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White paper

Wireless monitoring and intrusion detection in retail

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Wireless vs. Traditional Hardwired Approaches to Security

Physical security systems are essential in creating the secure environment on which retail businesses rely. Without proper detection systems, the security of customers, employees, the store, and its inventory can be put at risk.

Retail businesses, along with many other types of public and private enterprises, have traditionally relied on an array of security sensors for their burglar alarm and intrusion detection systems. These sensors are hardwired into security panels to monitor the physical space inside facilities and sometimes outside the facilities. Types of sensors include motion detectors, door and safe contacts, glassbreak detectors, and fixed-location panic buttons.

The security panel used in traditional hardwired systems is typically the same panel used in a wireless approach. Wireless solutions have evolved to work with virtually any commercially available security panel.

Wireless security installations provide the same sensor options of a hardwired system, without the expensive and cumbersome wiring costs, and they offer additional flexibility and functionality. Wireless security systems have been used in retail, financial, and government institutions for decades.

As loss prevention teams have become convinced of the reliability, value, and dependability of a wireless approach, they continue to expand its use to additional locations, facilities, and applications. Some of the biggest names in the retail industry have adopted wireless security systems for many of their stores, providing a testament to the maturity and proven performance of the underlying wireless technology.

Functional Advantages of a Wireless Security Approach

Security systems that rely solely on wired connections perform adequately for static locations, but the stringing of wiring can be difficult in many retail areas. Once the wire is fixed in place, it is nearly impossible to easily adapt it to changing floor plans or seasonal display adjustments. Retrofits and new-build construction can benefit from a wireless approach that decreases the costs of cable and installation labor. Similarly, when a security system is upgraded — during a store remodel, for example — the

installation cost of a wireless approach provides significant savings compared to a hardwired solution. The following sections highlight some of the benefits of a wireless system.

Avoid Costly Installs

Hardwiring security devices in those hard-to-reach points of access can either cause an unsightly installation — which ruins the sense of security — or drive up the cost of installation with variable results.

The hardwiring of a security system can be cumbersome and time consuming with unpredictable results. Some areas are difficult if not impossible to wire, such as the large expanse of glass windows in entryways or foyers between departments. Historic facilities can present additional wiring challenges due to thick walls and high ceilings. Wire in the wall or under the floor can present longer-term issues. Failed wiring due to inadvertent or fatigued wire breakage can be caused by a nail driven or a pest that has chewed through the wire. Wiring issues can add time and cost that affect the financial success of the retail enterprise.

The wireless approach presents an excellent alternative to the difficulties presented by traditional hardwiring. A large warehouse retailer with a fuel island, for example, doesn't have to trench over to the gas station from the main building. Wireless devices are simply mounted where they are needed. A wireless installation reduces installation costs and ensures a timely completion while it maintains the secure environment necessary for the success of the business.

Reduce Maintenance

In addition to automatic supervision, periodic manual testing is recommended to ensure system reliability.

Supervision automatically monitors the wireless link between the sensor and the security panel to ensure the devices are operational and ready when and if needed, without manual intervention. Intelligent wireless systems monitor the integrity of the link between the transmitter and the receiver.

Provide Additional Functionality

Wireless approaches also offer additional functional advantages compared to traditional hardwired security systems. Security pendants give a store manager and key employees the ability to trigger an alarm from anywhere in the store, lobby, or parking lot without the encumbrance of a wire.[1] Pendants are an ideal wireless application because employees are mobile by nature. A RF system also allows a retail store to easily adapt to seasonal rearrangements or display changes.

Economic Advantages

The economic advantages of a wireless security approach can be demonstrated through a cost comparison of the equipment and labor costs of a hardwired solution and a wireless solution. The examples demonstrate that wireless systems are cost effective for all sizes and shapes of retail enterprises. The three examples used are a small retail shop, a large retail department-like store and a large retail warehouse.

Each of the wireless examples includes the number of wireless pendants or panics proportional to the installation size. The number of pendants can be increased as needed to meet installation requirements. For the obvious reason, pendants are not included in the wired system example. The cost savings alone can justify the use of a wireless system, but the additional functionality should convince a loss prevention team to explore the benefits of a wireless solution.

The following examples are based on real world scenarios, and may or may not reflect your specific experience. However, the general conclusions about the difference in labor cost should be applicable to any situation.

One of the obvious savings is the installation cost of the wiring from the sensor to the security panel. The loss prevention team can greatly reduce this expense by specifying a wireless security system. In order to make the examples as real-life as possible, we've presented typical and a complex wiring installations.

