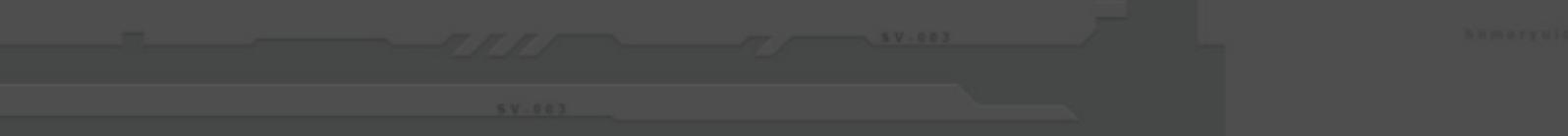


Expert Solution Providers



- RFID Solutions
- POS (Retail Management)
- Barcode Solutions
- Network Solutions
- Mobility Solutions on PDA/ Hand Held Terminals
- Time Attendance System
- Security Surveillance
- EAS Gates and Labels





Matrix solutions based in North India, are providing comprehensive IT solutions since 1995. We are a proven and established supplier of:

- RFID Solutions
- POS Solutions/ Barcode Solutions
- Time and Attendance System
- Customized software solutions
- Network Solutions
- Security Surveillance
- EAS Gate (Anti Theft) & Labels

Matrix Solutions work with all the leading organizations and stores to ensure that we can offer the best possible solution at the best possible price. With our in-house software capabilities; this enables us to provide bespoke systems at extremely competitive rates. We are an organization driving a huge clientele on a committed path of delivering quality products and a range of software solutions with core competencies in RFID solutions for Libraries, Jewellery stores, Vehicle Access control, Asset Management & Tracking, Manufacturing, Retail Management, EAS Gates, Hard & Soft RF Tags, Point of Sale, Barcode Automation, and Hospitality Industry, Mobility solutions on PDA / Hand Held Terminals, and web services.

Matrix's product automates labor-intensive processes, authenticates and safeguards goods, and enables real-time inventory and asset visibility. With a proven track record of delivering reliable, high performance production systems, Matrix has successfully deployed many systems in the country.

We have a global and phenomenal presence in India & across with more than thousands of corporations as our business milestones. Matrix offers a range of RFID, EAS, Barcode and Retail Point of Sale software solutions which integrate a wide spectrum of customer requirements, streamlining business functions and increase organizational efficiency with a definite mark of quality with a ROI (Return of Investment) assurance.

We offer completely FREE and impartial advice on any RFID, Security, Software and barcode requirement that you may have and will always be happy to meet with you to discuss your requirements and provide an outline specification and quotation without any commitment from yourselves.

Our customers consist of sole traders up to some of the biggest companies currently operating in India, all based in various industries, including departmental stores, bakery, saloons, book shops, shoe store, hotels and restaurants, government organizations, defence, advocates and newspaper management.




RFID



About RFID

What is RFID?

RFID stands for Radio-Frequency IDentification. The acronym refers to small electronic devices that consist of a small chip and an antenna. The chip typically is capable of carrying 2,000 bytes of data or less. Radio Frequency IDentification (RFID) is a technology that allows automatic identification of objects, animals or people by incorporating a small electronic chip on its "host". Data is stored on this chip and can then be "read" by wireless devices, called RFID readers.

The concept is similar to traditional barcodes. A barcode represents information in a condensed format (usually lines) that takes little space and can be read by a machine.

Compared to barcodes, RFID tags are "smarter": the information on the micro-chip can be read automatically, at a distance, by another wireless machine. This means RFID is easier to use and more efficient than barcodes: there is no need to pass each individual object/animal/person in front of a scanner to retrieve the information contained in each tag.

Radio frequency identification is a powerful emerging technology that enables companies to achieve total business visibility. By knowing the identity, location and conditions of assets, tools, inventory, people and more, companies can optimize business processes and reduce operational costs.

Difference between Barcode and RFID

RFID...the New Barcode?

How many times have you heard that RFID is going to be the new barcode? There may be some truth to that, but in reality RFID it isn't a new bar code, it is a whole new way to look at business processes. RFID tags provide a new level of automation that far exceeds that of barcodes.

