QuecPython LED User Guide

LTE Standard Module Series

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About the Document

Revision History

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-	2020-11-10	Kenney/Rivern	Creation of the document
1.0.0	2020-11-10	Kenney/Rivern	Preliminary

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1 Introduction

This document takes EC100Y-CN as an example to introduce how to use the LED function.

This document is applicable to the following Quectel modules:

- EC100Y-CN
- EC600S-CN

2 Overview

Before using the LED function, you need to understand the GPIO serial port of the EVB. GPIO is the general I/O port. GPIO is the pin output and input function of the EVB. The output function is to pull the pin high and low; the input function is to detect whether the level on the pin is high or low. When you need to control the high and low of the pin, use the output function of GPIO. For example, when controlling the on and off of the LED lamp, it is necessary to control the high and low level of the output to realize the on and off of the LED lamp.

Take EC100Y-CN module as an example, as shown in the figure is the GPIO serial port:
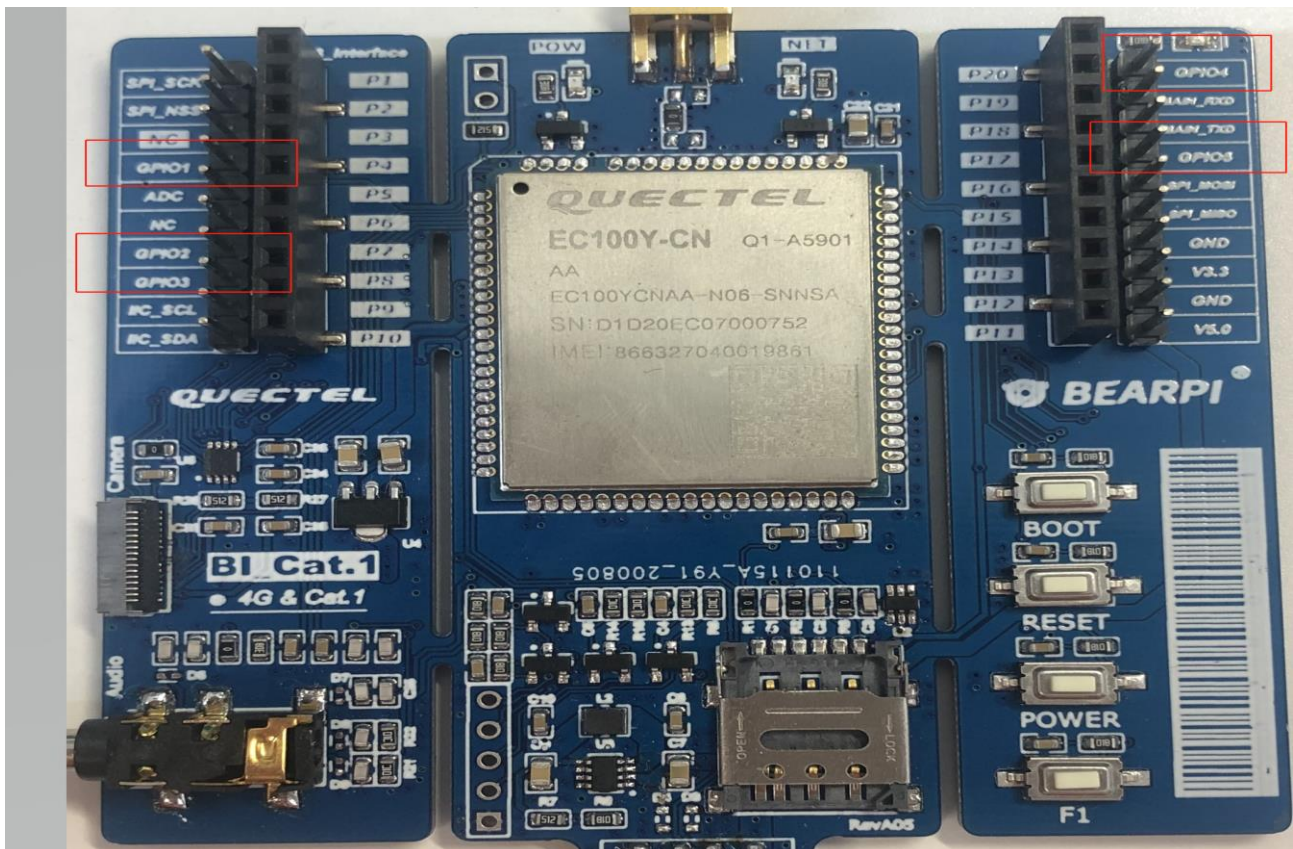

Figure 1: GPIO Serial Port

3 LED Function Realization

To realize the LED function in the EVB, you need to use the Pin function in QuecPython. Take EC100Y-CN module as an example, connect the LED control line of the module to the GPIO1 serial port of the EVB, and then connect the module V3.3 serial port to the EVB V3.3 serial port to supply power to the module. After the connection is complete, power on the EVB.

