



PDDAXLQUE

DX-CP28

Low-power Beacon

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Update Records

Version	Date	Description	Author
V1.0	2022/01/24	Initial version	LSL
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1. Introduction

1.1. Overview

The DX-CP28 Bluetooth beacon is a low-power Bluetooth product developed by Shenzhen Daxia Longque Technology Co., Ltd., specialized for asset management, indoor positioning, and advertising push. It complies with Bluetooth BLE 5.1 specification and supports both iBeacon and Eddystone protocols. With a circular design and a PC material housing, it is compact and delicate, assembled with a twist-lock mechanism for easy battery replacement, extending battery life. SDK and technical services are provided, and OEM/ODM options are available according to customer requirements.

1.2. Product Features

- DIALOG 14531 main control chip
- ARM Cortex-M0 processor
- Bluetooth BLE 5.1 protocol+
- Low power consumption, low cost
- Operating power consumption: 24.87 uA
- Lifespan: 4years
- Powered by a CR2477 lithium button cell battery
- Open-air visible communication distance: 100-120m
- Supports iBeacon & Eddystone
- Supports rotation of 6 UUIDs
- Compact and delicate, easy to install
- Twist-lock assembly, easy battery replacement

1.3. Bluetooth default parameters

- Bluetooth name: CP28-XX (XX: The last two bytes of the MAC address)
- Transmit power: +2.5dBm
- Broadcast interval: 500ms
- Default iBeacon broadcast packet data:

UUID: E2C56DB5-DFFB-48D2-B060-D0F5A71096E0

MAJOR: 0

MINOR: 0

- Default Eddystone broadcast packet data:

UID: Namespace id: e5a4a7e5a48f31323334

Instance id:: 44584c29191a

URL: URL: http://www.szdx-smart

- Default restart iBeacon password: dx1234
- Default Restore factory password: 1234

Table 1 : Basic Parameter Table

Parameter Name	Details	Parameter Name	Details
Chipset	DA14531	Model Number	CP28
Bluetooth protocol	BLE 5.1	protocol	GATT, iBeacon, Eddystone
Battery type	CR2477	Broadcast interval	100ms ~ 1000ms
Battery level	880×2 mAh	Transmit power	-19.5~+2.5dBm
Power supply	Button cell battery	Sensitivity	-94dBm@0.1%BER
Modulation method	GFSK	Frequency band	2.402GHz -2.480GHz ISM band
RF input impedance	50Ω	Frequency hopping and channels	1600hops/s 2MHzspacing, 40channels
Antenna interface	On-board antenna	PCB Size	55.6*55.6mm
Operating temperature	MIN:-40°C - MAX:+85°C	Humidity	10%-95% non-condensing

