

BananaPi uses DVK-511

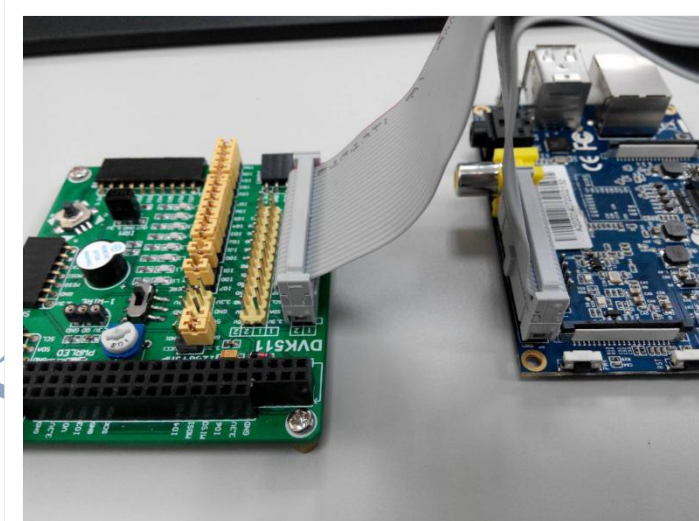
DS18B20 measuring temperature sensing

By Justin Chen

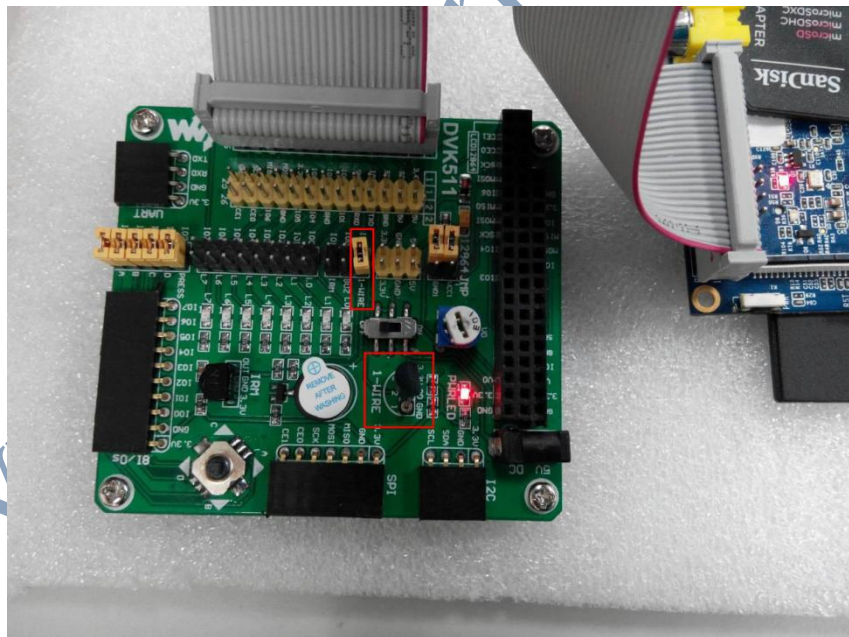
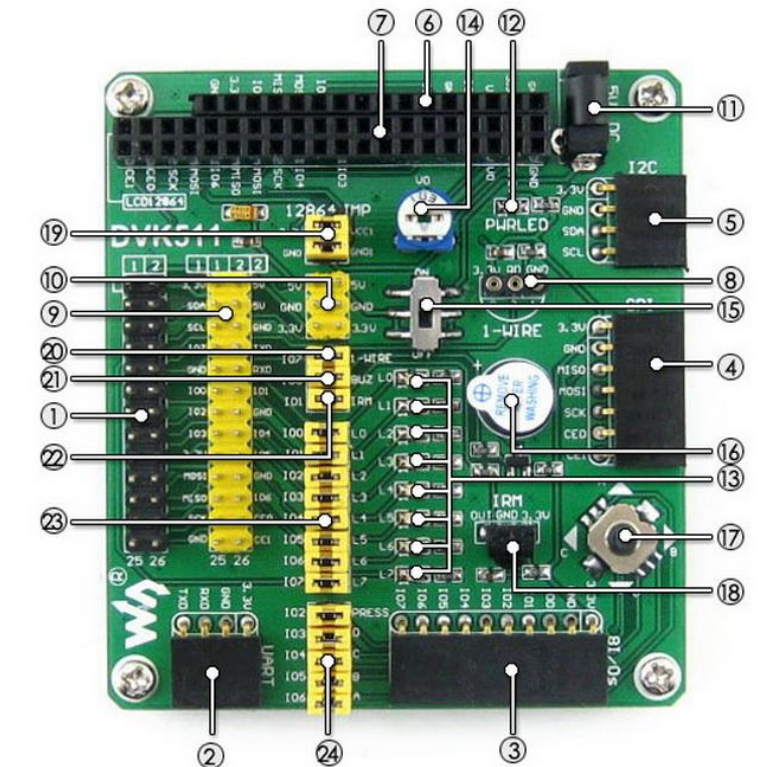
1. First go to website <http://www.bananapi.com/> download BananaPi customized Raspbian Image; about how to burn the image into SD
<http://www.bananapi.com/index.php/download?layout=edit&id=42>.
2. The Image burn in SD card has preload the customized WiringPi Lib before, if download WiringPi Lib by yourself, you will need to modify it, otherwise it can't use; WiringPi Lib can find in /opt/gpio-lib.

```
pi@bananapi: /opt/gpio-lib
File Edit Tabs Help
pi@bananapi /opt/gpio-lib $ ls
RPi.GPIO-0.5.5 ScratchGPIO5 WiringBPi_Beta_V2.0
```

