

**Order No.** : G-45-2015-00597  
**Applicant** : i-SENS, Inc.  
**Address** : 43, Banpo-daero 28-gil, Seocho-gu, Seoul, 137-873, Republic of Korea  
**Product** : Blood Glucose Meter  
**Model** : GM01CAB  
**Alt Model Name** : GM01CAD  
**Environment** : Temp. (21.5 ~ 22.7) °C, Humidity (28.0 ~ 32.0) %R.H.  
 Atmospheric Pressure (100.5 ~ 100.6) kPa  
**Standards** : FCC Part 15 Subpart B  
 FCC Part 18  
**Date of Receipt** : February 26, 2015  
**Date of Test** : March 30, 2015 ~ March 31, 2015  
**Date of Issue** : April 06, 2015  
**Test Result** : Compliance  
**Use of report** : Validation

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.  
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|             |                              |                              |
|-------------|------------------------------|------------------------------|
| Affirmation | Tested by                    | Technical Manager            |
|             | Name : Jinho Seo (Signature) | Name : Paul Kang (Signature) |

The above test report is the accredited test results by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA

**Accredited by KOLAS Republic of KOREA**  
**SGS Korea Co., Ltd. Gunpo Laboratory**  
 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, 435-040 Korea

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## 1. General Information

### 1.1 Client Information

Applicant : i-SENS, Inc.  
Address of Applicant : 43, Banpo-daero 28-gil, Seocho-gu, Seoul, 137-873,  
Republic of Korea

Manufacturer : i-SENS, Inc.  
Address of Manufacturer : 43, Banpo-daero 28-gil, Seocho-gu, Seoul, 137-873,  
Republic of Korea

### 1.2 Test Laboratory

Name and Address : SGS Korea Co., Ltd.  
Giheung 1 Laboratory : 35, Giheungdanji-ro 121beon-gil, Giheung-gu, Yongin-si,  
Gyeonggi-do, Republic of Korea  
Giheung 2 Laboratory : 23, Giheungdanji-ro 24beon-gil, Giheung-gu, Yongin-si,  
Gyeonggi-do, Republic of Korea  
Gunpo Laboratory : 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do,  
435-040 Republic of Korea  
Phone : + 82 31 428 5700  
Fax : + 82 31 427 2370  
e-mail : [paul.kang@sgs.com](mailto:paul.kang@sgs.com)

### 1.3 General Information of E.U.T.

|                            |                                   |
|----------------------------|-----------------------------------|
| Product Name               | Blood Glucose Meter               |
| Model Name                 | GM01CAB                           |
| Alt Model Name             | GM01CAD                           |
| Model different            | Model name is different in market |
| FCC ID                     | OELGM01CAB                        |
| Serial No.                 | B2C800C00012                      |
| H/W Version                | V1.0.6                            |
| S/W Version                | V64.52.3                          |
| EMI Classification         | Class B                           |
| Internal Highest Frequency | 20 MHz                            |
| Test Voltage               | 120 V 60 Hz                       |

## 1.4 Operating Modes and Conditions

| Operating mode            | Operating condition                            |
|---------------------------|------------------------------------------------|
| USB Data communication    | USB Data communication with notebook computer. |
| Blood glucose measurement | Blood glucose measurement status.              |

## 1.5 Auxiliary Equipments

| Description       | Model          | Serial No.               | Manufacturer             |
|-------------------|----------------|--------------------------|--------------------------|
| Notebook Computer | LGE-DMLGX14(B) | 008QTEQ024836            | LG Electronics Co., Ltd. |
| LCD Monitor       | S2740Lb        | CN-DP7D0G-74261-352-05CL | DELL Inc.                |
| USB Keyboard      | WK590          | HDJ2011000000            | WINTEK                   |
| USB MOUSE         | M-U0026        | 810-002147               | Logitech                 |
| Wireless Router   | WG602v4        | -                        | NETGEAR                  |

Note: Auxiliary equipments are declared according to FCC procedure.

