# AsReader

## AsReader GUN-Type

## ASR-L251G Series

## Barcode/ RFID Reader

# User's Manual

## Contents

# Preface

Thank you for using the Handheld Gun-Type AsReader ASR-L251G series.

AsReader GUN-Type ASR-L251G series is a portable device that can scan 1D/2D codes and read/write RF tags. This series of products has several models to choose from (JP, US, EU, etc.), please contact your distributor to choose the model suitable for your country or region.

Please refer to the appendix "Product Specifications" for the model information of this series.

This Manual describes the considerations for using AsReader GUN Type ASR-L251G.

Please read the manual carefully and keep it as long as you have the device.

※In some sections of this manual, we may refer to " AsReader ASR-L251G " as "the device" or "this device" except for accessories.

If you have any comments or questions about this manual, please contact us through the following ways.

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★In order not to damage your property and life safety, please read this manual carefully before using this product. We will not be responsible for any loss caused by non-compliance with this manual.

★We are not responsible for any damage caused by natural disasters, such as earthquake, lightning, wind, flood, fire outside our responsibility, third party behavior, other accidents, intentional or negligent, abuse or other improper use.

★If the damage is caused by falling or collision as determined by our company, the maintenance fee will be charged even within the warranty period.

★We will take appropriate measures to ensure that our products do not infringe other patents, but we are not responsible for any patent infringement caused by any of the following (1) to (3).

(1) Used in combination with components, products, equipment, data processing systems or software outside our company.

(2) Our products are used in unexpected ways.

(3) Modification of our products by any person or company other than our company

## Safety Instructions

· Please read the following instructions carefully to prevent injury, malfunction, fire, etc.

| ⚠ Warnings |
|---|
| Do not attempt to disassemble, modify or repair the device yourself, otherwise it may cause malfunction, fire or electric shock. We are not responsible for any malfunction of this product or intelligent device caused by modification. |
| The product has passed the radio regulations of Japan and obtained product design certification. According to the radio regulations, modification of this product is prohibited. If you modify yourself, you will be subject to legal sanctions.<br>In addition, the radio regulations are not identical in each country and region, so it is necessary to comply with the regulations of each country. We have models suitable for various countries and regions, please consult your distributor for details. |
| Depending on the intended use and location, it may take some effects of medical equipment. In order to reduce this effect, please strictly adhere to the following points during operation.<br>1. The operator of this product should keep this product away from more than 22 cm of the site where the implantable medical device is attached.<br>2. Persons with implantable medical devices should be away from more than 22 cm of this product. |
| If you notice any abnormalities such as smoke, abnormal odor, or strange noise coming from the product during use, stop using it immediately. Continued use may cause fire or electric shock. |
| Do not drop or throw the product and subject it to strong impact. It may cause damage, fire, electric shock, or malfunction. If the product is damaged by dropping and the inside of the device is exposed, do not touch the exposed part with your hands, because there is a risk of electric shock or injury on the damaged part. |
| Do not charge the battery in wet environment, as water will leak from the battery that does not have waterproof performance and the AsLock connection terminal (when AsLock is not connected). Otherwise, it may result in electric shock, short circuit, fire, or burns. Do not splash water on the terminals. Also, do not use this product near water such as in a bathroom, shower room, kitchen, or washroom. It may cause fire or electric shock. |
| Do not use if the USB-C charging terminal is damaged or broken. It may cause fire or electric shock. |
| If charging is not completed within the specified charging time, stop charging. It may cause liquid leakage, heat generation, fire, or failure. |
| Do not use, store, or leave the product in hot places (eg. by the fire, near a heater, in direct sunlight, in a car in hot weather). It may cause rupture, malfunction, fire or injury. |
| Do not throw the product into fire or heat. It may burst or cause a fire. |
| This product is a Class 2 laser product. Do not look into the laser beam or point it at other people. Directly looking into the laser beam may damage your eyes.<br>If you suspect a laser beam injury, seek medical advice immediately. |
| ⚠ Cautions |
| For charging, please use the dedicated USB-C charging cable, the magnetic suction and charging adapter with an output of 5V2A. Using different chargers may result in failed charges. |
| Please refer to local regulations when you recycle this device. |
| Please contact your local purchasing source immediately if any abnormal incidents occur. |
| Continuous use of this product in water or in rain may cause damage to the product or attached mobile devices. If it gets wet, please wipe it off immediately. |

Interference from external radio waves or surrounding electronic equipment may cause the device to not function properly. Please use the device with caution in this type of environment.

The AsLock connection terminal of this product, the magnetice suction of the USB-C charging cable, and the AsLock Gender, all have built-in magnets, which may erase the data on magnetic cards such as credit cards. So, to protect your data, please keep magnetic cards, such as credit cards, away from more than 10 cm of these magnets.

## How to Care for the Device

Please use this product in a clean environment. Adhesive chemicals or oils may cause the resin shell to break.

