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Emissions
Test Report

EUT Name: Glucose Monitoring System Sensor

Model No.: Freestyle Libre 2 Sensor

CFR 47 Part 15.247: 2018 and RSS 247: 2017

Prepared for:

Abbott Diabetes Care
1360 S. Loop Road
Alameda, CA 94502

Prepared by:

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Revisions

Revision No.	Date	Reason for Change	Author
0	2/26/2021	Original Document	DA
1	2/26/21	Updated, IC ID: 12106A-LIB02S	RD

Note: Latest revision report will replace all previous reports.

Statement of Compliance

Manufacturer:	Abbott Diabetes Care 1360 S. Loop Road Alameda, CA 94502
Requester / Applicant:	Abbott Diabetes Care
Name of Equipment:	Glucose Monitoring System Sensor
Model No.	Freestyle Libre 2 Sensor
Type of Equipment:	Intentional Radiator
Application of Regulations:	CFR 47 Part 15.247: 2018 and RSS 247: 2017
Test Dates:	8/20/2018, 8/19/20

Guidance Documents:

Emissions: ANSI C63.10-2013

Test Methods:

Emissions: ANSI C63.10-2013

The electromagnetic compatibility test and documented data described in this report has been performed and recorded by TUV Rheinland, in accordance with the standards and procedures listed herein. As the responsible authorized agent of the EMC laboratory, I hereby declare that the equipment described above has been shown to be compliant with the EMC requirements of the stated regulations and standards based on these results. If any special accessories and/or modifications were required for compliance, they are listed in the Executive Summary of this report.

This report must not be used to claim product endorsement by A2LA or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written authorization of TUV Rheinland of North America.

Rachana Khanduri		Richard Decker	
Test Engineer	Date February 26, 2021	A2LA Signatory	Date February 26, 2021

Testing Cert #3331.02 **US1131** **2932M-1**

1 Executive Summary

1.1 Scope

This report is intended to document the status of conformance with the requirements of the CFR 47 Part 15.247: 2018 and RSS 247: 2017 based on the results of testing performed on 8/20/2018, 8/19/20 on the Glucose Monitoring System Sensor Model Freestyle Libre 2 Sensor manufactured by Abbott Diabetes Care. This report only applies to the specific samples tested under the stated test conditions. It is the responsibility of the manufacturer to assure that additional production units of this model are manufactured with identical or EMI equivalent electrical and mechanical components. Test data was verified before latest revision. This report is further intended to document changes and modifications to the EUT throughout its life cycle. All documentation will be included as a supplement.

1.2 Purpose

Testing was performed to evaluate the EMC performance of the EUT in accordance with the applicable requirements, procedures, and criteria defined in the application of regulations and application of standards listed in this report. The 2400 MHz to 2483.5 MHz frequency band is covered in this document.

1.3 Summary of Test Results

Table 1: Summary of Test Results

Test	Test Method ANSI C63.4	Worse Case (Measured)	Result
AC Power Conducted Emission	CFR47 15.207, RSS-GEN Sect.8.8	N/A	N/A (See Note)
DTS Bandwidth (6dB)	CFR47 15.247 (a)(2), RSS 247 Sect. 5.2(a)	684 KHz	**Complied**
Maximum Output Power	CFR47 15.247 (b), RSS 247 Sect. 5.4 (d)	4.6 dBm RMS	**Complied**
Peak Power Spectral Density	CFR47 15.247 (e), RSS 247 Sect. 5.2	-2.8 dBm/3KHz	**Complied**
Out of Band Emissions	CFR47 15.247 (d), RSS 247 Sect.5.5	Non-Restricted: -35.5 dBc Restricted: 51.0 dBuV/m (Average)	**Complied**
Transmit Radiated Spurious Emissions	CFR47 15.247 (d), RSS 247 Sect.5.5	7.6 dB Margin @ 98.1 MHz (Average)	**Complied**

Note: EUT is battery powered.

1.4 Special Accessories

No special accessories were necessary in order to achieve compliance.

