

Raybaca

Raybaca IOT Technology Co., Ltd

RFID Reader Range Datasheet

Handheld, stick, mini, fixed and Android PDA readers, with the tag formats, memory, interfaces and read distances published for each model.

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Certifications Held

- ICAR Certificate Extra ID 900264 - Issued December 2023
- ICAR Certificate Extra ID 900250 - Issued December 2023
- ICAR Ear Tag Certificate - Raybaca ear tag certification
- CE RED Test Certificate for RBC-S18 - Radio Equipment Directive test certificate
- CE Certificate for RBC-A04 - Fixed tag reader
- 148+ patent certificates
- ISO certificate
- AAA credit certificate
- High Tech Enterprise certificate

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RFID Reader

Specifications by Model

RBC-RT02 LF Handheld Reader

Model	RBC-RT02
Frequency	134.2 kHz
Standard	ISO 11784/11785
Tag Support	FDX-B, EMID
Reading Distance	20-22 cm for ear tags, 10-15 cm for 2.12-12 mm microchips
Display	High-brightness OLED
Memory	128 tag records
Power Supply	Rechargeable lithium battery
Communication	USB, Bluetooth
Language	English
Weight	97 g (including packaging)
Dimensions	L17.5 - W8.8 - H3.5 cm
Protection	IP65-67
Operating Temperature	-10 to 50-C

RBC-S18 Stick Reader

Model	RBC-S18
Type	Handheld RFID stick reader
Supported Tags	FDX-B, HDX (ISO 11784/85)
Reading Distance	FDX-B: 30 mm, Ear tag -30 cm (-5 cm); HDX: 300 mm, Ear tag -35 cm (-5 cm)
Display	High-brightness LCD (240x320)
Memory Capacity	20,000 tag records, 6,000 comparison records
Data Transfer	USB 2.0, Bluetooth 4.2
Power Source	7.4V 1800mAh lithium battery
Power Consumption	Reading: 3.7W, Standby: 0.5W
Battery Life	Up to 10,000 reads on a full charge
Size	Length 67 cm, Width 4.4 cm, Height 4.1 cm
Buttons	Left, Right, Scan
Operating Environment	Normal indoor and outdoor use, avoid high heat, humidity, and corrosive conditions

RBC-RT03 Mini Pets Reader

Model	RBC-RT03
Frequency	134.2 kHz
Supported Tags	ISO 11784/11785 FDX-B, FDX-A, HDX
Reading Distance	Ear tags: 20-22 cm, 2.12 x 12 mm microchips: 10-15 cm
Display	High-brightness OLED
Memory	Stores up to 8 tag readings
Communication	USB, Bluetooth 4.0
Power Supply	Rechargeable lithium battery
Weight	176 g (including packaging)
Dimensions	L21.3 x W14.9 x H2.9 cm
Operating Temperature	-20 to 80-C
Protection Rating	IP65-67

RBC-PDA47-UHF Android PDA Reader

Model	RBC-PDA47-UHF
Standard	ISO 18000-6C
Frequency	860-960 MHz
Reading Distance	1-40 m (UHF ear tags)
Reading Access Time	<100 ms
Operating System	Android 10.0
CPU	Arm Cortex-A73, eight-core, 12nm process
RAM	2GB
ROM	16GB
Battery	3.8V, 9000mAh integrated polymer lithium battery
Weight	650g (including battery)
Operating Temperature	-20- to 55-
Size	166 x 79 x 31 mm
Connection	USB 2.0, wireless USB HID (optional), Bluetooth (optional)
Storage Time	>20 years
Language	English / Customized

RBC-A04 Fixed TAG Reader

Model	RBC-A04
Standard	ISO 11784/11785
Protocol Support	FDX-A, FDX-B, HDX
Reading Distance	More than 40 cm with Raybaca animal tags
Interface	RS232, RS485
Power Supply	12V-DC, Current <150mA
Size	260 mm x 260 mm x 35 mm
Communication Protocol	String format, default RS485 address 001, baud rate 19200
Buzzer	Enabled by default
Data Format	Frame header \$, address 1Byte, data length 1Byte, data, check BCC, terminator #
Default Address	001 (RS485)

