

Mobile Computer FR1000 User Guide



Urovo Technology Co., Ltd.

Note:

* This Guide introduced general functions of FR1000. Your PDA device

may have different functions wherein or description.

* There may be differences between the illustrations in this Guide and

the actual product. And the actual product shall prevail.

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Index	
1.Introduction	5
1.1 Product Overview	5
1.1.1 Unpack	6
1.2 Key Features	9
2.Specifications1	2
2.1 General Specifications1	2
2.2 Network Antenna Interface1	2
2.3 Specification Sheet1	3
3.Assembly1	6
3.1 Connecting Antennas1	6
3.2 Connecting Peripheral Devices1	6
4.Operation1	7
4.1 Starting Up the System1	7
4.2 RFID Demo Application1	7
4.2.1 Installing the Application1	7
4.2.2 Setting Up the System1	8
4.2.3 Using the Application1	8
5.Troubleshooting	1

1.Introduction

1.1 Product Overview

This manual provides information and instructions for operating the RFID Reader/Writer. The device is Android, with no built-in screen, if you need to demonstrate, you can connect external devices such as monitors, keyboards and mice to operate.

The RFID Reader/Writer features eight read/write antenna interfaces, four network antenna interfaces, one DC interface, three USB interfaces, one RJ45 interface, one RS232 interface, one GPIO interface, one HDMI interface, one MicroUSB interface for debugging, and a reset button.





1.1.1 Unpack

a. device





b. 4G & WLAN Antenna



c. Power supply







d. GPIO Cable



e. GPS Antenna



f. RFID Antenna(optional)

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g. RF cable(optional)



1.2 Key Features

- Octa-core 1.6GHz
- Android 10.0
- 4GB+64GB
- Supports POE+ power supply

- Supports manual change of IPV6 address
- Supports 1920x1200P HD video output
- Supports GPS + GLONASS or GPS + BeiDou
- Designed based on Impinj E710 RFID engine, fully supporting electronic tags that comply with EPC CLASS1 G2 standards
- Protocol standards: EPC Global Class1 Gen2/ISO 18000-6C
- Frequency band: U.S. 902-928MHz, European 865-868MHz
- Operates on either wideband frequency hopping spread spectrum (FHSS) or fixed frequency transmission mode, supports RSSI function, and peak tag inspection speed is greater than 1000 tags/second
- Output power up to 33dBm (adjustable)
- Supports 8 external SMA antenna interfaces and antenna detection
- Supports 2.4G/5G dual-band Wi-Fi
- Supports Bluetooth 5.0
- HDMI D Type interface, supporting transmission speeds of up to 5GB/s and 1920x1080P high-definition video output
- Supports USB 2.0 * 3
- Supports 100M/10M adaptive network interface
- Supports RS232 interface
- Low power consumption design, powered by a single +9V~24V power supply
- Supports multi-channel optocoupler-isolated GPIO, with 4 inputs and 4 outputs, and isolation voltage VRMS>3kV

- Supports secondary development and remote online upgrade
- Compact and exquisite design, suitable for various application scenarios.
- Features: If connect with 9dBi Antenna, Long-range(9dBi, 30 meter) and large-scale identification and reading of tags, subject to actual packaging specifications.

Application scenarios:

Applications in various industries such as warehousing, archive management, library management, banking, footwear, jewelry, laundry, production line management, and unmanned retail.

2.Specifications

2.1 General Specifications

The RFID Reader/Writer has the following specifications:

- Operating system: Android 10.0
- Input power: DC 13.6V
- Power consumption:
- Operating temperature: -30°C to 70°C
- Storage temperature: -40°C to 85°C
- Relative humidity: 5% to 95% non-condensing(+25°C)
- Dimensions: 180 x 128 x 28 mm

2.2 Network Antenna Interface

• The RFID Reader/Writer features eight read/write antenna interfaces and

four network antenna interfaces.



2.3 Specification Sheet

- 16							
		Model	UROVO FR1000				
	5 (O.S.	Android 10.0				
	Performance	Processor	Octa-core 1.6GHz				
		Memory	RAM: 4GB ROM: 64GB				
		Dimensions	180*128*28mm				
		Display output	HDMI D Type interface; support 1920x1080P HD video output				
		Slot	SIM x 1				
	Basic specifications	Interface	GPS antenna, Wi-Fi/Bluetooth antenna, power interface DC JACK, USB interface, HDMI interface, TCPIP network interface RJ45(PoE supply mode), serial communication interface RS232 (DB9 Female), GPIO interface, debugging/download USB interface, USB interface * 2, system RESET button, SMA antenna interface ANT1 ~ ANT8				
		Positioning	GPS + GLONASS or GPS + BeiDou				
			Support 2.4G/5G dual-band Wi-Fi				
			Wi-Fi network protocol: 802.11 a/b/g/n/ac				
		Wi-Fi	Support WAPI & SMS4 encryption				
			Support manual change of IPv6 addresses				
	Network	Bluetooth	ו Support BT5.0				

Connections		
	Operating Temp.	-30 ~ +70℃
	Storage	-40 ~ +85℃
	Temp.	
	Humidity	<95% (no condensation)
	Sealing	IP43
Environment	Supply voltage	9 ~ 24V, typical value: 13.6V
	Working current	3A

