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PRODUCT	Axis T8122	D-Link 1008P	Dycon D1800	MicroSemi 9006G	TP-Link TL-SF1008P
PRODUCT DESIGN	80%	80%	82%	83%	70%
EASE OF INSTALLATION	80%	80%	80%	80%	50%
FLEXIBILITY	80%	81%	81%	82%	80%
PERFORMANCE	80%	80%	81%	80%	60%
OVERALL RATING	80%	80%	81%	81%	65%

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Switched on to savings?

Power over Ethernet has been touted as a cost-saving benefit of networked security solutions, but is it suitable for high risk applications? Benchmark considers the products and the principles behind the technology.

Power over Ethernet is increasingly being offered as an option in security applications. This has led to much debate over the suitability of the technology. Whilst it has its roots firmly in the IT sector, it is increasingly common to see the technology cropping up in network cameras and video codecs. Of course, the potential issues relating to IT downtime are very different to those of security system downtime.

PoE was predominantly used for non-essential devices, such as telephony handsets, access points, switches and the like, but within the security sector it has increasingly been used for cameras. There has also been an increase in its use with other devices such as call points and access control readers.

There are two main 'flavours' when it comes to PoE, with low power (15.4W) and PoE+ (30W+). These are covered by compliance to the IEEE 802.3af and IEEE 802.3at standards. PoE works by using spare pairs in Cat 5 (and above) cabling, allowing one cable to carry network data and power to a device.

Essentially, the main benefit of PoE is one of cost savings. Devices at the edge (i.e., remote from the control room) usually require the installation of a fused spur, which in turn is connected to a power supply unit to regulate the voltage. The use of PoE can eliminate the cost of both the fused spur and the PSU. Where devices are used on a temporary basis, this also allows for the relocation of a device at any time, as the power requirements are dealt with via the network cable.

PoE doesn't have to be used with PoE compatible units. There is an opportunity to use splitters at the remote end, taking the power out of the network cable and feeding it to conventionally powered devices.

PoE can certainly offer cost savings, and in most applications it will be suitable for security use. It relies on a physical connection between the midspan and the device, via the

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unused pairs in the cable, so is effectively hard wired. However, the cables use modular plugs, so midspans should not be located in unsecure areas; the same is true of switches in the system topology.

Axis Communications T8122

The T8122 is a single port PoE midspan. The unit is IEEE 802.3af and IEEE 802.3at compliant. Designed to be either wall/desk or DIN rail mounted, the unit has power inputs of either 12-24V DC or 45-57V DC. Power output is governed by a selector switch which enables 30W or 15W settings. Aside from power input, the only other connections are for the network cable input and output.

The unit has two LEDs on the front panel. One indicates the presence of DC power, and the other delivers Port status. The conditions are unlit (no powered device), steady green (15W device connected) or steady yellow (30W device connected), 1Hz blinking (over current or short circuit) and 4Hz blinking (input voltage out of range or internal fault).

Cable lengths are specified for input voltage, and the unit is very much a plug and play device. The manual isn't really needed, but if you do dip into it then you'll find it easy to read and well presented.

Performance-wise, the T8122 acted as expected, and automatically detected all of the powered devices we used. Performance was consistent, and there were no issues with the supply. The unit was reliable across a range of distances and with a variety of cameras, and as such won't disappoint those seeking a single channel device.

D-Link DGS 1008P

The DGS 1008P is a gigabit Ethernet unmanaged switch with eight ports, four of which deliver PoE. The unit is IEEE 802.3af compliant. The desktop unit has a total output of 52 watts, delivering 15.4W per PoE enabled port. The unit is plug and play, and uses a 48V DC PSU, which is supplied with the unit.

The switch offers simultaneous full speeds on all ports, and supports QoS. Other functionality includes cable diagnostics with an array of LEDs to deliver status information at a glance, and D-Link's Green technology which offers power savings by reducing consumption without detriment to performance.

The unit's LEDs indicates the presence of DC power, link information (data transfer, gigabit

link or 10/100 link), PoE condition and PoE maximum warning.

The unit is supplied with the PSU, a paper quick start guide (which you really won't need) and a CD containing the full documentation. The manual is straightforward and easy to follow.

With regard to performance, the DGS 1008P behaved as expected. Powered devices were detected and the power delivery was consistent. The unit worked with a number of powered devices across a wide range of cable lengths. There were no problems with supply, and the unit displayed good manners throughout the test period.

There is a slight limitation in that devices with a need for higher power levels aren't supported, but so long as you don't expect it to operate out of specification, you won't be disappointed. For many, that the unit is also a switch will tick an extra box!

