Fission Smart Wearable Products
SDK Instructions (iOS)

Preface: The SDK hopes that you understand the basic concepts of BLE (Bluetooth Low Energy) and use Apple's Bluetooth framework CoreBluetooth proficiently.

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➢ Update Record

Version Number	Update Content	Release Date
V1.0.0	✧ Define the SDK infrastructure and functional api interfaces, which are divided into four categories: ✧ 1. Bluetooth Manager (FBBluetoothManager) ✧ 2. AT protocol instruction set (FBAtCommand) ✧ 3. BG protocol instruction set (FBBgCommand) ✧ 4. OTA manager (FBBluetoothOTA)	20201231 First Release
V2.0.0	✧ 1. Optimize known issues ✧ 2. The data type of the AT command callback is converted from the NSDictionary dictionary to the object model used, see each callback block for details ✧ 3. Add custom dial compression algorithm protocol	20220414
V3.0.0	✧ 1. Optimize known issues ✧ 2. Refactor the callback method of blcok, and fix the abnormal problem of block callback	20220715
V3.0.1	✧ 1. Broadcast information analysis: the adaptation number is compatible ✧ 2. Added Hindi, Bengali, Urdu, Persian ✧ 3. New acquisition of mental stress recording protocol, blood pressure protocol is not available for now	20221119
V3.0.2	✧ 1. Optimize OTA notification problem ✧ 2. Added confirmation/cancel command for GPS motion interconnection control	20221214
V3.0.3	✧ 1. Added timing heart rate, timing blood oxygen, timing mental stress detection switch setting protocol ✧ 2. FBMessageModel new message push type ✧ 3. FB_MOTIONMODE New motion type	20221230
V3.0.4	✧ 1. Added get and set call audio switch protocols ✧ 2. Add get and set multimedia audio switch protocol ✧ 3. EM_FUNC_SWITCH new type	20230105
V3.0.5	✧ 1. Amend the protocol for obtaining blood	20230130

	pressure records ✧ 2. Added access to high-frequency heart rate records for exercise (1 time per second) ✧ 3. Added access to mental stress protocol ✧ 4. Compatible with obtaining manual measurement record protocol ✧ 5. New configuration of FBFirmwareVersionObject ✧ 6. Automatically synchronize system time (synchronize UTC time + set time zone), obtain exercise statistics report + record exercise details ✧ 7. FB_RECORDTYPE new type ✧ 8. New type of FB_MULTIPLERECORDREPORTS	
V3.0.6	✧ 1. Correct the legality judgment of set abnormal heart rate reminder parameters	20230202
V3.0.7	✧ 1. Optimize device search performance ✧ 2. Optimize data sending interval ✧ 3. Added the "confirm that the phone is found" protocol (FBAtCommand) fbUpPhoneConfirmedFoundDataWithBlock:	20230209
V3.0.8	✧ 1. The timeout period of the binding request is extended from 30s to 60s ✧ 2. Added protocol for obtaining device log data	20230211
V3.0.9	✧ 1. New configuration of FBFirmwareVersionObject: ✧ Does it support multiple sports modes at one time? ✧ Support one-time push of the number of multiple sports modes, 0 does not support ✧ 2. Added one-time push of multiple sports mode protocols ✧ 3. FB_OTANOTIFICATION adds OTA notification type: ✧ FB_OTANotification_Multi_Sport(9) ✧ 4. FBCustomDataTools has added "compress and merge multiple sports types into one Bin file", which can be used in conjunction with "one-time push of multiple sports modes" ✧ 5. FBBluetoothOTA adds a progress model FBProgressModel, which is compatible with the upgrade progress problem when a bin file contains multiple packages	20230301

	✧ 6. Corrected the problem that some areas use winter/summer time, and the time zone cannot be set, resulting in time errors ✧ 7. The device binding request can be passed to the Mac address, but it is recommended to pass nil, the SDK will manage the binding key for you internally ✧ 8. Added error code FB_GPS_MOTION_STATE_NONE for GPS motion control, no local motion information ✧ 9. Optimize the search device and use the data model FBPeripheralModel ✧ 10. FB_MOTIONMODE adds new motion types: ✧ French Boxing(139)	
V3.1.0	✧ 1. FB_OTANOTIFICATION adds OTA notification type: ✧ FB_OTANotification_Multi_Dial_Built_in(200) ✧ FB_OTANotification_Multi_Sport_Built_in(201) ✧ 2. FBCustomDataTools "Multiple motion type Bin files are compressed and merged into one Bin file" compression algorithm API adjustment (2048 or 4096) ✧ 3. Added the "Get Device Motion Type List" protocol (FBBgCommand) fbGetListOfDeviceMotionTypesWithBlock: ✧ 4. Original OTA SDK update: RTKOTASDK.framework	20230324
V3.1.1	✧ 1. Optimize the internal compression algorithm ✧ 2. Fix the wrong version of the "Get Device Hardware Information" structure ✧ 2. Added the "Get Device Binding Status" protocol (FBAtCommand) fbGetBindingStatusRequestWithBlock: ✧ 3. Add the "Get Current Exercise State" protocol (FBAtCommand) fbGetCurrentExerciseStateStatusWithBlock:	20230329
V3.1.2	✧ 1. Add new image resources, customize the watch face, and use different sizes of cut images for different resolutions	20230403
V3.1.3	✧ 1. Added the "Device Confirmed Found"	20230412

	protocol (FBAtCommand) fbUpDeviceConfirmedFoundDataWithBlock: ✧ 2. Added the "Get System Function Switch Information" protocol (FBBgCommand) fbGetSystemFunctionSwitchInformationWithBlock: ✧ 3. Added the "Set System Function Switch Information" protocol (FBBgCommand) fbSetSystemFunctionSwitchInformation: withBlock: ✧ 4. New configuration of FBFirmwareVersionObject: ✧ Whether to support daily heart rate detection switch control ✧ Whether to support daily blood oxygen detection switch control ✧ Whether to support daily blood pressure detection switch control ✧ Whether to support daily mental stress detection switch control ✧ 5. Added a complete analysis of binary data buried point log ✧ 6. OTA new error status FB_OTANotification_ERROR_Busy_Sport: The device is in motion, please end the motion and try again... ✧ 7. Correct the "interface jump test" protocol error (FBAtCommand) fbUpInterfaceJumpTestCode:	
V3.1.4	✧ 1. Optimize known issues ✧ 2. Added "custom dial supports anti-aliasing" processing ✧ 3. New configuration of FBFirmwareVersionObject: ✧ Whether to support the setting of the system function switch and the command of obtaining big data (0252H / 0352H) ✧ Whether to support sporadic naps ✧ Whether to support custom dial anti-aliasing ✧ 4. Added Nepali language ✧ 5. Add Ukrainian language ✧ 6. Reports/records are sorted by timestamp from small to large	20230518

	✧ 7. Compatibility with matching numbers in broadcast information	
V3.1.5	✧ 1. Fix known errors in the protocol of "Setting/Getting Personal User Information" ✧ 2. Added the "read off-chip flash space data" protocol, which is used to obtain device unexpected restart information for firmware analysis (FBBgCommand) fbReadOffChipFlashWithAddress: withLength: withBlock: ✧ 3. FBFirmwareVersionObject added: Adaptation number, long integer (supported by some watches) Hardfault information space address Hardfault information space size System parameter space address System parameter space size Whether to support OTA notification command with adaptation number verification Whether to support hardfault information and system parameter reading Whether to support dial CRC check ✧ 4. New types of EM_FUNC_SWITCH: FS_TIMING_BP_WARN(33) FS_DEVICE_EXCEPTION_WARN(34) ✧ 5. Add dial data verification (UTC or CRC) ✧ 6. The original OTA SDK is updated to v1.4.9 (RTKOTASDK.framework, RTKLEFoundation.framework) Modify the order of multi-package OTA files ✧ 7. FBTypeRecordModel record generation cycle The parameter name is changed from createTimes to recordingCycle to avoid ambiguity, and the unit is unified as seconds; new parameters ✧ 8. FBRecordDetailsModel sports details record new parameters KilometerPace for one kilometer (one kilometer pace, unit second) and one mile time (one mile pace, unit second) MilePace, which are only supported by some devices, and are defined according to the parameter record format (recordDefinition) depends on	20230718

	✧ 9. Custom dial anti-aliasing cutting map update ✧ 10. Optimize record/report sorting and other known issues	
V3.1.6	✧ 1.EM_FUNC_SWITCH new type: FS_AGPS_LOCATION_REQUEST(35) FS_AGPS_DATA_REQUEST(36) ✧ 2.FB_OTANOTIFICATION New OTA notification type: FB_OTANotification_AGPS_Package(30) ✧ 3. Added "Push AGPS basic location information (latitude and longitude UTC)" protocol (FBBgCommand) fbPushAGPSLocationInformation: withBlock: ✧ 4. Added "Synchronized AGPS positioning data" protocol (FBBgCommand) fbSynchronizeAGPSPositioningData: withBlock: ✧ 5.FB_MOTIONMODE new motion type: Beach volleyball(140) ✧ 6.FB_LANGUAGES new language type: FB_SDK_ms(29) FB_SDK_sk(30) FB_SDK_my(31) FB_SDK_da(32) ✧ 7. The SDK supports compiling and running on both real devices and simulators (note: the simulator cannot use Bluetooth)	20230824

➢ Environmental Requirements

iOS 10 and above operating systems support simulator and real machine compilation (i.e. x86_64, arm64 instruction set)

Rely

- CoreBluetooth.framework

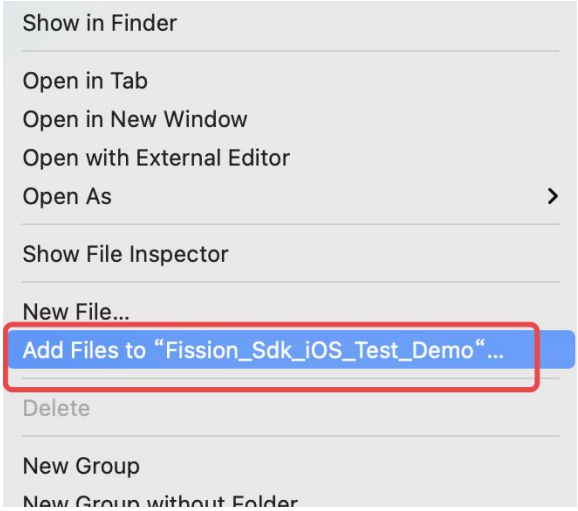
➢ Import SDK

Method 1: Install through CocoaPods. Add the following content in Podfile

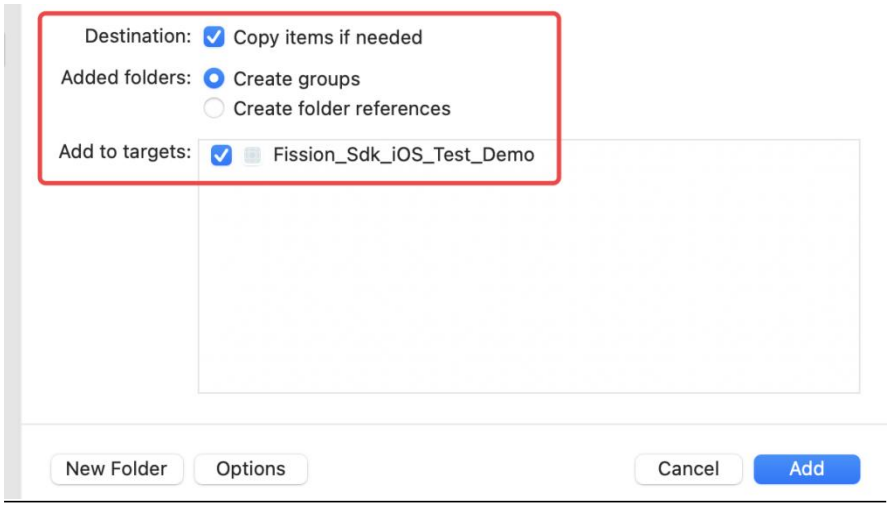
pod 'Fission_Sdk_iOS', git: 'https://github.com/linwear/Fission_Sdk_iOS.git'

Method 2: Manually import the SDK (.xcframework supports emulator and real machine compilation and running)

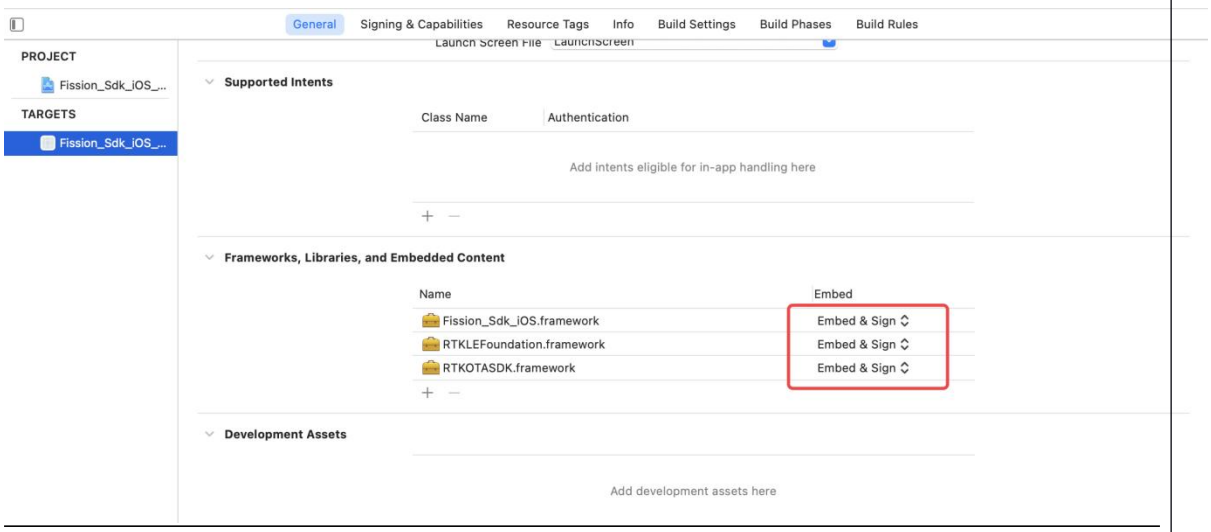
1、Import Fission_Sdk_iOS.xcframework, RTKOTASDK.xcframework, RTKLEFoundation.xcframework Add File into the project:



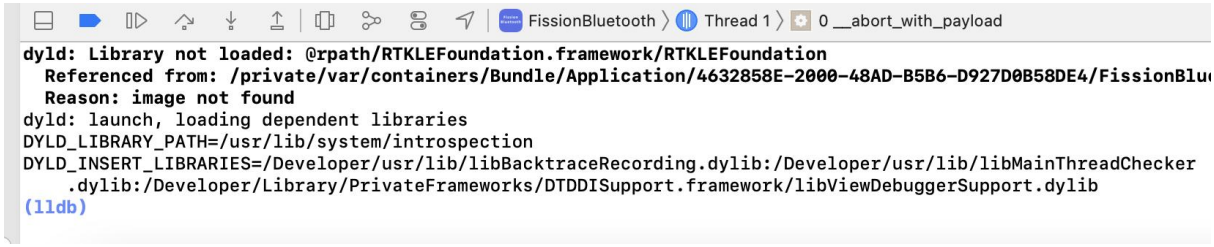
At this point, you should check the options:



2、Modify the embedding mode of Fission_Sdk_iOS.xcframework, RTKOTASDK.xcframework, and RTKLEFoundation.xcframework in the project to Embed&Sign:

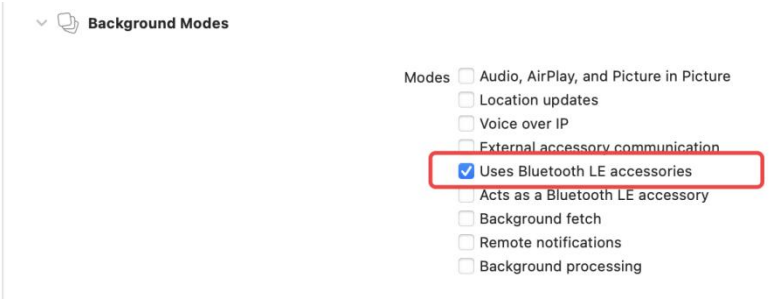


Note: In order for an app to execute SDK code, the framework needs to be included in the app bundle. If it cannot be executed, image not found will be printed in the console, indicating that this step has not been completed.