2. Product schematic diagram and exterior dimensions

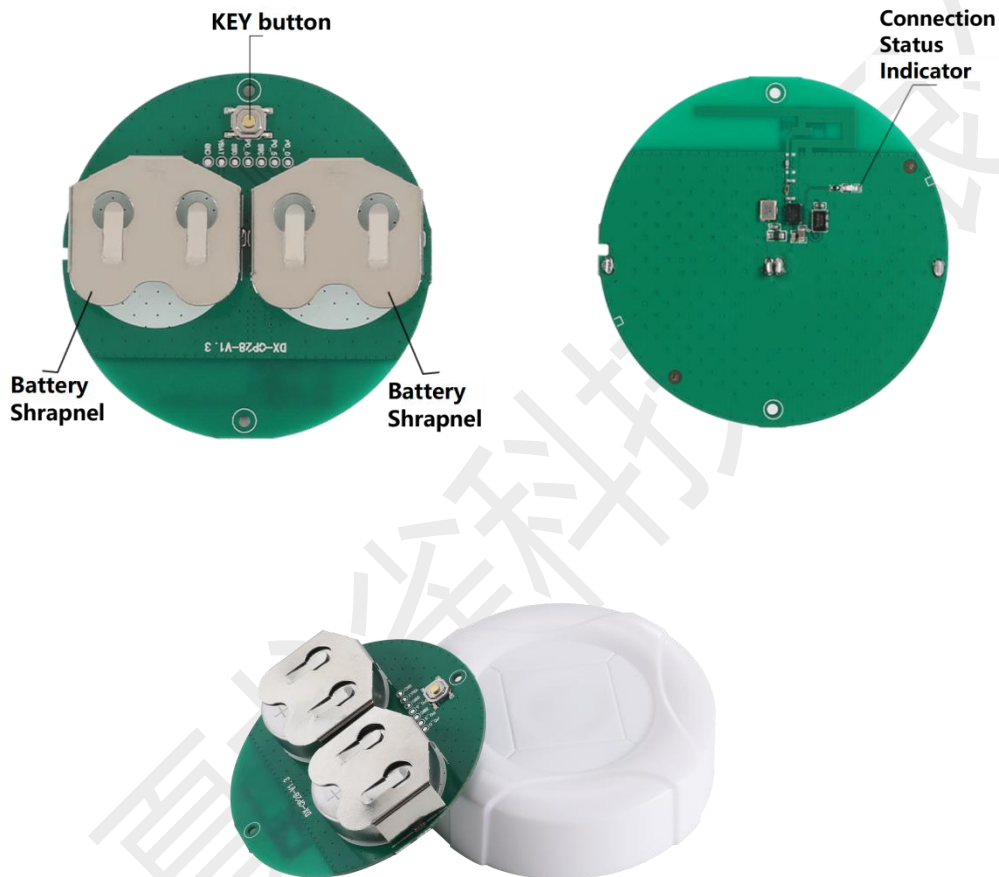


Figure 1: CP28 Product diagram

3. Hardware Construction

Description

3.1. KEY button

Table 2: KEY switch Function Definition Table

Operation Method	Result
Press and hold the KEY switch for at least 6S	Power off
Press and hold the KEY switch for at least 2S	Power on

Note:

Default to low power mode after power on/power up

3.2. Indicator Light

- Connection status indicator light: The light is off when not connected; the red light is on when connecting; the light is off when the connection is successful.
- After the module is powered on/turned on, the connection status indicator light flashes once.
- After shutting down, the connection status indicator light flashes twice.

4. Electrical Characteristics and Reliability

4.1. Operating and Storage Temperature

Table 3: Operating and Storage Temperature Table

Parameter	Minimum	Typical	最大值	Unit
Normal Operating Temperature	-40	-	40	°C
Storage Temperature	-50	-	150	°C

4.2. Standby Current 耗流

Table 4: Power Consumption Table

Mode	Current 电流	Unit
OFF	1.64	uA
ON	24.87	uA

Note

The power consumption in the above table is obtained under the condition of transmission power +2.5 dBm, with a broadcast interval of 500ms, for reference only. The power consumption generated by this module may vary with different transmission powers and broadcast intervals. Actual power consumption shall prevail.

4.3. RF Characteristics

Table 5: RF Characteristics Table

Function	Value
BLE Transmit Power	-19.5 ~2.5dBm
BLE Sensitivity	-94dBm@0.1%BER

4.4. Distance Measurement Table

Test Object	Connection Object	Connection Distance	Broadcast Distance
CP28	iPad	67.2 m	122.2m
	Onepuls ACE 2 Pro	67.2 m	146.2m

Note

Test default parameters: (Transmit power: +2.5dBm, Broadcast interval: 500ms)

4.5. ESD Protection

In the application of modules, static electricity generated by human static electricity and electrostatic friction between microelectronics may discharge to the module through various paths, which may cause certain damage to the module. Therefore, ESD protection should be emphasized. In the process of research and development, production assembly, testing, etc., especially in product design, ESD protection measures should be taken. For example, anti-static protection should be added at the interface of circuit design and points susceptible to electrostatic discharge damage or interference. Anti-static gloves should be worn during production

Table 6: ESD Tolerance Voltage Table for Module Pins

Testing Interfaces	Contact Discharge	Air Discharge	Unit
VBAT and GND	+2	+4	kV
Main Antenna Interface	+2	+4	kV

