

# SKB376AT 指令集/ SKB369 AT Instruction and Examples

## 文档信息/Document Information

标题/Title	SKB376 AT 指令集/SKB376 AT Instruction and Examples	
制作人/Author	杜攀/Duke	
文档类型/Document type	AT 指令集/ AT Instruction	
文档编号/Document number	SL-2205247	
版本和日期/Version and Date	V1.01	2-May-2022
披露限制/Disclosure restriction	公开/Open	

## 修订历史/Revision History

版本 Version	描述 Description	制作人 Maker	日期 Date
V1.01	初始发布/Initial Release	Duke	2022.03.02

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## 一、功能引脚/Pin function

PIN	类型/Type	说明/Description
P0.03	UART TXD	默认串口输出端/Default serial port output
P0.06	UART RXD	默认串口输入端/Default serial port input
P0.16	GPIO	连接状态，引脚默认高电平，作为从机被连接后低电平，断开后高电平 /Connection status, pin default high level, becomes low level after being connected as slave, and restores high level after disconnecting
P0.17	GPIO	Notify 使能引脚，默认高电平，作为从机连接后可进行通信时低电平/Notify enable pin, default high level, becomes low level when the slave is connected to communicate
P0.18	GPIO	蓝牙模块广播状态引脚，广播:500ms 反转一次；无广播：低/Bluetooth module broadcast status pin, broadcast :500ms reversal; No broadcast: low

## 二、默认参数/Default parameters

### 2.1 蓝牙默认参数/Bluetooth Default parameters

广播名称/Name of advertising: K+MAC 地址后 6 位

发射功率/Transmission power: 0dBm

广播间隔/Advertising interval: 500ms

广播状态/State of advertising: 开启 /Open

串口状态/serial port state: 开启/Open

### 2.2 串口默认参数/Serial port Default Parameters

波特率/Baud rate: 115200 bps

引脚/PIN: TX: P0.03 RX: P0.06

数据位/Data bits: 8 位/ 8 bit

校验位/Parity bit: 无

停止位/Stop bit: 1 位/ 1 bit

流控/Flow control: 无

## 三、蓝牙广播数据解析/Bluetooth broadcast data parsing

长度/Length	类型/Type	类型内容/Value	描述/Describe
2	0x01	0x06	
10	0x09	0x34B595F4546523332	蓝牙名称/Bluetooth name
17	0X07	0x6E400001B5A3F393E 0A9E50E24DCCA9E	UUID
11	0xFF	0x11310212003C8430A 919	>Company:Reserved ID 0212->固定字节/Fixed bytes 003C8430A919->MAC 地址/MAC address

## 四、蓝牙 AT 指令解析/Bluetooth AT Command parsing

### 4.1 AT 指令格式/AT Command format

指令串由五个部分构成: 指令头、指令、参数连接符、 [参数]、结束符, 指令头为:"AT+", 参数连接符为 "=", 结束符为"\r\n", 参数连接符、参数为可选项(即可以带参数、也可以不带参数), 当指令串携带有参数则表示设置指令, 若不带参数则表示查询指令。

The Command string consists of five parts: Command header, Command, parameter connector, [parameter], and terminator. The Command header is "AT+", the parameter concatenator is "=", and the end character is "\r\n". The parameter concatenator and parameter are optional (either with or without parameters). If the Command string contains parameters, it indicates that the Command is set; If it does not, it indicates that the Command is queried.

举例/For example:

设置广播间隔指令/Sets the broadcast interval command: **AT+ADVINTVL=1000\r\n**

查询广播间隔指令/Query broadcast interval instruction: **AT+ADVINTVL\r\n**

## 4.2 通用命令/General command

### 4.2.1 获取所有指令/Get all instructions: AT+? or AT+HELP

指令/Command	样例/Example	可能返回的结果/Possible results returned	说明/Explain
AT+? or AT+HELP	AT+?\r\n AT+HELP\r\n	1. AT+? or AT+HELP -Get AT oommands help. 2. AT+VER -Show Firmware version. 3. AT+MAC -Get device MAC address. 4. AT+PEER -Get peer device MAC address when in connection. 5. AT+RESET -Reset the module by software. 6. AT+FACTORY -Restore factory parameters. 7. AT+STATUS -Get current parameters. 8. AT+DISCON= -Disconnect to peer device when in connection. 9. AT+BAUD=<baudrate> -Set or Get UART's baudrate in bps unit. -Could be 2400/4800/9600/14400/19200/38400/57600/115200/230400/460800. 10. AT+TXPWR=<tx power> -Set or Get Radio TX power in dBm unit. -Could be 2/0/-3/-8/-13/-19. 11. AT+DEV_NAME=<name> -Set or Get Modify device's name. -Length of name less than 12. 12. AT+ADVINTVL=<interval> -Set or Get Modify advertisement interval in ms unit. -Interval=[20'5000]. 13. AT+ADVUID=<uuid> -Set or Get uuid, Length: 12 byte.	获取模块可支持的所有指令集/Gets all command sets supported by the module

### 4.2.2 获取固件版本/Obtaining the Firmware Version: AT+VER

指令/Command	样例/Example	可能返回的结果/Possible results returned	说明/Explain
AT+VER	AT+VER\r\n	Ver:SYD8811_UART.00.03	获取模块固件版本信息 /Obtain the module firmware version information

### 4.2.3 获取蓝牙 MAC/Get device MAC address: AT+MAC

指令/Command	样例/Example	可能返回的结果/Possible results returned	说明/Explain
AT+MAC	AT+MAC\r\n	[DA]00:3C:84:30:A9:19	获取蓝牙 MAC 地址/Get the Bluetooth MAC address

