

MOKO BeaconX Pro User Manual

MOKO BeaconX Pro User Manual

Please use the app-MokoBeaconX Pro published by Moko Technology to configure BeaconX Pro series products.



1. Turn ON/OFF the device

- Turn ON the device:

1. Press the button and keep holding for 3 seconds;
2. The green (Some types have only one red LED) LED flashes 3 seconds quickly and then turns off, it means that the device is on and starts broadcasting.

- Turn OFF the device:

1. Press the button and keep holding for 3 seconds;
2. The red led lights on 3 seconds then turns off, it means that the device is off and stops broadcasting.

2. Scan and connect to the device

2.1 Scan the devices

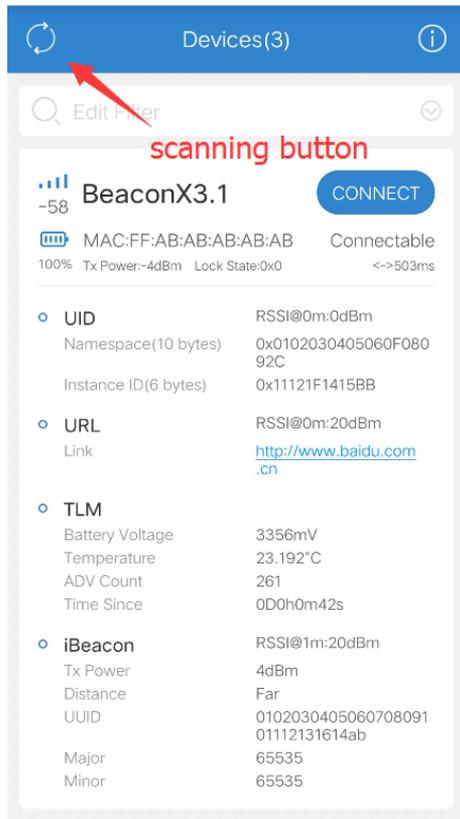
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1. Turn on the telephone's Bluetooth and location service, then open the APP **BeaconX Pro**;

2. Touch the **scanning button** on the upper left corner of the status bar to start scanning devices;

3. The default scanning time is 1 minute;

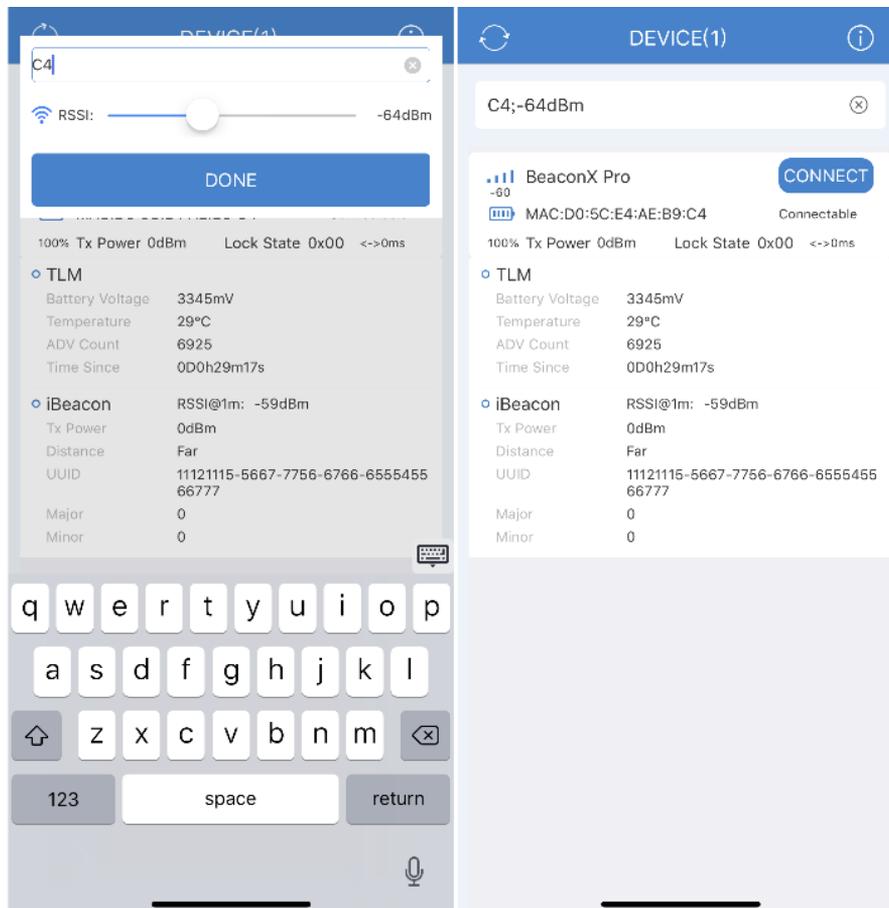
4. User also can touch the **scanning button** to stop scanning;



5. The Edit Filter at the top can help user filter the keywords and RSSI. Keywords include part of the **Device Name and Mac Address**, case-insensitive; RSSI ranges from -100dBm to 0dBm;

For Example: Enter the "C4" into the dialog and slip RSSI to -64dBm, the Moko BeaconX Pro will show the devices whose RSSI is stronger than -64dBm and whose Device Name and Mac Address include "C4".

