Introduction

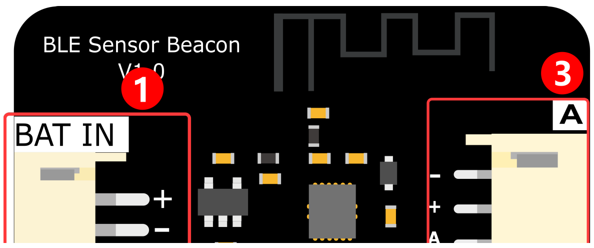
This Gravity wireless BLE Sensor Beacon with built-in 11-bit ADC is capable of collecting data from digital and analog sensors and broadcasting via Bluetooth. And users can access the sensor data within broadcasting range on a Bluetooth-equipped device like a smartphone, ESP32, etc.
The BLE sensor beacon is integrated with low power BLE 5.3 technology, and its data format can be configured as iBeacon, Eddystone, custom format, etc. Besides, users can configure broadcast data format, content and time intervals on graphical interface as per their needs, which allows configuring a BLE beacon without any programming.
After configuration, it will run as a Bluetooth beacon when powered on, and collect and broadcast data automatically according to the settings. These sensor beacons can be used as IoT sensor nodes for data collection in many scenarios such as smart farms, offices, factories, and warehouses.

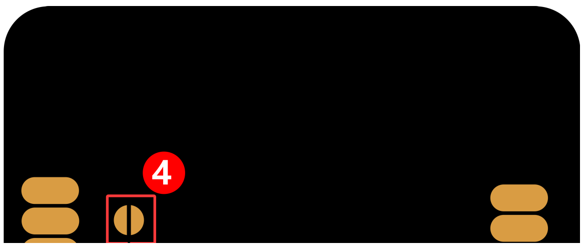
Note: Gravity: BLE beacon module needs to be configured with a 3.3V USB-TTL tool.

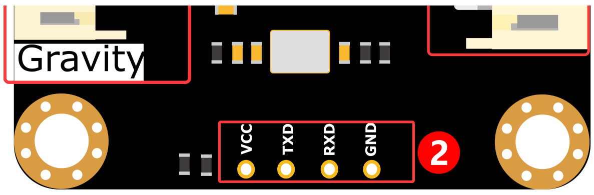
Specification

- Operating Voltage: 1.2-5.5V DC
- Operating Current: <2mA @Eddystone TLM
- Supported sensors: 1.2-3.3V digital/analog sensors
- Input Signal: digital/analog signals
- Operating Frequency Range: 2.4GHz ISM
- Modulation: GFSK
- Transmitting Power: +5.0dBm
- PCB Size: 27mm×33.5mm/1.06×1.32inch
- Mounting Hole Size: inner diameter of 3.1mm/outer diameter of 6mm

Pinout







NO.	Name	Description
1	Power Input	1.2-5.5V DC power input
2	Burning/Debugging	Used for module debugging and burning
3	Sensor Signal Input	"A": Sensor signal input "-": Sensor power supply GND "+": Sensor power supply VCC
4	Sensor VCC Select	Short circuit: 3.3V continuous power supply Disconnected (default): supply power only when broadcasting

Power supply description

When using a 1.2-3.3V power supply to power the beacon, the supply voltage at the sensor side follows the input voltage, for example, if a 1.5V AAA battery is used to power the beacon, the beacon will work normally and will provide 1.5V to the sensor. When using a 3.3-5.5V power supply to power the beacon, the supply voltage at the sensor side is a stable 3.3V.

Quick Start Guide

The guide demonstrates how to get sensor data by mobile app and ESP32 when the data is configured in custom format.

1. Requirements

- **Hardware**
    - TEL0149 Gravity: BLE Sensor Beacon x 1
    - 3.3V USB-TTL Tool x 1
        - Gravity: Analog LM35 Temperature Sensor (https://www.dfrobot.com/product-76.html) (or other analog sensors) x 1
    - Windows/Linux/Mac OS PC
        - ESP32
- **Software**

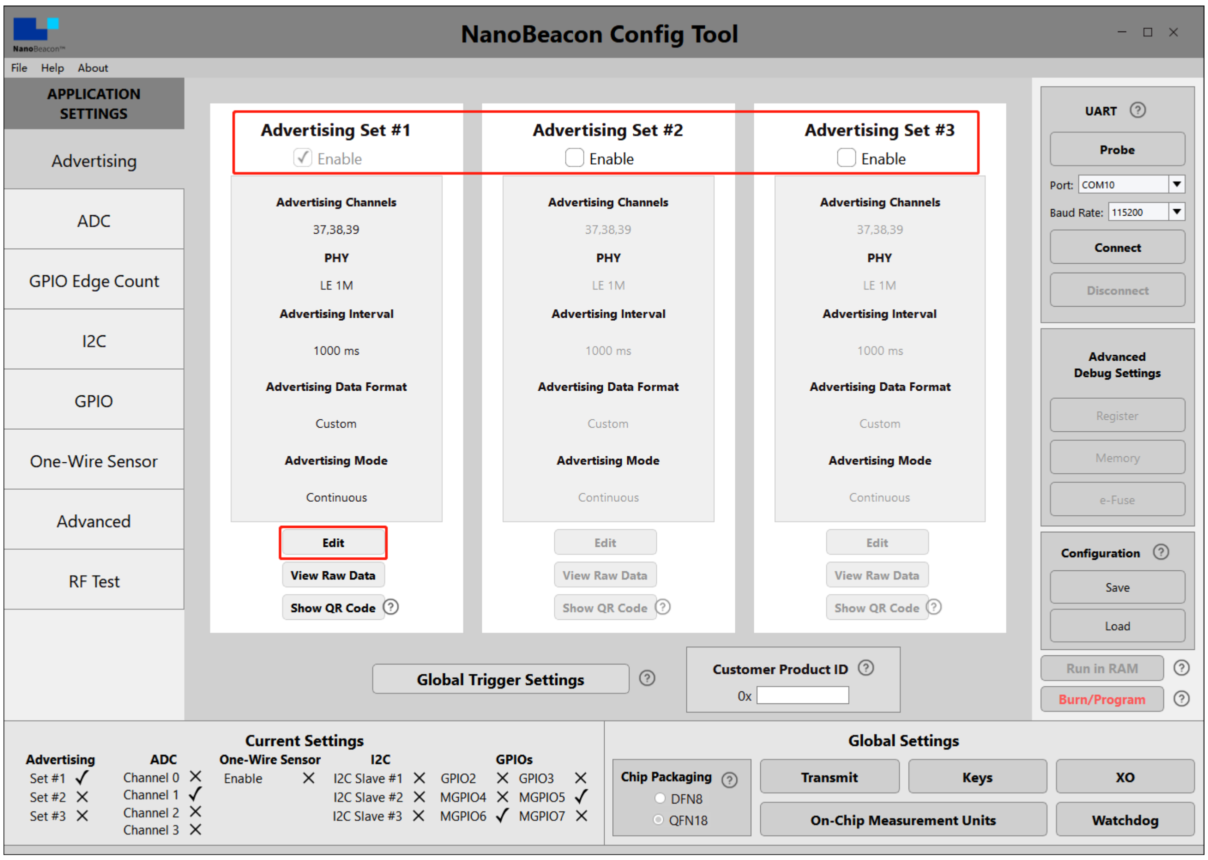
- Recommended Mobile App: nRF Connect (iOS (https://apps.apple.com/us/app/nrf-connect-for-mobile/id1054362403), Android (https://play.google.com/store/apps/details?id=no.nordicsemi.android.mcp)), LightBlue (iOS (https://apps.apple.com/us/app/lightblue/id557428110)), BLE Hero (iOS (https://apps.apple.com/us/app/ble-hero/id1013013325))
- nRF Connect APK (https://dfimg.dfrobot.com/nobody/wiki/30a8fac07e23db2da802e9647fb761ea.zip)
- Beacon Config Tool: NanoBeaconConfigTool_V3.2.11
- Arduino IDE & ESP32 Environment: How to use FireBeetle_ESP32_E for the first time? (https://wiki.dfrobot.com/FireBeetle_Board_ESP32_E_SKU_DFR0654#target_6)

2. Configure Sensor Beacon

Note: The module can only be burned once, so don't click "Burn/Program" before confirming the configuration information. Test the module through "Run in RAM", which can be used infinitely before burning. The system will reset when powered off.

- **1. Download NanoBeaconConfigTool_V3.2.11 and run NanoBeaconConfig.exe**.
- **2. Advertising**

This Gravity: BLE sensor beacon supports three advertising sets. Tick to Enable it. One of them is enabled by default; click **Edit** to enter the config page.



	Advertising Set #1	Advertising Set #2	Advertising Set #3
Enable	✓		
Advertising Channels	37,38,39	37,38,39	37,38,39
PHY	LE 1M	LE 1M	LE 1M
Advertising Interval	1000 ms	1000 ms	1000 ms
Advertising Data Format	Custom	Custom	Custom
Advertising Mode	Continuous	Continuous	Continuous

Port: COM10
Baud Rate: 115200
Customer Product ID 0x

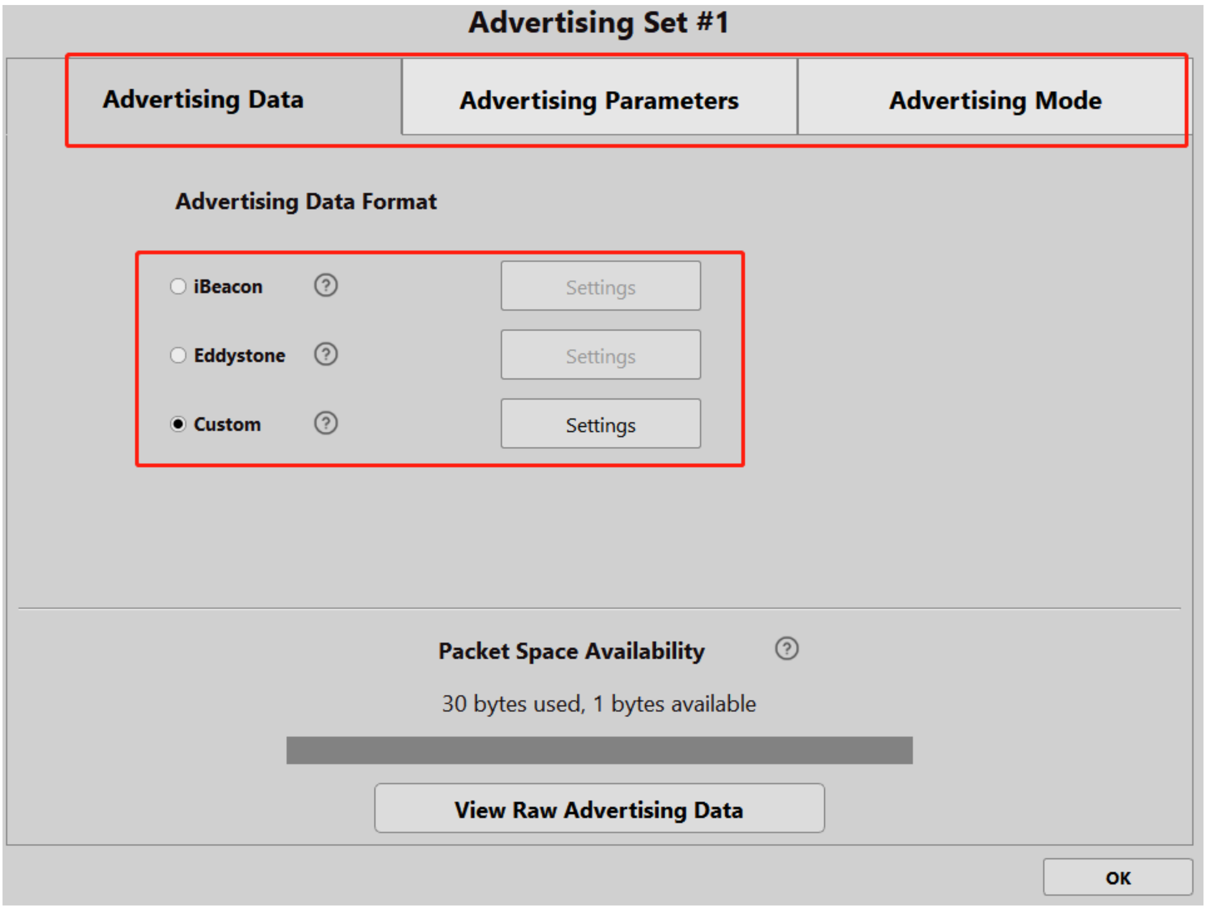
Current Settings

Advertising		ADC		One-Wire Sensor		I2C		GPIOs			
Set #1	✓	Channel 0	✗	Enable	✗	I2C Slave #1	✗	GPIO2	✗	GPIO3	✗
Set #2	✗	Channel 1	✓			I2C Slave #2	✗	MGPIO4	✗	MGPIO5	✓
Set #3	✗	Channel 2	✗			I2C Slave #3	✗	MGPIO6	✓	MGPIO7	✗
		Channel 3	✗								

Global Settings
Chip Packaging: DFN8 / QFN18

- **3. Advertising Set#1 - Edit - Advertising Data**

Three data formats are supported: iBeacon, Eddystone and Custom. This tutorial mainly uses custom data format.



