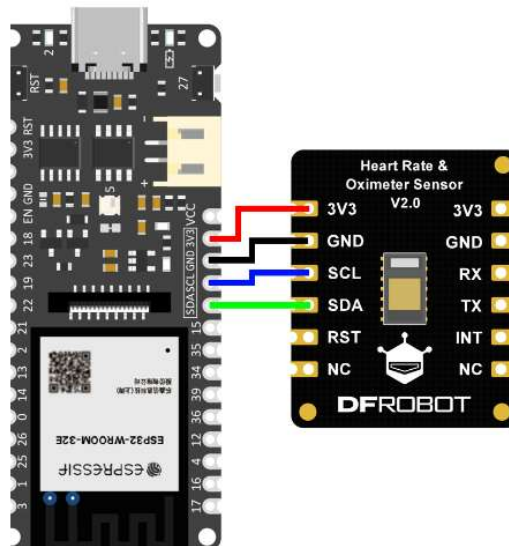


1. Test Sensor_MAX30102.ino

Connect the MAX30102 sensor to the I2C interface of the ESP32 with reference to the following wiring diagram, and upload the Sensor_MAX30102.ino in the current folder to the ESP32.



When there is a normal reading in the serial monitor, the sensor is normal. The sensor can be connected to the Beacon test

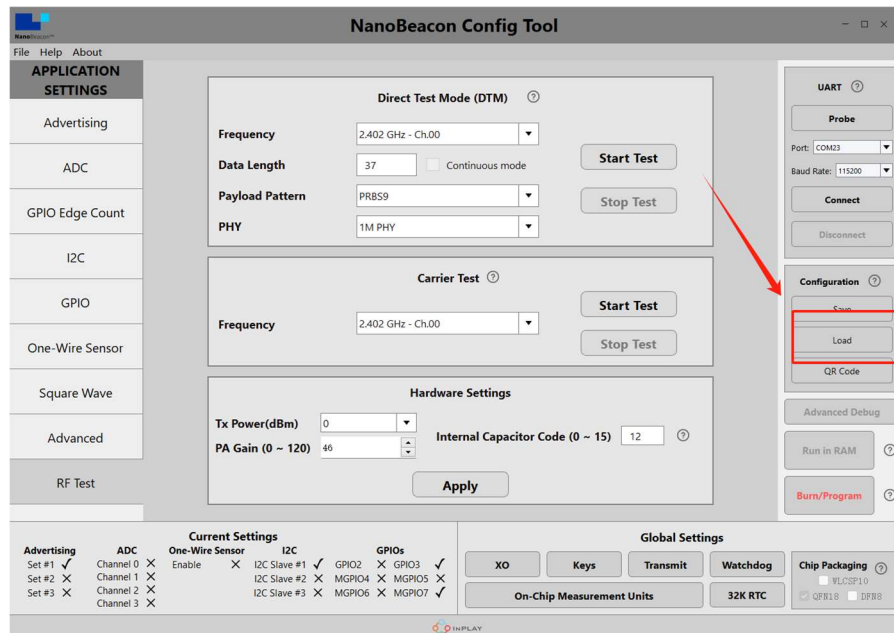
```
Arduino Uno
Sensor_MAX30102.ino
24
25 void setup()
26 {
27   Serial.begin(115200);
28   Wire.begin();
29
30   // 这里为简化配置，不过多解释寄存器详细配置位，感兴趣
31   // 开启测量辅助灯
32   Wire.beginTransmission(MODULE_I2C_ADDRESS);
33   Wire.write(0x20);
34   Wire.write(0x00);
35   Wire.write(0x01);
36   Wire.endTransmission();
37   Serial.println("Success to initialize the sensor")
38 }
39
40 void loop()
41 {
42   uint8_t val = 0, rbuf[4] = { 0 }, tempBuf[2] = { 0}
43   int SPO2 = -1, heartbeat = -1;
44   float temperature = 0.0;
45   readReg(0x0C, &val, 1);
46   if (val != 0) {
47     SPO2 = val;
48   }
49 }

Output Serial Monitor x
Message (Enter to send message to 'Arduino Uno' on 'COM4')
temperature value of the board is : 36.06 °C
SPO2 is : 99%
heart rate is : 87Times/min
Temperature value of the board is : 36.09 °C
SPO2 is : 99%
heart rate is : 83Times/min
Temperature value of the board is : 36.11 °C
SPO2 is : 99%
heart rate is : 83Times/min
Temperature value of the board is : 37.03 °C
SPO2 is : 99%
heart rate is : 85Times/min
Temperature value of the board is : 37.05 °C
```

