



*PANDUIT Corp : Recipient of the  
2007 North American Scalable Power-Over-Ethernet  
Product Innovation of the Year Award*



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*"Partnering with clients to create innovative growth strategies"*

## 2007 North America Product Innovation of the Year Award (Scalable Power-Over-Ethernet)

The 2007 Frost & Sullivan North American Product Innovation of the Year Award in the field of scalable power-over-Ethernet (PoE) goes to *PANDUIT* Corp. of Illinois, in recognition of its development of the *DPoE™* Compact 8 Midspan product, a scalable and innovative solution for Ethernet and Gigabit Ethernet networks. The solution's unique DC-mode of operation distinguishes it from conventional AC-driven PoE solutions, and endows it with superior performance and heat dissipation capabilities.

### Introduction

Founded in 1955, *PANDUIT* is a leading global manufacturer of network and electrical solutions. *PANDUIT* has always maintained a strong focus on innovation in diverse areas; this is evident from the company's vast product portfolio, which spans network cabling systems, power connectors, communication connectors, cable management systems and wiring accessories. Armed with leading edge technology, intellect, and a forward thinking management that regards human resource development as a key ingredient of its success, the *PANDUIT* solutions have been able to achieve the highest reliability, even at the lowest overall installed cost. In fact, *PANDUIT* technology, product quality, and performance have made its presence spread across not only North America, but also across countries in Europe and the Asia Pacific.

### Technology Overview

Ethernet technologies have come a long way over the past two decades, and, with the rapid advancement in technologies such as Internet protocol (IP), Internet, Web services, and information technology and with the need for anytime-anywhere networks, the Ethernet is becoming even more important. Ethernet technologies have already made their way into a plethora of applications such as personal computers, laptops, servers, IP-based cameras, and backhaul to wireless routers, to name a few. It is to be noted that all these applications and devices need power from a power supply point and rely upon cabling and power infrastructure to accommodate the myriad Ethernet cables. However, laying power cables where Ethernet-based devices are installed could be cumbersome, and it can considerably increase costs, especially as manual labor and cabling is quite an expensive proposition.

PoE technology was thus designed to solve the problem of powering remote Ethernet-based devices. PoE devices allow transmission of power, along with data, over twisted-pair cables, to power Ethernet devices. The IEEE 802.3af standard recommends a maximum current of 400 milliamperes and a load power of 15.4 watts for such systems.

PoE technology is increasingly becoming dominant in powering devices such as Wi-Fi access points, IP-based cameras, Webcams, VoIP phones, hubs/switches, and many others. Efficient use of available space, scalability, and flexibility are of utmost importance for any PoE solution for it to deliver value to the network infrastructure, with the need for extra power cables in infeasible situations.

## Innovative Features

The two most important aspects of any PoE solution are power manageability and scalability. The *DPoE™* Compact 8 Midspan is distinguished in terms of both aspects. It provides a reliable and robust power supply and is capable of reaching out to those Ethernet-based devices that are devoid of conventional power supply solutions. The *DPoE™* System uses the power Midspan solution to efficiently cater to Ethernet network devices requiring data port convergence.

It is also important to note that wireless technologies are becoming increasingly prevalent, and the new wireless mesh networks could help convert present day hotspots to hot-zones, thereby enabling a wider geographical reach. Many wireless access points make up the mesh networks, and, for the network to operate effectively, sufficient power has to be supplied to each access point. PoE solutions such as those of *PANDUIT* are able to support a wide variety of wireless access points and IP cameras (surveillance) that do not have regular access to a reliable power supply point. In addition to facilitating robust power for the present day PoE-powered device demand solutions, the *PANDUIT* power enhanced capable design and Gigabit Ethernet compatibility facilitate optimum data transmission efficiency.

It is clear that in any power and communications technology system, electromagnetic and radio frequency interference could play havoc with the reliable transport of data. *PANDUIT* took this important facet into consideration while designing its *DPoE™* Midspan product; as a result, it incorporates shielded ports to avoid the aforementioned interferences.

Furthermore, in today's world of communications, scalability, and modularity are virtually prerequisites for any viable solution. *PANDUIT* has designed the Compact 8 Midspan in a way that it provides a scalable and future-proof solution for next generation data transmission and PoE requirements. For small and medium PoE requirements, the solution accommodates three PoE units that fit across a single rack space for scalability. As the scalable solution minimizes the capital expenditures, improved network reliability and robustness reduce the operational expenses in the long run.

The Compact 8 Midspan PoE solution has a power capacity of 32 watts, which is almost twice the IEEE 802.3af standard, and can support power demands of even next generation PoE devices. Moreover, instead of relying on AC, it uses DC, which also facilitates heat dissipation and provides for improved network efficiency.

Finally, in any Ethernet network, robust network management is of utmost importance, and the *PANDUIT* PoE solution has been designed to support SNMPv3 for the management of networks, and has an option to integrate the module with HP OpenView Network Node Manager platform.

The intellectual property portfolio of *PANDUIT* extends into areas such as power redundancy and power sharing across the devices enabling scalability, all key selling points for its solutions.

PANDUIT has also submitted and tested their DPoE™ System products at the Interoperability Lab in New Hampshire to certify its solutions for quality and reliability. Significantly, PANDUIT spends approximately \$50 million, which is 10% of its sales on R&D and quality control. To stay ahead of the market, PANDUIT has a unique new product introduction program, which focuses on implementing future needs, technologies and standards into its newest products, which is supported by the fund allocated for R&D spending.

PANDUIT has been able to reach great heights in product quality and reliability due to several reasons. One of them is its use of cutting edge technologies, specifically the use of advanced analytical modeling and prototyping methodologies and state-of-the-art development processes. In addition, by successfully exploiting the power of computer-aided design/computer-aided manufacturing (CAD/CAM), PANDUIT has been able to leverage advanced design and manufacturing technologies that facilitate the production of very high quality products. To speed up the design process from paper to product in a few hours, PANDUIT uses sophisticated Rapid Modeling equipment. PANDUIT pays extra attention to the reliability and robustness of its products right from the initial stages of development using computerized engineering tools such as finite element analysis (FEA) and mold flow analysis.

## Conclusion

Frost & Sullivan is pleased to recognize PANDUIT with the Award for Product Innovation of the Year Award for its efforts in product development and innovation, as epitomized by its development of the DPoE™ Compact 8 Midspan. This solution exemplifies the futuristic and progressive approach of PANDUIT to product development, as well as the company's continuous quest to enhance the scalability, reliability, and robustness of its PoE devices.



### About Frost & Sullivan

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