



specification

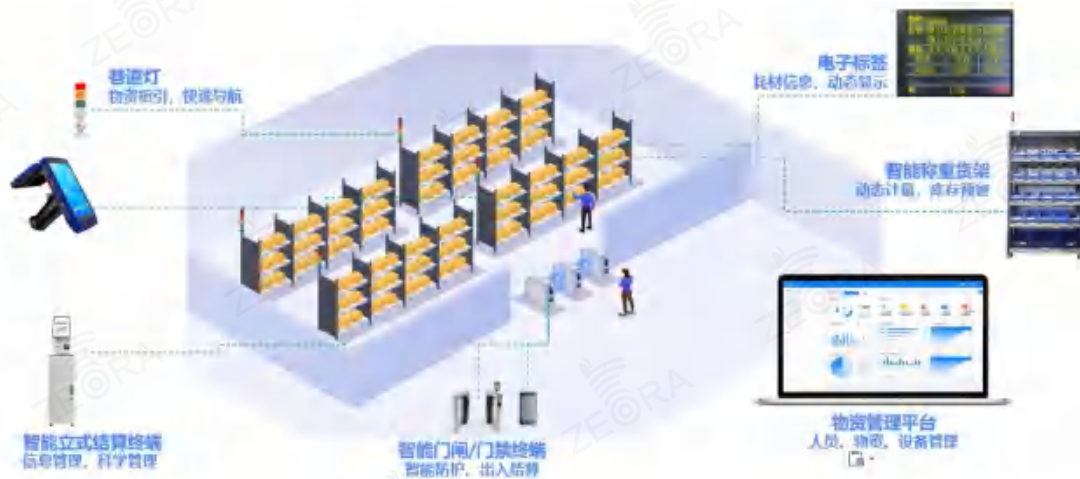
KEY CABINET PRODUCT SPECIFICATION

Intelligent Smart Warehouse (Consumables)

1、 summary

The Zebra Smart Unmanned Warehouse addresses challenges in traditional material management—such as low efficiency, high error rates, and difficult traceability—through a combination of "smart devices + intelligent systems + scenario-specific adaptations." It delivers significant value to warehouse material management across three dimensions: cost, efficiency, and accuracy.

2、 Flowchart of the components of a unmanned warehouse system



3、 system composition

order number	device name	model	remarks
1	Vertical Settlement Terminal	ZSW-D05	●
2	Intelligent weighing shelf with smart functionality	ZSW-W01	○
3	Hall Light	ZSW-D09	○

management simpler, smarter, and more efficient

Make enterprise material

4	Smart Access Control All-in-One Device	ZSW-D01	•
5	Smart Passage Gate	ZSW-D04	□
6	Intelligent Smart Terminal	ZSW-D08	□
7	Material Management Platform	-	•

Note: • Required ○ Configurable as needed □ Optional

4、ZSW-D05 Vertical Settlement Terminal

The ZSW-D05 is Zebra Intelligence's latest intelligent vertical desktop terminal, designed specifically for managing materials, consumables, assets, and other items in warehouses. Serving as a core management device for automated warehouse systems, it integrates seamlessly with smart shelves, handheld terminals, access control systems, RFID-enabled corridors, and other intelligent devices to enable efficient, intelligent management of both storage facilities and office environments.



(1) Product Features

- **Inventory Location Tracking:** Supports integration with smart shelves, lighting systems, and automated access gates to automatically locate goods based on orders or items, enhancing outbound efficiency.
- **Real-time inventory management:** Supports real-time recording and dynamic updates for goods inbound and outbound.
- **Automated inventory management:** Integrates RFID, barcode scanning and other technologies to automatically identify product information, reducing manual entry errors.
- **Local Upgrade:** Supports updating applications by connecting the upgrade package via a USB external interface.

- Remote Upgrade: Supports deploying upgrade packages remotely, with the system automatically completing installation.

(2) Specification Parameters

Main Specification Parameters	
product model	ZSW-D05
performance parameter	
operating system	Android 11
Industrial Control Configuration	RK3568:4 cores, 2 GB RAM, 16 GB storage
RFID Identification (Optional)	High frequency; Recognition frequency: 13.56 MHz; Reading time \leq 3 seconds
Weighing Module (Optional)	Precision: 1 g; Range: 0–40 kg
Card Recognition (Optional)	Operating frequency: 13.56 MHz; Card reading range: 0–30 mm
UPS Power Supply (Optional)	Provide a UPS power supply
Specification Parameters	
Overall dimensions	330 × 420 × 1460 mm (width × depth × height)
screen	15.6-inch 1080p high-definition touchscreen
face recognition	Dual cameras with 2 million pixels each
QR Code Recognition	Reading accuracy \geq 7 mil
	Effectively identifies codes from various media including mobile phone screens, paper codes, and plastic codes.
Internal speaker	3W×2
Work Environment Requirements	Operating temperature: -10°C to 50°C; Operating humidity: 10% to 90% RH
power requirement	Single-phase AC 220 V, 50–60 Hz

