

7.WiringPi library

1. Introduction of wiringPi

The wiringPi is a GPIO control library function for the Raspberry Pi platform. The wiringPi library contains a wealth of library functions such as GPIO library, I2C library, SPI library, UART library and software PWM library, etc.

2. Version information of wiring Pi

You need to input: gpio -v . As shown in the figure below.

```
root@raspberrypi:/home/pi/smartcar# gpio -v
gpio version: 2.42
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This is free software with ABSOLUTELY NO WARRANTY.
For details type: gpio -warranty

Raspberry Pi Details:
   Type: Pi 3, Revision: 02, Memory: 1024MB, Maker: Embest
   * Device tree is enabled.
   *--> Raspberry Pi 3 Model B Rev 1.2
   * This Raspberry Pi supports user-level GPIO access.
```

3. Use of GPIO

You can input: gpio readall to get the correspondence between the wiringPi and the GPIO interface of the Raspberry Pi, as shown in the following figure:

oot@raspberrypi:/home/pi/smartcar# gpio readall											
BCM	+ wPi							+ Mode		+ wPi	++ BCM
	+	+	+	V 	+	++		+	Nume 	WLI 	++
		3.3v	I	i		11 2	I	i I	5⊽	I	i i
		SDA.1	IN	1		4	ı		5 v	I	I I
3		SCL.1	IN	1		6	ĺ		0v	ĺ	i i
4		GPIO. 7	IN	1		8	1	IN	TxD	15	14
		0v	İ	İ		1 10	1	IN	RxD	16	15
17		GPIO. 0	IN	0	11	12	0	IN	GPIO. 1	1	18
27		GPIO. 2	IN	0	13	14	l		0v		
22		GPIO. 3	IN	0	15	16	0	IN	GPIO. 4	4	23
		3.3v		l	17	18	0	IN	GPIO. 5	5	24
10	12	MOSI	IN	0	19	20	l		0v	l	
	13	MISO	IN	0	21	11 22	0	IN	GPIO. 6	6	25
11	14	SCLK	IN	0	23	24	1	IN	CE0	10	8
		0v	l		25	26	1	IN	CE1	11	7
	30	SDA.0	IN	1	27	11 28	1	IN	SCL.0	31	1
	21	GPIO.21	IN	1	29	30	I		0v		
	22	GPIO.22	IN	1	31	11 32	0	IN	GPIO.26	26	12
13	23	GPIO.23	IN	0	33	34			0v	I	
19	24	GPIO.24	IN	0	35	36	0	IN	GPIO.27	27	16
26	25	GPIO.25	IN	0	37	38	0	IN	GPIO.28	28	20
		0v	l		39	40	0	IN	GPIO.29	29	21
BCM	+ wPi	+ Name +						 Mode		+ wPi	BCM

The Physical column is the pin definition of the physical interface J8 of the Raspberry Pi. The wPi column is the corresponding value of the GPIO in the wiringPi library. The BCM column is the corresponding value of the GPIO in the BCM2835 C library.

(Note:we use the wiringPi library function in the development of the Raspberry Pi wifi smart robot car.)