

RFID Singulation: S0, S1, S2 & S3

Why some tags are easy to scan
and why others seem to disappear



ASSETS
PEOPLE
OPERATIONS

Zebra RFD40

UHF RFID sled

Powering asset
visibility in Ledger

Think of it like a room full of people

If everyone keeps answering, the loudest voices are heard over and over. When people who have already answered stay quiet for a moment, it becomes easier to hear the rest.



The four RFID inventory sessions

S0 Immediate return



Tags become available again very quickly.

Useful for:

- Repeated reads
- Finding a specific item (e.g. by pulsing/flashing)

S1 Short quiet period



Previously read tags stay quiet briefly.

Useful for:

- General inventory
- Good default for most Ledger handheld workflows

S2 Longer persistence



Already-read tags stay quiet for longer.

Useful for:

- Larger bulk scans
- Higher tag populations

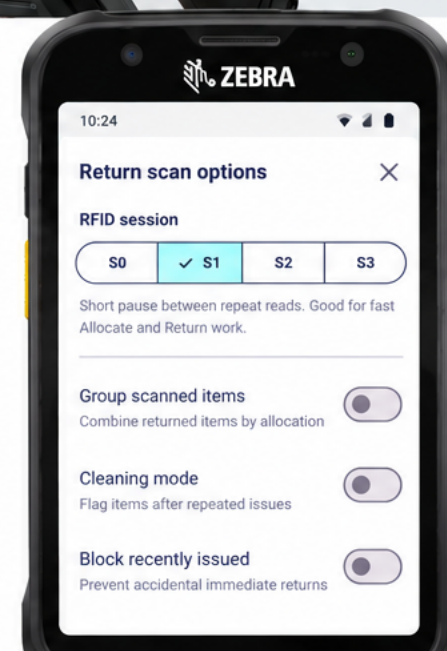
S3 Longer persistence



A separate long-persistence session, similar to S2.

Useful for:

- Specialised workflows
- Challenging environments



A real-world example

We first noticed this while scanning around 100 RFID-tagged garments on a tightly packed clothing rack. Most tags were found quickly, but a few could remain invisible. The tags are sewn in, positioned similarly, and often sit perpendicular to the reader, which makes them harder to read. Switching from S0 to S1 made it much easier to find the full rack.



Troubleshooting tip

If your reader finds most tags but struggles with the last few, check which inventory session you're using. If you're on S0, try S1 before assuming the tag is faulty.



Need to find a specific item?

Ledger also supports Locate mode on compatible Zebra readers. This targets a single known tag and shows a relative distance bar to help you find the item.

[Learn more about Locate mode](#)