Step1：First import the machine module and create a GPIO object. The code example is as follows:

```
from machine import Pin
gpio1 = Pin(GPIO1, Pin.OUT, Pin.PULL_DISABLE, 0)
```

GPIOn	Integer type. Pin number.
	The pin correspondence is as follows:
	GPIO1－Pin number 22
	GPIO2－Pin number 23
	GPIO3－Pin number 178
	GPIO4－Pin number 199
	GPIO5－Pin number 204
direction	Integer type.
	IN Input mode
	OUT Output mode
pullMode	Integer type.
	PULL_DISABLE Floating mode
	PULL_PU Pull up mode
	PULL_PD Pull down mode
level	Integer type. Pin level.
	0 Set the pin to low level
	1 Set the pin to high level

Step2：Obtain the pin voltage and execute the code as follows:

```
gpio1.read()
```

Step3：Set the pin level. The execution code is as follows:

```
gpio1.write(1)
```

Step4：Realize the flashing effect of LED lights by setting a string of changing voltages of the pins. The execution code is as follows:

```
import utime
i = 1
while i<100：
    gpio1.write(0)
    utime.sleep(1)
    gpio1.write(1)
    utime.sleep(1)
        i += 1
```

```
>>> from machine import *
>>>
>>> gpio1 = Pin(Pin.GPIO1,Pin.OUT,Pin.PULL_DISABLE,0)
>>>
>>> gpio1.read()
0
>>> 
```

```
>>> import utime
>>>
>>>
>>> i = 1
>>> while i<100:
...     gpio1.write(0)
...     utime.sleep(1)
...     gpio1.write(1)
...     utime.sleep(1)
...     i += 1
...
0
0
```

After running the above code, you can observe that the LED lights of the EC100Y-CN module flash every 1 second, and more functions can be achieved by modifying the code and connecting multiple sets of peripherals.
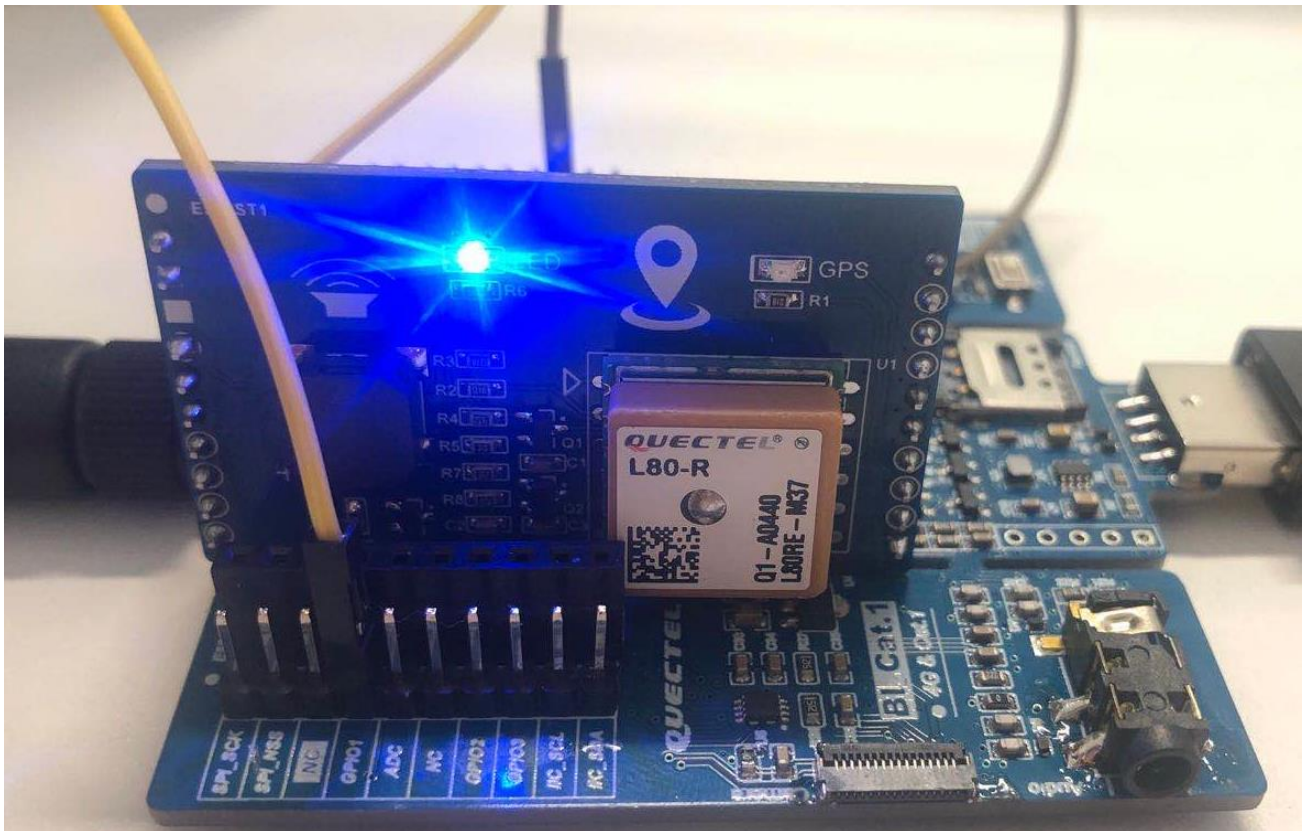
Figure 2: LED Light Flashing

> **NOTE**
>
> The above part of the code can be found in the SDK provided by Quectel, and the path is *modules/gpio/example_pin.py*.

4 Terms and Abbreviations

Table 1: Terms and Abbreviations

Abbreviation	Description
GPIO	General-Purpose Input/Output
LED	Light Emitting Diode
SDK	Software Development Kit