iOS FeasyBlue SDK API

Reference Manual

Version 1.0

Revision History

Version	Date	Notes	Author
1.0	2018/8/1	First Release	Liulian

目录

1. Introduction

This reference manual presents design guidelines for software engineers that use iOS FeasyBlue SDK to create iOS App for Bluetooth connectivity requirements.

1.1 iOS System Version Requirements

- iOS 8.0 and above

1.2 Supported iOS devices

- iPhone 5 and newer iPhone
- iPad mini and newer iPad mini
- iPad 3 and newer iPad
- iPod touch 6 and newer iPod touch

1.3 Supported Bluetooth Profile

- GATT (Generic Attribute Profile, relevant to BLE)
- iAP2 (iOS Accessory Protocol 2, relevant to MFi)

2. Get started with FeasyBlue

2.1 General Tools

FeasyBeacon using the "pod" tool, and uses the MJRefresh, MBProgressHUD, SVProgressHUD and Masonry third-party tools, etc. Due to the use of the "pod" tool, when you run the project, please open the project with "xcworkspace "suffix.

2.2 FeasyBlue Demo App Project Setup

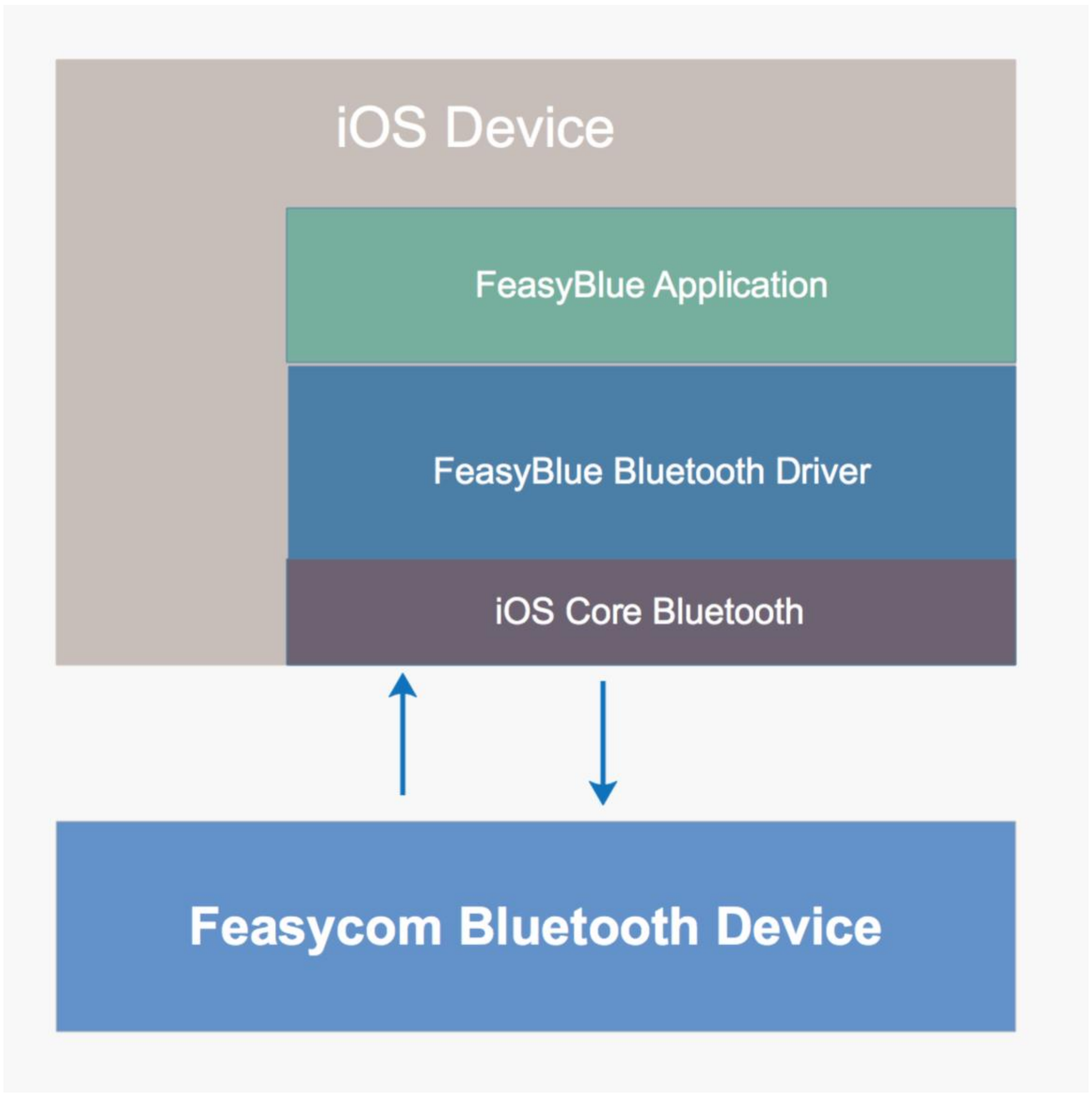
If you want to use the bluetooth function, add bluetooth permissions, TARGETS -> Info -> “Privacy - Bluetooth Peripheral Usage Description”, and If you want to bluetooth data transmission mode in the background, please open the background model, TARGETS -> Cacpbilities -> background modes -> Uses Bluetooth LE accessories.