Dycon D1800

The D1800 series are PoE midspans, with 4, 8, 12 and 16 port versions. The Benchmark test unit was the D1816 featuring 16 ports. The unit is IEEE 802.3af and IEEE 802.3at compliant. Designed to be rack mounted, the unit has an integral power supply and features a simple mains input. Aside from power input, the only connections are for the network cable input and output. The unit delivers up to 30W per port, with simultaneous power across all ports.

The D1800 series features individual power supplies for each set of four ports. This means that should a power supply fail, only four of the total number of available ports will be lost. Dycon also offers a range of traditional switch mode power supplies, and in keeping with its ethos states that the D1800 series is over 85 per cent efficient.



Download the Axis T8122 specsheet



Download the D-Link DGS-1008P specsheet

Axis Communications T8122

- ➕ Easy to install and use
- ➖ By design, it offers limited flexibility



D-Link DGS 1008P

- ➕ A true plug and play gigabit switch with PoE
- ➖ Does not support PoE+ devices



Dycon D1800

- ➕ A solidly built midspan with efficient performance
- ➖ Bulky unit due to multiple power supplies





MicroSemi PowerDsine 9006G

- ➕ Power back-up and redundancy built in
- ➖ Cooling fan is on the noisy side



TP-Link TL-SF1008P

- ➕ Combined switch functionality with PoE
- ➖ Dodgy power connector rules it out



Download the MicroSemi PD9000G specsheet

The unit has status LEDs on each port. These indicate that port power is available, and that a compatible powered device is connected. The unit is supplied with a rack mounting kit and a very brief but sufficient manual.

The unit is fan cooled, and whilst there is a slight whir emitted from the unit, it's not invasive, and in a general working environment it is not loud enough to be noticed.

With regard to performance, the D1816 behaved as expected, and over the duration of the test provided reliable and consistent performance. This was with all of the test devices, across a range of cable lengths, and included standard PoE and PoE+ devices. There were no issues with regard to the supply, and the unit remained cool, which does give some reassurance to its efficiency.

MicroSemi PowerDsine 9006G

The PowerDsine 9006G from MicroSemi is a six port PoE midspan, and is a part of the

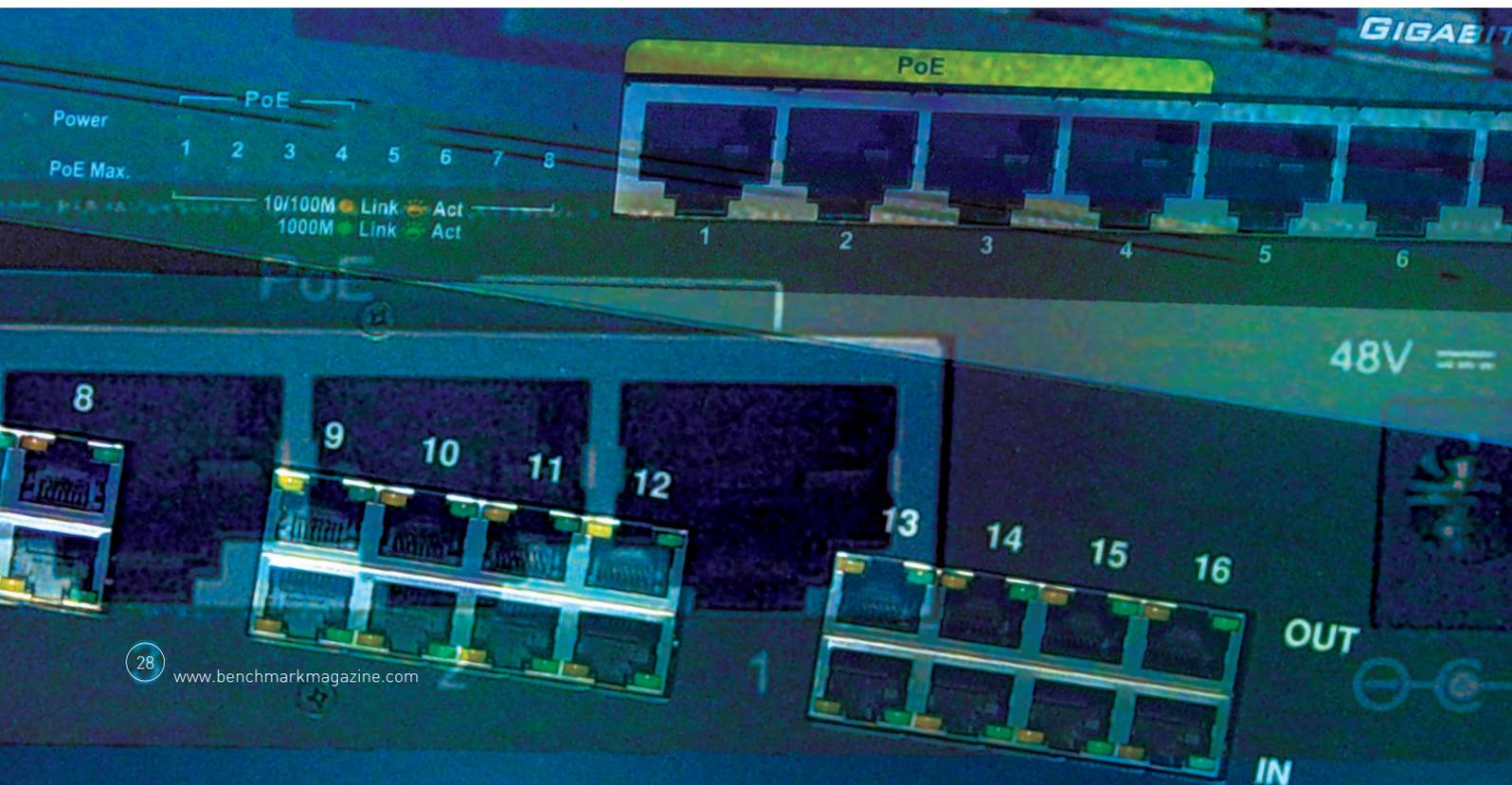
9000G series which also includes 12 and 24 port models. The unit is IEEE 802.3af and IEEE 802.3at compliant. The device is desktop or rack mounted, and has an integral power supply and features a simple mains input.

