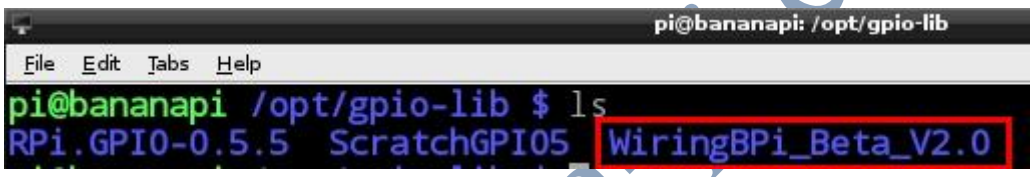
BananaPi uses DVK-511

DS18B20 measuring temperature sensing

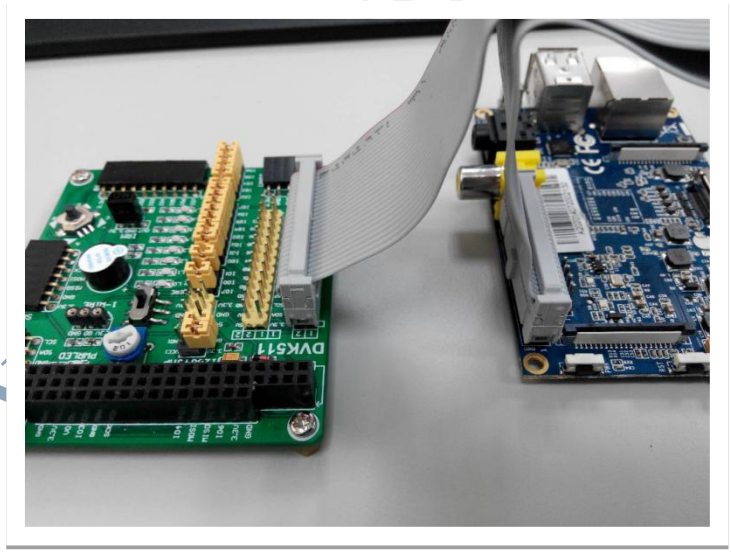
By Justin Chen

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.

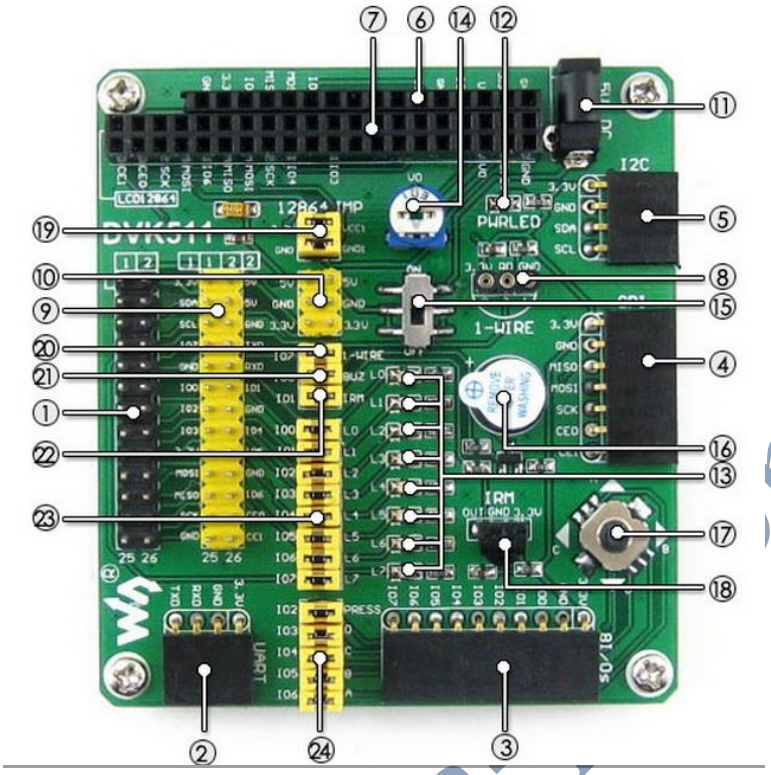
2. The Image burn in SD card has preload the customized WiringPi Lib before, if download WiringPi Lib by yourself, you will need to modify it, otherwise it can't use; WiringPi Lib can find in /opt/gpio-lib.