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6.You can click on the URL and the app will jump to the corresponding web;

2.2 Connect to the device

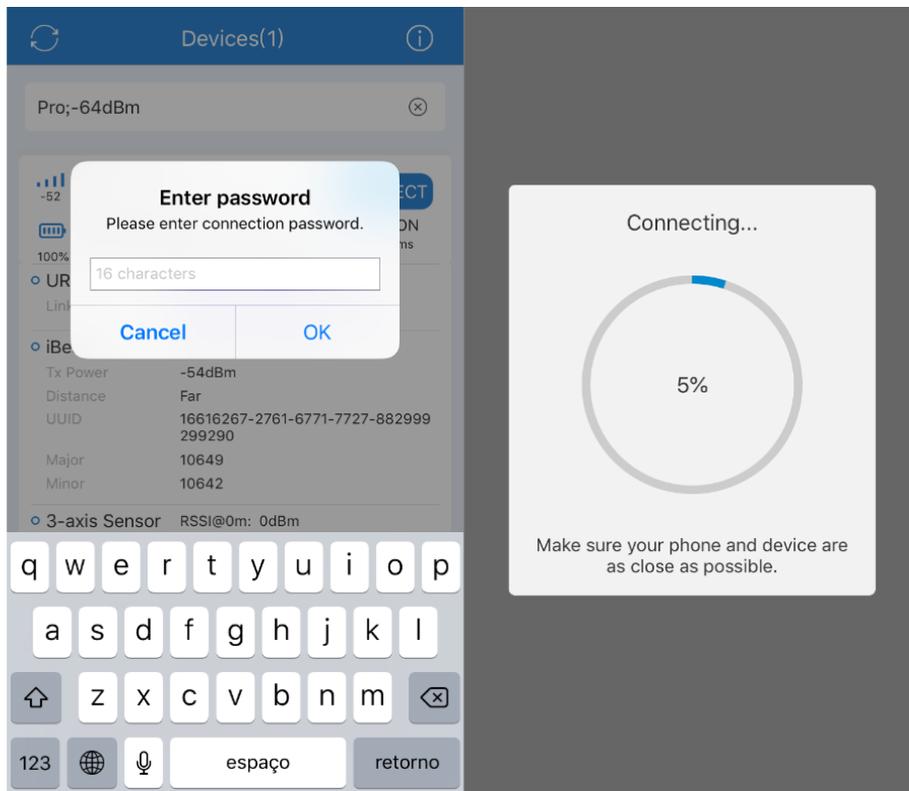
1.Touch the blue button on the right **CONNECT** to connect to the device that needs to be configured;

2.If the current device is **No Password** connectable, no password verification is required, and the device can be directly connected;

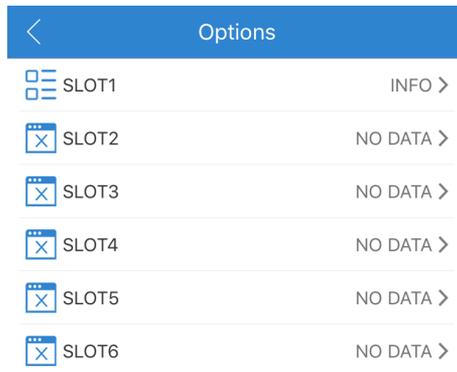
3.If the current device requires a password to connect,there will be a dialog box asking you to enter a password of no more than 16 characters for password verification. The password is ASCII visible characters. When the user enters the correct password, the device can be successfully connected.

4.Lock State 0x00 means the device requires password to connect and 0x02 means the device does not require password to connect.

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5. When the user connects to device successfully, he can enter into the configuration interface to configure the device's parameters.



3. Configure BeaconX Pro parameters

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3.1 SLOTS and Supported frames

There are 6 active SLOTS can be configured, and the different sensor device types and corresponding supported SLOT are as follows:

Device type	Corresponding supported SLOT
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Device type	Corresponding supported SLOT
No sensor	Eddystone™-TLM Eddystone™-UID Eddystone™-URL iBeacon Device Information NO DATA
3-axis accelerometer sensor	Eddystone™-TLM Eddystone™-UID Eddystone™-URL iBeacon Device Information 3-axis accelerometer sensor NO DATA
Temperature and humidity sensor	Eddystone™-TLM Eddystone™-UID Eddystone™-URL iBeacon Device Information Temperature and humidity sensor NO DATA
3-axis accelerometer sensor and Temperature and humidity sensor	Eddystone™-TLM Eddystone™-UID Eddystone™-URL iBeacon Device Information Temperature and humidity sensor 3-axis accelerometer sensor NO DATA

Users can configure a certain frame type on different SLOTS. For example, for the device with 3-axis accelerometer sensor and temperature and humidity sensor, APP can simultaneously broadcast 6 sets of device information data, or they can simultaneously broadcast 3 sets of URL data plus 1 set of device information data and 1 set of temperature and humidity sensor and 1 set of 3-axis accelerometer sensor.