## 1.6 Cable List

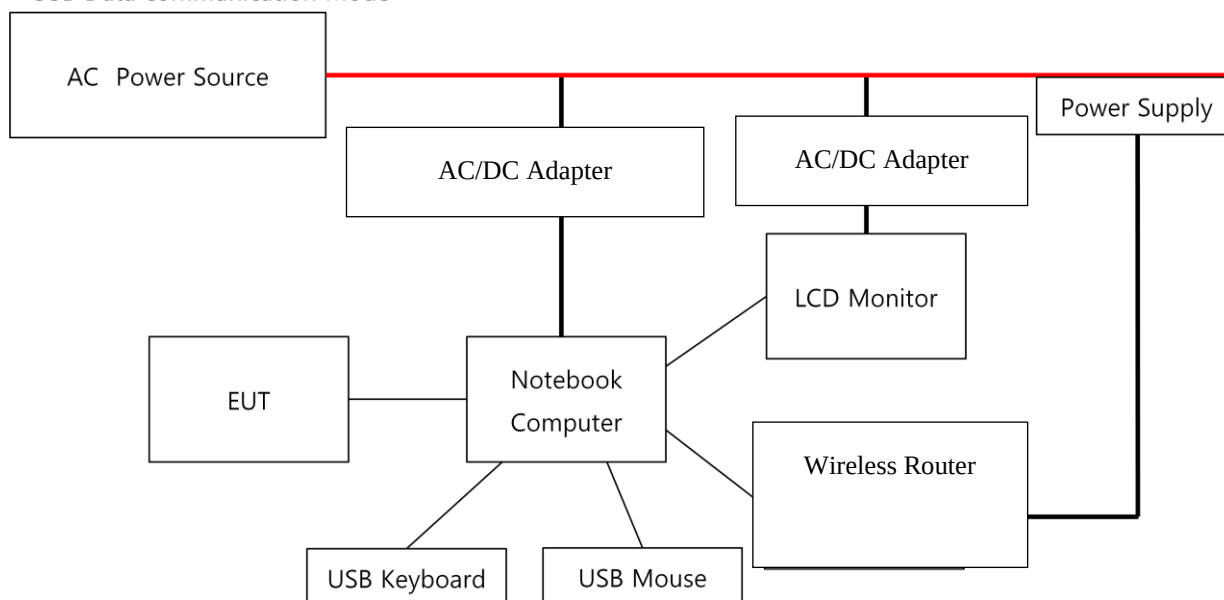
| Start                          |          | END               |          | Cable Spec. |          |      |
|--------------------------------|----------|-------------------|----------|-------------|----------|------|
| Name                           | I/O Port | Name              | I/O Port | Length      | Shield   | Core |
| USB Data communication Mode    |          |                   |          |             |          |      |
| EUT                            | USB      | Notebook Computer | USB      | 0.5         | Shield   | -    |
| Notebook Computer              | USB      | USB Keyboard      | -        | 1.2         | Unshield | -    |
|                                | USB      | USB Mouse         | -        | 1.2         | Unshield | -    |
|                                | RGB      | LCD Monitor       | RGB      | 1.0         | Unshield | -    |
|                                | LAN      | Wireless Router   | LAN      | 1.5         | Unshield | -    |
|                                | DC IN    | AC/DC Adapter     | DC OUT   | 1.5         | Unshield | -    |
| AC/DC Adapter                  | AC IN    | AC Source         | -        | 1.2         | Unshield | -    |
| LCD Monitor                    | DC IN    | AC/DC Adapter     | DC OUT   | 1.0         | Unshield | -    |
| AC/DC Adapter                  | AC IN    | AC Source         | -        | 1.5         | Unshield | -    |
| Wireless Router                | DC IN    | Power supply      | DC OUT   | 1.0         | Unshield | -    |
| Power supply                   | AC IN    | AC Source         | -        | -           | -        | -    |
| Blood glucose measurement Mode |          |                   |          |             |          |      |
| EUT                            | -        | -                 | -        | -           | -        | -    |

### 1.7 System Configurations

| Description   | Model                           | Serial No.   | Manufacturer |
|---------------|---------------------------------|--------------|--------------|
| Main Board    | RGA2E0620-V2.0.0                | 141216       | -            |
| Display       | -                               | -            | -            |
| Inner Battery | JHY403048 2.146Wh<br>580mAh3.7V | B2C800C00012 | -            |

### 1.8 Test System Layout

<USB Data communication Mode>



<Blood glucose measurement Mode>



### 1.9 Modifications

There was no modified item during the test.



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## 1.10 Applicable Standards for Testing

| Standards                            | Status     | Deviation    |
|--------------------------------------|------------|--------------|
| FCC Part 15 Subpart B<br>FCC Part 18 | Applicable | No Deviation |

## 1.11 Summary of Test Results

| Test Item          | Basic Standards                                                    | Results  |
|--------------------|--------------------------------------------------------------------|----------|
| Conducted Emission | FCC Part 15 Subpart B, FCC Part 18<br>ANSI C63.4 : 2009, MD-5:1986 | Complied |
| Radiated Emission  | FCC Part 15 Subpart B, FCC Part 18<br>ANSI C63.4 : 2009, MD-5:1986 | Complied |

Note : Test methods of all test items are performed according to the basic standards in this table.

## EMISSION

### 2.1 Test Results

| Test Items         | Basic Standards                                                    | Test Results    |
|--------------------|--------------------------------------------------------------------|-----------------|
| Conducted Emission | FCC Part 15 Subpart B, FCC Part 18<br>ANSI C63.4 : 2009, MD-5:1986 | <b>Complied</b> |
| Radiated Emission  | FCC Part 15 Subpart B, FCC Part 18<br>ANSI C63.4 : 2009, MD-5:1986 | <b>Complied</b> |

### 2.2 Test Method and Limits

#### 2.2.1 Test Method

| Test Items         | Measuring Frequency Range | RBW     | Measuring Distance |
|--------------------|---------------------------|---------|--------------------|
| Conducted Emission | 0.15 MHz ~ 30 MHz         | 9 kHz   | -                  |
| Radiated Emission  | 9 kHz ~ 0.15 MHz          | 200 Hz  | 3 m                |
|                    | 0.15 MHz ~ 30 MHz         | 9 kHz   | 3 m                |
|                    | 30 MHz ~ 1 GHz            | 120 kHz | 10 m & 3 m         |
|                    | Above 1 GHz               | 9 kHz   | 3 m                |

Note : 10 m method of radiated emission measurement is only applied to Class A equipment over the frequency range of 30 MHz ~ 1 GHz. Except this, 3 m method is applied to Class B equipment over the frequency range of 30 MHz ~ 1 GHz and Class A and Class B equipment above 1 GHz.