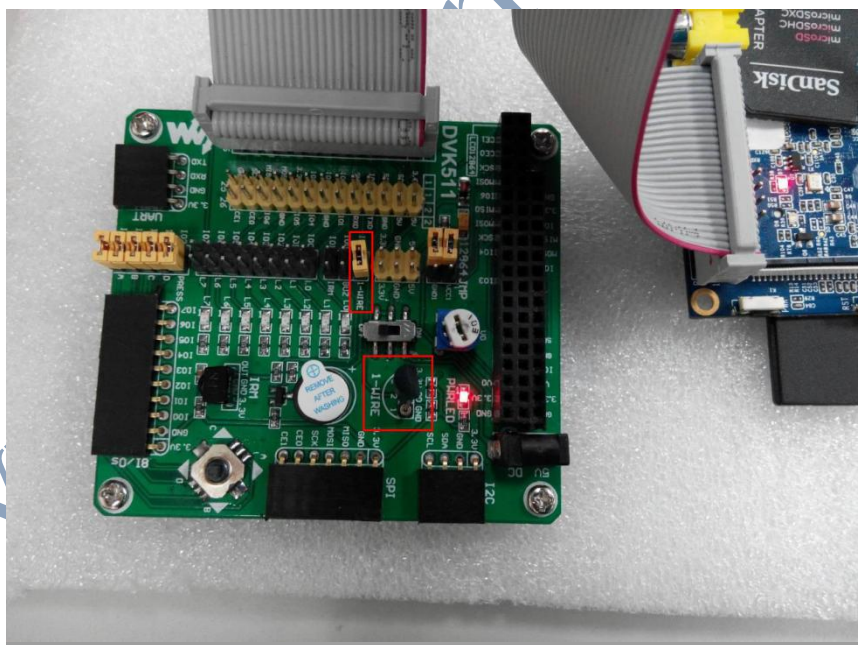


3. Connect the DVK511 to the BananaPi.



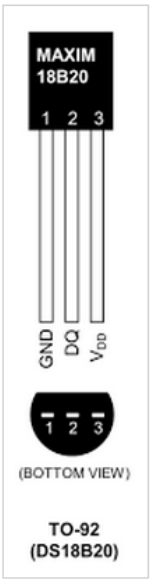
4. DVK-511 eighth jack is ONE-WIRE Interface. Plug DS18B20 temperature sensor insertion ONE-WIRE Interface jack, you will need to connect ONE-WIRE jumper in it so will no affect this function.