	RFID	Barcode
Line of Site	Not required (in most cases)	Required
Read Range	Passive UHF RFID: - Up to 40 feet (fixed readers) - Up to 20 feet (handheld readers) Active RFID: - Up to 100's of feet or more	Several inches up to several feet
Read Rate	10's, 100's or 1000's simultaneously	Only one at a time
Identification	Can uniquely identify each item/asset tagged.	Most barcodes only identify the type of item (UPC Code) but not uniquely.
Read/Write	Many RFID tags are Read/Write	Read only
Technology	RF (Radio Frequency)	Optical (Laser)
Interference	Like the TSA (Transportation Security Administration), some RFID frequencies don't like Metal and Liquids. They can interfere with some RF Frequencies.	Obstructed barcodes cannot be read (dirt covering barcode, torn barcode, etc.)
Automation	Most "fixed" readers don't require human involvement to collect data (automated)	Most barcode scanners require a human to operate (labor intensive)





RFID Solutions

Types of Tags

Active

Passive

Frequencies

Low frequency (125 KHz)

High frequency (13.56 MHz)

Ultra-high frequency (865-867 MHz)

Microwave (2.4GHz)



Application Areas

- Asset Management
- File Tracking & Management
- Warehouse Management
- Attendance System
- Laptop Management
- Vehicle Management
- Pallet Tracking
- Library Management
- Retail
- Supply Chain
- Healthcare Solutions
- Logistics
- Parking Management
- Manufacturing





Asset Management

Asset Management :

Matrix Solutions asset management systems and solutions are based on the principles of wireless identification, allows communications between readers and electronic tag devices attached to assets, like vehicles, equipment, machines, containers, documents, inventory, livestock, almost anything. Companies count on our systems to identify, track, and monitor almost anything that moves from electronic toll and traffic management, for commercial and private fleets, in parking and access control areas, on railcars, books in libraries, manufacturing lines and in inter-modal yards.

Using our broad industry knowledge of Auto-Identification and data capture (ADC) technologies like Barcode or RFID, we will determine the best solution, which may be a combination of wireless communication technologies, for the client besides defining the specific hardware and software needed to support real time asset management. Our expertise can save the company time and valuable resources by doing the research for them and suggesting the best combination. From start to finish, we will make company asset tracking an efficient and smooth implementation and transition.

Salient Features

- An asset has a 'wireless sensor' called a "Tag" (silicon chip) fixed to it,
- Each tag has a unique 16 digit number => each asset can be uniquely identified in the universe,
- Tags have permanent memory where data can be stored about the asset (Data Access Point)
- Tags can be fixed to both 'fixed' and 'mobile' assets like Books, Laptops, Desktops, Cargo, Freight Containers, Gas Cylinders, Pallets, Clothing, Cranes, Chains, Thermal devices ,

- 'Item attendant' - Tag data can be accessed onsite using a stationary or a mobile reader (PDA) in under a second, without referring to any database,

Benefits

- Wireless Sensors, Tags Manage and Secure Assets Whether Stationary Or In Motion Automatically,
- Removes Time Consuming Paperwork from the Audit Process Thus Making Personnel More Productive,
- System Utilises the Most Up To Date Radio Frequency Identification (Rfid) Technology to Allow the Optimum Use of Your Resources,
- Tags Are Available In Many Different Shapes and Sizes Depending On The Specification Required And Can Be Fixed Directly To The Equipment,
- Reader Is Easy To Operate, Portable Device - Can Scan 50 Tags in A Second With No Interference,
- Reader Automatically Downloads the Records Once It Is Returned To Its Cradle - Removing Paperwork from the Process,
- Adaptable Technology - Tag All Database Is Written In Microsoft Access/Sql Server 2000, With A User Friendly Graphical user interface to add, modify data - reports, logs, asset history available.
- We provides end to end Asset Management solutions with tags (active/passive), readers (stationary/portable), embedded antenna, management software, host computers, application server, system integration and support. Our enterprise software, BALANCE is based on infotributed architecture framework, providing services like data smoothing, reader coordination, data forwarding, data storage, task management.





