



BM70_71 HID Application Notes

1 Overview

This application note will introduce how to add and verify HID service.

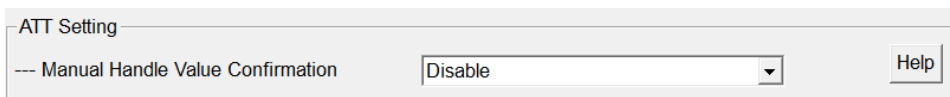
Below tools are used:

IS187x_X02_BLEDK3v2.00_UI v2.23.exe

BLEDK3 Manual Test Tool v0.50.exe

2 UI file modification

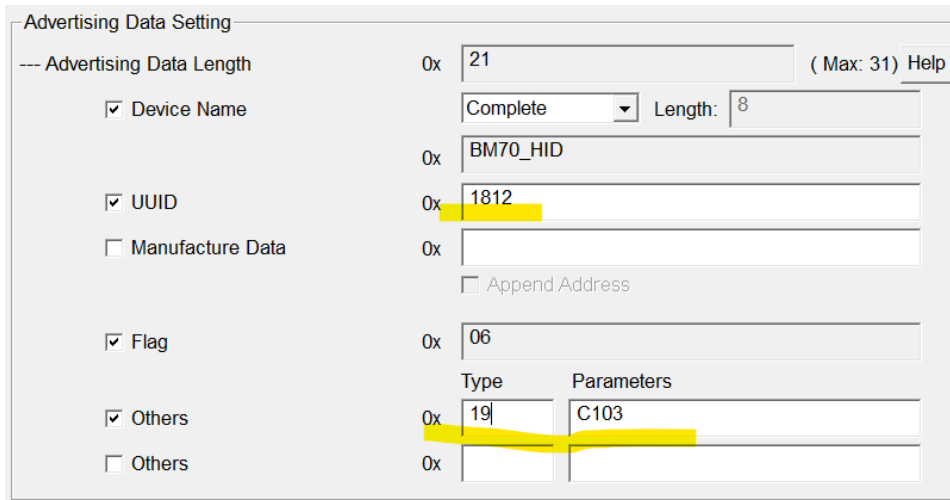
- Disable 'Manual Handle Value Confirmation' on 'System Setup' tab



ATT Setting

--- Manual Handle Value Confirmation Help

- Add 'Appearance/0x19' and HID service 0x1812 to Advertising Data on 'LE Mode Setup' tab



Advertising Data Setting

--- Advertising Data Length 0x (Max: 31) Help

Device Name Length:

0x

UUID 0x

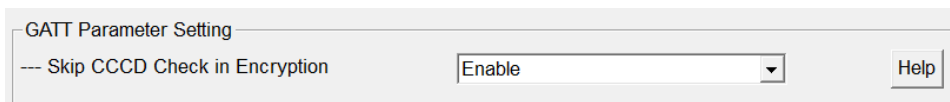
Manufacture Data 0x

Append Address

Flag 0x

Type	Parameters
0x <input type="text" value="19"/>	<input type="text" value="C103"/>
0x <input type="text"/>	<input type="text"/>

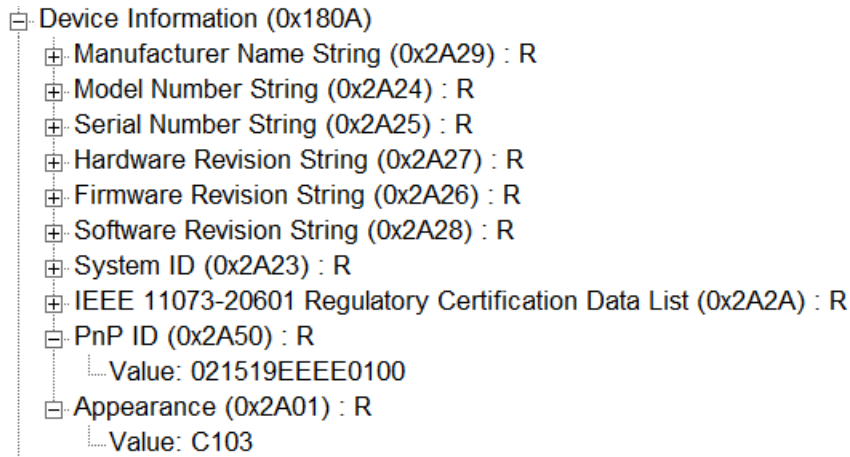
- Enable 'Skip CCCD Check in Encryption' on 'LE Mode Setup' tab