Advertising Data Format

- iBeacon — Settings
- Eddystone — Settings
- [✓ Custom] — Settings

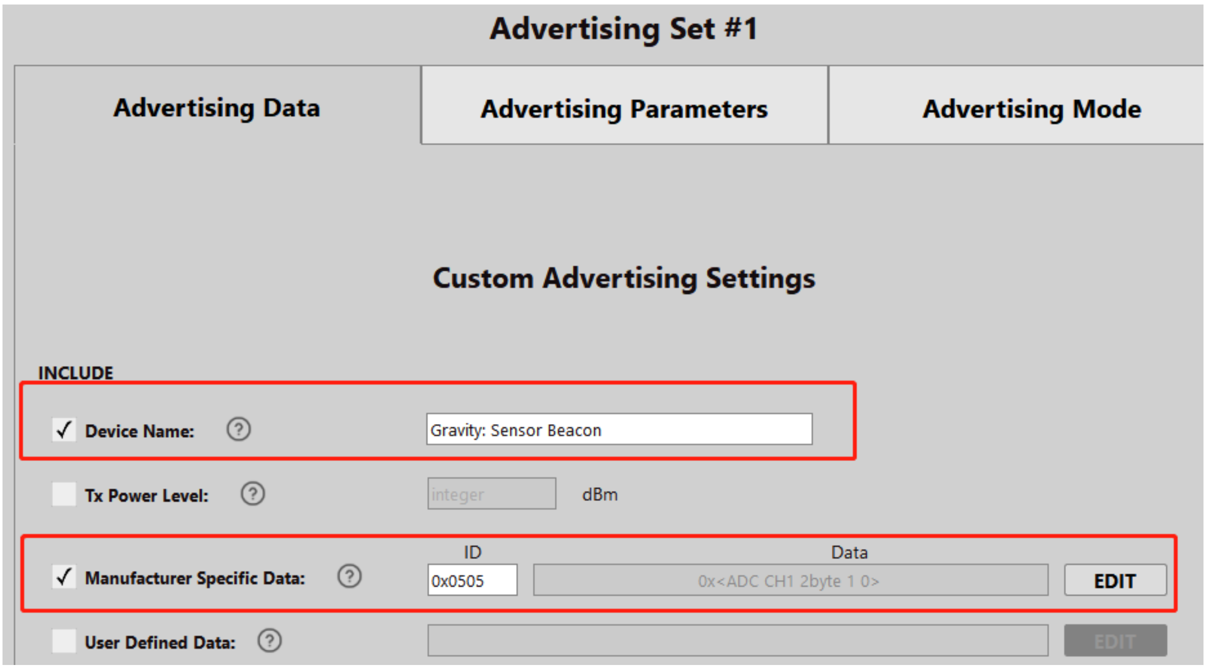
Packet Space Availability

30 bytes used, 1 bytes available

- **4. Advertising Set#1 - Edit - Advertising Data - Custom Settings**

Check "Device Name", and enter "Gravity: Sensor Beacon" or other names. So later it will be easy to scan and find the device on the mobile phone or ESP32 by name.

Check "Manufacturer Specific Data", and click "EDIT" to configure data.



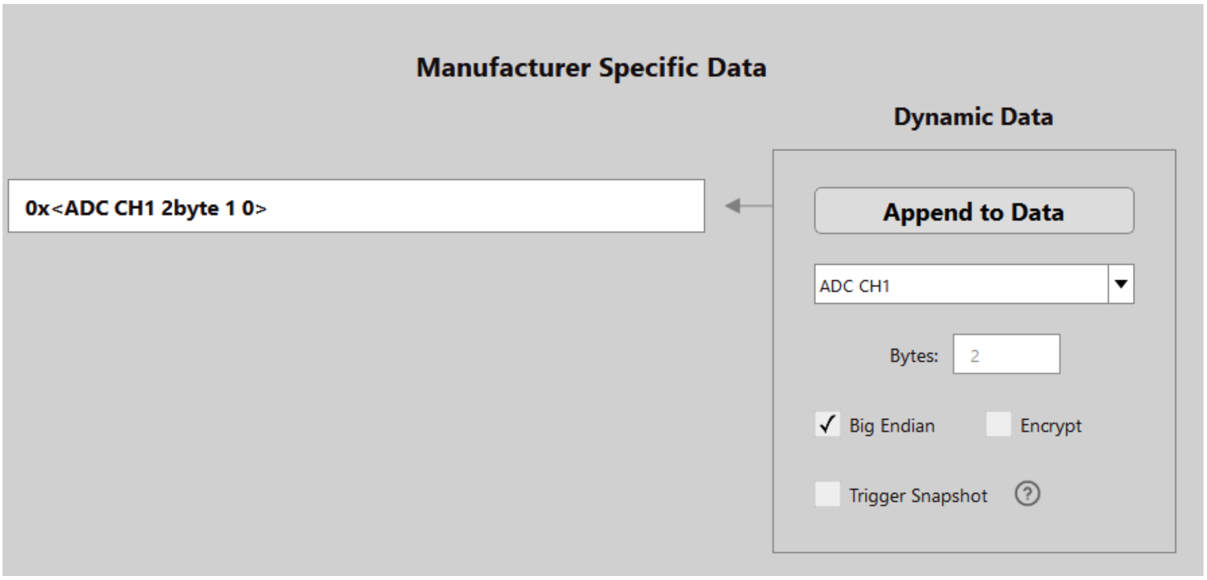
Custom Advertising Settings

INCLUDE

✓ Device Name:	Gravity: Sensor Beacon		
Tx Power Level:	integer	dBm	
	ID	Data	
✓ Manufacturer Specific Data:	0x0505	0x<ADC CH1 2byte 1 0>	EDIT
User Defined Data:			EDIT

- 5. Advertising Set#1 - Edit - Advertising Data - Custom Settings - EDIT

Only one analog data is configured here. Select "ADC CH1" in the drop-down menu, check "Big Endian", click "Append to Data", and then "0x<ADC CH1 2byte 1 0>" appears in the window. Click OK to exit.



0x<ADC CH1 2byte 1 0>

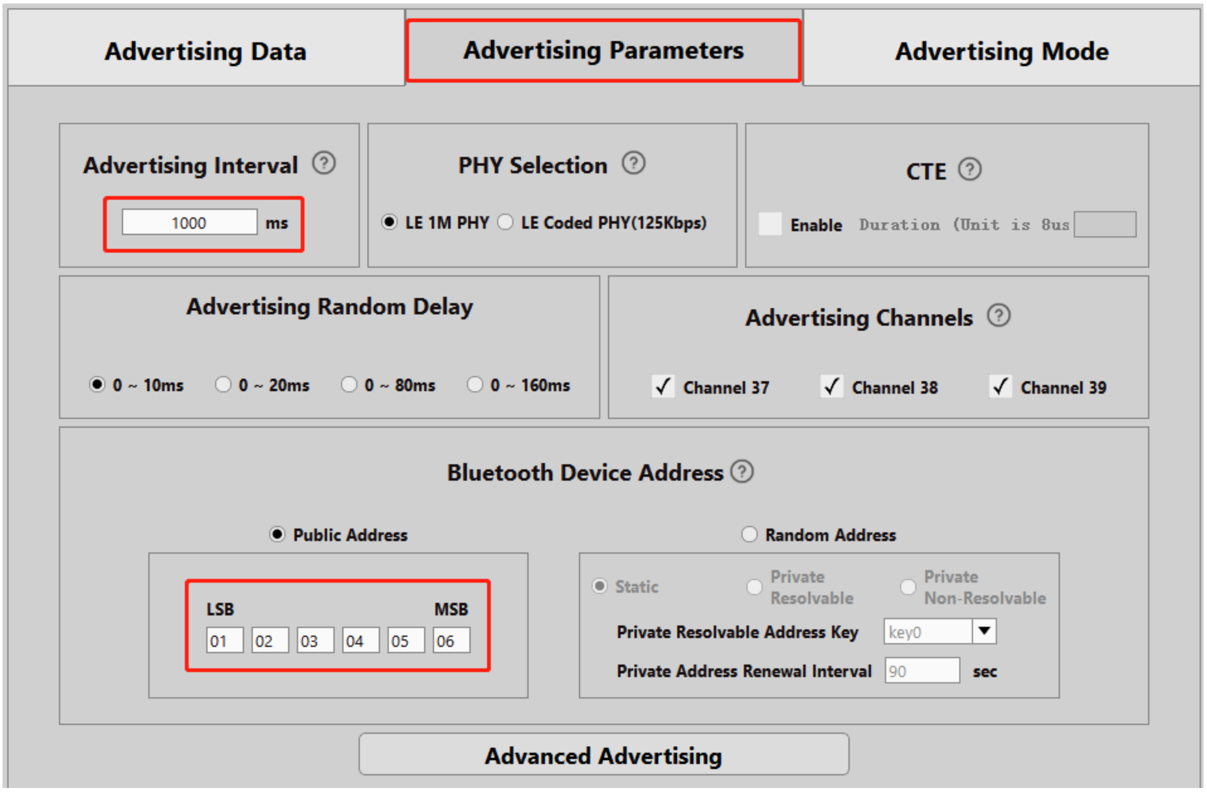
ADC CH1

Bytes: 2

[✓ Big Endian] Encrypt

- 6. Advertising Set#1 - Edit - Advertising Parameters

The advertising interval and address are set here. Make changes as required, and click OK to exit when done. Now the advertising data format is configured, and the module will broadcast data once every 1s.



Advertising Interval: 1000 ms

PHY Selection: [✓ LE 1M PHY] LE Coded PHY(125Kbps)

CTE: Enable Duration (Unit is 8us

Advertising Random Delay: [✓ 0 ~ 10ms] 0 ~ 20ms 0 ~ 80ms 0 ~ 160ms

Advertising Channels: [✓ Channel 37] [✓ Channel 38] [✓ Channel 39]

Bluetooth Device Address: [✓ Public Address] Random Address

LSB					MSB
01	02	03	04	05	06

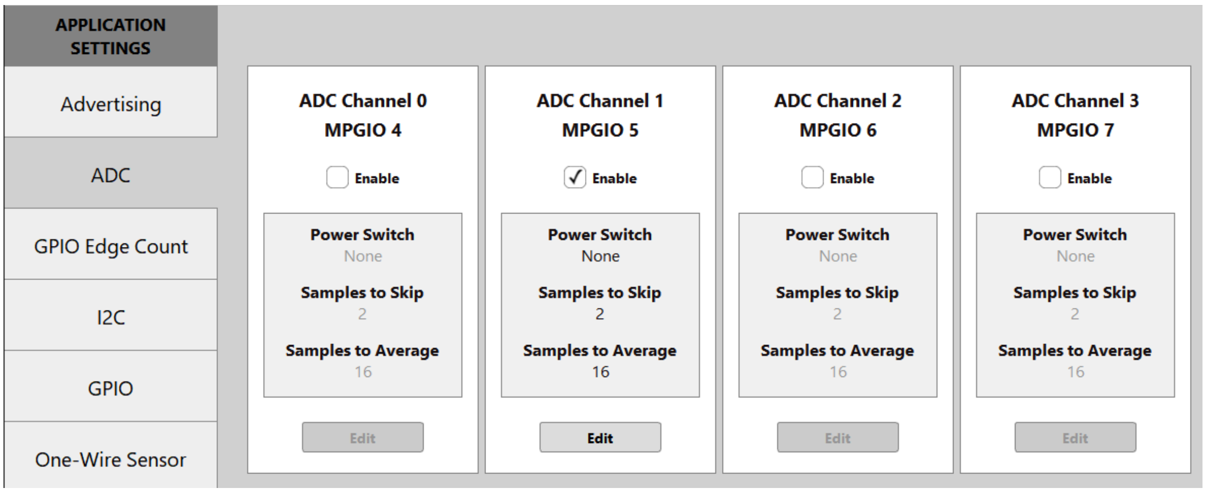
[✓ Static] Private Resolvable Private Non-Resolvable

Private Resolvable Address Key: key0

Private Address Renewal Interval: 90 sec

- 7. ADC

Next, configure ADC. The Gravity: BLE sensor beacon uses IO5 for analog acquisition, so enable "ADC Channel 1 MPGIO 5" in the ADC config page, and click Edit to set.