1.5 Equipment Modifications

None

2 Laboratory Information

2.1 Accreditations & Endorsements

2.1.1 US Federal Communications Commission

TUV Rheinland of North America at 1279 Quarry Ln, Pleasanton, CA 94566 is recognized by the commission for performing testing services for the general public on a fee basis. These laboratory test facilities have been fully described in reports submitted to and accepted by the FCC (US1131). The laboratory scope of accreditation includes: Title 47 CFR Parts 15, 18, and 90. The accreditation is updated every 3 years.

2.1.2 NIST / A2LA

TUV Rheinland of North America is accredited by the National Voluntary Laboratory Accreditation Program, which is administered under the auspices of the National Institute of Standards and Technology. The laboratory has been assessed and accredited in accordance with ISO Guide 17025:1999 and ISO 9002 (Lab Code Testing Cert #3331.02). The scope of laboratory accreditation includes emission and immunity testing. The accreditation is updated annually.

2.1.3 Acceptance by Mutual Recognition Arrangement

The United States has an established agreement with specific countries under the Asia Pacific Laboratory Accreditation Corporation (APLAC) Mutual Recognition Arrangement. Under this agreement, all TUV Rheinland at 1279 Quarry Ln, Pleasanton, CA 94566 test results and test reports within the scope of the laboratory NIST / A2LA accreditation will be accepted by each member country.

2.2 Test Facilities

All of the test facilities are located at 1279 Quarry Lane, Pleasanton, California 94566, USA. The 2305 Mission College, Santa Clara, 95054, USA location is considered a Pleasanton annex.

2.2.1 Emission Test Facility

The Semi-Anechoic chamber and AC Line Conducted measurement facility used to collect the radiated and conducted data has been constructed in accordance with ANSI C63.7:1992. The site has been measured in accordance with and verified to comply with the theoretical normalized site attenuation requirements of ANSI C63.4-2014, at a test distance of 3 and 5 meters. The site is listed with the FCC and accredited by A2LA (Lab Code Testing Cert #3331.02). The 3/5-meter semi-anechoic chamber used to collect the radiated data has been verified to comply with the theoretical

normalized site attenuation requirements of ANSI C63.4-2014, at a test distance of 3 meter and 5 meters. A report detailing this site can be obtained from TUV Rheinland of North America.

2.3 Measurement Uncertainty

Two types of measurement uncertainty are expressed in this report, per *ISO Guide To The Expression Of Uncertainty In Measurement*, 1st Edition, 1995.

The Combined Standard Uncertainty is the standard uncertainty of the result of a measurement when that result is obtained from the values of a number of other quantities; it is equal to the positive square root of the sum of the variances or co-variances of these other quantities, weighted according to how the measurement result varies with changes in these quantities. The term *standard uncertainty* is the result of a measurement expressed as a standard deviation.

2.3.1 Sample Calculation – radiated & conducted emissions

The field strength is calculated by subtracting the Amplifier Gain and adding the Cable Loss and Antenna Correction Factor to the measured reading. The basic equation is as follows:

Field Strength (dBµV/m) = RAW - AMP + CBL + ACF

Where: RAW = Measured level before correction (dBµV)

AMP = Amplifier Gain (dB)

CBL = Cable Loss (dB)

ACF = Antenna Correction Factor (dB/m)

$$\mu V/m = 10^{\frac{dB\mu V/m}{20}}$$

Sample radiated emissions calculation @ 30 MHz

Measurement +Antenna Factor–Amplifier Gain+Cable loss=Radiated Emissions (dBuV/m)

25 dBuV/m + 17.5 dB – 20 dB + 1.0 dB = 23.5 dBuV/m

2.3.2 Measurement Uncertainty

Per CISPR 16-4-2	**U_{lab}**	**U_{cispr}**
Radiated Disturbance @ 10 meters		
30 – 1,000 MHz	2.25 dB	4.51 dB
Radiated Disturbance @ 3 meters		
30 – 1,000 MHz	2.26 dB	4.52 dB

1 – 6 GHz	2.12 dB	4.25 dB
6 – 18 GHz	2.47 dB	4.93 dB
Conducted Disturbance @ Mains Terminals		
150 kHz – 30 MHz	1.09 dB	2.18 dB
Disturbance Power		
30 MHz – 300 MHz	3.92 dB	4.3 dB

2.4 Calibration Traceability

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Measurement method complies with ANSI/NCSL Z540-1-1994 and ISO Standard 17025:2005. Equipment calibration records are kept on file at the test facility.