#### 2.2.2 Test Limits

##### -Conducted Emission Limits

| Frequency Range    | Limits( dB( $\mu$ V) ) |          | Class          |
|--------------------|------------------------|----------|----------------|
|                    | Quasi-peak             | Average  |                |
| 0.15 MHz ~ 0.5 MHz | 79                     | 66       | <b>Class A</b> |
| 0.5 MHz ~ 30 MHz   | 73                     | 60       |                |
| 0.15 MHz ~ 0.5 MHz | 66 to 56               | 56 to 46 | <b>Class B</b> |
| 0.5 MHz ~ 5 MHz    | 56                     | 46       |                |
| 5 MHz ~ 30 MHz     | 60                     | 50       |                |

Note : The lower limit shall apply at the transition frequencies. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.



## -Radiated Emission Limits in part 18

| Frequency Range | Limits( dB( $\mu$ V/m) ) Average | Class                |
|-----------------|----------------------------------|----------------------|
| 9 kHz ~ 400 MHz | 63.5                             | Miscellaneous device |

## -Radiated Emission Limits below 1 GHz in part 15

| Frequency Range   | Limits( dB( $\mu$ V/m) ) | Class   |
|-------------------|--------------------------|---------|
|                   | Quasi-peak               |         |
| 30 MHz ~ 88 MHz   | 39.1                     | Class A |
| 88 MHz ~ 216 MHz  | 43.5                     |         |
| 216 MHz ~ 960 MHz | 46.4                     |         |
| 960 MHz ~ 1 GHz   | 49.5                     |         |
| 30 MHz ~ 88 MHz   | 40                       | Class B |
| 88 MHz ~ 216 MHz  | 43.5                     |         |
| 216 MHz ~ 960 MHz | 46                       |         |
| 960 MHz ~ 1 GHz   | 54                       |         |

## -Radiated Emission Limits above 1 GHz (3m method)

| Frequency Range | Limits( dB( $\mu$ V/m) ) |      | Class   |
|-----------------|--------------------------|------|---------|
|                 | Average                  | Peak |         |
| Above 1 GHz     | 59.5                     | 79.5 | Class A |
| Above 1 GHz     | 54                       | 74   | Class B |

## 2.3 Conducted Emission

The initial preliminary exploratory scans were performed over the measuring frequency range(0.15 MHz to 30 MHz) using a max hold mode incorporating a Peak detector and Average detector and using the software of EMC32(Version 8.50.0 from R&S). The final test data was measured using a Quasi-Peak detector and Average detector.

### 2.3.1 Test Equipments

| Description               | Model No. | Manufacturer | S/N    | Last Cal. Date |
|---------------------------|-----------|--------------|--------|----------------|
| Two-Line V-Network        | ENV216    | R & S        | 100190 | 2014.12.25     |
| Artificial Mains Networks | ESH2-Z5   | R & S        | 100280 | 2014.04.04     |
| Test Receiver             | ESCI 7    | R & S        | 100911 | 2014.01.07     |

Note : The calibration period of every equipment is 1 year.

## 2.3.2 Test Site

Shield Room in Gunpo Laboratory

## 2.3.3 Environment Conditions

Temperature : 22.4 °C ~ 22.7 °C

Humidity : 31.0 %R.H. ~ 32.0 %R.H.

Atmospheric Pressure : 100.5 kPa

**Test Date** : March 30, 2015

## USB Data Communication Mode

| Freq.<br>( MHz ) | Line<br>( H/N ) | Level ( dB $\mu$ V ) |      | CL<br>( dB ) | LISN<br>( dB ) | Result ( dB $\mu$ V ) |      | Limit ( dB $\mu$ V ) |      | Margin ( dB ) |      |
|------------------|-----------------|----------------------|------|--------------|----------------|-----------------------|------|----------------------|------|---------------|------|
|                  |                 | Q/P                  | A/V  |              |                | Q/P                   | A/V  | Q/P                  | A/V  | Q/P           | A/V  |
| 0.19             | N               | 42.0                 | 25.9 | 0.0          | 9.7            | 51.7                  | 35.6 | 63.9                 | 53.9 | 12.2          | 18.3 |
| 0.20             | H               | 43.0                 | 24.4 | 0.0          | 9.6            | 52.6                  | 34.0 | 63.6                 | 53.6 | 11.0          | 19.6 |
| 0.26             | H               | 32.7                 | 15.4 | 0.0          | 9.6            | 42.3                  | 25.0 | 61.4                 | 51.4 | 19.1          | 26.4 |
| 0.33             | H               | 25.6                 | 10.1 | 0.0          | 9.6            | 35.2                  | 19.7 | 59.5                 | 49.5 | 24.3          | 29.8 |
| 11.08            | N               | 19.8                 | 13.2 | 0.1          | 9.8            | 29.7                  | 23.1 | 60.0                 | 50.0 | 30.3          | 26.9 |
| 24.09            | N               | 19.5                 | 12.1 | 0.2          | 9.9            | 29.7                  | 22.3 | 60.0                 | 50.0 | 30.3          | 27.7 |

Measurement Uncertainty :  $\pm 3.21$  dB (The confidential level is about 95%,  $k=2$ )

Note : • Line ( H ) : Hot  
 • CL: Cable Loss  
 • Result = Level + CL + LISN  
 • Line ( N ) : Neutral  
 • LISN : LISN Factor  
 • Margin = Limit – Result

**See Appendix A (Conducted Emission)**

## 2.4 Radiated Emission

The initial preliminary exploratory scans were performed at 3 m distance over the measuring frequency range(9 kHz to 1 GHz) using a max hold mode incorporating a Peak detector and using the software of EP5RE(Version Ver3.10.20 from TOYO). The final test data was measured using a Quasi-Peak detector at 1 GHz at 3 m distance. at USB Communication mode and Average detector at Blood glucose measurement Mode. Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency.