It is not recommended to configure 6 slots as NO DATA, that means the device will not broadcast and user must reset the device.

Note: TLM shows only one in the broadcast. For more, please click Eddystone-回到顶部
TLM: <https://github.com/google/eddystone/tree/master/eddystone-tlm>
(<https://github.com/google/eddystone/tree/master/eddystone-tlm>)

By default, the device broadcasts only device information. We can adjust the default Settings according to customer requirements.

- Related data of frame type;
- Advertising Interval;
- Tx Power (Transmission Power) ;
- Measured Power(RSSI@1m (<https://github.com/1m/0m>));
- Device Name;
- The trigger status in the slot includes the following 5 types:
 - Temperature trigger
 - Humidity trigger
 - Button double tap
 - Button triple tap
 - Motion trigger

Note:

If the the device has temperature **and** humidity sensor **and** 3-axis accelerometer sensor, **all** 5 trigger status can be selected **for configuration**;

If the device only has temperature **and** humidity sensor, 4 trigger status (temperature trigger, humidity trigger, button **double** tap **and** button triple tap) can be selected **for configuration**.

If the the device only has 3-axis acceleration sensor, 3 trigger status (button **double** tap, button triple tap **and** motion trigger) can be selected **for configuration**.

If the device has no sensor, only 2 trigger states (button **double** tap, **and** button triple tap) can be selected **for configuration**.

When slot is NO DATA, the trigger state cannot be set for the slot.

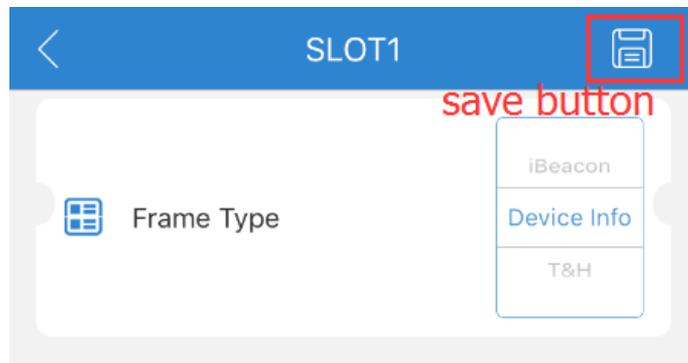
The corresponding effect interface corresponds to the device type as follows:

Device type	Supported trigger types
No sensor	1.Button double tap 2.Button triple tap
3-axis accelerometer sensor	1.Button double tap 2.Button triple tap 3.Device moves
Temperature and humidity sensor	1.Button double tap 2.Button triple tap 3.Temperature above 4.Temperature below 5.Humidity above 6.Humidity below

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Device type	Supported trigger types
3-axis accelerometer sensor and Temperature and humidity sensor	1.Button double tap 2.Button triple tap 3.Temperature above 4.Temperature below 5.Humidity above 6.Humidity below 7.Device moves

- Each slot has independent Advertising Interval, Tx Power, Measured Power (RSSI@0m (<https://github.com/0m>) and RSSI@1m (<https://github.com/1m>)). Different trigger states can be configured for each slot.
- After configuring, touch the save button on the upper right corner of the status bar to save settings. Other operations will cancel the configuration.

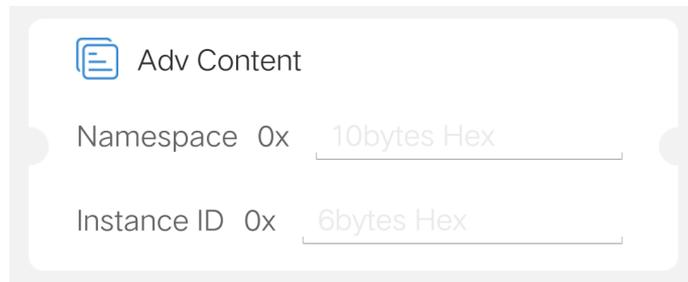


3.2.1 Related data of frame type;

Eddystone™-TLM

NO configurable frame type data.