Although the following analysis focuses on three specific examples: a small retail store such as a personal electronics store; a large retail store such as a department store chain; and a huge retail warehouse superstore with a fuel island, the conclusions are generally applicable to retail locations of

1.This requires careful management of supervision events and processes.

practically any size. The greater the number of monitored points the greater the savings with the use of a wireless approach. While most companies have security systems in place, successful enterprises often perform security upgrades that can range from a display area that requires a change in the security profile to a major remodeling of a store to the construction of a new location. This continuous renewal of the underlying security systems presents an excellent opportunity for the loss prevention team to examine the merits of a wireless security solution and anticipate the speed and cost savings.

While the number and types of burglary and intrusion detection devices vary from store to store, the goal of each installation remains the same: to keep customers and employees safe and secure and to reduce losses from robberies and break-ins.

Economic Advantages for a Typical Small Retail Store

Small retail outlets require fewer monitored points than large outlets. For the purpose of discussion, we've used a store example that has ten static monitored points (plus one pendant for the wireless solution) as shown below.

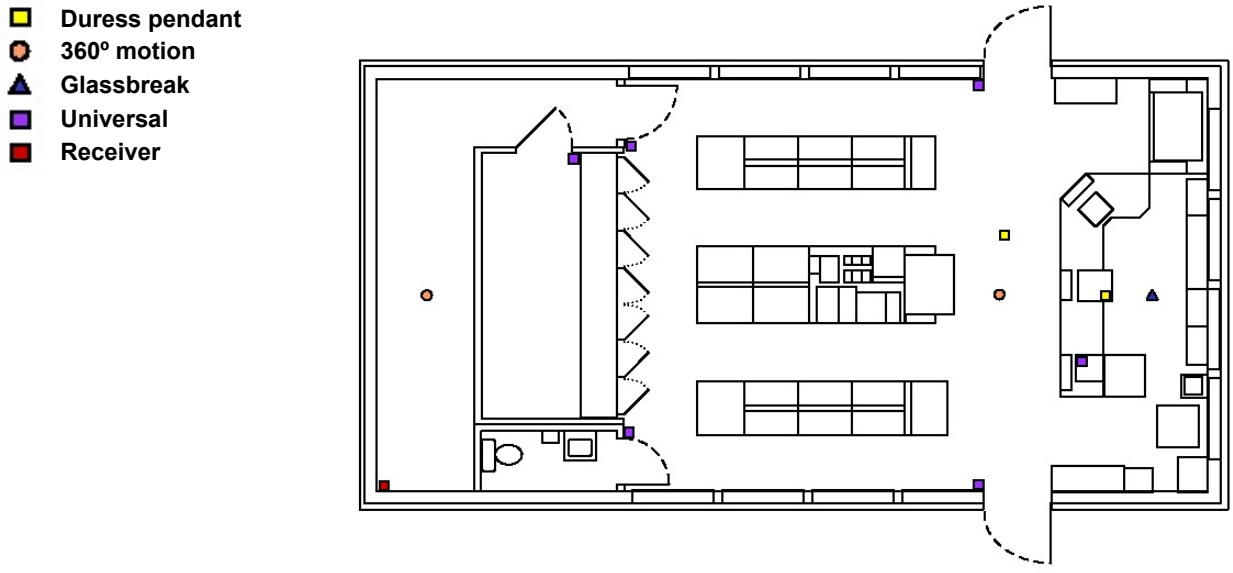

Figure 1 Typical Small Retail Store

For a small business, the implementation of a wireless security solution compared to a hardwired solution can save from more than $2,000 to $4,000, due to the difficulty of running cables for a hardwired solution. This example illustrates a possible 36 percent cost saving for a single

location. Multiply this cost saving by a number of new or remodeled locations and the savings can be significant. After the wireless system is in place, each added point becomes more cost effective.

Table 1: Breakdown of small retail shop wireless savings

	Hardwired security system (10 points)				Wireless security system (11 points)			
	Equipment	**Labor hours**	**Labor**	**Total**	**Equipment**	**Labor hours**	**Labor**	**Total**
Complex	$2,900	55	$8,250	$11,150	$3,400	25	$3,750	$7,150
Typical	$2,900	40	$6,000	$8,900	$3,400	23	$3,450	$6,850

Table 2: Total small retail shop wireless savings

	Labor hours	**Dollars**	**Percentage**
Complex	30	$4,000	36%
Typical	17	$2,050	23%

Economic Advantages for a Typical Large Retail Outlet

Large stores use a higher number of detection points and more cable than small stores. For the purpose of discussion,

the example location has 28 monitored points (plus two pendants for the wireless solution) as shown below.

