Chris Harvey

From: SS-Seednet <ssliou@seed.net.tw>
Sent: Sunday, April 27, 2014 10:17 AM
To: Harvey, Christopher
Cc: Harvey, Christopher; Hoque, Claire; danieljoonpark@hotmail.com; R00 高澤琪 Doris
Subject: Re: Wahoo Fitness LLC, //PADWF109 //AN14T0158 Notice #1
Attachments: Exhibit-G-Schematics_WFBTHR02.pdf; Exhibit-C-Test_Report_rev.pdf; Exhibit-K-Operation Description_rev.pdf; Exhibit-E-User_Manual_rev.pdf; Exhibit-M-Hardware Difference.pdf; Exhibit-A-Block Diagrams_rev.pdf; Exhibit-D-ID_ Label_rev.pdf; Exhibit-G-Schematics_WFBTHR02P.pdf; Exhibit-G-Schematics_WFBTHR02R.pdf

Dear Harvey,

Reply as below.

1. The label shows an IC number (10563A-WF0109), but no IC application has been submitted. Please confirm if you are also applying for IC Certification.
[ETC] Yes, IC certification is required.

2. This device is described as a Bluetooth (BLE) and ANT+ device, but the test report does not describe the operation very clearly. ANT+ is described as operating at 2457MHz, but ANT+ protocol operates in hopping mode from 2402-2480MHz. BLE is described 2402 - 2480 MHz, but seems only to be tested at low, mid and high channels and not in hopping mode. Please provide more description of operation in the Theory of Operation exhibit.
Typically BLE (Bluetooth 4.0) devices are backward compatible and can operate in earlier versions of Bluetooth modes, which use different modulations and typically have varying power. Is this device capable of other Bluetooth modes and were other modes tested?
[ETC] Additional information about the ANT+ and BLE was added in the operation description.
1. For ANT+ heart rate protocal the RF frequency is 2457MHz.
2. The BLE mode it is not backward compatible in earlier versions of Bluetooth modes.

3. There is no description in the test report to show if the device was tested in hopping and non-hopping modes of operation.
[ETC] ANT+ and BLE have no hopping mode. They are DTS.

4. Please update the Block diagram to clarify the frequency of operation as 2402-2480MHz instead of just 2.4GHz.
[ETC] Updated.

5. The manual shows 2 models listed (WFBTHR02, WFBTHR02R) as having the same FCC ID number. The Test Report lists 3 models (WFBTHR02, WFBTHR02P, WFBTHR02R). The report provides a description of the 3 models and the differences with the P model having more functions. Please include more information about if there are any hardware differences between the models (the internal photos seem to show that that the models have some differences in components and that even the 'P' model is missing some components that are installed in the other models.) [ETC] Additional information of hardware difference was attached. WFBTHR02P is most complex and the others are function degraded with some components removed.

6. The Schematic Diagram exhibit (title DeuceV2) shows some components as Xed out, but there is no indication of the model differences or the difference between TICKR and TICKRX shown on the last page.
[ETC] Schematics of the three models were provided.

7. PDF Page 2 and 6 of the Test report lists Model WFBTHR02P and Serial Model No WFBTHR02R , WFBTHR02. The description of Serial Model No seems confusing since the models are additional models. Did the sample tested have a Serial Number?
[ETC] There three models here in this application, WFBTHR02P, WFBTHR02R and WFBTHR02. WFBTHR02P is most complex so it is the main model. The others are function degraded with some components removed so they are serial models.

8. The Test report only describes the orientation of this device as being positioned horizontally on the table, but this is a portable device that can be oriented in any position. FCC requires testing portable devices in 3 orthogonal orientations. Please ensure that this device is tested in all 3 orthogonal orientations (X Y & Z).
[ETC] Horizontal orientation is the worst case. Test report was revised on section 4.2 and test data pages.

9. The Radiated test data on pages 16-17 show Peak measurements 20dB higher than the average measurements, but the data on pages 18-19 have Peak measurements about 11dB higher than Average measurements, but the data on pages 22-25 are almost the same for Peak and Average. The data on pages
38-41 shows Peak measurements from 25-30dB higher than the average measurements. It seems strange that related emissions from this device have different Peak to Average values.
[ETC] For bandedge test (pages 38-41) the average test setting was not correct. Retest was performed with correct data provided. For pages 22-25 the test mode is ANT+. The characteristics is different from BLE so the peak/average value is differnet.