2.3 Download and Run the FeasyBlue Demo App

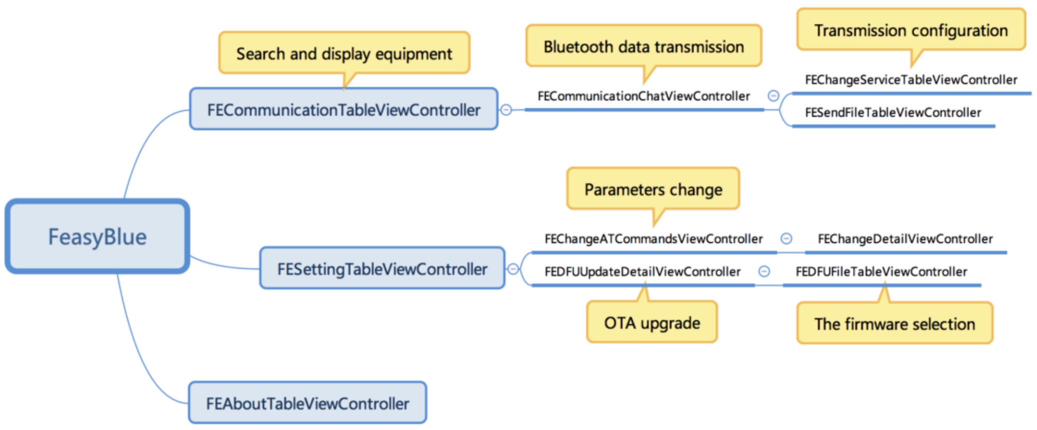
As a first test, we recommend the communication module. When the FeasyBlue App started, it runs the communication module, and it will scan the nearby bluetooth devices. Once there is a Feasycom bluetooth module displayed on the device scanning list, you can try to connect it if it is connectable. After FeasyBlue connected to a Feasycom bluetooth module, FeasyBlue will switch to a transmission page, then you can transferring data from or to bluetooth module.