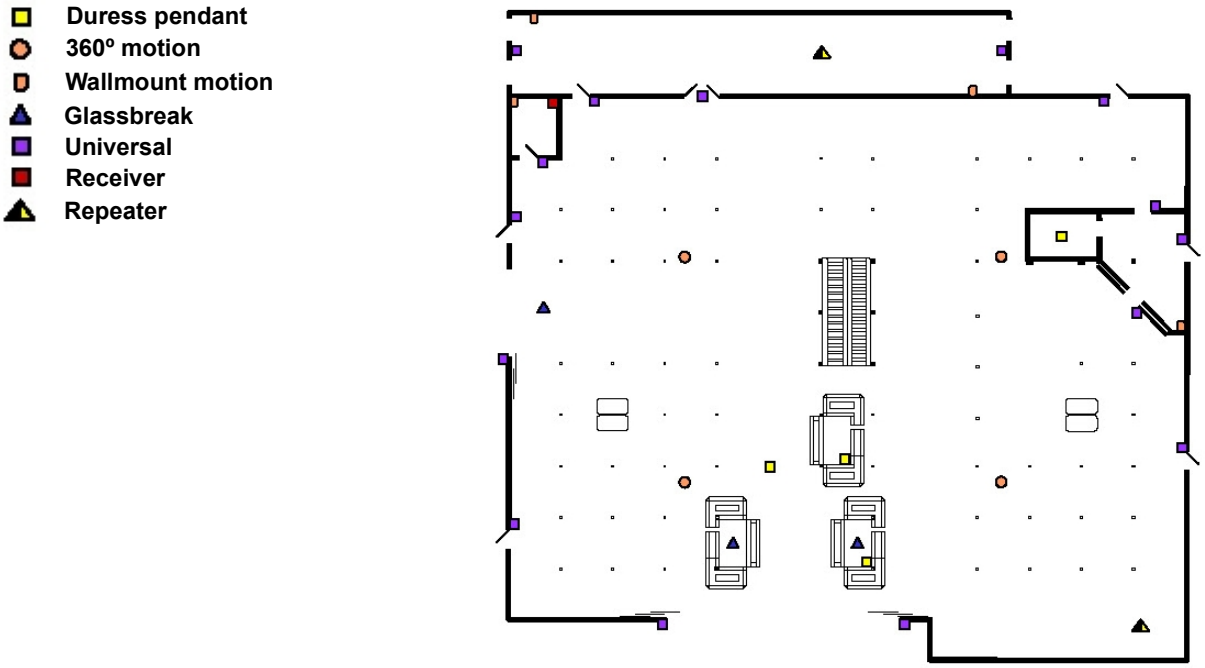

Figure 2 Typical Large Retail Outlet

Any mixture of wireless security devices should provide the same financial advantages and difficult-to-wire locations can provide even greater savings.

For a large retail outlet, such as an apparel chain store, the implementation of a wireless system compared to a hardwired solution can save from more than $4,500 to more than $10,500 per store. These savings result primarily from labor efficiencies yielded by the wireless solution due to ease of deployment and the cost of the cable. In the case of large facilities with complex wiring, the analysis shows a 45 percent cost savings. A typical large installation can yield a 27 percent savings.

Table 3: Breakdown of large retail shop wireless savings

	Hardwired security system (28 points)				**Wireless security system (30 points)**			
	Equipment	**Labor hours**	**Labor**	**Total**	**Equipment**	**Labor hours**	**Labor**	**Total**
Complex	$5,600	121	$18,150	$23,750	$7,600	37	$5,550	$13,150
Typical	$5,600	78	$11,700	$17,300	$7,600	34	$5,100	$12,700

Table 4: Total large retail shop wireless savings

	Labor hours	Dollars	Percentage
Complex	84	$10,600	45%
Typical	44	$4,600	27%

Economic Advantages for a Typical Warehouse Superstore

As demonstrated in the previous example, large stores require a higher number of detection points and additional cable than small stores. For this example, the location has 68 monitored points plus four pendants for the wireless solution. The large warehouse superstore includes a fuel island that requires monitoring. It is further assumed that the hardwire cable was installed during the construction phase so retrenching, which increases the labor cost, is not required from the store to the fuel island.

For a large warehouse superstore, the implementation of a wireless security solution compared to a hardwired solution can save from almost $11,000 to almost $25,500 per location. These savings result primarily from labor efficiencies yielded by the wireless solution due to ease of deployment and the increased cable costs. In the case of very large facilities with complex wiring, the analysis shows a 50 percent cost savings. A typical large facility installation can yield a 31 percent savings.