3 Product Information

3.1 Product Description

Manufacturer declared information:

The Glucose Monitoring System E is a unique sensor-based system that has two main parts: a disposable glucose Sensor, which is worn on your body, and the Reader, a handheld device that displays information from the Sensor. The Reader is used to wirelessly scan the Sensor to gather glucose readings. The Reader also receives glucose information for the Sensor via BLE.

3.2 Equipment Configuration

A description of the equipment configuration is given in the Test Plan Section (Section 6). The EUT was tested as called for in the test standard and was configured and operated in a manner consistent with its intended use. The EUT was connected to rated power and allowed to reach intended operating conditions. The placement of the EUT system components was guided by the test standard and selected to represent typical installation conditions.

In the case of an EUT that can operate in more than one configuration, preliminary testing was performed to determine the configuration that produced maximum radiation.

The final configuration was selected to produce the worst case radiation for emissions testing.

3.3 Operating Mode

A description of the operation mode is given in the Test Plan Section (Section 6).

The final operating mode was selected to produce the worst case radiation for emissions testing.

3.4 Unique Antenna Connector

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of CFR47 Parts 15.211, 15.213, 15.217, 15.219, or 15.221.

3.4.1 Results

The Glucose Monitoring System Sensor employs a single integral antenna inaccessible to the end user. The antenna has a declared maximum gain of -1.0 dBi.

Refer to Table 9 for additional antenna information.

4 Emissions

Testing was performed in accordance with CFR 47 Part 15.247. These test methods are listed under the laboratory's A2LA Scope of Accreditation. This test measures the levels emanating from the EUT, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices. Procedures described in section 8 of the standard were used.

4.1 Output Power Requirements

The maximum output power requirement is the maximum equivalent isotropic radiated power delivering at the transmitting antenna under specified conditions of measurements in the presence of modulation.

The maximum output power and harmonics shall not exceed CFR47 Part 15.247 (b)

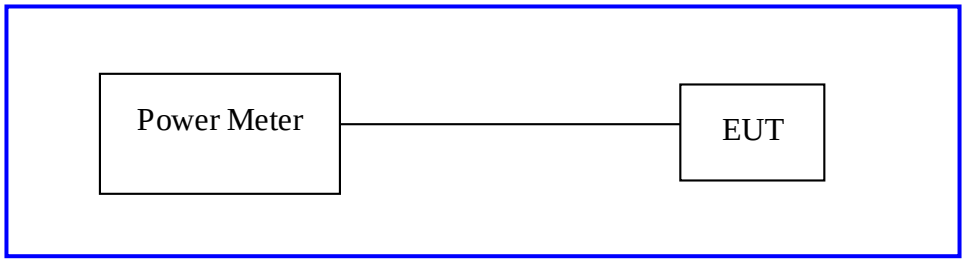
The maximum transmitted powers are:

Band 2400-2483.5 MHz: 1 W

4.1.1 Test Method

The ANSI C63.10-2013 11.9.2.3.1 Method AVGPM conducted was used to measure the channel power output. The measurements were conducted on the low, medium and high channels per CFR47 Part 15.247(b); 2400 MHz to 2483.5 MHz.

