深新锐蓝牙协议

修改历史：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 版本号 | 创建人 | 修改内容 | 评审人 | 时间 |
| 1.0 | 廖华兴 | 1. 增加心率的历史记录 |  | 2017/04/26 |
| 1.1 | 廖华兴 | 1. 0x9B增加系统标识、心率检测模式 2. 0xFF增加恢复出厂设置 |  | 2017/05/05 |
| 1.2 | 廖华兴 | 1. 增加设备访问app数据 2. 增加手机APP设置天气 | 钱锋，廖华兴 | 2017/05/18 |
| 1.3 | 廖华兴 | 1. 修改久坐闹钟参数（重复时间单位、范围和默认值） | 钱锋，廖华兴 | 2017/6/22 |
| 1.4 | 廖华兴 | 1. 修改饮水闹钟参数（增加闹钟重复周期） 2. 修改普通闹钟、饮水闹钟、久坐闹钟、离线闹钟的重复周期的默认值为工作日0x3E | 钱锋，廖华兴 | 2017/6/22 |
| 1.6 | 廖华兴 | 1. 0xFF增加心率、体温自动测试设置 2. 增加0xB1命令，支持离线传感器数据同步 | 钱锋，廖华兴 | 2017/8/7 |
| 1.7 | 廖华兴 | 1. 修改0xB1命令的数据格式 | 钱锋，廖华兴 |  |
| 1.8 | 钱锋 | 1. 修改0xB1命令参数，增加传感器类型定义 | 钱锋，廖华兴 |  |
| 1.9 | 廖华兴 | 1. 扩展0xFF命令支持自动测试血压开关 | 钱锋，廖华兴 | 2017/10/18 |
| 1.9.1 | 廖华兴 | 1. 扩展0xE3命令，支持电量上报 |  | 2017/11/20 |
| 1.9.2 | 廖华兴 | 1. 扩展0xA4命令，支持Snapchat消息类型 2. 扩展0xFF命令，支持新的IOS提醒类型开关 |  | 2017/12/28 |
| 2.0 | 廖华兴 | 1. 自定义UI命令 2. 增加天气命令 3. 增加GPS数据同步命令 4. 扩展0x9F命令，扩展参数支持拒接来电 5. 扩展0x9B命令，支持第二组勿扰时段 |  | 2018/1/19 |
| 3.0.0 | 廖华兴 | 1. 更新自定义UI参数说明 2. 修改天气协议 3. 修改同步GPS详细运动数据中的速度定义说明以及运动类型 |  |  |

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1. **Hardware description**

This file provides the communication protocol for wristband , hardware statement, etc.

* 1. **Bluetooth：**

Support Bluetooth Low Energy 4.0 device, eg. IOS 6.0 and above iPhone, iPad, iPod, or other Bluetooth device with BLE 4.0

Bluetooth module provides following service and characteristic value to communicate :

* + 1. **Data Channel（Service ID：0xFFF0）**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Characteristic UUID | Properties | Total Bytes | Defaults | Remark |
| FFF1 | Write | 20 | N/A | Basic |
| FFF3 | Write | 20 | N/A | Advance |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 硬件能力表**Bytes no.** | **Value(Hex):Bit** | | | | | | | | **Description** | **Remark** |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| #1 | Heart Rate | Blood Pressure | SPO2H | 温度 |  |  |  |  |  | 支持的传感器类型 |
| #2 |  |  |  |  |  |  |  |  |
| #3 |  |  |  |  |  |  |  |  |
| #4 |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 运动模式**Bytes no.** | **Value(Hex):Bit** | | | | | | | | **Description** | **Remark** |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| #1 | Swimming | Stair | Bicycle | Walk | 跑步 | 跳绳 | 开合跳 | 仰卧起坐 |  | 运动模式序号表示(对应下表的序号，从1开始)：  0 普通  1 游泳  2 爬楼梯  3 自行车，  … |
| #2 | Dance | Basketball | Yoga | Golf | Climb | Martial | Long Sleep |  |
| #3 |  |  |  |  |  |  |  |  |
| #4 |  |  |  |  |  |  |  |  |

* + 1. **bluetooth advertisment:**

增加一个广播属性 内容为：本机的BLE MAC Address

* 1. **Optional USB port：**

Use a USB cable to check the wristband data on PC soft ware.

Serial port parameter：115200.n.8.1(115200bps, no parity, data bits = 8, stop bit=1)

* 1. **Remark**

*1*、*The “XX” in this file can be arbitrary number*

*2*、*Based on the data format in this file, if data is wrong, then returns failure (Negative Response ).*

1. **Communication protocol**
   1. **Message Structure.**

Message structure for Data Transmission and Reception is as below:

|  |  |  |  |
| --- | --- | --- | --- |
| Opcode | Length | Parameters | Checksum |
| 1byte | 1bytes | N bytes(<200) | 1 bytes |

**Opcode**: Operation code, to define different operation order according to different service demand. Refer to Opcode Table。

**Length**: the length of Parameters’ byte, the max is 200.

**Parameters**：define different transmission and reception parameter according to Request&Response data.

**Checksum**： do XOR operation to all data in the parameters.

* 1. **Basic Channel suppurted Opcode Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Opcode | Description | Service identified positive response | Negative response code | Remark |
| 0X83 | Ser personal info | 0X23 | 0X03 |  |
| 0XC4 | Read sport&sleep data curve graph(by week) | 0X24 | 0X04 |  |
| 0XC6 | Read device data | 0X26 | 0X06 |  |
| 0X87 | Reset to defaults | 0X27 | 0X07 |  |
| 0X88 | Clear data | 0X28 | 0X08 |  |
| 0XC2 | Set device time | 0X22 | 0X02 |  |
| 0X89 | Read device time | 0X29 | 0X09 |  |
| 0XF1 | 手机APP提醒手环 | 0XF1 |  |  |
| 0xFA | 读取设备蓝牙地址 | 0xFA |  |  |
| 0xFB | 读取设备FW版本号 | 0xFB |  |  |
| 0xFC | 进入OTA模式 | 无 |  |  |
| 0xFD | 设置闹钟名称 | 0xFD |  |  |
| 0xFE | 设置日程离线闹钟 | 0xFE | 0x0E |  |
| 0x84 | 设置饮水 |  |  |  |
| 0x86 | 久坐 |  |  |  |
| 0xF2 | 天气 | 0xF2 |  |  |
| 0xF3 | 防丢 | 0xF3 |  |  |
| 0xF5 | 拍照 |  |  |  |
| 0xF6 | 音乐播放 |  |  |  |
| 0X91 | 设置运动参数 | 0X31 | 0X11 |  |
| 0X92 | 设置人体特征阈值  (如：心率告警值) | 0X32 | 0X12 |  |
| 0X93 | 切换实时传感器检测模式 | 0X33 | 0X13 |  |
| 0X94 | 切换运动检测模式 | 0X34 | 0X14 |  |
| 0X96 | 清除运动数据 | 0X36 | 0X16 |  |
| 0X97 | 蓝牙设备上报运动实时数据 | 0X37 | 0X17 | 设备通知APP |
| 0x98 | 吃药提醒 | 0x38 | 0x18 |  |
| 0XC5 | Read Heart rate | 0X25 | 0X05 |  |
| 0x99 | 蓝牙设备上报传感器实时数据 |  |  | 设备通知APP |
| 0x9A | 设置左右手 | 0x2A | 0x1A |  |
| 0x9B | 设置设备参数 | 0x2B | 0x1B | 建议：设置左右手可以合并 |
| 0x9C | 设置/验证解锁密码 | 0x2C | 0x1C |  |
| 0x9D | 设置自动睡眠时间 | 0x2D | 0x1D |  |
| 0x9E | 设置手环场景 | 0x2E | 0x1E |  |
| 0x9F | 设备上报操作命令 | 0x2F | 0x1F |  |
| 0xFF | 控制手环 | 0xFF |  |  |
| 0xA1 | 控制手环ANCS | 0xA1 |  |  |
| 0xA2 | 同步运动数据 | 0xA2 |  |  |
| 0xA3 | 同步运动心率数据 | 0xA3 |  |  |
| 0xA4 | 手机APP提醒手环 | 0xA4 |  |  |
| 0xA5 | 同步运动详细数据 | 0xA5 | 0x45 |  |

