


Electromagnetic Emission Compliance Report for FCC Certification

Test Report No. : E135R-020
AGR No. : A135A-047
Applicant : SD Biosensor, Inc.
Address : C-4th&5th Floor Digital Empire Building 980-3, Yeongtong-dong, Yeongtong-gu,
Suwon-si, Kyonggi-do, Korea
Manufacturer : SD Biosensor, Inc.
Address : C-4th&5th Floor Digital Empire Building 980-3, Yeongtong-dong, Yeongtong-gu,
Suwon-si, Kyonggi-do, Korea
Type of Equipment : GlucoNavii Mentor NFC
(Part 15 Class B Computing Device Peripheral)
Model Name : 01GM24
Multiple Model Name : 01GM14
FCC ID. : RPJ01GM24
Serial number : N/A
Total page of Report : 11 pages (including this page)
Date of Incoming : April 22, 2013
Date of Issuing : May 09, 2013

SUMMARY

The equipment complies with the requirement of *FCC CFR 47 PART 15 SUBPART B, Section 15.101*.

This test report contains only the results of a single test of the sample supplied for the examination. It is not a general valid assessment of the features of the respective products of the mass-production.

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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
E135R-020	May 09, 2013	Initial Issue	All

1. VERIFICATION OF COMPLIANCE

APPLICANT : SD Biosensor, Inc.
ADDRESS : C-4th&5th Floor Digital Empire Building 980-3, Yeongtong-dong, Yeongtong-gu, Suwon-si, Kyonggi-do, Korea
CONTACT PERSON : Kim Jae Young / Instrument Development team manager
TELEPHONE NO : +82-31-300-0422
FCC ID : RPJ01GM24
MODEL NO/NAME : 01GM24
SERIAL NUMBER : N/A
DATE : May 09, 2013

EQUIPMENT CLASS	JBP - Part 15 Class B Computing Device Peripheral
E.U.T. DESCRIPTION	GlucoNavii Mentor NFC- Unintentional Radiator
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4: 2009
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15, SECTION 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	10 m Semi anechoic chamber

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. GENERAL INFORMATION

2.1 Product Description

The SD Biosensor, Inc., Model 01GM24 (referred to as the EUT in this report) is a GlucoNavii Mentor NFC with NFC function and USB port. This report covers for PC peripheral device only and NFC function will be covered by another test report. Product specification described herein was obtained from product data sheet or user’s manual.

CHASSIS TYPE	Plastic
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1 MHz)	8 MHz
Electrical Rating	Max 3 Vdc, 500 mA
EXTERNAL CONNECTOR	3.5 Pi 3 pole stereo jack, Customized sensor connector

2.2 Model Differences

-. The following lists consist of the added model and their differences.

Model Name	Differences	Tested
01GM24	Basic Model	<input checked="" type="checkbox"/>
01GM14	The model is differs from basic model and exterior color.	<input type="checkbox"/>

2.3 Related Submittal(s) / Grant(s)

-. Original submittal only

2.4 Test System Details

The model numbers for all the equipments that were used in the tested system is:

Model	Manufacturer	FCC ID	Description	Connected to
01GM24	SD Biosensor, Inc.	RPJ01GM24	GlucNavii Mentor NFC (EUT)	Notebook PC
PP21L	DELL	DoC	Notebook PC	-
ADP-65HB AD	DELTA Electronics. Inc.	N/A	Notebook PC adaptor	Notebook PC
E176FPb	DELL	DoC	Monitor	Notebook PC
SK-8115	DELL	DoC	Keyboard	Notebook PC
LXH-MOANUOA USB	IENOVO	DoC	Mouse	Notebook PC

2.5 Cable Description for the Test System

Cable	Shielded	Ferrite Bead	Metal Shell	Length (m)	Connected to
Stereo jack	Y	Both End	Both End	2.0	USB port of Notebook PC

2.6 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2009. Radiated testing was performed at a distance of 10 m from EUT to the antenna up to 1 GHz.

2.7 Test Facility

The Electromagnetic compatibility measurement facilities are located on at 301-14, Daessangryung-ri, Chowol-eup, Gwangju-si, Gyeonggi-do, 464-862, Korea. The Onetech Corp. has been accredited as a Conformity Assessment Body (CAB) with designation Number, KR0013.

3. SYSTEM TEST CONFIGURATION

3.1 Mode of operation during the test

-. The EUT was connected to the Stereo jack port of notebook PC and transmit the data to notebook PC continuously through the USB port during the test.