### 2.4.1 Test Equipments

| Description         | Model No. | Manufacturer                       | S/N        | Last Cal. Date |
|---------------------|-----------|------------------------------------|------------|----------------|
| Bilog Antenna       | VULB9163  | SCHWARZBECK<br>MESS-<br>ELEKTRONIK | 396        | 2014.06.16     |
| Test Receiver       | ESU26     | R & S                              | 100109     | 2014.06.16     |
| Amplifier           | 8447F     | HP                                 | 2944A03909 | 2014.08.27     |
| Active Loop Antenna | FMZB1519  | SCHWARZBECK                        | 1519-039   | 2013.07.09     |

Note : Only the calibration period of Antennas is 2 years but the period of every equipment is 1 year.

### 2.4.2 Test Site

3 m Semi-Anechoic Chamber in Gunpo Laboratory

## 2.4.3 Environment Conditions

Temperature : 21.5 °C ~ 21.9 °C

Humidity : 28.0 %R.H. ~ 31.0 %R.H.

Atmospheric Pressure : 100.6 kPa

Test Date : March 31, 2015

## Blood Glucose measurement Mode

| Freq.<br>( MHz ) | Level<br>( dB $\mu$ V ) | Pol.<br>(H/V) | A<br>( ° ) | H<br>( cm ) | AF<br>( dB ) | CL<br>( dB ) | F/S<br>( dB $\mu$ V/m ) | Limit<br>( dB $\mu$ V/m ) | Margin<br>( dB ) |
|------------------|-------------------------|---------------|------------|-------------|--------------|--------------|-------------------------|---------------------------|------------------|
| 9kHz~150kHz      |                         |               |            |             |              |              |                         |                           |                  |
| 0.01             | 27.4                    | H             | 172        | 200         | 20.4         | 0.1          | 47.9                    | 63.5                      | 15.6             |
| 0.02             | 30.0                    | H             | 172        | 200         | 20.4         | 0.1          | 50.4                    | 63.5                      | 13.1             |
| 0.03             | 36.9                    | V             | 148        | 200         | 20.3         | 0.1          | 57.2                    | 63.5                      | 6.3              |
| 0.04             | 26.2                    | H             | 105        | 200         | 20.2         | 0.1          | 46.5                    | 63.5                      | 17.0             |
| 0.05             | 24.2                    | V             | 170        | 200         | 20.1         | 0.1          | 44.4                    | 63.5                      | 19.1             |
| 0.09             | 29.1                    | H             | 172        | 200         | 20.0         | 0.1          | 49.2                    | 63.5                      | 14.3             |
| 150kHz~30MHz     |                         |               |            |             |              |              |                         |                           |                  |
| 0.19             | 22.1                    | H             | 176        | 200         | 20.0         | 0.1          | 42.2                    | 63.5                      | 21.3             |
| 0.24             | 20.8                    | V             | 340        | 200         | 20.0         | 0.1          | 40.9                    | 63.5                      | 22.6             |
| 0.57             | 21.2                    | H             | 20         | 200         | 20.2         | 0.1          | 41.5                    | 63.5                      | 22.0             |
| 5.03             | 19.6                    | V             | 223        | 200         | 20.2         | 0.3          | 40.0                    | 63.5                      | 23.5             |

Measurement Uncertainty (Horizontal) :  $\pm 3.59$  dB (The confidential level is about 95%,  $k=2$ )

Measurement Uncertainty (Vertical) :  $\pm 3.59$  dB (The confidential level is about 95%,  $k=2$ )

Note: • AF = Antenna Factor

• Pol.(H) = Horizontal

• Margin = Limit – F/S

• A : Angle

• CL = Cable Loss

• Pol.(V) = Vertical

• F/S = Level + AF + CL – Amp.

• H : Height

• F/S = Field Strength

• Amp. = Amplifier Gain

## Blood Glucose measurement Mode

| Freq.<br>( MHz ) | Level<br>( dB $\mu$ V ) | Pol.<br>(H/V) | A<br>( ° ) | H<br>( cm ) | AF<br>( dB ) | CL<br>( dB ) | Amp.<br>( dB ) | F/S<br>( dB $\mu$ V/m ) | Limit<br>( dB $\mu$ V/m ) | Margin<br>( dB ) |
|------------------|-------------------------|---------------|------------|-------------|--------------|--------------|----------------|-------------------------|---------------------------|------------------|
| 41.10            | 32.6                    | H             | 65         | 400         | 14.3         | 0.9          | 27.7           | 20.1                    | 63.5                      | 43.4             |
| 58.27            | 33.1                    | V             | 133        | 100         | 12.9         | 1.0          | 27.8           | 19.1                    | 63.5                      | 44.4             |
| 93.13            | 33.8                    | V             | 231        | 100         | 10.5         | 1.3          | 27.8           | 17.8                    | 63.5                      | 45.7             |
| 100.33           | 32.4                    | H             | 111        | 400         | 11.2         | 1.3          | 27.6           | 17.4                    | 63.5                      | 46.1             |
| 370.55           | 33.2                    | V             | 26         | 100         | 15.8         | 2.5          | 27.0           | 24.6                    | 63.5                      | 38.9             |
| 397.70           | 32.6                    | H             | 80         | 200         | 16.4         | 2.6          | 26.7           | 24.9                    | 63.5                      | 38.6             |