* 1. **Checksum：**

|  |  |  |  |
| --- | --- | --- | --- |
| Opcode | Length | Parameters | checksum |
| 1byte | N bytes |  | 1bytes |
| OPCODE | LENGTH | BYTE1/BYTE2/BYTE3/BYTE4/BYTE5 | CHECKSUM |

CHECKSUM=BYTE1xor BYTE2 Xor BYTE4 xor BYTE5

1. **Service Description**
   1. **Read device system time**
      1. **Description**

This service is used to read device system date and time. Meanwhile this is one of the service that Use one of them to set up communication, please check “Set device system time” for the other one

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bytes no.** | **Value(Hex)** | **Description** | **Remark** |
| #1 | **0X89** | Read Device time |  |
| #2 | **0X00** | Data Length |  |
| #3 | **XX** | Checksum |  |

* + 1. **Positive response**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bytes no.** | **Value(Hex)** | **Description** | **Remark** |
| #1 | **0X29** | Read Device time successfully |  |
| #2 | **0X07** | Data Length |  |
| #3 | **XX** | year(0~99) | System date and time on  the device |
| #4 | **XX** | Month (1~12) |
| #5 | **XX** | date |
| #6 | **XX** | Hour (0~23) |
| #7 | **XX** | Minute (0~59) |
| #8 | **XX** | Second (0~59) |
| #9 | **XX** | Week (1~7) |
| #10 | **XX** | 当前屏幕方向 | 0-正屏 1-反屏 |
| #11 | **0X00** | checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bytes no.** | **Value(Hex)** | **Description** | **Remark** |
| #1 | **0X09** | Fail to read Device System time |  |
| #2 | **0X00** | Data Length |  |
| #3 | **XX** | Checksum |  |

* 1. **Set device system time**
     1. **Description**

This service is used to set device system date and time. Meanwhile this is one of the service that build

communication with device, please check “Read device system time” for the other one

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bytes no.** | **Value(Hex)** | **Description** | **Remark** |
| #1 | **0XC2** | Set device system time |  |
| #2 | **0X07** | Data Length |  |
| #3 | **XX** | year(0~99) | System data and time  （Data must meet the  data and time format） |
| #4 | **XX** | Month (1~12) |
| #5 | **XX** | date |
| #6 | **XX** | Hour (0~23) |
| #7 | **XX** | Minute (0~59) |
| #8 | **XX** | Second (0~59) |
| #9 | **XX** | Week (1~7) |
| #10 | **0X00** | checksum |  |

* + 1. **Positive response**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bytes no.** | **Value(Hex)** | **Description** | **Remark** |
| #1 | **0X22** | Set device system time  success |  |
| #2 | **0X04** | Data Length |  |
| #3-#6 | XX/XX/XX/XX | Set password | The password for BT  match |
| #7 | **0X00** | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bytes no.** | **Value(Hex)** | **Description** | **Remark** |
| #1 | **0X02** | Fail to Set device system time |  |
| #2 | **0X04** | Data Length |  |
| #3 | XX/XX/XX/XX | checksum |  |

* 1. **Set personal information**
     1. **Description**

This service is used to set some necessary information that the working device need. Eg. Height, weight, Alarm, idle alert, etc.

* + 1. **Command Execution**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bytes no.** | **Value(Hex)** | **Description** | **Remark** |
| #1 | **0X83** | Set personal info |  |
| #2 | **0X2F** | Data Length | 47bytes |
| #3-#7 | **XX/XX.../XX** | Alarm 1 | Refer to “Alarm  parameters” |
| #8-#12 | **XX/XX.../XX** | Alarm 2 |
| #13-#17 | **XX/XX.../XX** | Alarm 3 |
| #18-#22 | **XX/XX.../XX** | Alarm 4 |
| #23-#27 | **XX/XX.../XX** | Idle Alert | Refer to “Idle Alert” |
| #28-#34 | **XX/XX.../XX** | Activity Alert | Refer to “Activity Alert” |
| #35-#49 | **XX/XX.../XX** | others | Refer to “Others” |
| #50 | **XX** | checksum |  |

* + - 1. **Alarm Parameters**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | XX | Alarm switch | 0 is off，1 is on |
| #2 | XX | Alarm hour | Alarm time |
| #3 | XX | Alarm minute |
| #4 | XX | Smart clock reminding  (minutes) | 0~30 |
| #5 | Bit0: Save, Value is 0  Bit1: Mon  Bit2: Tues  Bit3: Wed  Bit4: Thurs  Bit5: Fri  Bit6: Sat  Bit7: Sun | The alarm clock repeat  Week | 1 is Repeat can make it  on;  0 is Repeat can make it  off;  默认值：0x3E 工作日 |

* + - 1. **Idle Alert**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | XX | Idle Alert Switch | 0 is off，1 is on |
| #2 | XX | Start Time-Hour(0~23) | Idle |
| #3 | XX | End Time-Hour(0~23) |  |
| #4 | XX | Smart clock reminding  (minutes) | 0~240 |
| #5 | Bit0: Save, Value is 0  Bit1: Mon  Bit2: Tues  Bit3: Wed  Bit4: Thurs  Bit5: Fri  Bit6: Sat  Bit7: Sun | The alarm clock repeat  Week | 1 is Repeat can make it  on;  0 is Repeat can make it  off; |

* + - 1. **Activity(unused, reserved)**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | XX | Project Switch | 0 is off，1 is on |
| #2 | XX | Project Type |  |
| #3 | XX | Start Time-Hour(0~23) | Working time range for  project(activity)  Remark：Start time and  End time should not be  the same.。 |
| #4 | XX | Start Time-Minute(0~59) |
| #5 | XX | End Time-Hour(0~23) |
| #6 | XX | End Time-Minute(0~59) |
| #7 | Bit0: Save，Value is 0  Bit1: Mon  Bit2: Tues  Bit3: Wed  Bit4: Thurs  Bit5: Fri  Bit6: Sat  Bit7: Sun | Repeat Week for Project  (activity) | 1 is on  0 is off |

* + - 1. **Others**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | XX | Gender | 0 is female,1 is male |
| #2 | XX | Height(Unit: cm) | Value Range:：0~250 |
| #3 | XX | Weight(Unit: kg) | Value Range:：0~200 |
| #4 | XX | Stride(Unit: cm) | Value Range:：0~150 |
| #5 | XX | Running Stride(Unit: cm) | Value Range:：0~200 |
| #6 | XX（0~23） | Sleep Start Time-Hour | Remark:  1. Conform to the time  format  2.Start Time for sleep and  wake up cannot be the  same. |
| #7 | XX（0~59） | Sleep Start Time-Minute |
| #8 | XX（0~23） | Wake-up Start Time-Hour |
| #9 | XX（0~59） | Wake-up Start  Time-Minute |
| #10~#12 | XX/XX/XX | Goal Steps | Value Range:：1-999,999 |
| #13 | XX | Bluetooth Auto Close  Switch | 1 is on 0 is off |
| #14 | XX | Time for BT Auto  Close(minute) | 0~120 |
| #15 | XX | Anti Lost | 0-     Deactive  1-     Active |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x23 | Successfully set personal  information |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x03 | Fail in setting personal  information |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Cheacksum |  |

* 1. **Read Sports data Curve Graph**
     1. **Description**

This service is used to read the movement point every hour(record data every 2 minutes), movement curve gragh.