Data Capture Specifications

RFID(UHF)

RFID	Read-write (UHF)		
Frequency	840 ~ 960MHz (adjustable based on the requirements of different		
	countries or regions)		
Protocol	Support ISO18000-6C		
RF output	Maximum: 33dBm		
Receiving sensitivity	Minimum: -85dBm		

Network Connections

GPS

Positioning	Positioning parameters			
Support mode	GPS + GLONASS or GPS + BeiDou			
Frequency	GPS 1575.42 ± 1.023MHZ; GLONASS 1597.5~1605.8 MHZ; BDS 1561.098			
	± 2.046MHZ;			
Sensitivity	-163dBm			

WLAN

Wi-Fi	WLAN
Protocol	IEEE 802.11 b/g/n/a (2.4G/5G dual-band Wi-Fi)
Frequency	2.4G and 5G
Security and Encryption	Support WAPI & SMS4 encryption
Transmitting power	Pmax <20dBm

Bluetooth

Standard	Bluetooth parameters		
Bluetooth features	BT5.0		
Receiving sensitivity	DH5 -92dBm, 2-DH5 -91dBm, 3-DH5 -85dBm		

Accessories

	Туре
Optional Antenna	4dBi-12dBi Antenna

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3.Assembly

3.1 Connecting Antennas

To connect the antennas, follow these steps:

- Connect one end of the RF cable to the main antenna interface of the RFID Reader/Writer.
- 2. Connect the other end of the transmission cable to the read/write antenna.

Note: For installation instructions, please copy the link and open it in your browser to watch the unboxing video:

https://youtu.be/SeOwQd6nRF8

3.2 Connecting Peripheral Devices

To connect peripheral devices, follow these steps:

- Connect the monitor, keyboard, and mouse to the RFID Reader/Writer via the HDMI interface and USB interfaces.
- 2. Connect the Ethernet cable to the RJ45 interface to establish a network connection, or use 4G/ Wi-Fi for communication.

Urovo 4.Operation

4.1 Starting Up the System

To start up the system, follow these steps:

- 1. Connect the power supply to the DC interface of the device, the device will automatically boot up.
- 2. Connect the peripheral devices, such as a keyboard, mouse, and monitor, to the appropriate interfaces on the device.
- 3. Wait for the device to boot up and the operating system to load.

4.2 RFID Demo Application

The application is designed to showcase the device's capabilities and provide a basic understanding of RFID technology.

#RFID demo.

4.2.1 Installing the Application

You can use the Micro-USB port to install the demo, or you can develope the

sepecific app for you business/work flow.

a. use adb command like: adb install...apk

b. copy the apk file into the folder of device and find it to install.

4.2.2 Setting Up the System

Before using the RFID demo application, you need to set up the system by following these steps:

- 1. Connect the antennas to the appropriate interfaces on the device.
- 2. Connect the peripheral devices, such as a keyboard, mouse, and display, to the appropriate interfaces on the device.
- 3. Connect the device to a network using one of the available interfaces (e.g., Ethernet, Wi-Fi).

4.2.3 Using the Application

To use the RFID demo application, follow these steps:

- 1. Launch the RFID demo application from the device's main menu.
- 2. Set the Baud Rate

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iği u	IFDemo_V3.62		
	() ocoo		
	9600		
DevidDeter	0 19200		
BaudRate:	57600		
	0 115300		
	0 113200		
		Connect	
			•
			<i>A</i>
		•	

3. Select the Antenna port you connected and set it

6:30 рм 🖪 🔛 🕲				Ŷ
SCAN		PARAM	R/W	CMD
		Invento	огу Туре	
	Type:	EPC		
		Ant	enna	
ANT1	ANT2		ANT3	ANT4
ANT5	ANT6		ANT7	MNT8
		Mix/TID	condition	
	Bank:	TID		
	Ptr:	0		15
	Len:	6		
	Access Pwd:	0000000		
		Inventory	Parameter	
	Q:	6		
	Session:	Auto-2		
	Scantime:	10*100ms		4
	Target:	A		
	A/B:	1		-
G	Get			Set
	•			

4. Go back to first page and test scan, or go to R/W page for the detail reading

and writting.

•

6:32 рм 🖪 🖂 🔕					20
SCAN	PARAM	R/W		СМД	
Result		18:31:16 Read	Success		
ID	E20051161502004220803C8	38			
Bank	User				4
Ptr	þ				
Len	6				
Access Pwd	0000000				
WriteData					
ReadData	E2034121EA12BCED324	98765			
Read	W	rite		WriteEPC	
Lock Mem:	USER				
Lock Type:	Lock				4
	L	ock			
Kill Pwd:	12345678				
	ŀ	GII			
Lock or kill password can not be 00000000					

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5. Troubleshooting

In case of any issues or errors during operation, refer to the following troubleshooting steps to resolve the problem:

- Verify that all cables and connections are properly connected and secured.
- Ensure that the power source is sufficient and that the device is properly powered on.
- Check that the peripheral devices, such as the display screen and keyboard, are properly connected and functioning.
- Verify that the RFID demo application is properly installed and configured. If necessary, reinstall the application and follow the setup instructions.
- If the issue persists, refer to the user manual or contact technical support for further assistance.