# BALTECH RFID Reader User Manual



**RFID Reader**
**Covered Variants:**
**M/N: 12115-610, M/N: 12115-620, M/N: 12115-601, M/N: 12115-611**
**M/N: 12115-x1y1z1**
**Operation Manual**

Contents



## RFID Reader

1“x“, “y” and “z” shall represent any alphanumerical number or can be blank.
The “12115-XYZ” Reader/Writer is a desktop contactless smart card USB & Bluetooth wireless Technology Smart card reader and writer combining the high- and low-frequency card technologies. It supports Mifare, ISO 14443A/B, and ISO 15693 standards as well as all major 125kHz-based transponders. Optional it has also an RS232 interface. Based on BALTECH’s core technology it provides support for the latest smartcard technologies, encryption, and security features.

## Mounting and Connection

The reader generates a magnetic field at 13.56MHz, 125 kHz, and 2.4 GHz which could be influenced by any electrically conductive material close to the device.

To ensure good performances and functionalities in terms of reading range and reliability a minimum distance of 10cm from such materials is required. Mounting the unit directly to metal would result in a severe reduction of reading range down to zero functionality. Care should be taken when testing the device after mounting in a problematic environment: Read ranges and performance vary from card to card and very much from card to tag or key-fob. When mounting multiple readers, the distance between readers should be a minimum of 0.5 m in order to avoid degradation of performance due to interference. To connect the device to a host system (a printer or a PC), please make sure that the system provides a USB socket intended for the connection of the reader.

## Operation

Whenever the device is connected to a proper power supply, it will switch on the internal antenna and periodically scan for a card. Once a card has been detected, the card number is read, and the data is converted and sent to the host system through the USB/RS232(model dependent) Interface. To enable the device to read cards, tags, and key fobs successfully, they should be placed centered above the reader. The device is used for identification, and access control.

## Technical Features

| | |
|---|---|
| Operating Frequency | •0.125MHz<br>•13.56MHz<br>•2402MHz-2480MHz |
| Data transmission modulation r eader to the card: | ASK |
| Data transmission modulation c ard to reader: | AM/Load modulation |
| Interfaces | USB: Full speed 2.0, RS 232, Bluetooth 5.2 |
| Contactless Card | Supported standards: IS014443 A & B, IS015693, Communication speed IS 014443A/B: Baud rate up to 424kBaud |
| Operating Range | •IS014443A/B: up to 5cm<br>•IS015693: up to 8cm<br>•125kHz: up to 6cm<br>•Bluetooth wireless technology: up to 10m |
| Human | Red, Green, Blue LEDs & Buzzer |
| Supply Power [Voc] | +5V (±5%) |
| Power Consumption [W] | Up to 1.5 / 1 tsp. |
| Operating Temperature [°C] | -20 to +65 |
| Operating Humidity [%] | 20 to 80 relative humidity; non-condensing |
| Non-Operating Humidity [%] | 10 to 90 relative humidity; non-condensing |
| Antennas | •2.4GHz internal Chip antenna<br>•125kHz permanently attached coil antenna<br>•13.56MHz integrates PCB loop antenna |
| The duty cycle for normal use operation [ 6 minutes time window] | Use 1 time within 6 minutes.<br>Interaction with the user is 10 seconds in the vicinity of the device.<br>•Duty Cycle = (1 x Los )/ 6 min = 2,78 |

**Pinning**
The reader supports a USB host interface.

| USB Interface Molex Header (4 pins)<br>Molex Part Number: 53261-0471 | | | |
|---|---|---|---|
| **Pin#** | **Name** | **Type** | **Description** |
| 1 | PWR | Power | 5V Power Supply |
| 2 | D- | Data | USB-Data inverted |
| 3 | D+ | Data | USB-Data |
| 4 | GND | Power | Signal and Power Ground |

**General regulatory requirements for 12115-610**
FCC ID: OKY12115610A01A
IC : 7657A-12115610
Contains FCC ID: QOQ-BGM220S
Contains IC: 5123A-BGM220S
**NOTICE:**
This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s). 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.

Changes or modifications made to this equipment not expressly approved by BALTECH AG may void the FCC authorization to operate this equipment.
**NOTE:** 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 or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and 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.

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## Documents / Resources

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|---|---|
|  | **BALTECH RFID Reader** [pdf] User Manual<br>12115610A01A, OKY12115610A01A, RFID Reader, RFID, Reader, 12115-610, 12115-620, 12115-601, 12115-611, 12115-x1y1z1 |

## References

- **Baltech AG | Balanced Technology**