Secondary Development Interface (Optional)	support
network interface	WIFI, RJ-45,4G (optional)

5、ZSW-W01 Intelligent Weighing Shelf

The Intelligent Weighing Shelf (ZSW-W01) employs advanced weighing technology to enable real-time weight measurement and inventory management of products. Designed for indoor warehouse environments, it operates without supervision using automated weighing systems and runs continuously 24/7. It can be integrated with smart access control systems and vertical payment terminals to facilitate inventory counting and management of goods in the storage area.



(1) Product Features

- Fully automated management: Automatic identification of

material quantities eliminates the hassle and potential errors associated with manual scanning and data entry;

- One-click inventory check: Complete daily and monthly inspections within 10 seconds;
- Data collection and scientific analysis: Each shelf is equipped with 23 standard weighing points, enabling efficient management of various items.
- Storage Location Binding: Items can be linked to specific storage locations, enabling real-time updates for product retrieval and return.
- Shelf labeling: Each storage location is equipped with a display screen that allows real-time adjustment of product quantities based on weight changes.

(2) Specification Parameters

product model	ZSW-W01
Total Dimensions	1982*1400*450 mm (height * width * depth)
capacity	5 floors, totaling 23 storage spaces.
material quality	Material: High-quality galvanized steel plate with a thickness of 1.2 mm
Weighing Module	Equipped with a high-precision weighing module, offering a maximum capacity of 40 kg and weighing accuracy of 1 g.
Electronic Shelf Label	2.8-inch LCD screen

supply electricity	AC220V 50Hz 150W
--------------------	------------------

6、ZSW-D09 Tunnel Light

The tunnel indicator light (ZSW-D09) helps warehouse staff quickly locate target areas and reduces inventory retrieval time.



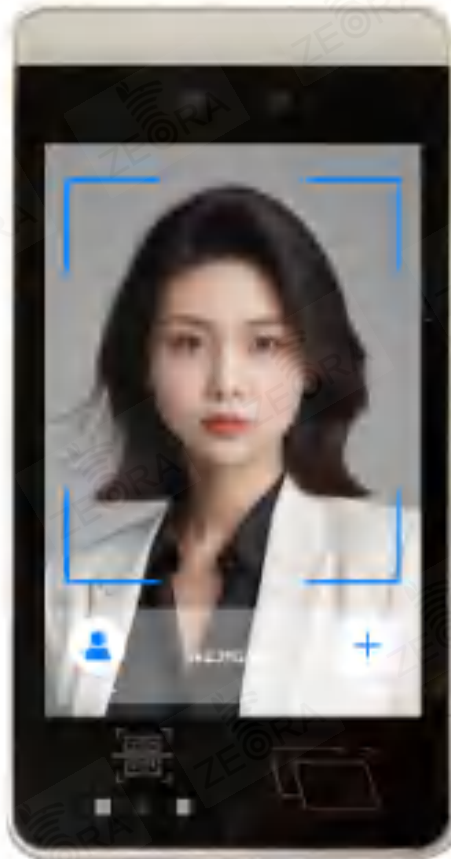
product model	ZSW-D09
Total Dimensions	φ50mm*300mm(H)
light color	Red, Yellow, Green
supply electricity	DC 12V

7、ZSW-D01 Intelligent Access Control All-in-One Device

The ZSW-D01 intelligent access control all-in-one device is a smart terminal developed by Zebra Intelligence for upgrading traditional access control systems. Equipped with facial recognition algorithms and proprietary activity detection capabilities, it delivers financial-grade

security with a recognition accuracy exceeding 99.99%. It seamlessly integrates with access control systems to enable efficient, secure, and convenient contactless personnel management, significantly enhancing both throughput and safety.

It can be directly integrated into various types of doors with easy installation without altering the cabinet structure. Identification methods include facial recognition, account verification, electronic ID cards, and card swiping (optional).