## USB Data Communication Mode

| Freq.<br>( MHz ) | Level<br>( dB $\mu$ V ) | Pol.<br>(H/V) | A<br>( ° ) | H<br>( cm ) | AF<br>( dB ) | CL<br>( dB ) | Amp.<br>( dB ) | F/S<br>( dB $\mu$ V/m ) | Limit<br>( dB $\mu$ V/m ) | Margin<br>( dB ) |
|------------------|-------------------------|---------------|------------|-------------|--------------|--------------|----------------|-------------------------|---------------------------|------------------|
| 48.07            | 47.8                    | V             | 99         | 100         | 14.1         | 0.9          | 27.6           | 35.2                    | 40.0                      | 4.8              |
| 65.85            | 50.4                    | H             | 231        | 400         | 10.1         | 1.0          | 27.8           | 33.7                    | 40.0                      | 6.3              |
| 66.17            | 51.9                    | V             | 172        | 400         | 9.9          | 1.0          | 27.8           | 35.0                    | 40.0                      | 5.0              |
| 143.89           | 55.1                    | V             | 240        | 100         | 8.2          | 1.5          | 27.2           | 37.6                    | 43.5                      | 5.9              |
| 155.98           | 54.2                    | V             | 103        | 200         | 8.2          | 1.6          | 27.5           | 36.5                    | 43.5                      | 7.0              |
| 384.33           | 36.2                    | H             | 89         | 100         | 16.1         | 2.6          | 26.9           | 28.0                    | 46.0                      | 18.0             |

Measurement Uncertainty (Horizontal) :  $\pm 5.31$  dB (The confidential level is about 95%,  $k=2$ )

Measurement Uncertainty (Vertical) :  $\pm 5.71$  dB (The confidential level is about 95%,  $k=2$ )

Note: • AF = Antenna Factor

• CL = Cable Loss

• F/S = Field Strength

• Pol.(H) = Horizontal

• Pol.(V) = Vertical

• Amp. = Amplifier Gain

• Margin = Limit – F/S

• F/S = Level + AF + CL – Amp.

