# ATD100N USER GUIDE

# Contents

# Before the Beginning

The objective of user guide is to pass the basic contents related with **ATD100N**`s maintenance and smooth uses. User guide inclusive of text, images, logos, product name may not be distributed, modified, displayed, reproduced (in whole or in part) without the prior written permission of **ATID Co,.Ltd.** Furthermore, the described contents in this document are subject to change without notice for improving or maintaining the product and we inform the user that some material can be different with the described contents due to the firmware changes of product.

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# Product Overview

**ATD100N** is a compact size UHF RFID desktop reader product. This product does not require a separate power source and can be operated only by a USB connection. It can be used as a data collector in various fields such as medicine management and inventory management.

This product can transmit the collected data to the Windows Host device through the USB transmission method. SDK is supported to easily process the collected data.

# Key Features

1) This product is a compact size UHF RFID desktop reader.

2) The RFID module of PHYCHIS was applied to read/write the UHF RFID tag.

3) Using the USB cable installed in the device, it is possible to connect to a Host device to operate and transmit data.

4) It is possible to check the operation status of the device through the LED and buzzer.

5) Support HID (Human Interface Device) mode.

# Product Specification

| Performance | |
|---|---|
| Processor | ARM7 Core |
| Supported Platforms | Windows |

| Physical Characteristics | |
|---|---|
| Dimensions (W x H) | 140 x 26 mm |
| Weight | 210g |
| Power | USB 0.5A |
| USB Interface | 1 USB, USB Type-A Cable (Fixed Type) |
| Host Protocol | Serial (VCP), HID |
| Standard I/O Port | USB Client |
| Notification | LED Indicator, Buzzer |

| Data Collection | | |
|---|---|---|
| RFID UHF | Protocol | EPC GEN2, ISO/IEC 18000-6C |
| | Reading Range | ~ 50 cm (Depending on environment and tag type) |
| | Writing Range | ~ 50 cm |
| | RF Output | 0.5W |
| | Frequency Range | US / FCC     : 902MHz ~ 928MHz<br>EU / CE       : 865MHz ~ 868MHz<br>KR / KC       : 917MHz ~ 921MHz<br>JP / TELEC   : 920MHz ~ 923MHz (0.2W) |
| | Antenna | Circular Antenna / 2.2 dBic |

| User Environment | |
|---|---|
| Operating Temp | -10°C to 50°C |
| Storage Temp | -30°C to 70°C |
| Humidity | 5~95% (non-condensing) |

# Configuration of the product

## 1. Product Appearance

Status LED 2

Mode Setting Switch
(Serial / HID)

RFID

Power Button / Status LED 1
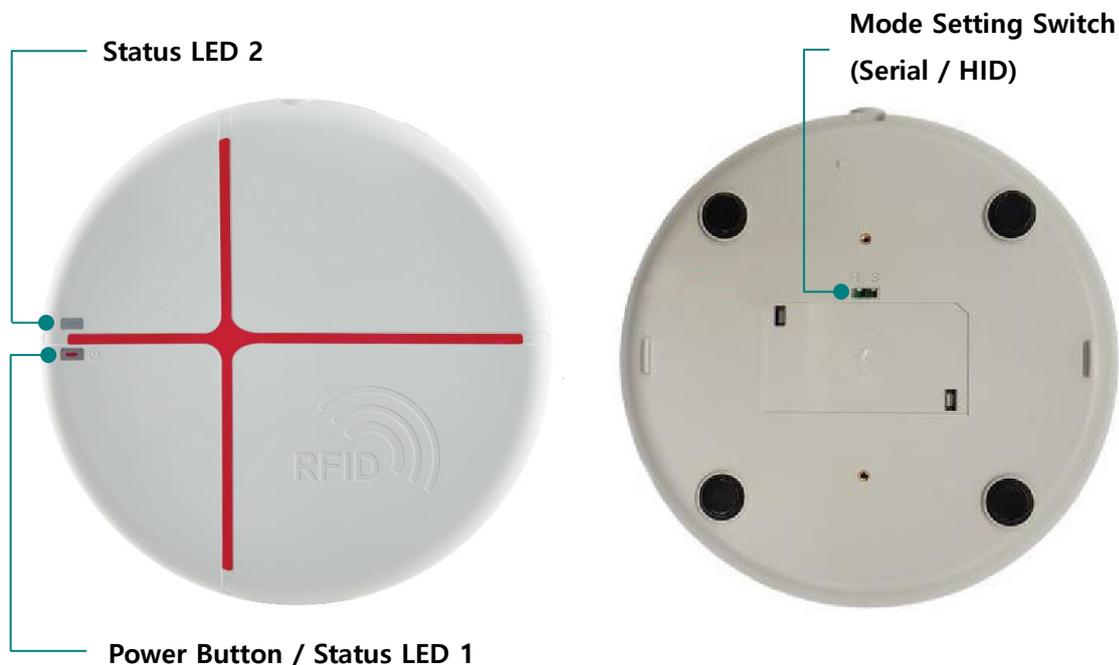
1) **Power Button / Status LED 1** : By keeping the button pressed, the product can be turned ON/OFF. It also serves as an LED to indicate the status of the product.