Eddystone™-UID

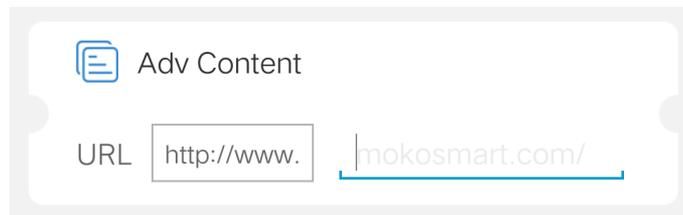


Namespace --- 10bytes Hexadecimal number

Instance ID --- 6bytes Hexadecimal number

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Eddystone™-URL



URL Scheme Prefix:

1. http://www.
2. https://www.
3. http://
4. https://

Encoded URL (Any of the following is ok) :

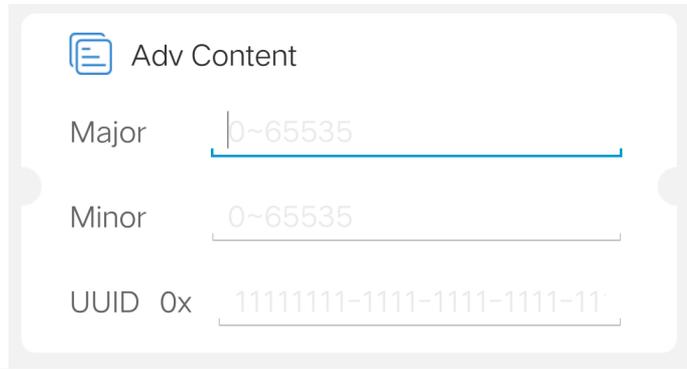
1. 1-16 characters and Eddystone-URL HTTP URL encoding (as following) ;
2. 1-17 characters

Currently supported Eddystone-URL HTTP URL encoding :

Decimal	Hex Value	Expansion
0	0x00	.com/
1	0x01	.org/
2	0x02	.edu/
3	0x03	.net/
4	0x04	.info/
5	0x05	.biz/
6	0x06	.gov/
7	0x07	.com
8	0x08	.org
9	0x09	.edu
10	0x0a	.net
11	0x0b	.info
12	0x0c	.biz
13	0x0d	.gov
14..32	0x0e..0x20	Reserved for Future Use
127..255	0x7F..0xFF	Reserved for Future Use

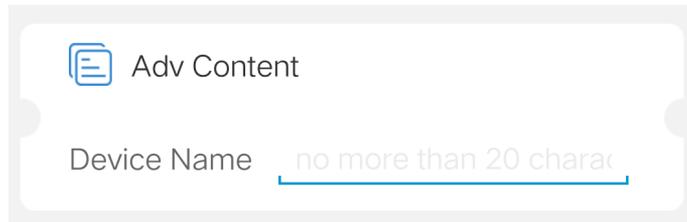
iBeacon

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Major --- 0-65535
 Minor --- 0-65535
 UUID --- 16bytes Hexadecimal number

Device Information



- The default device name is: **BeaconX Pro**
- The device name can be 1~20 characters.

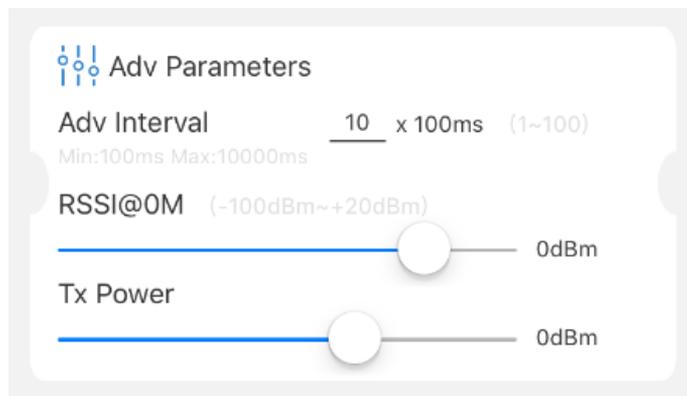
3-axis accelerometer sensor

NO configurable frame type data.

Temperature and humidity sensor

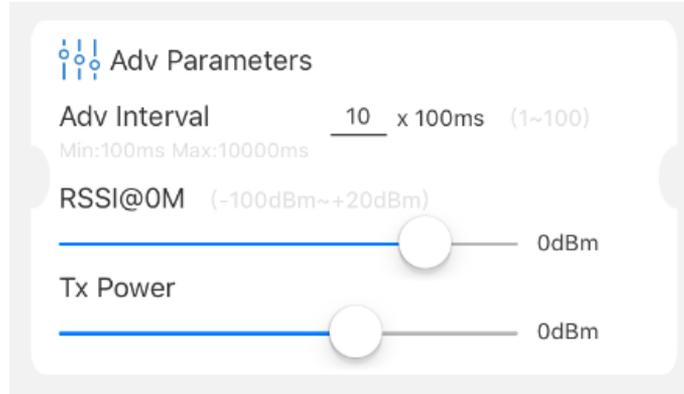
NO configurable frame type data.