10. Please update the test report to show compliance with the 20dB BW requirement of FCC 15.215(c).
[ETC] 20dB BW test results were added into the revised test report on pages 42-44.

(also please note that if you submit an IC application you will need to have each model approved using the Model number on the labeling, as current label just shows model TICKR) [ETC] ID Labels were updated.

Please note that the User's Manual Industry Canada Statement English language section incorrectly states RSS 103 compliance, but should state
RSS-102 for RF exposure..
[ETC] User manual updated.

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-----原始郵件-----
From: Chris.Harvey@ul.com
Sent: Wednesday, March 26, 2014 11:10 PM
To: ssliou@etc.org.tw
Cc: Chris.Harvey@ul.com ; claire.hoque@ul.com ; danieljoonpark@hotmail.com

Subject: Wahoo Fitness LLC, //PADWF109 //AN14T0158 Notice #1

Dear SS Liou,

You are listed as the Technical Contact for the above referenced TCB application. The following item(s) need(s) to be resolved before the review can be continued:

1. The label shows an IC number (10563A-WF0109), but no IC application has been submitted. Please confirm if you are also applying for IC Certification.

2. This device is described as a Bluetooth (BLE) and ANT+ device, but the test report does not describe the operation very clearly. ANT+ is described as operating at 2457MHz, but ANT+ protocol operates in hopping mode from 2402-2480MHz. BLE is described 2402 - 2480 MHz, but seems only to be tested at low, mid and high channels and not in hopping mode. Please provide more description of operation in the Theory of Operation exhibit.
Typically BLE (Bluetooth 4.0) devices are backward compatible and can operate in earlier versions of Bluetooth modes, which use different modulations and typically have varying power. Is this device capable of other Bluetooth modes and were other modes tested?

3. There is no description in the test report to show if the device was tested in hopping and non-hopping modes of operation.

4. Please update the Block diagram to clarify the frequency of operation as 2402-2480MHz instead of just 2.4GHz.

5. The manual shows 2 models listed (WFBTHR02, WFBTHR02R) as having the same FCC ID number. The Test Report lists 3 models (WFBTHR02, WFBTHR02P, WFBTHR02R). The report provides a description of the 3 models and the differences with the P model having more functions. Please include more information about if there are any hardware differences between the models (the internal photos seem to show that that the models have some differences in components and that even the 'P' model is missing some components that are installed in the other models.)

6. The Schematic Diagram exhibit (title DeuceV2) shows some components as Xed out, but there is no indication of the model differences or the difference between TICKR and TICKRX shown on the last page.

7. PDF Page 2 and 6 of the Test report lists Model WFBTHR02P and Serial Model No WFBTHR02R , WFBTHR02. The description of Serial Model No seems confusing since the models are additional models. Did the sample tested have a Serial Number?

8. The Test report only describes the orientation of this device as being positioned horizontally on the table, but this is a portable device that can be oriented in any position. FCC requires testing portable devices in 3 orthogonal orientations. Please ensure that this device is tested in all 3 orthogonal orientations (X Y & Z).

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38-41 shows Peak measurements from 25-30dB higher than the average measurements. It seems strange that related emissions from this device have different Peak to Average values.

10. Please update the test report to show compliance with the 20dB BW requirement of FCC 15.215(c).

(also please note that if you submit an IC application you will need to have each model approved using the Model number on the labeling, as current label just shows model TICKR)

Please note that the User's Manual Industry Canada Statement English language section incorrectly states RSS 103 compliance, but should state
RSS-102 for RF exposure..

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of the original e-mail date may result in application dismissal and forfeiture of the filing fee. Also, please note that partial responses increase processing time and should not be submitted.
Any questions about the content of this correspondence should be directed to the e-mail address listed below the name of the sender. Revised documentation should not be emailed, but instead should be submitted through "Add Attachment" function at the UL-CCS website. Please have your Assessment Number and FCC ID/IC Certification number handy. You may use the following
link: https://cert.ccsemc.com/filing/

Best regards,

Chris Harvey
Chris.Harvey@ul.com

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