

RFID Scan Troubleshooting Guide

Before following these troubleshooting steps, make sure you have the latest version of the app installed; search the App Store or Play Store for an update.

Additionally, if using a TSL reader, please follow [these troubleshooting steps](#) (including updating the firmware) to eliminate potential hardware issues.

If your RFID tags are appearing as **Unknown Items**, failing to scan, or scanning inconsistently with reduced read range, follow the troubleshooting steps below to identify and resolve the issue.

When troubleshooting RFID performance, test **one variable at a time**. Isolating each potential cause makes it easier to identify the root of the problem and prevents multiple changes from masking the actual issue. This systematic approach leads to faster, more accurate troubleshooting.

Issue: Tag is scanning as "Unknown"

This issue relates to scans displaying an SGTIN string (for example: sgtin-96:511099.0001804.1) instead of product names

Possible Causes:

- Product does not exist in Simple RFID
- Mobile app product database is out of date

Troubleshooting Steps:

1. Confirm that the product appears in the **Products** page of the web portal.
2. If the product doesn't appear, try reimporting from the partner system.
3. If using Shopify:
 - [Reimport products from Shopify](#)
4. From the mobile app: [Force Reload Products](#)

Issue: Tags Are Not Scanning at All

This issue occurs when tags do not appear in scan results.

Possible Causes:

- [Tag persistence](#) is in effect
- The tag is damaged
- The tag was not encoded properly
- The tag is applied to or placed on signal-disruptive materials
- Tags are tightly packed or touching one another (shielding)
- Duplicate serial numbers exist

Troubleshooting Steps:

1. Test for Tag Persistence

- Wait approximately 1 minute (sometimes may take up to 5 minutes) and attempt to scan the tag again.
 - If the tag scans successfully after waiting, the issue is likely related to tag persistence.

Use scanning mode "Speed" to avoid tag persistence

2. Test on a Neutral Surface

- Move the tag to a neutral surface and attempt another scan.
- If the tag scans successfully, the original surface or environment is likely causing interference.

A neutral surface is any surface confirmed not to interfere with RFID signals. To verify a neutral surface, test it using a known working RFID tag first.

3. Use the EPC Read Feature

- Use the **EPC Read** feature in the mobile app to directly read the tag's EPC value.
 - If an EPC value appears:
 - Check if the tag is encoded. If it begins with "E2" then it has not been encoded as a product.
 - If no EPC value appears:
 - The tag may be damaged.

4. Check for Dense Tag Environments

- If tags fail to scan when packed closely together:
 - Enable **Density** scan mode in the mobile app.
 - Separate tags so they are no longer touching or stacked tightly together.
 - Retry scanning after separating the tags.

Issue: Tag Performance Is Reduced or Inconsistent

This issue includes:

- Reduced read distance
- Inconsistent scans
- Tags only scanning from certain angles
- Tags requiring close-range scans when they normally scan from farther away.
 - For example, tags that normally scan from 10 feet away may only scan from less than 1 foot away.

Possible Causes:

- Tags are placed in poor locations on the product (such as the bottom)
- Tags are shielded by metal or reflective materials
- RFID tags are stacked on top of one another, causing interference
- Product packaging or materials are disrupting the RFID signal
- The RFID reader power is set too low

Troubleshooting Steps:

1. Identify Environmental Interference

- Determine whether performance issues occur only with specific products or materials.
- Questions to consider:
 - Do tags scan properly on some items but not others?
 - Does read range decrease on certain materials?
 - Are scans inconsistent only in specific environments?

2. Test on a Neutral Surface

- Move the tag to a neutral surface and scan again.
- If performance improves, environmental interference is likely the cause.

A neutral surface is any surface confirmed not to interfere with RFID signals. Verify the surface using a known working RFID tag before testing.

3. Inspect Tag Placement

- Check the physical placement of the RFID tag.
- Avoid:
 - Mounting tags directly on metal surfaces
 - Placing tags underneath products
 - Stacking RFID tags on top of each other
 - Applying tags behind reflective packaging materials
- Reposition the tag and retest scan performance.

4. Confirm Reader Power

- [Open the reader scan settings and set the reader power to max output, and set the reader sensitivity to Far](#)

5. Perform an Audit

- [Perform an audit to confirm accuracy](#) (using an Integration)
 - [Perform an audit against Custom Source](#) (such as a spreadsheet)
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Additional Best Practices

- Test one tag at a time whenever possible.
 - Compare against a known working tag to isolate environmental issues.
 - Avoid folding, creasing, or damaging RFID tags during application.
 - Keep tags separated when testing read performance.
 - Use the same scanner and scan settings during troubleshooting for consistent results.
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