Atid
All that Identification

RF-PRISMA USER GUIDE

ATID Co.,Ltd
Ver 0.1

Contents

Before the Beginning

The objective of user guide is to pass the basic contents related with **RF-Prisma**`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

RF-Prisma is a combined Barcode/RFID reader product. This product is equipped with a linear antenna to improve tag reading performance. **RF-Prisma** has a beautiful design with vivid red and soft curves and a light weight to enhance usability.

This product provides 1D/2D barcode reading function as an option, and the collected data can be transmitted to the host device through Bluetooth or USB interface. SDK is supported so that the collected data can be easily processed on the host device equipped with Windows, Android, or iOS.

Key Features

1) Linear antenna is applied to provide long tag reading performance compared to circular antenna products.
2) The Impinj's high performance R2000 Module is equipped, allowing the UHF RFID Tag to be read/write at high speed.
3) Barcode reading function equipped with Zebra's high-performance Barcode Engine SE4710 is provided as an option.
4) It can be connected to a PC through Micro USB and can be charged simultaneously with data transmission.
5) Even without a charging adapter, it can be charged using a regular smartphone charger.

Product Specifications

Performance		
Processor		ARM7 Core
Supported Platforms		Windows, Android, iOS
Internal Storage		1M Byte Flash Memory
Physical Characteristics		
Dimensions (W x L x H)		171 x 117 x 40 mm
Weight		230g
Power		2,600mAh Lithium-Ion Battery
USB Interface		1 USB Port / Micro USB
Notification		LED Indicator, Buzzer
Data Collection		
RFID (UHF)	Protocol	EPC GEN2, ISO/IEC 18000-6C
	Reading Range	~ 7m (Depending on environment and tag type)
	Writing Range	~ 0.5m
	RF Output	1W (MAX)
	Frequency Range	US / FCC : 902MHz ~ 928MHz EU / CE : 865MHz ~ 868MHz KR / KC : 917MHz ~ 921MHz JP / TELEC : 916MHz ~ 921MHz (1W) : 916MHz ~ 924MHz (0.25W / Optional)
	Antenna	Linear Antenna / 4dBi
Barcode		2D Engine (Support to read 1D & 2D Barcode / Optional)
Communication		
Bluetooth		BT V2.1+EDR / BLE V4.1 (MFi Certified)
User Environment		
Operating Temp		-10°C to 45°C
Storage Temp		-30°C to 60°C
Humidity		5~95% (non-condensing, +25°C
Drop Spec		1.2m

Configuration of the product

1. Product Components

RF-Prisma

Smartphone Holder

Battery Pack

Hand Strap

Micro USB Cable

Adaptor

2. Product Appearance

3. Barcode Option

You can select the barcode option when ordering products. The barcode module is applied to the product in the form below.

4. Smartphone Holder

A smartphone holder for attaching a smartphone to the product is included with the product. Smartphone holders are provided with different types of brackets as shown below depending on whether or not the barcode option is selected. For a detailed guide on attaching to the bracket, please refer to the 'Attaching the Smartphone Holder' section.

Standard Option

Barcode Module Option

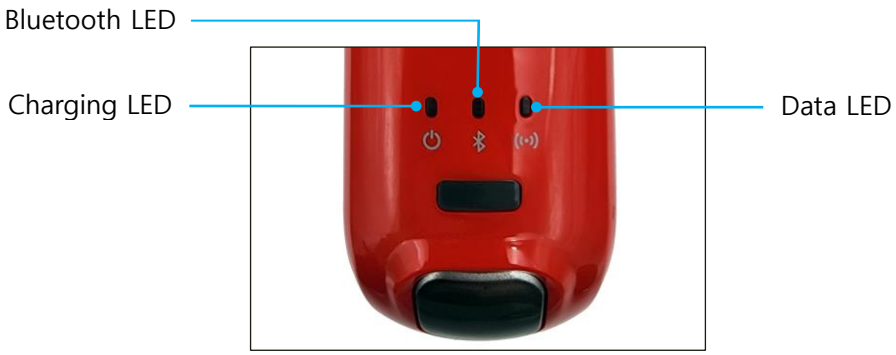
Operation of the product

1. The purpose and function of the buttons

1) **Power Button** : Press and hold for more than 1 second to turn the power on/off.

