

# Guidelines:

## IT Asset Tagging Using RFID



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# IT Asset Tagging Using RFID

Today's data-dependent enterprises have more IT assets than ever to manage, maintain, and track. The modern data center can easily expand to encompass thousands of servers, storage systems, network devices, desktop PCs, laptops, tablets, and printers. As the number of deployed assets increases, so does the difficulty of keeping track of them all.

RFID technology allows users to quickly and easily locate any IT asset, reduce the time required for audits or inventories, and track the complete lifecycle history of any asset from acquisition to disposal. A variety of RFID tags designed to perform in often RF-unfriendly IT environments are available in sizes and form factors that are ideally suited to tag assets where available space can be very limited.



## The Challenge

IT assets come in many different configurations. Even models from the same manufacturer will have different physical characteristics. The location of power switches, air vents, connectors, controls and indicators is variable by manufacturer and by model. The physical construction of the IT asset is also variable; one model of server may be very RF friendly (plastic) while the model next to it may be mostly metal construction.

### For those reasons there is a need for RFID tags that can operate:

- In areas where the presence of metal is significant
- Where there are many assets in close proximity to one another
- Where available space for affixing a tag is limited
- On both plastic and metal surfaces
- Where tags may be hidden from line-of-sight
- Where placement does not interfere with the functional purpose of the asset

### Tag Types for IT Assets

- “Balanced” tags that perform well on or off metal
- Small form-factor tags
- Low profile tags
- Print-on-demand labels that can be applied directly to a metal asset

As a result, there is a wide variety of RFID tags on the market today that are well-suited for tagging IT assets. These smaller, low profile tags allow for more flexibility in placement on common IT assets.



## General Placement Considerations

### For all IT assets, some general guidelines should be followed:

1. Identify the asset with the least amount of space available to affix a tag—that will be the maximum size of the ideal tag when tagging assets of different sizes.
2. Choose a tag that performs on and off metal that reduces the number of tag types required to purchase / inventory.
3. Find a smooth flat area the size of the tag; the flatter the surface, the more area the adhesive has to stick. For assets that do not have space to apply an adhesive-backed tag, choose a tag that can be attached using alternate methods, such as a zip tie.
4. Ensure that tag placement does not interfere with the operation of or the mounting of the device in its final location.
5. Do not place the tag over ventilation holes, as this may cause the device to overheat.
6. Attach the tag to an area on a device that is fixed, i.e. a battery pack or device cover can be separated from the actual asset, so would not be a good place to attach a tag.
7. The Financial Services Technology Consortium (FSTC) recommends that RFID tags be permanently attached to the front face of rack mounted assets.
8. TEST, TEST, TEST the tag's readability when the IT asset is placed in operation.

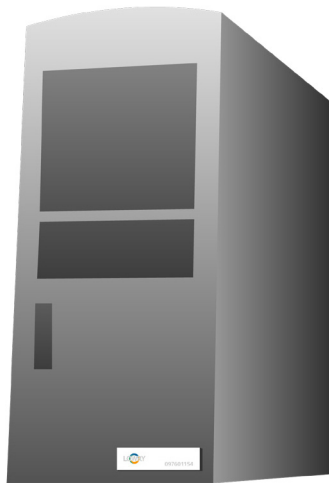
Standardizing on one tag allows users to take advantage of cost savings achieved by higher volume purchases.

# Suggested Placement by Asset Type

In addition to the general placement guidelines, certain IT assets have specific considerations for optimal placement. Examine the different types of equipment your company uses and then follow the guidelines below for some of the most common assets:

## Laptop Computers

- Place the tag in an area that is not covering any network, USB, video, memory card or other ports.
- Place the tag where it will not interfere with battery removal or operation of a DVD/CD drive.
- The bottom of the laptop is not an ideal location for an RFID tag as it may cause the laptop to sit unevenly on a desk and will be out of sight of a reader when it is in its normal operating position.