### 4.2.4 获取连接设备的 MAC 地址/Obtain the MAC address of the connected module:

#### AT+PEER

指令/Command	样例/Example	可能返回的结果/Possible results returned	说明/Explain
AT+PEER	AT+PEER\r\n	1. 未连接设备/Unconnected device: [DA]00:00:00:00:00:00  2. 已连接设备/Connected devices: [DA]65:AC:42:73:81:A9	获取与模块连接的蓝牙设备的 MAC 地址/Gets the MAC address of the Bluetooth device connected to the module

#### 4.2.5 复位模块/Reset the module: AT+RESET

指令/Command	样例/Example	可能返回的结果/Possible results returned	说明/Explain
AT+RESET	AT+RESET\r\n	[DA]Reset OK	复位蓝牙模块/Reset the Bluetooth module

#### 4.2.6 恢复出厂设置/Factory data reset: AT+FACTORY

指令/Command	样例/Example	可能返回的结果/Possible results returned	说明/Explain
AT+FACTORY	AT+FACTORY\r\n	[DA]Factory OK	使模块恢复出厂时的设置/Restore the module to its factory Settings

#### 4.2.7 获取模块状态/Obtaining module status: AT+STATUS

指令/Command	样例/Example	可能返回的结果/Possible results returned	说明/Explain
AT+STATUS	AT+STATUS\r\n	[DA]115200, SKY_EFR32, 200, 0	其数据组成为: 波特率, 蓝牙名称, 广播间隔, 发射功率/ Its data composition is: baud rate, Bluetooth name, broadcast interval, transmission power

#### 4.2.8 断开对等蓝牙设备/Disconnect the peer Bluetooth device: AT+DISCON

断开对等蓝牙设备: AT+DISCON=s\r\n s:作为从机断开

Disconnect the peer Bluetooth device: AT+DISCON=s\r\n s:slave role

指令/Command	样例/Example	可能返回的结果/ Possible results returned	说明/Explain
AT+DISCON	AT+DISCON=s\r\n	1. 设置成功/Successfully set: [DA]Set OK [DA]Disconnected  2. 设置失败/Setup failed: [DA]ERR: 40004	1. 断开对等蓝牙设备/Disconnect to peer Bluetooth devices device 2. 错误码/Error code: 40004: 无效指令(未连接设备时发送此指令)/Invalid instruction (send this instruction when the device is not connected)

#### 4.2.9 查询/设置串口波特率/Query and set the baud rate of the serial port:

##### AT+BAUD

1. 可查询当前波特率，或从固定波特率中选择一项设置为当前波特率/ You can query the current baud rate or select a fixed baud rate to set the current baud rate
2. 设置后须复位生效/ Reset to take effect after setting

指令/Command	样例/Example	可能返回的结果/ Possible results returned	说明/Explain
AT+BAUD	查询/Query: AT+BUAD\r\n 设置/Set: AT+BUAD=115200\r\n	3. 查询/Query: <pre>[DA]Baud:115200</pre> 2. 设置成功/Successfully set: <pre>[DA]Set OK</pre> 3. 设置失败/Setup failed <pre>[DA]ERR:40002</pre>	1. 查询/设置串口波特率/Query and set the baud rate of the serial port 2. 可选项/Options: 2400/4800/9600/14400/ 19200/38400/57600/ 115200/230400/460800 4. 设置后须复位后生效/Reset to take effect after setting 5. 错误码/Error code: 40002: 参数错误/ parameter error

#### 4.2.10 查询/设置发射功率/Query or set the transmitted power: AT+TXPWR

指令/Command	样例/Example	可能返回的结果/ Possible results returned	说明/Explain
AT+TXPWR	查询/Query: AT+TXPWR\r\n 设置/Set: AT+TXPWR=0\r\n	1. 查询/Query: <pre>[DA]TxPower:0</pre> 2. 设置成功/Successfully set: <pre>[DA]Set OK</pre> 3. 设置失败/Setup failed: <pre>[DA]ERR:40002</pre>	1. 查询/设置发射功率/Query and set the transmitted power 2. 可选项/Options: -20/-16/-12/-8/-4/0/2/4/6 3. 错误码/Error code: 40002: 参数错误/parameter error



#### 4.2.11 查询/设置广播名称/Query/Set the broadcast name: AT+DEV\_NAME

指令/Command	样例/Example	可能返回的结果/ Possible results returned	说明/Explain
AT+DEV_NAME	查询/parameter error: AT+DEV_NAME\r\n 设置: AT+DEV_NAME=SKY\r\n	1. 查询/Query: <pre>[DA]Name:SKY_EFR32</pre> 2. 设置成功/Successfully set: <pre>[DA]Set OK</pre> 3. 设置失败/Setup failed: <pre>[DA]ERR:40003</pre>	1. 查询/设置广播名称 /Query/Set the broadcast name 2. 范围: 名称最长为 20 字节 /Range: The maximum length of the name is 20 bytes 3. 错误码/Error code: 40003: 参数长度错误 /Parameter length error

#### 4.2.12 查询/设置广播间隔/Query or set the broadcast interval: AT+ADVINTVL

指令/Command	样例/Example	可能返回的结果/ Possible results returned	说明/Explain
AT+ADVINTVL	查询/Query: AT+ADVINTVL\r\n 设置/Set: AT+ADVINTVL=500\r\n	1. 查询/Query: <pre>AdvIntval:500</pre> 2. 设置成功/Successfully set: <pre>[DA]Set OK</pre> 3. 设置失败/Successfully set: <pre>[DA]ERR:40002</pre>	1. 查询/设置广播间隔/Query or set the broadcast interval 2. 设置范围/The set range: 20ms~10000ms 步进/step value: 10ms 3. 错误码/Error code: 40002: 参数错误/parameter error

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