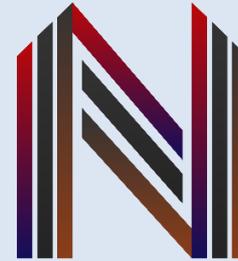


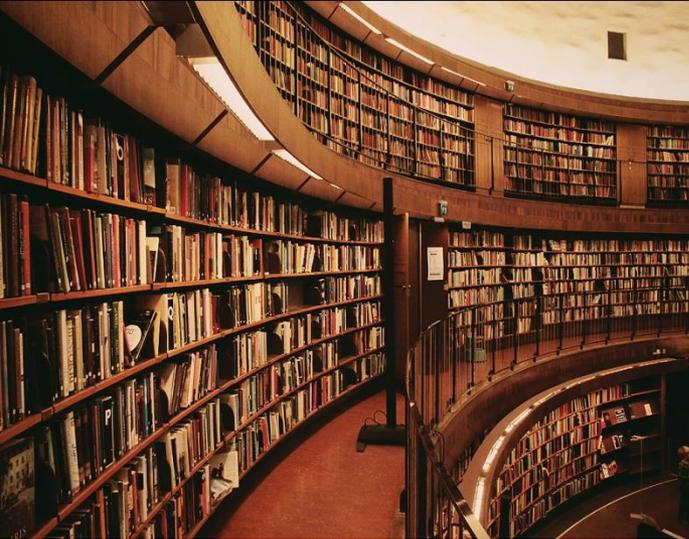
# RFID LIBRARY AUTOMATION



*Network Toll Solution*  
Quest for Excellence

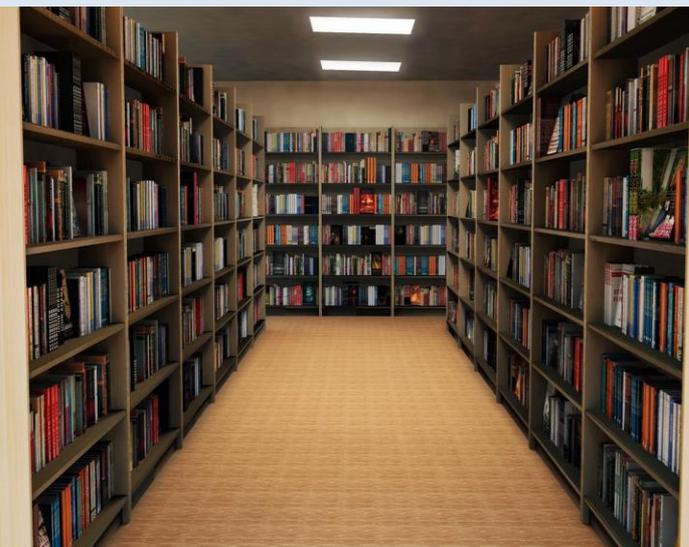
[www.networktoll.com](http://www.networktoll.com)

Unit No. 1008, Tower 3, Aastha Greens, Sector 4, Greater Noida West, U.P. 201306



PRESENTING

“NTS LIB”





1. Company Profile
2. Why us?
3. Traditional Indian Library
4. Issues and Challenges
5. Solution Benefits
6. RFID VS Barcode
7. Components
8. Clients

- Incepted with an objective to make “tracking” time and cost effective.
- Core domain AIDC vertical with focus on RFID technology
- State of art infrastructure with Internal R&D and manufacturing unit in Delhi and Gurgaon
- Lead by a team of IIT'ians .
- Team strength of 20 plus. Experience of more than a decade.
- Global experience in automating 30 + libraries
- First company to automate Delhi University Library.
- Experience of automating one of the largest libraries in India - RGPV
- Among top 10 RFID automation service providers in India. CIO 2016
- Experience of integration with KOHA, TCS, LIBERTY and other leading softwares in the market. Can be integrated with SLIM and E gran
- ISO 9001:2008 certification . Full compliance to NCIP Protocol for Libraries.