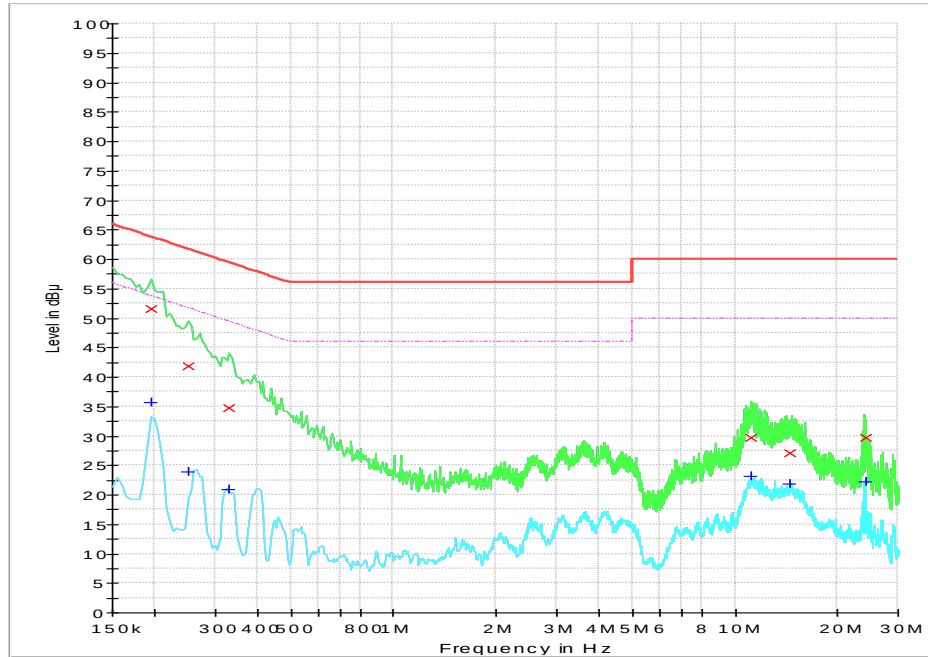
• A : Angle

• H : Height

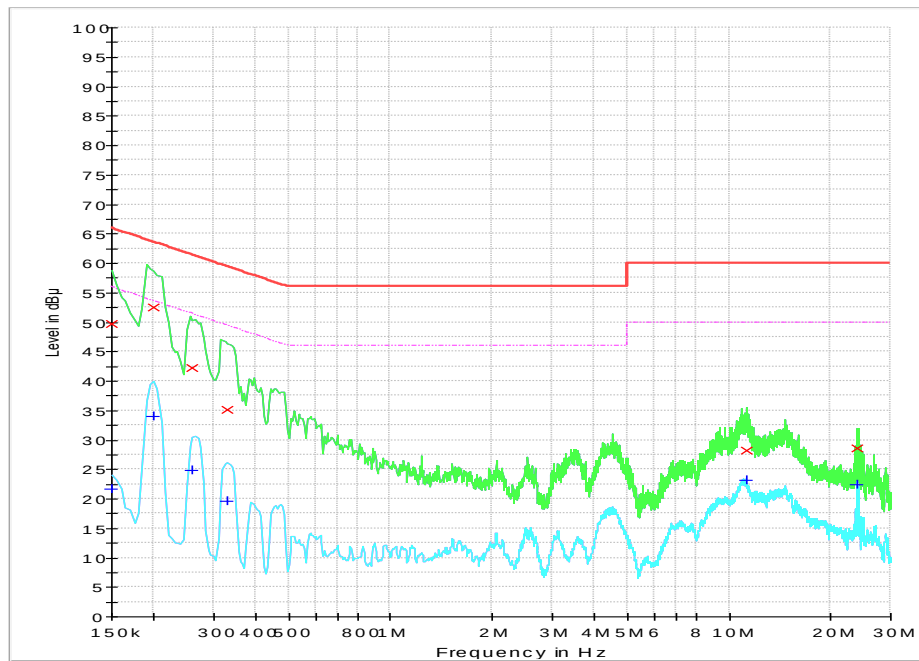
**See Appendix B (Radiated Emission)**

## Appendix A: Conducted