5. App Usage Process

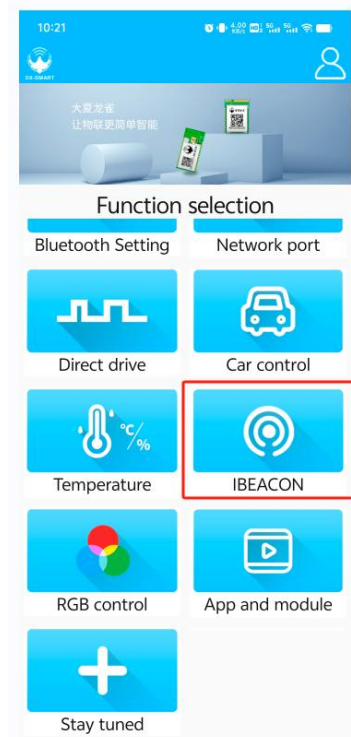
5.1. Android APP Modify Module Parameters

5.1.1. Android App Operation Process

1. Download “**DX-SMART.apk**” from the official website or contact customer service to install it on your Android phone.
2. Open the **DX-SMART** APP and click **iBeacon** to enter the connection interface.
3. Find the MAC code that is the same as the shell and click Connect.
4. After connection, you can modify the iBeacon parameters in the APP
5. After making the modifications within the specified format and range, click on “**Restart iBeacon**” Enter the restart password to complete the modifications.
(Android app interface as shown in Figure 2)"



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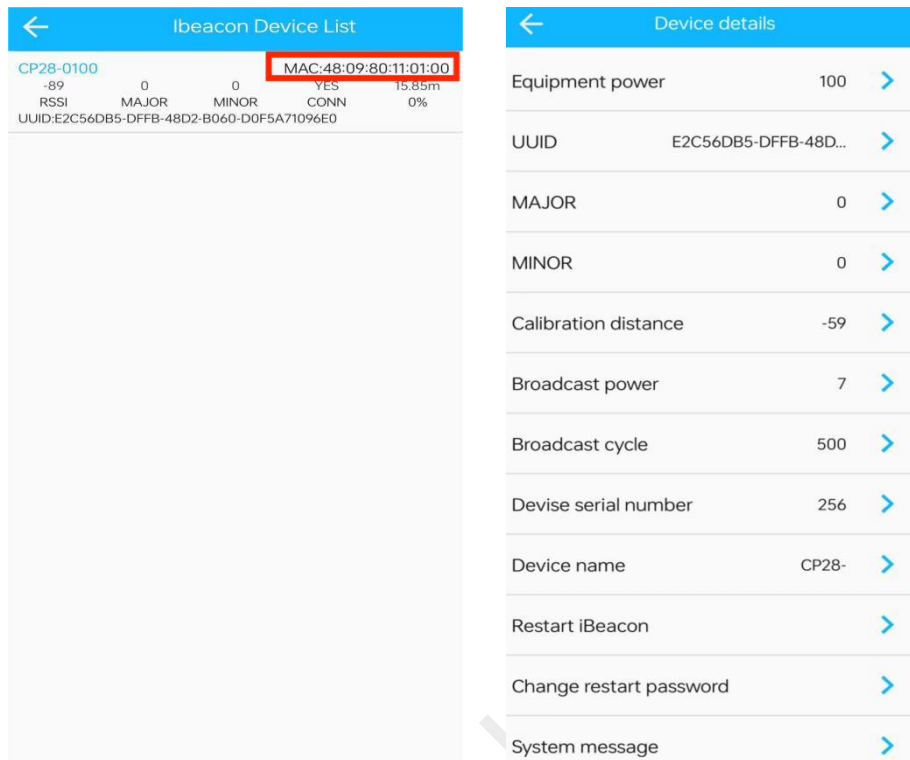


Figure 2: Android APP interface diagram

5.1.2. iOS App Operation Process

1. Download our “**DX-SMART**” app from the Apple App Store
2. Open the **DX-SMART** APP and click **iBeacon** to enter the connection interface.
3. Find the MAC code that is the same as the shell and click Connect.
4. After connecting, you can modify both iBeacon and Eddystone parameters.
5. After making modifications within the specified format and range, click on “**Restart iBeacon**” Enter the restart password to complete the modifications.