3.2 Equipment Modifications

-. None

3.3 Configuration of Test System

Line Conducted Test : The Notebook PC was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4: 2009 7.3.3 to determine the worse operating conditions.

Radiated Emission Test : Preliminary radiated emission test was conducted using the procedure in ANSI C63.4: 2009 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 10 m semi anechoic chamber.

4. PRELIMINARY TEST

4.1 AC Power line Conducted Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Data communication Mode	X

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Data communication Mode	X

5. FINAL RESULT OF MEASUREMENT

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level.

5.1 Conducted Emission Test

Humidity Level : 24 % R.H. Temperature: 39 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107(a)
 Type of Test : CLASS B
 Result : PASSED BY 8.80 dB at 0.20 MHz under Peak detector mode

EUT : GlucNavii Mentor NFC Date: April 24, 2013
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

Frequency (MHz)	Line	Quasi-Peak (dBµV)		Margin (dB)
		Emission level	Q.P Limits	
0.20	N	54.90	63.70	8.80
0.21	N	54.30	63.30	9.00
0.28	N	45.00	60.90	15.90
0.42	H	39.10	57.40	18.30
2.21	N	32.80	56.00	23.20
2.17	H	31.60	56.00	24.40
Frequency (MHz)	Line	Average (dBµV)		Margin (dB)
		Emission level	Limits	
0.20	H	40.60	53.50	12.90
0.21	N	41.10	53.30	12.20
0.28	N	33.90	50.90	17.00
0.42	H	30.20	47.40	17.20

Line Conducted Emissions Tabulated Data

Remark: "H": Hot Line, "N": Neutral Line.

Margin (dB) = Limit – Emission Level

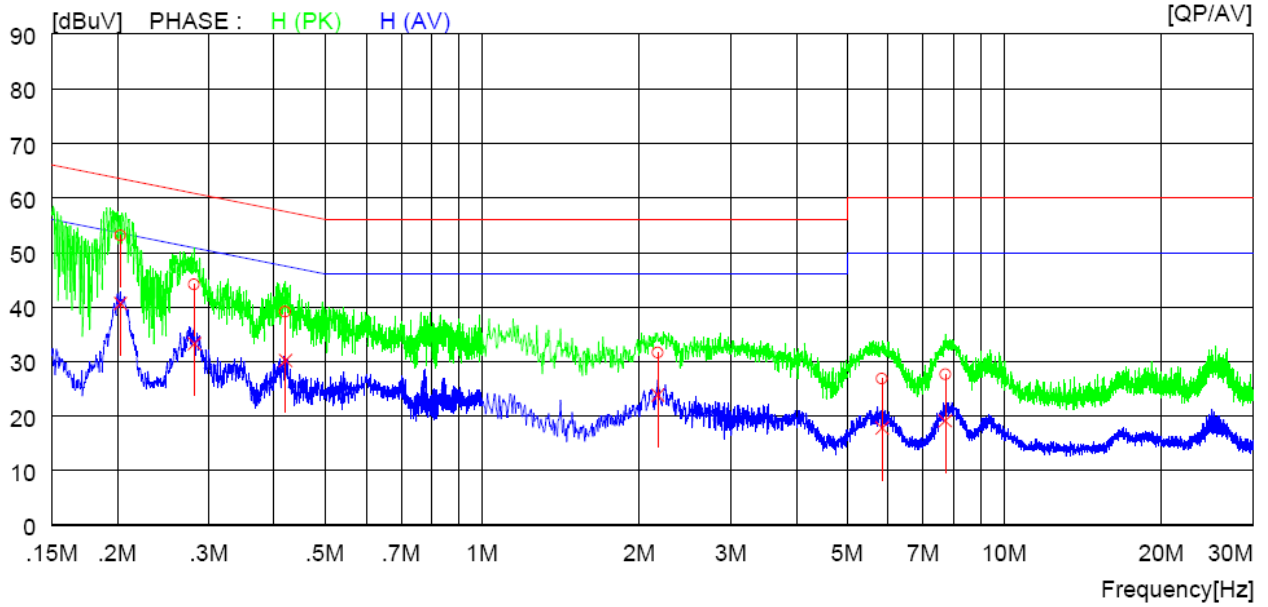
Emission Level (dBµV) = Reading value (dBµV) + Insertion Loss of LISN (dB) + Cable loss (dB)

See next page for an overview sweep performed with quasi-peak and average detector.