· chemicals include cosmetics, detergents, pesticides, thinners, gasoline, etc.

· oils include tallow and other animal oils, hand creams, etc.

Please keep the device clean. If the device becomes dirty, wipe it with a soft, dry cloth.
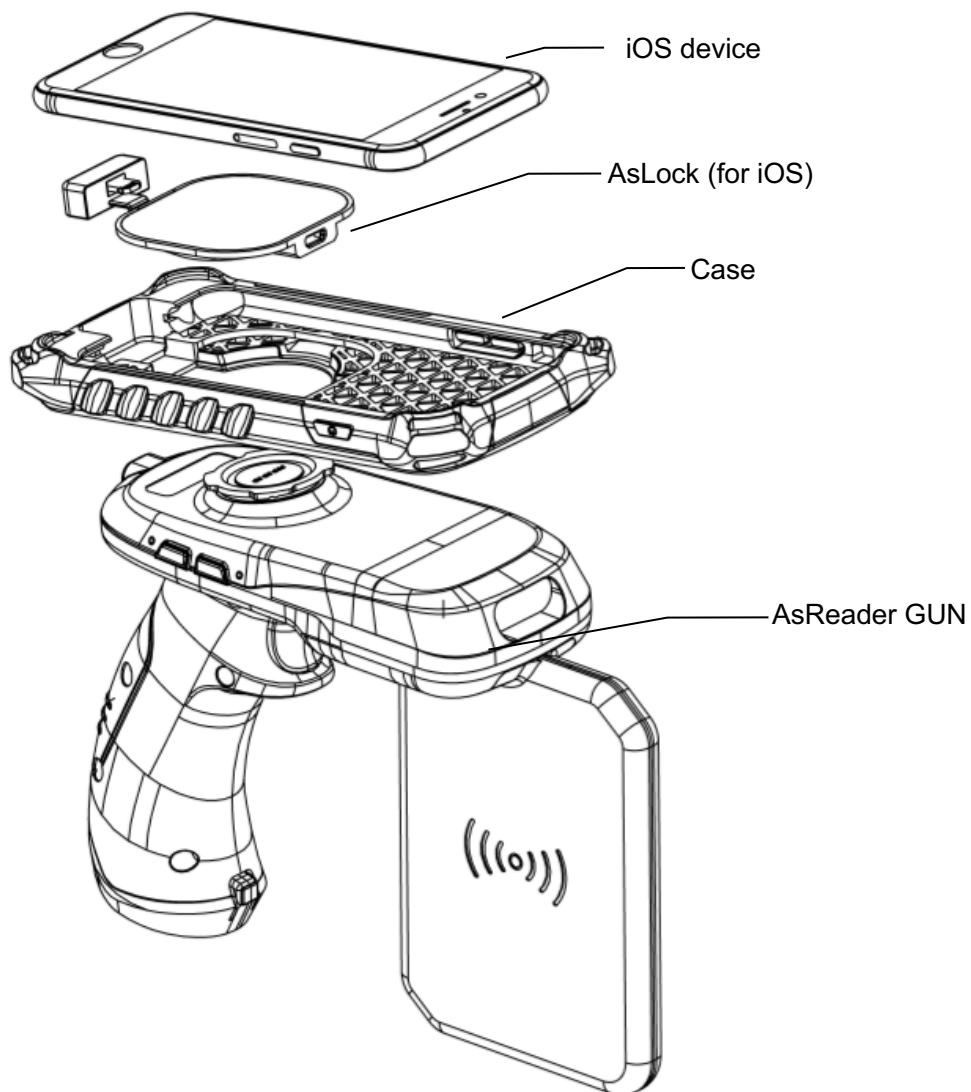
Using solvents of high-volatility may cause color changes and performance problems.