File Tracking & Management

RFID technology allows you to track files like you would using bar-coding but it also has some advanced features that no other system can provide. For instance, in a file room or record center, RFID technology allows you to inventory your files without using a line of site bar code reader. RFID also allows you to locate misfiled records or boxes faster and easily using a portable reader. This works by locating the file in the database and programming the portable reader with the corresponding RFID tag that is assigned to a file or box you are looking for. You can then walk through your file system passing the portable reader over the edge of your files or boxes. The reader will give off an alarm to let you know when it has located the misfiled file or box.

Saves time: RFID file tracking means finding of lost and misplaced files and documents and less times wasted in searching for lost files.

Promotes efficiency: RFID File tracking solutions helps manage valuable storage room space.

Deploys easily: RFID solutions leverage innovative history of seamless integration into existing systems and networks.

Improves Security sensitive records: RFID File tracking technology helps reduce the risk of compromising confidential information.

Tracks irreplaceable files: Files are accounted for and data can be monitored from multiple locations.



Helps install and ensure compliance: RFID Tracking Software solution simplifies Check-in and Check-out process to help safeguard information

RFID Technologies now offers a break-through in file and document tracking

It is especially beneficial in those environments where the documents are of high value to the organization, and the temporary or permanent loss of a document would have significant negative impact, such as intellectual property, key medical records, property ownership, financial documents or documents vital to the company.

Examples are:

Lawyer's and Accountant's firms offices

Government offices

Hospitals and other Clinics & Medical offices

Crime Labs and file archives

Mortgage Companies

Insurance Companies

Financial Institutions

Pharmaceutical Companies

RFID File & Document Tracking Solution provides a complete file and document tracking, workflow, and records management solutions that leverage leading edge RFID technologies to streamline tracking processes, saves time and labour, and reduces operating costs.

RFID Document Records Management: RFID Tracking solution for Documents, Files, folders and Boxes, Records, any important item.....

RFID Document management systems provides a reliable tracking management and live monitoring of important unique documents which move around in companies, public or legal offices: on desks, in shelves, in cabinets and in archives to ensure the accurate tracking of documents, files and folders.





Warehouse Management

Warehouse Management

The features of modern warehouse management, we put forward a warehouse management system (WMS) based on Radio Frequency Identification (RFID) and probe into the structure and operation flow of the system. The WMS adopts RFID middleware as the support platform, covers goods entry, picking, checking, delivery and many other operation flows and can collect, deliver, check and update mass data on the frequent warehouse entry and delivery, so as to decrease the labor intensity, avoid fault scanning, miss scanning, re-scanning and other artificial errors and improve the efficiency and accuracy. The WMS based on RFID will help to improve the efficiency of warehouse management and make rapid self-recording of receiving and delivery.

Features

- Provides goods history.
- Real-time reports generation.
- Integrates record management
- Inventory Management

Activities in Ware House Receiving Cross docking Put away Inventory control and stock location management Picking Sortation and conveying Shipping Asset management Physical control and security.

Benefits of RFID in Ware House Management

- Substantial productivity gains
- Elimination of re-labeling costs and effort.
- Greater accuracy
- Flexibility of data on the tag – e.g., goods and containers can be identified and tracked using the same tag

Ability to write additional or replacement information to a tag at any stage in the supply chain.

All of this means that goods can be checked in and out much faster and AT A LOWER OVERALL COST THAN THAT ACHIEVED BY EXISTING SYSTEMS. For a comparison of costs associated with bar-coding and RFID systems in a typical supply chain situation.





Laptop Management

This solution replaces the laptop register which employees and visitors have to sign when entering or leaving premises. When scanning the laptop, the details of the person associated with the laptop is shown on screen. Laptop tags can be detected through the laptop case.

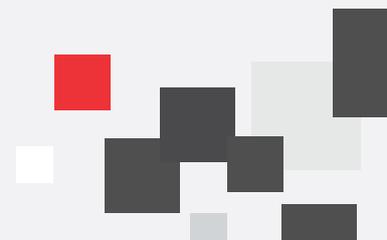
The system increases computer security and reduce or eliminate the chance of stolen hardware and data breaches by implementing RFID verified computer access and internal metal mount RFID tags for asset security.