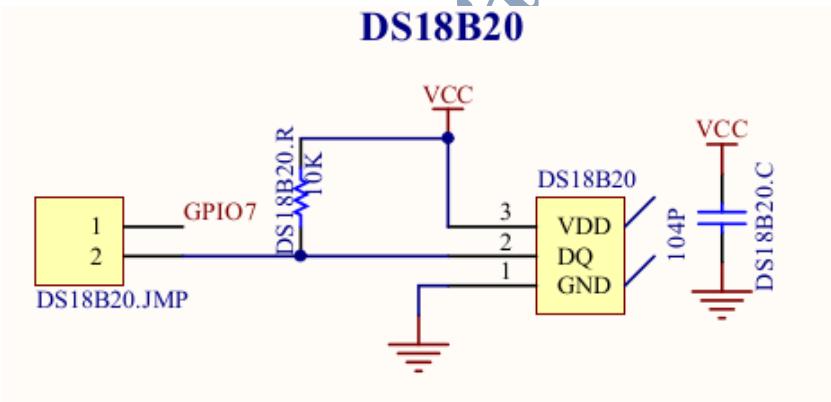


Round direction of DS18B20 needs to be consistent with the DVK-511's

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



Above picture shows DS18B20 PIN's corresponding table

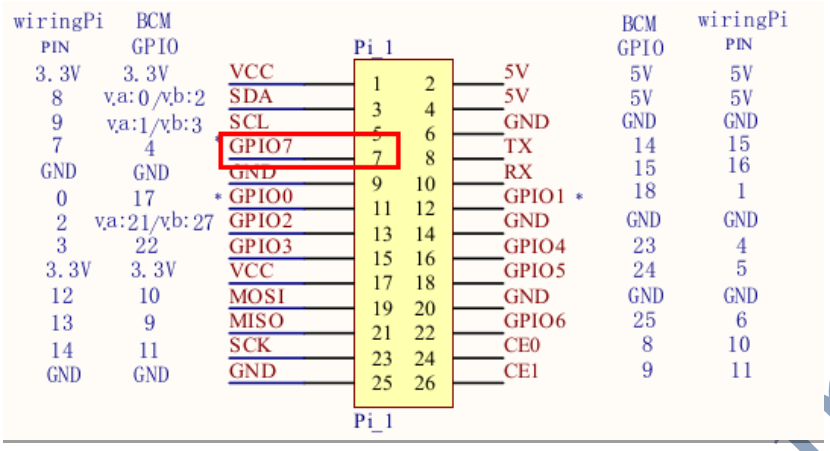


Above picture shows the DVK-511 to DS18B20 PIN's corresponding table

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

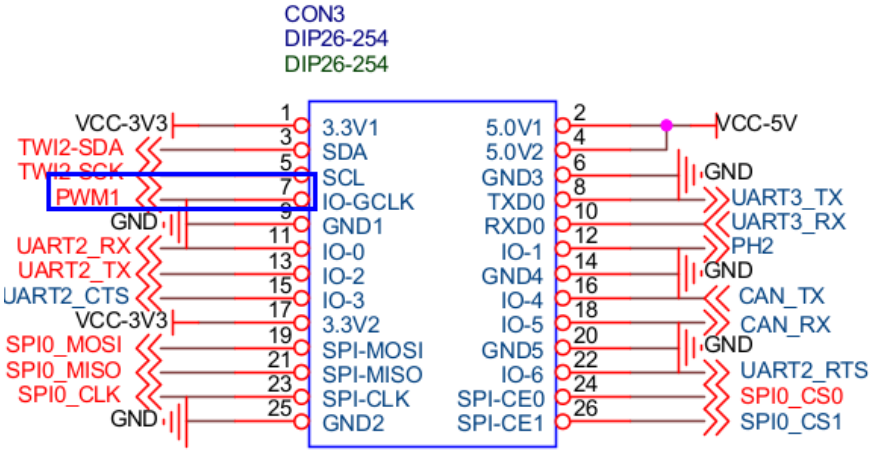
   To drive DS18B20 device for an additional defined Wire initial value, first see DVK-511 toward DS18B20 PIN foot corresponds to the FIG can know the pin control DS18B20 device name is GPIO7, in comparison DVK-511 26PIN line

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



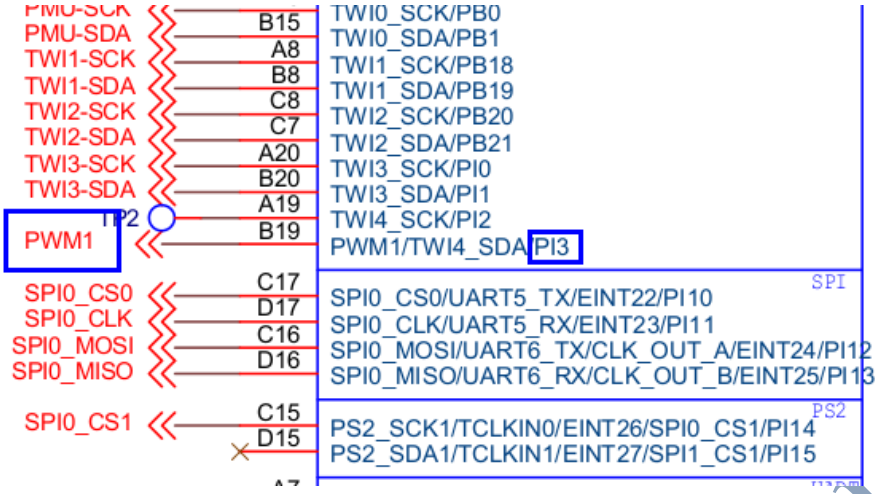
The DVK511-26PIN

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 = 0x62
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>
```

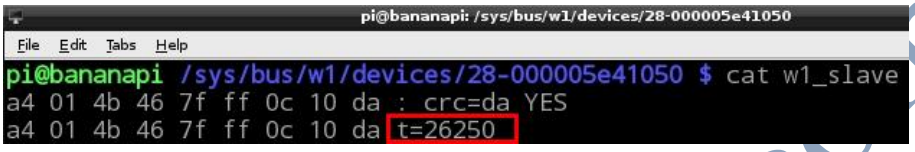
[w1_para]
gpio = 4

7. Then open LXTerminal switch to W1 folder directory.

Check whether the system has to read the DS18B20 device

Switch to the corresponding directory

Run to watch DS18B20 temperature sensor to check the resulting temperature



The temperature is measured to 26.250 ℃