

一、蓝牙广播名称及UUID /

Bluetooth broadcast name and UUID

蓝牙广播名称: LZ-OTA XXXXXXXXXXXX (X 表示 0~9 的数字, 一共 12 位)

服务 UUID: 0000fff0-0000-1000-8000-00805f9b34fb

特征 UUID: 0000fff1-0000-1000-8000-00805f9b34fb (手机 APP TO 设备)

特征 UUID: 0000fff2-0000-1000-8000-00805f9b34fb (设备 TO 手机 APP)

Bluetooth broadcast name: LZ-OTA XXXXXXXXXXXX (X represents numbers from 0 to 9, with a total of 12 digits)

Service UUID: 0000fff0-0000-1000-8000-00805f9b34fb

Feature UUID: 0000fff1-0000-1000-8000-00805f9b34fb (mobile app to device)

Feature UUID: 0000fff2-0000-1000-8000-00805f9b34fb (Device TO Mobile APP)

二、蓝牙协议格式 / Bluetooth protocol format

APP 发送数据到设备的协议格式 (多字节如无说明, 默认高字节在前) :

The protocol format for the APP to send data to the device (if multiple bytes are not specified, the high byte comes first by default):

header	msgType	length	n 个 byte	checkcode
协议头 protocol header	消息类型 Message type	2 个字节 2 bytes	内容 Content	crc32 校验 crc32 check

设备回传数据到 APP 的协议格式:

The protocol format for the device to transmit data back to the APP:

header	msgType	length	status	n 个 byte	checkcode
协议头 protocol header	消息类型 Message type	2 个字节 2 bytes	状态码 1 个字节 Status code: 1 byte	内容 Content	crc32 校验 crc32 check

■ 协议头 (header) : 0xcd , 1 个 byte

■ 消息类型 (msgType) : 1 个 byte, 定义如下:

0x1f: 蓝牙WiFi 配网, 用于 WiFi 模块配网

■ length :

APP 发送: 内容长度 (n) + 校验(4)

设备应答: 1 + 内容长度 (n)

■ crc32 校验(checkcode): 4 个 byte 定义 CRC32 校验起始值, 可用任意 4 个字节替代, 比如 0xFFFFFFFF。

■ 状态码(status): 1 个 byte, 定义如下:

0x00 :success

0x01 :error

■ Protocol header: 0xcd, 1 byte

■ Message type (msgType): 1 byte, defined as follows:

0x1f: Bluetooth WiFi network configuration, used for configuring the WiFi module

■ length :

APP sends: content length (n) + check (4)

Device response: 1 + content length (n)

■ crc32 check (checkcode): 4 bytes define the starting value of CRC32 check, which can be replaced with any 4 bytes

A representation, such as 0xFFFFFFFF.

■ Status code (status): 1 byte, defined as follows:

0x00 :success

0x01 :error

1、蓝牙 WiFi 配网 / Bluetooth WiFi provisioning

header	msgType	length	Wifi Name	分隔符 Separator	WiFi PassWord	checkcode
0xcd	0x1f	2 个字节高位在前 2 bytes with the high-order byte first	以双引号包含 Enclosed in double quotation marks	逗号 一个字节 comma, a byte	以双引号包含 Enclosed in double quotation marks	crc32 校验 可以用4 个 FF 字节代替 CRC32 check It can be replaced with 4 FF bytes

比如手机连接的 WiFi 路由器 (2.4G) 名称: QWYSE-2.4G

密码: q20160301

则 APP 发送给监测带或者网关的数据格式内容为:

"QWYSE-2.4G","q20160301"

加上帧头、类型、数据长度、CRC 校验, 最终的 16 进制数据:

CD 1F 00 1C 22 51 57 59 53 45 2D 32 2E 34 47 22 2C 22 71 32 30 31 36 30 33 30 31 22 FF FF FF
FF

For example, the name of the WiFi router (2.4G) connected to the mobile phone is QWYSE-2.4G

Password: q20160301

The data format content sent by the APP to the monitoring belt or gateway is as follows:

"QWYSE-2.4G","q20160301"

After adding the frame header, type, data length, and CRC check, the final hexadecimal data is:

CD 1F 00 1C 22 51 57 59 53 45 2D 32 2E 34 47 22 2C 22 71 32 30 31 36 30 33 30 31 22 FF FF FF FF

设备返回 9 个 byte 的操作结果

The device returned an operation result of 9 bytes

header	msgType	length	status	checkcode
0xcd	0x1f	2 个字节高位在前 2 bytes with high order first	0:成功; 1:失败 0: Success; 1: Failure	crc32 校验 crc32 check

配网成功: CD 1F 00 01 00 FF FF FF FF

配网失败: CD 1F 00 01 01 FF FF FF FF

Network pairing successful: CD 1F 00 01 00 FF FF FF FF;