➢ Set Bluetooth background mode

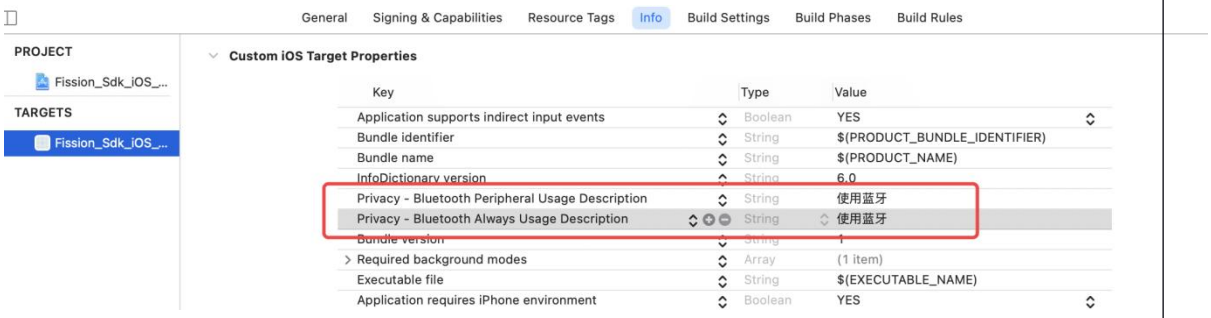
Background running mode, enable the following Background mode:



➢ Set privacy permissions

Privacy data usage instructions, iOS requires the app to provide a visual text description of the privacy data used, otherwise the app cannot be started, and the following usage description needs to be added to the info plist:

- Privacy - Bluetooth Peripheral Usage Description
- Privacy - Bluetooth Always Usage Description



➢ To get started, import the header file

In the source code using the SDK interface, use `#import<Fission_Sdk_iOS/Fission_Sdk_iOS.h>` to introduce the header file to use the relevant API

① Initialize the Bluetooth manager **FBBluetoothManager.sharedInstance** and set the callback monitoring method:

```
/// Bluetooth state change callback
-(void)fbOnCentralManagerDidUpdateStateWithBlock:(FBOnCentralManagerDidUpdateStateBlock)fbBlock;

/// Search bluetooth device callback
-(void)fbDiscoverPeripheralsWithBlock:(FBDiscoverPeripheralsBlock)fbBlock;

/// Device connection success/failure callback
```

```
-(void)fbOnConnectedAtChannelWithBlock:(FBOnConnectedAtChannelBlock)fbBlock;

/// Device disconnect callback
-(void)fbOnDisconnectAtChannelWithBlock:(FBOnDisconnectAtChannelBlock)fbBlock;

/// Bluetooth system error callback
-(void)fbBluetoothSystemErrorWithBlock:(FBBluetoothSystemErrorBlock)fbBlock;

/// Start scanning for devices
- (void)scanForPeripherals;

/// Stop scanning devices
- (void)cancelScan;

/// Connect device
- (void)connectToPeripheral:(CBPeripheral * _Nonnull)peripheral;

/// Disconnect device
- (void)disconnectPeripheral;
```

For more api interface methods, refer to the **FBBluetoothManager** class;

Code example 1, set the callback to monitor the scanned device:

```
// 扫描到设备回调方法
[FBBluetoothManager.sharedInstance fbDiscoverPeripheralsWithBlock:^(BOOL isPair, NSString * _Nonnull device_Name, NSString *
    _Nonnull mac_Address, NSString * _Nonnull adapt_Number, CBPeripheral * _Nonnull peripheral, NSDictionary * _Nonnull
    advertisementData, NSNumber * _Nonnull RSSI) {

    // do something...
}];
```

Code example 2, start scanning devices:

```
// 开始扫描设备
[FBBluetoothManager.sharedInstance scanForPeripherals];
```

② AT command set **FBAtCommand.sharedInstance**, for more api interface methods use refer to **FBAtCommand** class;

Code example, request to bind the device:

```
// 绑定设备请求
[FBAtCommand.sharedInstance fbBindDeviceRequestWithBlock:^(NSInteger responseObject, NSError * _Nullable error) {
    if (error) {
        // 失败
    } else {
        // 根据自身业务处理结果
    }
}];
```

③ BG instruction set **FBBgCommand.sharedInstance**, specific api interface methods refer to **FBBgCommand** class;

Code example, requesting device hardware information:

```
// 获取设备硬件信息请求
[FBBgCommand.sharedInstance fbGetHardwareInformationDataWithBlock:^(FB_RET_CMD status, float progress, FBDeviceInfoModel *
    _Nullable responseObject, NSError * _Nullable error) {
    if (error) {
        // 失败
    } else if (status == FB_DATATRANSMISSIONDONE) {
        // 成功
    }
}];
```

④ OTA manager **FBBluetoothOTA.sharedInstance**, firmware upgrade, online dial, custom dial, sports push... By passing in the `FB_OTANOTIFICATION` parameter, distinguish the OTA type. For the specific api interface method, refer to the **FBBluetoothOTA** class;

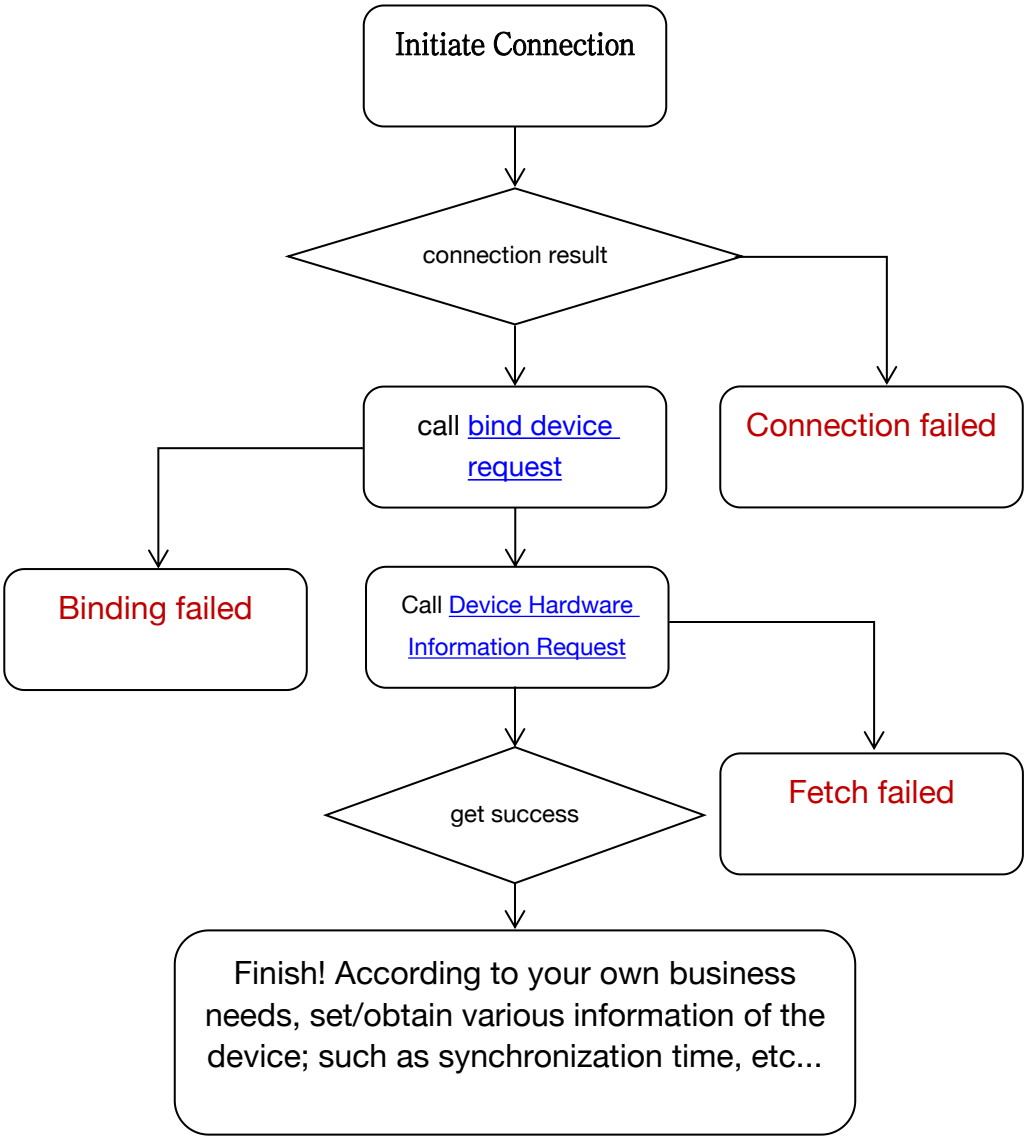
Code example, firmware upgrade:

```
// 升级固件
[FBBluetoothOTA.sharedInstance fbStartCheckingOTAWithBinFileData:binFile withOTAType:FB_OTANotification_Firmware
    withBlock:^(FB_RET_CMD status, float progress, FBOTADoneModel * _Nonnull responseObject, NSError * _Nonnull error) {
    if (error) {
        // 失败
    } else if (status==FB_DATATRANSMISSIONDONE){
        // 成功
    } else if (status==FB_INDATATRANSMISSION){
        // progress进度
    }
}];
```

Custom dial bin files support local generation, please refer to:

```
// 生成自定义表盘文件
NSData *file = [FBCustomDataTools.sharedInstance fbGenerateCustomDialBinFileDataWithDialModel:model];
```

➢ Fixed Process Description



Note: The underlying functions of the SDK depend on [device hardware information]. For details about hardware function related information **FBAllConfigObject.firmwareConfig**, please refer to the **FBFirmwareVersionObject** class;

①Initiate Connection

②The connection is successful, request to bind the device
③The device is successfully bound, requesting to obtain device hardware information
④The device hardware information request is successful, and it starts to call other protocol interfaces according to its own business needs...

➢ Basic control and query API （FBAtCommand）

1、Get device power information

```
- (void)fbReqBatteryStatusDataWithBlock:(FBReqBatteryStatusBlock _Nonnull)fbBlock;
/*
 手表设备电量信息 | Watch device battery info
 */
@interface FBBatteryInfoModel : NSObject
/**
 电池电量状态 | Battery state
*/
@property (nonatomic, assign) FB_BATTERYLEVEL batteryState;
/**
 电池电量 | Battery level
*/
@property (nonatomic, assign) NSInteger batteryLevel;
@end

typedef enum {
    BATT_NORMAL    = 0,  //正常 | Normal
    BATT_LOW_POWER = 1,  //低压 | Low power
    BATT_CHARGING  = 2,  //充电中 | Charging
    BATT_FULL      = 3,  //电池满 | Full power
}FB_BATTERYLEVEL;
```

2、Get device version information

```
- (void)fbReqDeviceVersionDataWithBlock:(FBReqDeviceVersionBlock _Nonnull)fbBlock;
/*
 设备版本信息 | Device version information
 */
@interface FBDeviceVersionModel : NSObject
/**
 硬件版本号 | Hardware version number
*/
@property (nonatomic, copy) NSString *hardwareVersion;
/**
 软件版本号 | Software version number
*/
```

```
@property (nonatomic, copy) NSString *softwareVersion;
@end
```

3、Get protocol version information

```
- (void)fbReqProtocolVersionDataWithBlock:(FBReqProtocolVersionBlock _Nonnull)fbBlock;
/**
 协议版本号 | Protocol version number
*/
NSString *responseObject;
```

4、Get UTC time

```
- (void)fbReqUTCTimeDataWithBlock:(FBGet_AT_ResultCallBackBlock _Nonnull)fbBlock;
/**
 UTC 时间（秒） | UTC time (seconds)
*/
NSInteger responseObject;
```

5、Get the time zone

```
- (void)fbReqTimezoneDataWithBlock:(FBGet_AT_ResultCallBackBlock _Nonnull)fbBlock;
/**
 时区（分钟） | Time zone (minutes)
*/
NSInteger responseObject;
```

6、~~Synchronize UTC time~~ (It is recommended to use fbAutomaticallySynchronizeSystemTimeWithBlock: instead)

~~- (void)fbSynchronizeUTCTimeWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;~~

7、~~Set time zone~~ (It is recommended to use fbAutomaticallySynchronizeSystemTimeWithBlock: instead)

~~- (void)fbUpTimezoneMinuteData:(NSInteger)timeZoneMinute withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;~~

```
/**
```

```
时区（分钟）｜Time zone (minutes)
*/
NSInteger timeZoneMinute;
```

8、Set system time (Synchronize UTC time + Set time zone)

```
-(void)fbAutomaticallySynchronizeSystemTimeWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

9、Set the time display mode

```
- (void)fbUpTimeModeData:(FB_TIMEDISPLAYMODE)hoursMode withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/**
时间显示模式｜Time display mode
*/
TIMEDISPLAYMODE hoursMode;

typedef enum {
    FB_TimeDisplayMode12Hours = 12,  //12 小时制｜12 hour system
    FB_TimeDisplayMode24Hours = 24,  //24 小时制｜24 hour system
}FB_TIMEDISPLAYMODE;
```

10、Language setting

```
- (void)fbUpLanguageData:(FB_LANGUAGES)language withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/**
语言｜language
*/
LANGUAGES language;

typedef enum {
    FB_SDK_zh_Hans = 0,   //中文简体｜Simplified Chinese
    FB_SDK_en      = 1,   //英文｜English
    FB_SDK_ja      = 2,   //日语｜Japanese
    FB_SDK_fr      = 3,   //法语｜French
    FB_SDK_de      = 4,   //德语｜German
    FB_SDK_es      = 5,   //西班牙语｜Spanish
    FB_SDK_it      = 6,   //意大利语｜Italian
    FB_SDK_pt      = 7,   //葡萄牙语｜Portuguese
    FB_SDK_ru      = 8,   //俄语｜Russian
```

```
    FB_SDK_cs      = 9,   //捷克语 | Czech
    FB_SDK_pl      = 10,  //波兰语 | Polish
    FB_SDK_zh_Hant = 11,  //中文繁体 | Chinese traditional
    FB_SDK_ar      = 12,  //阿拉伯语 | Arabic
    FB_SDK_tr      = 13,  //土耳其语 | Turkish
    FB_SDK_vi      = 14,  //越南语 | Vietnamese
    FB_SDK_ko      = 15,  //韩语 | Korean
    FB_SDK_he      = 16,  //希伯来语 | Hebrew
    FB_SDK_th      = 17,  //泰语 | Thai
    FB_SDK_id      = 18,  //印尼语 | Indonesian
    FB_SDK_nl      = 19,  //荷兰语 | Dutch
    FB_SDK_el      = 20,  //希腊语 | Greek
    FB_SDK_sv      = 21,  //瑞典语 | Swedish
    FB_SDK_ro      = 22,  //罗马尼亚语 | Romanian
    FB_SDK_hi      = 23,  //印地语 | Hindi
    FB_SDK_bn      = 24,  //孟加拉语 | Bangla
    FB_SDK_ur      = 25,  //乌尔都语 | Urdu
    FB_SDK_fa      = 26,  //波斯语 | Persian
    FB_SDK_ne      = 27,  //尼泊尔语 | Nepali
    FB_SDK_uk      = 28,  //乌克兰语 | Ukrainian
}FB_LANGUAGES;
// For more types, please check the FBMacro.h file in the SDK
```

11、Set distance unit

```
- (void)fbUpDistanceUnitData:(FB_DISTANCEUNIT)units
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/**
 单位 | Unit
*/
FB_DISTANCEUNIT units;

typedef enum {
    FB_EnglishUnits = 0,  //英制单位 | English units
    FB_MetricUnit   = 1,  //公制单位 | Metric unit
}FB_DISTANCEUNIT;
```

12、Set the vibration reminder switch

```
- (void)fbUpShakeAlterSwitchData:(BOOL)switchMode
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 开 NO 关 | YES ON NO OFF */
BOOL switchMode;
```

13、Set the switch to turn on the screen by raising your wrist

```
- (void)fbUpWristSwitchData:(BOOL)switchMode
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 开 NO 关 | YES ON NO OFF */
BOOL switchMode;
```

14、Enter/exit camera mode

```
- (void)fbUpTakePhotoStatusData:(BOOL)switchMode
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 进入 NO 退出 | YES Enter NO Exit */
BOOL switchMode;
```

15、Turn on/off data flow

```
- (void)fbUpDataStreamData:(NSInteger)second
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/**
 数据返回时间间隔（单位秒） 0 表示关闭 | Data return time interval (unit: second) 0 means closed
*/
NSInteger second;
```

16、Set the heart rate switch

```
- (void)fbUpHeartRateData:(BOOL)switchMode
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 开 NO 关 | YES ON NO OFF */
BOOL switchMode;
```

17、Receive the callback when the device takes pictures

```
- (void)fbUpTakePhotoClickDataWithBlock:(FBUpTakePhotoClickBlock
_Nonnull)fbBlock;
// When the device side operates to shake and take a photo, it will actively notify the app side
through this callback
```

18、Phone find device

```
- (void)fbUpFindDeviceDataWithBlock:(FBResultCallBackBlock
_Nonnull)fbBlock;
```

19、Receive the callback from the device to find the mobile phone

```
- (void)fbUpFindPhoneDataWithBlock:(FBUpFindPhoneBlock _Nonnull)fbBlock;
// When the device side operates to find the mobile phone, it will actively notify the app side through this callback
```

20、Received the callback that the device cancels to find the mobile phone

```
- (void)fbAbandonFindingPhoneWithBlock:(FBAbandonFindingPhoneBlock _Nonnull)fbBlock;
// If the device side cancels the phone search, it will actively notify the app side through this callback
```

21、The mobile phone is confirmed to be found

```
- (void)fbUpPhoneConfirmedFoundDataWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// When the device successfully finds the mobile phone, the APP calls this method to stop the device from searching for the mobile phone
```

22、Receive the callback of successful Bluetooth pairing

```
- (void)fbUpPairingCompleteDataWithBlock:(FBUpPairingCompleteBlock _Nonnull)fbBlock;
// When the Bluetooth pairing between the device and the mobile phone is successful, the app will be actively notified through this callback
```

23、Reboot the device

```
- (void)fbUpRebootDeviceDataWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

24、Reset

```
- (void)fbUpResetDeviceDataWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

25、Soft shutdown

```
- (void)fbUpSoftDownDataWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

26、Start OTA upgrade mode

```
- (void)fbUpOpenOTADataWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

27、Security confirmation

```
- (void)fbUpSafetyConfirmDataWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

28、Start/Exit Self-Test Mode

```
- (void)fbUpSelfTestData:(BOOL)switchMode withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 启动 NO 退出 | YES Start NO Exit */
BOOL switchMode;
```

29、Clear user information

```
- (void)fbUpClearUserInfoDataWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

30、Clear activity data

```
- (void)fbUpClearSportDataWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

31、Set the device to actively disconnect

```
- (void)fbUpDisConnectDataWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

32、Interface jump test

```
- (void)fbUpInterfaceJumpTestCode:(NSInteger)interfaceCode withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/**
 指定界面代号 | Specify interface code
*/
NSInteger interfaceCode;
```

33、Women's Physiological Status Setting

```
-(void)fbUpFemalePhysiologicalStateData:(FB_FEMALEPHYSIOLOGICALSTATE)stateCode withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/**
 女性生理状态 | Female's physiological state
*/
FB_FEMALEPHYSIOLOGICALSTATE stateCode;

typedef enum {
    FB_FPS_NotUsed              = 0,  //未启用 | Not used
    FB_FPS_Pregnancy            = 1,  //怀孕期 | Pregnancy
    FB_FPS_Menstruation         = 2,  //月经期 | Menstruation
    FB_FPS_Safety               = 3,  //安全期 | Safety period
    FB_FPS_Ovulation            = 4,  //排卵期 | During ovulation
    FB_FPS_OvulationDay         = 5,  //排卵日 | Ovulation day
    FB_FPS_PregnancyPreparation = 6,  //备孕期 | Pregnancy preparation period
}FB_FEMALEPHYSIOLOGICALSTATE;
```

34、Get unused note wakeup/alarm message ID

```
- (void)fbGetUnusedClockIDWithBlock:(FBGet_AT_ResultCallBackBlock _Nonnull)fbBlock;
```

// When creating a wake-up/alarm message on the app side, you need to call this interface first to query the available IDs

```
/**
 可用 ID | Available IDs
*/
NSInteger responseObject;
```

35、Enable/exit sprint mode

```
- (void)fbUpSprintMode:(FB_SPRINTMODE)mode withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

// After it is turned on, the collection speed is changed from one motion detail per minute to one per second

```
/**
 短跑模式开关 | Sprint mode switch
*/
```

```
FB_SPRINTMODE mode;

typedef enum {
    FB_SPRINTMODE_OFF = 0,  //关闭 | Close
    FB_SPRINTMODE_ON  = 1,  //开启 | Open
}FB_SPRINTMODE;
```

36、Listen for device location requests

```
- (void)fbUpPositioningSwitchWithBlock:(FBUpPositioningSwitchBlock _Nonnull)fbBlock;
```