- **Experience** of more than a **decade** in RFID Library Automation.
- Strong **project management** skills.
- Quick turn around time. **24\*7** technical call centre help
- **Integration experience** with almost all possible ILMS in market.
- **Customized hardware design** to match library theme.
- **In house** software development, installation & commissioning, R&D **team**.

- High **quality** products with **comprehensive AMC** facility.
- Three way approach of working

**SYSTEM  
INTEGRATOR**

**SOLUTION  
ARCHITECT**

**DATA  
ANALYST**

- Focus on **ROI**
- Competitive **pricing**.
- Facility for data entry / tagging etc

# Traditional Indian Libraries

- Still using **barcode technology**.
- Generally a **guard** is deputed at exit point to **check book theft**.
- Inventory is **counted manually**.
- Library users / patrons are given **paper cards for transaction** of books.
- On purchase, book information is manually entered in registers.
- Working hours : **9 AM – 7 PM**
- Library staff is generally engaged in circulation or data management work.
- **Finding** a particular book is a tedious work.
- **Proprietorship ILMS**.



- **Theft**. Loss of books, journals, CD's, project reports etc.
- Poor **inventory** accuracy.
- **Long queue** at circulation desk.
- Lack of **valuable information** to patrons
- **Inefficient** use of trained staff.
- **Miss – shelved** books.
- **Time** constraint.
- Increased **material handling cost**.





*How can a librarian **spend** more time educating the students when they spend most of their day coping with the other issues of the library.*

+ We've got the

**solution**

we want it

A **solution**  
that exactly  
meets the  
**NEED**

*they* want it

**Library**

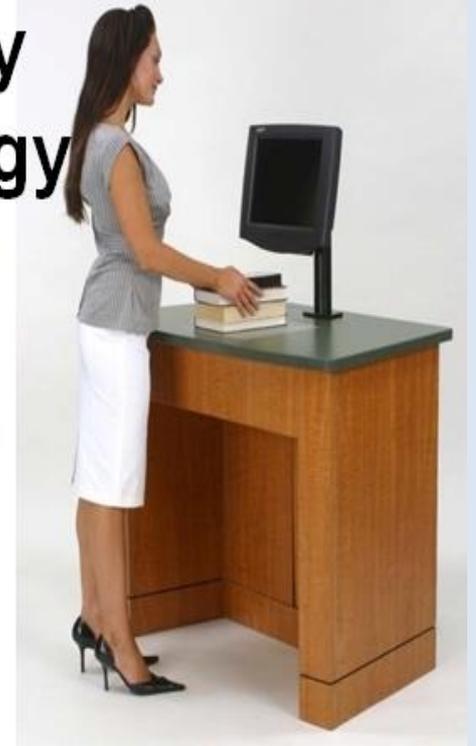
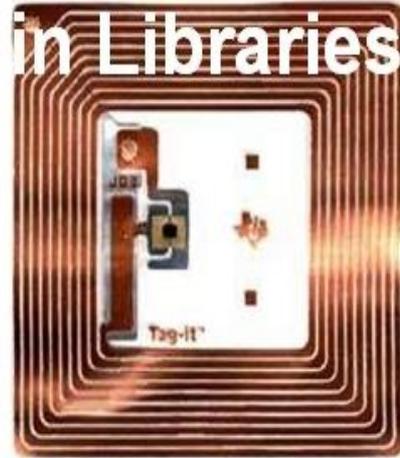
**Management**

**with RFID**

**Technology**



# RFID (Radio Frequency Identification) technology



**HIGH FREQUENCY  
RFID (HF)**



### For Library Staff

- **Saves time** in inventory and stock verification.
- Quick **circulation**.
- Prevents **theft**.
- Better **utilization of resources**.
- **Cost** effective.
- **24\*7** library.
- Helps in **locating mis shelved** books.
- **Paper less** transaction.
- Better and **smooth back end** operations.
- Branding by Updation to new technology.
- Customer / **patron satisfaction**.
- **Multi purpose** library card.