RBC-S20-Mini Reader

Model	RBC-S20
Frequency	134.2 kHz
Supported Tags	ISO 11784/11785 FDX-B, HDX
Read Time	< 100 ms
Screen	0.91 OLED
Memory	128 pieces of information (time + tag code)
Communication	USB, Bluetooth 4.0
Power Supply	3.7 V lithium battery
Battery Capacity	800 mAh
Weight	98 g
Size	17.5 x 8.8 x 1.8 cm
Work Temperature	-10 to 50-C
Language	English
Indication	Beeper

RBC-S15 Portable-reader

Model	RBC-S15
Frequency	134.2 kHz
Standard	ISO 11784/11785
Supported Tags	FDX-B, FDX-A, HDX, microchips
Read Time	Less than 1 second
Screen	Color OLED, 1.14 inches, 240 x 130 pixels
Communication	USB, Bluetooth 4.0
Power Supply	Rechargeable lithium battery
Current	500 mA (Max)
Weight	92g
Dimensions	190 x 90 x 22 mm
Operating Temperature	-20 to 70-C
Indication	Beeper for read confirmation
Buttons	Power/Exit, OK, Left Select, Right Select

RBC-S12 Barcode&ID Reader

Model	RBC-S12
Frequency	134.2 kHz
Tag Format	EMID, FDX-B (ISO 11784/85)
Reading Distance	7-15 cm for 2x12 mm glass tag
Display	High brightness OLED
Power	3.7V rechargeable lithium battery
Connection	USB2.0
Language	English
Reading Mode	Key Trig / Read Once / Continuous
Signal Indicator	High brightness OLED
Battery Type	Rechargeable lithium battery
Operating Environment	Standard indoor and outdoor field use

RBC-TN009B Arowana fish RFID reader

Model	RBC-TN009B
Type	Handheld RFID Arowana fish reader
Frequency	134.2 kHz / 125 kHz
Tag Format	EMID, FDX-B/A (ISO 11784/85)
Reading/ Writing Distance	Over 7-15 cm for 2*12 mm glass tag
Display	High brightness OLED
Power	9V DC battery
Connection	USB2.0
Weight	300g (without battery)
Size	15.5 x 85 x 30 mm
Language	English
Operation	Two-button: red power, black read

RBC-S5100 Handheld RFID Reader

Model	RBC-S5100
Frequency	134.2 kHz + 125 kHz
Chip Types Supported	FDX-B, FDX-A, HDX
Reading Range	Up to 9 cm for glass microchips
Display	High brightness OLED
Memory	800 ID numbers
Power Supply	Built-in 1400 mAh lithium battery, 3.7 V

Connectivity	USB 2.0, Bluetooth
Dimensions	L15 x W8 x D3.5 cm
Weight	135 g
Operating Languages	English, French, Spanish, Portuguese, Italian, German, Polish

RBC-S03 Handheld RFID Reader

Model	RBC-S03
Frequency	134.2 kHz / 125 kHz
Tag Format	FDX-B (ISO 11784/85), EMID
Reading Distance	2 mm glass tag >15 cm, 30 mm ear tag >25 cm
Reading Access Time	<100 ms
Display	128-64 high brightness OLED
Signal Indicator	Buzzer
Power Supply	3.7 V (3 AA batteries)
Power Consumption	Working: 0.9 W, Standby: 0.04 W
Storage Time	>20 years
Weight	300 g (without battery)
Operating Temperature	-10- to 50-
Storage Temperature	-30- to 70-
Language	English / Customized
Connection	USB 2.0, wireless USB HID (optional), Bluetooth (optional)