2) **Reading Toggle Button** : Reading starts when it is pressed once, and reading execution and stop are alternated each time it is pressed. In case of reading, the reading state is maintained even if the button is not pressed. If **RF-Prisma** is not connected to the host, this button does not work.

2. Configuration and Operation of LED



1) **Charging LED** : The three states are displayed as follows.

States	LED Operations
Charging	Red LED is turned on.
Charging is Done	Green LED is turned on.
Low Battery Alarm	When the device needs to be charged, a buzzer sounds and a Red LED is blinking.

2) **Bluetooth LED** : While waiting for connection with the host device, the blue LED is blinking. When the connection with the host device is completed, the blue LED stays on.

3) **Data LED** : During data reading, the blue LED is turned on while the red LED is turned on.

3. Battery Replacement

1) Pull the battery release button in the direction ① and hold it..
2) Remove the battery in direction ②.
3) To combine the battery, press the battery after combining the groove on the top of the battery to the main body..

4. Battery Charging

User can charge the battery by connecting the adapter included with the product to a power source and connecting the USB cable to the Micro USB connector at the bottom of the handle of the product. User can check the charging status through the charging LED on the top of the product.

- **It is recommended to charge using the included adapter. Charging with an unkonwn adapter may cause malfunction of the device.**
- **The device is charged even when a USB cable is connected for data communication with a PC. In this case, it will charge at a low rate.**

Attaching the Smartphone Holer

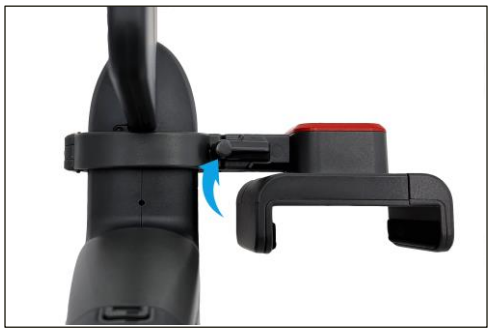
This product provides a smartphone holder for helping to use when linked with a smartphone. Depending on whether or not the barcode reading option is applied, different types of bracket products are provided, and each attaching method is different, so refer to the guide below and use it in combination with the product.

1. Installation of standard option smartphone holder

1) Open the product fixing structure of the smartphone holder and position the product as shown in the picture.

2) Covers the product fixing structure.

3) Flip the smart holder fixing clip upward for fixing the smartphone holder.

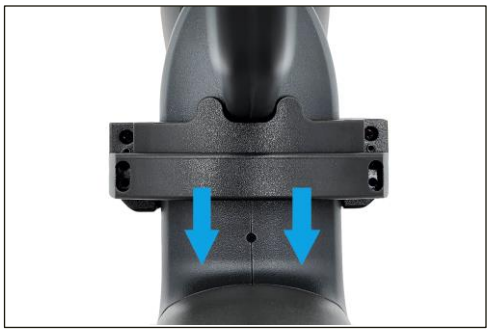


2. Installation smartphone holder with barcode module

1) Remove the protective cap shown below at the bottom of the product.

2) Screw off the bolts located under the protective cap.

3. Push the protective part down to separate them.



4. Place the smartphone holder on the exposed position by separating the protective part. After that, tighten the screw, and cover the protective cap for fixing it.

Using Android Demo Application

1. Connecting the Android Demo Application

1) Install the Demo App with the APK file included in the SDK.
2) When the installation is complete, the icon below will be created.

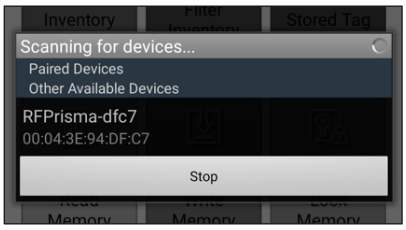
3) When running the Demo App, it starts with the screen like the one below..

4) Turn on the reader and click the icon ⋮ at the top right of the app to scan the IDs of connectable devices as shown below.