(1) Product Features

- No need to modify the door structure for rapid intelligent access control upgrade

- Supports multiple login authentication methods: facial recognition, account verification, electronic ID card, and card swiping (optional)
 - 8-inch touchscreen display with a 16:9 aspect ratio and 1280×800 resolution, featuring real-time face detection alerts
 - 2-megapixel wide-field camera adaptable to various complex environments
 - Intelligent management with interconnected data and configurable access control permissions for personnel entry/exit

(2) Specification Parameters

Main Specification Parameters	
product model	ZSW-D01
operating system	Android 11
Industrial Control Configuration	RK3568:2 GB of RAM, 16 GB of storage
Overall dimensions	130*30*265 mm (width*depth*h height)
screen	8-inch HD display with a resolution of 1280 × 800 and multi-touch support
material	Panel: Tempered glass Shell: Cold-rolled steel plate
Lock Opening Control	Relay-controlled unlocking (default)
Accessories	Access control power supply, magnetic lock
life length	500,000 times
working temperature	-16°C-45°C
Working Humidity	5–95% pH (no condensation)

face recognition	Camera: 200W
Card Reading Module (Optional)	Operating frequency: 13.56 MHz; Card reading range: 0–30 mm
Lock Opening Method	Face Recognition / Account Verification / Electronic ID Card / Card Reading Verification (Optional)
working power supply	Single-phase AC 220 V, 50–60 Hz

8、ZSW-D04 Intelligent Passage Gate

The ZSW-D04 intelligent passageway gate integrates sophisticated mechanical transmission, circuit board control, LED lighting effects, and various read/write technologies into a single unit. By configuring different reading devices, it enables intelligent control and management of passage flow.

The entire product rack is manufactured using stainless steel laser cutting and CNC bending molding, featuring an elegant design. It employs a servo control system that offers simple operation and a wide speed range; the servo motor delivers high speed and stable torque characteristics, and is equipped with a built-in encoder, enabling a highly precise and high-performance control system. The system features standard quick-connect electronic interfaces and integrates components such as QR code scanners and card readers, allowing easy integration of barcode, QR code, ID card, and IC card reading/writing devices. This facilitates orderly and civilized access for personnel while preventing

unauthorized entry. Additionally, to comply with fire escape requirements, the system includes a dedicated fire alarm button interface that automatically opens the gate in emergencies to facilitate evacuation.



(1) Product Features

- The system features a collision prevention mechanism: when an external object strikes the gate without authorization and its movement angle reaches the preset value (e.g., 2°), the controller activates the braking system to halt the gate's movement and triggers an audio-visual alarm. If the external force increases further, the brake controller prevents the gate from being damaged; upon removal of the force, the gate automatically resets and the system returns to normal operation.

- Features a fault alarm notification function;
- The two actuators communicate via RS485 protocol, enabling real-time data exchange between them. This high-performance, highly reliable fieldbus system supports distributed or real-time control, ensuring

effective communication between actuators and maintaining synchronized operation and unified status of the access gate.

- The brushless motor employs a fully closed-loop control system with high-stability rack and pinion components, combined with an advanced proportional-integral-differential (PID) algorithm, ensuring precise position accuracy, rapid response, smooth operation, and absence of jitter or delay during gate operation; the motor operates without harsh noise, experiences no operational obstructions, delivers optimal torque, and offers long service life.

- Multi-layer anti-trap protection: When the gate swing door is obstructed and the actual operating current exceeds the anti-trap protection threshold, the physical anti-trap protection mechanism is activated. Combined with infrared anti-trap protection, this comprehensive system significantly reduces the risk of accidental injury.

- Features an automatic reset function: if a pedestrian fails to pass through within the system-specified time after successfully scanning a valid card, the system will automatically revoke their passage permission for that attempt.

- Standardized external electrical interfaces compatible with various card readers, enabling remote control and management via a management computer;

- The entire system operates smoothly with minimal noise;

(2) Specification Parameters

Main Specification Parameters	
product model	ZSW-D04
outline dimension	Length * Width * Height: 900 mm * 160 mm * 980 mm
Box Material	Top cover: 1.2 mm; Body: 1.0 mm SUS 304
Door panel material	8 mm transparent acrylic
Material of the intermediate gate plate	8mm tempered glass
production engineering	Fully computer-controlled CNC laser cutting; fully computer-controlled CNC bending.
gangway width	≤900mm
ambient temperature	-20°C to 70°C
work environment	Indoor and outdoor (with an additional canopy installed outdoors)
input voltage	100V~240V
Driving Motor	24V brushless motor
plant capacity	120W
response time	0.2S
Throughput Speed	Always open: 50 people per minute; Always closed: 35 people per minute
communication interface	RS485
communication distance	Less than 1200 m
Door Opening Signal Input	Dry Contact
Door Opening/ closing Time	Less than 1 second

9、ZSW-D08 Intelligent Handheld Terminal

The ZSW-D08 intelligent handheld terminal is a all-in-one device developed by Zebra that supports warehouse inbound/outbound management and inventory counting functions. It handles the storage, return, relocation, and inventory verification of consumables, assets, and reagents, enabling a single PDA to fulfill comprehensive inventory management requirements for various materials.



