

TECHNICAL INFORMATION MANUAL

Revision 0.1 – 25 November 2021

R1210I

trID

RAIN RFID Smart Tray Reader



Visit the [trID R1210I web page](#), you will find the latest revision of data sheets, manuals, certifications, technical drawings, software and firmware.
All you need to start using your reader in a few clicks!

Scope of Manual

The goal of this manual is to provide the basic information to work with the trID R1210I RAIN RFID Smart Tray Reader.

Change Document Record

Date	Revision	Changes	Pages
14 Oct 2021	0.0	Preliminary release	-
25 Nov 2021	0.1	Updated FCC compliance paragraph	12

Reference Document

[RD1] EPCglobal: EPC Radio-Frequency Identity Protocols Class-1 Generation-2 UHF RFID Protocol for Communications at 860 MHz – 960 MHz, Version 2.0.1 (April 2015).

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Preliminary Product Information

This document contains information for a new product. CAEN RFID reserves the right to modify this product without notice.

“Preliminary” product information describes products that are ready for production, but for which full characterization data is not yet available. CAEN RFID believes that the information contained in this document is accurate and reliable. However, the information is subject to change without notice and is provided “AS IS” without warranty of any kind (Express or implied). You are advised to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete. All products are sold subject to the terms and conditions of sale supplied at the time of order acknowledgement, including those pertaining to warranty, patent infringement, and limitation of liability. No responsibility is assumed by CAEN RFID for the use of this information, including use of this information as the basis for manufacture or sale of any items, or for infringement of patents or other rights of third parties.

Federal Communications Commission (FCC) Notice (Preliminary)

This device was tested and found to comply with the limits set forth in Part 15 of the FCC Rules. Operation is subject to the following 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 when the equipment is operated in a commercial environment.

This device generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, the product may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case, the user is required to correct the interference at their own expense. The authority to operate this product is conditioned by the requirements that no modifications be made to the equipment unless the changes or modifications are expressly approved by CAEN RFID.

Disposal of the product

Do not dispose the product in municipal or household waste. Please check your local regulations for disposal/recycle of electronic products.



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1 INTRODUCTION

Description

The **trID (Model R1210I)** is a slim RAIN RFID reader of the easy2read® product line with integrated antenna for short range applications.

The reader hosts an internal rechargeable battery and can operate both in wired mode, using a USB cable, or in wireless mode through the Bluetooth® interface.

Thanks to the Bluetooth® communication interface, the trID can be connected to any Bluetooth® enabled host such as a PC, a smartphone, a PDA or a tablet for RAIN RFID readings. The reader is compatible with Windows 8/10, Windows CE/Mobile, Android and iOS operating systems. The device supports both Bluetooth Low Energy (BLE) and Bluetooth classic communication to provide the maximum usage flexibility, including the HID profile for keyboard emulation.

The trID slim form factor permits to embed the reader in jewelry trays or to use it on a desk for document tracking or in healthcare environment to track surgery or dental tools.



Fig. 1.1: trID R1210I Reader

Front panel

The trID R1210I front panel houses the following buttons and icon (see figure below):



Fig. 1.2: Front Panel

Bottom panel



Fig. 1.3: Bottom Panel

No.	Name	Description
1	Reset	A Hardware Reset can be achieved via the Reset hole
2	Power button	Press the button to switch on the reader, press for at least 2 seconds to switch it off
3	Bluetooth LED	Indicates the Bluetooth connection (see § Tab. 1.3: Bluetooth LED status table page 8)
4	Charge LED	Indicates the battery level (see § Tab. 1.2: Charge LED Status Table page 7)
5	USB-C	USB port type C (see § USB connector page 8)

Tab. 1.1: Bottom Panel LEDs and Buttons

Status	Description
Green	Reader is active and the battery charge is in the range 35÷100%
Orange	Reader is active and the battery charge is in the range 15÷35%
Red	Reader is active and the battery charge is in the range 0÷15%

Tab. 1.2: Charge LED Status Table

Status	Description
OFF	No connection established
Orange	USB cable connected (both to a PC or to the AC power adapter)
Blue	Bluetooth connected
Green	Configuration mode

Tab. 1.3: Bluetooth LED status table

Charging

The trID R1210I is supplied with an USB cable while the power supply for charging is an optional accessory (see § *Accessories* page 11).

When you charge the reader, the charge LED (see § *Tab. 1.1: Bottom Panel LEDs and* page 7) lights up orange.

When the reader is on, the charge LED (see § *Tab. 1.1: Bottom Panel LEDs and* page 7) indicates the battery level according to table *Tab. 1.2: Charge LED Status Table* page 7.



Warning: EMPTY BATTERY CONDITION: When the reader is completely discharged, it is recommended to fully charge it.

USB connector

A USB Type C socket connector is located in the bottom side of the trID R1210I (see § *Fig. 1.3: Bottom Panel* page 7) and can be used to connect the reader to an USB host port or to an AC/DC battery charger.