# 1 Assembly of Products and Accessories
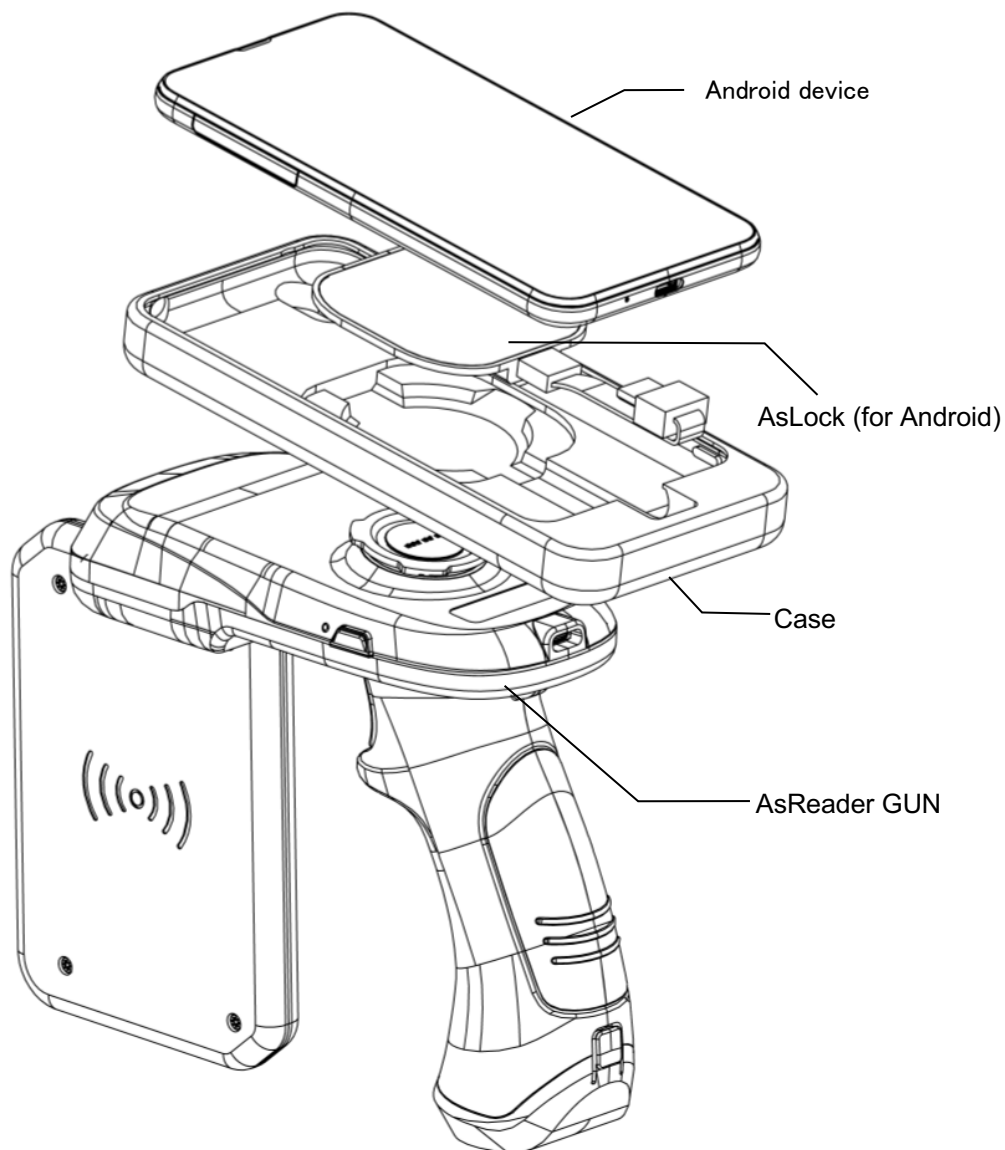
## 1.1 Assembly of Products and Accessories

· In order to use this product with intelligent devices, the following parts are required.

### 1.1.1 Working with iOS Devices

iOS device

AsLock (for iOS)

Case

Accessories

AsReader GUN

AsReader

## 1.1.2 Working with Android devices

Android device

AsLock (for Android)

Case

AsReader GUN

Accessories

AsReader

Note: If you are using an Android device, we do not guarantee that all models can be used because there are various models. Although most models that support OTG connection can be used, we strongly recommend that you do a verification before purchasing. Please contact the distributor for details such as verification before purchase and the existence of compatible cases.
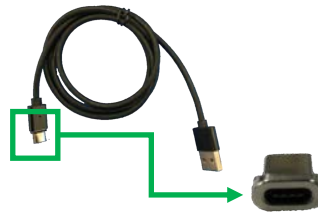
**1.2 Inside the Box**

The following items are contained in the box. Please first make sure you have all of these items. In case that any items are missing please contact the company from whom you purchased the device.

●AsReader                                    ●USB-C cable and the magnetic suction

※Optional accessories (included in the same package as AsReader if purchased at the same time)

●AsLock (for iOS)          ●AsLock (for Android)                    ●AsLock Gender

●Case

1.3 Applications Development
To use this product, you need to install related applications on mobile devices.

You can download SDK from our official website for iOS application development (please refer to SDK development manual and sample code)
The official website link (SDK for iOS only):

https://asreader.com/downloads/asr-l251g/
Please contact your distributor to obtain the Android SDK.

