

Deptrum® HandPass 521

Product Specification

V2.1 - 2026/09/30

1 Revision History

Revision	Description	Date	Revised by
V2.1	Official release	2026/09/30	Yan Qizhan



Product Appearance

2 Product Overview

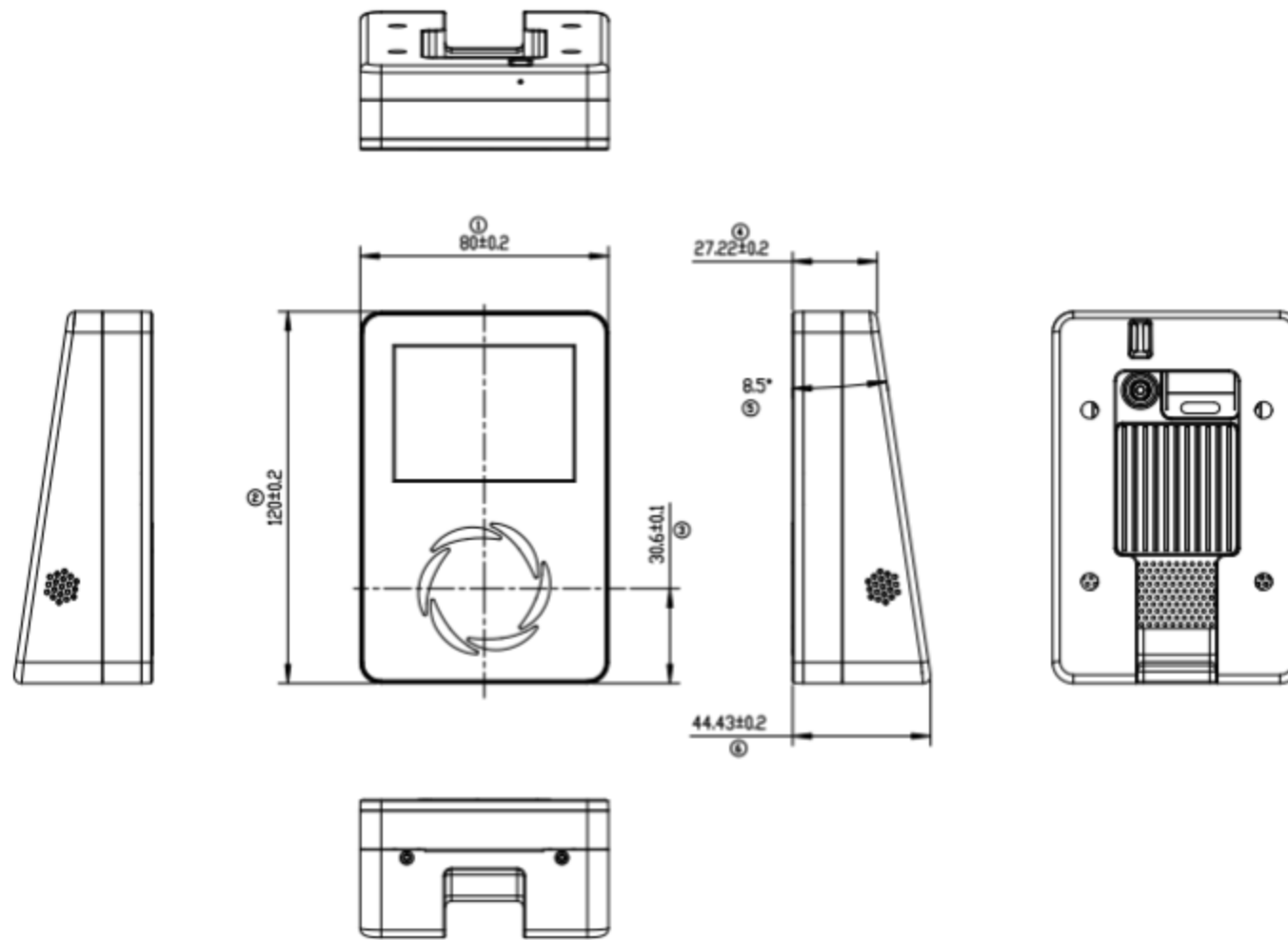
Product Introduction The Deptrum® HandPass 521 is a high-performance palm recognition host device. Using high-precision optical technology and a built-in high-performance AI module, the device achieves fast palm detection and auto exposure (Palm AE), capturing high-definition palm-print and palm-vein images. Combined with on-device palm-print algorithms, the device can directly generate identity IDs, enabling palm-based door access control and identity verification. System Requirements The device supports local enrollment and recognition, outputting IDs and control signals in a closed loop. An HTTP-based cloud service communication interface is supported, enabling seamless integration with various management or door access systems.	Product Features • 5 ~ 12 cm palm-scan working distance • Palm proximity sensing • Fast palm-scan experience within seconds, adaptable to diverse user scenarios • User interaction via screen, voice prompts, and indicator light ring • High security level, supporting enrolled IDs at the 10,000 scale Applications • PalmID identity recognition and access control • Smart door access • Turnstile control • System integration
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3 Core Specifications