Features:

- Registering a laptop computer and associated person
- Verifying the laptop computer and associated person
- Scanning the laptop computer in or out
- Generating alarms
- Versions for single and multiple gates

Active RFID/RTLS Asset Management Solutions are designed to supplement the traditional security measures already deployed to reduce shrinkage of critical high-value mobile assets. Matrix does this by capturing real-time location, time/date and motion information about the protected asset and then alerting security when illicit asset tampering or unauthorized asset movement is detected.

Due to the ease of implementation, Matrix Active RFID/RTLS Asset Protection Solutions are the most cost-effective way to protect thousands of assets in challenging office environments.





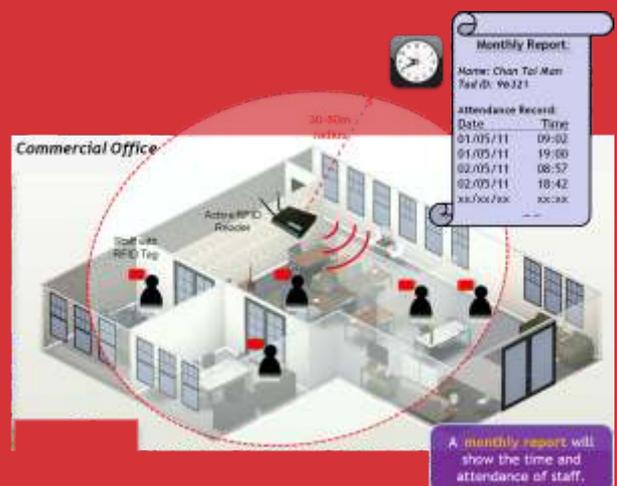
Attendance Management

Active time and attendance system

- Active RFID tags are used as Employee's id cards and are given to each Employee. Each Employee's information is also linked with the tag ID for easier retrieval of related information.
- Whenever Employees carrying their tag pass through the office entrance, readers detect the tags and immediately send the tag ID to the server. Entry or exit of a particular Employee is recorded and can be retrieved for later human resources management usages. The whole recording process is automatic and thus convenient for both Employees and operators.
- By implementing active RFID technology, no longer do Employees need to sign in or out manually. Human errors, unnecessary disputes, and tedious paper recording and data entry work can all be avoid, providing efficiency in overall operation of the company.

Features of the active time attendance system:

- Tracks Employees' in/out record
- When passing through the entrance, time of entry or exit of particular Employees is recorded as soon as the RFID tags are detected.
- Multiple tags reading simultaneously
- Readers can detect around 100 tags at a time.
- Varying reading distance
- Reading range of the active system can be adjusted from several meters radius for short range reading to up to 50 meters radius for long range reading. Adjustable reading range of the system provides flexibility in difference applications.
- RFID technology has been applied in attendance system in the recent year. However, there are still some limitations such as the information visualization of RFID tag and short reading coverage. Matrix's active RFID tags and readers will help to optimize the office attendance system.



Monthly report for Human Resource Management

- The system is capable of generating monthly reports for every Employee, showing records such as total hours, number of day-offs, attendance report of the Employees. Such reports provide data and statistics for further analysis in respect of human resource planning and management.





Vehicle Access Control

“Secure and Smartest way to Vehicle Access Control System”

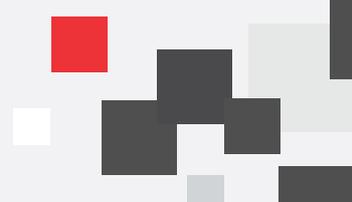
Securevac is complete hands free; automatic and secure way to vehicle access control system without any human intervention. The system ensures that the RFID tag's information is read by the RFID reader as the vehicle approaches a lowered barrier or closed gate, and if verified by Securevac software, the driver gains access without ever taking hands off the steering wheel or coming to a complete halt. The system is best suited for commercial and corporate parking areas, gated communities, assisted living, ports, airports, industries, universities and etc.