## 2 Name of each part of the AsReader

AsLock terminal

Barcode module

Antenna

Trigger

Mode indicator

Mode change

Power button

Mode button

Power indicator

USB-C charging port

Battery
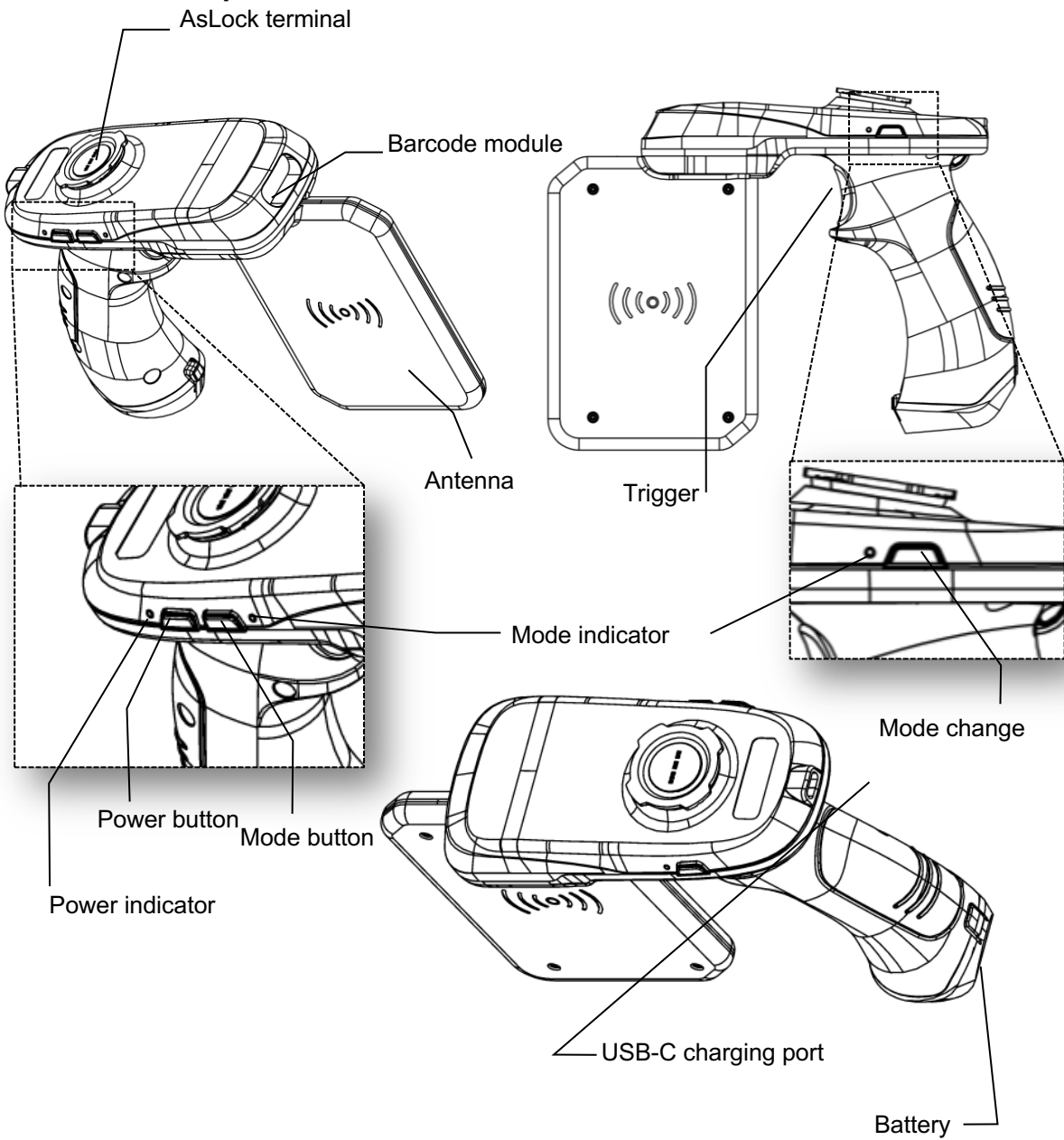
## 3  Functions and Operations

① Power button

· Power on / off

Press and hold the power button for more than 3 seconds, the buzzer will beep with vibration, the power indicator will start to flash, and AsReader will start.

※ The beep sound is turned on by default. If the beep sound setting is turned off, there will be no beep sound. The settings are saved in the application.

※ Vibration is turned on by default. If the vibration setting is turned off, it will not vibrate. The settings are saved in the application.

When AsReader is on, press and hold the power button for more than 3 seconds to shut down.

If it cannot be turned off, press and hold the power button for more than 10 seconds to reset.

If the product is placed without any operation, the device will go to sleep or shut down automatically. The sleep and automatic shutdown times of each OS are as follows.

|  | iOS | Android | The mobile device is not connected |
|---|---|---|---|
| Sleep | 5 mins | 5 mins | Not going to sleep |
| Auto OFF | When application connected: not turn off When application disconnected: 10 mins | 10 mins after sleep | 10 mins |

When the AsReader is in the sleep state, press the Trigger key to return to the operable state.

The idle time until sleep and power off can be modified by setting. If set to 0, this function is invalid.

When this product is connected to the application and does not perform any operation, the mobile device may go to sleep before this product. In this case, the mobile device will repeatedly connect and disconnect at certain intervals, and there will be Some beeps for connection and disconnection. If the product goes to sleep before the mobile device, the application will display the corresponding prompt message.