Animal Microchip

Specifications by Model

RBC-Z00 Microchips Syringe

Model	RBC-Z00 microchips syringe
Standard	ISO 11784/11785 FDX-B, FDX-A
Frequency	134.2 kHz (optional: LF 125 kHz, HF 13.56 MHz/NFC)
Chip Type	EM4305
Size	Standard: 1.25-7 mm, 1.4-8 mm, 2.12-12 mm; Optional: 2.12-8 mm, 3-15 mm, 4-32 mm
Material	Biochemical coating, bio-grade glass encapsulation
Number Format	15-digit unique identification code
Certificate	ICAR Certificate, MSDS Certificate
Packaging	20 sets per bag, 50 bags per carton, 40-40-50 cm per carton, 9 kg gross weight per carton

RBC-Z05 Microchips Syringe

Model	RBC-Z05 Microchips Syringe
Standard	ISO 11784 / ISO 11785
Frequency	134.2 kHz (optional: LF 125 kHz, HF 13.56 MHz/NFC)
Chip Type	EM4305
Size	Standard: 1.25 x 7 mm, 1.4 x 8 mm, 2.12 x 12 mm; Optional: 2.12 x 8 mm, 3 x 15 mm, 4 x 32 mm
Material	Bio-grade glass encapsulation with biochemical coating
Sterilization	Ethylene oxide (EO)
Packaging	20 sets per bag, 50 bags per carton, 40 x 40 x 50 cm per carton, 9 kg gross weight per carton
Unique Number	15-digit unique identification code
Operating Life	Exceeds 75 years
Certificate	ICAR Certificate, MSDS Certificate

RBC-LF Implanted Electronic microchip

Model	RBC-LF Microchips
Protocol	ISO 11784/11785, FDX-A, FDX-B, HDX
Frequency	125 kHz, 134.2 kHz
Chip Type	EM4305
Operating Life	Over 75 years
Size	FDX-A 1.4-8 mm, 2.12-12 mm, 3-15 mm; FDX-B 1.25-7 mm, 1.4-8 mm, 2.12-12 mm; HDX 3-13 mm, 7-15 mm
Material	Biochemical coating, bio-grade glass encapsulation
Number Format	10-digit or 15-digit unique identification code
Sterilization	EO sterilization
Certificate	ICAR certificate, MSDS certificate
Packaging	Customized package as per buyer request

RBC-HF Implanted Electronic microchip

Model	RBC-HF Microchips
Standard	ISO 14223
Frequency	13.56 MHz
Chip Type	Icode-Slix

Size	2.12 x 12 mm, 3.15 x 23 mm, 3 x 15 mm
Material	Biochemical coating, bio-grade glass encapsulation
Encapsulation	Hermetically sealed
Operating Life	Over 75 years
Power Source	Passive, no battery required
Implantation Site	Central area of the shoulder
Sterilization	EO sterilization
Number Format	15-digit unique identification code

Ear Tag Applicator

Ear tag applicator designed to install RFID ear tags on livestock with consistent pressure and alignment, ensuring secure attachment and reducing handler effort during routine tagging operations.

Who It Is For

- Cattle, sheep, goat and pig farms conducting regular animal identification and health checks
- Veterinary teams and vaccination crews working in the field with mobile tagging needs
- National and provincial livestock traceability programmes deploying tags at scale
- Distributors supplying farms with complete RFID tagging systems including tools
- System integrators building automated farm workflows that include tagging as a step

Where It Is Used

- Routine tagging of calves at birth or weaning on a farm with multiple animals per day
- Field vaccination campaigns where tags are applied during health checks
- Traceability programme rollouts requiring thousands of tags installed in a short time
- Mobile units moving between farms needing a reliable, portable applicator
- Training new staff on correct tag placement without risking animal injury or tag failure

Specifications by Model

RBC-Q-G2-Ear Tag Applicator

Model	RBC-Q-G2
Size	245 x 65 mm
Jaw to Shaft Center Length	75 mm
Center to Grip Length	170 mm
Grip Wall Thickness	Greater than 2.6 mm
Plier Material Brinell Hardness	Greater than or equal to 85-90 HBS
Maximum Shear Force	Greater than or equal to 1500 N
Color	Red
Net Weight	320 g
Packing	50 pcs per carton

