Confidential

Specification: UHF RFID Long Range Gun type

Project Name : ASR-L251G
Model name: ASR-L251G-XX
Product name: Long Range Gun type Reader

Supplier Approval

Made by	Checked by	Approved by
HN Kim		
2019-08-05		

Customer Approval

Checked by	Checked by	Approved by

Revision Descriptions

Rev	ECN	Description	Approved by	Date
XP101 **XD101**		Initial draft Revision.(Request ASX) Changed. Contents & Block-Diagram & Image. Changed. Test Range in Sec.8	**HnKim**	**2019.4.8.** **2019.8.5.**

Table of Contents

1. Scope

1.1. Introduction

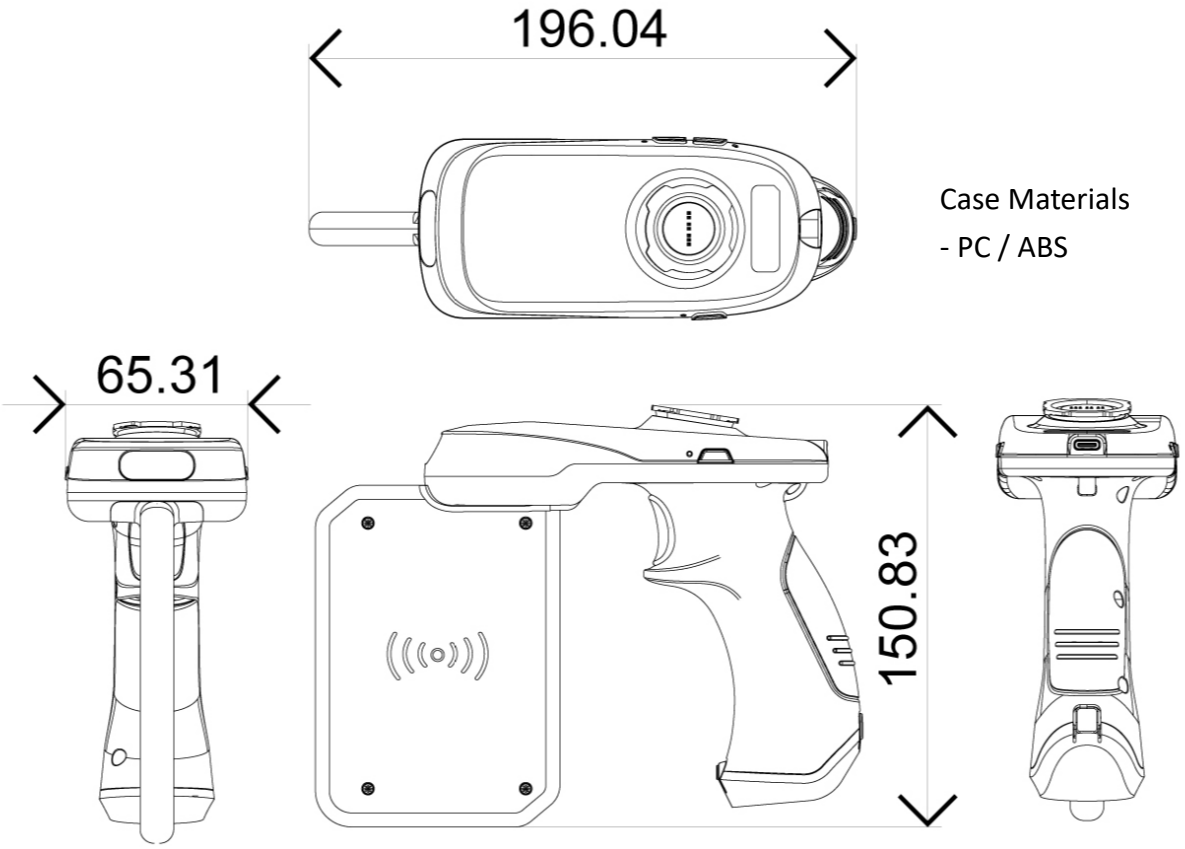
Mobile UHF RFID & Barcode reader combined Bluetooth Low Energy.

It complies RFID standard (EPC Class 1 Gen2 / ISO 18000-6C 900MHz UHF RFID), Op. Frequency is JPN or US, EU, KC, ETC.

It comply Barcode standard.

