



simpler, smarter, and more efficient

Make enterprise material management



specification

KEY CABINET PRODUCT SPECIFICATION

Intelligent handheld terminal: ZSW-D02

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1. Product Image



II. Product Overview

The ZSW-D02 intelligent handheld terminal is a portable mobile management device developed by Zebra Intelligence specifically for modern warehouse management scenarios. It integrates core technologies such as the Internet of Things, mobile communications, and intelligent recognition, offering lightweight design and comprehensive functionality as its key advantages to enable end-to-end mobile management of all warehouse materials—including consumables, assets, and reagents—for inventory receipt, dispatch, relocation, and stocktaking.

This terminal addresses the limitations of traditional warehouse management, which relies on fixed equipment and has restricted operational flexibility. Equipped with core features such as ultra-high-frequency RFID identification, QR code scanning, and multi-network communication, coupled with a stable Android operating system, it enables warehouse managers to perform tasks like material data collection, process approval, and information queries anytime, anywhere. The device supports control of material flow across warehouses and regions, with data synchronized in real time to the cloud-based management platform, significantly enhancing operational efficiency and reducing human errors. It provides crucial support for establishing a

"mobile, intelligent, and precise" warehouse management system for

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enterprises, and is suitable for mobile operation needs across various sectors including manufacturing, logistics warehousing, pharmaceutical reagents, and office consumables management.

III. Application Scenarios

(1) Large-scale logistics and warehousing centers: Given the characteristics of these centers — large volume of materials, frequent material flow, and extensive operational scope—management personnel can use handheld terminals to move between shelves for tasks such as rapid barcode scanning for inventory registration, outbound verification, and cross-regional transfer confirmation, eliminating the need to visit fixed workstations and significantly reducing operational time, making them ideal for high-volume material handling scenarios.

(2) Production Enterprise Workshop Warehouses: Designed to meet the close integration requirements between workshop warehouses and production lines, employees can quickly retrieve production consumables and tool assets via terminals and complete outbound registration; surplus materials can be returned instantly, either to the original warehouse or designated areas, enabling dynamic management of production supplies and ensuring timely material supply without waste.

(3) Pharmaceutical and Reagent Warehouse: To meet the management requirements for specialized materials such as reagents and

pharmaceuticals, this system enables precise identification of material labels at the terminal level, facilitates rapid inventory entry/exit and stocktaking operations, and records material flow trajectories in real time, thereby fulfilling the stringent demands of the pharmaceutical industry for material traceability and expiration date management. Additionally, its mobile-oriented functionality is compatible with warehouse environments featuring multiple areas and shelves.

(4) Enterprise Multi-Filial Warehouses: Suitable for group enterprises and multi-store cross-regional warehouse management, this solution enables cross-warehouse transfer operations (e.g., from Warehouse A's Area A to Warehouse B's Area B). Data is synchronized in real time to the headquarters management platform via 4G or WiFi, allowing managers to remotely monitor inventory levels across all branches and achieve coordinated material allocation across regions.

(5) Regular Warehouse Inventory Counting and Emergency Verification: This solution addresses the time-consuming, labor-intensive nature of traditional inventory counting and data lag issues. Managers can follow predefined tasks, using terminals to conduct item counts area-by-area and shelf-by-shelf, while rapidly collecting data through RFID batch scanning or QR code scanning. The system automatically compares this data with records and generates an inventory discrepancy

report, enabling instant data retrieval and verification during emergency inspections.

(6) Office Consumables and Fixed Asset Management: Designed for corporate administrative environments, this system facilitates the issuance, return, and inventory management of fixed assets such as office supplies, printer consumables, and computer equipment. Employees can complete issuance registrations on-site via terminals, while administrators can monitor asset distribution at any time to prevent waste of consumables and loss of fixed assets.