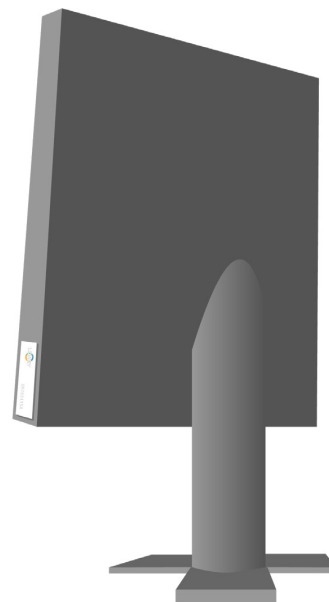


## Desktop Computers

- Place the tag in an area that is not covering any network, USB, video, memory card or other ports.
- Place the tag where it will not interfere with battery removal or operation of a DVD/CD drive.

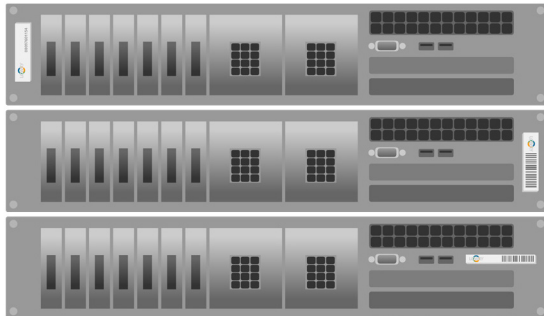
## Monitors

- Place the tag in an area that is not covering any network, USB, video, memory card or other ports.
- Place the tag where it will not interfere with any switches.



## Network Hardware (Routers/Switches/Hubs, etc.)

- Place the tag in an area that is not covering any network, USB, video, memory card or other ports.
- If the hardware is rack mounted include these rules:
  - a. Make sure the tag does not interfere with the device going in to the rack.
  - b. Make sure that the tag is still readable once the device is mounted in the rack.

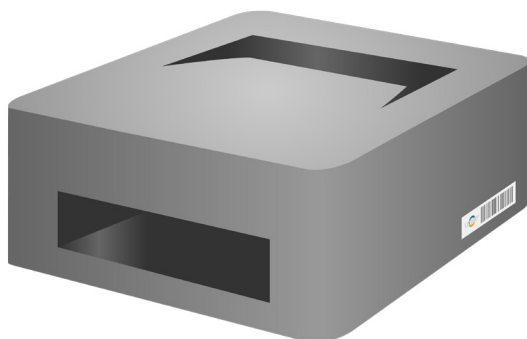


## Data Center Servers

- Place the tag in an area that is not covering any network, USB, video, memory card or other ports.
- Place the tag where it will not interfere with the operation of a DVD /CD drive.
- If the hardware is rack mounted include these rules:
  - a. Make sure the tag does not interfere with the device going in to the rack.
  - b. Make sure that the tag is still readable once the device is mounted in the rack.

## Mobile Phones

- Place the tag in an area that is not covering any network, USB, video, memory card or other ports.
- Place the tag in an area that does not cover speaker or microphone holes.
- Place the tag on a fixed piece of the asset that will not interfere with cases, covers or any other accessories that users may use. You may need to identify a specific cover or case that will work once the RFID asset tag is attached.



## Printers

- Place the tag in an area that is not covering any network, USB, video, memory card or other ports.
- Place the tag on an area that does not interfere with the operation of any access doors or paper paths.

Since all IT asset types come in different sizes and shapes, there is not a single location for tag placement that can be specified for each. Following the above rules of thumb and general guidelines will result in a higher success rate of asset location.

# IT Asset RFID Tags

There is a wide range of RFID tags designed for IT assets. The following table is a list of some tags that have been implemented successfully for IT asset tracking.

