

UPS Zebra Rugged Handheld Usability Test Plan

Evaluation of the Zebra industrial handheld as a UPS delivery and logistics support device

STUDY	UPS Zebra Handheld Usability Evaluation	METHOD	Moderated, task-based usability testing
PARTICIPANTS	6-8 UPS drivers and warehouse staff	SESSION	60-75 minutes per participant
LOCATION	Warehouse environment or delivery simulation	DEVICE	Zebra rugged Android handheld

1. Study Purpose

This study evaluates the usability of the Zebra rugged Android handheld in the context of UPS delivery and warehouse operations. The Zebra offers a larger screen, physical keyboard, and enterprise-grade durability compared to the DIAD, but its industrial design origins raise questions about whether the interface is optimized for the fast-paced, physical demands of UPS delivery workflows.

The study will assess task completion across core delivery and logistics workflows, evaluate how well the touch interface performs with gloves, and identify where the device's industrial design creates friction for drivers accustomed to the DIAD.

2. Research Objectives

1. Can drivers complete standard delivery workflows on the Zebra as efficiently as on the DIAD?
2. How well does the touch interface perform when drivers are wearing gloves?
3. Is the physical keyboard used, and does it help or create additional complexity?
4. How readable is the screen in outdoor sunlight and low-light warehouse conditions?
5. How does the device weight and form factor affect physical comfort over a shift?
6. Can drivers navigate the interface without significant relearning from their DIAD experience?
7. How does scan performance compare to other UPS handheld devices?
8. Are error states and recovery paths clear and accessible?
9. How does battery life and charge management affect driver behavior?
10. Which workflows benefit from the larger screen, and which are made more complex by it?

3. Key Workflows to Evaluate

- Device startup and login
- Reviewing stop and package list
- Scanning a package barcode
- Processing a standard delivery
- Capturing a signature
- Entering a delivery exception
- Using the physical keyboard for text entry
- Touch interaction with gloves on
- Viewing the screen in direct sunlight
- Finding a specific function in the menu structure
- Recovering from an incorrect entry
- Completing end-of-shift activities

4. Participants

Recruit 6-8 participants who are current UPS delivery drivers or warehouse staff with experience using the Zebra device on their routes or in their facility. Include participants who regularly use both the DIAD and the Zebra, as the comparison between devices is central to the evaluation.

Participant Type	Target Count
Delivery driver, primary Zebra user	2-3
Delivery driver, primary DIAD user (Zebra secondary)	2-3
Warehouse or logistics staff	1-2

5. Test Environment

Testing should occur in an environment that reflects both warehouse and delivery conditions. Bring sample packages with barcodes, and test the screen readability in both indoor and outdoor light. Have gloves available to test touch performance.

- Zebra device, fully charged
- Sample packages with scannable barcodes
- Delivery gloves (for touch interface testing)
- Bright outdoor light or equivalent lamp for glare testing
- Low-light area for indoor/warehouse simulation
- DIAD device for comparison tasks (optional)

6. Session Structure

1	Introduction Explain the study and establish rapport with the participant.	5 min
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2	Background Interview Understand how the participant uses the Zebra, how often, and in what context relative to other devices.	5-10 min
3	Task Testing Participants complete realistic delivery and logistics scenarios. Observe without intervening.	40-50 min
4	Debrief Discuss preferences between devices, frustrations, and which workflows work better on Zebra vs. DIAD.	10 min

7. Measurement Framework

Quantitative Measures

- Task completion: Success / Partial / Failure
- Time on task
- Number of touch errors or missed taps
- Number of keyboard vs. touchscreen input switches
- Gloved vs. ungloved touch success rate
- Number of screen readability failures (participant cannot read content)
- Confidence rating per task (self-reported)

Qualitative Measures

- Confusion or hesitation at menu or navigation points
- Frustration with touch responsiveness while gloved
- Screen readability comments in outdoor or low-light conditions
- Comparisons to DIAD (spontaneous or prompted)
- Physical discomfort or weight-related comments
- Unexpected uses of the physical keyboard
- Mental-model mismatches with DIAD interaction patterns

8. Success Criteria

A task is considered successful when the participant completes the intended outcome without moderator assistance.

Rating	Label	Description
0	No issue	Participant completes the task easily.
1	Minor	Small hesitation or inefficiency with no meaningful impact.
2	Moderate	Participant struggles but eventually succeeds.
3	Major	Requires substantial effort, repeated errors, or moderator assistance.
4	Critical	Cannot complete the task or the error could cause a significant operational problem.

9. Observation Guidelines

The moderator should observe:

- Whether the participant uses the touchscreen or physical keyboard for text input
- How often and how successfully the participant taps small targets while gloved
- Whether the participant squints, tilts, or shields the screen to improve readability
- How the participant navigates menu structures relative to DIAD patterns
- Physical handling of the device (grip, weight shifts, setting it down)
- Whether the participant makes spontaneous comparisons to the DIAD
- How the participant recovers from errors or incorrect menu selections

Do not correct participants after an error. Allow independent recovery.

10. Analysis Themes

- Touch interface performance
 - Screen readability
 - Gloved interaction
 - Scan accuracy
 - DIAD comparison points
- Physical keyboard use
 - Navigation and menus
 - Device weight and ergonomics
 - Error recovery
 - Workflow fit

Finding	What happened
Evidence	What participants did or said
Impact	Why it matters to the delivery workflow
Severity	0-4

Recommendation	Potential improvement
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11. Deliverables

- Usability test plan and moderator script
- Participant profile summary
- Task-level success metrics
- Usability findings with severity ratings
- DIAD vs. Zebra comparison summary
- Key participant quotes
- UX recommendations
- Prioritized improvement opportunities
- Executive summary