

Ex10 UHF RFID Module(1-Port)



Model: RRU7180M

RRU5180M

RRU3180M

Size: 57.5mmx36.8mmx6.1mm

Weight: 23g

GENERAL DESCRIPTION

RoyalRay UHF E-Series Single-Port Module is designed based on the latest Impinj E710 chip, fully supporting the Gen2X functionality to maximize the potential of the chip. It demonstrates exceptional anti-collision capabilities and comprehensive thermal balance characteristics, ensuring consistently outstanding performance. This module is the optimal choice for high-performance handheld RFID devices and is equally suitable for various mainstream RFID applications such as logistics and apparel. The series also offers sub-version options based on the E510 and E310 chips.

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

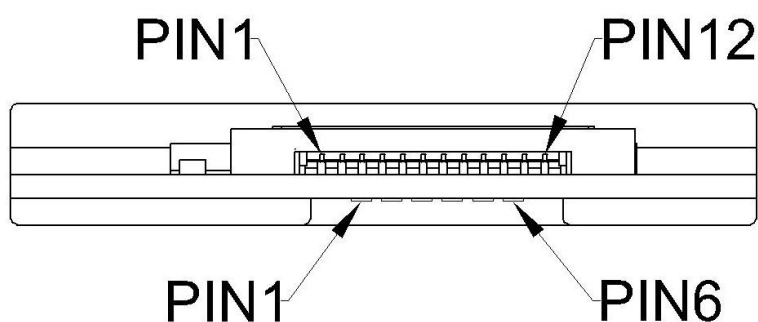
● Electrical and Mechanical Specification

Under $T_A=25^{\circ}\text{C}$, $V_{CC}=+5.0\text{V}$ unless specified

ITEM	SYMBOL	MIN	TYP	MAX	UNIT
Power Supply	VCC	3.8	5	5.5	V
Current Dissipation	I_C	410	100 (standby) 1000(30dBm) 1350(33dBm)	1450*	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

*The module's power consumption may fluctuate within $\pm 10\%$ depending on the antenna matching conditions.

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