	Confidex Steelwave Micro II™	Confidex Steelwave Micro™	Omni Prox NG	Omni Prox Label	Omni IQ 400	Xerafy Titanium Metal Skin
Recommended Applications	Fixed IT assets, laboratory devices, other metal assets; IT assets with plastic cover, furniture, other indoor assets	Fixed IT Assets; other metal assets; data servers	IT data center, servers, routers, switches	IT data center, servers, routers, switches	IT Assets, metal - Print/encode on-demand	Smartphones; disk storage; tablets; metal/non-metal
Tag type	ISO 18000-6C	ISO 18000-6C	ISO 18000-6C	ISO 18000-6C	ISO 18000-6C	ISO 18000-6C
Size	1.5 x 0.5 x 0.17 in	1.5 x 0.5 x 0.12 in	1.48 x 0.49 x 0.177 in.	1.30 x 0.39 x 0.19 in.	4.1 x 1.1 x 0.03 in.	1.77 x 0.22 x 0.03 in
Read range	Up to 5 m/ 16 ft. (on metal) Up to 1.5 m / 5 ft. (non-metal)	Up to 3.5 m/ 11 ft. (on metal) Up to 1 m / 3 ft. (non-metal)	(Fixed reader)1 1.8m +/- 25% (Handheld reader)1 0.9m +/- 25% Material Compatibility Metal and non-metallic substrates	(Fixed reader)1 Up to 3.0 (US), Up to 2.0 (EU) Up to 2.5 (GS) (Handheld reader)1 Up to 1.5 (US), Up to 1.2 (EU) Up to 1.3 (GS) Material Compatibility Metal and non-metallic substrates	(Fixed reader)1 Up to 4.0m (13.1ft) (Handheld reader) 1 Up to 2.0m (6.5 ft.) Material Compatibility Optimized for metal and liquid	Up to 4 ft. (1.2 m) (On or Off Metal)
Tag Attachment	Adhesive, tethering, cable-tie	Adhesive	Adhesive, tethering, cable-tie	Adhesive	Adhesive	High performance adhesive
Frequency	865 – 928 MHz	902 – 928 MHz (US) 865 – 928 MHz (Global)	860-930MHz (Dual Band)	902–928 (US), 866–868 (EU) 860–960 (global)	866-868 (EU) 902-928 (US)	902-928 MHz (US); 866-868 MHz (EU)
Features	FSTC-compliant Versatile attachment option Quality finishing	FSTC-compliant	Low profile, small footprint and consistent RF performance	With its on and off metal read performance and small form factor, Omni-ID Prox label is ideally suited to IT Asset management applications	With innovative construction and thermal barcode printer compatibility, the Omni-ID IQ 400 label is ideal for hassle-free deployment of RFID applications involving metals and liquids	Lightweight and flexible with a paper-thin profile

# Summary

The benefits of RFID in IT asset tagging will easily be recognized when done properly. With properly tagged IT assets, a labor savings will be recognized in the form of reduced time to audit your IT asset inventory. Some of the benefits that will be achieved as a result of the RFID tagged assets:

- An entire rack of IT assets can be read in seconds with using a hand held RFID reader.
- Audits are 10 times faster than traditional barcode inventory methods.
- The shorter time to audits will help to ensure they are done on a regular basis, resulting in more accurate asset inventories.
- The accurate inventories will help your company to meet compliance requirements such as Sarbanes-Oxley or other accounting practices.

## About Lowry Solutions

Since 1974, Lowry Solutions has been implementing technology innovations nationwide, and with over 10,000 customers, it has established itself as a premier Enterprise Mobility and Auto-ID system integrator focused on barcode, RFID, biometrics, enterprise mobility, and asset management solutions. Lowry understands that each enterprise has its own specific issues and requirements, and that in order to provide best-in-class solutions to address these issues, a deep understanding of our clients' unique business processes is a necessity. To us, success is rooted in our ability to enhance and grow our customer's business.

“In the past we might shut down for a week to inventory 1,000 items. Now I can collect what I need in a half hour.”

- Lowry Customer

### Our Approach

We don't push technology or brand — we encourage partnerships. Our success depends on how we enhance and improve our customers' business.

### Our Employees

Our employees are highly experienced, certified, and accredited individuals with vertical and application specificity that are continually trained on relevant technologies, solutions, and standards.

### Our Relationships

We have long-standing relationships with leading Enterprise Mobility and Auto-ID hardware manufacturers, providing us access to the best equipment for the application — at a more affordable price.

### Our Solutions

The solutions we provide are customized for each client to ensure the greatest impact and most aggressive ROI — and we support these solutions with world-class, 24/7 service.

### Our Experience

We are one of the most venerable Enterprise Mobility systems integrators, with a track record of nearly 40 years of success delivering solutions to our valued customers.



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