

MIFARE & ISO14443A/B & ISO15693 & ISO18000 & ISO18092 IC CARD MODULE

JMY5051 IC Card Reader

User's manual

(Revision B V1.03)

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Please read this manual carefully before using. If any problem, please mail to: Jinmuyu@vip.sina.com



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1 Product Introduction

JMY5051 is the second generation product based on JMY505 with UART and IIC serial port. JMY5051 has various functions and supports multi ISO/IEC standard of contactless card. The RF protocol is complex. The designer combined some frequent used command of RF card and then user could operate the cards with full function by sending simple command to the module.

The impedance between RF module and antenna was tuned by impedance analyzer. And then the module has excellent performance and stability.

The module and antenna is split design. They are connecting by a 50ohm coaxial wire whose length is up to 1000cm in good situation. But the best length of the coaxial line is 60cm.

2 Characteristics

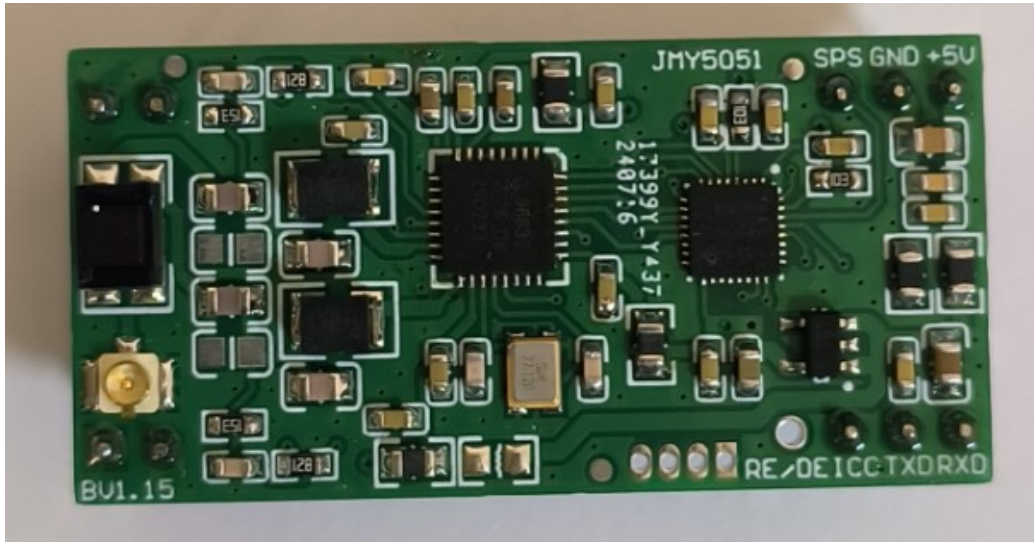
- PCD model: NXP CL RC663
- Working frequency: 13.56MHz
- Card supported: see: [module function configuration table](#)
- Anti collision ability: Full function anti collision; be able to process multi-cards; be able to set operate single card only.
- Auto detecting card: Supported, default OFF. The default state can be set.
- Power supply: DC 5V ($\pm 0.5V$)
- Interface: IIC & UART (selected by SPS pin)
- Communication rate: IIC: Max.200Kbps
UART: 19200bps / 9600bps / 38400bps / 57600bps / 115200bps
- Max. command length: JCP04 253 Bytes;
JCP05 510 Bytes;
- Interface level: IIC/UART(3.3V)
- Power consumption: 150mA(Varies depending on antenna)
- Operating distance: 70mm (depending on card and antenna design)
- Dimension: 20.32mm*41.15mm
- Package: DIP32
- Weight: About 15g
- ISP: Supported
- Operating temperature: -25 to +85°C
- Storage temperature: -40 to +125°C
- RoHS: Compliant