// When the app receives the callback, it needs to actively report the positioning information to the device.

```
15  @interface FBBgCommand : NSObject
363 #pragma mark - App推送手机定位信息 | App push mobile location information
364 /**
365  App推送手机定位信息 | App push mobile location information
366  @param longitude      经度 | Longitude
367  @param latitude       纬度 | Latitude
368 */
369 - (void)fbPushMobileLocationInformationWithLongitude:(float)longitude withLatitude:(float)latitude withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

37、OTA type notification

```
- (void)fbUpOTANotificationWithType:(FB_OTANOTIFICATION)type withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

38、Enter/Exit production mode

```
- (void)fbUpProductionTestModeIsOpen:(BOOL)isOpen withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 进入 NO 退出 | YES Enter NO Exit */
BOOL isOpen;
```

39、Callback for monitoring device-side function status changes

```
-(void)fbReceiveFunctionSwitchSynchronizationWithBlock:(FBReceiveFunctionSwitchSynchronizationBlock _Nonnull)fbBlock;
/*
 手表设备功能变更通知 | Watch device function change notice
 */
@interface FBWatchFunctionChangeNoticeModel : NSObject
/**
 变更的功能 | Changed functions
*/
```

```
@property (nonatomic, assign) EM_FUNC_SWITCH functionMode;
/**
 功能更改值 | Function change value

 @note 根据变更的功能类型，功能更改值代表的含义不同，具体参考上述枚举【EM_FUNC_SWITCH】 | According to the changed function type, the meaning of the function change value is different. Refer to the above enumeration 【EM_FUNC_SWITCH】 for details
*/
@property (nonatomic, assign) NSInteger functionChangeValue;
@end
typedef enum {
    FS_NULL                  = 0,   //无 | Nothing
    FS_SENSOR_GATHER          = 1,   //体征数据采集总开关状态，0 关 1 开 | Sign data acquisition master switch status, 0 off and 1 on
    FS_MOTOR_ENABLE           = 2,   //振动开关状态，0 关 1 开 | Vibration switch status, 0 off, 1 on
    FS_DONT_DISTURB_WARN      = 3,   //勿扰开关状态，0 关 1 开 | Do not disturb switch status, 0 off and 1 on
    FS_CLOCK_1_WARN           = 4,   //闹钟 1 的开关状态，0 关 1 开 | Alarm 1 switch status, 0 off and 1 on
    FS_CLOCK_2_WARN           = 5,   //闹钟 2 的开关状态，0 关 1 开 | Alarm 2 switch status, 0 off and 1 on
    FS_CLOCK_3_WARN           = 6,   //闹钟 3 的开关状态，0 关 1 开 | Alarm 3 switch status, 0 off and 1 on
    FS_CLOCK_4_WARN           = 7,   //闹钟 4 的开关状态，0 关 1 开 | Alarm 4 switch status, 0 off and 1 on
    FS_CLOCK_5_WARN           = 8,   //闹钟 5 的开关状态，0 关 1 开 | Alarm 5 switch status, 0 off and 1 on
    FS_LOWBATTERY_WARN        = 9,   //低压提醒功能开关状态，0 关 1 开 | Low voltage reminder function switch status, 0 off and 1 on
    FS_TARGET_DAY_WARN        =10,   //日目标提醒检测总开关状态，0 关 1 开 | Daily target alert detection master switch status, 0 off and 1 on
    FS_TARGET_WEEK_WARN       = 11,  //周目标提醒检测总开关状态，0 关 1 开 | Weekly target alert detection master switch status, 0 off and 1 on
    FS_TARGET_SELF_WARN       = 12,  //自我鼓励目标提醒检测总开关状态，0 关 1 开 | Self encouragement target alert detection master switch status, 0 off and 1 on
    FS_HEARTRATE_LEVEL_WARN   =13,   //心率超标提醒开关状态，为 0 关 非 0 开 | The heart rate exceeds the limit reminder switch status, which is 0 off and not 0 on
    FS_WEARING_STATE_WARN     = 14,  //佩戴状态，0 未佩戴 1 佩戴 | Wearing status, 0 not wearing, 1 wearing
    FS_TAKEPHOTOS_WARN        = 15,  //拍照模式开关状态，0 关 1 开 | Photo mode switch status, 0 off and 1 on
    FS_STATEOFCHARGE_WARN     =16,   //设备充电状态更新,0 放电状态、1 低压状态、2 充电状态、3 充满状态 | The charging state of the equipment is updated, including 0 discharge state, 1 low voltage state, 2 charging state and 3 full state
    FS_MUSICINTERFACESTATUS   = 17,  //进入音乐界面状态 | Music interface status
    FS_BRIGHTSCREENTIMECHANGES = 18, //亮屏时长改变 | The duration of bright screen changes
    FS_WRISTLIFT_WARN         = 19,  //抬腕开关状态，0 关 1 开 | Wrist lifting switch status, 0 off and 1 on
    FS_PERCENTAGE_BATTERY     = 20,  //当前电池电量百分比 | Current battery power percentage
    FS_WATER_DRINKING_WARN    = 21,  //喝水提醒开关状态，0 关 1 开 | Water drinking reminder switch status, 0 off and 1 on
    FS_SEDENTARY_WARN         = 22,  //久坐提醒开关状态，0 关 1 开 | Sedentary reminder switch status, 0 off and 1 on
    FS_OTA_PERCENTAGE         = 23,  //OTA 百分比 | OTA percentage
```

```
    FS_MUTE_SWITCH              = 24,  //静音开关同步（安卓专用）｜Mute switch synchronization (Android only)
    FS_OTA_INTERFACE_STATUS     = 25,  //手表 OTA 升级界面状态，1 进入 OTA 界面，0 退出 OTA 界面｜Watch OTA upgrade interface status, 1 enters the OTA interface, 0 exits the OTA interface
    FS_ALARMCLOCK_CHANGENOTICE = 26,  //手表记事提醒/闹钟信息变更通知事件｜Watch reminder / alarm clock information change notification event

    FS_TIMING_HR_WARN           = 28, //定时心率检测开关状态,0 关 1 开｜Timing heart rate detection switch status, 0 off 1 on
    FS_TIMING_SPO2_WARN         = 29, //定时血氧检测开关状态，0 关 1 开｜Timing blood oxygen detection switch status, 0 off 1 on
    FS_TIMING_STRESS_WARN       = 30, //定时精神压力检测开关状态，0 关 1 开｜Timing mental stress detection switch status, 0 off 1 on
    FS_CALLAUDIO_WARN           = 31, //通话音频开关状态，0 关 1 开｜Call audio switch status, 0 off 1 on
    FS_MULTIMEDIAAUDIO_WARN     = 32, //多媒体音频开关状态，0 关 1 开｜Multimedia audio switch status, 0 off 1 on
    FS_TIMING_BP_WARN           = 33, //定时血压检测开关状态，0 关 1 开｜Timing blood pressure detection switch status, 0 off 1 on
    FS_DEVICE_EXCEPTION_WARN    = 34, //设备异常信息读取请求｜Device exception information read request
    FS_AGPS_LOCATION_REQUEST    = 35, //AGPS 位置基础信息(经纬度 UTC)请求｜AGPS location basic information (longitude and latitude UTC) request
    FS_AGPS_DATA_REQUEST        = 36, //AGPS 定位数据请求｜AGPS positioning data request

    FS_OTHER_EXPAND             = 255  //更多功能待拓展｜More functions to be expanded
}EM_FUNC_SWITCH;
// For more types, please check the FBMacro.h file in the SDK
```

40、Set temperature unit

```
- (void)fbUpTemperatureUnitWithUnit:(FB_TEMPERATUREUNIT)unit withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/**
温度单位｜Temperature unit
*/
FB_TEMPERATUREUNIT  unit;

typedef enum {
    FB_Centigrade       = 0,  //摄氏度 C｜Centigrade(C)
    FB_FahrenheitDegree = 1,  //华氏度 F｜Fahrenheit degree(F)
}FB_TEMPERATUREUNIT;
```

41、Get the duration of the bright screen

```
-(void)fbGetTheDurationOfBrightScreenWithBlock:(FBGet_AT_ResultCallBackBlock _Nonnull)fbBlock;
```

```
/**
 亮屏时长（秒）｜Duration of screen lighting (seconds)
*/
NSInteger responseObject;
```

42、Set the duration of the bright screen

```
- (void)fbSetTheDurationOfBrightScreenWithDuration:(int)duration
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/**
 亮屏时长（秒）｜Duration of screen lighting (seconds)
*/
int duration;
```

43、Switch to the specified watch face

```
- (void)fbTogglesTheSpecifiedDialWithIndex:(int)index
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/**
 表盘索引｜Dial index
*/
int index;
```

44、Set vibration feedback

```
- (void)fbVibrationFeedbackSwitchWithMode:(BOOL)mode
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 开 NO 关｜YES ON NO OFF */
BOOL mode;
```

45、Request to bind the device

```
/** The Mac address of the watch can not be passed. If it is nil, it will be processed internally by the SDK. It is recommended to pass nil
 */
- (void)fbBindDeviceRequest:(NSString * _Nullable)macAddress
withBlock:(FBGet_AT_ResultCallBackBlock _Nonnull)fbBlock;
/**
 绑定结果｜Binding Results
0 拒绝绑定｜0 refuses to bind
1 同意绑定｜1 agree to bind
2 已被绑定｜2 is bound
3 确认超时｜3 confirmation timeout
4 递交秘钥错误｜4 Wrong key submission
```

```
5 递交秘钥正确 | 5 The submitted key is correct
6 无需绑定 | 6 No binding required
*/
NSInteger responseObject;
```

46、Request to unbind the device

```
- (void)fbUnbindDeviceRequestWithBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

47、Get resting heart rate for the day

```
-(void)fbGetRestingHeartRateOfTheDayWithBlock:(FBGet_AT_ResultCallBackBlock _Nonnull)fbBlock;
/**
 当天静息心率 | The resting heart rate of the day
*/
NSInteger responseObject;
```

48、Get the specified prompt function

```
- (void)fbGetPromptFunctionWithMode:(FB_PROMPTFUNCTION)mode withBlock:(FBGet_AT_ResultCallBackBlock _Nonnull)fbBlock;
/**
 提示阀值，等于 0 则代表关闭 | Prompt threshold value, equal to 0 means closed
*/
NSInteger responseObject;
/**
 提示功能 | Prompt function
*/
FB_PROMPTFUNCTION mode;

typedef enum {
    FB_ExerciseHeartRate = 1,  //运动心率超高提示 | Exercise heart rate ultra-high prompt
    // 更多... 待拓展 | More... To be expanded
}FB_PROMPTFUNCTION;
```

49、Set the specified reminder function

```
- (void)fbSetPromptFunctionWithMode:(FB_PROMPTFUNCTION)mode withThreshold:(NSInteger)threshold withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

50、The app side synchronizes the GPS motion status to the device side

```
- (void)fbSynchronizationGPS_MotionWithModel:(FBGPSMotionActionModel *)model withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/*
 GPS 运动状态信息 | GPS motion status information
 */
@interface FBGPSMotionActionModel : NSObject
/**
 运动模式 | Movement mode
*/
@property (nonatomic, assign) FB_MOTIONMODE MotionMode;
/**
 GPS 运动状态 | GPS Motion status
*/
@property (nonatomic, assign) FB_GPS_MOTION_STATE MotionState;
/**
 当前运动总时间，单位秒 | Total current movement time, in seconds
 */
@property (nonatomic, assign) NSInteger totalTime;
@end
```

More sports mode reference[FB_MOTIONMODE]

```
typedef enum {
    FB_SettingStopMotion  = 0,  //停止运动 | Stop motion
    FB_SettingStartMotion = 1,  //开始运动 | Start motion
    FB_SettingPauseMotion = 2,  //暂停运动 | Pause motion
    FB_SettingKeepMotion  = 3,  //继续运动 | Keep motion
}FB_GPS_MOTION_STATE;
```

51、Callback for monitoring device-side GPS motion status changes

```
-(void)fbGPS_MotionWatchStatusChangeCallbackWithBlock:(FBGPSMotionWatchStatusChangeBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

52、Timing heart rate detection switch setting

```
- (void)fbTimingHeartRateDetectionSwitchData:(BOOL)switchMode withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 开 NO 关 | YES ON NO OFF */
BOOL switchMode;
```

53、Timed blood oxygen detection switch setting

```
- (void)fbTimingBloodOxygenDetectionSwitchData:(BOOL)switchMode
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 开 NO 关 | YES ON NO OFF */
BOOL switchMode;
```

54、Timed mental stress detection switch setting

```
- (void)fbTimingStressDetectionSwitchData:(BOOL)switchMode
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 开 NO 关 | YES ON NO OFF */
BOOL switchMode;
```

55、Get call audio switch status

```
- (void)fbGetCallAudioSwitchWithBlock:(FBGet_AT_ResultCallBackBlock
_Nonnull)fbBlock;
```

56、Set call audio switch status

```
- (void)fbSetCallAudioSwitchData:(BOOL)switchMode
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 开 NO 关 | YES ON NO OFF */
BOOL switchMode;
```

57、Get the status of the multimedia audio switch

```
-
(void)fbGetMultimediaAudioSwitchWithBlock:(FBGet_AT_ResultCallBackBlock
_Nonnull)fbBlock;
```

58、Set the status of the multimedia audio switch

```
- (void)fbSetMultimediaAudioSwitchData:(BOOL)switchMode
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/** YES 开 NO 关 | YES ON NO OFF */
BOOL switchMode;
```

➢ Record Report Synchronization API （FBBgCommand）

1、Get device hardware information

```
-(void)fbGetHardwareInformationDataWithBlock:(FBGetHardwareInformationBlock _Nonnull)fbBlock;
/*
 设备硬件信息 | Device hardware information
*/
@interface FBDeviceInfoModel : NSObject
/**
 结构体版本 | Structure version
*/
@property (nonatomic, assign) NSInteger structVersion;
/**
 硬件标志 | Hardware logo
*/
@property (nonatomic, copy) NSString *hardwareIdentifier;
/**
 mac 地址 | MAC address
*/
@property (nonatomic, copy) NSString *mac;
/**
 硬件版本 | Hardware version
*/
@property (nonatomic, copy) NSString *hardWareVersion;
/**
 固件版本 | Firmware version
*/
@property (nonatomic, copy) NSString *firmwareVersion;
/**
 UI 版本 | UI version
*/
@property (nonatomic, copy) NSString *UI_Version;
/**
 协议版本 | Protocol version
*/
@property (nonatomic, copy) NSString *protocolVeriosn;
/**
 设备名称 | Equipment name
*/
@property (nonatomic, copy) NSString *deviceName;
```

```
/**
 设备 ID | Device ID
*/
@property (nonatomic, assign) NSInteger deviceID;
/**
 设备 SN 号 | Equipment Sn number
*/
@property (nonatomic, copy) NSString *deviceSN;
/**
 固件更新日期 | Firmware update date
*/
@property (nonatomic, copy) NSString *firmwareUpdateTime;
/**
 适配号 | Matching number
*/
@property (nonatomic, copy) NSString *fitNumber;
/**
 二维码信息 | QR code information
*/
@property (nonatomic, assign) NSInteger QR_code;
/**
 MAC 二维码版本 | Mac QR code version
*/
@property (nonatomic, assign) NSInteger Mac_QR_code_version;
/**
 显示屏型号 | Display model
*/
@property (nonatomic, assign) NSInteger display_model;
/**
 TP 型号 | TP model
*/
@property (nonatomic, assign) NSInteger TP_model;
/**
 手表表盘形状 | Watch dial shape
 @note shape 手表表盘形状，0:长方形、1:圆形、2:正方形 | Watch dial shape, 0: rectangle, 1: circle, 2: Square
*/
@property (nonatomic, assign) NSInteger shape;
/**
 手表显示分辨率宽高 | Watch display resolution width and height
 */
@property (nonatomic, assign) CGSize watchDisplaySize;
/**
 表盘缩略图显示分辨率宽高 | Dial thumbnail display resolution width and height
 */
```

```
@property (nonatomic, assign) CGSize dialThumbnailDisplaySize;
/**
 音频库版本 | Audio library version
 */
@property (nonatomic, copy) NSString *audioTimeVersion;
@end
```

@note When the interface request is successful, the internal cache of **FBFirmwareVersionObject** will be automatically updated. For more information, please refer to **FBAllConfigObject.firmwareConfig**

2、Obtain real-time measurement data of the day

```
-(void)fbGetCurrentDayActivityDataWithBlock:(FBGetCurrentDayActivityDataBlock _Nonnull)fbBlock;
/*
 当日实时测量数据 | Real time measurement data of the day
*/
@interface FBCurrentDataModel : NSObject
/**
 本次数据产生时间点，时间戳 GMT 秒 | Time point of data generation, time stamp GMT seconds
*/
@property (nonatomic, assign) NSInteger GMTtimeInterval;
/**
 GMT 转年月日时分秒 | GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *dateTimeStr;
/**
 当前累计步数 | Current cumulative steps
*/
@property (nonatomic, assign) NSInteger currentStep;
/**
 当前累计消耗卡路里（千卡） | Current cumulative calories consumed (kcal)
*/
@property (nonatomic, assign) NSInteger currentCalories;
/**
 当前累计行程（米） | Current cumulative travel (m)
*/
@property (nonatomic, assign) NSInteger currentDistance;
/**
 当前心率（次/分钟） | Current heart rate (times / min)
*/
@property (nonatomic, assign) NSInteger currentHeartRate;
/**
```

```
 当前心率等级 | Current heart rate level
*/
@property (nonatomic, assign) FB_CURRENTHEARTRANGE HeartRateRange;
/**
 当前血氧（%） | Current blood oxygen (%)
*/
@property (nonatomic, assign) NSInteger currentOxy;
/**
 当前血氧等级 | Current blood oxygen level
*/
@property (nonatomic, assign) FB_CURRENTOXYRANGE OxyRange;
/**
 当前电池电量（%） | Current battery level (%)
*/
@property (nonatomic, assign) NSInteger batteryLevel;
/**
 当前收缩血压（高压，mmHg） | Current systolic blood pressure (high pressure, mmHg)
*/
@property (nonatomic, assign) NSInteger currentShrinkBlood;
/**
 当前舒张血压（低压，mmHg） | Current diastolic blood pressure (low pressure, mmHg)
*/
@property (nonatomic, assign) NSInteger currentDiastoleBlood;
/**
 当前累计运动时间（分钟） | Current cumulative movement time (minutes)
*/
@property (nonatomic, assign) NSInteger currentSportTimes;
/**
 当前累计激烈运动时间（分钟） | Current accumulated intense exercise time (minutes)
*/
@property (nonatomic, assign) NSInteger currentSportFierceTimes;
/**
 当前发生久坐累计时间（分钟） | Current accumulated sitting time (minutes)
*/
@property (nonatomic, assign) NSInteger sittingTime;
/**
 当前久坐期间平均步数，步数/小时 | Average steps during current sedentary period, steps / hour
*/
@property (nonatomic, assign) NSInteger sittingStep;
/**
 当前的经度 | Current longitude
*/
@property (nonatomic) float currentLongitude;
/**
```