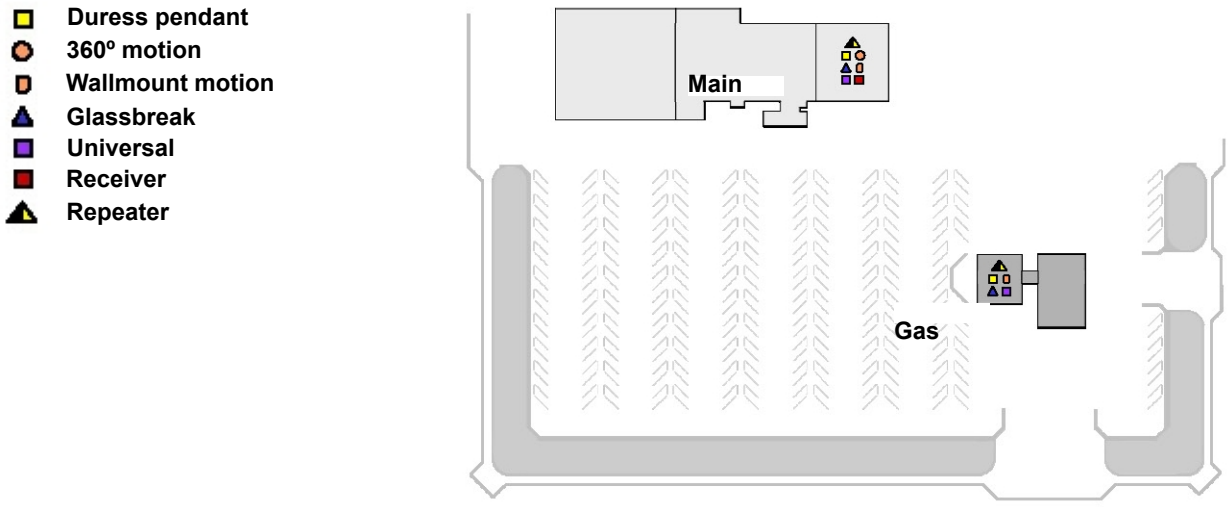

Figure 3 Typical Warehouse Superstore

Table 5: Breakdown of large warehouse superstore wireless savings

	Hardwired security system (68 points)				Wireless security system (72 points)			
	Equipment	**Labor hours**	**Labor**	**Total**	**Equipment**	**Labor hours**	**Labor**	**Total**
Complex	$10,200	267	$40,050	$50,250	$15,200	65	$9,750	$24,950
Typical	$10,200	164	$24,600	$34,800	$15,200	59	$8,850	$24,050

Table 6: Total large warehouse superstore wireless savings

	Labor hours	**Dollars**	**Percentage**
Complex	202	$25,300	50%
Typical	105	$10,750	31%

Reasons to Choose Inovonics as Your Wireless Security Provider

Wireless security solutions provide significant functional and economic advantages. Now consider some reasons why Inovonics is the wireless security provider of choice.

Market Leadership

For decades, Inovonics has been a pioneer and the market leader in the field of wireless sensor networks. Millions of Inovonics transmitters, repeaters, and receivers are installed in commercial installations throughout the world, including retail outlets, banks, hospitals, government buildings and other protected sites. Some of the most respected and well-known facilities in the world trust their safety and security to Inovonics.

Proven, Reliable Record

Inovonics offers the best range, reliability, sophisticated self-diagnostics, and scalability in the market today — all of which help to ensure reliable operation. The Inovonics system conducts periodic battery tests and provides a two-week advance notice if battery replacement is required. If a transmitter malfunctions, our system has the capability to provide an intelligent alert message so that security personnel can quickly and easily resolve the problem.

Solutions Known for Superior Performance

Inovonics security solutions use a 900 MHz, frequency-hopping, spread spectrum radio technology for superior reliability and performance. This is the same wireless technology approach adopted by the U.S. military due to its incomparable resistance to noise, interference and interception.

Flexibility

Inovonics security solutions are designed to provide maximum flexibility. They can be installed in conjunction with any major control panel from leading manufacturers such as Honeywell, Bosch, Pacom, ICT and Sonitrol. Because Inovonics solutions can be deployed on virtually any security control panel, users are free to choose the security integrators with which they are most comfortable, including industry leaders like Johnson Controls, Everon, Securitas and Convergint.

Summary

Hardwired solutions present problems in the form of difficult or impossible deployments. The resulting cost of installation is the primary disadvantage of hardwired security systems.

The examples demonstrate that any size retail enterprise can benefit from significant savings using a wireless security solution and receive additional functionality. The examples show savings of more than $2,000 to more than $25,000 per location, depending on the size of the facility and the number of monitored detection points. With labor and cable costs on

the rise, these savings are likely to increase over time. The examples show that the Inovonics security systems are cost effective, and they can be used by any size retail enterprise.

Wireless security has existed in the retail industry for decades. Early adopters started with pendants and evolved their solutions over time. Retailers are finding that after they adopt the infrastructure to accommodate wireless sensors, they can easily scale or adjust the security system by adding additional monitored points to the existing platform and reap greater economic benefits.

As commercial enterprises install wireless systems and experience their value, reliability, and dependability, more and more retail enterprises are upgrading to Inovonics security solutions for all of their security system needs.

For more information, contact us at 800.782.2709, option 1 or at www.inovonics.com.