Network pairing failed: CD 1F 00 01 01 FF FF FF FF

备注: Note:

1、蓝牙协议，手机发送一包数据 20 字节，超过 20 字节，分包发送。

比如协议文档上的配网：

CD 1F 00 1C 22 51 57 59 53 45 2D 32 2E 34 47 22 2C 22 71 32 30 31 36 30 33 30 31 22 FF FF FF FF

第一包数据：

CD 1F 00 1C 22 51 57 59 53 45 2D 32 2E 34 47 22 2C 22 71 32

第二包数据：

30 31 36 30 33 30 31 22 FF FF FF FF

2、第二包数据发完后等待三十秒左右，会收到设备返回配网成功/失败提示。

1. Bluetooth protocol: When a mobile phone sends a packet of data, if it exceeds 20 bytes, it will be sent in multiple packets. For example, the network configuration in the protocol document:

CD 1F 00 1C 22 51 57 59 53 45 2D 32 2E 34 47 22 2C 22 71 32 30 31 36 30 33 30 31 22 FF FF FF FF First packet data:

CD 1F 00 1C 22 51 57 59 53 45 2D 32 2E 34 47 22 2C 22 71 32 Second packet data:

30 31 36 30 33 30 31 22 FF FF FF FF

After sending the second packet of data, wait for about 30 seconds, and you will receive a prompt from the device indicating whether the network pairing is successful or unsuccessful.

2、蓝牙配置服务器域名和端口号（或者 IP 地址和端口号）

Bluetooth configuration server domain name and port number (or IP address and port number)

header	msgType	length	域名/IP 地址 Domain name/ IP address	分隔符 Separator	端口号 port number	checkcode
0xcd	0x23	2 个字节 高位在前 2 bytes with high order first	以双引号包含 enclosed in double quotation marks	逗号 一个字节 comma, One byte	以双引号包含 enclosed in double quotation marks	crc32 校验 可以用4 个 FF 字 节代替 crc32 check It can be replaced with 4 FF bytes

连接域名和端口号：

比如需要连接的服务器域名：sn.liaxyzz-ai.com

端口号：80

则小程序、APP 发送给监测带或者网关的数据格式内容为：

"sn.liaxyzz-ai.com","80"

加上帧头、类型、数据长度、CRC 校验，最终的 16 进制数据：

CD 23 00 1C 22 73 6E 2E 6C 69 61 78 79 7A 7A 2D 61 69 2E 63 6F 6D 22 2C 22 38 30 22 FF FF FF

Connect to the domain name and port number:

For example, the server domain name that needs to be connected is: sn.liaxyzz-ai.com

Port number: 80

The data format content sent by mini-programs or apps to the monitoring belt or gateway is as follows:

"sn.liaxyzz-ai.com","80"

After adding the frame header, type, data length, and CRC check, the final hexadecimal data is:

CD 23 00 1C 22 73 6E 2E 6C 69 61 78 79 7A 7A 2D 61 69 2E 63 6F 6D 22 2C 22 38 30 22 FF FF FF

连接 IP 地址和端口号：

比如需要连接的服务器 IP 地址为：39.101.189.76

端口号：90

则小程序、APP 发送给监测带或者网关的数据格式内容为：

"35.301.189.76","90"

加上帧头、类型、数据长度、CRC 校验，最终的 16 进制数据：

CD 23 00 18 22 33 35 2E 33 30 31 2E 31 38 39 2E 37 36 22 2C 22 39 30 22 FF FF FF FF

Connect IP address and port number:

For example, the IP address of the server to be connected is: 39.101.189.76

Port number: 90

The data format content sent by mini programs or apps to the monitoring belt or gateway is as follows:

"35.301.189.76","90"

Including the frame header, type, data length, and CRC check, the final hexadecimal data is:

CD 23 00 18 22 33 35 2E 33 30 31 2E 31 38 39 2E 37 36 22 2C 22 39 30 22 FF FF FF FF

返回 9 个 byte 的操作结果

Return the operation result of 9 bytes

header	msgType	length	status	checkcode
0xcd	0x23	2 个字节高位在前 2 bytes with high order first	0:成功; 1:失败 0: Success; 1: Failure	crc32 校验 crc32 check

配置成功: CD 23 00 01 00 FF FF FF FF

配置失败: CD 23 00 01 01 FF FF FF FF

Configuration successful: CD 23 00 01 00 FF FF FF FF

Configuration failed; CD 23 00 01 01 FF FF FF FF

备注:

1、同蓝牙WiFi 配网，手机发送一包数据 20 字节，超过 20 字节，分包发送。

Note:

1. For Bluetooth and WiFi network configuration, the mobile phone sends a packet of data with 20 bytes. If it exceeds 20 bytes, it will be sent in packets.