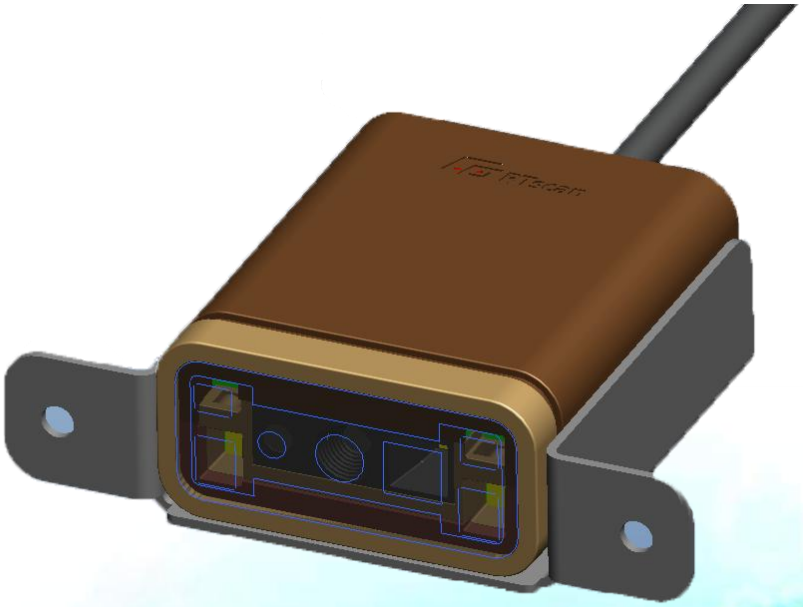
RTscan

RT240 Integration guide

（Version 2.1 2026）



Chapter 1 Introduction

1.1 Product Overview

In order to meet the different needs of different applications, we developed the RT240 series with for versions in terms of reading distance and sensor resolution: RT240-SR is a standard range barcode scanner, RT240-SD is short distance barcode scanner, RT240-ER is a long-range/extended range barcode scanner, and RT240-HD is a high density barcode scanner.

The RT240 series decoder ingeniously blends an advanced chip design & manufacturing, which significantly simplifies application design and delivers superior performance and solid reliability with low power consumption.

The RT240 series support all mainstream 1D and standard 2D barcode symbologies (e.g UPC/EAN, UPC/EAN with supplementals, Bookland EAN, ISSN, UCC Coupon Extended Code, Code128, GS1-128, ISBT 128, Code 39)as well as (PDF417, Data Matrix, QR Code, Micro QR).

1.2 Illumination

The RT240 series equipped with **extra and brightness sensitive illumination LED**, when the environment's illumination is bight enough, this extra LED will keep off, and when the environment's illumination become dark, this extra LED will turn on automatically, and this illumination makes the motion sensor can detect the bar code easily in dark environment. This design make the RT240 scanner compatible with all illumination environment, whether dark or bright.

Chapter 2 Installation

2.1 General Requirements

2.1.1 ESD

ESD protection has been taken into account when designing the RT240 and the scanner is shipped in ESD safe packaging. Be sure grounding wrist straps and properly grounded work areas are used.

2.1.2 Dust and Dirt

The RT240 with enclosed design which protect itself from dust and dirt.

2.1.3 Ambient Environment

The following environmental requirements should be met to ensure good performance of the RT240:

WorkingTemperature	-20°Cto 55°C
StorageTemperature	-40°Cto 70°C
Humidity	5% ~95% (non-condensing)

