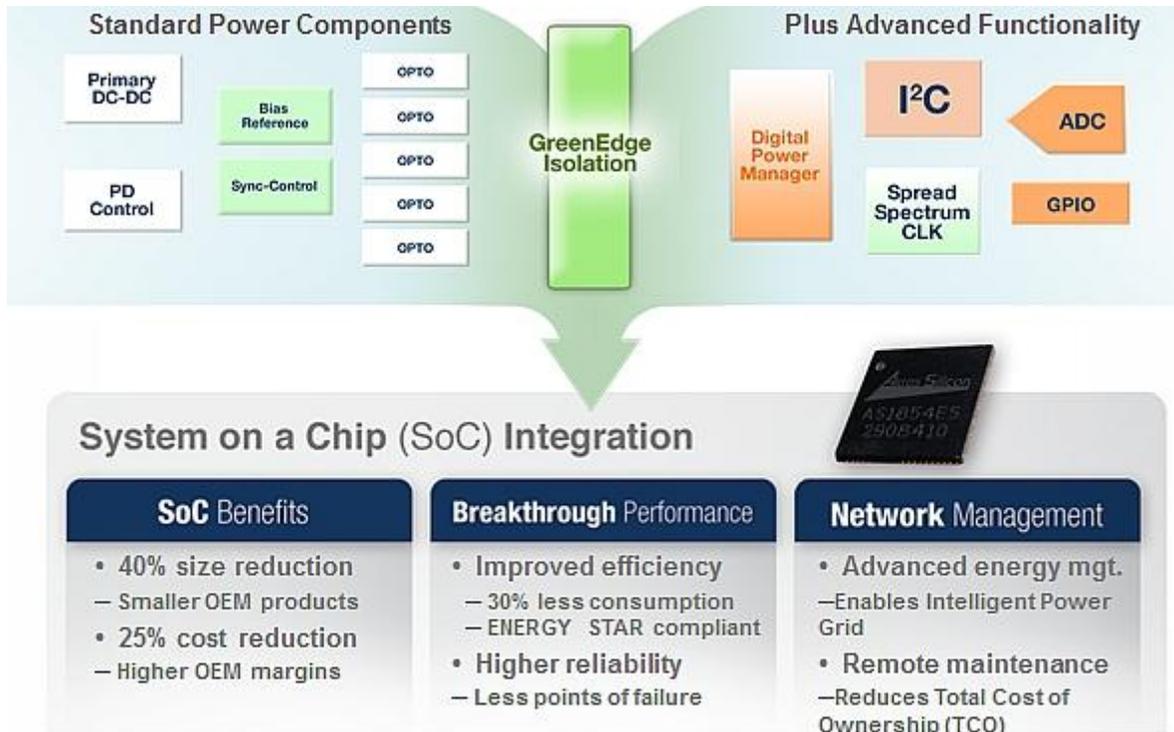
- Efficient
- Small
- Simple

AS18x4 based design
Board area ~ 1620mm²
75% size reduction

Significant board footprint reductions are achieved by the Akros SoC

The solution SoC offers the following features:

- Dynamic power-level adjustment (to 60W and above) without using opto-couplers and their associated complex compensation networks
- Higher power conversion efficiency due to communication across the isolation barrier
- More accurate output-voltage sensing using a resistor-divider sensor on the secondary side

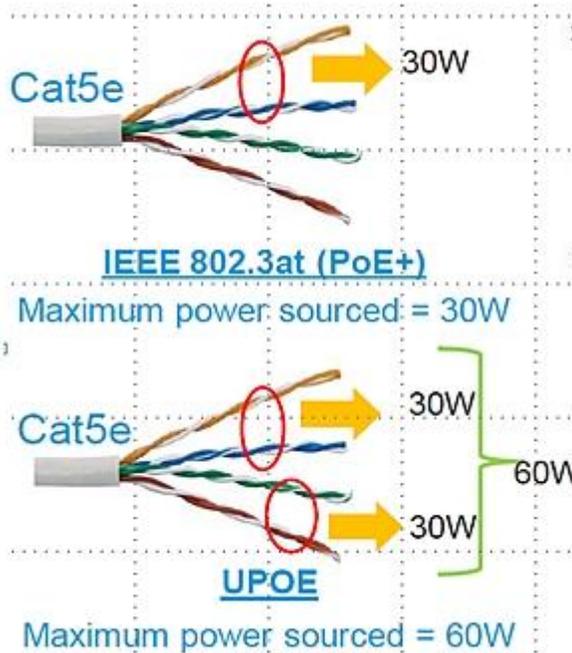


A high level of integration of the full PoE solution is achieved by the Akros architecture on SoC

Other existing approaches to higher power (60W and above) PoE deployments require multiple components, such as two or three power management ICs, several opto-couplers and custom transformers. In addition to adding component cost, consuming board space and increasing design complexity, these approaches are vulnerable to shoot-through issues and losses due to rectifier diode and reverse recovery. Akros' approach can accommodate 60W and above PoE applications using just two components: one AS1860 SoC and one external FET. Moreover, by integrating GreenEdge digital isolation, the AS1860 enables the implementation of many advanced diagnostic and high-voltage telemetry features that allow operators to remotely manage power, which in turn enhances reliability and energy efficiency.

60W and above PoE deployments are coming soon and are expected to transform next-generation enterprise workspaces.