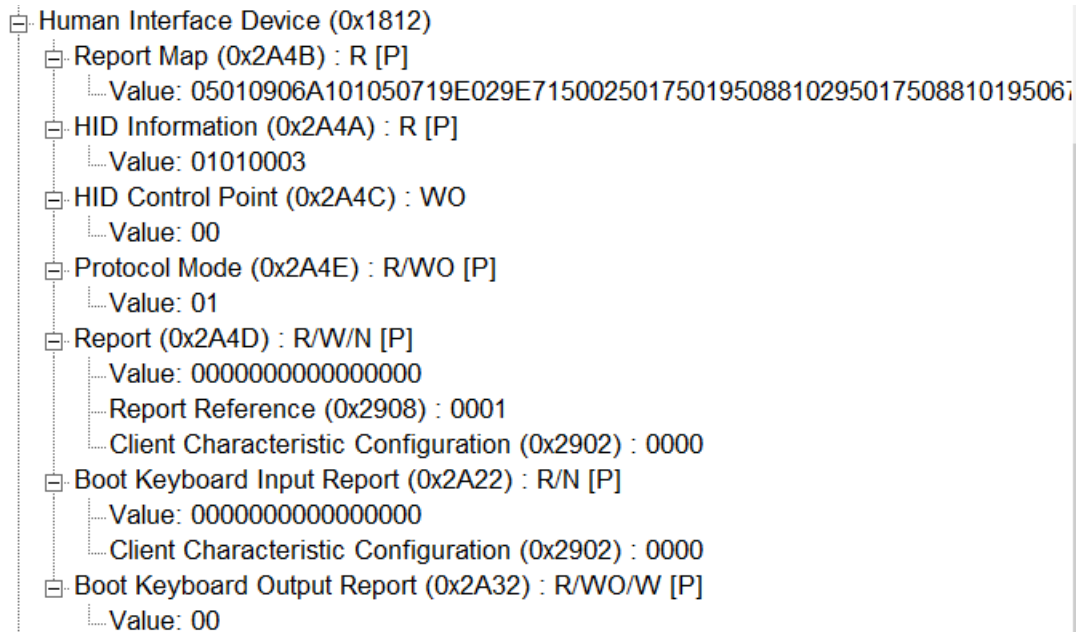
GATT Parameter Setting

--- Skip CCCD Check in Encryption Help

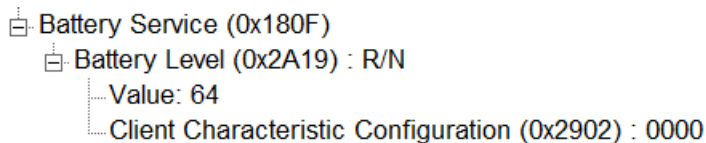
- Add 'PnPID' and 'Appearance' into 'Device Information' on 'GATT service table' tab