```
 当前的纬度 | Current latitude
*/
@property (nonatomic) float currentLatitude;
/**
 当天每小时步数曲线，一小时一笔，固定 24 笔 | Steps per hour curve of the day, one transaction per hour, 24 fixed transactions

 @note 第一笔为 0 时 ~ 1 时的步数，第二笔为 1 时 ~ 2 时，以此类推... | The first stroke is the number of steps from 0 hour to 1 hour, the second stroke is from 1 hour to 2 hours, and so on
*/
@property (nonatomic, strong) NSArray <NSNumber *> *currentStepCurve;
/**
 当前精神压力值 | Current stress value
*/
@property (nonatomic, assign) NSInteger currentStress;
/**
 当前精神压力等级 | Current stress level
*/
@property (nonatomic, assign) FB_CURRENTSTRESSRANGE StressRange;
@end

typedef enum {
    FB_HR_NORMAL           = 0,  //正常的 | Normal
    FB_HR_MODERATE         = 1,  //缓和的 | Moderate
    FB_HR_VIGOROUS         = 2,  //充沛的 | Vigorous
    FB_HR_MAX_HR           = 3,  //心率过快 | The heart rate is too fast
    FB_HR_TAKE_IT_EASY      = 4,  //别紧张 | Take it easy
    FB_HR_WATCH_YOUR_LIMITS = 5,  //注意你的极限 | Watch your limits
    FB_HR_DONT_OVEREXERT    = 6,  //不要用力过猛 | Don't overdo it
}FB_CURRENTHEARTRANGE;

typedef enum {
    FB_OXY_NORMAL   = 0,  //正常 | Normal
    FB_OXY_MILD     = 1,  //轻度缺氧 | Mild hypoxia
    FB_OXY_MODERATE = 2,  //中度缺氧 | Moderate hypoxia
    FB_OXY_SEVERE   = 3,  //重度缺氧 | Severe hypoxia
}FB_CURRENTOXYRANGE;

typedef enum {
    FB_STRESS_RELAX     = 1,  //1-25 放松 | 1-25 Relax
    FB_STRESS_NORMAL    = 2,  //26-50 正常 | 26-50 normal
    FB_STRESS_SECONDARY = 3,  //51-75 中等 | 51-75 Medium
    FB_STRESS_HIGN      = 4   //76-99 偏高 | 76-99 high
}FB_CURRENTSTRESSRANGE;
```

3、Get real-time statistics report of current sleep

```
-(void)fbGetCurrentSleepStatisticsReportDataWithBlock:(FBGetSleepStatisticsReportBlock _Nonnull)fbBlock;
/*
 睡眠统计报告 | Sleep statistics report
*/
@interface FBSleepCaculateReportModel : NSObject
/**
 时间戳 GMT 秒 | Time stamp GMT seconds
*/
@property (nonatomic, assign) NSInteger GMTtimeInterval;
/**
 GMT 转年月日时分秒 | GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *dateTimeStr;
/**
 结构体版本 | Structure version
*/
@property (nonatomic, assign) NSInteger structVersion;
/**
 本次开始睡觉时间，GMT 秒 | Time to go to bed this time, GMT seconds
*/
@property (nonatomic, assign) NSInteger startSleepTime;
/**
 本次开始睡觉时间，GMT 转年月日时分秒 | Time to go to bed this time, GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *startDateTimerStr;
/**
 本次结束睡觉时间，GMT 秒 | The end of the sleep time, GMT seconds
*/
@property (nonatomic, assign) NSInteger endSleepTime;
/**
 本次结束睡觉时间，GMT 转年月日时分秒 | The end of the sleep time, GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *endDateTimerStr;
/**
 本次睡眠持续总时间（分钟） | Total sleep duration (minutes)
*/
@property (nonatomic, assign) NSInteger continueSleepTime;
/**
 本次睡眠清醒累计时间（分钟） | Cumulative time of waking up in this sleep (minutes)
*/
@property (nonatomic, assign) NSInteger awakeTime;
```

```
/**
 本次睡眠浅睡累计时间（分钟）｜Cumulative time of light sleep (minutes)
*/
@property (nonatomic, assign) NSInteger lightSleepTime;
/**
 本次睡眠深睡累计时间（分钟）｜Cumulative time of deep sleep (minutes)
*/
@property (nonatomic, assign) NSInteger deepSleepTime;
/**
 本次睡眠眼动累计时间（分钟）｜Cumulative time of eye movement in this sleep (minutes)
*/
@property (nonatomic, assign) NSInteger eyeMoveTime;
/**
 本次睡眠时最大血氧（%）｜Maximum blood oxygen during this sleep (%)
*/
@property (nonatomic, assign) NSInteger maxOxy;
/**
 本次睡眠时最小血氧（%）｜Minimum blood oxygen during this sleep (%)
*/
@property (nonatomic, assign) NSInteger minOxy;
/**
 本次睡眠时最大心率（次/分钟）｜Maximum heart rate during this sleep (times / min)
*/
@property (nonatomic, assign) NSInteger maxHeartRate;
/**
 本次睡眠时最小心率（次/分钟）｜Minimum heart rate during this sleep (times / min)
*/
@property (nonatomic, assign) NSInteger minHeartRate;
/**
 本次睡眠零星小睡累计时间（分钟）｜Cumulative time of this sporadic nap (minutes)
*/
@property (nonatomic, assign) NSInteger sporadicNapTime;
@end
```

4、Get the current real-time sleep state record

```
-(void)fbGetCurrentSleepStateRecordingDataWithBlock:(FBGetSleepStateRecordingBlock _Nonnull)fbBlock;
/*
 睡眠状态记录｜Sleep state recording
*/
@interface FBSleepStatusRecordModel : NSObject
/**
 时间戳 GMT 秒｜Time stamp GMT seconds
```

```
*/
@property (nonatomic, assign) NSInteger GMTtimeInterval;
/**
 GMT 转年月日时分秒 | GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *dateTimeStr;
/**
 结构体版本，0:不支持眼动，1:支持眼动 | Structure version, 0: eye movement is not supported, 1: eye movement is supported
*/
@property (nonatomic, assign) NSInteger structVersion;
/**
 是否有零星小睡，YES:有零星小睡，NO:无零星小睡 | Whether there are sporadic naps, yes: sporadic naps, No: no sporadic naps
*/
@property (nonatomic, assign) BOOL isNap;
/**
 零星小睡数据的偏移位置长度 | Offset position length of sporadic nap data
*/
@property (nonatomic, assign) NSInteger napDataOffset;
/**
 开始睡眠时间，GMT 秒 | Sleep start time, GMT seconds
*/
@property (nonatomic, assign) NSInteger startSleepTime;
/**
 开始睡眠时间，GMT 转年月日时分秒 | Sleep start time, GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *startDateTimerStr;
/**
 睡眠结束时间，GMT 秒 | Sleep end time, GMT seconds
*/
@property (nonatomic, assign) NSInteger endSleepTime;
/**
 睡眠结束时间，GMT 转年月日时分秒 | Sleep end time, GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *endDateTimerStr;
/**
 当天深度睡眠时间（分钟） | Deep sleep time of the day (minutes)
*/
@property (nonatomic, assign) NSInteger deepSleepTime;
/**
 当天浅睡时间（分钟） | Light sleep time of the day (minutes)
*/
@property (nonatomic, assign) NSInteger lightSleepTime;
/**
 当天眼动时间（分钟） | Eye movement time of the day (minutes)
```

```
*/
@property (nonatomic, assign) NSInteger eyeMoveTime;
/**
睡眠状态数组有效长度 | Effective length of sleep state array
*/
@property (nonatomic, assign) NSInteger EffectiveLength;
/**
 夜间睡眠状态数组 | Night sleep status array
*/
@property (nonatomic, strong) NSArray <FBSleepStateModel *> *sleepStateArray;
/**
 零星小睡状态数组 | Sporadic nap status array
*/
@property (nonatomic, strong) NSArray <FBSleepStateModel *> *napStateArray;
@end



/*
 睡眠状态详细 | Sleep status details
*/
@interface FBSleepStateModel : NSObject
/**
 睡眠状态起始时间戳 GMT 秒 | Sleep state start timestamp GMT seconds
*/
@property (nonatomic, assign) NSInteger startStatusGMT;
/**
 起始 GMT 转年月日时分秒 | From GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *startDateTimeStr;
/**
 睡眠状态结束时间戳 GMT 秒 | Sleep state end timestamp GMT seconds
*/
@property (nonatomic, assign) NSInteger endStatusGMT;
/**
 结束 GMT 转年月日时分秒 | End GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *endDateTimeStr;
/**
 睡眠状态 | Sleep state
*/
@property (nonatomic, assign) FB_SLEEPSTATE SleepStatus;
/**
 持续睡眠时间（分钟） | Duration of sleep (minutes)
*/
```

```
@property (nonatomic, assign) NSInteger durationSleepTime;
@end

typedef enum {
    Awake_state   = 0,  //清醒状态 | Awake state
    Shallow_sleep = 1,  //浅层睡眠 | Shallow sleep
    Deep_sleep    = 2,  //深层睡眠 | Deep sleep

    Eye_move      = 3,  //眼动状态（结构体版本不等于 0 时才有此类型） | Eye move (This type is only available when the structure version is not equal to 0)
}FB_SLEEPSTATE;
```

5、Get daily activity statistics report

```
- (void)fbGetDailyActivityDataStartTime:(NSInteger)startTime forEndTime:(NSInteger)endTime withBlock:(FBGetDailyActivityDataBlock _Nonnull)fbBlock;
/*
 每日活动统计报告 | Daily activity statistics report
*/
@interface FBDayActivityModel : NSObject
/**
 时间戳 GMT 秒 | Time stamp GMT seconds
*/
@property (nonatomic, assign) NSInteger GMTtimeInterval;
/**
 GMT 转年月日时分秒 | GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *dateTimeStr;
/**
 结构体版本 | Structure version
*/
@property (nonatomic, assign) NSInteger structVersion;
/**
 当天的累计步数 | Cumulative steps of the day
*/
@property (nonatomic, assign) NSInteger totalSteps;
/**
 当天消耗的卡路里（千卡） | Calories consumed that day (kcal)
*/
@property (nonatomic, assign) NSInteger totalCalories;

/**
 当天的累计行程（米） | Cumulative itinerary of the day (m)
```

```
*/
@property (nonatomic, assign) NSInteger totalDistance;
/**
 当天的平均心率（次/分钟）| Average heart rate of the day (times / min)
*/
@property (nonatomic, assign) NSInteger avgHeartRate;
/**
 当天最高心率（次/分钟）| Maximum heart rate of the day (times / min)
*/
@property (nonatomic, assign) NSInteger maxHeartRate;
/**
 当天最低心率（次/分钟）| Lowest heart rate of the day (times / min)
*/
@property (nonatomic, assign) NSInteger minHeartRate;
/**
 当天平均血氧（%）| Average blood oxygen of the day (%)
*/
@property (nonatomic, assign) NSInteger avgOxy;
/**
 当天累计运动时间（分钟）| Accumulated exercise time of the day (minutes)
*/
@property (nonatomic, assign) NSInteger totalSportTime;
/**
 当天激烈运动时间（分钟）| Intense exercise time of the day (minutes)
*/
@property (nonatomic, assign) NSInteger voilentSportTime;
/**
 当天深度睡眠时间（分钟）| Deep sleep time of the day (minutes)
*/
@property (nonatomic, assign) NSInteger deepSleeTime;
/**
 当天浅睡眠时间（分钟）| Light sleep time of the day (minutes)
*/
@property (nonatomic, assign) NSInteger lightSleepTime;
/**
 当天睡眠眼动时间（分钟）| Sleep eye movement time of the day (minutes)
*/
@property (nonatomic, assign) NSInteger eyeMoveTime;
/**
 当天最高血压（mmHg）| Highest blood pressure of the day (mmHg)
*/
@property (nonatomic, assign) NSInteger maxBlood;
/**
 当天最低血压（mmHg）| Lowest blood pressure of the day (mmHg)
```

```
*/
@property (nonatomic, assign) NSInteger minBlood;
/**
 当天最高精神压力值 | Maximum stress value of the day
*/
@property (nonatomic, assign) NSInteger maximumStress;
/**
 当天最高精神压力等级 | Maximum stress level of the day
*/
@property (nonatomic, assign) FB_CURRENTSTRESSRANGE StressRange;
@end
```

6、Obtain the hourly activity statistics report

```
- (void)fbGetHourlyActivityDataStartTime:(NSInteger)startTime forEndTime:(NSInteger)endTime withBlock:(FBGetHourlyActivityDataBlock _Nonnull)fbBlock;
/*
 整点活动统计报告 | Statistical report of on-time activities
*/
@interface FBHourReportModel : NSObject
/**
 时间戳 GMT 秒 | Time stamp GMT seconds
*/
@property (nonatomic, assign) NSInteger GMTtimeInterval;
/**
 GMT 转年月日时分秒 | GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *dateTimeStr;
/**
 结构体版本 | Structure version
*/
@property (nonatomic, assign) NSInteger structVersion;
/**
 到此刻为止的累计计步数 | Cumulative steps up to now
*/
@property (nonatomic, assign) NSInteger hourStep;
/**
 到此刻为止的累计行走距离（米） | Accumulated walking distance up to now (m)
*/
@property (nonatomic, assign) NSInteger hourdDistance;
/**
 到此刻为止的累计消耗卡路里（千卡） | Cumulative calories burned so far (kcal)
*/
```

```
@property (nonatomic, assign) NSInteger hourCalories;
@end
```

7、Get sleep statistics report

```
- (void)fbGetSleepStatisticsReportDataStartTime:(NSInteger)startTime
forEndTime:(NSInteger)endTime
withBlock:(FBGetSleepStatisticsReportBlock _Nonnull)fbBlock;
// Refer to the above sleep real-time statistics report parameters
```

8、Get sleep status record

```
- (void)fbGetSleepStateRecordingDataStartTime:(NSInteger)startTime
forEndTime:(NSInteger)endTime withBlock:(FBGetSleepStateRecordingBlock
_Nonnull)fbBlock;
// Refer to the above sleep real-time state recording parameters
```

9、Get list of exercise records

```
- (void)fbGetMotionRecordListDataStartTime:(NSInteger)startTime
forEndTime:(NSInteger)endTime withBlock:(FBGetMotionRecordListBlock
_Nonnull)fbBlock;
/*
 运动记录列表 | Sports record list
*/
@interface FBSportRecordModel : NSObject
/**
 时间戳 GMT 秒 | Time stamp GMT seconds
*/
@property (nonatomic, assign) NSInteger GMTtimeInterval;
/**
 GMT 转年月日时分秒 | GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *dateTimeStr;
/**
 结构体版本 | Structure version
*/
@property (nonatomic, assign) NSInteger structVersion;
/**
 开始运动时间，GMT 秒 | Start time of exercise, GMT seconds
*/
@property (nonatomic, assign) NSInteger startSportTime;
/**
```

```
 开始运动时间，GMT 转年月日时分秒 | Start time of exercise, GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *startDateTimerStr;
/**
 结束运动时间，GMT 秒 | End exercise time, GMT seconds
*/
@property (nonatomic, assign) NSInteger endSportTime;
/**
 结束运动时间，GMT 转年月日时分秒 | End exercise time, GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *endDateTimerStr;
/**
 运动模式 | Motion mode
*/
@property (nonatomic, assign) FB_MOTIONMODE MotionMode;
@end
```

10、Get Sports Statistics Report

```
- (void)fbGetSportsDataReportDataStartTime:(NSInteger)startTime forEndTime:(NSInteger)endTime withBlock:(FBGetSportsDataReportBlock _Nonnull)fbBlock;
/*
 运动统计报告 | Sports statistics report
*/
@interface FBSportCaculateModel : NSObject
/**
 时间戳 GMT 秒 | Time stamp GMT seconds
*/
@property (nonatomic, assign) NSInteger GMTtimeInterval;
/**
 GMT 转年月日时分秒 | GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *dateTimeStr;
/**
 结构体版本 | Structure version
*/
@property (nonatomic, assign) NSInteger structVersion;
/**
 运动开始时间戳，作为每笔运动的唯一识别 id， GMT 秒 | The movement start time stamp is used as the unique identification ID of each movement, GMT seconds.
*/
@property (nonatomic, assign) NSInteger startSportTime;
/**
```

```
 运动开始时间，GMT 转年月日时分秒 | Start time of exercise, GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *startDateTimerStr;
/**
 运动结束时间戳，GMT 秒 | Movement end timestamp, GMT seconds
*/
@property (nonatomic, assign) NSInteger endSportTime;
/**
 运动结束时间，GMT 转年月日时分秒 | End time of exercise, GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *endDateTimerStr;
/**
 运动总时间（秒） | Total exercise time (seconds)
*/
@property (nonatomic, assign) NSInteger totalSportTime;
/**
 运动总步数 | Total movement steps
*/
@property (nonatomic, assign) NSInteger totalSteps;
/**
 运动总卡路里（千卡） | Total exercise calories (kcal)
*/
@property (nonatomic, assign) NSInteger totalCalories;
/**
 运动总距离（单位米，通过计步估算） | Total distance of movement (in meters, estimated by steps)
*/
@property (nonatomic, assign) NSInteger totalDistance;
/**
 本次运动轨迹运动距离（单位米，通过 gps 定位 计算） | The movement distance of this movement track (unit: m, calculated by GPS
positioning)
*/
@property (nonatomic, assign) NSInteger gpsDistance;
/**
 运动模式 | Motion mode
*/
@property (nonatomic, assign) FB_MOTIONMODE MotionMode;
/**
 本次运动最大心率（次/分钟） | Maximum heart rate of this exercise (times / min)
*/
@property (nonatomic, assign) NSInteger maxHeartRate;
/**
 本次运动最小心率（次/分钟） | Minimum heart rate of this exercise (times / min)
*/
@property (nonatomic, assign) NSInteger minHeartRate;
```