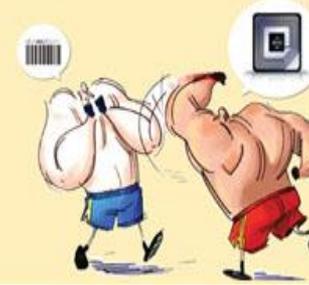
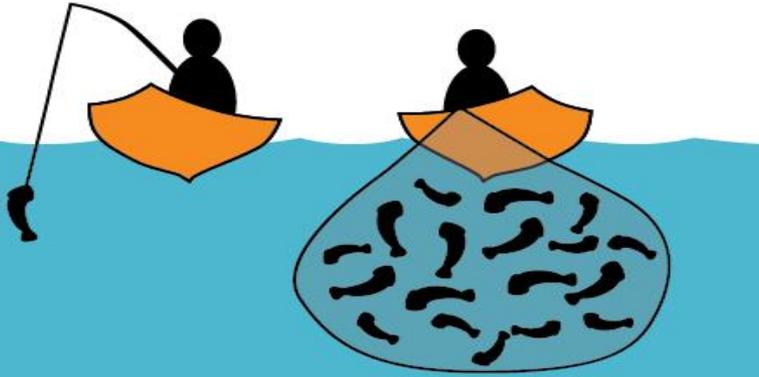
### For Library Users

- **Shorter waiting time** at circulation desks.
- **Higher availability** of books due to quick circulation.
- **Faster, easier and convenient** to use.
- **24 hours book return** facility.
- Easy **book searching**.
- Library cards can be used for **transaction in canteen and attendance purpose**.
- Better library **experience**.
- Exposure to new technology.

