

## TL-2.3 Manual

### 1 . Product parameter

**Bluetooth Protocol:** Bluetooth Specification V4.0 BLE

**Work frequency:**2402-2480 MHz ISM (Industrial, Scientific and Medical)  
and SRD (Short Range Device) frequency band

**modulation mode:** GFSK(Gaussian Frequency Shift Keying)

**transmitted power:** -0.37 dBm(Conducted)

**Receiver Sensitivity:** -94 dBm at 1Mbps

**Support service:** Peripheral UUID FFE0,FFE1

**power dissipation:**20.2mA

**Supply-Voltage Range:** 2.5 V-3.6 V

**Operating ambient temperature range:**-40~85 degree

**Module dimension:**19.55mm x 13.5mm x 1.0mm

### 2 . Product summary

TL-2.3 module use TI CC2541 ,

In-System-Programmable Flash,support AT command.

### 3. application area

Smart home

Industrial control

Bluetooth printer

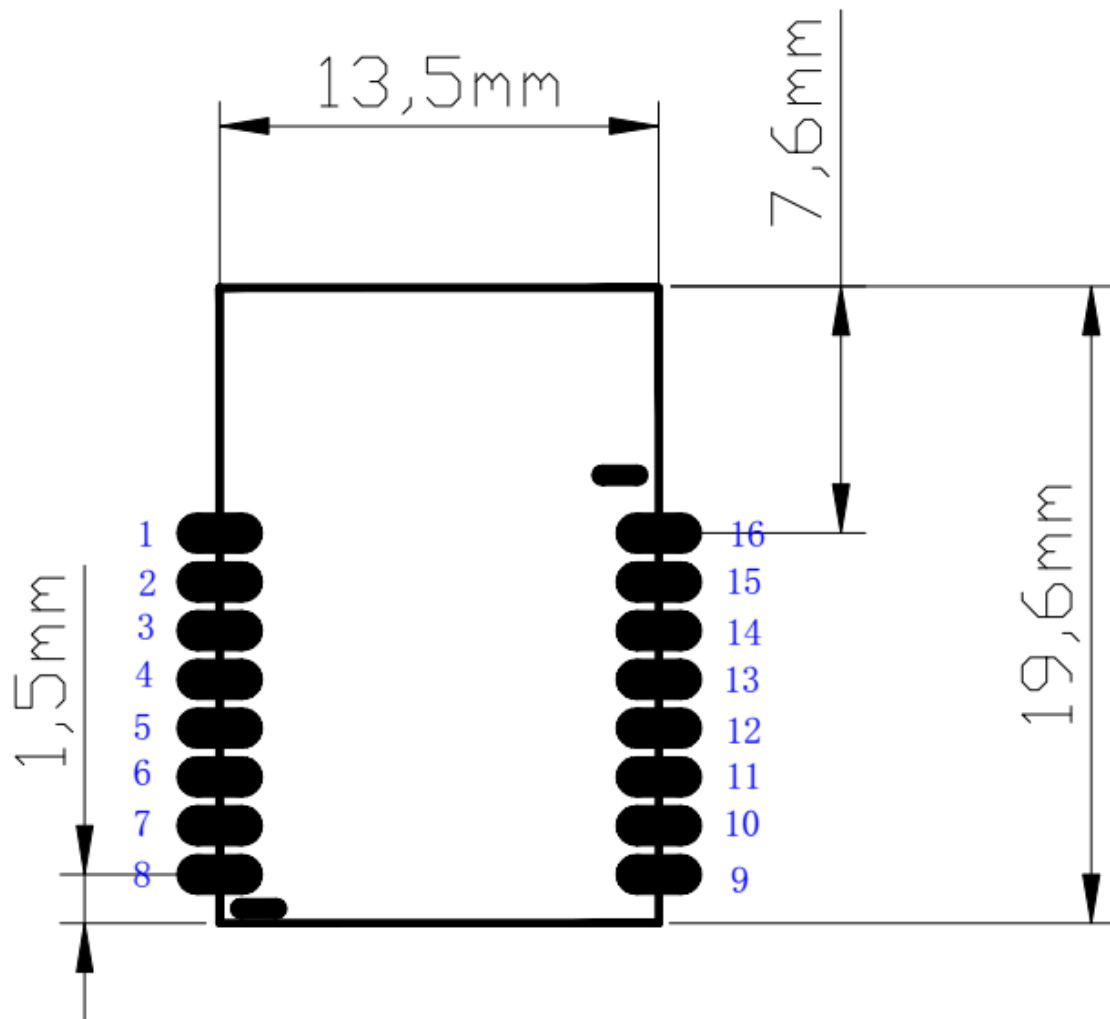
Automate collect

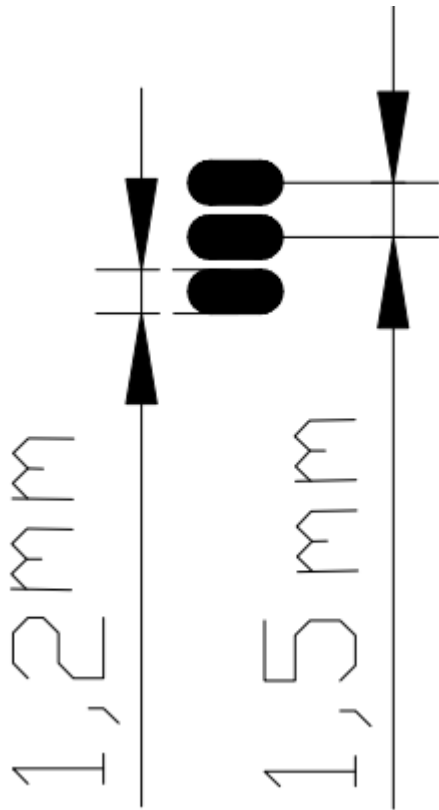
#### 4.Product model

TL-2.3

#### 5. technical specifications

##### 5.1 Product dimension and label





## 5.2 TL-2.3 pin define

| Pin number | Pin name | Pin instruction |
|------------|----------|-----------------|
| 1          | UART_RTS | UART            |
| 2          | UART_TX  | UART            |
| 3          | UART_CTS | UART            |
| 4          | UART_RX  | UART            |
| 5          | NC       | Not connect     |
| 6          | NC       | Not connect     |
| 7          | NC       | Not connect     |
| 8          | NC       | Not connect     |
| 9          | VCC      | Power 3.3v      |
| 10         | NC       | Not connect     |

|    |        |                 |
|----|--------|-----------------|
| 11 | RESETB | Low RESET (5ms) |
| 12 | GND    | Power gound     |
| 13 | PIO3   | IO port         |
| 14 | PIO2   | Digital in/out  |
| 15 | PIO1   | LED output pin  |
| 16 | PIO0   | Key pin         |

## 6.System function

Module factory default config:

Anova:9600,N,8,1,Peripheral,Don' t sleep,

transparent transmission model

## 7.AT command

The module through RS-232 level conversion is connected to the computer COM port . Used COM debugger according to 9600,N,8,1 config .

Take care:This module can not be directly connected to the computer COM port ,after RS-232 level conversion ,otherwise the module will be damaged.

(1).Test

| Command | Response      | Parameter |
|---------|---------------|-----------|
| AT      | OK<br>OK+LOST | empty     |

The module is in the standby state ,will be returned

through the serial port : " OK "

When the module is connected, disconnect and return : " OK+LOST "

(2).Inquiry /set baud

| Command            | Response       | Parameter                                                               |
|--------------------|----------------|-------------------------------------------------------------------------|
