

SWITCH to Smart Library



RFID Library Management Solutions

RFID Solutions | Barcode Solutions | POS (Retail Management) | Network Solutions | Security Surveillance |
Mobility solutions on PDA/Hand Held Terminals | Time Attendance system |

About us

Founded in 1995 and based in North India, Matrix solutions are a proven, established supplier of comprehensive range of **RFID Solutions**, Barcode solutions, POS (Retail management), Network Solutions, consumables and peripherals. 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.

Combined with our own in-house software capabilities, this enables us to provide a bespoke system at extremely competitive rates. We are an organization driving a huge clientele on a committed path of delivering quality products and a range of solutions with core competencies in POS (Retail Management), RFID solutions for

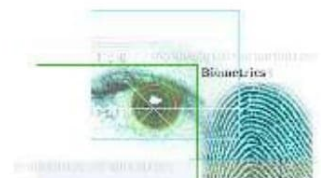
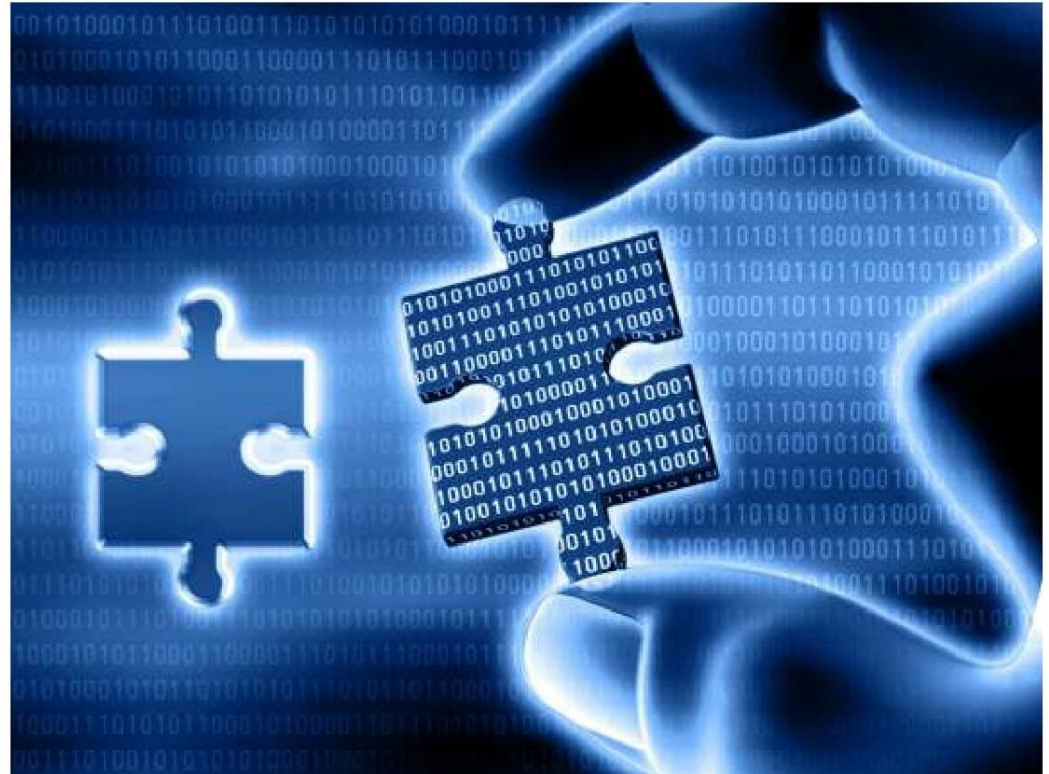
- Library Management system.
- Industrial and manufacturing.
- Jewelry inventory management and many more.

Other services include complete Barcode solutions, Time attendance systems, Network solutions, Mobility solutions on PDA / Hand Held Terminals and Security surveillance

We offer completely FREE and impartial advice on any RFID or

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 north india, all based in various industries, including libraries, departmental stores, bakery, saloons, book shops, shoe store, hotels and restaurants, government organizations, advocates and newspaper management.

Our **most valuable asset** is our Team - technically qualified and certified professionals committed, capable and in pursuit of perfection, continuously upgrading, fine-tuning the retail software product and solution, offering quality services using proven customer centric methodologies, extensive testing and long term relationship of support and maintenance as the essence.



Technical comparison between Barcode and RFID Tags

RFID and barcodes are similar in that they are both data collection technologies, meaning they automate the process of collecting data. However, they also differ significantly in many areas. Although this comparison primarily focuses on the **advantages of RFID over barcodes**, RFID will not completely replace barcode technology. Barcodes offer some advantages over RFID, most notably their low cost.