IV. Product Features

(1) Inventory Management: Supports individual or batch inbound/outbound operations for various materials such as consumables, assets, and reagents. Material information can be rapidly collected via QR code scanning or ultra-high-frequency RFID identification without manual entry, ensuring convenient and efficient operation. Existing labels can be directly recognized for inventory recording without replacement, thereby reducing management costs.

(2) Return and Transfer Management: Supports batch returns of multiple items, allowing flexible selection between the original warehouse area or designated alternative areas; enables cross-warehouse and cross-region transfers (e.g., from Warehouse A Area A to Warehouse B

Area B), with real-time synchronization of transfer records ensuring traceability of item locations and statuses.

(3) Intelligent Inventory Counting Function: Supports targeted inventory counts based on predefined tasks, enabling collection of warehouse material information through RFID batch recognition (with a maximum detection range of 20 meters) or QR code scanning, followed by automatic comparison of inventory data with management backend records.

(4) Multi-mode recognition: Integrates UHF RFID identification with a two-dimensional scanning engine.

(5) Authority Security Verification: A user account-based authentication login system is employed, with distinct operational permissions assigned to personnel based on their roles. This ensures the security and compliance of critical operations such as inventory management and data modification, preventing unauthorized actions.

(6) Real-time data synchronization: Supports multiple communication methods including 4G, WiFi, and Bluetooth, enabling real-time upload of operational data to the management platform while receiving task instructions and updates from the platform, ensuring consistency between terminal and platform data for global data sharing.

2、Specification Parameters

1. Basic Parameters

performance parameter	model	DS07
	operating system	Android 11.0 Android 13.0 (Optional)
	processor	Eight-core 64-bit, 2.45 GHz
	internal storage	RAM+ROM: 4GB+64GB
	extended memory	Micro SD card, supporting up to 256 GB
Basic Specifications	outline dimension	143.3mmx169mm ×90.5mm
	Total weight of the device	678g
	display screen	5.7-inch color full-screen display (720 × 1440)
	touch screen	Supports multi-touch, glove touch, water-resistant operation, and passive pen signature; equipped with Corning glass cover.
	main battery	3.85 V, 9000 mAh rechargeable lithium battery
	charging interval	No more than 7 hours
	audio frequency	1.5W speaker, microphone (with noise cancellation support), handset
	key	Physical buttons: Volume up/down keys, Power button, Custom key 1, Scan buttons 2
	camera	Front-facing camera: 500W pixels Top-mounted 1300W camera with flash support
	sensor	Distance, Light Sensitivity, Acceleration, Geomagnetism, Gyroscope
	scan	Professional scanning head supports scanning mainstream 1D and QR codes, as well as screen scanning
Slot Type	2 Nano-SIM cards and 1 Micro SD card, supporting up to 256 GB of expansion	
data		Dual SIM, Dual Standby

communications	network	Supports 4G,3G, and 2G networks
	PDA	BT5.0 + BR/EDR + BLE
	WIFI	2. Dual-band support for 4G/5G, compliant with IEEE standards 802.11a/b/g/n/ac/d/e/h/i/k/r/v/w Standards – Fast roaming: 802.11r, OKC, PMKID caching; 802.11ax-ready
	fixed position	Supports GPS, A-GPS, Beidou, GLONASS, and Galileo
service environment	working temperature	-20 ~ +60°C
	storage temperature	-40 ~ +70°C
	humidity	5% RH to 95% RH (no condensation)
	Seismic resistance height upon impact with ground	Capable of withstanding repeated impacts from falls from a height of 1.2 meters onto a smooth concrete surface.
	levels of protection	IP67
	electrostatic protection	Air discharge: ±15 kV; Contact discharge: ±8 kV

2. Data Collection Function Details

1) Camera

camera	Previous
Photo Features	Prime lens, 1080p video recording
pixel	500W
camera	Top Placement
Function Type	Supports flash (700 mA, flashlight mode), autofocus, and 1080p video recording
pixel	1300W Camera