Test Setup:



4.1.2 Results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

Table 2: RF Output Power at the Antenna Port – Test Results – BLE 4.0

Test Conditions: Conducted Measurement, Normal Temperature				
Antenna Type: Integrated		**Power Setting:** Default		
Max. Directional Gain: -1 dBi				
Signal State: Modulated				
Ambient Temp.: 24° C		**Relative Humidity:** 37%		
RF Output Power – BT LE 4.0				
Voltage	**Operating Channel (MHz)**	**Measured RMS Power [dBm]**	**Limit [dBm]**	**Margin [dB]**
Nominal	2402	4.6	30.0	-25.4
	2440	4.5	30.0	-25.5
	2480	3.9	30.0	-26.1
Note: -				

4.2 DTS Bandwidth (6dB) and 99% Occupied Bandwidth

The occupied bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency.

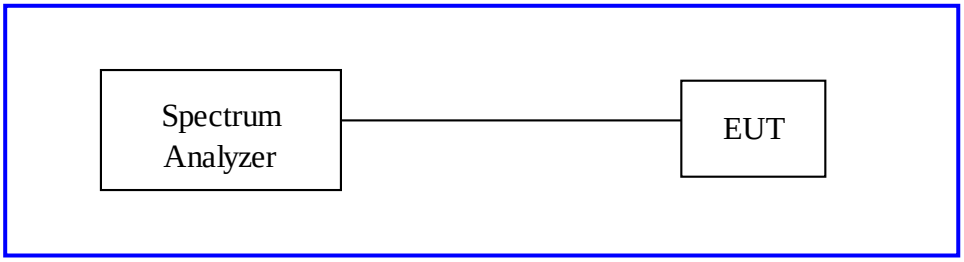
The 99% bandwidth is the bandwidth in which 99% of the transmitted power occupied.

The minimum 6 dB bandwidth shall be at least 500 kHz.

4.2.1 Test Method

The conducted method was used to measure the occupied bandwidth and 6 dB bandwidth according to ANSI C63.10:2013 Section 6.9.3 and 11.8.1, respectively. The measurement was performed with modulation per CFR47 15.247(a) (2). Measurements were performed on 3 channels in each operating frequency range; 2400 MHz to 2483.5 MHz.

Test Setup:



4.2.2 Results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

Table 3: Occupied Bandwidth – Test Results – BLE 4.0

Test Conditions: Conducted Measurement, Normal Temperature		
Antenna Type: Integrated	**Power Setting:** Default	
Signal State: Modulated		
Ambient Temp.: 24° C	**Relative Humidity:** 37%	
Bandwidth for BLE 4.0		
Freq. (MHz)	**6dB Bandwidth (MHz)**	**99% Bandwidth (MHz)**
2402	0.684	1.11
2442	0.674	1.09
2480	0.675	1.08

