Technology Solutions for Retail

R3S

Desktop RFID Reader

Smaller Size and Richer Interfaces to Support Broader Application Needs.



R3S is our newly launched desktop UHF reader designed for close-range RFID data capture. It is built with the Impinj E-series chip and supports the latest Impinj Gen2X protocol, enabling reading distances of up to100 cm, With a proprietary high-efficiency anti-collision algorithm, the R3S delivers fast, stable performance while maintaining a highread rate, It supports multiple data interfaces, including Bluetooth, Type-C USB, andEthernet, and works seamlessly with Android, iOS, and Windows devices. Typical applications include retail checkout, tablet based POS, and jewelry or valuables management.







Compact design for flexible deployment

The R3S adopts a compact, integrated design that combines the UHF module and antenna into a single unit, making it small, plug-and-play, and easy to deploy. **A top-mounted Scan button allows manual trigger-based reading** for more flexible operation. It fits perfectly in space-constrained environments such as desktops, counters, and service windows, and can also be embedded into self-checkout kiosks, loan/return terminals, and other all-in-one devices-delivering a **"fits anywhere"** deployment experience.

Versatile Interfaces for Easy Integration

USB provides true **plug-and-play** operation without an external power supply. RJ45 supports Ethernet communication and PoE+ power. A DC input is available to ensure stable power delivery when USB is insufficient or when external Bluetooth modules are used. **Multiple I/O options greatly enhance installation flexibility.**


USB Type-C


RJ45


DC input


Bluetooth 5.0

High-Performance, Low-Miss Reading Engine

Powered by the **Impinj E-series** and s**upporting the latest Impinj Gen2X protocol,** the R3S offers excellent sensitivity and anti-collision performance. It can read **70+ tags** in a single session (5-second inventory), significantly improving efficiency for batch checkout and inventory tasks, even in dense tag environments.

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Dual Indicators for Instant Feedback

LED indicators and a **built-in buzzer provide intuitive real-time feedback** for read/write operations, helping users confirm status quickly and reducing errors caused by oversight.



Precise power control for reduced misreads

With a maximum read distance of **approximately 100 cm** and **30-level adjustable power settings,** the R3S allows fine-tuned control for different operational scenarios. This helps minimize stray reads and misreads, ensuring accurate and reliable results.

Strong compatibility with mainstream platforms

Fully compatible with **Windows, Android, and iOS systems,** the R3S connects easily with mainstream terminal devices. SDKs are available to support application development and reduce integration effort and cost.



Specification

Physical Characteristics	**Dimensions**	255×235×18mm / 10.04×9.25×0.71in
	Weight	Approximately 650g / 22.93oz.
	Material	PC
	Port	Compact Version: 1 USB Type-C port Enhanced Version: 1 USB Type-C port + 1 DC power port PoE Version: 1 USB Type-C port + 1 DC power port + 1 RJ45 port
	Power Supply	USB, DC, and RJ45 ports all support power supply
	Scan Button	1 Scan Button
	LED Indicators	1 Power indicator (ring around the inventory button) 1 Bluetooth indicator 1 Operation indicator Ethernet indicators: 1 green LED + 1 yellow LED (PoE Version)
	Audio	1 Buzzer
Data Communication	**USB**	USB 2.0 with a transmission rate of 12 Mbit/s
	Ethernet	10/100 Base-T Ethernet /PoE+ support
	Bluetooth	BLE 5.0
Environmental	**Operating Temp.**	-4°F to 122°F / -20 °C to 50°C
	Storage Temp.	-40°F to 158°F / -40°C to 70°C
	Humidity	5%RH-95%RH non condensing
	Sealing	Ingress Protection (IP) 54 rating
	Vibration	YD/T 1539-2019
	ESD	±15kV air discharge, ±8kV contact discharge

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RFID	**Engine**	Based on Impinj E-Series chip
	Frequency	865-868MHz / 920-925MHz / 902-928MHz (custom-design for frequency band)
	Impinj Gen2X	Supported
	Protocol	EPC global Class 1 Gen 2 / ISO18000-63 RFID
	Transmit Power	1-30, step 1dB
	Antenna	Near-Field Antenna
	Fastest Read Rate	250+ tags/sec
	Multi-tag Inventory	Supports reading 70+ RFID tags at once (5 seconds)
	Max Read Range	>100cm (tag: Impinj M750 tag)
Developing Environment	**SDK**	Supports Android, iOS, and Windows systems
Accessories	**Standard**	1 USB data cable, 1 USB cable clip, 2 USB cable fixing screws、 1 DC power adapter（PoE Version and Enhanced Version）
	Optional	1 PoE power adapter（PoE Version）、Mounting Bracket

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