Comparison Statistics

RFID is 15-20 times faster than manual and barcode processes for inventorying IT assets. (Source: RFID Journal)

Some companies experience a 95% reduction in time using RFID (Source: Motorola)

The #1 RFID application being deployed is IT asset tracking (Source: Aberdeen)



	RFID	Barcode
Line of Site	Not required (in most cases)	Required
Read Range	Passive UHF RFID: <ul style="list-style-type: none"> - Up to 40 feet (fixed readers) - Up to 20 feet (handheld readers) Active RFID: <ul style="list-style-type: none"> - 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)

WHY RFID For Library ?

RFID latest technology for identification in the world .

Replace both the EM security strips and Barcode

RFID tags can be read;-

Through desktops and book covers
(no line of sight is required)

In any orientation to the reader/antenna.
While moving.

Several at a time.

From distances of several inches to the antenna.

RFID **improves** library workflow, staff productivity and customer service with these attributes.

Ability to **conduct inventory counts** without removing books from the shelves.

Alignment or orientation and line-of-sight not required for issue-return, Location Tagging and stock taking.

Allows patron **self check-out / check-in**.

Anti-theft detection is On-Line and safe.

Allows **High-speed inventory** taking.



RFID Library Management OVERVIEW

To **remove** manual book keeping of records.

Improved utilization of resources like manpower, infrastructure etc.

Less time consumption as line of sight and manual interaction are not needed for RFID-tag reading.

To **minimize** the manual errors

RFID tags **replace** both the EM security strips and Barcode.

Circulation: handling user accounts and issuing/returning and shelving of materials.

Simplify patron **self check-out / check-in**.

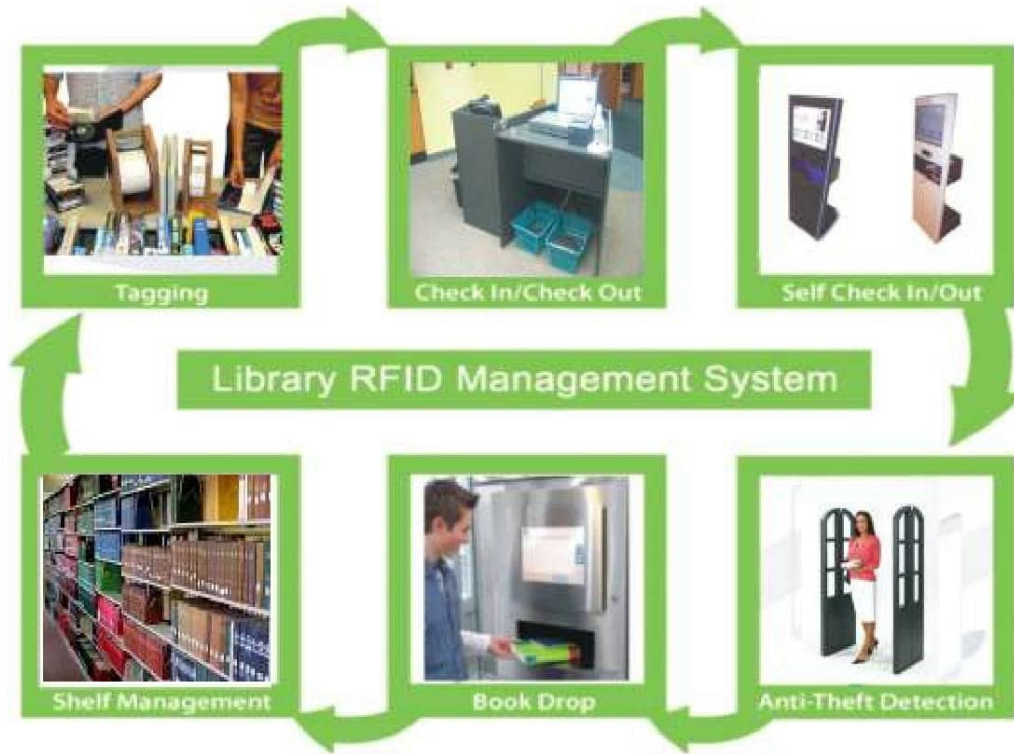
Ability to **handle material** without exception for video and audio tapes.

Radio Frequency **anti-theft detection** is innovative and safe.

High-speed inventory and identify items which are out of proper order.



How does the system works



Components



Staff Counter Station



Self Adhesive RFID Tags



RFID Patron Card



Self check in/out station



EAS Security Gate



Book Drop Station



Data Collection Unit

RFID Tags for Books I CD I LP I Audio Tapes I Journals I Cassettes I Videotapes

Tags (13.56 MHz frequency).

Tags are also called transponders. They have an intelligent chip and an antenna.