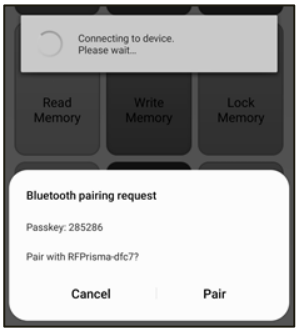
5. Depending on whether the reader is registered in the host device, select the registration menu.

- Connect to last Bluetooth device : Connect with the last registered device in the Host.
- Connect to new Bluetooth device : User can select and connect among the **RF-Prisma**s that are turned on around user.

6. If you click 'Connect to new Bluetooth device', **RF-Prisma** that is turned on nearby will be searched and displayed.



7. If user click the reader user wants to connect to, the Host device will ask you to approve the paring. Click 'Pair' button connect with the device.



8. When the pairing is completed without problems, the menus are activated as below.

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- Inventory : Read UHF tag data.
- Filter Inventory : Store inventory tags in the internal memory of the device, compares data, and performs inventory without duplication.
- Stored Tag : Read the tag data stored in the internal memory of the device or to store or delete an arbitrary tag in the memory.
- Read Memory : Read the tag data under the conditions specified by the user.
- Write Memory : Write the contents designated by the user to the tag.
- Lock memory (Tag Access) : Protect tag information by setting the Lock / Unlock function to the tag.
- RFID Option : Set options related to the RFID function.
- Barcode Demo : This is a menu that is activated when a barcode module is installed and reads barcode data.
- Barcode Option : Set options related to the barcode function.

For details on how to use the demo app, refer to the 'RF Prisma SDK Demo Guide for Android Developer' document included in the SDK.

Windows Host Bluetooth Connection Settings

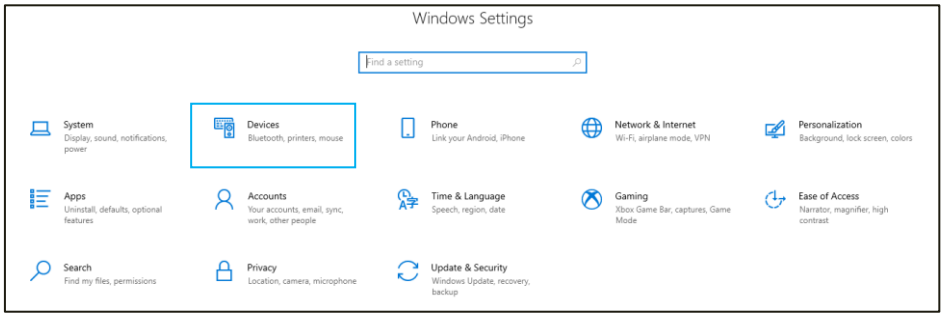
To send/receive data with a Windows platform device using Bluetooth, the **RF-Prisma** requires a PC with built-in Bluetooth functionality or a dedicated Bluetooth dongle. This chapter describes the Bluetooth connection method for Windows 10, which are representative Windows platforms.

- For details related to the Bluetooth function of the host device, please check with the place of purchase of the PC or the person in charge of product installation.
- In this chapter, it is assumed that the Bluetooth-related driver is installed normally.

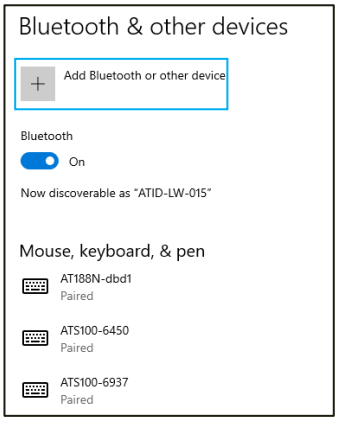
- For any problems that occur while using the product or during the installation process, please contact the reseller or manufacturer where you purchased the product.
- If the Bluetooth driver is not installed normally, or if you use a special driver that is separately supported by Windows 10 OS, the contents of this manual may not match each other.

1. Bluetooth Connection

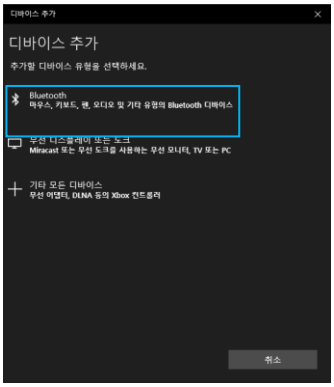
1) Enter the Windows Settings menu through ' Start → Settings' of Windows.
2) Select 'Device' menu in Windows settings.