Features:

- Provides an access control solution that is truly hands-free and unencumbered
- Faster access for residents; employees and visitors.
- Windshield RFID passive tags can be read up to 4-5 meters from the access control doorway.
- The RFID reader can also trigger surveillance cameras or video recorders whenever a vehicle enters or exits the controlled area
- Eliminates manual record keeping, thereby increasing accuracy and staff productivity.
- Matrix's Securevac software allows RFID windshield tags to be linked with the owner's access control badge for more secure safety measures, for the vehicles moving in-out and within the facility.
- Information such as Owner's name; Vehicle Number; can be displayed on a screen for the security guard to verify the passing vehicle.
-

System Working

Matrix Solutions proposes an intelligent Gate Automation System to the institutions; corporate, gated communities and restricted areas with the problem of access control of vehicles. The system consists of RFID based cards, readers which offer long read range of 4-7 meters that assist in the tracking of vehicles. Cards are the devices that give identity to the vehicle and work like a wireless name plate. It transmits the vehicle identity from a distance of 4-7 meters to readers which are placed near the gate. The Long range Reader is attached to the computer which takes the decision of identifying the right permissible vehicle and instructs the boom barrier/gate to open accordingly.





Tool Management

Cost and scheduling pressures are rising continuously in all plants. It is therefore becoming increasingly important to prevent machine stoppages, or at least to reduce downtimes to the minimum. Having the necessary tool to hand, or being able to locate it fast, can contribute significantly toward this goal. Cache Technologies has developed an application using RFID technology that efficiently and reliably supports the issue and return processes and the inventory management of tools.

Tool Management with Database and RFID

A new tool is quickly and easily entered into the system via a user-friendly interface and with support from RFID technology. In tool management with RFID, each tool carries an RFID chip. A RFID desktop reader/writer attached to the computer is activated by the application and brought into contact with the RFID tag/chip on the tool. This allocates to the RFID tag/chip a new data record in the application and a tool is entered into the system. The user may add specific material data (name, date of purchase, material no., long description, etc.) to the new data record. Tool data are stored in a database and can be entered and used at any time.

Availability checking/ Issue and return of tools

If in the future you want to read out the information on a tool fitted with an RFID chip, you must bring the RFID chip into contact with the desktop reader or handheld data collection unit. The associated data record then appears on the screen. Click a button to check out the tool, which is then taken away by an employee. For the return of a tool, the process is reversed.

The Benefits

- Safeguarding of the plant against missing tools by their assignment to a "borrower".
- Issue and return of tools is very quick and simple.
- Real-time individual tool inventory tracking
- Full check in-out process automation
- Utilization of existing infrastructure
- Central management of tools in a database.
- Full accountability with multiple users
- Rapid preparation of reports and analyses is possible at any time.
- Adaptable enterprise technology that works with existing processes
- True like-item accountability – the ability to distinguish between identical tools with no accountability loopholes





Library Management

Matrix Solutions Radio Frequency Identification (RFID) based library management systems have been in use for book identification for self checkout, anti-theft control, inventory control and sorting and conveying of library books, and audio/video materials. It achieves significant savings in labor costs, enhances customer service quality, minimizes book theft risk, and provides a constant record update of media collections.

Components

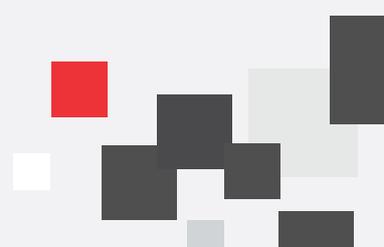
Label conversion systems, self-check-in/out system, self-help book return system, intelligent search systems, cart-type inventory systems and security gates detection system.

Features

- Simplify the procedures for borrowing and returning books, shorten the books circulation, increase book lending rate and enhance the library user-friendly service.
- Easy inventory reduces the labor intensity of management personnel and minimizes book misshelving issues.
- Locating the desired books has become more efficient and convenient and further tap the potential library resources to enhance the utilization of library materials.
- The security gates are designed for the detection and reading of information from RFID transponders which are carried through a door.