2) **Status LED 2** : LED indicating the status of the product.

3) **Mode Setting Switch** : The operation mode of **ATD100N** is set according to the switch setting as shown table below. If user changes the operation mode, the setting is applied as the product reboots.

| Switch Setting | Operation Mode |
|----------------|----------------|
| S | Serial |
| H | HID |

## 2. USB Cable

**ATD100N** is equipped with a USB TYPE-A, 1.5m USB cable as standard. It supplies power and transmits data to the host device through the USB cable connection.



USB TYPE-A

## 3. UHF Antenna

The antenna of **ATD100N** is located in the center of the product. The closer the tag is located at the center of the product, the higher the recognition rate.
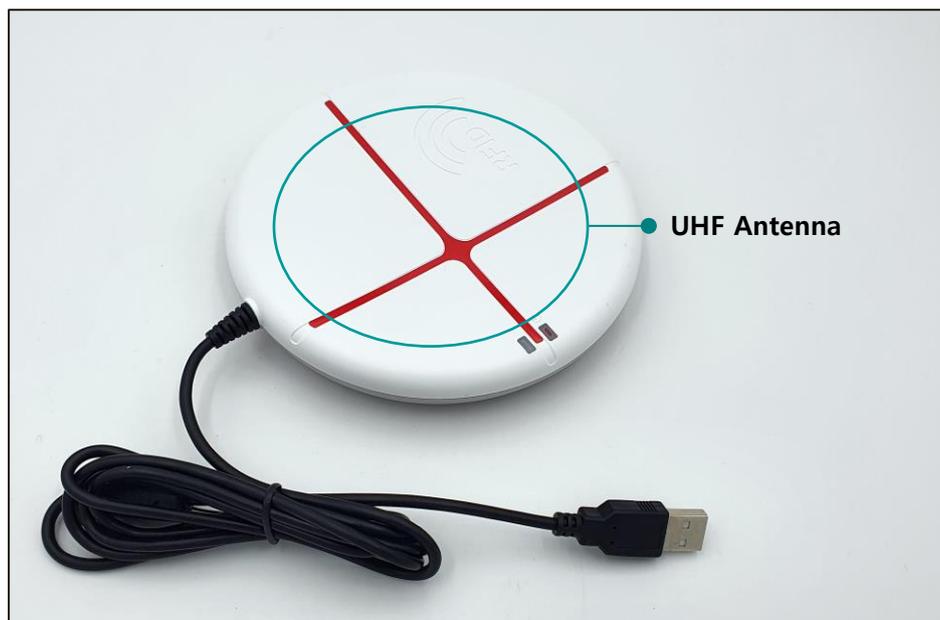


UHF Antenna

⚠ Two types of antennas (866MHzk, 912MHz) are supported according to each country's frequency range. It is necessary to select an antenna according to the region where the product is used.

# Operation Guide

## 1. Serial Mode

When the device is set to Serial mode, the device uses the ATID protocol to communicate with the HOST device in a command. In order to connect the host device to the device, a demo program provided by ATID or a program developed using SDK is required.

## 2. Product operation in serial mode

1) When the USB cable of the product is connected to the Windows Host device, the product turns on with a buzzer sound.

2) When booting is normally completed, 'Status LED 2' blinks in green.



3) When connected to Windows Host without problems, the device is assigned a COM port.

- COM Port is assigned a different number depending on the PC situation.
- Check the COM Port number assigned to the 'AT91 USB to Serial Converter' in 'Device Manager → Ports (COM & LPT)' of the control panel.
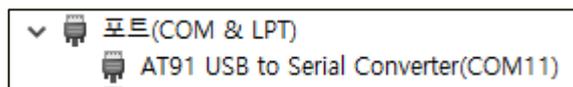


- Depending on the PC situation, driver installation may be required.