**BARCODE  
SCANNING**

**vs.**

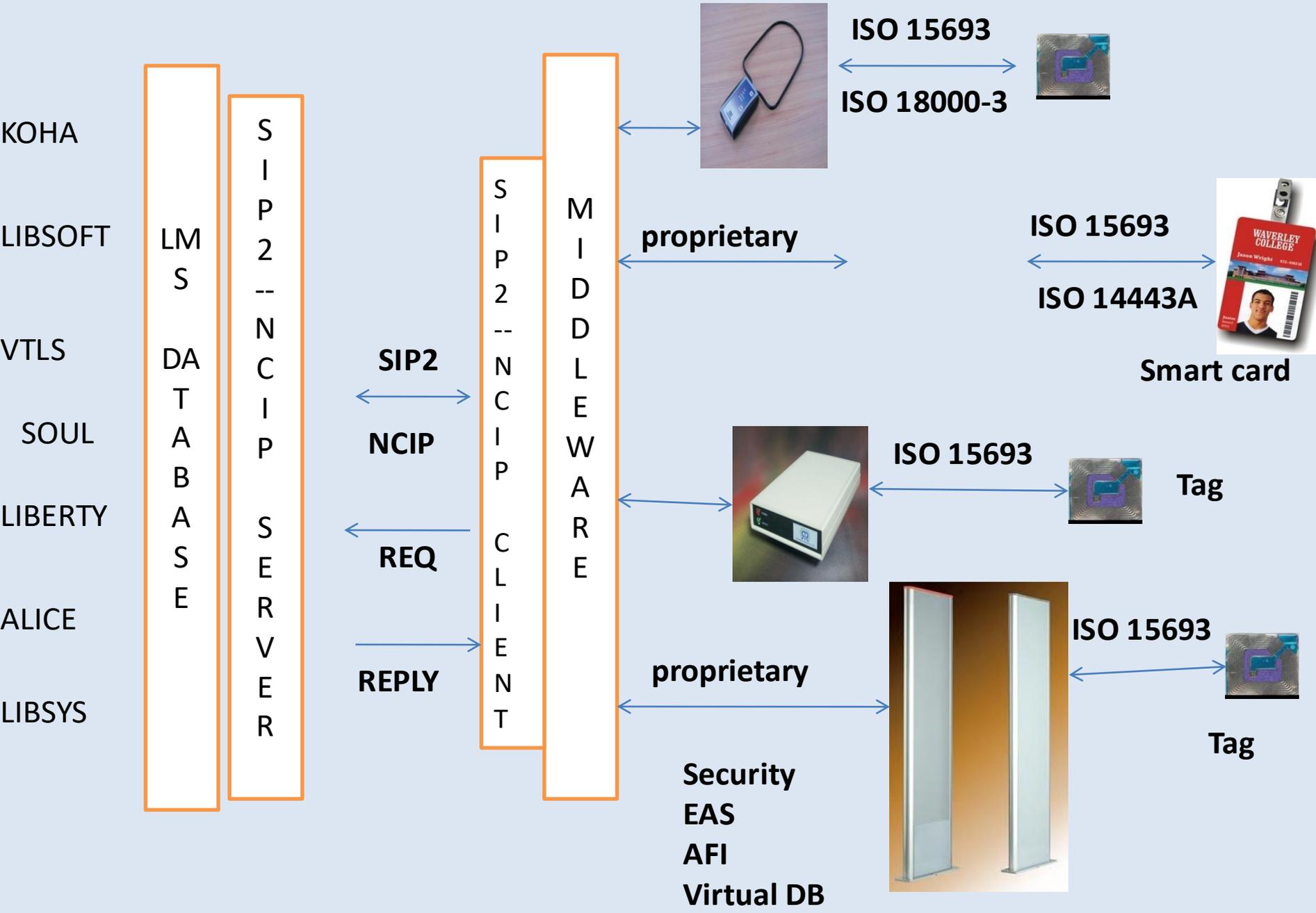
**RFID  
SCANNING**



# BARCODE vs RFID

Feature	RFID Tags	Barcodes
Read more than one item at a time	Yes	No
Read while item is moving	Yes	No
User Programmable	Yes	No
Line of site read not required	Yes	No
Lifetime guarantee	Yes	No
Sturdy in harsh environments	Yes	No
Able to resist water damage	Yes	No
Built-in security	Yes	No
Inventory without handling items	Yes	No
Able to locate specific items on shelves	Yes	No
Use with automatic returns units	Yes	No

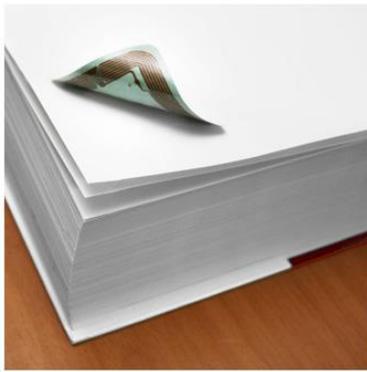
# Communication Flow, Protocols & Standards





# RFID LIBRARY COMPONENTS

- Book Tags
- Labels
- Smart Card
- Staff Station
- Handheld Reader
- Book Drop Unit
- Information Kiosk
- Software / Middleware
- Smart Card Printer
- CCTV
- Security Gate
- Automatic Issue Return Kiosk
- Automatic sensor based Sliding gates
- SMS Service pack



## RFID Tags

### Libraries identification

- **Paper thin** label.
- Provides **Identification and Security** in a single tag.
- **Pasted** on inside of back cover.
- Password protected **anti theft** security bit.
- **13.56 MHz** frequency.
- **ISO 15693, 18000-3**
- Maximum read range upto **1 meter in Gate antenna & upto 25 cm in staff station**
- Every tag has a **unique identification** number.
- Memory : up to **2048 bits**
- Dimension: Available in **various dimensions**.
- Data retention: **10 years**.