3. FeasyBlue Architecture

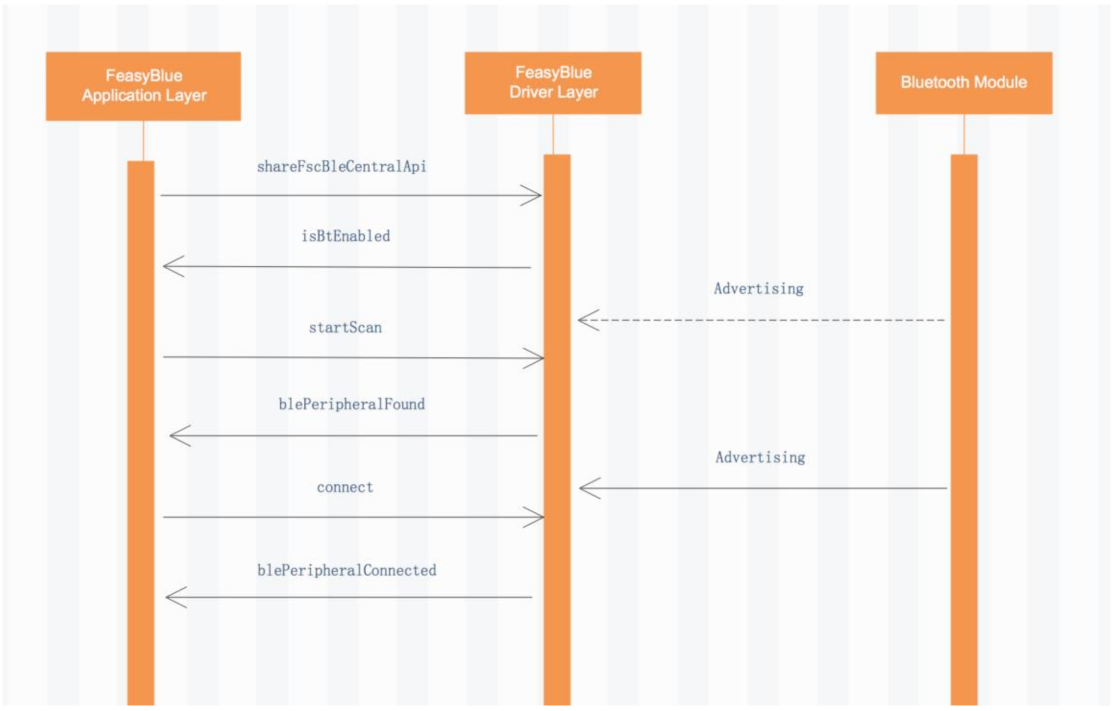
3.1 Application architecture



3.2 Page View Controller Topology


FeasyBlue
Search and display equipment
FECommunicationTableViewController
Bluetooth data transmission
FECommunicationChatViewController
Transmission configuration
FEChangeServiceTableViewController
FESendFileTableViewController
FESettingTableViewController
Parameters change
FEChangeATCommandsViewController
FEChangeDetailViewController
FEDFUUpdateDetailViewController
FEDFUFileTableViewController
OTA upgrade
The firmware selection
FEAboutTableViewController

3.3 Typical Initialization and Connection Setup



4. The basis of the API

4.1 ATTRIBUTES

```
/*
 * @property moduleType
 * @discussion                    Module type(BLE or Beacon).
 */
MODULETYPE moduleType
```

```
/*
 * @property peripheral
 * @discussion                    Last connected peripheral.
 */
CBPeripheral *peripheral
```

