High performance embedded UHF electronic tag reader module

Model：FU0052

Size：57mmx36.8mmx7.3mm

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Introduction

FU0052 is a high-performance embedded UHF electronic tag reader/writer module with completely independent intellectual property design. Combined with a proprietary high-efficiency collision processing algorithm, it can achieve fast reading and writing of electronic tags while maintaining a high reading rate. It can be widely used in logistics, personal identity recognition, conference sign-in systems, access control systems, anti-counterfeiting systems, production process control and other wireless radio frequency identification (RFID) systems.

Features

- Completely independent intellectual property design;
- Based on IMPINJ E310/E510/E710 chip design, fully supports electronic tags that comply with the 18000-6C (EPC C1G2) protocol standard, and has excellent multi-tag anti-collision function;
- Working frequency 865~868MHz/902 ～ 928MHz (can be adjusted according to the requirements of different countries or regions);
- Work in wide spectrum frequency hopping (FHSS) or fixed frequency transmission mode;
- Output power reaches 33dBm (adjustable);
- Support external antenna (external 6dBi antenna, tag E41);
- Reading distance>9M*;
- Tag query speed* reaches 1000 pieces/second (using E710) or 600 pieces/second (using E510) or 300 pieces/second (using E310);
- Tag cache area 1000 tags @ 96bit EPC;
- Low power design, +3.8V ~ +5.25V power supply;
- MMCX-J type antenna interface;
- Support RSSI;
- Support RS232 serial communication interface (3.3V TTL level);
- High stability, external heat sink air cooling;
- Support firmware online upgrade;

** The effective reading distance and tag query speed are directly related to the antenna, electronic tag and working environment.*

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Electrical properties

● Limit parameters

Item	Symbol	Numeric	Unit
Voltage	VCC	5.5	V
Operating Temperature	T_{OPR}	-20 ~ +60	℃
Stored Temperature	T_{STR}	-40 ~ +85	℃

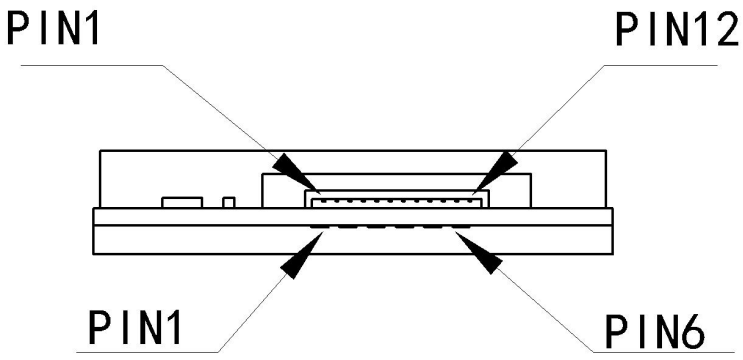
● Specification

Unless otherwise specified, the specifications shown are taken under the operating conditions of TA＝25℃ and VCC＝+5.0V

Item	Symbol	Min	Typical	Max	Unit
Voltage	VCC	3.8	5.0	5.25	V
Working current	I_C			1500	mA
Working frequency	F_{REQ}	-	865~868 902~928	-	MHz
RF port output power	P_{RF}	0		33	dBm
Receiving sensitivity	SR		-74(Using E310) -81(Using E510) -87(Using E710)		dBm
Size	L×W×H		57×36.8×7.3*		mm

* Two thin modules are available: RRU7180MP and RRU7180MZ, with dimensions of 57x36.8x6mm.

Interface



Serial number	Pad number	Symbol	Describe
1	1	VCC	power supply
2	1	VCC	power supply
3	2	GND	Ground
4	2	GND	Ground
5	3	EN	Enable terminal, high level is valid (internal 10k resistor can be selected to pull up to VCC)
6		Reserved	Reserve

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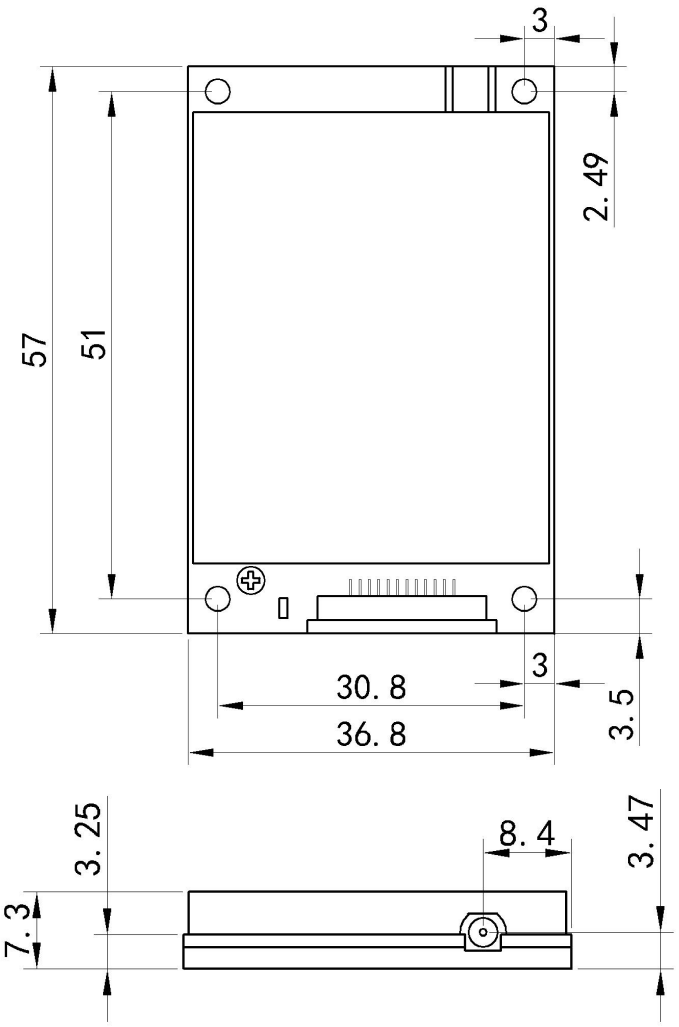
7		Reserved	Reserve
8	4	Reserved	Reserve
9	5	RXD	Serial communication data input terminal
10	6	TXD	Serial communication data output terminal
11		Reserved	Reserve
12		Reserved	Reserve

Mechanical properties (unit: mm)



Application Information

1. When using this product to design a reader, users must fully consider good heat dissipation design, ensure that the module's heat dissipation position is in full contact with the reader's base plate, and apply thermal grease on the contact surface to reduce thermal resistance;
2. For other communication protocol information, please refer to the product user manual.

Note:
1. If the manual changes, please refer to the latest version.
2. Xiamen Innov Information Science & Technology Co., Ltd. reserves the right of final explanations.

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