Alongside the mains power input, the unit also features power redundancy and back-up. The former is achieved where multiple units are linked. If one unit's PSU fails it can be powered by a second midspan. The latter allows connection of a secondary power supply. The front of the unit features the connections for the network cable input and output. There is also a USB port for console connection, and a network port to allow remote management.

The unit delivers up to 36W per port, with simultaneous power across all ports. Throughput of the unit is up to gigabit Ethernet. For ease of use, each input has a status LED to display active load, overload or short circuit, and excess consumption. There is also a main power status LED for the unit.

The unit is fan cooled, but unlike the Dycon unit it is fairly noisy, and this would probably limit its use to server rooms.

With regard to performance, the PowerDsine 9006G showed good and consistent behaviour throughout the test. It performed as specified with a wide range of devices and across a variety of cable lengths, and it provided reliable power delivery throughout the test with standard PoE and PoE+ devices. The unit





Download the Dycon D1800 specsheet

remained cool over long periods, and the added benefit of power redundancy will be enough for some seeking a high level of reliability.

TP-Link TL-SF1008P

The TL-SF1008P from TP-Link is a 10/100Mbps switch with eight ports, four of which deliver PoE. The unit is IEEE 802.3af compliant, delivering 15.4W per PoE enabled port. The unit is plug and play, and uses a 48V DC PSU, which is supplied with the unit. More about that in a moment.

The unit's LEDs indicates the presence of DC power, link information (data transfer, link), PoE condition and PoE maximum warning. If there is an issue with too much power being drawn, the unit operates a port priority system starting with port 1 and finishing on port 4.

The PSU does need mentioning, because it's the Achilles' Heel of the device. The connector on the PSU is modular, but it's a very bad fit. Ours was loose, to the point that power tended to flick on and off. The only way to retain it was to use tape, which isn't acceptable. Interestingly, we did find another PSU with the same specification and a better fitting plug, but the TP-Link unit didn't work with it!

Supplying a unit with an appropriate PSU is a must, and in security applications such a component-based point of failure will not be tolerated. As such, the unit simply cannot be recommended as is stands.

Performance is as expected. The unit worked with a number of powered devices across a wide range of cable lengths, although devices with a need for higher power levels aren't supported.

Verdict

The Axis T8122 is a useful tool for applications where a single PoE channel is required. The unit is lightweight, silent and easy to install. Supporting both IEEE 802.3af and IEEE 802.3at compliance, the midspan is simple in its functionality; it provides power, and that's it!

D-Link's DGS 1008P works well, and if you are using IEEE 802.3af devices then it offers a good level of flexibility. For smaller applications the fact that it is a gigabit ethernet switch will be welcomed, and many installers and integrators will view this positively for appropriate applications.

The D1800 series from Dycon looks and feels like an industrial unit, and as such does give reassurance. Dycon's heritage in greener power for the security sector will influence some installers and integrators, and the unit won't disappoint, especially if you require larger device counts requiring PoE+ supply.

Microsemi's PowerDsine 9006G performs well and has an added level of flexibility due to the power back-up and redundancy features. The one downside of the unit is noise; the fan is quite loud and this rules out its use in some applications.

Finally, the TP-Link TL-SF1008P cannot be recommended for security applications; we wouldn't recommend it for any applications because of the power connection issue. In reality, if that was fixed, it would be very different, and if the manufacturer does take steps to resolve the problem we'll let you know.