HandPass 521 Specifications		
Host Device Parameters	Model Specifications	HandPass 521
	Overall Dimensions	120 × 80 × 44.65 mm (L × W × H)
	Camera	Palm-scan camera, supporting palm-print and palm-vein imaging

	Palm-scan Working Distance	5 ~ 12 cm
	P-Sensor Sensing Distance	3 ~ 30 cm
	Screen	2.8-inch touchscreen, 320 × 240 resolution
	Speaker	2 W
	Storage	EMMC 4 GB
	Network	Supports Wi-Fi 11b/g/n 2.4G
	Communication Interfaces	RJ45, Wiegand (26/34), relay, USB Host, USB Device, UART (RS232)
	Power Supply	12 V / 2 A
	Firmware Upgrade	Supports OTA upgrade
Algorithm Performance	Database Capacity	Supports user IDs at the 10,000 scale with a local recognition solution
	Palm-scan Freedom (planar range)	High (6 cm left/right movement @ 10 cm distance)
	Palm-scan Freedom (posture)	Pitch $\leq 30^\circ$, roll $\leq 30^\circ$, yaw $\leq 360^\circ$
	Recognition Speed	Local recognition: 600 ms (excluding business processing time)
	Palm Recognition Pass Rate	99% (TAR) @ FAR = 1e-6
Others	Temperature Rise During Normal Operation	Front glass cover temperature rise < 20 °C
	IP Rating	IP55 (front-side waterproof)