About the whole hour can be drawed according to every movement point.

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xC4 | Read movement data curve gragh |  |
| #2 | 0x03 | Data Length |  |
| #3 | XX | Days of the week | 1~7 stands for Monday to  Sunday accordingly. |
| #4 | XX | Hour time | 0~23 |
| #5 | XX | The numbers of reading  hour | 1~3 |
| #6 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x24 | Read movement data curve successfully |  |
| #2 | 0xB7 | data length | 每10分钟2个byte来保存步数  App根据请求的时间长度，判断返回长度是否使用压缩协议 |
| #3~#6 | XX/XX | date | Year(1byte)+month(1byte)+day(1byte)+hour(1byte) |
| #7~#12 | XX/XX | The first data Data\_1 | XX/XX means MSB/LSB |
| … | XX/XX | …. |
|  |  |  |
| #186 | XX | checksum |  |

Note: if no movement data will return to 0x24 0x00 0x00using 16 bits of data to represent the steps in 2 minutes or the movements during sleeping,using（Big Endian），#6~#185, total 180 data, record 3 hours data.

|  |  |  |  |
| --- | --- | --- | --- |
| MSB | | | LSB |
| Bit7 | Bit6 | Bit5-Bit0 | Bit7-Bit0 |
| **Data type**  **00:Daily mode**  **10:Sports mode**  **01:Sleep mode** | | Steps or movements during sleeping] | |

MSB/LSB=0xFFFF means invalid data.

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x04 | Fail in reading movement  data curve gragh |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **Read Device Data**
     1. **Description**

读取手环当前步数信息

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xC6 | 读取手环当前步数信息 |  |
| #2 | 0x01 | Data length |  |
| #3 | 0x08 | Local Identifier (LID) |  |
| #4 | 0x08 | checksum |  |

* + 1. **Positive Response (Newly added)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Bytes no.** | **Value(Hex)** | **Description** | **Remark** |
| #1 | 0x26 | Succeed in reading device  data |  |
| #2 | 0x0D | Data Length |  |
| #3~#5 | XX/XX/XX | 步数 | 当前总步数 |
| #6~#8 | XX/XX/XX | 卡路里 | 无效 |
| #9 ~ #11 | XX/XX/XX | 距离 | 无效 |
| #12 | XX | checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x06 | Fail in reading device data |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | checksum |  |

* 1. **Reset to Defaults**
     1. **Description**

This command is used to restore the factory default settings for the device, including all parameters in the personal information settings.

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x87 | Reset to defaults |  |
| #2 | 0x00 | Data Length |  |
| #3 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x27 | Succeed in resetting to  default |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x07 | Fail in resetting to defaults |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **Clear Data**
     1. **Description**

This command is used to clear sports data record, please use with caution in, otherwise all the movement data will be cleared! ! !

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x88 | Clear all the data |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x28 | Succeed in clearing all  the data |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x08 | Fail in clearing all the data |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **设置运动参数**
     1. **Description**

设置不同运动模式下的配置参数。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x91 | 设置运动参数 |  |
| #2 | 0x11 | Data Length |  |
| #3-#6 | XX/XX/XX/XX | 运动模式 | 参考硬件能力表中的运动模式 |
| #7 | XX | 运动步距 |  |
| #8 | XX | 运动检测超时，单位（分钟） |  |
| #9-#19 | 0x00 | Reserved |  |
| #20 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x31 | Succeed in 设置运动参数 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x11 | Fail in 设置运动参数 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **设置人体特征告警阈值**
     1. **Description**

设置各种检测人体特征传感器的阈值，用于紧急情况下的告警通知。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x92 | 设置运动参数 |  |
| #2 | 0x11 | Data Length |  |
| #3-#6 | XX/XX/XX/XX | 传感器类型 | 参考硬件能力表中的传感器类型 |
| #7 | XX | 运动检测超时，单位（分钟） |  |
| #8-#19 | 0x00 | Reserved |  |
| #20 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x32 | Succeed in 设置人体特征阈值 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x12 | Fail in 设置人体特征阈值 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **切换实时传感器检测状态**
     1. **Description**

切换各种检测人体特征传感器实时检测。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x93 | 启动实时监测 |  |
| #2 | 0x11 | Data Length |  |
| #3-#6 | XX/XX/XX/XX | 传感器类型 | 参考硬件能力表中的传感器类型 |
| #7 | XX | 启动或者停止 | 0x01：启动  0x00：停止  0x02 : 配置 |
| #8 | XX | 是否打开实时数据上传 | 0x01：启动(使用0x99上报数据)  0x00：停止 |
| #9 | XX | 检测次数 | 1 ~ 0xFF  0xFF: 无限次 |
| #10-#19 | 0x00 | Reserved |  |
| #20 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x33 | Succeed in 切换实时传感器检测状态 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x13 | Fail in 切换实时传感器检测状态 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **切换运动检测模式**
     1. **Description**

在多种运动模式间切换任意一种，且只能一种。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x94 | 切换运动检测模式 |  |
| #2 | 0x11 | Data Length |  |
| #3-#6 | XX/XX/XX/XX | 运动模式 | 参考硬件能力表中的运动模式 |
| #7 | XX | 是否打开实时数据上传 | 0x01：启动  0x00：停止 |
| #8-#19 | 0x00 | Reserved |  |
| #20 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x34 | Succeed in 切换运动检测模式 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x14 | Fail in 切换运动检测模式 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **清除运动数据（暂时不用）**
     1. **Description**

清除所有运动数据，小心使用。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x96 | 清除运动数据 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x36 | Succeed in 清除运动数据 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x16 | Fail in 清除运动数据 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **蓝牙设备上报运动实时数据**
     1. **Description**

蓝牙设备主动上报运动实时数据。

* + 1. **Performance**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Bytes no. | | Value(Hex) | Description | | | Remark |
| #1 | | 0x97 | 上报运动实时数据 | | |  |
| #2 | | 0x06 | Data Length | | |  |
| #3-#6 | | XX/XX/XX/XX | 运动模式 | | | 参考硬件能力表中的运动模式 |
| #7 | XX | | |  | 运动子类型（保留） | | |
| #8-#11 | XX/XX/XX/XX | | |  | 运动数据 | | |
| #12 | | XX | Checksum | | |  |