4.2 CALLBACKS

```
/*
 * @discussion                    Get the current centralManager
 */
- (CBCentralManager *)centralManager;
```

```
/*
 * @discussion                    Peripheral enabled callback, when the state of
 *                                 central is CBManagerStatePoweredOn, call the
 *                                “startScan”    method.
 */
-(void)isBtEnabled:(void(^)(CBCentralManager *central))block
```

```
/*
 * Peripheral found callback,
 * @param central                 The central manager providing this update.
 * @param peripheral              A <code>CBPeripheral</code> object.
 * @param advertisementData       A dictionary containing any advertisement and scan
 *                                 response data.
 * @param RSSI                    The current RSSI of <i>peripheral</i>, in dBm. A value of
 *                                 <code>127</code> is reserved and indicates the RSSI was
 *                                 not available.
 */
-(void)blePeripheralFound:(void(^)(CBCentralManager*central,CBPeripheral*peripheral,NSDictionary *advertisementData, NSNumber *RSSI))block
```

```
/*
  * Peripheral connected callback,
  * @param central                 The central manager providing this information.
  * @param peripheral              The <code> CBPeripheral </code> that has connected.
  * @discussion                    This method is invoked when a connection initiated by
  *                                 {@link connect:} has succeeded.
  */
-(void)blePeripheralConnected:(void(^)(CBCentralManager*central,CBPeripheral*peripheral
))block
```

```
/**
  * @discussion                    This method is invoked when SDK is ready to write data
  */
- (void)peripheralWriteDidReady:(void (^)(void))block;
```

```
/*
  * Discover services callback,
  * @param services                The array of services information.
  * @param error                    If an error occurred, the cause of the failure.
  * @discussion                    This method returns the result of a @link
  *                                 discoverServices @/link call. If the service(s) were read
  *                                 successfully, they can be retrieved via.
  */
-(void)servicesFound:(void (^)(NSArray <CBService*>*services,NSError *error))block
```

```
/*
  * Peripheral disconnected callback,
  * @param central                 The central manager providing this information.
  * @param peripheral              The <code>CBPeripheral</code> that has disconnected.
  * @param error                    If an error occurred, the cause of the failure.
  * @discussion                    This method is invoked upon the disconnection of a
  *                                 peripheral that was connected by {@link
  *                                 connect:}. If the disconnection was not
  *                                 initiated by {@link disconnect}, the cause will be
  *                                 detailed in the <i>error</i> parameter.   Once this
  *                                 method has been.
  */
-(void)blePeripheralDisonnected:(void(^)(CBCentralManager*central,CBPeripheral*peripher
al, NSError *error))block
```

```
/*
  * Received packet callback,
  * @param peripheral              The peripheral providing this information.
  * @param characteristic          A <code>CBCharacteristic</code> object.
  * @param error                    If an error occurred, the cause of the failure.
  * @discussion                    This method is called when data is returned from the
  *                                 peripheral.
  */
```

```
-(void)packetReceived:(void(^)(CBPeripheral*peripheral,CBCharacteristic*characteristic,NSE
rror*error))block
```

4.3 METHODS

```
/**
  * @discussion                     Get current SDK version
  */
+ (NSString *)SDKVersion;
```

```
/*
  * @discussion                     The singleton. To initialize the
  *                                  <code>FscBleCentralApi</code>.
  */
+(instancetype)shareFscBleCentralApi
```

```
/*
  * @discussion                     Start scan peripherals.
  */
-(void)startScan
```

```

/**
  *@param UUIDs                     UUIDs of Peripherals to scan
  *@praam allowDuplicates          whether allow duplicate result
  *@discussion                     start scan peripherals with UUIDs and allowDuplicates flag
  */
- (void)startScanWithServiceUUIDs:(NSArray<CBUUID *> *)UUIDs
allowDuplicates:(BOOL)allowDuplicates;
```

```
/*
  * @discussion                     Stop scan peripherals.
  */
-(void)stopScan
```

```
/*
  * Connect peripheral,
  * @param peripheral                A <code> CBPeripheral </code> object.
  * @discussion                     See “blePeripheralConnected:”.
  */
-(void)connect:(CBPeripheral *)peripheral
```

```
/*
  * @discussion                     Disconnect peripheral.
  */
-(void)disconnect
```

