

RT241 Integration guide

(Version 1.1 2023)



technology

A smaller version of the RTscan logo, consisting of a red stylized 'R' icon and the text 'RTscan' in black.

Chapter 1 Introduction	5
1.1 Product Overview	5
1.2 Illumination	5
Chapter 2 Installation	6
2.1 General Requirements	6
2.1.1 ESD	6
2.1.2 Dust and Dirt	6
2.1.3 Ambient Environment	6
2.1.4 Thermal Considerations	7
2.2 Mounting	7
2.2.1 Dimensions	8
2.2.2 Mounting bracket:	9
2.2.3 Mounting methods	11
2.2.4 Window	12
2.2.5 Eye Safety	12
2.2.6 Assemble / Disassemble the cover:	12
Chapter 3 Electrical Specifications	15
3.1 Power Supply	15
3.2 DC Characteristics	15

Chapter 1 Introduction

1.1 Product Overview

The RT241 is outstanding at its special design, laser accurate aiming, and its excellent performance for decoding almost 1d&2d bar codes, even poor quality barcodes: QR codes, Aztec, Maxicode, EAN-13, EAN-8, UPC-A, UPC-E, Code128, Code 39, Codabar, UCC/EAN 128, RSS, ITF-14, ITF6, Standard 2 of 5, etc. With a square and cross aiming, users can accurately and easily point to the barcodes and achieve quick reading, to make a better experience.

It is suitable for all kinds of applications: ATMs, lockers, Kiosks, Express cabinets, Ticket gates, and other types of self-service terminals.

1.2 Illumination

The RT241 equipped a square & cross laser aimer and an illumination LED. Users can accurately and easily point to the barcodes and achieve quickly reading. This makes a better user experience. For safety purpose, the laser light is IEC 60825-1 certificated.

Chapter 2 Installation

2.1 General Requirements

2.1.1 ESD

ESD protection has been taken into account when designing the RT241 and the engine 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 RT241 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 RT241:

WorkingTemperature	-20°Cto 60°C
StorageTemperature	-40°Cto 70°C
Humidity	5% ~95% (non-condensing)

2.1.4 Thermal Considerations

Electronic components in the RT241 generate heat during the course of their operation. The following precautions should be taken when integrating the RT241:

- Reserve sufficient space for good air circulation during design.
- Avoid wrapping the RT241 with thermal insulation materials such as rubber.

2.2 Mounting

There are several options for easy mounting into your terminals:

With cover; without bracket



With cover; with bracket-B



Without cover; without bracket



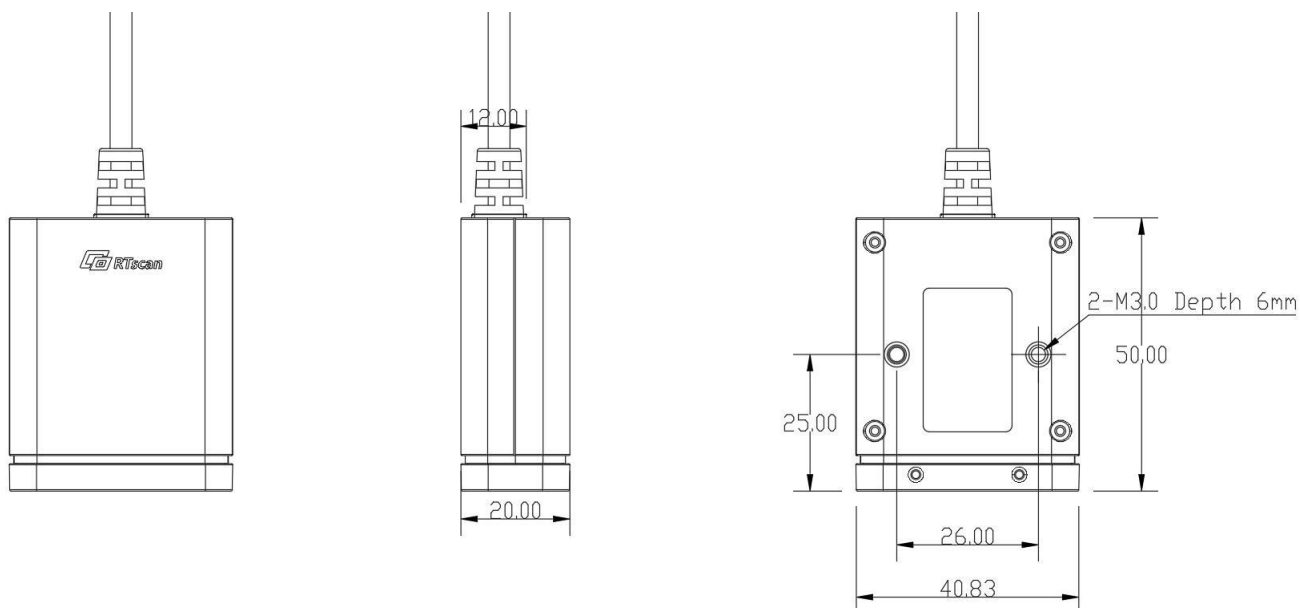
Without cover; with bracket-A



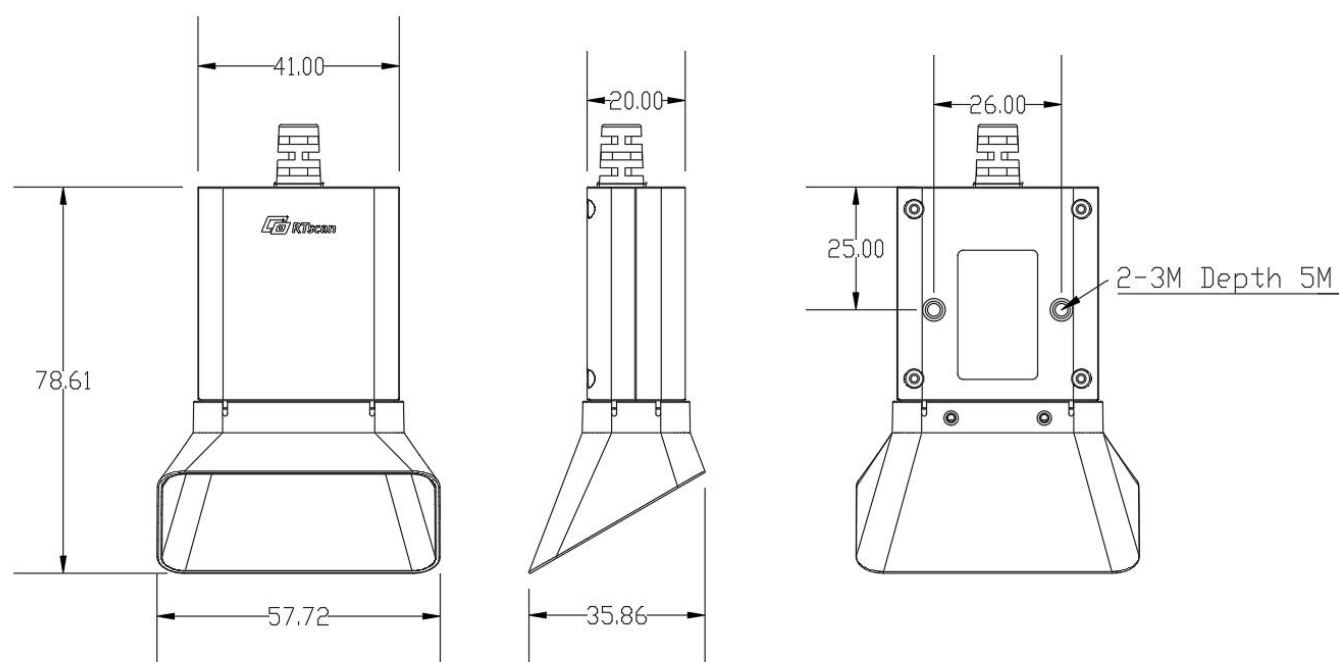
2.2.1 Dimensions

The illustrations below show the mechanical mounting dimensions for the RT241 Series. The structural design should leave some space between components .