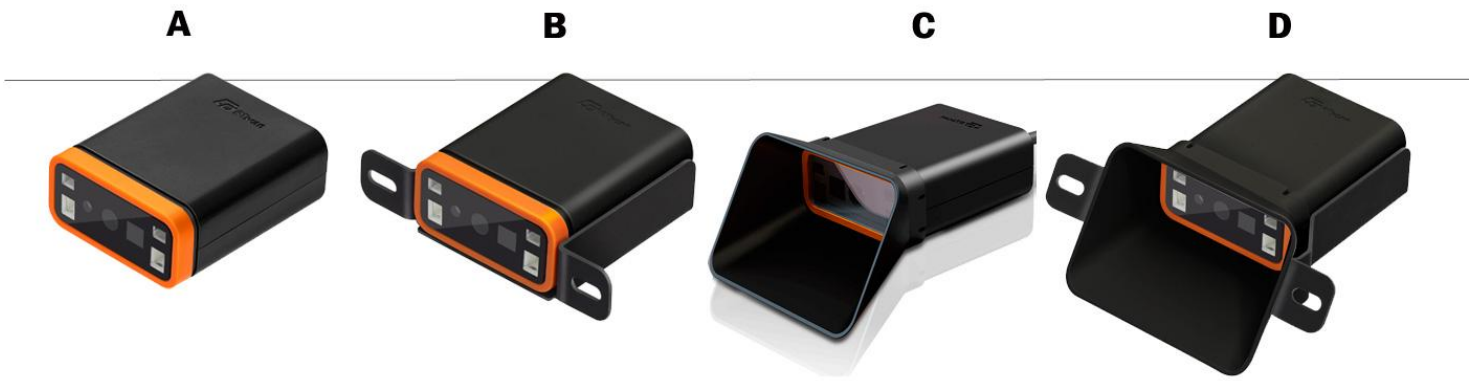
2.1.4 Thermal Considerations

Electronic components in the RT240 generate heat during the course of their operation. The following precautions should be taken when integrating the RT240:

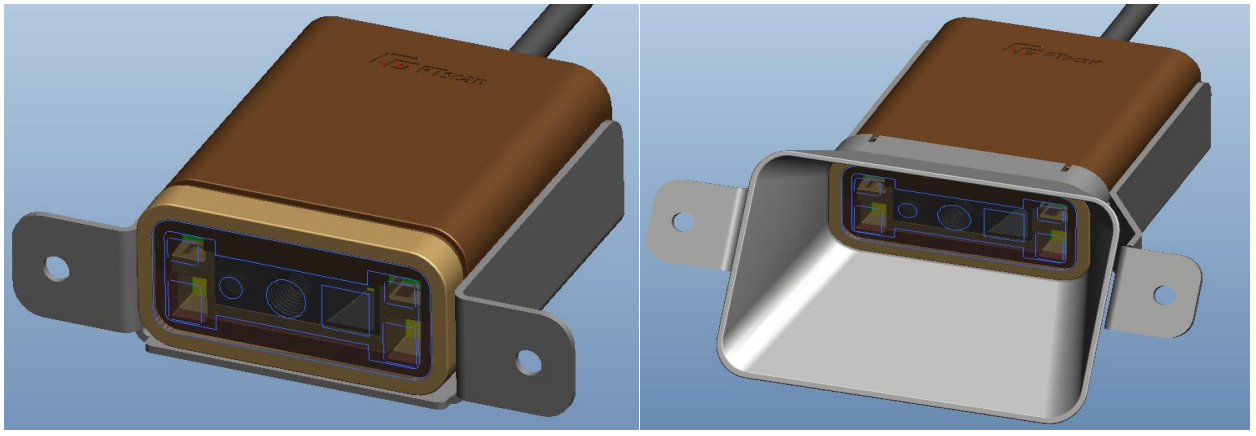
- Reserve sufficient space for good air circulation during design.
- Avoid wrapping the RT240 with thermal insulation materials such as rubber.

2.2 Mounting

There are several options for easy mounting into your terminals:

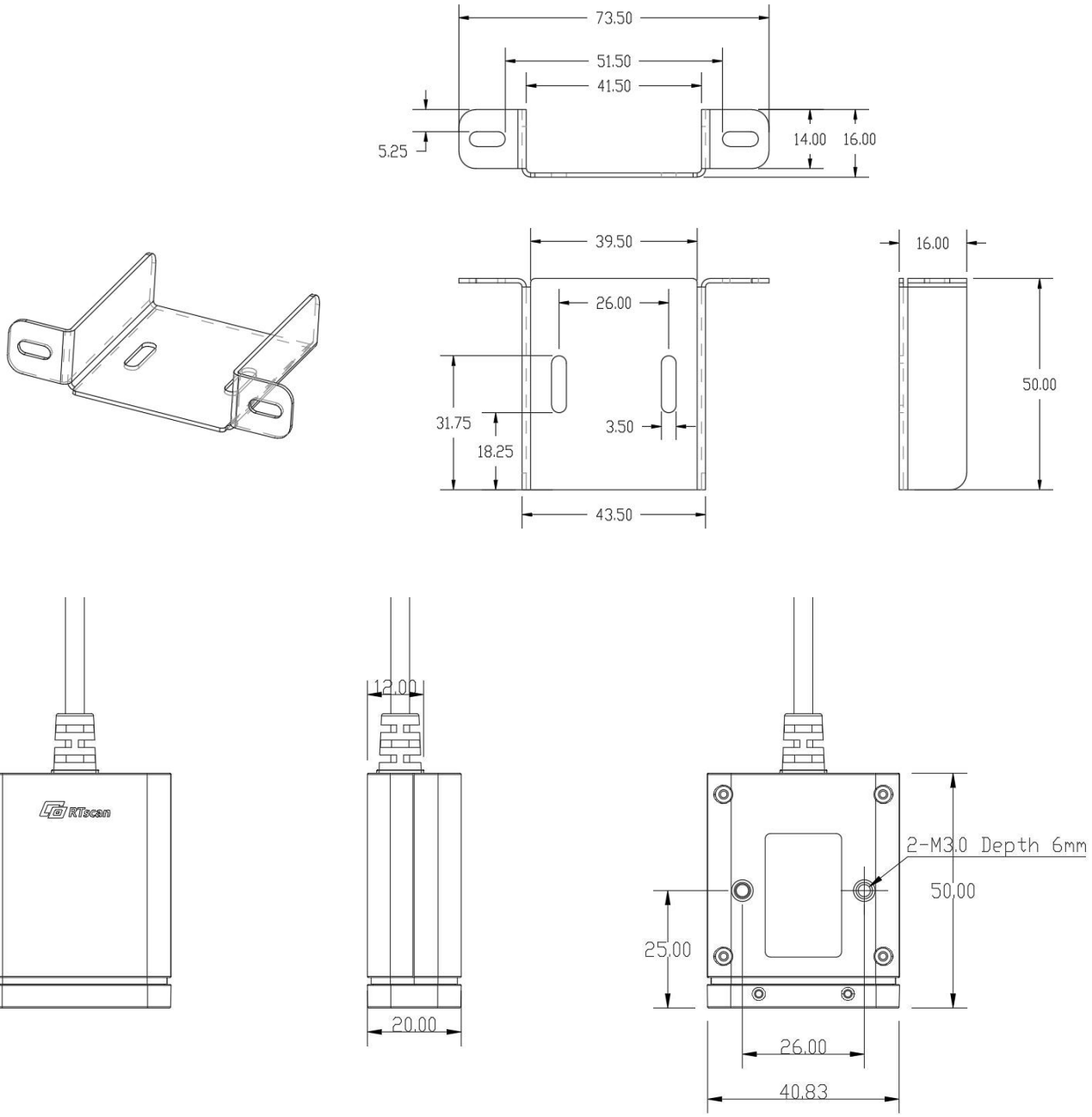


2.2.1 Mounting bracket and Dimensions

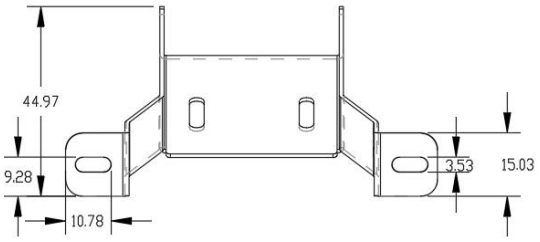


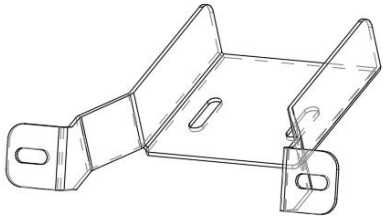
Type A Type B

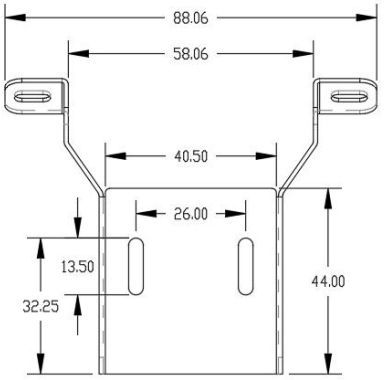
Type A drawing (unit:mm):