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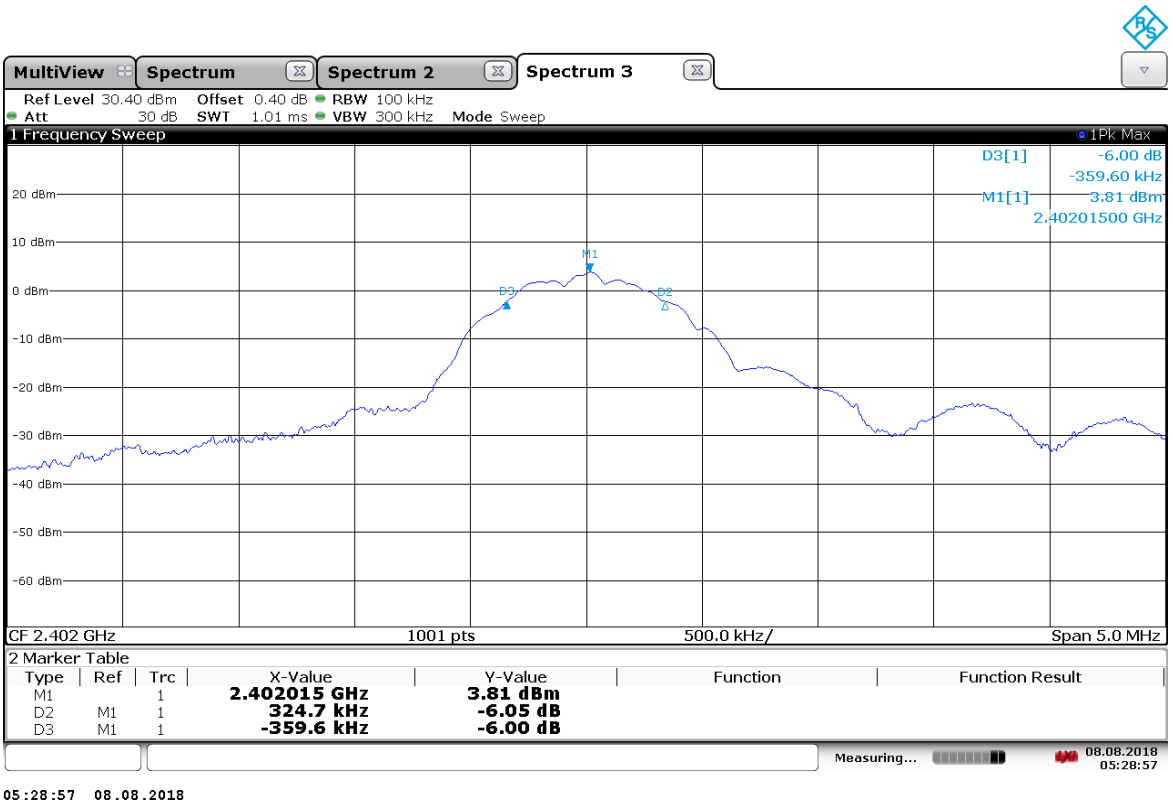