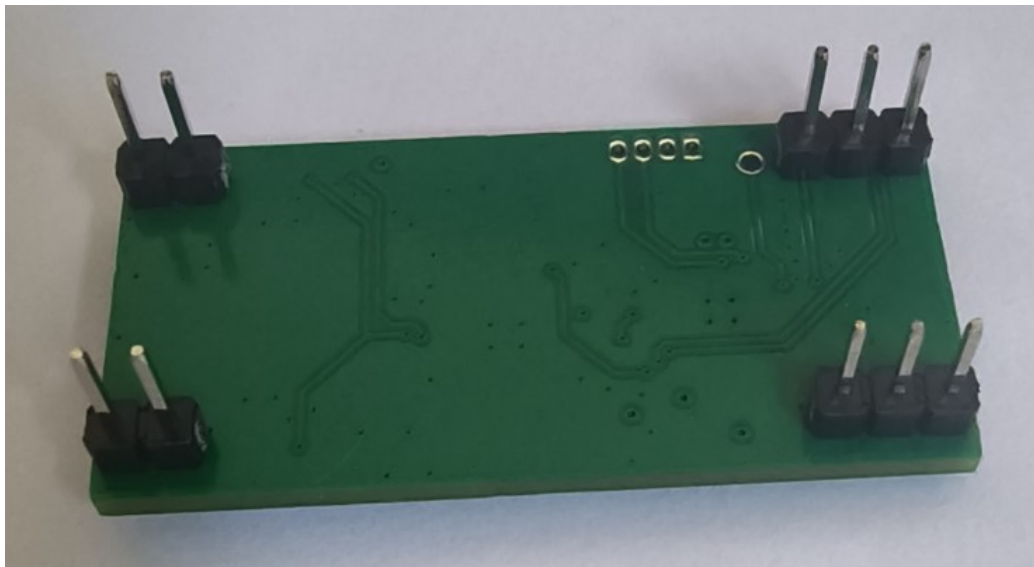
3 Physical Parameter and Pin Outs

3.1 Photo

Front

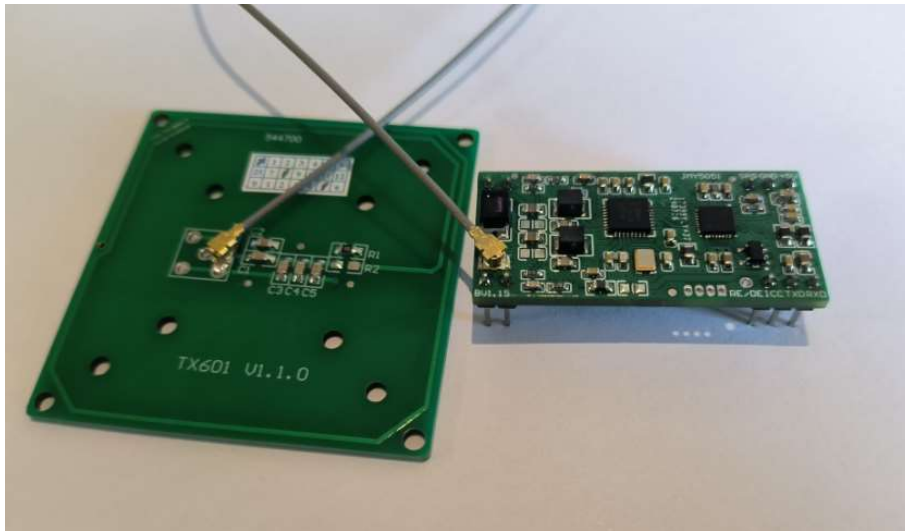


Back

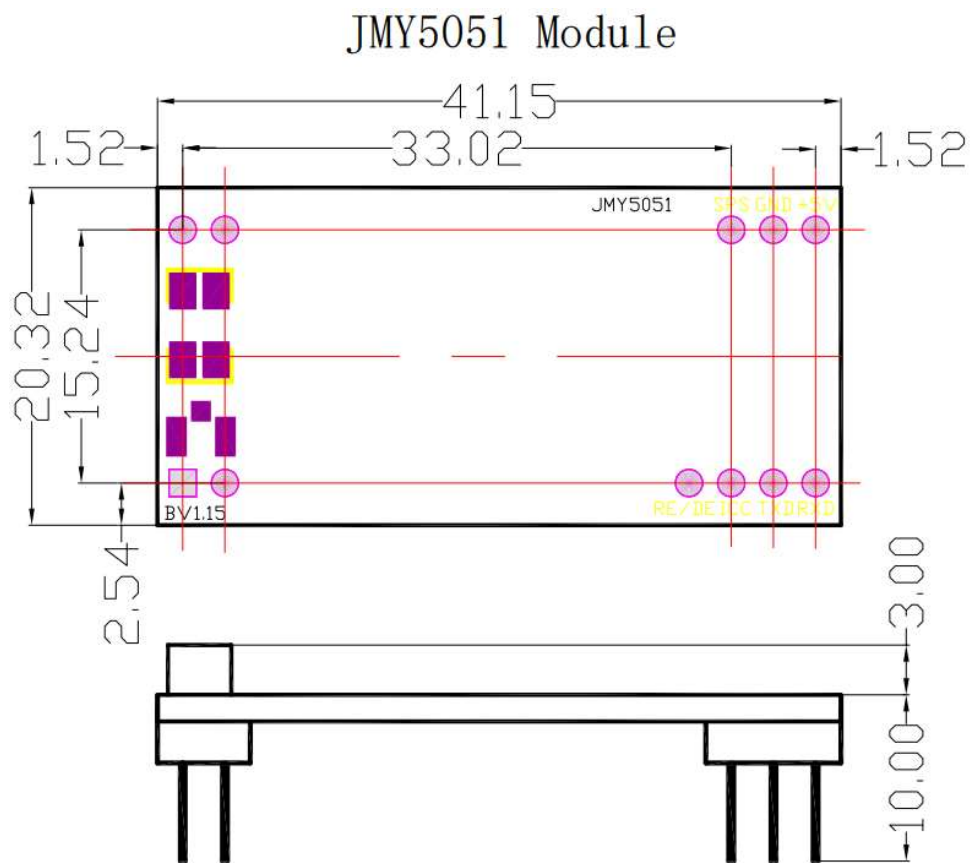




JMY5051+TX601+50ohm coaxial wire



3.2 Dimension



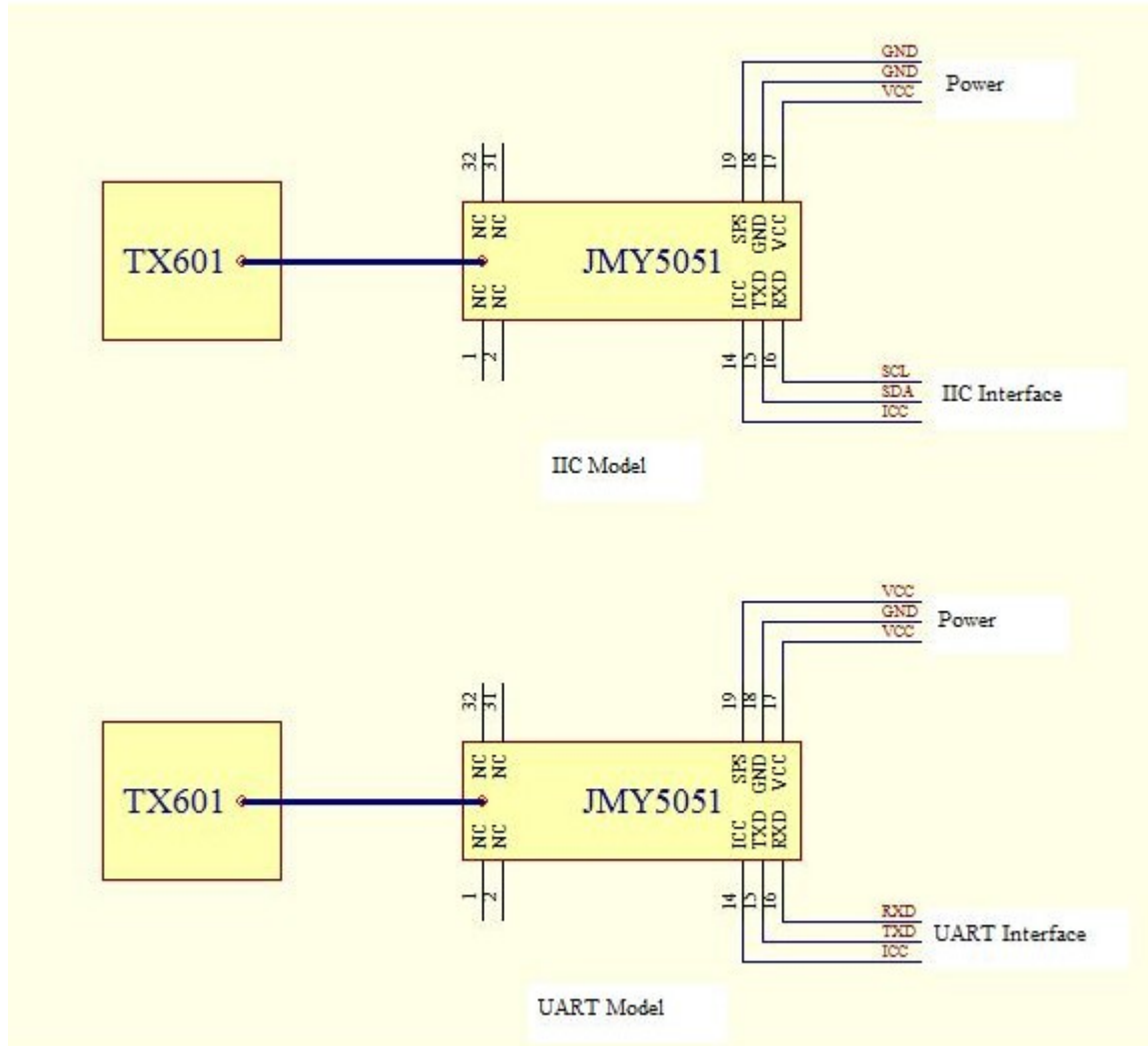


3.3 Pin configurations and Pin outs

PIN	FUNCTION	Type	Low level	High level	Description
1	NC	/	/	/	NC
2	NC	/	/	/	NC
13	RE	Output	0V	3.3V	RE/DE 485 Direction control output (not connected)
14	ICC	Output	0V	3.3V	Card presence indication HIGH: No card; LOW: Card present
15	TXD/SDA	Input / Output	0V	3.3V	UART Send/IIC SDA
16	RXD/SCL	Input	0V	3.3V	UART Receive/IIC SCL
17	VCC	Power	/	5.0V	Module power supply
18	GND	Power	0V	/	Module power ground
19	SPS	Input	0V	3.3V	Serial port selection LOW:IIC; HIGH:UART
31	NC	/	/	/	NC
32	NC	/	/	/	NC



3.4 Connection schematic



3.5 Antennas

Normally, as the size of TX500 series antenna may not meet the actual demands, the antenna needs to be customized, especially in some compact systems. The following information for customization is needed: 1. Dimension of the antenna PCB; 2. the