

Magnum PoE Switches from GarrettCom Provide Connectivity and Power for Roadside Remote Monitoring Stations in the UK

An Industrial Ethernet Application

TECHNOLOGY TODAY

As trends in VoIP, Wi-Fi (802.11) wireless networks, and security accelerate, the numerous benefits provided by Power Over Ethernet (PoE) can help turn dreams of the future into practical applications. Today, with PoE, the same wires that carry the data to and from Ethernet connected equipment can also carry the power. Consequently, one of the major benefits of PoE is its inherent ease of deployment. Access to hard-to-reach locations or places with a lack of space for power deployment, such as roadside, external walls and internal ceilings becomes much simpler and easier to maintain. Not only is deployment made easier, but the cost of bringing electrical power to each device is eliminated, driving down installation costs.

About Amplicon Liveline

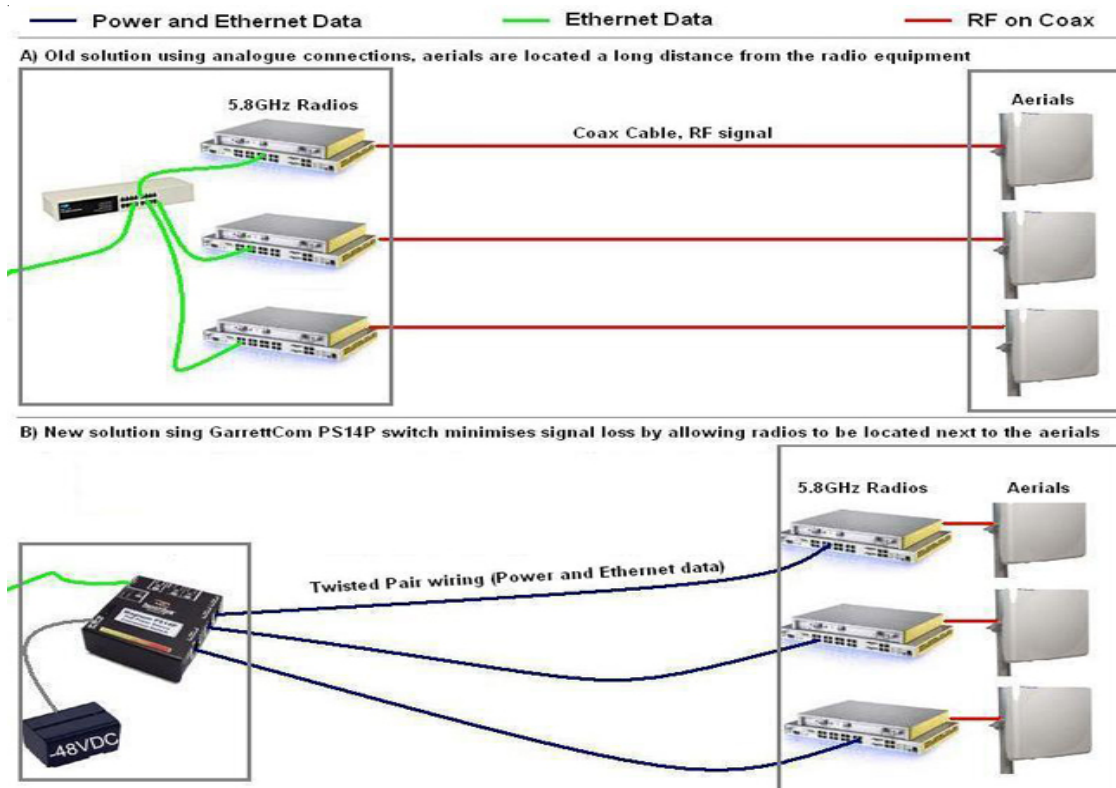
Amplicon Liveline has been manufacturing and distributing products and systems for Industrial applications since the early 1970's. Drawing on their vast experience and technical competence in Data Communications, Industrial PCs, and Measurement & Control, Amplicon Liveline have developed a total solution capability that makes them a key partner for all system integrators, OEMs and manufacturers.