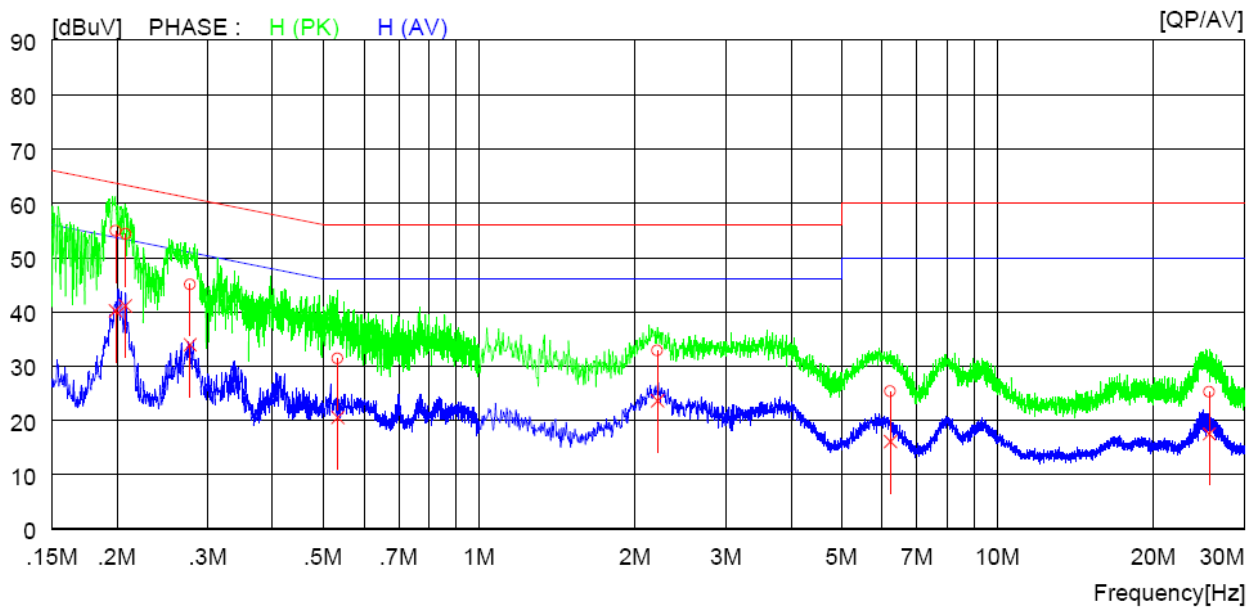


Tested by: Sung-Woo, Park / Project Engineer

Graphical representation of Conducted Emission



HOT LINE



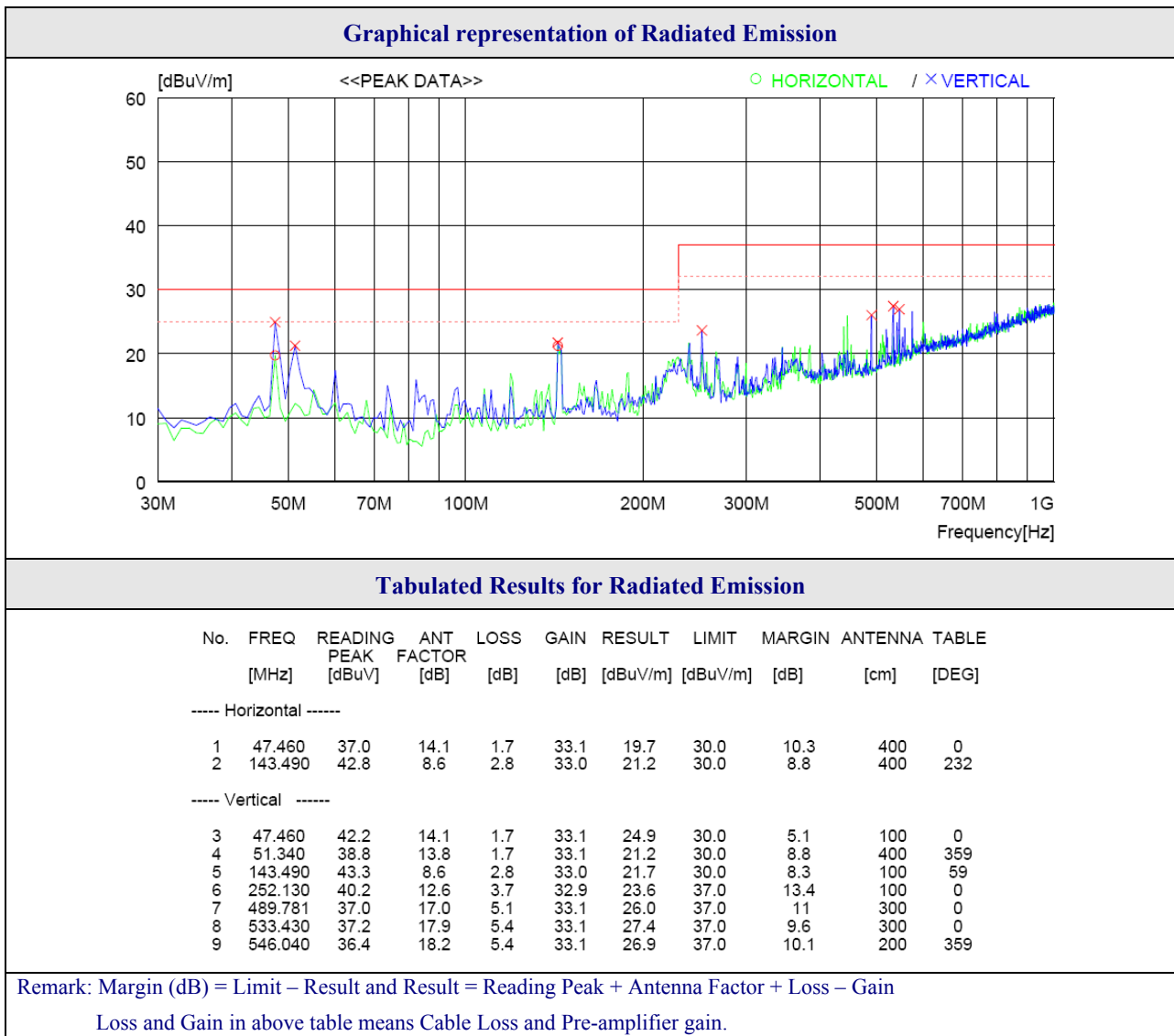
NEUTRAL LINE

5.2 Radiated Emission Tests

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Humidity Level : 39 % Temperature: 24 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109 (g)
 Type of Test : CLASS B
 Result : PASSED BY 6.10 dB at 212.36 MHz under quasi-peak detector mode

 EUT : GlucNavii Mentor NFC Date: April 30, 2013
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 10 Meter



Tested by: Sung-Woo, Park / Project Engineer

6. LIST OF TEST EQUIPMENT

No.	Equipment	Manufacturer	Model Name	Serial No.	Last Cal.	Interval Cal.	Used
1.	Test receiver	Rohde & Schwarz	ESCI	101012	Feb. 06, 2013	One Year	■
2.			ESU	100261	Sep. 24, 2012	One Year	■
3.			ESiB26	100296	Apr. 15, 2013	One Year	
