Thermoco Developer Guide

Version 1.0.0

May 2, 2017

Table of Content

1 System Overview

1.1 Introduction

This specification is mainly for developers who want to communicate with Thermoco.

2 Thermoco communication

2.1 Introduction

Thermoco is a small gadget. It measures temperature and save the data to its memory.
It uses Bluetooth Low Energy technology (BLE4.0) to communicate with your smart devices.

2.2 Services

2.2.1 UUID FFD0

2.2.2 Advertise data

Broadcasting temperature data. Data will be “WKdd” where “dd” is the temperature data.

Sample code snippets:

```
    unsigned char *word16ptr = (unsigned char *)[usrData bytes];
     if (word16ptr[0] == 'W' && word16ptr[1] == 'K') {
        isValidDevice = YES;
        if(!(word16ptr[2] == 0x80 && word16ptr[3] == 00)) {
           long word16int = word16ptr[2];
           word16int <<= 8;
           word16int += word16ptr[3];
           long tempint;
           float temperature;
           tempint = word16int >> 4;
           if (tempint < 0x800) {
              temperature = 0.0625*tempint;
           }
           else {
              tempint = 0x800 - tempint&0x7ff;
              temperature = -0.0625*tempint;
           }
        }
}
```

2.2.3 FFD1

Use Write command to send request to the unit. Provides 2 commands: “VERS” and “READ”.
Use Notify to waiting for the response.
0x8000 is the start of the data: need to clear buffer and get ready.

0xdddt is the data, ddd is the temperature data, t is the repeating times. Temperature calculation: for positive data: temperature = ddd * 0.0625; negative data: temperature = (ddd & 0x7ff – 0x800) * 0.0625 (Please refer to 2.2.4 for temperature translating.)
0x80ff is the end of the data.

2.2.4 FFD2

Use read command, data will be 0xddd0. Ddd is the temperature data.
Sample code snippets:

```
NSData *data = [characteristic value];
    if ([data length] == 2) {
        unsigned char *word16ptr = (unsigned char *)[data bytes];
        long word16int = word16ptr[0];
        word16int <<= 8;
        word16int += word16ptr[1];
        long tempint;
        float temperature;
        tempint = word16int >> 4;
        if (tempint < 0x800) {
            temperature = 0.0625*tempint;
        }
        else {
            tempint = 0x800 - tempint&0x7ff;
            temperature = -0.0625*tempint;
        }
```

3 History

Date	Name	Comments
May 1, 2017	K SOLUTION	First draft.
		1.