Without Cover:

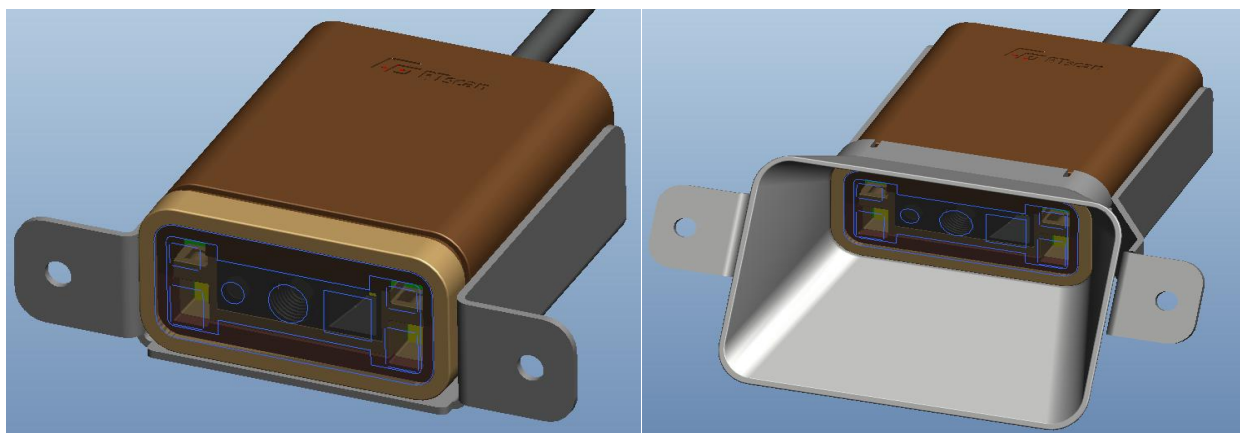


With Cover:



(unit:mm)

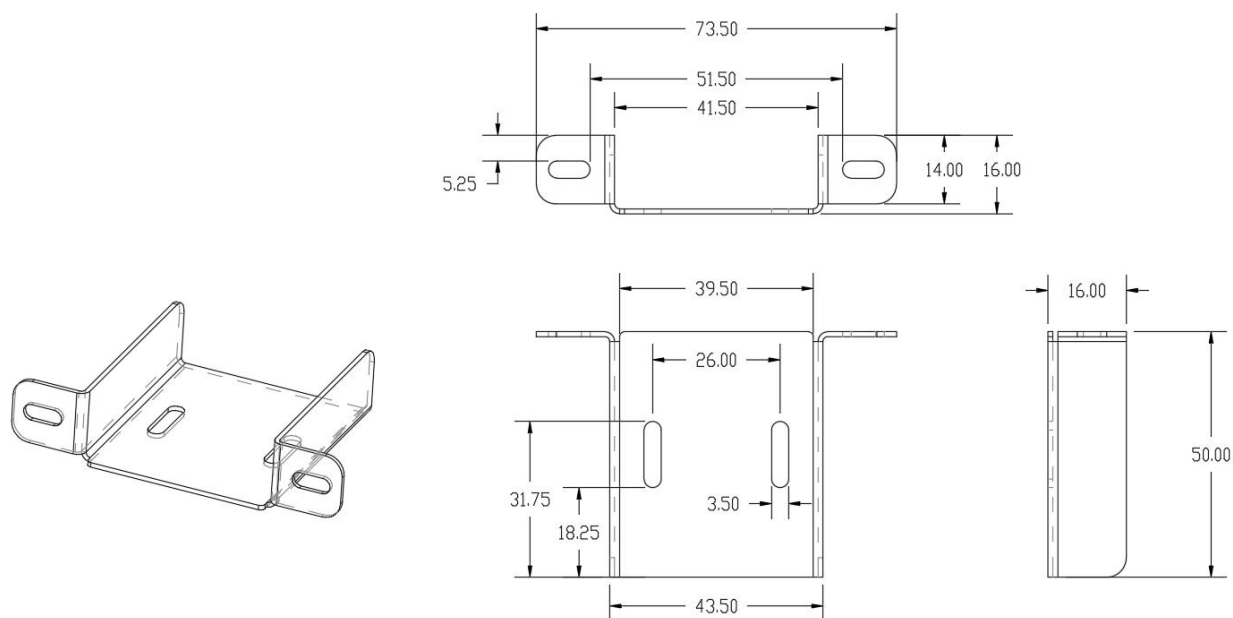
2.2.2 Mounting bracket:



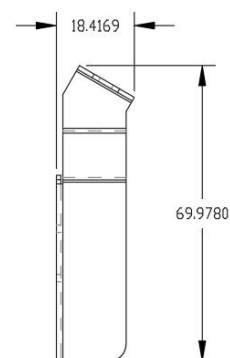
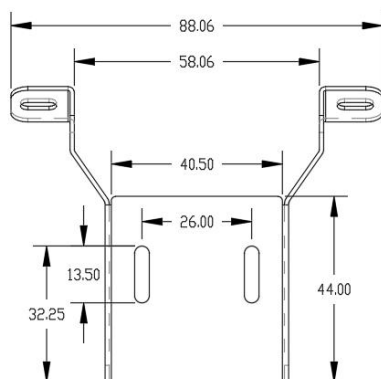
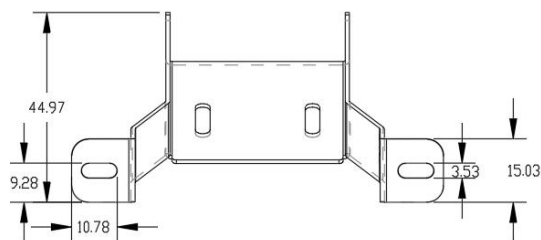
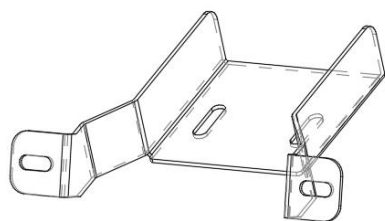
Type A

Type B

Type A drawing:



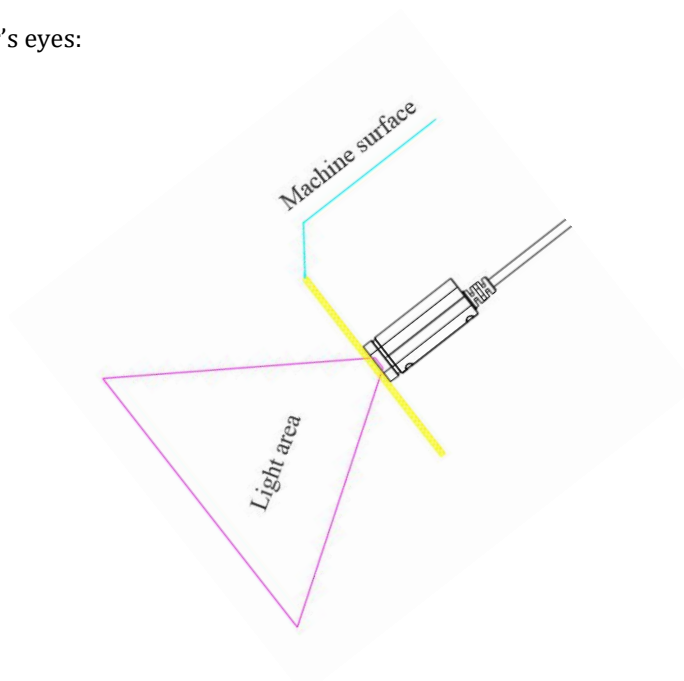
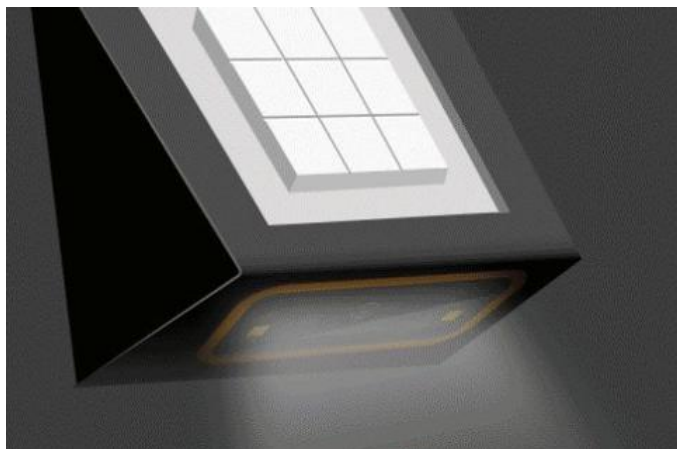
Type B drawing:



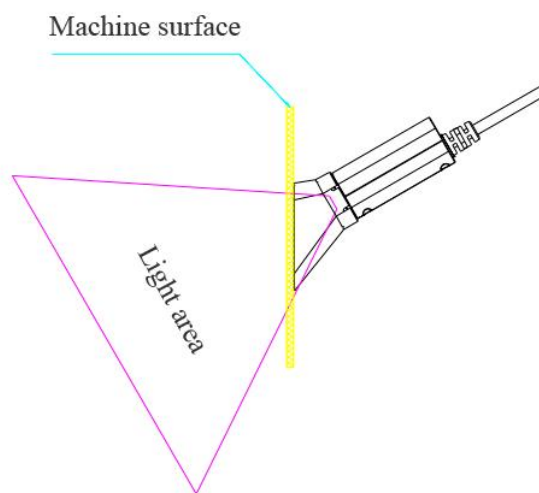
2.2.3 Mounting methods

We suggest to mount the scanner as below:

1. Design and fix the scanner face down to avoid flash into user's eyes:



2. For vertical surface, use the **cover that specially designed for RT241 Series**, which can protect user's eyes from LED flashing:



2.2.4 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 RT241 Series. It is suggested to use abrasion resistant window material or coating.

2.2.5 Eye Safety

The RT241 Series 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.

2.2.6 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 RT241 Series cover

Step 1: Get your RT241 Series 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



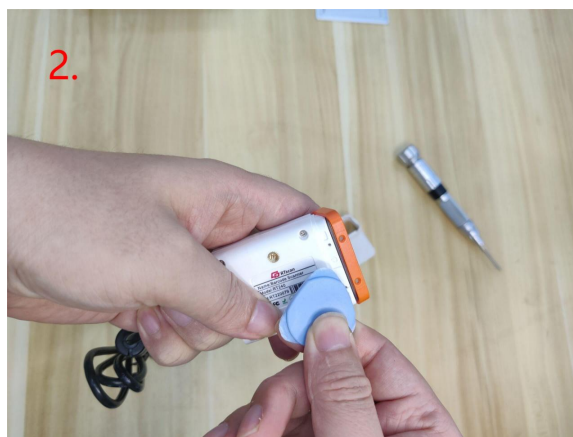
* Step 5: Finally screw on the bottom screw and done

Steps to Install RT241 Series cover

Step 1: Use a small tool to pry open the RT241 Series

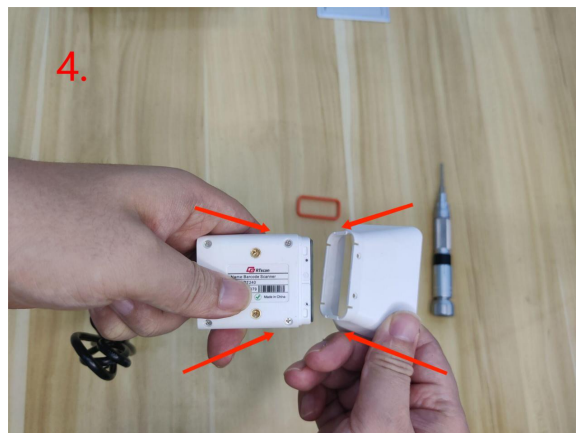
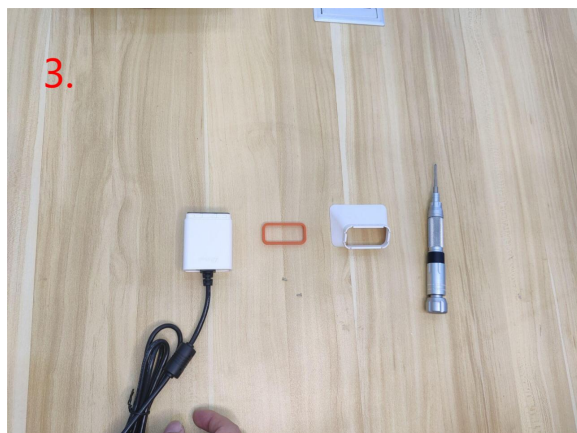


Step 2 : Take them apart with a little effort



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



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

$T_a = 25^{\circ}\text{C}$:

	MIN	Tpy	MAX	
V_{CC}	4.5	5	5.5	V

$T_a=25^{\circ}\text{C}$, $V_{CC}=5\text{V}$

Parameter	Model	Average	Maximum	Unit
I_{OP}	RT241-SR/RT241-SD	190	/	mA
$I_{Standby}$	RT241-SR/RT241-SD	0.5	/	mA
I_{OP}	RT241-ER/RT241-HD	230	/	mA
$I_{Standby}$	RT241-ER/RT241-HD	1	/	mA

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