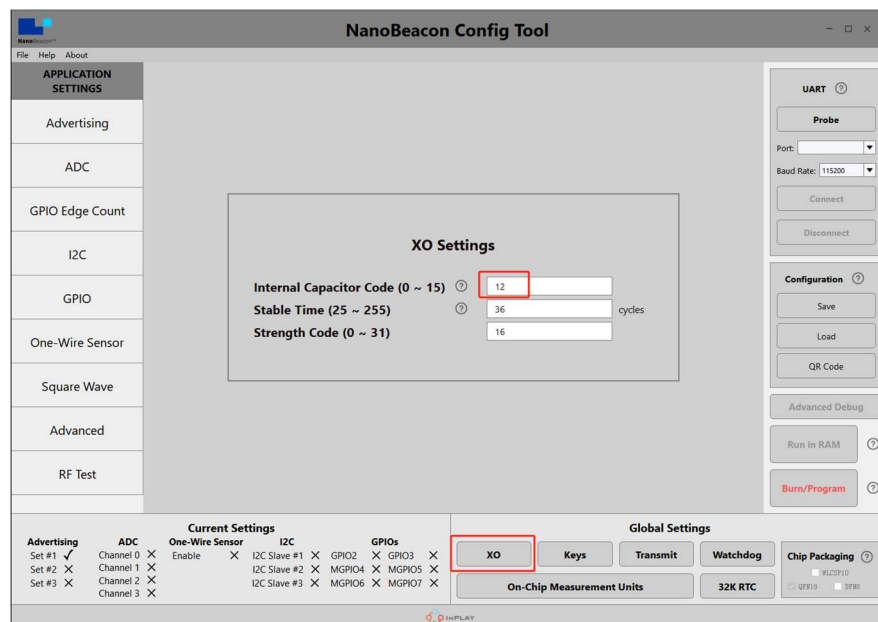
2. Burning Beacon and Connecting Sensor

Please use a USB-TTL converter to burn the .cfg file into the Beacon.

NanoBeacon Config Tool can Load the MAX30102.cfg file in this folder.



Check that the XO capacitor configuration is 12

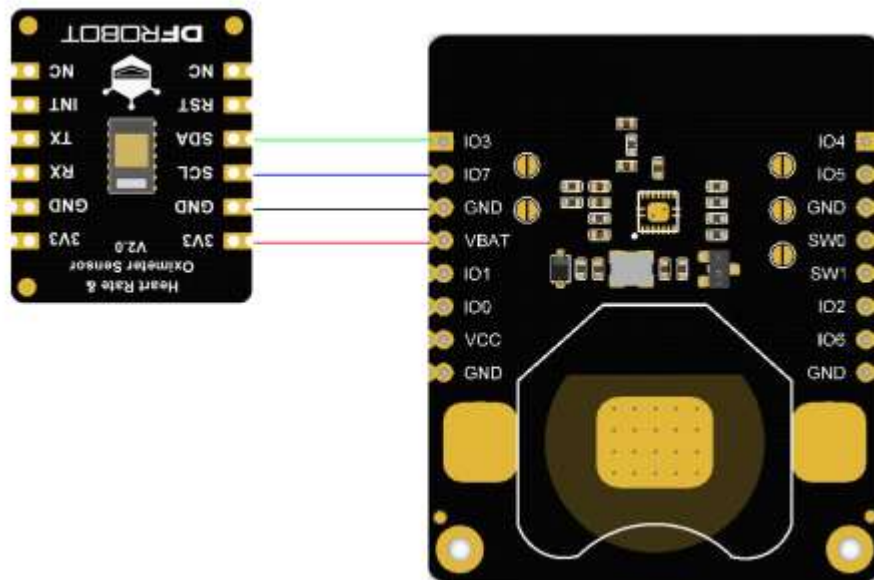


烧录流程请参考 Beacon 的 wiki:

https://wiki.dfrobot.com.cn/_SKU_TEL0168_Fermion_BLE_%E4%BC%A0%E6%84%9F%E5%99%A8%E4%BF%A1%E6%A0%87#target_4

After the burn-in is complete, refer to the diagram below to connect the Beacon and the sensor.

Note: Our .cfg example file defaults to SCL->GPIO7, SDA->GPIO3.



3. Upload ESP32 code and get readings

Upload the Beacon_MAX30102.ino in the same directory to the ESP32.

And power up the Beacon and sensors, the power supply can be selected from CR2032 coin cell battery, or VCC and GND input 3.3V.

You will see the relevant data printed in the serial monitor.

FireBeetle ESP32

Beacon_MAX30102.ino

```
14 #include <BLEBeacon.h>
15
16 #define ENDIAN_CHANGE_U16(x) (((x)&0xFF00) >> 8) + (((x)&0xFF
17
18 //设置ESP32 5秒扫描一次蓝牙设备
19 int scanTime = 5; //In seconds
20 BLEScan* pBLEScan;
21
22 class MyAdvertisedDeviceCallbacks : public BLEAdvertisedDeviceC
23 {
24     void onResult(BLEAdvertisedDevice advertisedDevice)
25     {
26         if (advertisedDevice.haveName()) {
27             if (String(advertisedDevice.getName().c_str()) == "MAX30
28             {
29                 Serial.print("Device name: ");
30                 Serial.println(advertisedDevice.getName().c_str());
31                 std::string strManufacturerData = advertisedDevice.get
32                 uint8_t cManufacturerData[100];
33                 strManufacturerData.copy((char*)cManufacturerData, str
34                 Serial.printf("strManufacturerData: %d ", strManufactu
35
36                 for (int i = 0; i < strManufacturerData.length(); i++)
37                     Serial.printf("[%x]", cManufacturerData[i]);
38             }
39         }
40     }
41 }
```

Output Serial Monitor x

Message (Enter to send message to 'FireBeetle ESP32' on 'COM23')

Device name: MAX30102
strManufacturerData: 9 [5][5][63][0][0][0][6d][22][7]
SP02 is : 99%
heart rate is : 109Times/min
Temperature value of the board is : 34.07 ℃

Device name: MAX30102
strManufacturerData: 9 [5][5][63][0][0][0][6e][22][2]
SP02 is : 99%
heart rate is : 110Times/min
Temperature value of the board is : 34.02 ℃