(1) Product Features

1. Features a 5.5-inch touchscreen with QR code recognition
2. The software system uses the Android operating system.
3. Integrates functions for inventory management of consumables, assets, and

reagents, including inbound/outbound operations, returns, transfers, and stocktaking

4. Supports account verification login
5. Supports batch inbound and outbound operations for consumables, assets, and reagents
6. Supports moving items from Warehouse A Area A to Warehouse B Area B for quick relocation
7. Supports returning multiple items to the warehouse, allowing selection of another storage area for re-storage
8. Supports conducting inventory counts of stored consumables, assets, and reagents according to predefined tasks.
9. Local Upgrade: Supports updating applications by connecting the upgrade package via a USB external interface;
10. Remote Upgrade: Supports deploying upgrade packages remotely, with the system automatically completing the installation

(2) Specification Parameters

1. Basic Parameters

performance parameter	model	DS08
	operating system	Android 12.0
	processor	Eight-core 64-bit, 2.2 GHz
	internal storage	RAM: 4GB , ROM: 64GB
	extended memory	Micro SD card, supporting up to 256 GB of SDXC capacity
Basic Specifications	outline dimension	156.9mm×72.3mm×16.9mm
	Total weight of the device	Host (with battery) does not exceed 266 g
	display screen	5.5-inch color full-screen display (720×1440)
	touch screen	Supports multi-touch, glove touch, water-resistant operation, and passive pen signatures

	main battery	5000mAh, removable
	charging interval	5V2A, not exceeding 4 hours
	audio frequency	1.5W speaker, microphone (with noise cancellation support), earpiece (with echo cancellation support)
	Interface	USB Type-C port: Supports OTG and headphone audio transmission Bottom Pogo Pins *4: Support charging/data transfer
	key	Physical buttons: Volume up/down keys, Power button, Scan buttons (2)
	camera	Front 5MP camera Rear 13MP camera with PDAF and flash support
	sensor	Distance, Light Sensitivity, Acceleration, Geomagnetism, Gyroscope
	scan	Professional scanning engine that supports scanning mainstream 1D and QR codes, including screen scanning
	Slot Type	Single card slot, choose either Nano-SIM or Micro SD (SD cards support up to 256 GB expansion)
data communications	wireless wide area network	Supports 4G,3G, and 2G networks
	PDA	BT5.0 + BR/EDR + BLE
	Wi-Fi	2.4G/5G dual-band support IEEE 802.11a/b/g/n/ac/d/h/i/k/r/v/w Standards Fast roaming: PMKID caching; 802.11r (Over-the-Air); OKC: You can set a Wi-Fi roaming threshold
	fixed position	Supports GPS, A-GPS, Beidou, GLONASS, and Galileo
	NFC	RFID frequency: 13.56 MHz; supports ISO 15693, ISO 14443 A/B, Mifare, and Felica standards
service environment	working temperature	-20 ~ +60°C
	storage temperature	-40 ~ +70°C
	humidity	5% RH to 95% RH (no condensation)
	Seismic resistance	Capable of withstanding repeated impacts from falls from a height of 1.5 meters onto a smooth concrete surface.

height upon impact with ground	
levels of protection	IP67
electrostatic protection	Air discharge: ± 15 kV; Contact discharge: ± 8 kV

2. Data Collection Function

1) Camera

camera	Previous
Photo Features	Prime lens, 1080p video recording
pixel	5MP
camera	postposition
Function Type	Supports flash, autofocus, and 1080p video recording
pixel	13 MP; 8 MP available as an option

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. Data Communication Parameters

1) GPS Positioning

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

2) Wireless Communication Function

Wi-Fi	WLAN Wireless Local Area Networks
protocol	IEEE 802.11a/b/g/n/ac/d/h/i/k/r/v/w standard (2.4 GHz/5 GHz dual-band Wi-Fi)
frequency range	2.4G、 5G
Work Channel	CH1–CH13, CH34–CH140, CH149–CH165 (depending on country/region)
safety	Enhanced Open/WEP/WPA/WPA2-Personal/WPA3-Personal/WPA/WPA2/WPA3-Enterprise
go on a pleasure trip	PMKID caching; 802.11r (Over-the-Air); OKC – allows setting of Wi-Fi roaming thresholds

3) Wireless Wide Area Network

wireless wide area network	Wide Area Network Communication Parameters
frequency range	TD-LTE(B34/B38/B39/B40/B41) FDD-LTE(B1/B2/B3/B4/B5/B7/B8/B20/B28A/B28B) WCDMA(B1/B2/B4/B5/B8) TD-SCDMA(B34/B39) CDMA&EVDO:BC0 GSM/EDGE/GPRS(850/900/1800/1900)

4) Bluetooth

management simpler, smarter, and more efficient

Make enterprise material

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