3.2.2 Advertising Interval



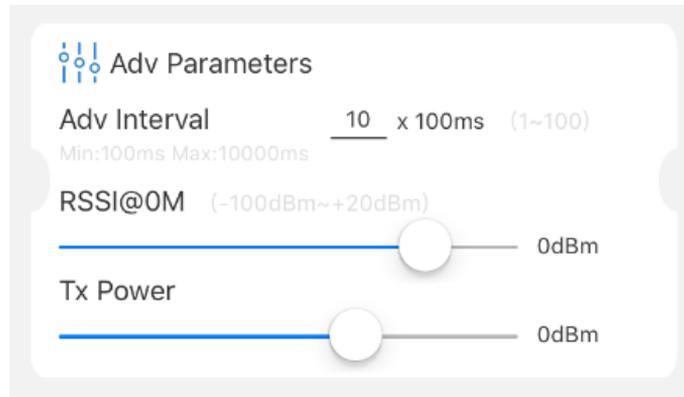
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- Default Advertising Interval: 1000ms.
- The broadcast interval ranges from 100ms to 10000ms, and can be adjusted by inputting 1-100 in units of 100ms.
- Advertising Interval can be set independently for all slots, It means you can change the SLOT1 Advertising Interval to 500ms, the SLOT2 Advertising Interval to 1000ms, and other slots Advertising Interval to other slots.

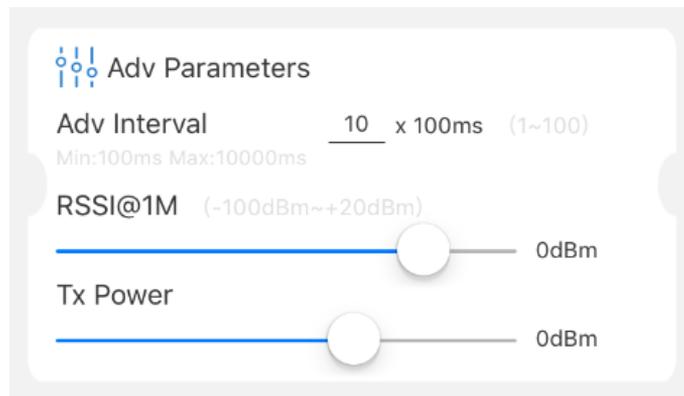


- The Transmission power of the device is determined by the chip.
- Default Tx Power: 0dBm.
- Tx Power can be configured as one of the following data: -40dBm, -20dBm, -16dBm, -12dBm, -8dBm, -4dBm, 0dBm, 3dBm, 4dBm.

3.2.4 Measured Power(RSSI@1m (<https://github.com/1m>)/0m)



For Eddystone™



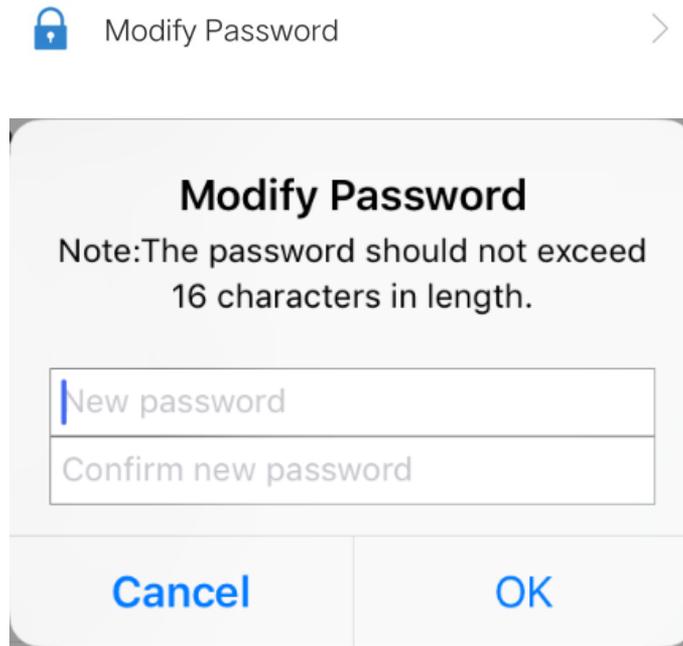
For iBeacon

- RSSI—Received Signal Strength Indication.
- RSSI@1m (<https://github.com/1m>) refers to Receiver device receives the signal strength in 1 meter. (For iBeacon)
- RSSI@0m (<https://github.com/0m>) refers to Receiver device receives the signal strength in 0 meter. (For Eddystone™)
- The value accords with the actual test results and is usually confirmed by the customer based on the actual application.

3.2.5 Configure SETTING

Modify Password

- The password can be modified when the device requires password verification to log in. The device cannot modify the password in the **No Password** state.
- Default password: “**Moko4321**” ;
- Length of password: you can enter 1-16 arbitrary characters;
- Users need to enter the same content twice to change the password. After the password is successfully modified, the device will be disconnected.



Update Firmware

- If you use an IOS operating system phone, you can use iTunes to import the update file to the app;
- If you use an Android operating system phone, import the update file into your phone' s memory or TF card;
- Select the update file;
- Start DFU.
- **Note:**The update file must match BeaconX Pro firmware.