Emission

### Neutral



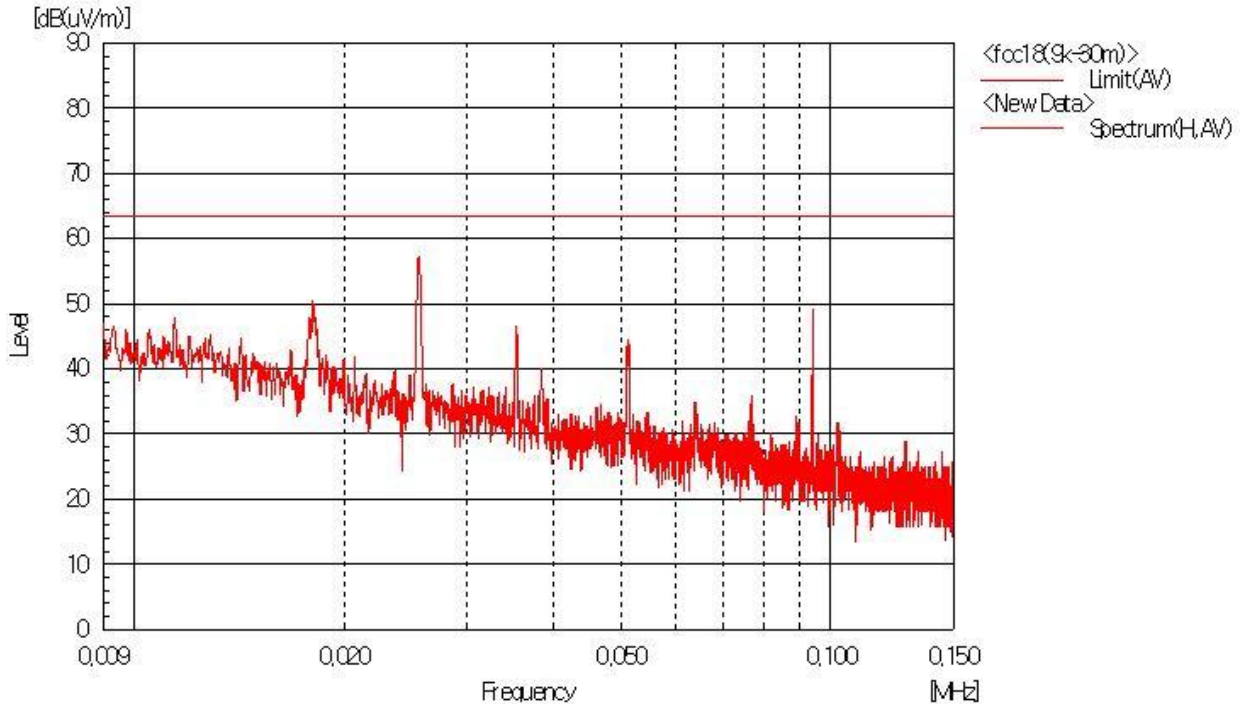
### Hot



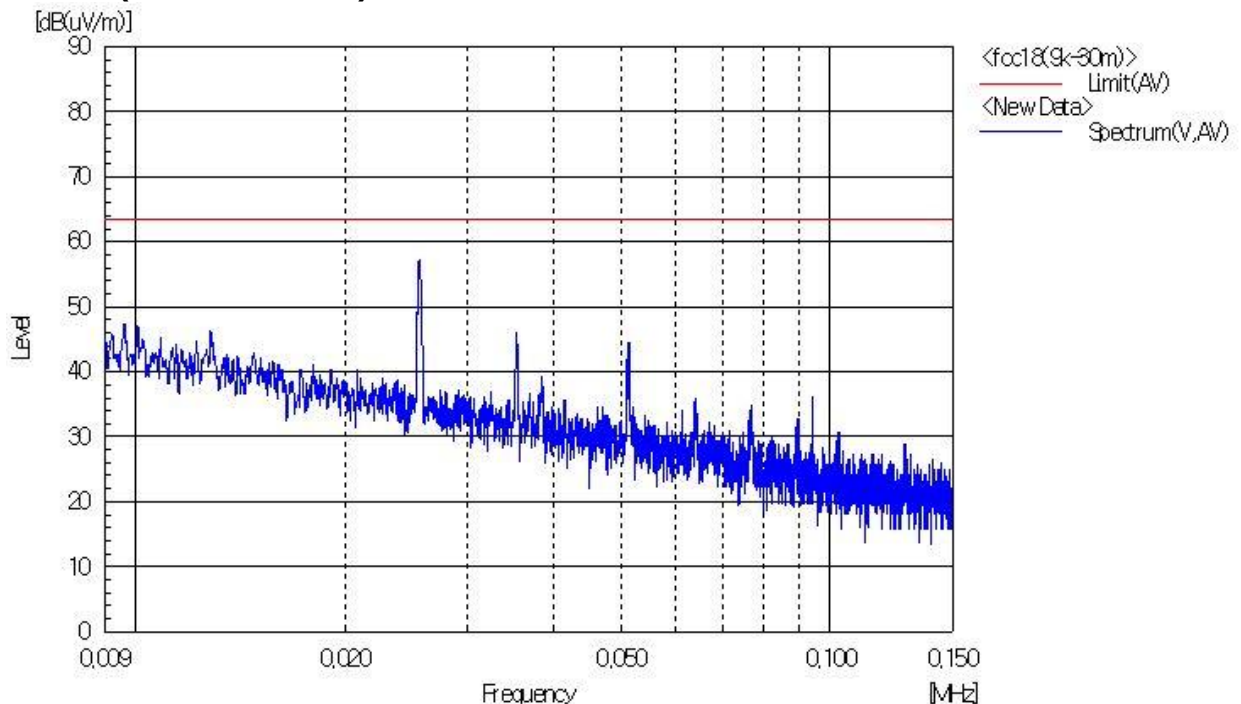
## Appendix B: Radiated Emission (3 m Scan Data)