- Add 'HID service' on 'GATT service table' tab



- Add 'Battery service' on 'GATT service table' tab

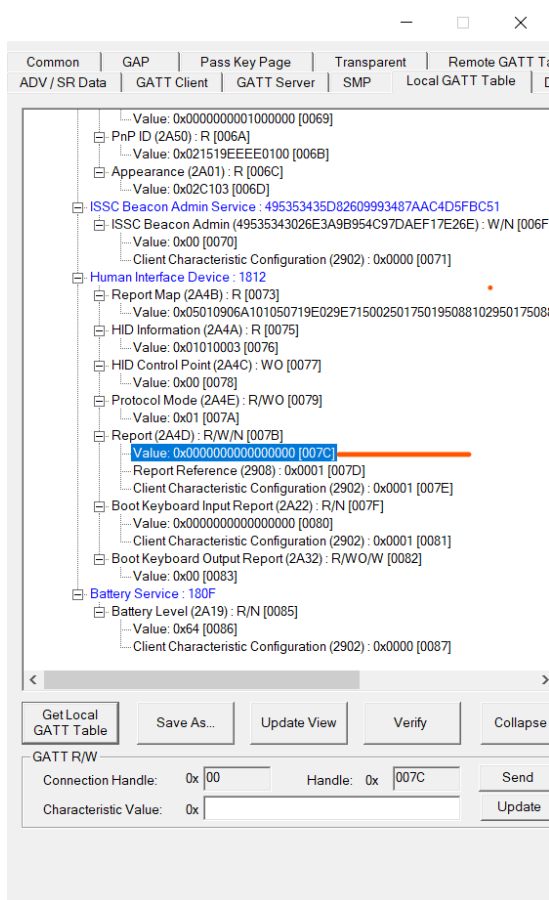


3 Verify HID service

Download the demo HID UI file 'IS1870SF_X02_BLEDK3v2.00_UI v2.23(BM70)_HID.txt'.

3.1 Get the handle of 'report value'

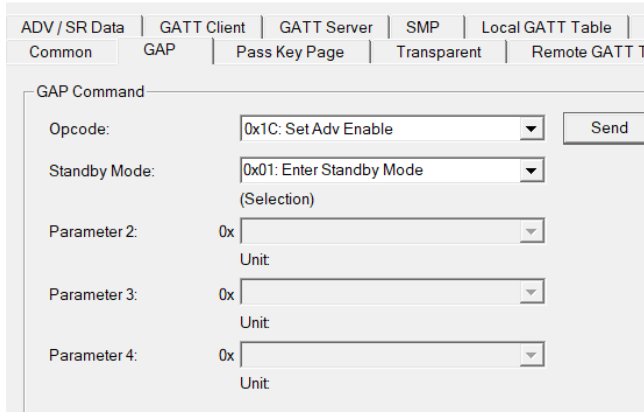
In our case, the handle is 0x007C which can be seen on 'local GATT Table' tab in manual tool.



3.2 Connection to EVB

3.2.1 EVB advertisement

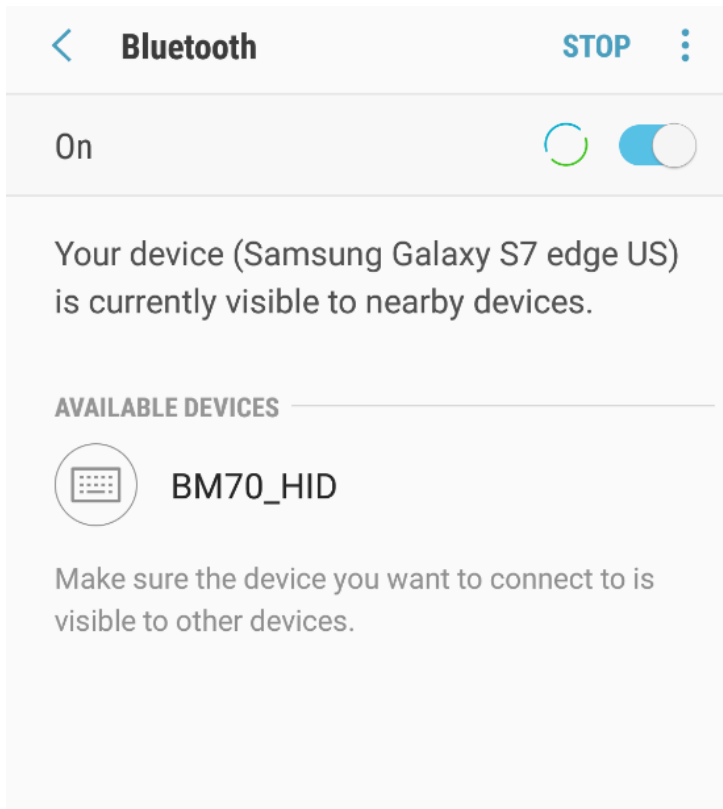
Do advertising with manual tool. In android/ios setting page, find and connect to 'BM70_HID' and open any text editor.