## RFID Smart card for Library Users

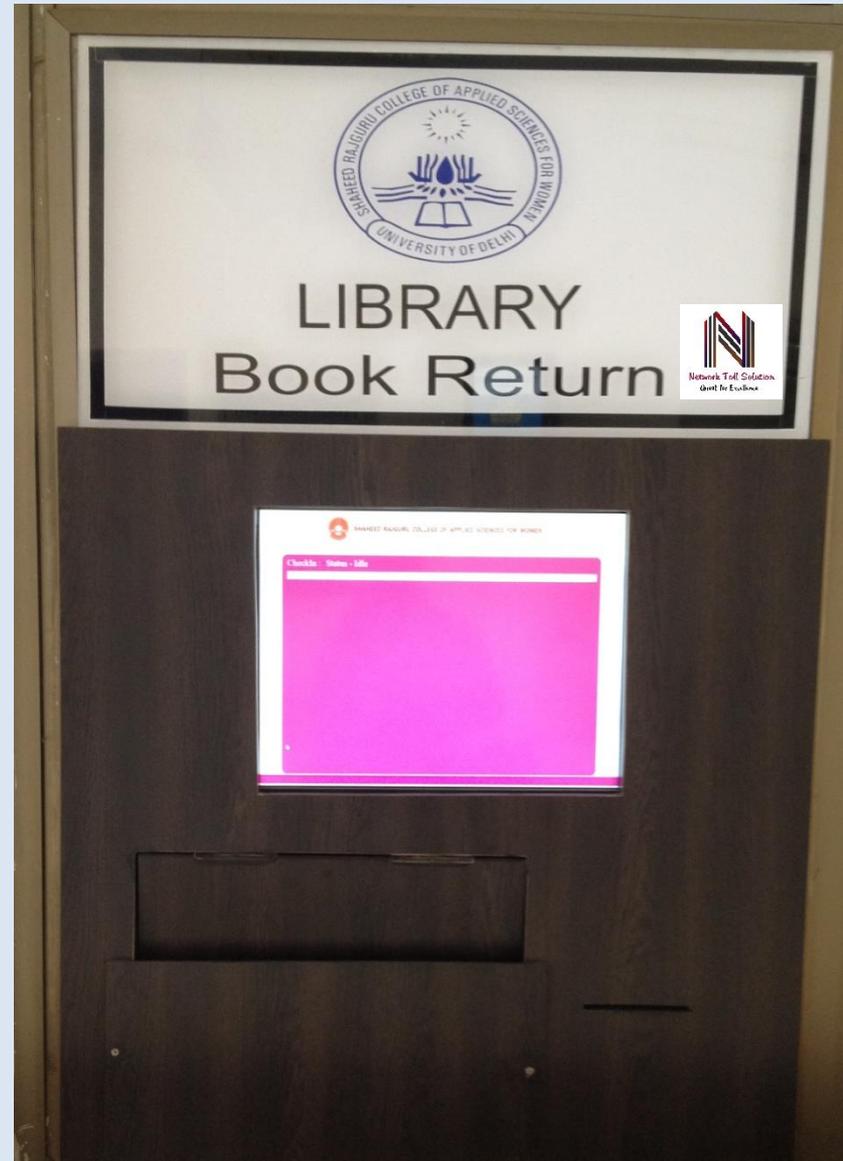
- Used for book issue and return.
- Mifare **multipurpose card**. Can be used for attendance, canteen payment, access control, hostel attendance etc
- **Frequency**: 13.56 MHz
- **Memory** : 1k.
- Unique ID **eliminates the risk of duplicate card**.
- Password protected. **Can be blocked in case of loss**.
- **Data retention**: 10 years
- Can be used for **10,00,000 transactions**.
- **Custom printing** available.
- Logo, name, address etc of institute can be printed at manufacturing time. (Pre printing)