| Inquiry:AT+BAUD?   | OK+Get:[para1] | Para1:0~8                                                               |
| Set:at+BAUD[para1] | OK+Set:[para1] | 0=9600;1=19200;<br>2=38400;3=57600;<br>4=115200;<br><br>Default:0(9600) |

Note:After the instruction is executed,parameters to be re installed on the new power to take effect.

(3).Inquiry,set device name

| Command          | Response       | Parameter         |
|------------------|----------------|-------------------|
| Inquiry:AT+NAME? | OK+NAME[para1] | Para1:device name |

|                    |               |                                                    |
|--------------------|---------------|----------------------------------------------------|
| Set:AT+NAME[para1] | OK+SET[para1] | The longest 11 digits or letters.<br>Defaule:Anova |
|--------------------|---------------|----------------------------------------------------|

(4).Module reset,restart

| Command  | Response | Parameter |
|----------|----------|-----------|
| AT+RESET | OK+RESET | empty     |

## 8. Approved host devices:

# 1: Product Name: Portable Water Heater-Precision Cooker

Model: Mini

Function: The Bluetooth module inside this Portable Water Heater-Precision Cooker allows the device to a mobile phone, processes mobile phone commands and display the results on the mobile phone display.

*Note: The above list are showing all products in which the module is approved. If the host device is not listed, the module is not approved in the host device. At time of initial certification, the module is approved in one (#1) host device as shown above.*

# FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- } -Reorient or relocate the receiving antenna.
- } -Increase the separation between the equipment and receiver.
- } -Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- } -Consult the dealer or an experienced radio/TV technician for help.

\*RF warning:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Modular Approval & Installation:

The TL-2.3 module is designed to comply with the FCC rules, except for power stabilization which shall be provided by the host. Therefore, any host system using this module, requires additional testing and equipment authorization. This radio module must not be installed to co-locate and operating simultaneously with other radios in host system, if so, then additional testing and equipment authorization may be required to operating simultaneously with other radio. Only those antenna(s) tested with the device or similar antenna(s) with equal or lesser gain may be used with this transmitter.

The host system shall have a label indicating: Contains FCC ID: 2AIO3-TL2