Reset Factory (Firmware reset)

- Make the the device to factory settings, the device will be disconnected, but the password will not be restored.
- Factory Reset cannot be operated when the device does not require password to connect.



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Configure 3-axis Accelerometer

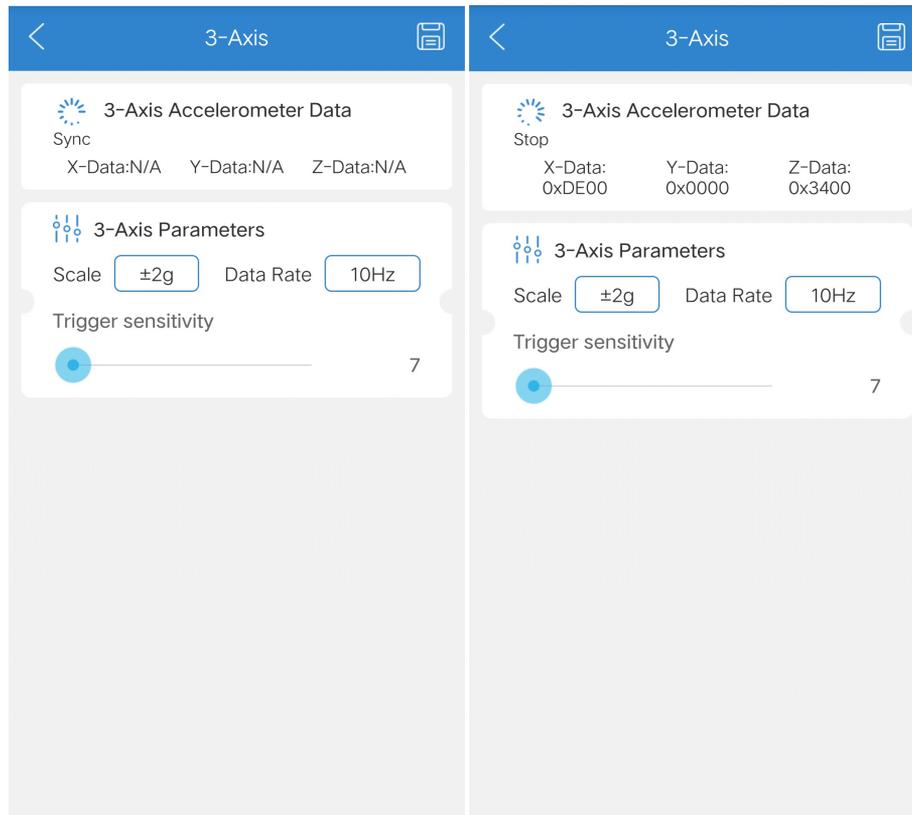
- Click the **Sync** icon at the top left to monitor the 3-axis accelerometer data in real time. The page will display the X, Y, and Z-axis data.

- Click the **Stop** icon at the top left to stop monitoring to the 3-axis accelerometer data, and the page will stay showing the last collected data.
- You can configure the gravitational acceleration reference value, sampling rate, and sensitivity of the 3-axis accelerometer.

Sampling rate can be configured as one of the following data: 1hz, 10hz, 25hz, 50hz, 100hz. **Default sampling rate:** 10Hz;

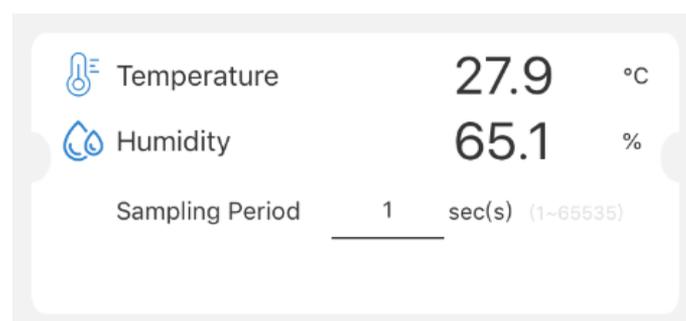
Dynamically user-selectable full scales can be configured as one of the following data: $\pm 2g$, $\pm 4g$, $\pm 8g$, $\pm 16g$. **Default value:** $\pm 2g$;

Sensitivity range: 0x07-0xFF, **Default sensitivity:** 0x07.



Configure T&H

- Real-time monitoring of temperature and humidity data, and display current temperature and humidity sampling results;
- You can configure the sampling rate of the temperature and humidity sensor. The sampling rate indicates how many seconds to sample the temperature and humidity data. The sampling rate ranges from 1-65535s.

