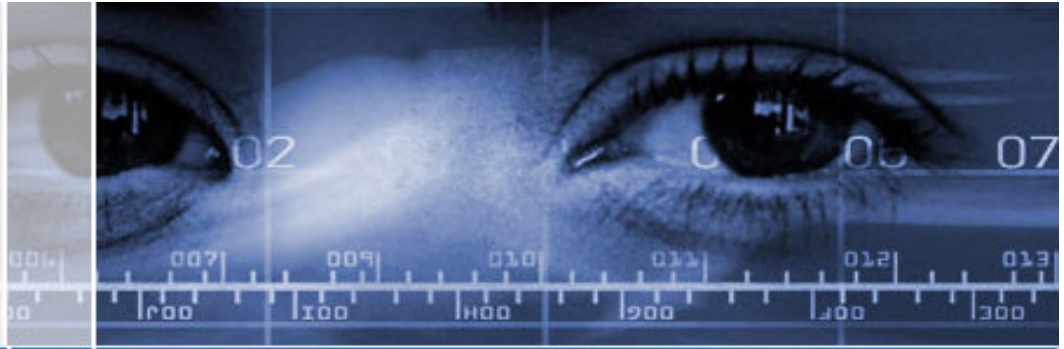


SMTAG AND ACTIVE RFID

- Products
- Applications
- Benefits
- Considerations



WHAT IS ACTIVE RFID?

Active Radio Frequency Identification (RFID) technology is a highly reliable way to automatically control, detect and track a variety of assets using FM radio transmission. By creating a dynamic link between people, objects and processes, RFID has established itself as a primary player in the future of data collection, identification and analysis. It is currently found in applications ranging from work flow systems and waste management, to vehicle security and highway toll systems. RFID is increasingly becoming a familiar part of our lives, both at work and at home.

The uses for RFID technology are limitless. More flexible and easier to use than bar coding or other forms of data collection, RFID is a multi-purpose technology.

A small tag, or transponder, affixed to or embedded into virtually any object (including livestock) individually identifies the object using a unique, factory-programmed, unalterable code. Since RFID does not require line-of-sight between the transponder and the reader, these systems overcome the limitations of other identification approaches, such as bar coding. This means that RFID systems work effectively in hostile environments where excessive dirt, dust, moisture and/or poor visibility would normally hamper identification.

ACTIVE RFID IN USE

An application which illustrates the above resides with MTN in South Africa. MTN is Africa's largest mobile telephone company is using wireless radio frequency temperature sensors to monitor temperature fluctuations on airflows on its blade servers throughout its southern African switching operation.

MTN Network Group has been looking for an automated and wireless technology that enhances their building management systems and enables fault reporting and escalation processes without human intervention.

Steve Harley, Managing Director of Lefatshe i-Tag, the South African distributor of smtag international ag comments, *"The technology can pick up temperature fluctuations as small as a tenth of a degree and relays this data wirelessly to a server which can decide at what level to address the anomaly. This entire process is totally automated and performs a critical function for MTN as heat variance is a major indicator that there is something amiss"*.

ACTIVE RFID SYSTEM COMPONENTS

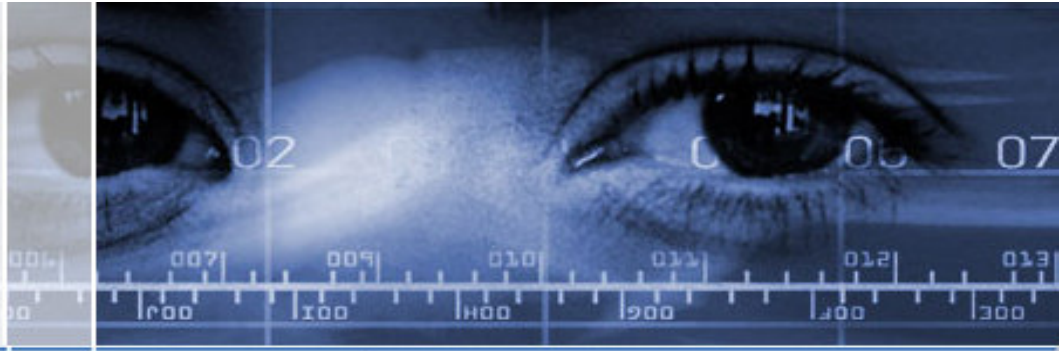
A RFID system is comprised of a number of components including a range of transponders, handheld or stationary readers, data input units, and system software. The transponders, or ID tags, are the backbone of the technology and come in all shapes, sizes and read ranges.

The "Read only" transponder family from smTAG which can be read at a distance of up to 100 meters contains a unique factory-programmed ID code and optionally sensor based data.

The "Read-write" transponder family consists of bits of code that can be programmed by the user to revise and update data. This capability allows for a custom coding and numbering system so that data can be easily integrated with other computerized information and automation systems. Data collected from either type of transponder can be sent directly to a host computer through standard interfaces, or stored in a portable reader until uploaded to a computer for data processing.

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BENEFITS

Evaluating the benefits of RFID begins not only with a full understanding of how the technology works, but also an appreciation of how the implementation of the technology *saves time, reduces handling and labor costs, cuts cycle times, eliminates errors and waste, and improves overall quality.*

One of the most outstanding benefits of RFID is its ability to read within a variety of sometimes aggressive environments at remarkable speeds -- responding in less than 100 milliseconds in most cases. Since RFID does not require line-of-sight between the transponder and the reader, these systems overcome the limitations of other identification approaches. This means that RFID systems work effectively in hostile environments where excessive dirt, dust, moisture and/or poor visibility would normally hamper identification.

Furthermore, RFID is completely automatic and transparent, eliminating the need to scan an object manually or activate a magnetic stripe, reader, or other contact ID technology.

RANGE OF APPLICATIONS

- Airport Transportation
- Commercial Services
- Construction Industry
- Distribution and Logistics
- Educational Institutions
- Health Care Industry
- Highway Transportation
- Manufacturing Industry
- Marine Transportation

- Rail Transportation
- Retail
- Parking Industry
- Trucking Industry

CONSIDERATIONS

When evaluating RFID systems consider not only the cost but more importantly, the overall value. The conventional wisdom in the automatic ID industry is that you can't use a \$10 RFID tag on an item that costs less than \$50. But that's not necessary correct.

In fact the read/write technologies and the passive qualities of many transponders mean that ID tags can now be used and reused indefinitely, amortizing the costs of each transponder to a level competitive with many other automatic ID technologies.

Transponders are now going into low-value items such as shipping pallets, conveyor bins, packing cartons, and even residential garbage carts. In addition, the manufacturing efficiencies and larger production volumes will further drive down unit costs. RFID tags from smtag can be used over and over again each day and they are an inexpensive way to implement high-tech solutions in a simple consumer application.

PRODUCTS

smtag's product range covers transponders (broadcast and point-to-point) and readers for nearly any type of application.

The simplest way to evaluate the power of this fascinating technology is to get smtags Evaluation Kit "EK1000". This

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kit includes a variation of short and long distance “broadcast-tags” with and without sensors for mesuaring temperature or motion. For detailed information please see the product-sheets.



Evaluation Kit EK 1000