```
/**
 本次运动平均心率，运动结束时计算，心率和/ 记录次数（次/分钟）｜Average heart rate of the exercise, calculated at the end of the exercise, heart rate and / or record times (times / minute)
*/
@property (nonatomic, assign) NSInteger avgHeartRate;
/**
 本次运动最大步频（步/分钟）｜Maximum stride frequency (step / min)
*/
@property (nonatomic, assign) NSInteger maxStride;
/**
 本次运动平均步频 = 步频和/记录次数（步/分钟）｜Average stride frequency = stride frequency and / or recording times (step / minute)
*/
@property (nonatomic, assign) NSInteger avgStride;
/**
 运动次数，中途休息次数｜Number of exercises, number of breaks
*/
@property (nonatomic, assign) NSInteger breakTimes;
/**
 中断 UTC 记录，同时用于统计运动总时间｜The UTC record is interrupted and used to count the total movement time at the same time
*/
@property (nonatomic, strong) NSArray <FBSportPauseModel *> *sportPauseArray;
/**
 本次运动最大速度(单位:米/秒)｜Maximum speed of this movement (unit: M / s)
*/
@property (nonatomic, assign) NSInteger maxSpeed;
/**
 本次运动平均速度 = 距离/用时（米/秒）｜Average speed of this movement = distance / time (M / s)
*/
@property (nonatomic, assign) NSInteger avgSpeed;
/**
 本次无轨迹运动平均配速（秒/公里）｜Average speed of this trackless movement (s / km)
*/
@property (nonatomic, assign) NSInteger noTrackAvgSpeed;
/**
 本次有轨迹运动配速（秒/公里）｜This time, there is track movement speed (s / km)
*/
@property (nonatomic, assign) NSInteger trackAvgSpeed;
/**
 重复运动的周期数(来回次数，圈数)(单位：圈)｜Number of cycles of repeated motion (number of cycles, number of turns) (unit: turns)
*/
@property (nonatomic, assign) NSInteger sportRepeatCount;
/**
 摆臂次数，划水次数(单位:次)｜Arm swing times, stroke times (unit: Times)
*/
```

```
@property (nonatomic, assign) NSInteger armSwingTimes;
/**
 热身运动时间，单位分钟 | Warm up exercise time in minutes
*/
@property (nonatomic, assign) NSInteger heartRate_level_1;
/**
 燃脂运动时间，单位分钟 | Fat burning movement time, in minutes
*/
@property (nonatomic, assign) NSInteger heartRate_level_2;
/**
 有氧耐力运动时间，单位分钟 | Aerobic endurance exercise time, in minutes
*/
@property (nonatomic, assign) NSInteger heartRate_level_3;
/**
 高强有氧运动时间，单位分钟 | High strength aerobic exercise time, in minutes
*/
@property (nonatomic, assign) NSInteger heartRate_level_4;
/**
 无氧运动时间，单位分钟 | Anaerobic exercise time in minutes
*/
@property (nonatomic, assign) NSInteger heartRate_level_5;
@end
```

11、Get heart rate records

```
- (void)fbGetHeartRateRecordDataStartTime:(NSInteger)startTime forEndTime:(NSInteger)endTime withBlock:(FBGetHeartRateRecordBlock _Nonnull)fbBlock;
/*
 类型记录/报告 | Type record / Report
*/
@interface FBTypeRecordModel : NSObject
/**
 第一条记录(结构体)的形成时间戳 GMT 秒 | Time stamp GMT seconds
*/
@property (nonatomic, assign) NSInteger GMTtimeInterval;
/**
 GMT 转年月日时分秒 | GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *dateTimeStr;
/**
 本次运动的开始时间戳 GMT 秒（仅记录类型为：运动详情记录、运动定位记录 时 有值）| The start time stamp of this movement is GMT seconds (only the record types are: motion detail record and motion positioning record)
*/
```

```
@property (nonatomic, assign) NSInteger sportTimeStamp;
/**
 记录生成周期（记录类型为心率/计步/血氧/血压记录时，单位分钟；为运动详情/运动定位记录时，单位秒）｜Record generation cycle (record type: heart rate / step / blood oxygen / blood pressure record, unit: minute; record type: movement details / movement positioning record, unit: Second)
*/
@property (nonatomic, assign) NSInteger createTimes;
/**
 有效记录条数｜Number of effective records
*/
@property (nonatomic, assign) NSInteger EffectiveRecord;
/**
 单条记录长度｜Length of single record
*/
@property (nonatomic, assign) NSInteger recordLength;
/**
 记录类型｜Record type
*/
@property (nonatomic, assign) FB_RECORDTYPE RecordType;
/**
 类型记录数组｜Type record array
*/
@property (nonatomic, strong) NSArray <FBRecordDetailsModel *> *recordArray;
@end

/*
 * 记录类型｜Record type
 */
typedef enum {
    FB_HeartRecord     = 0,  //心率记录｜Heart rate recording
    FB_StepRecord      = 1,  //计步记录｜Step count record
    FB_BloodOxyRecord  = 2,  //血氧记录｜Blood oxygen recording
    FB_BloodPreRecord  = 3,  //血压记录｜Blood pressure recording
    FB_SportsRecord    = 4,  //运动详情记录｜Sports detail record
    FB_MotionGpsRecord = 5,  //运动定位记录｜Motion location record
    FB_HFHeartRecord   = 6,  //运动高频心率记录(1 秒 1 次)｜Sports high-frequency heart rate recording (1 time per second)
    FB_StressRecord    = 7,  //精神压力记录｜Stress Record

}FB_RECORDTYPE;

/*
 类型记录数组详情（具体参考枚举值 FB_RECORDTYPE）｜Type record array details (refer to enumeration value FB_RECORDTYPE for details)
```

```
*/
@interface FBRecordDetailsModel : NSObject
#pragma mark - 以下值，通用，有值 | The following values, general, have values
/** 记录形成时间戳 GMT 秒 | Record the formation time stamp GMT seconds */
@property (nonatomic, assign) NSInteger GMTtimeInterval;
/** GMT 转年月日时分秒 | GMT to YYYY-MM-dd HH:mm:ss */
@property (nonatomic, copy) NSString *dateTimeStr;

#pragma mark - 当 FB_RECORDTYPE 为 FB_HeartRecord、FB_HFHeartRecord 时（心率记录、运动高频心率记录(1 秒 1 次)），以下有值 | When FB_RECORDTYPE is FB_HeartRecord, FB_HFHeartRecord (heart rate record, exercise high-frequency heart rate record (1 time per second)), the following values
/** 心率值 | Heart rate value */
@property (nonatomic, assign) NSInteger hr;

#pragma mark - 当 FB_RECORDTYPE 为 FB_StepRecord 时（计步记录），以下有值 | When FB_RECORDTYPE is FB_StepRecord (step counting record), the following values
/** 计步数累加值 | Accumulated value of step count */
@property (nonatomic, assign) NSInteger step;

#pragma mark - 当 FB_RECORDTYPE 为 FB_BloodOxyRecord 时（血氧记录），以下有值 | When FB_RECORDTYPE is FB_BloodOxyRecord (blood oxygen record), the following values
/** 血氧值（%） | Blood oxygen value (%) */
@property (nonatomic, assign) NSInteger Sp02;

#pragma mark - 当 FB_RECORDTYPE 为 FB_BloodPreRecord 时（血压记录），以下有值 | When FB_RECORDTYPE is FB_BloodPreRecord (blood pressure record), the following values
/** 收缩压（高压，mmHg） | Systolic blood pressure (high pressure, mmHg) */
@property (nonatomic, assign) NSInteger pb_max;
/** 舒张压（低压，mmHg） | Diastolic blood pressure (low pressure, mmHg) */
@property (nonatomic, assign) NSInteger pb_min;

#pragma mark - 当 FB_RECORDTYPE 为 FB_StressRecord 时（精神压力记录），以下有值 | When FB_RECORDTYPE is FB_StressRecord (mental stress record), the following values
/** 精神压力值 | Mental stress value */
@property (nonatomic, assign) NSInteger stress;
/** 精神压力等级 | Mental stress level */
@property (nonatomic, assign) FB_CURRENTSTRESSRANGE StressRange;

#pragma mark - 当 FB_RECORDTYPE 为 FB_SportsRecord 时（运动详情记录），以下有值 | When FB_RECORDTYPE is FB_SportsRecord (sports details record), the following values
/** 实时配速（秒/千米） | Real time pace (SEC / km) */
@property (nonatomic, assign) NSInteger pace;
/** 一分钟内消耗的卡路里值（千卡） | Calories consumed in one minute (kcal) */
@property (nonatomic, assign) NSInteger calories;
```

```
/** 一分钟内的步数（实时步频，步/分钟）｜Steps in one minute (real time step frequency, step / minute) */
@property (nonatomic, assign) NSInteger stepFrequency;
/** 运动中的实时距离（米）｜Real time distance in motion (m) */
@property (nonatomic, assign) NSInteger distance;
/** 实时心率（次/分钟）｜Real time heart rate (times / min) */
@property (nonatomic, assign) NSInteger heartRate;
/** 实时体力，0~100｜Real time physical strength, 0-100 */
@property (nonatomic, assign) NSInteger stamina;
/** 运动状态。NO 正常，YES 暂停｜Motion state. NO normal, YES pause */
@property (nonatomic, assign) BOOL isSuspend;

#pragma mark - 当 FB_RECORDTYPE 为 FB_MotionGpsRecord 时（运动定位记录），以下有值｜When FB_RECORDTYPE is FB_MotionGpsRecord (motion positioning record), the following values
/** 纬度｜Real time distance in motion */
@property (nonatomic) float latitude;
/** 经度｜Real time heart rate */
@property (nonatomic) float longitude;
/** GPS 速度（米/秒）｜GPS speed (M / s) */
@property (nonatomic, assign) NSInteger speed;
/** 状态。NO 正常，YES 暂停｜Status. NO normal, YES pause */
@property (nonatomic, assign) BOOL gpsIsSuspend;
@end
```

12、Get pedometer records

```
- (void)fbGetStepCountRecordDataStartTime:(NSInteger)startTime forEndTime:(NSInteger)endTime withBlock:(FBGetStepCountRecordBlock _Nonnull)fbBlock;
// Refer to the above record parameters
```

13、Get Blood Oxygen Records

```
- (void)fbGetBloodOxygenRecordDataStartTime:(NSInteger)startTime forEndTime:(NSInteger)endTime withBlock:(FBGetBloodOxygenRecordBlock _Nonnull)fbBlock;
// Refer to the above record parameters
```

14、Get blood pressure records

```
- (void)fbGetBloodPressureRecordsDataStartTime:(NSInteger)startTime forEndTime:(NSInteger)endTime withBlock:(FBGetBloodPressureRecordsBlock _Nonnull)fbBlock;
// Refer to the above record parameters
```

15、Get Stress Records

```
- (void)fbGetStressRecordsDataStartTime:(NSInteger)startTime
forEndTime:(NSInteger)endTime withBlock:(FBGetStressRecordsBlock
_Nonnull)fbBlock;
// Refer to the above record parameters
```

16、Get exercise details record

```
- (void)fbGetExerciseDetailsDataStartTime:(NSInteger)startTime
forEndTime:(NSInteger)endTime withBlock:(FBGetExerciseDetailsBlock
_Nonnull)fbBlock;
// Refer to the above record parameters
```

17、Get sports statistics report + sports details record

```
-
(void)fbGetSportsStatisticsDetailsReportsWithStartTime:(NSInteger)start
Time forEndTime:(NSInteger)endTime
withBlock:(FBGetSportsStatisticsDetailsRecordBlock _Nonnull)fbBlock;
// Refer to the above record parameters
```

18、Obtain motion location records

```
- (void)fbGetMotionLocationRecordDataStartTime:(NSInteger)startTime
forEndTime:(NSInteger)endTime withBlock:(FBGetMotionLocationRecordBlock
_Nonnull)fbBlock;
// Refer to the above record parameters
```

19、Obtain exercise high-frequency heart rate records (1 time per second)

```
-
(void)fbExerciseHighFrequencyHeartRateRecordsDataStartTime:(NSInteger)s
tartTime forEndTime:(NSInteger)endTime
withBlock:(FBGetExerciseHFHRRecordsBlock _Nonnull)fbBlock;
// Refer to the above record parameters
```

20、Acquire manual measurement data records

```
- (void)fbGetManualMeasurementDataStartTime:(NSInteger)startTime
forEndTime:(NSInteger)endTime withBlock:(FBGetManualMeasureDataBlock
_Nonnull)fbBlock;
```

```
/*
 手动测量数据记录 | Manual measurement data record
*/
@interface FBManualMeasureDataModel : NSObject
/**
 时间戳 GMT 秒 | Time stamp GMT seconds
*/
@property (nonatomic, assign) NSInteger GMTtimeInterval;
/**
 GMT 转年月日时分秒 | GMT to YYYY-MM-dd HH:mm:ss
*/
@property (nonatomic, copy) NSString *dateTimeStr;
/**
 心率值 | Heart rate value
*/
@property (nonatomic, assign) NSInteger hr;
/**
 血氧值（%） | Blood oxygen value (%)
*/
@property (nonatomic, assign) NSInteger Sp02;
/**
 收缩压（高压，mmHg） | Systolic blood pressure (high pressure, mmHg)
 */
@property (nonatomic, assign) NSInteger pb_max;
/**
 舒张压（低压，mmHg） | Diastolic blood pressure (low pressure, mmHg)
 */
@property (nonatomic, assign) NSInteger pb_min;
/**
 精神压力值 | Mental stress value
 */
@property (nonatomic, assign) NSInteger stress;

/**
 精神压力等级 | Mental stress level
 */
@property (nonatomic, assign) FB_CURRENTSTRESSRANGE StressRange;
@end
```

21、Get specified records and reports

```
-(void)fbGetSpecialRecordsAndReportsDataWithType:(FB_MULTIPLERECORDREPORTS)recordTypes startTime:(NSInteger)startTime
```

```
forEndTime:(NSInteger)endTime
withBlock:(FBGetSpecialRecordsAndReportsBlock _Nonnull)fbBlock;
typedef enum {
    FB_CurrentDayActivityData          = 1<<0,   //当日实时测量数据 | Real time measurement data of the day
    FB_HeartRateRecording              = 1<<1,   //心率记录 | Heart rate recording
    FB_StepCountRecord                 = 1<<2,   //计步记录 | Step counting record
    FB_BloodOxygenRecording            = 1<<3,   //血氧记录 | Blood oxygen record
    FB_BloodPressureRecording          = 1<<4,   //血压记录 | Blood pressure record
    FB_HFHeartRateRecording            = 1<<5,   //运动高频心率记录(1 秒 1 次) | Sports high-frequency heart
rate recording (1 time per second)
    FB_StressRecording                 = 1<<6,   //精神压力记录 | Stress Record
    FB_SportsDetailsRecord             = 1<<7,   //运动详情记录 | Sports detail record
    FB_SportsPositioningRecord         = 1<<8,   //运动定位记录 | Sports positioning record
    FB_DailyActivityReport             = 1<<9,   //每日活动报告 | Daily activity report
    FB_OnHourActivityReport            = 1<<10,  //整点活动报告 | On hour activity report
    FB_SleepStatisticsReport           = 1<<11,  //睡眠统计报告 | Sleep statistics report
    FB_SleepStateRecording             = 1<<12,  //睡眠状态记录 | Sleep state recording
    FB_CurrentSleepStatisticsReport     = 1<<13,  //当前睡眠实时统计报告 | Current sleep real time
statistics report
    FB_CurrentSleepStateRecording       = 1<<14,  //当前睡眠实时状态记录 | Current sleep real time status
record
    FB_SportsRecordList                = 1<<15,  //运动记录列表 | Sports record list
    FB_SportsStatisticsReport          = 1<<16,  //运动统计报告 | Sports statistics report
    FB_Sports_Statistics_Details_Report = 1<<17,  //运动统计报告+运动详情纪录 | Sports statistics report +
sports details record
    FB_ManualMeasurementData           = 1<<18,  //手动测量数据 | Manual measurement data
}FB_MULTIPLERECORDREPORTS;

// Other parameters refer to the corresponding data model
```

22、Obtain personal user information

```
- (void)fbGetPersonalUserInforWithBlock:(FBGetPersonalUserInforBlock
_Nonnull)fbBlock;
/*
 用户个人信息 | User personal information
*/
@interface FBUserInforModel : NSObject
/**
 用户 ID（大于 0，小于 0xFFFFFFFF） | User ID (greater than 0, less than 0xFFFFFF)
*/
@property (nonatomic, assign) NSInteger userId;
/**
```

```
用户昵称（长度小于或等于 31 个字节，用户昵称超出最大长度，自动截取）｜User nickname (the length is less than or equal to 31 bytes, and the user nickname exceeds the maximum length, automatically intercepted)
*/
@property (nonatomic, copy) NSString *userNickname;
/**
用户身高（单位 cm，大于 100，小于 250）｜User's height (in cm, greater than 100, less than 250)
*/
@property (nonatomic, assign) NSInteger userHeight;
/**
用户体重（单位 kg， 大于 30， 小于 250）｜User's weight (in kg, more than 30, less than 250)
*/
@property (nonatomic, assign) NSInteger userWeight;
/**
时区偏移时间（分钟）｜Time zone offset time (minutes)
*/
@property (nonatomic, assign) NSInteger userTimeZoneMinute;
/**
用户性别｜User gender
*/
@property (nonatomic, assign) FB_USERGENDER UserGender;
/**
用户年龄（大于 5 岁，小于 130 岁）｜User age (over 5, under 130)
*/
@property (nonatomic, assign) NSInteger userAge;
/**
用户步幅（单位 cm）｜User stride (in cm)
*/
@property (nonatomic, assign) NSInteger userStride;
/**
女性生理周期信息｜Female physiological cycle information
*/
@property (nonatomic, strong) FBFemalePhysiologyModel *physiologyModel;
@end

typedef enum {
    FB_UserMale   = 0,  //男性｜Male
    FB_UserFemale = 1,  //女性｜Female
}FB_USERGENDER;
```

23、Set user personal information

```
- (void)fbSetPersonalUserInforWithUserModel:(FBUserInforModel *_Nonnull)userModel withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