※ If the beep sound is set to OFF, the device will not beep. The initial value is ON. The settings will be saved in the application.

In addition, this product will automatically restart if it detects a hardware problem. If multiple automatic restarts occur, the device may be faulty, please contact your distributor.

② Mode button

The application could get the events that each mode buttons are pressed. And you can assign various actions such as switching the mode between barcode  scan and RFID inventory to the mode buttons through the application.

③ Trigger

· Press the trigger to scan 1D, 2D code or RF tags. Of course, you can also scan within the application.

④ LED indicators

· The LED indicators on the sides of the product indicates the running status of the product.

[Power indicator]

| Running status | LED status |
|---|---|
| Waiting for a connection to the mobile device | Green LED blinking |
| Connected to mobile device | Green LED non-blinking |
| Battery power less than 25% (Not connected to mobile device) | Red LED blinking |
| Battery power less than 25% (Connected to mobile device) | Red and green LED blinking alternately |
| Charging | Red LED non-blinking |
| Be off | Be off |

※ When the device is 100% charged, the LED turns green. Depending on the state of connection to the mobile device, the LED indicator may blink or keep on.

[Mode indicator]

· The LED can be turned on by any event of the application.

⑤ Barcode module

· When the trigger button is pressed, the scanning window will emit a laser beam, aim it at the 1D and 2D barcodes, and then scan it.
· Beeping occurs during barcode scanning and can be set in the application. Default as being on.
· Vibration occurs during barcode scanning and can be set in the application. Default as being on.
· You can set the barcode scanning module, refer to the barcode setting manual.
※ You also can set the Barcode module in the application, and these settings will be permanently saved in the AsReader.

Barcode setting manual download link:

https://asreader.jp/downloads/asr-l251g/

⑥ RFID reading/writing (antenna)

· Point the antenna towards the RF tags for reading and writing.
· Beeping occurs during tag reading/writing and can be set in the application. Default as being on.

· Vibration occurs during tag reading/writing and can be set in the application. Default as being on.

※ You also can change these settings in the application, and these settings will be permanently saved in the AsReader.

⑦ USB-C charging interface

· The device can be charged with the Type-C cable and magnetic suction header with 8mm diameter supplied with the product

⑧ Battery part

· You can remove the battery by pressing the buttons on the front and back.

## 4  Before use

In order to use the product, the components and mobile devices shown in section 1.1 must be assembled and then connected to the product. The assembly method is as follows:

①  Connect the mobile device and AsLock.

iOS device                                                              Android device
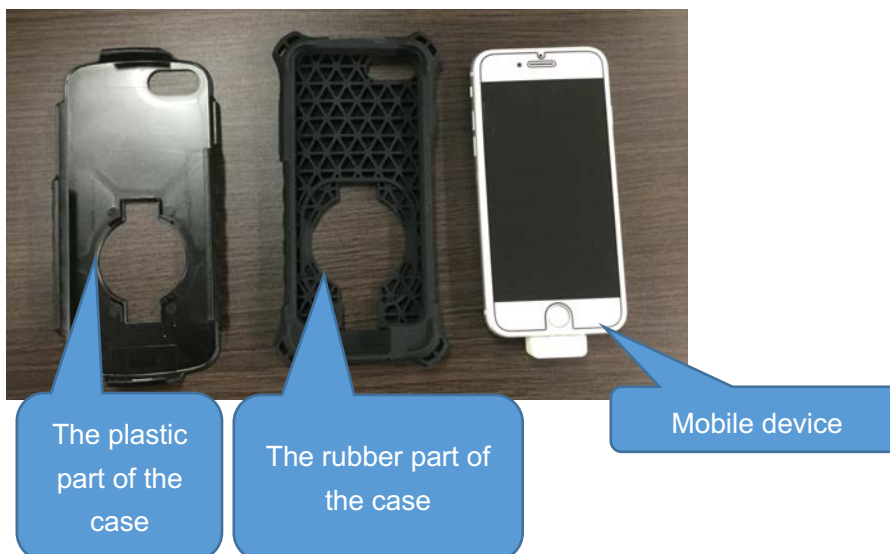