It interfaces through Target Devices and USB. It uses Li-ion battery (3400mAh) as internal power. Also it can charge Target Devices and RFID's battery at the same time by using USB C type.

1.2. Product Views

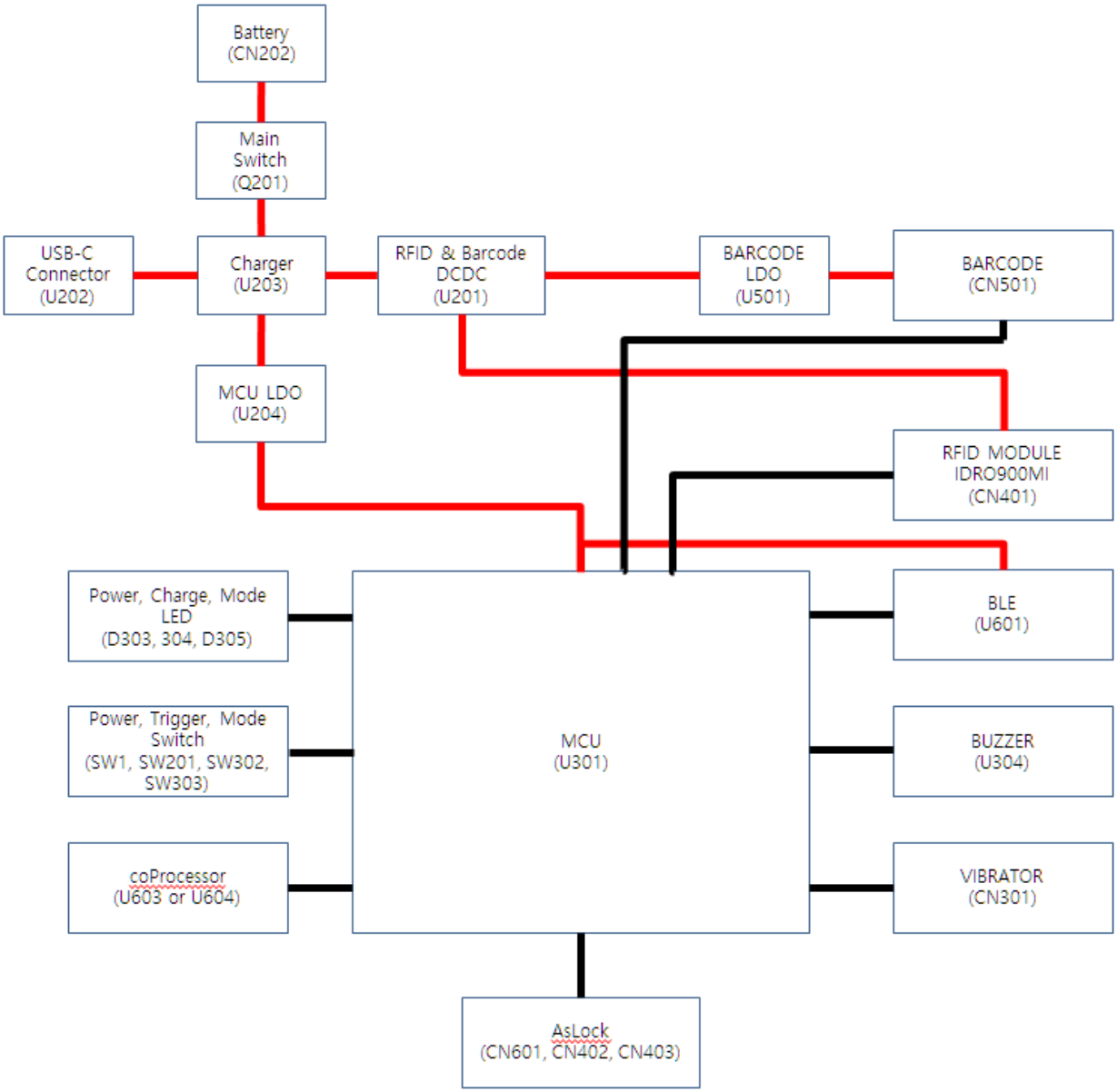


Case Materials
- PC / ABS

Status Indicate
- LED
- Sound
- Vibrator
- APP

Charging: USB C-Type
Read S/W: Trigger Button 1 ea
Mode S/W: 2 ea
Power S/W: 1ea

2. Block Diagram



3. Performance Specifications

3.1. UHF RFID Reader/Writer Module

RFID Reader Chip	**IDRO900MI**
Air Protocol	**EPC C1G2 / ISO 18000-63**
Interface	**Bluetooth LE or Magconn Pin 2 (for Debugging to PC)**
Operating Frequency	**EU: 865.7 ~ 867.5MHz** **USA: 902.75 ~ 927.25MHz** **JAPAN: 916.8 ~ 920.4MHz**
Output (EIRP)	**Adjustable 5-30 dBm with 1 dB steps**
RFID Read Distance	**TBD**
Antenna	**Yagi (TBD)**
Tag	**Read, Write, Lock, Kill**

Parameter	Min.	Typ.	Max.	Unit	Conditions
Supply Current (Active mode)			1250	mA	Transmit Power : +30dBm
Supply Current (Standby mode)			27	mA	PWR_ON enable
RX input impedance		50		Ω	
RX sensitivity		-74		dBm	
TX Power	+5		+30	dBm	
Frequency	860		960	MHz	See section 8
Channel bandwidth			200	kHz	
Channel Dwell time			0.4	Sec.	Case in Japan
Carrier sensing time	5			ms	Case in Japan
Carrier sensing level		-74		dBm	Case in Japan
Transmission time			4	Sec.	Case in Japan

Parameter	Min.	Typ.	Max.	Unit	Conditions
PWR_ON Enable					
V_{IH}	1	3.3	5	V	
V_{IL}	-0.3		0.4	V	
GPIO					
V_{IH}	2.0	3.3	3.6	V	
V_{IL}	-0.3		0.8	V	
UART					
Baud rate		115.2		kbps	
Parity		None			
Flow control		None			

3.2. Used Cell (INR18650-35E 3400mAh)

- Rechargeable lithium ion battery
- Diameter: Height(Max 65.25 mm), Diameter(Max. Ø 18.55 mm)
- Nominal Voltage: 3.6 Volt
- Rated capacity (nominal): 3400mAh