4) When the program of Windows Host device and ATD100N are connected, 'Status LED 2' stops blinking and stays on.

5) If data collection starts while the demo program is connected, 'Status LED 1' blinks in red depending on whether there is data or not.

6) Press and hold the power switch or unplug the USB cable from the host device to turn off the product.

## 3. HID (Human Interface Devices) mode

When the **ATD100N** is set to HID mode, the device transmits the collected EPC data to the host in HEX format. In this case, open a program that can create documents (txt, docx, xlsx, etc.) and place the cursor on the program to display the collected data.

## 4. Product operation in HID mode

1) When the USB cable of the product is connected to the Windows Host device, the product turns on with a buzzer sound.

2) When booting is normally completed, 'Status LED 1' turns green and 'Status LED 2' blinks in red. When connected to Host, 'Status LED 2' stops blinking and stays on.



3) When connected to the host, data collection starts automatically.

4) When data collection starts, status LED 1 blinks in orange depending on whether there is data or not.
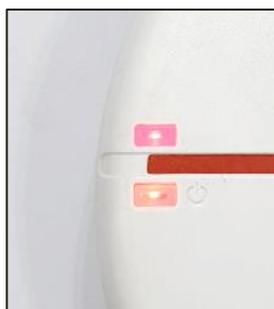


5) Data collected in HID mode is transmitted only EPC excluding CRC and PC to the host device. Terminator is set to line breaks.

6) Press and hold the power switch or disconnect the USB cable from the host device to turn off the product.

# Using the Windows Host Demo Application

1) To connect **ATD100N** and Windows Host device, connect via USB.

2) User can install the demo app included in the SDK on the host device.
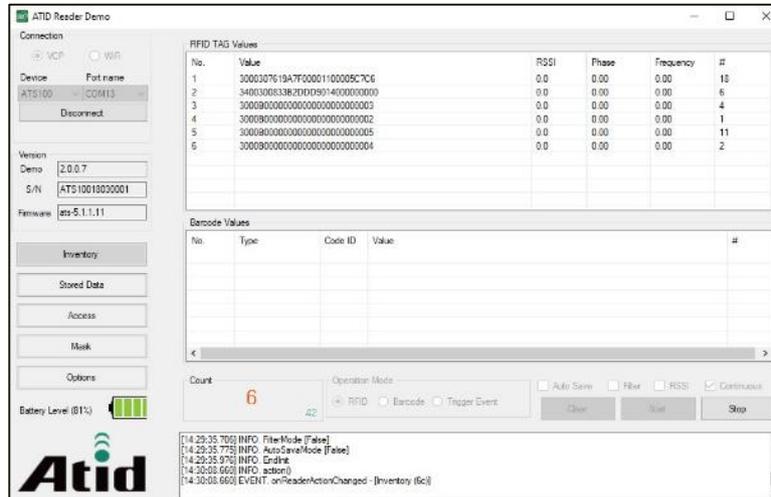


> ⚠️ For details on how to use the Windows demo application, refer to the 'ATID Reader Demo Guide for Windows' document included in the SDK.

# SDK (Software Development Kit)

In order to utilize the data transmitted to the host device, a separate program must be developed referring to the SDK provided by ATID.

| Platform | Development Tool | Development Language |
|---|---|---|
| Windows | Visual Studio | .NET Framework (C#), UWP (C#) |

| SDK Package Configuration | Details |
|---|---|
| Demo | Demo Application |
| Doc | Development documents such as user guides / manuals, programmer guides, demo guides, etc. |
| Lib | Library for application development |
| Sample | Sample Code |
| USB Drive for Windows | Windows USB Driver of ATID Bluetooth Reader |

# Product Warranty

## 1. ATD100N Product Details

For more information on product details **ATD100N,** please visit the address below.

http://www.atid1.com

## 2. SDK Download

If you need an **ATD100N** SDK, please contact us or the place of purchase.

## 3. Warranty and Technical Support

All **ATID** products can be repaired free of charge for one year based on the product manufacturing date. However, in principle, any defects caused by customer carelessness in use shall be repaired even during the free repair period.

For warranty, technical support and inquiries on this product, please contact the distributor or ATID.

## 4. Certifications

This product is KC, FCC, CE and TELEC certified, but we are not responsible for any issues arising during use outside of the certified area.

For details, please contact the distributor or ATID.

# ATID

| | | |
|---|---|---|
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The contents of the user manual are subject to change without notice for product specifications change or improvement.