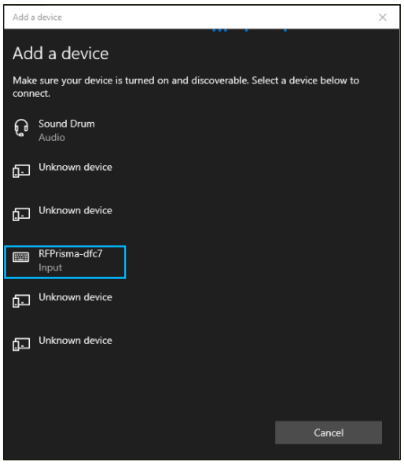
3) Check that the Bluetooth function is turned on. If it is off, turn on the Bluetooth function.
4) Select 'Add Bluetooth or other device' menu.

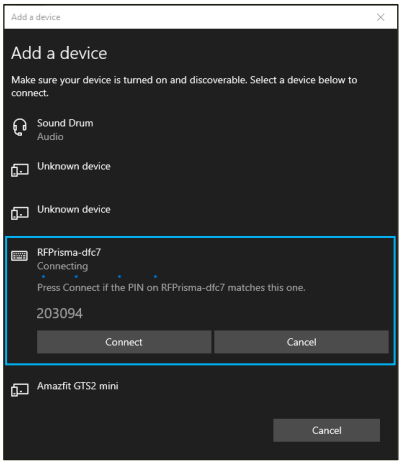


5) Turn on **RF-Prisma** and select Bluetooth as the device type to add. Select to start searching for Bluetooth devices requesting pairing in the vicinity.



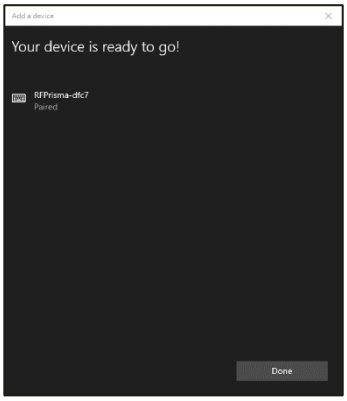
6) If user clicks the device user wants to connect among the searched Bluetooth devices, the pairing information screen of the target device is activated. Check if it matches the pairing information of the **RF-Prisma** you want to connect, and if it matches, click the 'Connect' button.



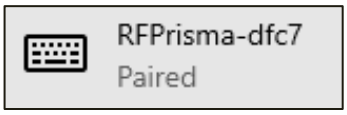


The 4 digits after the device name to be searched are the last 4 digits of the Bluetooth Module MAC Address. This 4 digit value is entered as a different value for all devices.

7) When pairing is completed normally, 'Your device is ready to go!' message is displayed. Click the Done button to complete the pairing process.