* 1. **吃药提醒**
     1. **Description**

设置吃药提醒闹钟。吃药提醒有3个闹钟时间，代表最多一天可以提醒3个吃药时间

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | XX | Alarm1 switch | 0 is off，1 is on |
| #2 | XX | Alarm1 hour | Alarm time |
| #3 | XX | Alarm1 minute |
| #4 | XX | Alarm2 switch | 0 is off，1 is on |
| #5 | XX | Alarm2 hour | Alarm time |
| #6 | XX | Alarm2 minute |
| #7 | XX | Alarm3 switch | 0 is off，1 is on |
| #8 | XX | Alarm3 hour | Alarm time |
| #9 | XX | Alarm3 minute |
| #10 | XX | Smart clock reminding  (minutes) | 0~30 |
| #11 | Bit0: Save, Value is 0  Bit1: Mon  Bit2: Tues  Bit3: Wed  Bit4: Thurs  Bit5: Fri  Bit6: Sat  Bit7: Sun | The alarm clock repeat  Week | 1 is Repeat can make it  on;  0 is Repeat can make it  off;  默认值：0x3E 工作日 |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x38 | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x18 | Fail in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **蓝牙设备上报传感器实时数据**
     1. **3.21.1 Description**

蓝牙设备主动上报传感器实时数据。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x99 | 上报传感器实时数据 |  |
| #2 | XX | Data Length |  |
| #3-#6 | XX/XX/XX/XX | 传感器模式 | 参考硬件能力表中的传感器模式 |
| #7-#19 | XX/XX | 传感器数据 | 数据格式与传感器类型相关  具体查看后面的格式定义 |
| #20 | XX | Checksum |  |

* + 1. **心率数据格式**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1-#2 | XX/XX | 心率 |  |

* + 1. **血压数据格式**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | XX | 收缩压 |  |
| #2 | XX | 舒张压 |  |

* + 1. **血氧数据格式**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | XX | 血氧值 | 仅表示百分比前面的数值  0 – 100 |

* + 1. **温度数据格式**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 温度符号 | 正数或是负数 | 0 无效  1 正数  2 负数 |
| #2 | 温度精确小数位 | 小数点位数 | 0 整数  1 精确到1位小数点  2 精确到2位小数点 |
| #3-#4 | XX/XX | 温度值 | 为避免小数点传输，该值是实际温度 \* #2 \* 10 |

* 1. **手机APP提醒手环**
     1. **Description**

手机APP提醒手环

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xF1 | 手机APP提醒手环 |  |
| #2 | 0xXX | Data Length |  |
| #3 | XX | 提醒类型1 | 参考提醒类型表的提醒类型#1 |
| #4 | XX | 提醒类型2 | （保留）参考提醒类型表的提醒类型#2 |
| #5-#19 | 0x00 | 附加信息 | 如：来电和短信提醒，可以携带电话号码。  采用字符ASCII 的hex值，目前支持0-9.  后续可兼容显示英文信息（例如通讯录中的名字）。（0x20-0x7a，不再此范围的字符使用空格符代替0x20） |
| #20 | XX | Checksum |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 提醒类型表 | **Value(Hex):Bit** | | | | | | | | **Description** | **Remark** |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| #1 | 来电提醒 | 短信提醒 | 邮件提醒 | 日程提醒 | 手机低电提醒 | FACEBOOK | TWITTER | 无 | 支持的提醒类型 | 0xFF 0xFF  表示未知类型 |
| #2 | 微信 | QQ | Skype | Line | Whatsapp | 未接来电 | 未读短信 | 人名 |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xF1 | Succeed in手机APP提醒手环 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **设置屏幕方向**
     1. **Description**

手机APP设置手环正反屏

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x9A | 手机APP设置手环左右手显示 |  |
| #2 | 0x01 | Data Length |  |
| #3 | XX | 正反屏，正屏00，反屏01 |  |
| #4 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x2A | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x1A | Fail in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | checksum |  |

* 1. **设置设备参数**
     1. **Description**

手机APP设置手环参数

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x9B | 手机APP设置手环参数 |  |
| #2 | XX | Data Length |  |
| #3 | XX | 时间制式 | 0：12小时制  1：24小时制 |
| #4 | XX | 温度 | 0：摄氏度  1：华氏度 |
| #5 | XX | 灭屏时间设置，单位秒。 | 最小0，最大255 |
| #6 | XX | 正反屏，正屏00，反屏01 | 可替代0x9A |
| #7 | XX | 计量单位 | 1：公制  2：英制 |
| #8 | XX | 震动 | 0:马达震动关闭  1:打开  2:防丢震动关闭 |
| #9 | XX | 抬手亮屏开关 | 0:关闭  1:打开 |
| #10 | XX | 语言选择 | 0：英文  1：中文  2: 俄罗斯语  3: 乌克兰语  默认：0 |
| #11 | XX | 勿扰模式 | 0：关闭  1：打开 |
| #12 | XX | 勿扰时段开始小时 |  |
| #13 | XX | 勿扰时段开始分钟 |  |
| #14 | XX | 勿扰时段结束小时 |  |
| #15 | XX | 勿扰时段结束分钟 |  |
| #16 | XX | 横竖屏 |  |
| #17 | XX | 日期显示方式 |  |
| #18 | XX | 系统标识 | 0：Android  1：iOS |
| #19 | XX | 心率检测模式 | 0：自动测试  1：手动测试 |
| #20 | XX | 翻腕亮屏时段开始小时 |  |
| #21 | XX | 翻腕亮屏时段开始分钟 |  |
| #22 | XX | 翻腕亮屏时段结束小时 |  |
| #23 | XX | 翻腕亮屏时段结束分钟 |  |
| #24 | XX | 勿扰时段2开始小时 |  |
| #25 | XX | 勿扰时段2开始分钟 |  |
| #26 | XX | 勿扰时段2结束小时 |  |
| #27 | XX | 勿扰时段2结束分钟 |  |
| #28 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x2B | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x1B | Fail in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | checksum |  |

* 1. **设置/验证解锁密码**
     1. **Description**

手机APP设置/验证手环解锁密码

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x9C | 手机APP设置/验证手环解锁密码 |  |
| #2 | 0x06 | Data Length |  |
| #3 | XX | 00:设置  01:验证 |  |
| #4-#9 | XX | 6位字符密码（16进制ASCII码） |  |
| #10 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x2C | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x1C | Fail in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | checksum |  |

* 1. **设置自动睡眠时间**
     1. **Description**

手机APP设置自动睡眠时间

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x9D | 手机APP设置自动睡眠时间 |  |
| #2 | 0x0F | Data Length |  |
| #3 | XX | 0:Disable  1:Enable | 自动睡眠时段1 |
| #4 | XX | Start hour(0 - 23) |
| #5 | XX | Start minute(0 – 59) |
| #6 | XX | End hour(0 - 23) |
| #7 | XX | End minute(0 – 59) |
| #8 | XX | 0:Disable  1:Enable | 自动睡眠时段2 |
| #9 | XX | Start hour |
| #10 | XX | Start minute |
| #11 | XX | End hour |
| #12 | XX | End minute |
| #13 | XX | 0:Disable  1:Enable | 自动睡眠时段3 |
| #14 | XX | Start hour |
| #15 | XX | Start minute |
| #16 | XX | End hour |
| #17 | XX | End minute |
| #18 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x2D | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x1D | Fail in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | checksum |  |

