

A Short Visual Guide to

RFID TECHNOLOGY

WHAT IS RFID?

Radio-frequency identification (RFID) is an automated data capture technology that wirelessly identifies tagged objects.

Here's how it works.

POPULAR USES



Contactless Payment



Asset Tracking



Inventory Management



Access Control



Supply Chain Management



Counterfeit Prevention

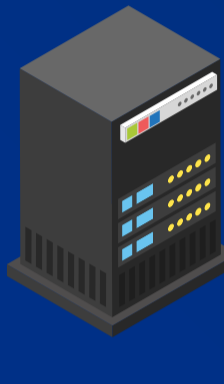
3 PARTS OF RFID TECHNOLOGY



Tag



Reader



Database



TAG

Attached to an object to carry information about it.

ACTIVE TAGS

- Are battery powered
- Broadcast on their own
- Good for real-time or sensor applications
- Longer read range but more expensive

PASSIVE TAGS

- No internal power source
- "Woken up" by the reader to transmit data
- Lower price point
- Maintenance-free for years

To select the right tag, consider ...

OPERATING FREQUENCY

- LF – 125 or 134.2 kHz
- HF – 13.56 MHz
- UHF – 860 to 960 MHz
- Active – 2.45 GHz

TAGGED ITEM MATERIAL

- Metal
- Plastic
- Mixed

ENVIRONMENTAL CONDITIONS

- Extreme cold or heat
- Direct sunlight
- High impact

MOUNTING METHOD

- Epoxy, glue or sticker
- Screw, Rivet
- Welding, Cable Tie etc.

RFID Chip Functions

Memory Capacity

Tagged Item Footprint

READER



Sends and receives radio waves to and from the tag, converts the radio waves to a usable form of data, and passes that information to the software database.

TYPES OF READERS

Handheld

- Lightweight
- On-the-go use

Fixed

- Remains in one place
- Reads tags as they pass through a portal or doorway

DATA BASE



Allows the storage and evaluation of tag data.

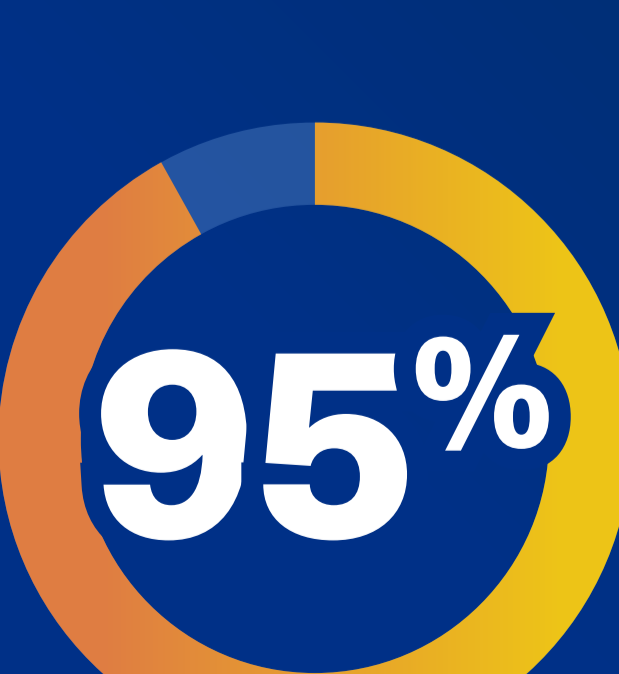
RFID technology enables automatic, nearly instantaneously updates to your software application to analyze at a later time.

- Faster inventory processes
- Prevent human error in workflows
- Improving data accuracy and availability

WHY RFID?

ADVANTAGES

- RFID readers do not need line of sight (barcodes or QR codes do)
- Many assets can instantly be identified with a single scan
- Reading can be totally automated with fixed readers
- RFID functions in dirty, oily and other difficult environments
- Data can be written back to the tag, allowing information to travel with the item
- Crypto functions support security use cases



REDUCTION IN TIME & LABOR COSTS

In one use case, RFID technology turned a 2.5 hour, two-person process to a 15-minute, one-person process.