THE CHALLENGE

A UK national transportation infrastructure project has been setup to maintain over 4600 miles of core road network (motorways and A roads). The objective of the project is to develop travel information services that will improve utilization of the trunk road network through the provision of better information to road users.

The project utilizes 'outstations' to deliver measured traffic related data every 5 minutes around the clock from all 1600 sites to provide a massive quantity of information. The data provided is an essential part of a strategic analysis plan that is to be carried out on the UK roads which will also be made available to third parties. For example, real-time data could be used to provide real-time traffic condition updates to mobile phones, PDAs and in-car navigation systems.

The project required high data availability from the series of remote monitoring 'outstations' situated across a wide area. However, laying fibre cabling was not a viable solution for both environmental and economical reasons. Like a lot of companies seeking to install equipment in hard-to-reach locations, Amplicon Liveline did not have AC power outlets. After considering several options, the newly-emerging 5.8Ghz radio technology powered by PoE for the data collection infrastructure was adopted.



PoE Switches for UK Roads

THE CHALLENGE (CONT.)

Amplicon Liveline knew that some vendors in the market were offering products known as “midspan solutions” – a patch-panel type device that could be added to a standard Ethernet switch to deliver power to the radio devices, but were looking for a less costly and more efficient solution.

THE SOLUTION

Engineers at Amplicon Liveline chose GarrettCom’s new PS14P PoE Power Source Ethernet Switch. The PoE capability of the PS14P enabled the radio equipment to be located close to the aerials, minimizing signal loss and maximizing throughput. The solution only required a CAT 5 cable connection and no separate power cable, meaning greatly simplified installation and reduced future maintenance. Each outstation has three radios and uses a single PoE switch connected to a -48VDC power source.

The PS14P replaced a conventional switch, power supply and three PoE power injectors. The reduction in volume allowed the use of considerably smaller equipment cabinets, saving both space and money.

“The equipment needed to be able to cope with operating in a harsh environment several hundred miles away from the maintenance team, and thus withstand extreme temperatures and vibration. Together with our past experience of other GarrettCom products, we had very good confidence in the PS14P providing good reliable operation.” said Niraj Haria, Senior Sales Engineer, Amplicon Liveline Ltd.

THE RESULTS

The PS14P units have provided a cost effective, economical solution and are operating in harmony with the wireless radio equipment in harsh roadside locations. The data being provided is an essential part of a strategic analysis plan that is to be carried out on the UK roads. The system gives the ability to provide real-time traffic updates to mobile phones, PDAs and in-car navigation systems. A typical ‘outstation’ implementation is shown in the diagram.

ABOUT PoE and the GARRETTCOM PS14P

The PS14P Power Source Ethernet Switch is a premium-rated 802.3af PoE switch with four 10/100 RJ-45 ports in a compact package, rated for temperature un-controlled (outdoor) environments. All four RJ-45 Ethernet ports support Power Source PoE per the IEEE802.3af standard. PS14P units include an integral -48V DC terminal block for power input. The product’s ambient temperature rating is -40° to +75° C.

In addition to Wireless Radio Systems, the PS14P may be used in a variety of other industrial PoE applications supporting a variety of PoE powered devices such as:

- Wireless access-points (airports, warehouses, etc.)
- VoIP phones
- Security Cameras
- Access control and Help-points (Intercoms, Entry cards, Keyless entry, etc.)
- Lighting controllers
- Remote Point of Sale (POS) kiosks
- Industrial devices (sensors, controllers, meters etc.)
- Combining with a CS14P-48VDC for a fibre optic up-link in any of the above applications

For a more complete list of applications, visit www.PoEswitch.com

ABOUT GARRETTCOM

GarrettCom is the leading manufacturer of industrial and carrier-class Ethernet LAN products. GarrettCom offers a comprehensive line of ETSI and NEBS-certified switches and hubs for use in telecommunications, industrial, and automated environments. Network management applications, embedded in the company’s MNS-6K Ethernet management software, support redundant rings and secure web-based access to local and remote networks. GarrettCom markets its products through a network of resellers, OEMs, system integrators, and distributors worldwide. For more information on GarrettCom and its products, visit www.garrettcom.com or www.garrettcom.co.uk.