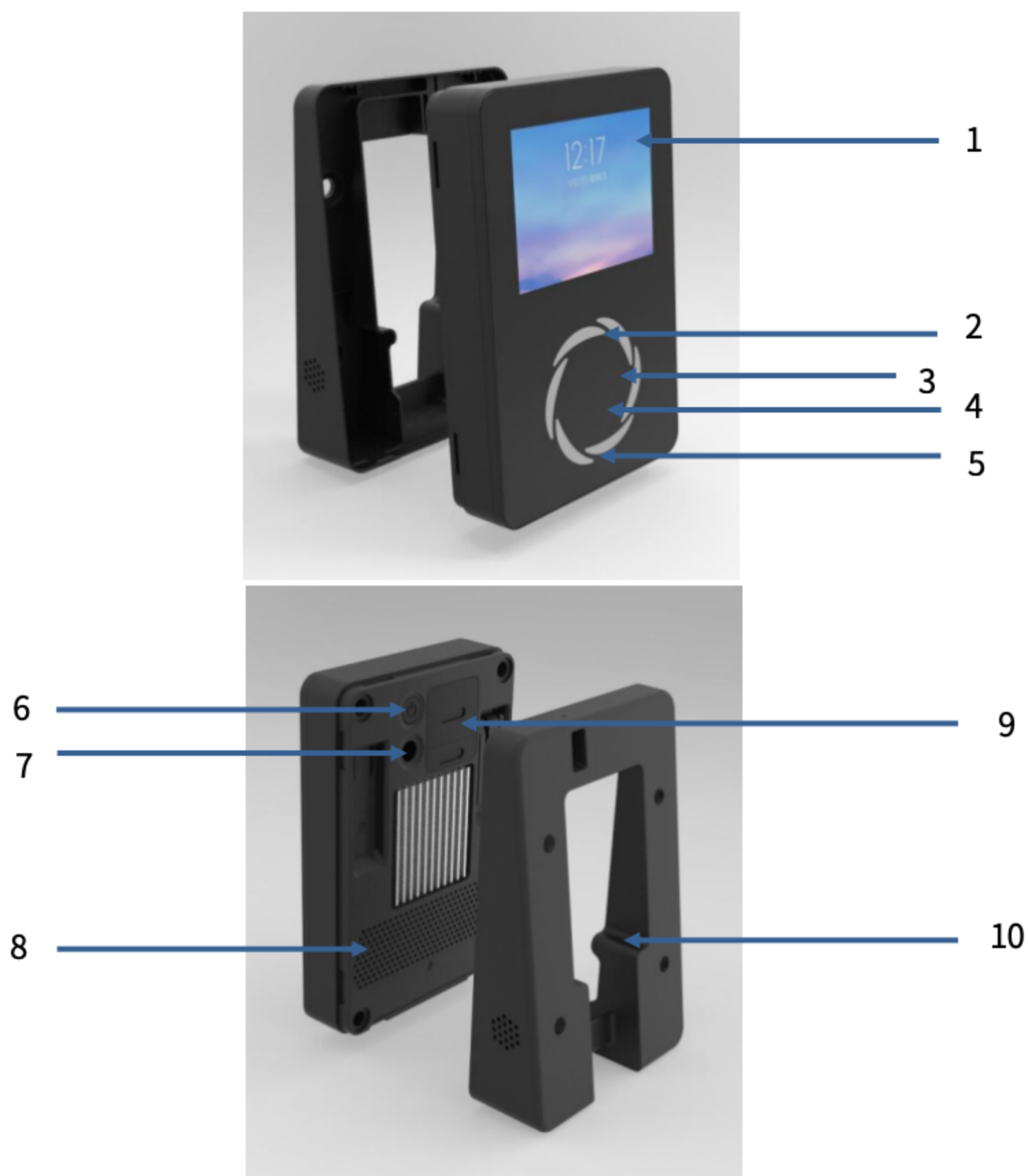
4 Product Dimensions & Structure



Dimension Drawing

4.1 Product Description

The HandPass 521 host device consists of a touchscreen, P-Sensor, IR fill light, palm camera, indicator light ring, power button, power input port, speaker, Wafer harness connector, and a wall-mount bracket, and supports wall-mounted installation. The device appearance and mechanical structure are shown in the figure below. Overall dimensions are 120 (L) × 80 (W) × 44.65 (H) mm. Structural dimensions may vary slightly depending on the specific product configuration; please refer to the actual product.



Handpass 521 Component Numbering Diagram (numbers correspond to the component table)

Product Components	No.
Touchscreen	1
P-Sensor	2
IR Fill Light	3
Palm Camera	4

Indicator Light Ring	5
Power Button	6
Power Input Port	7
Speaker	8
Wafer Harness Connector	9
Wall-mount Bracket	10

5 Environment & Reliability

Item	Parameter	Specification
Operating Environment	Operating Temperature	0°C ~ +55°C
	Relative Humidity	0% ~ 95%, non-condensing
Storage Environment	Storage Temperature	-20°C ~ +60°C
	Relative Humidity	0% ~ 90%, non-condensing

6 EMC

Item	Specification
ESD Rating	Contact discharge ± 8 kV, air discharge ± 12 kV

7 Software Development

Customers can set up their own HTTP service and develop services and management platforms, enabling multiple devices to work in coordination. For detailed usage, please refer to the documentation included with the API. The Deptrum software management platform can also be used for service deployment.

8 Disclaimer

The device application information and other similar content described in this publication are provided for your convenience only and may be superseded by updated information. It is your responsibility to ensure that your application complies with the applicable technical specifications. Shenzhen Deptrum Technology Co., Ltd. makes no representations or warranties of any kind, express or implied, written or oral, statutory or otherwise, with respect to this information, including but not limited to representations or warranties regarding its use, quality, performance, merchantability, or fitness for a particular purpose. Deptrum assumes no liability for the consequences arising from this information or its use. Deptrum products shall not be used as critical components in life support systems without the written approval of Shenzhen Deptrum Technology Co., Ltd. No license is conveyed, implicitly or otherwise, under Deptrum's intellectual property rights.

9 Technical Support

Support is available through the following channels:

- Email support: Please send your questions to support@deptrum.com
- FAE support: Please contact our sales team for FAE support

10 Precautions

- Do not heat this product with any external heat source.
- Do not drop or impact this product, as this may damage internal components and degrade accuracy; improper handling may damage internal elements.
- Do not attempt to modify or disassemble this device in any way, as this may damage the product and degrade accuracy.
- It is normal for the product to heat up after extended use; heat dissipation measures may be applied on the back of the product.

- Do not store the product in a high-temperature, high-humidity environment, as this may degrade product accuracy or cause malfunction.