(IOS app interface as shown in Figure 3)

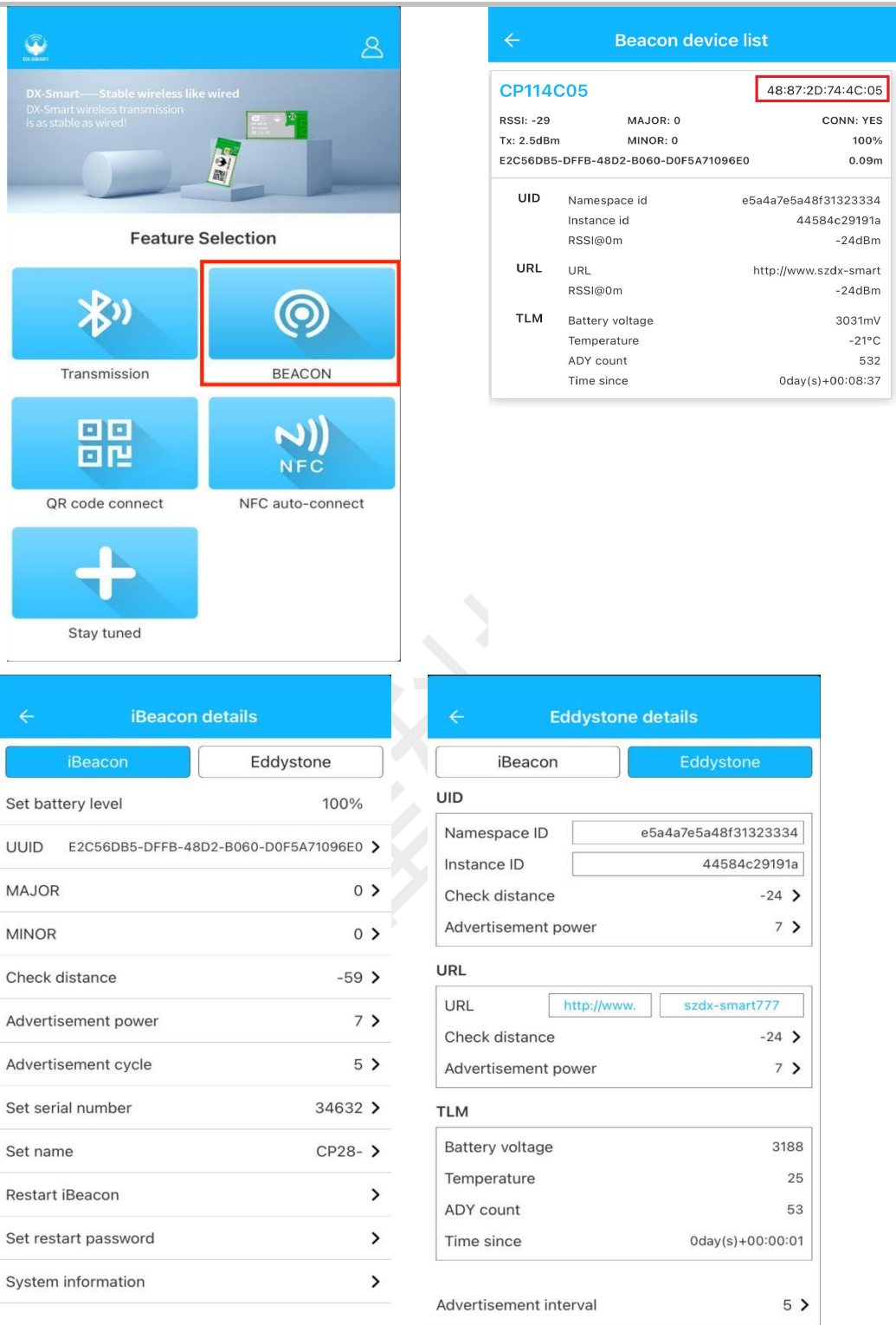


Figure 3: IOS APP interface diagram



6. Points for attention

- Avoid external pressure on the product
- Indoor and outdoor use in normal temperature environments, prohibited from use in damp or watery environments
- Non professionals are not allowed to disassemble and repair themselves