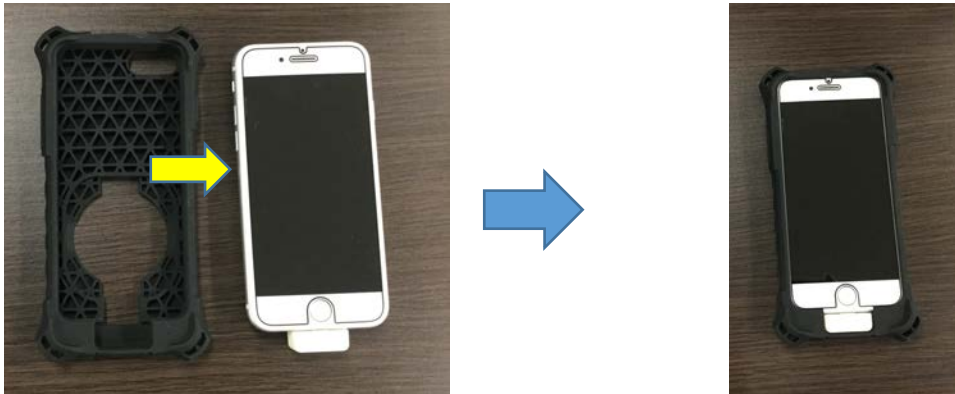②  Put the above combination①  into the protective case. (The following steps are common for iOS and Android devices)



How to wear the case

②-1    Remove the rubber part of the case.



The plastic part of the case
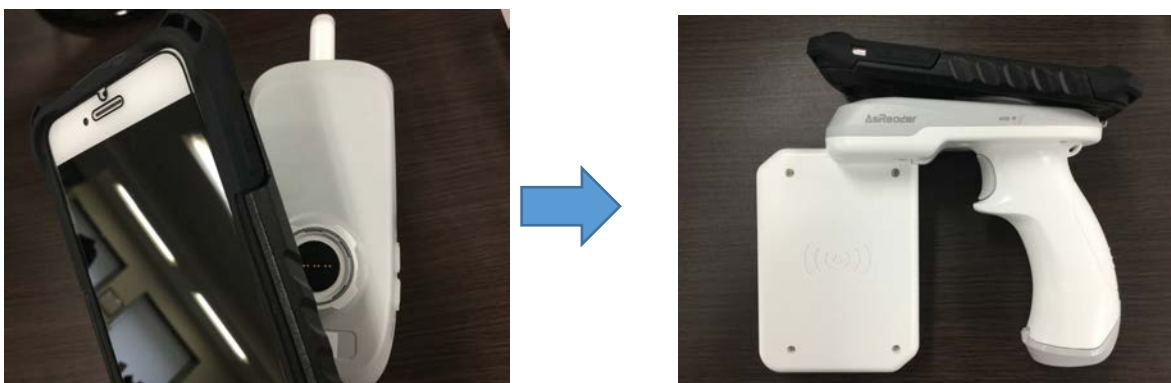
The rubber part of the case

Mobile device

②-2    Put the mobile device in the rubber part of the case.



②-3    Install the outer plastic part of the case to the upper ②-2.



③Connect the ②  above to the AsReader.



To use this product, you need to install a companion app on the mobile device. Please download the apps from AppStore or Google Play.

## 5　How to scan

When ready as described in chapter 4, make sure the battery is fully charged. Next, start the application, boot the product, and then check the connection status between the app and the product.

When connected:

① For barcodes:

First, you need to select the barcode mode in the application. And then pull the trigger to illuminate the white illumination and the red laser toward the barcodes to scan the barcodes. (You can also read it by operating the application instead of using the trigger.)

※ The red laser is for aiming. If you aim at the middle point of the barcode, it will be easier to read.

② For RF tags:

First, you need to select the RFID mode in the application. Then point the antenna towards the RF tags and pull the trigger to read /write. (You can also read and write by operating the application instead of using the trigger.)

### ※When using our demo app

If you are using our demo application "AsReader GUN", please refer to "ASR_L251G_Demo_App_User_Manual_ObjectiveC" for the operation method.

## 6 How to charge

The charging method for this product is as follows.

Plug the included magnetic suction into the Type-C charging interface on the AsReader, and then connect to the Type-C charging cable to charge. We recommend using a 5V/2A charging adapter.