24、Obtain note reminder/alarm information

```
- (void)fbGetClockInforWithBlock:(FBGetClockInforBlock _Nonnull)fbBlock;
/*
 记事提醒/闹钟信息 | Reminder / alarm clock
*/
@interface FBAlarmClockModel : NSObject
#pragma mark 以下值，通用，必传 | The following values, general, must be passed
/**
 序号 ID（0、1、2、3、4）最多 5 个闹钟 | Serial number ID (0, 1, 2, 3, 4) up to 5 alarm clocks
*/
@property (nonatomic, assign) NSInteger clockID;
/**
 闹铃类别：备忘提醒（年月日小时分钟有效），定时闹钟（仅小时分钟有效） | Alarm category: reminder（valid for hours and minutes），
Time alarm clock（only hours and minutes）
*/
@property (nonatomic, assign) FB_ALARMCATEGORY clockCategory;
/**
 使能开关 NO:关 YES:开（默认 YES） | Enable switch NO: off YES: on (default YES)
*/
@property (nonatomic, assign) BOOL clockEnableSwitch;
/**
 稍后提醒开关 NO:关 YES:开（默认 NO） | Remind switch later NO: OFF YES: ON (default NO)
*/
@property (nonatomic, assign) BOOL remindLater;
/**
 描述，长度小于等于 23 个字节 | Description, the length of description is less than or equal to 23 bytes
*/
@property (nonatomic, copy) NSString *clockDescribe;

#pragma mark 当 FB_ALARMCATEGORY==FB_Reminders 时，为备忘提醒，以下值，必传 | When FB_
ALARMCATEGORY==FB_Reminders, for reminders, the following values must be passed
/**
 年月日小时分钟，格式：YYYY-MM-dd HH:mm（当闹铃类别为 FB_Reminders:备忘提醒，必传；为 FB_AlarmClock:定时闹钟可不传） |
Month, year, day, hour and minute, format: YYYY-MM-dd HH:mm (When the alarm type is FB_Reminders: reminder, it must be sent;
when it is FB_AlarmClock: fixed time alarm, it can not be sent)
*/
@property (nonatomic, copy) NSString *clockYMDHm;

#pragma mark 当 FB_ALARMCATEGORY==FB_AlarmClock 时，为定时闹钟，以下值，必传 | When FB_
ALARMCATEGORY==FB_AlarmClock, for alarm clock, the following values must be passed
/**
 重复性，YES:周期有效，NO:一次有效 | Repeatability, YES: cycle effective, NO: once effective
*/
```

```
@property (nonatomic, assign) BOOL isRepeat;
/**
 星期选中标记（星期日、星期一、星期二、星期三、星期四、星期五、星期六；必须设置固定七个数据的数组，传 0「未选中」或 1「选中」）｜Week check mark (Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday; fixed array of seven data must be set, transfer 0 (unselected) or 1 (selected))
*/
@property (nonatomic, strong) NSArray <NSNumber *> *clockRepeatArray;
/**
 小时分钟,格式:HH:mm(当闹铃类别为 FB_AlarmClock:定时闹钟,必传;为FB_Reminders:备忘提醒可不传)｜Hours and minutes, format: HH: mm (When the alarm type is FB_AlarmClock: timed alarm, it must be sent; when it is FB_Reminders: reminder, it can not be sent)
*/
@property (nonatomic, copy) NSString *clockHm;
@end

typedef enum {
    FB_Reminders  = 0,  //备忘提醒｜Reminders
    FB_AlarmClock = 1,  //定时闹钟｜Alarm clock
}FB_ALARMCATEGORY;
```

25、Set note reminder/alarm information

```
- (void)fbSetClockInforWithClockModel:(FBAlarmClockModel *_Nonnull)clockModel withRemoved:(BOOL)isRemoved withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

26、Get message push switch information

```
- (void)fbGetMessagePushSwitchWithBlock:(FBGetMessagePushSwitchBlock _Nonnull)fbBlock;
/*
 消息推送开关信息｜Message push switch information
*/
@interface FBMessageModel : NSObject
/**
 没有，其他类型｜No, other types
*/
@property (nonatomic, assign) BOOL none;
/**
 电话｜Telephone
*/
@property (nonatomic, assign) BOOL telephone;
/**
 短信｜SMS
```

```
*/
@property (nonatomic, assign) BOOL sms;
/**
 微信 | WeChat
*/
@property (nonatomic, assign) BOOL weChat;
/**
 QQ
*/
@property (nonatomic, assign) BOOL qq;
/**
 脸书 | Facebook
*/
@property (nonatomic, assign) BOOL facebook;
/**
 推特 | Twitter
*/
@property (nonatomic, assign) BOOL twitter;
/**
 领英 | LinkedIn
*/
@property (nonatomic, assign) BOOL linkedIn;
/**
 Whatsapp
*/
@property (nonatomic, assign) BOOL whatsapp;
/**
 Line
*/
@property (nonatomic, assign) BOOL line;
/**
 照片墙 | Instagram
*/
@property (nonatomic, assign) BOOL instagram;
/**
 色拉布 | Snapchat
*/
@property (nonatomic, assign) BOOL snapchat;
/**
 Skype
*/
@property (nonatomic, assign) BOOL skype;
/**
 谷歌邮箱 | Gmail
```

```
*/
@property (nonatomic, assign) BOOL gmail;
/**
 Outlook
*/
@property (nonatomic, assign) BOOL outlook;
/**
 Messenger
*/
@property (nonatomic, assign) BOOL messenger;
/**
 Viber
*/
@property (nonatomic, assign) BOOL viber;
/**
 Googletalk
*/
@property (nonatomic, assign) BOOL googletalk;
/**
 Vkontakte
*/
@property (nonatomic, assign) BOOL vkontakte;
/**
 Imo
*/
@property (nonatomic, assign) BOOL imo;
/**
 Imobeta
*/
@property (nonatomic, assign) BOOL imobeta;
/**
 Imolite
*/
@property (nonatomic, assign) BOOL imolite;
/**
 Chatapp
*/
@property (nonatomic, assign) BOOL chatapp;
/**
 Kik
*/
@property (nonatomic, assign) BOOL kik;
/**
 Skred
```

```
*/
@property (nonatomic, assign) BOOL skred;
/**
 Telegramx
*/
@property (nonatomic, assign) BOOL telegramx;
/**
 Beechat
*/
@property (nonatomic, assign) BOOL beechat;
/**
 Teamtalk
*/
@property (nonatomic, assign) BOOL teamtalk;
/**
 Kakao
*/
@property (nonatomic, assign) BOOL kakao;
/**
 Ftalk
*/
@property (nonatomic, assign) BOOL ftalk;
/**
 Rimet
*/
@property (nonatomic, assign) BOOL rimet;
/**
 Wework
*/
@property (nonatomic, assign) BOOL wework;
/**
 红包 | Red envelope/Hong Bao
*/
@property (nonatomic, assign) BOOL HongBao;
/**
 Missedcall
*/
@property (nonatomic, assign) BOOL missedcall;
/**
 Calendar
*/
@property (nonatomic, assign) BOOL calendar;
/**
 Applemusic
```

```
*/
@property (nonatomic, assign) BOOL applemusic;
/**
 Googlemaps
*/
@property (nonatomic, assign) BOOL googlemaps;
/**
 Likee
*/
@property (nonatomic, assign) BOOL likee;
/**
 Messages
*/
@property (nonatomic, assign) BOOL messages;
/**
 Mono
*/
@property (nonatomic, assign) BOOL mono;
/**
 Odnoklassniki
*/
@property (nonatomic, assign) BOOL odnoklassniki;
/**
 Privat
*/
@property (nonatomic, assign) BOOL privat;
/**
 Youtube
*/
@property (nonatomic, assign) BOOL youtube;
/**
 Youtubemusic
*/
@property (nonatomic, assign) BOOL youtubemusic;
/**
 Zoom
*/
@property (nonatomic, assign) BOOL zoom;
/**
 Telegram
*/
@property (nonatomic, assign) BOOL telegram;
/**
 Tiktok
```

```
*/
@property (nonatomic, assign) BOOL tiktok;
/**
 Pinterest
*/
@property (nonatomic, assign) BOOL pinterest;
/**
 总开关 | Maste rSwitch
*/
@property (nonatomic, assign) BOOL masterSwitch;
@end
// For more types, please check the FBMacro.h file in the SDK
```

27、Set message push switch information

```
- (void)fbSetMessagePushSwitchWithData:(FBMessageModel *)messageModel
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

28、Get information about sedentary

```
- (void)fbGetLongSitInforWithBlock:(FBGetLongSitInforBlock
_Nonnull)fbBlock;
/*
 久坐提醒信息 | Sedentary reminder
*/
@interface FBLongSitModel : NSObject
/**
 久坐提醒开关 NO:关闭 YES:打开（默认 YES） | Sedentary reminder switch NO: off YES: on (Default: YES)
*/
@property (nonatomic, assign) BOOL enable;
/**
 检测起始时间，一天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，起始时间小于结束时间）（默认 480，即 08:00） | Detection start
time, absolute minutes of a day (greater than or equal to 0 minutes, less than 1440 minutes, start time less than end time) (the default is
480, i.e. 08:00)
*/
@property (nonatomic, assign) NSInteger startTime;
/**
 检测结束时间，一天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，结束时间大于起始时间）（默认 1080，即 18:00） | Detection end
time, absolute minutes of a day (greater than or equal to 0 minutes, less than 1440 minutes, end time greater than start time) (the default
is 1080, i.e. 18:00)
*/
@property (nonatomic, assign) NSInteger endTime;
/**
```

```
久坐持续时间检测时间（分钟），在这个时间内步数不达标，进行久坐提醒（默认 45）| The detection time of sedentary duration（minutes）. If the steps are not up to standard within this time, the sedentary reminder will be given (Default: 45)
*/
@property (nonatomic, assign) NSInteger continueTime;
/**
目标步数，在持续时间内低于这个值，进行久坐提醒（默认 100）| If the target step number is lower than this value in the duration, the sedentary reminder will be given (Default: 100)
*/
@property (nonatomic, assign) NSInteger targetSteps;
@end
```

29、Set up sedentary reminders

```
- (void)fbSetLongSitInforWithModel:(FBLongSitModel * _Nonnull)longSitModel withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

30、Get heart rate level judgment information

```
- (void)fbGetHeartRateInforWithBlock:(FBGetHeartRateInforBlock _Nonnull)fbBlock;
/*
心率等级判定信息 | Heart rate level determination information
*/
@interface FBHeartRateRatingModel : NSObject
/**
超过这个百分比，认定为 mix_hr / If the percentage exceeds this, it will be regarded as mix_hr
*/
@property (nonatomic, assign) NSInteger min_hr;
/**
超过这个百分比，认定为 moderate | If the percentage exceeds this, it will be regarded as moderate
*/
@property (nonatomic, assign) NSInteger moderate;
/**
超过这个百分比，认定为 vigorous | If the percentage exceeds this, it will be regarded as vigorous
*/
@property (nonatomic, assign) NSInteger vigorous;
/**
超过这个百分比，认定为 max_hr / If it exceeds this percentage, it is regarded as max_hr
*/
@property (nonatomic, assign) NSInteger max_hr;
/**
最高心率值 | Maximum heart rate
*/
```

```
@property (nonatomic, assign) NSInteger heigt_hr;
/**
 只有心率值在这个时间宽度都在某个级别以 上，才确定新等级 | Only when the heart rate value is above a certain level in this time width can the new level be determined
*/
@property (nonatomic, assign) NSInteger other_hr;
@end
```

31、Set heart rate level judgment information

```
- (void)fbSetHeartRateInforWithModel:(FBHeartRateRatingModel *_Nonnull)heartAlgoModel withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

32、Get drinking water reminder information

```
- (void)fbGetDrinkWaterWithBlock:(FBGetDrinkWaterBlock _Nonnull)fbBlock;
/*
 喝水提醒信息 | Water drinking reminder information
*/
@interface FBWaterClockModel : NSObject
/**
 提醒起始时间，一天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，起始时间小于结束时间）（默认 480，即 08:00） | Reminder start time, absolute minutes of a day (greater than or equal to 0 minutes, less than 1440 minutes, start time less than end time) (the default is 480, i.e. 08:00)
*/
@property (nonatomic, assign) NSInteger startTime;
/**
 提醒结束时间，一天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，结束时间大于起始时间）（默认 1080，即 18:00） | Reminder end time, absolute minutes of a day (greater than or equal to 0 minutes, less than 1440 minutes, end time greater than start time) (the default is 1080, i.e. 18:00)
*/
@property (nonatomic, assign) NSInteger endTime;
/**
 提醒周期，如果为 0 只提醒一次（默认 60） | Reminder cycle, if it is 0, only remind once (Default: 60)
*/
@property (nonatomic, assign) NSInteger repeatCount;
/**
 提醒开关，NO:关闭 YES:打开（默认 YES） | Reminder switch, NO: off, YES: on (Default: YES)
*/
@property (nonatomic, assign) BOOL alterSwitch;
@end
```

33、Set drinking water reminder

```
- (void)fbSetDrinkWaterWithModel:(FBWaterClockModel *
_Nonnull)drinkWaterModel withBlock:(FBResultCallBackBlock
_Nonnull)fbBlock;
// Refer to the above parameters
```

34、Get Do Not Disturb reminders

```
- (void)fbGetNotDisturbWithBlock:(FBGetNotDisturbBlock _Nonnull)fbBlock;
/*
 勿扰提醒信息 | Do not disturb reminder message
*/
@interface FBNotDisturbModel : NSObject
/**
 勿扰提醒起始时间，一天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，起始时间小于结束时间）（默认 360，即 06:00） | Do not disturb
reminder start time, absolute minutes of a day (greater than or equal to 0 minutes, less than 1440 minutes, start time less than end time)
*/
@property (nonatomic, assign) NSInteger startTime;
/**
 勿扰提醒结束时间，一天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，结束时间大于起始时间）（默认 1260，即 21:00） | Do not disturb
reminder end time, absolute minutes of a day (greater than or equal to 0 minutes, less than 1440 minutes, end time greater than start
time)
*/
@property (nonatomic, assign) NSInteger endTime;
/**
 勿扰提醒开关，NO:关闭  YES:打开（默认 NO） | Reminder switch, NO: off, YES: on (Default: NO)
*/
@property (nonatomic, assign) BOOL alterSwitch;
@end
```

35、Set Do Not Disturb reminder

```
- (void)fbSetNotDisturbWithModel:(FBNotDisturbModel *
_Nonnull)notDisturbModel withBlock:(FBResultCallBackBlock
_Nonnull)fbBlock;
// Refer to the above parameters
```

36、Get heart rate detection information

```
- (void)fbGetHeartTestPeriodsWithBlock:(FBGetHeartTestPeriodsBlock
_Nonnull)fbBlock;
/*
```

```
 心率检测信息，为全天候检测，建议只可修改提醒周期 | The heart rate detection information is all-weather detection, and it is recommended that only the reminder cycle can be modified
*/
@interface FBHrCheckModel : NSObject
/**
 心率检测起始时间，一天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，起始时间小于结束时间） | Start time of heart rate detection, absolute minutes of a day (greater than or equal to 0 minutes, less than 1440 minutes, start time less than end time)
*/
@property (nonatomic, assign) NSInteger startTime;
/**
 心率检测结束时间，一天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，结束时间大于起始时间） | End time of heart rate detection, absolute minutes of a day (greater than or equal to 0 minutes, less than 1440 minutes, end time greater than start time)
*/
@property (nonatomic, assign) NSInteger endTime;
/**
 心率检测周期，分钟，如果为 0 只检测一次，为 10 的整倍数 | Heart rate detection cycle, minutes, if it is 0, only detect once, it is an integral multiple of 10
*/
@property (nonatomic, assign) NSInteger repeatCount;
/**
 自动检测开关，NO:关闭  YES:打开 | Automatic detection switch, NO: off, YES: on
*/
@property (nonatomic, assign) BOOL alterSwitch;
@end
```

37、Set heart rate detection information

```
- (void)fbSetHeartTestPeriodsWithModel:(FBHrCheckModel * _Nonnull)hrCheckModel withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

38、Obtain information on raising the wrist to brighten the screen

```
- (void)fbGetWristTimeWithBlock:(FBGetWristTimeBlock _Nonnull)fbBlock;
/*
 抬腕亮屏信息 | Wrist lifting light screen information
*/
@interface FBWristModel : NSObject
/**
 抬腕有效起始时间，当天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，起始时间小于结束时间）（默认 360，即 06:00） | Effective starting time of wrist lifting, absolute minutes of the day (greater than or equal to 0 minutes, less than 1440 minutes, start time less than end time)  (the default is 360, i.e. 06:00)
*/
@property (nonatomic, assign) NSInteger startTime;
```

```
/**
 抬腕有效结束时间，当天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，结束时间大于起始时间）（默认 1320，即 22:00）｜Effective end time of wrist lifting, absolute minutes of the day (greater than or equal to 0 minutes, less than 1440 minutes, end time greater than start time)  (the default is 1320, i.e. 22:00)
*/
@property (nonatomic, assign) NSInteger endTime;
/**
 抬腕亮屏开关，NO:关闭  YES:打开（默认 YES）｜Wrist lifting light screen switch, NO: off, 1: YES (Default: YES)
*/
@property (nonatomic, assign) BOOL alterSwitch;
@end
```

39、Set the information of raising the wrist to brighten the screen

```
- (void)fbSetWristTimeWithModel:(FBWristModel * _Nonnull)wristModel withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

40、Obtain sports target information

```
- (void)fbGetSportsTagargetWithBlock:(FBGetSportsTagargetBlock _Nonnull)fbBlock;
/*
 运动目标信息｜Moving target information
*/
@interface FBSportTargetModel : NSObject
/**
 目标步数开关：NO:关  YES:开｜Target step switch：NO:off YES: on
*/
@property (nonatomic, assign) BOOL stepSwitch;
/**
 目标卡路里开关：NO:关  YES:开｜Target calorie switch：NO:off YES: on
*/
@property (nonatomic, assign) BOOL caculateSwitch;
/**
 目标距离开关：NO:关  YES:开｜Target distance switch：NO:off YES: on
*/
@property (nonatomic, assign) BOOL distanceSwitch;
/**
 运动目标参数开关：NO:关  YES:开｜Moving target parameter switch：NO:off YES: on
*/
@property (nonatomic, assign) BOOL sportSwicth;
/**
 目标之步数｜Step target
```

```
*/
@property (nonatomic, assign) NSInteger stepTarget;
/**
 目标之卡路里消耗（千卡）| Target calorie consumption (kcal)
*/
@property (nonatomic, assign) NSInteger calorieTarget;
/**
 目标之里程数（米）| Distance target (m)
*/
@property (nonatomic, assign) NSInteger distanceTarget;
/**
 目标之运动时间（分钟）| Sport time target (minute)
*/
@property (nonatomic, assign) NSInteger sportTimeTarget;
@end
```

41、Set sports goal information

```
- (void)fbSetSportsTagargetWithModel:(FBSportTargetModel *
_Nonnull)sportTargetModel withBlock:(FBResultCallBackBlock
_Nonnull)fbBlock;
// Refer to the above parameters
```