Ordering Options

The reader is available in **ETSI** or **FCC** version:

	Code	Description
Reader	WR1210IXEUAA	trID - RAIN RFID smart tray reader - ETSI
	WR1210IXUSAA	trID - RAIN RFID smart tray reader - FCC

2 TECHNICAL SPECIFICATIONS

Technical Specifications Table

Frequency Range	865.600÷867.600 MHz (ETSI EN 302 208 V3.1.1) (Mod. R1210IE) 902÷928 MHz (FCC part 15.247) (Mod. R1210IU)
RF Power	Configurable from 4 dBm ERP to 21 dBm ERP (Mod. R1210IE) Configurable from 6 dBm EIRP to 23 dBm EIRP (Mod. R1210IU)
Number of Channels	4 channels (compliant to ETSI EN 302 208 V3.1.1) (Mod. R1210IE) 50 hopping channels (compliant to FCC part 15.247) (Mod. R1210IU)
Standard Compliance	EPC C1G2 - ISO 18000-63
Antenna Gain	-4dBi
Antenna Type	Near Field UHF Antenna
Read Range	up to 15 cm (typical; depending on tag)
USB Interface	USB 2.0 Full Speed (12 Mbit/s) via USB Type-C connector
Bluetooth Interface	<ul style="list-style-type: none"> - Bluetooth 4.1 Smart Ready compliant - 12dBm EIRP output power BR/EDR - 8dBm EIRP output power BLE - HID and Serial over GATT (BLE) - HID and SPP profiles (Bluetooth classic)
User Interface	<ul style="list-style-type: none"> - Power button - Power and battery status LED - Communication and operation result LED - Bi-tonal buzzer element for event signalling
Battery Type	Li-ion 3.7V, 2150mAh
Battery Life	Operating: > 18 h (with 60,000 tag readings) Standby: > 15 days (powered off, no LED blinking)
Battery Charging Time	<ul style="list-style-type: none"> - 6h connected to a PC USB port - 2h 40min with 1A AC/DC power supply
IP Rating	IP30
Dimensions	- trID: 217 x 146 x 14 mm ³ (8.54 x 5.75 x 0.55 inches ³)
Length of USB cable	1.5 m
Operating Temperature	-10 °C to +55 °C
Weight	- trID: 375 g

Tab. 2.1: trID R1210I Technical Specifications Table

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Warning: The RF settings must match the operating country/region to comply with local laws and regulations.

The usage of the reader in different countries/regions from the one in which the device has been sold is not allowed.

Technical Drawings

The following drawings show the R1210I trID from different points of view.
All dimensions are in millimeters.

