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› **Fongwah U6 RFID Reader Desktop UHF Reader/Writer (Built-in 8dB Antenna), Bulk Tags Reading and Long Distance User Manual**

FONGWAH 8dB Antenna

Fongwah U6 RFID Reader Desktop UHF Reader/Writer User Manual

Model: U6 (8dB Antenna)
Brand: FONGWAH

1. INTRODUCTION

The Fongwah U6 RFID Reader is an integrated UHF Read/Write device designed for efficient bulk tag reading and long-distance identification. It features a built-in 8dB antenna and supports various protocols, making it suitable for a wide range of applications.

This manual provides detailed instructions for setting up, operating, and maintaining your U6 RFID Reader, along with technical specifications and troubleshooting tips.

2. PRODUCT FEATURES

- **All-in-One Device:** Integrated UHF reader with a built-in 8dB antenna, supporting TCP/IP and USB serial-to-USB communication.

- **Protocol Compliance:** Compatible with EPCglobal UHF Class 1 Gen 2 and ISO 18000-6C protocols.

- **High Performance:** Capable of reading over 100 tags per second with a long reading distance of 1-8 meters (performance varies based on tags and environment).

- **Versatile Applications:** Ideal for scenarios requiring identification of a large number of tags over long distances, data block transmission, and high security. Supports reading and writing of self-developed temperature measurement tags.

- **Broad Application Prospects:** Suitable for asset management, aviation, logistics, retail, and identity recognition.

- **Technical Support:** Cross-platform open SDK provided for secondary development and software integration.

3. PRODUCT SPECIFICATIONS

Specification	Value
Brand	FONGWAH
Model Number	8dB Antenna (U6)
Frequency	860-960MHz
Bulk Tags Reading	>100pcs per second
Long Distance Reading	1-8 meters (depending on tags' performance and working environment)
Supported Protocols	EPCglobal UHF class 1 Gen 2, ISO 18000-6C
Communication Interfaces	TCP/IP, USB serial-to-USB
Compatible Operating Systems	Windows 98, Me, 2K, XP, 2003, Vista, 7 (32-bit and 64-bit), CE, Unix, Linux, Android
Data Transfer Rate	200 Megabytes Per Second
Compatible Devices	Laptop, Desktop

4. SETUP GUIDE

Follow these steps to set up your Fongwah U6 RFID Reader:

1. **Unboxing:** Carefully remove the RFID reader and all accessories from the packaging. Verify that all components are present.

2. **Power Connection:** Connect the power adapter to the reader's power input port. Plug the adapter into a standard electrical outlet.

3. **Data Connection:**
   - **USB Connection:** For direct connection to a computer, use the provided USB cable to connect the reader to an available USB port on your PC or laptop.
   - **Network (TCP/IP) Connection:** For network integration, connect an Ethernet cable from the reader's LAN port to your network switch or router. Configure network settings as required by your system administrator.

4. **Driver Installation (if necessary):** For USB connections, your operating system may automatically install necessary drivers. If not, refer to the provided SDK or contact technical support for driver installation instructions.

5. **Software Integration:** The reader requires integration with your application software. Utilize the provided cross-platform open SDK (Software Development Kit) which includes DLLs and various programming examples to develop or integrate with your existing software.

Figure 4.1: Front view of the Fongwah U6 RFID Reader with its connected USB and power cables.

Figure 4.2: Bottom view of the Fongwah U6 RFID Reader, highlighting the cable entry point and mounting screws.

5. OPERATING INSTRUCTIONS

The Fongwah U6 RFID Reader is designed for efficient and reliable RFID tag reading and writing. Once properly set up and integrated with your software, follow these general operating guidelines:

1. **Power On:** Ensure the reader is powered on. An indicator light (if present) should confirm its operational status.

2. **Software Activation:** Launch your RFID application software that is integrated with the U6 reader.

3. **Tag Placement/Proximity:** Position the RFID tags within the reader's operational range (1-8 meters). For optimal performance, ensure there are no significant metallic obstructions between the reader and the tags.

4. **Reading Tags:** Initiate the tag reading process through your software. The U6 reader is capable of reading over 100 tags per second, making it highly efficient for bulk tag identification.

5. **Writing Tags (if applicable):** If your application requires writing data to tags, follow the specific instructions within your software. The reader supports writing to compatible UHF tags.