- Operating Voltage: 2.8 ~ 4.2V

3.3. DC Input Specification

3.3.1. Input Voltage Rating

Input voltage: 3.7V

Adapter must use over 10.0 watt.

3.3.2. Charging Voltage

Battery fully charged voltage: 4.2V ± 1%

Battery charging current: 0.1 ~ 1.6 A ± 1%

Charging method: CCCV (constant current constant voltage)

3.3.3. Charging time

About 3.5hours at only charge

3.4. Using Time

It is vary depend on frequency of use. In standby mode, usable time is within 24 hours.

3.5. LED description

3.5.1. Dual color LED display

3.5.1.1. Red LED

- Charging: Red LED ON
- Fully charged: Red LED off

3.5.1.2 Green LED

- Power ON: Green LED ON

3.5.2. Write LED

- Mode : User Defined..

3.6. Protection function of Battery

3.6.1. Over Voltage Protection (OVP)

When the cell voltage becomes higher than 4.275V ± 0.05V during charging, charging is prohibited. Over voltage condition is released when cell voltage is dropped under 4.075V± 0.15V.

3.6.2. Under Voltage Protection (UVP)

When the cell voltage becomes lower than 2.50V ± 0.05V during discharging, discharging is prohibited. Under voltage condition is released when the cell voltage rises over 2.9V ± 0.15V.

3.6.3. Over Load Protection (OCP-inner cell)

The output is shutdown if output current exceeds 10.0A ± 1.0A. When the output load is removed and charging starts again, output over load condition is released.

3.6.4. Over Temp Protection (OTP)

At charge condition, if unit case temperature is exceed 45°C ± 5°C, charge prohibited.

3.7. Sleep Current

Sleep current consumption (main power switch off) : less than 1mA(TBD)

Power down current consumption (under voltage cutoff) : less than 100uA

3.8. Barcode Engine (Optional)

It select by customer request.