Benefits

- Improve management efficiency
- Simplify the procedures for borrowing and returning books
- Time saving RFID checkout and check-in
- Reduces the labor intensity of management staff
- An increase in the patrons' satisfaction
- Enhanced security function in a library
- Reduced material costs and handling
- Regular inventory control and update
- Automation of sorting and conveying functions
- Streamline operations and provide better customers





Retail Point of Sale

At Matrix we have several years of experience developing point-of-sale solutions for customers looking to improve their services. Our technology will help increase accuracy and speed in your payment processing, receipt printing, check-in and check-out, returns handling, and line- and queue-busting processes.

Our inventory of POS hardware, from mobile computers, to printers, to touch screens is one of the largest in the industry. We can provide you with a total solution that includes best-in-class software to efficiently manage your store operations while you focus on keeping your customers satisfied. Alternatively, we can offer you POS components that fit into your existing infrastructure. Ask about our wireless applications that can be used to streamline mobile credit card processing transactions at your POS terminals. No matter what your POS requirements, you can count on our experience working with thousands of retailers, restaurants and service providers to bring you the application you need.

- **Speed** - The correct hardware and technology will minimize time spent scanning.
- **Compliance** - If your product line requires ID verification (alcohol, tobacco) imaging technology can quickly record the required information as well as snap a photo of the ID when necessary.
- **Scalability** - If your store experiences seasonal surges in business we design mobile cashier solutions for a line busting application.

POS software solutions are available for:

- Departmental Stores
- Salon and Spa Management system
- Hotel Management system
- Book Store point of sale
- Shoes and garment point of sale
- Newspaper management

Highlights of Matrix POS software

Complete store automation for reduced human errors and fast checkouts
Billing process simple and accurate
Multiple payment modes
Barcode generation and scanning
Cash, credit and advance sales management
Drawer and currency management
Return/Exchange and Refunds tracking system
Specially designed reports for detail analysis of sales, stock and profitability
Multiple stock valuation options on average cost, standard cost and MRP
Customer information tracking and gathering
Customer loyalty management programs





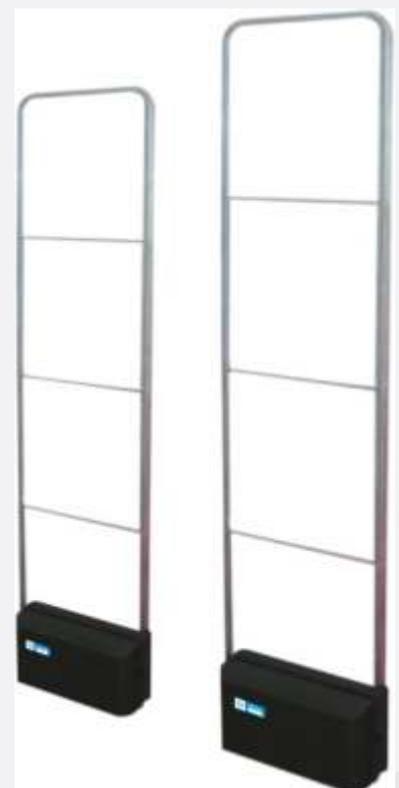
Electronic Article Surveillance

Electronic Article Surveillance, or EAS, is an anti-shoplifting system used by retail businesses. It involves attaching an electronically detectable tag to the item of clothing or merchandise. Nowadays, a lot of merchandise has these tags incorporated into their packaging. In other cases, the tags have to be attached by the store.

When the item is purchased, the tag is either removed or deactivated. Tags are typically removed from clothing, while merchandise with the tag incorporated into packaging are usually passed over a pad that deactivates the tag. The MTrust RFID EAS Gate is used to detect RF hard Tags & Labels that is equipped with EAS (Electronic Article Surveillance). It is able to detect RF hard Tags upto 2.0m and soft label upto 1.4m range without interference from magnetic items. Upon detecting of armed RF Tag, the alarm will sound with flashing lights on the gates.

Features

- Attractive, crystal clear acrylic design.
- Attractive slim-line design.
- Compatible with Sensormatic 8.2MHz hard tags and labels.
- Remote electronics for easy installation.
- One, two or multiple pedestal configurations.
- Advanced analogue and Digital Signal Processing (DPS).





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