ADC Channel 0 MPGIO 4	ADC Channel 1 MPGIO 5	ADC Channel 2 MPGIO 6	ADC Channel 3 MPGIO 7
Enable	✓ Enable	Enable	Enable
Power Switch: None	Power Switch: None	Power Switch: None	Power Switch: None
Samples to Skip: 2	Samples to Skip: 2	Samples to Skip: 2	Samples to Skip: 2
Samples to Average: 16	Samples to Average: 16	Samples to Average: 16	Samples to Average: 16

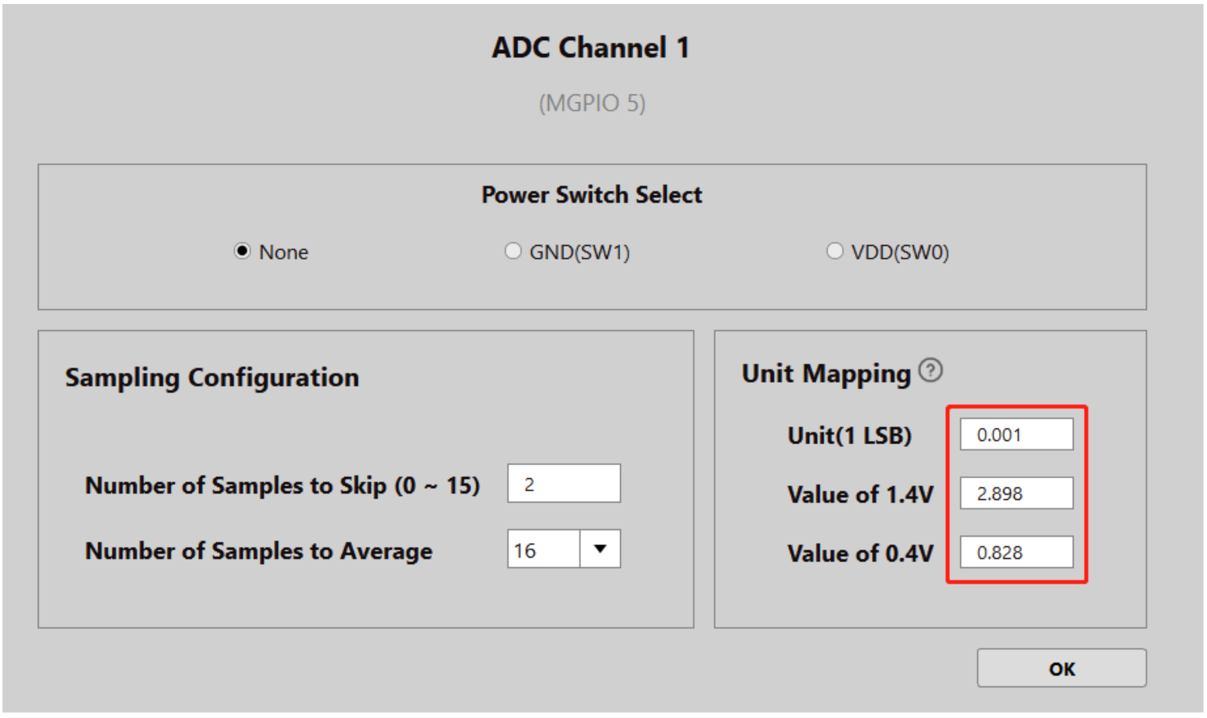
- **8. ADC - ADC Channel 1 MPGIO 5 - Edit**

Change the unit to 0.001 for easy calculation, which has little effect on the accuracy. But if high accuracy is required, leave it alone. Since the analog input voltage is divided (2.06) in the circuit, it is necessary to remap the divided voltage value.

Change Value of 1.4V to 2.898

Change Value of 0.4V to 0.828

Now the ADC sampling config is completed, and the data broadcasted by the beacon will be the voltage of the "sensor signal input"; unit is mV.



Power Switch Select: [✓ None] GND(SW1) VDD(SW0)

Sampling Configuration
Number of Samples to Skip (0 ~ 15): 2
Number of Samples to Average: 16

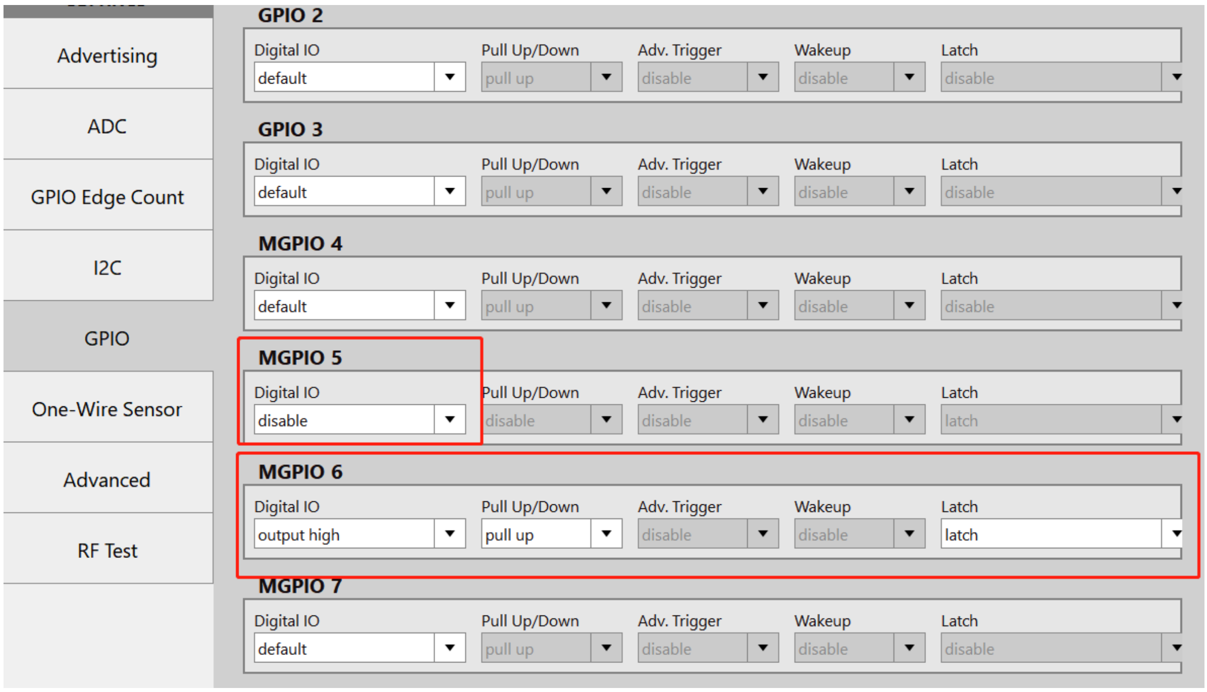
Unit Mapping
Unit(1 LSB): 0.001
Value of 1.4V: 2.898
Value of 0.4V: 0.828

- **9. GPIO**

Since MGPIO 5 serves as ADC input, it needs to be configured as "disable"

Since MGPIO 5 serves as ADC input, it needs to be configured as "disable".

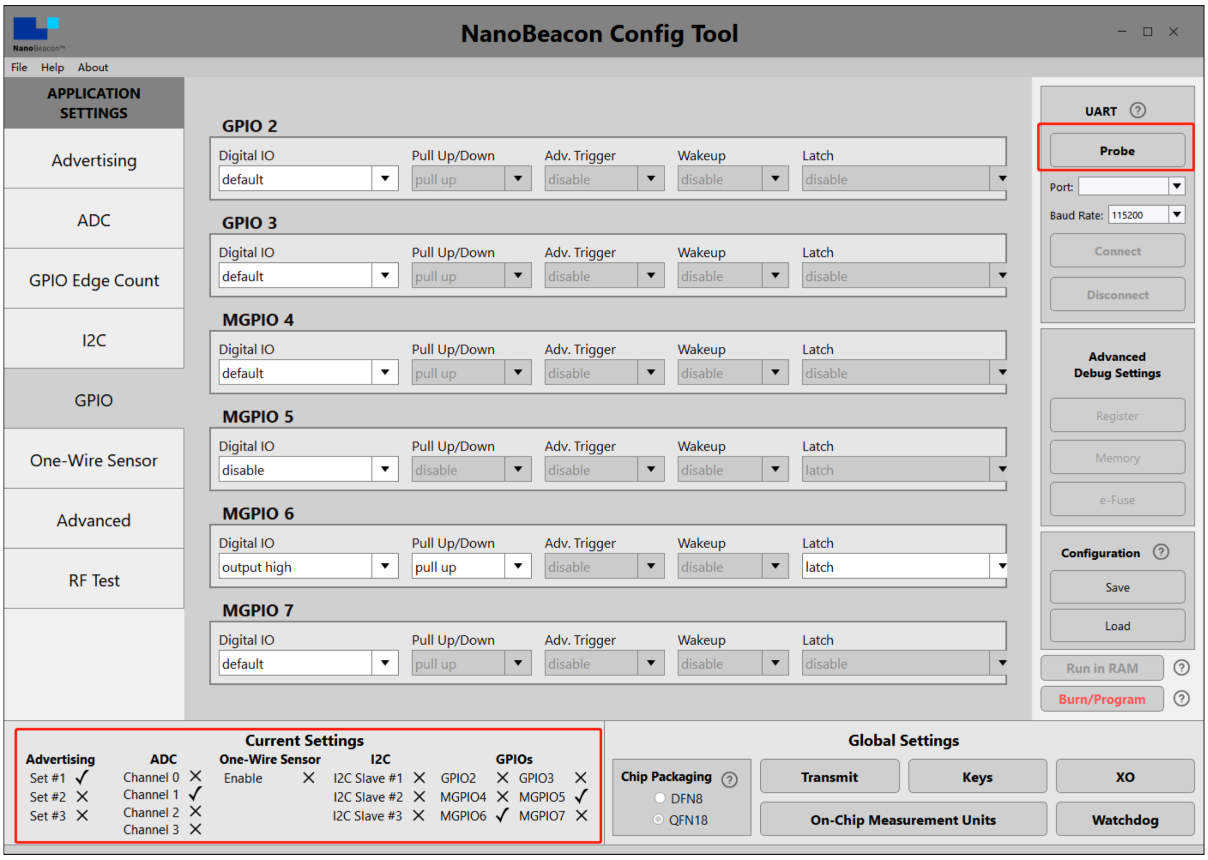
MGPIO 6 will be used as a power supply for the sensor, so configure it as "output high" "pull up" and "latch" to keep it outputting a high 3.3V for powering sensor.