Selectable engine:

1D : SE655, SE965

2D : N6683, SE2707, EM3396, EM50, ETC(Consult the manufacturer)

4. Environmental Requirements

4.1. Temperature

Operation: Discharge (-10 to 45°C), Charge (0 to 45°C)

Storage (for shipping state): -20 to 60°C (1 month)

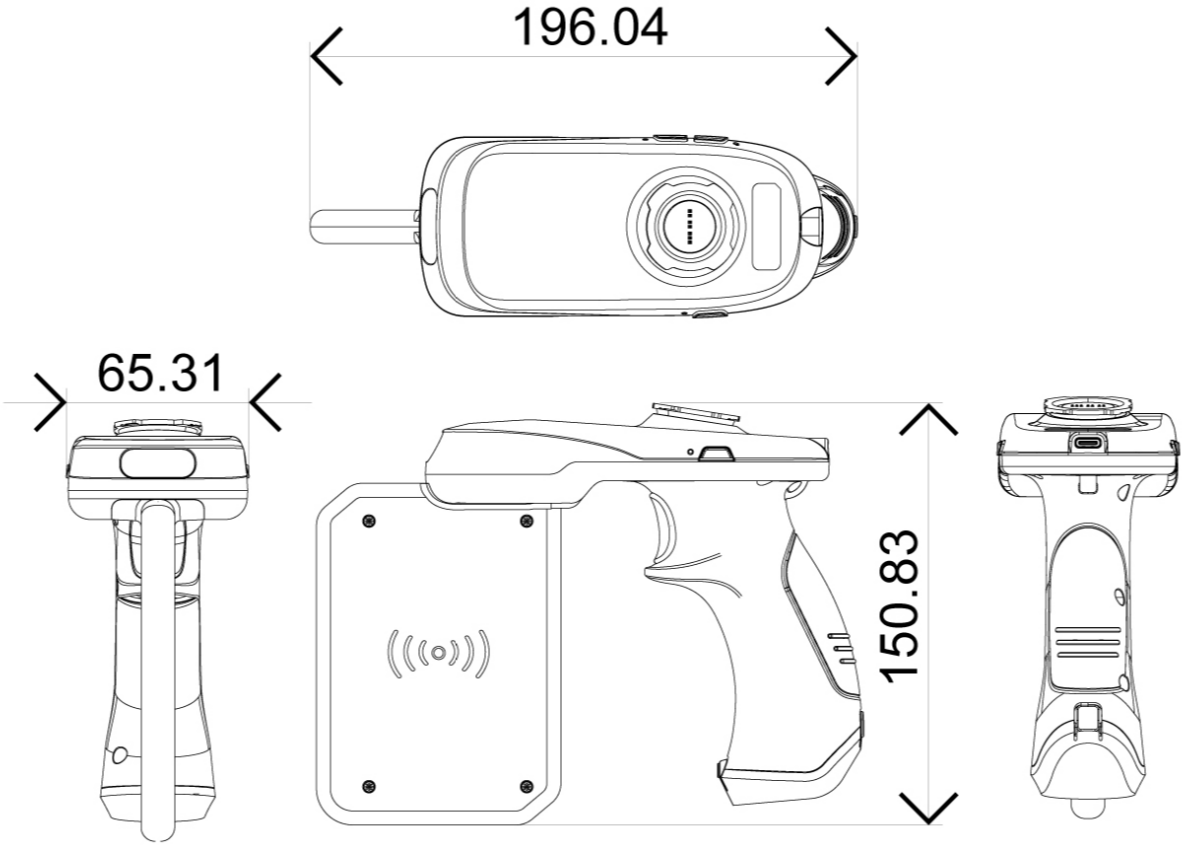
-20 to 45°C (3 month)

-20 to 20°C (1 year)

5. Mechanical Specifications

5.1. Dimensions (mm)

196.04 x 65.31 x 150.83 mm (Tolerance +/- 1mm)



5.2. Lead-free/RoHS

Less than 370g

5.3. AsLock Cradle

AsLock is a tool for opening management ports that are not accessible to the average user. With the AsLock, admin can connect in management mode and cable banding for easier carry.

Certification and Safety Approvals FCC Compliance Statement

This device complies with part 15 of the FCC rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antennae

• Increase the separation between the equipment and the receiver

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

FCC RF Exposure Statement

The highest SAR value reported under this standard during product certification for use next to the body with the minimum separation distance of 0mm is 1.794W/Kg. This transmitter must not be collocated or operating in conjunction with any other antenna or transmitter. This product is compliance to FCC RF Exposure requirements and refers to FCC website https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm search for

FCC ID: 2AJXE-ASR-L251G-XX. The product should be forward-facing and shall not be used human body and hands.

FCC Caution

Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void user's authority to operate the equipment.