The screenshot shows a manual tool interface with a menu bar at the top containing: ADV/SR Data, GATT Client, GATT Server, SMP, Local GATT Table, and Remote GATT T. Below the menu bar, there are tabs for Common, GAP, Pass Key Page, Transparent, and Remote GATT T. The main area is titled 'GAP Command' and contains several input fields: Opcode (set to '0x1C: Set Adv Enable'), Standby Mode (set to '0x01: Enter Standby Mode'), Parameter 2, Parameter 3, and Parameter 4, each with a 'Unit' label. A 'Send' button is located to the right of the Opcode field.

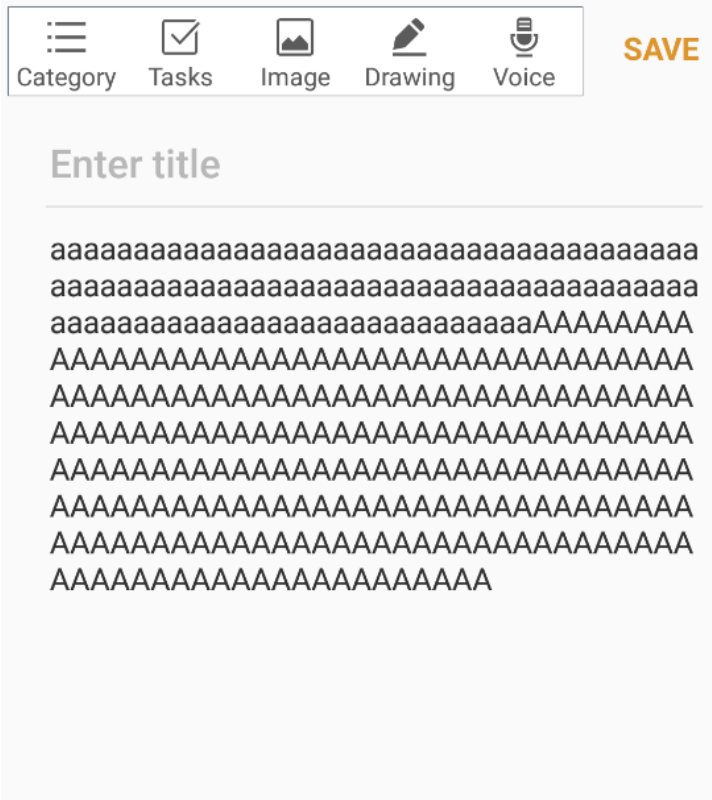
3.2.2 Pair the HID device

In the setting page, the HID device is listed. Click to do pairing and connection.



3.2.3 Open any text editor

In the demo, 'memo' text editor is used:



3.3 Send key code to text editor

Note that the format of the report is 8 bytes

- use 0x38 command to send 'a'(pressed):
00C38007C000040000000000;
80: the connection handle
007C: HID "Report" value handle
04: 'a' key code
- use 0x38 command to send key release:
00C38007C00000000000000000;
80: the connection handle
007C: HID "Report" value handle
00: release
- use 0x38 command to send 'A'(pressed):
00C38007C02004000000000000;
80: the connection handle
007C: HID "Report" value handle
02: CAP on
04: 'a' key code

BLEDK3 Manual Test Tool v0.50

COM Port: COM3 Baudrate: 115200 Disconnect
Parity Bit: None Stop Bit: 1
GPIO Ctrl: No Use Rx_Ind delay Time: 30 (0.1 ms)

Write
Opcode Write Data Length: 11
0x 38 0x 80007C0200040000000000 Write Data

Continuous Send
Load Script Count Repeat Round Times Continuous Send
1

Configure Status
BT: 0x09: Idle Mode.
Link 1: 0x0c: BLE Connected Mode
Link 2: 0x09: Idle Mode.
Link 3: 0x09: Idle Mode.
Link 4: 0x09: Idle Mode.

Log View : Clear
<-- 000C3880007C0200040000000000
--> 0003803800

BLEDK3 Manual Test Tool v0.50

COM Port: COM3 Baudrate: 115200 Disconnect
Parity Bit: None Stop Bit: 1
GPIO Ctrl: No Use Rx_Ind delay Time: 30 (0.1 ms)

Write
Opcode Write Data Length: 11
0x 38 0x 80007C0000000000000000 Write Data

Continuous Send
Load Script Count Repeat Round Times Continuous Send
1

Configure Status
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Link 2: 0x09: Idle Mode.
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