	Digital IO	Pull Up/Down	Adv. Trigger	Wakeup	Latch
GPIO 2	default	pull up	disable	disable	disable
GPIO 3	default	pull up	disable	disable	disable
MGPIO 4	default	pull up	disable	disable	disable
MGPIO 5	disable	disable	disable	disable	latch
MGPIO 6	output high	pull up	disable	disable	latch
MGPIO 7	default	pull up	disable	disable	disable

- **10. Check Config**

As shown at the lower left corner of the page, Set #1, ADC Channel 1, MGPIO5 and MGPIO6 are enabled.



	Digital IO	Pull Up/Down	Adv. Trigger	Wakeup	Latch
GPIO 2	default	pull up	disable	disable	disable
GPIO 3	default	pull up	disable	disable	disable
MGPIO 4	default	pull up	disable	disable	disable
MGPIO 5	disable	disable	disable	disable	latch
MGPIO 6	output high	pull up	disable	disable	latch
MGPIO 7	default	pull up	disable	disable	disable

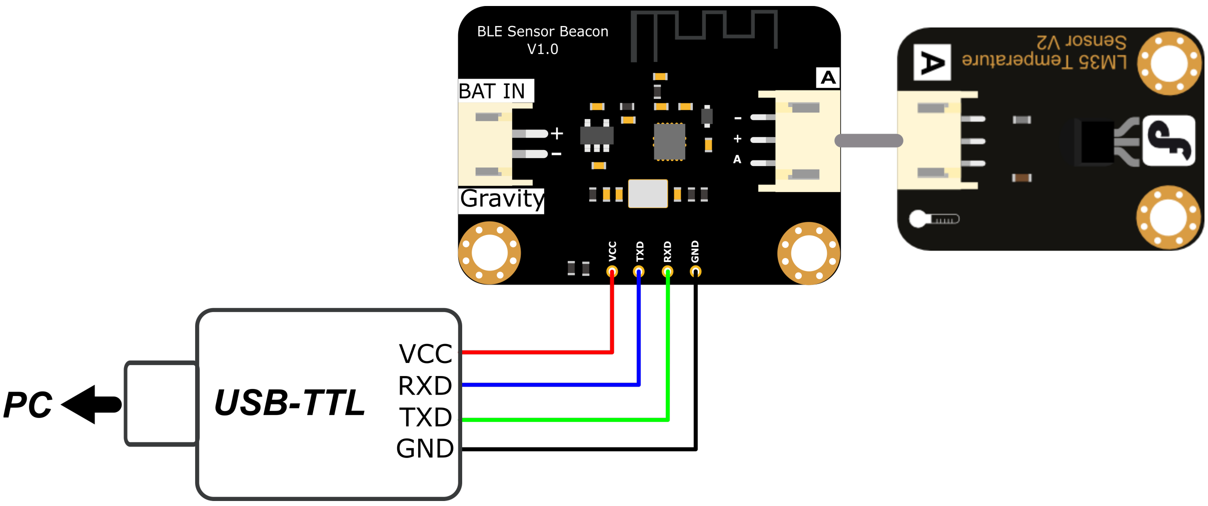
Current Settings

Advertising		ADC		One-Wire Sensor		I2C		GPIOs			
Set #1	✓	Channel 0	✗	Enable	✗	I2C Slave #1	✗	GPIO2	✗	GPIO3	✗
Set #2	✗	Channel 1	✓			I2C Slave #2	✗	MGPIO4	✗	MGPIO5	✓
Set #3	✗	Channel 2	✗			I2C Slave #3	✗	MGPIO6	✓	MGPIO7	✗
		Channel 3	✗								

- **11. Hardware connection**

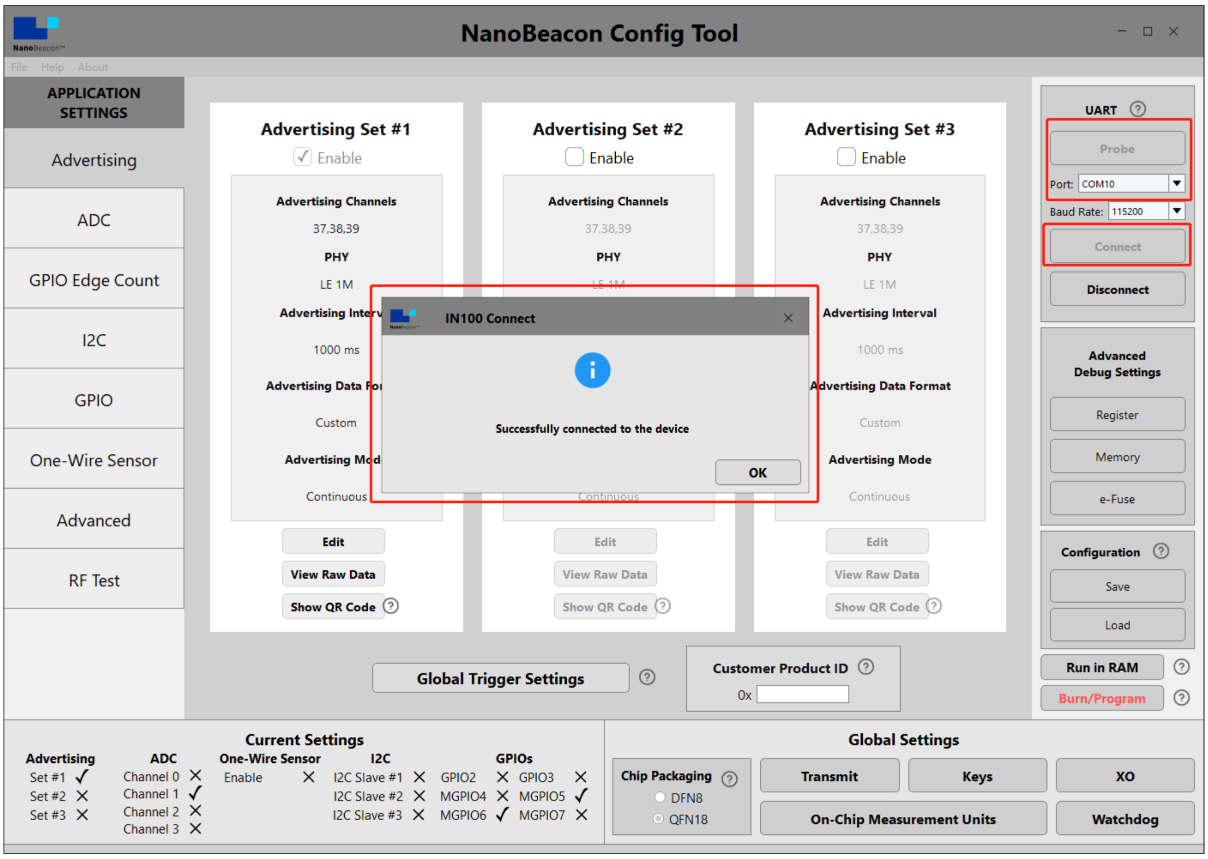
Connect hardware according to the connection diagram.

Connect hardware according to the connection diagram.



- **12. Connect module to PC**

Click "Probe" at the upper right corner to refresh the port, then select the corresponding port, and click "Connect". A pop-up window will appear after a successful connection.



Advertising Channels: 37,38,39
PHY: LE 1M
Advertising Interval: 1000 ms
Advertising Data Format: Custom
Advertising Mode: Continuous

Port: COM10
Baud Rate: 115200

Successfully connected to the device

Customer Product ID 0x

Current Settings

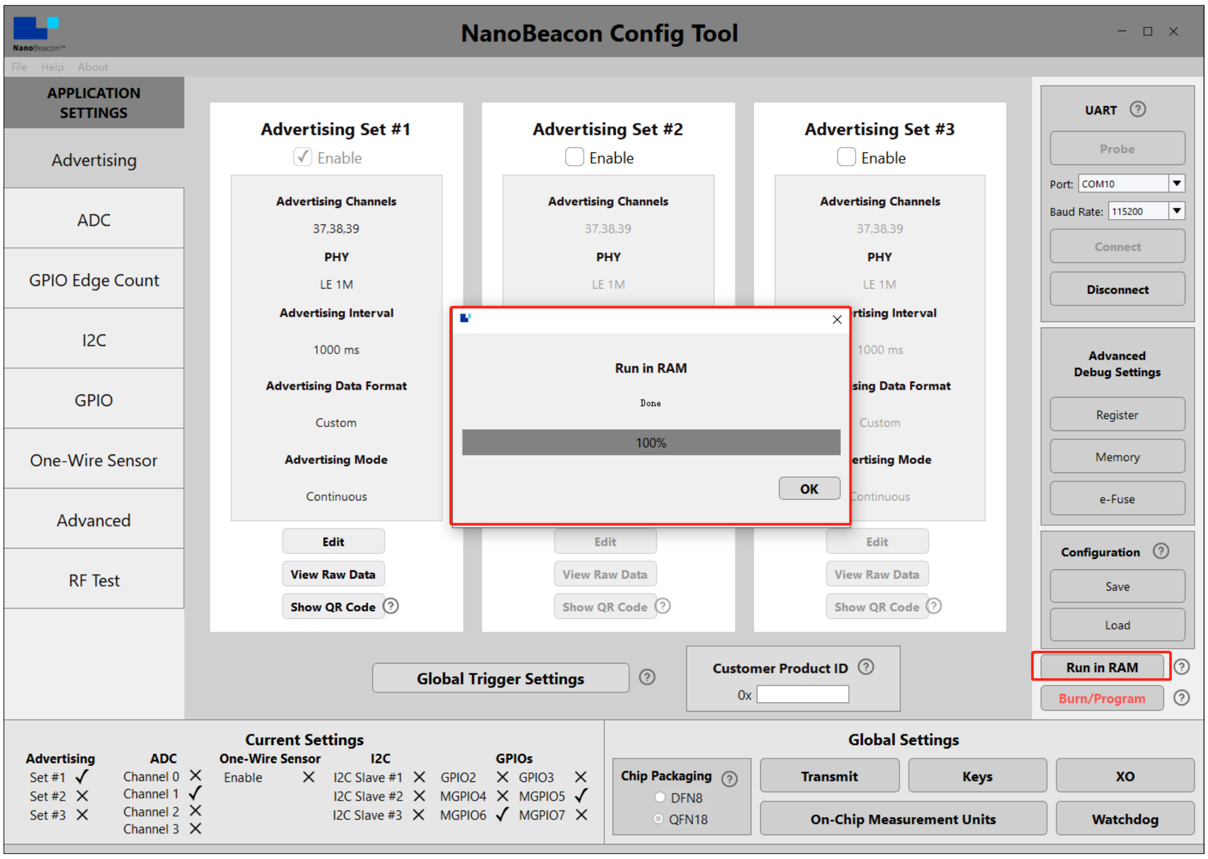
Advertising	ADC	One-Wire Sensor	I2C	GPIOs	
Set #1 ✓	Channel 0 ✗	Enable ✗	I2C Slave #1 ✗	GPIO2 ✗	GPIO3 ✗
Set #2 ✗	Channel 1 ✓		I2C Slave #2 ✗	MGPIO4 ✗	MGPIO5 ✓
Set #3 ✗	Channel 2 ✗		I2C Slave #3 ✗	MGPIO6 ✓	MGPIO7 ✗
	Channel 3 ✗				

- 13. Run Test

Click "Run in RAM", and a pop-up window will appear when it's done.

Note: The module can only be burned once, so don't click "Burn/Program" before confirming the configuration information. The module can be tested through "Run in RAM", which can be used infinitely before burning. The system will reset when powered

off.