6. **Data Processing:** The read/written tag data will be transmitted to your connected computer or network for processing by your application.
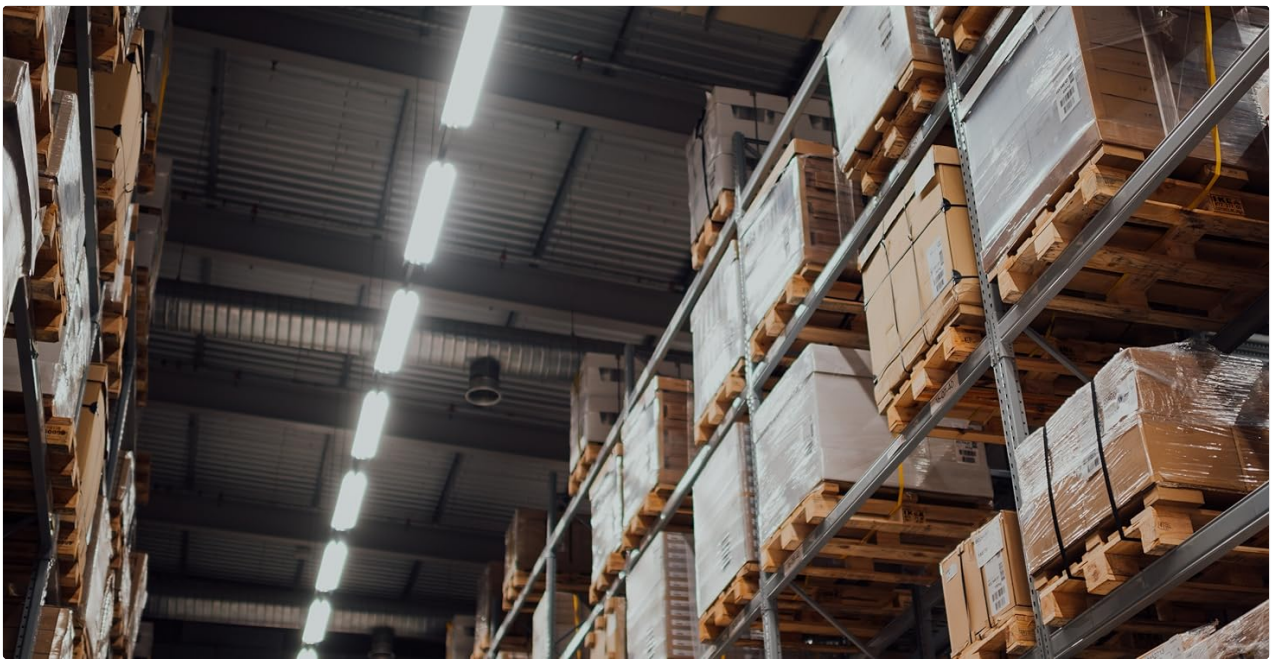
Figure 5.1: Example of the RFID reader deployed in a retail clothing store for inventory management.

Figure 5.2: The RFID reader in use within a grocery store, demonstrating its application in fresh produce inventory.
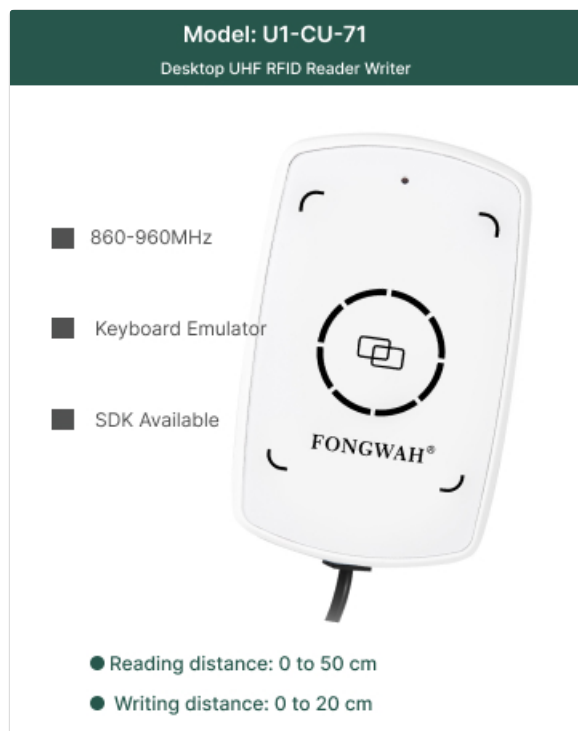
Model: U1-CU-71
Desktop UHF RFID Reader Writer

860-960MHz

Keyboard Emulator

SDK Available

FONGWAH®

● Reading distance: 0 to 50 cm
● Writing distance: 0 to 20 cm

Figure 5.3: The RFID reader integrated into a cosmetics retail environment for product tracking.

Model: U6-CU-91
Gen2 UHF RFID Reader Writer

860-960MHz

Keyboard Emulator

SDK Available

● Read Distance: 0 to 100cm
● Write Distance: 0 to 20cm

Note: U6-CU-91 is the updated model of WRD-130-U1

Figure 5.4: Multiple RFID readers deployed in a warehouse setting for comprehensive asset management.

6. MAINTENANCE AND CARE

Proper maintenance ensures the longevity and optimal performance of your Fongwah U6 RFID Reader:

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the reader. Avoid using abrasive cleaners, solvents, or harsh chemicals, as these can damage the device.
- **Environment:** Operate the reader in a clean, dry environment. Protect it from extreme temperatures, humidity, dust, and direct sunlight.