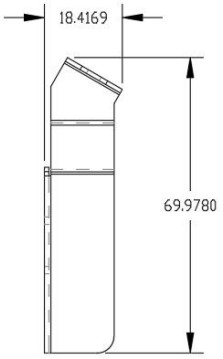


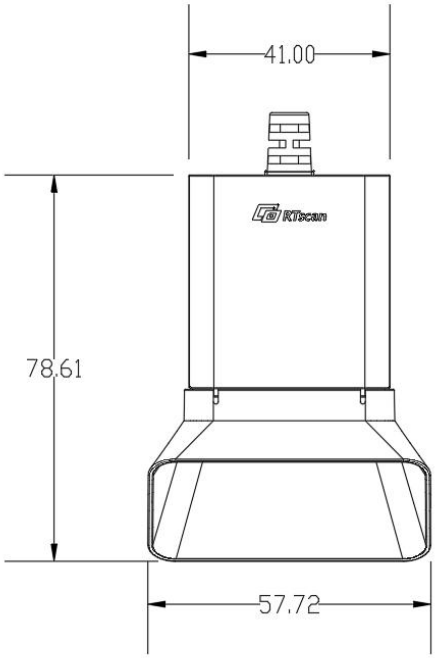
Type B drawing:

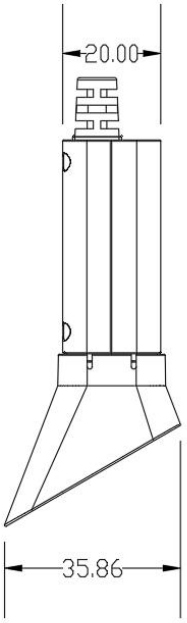


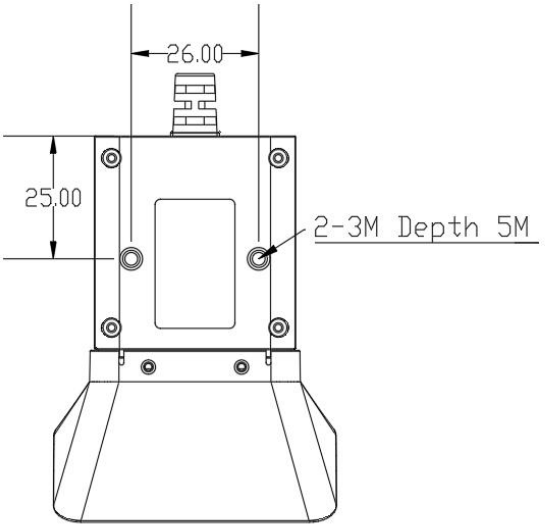






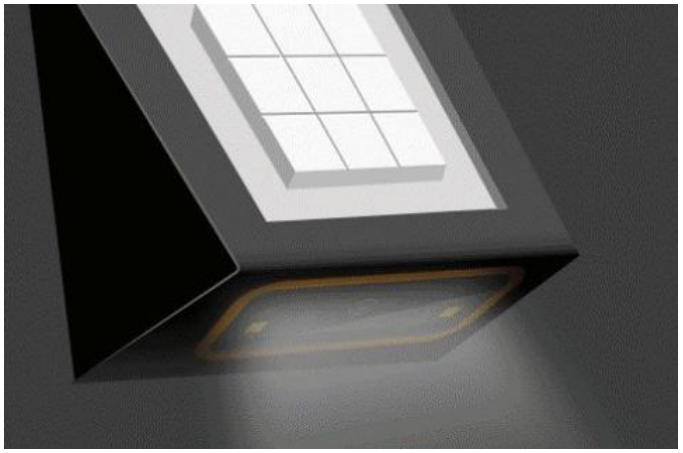