Advertising Set #1 ✓ Enable
Advertising Channels: 37,38,39
PHY: LE 1M
Advertising Interval: 1000 ms
Advertising Data Format: Custom
Advertising Mode: Continuous

Advertising Set #2 ☐ Enable

Advertising Set #3 ☐ Enable

Port: COM10
Baud Rate: 115200

Run in RAM
Done
100%
OK

Customer Product ID
0x

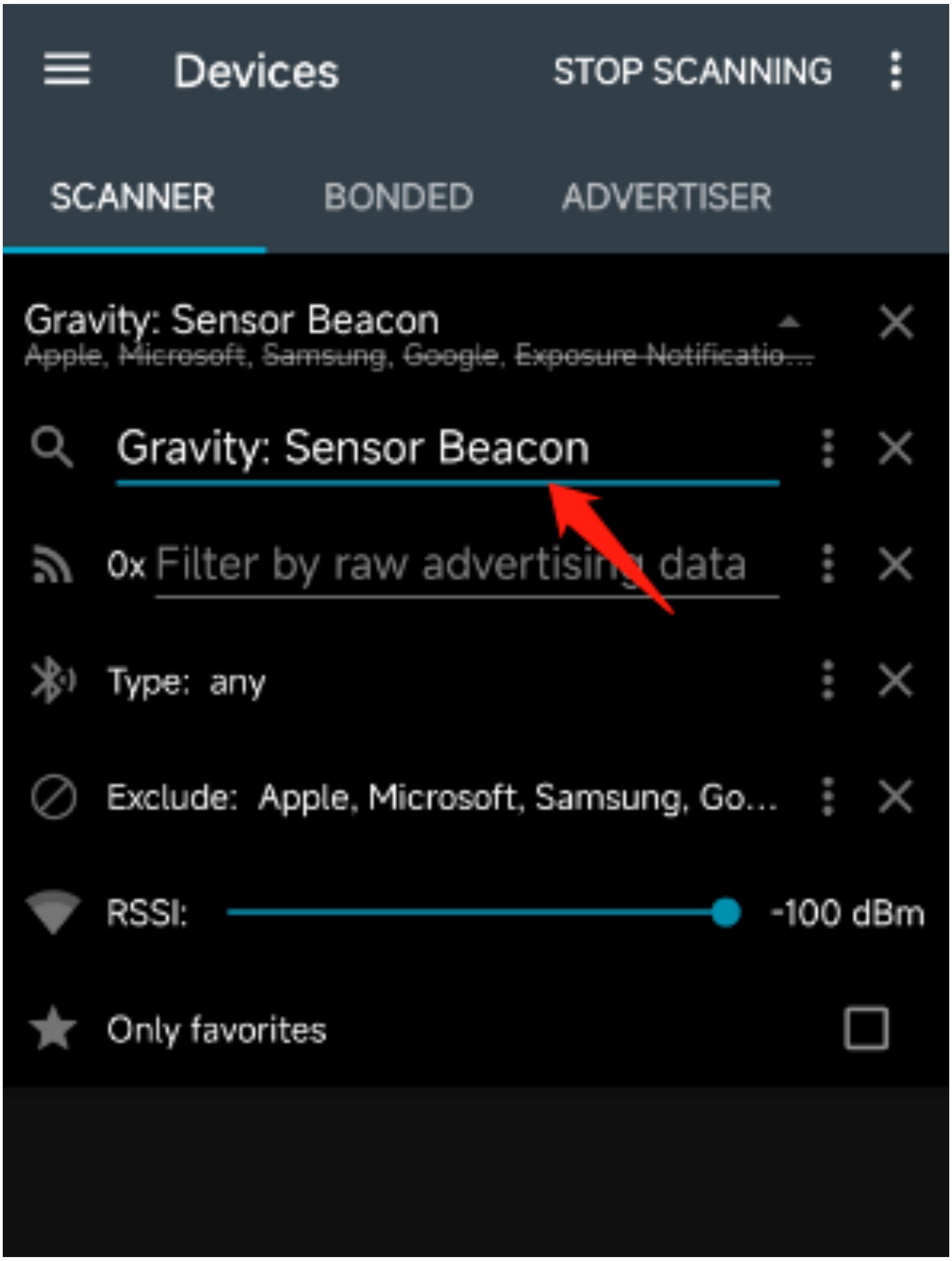
Current Settings

Advertising		ADC		One-Wire Sensor		I2C		GPIOs			
Set #1	✓	Channel 0	✗	Enable	✗	I2C Slave #1	✗	GPIO2	✗	GPIO3	✗
Set #2	✗	Channel 1	✓			I2C Slave #2	✗	MGPIO4	✗	MGPIO5	✓
Set #3	✗	Channel 2	✗			I2C Slave #3	✗	MGPIO6	✓	MGPIO7	✗
		Channel 3	✗								

Global Settings
Chip Packaging: DFN8, QFN18

3. Get Data via Mobile App

- i. Take Android phone as an example, install and open nRF Connect.apk (https://dfimg.dfrobot.com/nobody/wiki/61fabd11c754c46a02685bf36a6f83ea.zip).
- ii. If there are too many other beacon devices nearby, find the device by entering the device name of the beacon in the filter. In the tutorial step 4, beacon config, the device has been named as "Gravity: Sensor Beacon".



Gravity: Sensor Beacon
~~Apple, Microsoft, Samsung, Google, Exposure Notificatio...~~

Gravity: Sensor Beacon

0x Filter by raw advertising data

Type: any

Exclude: Apple, Microsoft, Samsung, Go...

RSSI: -100 dBm

Only favorites ☐

- iii. Only "Gravity: Sensor Beacon" is kept in the menu; click to see the details.
- iv. Data Interpretation

"Gravity: Sensor Beacon" is the Device Name set in step 4 of the tutorial for beacon config;

"06:05:04:03:02:01" is the address set in step 6;

"0X00E3" is the ADC-sampled data set in step 5.

- v. Sensor Data Calculation

The known sensor data sampled by the beacon is "0X00E3", equalling 227 when converted to a decimal number, which means the voltage value sampled by the beacon is 227mV.

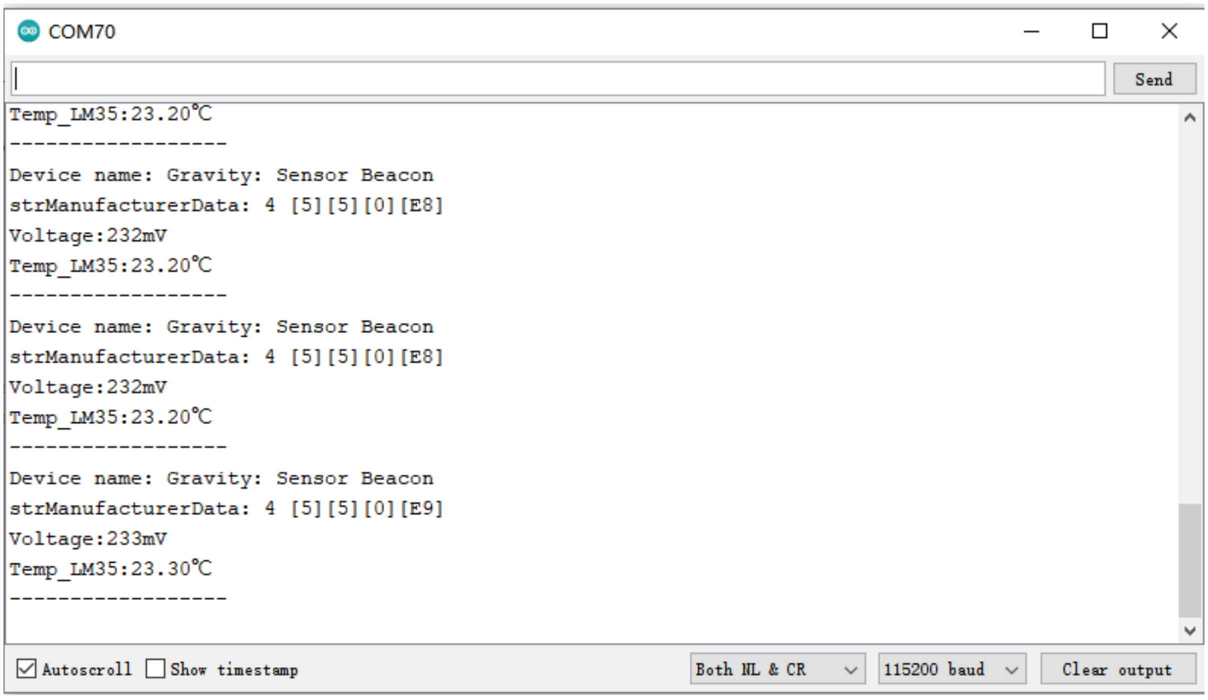
The sensor connected is LM35 temperature sensor. And LM35 wiki shows the relationship between its output voltage and temperature: 10mV for one degree Celsius, which means the sensor temperature data broadcasted by the beacon is 22.7°C.

4. Get Data with ESP32

- Prepare Arduino IDE & ESP32 Environment: How to use FireBeetle_ESP32_E for the first time? (https://wiki.dfrobot.com /FireBeetle_Board_ESP32_E_SKU_DFR0654#target_6)
- Burn codes below for ESP32

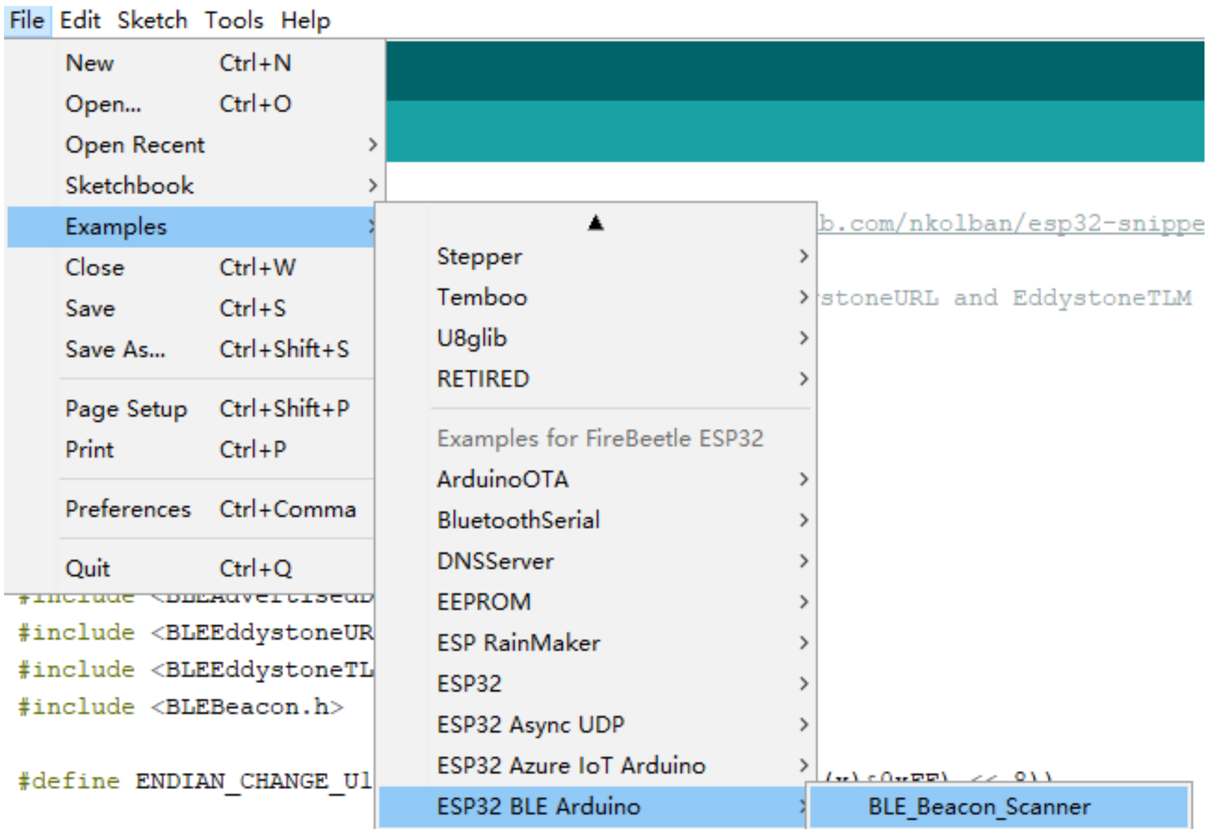
```
/*
   Based on Neil Kolban example for IDF: https://github.com/nkolban/esp32-snippets/
   Ported to Arduino ESP32 by Evandro Copercini
   Changed to a beacon scanner to report iBeacon, EddystoneURL and EddystoneTLM bea
*/

#include <Arduino.h>
#include <BLEDevice.h>
#include <BLEUtils.h>
#include <BLEScan.h>
#include <BLEAdvertisedDevice.h>
#include <BLEEddystoneURL.h>
#include <BLEEddystoneTLM.h>
#include <BLEBeacon.h>
#define ENDIAN_CHANGE_U16(x) ((((x)&0xFF00) >> 8) + (((x)&0xFF) << 8))

float Sensor_Data;
int scanTime = 5; //In seconds
BLEScan *pBLEScan;

class MyAdvertisedDeviceCallbacks : public BLEAdvertisedDeviceCallbacks
{
    void onResult(BLEAdvertisedDevice advertisedDevice)
    {
      if (advertisedDevice.haveName())
      {
        if(String(advertisedDevice.getName().c_str()) == "Gravity: Sensor Beacon"){
          Serial.print("Device name: ");
          Serial.println(advertisedDevice.getName().c_str());
          std::string strManufacturerData = advertisedDevice.getManufacturerData();
          uint8_t cManufacturerData[100];
          strManufacturerData.copy((char *)cManufacturerData, strManufacturerData.l
          Serial.printf("strManufacturerData: %d ", strManufacturerData.length());
            for (int i = 0; i < strManufacturerData.length(); i++)
            {
              Serial.printf("[%X]", cManufacturerData[i]);
            }
            Sensor_Data = int(cManufacturerData[2]<<8 | cManufacturerData[3]);
            Serial.println();
            Serial.print("Voltage:");Serial.print(int(Sensor_Data));Serial.println(
            Serial.print("Temp_LM35:");Serial.print(Sensor_Data/10);Serial.println(
            Serial.println("------------------");
        }
      }
    }
};
```

```
void setup()
{
  Serial.begin(115200);
  Serial.println("Scanning...");

  BLEDevice::init("");
  pBLEScan = BLEDevice::getScan(); //create new scan
  pBLEScan->setAdvertisedDeviceCallbacks(new MyAdvertisedDeviceCallbacks());
  pBLEScan->setActiveScan(true); //active scan uses more power, but get results fas
  pBLEScan->setInterval(100);
  pBLEScan->setWindow(99); // less or equal setInterval value
}
void loop()
{
  // put your main code here, to run repeatedly:
  BLEScanResults foundDevices = pBLEScan->start(scanTime, false);
  pBLEScan->clearResults(); // delete results fromBLEScan buffer to release memory
  delay(2000);
}
```



```
Temp_LM35:23.20℃
------------------
Device name: Gravity: Sensor Beacon
strManufacturerData: 4 [5][5][0][E8]
Voltage:232mV
Temp_LM35:23.20℃
------------------
Device name: Gravity: Sensor Beacon
strManufacturerData: 4 [5][5][0][E8]
Voltage:232mV
Temp_LM35:23.20℃
------------------
Device name: Gravity: Sensor Beacon
strManufacturerData: 4 [5][5][0][E9]
Voltage:233mV
Temp_LM35:23.30℃
------------------
```