42、Set today's weather details

```
- (void)fbPushTodayWeatherDetailsWithModel:(FBWeatherDetailsModel *
_Nonnull)model withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/*
 推送今日天气详情消息参数 | Push today's weather details message parameters
*/
@interface FBWeatherDetailsModel : NSObject
/**
 天气 | Weather
*/
@property (nonatomic, assign) FB_WEATHER Weather;
/**
 空气质量等级 | Air quality level
*/
@property (nonatomic, assign) FB_AIRLEVEL AirCategory;
/**
 空气温度 | air temperature
*/
@property (nonatomic, assign) NSInteger airTemp;
/**
```

```
 体感温度（C）｜Somatosensory temperature (c)
*/
@property (nonatomic, assign) NSInteger somatTemp;

/**
 最低温度，可以为负数｜The lowest temperature can be negative
*/
@property (nonatomic, assign) NSInteger tempMin;
/**
 最高温度，可以为负数｜The highest temperature can be negative
*/
@property (nonatomic, assign) NSInteger tempMax;
/**
 日出时间，小时｜Sunrise time, hours
*/
@property (nonatomic, assign) NSInteger sunriseHours;
/**
 日出时间，分钟｜Sunrise time, minutes
*/
@property (nonatomic, assign) NSInteger sunriseMinutes;
/**
 日落时间，小时｜Sunset time, hours
*/
@property (nonatomic, assign) NSInteger sunsetHours;
/**
 日落时间，分钟｜Sunset time, minutes
*/
@property (nonatomic, assign) NSInteger sunsetMinutes;
/**
 湿度（%）｜Humidity (%)
*/
@property (nonatomic, assign) NSInteger humidity;
/**
 风向｜Wind direction
*/
@property (nonatomic, assign) EM_WINDDIRECTION WindDirection;
/**
 风速度（米/秒）｜Wind speed (M / s)
*/
@property (nonatomic, assign) NSInteger windSpeed;
/**
 最近 2 小时降水概率（%）｜Precipitation probability in the last 2 hours (%)
*/
@property (nonatomic, assign) NSInteger probability;
```

```
/**
 降水量（毫米）| Precipitation (mm)
*/
@property (nonatomic, assign) NSInteger precipitation;
/**
 气压（百帕）| Air pressure (HPA)
*/
@property (nonatomic, assign) NSInteger airPressure;
/**
 能见度（米）| Visibility (m)
*/
@property (nonatomic, assign) NSInteger visibility;
/**
 紫外线指数 | UV index
*/
@property (nonatomic, assign) NSInteger UV_index;
@end

typedef enum {
    WT_SUNNY              = 0,   //晴 | Sunny
    WT_PARTLY_CLOUDY       = 1,   //多云 | Cloudy
    WT_WIND               = 2,   //风 | Wind
    WT_CLOUDY             = 3,   //阴天 | Overcast
    WT_LIGHT_RAIN          = 4,   //小雨 | Light rain
    WT_HEAVY_RAIN          = 5,   //大雨 | Heavy rain
    WT_SNOW               = 6,   //雪 | Snow
    WT_THUNDER_SHOWER      = 7,   //雷阵雨 | Thunder shower
    WT_SUNNY_NIGHT         = 8,   //晴晚上 | Sunny night
    WT_PARTLY_CLOUDY_NIGHT = 9,   //多云晚上 | Cloudy night
    WT_STANDSTORM          = 10,  //沙尘暴 | Sand storm
    WT_SHOWER             = 11,  //阵雨 | Shower
    WT_SHOWER_NIGHT        = 12,  //阵雨晚上 | Shower night
    WT_SLEET              = 13,  //雨夹雪 | Sleet
    WT_SMOG               = 14,  //雾、霾 | Fog and haze
    WT_LIGHT_SNOW          = 15,  //小雪 | Light snow
    WT_HEAVY_SNOW          = 16,  //大雪 | Heavy snow
    WT_MODERATE_RAIN       = 17,  //中雨 | Moderate rain
    WT_RAINSTORM           = 18,  //暴雨 | Rainstorm

    WT_UNKNOW             = 255, //未知天气 | Unknown weather
}FB_WEATHER;

typedef enum {
    AL_BAD     = 0,  //差 | Bad
```

```
    AL_GOOD    = 1,  //良 | Good
    AL_WONDFUL = 2,  //优 | Wonderful
}FB_AIRLEVEL;

typedef enum{
    WD_0 = 0,  //无风 | No wind
    WD_1 = 1,  //东风 | East wind
    WD_2 = 2,  //东南风 | Southeast wind
    WD_3 = 3,  //南风 | South wind
    WD_4 = 4,  //西南风 | Southwest wind
    WD_5 = 5,  //西风 | Westerly
    WD_6 = 6,  //西北风 | Northwest wind
    WD_7 = 7,  //北风 | North wind
    WD_8 = 8,  //东北风 | Northeasterly wind
}EM_WINDDIRECTION;
```

43、Set future weather forecast information

```
- (void)fbPushWeatherMessageWithModel:(NSArray <FBWeatherModel *>
*)weatherArray support:(BOOL)support_14days_Weather
withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
/*
 推送天气消息参数 | Push weather message parameters
*/
@interface FBWeatherModel : NSObject
/**
 序号 ID、0:昨天、1:今天、2:明天、3:后天..... | Serial number ID, 0: yesterday, 1: today, 2: tomorrow, 3: the day after tomorrow

 @note 根据 FBAllConfigObject.firmwareConfig.support_14days_Weather 来标识是否支持未来 14 天天气预报(YES:序号ID 支持0-15，
NO：序号ID 支持0-6） | According to FBAllConfigObject.firmwareConfig.support_14days_Weather to identify whether the weather
forecast for the next 14 days is supported (YES: serial number ID supports 0-15, NO: serial number ID supports 0-6)
*/
@property (nonatomic, assign) NSInteger days;
/**
 天气 | Weather
*/
@property (nonatomic, assign) FB_WEATHER Weather;
/**
 最低温度，可以为负数 | The lowest temperature can be negative
*/
@property (nonatomic, assign) NSInteger tempMin;
/**
 最高温度，可以为负数 | The highest temperature can be negative
*/
```

```
@property (nonatomic, assign) NSInteger tempMax;
/**
 空气质量等级 | Air quality level
*/
@property (nonatomic, assign) FB_AIRLEVEL AirCategory;
/**
 PM2.5 等级 | PM2.5
*/
@property (nonatomic, assign) FB_PM25 PM2p5;
@end

typedef enum {
    PM_LEVEL1 = 0,  //优 | Wonderful
    PM_LEVEL2 = 1,  //良 | Good
    PM_LEVEL3 = 2,  //轻度污染 | Light pollution
    PM_LEVEL4 = 3,  //中度污染 | Moderate pollution
    PM_LEVEL5 = 4,  //重度污染 | Heavy pollution
}FB_PM25;
```

~~44、The app pushes the location information of the mobile phone~~

```
- (void)fbPushMobileLocationInformationWithLongitude:(float)longitude withLatitude:(float)latitude withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

45、Get information about women's menstrual cycle

```
-(void)fbGetFemaleCircadianCycleWithBlock:(FBGetFemaleCircadianCycleBlock _Nonnull)fbBlock;
/*
 女性生理周期信息 | Female physiological cycle information
*/
@interface FBFemalePhysiologyModel : NSObject
/**
 健康模式设置 | Health mode setting
*/
@property (nonatomic, assign) FB_FEMALEPHYSIOLOGICALHEALTHMODEL HealthModel;
/**
 经期开始提醒提前天数，范围 1-3 天 | The number of days in advance of menstruation start reminder, ranging from 1 to 3 days
*/
@property (nonatomic, assign) NSInteger daysInAdvance;
/**
 经期的天数，范围 3-15 天 | The number of days of menstruation, ranging from 3 to 15 days
*/
```

```
@property (nonatomic, assign) NSInteger daysMenstruation;
/**
 周期长度，范围 17-60 天 | Cycle length, ranging from 17 to 60 days
*/
@property (nonatomic, assign) NSInteger cycleLength;
/**
 最近一次月经，年（最近两年） | Last menstruation, year (last two years)
*/
@property (nonatomic, assign) NSInteger lastYear;
/**
 最近一次月经，月 | Last menstruation, month
*/
@property (nonatomic, assign) NSInteger lastMonth;
/**
 最近一次月经，日 | The last menstruation, day
*/
@property (nonatomic, assign) NSInteger lastDay;
/**
 孕期提醒方式：NO 提示已怀孕天数，YES 提示距离预产期天数 | Pregnancy reminder: no indicates the number of days pregnant, yes indicates the number of days away from the expected delivery date
*/
@property (nonatomic, assign) BOOL isPreProduction;
/**
 提醒时间，小时 | Reminder time, hours
*/
@property (nonatomic, assign) NSInteger reminderHours;
/**
 提醒时间，分钟 | Reminder time, minutes
*/
@property (nonatomic, assign) NSInteger reminderMinutes;
/**
 设备提醒开关，NO 关，YES 开 | Device reminder switch, no off, yes on
*/
@property (nonatomic, assign) BOOL reminderSwitch;
@end

typedef enum {
    FB_HealthModel_NotUsed             = 0,  //未启用 | Not used
    FB_HealthModel_Menstrual           = 1,  //月经期 | Menstrual period
    FB_HealthModel_PregnancyPreparation = 2,  //备孕期 | Pregnancy preparation period
    FB_HealthModel_Pregnancy           = 3,  //怀孕期 | Pregnancy
}FB_FEMALEPHYSIOLOGICALHEALTHMODEL;
```

46、Set female menstrual cycle information

```
- (void)fbSetFemaleCircadianCycleWithModel:(FBFemalePhysiologyModel *
_Nonnull)physiologyModel withBlock:(FBResultCallBackBlock
_Nonnull)fbBlock;
// Refer to the above parameters
```

47、Obtain abnormal heart rate reminder information

```
-(void)fbGetAbnormalHeartRateReminderWithBlock:(FBGetAbnormalHeartRateR
eminderBlock _Nonnull)fbBlock;
/*
 心率异常提醒信息 | Abnormal heart rate reminder information
*/
@interface FBHrReminderModel : NSObject
/**
 心率异常提醒开关 NO:关闭 YES:打开 | Abnormal heart rate reminder switch No: off yes: on
*/
@property (nonatomic, assign) BOOL enable;
/**
 心率提醒上限，心率超高提醒 | Heart rate reminder upper limit, heart rate ultra-high reminder
*/
@property (nonatomic, assign) NSInteger highReminder;
/**
 心率提醒下限，心率过低提醒 | Low heart rate reminder
*/
@property (nonatomic, assign) NSInteger lowReminder;
/**
 心率值连续超标次数（达到超标的次数时才会提醒） | The number of times the heart rate value exceeds the standard continuously (it will
be reminded only when the number exceeds the standard)
*/
@property (nonatomic, assign) NSInteger exceedanceTimes;
/**
 检测起始时间，一天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，起始时间小于结束时间） | Detection start time, absolute minutes of
a day (greater than or equal to 0 minutes, less than 1440 minutes, start time less than end time)
*/
@property (nonatomic, assign) NSInteger startTime;

/**
 检测结束时间，一天的绝对分钟（大于等于 0 分钟，小于 1440 分钟，结束时间大于起始时间） | Detection end time, absolute minutes of
a day (greater than or equal to 0 minutes, less than 1440 minutes, end time greater than start time)
*/
@property (nonatomic, assign) NSInteger endTime;
@end
```

48、Set abnormal heart rate reminder

```
- (void)fbSetAbnormalHeartRateReminderWithModel:(FBHrReminderModel *_Nonnull)hrReminderModel withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

49、GPS sports interconnection data interaction

```
-(void)fbGPSMotionInterconnectionWithModel:(FBMotionInterconnectionModel * _Nonnull)model withBlock:(FBMotionInterconnectionBlock _Nonnull)fbBlock;
/*
 GPS 运动互联数据交互信息 | Interactive information of GPS motion interconnection data
 */
@interface FBMotionInterconnectionModel : NSObject
#pragma mark - 以下数据由 APP 提供填充 | The following data is filled in by app
/** 当前时间(UTC) | Current time (UTC) */
@property (nonatomic, assign) NSInteger currentTimeUTC;
/** 运动 ID，用运动的开始时间作为每笔运动的唯一识别码 | Motion ID, using the start time of the motion as the unique identification code of each motion */
@property (nonatomic, assign) NSInteger motionID;
/** 运动开始时间戳(UTC) | Motion start timestamp (UTC) */
@property (nonatomic, assign) NSInteger startMotionUTC;
/** 运动结束时间(UTC)，进行中的运动填 0 | Motion end time (UTC), fill in 0 for ongoing exercise */
@property (nonatomic, assign) NSInteger endMotionUTC;
/** 当前运动总时间，单位秒 | Total current movement time, in seconds */
@property (nonatomic, assign) NSInteger totalTime;
/** 当前运动总卡路里（千卡） | Total calories of current exercise (kcal) */
@property (nonatomic, assign) NSInteger totalCalories;
/** 当前本次运动轨迹运动距离（单位米，通过 gps 定位计算） | Motion distance of current trajectory (unit: m, calculated by GPS positioning) */
@property (nonatomic, assign) NSInteger motionDistance;
/** 运动模式 | Motion mode */
@property (nonatomic, assign) FB_MOTIONMODE MotionMode;
/** 本次运动最大步频（单位：步/分钟） | Maximum step frequency of this movement (unit: step / minute) */
@property (nonatomic, assign) NSInteger maxStepFrequency;
/** 本次运动平均步频 =步数/时间（单位：步/分钟） | Average step frequency of this exercise = steps / time (unit: steps / minute) */
@property (nonatomic, assign) NSInteger avgStepFrequency;

/** 重复运动的周期数（来回次数，圈数）（单位：圈） | Number of cycles of repeated motion (number of turns, turns) (unit: turns) */
@property (nonatomic, assign) NSInteger cyclesNumber;
/** 本次运动最大速度（单位：米/秒） | Maximum speed of this movement (unit: M / s) */
@property (nonatomic, assign) CGFloat maxSpeed;
```

```
/** 本次运动平均速度 = 距离/用时（单位：米/秒）｜Average speed of this movement = distance / time (unit: M / s) */
@property (nonatomic, assign) CGFloat avgSpeed;
/** 本次有轨迹运动配速（单位：秒/公里）｜This time there is track movement pace (unit: S / km) */
@property (nonatomic, assign) NSInteger trackPace;

#pragma mark - 以下数据 APP 或手表由提供（双方都有权修改）｜The following data is provided by app or watch (both parties have the right to modify)
/** 中途休息次数｜Number of breaks */
@property (nonatomic, assign) NSInteger breaksNumber;
/** 运动状态,0 停止,1 进行中,2 暂停(表明当前运动状态,非控制指令)｜Motion state, 0 stop, 1 in progress, 2 pause (indicating current motion state, non control command) */
@property (nonatomic, assign) NSInteger motionState;

#pragma mark - 以下数据由手表填充返回，APP 无需设置｜The following data is filled and returned by the watch. App does not need to be set
/** 当前运动总步数｜Total current motion steps */
@property (nonatomic, assign) NSInteger totalSteps;
/** 本次运动当前实时心率（单位：次/分钟）｜Current real-time heart rate during this exercise (unit: times / minute) */
@property (nonatomic, assign) NSInteger currentHeartRate;
/** 本次运动最大心率（单位：次/分钟）｜Maximum heart rate of this exercise (unit: times / minute) */
@property (nonatomic, assign) NSInteger maxHeartRate;
/** 本次运动最小心率（单位：次/分钟）｜Minimum heart rate of this exercise (unit: times / minute) */
@property (nonatomic, assign) NSInteger minHeartRate;
/** 本次运动实时平均心率（单位：次/分钟）｜Real time average heart rate of this exercise (unit: times / minute) */
@property (nonatomic, assign) NSInteger avgHeartRate;
/** 当前心率处于的区间（热身，燃脂，有氧，高强有氧，无氧）｜The range of current heart rate (warm-up, fat burning, aerobic, high-strength aerobic, anaerobic) */
@property (nonatomic, assign) FB_MOTIONHEARTRATERANGE currentHrRange;
/** 到当前为止，热身运动时间，单位分钟，随时刷新｜Up to now, the warm-up exercise time, in minutes, is refreshed at any time */
@property (nonatomic, assign) NSInteger heartRate_level_1;
/** 到当前为止，燃脂运动时间，单位分钟，随时刷新｜Up to now, the fat burning movement time, in minutes, can be refreshed at any time */
@property (nonatomic, assign) NSInteger heartRate_level_2;
/** 到当前为止，有氧耐力运动时间，单位分钟，随时刷新｜So far, aerobic endurance exercise time, in minutes, can be refreshed at any time */
@property (nonatomic, assign) NSInteger heartRate_level_3;
/** 到当前为止，高强有氧运动时间，单位分钟，随时刷新｜So far, the time of high-strength aerobic exercise, in minutes, can be refreshed at any time */
@property (nonatomic, assign) NSInteger heartRate_level_4;
/** 到当前为止，无氧运动时间，单位分钟，随时刷新｜So far, the anaerobic exercise time, in minutes, can be refreshed at any time */
@property (nonatomic, assign) NSInteger heartRate_level_5;
@end
```

50、Obtain common contact information

```
-(void)fbGetFavoriteContactListWithBlock:(FBGetFavoriteContactListBlock _Nonnull)fbBlock;
/*
 常用联系人信息 | Frequently used contact information
 */
@interface FBFavContactModel : NSObject
/**
 联系人姓名(长度小于或等于 64 个字节,超出最大长度,自动截取) | Contact name (less than or equal to 64 bytes in length, automatically intercepted if the maximum length is exceeded)
 */
@property (nonatomic, copy) NSString *contactName;
/**
 号码归属地（长度小于或等于 64 个字节，超出最大长度，自动截取） | Number location (if the length is less than or equal to 64 bytes, it will be automatically intercepted if the maximum length is exceeded)
 */
@property (nonatomic, copy) NSString *QCellCore;
/**
 联系人号码（长度小于或等于 20 个字节，超出最大长度，自动截取） | Contact number (less than or equal to 20 bytes in length, automatically intercepted if the maximum length is exceeded)
 */
@property (nonatomic, copy) NSString *contactNumber;
@end
```

51、Set common contact information

```
- (void)fbSetFavoriteContactListWithModel:(NSArray <FBFavContactModel *> *)modelList withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
// Refer to the above parameters
```

52、Read off-chip flash space data (Device unexpected restart information for firmware to analyze the problem)

```
- (void)fbReadOffChipFlashWithAddress:(NSInteger)address withLength:(NSInteger)length withBlock:(FBRequestDeviceLogsBlock _Nonnull)fbBlock;
```

53、Request device logs (Buried point data, read OTA cache data, a total of 60K)

```
- (void)fbRequestDeviceLogsWithBlock:(FBRequestDeviceLogsBlock _Nonnull)fbBlock;
```

54、Get system function switch information

```
-(void)fbGetSystemFunctionSwitchInformationWithBlock:(FBRequestSystemFunctionSwitchInfoBlock _Nonnull)fbBlock;
```

55、Set system function switch information

```
-(void)fbSetSystemFunctionSwitchInformation:(FBSystemFunctionSwitchModel * _Nonnull)switchModel withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

56、Push basic information of AGPS location (latitude and longitude UTC)

```
- (void)fbPushAGPSLocationInformation:(FBAGPSLocationModel * _Nonnull)locationModel withBlock:(FBResultCallBackBlock _Nonnull)fbBlock;
```

➢ Get streaming data API （FBAtCommand）

1. **After opening the data stream `fbUpDataStreamData: withBlock:` command, when there is data update, the device will return the data through this callback according to the set time interval**