* 1. **设置手环场景**
     1. **Description**

手机APP设置手环场景

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x9E | 手机APP设置手环场景 |  |
| #2 | 0x01 | Data Length |  |
| #3 | XX | 00：正常模式  01：摇一摇拍照模式  … |  |
| #4 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x2E | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x1E | Fail in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | checksum |  |

* 1. **设备上报操作命令**
     1. **Description**

设备上报操作命令

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x9F | 设备上报操作命令 |  |
| #2 | 0x01 | Data Length |  |
| #3 | XX | 0x00：挂断电话  0x 01：接听电话  … | 操作命令码 |
| #4 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x2F | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x1F | Fail in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | checksum |  |

* 1. **读取设备蓝牙地址**
     1. **Description**

读取设备蓝牙地址

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFA | 读取设备蓝牙地址 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFA | Succeed in |  |
| #2 | 0x06 | Data Length |  |
| #3-#8 | XX/XX/XX/XX/XX/XX | MAC address |  |
| #9 | XX | Checksum |  |

* + 1. **Negative Response**
  1. **读取设备FW版本号**
     1. **Description**

读取设备FW版本号

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFB | 读取设备FW版本号 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFB | Succeed in |  |
| #2 | 0x0C | Data Length |  |
| #3-#6 | XX/XX/XX/XX | 客户代码 | 不足位填充”\_” |
| #7-#10 | XX/XX/XX/XX | 产品代码 | 不足位填充”\_” |
| #11-#14 | XX/XX/XX/XX | Fw版本号 | 不足位填充”\_” |
| #15 | XX | Checksum |  |

* + 1. **Negative Response**
  1. **控制手环**
     1. **Description**

控制手环

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFF | 控制手环 |  |
| #2 | 0x11 | Data Length |  |
| #3 | XX | 操作标志 | 0：无操作  1：关闭手环  2：重启手环  3：恢复出厂设置 |
| #4 | XX | 提醒类型开关1 | 参考下表  iOS专用 |
| #5 | XX | 提醒类型开关2 | 参考下表  iOS专用 |
| #6 | XX | 提醒类型开关3 | 参考下表  iOS专用 |
| #7 | XX | 保留 |  |
| #8 | XX | 保留 |  |
| #9 | XX | 自动测试心率开关 | 0：关闭  1~255：自动测试时间间隔分钟数  比如：10表示每10分钟测试一次 |
| #10 | XX | 自动测试体温开关 | 0：关闭  1~255：自动测试时间间隔分钟数  比如：10表示每10分钟测试一次 |
| #11 | XX | 自动测试血压开关 | 0：关闭  1~255：自动测试时间间隔分钟数  比如：10表示每10分钟测试一次 |
| #12-#19 | XX |  | 保留 |
| #20 | XX | Checksum |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 提醒类型表 | **Value(Hex):Bit** | | | | | | | | **Description** | **Remark** |
| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
| #1 | 来电提醒 | 短信提醒 | 邮件提醒 | 日程提醒 | 手机低电提醒 | FACEBOOK | TWITTER | 无 | 支持的提醒类型 |  |
| #2 | 微信 | QQ | Skype | Line | Whatsapp | 未接来电 | 未读短信 | 人名 |
| #3 |  |  | Pinterest | Google+ | Snapchat | LINKEDIN | INSTAGRAM | kaKao |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFF | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **手机APP通知手环**
     1. **Description**

手机APP通知手环

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xA4 | 手机APP提醒手环 |  |
| #2 | 0xXX | state | 0:通知开始  1：通知名称  2：通知内容  3：通知结束 |
| #3-#19 | 0xXX…0xXX | Payload Content | 与state字段关联（不足填0x00）  0：参考3.27.3表  1：参考3.27.4表  2：utf8格式内容  3：内容为空 |
| #20 | XX | Checksum |  |

* + 1. **Notification title**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x00 | Reserved |  |
| #2 | 0xXX | Category ID | ANCS\_CATEGORYID\_PHONE = 0  ANCS\_CATEGORYID\_SMS = 1  ANCS\_CATEGORYID\_WEIXIN = 2  ANCS\_CATEGORYID\_MQQ = 3  ANCS\_CATEGORYID\_FACEBOOK = 4  ANCS\_CATEGORYID\_SKYPE = 5  ANCS\_CATEGORYID\_TWITTER = 6  ANCS\_CATEGORYID\_WHATISAPP = 7  ANCS\_CATEGORYID\_LINE = 8  ANCS\_CATEGORYID\_EMAIL = 9  ANCS\_CATEGORYID\_INSTAGRAM = 10  ANCS\_CATEGORYID\_LINKEDIN = 11  ANCS\_CATEGORYID\_SNAPCHAT = 12  ANCS\_CATEGORYID\_UNKNOWN = 255 |

* + 1. **Notification name**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1-#n | 0xXX…0xXX | 名称 |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xA4 | Succeed in手机APP提醒手环 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **同步运动心率数据**
     1. **Description**

同步历史运动模式下产生的数据。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xB3 | 同步运动数据 |  |
| #2 | 0x03 | Data Length |  |
| #6-#8 | XX/XX/XX | date | Year(1byte)+month(1byte)+day(1byte) |
| #9 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xB3 | Succeed in 同步运动数据 |  |
| #2 | XX | Data Length |  |
| #3 | XX | 运动模式 | 参考硬件能力表中的运动模式的序号  例如：骑车是3，计步是4，跳舞是9 |
| #4 | XX | Timespan | 间隔时长(分钟) |
| #5 | XX | Data size | 数据大小（字节）  (举例：心率是1，计步是2) |
| #6-#10 | XX/XX/XX/XX/XX | datetime | Year(1byte)+month(1byte)+day(1byte)+hour(1byte)+minute(1byte) |
| #11-#12 | XX/XX | Data length | 实际数据长度 |
| #13 - #n | XX | 心率数据  （单字节数据） | 运动心率，单位（次/分钟） |
| *#13-#n* | *XX/XX* | *计步数据*  *（双字节数据）* | *计步值，单位（步）* |
| … | … | 第k块运动数据 | 重复#3-#n的结构 |
| #XX | XX | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x43 | Fail in 同步运动心率数据 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **3.35控制手环ANCS**
     1. **3.35.1 Description**

控制手环ANCS

* + 1. **3.35.2 Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xA1 | 控制手环ANCS |  |
| #2 | 0x01 | Data Length |  |
| #3 | XX | 操作标志 | 0：关闭ANCS  1：开启ANCS |
| #4 | XX | Checksum |  |

* + 1. **3.35.3 Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xA1 | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **同步运动数据**
     1. **Description**

同步历史运动模式下产生的数据。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xA2 | 同步运动数据 |  |
| #2 | 0x00 | Data Length |  |
| #3-#19 | 0x00 | Reserved |  |
| #20 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xA2 | Succeed in 同步运动数据 |  |
| #2 | XX | Data Length |  |
| #3 | XX | 运动模式  第1块运动数据 | 参考硬件能力表中的运动模式的序号  例如：跑步是4 |
| #4-#6 | XX/XX/XX | date | Year(1byte)+month(1byte)+day(1byte) |
| #7-#8 | XX/XX | Duration | 运动数据持续的时长，单位（分钟） |
| #9-#11 | XX/XX/XX | steps | 步 |
| #12-#13 | XX/XX | Calories | 卡路里 |
| #14-#16 | XX/XX/XX | Distance | 米 |
| … | … | 第n块运动数据 | 重复#3-#16的结构，n<=12。 |
| #XX | XX | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xB2 | Fail in 同步运动数据 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **进入OTA模式**
     1. **Description**