RBC-Q-W2-Ear Tag Applicator

Model	RBC-Q-W2
Size	250 x 60 x 23 mm
Plier Material Brinell Hardness	- 85-90 HBS
Maximum Shear Force	- 1500 N
Color	Yellow
Net Weight	259.2 g
Applicable Tags	Raybaca one-side ear tags
Included Spare Parts	Back-up pin
Packaging	50 pcs per carton

RBC-Q-G4-Ear Tag Applicator

Model	RBC-Q-G4
Size	200 x 50 x 20 mm
Plier Material Brinell Hardness	- 85-90 HBS
Maximum Shear Force	- 1500 N
Color	Blue
Net Weight	240 g
Packing	50 pcs per carton

Questions on Ear Tag Applicator

Is the applicator compatible with all ear tag types

Yes, the applicator is designed for use with Raybaca's visual, LF, and UHF ear tags that have a standard male button and female receiver.

Can the applicator be used on all livestock species

Yes, the jaw width and pressure settings allow use on cattle, sheep, goats, and pigs, though adjustments are needed for ear thickness differences.

How is the applicator cleaned after use

The tool can be wiped down with a damp cloth and mild disinfectant. No submersion or harsh chemicals are recommended.

Does the applicator require calibration

No. The spring-loaded mechanism maintains consistent pressure without adjustment during normal use.

What is the expected lifespan of the applicator

The applicator is built for repeated use with no specified wear limit, based on the manufacturer's quality control and material selection.

IoT Smart Devices

IOT Smart Devices integrate RFID readers, GPS trackers and farm management software to capture animal identity and location data automatically across a farm or supply chain.

Who It Is For

- Large cattle, sheep or pig farms with multiple housing units and batch movements
- National or provincial livestock traceability programmes requiring automated data capture
- Veterinary teams conducting vaccinations or health checks in the field
- Distributors supplying farms with RFID and GPS tracking systems
- System integrators building IoT platforms for farm management and compliance

Where It Is Used

- Automatic animal capture as cattle pass through a gateway at the farm entrance
- Tracking pig movements between barns and verifying they are in the correct pen
- Monitoring the location of a sick animal during isolation and recording treatment events
- Verifying vaccination records during a field visit using a handheld reader
- Generating a compliance report for a traceability programme using data from GPS and RFID

Specifications by Model

RBC-CZZL-YZ01

Model	RBC-CZZL-YZ01
Operating System	Android
Power Source	Built-in large-capacity lithium battery
Battery Life	Over 4 hours on a single charge
Recognition Rate	Greater than 99%
Display	High-definition touch screen
Data Storage	Local storage with USB export support
Communication	Multiple interfaces for automatic data upload
Mobility	Equipped with wheels and traction hooks
Durability	Anti-corrosion and anti-rust surface treatments

RBC-ZCF-YZ01

Model	RBC-ZCF-YZ01
System Type	Automated sheep weighing and grouping management system
Animal Capacity	0 to 500 fattening animals
Weighing Speed	2 to 3 seconds per animal
Separation Speed	3 to 5 seconds per animal
Separation Gates	Three-level mechanical gates
Ear Tag Reading Distance	0 to 500 mm
Recognition Accuracy	100%
Control System	PLC and PC automation
Data Handling	Automatic collection, upload, and analysis
Input Method	On-site display controller for scale marking, tag input, and parameter adjustment

RBC-ZB-YZ01

Model	RBC-ZB-YZ01
Type	Automatic sheep restraint rack
Weighing Accuracy	Dynamic, one thousandth
Grouping Speed	5 to 8 seconds
Ear Tag Reading Rate	100%
Reading Distance	70 cm
Control Method	Bluetooth handheld switch
Cage Width Adjustment	Manual via long handle
Data Transmission	Wireless, self-organizing network
Power Source	Pneumatic
Operating Mode	Automatic with manual override