position and direction of the antenna outlet and the connector; 3. the description of the antenna periphery. JINMUYU will design the most proper antenna according to the user's exact requirements.



We provide many models of antenna. There are some recommended models in the table:

Antenna model	Size of antenna	Card operating distance
TX600	70mm * 70mm	90mm
TX601	50mm * 50mm	70mm
TX602	30mm * 30mm	60mm

3.6 Module Function Configuration Table

	JMY5051
PCD	NXP CL RC663
JCP04	●
JCP05	●
MIFARE 1K	●
MIFARE 4K	●
MIFARE Ultra Light	●
MIFARE Ultra Light C	●
MIFARE Mini	●
MIFARE DES fire	●
MIFARE Plus	●
T=CL TYPE A	●
SR176	●
SRI512	●
SRI1K	●
SRI2K	●
SRI4K	●
SRIX4K	●
T=CL TYPE B	●
I.CODE SLI	●
I.CODE SLI-S	●
TI Tag-it	●
ST LRI	●
Felica	●
ISO18000-3MODE3	●
NFC Reader	●
FLASH in MCU	2Kbytes
UART Interface	●
IIC Interface	●



3.7 MT-500 Test Board

The MT-500 test board is a testing tool specifically designed for developing JMY5xx series modules. Users can quickly perform quality control and development experiments on the modules with the MT-500.

The MT-500 uses a 51 microcontroller to operate the modules and can switch between communication ports (I/O or UART). Using the provided source code (including I/O and UART), users can quickly develop application programs.

The MT-500 can also communicate with a PC via its RS232 port, allowing users to develop test software to test the modules.

4 Communication Protocols

The physical interfaces of module are various. But the data link layer protocols are in accordance with JCP02, JCP03, JCP04 and JCP05. Please reference "JMY600 Series IC Card Module General Technical Manual".

For convenience to test the Module, we supply PC software: TransPort to users.

We have interface program source code to help users also. They are KELL projects in C51 or ASM51 format.

Please log in our website: www.jinmuyu.com to download or mail to jinmuyu@vip.sina.com to obtain the resources.

5 Document update history

Version	Date	Content
B V1.00	October 16, 2024	New file created
B V1.01	February 18, 2025	Added IIC and UART voltage level descriptions
B V1.02	September 26, 2025	Modified maximum power consumption description
B V1.03	October 10, 2025	Modify pin description