



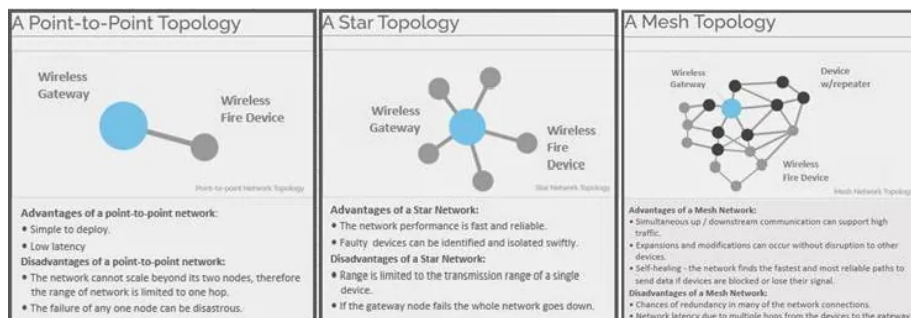
NETWORK TOPOLOGIES FOR WIRELESS FIRE ALARMS

Understanding the network topology of wireless systems is critical to designing and installing a reliable wireless fire alarm system.

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The current wireless fire detection market is oriented towards mixed wired and wireless systems, as a common way of extending or upgrading existing installations or installing new systems without the impact of running hard wiring throughout the building. The most common wireless technology is the point to point network – in which two devices which communicate directly with each other and star network - in which multiple wireless devices are in direct communication with either a central wireless gateway or a repeater.

The primary issue with point to point network technology is failure of any one node can be disastrous & network cannot scale beyond its two nodes. The primary issue with star network technology is that without any resilience in the network, the communications are at risk of failure if environmental conditions affect the signal integrity. Moreover, it is difficult and costly to adapt a star network to increase reliability. Another issue is limited flexibility to cover larger areas, requiring the use of expensive repeaters/batteries or wiring to add additional gateways.



Typical Wireless Technologies

The introduction of mesh network based wireless communication technology is set to overcome the main disadvantages of the star network by providing a more robust technology that delivers better communication reliability and installation flexibility

MESH TECHNOLOGY BENEFITS

The use of wireless mesh networks is already well established and growing in many different sectors. For example, it is used in industrial safety facilities where continuous system monitoring and operator communication is required and also in commercial buildings where extended internet access is required to cover large areas. The main driver for growth in wireless fire detection systems is the availability of mesh network technology as it provides greater security, reliability and adaptability than star network technology.

Reliability

The wireless mesh system offers greater communication reliability as there are multiple communication paths between each gateway and device transmitter and receiver. If one device is inoperable the rest of the devices will communicate with each other. Path redundancy offers a safe way to reroute signals through alternative paths in the case of broken communication links. Frequency diversity across 18 RF channels prevents interference

Adaptability

Mesh networks can adapt easily to environmental or architectural constraints, making the job of installation simpler. The wireless mesh system offers repeaters as an additional way to fit the network to virtually any building map.

Scalability

Mesh networks are more scalable than star networks. In the wireless mesh system new devices can be added without incurring additional work having to create a completely new network

NOTIFIER's SWIFT wireless mesh is integrated with current ONYX AFP-3030 panel to create flexible wired/wireless intelligent fire detection. Click [here](#) to learn more about SWIFT

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