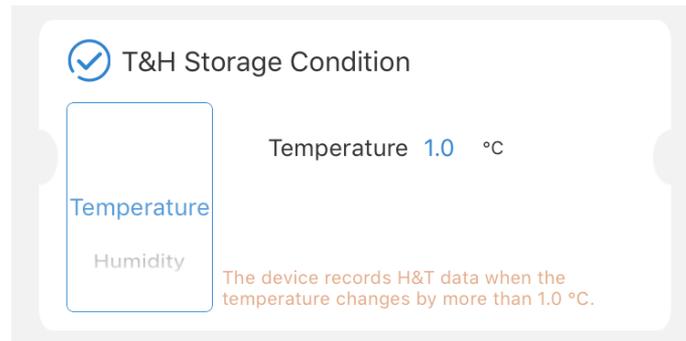


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- The storage conditions of the temperature and humidity sensor can be configured;

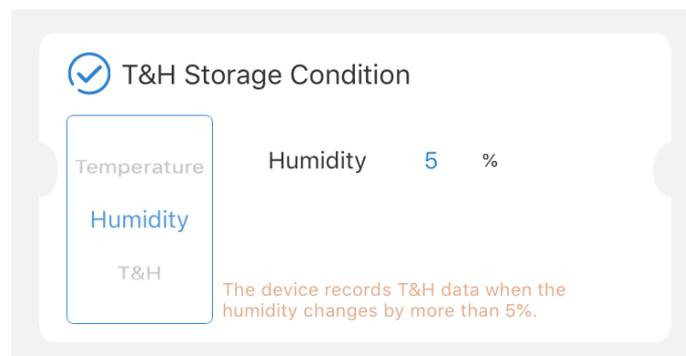
This function is used to store the data of temperature and humidity sensor under the conditions set by the user. When the preset conditions are reached, a set of temperature and humidity data is stored. The following four situations can be achieved:

- 1. Only preset the temperature value, that is, when the temperature changes beyond the preset value, record the temperature and humidity data once. The preset temperature ranges from 0.0°C to 100°C, with an interval of 0.5°C. When the preset temperature is 0.0°C, it means to store the temperature and humidity data when the temperature changes arbitrarily.



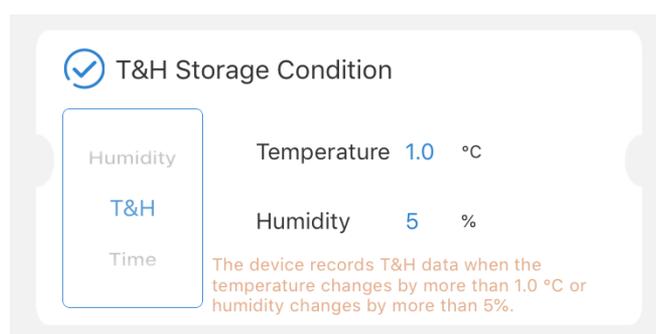
Storage when temperature change is greater than 1°C

- 2. Only preset the humidity value, that is, when the humidity changes beyond the preset value, record the temperature and humidity data once. The preset value range of humidity is 0~100%, and the interval is 1%. When the preset value of humidity is 0%, it means that the temperature and humidity data are stored when the humidity changes arbitrarily.



Storage when humidity changes by more than 5%

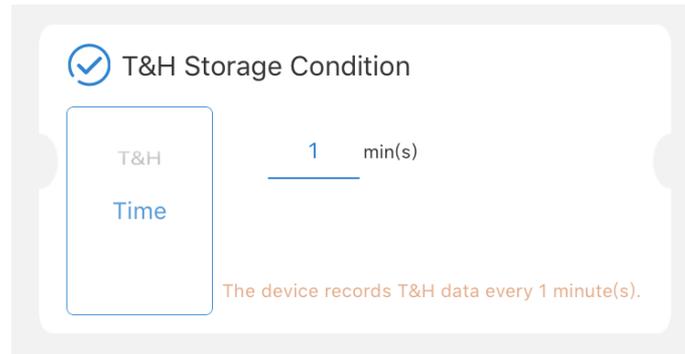
- 3. The temperature and humidity values are preset together, that is, when any change in temperature or humidity beyond the preset value, the temperature and humidity data will be recorded once. The temperature preset value ranges from 0.0 to 100 °C, the temperature interval of 0.5 °C, and the humidity preset value range is 0. ~100%, and 1% interval, when the temperature preset value is 0.0 °C, and the humidity preset value is 0%, it means that the temperature and humidity data are stored when there is a change in temperature or humidity.



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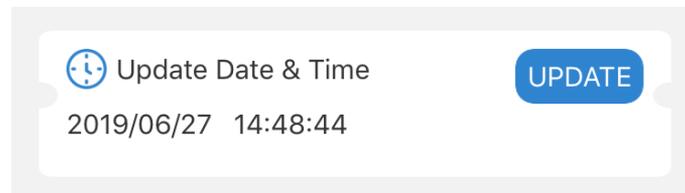
Storage at any temperature change greater than 1°C or humidity change greater than 5%

- 4. Only preset time value, that is, the preset time duration is reached, and temperature and humidity data are stored once. The time range is 1-255 minutes, and the interval is 1 minute.