# Automatic Book Issue and Return Kiosk



- Used for **automatic book issue and return**.
- **No manual intervention** required.
- On every issue and return, **print slip** with details is issued for future reference.
- **17 inch touch** screen kiosk.
- Read Range: Up to **25 cm**.
- Self issue and return for **3-4 books at a time**.
- **Online** firmware **upgrade**.
- **ISO 15693 and ISO 14443A** compliant.
- **NCIP/ SIP 2** Circulation protocol.
- Frequency: **13.56 MHz**.
- Antenna size: 300 x 300 mm
- Communication interface: Ethernet.
- Weight: 25 kg approx.
- **Esthetic touch**.

# RFID Book Return Unit



- Installed **outside library**.
- Wall mounted / independent unit.
- Drop box can be dragged to the shelf with **wheels**.
- **Custom** design and colour
- **24\*7** book return facility.
- **Speeds the book return** to library.
- **Print slip** facility with out of paper **notification**.
- **17 inch touch screen** with wooden esthetic touch.
- Frequency: 13.56 MHz
- **NCIP / SIP2 protocol complaint**.
- ISO 15693 and 14443A.
- Weight: Approx 20 Kg.
- Communication interface: Ethernet.
- Dimension: 60 x65 x 135 cm



# RFID Handheld Reader



- Used for inventory taking and searching a miss located book.
- **Read Range**: up to 10 cm.
- Window platform.
- **internal antenna** for stain free operation.
- In built battery.
- **Read and write** function.
- **Wide touch screen** display.
- Frequency: 13.5 MHz.
- Power Supply: 5V / 3 A DC Adapter.
- Communication interface: **USB**
- Storage : **1 GB Extendable**.
- Dimension: 19 x 9 x 4.5 cm.
- CPU: 400 MHz.
- **Light weighted**. 500 gm approx.

# RFID Security Gate



- Used for **theft prevention**.
- Reads in **all three orientation**.
- Read Range: **Up to 1 mt**.
- EAS/AFI bit programming inbuilt.
- Integrated **buzzer** alert system.
- ISO 15693 compliant.
- In built **anti collision algorithm**.
- API's for **customized application**.
- Weight : 20 kg max.
- Housing material : ABS
- Dimension: 1530 X 680 X 30 mm
- Communication Interface: RS 232
- Power consumption: 30 V Max.
- Frequency: 13.56 MHz.
- **Trans esthetic look**.





# RFID Staff Station

- Used for book circulation (check in & check out) and registration and renewals.
- Identifies the borrower using smart card.
- Can be used for programming RFID cards.
- Attached to a computer and placed under the table.
- Read Range: 25 cm.
- Multi protocol reader.
- integrated reader and antenna in single unit.
- Plug and play with USB.
- ISO 15693 and 14443A
- 13.56 MHz frequency.
- Power consumption: 500 mw max
- Dimension: 340 x 340 x 20 mm.
- Housing material: Corian Acrylic Polymer.
- Buzzer for read verification.

# RFID Information Kiosk for Library

- Used for **searching books** on entering the library.
- **19 inch touch** screen
- Wall mounted / independent unit.
- Weight: Approx 25 kg.
- **Custom design** and colour to suit the theme.
- **In built processor** and CPU.
- Space for **branding**.
- Ventilation unit.
- **ISO certified** rating.



# Smart Card Printer



**The most reliable & expandable  
card printer in its class**



# Automatic Sliding Gate



- Used at exit point of library.
- Helps in theft prevention.
- Gets activated immediately if gate sounds a buzzer.
- Alternatively can also be used for sensor based door opening and closing for library visitors.
- Weight: 150 kg approx.
- Power : 75 watts.
- Built in 8 nit mlcro computer
- Opening and closing time: 1- 9 sec adjustable.
- Opening adjustable.
- Glass finish.
- Can be integrated with CCTV and security gate.

# Thank You!



Share  
**your**  
suggestions



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