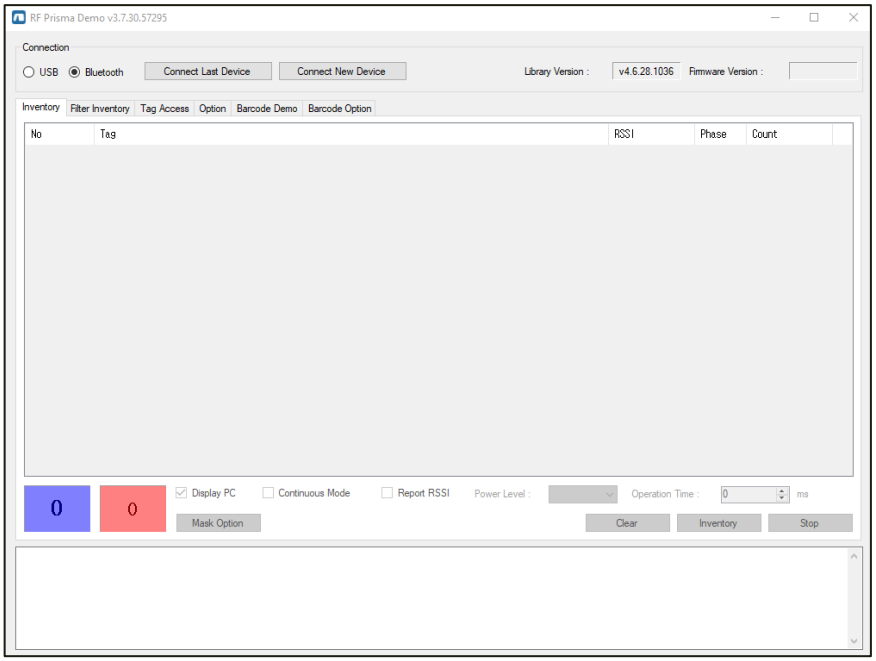


8) When the device is added successfully, the device will be registered with the message 'Paired'.



Using Windows Host Demo Application

1) When the Demo App for Windows Host included in the SDK is executed on the host device, it is executed as follows.

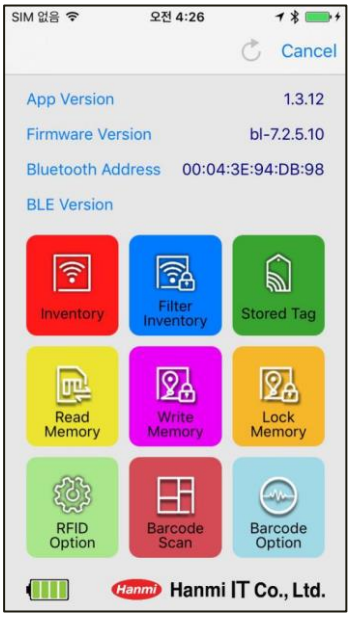


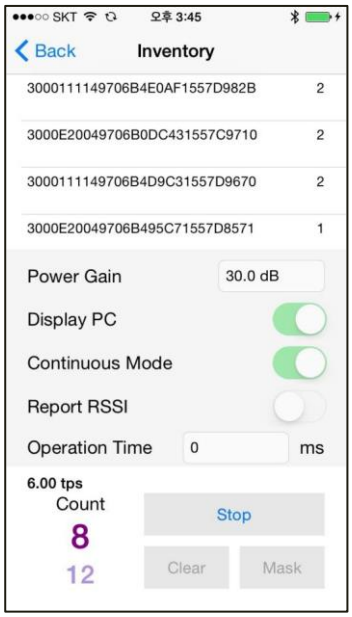
2) Select and connect the connection method (USB or Bluetooth) between **RF-Prisma** and the Windows Host device.

For details on how to use the demo app, refer to the 'RF Prisma SDK Demo Guide for Windows Developer' document included in the SDK.

Using iOS Host Demo Application

1) User can download the demo app through the 'App Store'.





- **The demo application is available from iOS version 10.2 or later.**
- **For details on how to use the demo app, refer to the 'ATID Reader Demo Guide for iOS' document included in the SDK.**

Firmware Update

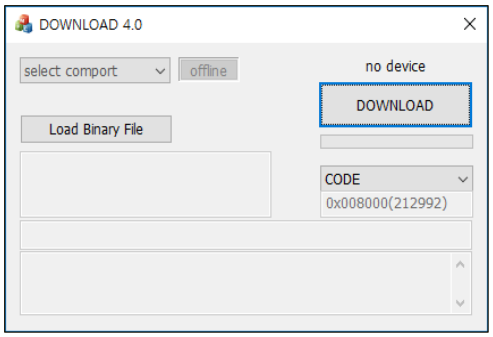
This product may be updated in the future to enhance its functionality and performance. If there is a problem during Firmware's update operation, the product may not be recoverable. So if you don't have knowledge of software and hardware, please contact your place of purchase or manufacturer for updates.

1. Firmware Update Preparation

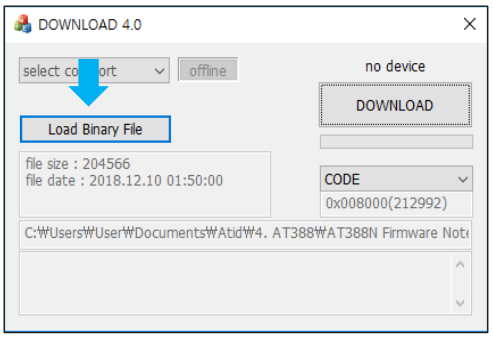
1) PC with Windows 7 or higher version (USB 2.0 Port)
2) RF-Prisma
3) Micro USB Cable
4) Firmware (xxxx.bin)
5) Firmware Update Tool (Included in the SDK)

2. Firmware Update Procedure

1) Save the firmware file in a specific folder on your PC.
2) Execute the firmware update program.