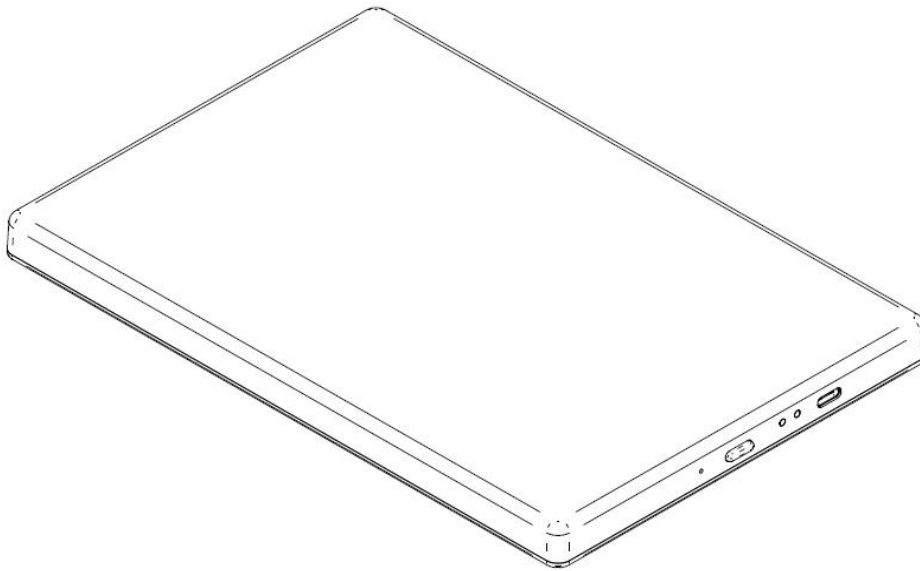


Fig. 2.1: trID R1210I Technical Drawings – 3D view

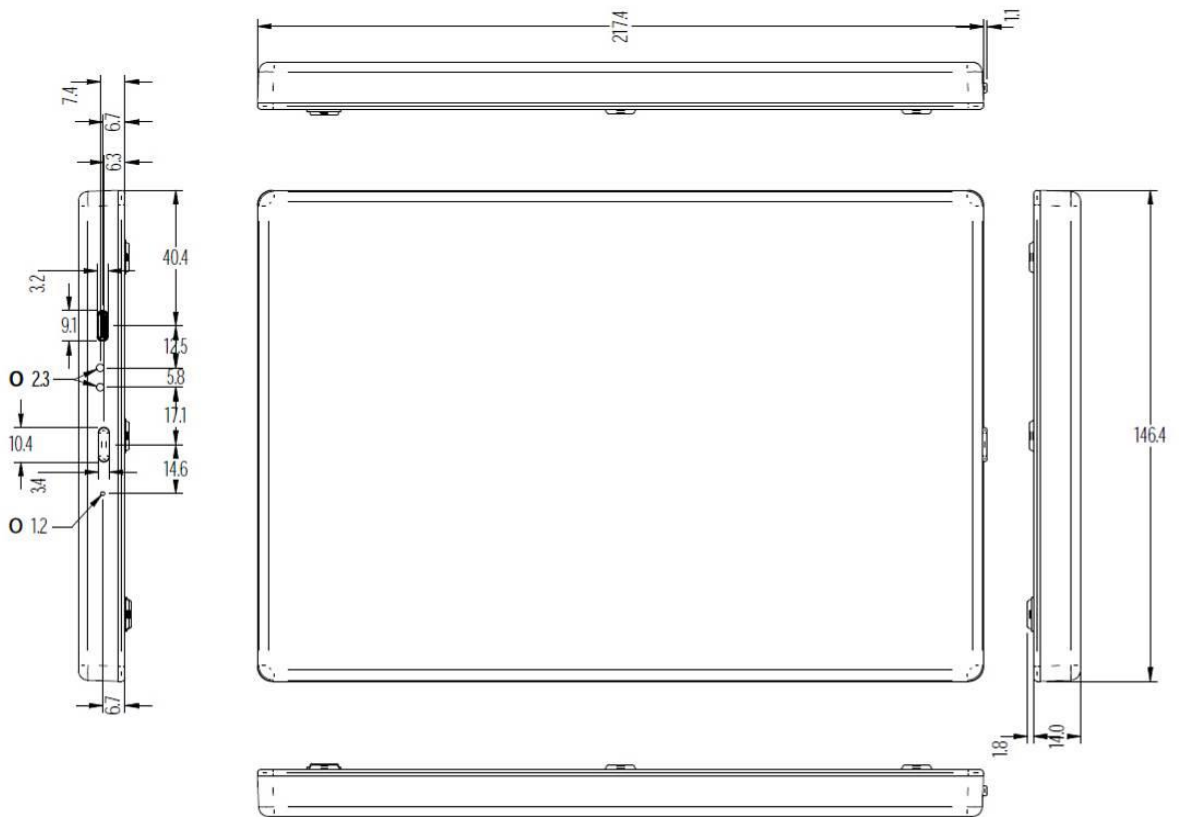


Fig. 2.2: trID R1210I Technical Drawings – Front panel view

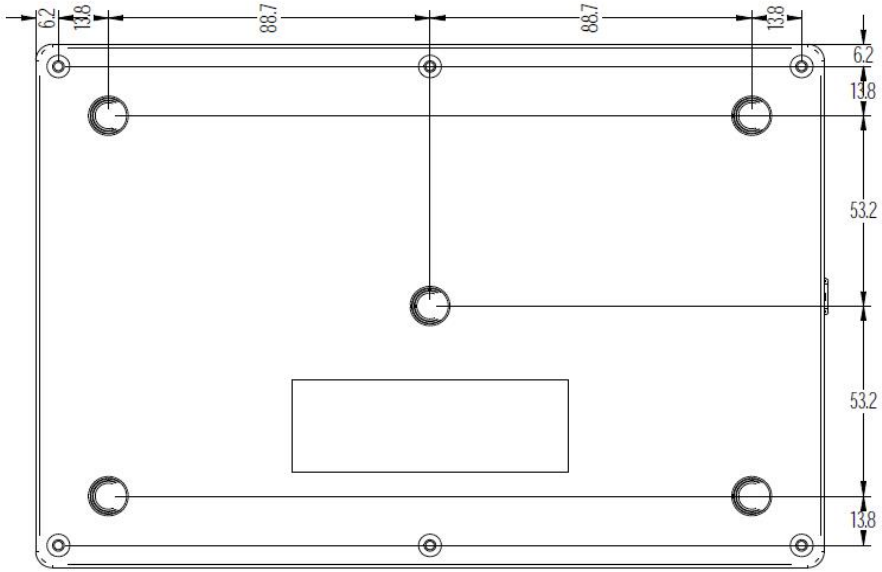


Fig. 2.3: trID R1210I Technical Drawings – Back panel view

3 REGULATORY COMPLIANCE

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. 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 off and on, the user is encouraged to try to correct the interference by one of the following measures:

- a. Reorient or relocate the receiving antenna.
- b. Increase the separation between the equipment and receiver.
- c. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- d. Consult the dealer or an experienced radio/TV technician for help.

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.

Any changes or modification not approved by CAEN RFID could void the user's authority to operate the equipment.

A minimum separation distance of 20cm shall be maintained between the device and user's/nearby people's body.

RoHS EU Directive

The trID R1210I Reader is compliant with the EU Directive 2015/863/EU on the Restriction of the Use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS3).