```
- (void)fbStreamDataHandlerWithBlock:(FBStreamDataHandlerBlock _Nonnull)fbBlock;
/*
 流数据 | Stream data
*/
@interface FBStreamDataModel : NSObject
/**
 流帧计数，自动递增，0-255，溢出后清零 | Stream frame count, auto increment, 0-255, clear after overflow
*/
@property (nonatomic, assign) NSInteger streamCount;
/**
 当前心率（次/分钟） | Current heart rate (times / minute)
*/
@property (nonatomic, assign) NSInteger currentHeartRate;
/**
 当前心率等级 | Current heart rate level
*/
@property (nonatomic, assign) FB_CURRENTHEARTRANGE HeartRateRange;
/**
 当前累计步数 | Current cumulative steps
*/
@property (nonatomic, assign) NSInteger currentStepCount;
/**
 当前累计距离（米） | Current cumulative distance (m)
*/
@property (nonatomic, assign) NSInteger currentDistance;
/**
 当前累计消耗卡路里（千卡） | Current cumulative calories consumed (kcal)
*/
@property (nonatomic, assign) NSInteger currentCalories;
@end
```

➢ OTA tool API （FBBluetoothOTA）

1. Generate custom dial bin file data

```
- (NSData
*)fbGenerateCustomDialBinFileDataWithDialModel:(FBCustomDialModel *
_Nonnull)dialModel;
```

~~2. Generate multi-item custom watch face bin file data~~

```
- (NSData
*)fbGenerateMultiProjectCustomDialBinFileDataWithDialsModel:(FBMultiple
CustomDialsModel * _Nonnull)dialsModel;
// NOTE: Due to the limited memory space of the dial, the customized content cannot exceed 16 controls at most, and the number of controls occupied by different styles is different. Before adding custom content, you need to check whether there is enough space on the dial
+ (BOOL)checkForOverflow:(NSArray <FBCustomDialItem *> *)items;
```

3. Generate custom motion type bin file data (Bin files of multiple motion types are compressed and merged into one Bin file)

```
- (NSData *)fbGenerateCustomMultipleMotionBinFileDataWithItems:(NSArray
<NSData *> * _Nonnull)items;
```

4. Pass in different OTATypes for OTA data synchronization. To avoid bricking, please confirm whether the project supports it

```
- (void)fbStartCheckingOTAWithBinFileData:(NSData * _Nonnull)binFile
withOTAType:(FB_OTANOTIFICATION)OTAType
withBlock:(FBSetOtaUpgradeManagerBlock _Nonnull)fbBlock;
```

```
typedef enum {
    FB_OTANotification_Firmware          = 0,    //升级固件 | Update Firmware
    FB_OTANotification_ClockDial         = 1,    //升级默认动态表盘 | Upgrade default dynamic dial
    FB_OTANotification_SmallFont         = 2,    //升级小字库 | Upgrade small font
    FB_OTANotification_BigFont           = 3,    //升级大字库 | Upgrade big font
    FB_OTANotification_UIPictureResources = 4,    //升级 UI 图片资源 | Upgrade UI image resources
```

```
    FB_OTANotification_2_3_4AtTheSameTime = 5,    //同时升级 2,3,4 | Upgrade 2, 3, 4 at the same time
    FB_OTANotification_Motion            = 6,    //推送运动模式 | Push motion mode
    FB_OTANotification_UI                = 7,    //增量升级 UI 图片 | Incrementally upgrade UI images
    FB_OTANotification_Multi_Dial        = 8,    //多表盘压缩数据包 | Multi-dial compressed data package
    FB_OTANotification_Multi_Sport       = 9,    //多运动类型压缩数据包 | Multi-sport type compressed data
package
    FB_OTANotification_DynamicClockDial   = 10,   //+n，升级动态表盘 n | +n. Upgrade dynamic dial n
    FB_OTANotification_CustomClockDial    = 20,   //+n，升级自定义表盘 n | +n. Upgrade custom dial n
        FB_OTANotification_AGPS_Package       = 30,   //推送 AGPS 定位数据包 | Push AGPS positioning data
package
    FB_OTANotification_Multi_Dial_Built_in = 200,  //厂线推送内置表盘压缩数据包 | The factory line pushes the
built-in dial compressed data package
    FB_OTANotification_Multi_Sport_Built_in = 201,  //厂线推送内置多运动类型压缩数据包 | The factory line
pushes the built-in multi-sport type compressed data package
    FB_OTANotification_Busy              = 254,  //设备处于禁止 OTA 状态，稍后再试 | The device is in OTA
prohibited state, please try again later
    FB_OTANotification_Cancel            = 255,  //放弃当前升级 | Discard current upgrade
}FB_OTANOTIFICATION;
// For more types, please check the FBMacro.h file in the SDK

/*
 OTA 完成信息 | OTA completion information
*/
@interface FBOTADoneModel : NSObject
/**
 ota 类型 | OTA type
*/
@property (nonatomic, assign) FB_OTANOTIFICATION type;
/**
 bin 二进制文件 | Bin binary
*/
@property (nonatomic, retain) NSData *binFile;
/**
 ota 升级总时长（单位秒） | Total OTA upgrade time (in seconds)
*/
@property (nonatomic, assign) NSInteger totalInterval;
/**
 平均速率（单位 KB/s） | Average velocity (in KB / s)
*/
@property (nonatomic) float velocity;
@end
```

- Error code enumeration definition FB_RET_CMD

```
typedef enum {
    //协议定义的通讯错误 | Protocol defined communication error
    RET_EXEC_ER        = 3,    //执行失败 | Execution failed
    RET_DATA_INVA      = 4,    //数据无效（格式错误） | Invalid data (format error)
    RET_COMM_BUSY      = 5,    //通信中（系统忙） | Communication (system busy)
    RET_COMD_INVA      = 6,    //无效指令 | Invalid instruction
    RET_PVER_ER        = 7,    //协议版本不符 | Protocol version does not match
    RET_DATA_OK        = 8,    //数据正确 | The data is correct
    RET_DATA_ER        = 9,    //数据错误 | Data error
    RET_DATA_TO        = 10,   //接收超时 | Receive timeout
    RET_RAM_OF         = 11,   //内存溢出 | Out of memory
    RET_CHKS_ER        = 12,   //校验和错误 | Check sum error
    RET_PARA_ER        = 13,   //参数错误 | Parameter error
    RET_LENG_ER        = 14,   //数据长度错误 | Data length error

    //自定义蓝牙通信错误 | Custom Bluetooth communication error
    RET_FB_ERR_OTA      = 15,   //OTA 失败，不支持 OTA | OTA failed, OTA not supported
    RET_FB_ERR_OFF      = 16,   //蓝牙未打开或不支持 | Bluetooth is not on or not supported
    RET_FB_ERR_NOT      = 17,   //尚未连接到设备 | Not yet connected to the device
    RET_FB_ERR_NOTREADY = 18,   //设备尚未初始化完成 | The device has not been initialized
    RET_FB_ERR_NET      = 19,   //写指令失败，或缺少连接参数 | Write instruction failed, or connection
parameters are missing
    RET_FB_ERR_AT       = 20,   //AT 指令异常，无效指令/无效参数 | At instruction exception, invalid
instruction / invalid parameter
    RET_FB_ERR_DATA     = 21,   //失败，数据校验未通过 | Failed, data verification failed
    RET_FB_ERR_TIMEROUT = 22,   //应答超时 | Response timeout

    //自定义数据传输状态 | Data transmission status
    FB_INDATATRANSMISSION     = 101,    //数据传输中 | In data transmission
    FB_DATATRANSMISSIONDONE   = 200,    //数据传输完成 | Data transmission complete
    FB_DATATRANSMISSIONFAILED = 500,    //数据传输失败 | Data transfer failed

    //GPS 运动状态执行错误 | GPS motion status execution error
    FB_GPS_MOTION_STATE_LOWPRESSUREERROR     = 200012, //执行失败，低压无法执行 | Execution failed, low
voltage cannot be executed
    FB_GPS_MOTION_STATE_COMMANDSTATUSERROR   = 200013, //指令状态错误 | Command status error
    FB_GPS_MOTION_STATE_INREGULARMOTIONERROR = 200014, //常规运动中，请先停止当前运动 | In normal motion,
please stop the current motion first
    FB_GPS_MOTION_STATE_INCALLERROR          = 200015, //正在通话中，无法执行此指令 | This command cannot be
executed while a call is in progress
    FB_GPS_MOTION_STATE_CANCELS              = 200017, //手表取消开启运动 | The watch cancels the movement
    FB_GPS_MOTION_STATE_NONE                 = 200019, //本地无此运动信息 | There is no local sports
information
}FB_RET_CMD;
```

➢ Motion Mode Enumeration DefinitionFB_MOTIONMODE

```
typedef enum {
    FBNotUsed              = 0,   //不使用 | Not used
    FBRunning              = 1,   //跑步 | Running
    FBMountaineering        = 2,   //登山 | Mountaineering
    FBCycling              = 3,   //骑行 | Cycling
    FBFootball             = 4,   //足球 | Football
    FBSwimming             = 5,   //游泳 | Swimming
    FBBasketball           = 6,   //篮球 | Basketball
    FBNo_designation        = 7,   //无指定 | No designation
    FBOutdoor_running       = 8,   //户外跑步 | Outdoor running
    FBIndoor_running        = 9,   //室内跑步 | Indoor running
    FBFat_reduction_running = 10,  //减脂跑步 | Fat reduction running

    FBOutdoor_walking       = 11,  //户外健走 | Outdoor walking
    FBIndoor_walking        = 12,  //室内健走 | Indoor walking
    FBOutdoor_cycling       = 13,  //户外骑行 | Outdoor cycling
    FBIndoor_cycling        = 14,  //室内骑行 | Indoor cycling
    FBFree_training         = 15,  //自由训练 | Free training
    FBFitness_training      = 16,  //健身训练 | Fitness training
    FBBadminton            = 17,  //羽毛球 | Badminton
    FBVolleyball           = 18,  //排球 | Volleyball
    FBTable_Tennis         = 19,  //乒乓球 | Table Tennis
    FBElliptical_machine    = 20,  //椭圆机 | Elliptical machine

    FBRowing_machine        = 21,  //划船机 | Rowing machine
    FBYoga_training         = 22,  //瑜伽 | Yoga
    FBStrength_training     = 23,  //力量训练（举重） | Strength training (weightlifting)
    FBCricket              = 24,  //板球 | Cricket
    FBRope_skipping         = 25,  //跳绳 | Rope skipping
    FBAerobic_exercise      = 26,  //有氧运动 | Aerobic exercise
    FBAerobic_dancing       = 27,  //健身舞 | Aerobic dancing
    FBTaiji_boxing          = 28,  //太极 | Tai Chi
    FBAuto_runing           = 29,  //自动识别跑步运动 | Automatically recognize running
    FBAuto_walking          = 30,  //自动识别健走运动 | Automatic recognition of walking movement

    FBWALK                 = 31,  //室内步行 | Indoor walking
    FBSTEP_TRAINING         = 32,  //踏步 | Step training
    FBHORSE_RIDING          = 33,  //骑马 | Ride a horse
    FBHOCKEY               = 34,  //曲棍球 | Hockey
    FBINDOOR_CYCLE          = 35,  //室内单车 | Aerodyne bike
    FBSHUTTLECOCK           = 36,  //毽球 | Shuttlecock
    FBBOXING               = 37,  //拳击 | Boxing
```

```
FBOUTDOOR_WALK          = 38,  //户外走 | Outdoor walk
FBTRAIL_RUNNING         = 39,  //越野跑 | Cross country running
FBSKIING               = 40,  //滑雪 | Skiing

FBGYMNASTICS            = 41,  //体操 | Artistic Gymnastics
FBICE_HOCKEY            = 42,  //冰球 | Ice hockey
FBTAEKWONDO             = 43,  //跆拳道 | Taekwondo
FBVO2MAX_TEST           = 44,  //有氧运动 | Aerobic exercise
FBAIR_WALKER            = 45,  //漫步机 | Walking machine
FBHIKING               = 46,  //徒步 | On foot
FBTENNIS               = 47,  //网球 | Tennis
FBDANCE                = 48,  //跳舞 | Dance
FBTRACK_FIELD           = 49,  //田径 | Athletics
FBABDOMINAL_TRAINING     = 50,  //腰腹运动 | Lumbar abdominal movement

FBKARATE               = 51,  //空手道 | Karate
FBCOOLDOWN              = 52,  //整理放松 | Organize and relax
FBCROSS_TRAINING         = 53,  //交叉训练 | Cross training
FBPILATES              = 54,  //普拉提 | Pilates
FBCROSS_FIT             = 55,  //交叉配合 | Cross fit
FBUNCTIONAL_TRAINING     = 56,  //功能性训练 | Functional training
FBPHYSICAL_TRAINING      = 57,  //体能训练 | Physical training
FBARCHERY              = 58,  //射箭 | Archery
FBFLEXIBILITY           = 59,  //柔韧度 | Flexibility
FBMIXED_CARDIO          = 60,  //混合有氧 | Mixed aerobic

FBLATIN_DANCE           = 61,  //拉丁舞 | Latin dance
FBSTREET_DANCE          = 62,  //街舞 | Hip hop
FBKICKBOXING            = 63,  //自由搏击 | Free fight
FBBARRE                = 64,  //芭蕾舞 | Ballet
FBAUSTRALIAN_FOOTBALL    = 65,  //澳式足球 | Australian football
FBMARTIAL_ARTS          = 66,  //武术 | Australian football
FBSTAIRS               = 67,  //爬楼 | Climb a building
FBHANDBALL              = 68,  //手球 | Handball
FBBASEBALL              = 69,  //棒球 | Baseball
FBBOWLING              = 70,  //保龄球 | Bowling

FBRACQUETBALL           = 71,  //壁球 | Squash
FBCURLING              = 72,  //冰壶 | Curling
FBHUNTING              = 73,  //打猎 | Go hunting
FBSNOWBOARDING          = 74,  //单板滑雪 | Snowboarding
FBPLAY                 = 75,  //休闲运动 | Leisure sports
FBAMERICAN_FOOTBALL      = 76,  //美式橄榄球 | American football
FBHAND_CYCLING          = 77,  //手摇车 | Handcart
```

```
FBFISHING              = 78,  //钓鱼 | Go fishing
FBDISC_SPORTS          = 79,  //飞盘 | Frisbee
FBRUGBY                = 80,  //橄榄球 | Rugby

FBGOLF                 = 81,  //高尔夫 | Golf
FBFOLK_DANCE           = 82,  //民族舞 | Folk dance
FBDOWNHILL_SKIING      = 83,  //高山滑雪 | Alpine skiing
FBSNOW_SPORTS          = 84,  //雪上运动 | Snow Sports
FBMIND_BODY            = 85,  //舒缓冥想类运动 | Soothing meditation exercise
FBCORE_TRAINING        = 86,  //核心训练 | Core training
FBSKATING              = 87,  //滑冰 | Core training
FBFITNESS_GAMING       = 88,  //健身游戏 | Fitness games
FBAEROBICS             = 89,  //健身操 | Aerobics
FBGROUP_TRAINING       = 90,  //团体操 | Group Gymnastics

FBKENDO                = 91,  //搏击操 | Kickboxing
FBLACROSSE             = 92,  //长曲棍球 | Lacrosse
FBROLLING              = 93,  //泡沫轴筋膜放松 | Foam shaft fascia relax
FBWRESTLING            = 94,  //摔跤 | Wrestling
FBFENCING              = 95,  //击剑 | Fencing
FBSOFTBALL             = 96,  //垒球 | Softball
FBSINGLE_BAR           = 97,  //单杠 | Horizontal bar
FBPARALLEL_BARS        = 98,  //双杠 | Parallel bars
FBROLLER_SKATING       = 99,  //轮滑 | Roller-skating
FBHULA_HOOP            = 100, //呼啦圈 | Hu la hoop

FBDARTS                = 101, //飞镖 | Darts
FBPICKLEBALL           = 102, //匹克球 | Pickleball
FBSIT_UP               = 103, //仰卧起坐 | Abdominal curl
FBHIIT                 = 104, //HIIT | HIIT
FBWAIST_TRAINING       = 105, //腰腹训练 | Waist and abdomen training
FBTREADMILL            = 106, //跑步机 | Treadmill
FBBOATING              = 107, //划船 | Rowing
FBJUDO                 = 108, //柔道 | rowing
FBTRAMPOLINE           = 109, //蹦床 | Trampoline
FBSKATEBOARDING        = 110, //滑板 | Skate

FBHOVERBOARD           = 111, //平衡车 | Balance car
FBBLADING              = 112, //溜旱冰 | Roller skating
FBPARKOUR              = 113, //跑酷 | Parkour
FBDIVING               = 114, //跳水 | Diving
FBSURFING              = 115, //冲浪 | Surfing
FBSNORKELING           = 116, //浮潜 | Snorkeling
FBPULL_UP              = 117, //引体向上 | Pull up
```

```
    FBPUSH_UP              = 118, //俯卧撑 | Push up
    FBPLANKING             = 119, //平板支撑 | Plate support
    FBROCK_CLIMBING         = 120, //攀岩 | Rock Climbing

    FBHIGHTJUMP            = 121, //跳高 | High jump
    FBBUNGEE_JUMPING        = 122, //蹦极 | Bungee jumping
    FBLONGJUMP             = 123, //跳远 | Long jump
    FBSHOOTING             = 124, //射击 | Shooting
    FBMARATHON             = 125, //马拉松 | Marathon
    FBVO2MAXTEST           = 126, //最大摄氧量测试 | VO2max test
    FBKITE_FLYING          = 127, //放风筝 | Kite Flying
    FBBILLIARDS            = 128, //台球 | Billiards
    FBCARDIO_CRUISER        = 129, //有氧运动巡洋舰 | Cardio Cruiser
    FBTUGOFWAR             = 130, //拔河比赛 | Tug of war

    FBFREESPARRING          = 131, //免费的陪练 | Free Sparring
    FBRAFTING              = 132, //漂流 | Rafting
    FBSPINNING             = 133, //动感单车 | Spinning
    FBBMX                  = 134, //BMX | BMX
    FBATV                  = 135, //ATV | ATV
    FBDUMBBELL             = 136, //哑铃 | Dumbbell
    FBBEACHFOOTBALL         = 137, //沙滩足球 | Beach Football
    FBKAYAKING             = 138, //皮划艇 | Kayaking
    FBSAVATE               = 139, //法国式拳击 | Savate
    FBBEACHVOLLEYBALL       = 140, //沙滩排球 | Beach Volleyball


    FBOther_reservation     = 255, //其他预留 | Other reservation
}FB_MOTIONMODE;
// For more types, please check the FBMacro.h file in the SDK
```