In the RFID tags for libraries tags can be rewritten over more than 100,000 times.

Book name, author name, accession number, etc can be written on it.

Paper thin and approximately 3"x 2" (86mm x 54mm) in size

Placed inconspicuously on the inside cover of each book in a library's collection.

Consists of an etched antenna and a tiny chip which stores vital bibliographic data including a unique ID number to identify each item.



Phases & Benefits of RFID Library Management System

Library Security System Only

Phase Action:

Using RFID Tag replace EM Security Stripe

Phase Target:

✍ Radio Frequency Detection.

✍ Replace the EM Anti-theft system to avoid the high volume EM field harm human body and without False Alarm.

Equipment & parts needed:

✍ **Anti-theft Detection Gate** - Detect the RFID Tag on Book and Check EAS Status, System alarm when the EAS status is ON.

✍ **Security Processing Station** - Turn On or Off the EAS Setting of the Chip.

✍ RFID Tags.



Support Library Circulation

Phase Action:

Using RFID tags replace the barcode in Circulation process. Reading book's access number from RFID than from barcode to borrow and return the book.

Phase Target:

No line of sight needed.

Allows to check-out and check-in several items simultaneously.

Performing both identification and anti theft in one single operation.

Equipment & parts needed:

Counter Station.

New Integrated Library System functions - read from RFID and set the EAS status.



Patron Self Check in / Check-out

Phase Action:

Let patron do the check-out and check-in process of books.

Phase Target:

Benefit to Librarian:

- Speeds up book check-in / check-out.
- Frees staff to better service patrons.
- Better space planning.

Benefit to Patrons:

- Easy to use: books can be read in any orientation
- Reduces queuing time
- Provides patron privacy

Equipment & parts needed:

- Self Check Station** - Perform patron self check-out and check-in process and turn off or turn off the EAS status.
- Book-Drop** - Indoor or Outdoor. After patron drop in the book into this station, book s id is checked and turned on the EAS simultaneously.
- Remote Book-drop** - Long distance away from library, Acquire better protection of the Book-drop.
- Sorting station** - Sorting the return books automotive or manual.



Smart and Quick Inventory

Phase Action:

Search and Inventory by reading the RFID using portable reader and portable computer.

Phase Target:

- Quick inventory
- Look up the misplace material
- Search for certain material

Equipment & parts needed:

- Portable RFID reader
- Portable Computer - Notebook PC or PDA
- Inventory & Searching software



Drop Box For Auto Return

The **Book Drop** boxes can be located anywhere, within or outside the library. Possible remote locations outside the library include Canteens, shopping centers, schools, etc. Patron inserts the library item into the slot. The reader captures the electronic signature and sends to back-end system for loan cancellation. Patron is acknowledged by beeping sound and flashlight. Patron's record is updated immediately. This is possible due to the seamless link between **MATRIX** Library RFID Management System and the host computer system. As such, users who have reached their loan quota can start borrowing items once they have returned them through the Book Drop.



This offers unprecedented **flexibility and convenience** of returning library items at anytime of the day, even when the library is closed.

KEY BENEFITS

The ability to return books during off hours.

Loans for the returned items will be instantaneously cancelled so that patron may immediately borrow again.

Librarians are able to allocate more time to customer service, as they are free from the labor-intensive loan cancellation activity associated with barcode system.

Display the return status and printing receipt.

The design of the Book Drops is such that items cannot be retrieved back once deposited.

Staff Counter Station

The Matrix Counter Station is a staff assisted station on services such as loan, return, tagging, sorting etc. It is loaded with arming/disarming module, tagging module and sorting module. Arming/Disarming module allows **EAS (Electronic Article Surveillance)** bit inside the tag of the library material to be set/reset so as to trigger/not trigger the alarm of the **EAS gate**. Checking of EAS status of library material is easy. The staff puts the item on the reader and click on the view to display the information stored inside the tag and status of EAS. There are also feature of Auto Arming and Auto Disarm. Auto Arm/Disarm will automatic arm/disarm library material that is within the Reader range.

Together with circulation module from Library Management System Software, this station is used for the following services:

- ✎ Editing and updating of patron s record.
- ✎ Add and deleting of patron s record.
- ✎ Generate loan history for a particular patrons.
- ✎ Managing of fines incurred by the patron.
- ✎ Arm/Disarm of EAS bit inside the library material.
- ✎ Program of new library material.
- ✎ Sort item in accordance to their branch and category number.
- ✎ The features of this station depend on the module loaded by the Library Management Software.



Key Benefits

Provide Value Added Customer Service instead of manual daily routine.

Perform media check-in/-out for those patrons who choose not to use the self service system.

Help patron that need assistance from the staff.