Magnetic suction for USB-C charging cable

USB-C charging interface

USB-C charging cable
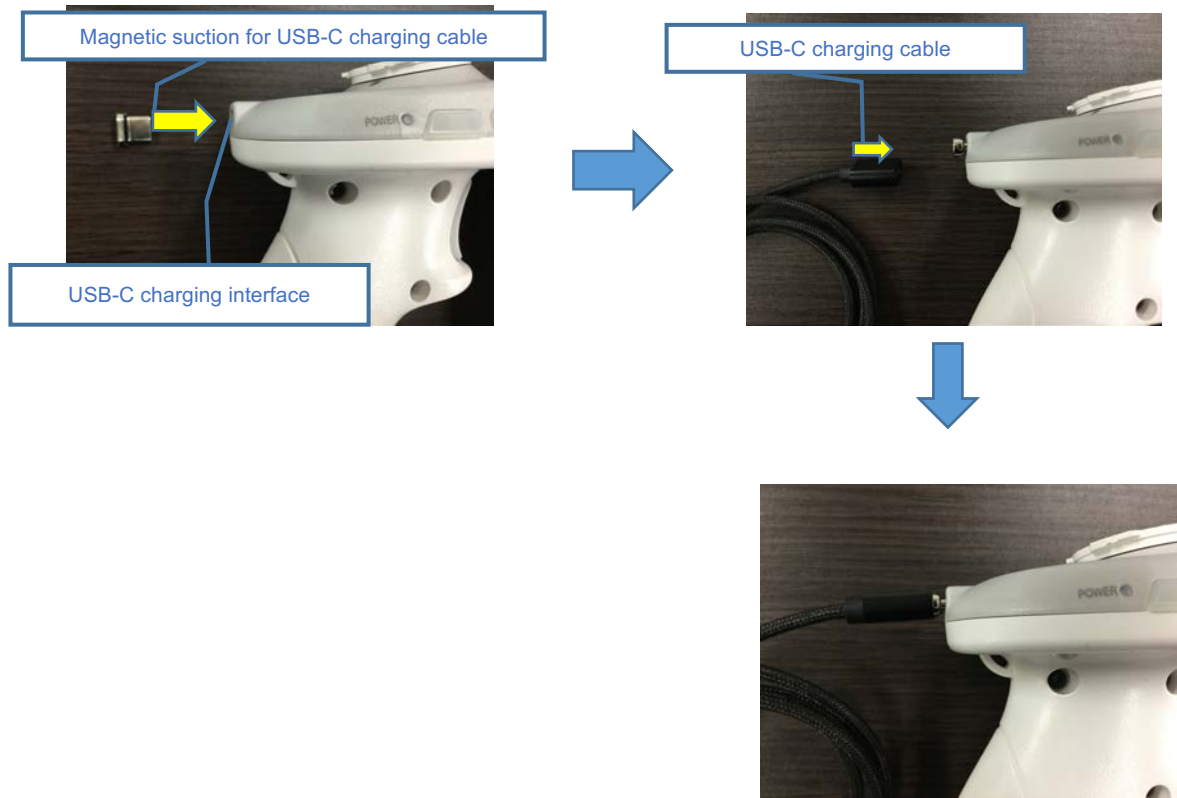
If a mobile device is connected, both the product battery and the mobile device battery are charged.
The power indicator LED is red and remains on while the product is being charged. When the device is 100% charged, the power indicator LED turns green. Depending on the state of connection to the mobile device, the LED indicator may blink or keep on.
※ when AsReader is off, once the type-c charging cable is connected, it will automatically start up and enter the charging state.
※ The power indicator does not show the charging status of the mobile device. Check the display on the mobile device for its charging status.
※ When an Android device is connected, communication with the Android device cannot be performed if the battery of this product is charged, so please disconnect the USB-C charging cable before use.
※ It needs to take 3.5 hours to fully charge the product when the battery runs out.
※ When using the product for the first time or if it has been left unused for a long period of time, please fully charge the battery of this product before use.
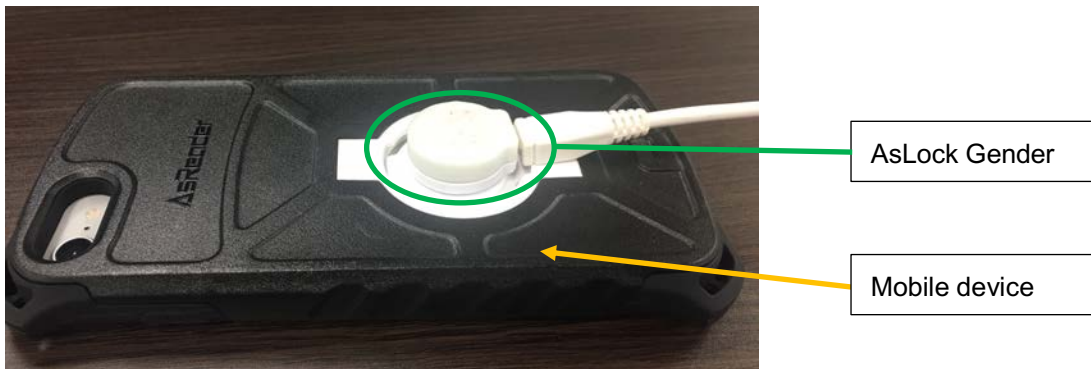
| ⚠ Warnings |
| --- |
| Do not charge the device with a power adapter other than 5V, since this may cause a malfunction and is not covered by the warranty. |

**※Supplementary Information**

Mobile devices (iOS and Android devices) can be charged separately by AsLock Gender.



AsLock Gender

Mobile device

AsLock Gender ASA-018C is recommended.

If AsLock Gender ASA-017C is used for charging, as the charging current it can provide is limited, the charging time may be longer than that of ASA-018C.

When charging with AsLock Gender ASA-018C, it is best to use the micro USB charging cable that supports quick charging in combination with it.

## 7　Troubleshooting

If you think the device is broken

Please check the following before contacting your distributor.

