**MICRO USB RELAY MODULE  
REFERENCE**

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**Welcome**

Welcome to use ”MICRO USB RELAY” module.  
The modular is produced by ICStation in 2014.  
The reference is sort for ICSE012A, ICSE013A, ICSE014A a total of three types of module.

**Features**

1. The module have MICRO USB and serial port , so they can communicate with PC and other device conveniently.
2. The normal working voltage for modules is 5V.And module of ICSE014A have a power interface of 5V. Parameters are as follows:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **ICSE012A** | **ICSE013A** | **ICSE014A** | **Unit** | **Remark** |
| CC | 4 | 2 | 8 |  | channel count of module |
| I | 400 | 250 | 700 | mA | working current |
| U | 5 | 5 | 5 | V | input voltage |
|  | √ | √ | √ |  | whether have serial port |
|  | 9600 | 9600 | 9600 | bit/s | baud rate of serial port |
| F | 1000 | 1000 | 1000 | Hz | Module control frequency |
|  | × | × | √ |  | Whether have power interface |

**Interface**

Modules all have Micro USB and serial port . Read following for details：

1. Micro USB: Standard micro USB mother mouth.
2. TX : Transmit
3. RX : Receive
4. 5V : Volt current condenser
5. GND : Ground
6. Power Interface : Only ICSE014A have . Interface is used when Micro USB cannot give enough power.

**Usage method**

1. USB usage method  
   Module connect with PC through USB . The connection method is as follows:  
   Then open ”Relay Board Manager” to operate the module . Read ” RelayBoardManager\_Reference” for details of the software.
2. Serial port usage method  
   Module can communicate with other device directly through serial port .   
   Module can receive single byte from upper monitor ( baud rate 9600)：  
   Upper Monitor 0x50 0x51  
   ICSE012A 0xAB  
   ICSE013A 0xAD  
   ICSE014A 0xAC  
   Module will turn to normal work state after receive “0x51” . Then every data byte will control the relay directly . Each bit controls a realy ( ‘0’ mark start , ‘1’ mark stop ) . Read following for details:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Bit** | **ICSE012A** | **ICSE013A** | **ICSE014A** | **Remark** |
| 0 | √ | √ | √ | Control the relay K1 |
| 1 | √ | √ | √ | Control the relay K2 |
| 2 | √ | × | √ | Control the relay K3 |
| 3 | √ | × | √ | Control the relay K4 |
| 4 | × | × | √ | Control the relay K5 |
| 5 | × | × | √ | Control the relay K6 |
| 6 | × | × | √ | Control the relay K7 |
| 7 | × | × | √ | Control the relay K8 |

**Thanks**

Thank you for buying and have a nice time.