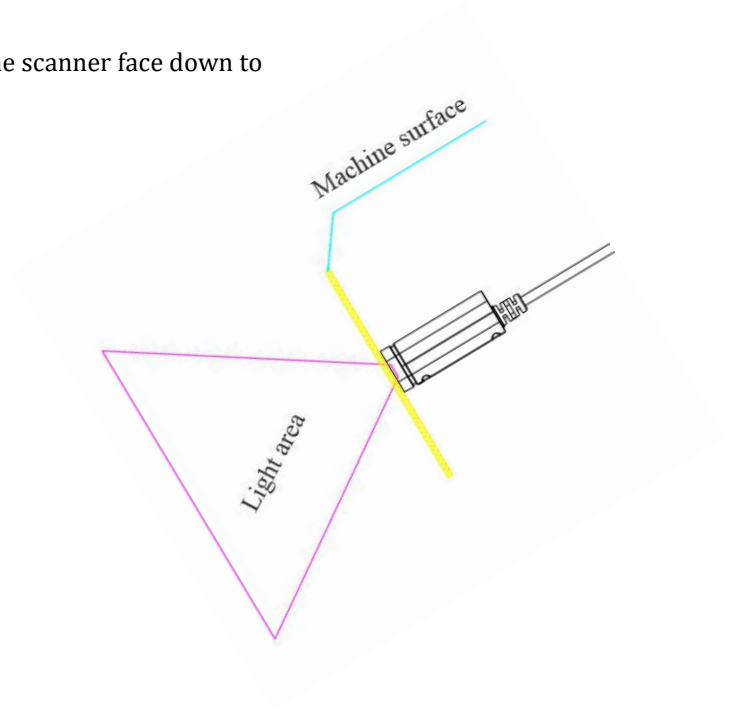




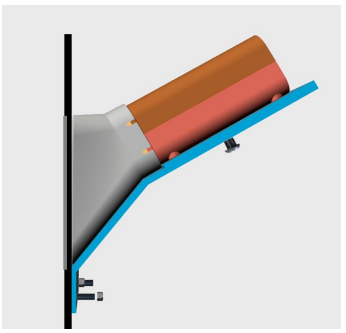
2.2.2 Mounting

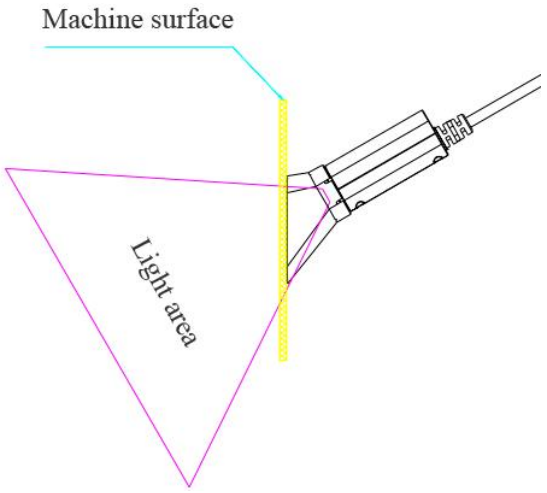
1. For **RT240 type A bracket**: We suggest to design and fix the scanner face down to avoid flash into user's eyes:





2. For vertical surface, we suggest to use **RT240 type B bracket**, which can protect user's eyes from LED flashing:





2.2.3 Window

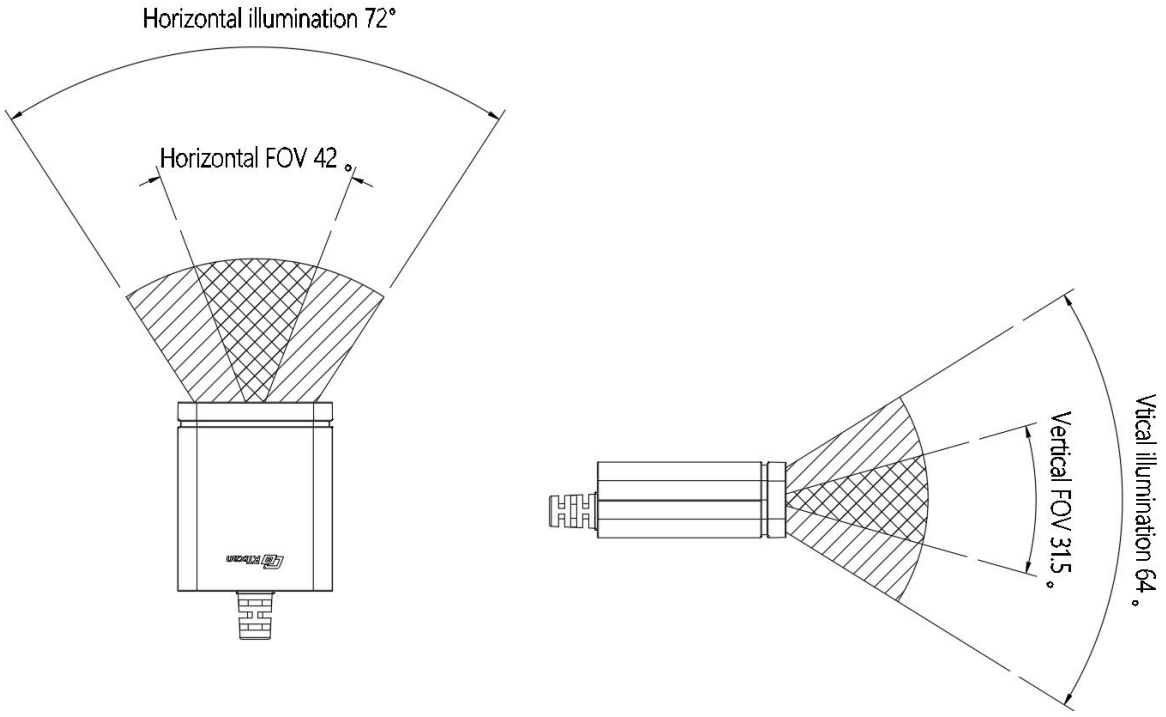
Normally, an external window is **not** necessary with above mounting methods, but if you prefer to use external window, then the window should be positioned properly to let the illumination and aiming beams pass through as much as possible and no reflections back into the scanner (reflections can degrade the reading performance).

The window should be mounted close to the scanner's window or mounted with a little tilt to the scanner's window. Avoid unwanted reflections and use a thin material for windows so as to reach better reading performance. The distance from the front of the scanner to the surface of the window is suggested to be less than 0.5mm.

It is suggested PMMA or optical glass with spectral transmittance over 90% and blurriness of less than 1%. Whether to use an anti-reflection coating or not depends on the material and application needs.

Scratch on the window can greatly reduce the performance of the RT240. It is suggested to use abrasion resistant window material or coating.

The window must not block the field of view and should be sized to accommodate the aiming and illumination envelopes shown below.



2.2.4 Eye Safety

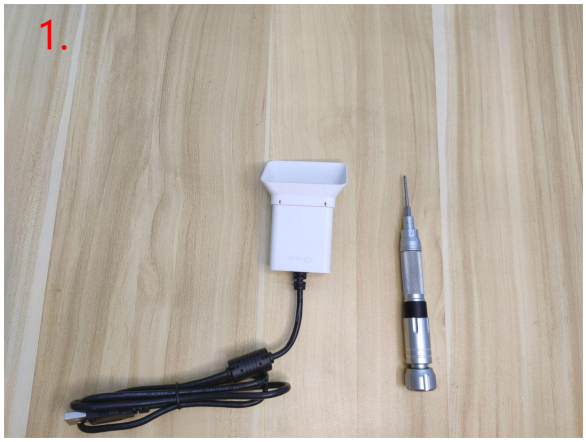
The RT240 has LEDs what create the aiming and illumination beams. These LEDs are bright, but testing has been done to demonstrate that the scanner is safe for its intended application under normal usage conditions. However, the user should avoid looking into the beam.