Why 60W PoE?



$$\text{Cable Loss} = I^2 \times 12.5\Omega \text{ per pair}$$

For the same current, R is halved using 2 pairs, so power loss in the cable reduced by a factor of 2

60W PoE advantages are obvious

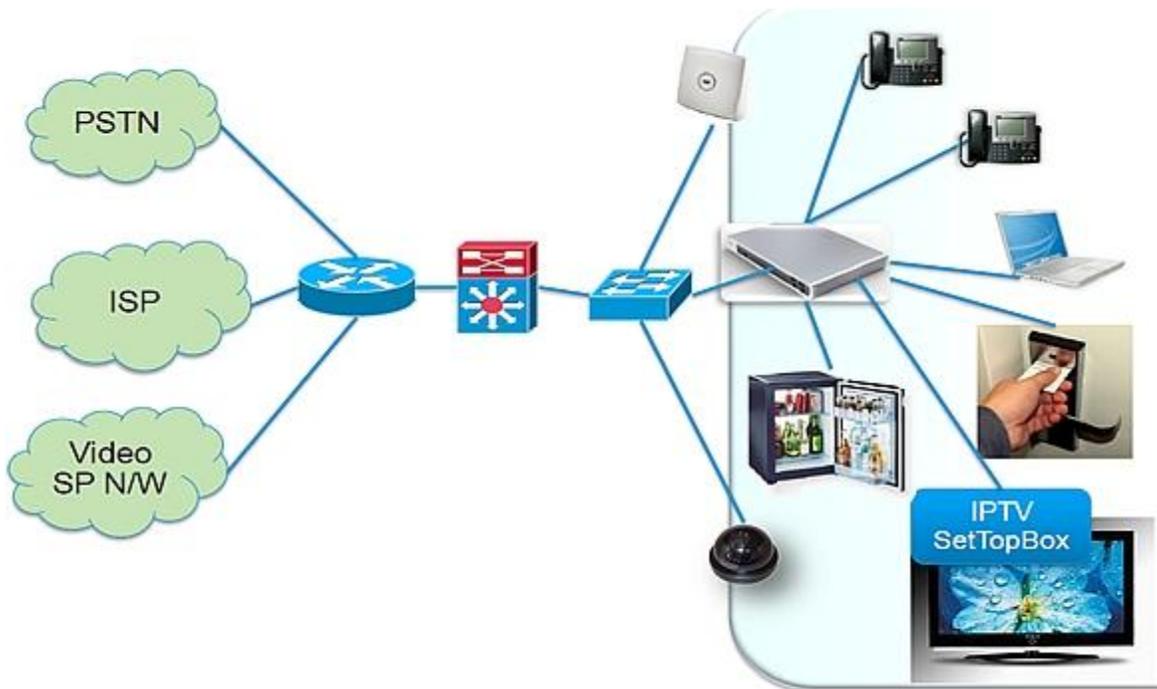
How much power can a 4-pair system save?

Parameter	Value
Nominal Voltage	48 V
Average PD Power	10 Watts
Link nominal Resistance	12.5 Ohms (over nominal length)
Link nominal Length	100 meters
Average Link length	50 meters
Hours in a Year	8760 Hours
Cable loss/PD	0.271 Watts
Cable loss/PD/Year	2376 Watt-Hour

Assuming 100 million PD's deployed, 2 pair system – 237 Million kW-hr wasted

4-pair system will save 120 Million kW-hr

Power savings by implementing a 4-pair system are significant

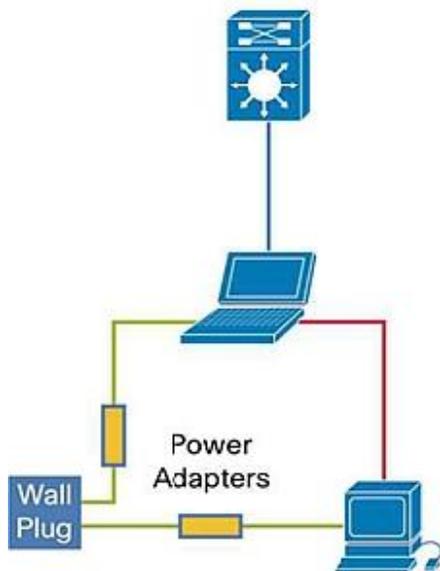


60W PoE Eliminates need for Power at each Connected Appliance

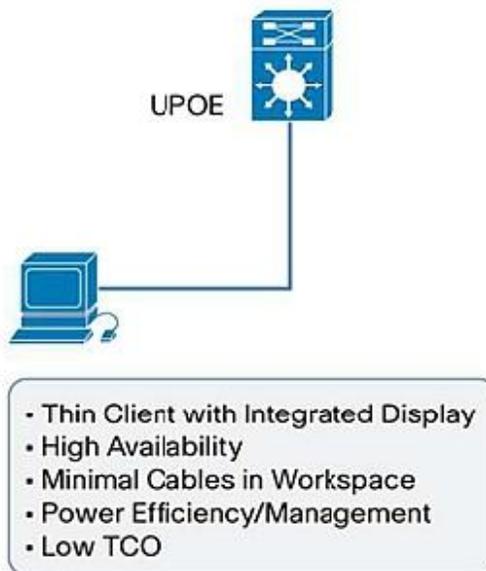
60W PoE applications

The thin client

Current Workspace Architecture



Next Generation Workspace Architecture



A thin client approach is now easily achievable

The AS1860 SoC is offered in a RoHS-compliant, 64-pin 9x9 QFN package. It is priced starting at \$4.69 per unit in 3K quantities.

For more information go to the Akros [website](#)