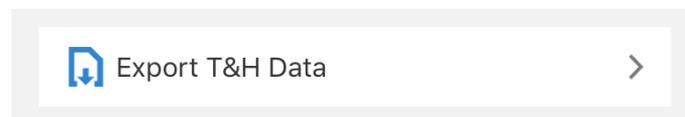


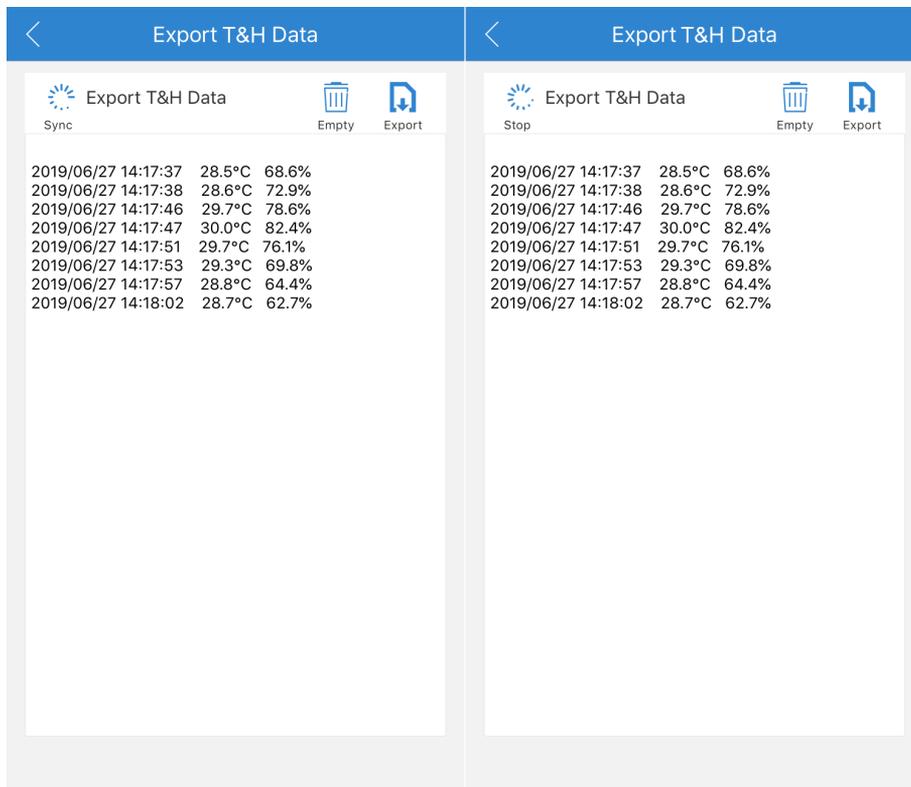
Store when time changes by 1 minute

- To synchronize the system time (Synchronize the device time with phone time), the user can click the **UPDATE** button on the right, and the updated time will be displayed.



- The user can click **Export T&H Data** to Export the stored temperature and humidity Data, which can support the storage of up to 4000 pieces of historical temperature and humidity Data;
- Click the **Sync** icon at the top left to monitor the temperature and humidity sensor data in real time. The page will record the time, temperature and humidity data that meet the storage conditions.
- Click the **Stop** icon at the top left to stop monitoring the temperature and humidity sensor data, and the page will stay showing the last collected data;
- Click the **Export** icon at the top right, the user can export the collected temperature and humidity data;
- Click the **Empty** icon on the top right, and the APP will empty the cached temperature and humidity data.





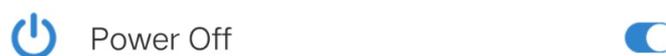
Connection status

- Default connection mode: Connetable.
- When the device is in disconnectable status, the device can't be configured. If you need to recover the connectable mode, you should do as the follow steps (device in the disconnectable status).
 1. Turn off the device ;
 2. Press and hold the button (Please make sure the device has a button) for 10s (The device will restart) ;
 3. The device restores the factory settings, and the password is restored to the original status (different from software reset)
 4. User can connect to the device and configure the device.



Power Off

- When user wants to use the APP to turn off the device, click the button on the right side of "Power Off" to turn off the device.



NO password

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- If the current state of the device is **No Password**, the user can connect to the device directly without password.



4.Device Information

- Battery Voltage
- Mac Address
- Produce Model
- Software Version
- Firmware Version
- Hardware Version
- Manufacture Date
- Manufacture



Device info	
Battery Voltage	3489mV
Mac Address	D5:4A:45:CA:71:86
Produce Model	HX-BeaconX
Software Version	nRF52-SDK14.2
Firmware Version	MkBeaconX-V3.1.1
Hardware Version	MKBNserial
Manufacture Date	2019/04/01
Manufacture	MOKO TECHNOLOGY LTD.



SLOT SETTING DEVICE

Revision History

Revision	Description	Approved	Date
V1.0	Initial Release	Hannah	2019.07.06

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(<https://www.showdoc.cc/>)编写

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