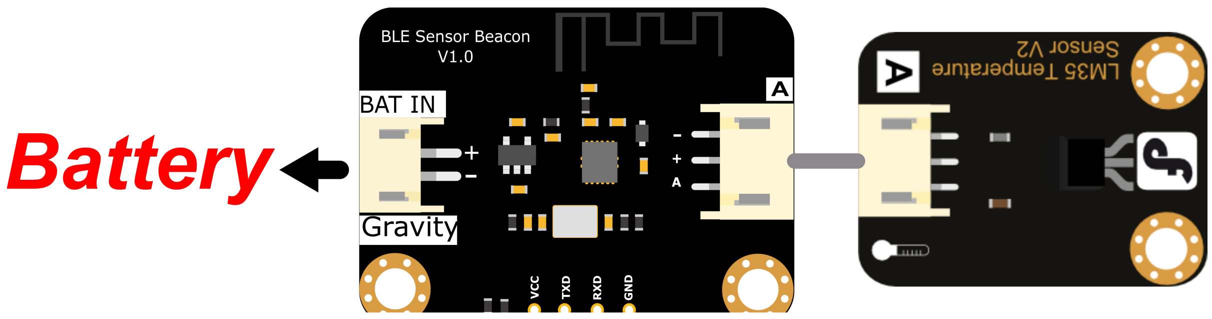
- The codes are modified based on the built-in BLE_Beacon_Scanner on ESP32. Please make changes when necessary.



```
b.com/nkolban/esp32-snippe
stoneURL and EddystoneTLM
#include <BLEEddystoneUR
#include <BLEEddystoneTL
#include <BLEBeacon.h>

#define ENDIAN_CHANGE_U1
```

5. Confirm Data & Burn

- **Note: The module can only be burned once, skip the step if you're just for function test.**
- The data above broadcast in the custom format. For configuring other data formats, please refer to software specifications for details.
- Check and confirm data, then burn it into the chip.
- Click the "Burn/Program" button at the lower right to burn codes; the corresponding pop-up window will appear when done.
- After burning, you can disconnect the module from the programming device and power the module with batteries.



Advanced Application

1. Broadcast Eddystone TLM Data

The Eddystone TLM comes with temperature data obtained from the temperature sensor inside the beacon chip. But it may be affected by the heat generated by the chip.

When configuring Eddystone TLM, select "Eddystone" in "Advertising Data Format", and "TLM Frame" in "Eddystone - Settings". Keep parameters like broadcast interval and address as default or make changes when necessary.

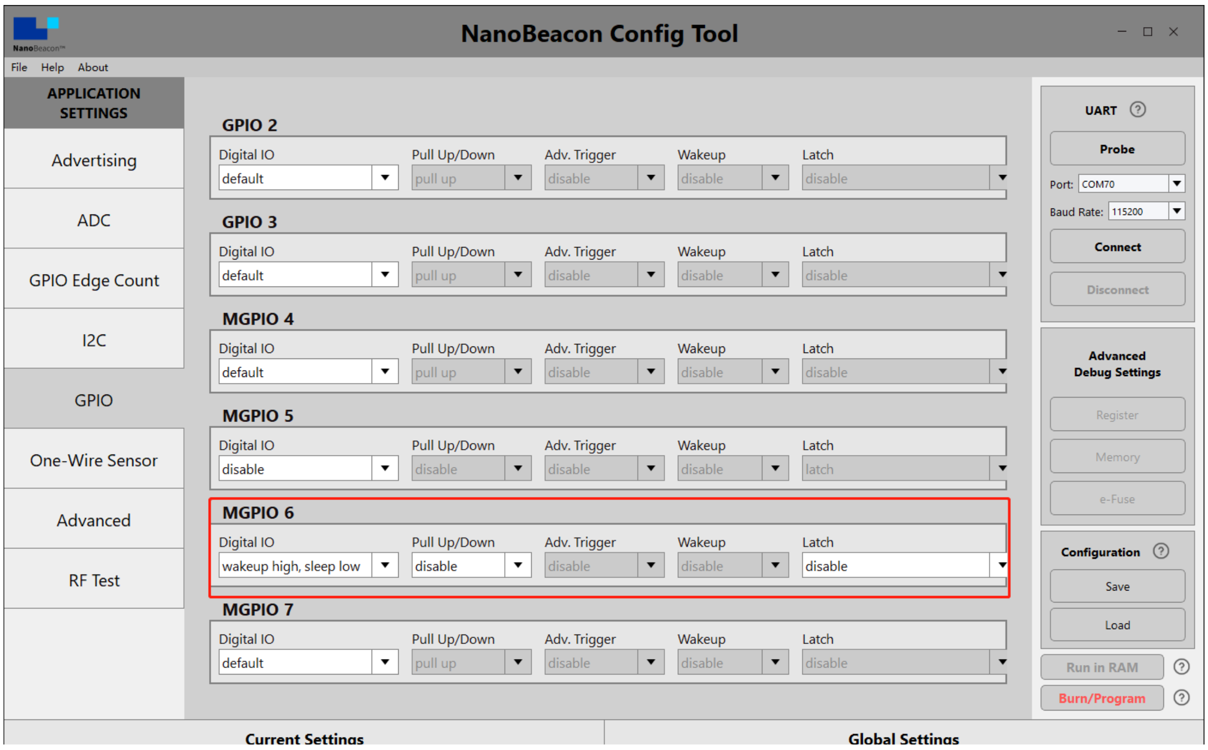
2. Power Supply for High-power Sensor

When using MGPIO6 as power output, it may fail to drive some high-power sensors due to weak loading capacity. So there are jumper pads designed on the back of the beacon board, which allows to power sensor through onboard LDO by short-circuiting, thus providing stabler 3.3V voltage with stronger electrical load capacity.

3. Dynamic Power Supply Control

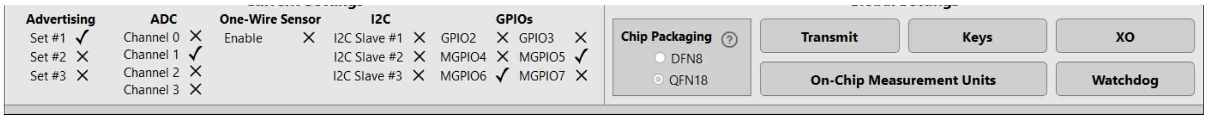
Dynamic power supply control means only supplying power to the sensor during broadcast, and stopping powering when the broadcast ends. For this purpose, you need to set MGPIO6 as "wakeup high, sleep low" and Latch as "disable".

The sample config file can be loaded directly after downloading: DynamicPower.zip (https://dfimg.dfrobot.com/nobody/wiki/b9cecef20db8edf19d9b0b2dbb8a8e39.zip)



Port: COM70
Baud Rate: 115200

	Digital IO	Pull Up/Down	Adv. Trigger	Wakeup	Latch
GPIO 2	default	pull up	disable	disable	disable
GPIO 3	default	pull up	disable	disable	disable
MGPIO 4	default	pull up	disable	disable	disable
MGPIO 5	disable	disable	disable	disable	latch
MGPIO 6	wakeup high, sleep low	disable	disable	disable	disable
MGPIO 7	default	pull up	disable	disable	disable



Advertising	ADC	One-Wire Sensor	I2C	GPIOs	
Set #1 ✓	Channel 0 ✕	Enable ✕	I2C Slave #1 ✕	GPIO2 ✕	GPIO3 ✕
Set #2 ✕	Channel 1 ✓		I2C Slave #2 ✕	MGPIO4 ✕	MGPIO5 ✓
Set #3 ✕	Channel 2 ✕		I2C Slave #3 ✕	MGPIO6 ✓	MGPIO7 ✕
	Channel 3 ✕				