RBC-PD-YZ04

Model	RBC-PD-YZ04
Category	IoT Smart Device
Display	8-inch digital tube display (standard)
Interface	Touch screen with button operation
Wireless Communication	WiFi (standard)
Power Supply	220V
Dimensions	1000 * 1000 * 750 mm
Weight	50 kg
Material	Stainless steel and engineering plastics
Data Storage	Local storage with automatic upload capability
Recognition Rate	Over 99 per cent

RBC-Smart drinking water equipment

Model	RBC-Smart drinking water equipment
Application	Cattle and sheep
Trough Dimensions	200 cm - 50 cm - 70 cm / 300 cm - 50 cm - 70 cm / 400 cm - 50 cm - 70 cm
Rim Width	5 cm
Water Depth	32 cm (cattle), 22 cm (sheep)
Trough Height	70 cm (cattle), 40 cm (sheep)
Material	Non-toxic, corrosion-resistant
Temperature Control	Constant temperature function
Water Supply	Automatic, timed, and measured
Energy Efficiency	Insulated, optional solar heating
Durability	Weather-resistant for outdoor use

RBC-PD-YZ03

Model	RBC-PD-YZ03
Category	IOT Smart Device
Display	8-inch digital tube display (standard)
Wireless Communication	WiFi (standard)
RFID Protocol	ISO 18000-6B/C
Supported Tags	UHF RFID electronic ear tags
Power Supply	220V
Dimensions	800*800*650 mm
Weight	25 kg
Recognition Rate	Over 99 per cent
Data Storage	Local storage with automatic upload capability

RBC-PD-YZ02

Model	RBC-PD-YZ02
Operating System	Android 7.1.2
Memory	2+16G (available 10G)
Display	8 inch, 1280x960, multi-touch
RFID Frequency	860-950 MHz
Antenna Type	Circular polarization, 8dbm
Battery Capacity	10000mAh, 12.6V
Communication Interfaces	USB, Wi-Fi, Bluetooth, 4G
Reading Distance	Up to 0.6 metre
Channel Size Range	1.3 m to 3.2 m
Slope Angle	30 degrees
Product Size	1780 x 900 x 900 mm
Product Weight	130 kg
Power Consumption	45W daily, 70W maximum
Operating Temperature	-10- to 45-
Operating Humidity	5% to 90%
Battery Life	More than 4 hours

RBC-XP-YZ01

Model	RBC-XP-YZ01
Operating System	Android 5.1
Memory	2+16G (available memory 10G)
Display	8 inches, 1280*960, supports multi-touch
UHF Identification	Supports UHF electronic ear tags, 860-950 MHz
Antenna	Circularly polarized ceramic antenna, 3dbm
Battery Capacity	10000mAh, 12.6V
Communication Interfaces	USB, Wi-Fi, Bluetooth, 4G
Product Size	540*375*400 mm
Product Weight	25kg
Operating Temperature	-10- to 45-
Operating Humidity	5% to 90%, no condensation
Battery Life	Greater than 10 hours
Power Consumption	Typical 45W, maximum 70W
Material	Steel

Questions on IoT Smart Devices

Can I use my existing RFID reader with the IOT Smart Devices software

Yes, if the reader supports ISO 18000-6C (UHF) or ISO 11784/11785 (LF) and can connect to a network or Android device.

Do the GPS trackers work in all weather conditions

Yes, the trackers are designed for outdoor use and tested under high and low temperature conditions.

How does the farm management software handle data from multiple readers

The software collects data from all connected readers and GPS trackers, then links it to animal records in real time.

Can the system track animals in a large pasture without fences

Yes, GPS trackers provide location data even in open fields, though signal strength may vary depending on terrain.

What kind of support does Raybaca offer for the IOT Smart Devices

Technical support is available for RFID readers, software integration, and device configuration.