进入OTA模式

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFC | 进入OTA模式 |  |
| #2 | 0x00 | Data Length |  |
| #n | 0x00 | Checksum |  |

* + 1. **Positive Response**
    2. **Negative Response**
  1. **设置闹钟名称**
     1. **Description**

设置闹钟名称

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFD | 设置闹钟名称 |  |
| #2 | 0xXX | Data Length |  |
| #3 | 0xXX | 闹钟序号 | 参考0X83命令的闹钟序号  【1，2，3，4】 |
| #4-#x | 0xXX..0xXX | 名称 | UTF8编码  最长10个字符（如果是中文，那么10\*3 = 30个字节，会发送两条内容到手环） |
| #n | 0xXX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFD | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | XX | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x3D | Fail in |  |
| #2 | 0x00 | Data Length |  |
| #3 | XX | Checksum |  |

* 1. **设置饮水闹钟**
     1. **Description**

设置饮水闹钟

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x84 | 设置饮水闹钟 |  |
| #2 | 0x06 | Data Length |  |
| #3 | 0xXX | 开关标志 | 0x00：关闭  0x01：打开 |
| #4 | 0xXX | 开始小时 | 0~23  默认：7 |
| #5 | 0xXX | 开始分钟 | 0~59  默认：30 |
| #6 | 0xXX | 间隔分钟数 | 1~240  默认：30 |
| #7 | 0xXX | 重复次数 | 0~6  默认：0 |
| #8 | 0xXX | 重复周期 | Bit0:reserved, Value is 0  Bit1: Mon  Bit2: Tues  Bit3: Wed  Bit4: Thurs  Bit5: Fri  Bit6: Sat  Bit7: Sun  默认值：0x3E 工作日 |
| #9 | 0xXX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x39 | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | XX | Checksum |  |

* + 1. **Negative Response**
  1. **设置久坐闹钟**
     1. **Description**

设置久坐闹钟

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x86 | 设置久坐闹钟 |  |
| #2 | 0x05 | Data Length |  |
| #3 | 0xXX | 开关标志 | 0x00：关闭  0x01：打开 |
| #4 | 0xXX | 开始小时 |  |
| #5 | 0xXX | 结束小时 |  |
| #6 | 0xXX | 检测时间 | 单位：分钟  范围：10 – 240  默认：60 |
| #7 | 0xXX | 重复周期 | Bit0:reserved, Value is 0  Bit1: Mon  Bit2: Tues  Bit3: Wed  Bit4: Thurs  Bit5: Fri  Bit6: Sat  Bit7: Sun  默认值：0x3E 工作日 |
| #8 | 0xXX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x32 | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | XX | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x0d | Fail in |  |
| #2 | 0x00 | Data Length |  |
| #3 | XX | Checksum |  |

* 1. **设备访问App数据消息**
     1. **Description**

设备访问App数据消息

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xE3 | 设备访问App数据消息 |  |
| #2 | 0x11 | Data Length |  |
| #3 | XX | 数据类型 | 1：天气温度  2：紫外线  3：气压  4：PM2.5  0xA0:上报电量 |
| #4 | XX | 附加参数1 | 当数据类型为0xA0时，表示当前连接设备电量数据 |
| #5-#19 | 0x00 | 保留 |  |
| #20 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xE3 | Succeed in |  |
| #2 | 0x11 | Data Length |  |
| #3-#19 | 0x00 | 保留 |  |
| #20 | 0x00 | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x53 | Fail in |  |
| #2 | 0x11 | Data Length |  |
| #3-#19 | 0x00 | 保留 |  |
| #20 | 0x00 | Checksum |  |

* 1. **手机APP设置天气**
     1. **Description**

手机APP设置天气

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xF2 | 手机APP设置天气 |  |
| #2 | 0x11 | Data Length |  |
| #3 | XX | 天气类型 | 详见表后说明 |
| #4 | XX | 温度范围 | 1：表示温度为0 上  0：表示温度为0 下 |
| #5 | XX | 温度单位 | 1：表示摄氏度；0：表示华氏度 |
| #6-#7 | XX/XX | 温度值 | 数据包含一位小数点  比如：360，应该是36.0 |
| #8-#19 | 0x00 |  | 保留 |
| #20 | XX | Checksum |  |

天气类型：

0x01：晴天

0x02：阴天 ------- 保留。Deprecated，APP 不会发送此值。

0x03：多云

0x04：小雨

0x05：中雨

0x06：大雨 ------- 保留。Deprecated，APP 不会发送此值。

0x07：雷阵雨

0x08：小雪

0x09：中雪

0x0A：大雪

0x0B：雨夹雪

0x0C：雾

0x0D：冰雹

0x0E：雨加冰雹

0x0F：尘埃，沙尘暴

0x10：热带风暴

0x11：风

0x12：大风

0x13：狂风

0x14：龙卷风

0x15：雷暴

0x16：猛烈雷暴

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xF2 | success |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **寻找手机/手环**
     1. **Description**

双向控制，寻找手机/手环

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xF3 | 双向控制，寻找手机/手环 |  |
| #2 | 0x01 | Data Length |  |
| #3 | XX | 动作类型 | 0x01：启动寻找  0xA1：关闭寻找 |
| #4 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xF3 | Succeed in寻找手机/手环 |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **手环控制手机拍照**
     1. **Description**

手环控制手机拍照

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xF5 | 手环控制手机拍照 |  |
| #2 | 0x00 | Data Length |  |
| #3 | XX | Checksum |  |

* 1. **手环控制手机音乐播放**
     1. **Description**

手环控制手机音乐播放

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xF6 | 手环控制手机音乐播放 |  |
| #2 | 0x01 | Data Length |  |
| #3 | XX | 动作类型 | 0x01：播放/暂停  0x02：上一曲  0x03：下一曲  0x04：停止  0x05：音量+  0x06：音量- |
| #4 | XX | Checksum |  |

* 1. **设置日程离线闹钟**
     1. **Description**

设置日程离线闹钟

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFE | 设置日程离线闹钟 |  |
| #2 | 0x11 | Data Length |  |
| #3 | 0xXX | 离线闹钟ID | 0x40-0x80  使用0xFD命令下发闹钟名称 |
| #4 | 0xXX | 开关标志 | 0x00：关闭  0x01：打开 |
| #5-#9 | 0xXX/0xXX/0xXX/0xXX/0xXX | 开始时间 | 年月日时分 |
| #10-#11 | 0xXX/0xXX | 结束时间 | 距离开始时间多少分钟  2字节 |
| #12 | 0xXX | 提醒时间类型 | 1. 分钟 2. 小时 3. 日 4. 周 |
| #13 | 0xXX | 提醒时间 | 提前多少时间提醒  单位参考提醒时间类型 |
| #14 | 0xXX | 重复类型 | 1. 一次性 2. 每日 3. 每周 4. 每月 5. 每年 |
| #15 | 0xXX | 重复时间 | 1~99 |
| #16-#17 | 0xXX/0xXX | 重复持续时间 | 0：永远  直到第n天 |
| #18 | 0xXX | 重复扩展参数1 | 重复类型为每周和每月时有效。  0x00：表示该参数无效  Bit0:reserved, Value is 0  Bit1: Mon  Bit2: Tues  Bit3: Wed  Bit4: Thurs  Bit5: Fri  Bit6: Sat  Bit7: Sun  默认值：0x3E 工作日 |
| #19 | 0xXX | 重复扩展参数2 | 重复类型为每月时有效。  0x00：表示该参数无效  1~31：每个月的第几天 |
| #20 | 0xXX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xFE | Succeed in |  |
| #2 | 0x00 | Data Length |  |
| #3 | XX | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x0E | Fail in |  |
| #2 | 0x00 | Data Length |  |
| #3 | XX | Checksum |  |