2.2.5 Assemble / Disassemble the cover:

The cover can be Assembled / Disassembled, when you get samples and want to test with or without the cover, you can follow below to do it :

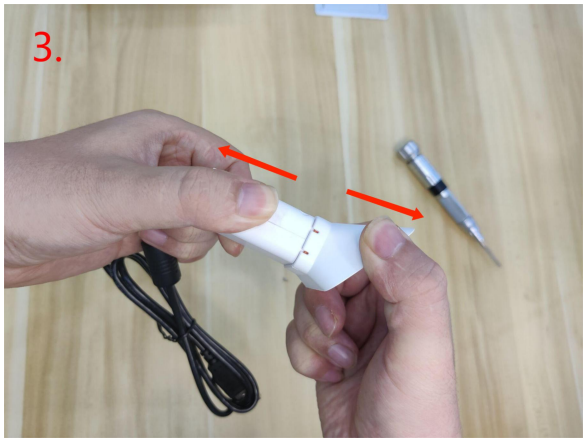
Steps to remove RT240 cover

Step 1:Get your RT240 and screwdriver ready



Step 2: Unscrew the screws on the bottom

Step 3: Pull out the cover and scanner



Step 4: Take them apart with a little effort

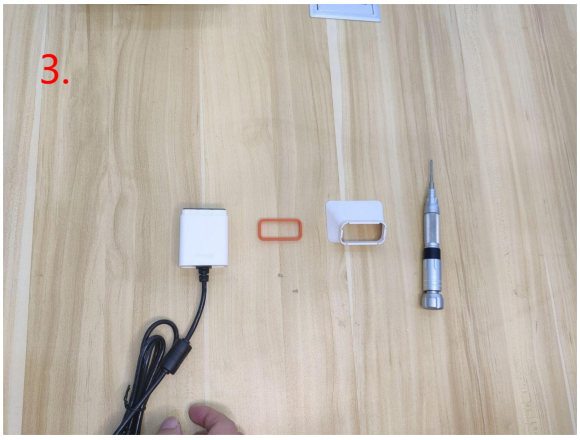
* Step 5: Finally screw on the bottom screw and done

Steps to Install RT240 cover

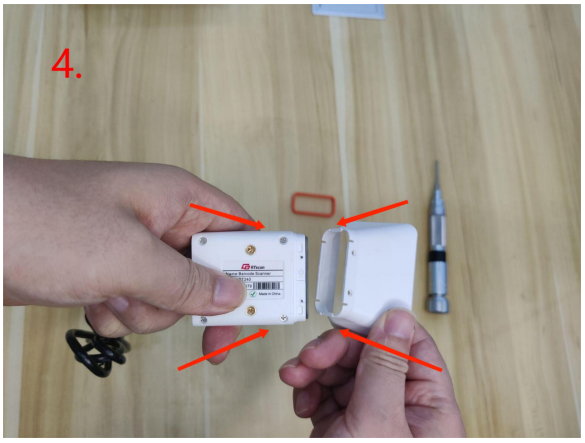
Step 1: Use a small tool to pry open the RT240

Step 2 : Take them apart with a little effort

Step 3: This is in a fully disassembled state



Step 4: Install the cover first, and align the holes.



Step 5:Put on the orange shell

Step 6:Press it with your fingers to immobilize it

Step 7: Screw in the screws and done

Chapter 3 Electrical Specifications

3.1 Power Supply

Unstable power supply or sharp voltage drops may lead to unstable performance of the engine. Do not resupply the power immediately after cutting it off. The interval must be greater than 3 seconds.

3.2 DC Characteristics

Ta = 25℃:

	MIN	Tpy	MAX	
V_{CC}	4.5	5	5.5	V

Ta=25℃, VCC=5V

Parameter	Average	Maximum	Unit
I_{OP}	170	303	mA
$I_{Standby}$	90	-	mA

If need any technical support, please feel free to contact at:
support@rtscan.com