4.			ESCI	101013	Oct. 14, 2012	One Year	■
5.	Pre-Amplifier	Sonoma Instrument	310N	312544	May 30, 2012	One Year	■
6.			310N	312545	May 30, 2012	One Year	■
7.		Rohde & Schwarz	SCU 18	10041	Jan. 25, 2012	One Year	
8.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-255	Apr. 24, 2012	Two years	■
9.			VULB9163	9163-419	Mar. 27, 2012	Two years	■
10.	Horn Antenna	Schwarzbeck	BBHA9120D	BBHA9120D295	Aug. 23, 2011	Two years	
11.	LISN	EMCO	3825/2	9109-1867	May 30, 2012	One Year	
12.				9109-1869	May 30, 2012	One Year	■
13.		Schwarzbeck	NSLK 8126	8126-404	Jun. 11, 2012	One Year	
14.			NSLK 8128	8128-216	Jun. 11, 2012	One Year	■
15.	Controller	Innco System	CO2000	619/27030611/L	N/A	N/A	■
16.	Turn Table	Innco System	DT3000	930611	N/A	N/A	■
17.	Antenna Master	Innco System	MA4000-EP	3320611	N/A	N/A	■
18.			MA4000-EP	3350611	N/A	N/A	■
19.	Tripod	EMCO	N/A	N/A	N/A	N/A	

Remark: Mark ■ mean used equipment.