2) Scan Head

	two dimension
Rotation Angle	360°

Up and Down Perspective Angle	$\pm 60^\circ$
Left-right perspective offset	$\pm 60^\circ$
Support Code Types	<p>Linear: Codabar, Code 11, Code 128, Code 2 of 5, Code 39, Code 93 and 93i, EAN/JAN-13, EAN/JAN 8, IATA Code 2 of 5, Interleaved 2 of 5, Matrix 2 of 5, MSI, GS1 Databar, UPC-A, UPC E, UPC-A/EAN-13</p> <p>with Extended Coupon Code, Coupon GS1 Code 32(PARAF), EAN-UCC Emulation, GS1 Data Bar</p> <p>2D Stacked: Codablock A, Codablock F, PDF417, MicroPDF417</p> <p>2D Matrix: Aztec Code, Data Matrix, MaxiCode, QR Code, Chinese Sensible (Han Xin), Grid Matrix, Dot Code</p> <p>Postal: Australian Post, British Post, Canadian Post, China Post, Japanese Post, Korea Post, Netherlands Post, Planet Code, Postnet</p>

3) RFID (UHF)

RFID	Read/Write (UHF)
RFID Chip	Impinj E710
Working Frequency Band	902 – 928 MHz or 865 – 868 MHz (can be adjusted according to country or region requirements)
protocol standard	ISO 18000-6C (Standard EPC C1G2)
operating distance	Reading distance: 20 m; depends on the tag
antenna gain	Increase by 5 dBi

3. Data Communication Volume

1) GPS Location

fixed position	location parameter
Support Mode	Supports GPS, A-GPS, Beidou, GLONASS, and Galileo
frequency	GPS (L1: 1.575 GHz, C/A code), BeiDou (B1: 1.561 GHz), GLONASS (L1: 1.602 GHz), Galileo (E1: 1.589 GHz; E2: 1.561 GHz)
Cold startup time	Less than 40 seconds
Maximum Number of Channels	31channel

sensitivity	-130 dB (SNR value: 40 dB Hz)
accuracy	5–10 meters (open space)

2) Wireless Communication Function

Wifi	WLAN Wireless Local Area Networks
protocol	IEEE 802.11a/b/g/n/ac/d/e/h/i/k/r/v/w standard (2.4 GHz/5 GHz dual-band Wi-Fi); compatible with IEEE 802.11ax
frequency range	2.4G、 5G
Work Channel	CH1–CH13, CH34–CH140, CH149–CH165 (depending on country/region)
safety	WEP (40 or 104 bit); WPA/WPA2 Personal (TKIP, and AES); WPA3 Personal (SAE); WPA/WPA2 Enterprise (TKIP and AES); WPA3 Enterprise 192-bit mode (GCMP-256) - EAP-TLS; Enhanced Open (OWE)
go on a pleasure trip	PMKID caching; Cisco CCKM; 802.11r (Over-the-Air); OKC – allows setting of WIFI roaming thresholds

3) Wireless Wide Area Network

wireless wide area network	Wide Area Network Communication Parameters	
Communication Mode	Dual SIM, Dual Standby	
Global Frequency Bands	4G(TD-LTE) 4G(FDD-LTE)	TD-LTE(B34/B38/B39/B40/B41) FDD-LTE(B1/B2/B3/B4/B5/ B7/B8/B12/B13/B17/B20/B28A/B28B)
	3G(WCDMA) 3G(CDMA2000)	WCDMA(B1/B2/B4/B5/B8) TD-SCDMA(B34/B39) CDMA2000 1x EV-DO Rev.A BC0 (800MHz)
	3G(TD-SCDMA)	
	2G(GSM) 2G(GSM) 2G(CDMA)	CDMA1x GSM/EDGE/GPRS(850/900/1800/1900)

4) Bluetooth

standard	Bluetooth Parameters
Support Mode	BT5.0 + BR/EDR + BLE
Connection Distance	Greater than 10 meters

4. Accessories

fittings of a machine	Accessory Type
standard fitting	Battery *1, Data cable *1, Power adapter *1