

EH-MC-10

**App program Interface
User Guide**

Ver 1.0

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1.Introduction

This document provides application development interface. The main reference document supply program development engineer.

Document describes the interface to each service module, including services using characteristic values, characteristic values describing the properties of characteristic, etc.

1.1. Service UUID

1.1.1 0x11223344556677889900aabbccddeeff00: Module's main Service UUID, this service is user for virtual SPP. This service UUID can configure by AT command.

1.1.2 0xaf00: This Service is used to change GPIO, PWM and Read AIO.

1.1.3 0x180f: This Service is for read Battery voltage.

1.1.4 0x180a: This service can read the Module's information ,include software version and hardware version.

1.2. Characteristic UUID

1.2.1 In main Service, 3 characteristics found, and the characteristics is used for translate the data. When write the characteristic, the write value will send to the Module, and bypass to UART port.

1.2.2 In second Service, 4 characteristics found, and 0xaf01 used to read the module's 3 ADC channel and Vbat channel. 0xaf02 used to

control the expect pio to high or low. 0xaf03 used to control 3 channel PWM output. 0xaf04 reserved.

1.2.3 In third Service, 0x2a19 is return the level of the battery.

1.2.4 In forth Service, can read all of the module's information.

1.3. Service and Characteristics Table

| Service | Characteristic | Property | Lenth (bytes) |
|---|----------------|-----------------------|------------------|
| 0x112233445566 778899aabbccceef f00 | 0x4a5b | Write/notify | 20 |
| | 0x2a4a | Reserve | 2 |
| | 0x2a4e | Ibeacon configure | 20 |
| 0xaf00 | 0xaf01 | AIO voltage read | 8 |
| | 0xaf02 | PIO configure | 2 |
| | 0xaf03 | PWM configure | 3 |
| | 0xaf04 | Reserve | |
| 0x180f | 0x2a19 | Battery level | 1 |
| 0x180a | 0x2a25 | Searial Number String | 20 |
| | 0x2a24 | Model Number String | 20 |
| | 0x2a23 | Systemp ID | 20 |

| | | | | |
|--|--------|--------------------------|--------|----|
| | 0x2a27 | Hardware Revision | String | 20 |
| | 0x2a26 | Firmware Revision | String | 20 |
| | 0x2a28 | Software Revision String | | 20 |
| | 0x2a29 | Manufacturer Name | String | 20 |
| | 0x2a50 | PnP ID | | 20 |

2. Characteristic Description

2.1. Characteristic 0x4a5b

Characteristic 0x4a5b provide the channel to communication between the module and the central. It have “write” and “notify” property. When write this characteristic, the writed data will send to the module. And when start notify open, and the app can listen to the channel, when module send data, the app will get the data.

Note:

The data lenth can't over 20 bytes. Data format can Hex or ASCII.

2.2. Characteristic 0x2a4a

Reserved

2.3. Characteristic 0x2a4e

Ibeacon configure characteristic. Format follow:

CMD,LEN,VALUE

CMD is mean which parameter need to change.

0: reset the module, when configure over, need to reset.

1:configure the uuid of service.

2: configure the major of ibeacon module

3: configure the minor of ibeacon module

4: configure the power value of ibeacon module

LEN is the lenth of valid data

VALUE is the valid data.

2.4. Characteristic 0xaf01

This characteristic is read the adc value of the module, this characteristic only read property.

The data return format is follow:

[AAAA][BBBB][CCCC][DDDD]

AAAA: ADC0 convert value, unit mV.

BBBB: ADC1 convert value, unit mV.

CCCC: ADC2 convert value, unit mV.

DDDD: VBAT convert value, unit:mV.

Example:

120511034405E40C, mean:

ADC0 : 1298 mV

ADC1: 785 mV

ADC2: 1348 mV

VBAT: 3300 mV

2.5. Characteristic 0xaf02

This characteristic used to control the PIO output High or Low. This characteristic only Write property. Format follow:

[CH][LEVEL]

CH: number of the PIO

LEVEL: High or Low Level

Example:

Send: 0101

PIO1 Set High.

2.6. Characteristic 0xaf03

This characteristic used to control the PWM output. Can set PWM on and off time. This characteristic only Write property.

[CH][ON][OFF]

CH: number of PWM channel, 0-3

ON: pulse on time, unit: 30us

OFF: pulse off time, unit: 30us

Example:

Send: 00f0a0

Set the PWM0 output, High: 7.5ms, Low: 4.8ms.

Not: when disable the PWM output, set the ON and OFF to 0.

2.7. Characteristic 0xaf04

reserved

2.8. Characteristic 0x2a19

This characteristic read the battery level. 0-100. 1 byte.

Example:

64, mean the battery is full.

2.9. Characteristic 0x2a25-0x2a50

These characteristics is set by the module's factory, and these characteristics only have read property.

3. ios test app

You can download the LightBlue in app store. This app can test the every characteristic of the Module. And can help you develop the app.