* 1. **同步运动详细数据**
     1. **Description**

同步各类运动模式下产生的详细数据，每分钟一条。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xA5 | 同步运动详细数据 |  |
| #2 | 0x11 | Data Length |  |
| #3-#6 | XX/XX/XX/XX | Datetime（unix timestamp，1970 base second） | 0时区 |
| #7-#19 | 0x00 |  |  |
| #20 | XX | Checksum |  |

* + 1. **Positive Response**

1、正确响应流程：

2、控制报文（开始）

3、传输数据报文

4、…

5、控制报文（结束）

* + 1. **控制报文**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xA5 | 同步运动数据开始或者结束 |  |
| #2 | XX | State | 1：开始  0：结束 |
| #3-#6 | XX/XX/XX/XX | Datetime（unix timestamp，1970 base second） | 数据开始时间 |
| #7-#8 | XX/XX | 时间长度 |  |
| #9-#20 | 0x00 |  |  |

* + 1. **传输报文**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xA6 | 传输历史数据 |  |
| #2-#5 | XX/XX/XX/XX | Datetime（unix timestamp，1970 base second） |  |
| #6-#8 | XX/XX/XX | 历史数据内容 | 1分钟一个数据  参考：表3.35.3.3 |
| #9-#11 | XX/XX/XX | 历史数据内容 | 1分钟一个数据  参考：表3.35.3.3 |
| #12-#14 | XX/XX/XX | 历史数据内容 | 1分钟一个数据  参考：表3.35.3.3 |
| #15-#17 | XX/XX/XX | 历史数据内容 | 1分钟一个数据  参考：表3.35.3.3 |
| #18-#20 | XX/XX/XX | 历史数据内容 | 1分钟一个数据  参考：表3.35.3.3 |

* + 1. **历史数据内容报文**

|  |  |  |  |
| --- | --- | --- | --- |
| #1 | XX | 运动模式 | 0x00：步行  0x01：跑步  0x02：自行车  0x03：跳舞  0x04：篮球  0x05：足球  0x06：瑜伽  0x07：武术  0x08：爬山  0x09：高尔夫  0x0a：游泳  0x0b：爬楼  0x0c : 睡眠  0x0d：跳绳  0x0e：开合跳  0x0f：仰卧起坐  0x10：乒乓球  0x11：羽毛球  0x12：跑步机  0x13：健身  0x14：动感单车  0x15：网球  0x16：排球  0x17：保龄球  0x18：滑雪  0x19：滑冰  0x1a：攀岩  0x1b：平板撑  0x1c：健美操  0x1d：毽球  0x1e：棒球  …  FF：表示无效 |
| #2 | XX | 计步数据 | FF：表示无效 |
| #3 | XX | 心率 | FF：表示无效 |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x45 | Fail in 同步运动心率数据 | 如果当天没有任何数据，直接使用该命令表示失败 |
| #2 | 0x11 | Data Length |  |
| #3-#19 | 0x00 |  |  |
| #20 | 0x00 | Checksum |  |

* 1. **同步离线传感器数据**
     1. **Description**

同步手环模式下产生的传感器数据。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xB1 | 同步离线传感器数据 |  |
| #2 | 0x11 | Data Length |  |
| #3-#6 | XX/XX/XX/XX | Datetime（unix timestamp，1970 base second） | 0点0分0秒  0时区 |
| #7-#10 | XX/XX/XX/XX | 传感器类型 | 参考硬件能力表中的传感器类型 |
| #11-#19 | 0x00 | Reserved |  |
| #20 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xB1 | Succeed in 同步离线传感器数据 | 手环返回命令请求时所携带的时间参数之后的离线数据  如果是app请求产生的数据，不要返回 |
| #2-#3 | XX/XX | Data Length |  |
| #4 | XX | 数据类型 | 1：心率  2：血压  3：血氧  4：体温 |
| #5-#8 | XX/XX/XX/XX | Datetime（unix timestamp，1970 base second） | 0点0分0秒  0时区 |
| #9 - #n | XX/XX/??/?? | 数据 | 数据格式与传感器类型相关  具体查看后面的格式定义 |
| … | … | 第k块运动心率数据 | 重复#4-#n的结构 |
| #XX | XX | Checksum |  |

* + 1. **心率数据格式**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | XX | 心率 |  |

* + 1. **血压数据格式**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | XX | 收缩压 |  |
| #2 | XX | 舒张压 |  |

* + 1. **血氧数据格式**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | XX | 血氧值 | 仅表示百分比前面的数值  0 – 100 |

* + 1. **温度数据格式**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1-#2 | XX/XX | 温度值 | 为避免小数点传输，该值是实际温度 \* 10 |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x61 | Fail in 同步离线传感器数据  或者  没有新数据 |  |
| #3-#19 | 0x00 | Reserved |  |
| #20 | * + 1. XX | Checksum |  |

* 1. **自定义UI配置**
     1. **Description**

配置自定义UI的显示顺序。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xE2 | 自定义UI配置 |  |
| #2 | 11 | Data Length |  |
| #3-#19 | XX..XX | UI资源ID | 数据范围：  0x01~0xFF  取值说明：  0x00:无（遇到表示结束）  (0x01 – 0x3f, 一级界面)  0x01:时间  0x02:计步  0x03:骑行  0x04:心率  0x05:血压  0x06:卡路里  0x07:距离  0x08:血压  0x09:信息存储  0x0a:天气  0x0b:多运动  0x0c:多功能  (0x40 – 0xff, 二级界面)  0x40:步行  0x41:跑步  0x42:登山  0x43:骑行  0x44:羽毛球  0x45:跑步机  0x46:足球  0x47:健身  0x48:瑜伽  0x49:篮球  0x4a:动感单车  0x4b:网球  0x4c:跳舞  0x4d:跳绳  0x4e:排球  0x4f:乒乓球  0x50:保龄球  0x51:滑雪  0x52:滑冰  0x53:攀岩  0x54:平板撑  0x55:健美操  0x56:毽球  0c57:棒球  0c58:游泳 |
| #20 | XX | Checksum |  |

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xE2 | Succeed |  |
| #2 | 0x11 | Data Length |  |
| #3 - #19 | 0x00 | Reserved |  |
| #20 | 0xXX | Checksum |  |

* + 1. **Negative Response**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | | Remark |
| #1 | 0x52 | Failed | |  |
| #2 | 0x11 | Data Length |  | |
| #3 - #19 | 0x00 | Reserved |  | |
| #20 | 0xXX | Checksum |  | |

