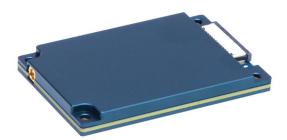
Ex10 UHF RFID Module(1-Port)





Model: RRU7180M **RRU5180M RRU3180M** Size: 57.5mmx36.8mmx6.1mm Weight: 23g

Ex10 UHF RFID Module(1-Port)

GENERAL DESCRIPTION

Based on the E710/E510/E310 chip design, Gen2 Extension Ready, maximizing chip potential with outstanding multi-tag anti-collision capability. The advanced thermal balance design ensures consistently high performance over time, making it the best choice for high-performance handheld RFID devices. It is also suitable for various mainstream RFID applications, including logistics and apparel.

FEATURES

- Self-intellectual property;
- Designed with IMPINJ E710/E510/E310 and support ISO18000-6C(EPC C1G2) protocol tag, featuring excellent multi-tag anti-collision functionality;
- 865~868MHz/902~928MHz frequency band(frequency customization optional);
- FHSS or Fix Frequency transmission;
- RF output power up to 33dbm(adjustable);
- MMCX socket for external antenna;;
- Effective distance up to 12m^{*}(with external 8dbi antenna and tag E41);
- Maximum inventory speed^{*} up to 1000pcs/s (using E710) or 600pcs/s (using E510) or 350pcs/s (using E310);
- Tag buffer size up to 1000PCS@96bits EPC;
- Low power dissipation with +3.8~5.5VDC power supply;
- Support RSSI;
- Support RS232 serial communication interface (3.3V TTL level);
- High stability with air cooling and no extra heat sinking;
- Support on-the-site firmware upgrading.

*Effective reading distance and tag interrogation speed are directly related to the antenna, tags, and the working environment.

CHARACTERISTICS

• Absolute Maximum Ratings

| ITEM | SYMBOL | VALUE | UNIT | | |
|----------------|------------------|-----------|------|--|--|
| Power Supply | VCC | 6 | V | | |
| Operating Temp | T _{OPR} | -20 ~ +65 | °C | | |
| Storage Temp | T _{STR} | -40 ~ +85 | °C | | |
| Page 2 Total 4 | | | | | |

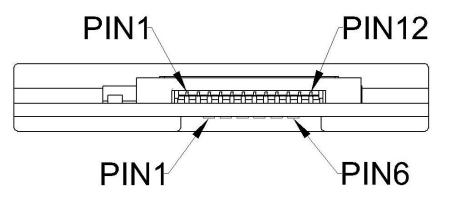
| | | RRU7180M |
|------------|------------------------------|----------|
| | | RRU5180M |
| 🗖 RoyalRay | Ex10 UHF RFID Module(1-Port) | RRU3180M |

• Electrical and Mechanical Specification

Under T_A=25 $^\circ\!\mathrm{C}$,VCC=+5.0V unless specified

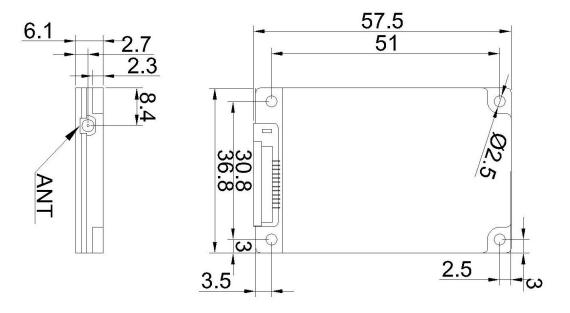
| ITEM | SYMBOL | MIN | ТҮР | MAX | UNIT |
|---------------------|------------------|-----|---|----------------------------|------|
| Power Supply | VCC | 3.8 | 5 | 5.5 | V |
| Current Dissipation | Ic | 410 | 100(standby) | 1000(30dBm) 1350(33dBm) | mA |
| Frequency | F _{REQ} | - | 865~868(ETSI) 902~928(FCC) | - | MHz |
| RF Output Power | P _{RF} | 5 | | 33 | dBm |
| Receive Sensitivity | SR | | -74(using E310) -81(using E510) -87(using E710) | | dBm |

INTERFACE



| No. | Pad No. | Symbol | Comment |
|-----|---------|--------|--|
| 1 | 1 | VCC | Power Supply |
| 2 | 1 | VCC | Power Supply |
| 3 | 2 | GND | Ground |
| 4 | 2 | GND | Ground |
| 5 | 3 | EN | Enable. High level effective with internal 10kOhm resistor pulled up to VCC |
| 6 | | NC | Reserved |
| 7 | | NC | Reserved |
| 8 | 4 | NC | Reserved |
| 9 | 5 | RXD | Serial data input |
| 10 | 6 | TXD | Serial data output |
| 11 | | NC | Reserved |
| 12 | | NC | Reserved |

MECHANICAL DATA (UNIT: mm)



Application Information

 When designing fixed reader, please take care of heat sinking and remember to make sure the heat sinker of the module is closely and stably attached to the reader's bottom plate;
Please refer to User's Manual for detailed protocol description.

Remark:

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^{1.} Specifications are subject to change, please pay attention to our latest version.

^{2.} Shenzhen RoyalRay Science and Technology Co., Ltd. reserves the right to the final interpretation of the above terms.