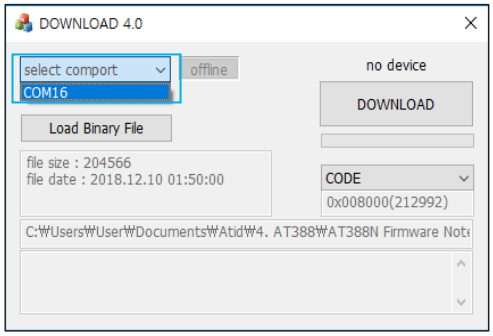


3) 'After clicking the 'Load Binary File' button, move to the folder where the firmware file was saved earlier and select the image to update.



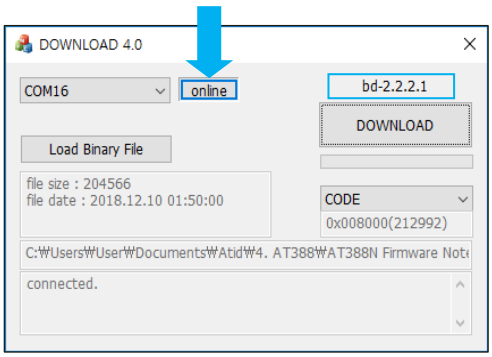
4) Connect **RF-Prisma** to PC using USB Cable.

5) Click the 'select comport' button in the PC update program to select the COM Port assigned to the **RF-Prisma** connected to the PC.

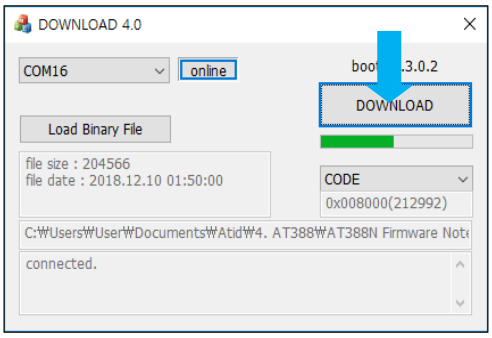


COM Port is assigned a different number depending on the PC situation.

6) Click the 'offline' button to try to connect to the device. When connected normally, the button changes to 'online' and the current firmware version of the device is displayed.



7) Click the 'DOWNLOAD' button to start the firmware update.



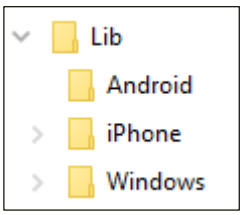
8) After a while, the product will automatically restart when the download is complete.

SDK (Software Development Kit)

When the device operates in interactive mode, a separate program must be developed by referring to the SDK provided by ATID in order to utilize the data transmitted from the host device. ATID Bluetooth Reader SDK supports three platforms: Android, Windows, and iOS.

Platform	Development Tool	Development Language
Android	Andorid Studio	Java
Windows	Visual Studio	.NET Framework (C#), UWP (C#)
iOS	XCODE	Objective-C
SDK Package Configuration	Details	
Bin	Demo Applications, Firmware Update Tool	
Doc	Development documents such as user guides programmer guides, demo guides, etc.	
Lib	Library for application development	
Sample	Sample Code	
Firmware	RF-Prisma Firmware	

Each folder is composed of subfolders for each platform as shown below.



Product Warranty

RF-Prisma is a product that **ATID Co.,Ltd.** is selling under a sales contract with Hanmi .

1. RF-Prisma Product Details

For more information on product details **RF-Prisma,** please visit the homepage below.

http://www.atid1.com

2. SDK Download

If you need **RF-Prisma** SDK, please contact us or the place of purchase.

3. Warranty and Technical Support

All **ATID Co.,Ltd**. 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 Co., Ltd**.

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 Co.,Ltd**

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