3. Connect the DVK511 to the BananaPi.

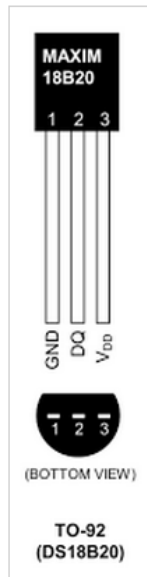


4. DVK-511 eighth jack is ONE-WIRE Interface. Plug DS18B20 temperature sensor insertion ONE-WIRE Interface jack, you will need to connect ONE-WIRE jumper in it so will no affect this function.

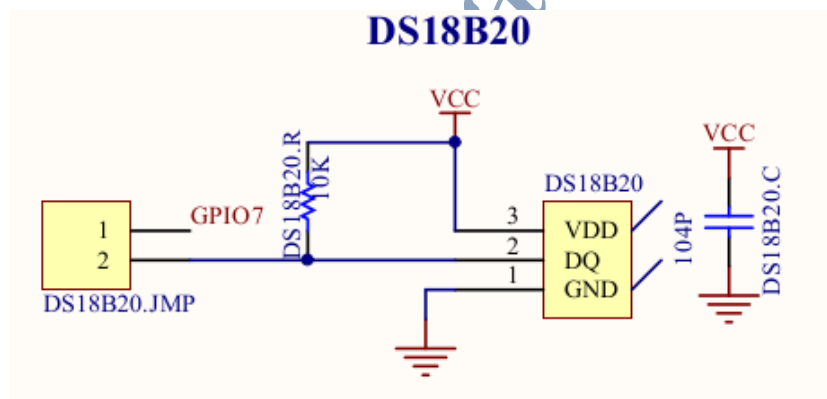


Round direction of DS18B20 needs to be consistent with the DVK-511's

5. Check DS18B20 Circuit diagram to understand the PIN corresponding to each pin.



Above picture shows DS18B20 PIN's corresponding table



Above picture shows the DVK-511 to DS18B20 PIN's corresponding table

6. Modify script.bin file (if you do not want to amend script.bin can replace the edited script.bin) How to manually replace script.bin can refer <http://www.bananapi.com/index.php/forum/advanced-users/54-how-to-modify-the-script-bin-file>

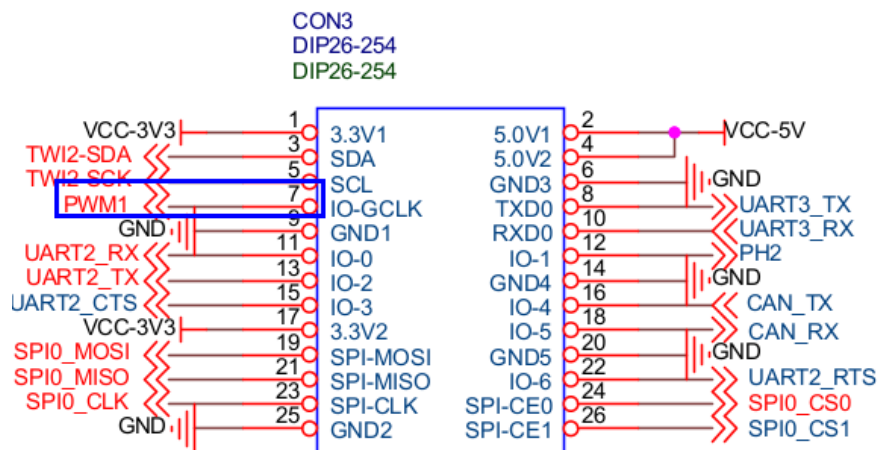
To drive DS18B20 device for an additional defined Wire initial value, first see DVK-511 toward DS18B20 PIN foot corresponds to the FIG can know the pin control DS18B20 device name is GPIO7, in comparison DVK-511 26PIN line

graph we can know it's the seventh PIN feet;

wiringPi PIN	BCM GPIO		Pi_1		BCM GPIO	wiringPi PIN
3.3V	3.3V	VCC	1	2	5V	5V
8	va:0/vb:2	SDA	3	4	5V	5V
9	va:1/vb:3	SCL	5	6	GND	GND
7	4	GPIO7	7	8	TX	14
GND	GND	GND	9	10	RX	15
0	17	*GPIO0	11	12	GPIO1 *	18
2	va:21/vb:27	GPIO2	13	14	GND	GND
3	22	GPIO3	15	16	GPIO4	23
3.3V	3.3V	VCC	17	18	GPIO5	24
12	10	MOSI	19	20	GND	GND
13	9	MISO	21	22	GPIO6	25
14	11	SCK	23	24	CE0	8
GND	GND	GND	25	26	CE1	9