5. Communication

5.1 METHODS

```
/* @param response               If yes, the <code>CBCharacteristicWriteWithResponse
  *                               </code> type is used, and if no, the
  *                               <code>CBCharacteristicWriteWithoutResponse</code>
  *                               type is used.
  * @param data                  The value to back.
  * @discussion                  This method is asynchronous, if you want to use
  *                               synchronized methods, see "syncSend: withResponse:".
  *                               Call this method before, please call the method
  *                               "setSendInterval:" once.
  */
-(void)send:(NSData*)data      withResponse:(BOOL)response      withSendStatusBlock:
(void(^)(NSData *data))block
```

```
/*
  * Send data to peripheral(sync),
  * @param data                  The value to write.
  * @param response              If yes, the <code>CBCharacteristicWriteWithResponse
  *                               </code> type is used, and if no, the
  *                               <code>CBCharacteristicWriteWithoutResponse</code>
  *                               type is used.
  * @discussion                  This method is synchronous, asynchronous method if you
  *                               want to use, see "send: withResponse:
  *                               withSendStatusBlock:".
  */
-(void)syncSend:(NSData *)data withResponse:(BOOL)response
```

```
/*
  * @discussion                  Stop send data to peripheral and reset sending status.
  */
-(void)stopSend
```

```
/*
  * Specify UUID to set characteristic,
  * @param serviceUUID           The UUID of service.
  * @param characteristicUUID    The UUID of characteristic.
  * @param notify                 Whether listening to.
  * @param result                 Whether to set up successfully.
  * @discussion                   This method allows you to specify UUID to search
  *                                services and characteristics.
  */
```

```
-(void)setCharacteristic:(NSString*)serviceUUID                withCharacteristicUUID:(NSString
*)characteristicUUID withNotify:(BOOL)notify infoBlock:(void (^)(BOOL result))block
```

```
/*
  * Read characteristic value,
  * @param characteristic              A <code>CBCharacteristic</code> object.
  * @discussion                        Read the eigenvalue information manually, see the
  *                                     method "readResponse:".
  */
-(void)read:(CBCharacteristic *)characteristic
```

```
/*
  * Set send interval(ms),
  * @param interval                     The gap between the packet.
  * @discussion                          If you want to call the method "send: withResponse:
  *                                     withSendStatusBlock:", please call this method once.
  */
-(void)setSendInterval:(NSInteger)interval
```

```
/*
  * Set mtu,
  * @discussion                          Call this method set data per packet size.
  */
-(void)setAttMtu:(NSInteger)mtu
```

5.2 CALLBACKS

```
/*
  * Peripheral disconnected callback,
  * @param characteristic              A <code>CBCharacteristic</code> object.
  * @param data                        The value to back.
  * @param error                        If an error occurred, the cause of the failure.
  * @discussion                        This method returns the result of a {@link send:
  *                                     withResponse:} call, when the parameter "response"
  *                                     is yes.
  */
-(void)sendCompleted:(void(^)(CBCharacteristic*characteristic,NSData*data,NSError*error))
block
```

```
/*
  * Response for characteristic value read,
  * @param characteristic              A <code>CBCharacteristic</code> object.
  * @discussion                        This method returns the result of a @link read: @/link
  *                                     call.
  */
-(void)readResponse:(void(^)(CBCharacteristic*characteristic))block
```

6. Parameter Change

6.1 METHODS

```
/*
  * Send AT commands,
  * @param commandArray          An array containing the AT commands.
  * @discussion                  See the callback method “fscAtResponse:”.
  */
-(void)sendFscAtCommands:(NSArray*)commandArray
```

6.2 CALLBACKS

```
/*
  * Response for send AT commands,
  * @param type                  A <code>CBCharacteristic</code> object.
  * @param status                status:OK; ERROR; TIMEOUT; ModifyNoNeed.
  * @discussion                  This method returns the result of a @link
  *                              sendFscAtCommands: @/link call.
  */
-(void)fscAtResponse:(void (^)(NSString*type,int status))block
```

7. Device Firmware Upgrade

7.1 METHODS

```
/*
  * Load file and check file information,
  * @param dfuFileName              The name of the upgrade file.
  * @discussion                     Return a <code>NSDictionary</code> object. Include file
  *                                  information.
  */
-(NSDictionary*)checkDfuFile:(NSString*)dfuFileName
```

```
/*
  * This method is called to upgrade,
  * @param dfuFileName              This parameter is the name of the upgrade file.
  * @param restore                  Restore the factory settings.
  */
-(void)startOTA:(NSString*)dfuFileName withRestoreDefaultSettings:(BOOL)restore
```

7.2 CALLBACKS

```
/*
  * OTA update callbacks,
  * @param percentage               This parameter is the upgrade progress.
  * @param status                   This parameter is the upgrade status.
  * @discussion                     This method returns the result of a @link startOTA:
  *                                  withRestoreDefaultSettings: @/link call.
  */
-(void)otaProgressUpdate:(void (^)(CGFloat percentage, int status))block
```