★Cannot connect to Mobile device
The mobile device may not recognize the device due to problems with the connection or an app.

Please check the following:

①　Make sure that the power of this product is turned on. If it is, turn it off and then on again.
②　Please restart the application.
③　Turn the mobile device power off and then on again.

★Not working
If this product become inoperable, press the power button for 10 seconds or longer to reset it.

★Cannot scan
If the device does not scan, please try the following:
①　Please confirm the device's battery is sufficiently charged.

②　If the application is not responding, please try restarting the application.

③　If the RFID is continuously read for a long time, the RFID module may generate heat, which making it impossible to inventory. Please wait a while and then try again.

## Appendix-Specifications

| Model Name | Bandwidth | Region |
|---|---|---|
| ASR-L251G-21 | 916-921MHz | Japan |
| ASR-L251G-22 | 865-868MHz | Europe |
| ASR-L251G-23 | 902-928MHz | North America |
| ASR-L251G-24 | 920.5-924.5MHz | China |
| ASR-L251G-26 | 902-908MHz, 915-928MHz | Brazil |

| | | |
|---|---|---|
| RFID | Spec | ISO 18000-63 (That is, the previous 18000-6C) / EPC global Class 1 Gen 2 |
| | Output power | 1W (5～30dBm: adjustable in units of 1dBm) |
| | Reading distance | 0～12m ※1 |
| | Reading speed | ≥1000 pieces/sec ※2 |
| | Polarization characteristics | Linearly polarized antenna |
| | Function | Read/ Write/ Lock/ Kill |
| Barcode | Scanning method | CMOS sensor |
| | Reading distance | ■ Barcode resolution　　　　■ Distance to the front of the device<br>100% U.P.C.　　　　　　　　46 mm – 419 mm<br>CODE 39　　-　　5 mil　　　64 mm – 163 mm<br>CODE 39　　-　　10 mil　　　28 mm – 338 mm<br>PDF417　　-　　6.7 mil　　　46 mm – 185 mm<br>Data Matrix　-　　10 mil　　　53 mm – 203 mm |
| | Reading angle | Pitch: ±45°; Roll: 360°; Skew motion: ±60° ※3 |
| | Readable code | ■1D: UPC/EAN/JAN, GS1 Databar, Code 39, Code 128, Code 32, Code 93, Codabar/NW7, Interleaved 2 of 5, Code 2 of 5, Matrix 2 of 5, MSI, Telepen, Trioptic, China Post<br>■2D Stacked: PDF417, MicroPDF417, GS1 Composite<br>■2D Matrix: Aztec Code, Data Matrix, QR Code, Micro QR Code, MaxiCode, Han Xin Code<br>■Postal: Intelligent Mail Barcode, Postal-4i, Australian Post, British Post, Canadian Post, Japanese Post, Netherlands (KIX) Post, Postnet, Planet Code<br>■OCR Option: OCR-A, OCR-B, E13B (MICR) |
| | Light sources | Illumination: white LED, Aiming: red laser (class 2) |
| Battery | Battery capacity | Built-in rechargeable lithium-ion battery 3400mAh |

| | Continuous operation time | ■RFID<br>About 11 hours (scan every 5 s; 30 s standby time)<br>About 8 hours (scan every 10 s; 30 s standby time)<br>■Barcode<br>About 32 hours or 20,000 times (scan every 5 s) |
|---|---|---|
| | Power source | USB-C cable & Magnetic suction header with 8mm D. ※4 |
| | Charging time | About 3.5 hours (Built-in battery) |
| Key input | | Trigger, Mode button, Power button |
| Communication | Interface | USB |
| Appearance | Dimensions(D)x(W)x(H) | 196x64x145mm |
| | Weight (with Battery) | About 370g |
| | Material | PC (Polycarbonate) |
| | Case color | White, Gray |
| | LED | Power indicator: red/green          Mode indicator: white |
| Environment | Operation temperature | -10℃～45℃ |
| | Charging temperature | 0℃～45℃ |
| | Storage temperature | -20℃～60℃ (A month) |
| | Operation humidity | 20～85 % RH |
| | Storage humidity | 10～95 % RH |
| | IP rating | IP54 compliance (only when connected to AsLock) |
| | Anti-drop | (Six-sided, 4 edge, once each) 1.5m ※5 |
| Certificates | | TELEC/ FCC ※6 /CE/SRRC ※6 /ANATEL ※6 / RoHS |
| Bundled items | | USB-C cable & Magnetic suction header with 8mm D |

※ 1 It depends on the type of RF tag and operating environment.

※ 2 It depends on the settings and operating environment.

※ 3 It depends on the barcode type.

※ 4 Use a 5V2A output charging adapter for charging.

※ 5 This product only.

※ 6 Scheduled to be acquired (as of March 2020).

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**ASR-L251G  Series**
**Barcode/ RFID Reader**

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2020.3   V1.0

Asterisk Inc.