* 1. **设备访问App数据消息**
     1. **Description**

设备访问App数据消息

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xE3 | 设备访问App数据消息 |  |
| #2 | 0x11 | Data Length |  |
| #3 | XX | 数据类型 | 1：天气温度  2：紫外线  3：气压  4：PM2.5  5：女性提醒内容（app通过离线闹钟下发数据） |
| #4-#19 | 0x00 | 保留 |  |
| #20 | XX | Checksum |  |

* 1. **手机APP设置天气**
     1. **Description**

手机APP设置天气

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xF2 | 手机APP设置天气 |  |
| #2 | 0x11 | Data Length |  |
| #3 | XX | 天气类型 | 详见表后说明 |
| #4 | XX | 温度范围 | 1：表示温度为0 上  0：表示温度为0 下 |
| #5 | XX | 温度单位 | 1：表示摄氏度；0：表示华氏度 |
| #6-#7 | XX/XX | 温度值 | 当前温度：  数据包含一位小数点  比如：360，应该是36.0  当日起不是当日时，填为0 |
| 0x8 | XX | 日期 | 0：表示当日  （当接收到此参数时，手环需要清除之前的所有已接收天气数据，以本次为最新有效数据）  1：表示明日  2：表示后日 |
| #9 | XX | 温度范围 | 1：表示温度为0 上  0：表示温度为0 下 |
| #10-#11 | XX/XX | 温度值 | 最低温度：  数据包含一位小数点  比如：360，应该是36.0 |
| #12 | XX | 温度范围 | 1：表示温度为0 上  0：表示温度为0 下 |
| #13-#14 | XX/XX | 温度值 | 最高温度：  数据包含一位小数点  比如：360，应该是36.0 |
| #15-#19 | 0x00 |  | 保留 |
| #20 | XX | Checksum |  |

天气类型：

0x01：晴天

0x02：阴天 ------- 保留。Deprecated，APP 不会发送此值。

0x03：多云

0x04：小雨

0x05：中雨

0x06：大雨 ------- 保留。Deprecated，APP 不会发送此值。

0x07：雷阵雨

0x08：小雪

0x09：中雪

0x0A：大雪

0x0B：雨夹雪

0x0C：雾

0x0D：冰雹

0x0E：雨加冰雹

0x0F：尘埃，沙尘暴

0x10：热带风暴

0x11：风

0x12：大风

0x13：狂风

0x14：龙卷风

0x15：雷暴

0x16：猛烈雷暴

* + 1. **Positive Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xF2 | success |  |
| #2 | 0x00 | Data Length |  |
| #3 | 0x00 | Checksum |  |

* 1. **同步GPS运动详细数据**
     1. **Description**

同步GPS运动模式下产生的详细数据，每分钟一条。

* + 1. **Performance**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xB5 | 同步GPS运动详细数据 |  |
| #2 | 0x11 | Data Length |  |
| #3-#6 | XX/XX/XX/XX | Datetime（unix timestamp，1970 base second） | 0时区 |
| #7-#19 | 0x00 |  |  |
| #20 | XX | Checksum |  |

* + 1. **Positive Response**

正确响应流程：

1、控制报文（开始）

2、传输数据报文A

传输数据报文B

传输数据报文B

…

传输数据报文A

传输数据报文B

传输数据报文B

3、控制报文（结束）

…

…

* + 1. **控制报文**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xB5 | 同步运动数据开始或者结束 |  |
| #2 | XX | State | 1：开始  0：结束  2：没有数据 |
| #3-#6 | XX/XX/XX/XX | Datetime（unix timestamp，1970 base second） | 数据开始时间 |
| #7-#8 | XX/XX | 时间长度 | 单位：分钟 |
| # | XX | 运动类型 | 0x00：步行  0x01：跑步  0x02：自行车  0x03：跳舞  0x04：篮球  0x05：足球  0x06：瑜伽  0x07：武术  0x08：爬山  0x09：高尔夫  0x0a：游泳  0x0b：爬楼  0x0c : 睡眠  0x0d：跳绳  0x0e：开合跳  0x0f：仰卧起坐  0x10：乒乓球  0x11：羽毛球  0x12：跑步机  0x13：健身  0x14：动感单车  0x15：网球  0x16：排球  0x17：保龄球  0x18：滑雪  0x19：滑冰  0x1a：攀岩  0x1b：平板撑  0x1c：健美操  0x1d：毽球  0x1e：棒球  …  FF：表示无效 |
| #9 | XX | 数量 | 总数据数量 |
| #10 | XX | 序号 | 当前第几个数据 |
| #11-#12 | XX/XX | 总步数 | 当类型为跑步时有效 |
| #9-#20 | 0x00 |  |  |

* + 1. **传输报文A**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xB6 | 传输历史数据 |  |
| #2-#5 | XX/XX/XX/XX | Datetime（unix timestamp，1970 base second） | 数据开始时间 |
| #6-#18 | XX/…/XX | 历史数据内容 | 完整包，简称A包  参考：表3.45.5.1 |

* + - 1. **历史数据内容报文**

|  |  |  |  |
| --- | --- | --- | --- |
| #1-#4 | XX/XX/XX/XX | 纬度 | 采用度数表示，固定6位小数点  例子：  22.548931  将会表示为不带小数点：  22548931  并且还需要固定加上90.000000的不带小数点：  90000000  最终表示为：  112548931 |
| #5-#8 | XX/XX/XX/XX | 经度 | 采用度数表示，固定6位小数点  例子：  113.938283  将会表示为不带小数点：  113938283  并且还需要固定加上180.000000的不带小数点：  180000000  最终表示为：  293938283 |
| #9-#10 | XX/XX | 海拔 | 单位：米  并且固定加上2000米，避免负数 |
| #11-#12 | XX/XX | 速度 | 单位：公里/小时  为表示1位小数点精度，数据均乘以10表示  如：360表示36.0 |
| #13 | XX | 心率 |  |

* + 1. **传输报文B**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0xB7 | 传输历史数据 |  |
| #2-#10 | XX/…/XX | 历史数据内容 | 变化包，简称B包  参考：表3.45.6.1 |
| #11-#19 | XX/…/XX | 历史数据内容 | 变化包，简称B包  参考：表3.45.6.1 |

* + - 1. **历史数据内容报文**

|  |  |  |  |
| --- | --- | --- | --- |
| #1 | XX | 时间偏移量 | 与上一个报文的时间差，单位为秒 |
| #2-#3 | XX/XX | 纬度变化值 | 第一个字节的最高位：0表示负数，1表示正数  剩余部分表示纬度变化值，具体参考A包说明 |
| #4-#5 | XX/XX | 精度变化值 | 第一个字节的最高位：0表示负数，1表示正数  剩余部分表示精度变化值，具体参考A包说明 |
| #6 | XX | 海拔变化值 | 第一个字节的最高位：0表示负数，1表示正数  剩余部分表示海拔变化值，具体参考A包说明 |
| #7-#8 | XX/XX | 速度 | 单位：公里/小时 |
| #9 | XX | 心率 |  |

* + 1. **Negative Response**

|  |  |  |  |
| --- | --- | --- | --- |
| Bytes no. | Value(Hex) | Description | Remark |
| #1 | 0x55 | Fail in 同步GPS运动数据 | 如果当天没有任何数据，直接使用该命令表示失败 |
| #2 | 0x11 | Data Length |  |
| #3-#19 | 0x00 |  |  |
| #20 | 0x00 | Checksum |  |

* 1. **The appendix**