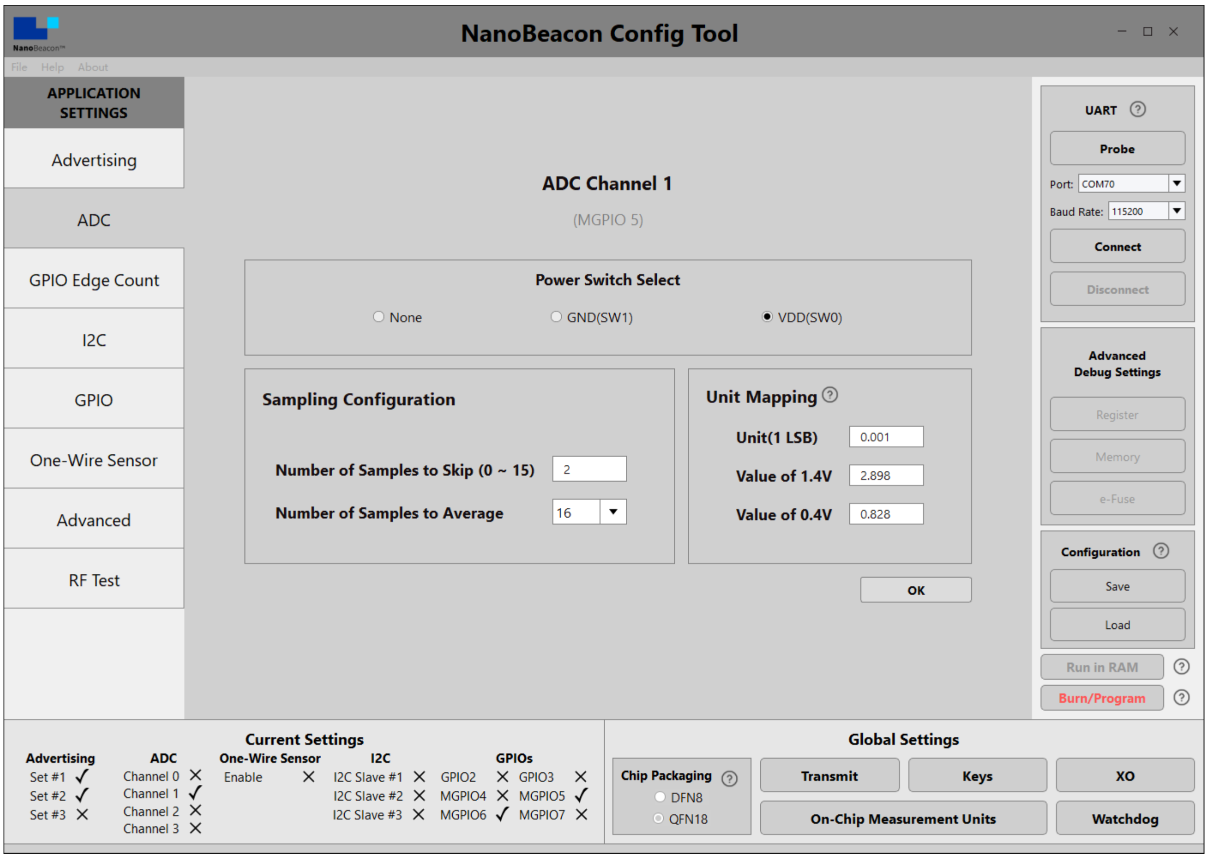
Chip Packaging: DFN8 / QFN18

4. Avoid Packet Loss During Long Interval

When the advertising interval is set to 10s or even longer, if the receiver fails to receive, it has to wait for the next broadcast from the beacon after 10s, in which the failure risk may still exist. In this case, it is recommended to do multiple broadcasts after the interval.

The steps are shown below:

- Enable SW0, the dynamic power supply control port of the beacon chip. It outputs high every time the broadcast is enabled.



Port: COM70
Baud Rate: 115200

ADC Channel 1

(MGPIO 5)

Power Switch Select

None GND(SW1) [✓ VDD(SW0)]

Sampling Configuration

Number of Samples to Skip (0 ~ 15)	2
Number of Samples to Average	16

Unit Mapping

Unit(1 LSB)	0.001
Value of 1.4V	2.898
Value of 0.4V	0.828

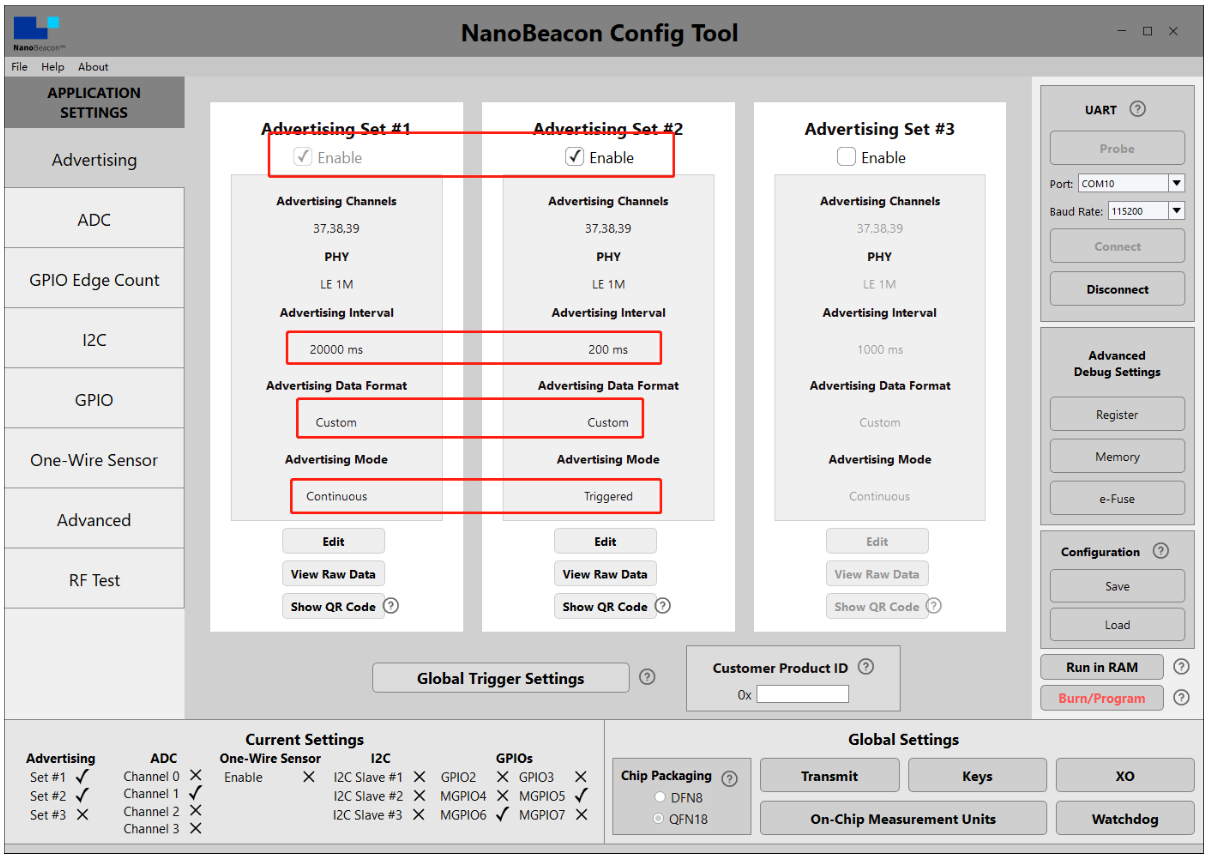
Current Settings

Advertising	ADC	One-Wire Sensor	I2C	GPIOs	
Set #1 ✓	Channel 0 ✕	Enable ✕	I2C Slave #1 ✕	GPIO2 ✕	GPIO3 ✕
Set #2 ✓	Channel 1 ✓		I2C Slave #2 ✕	MGPIO4 ✕	MGPIO5 ✓
Set #3 ✕	Channel 2 ✕		I2C Slave #3 ✕	MGPIO6 ✓	MGPIO7 ✕
	Channel 3 ✕				

Global Settings

Chip Packaging: DFN8 / QFN18

- Enable two advertising sets, set one as continuous advertising of 20s interval, the other as triggered advertising of 200ms interval. And set the same data format for them.



	Advertising Set #1	Advertising Set #2	Advertising Set #3
Enable	✓	✓	
Advertising Channels	37,38,39	37,38,39	37,38,39
PHY	LE 1M	LE 1M	LE 1M
Advertising Interval	20000 ms	200 ms	1000 ms
Advertising Data Format	Custom	Custom	Custom
Advertising Mode	Continuous	Triggered	Continuous

Port: COM10
Baud Rate: 115200

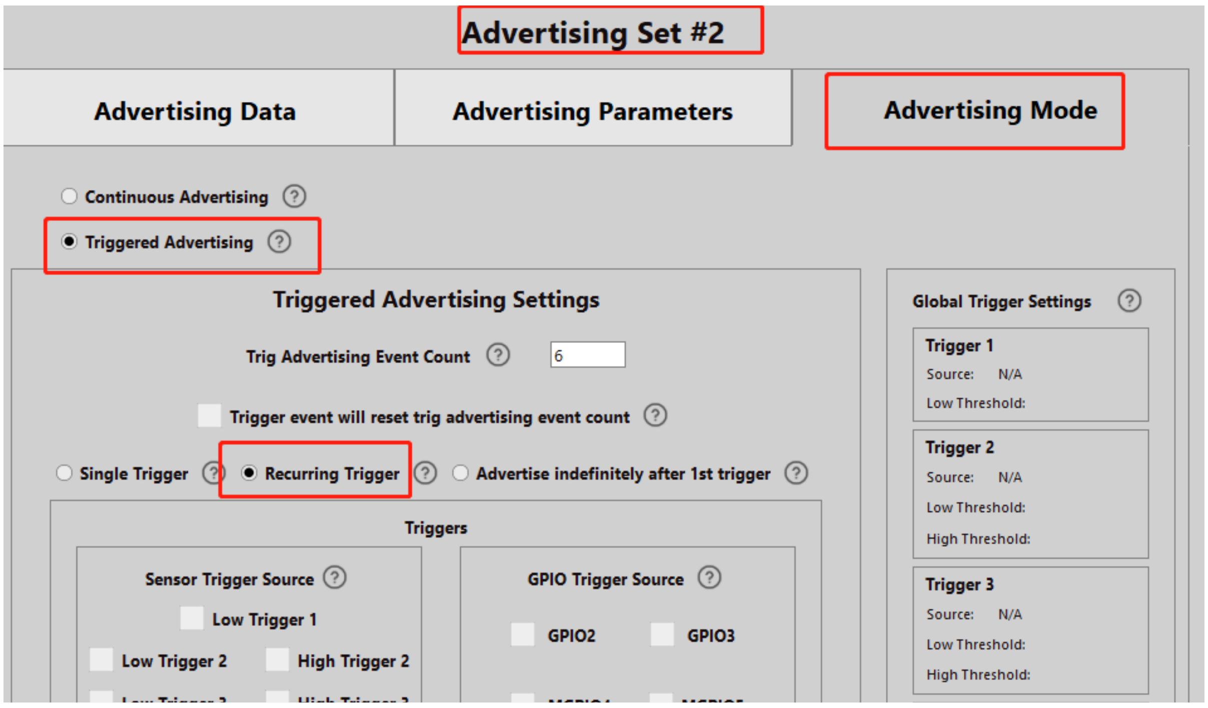
Customer Product ID 0x

Current Settings

Advertising		ADC		One-Wire Sensor		I2C		GPIOs			
Set #1	✓	Channel 0	✕	Enable	✕	I2C Slave #1	✕	GPIO2	✕	GPIO3	✕
Set #2	✓	Channel 1	✓			I2C Slave #2	✕	MGPIO4	✕	MGPIO5	✓
Set #3	✕	Channel 2	✕			I2C Slave #3	✕	MGPIO6	✓	MGPIO7	✕
		Channel 3	✕								

Chip Packaging: DFN8 / QFN18

- Continuous advertising will not be talked about further here. For triggered advertising, select MGPIO6 as it is connected to SW0 in the circuit and the level jump of SW0 can be detected through it. There will be 6 data broadcasts every time the SW0 level jump is detected. (In triggered advertising mode, the system will re-enter the detection state only when completing the set times of broadcasts.)