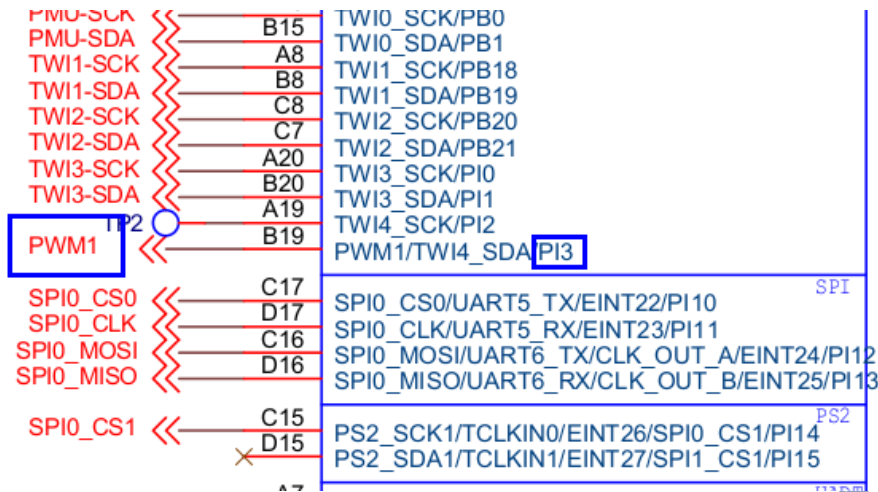
The DVK511-26PIN

Then corresponds to the 26PIN BananaPi feet Seventh PIN is PWM1



The BananaPi-26PIN

Check BananaPi A20 CPU circuit diagrams can see PWM1 corresponding GPIO is PI3



The BananaPi-A20 CPU

Final inspection BananaPi boot SD Card GPIO PI3 can be found in the script.bin, then script.bin defined gpio_pin_4 again; so we need to define the initial value of 4 w1_para of gpio

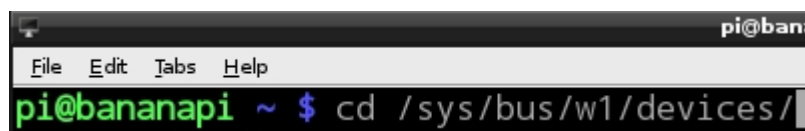
```
tkey_twi_addr = 0xb2
tkey_int = port:PI13<6><default><default><default>

[motor_para]
motor_used = 0
motor_shake = port:PB03<1><default><default><1>

[gpio_para]
gpio_used = 1
gpio_num = 88
gpio_pin_1 = port:PB20<1><default><default><default>
gpio_pin_2 = port:PB21<1><default><default><default>
gpio_pin_3 = port:PB20<1><default><default><default>
gpio_pin_4 = port:PI03<1><default><default><default>
gpio_pin_5 = port:PB22<1><default><default><default>
gpio_pin_6 = port:PB23<1><default><default><default>
gpio_pin_7 = port:PI14<1><default><default><default>
gpio_pin_8 = port:PI10<1><default><default><default>
gpio_pin_9 = port:PI13<1><default><default><default>
gpio_pin_10 = port:PI12<1><default><default><default>
gpio_pin_11 = port:PI11<1><default><default><default>
```

[w1_para]
gpio = 4

7. Then open LXTerminal switch to W1 folder directory.



Check whether the system has to read the DS18B20 device

```
pi@bananapi: /sys/b
File Edit Tabs Help
pi@bananapi /sys/bus/w1/devices $ ls
28-000005e41050 w1_bus_master1
```

Switch to the corresponding directory

```
pi@bananapi: /sys/bus/w1/devices
File Edit Tabs Help
pi@bananapi /sys/bus/w1/devices $ cd 28-000005e41050
```

Run to watch DS18B20 temperature sensor to check the resulting temperature

```
pi@bananapi: /sys/bus/w1/devices/28-000005e41050
File Edit Tabs Help
pi@bananapi /sys/bus/w1/devices/28-000005e41050 $ cat w1_slave
a4 01 4b 46 7f ff 0c 10 da : crc=da YES
a4 01 4b 46 7f ff 0c 10 da t=26250
```

The temperature is measured to 26.250 °C

www.banana-pi.com