### Blood Glucose measurement Mode

#### Horizontal (9kHz ~ 150MHz)

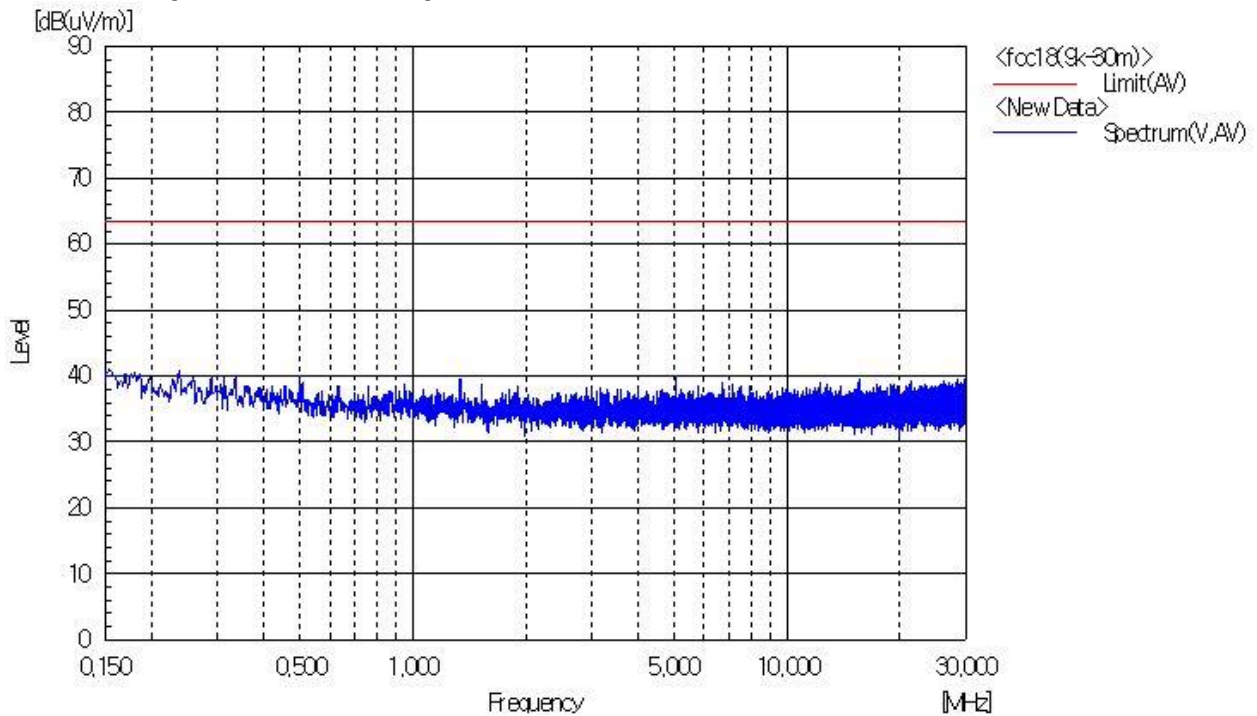


#### Vertical(9kHz ~ 150MHz)

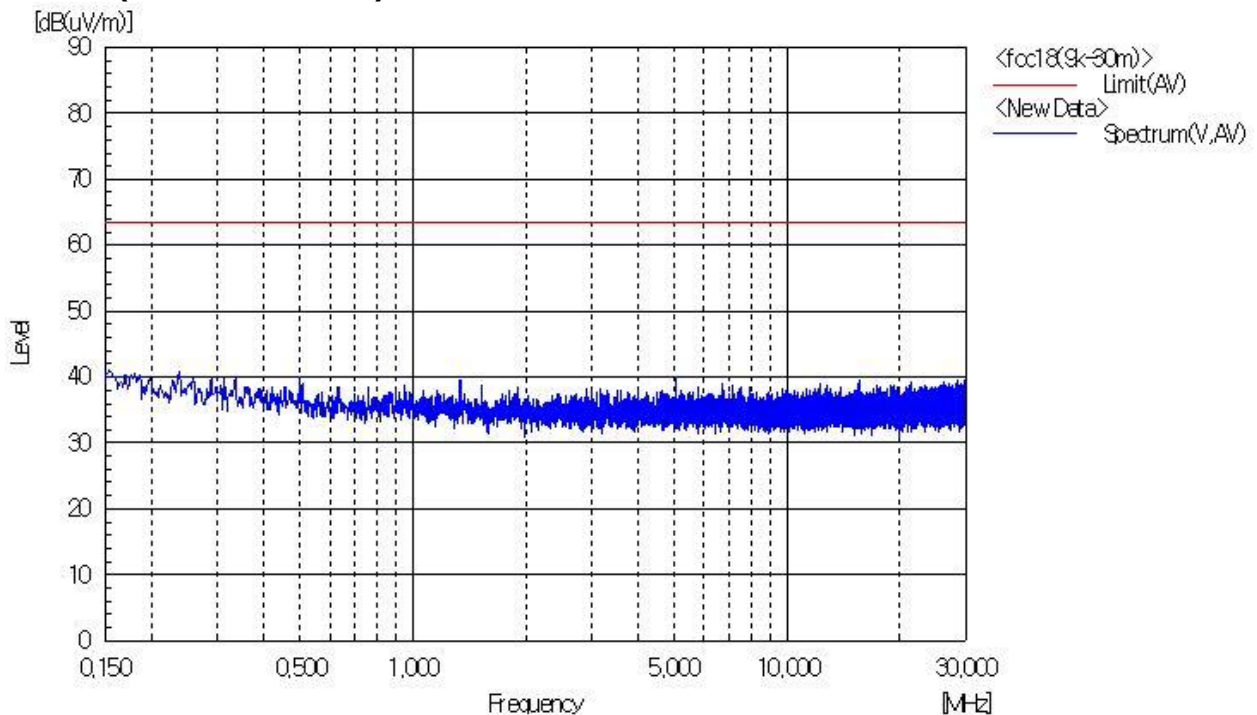




## Horizontal (150kHz ~ 30MHz)

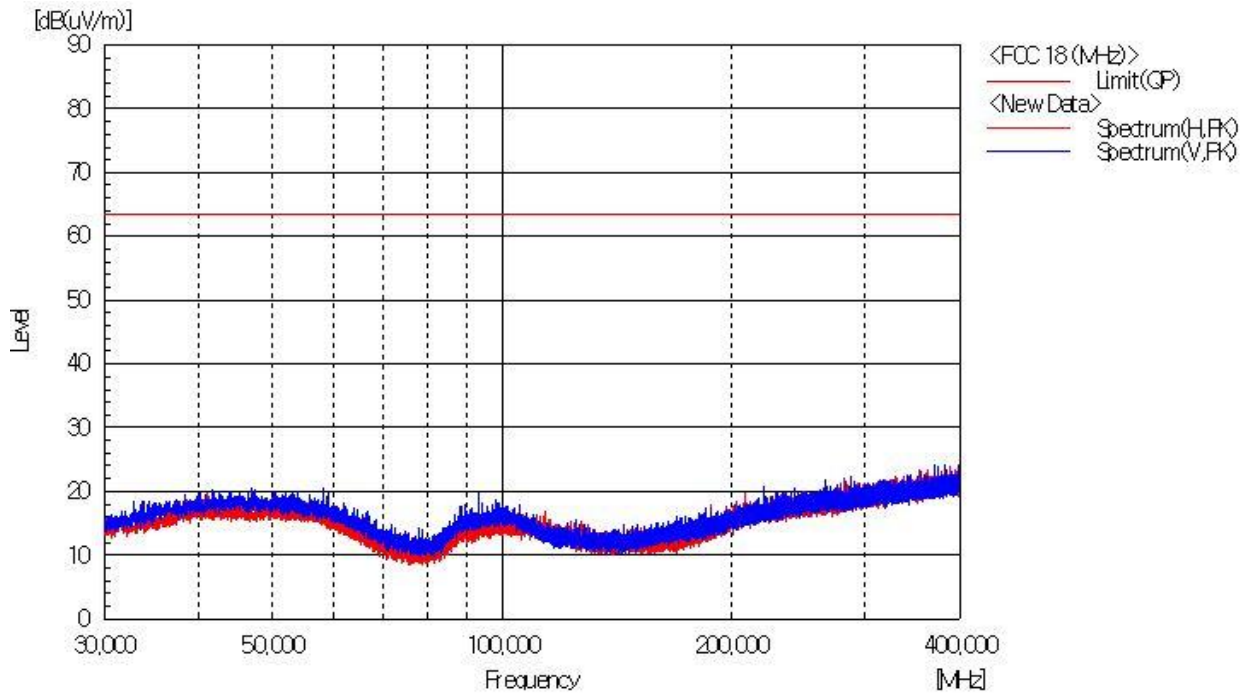


## Vertical(150kHz ~ 30MHz)





## Blood Glucose measurement Mode



## USB Data Communication Mode