Continuous Advertising [✓ Triggered Advertising]

Triggered Advertising Settings

Trig Advertising Event Count: 6

☐ Trigger event will reset trig advertising event count

Single Trigger [✓ Recurring Trigger] Advertise indefinitely after 1st trigger

Sensor Trigger Source: ☐ Low Trigger 1, ☐ Low Trigger 2, ☐ High Trigger 2

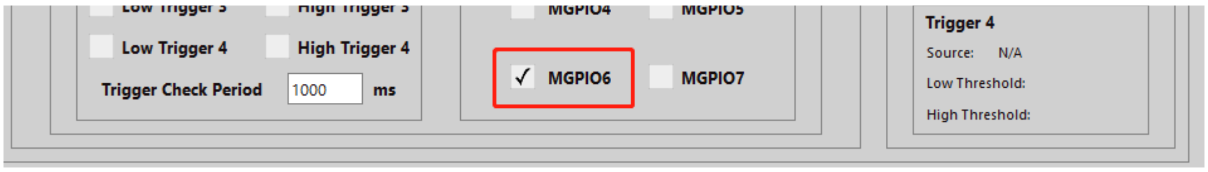
GPIO Trigger Source: ☐ GPIO2, ☐ GPIO3

Global Trigger Settings

Trigger 1
Source: N/A
Low Threshold:

Trigger 2
Source: N/A
Low Threshold:
High Threshold:

Trigger 3
Source: N/A
Low Threshold:
High Threshold:

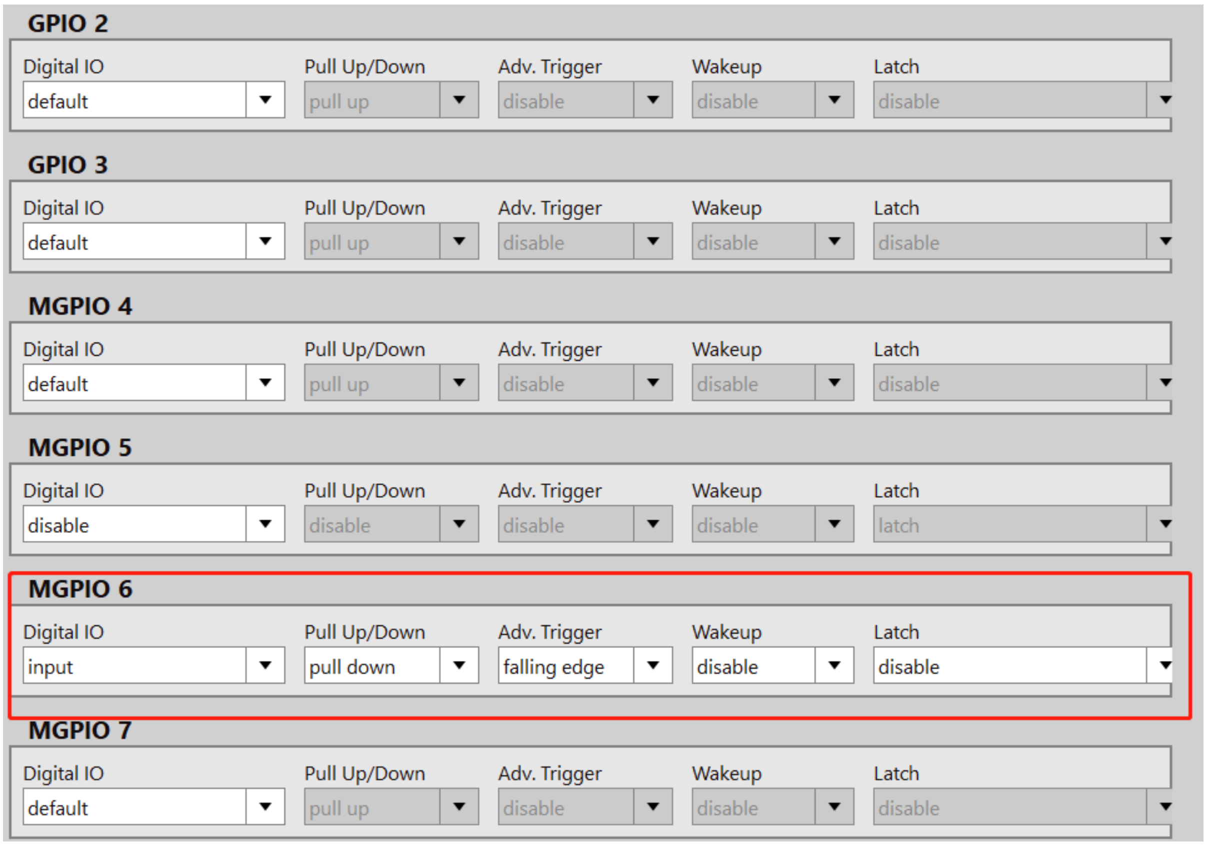


Low Trigger 3 | High Trigger 3
Low Trigger 4 | High Trigger 4
Trigger Check Period 1000 ms

MGPIO4 | MGPIO5
✓ MGPIO6 | MGPIO7

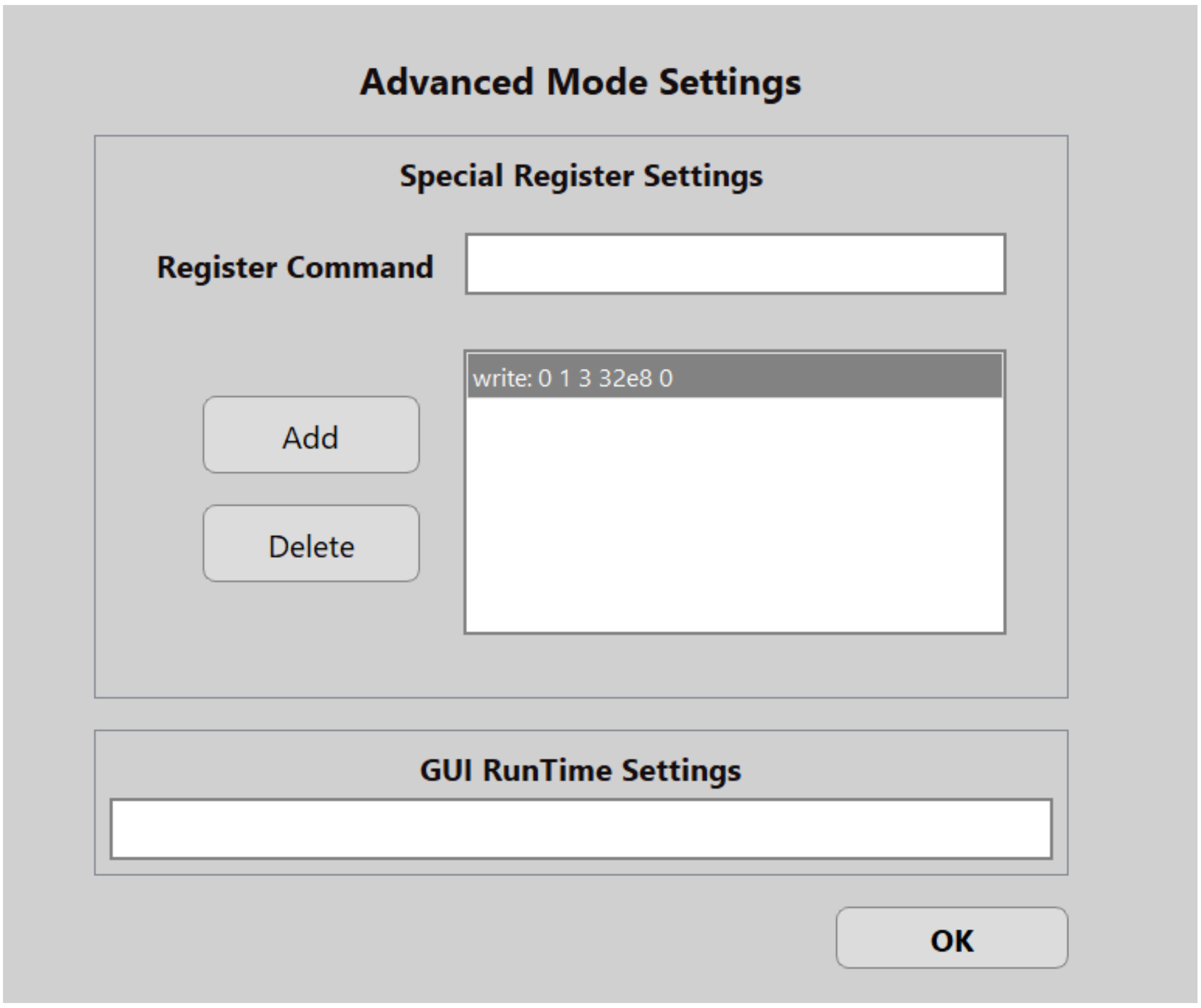
Trigger 4
Source: N/A
Low Threshold:
High Threshold:

- Set MGPIO6 as input mode, and enable edge detection.



	Digital IO	Pull Up/Down	Adv. Trigger	Wakeup	Latch
GPIO 2	default	pull up	disable	disable	disable
GPIO 3	default	pull up	disable	disable	disable
MGPIO 4	default	pull up	disable	disable	disable
MGPIO 5	disable	disable	disable	disable	latch
MGPIO 6	input	pull down	falling edge	disable	disable
MGPIO 7	default	pull up	disable	disable	disable

- In the Advanced Mode Settings, enter the command "register write: 0 1 3 32e8 0" to disable the anti-shake feature.

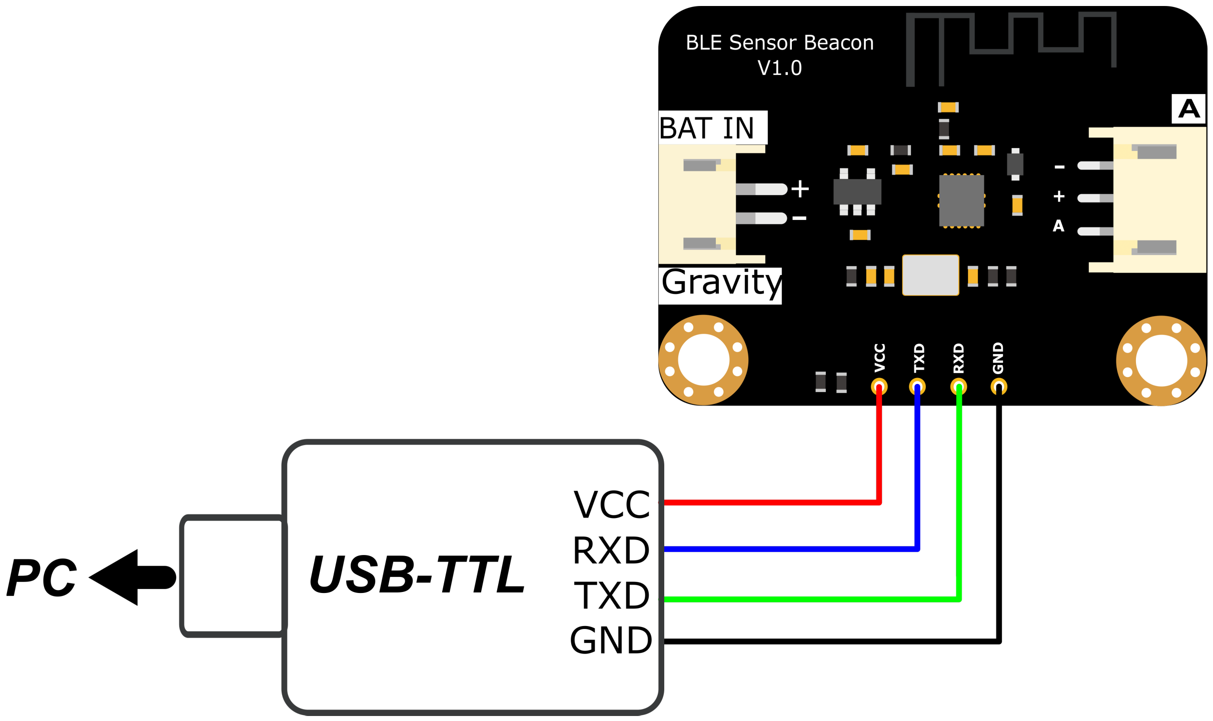


write: 0 1 3 32e8 0

- After completing the operations above, you can do a test by Run in RAM. And the config file above can be loaded directly after downloading: trigger.zip (https://dfimg.dfrobot.com/nobody/wiki/78a418d7b6e323b162d2fe9f199e37a7.zip)

Instructions for NanoBeacon Config Tool

For more information on the use of the NanoBeacon Config Tool, see the software user guide: NanoBeacon Config Tool User Guide EN.pdf (https://dfimg.dfrobot.com/nobody/wiki/5d9b79a87f78ef9c0fe3c98077f89809.pdf) The user guide uses the "Beacon development kit" and when using the Gravity: BLE sensor beacons, the 3.3V USB-TTL tool can be used directly.


BLE Sensor Beacon
V1.0
BAT IN
+
–
Gravity
A
-
+
A
VCC
TXD
RXD
GND
PC
USB-TTL
VCC
RXD
TXD
GND