- **Cable Management:** Ensure all cables are securely connected and not strained or kinked. Avoid placing heavy objects on cables.
- **Storage:** When not in use for extended periods, store the reader in its original packaging or a protective case in a cool, dry place.
- **Firmware Updates:** Periodically check with Fongwah technical support for any available firmware updates that may improve performance or add new features.

7. TROUBLESHOOTING

If you encounter issues with your Fongwah U6 RFID Reader, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Reader not powering on	Power cable loose; Power outlet faulty; Power adapter damaged.	Check power cable connection; Try a different power outlet; Replace power adapter if damaged.
Cannot read tags	Tags out of range; Incorrect tag type; Software not configured correctly; Interference.	Ensure tags are within 1-8 meters; Verify tags are UHF (EPCglobal C1 Gen2, ISO18000-6C); Check software settings and SDK integration; Reduce electromagnetic interference from other devices.
Slow reading speed	Too many tags in field; Environmental interference; Software processing bottleneck.	Optimize tag density; Minimize interference; Consult software developer for optimization.
USB connection issues	Faulty USB cable; Driver not installed; USB port issue.	Try a different USB cable; Install necessary drivers from SDK; Use a different USB port on your computer.
Network connection issues	Incorrect IP settings; Faulty Ethernet cable; Network firewall.	Verify IP address and network settings; Test with a different Ethernet cable; Check firewall rules on your network.

If the problem persists after attempting these solutions, please contact Fongwah technical support for further assistance.

8. TECHNICAL SUPPORT AND SDK

Fongwah provides comprehensive technical support for the U6 RFID Reader. A cross-platform open SDK (Software Development Kit) is available to facilitate the secondary development and integration of the device with your custom software applications.

The SDK typically includes:

- DLLs (Dynamic Link Libraries) for various programming languages.
- Programming examples to guide developers.

- Documentation for API functions and device communication protocols.

For SDK access, technical inquiries, or support, please refer to the official Fongwah website or contact their customer service directly. Most of Fongwah's readers and writers are designed for users with programming skills to integrate the device with their software.

9. APPLICATIONS

The Fongwah U6 RFID Reader is highly versatile and suitable for a wide array of applications requiring efficient and long-distance RFID identification:
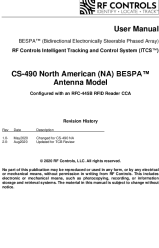
- **Asset Management:** Track and manage inventory, equipment, and other assets in warehouses, offices, and industrial settings.

- **Aviation:** Streamline baggage handling, cargo tracking, and equipment management in airport operations.

- **Logistics and Supply Chain:** Improve efficiency in goods tracking, shipping, receiving, and overall supply chain visibility.

- **Retail:** Enhance inventory accuracy, prevent theft, and improve customer experience through faster checkout processes.

- **Identity Recognition:** Utilize for access control, personnel tracking, and other identification purposes where bulk reading is beneficial.

- **Temperature Sensing Tags:** Supports reading and writing of Fongwah's self-developed temperature sensing tags, enabling specialized applications in cold chain logistics or environmental monitoring.

Figure 9.1: The RFID reader facilitating inventory management in a warehouse with stacked boxes.

Related Documents - 8dB Antenna

	[Fongwah U1-CU-71 UHF Reader Test Report](#) Comprehensive test report for the Fongwah U1-CU-71 UHF Reader, detailing RF performance characteristics including conducted and radiated emissions, peak output power, occupied bandwidth, carrier frequency separation, hopping channel number, dwell time, and antenna requirements, conducted by Shenzhen CTB Testing Technology Co., Ltd. according to FCC CFR Title 47 Part 15 Subpart C and ANSI C63.10 standards.
	[SkyeModule M1 Antenna Design Guide - SkyeTek](#) Comprehensive guide for designing custom RFID antennas for the SkyeTek SkyeModule M1 reader module, covering internal and external antenna configurations, design procedures, and examples.
	[YR903 UHF RFID Evaluation Kit User Manual](#) Comprehensive user manual for the Invelion YR903 UHF RFID Evaluation Kit. Covers hardware overview, reader configuration, RF parameter settings, ISO-18000-6C tag inventory (Real-time and Buffer modes), tag access operations (read, write, lock, kill, selection), error handling, custom application development, and driver installation.
	[GE Outdoor/Attic HD Antenna User Manual](#) Comprehensive guide for installing and using the GE Outdoor/Attic HD Antenna, including safety instructions, assembly steps, connection diagrams, and troubleshooting tips.
	[RF Controls CS-490 NA BESPA Antenna User Manual](#) Comprehensive user manual for the RF Controls CS-490 NA BESPA (Bidirectional Electronically Steerable Phased Array) Antenna Model. Details installation, configuration, specifications, indicator lights, safety instructions, and FCC compliance for RFID tracking systems.
	[Andea Electronics EA2602-BL/EA2602-BL-P HF RFID Shielded Antenna User Manual](#) User manual for the Andea Electronics EA2602-BL and EA2602-BL-P HF RFID Shielded Antennas, detailing product overview, features, dimensions, interface, connection instructions, and testing procedures.