

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



## 3 PARTS OF RFID TECHNOLOGY



## 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.

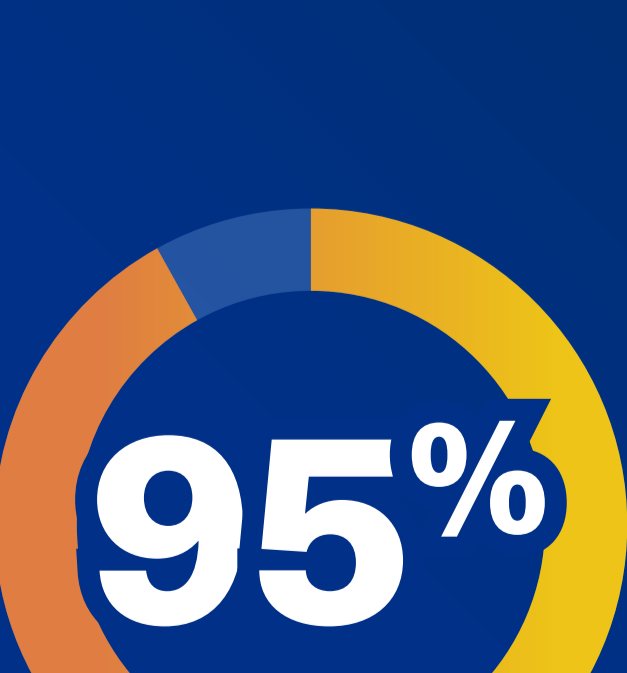
RFID technology enables automatic, nearly instantaneously updates to your software application to analyze at a later time.

- 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.