Figure 1 : 6dB Bandwidth – BT LE – 2402MHz

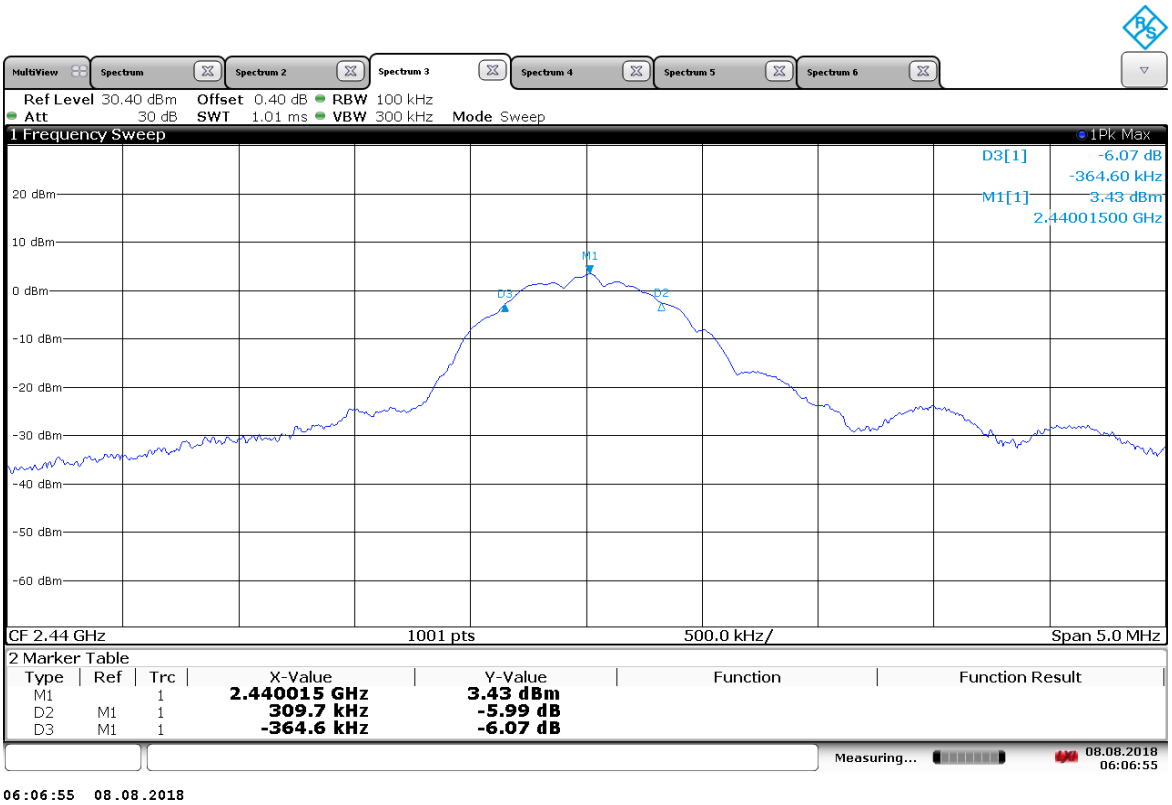

Figure 2 : 6dB Bandwidth – BT LE – 2440MHz

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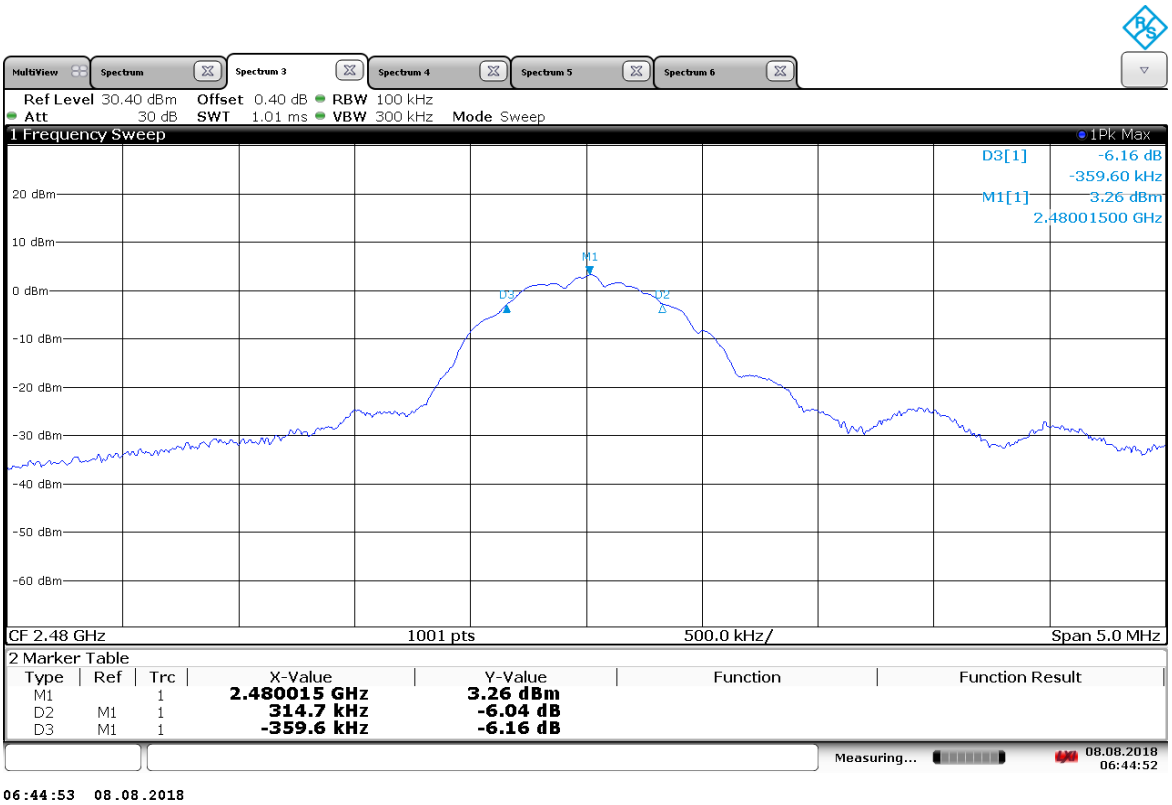

Figure 3 : 6dB Bandwidth – BT LE – 2480MHz

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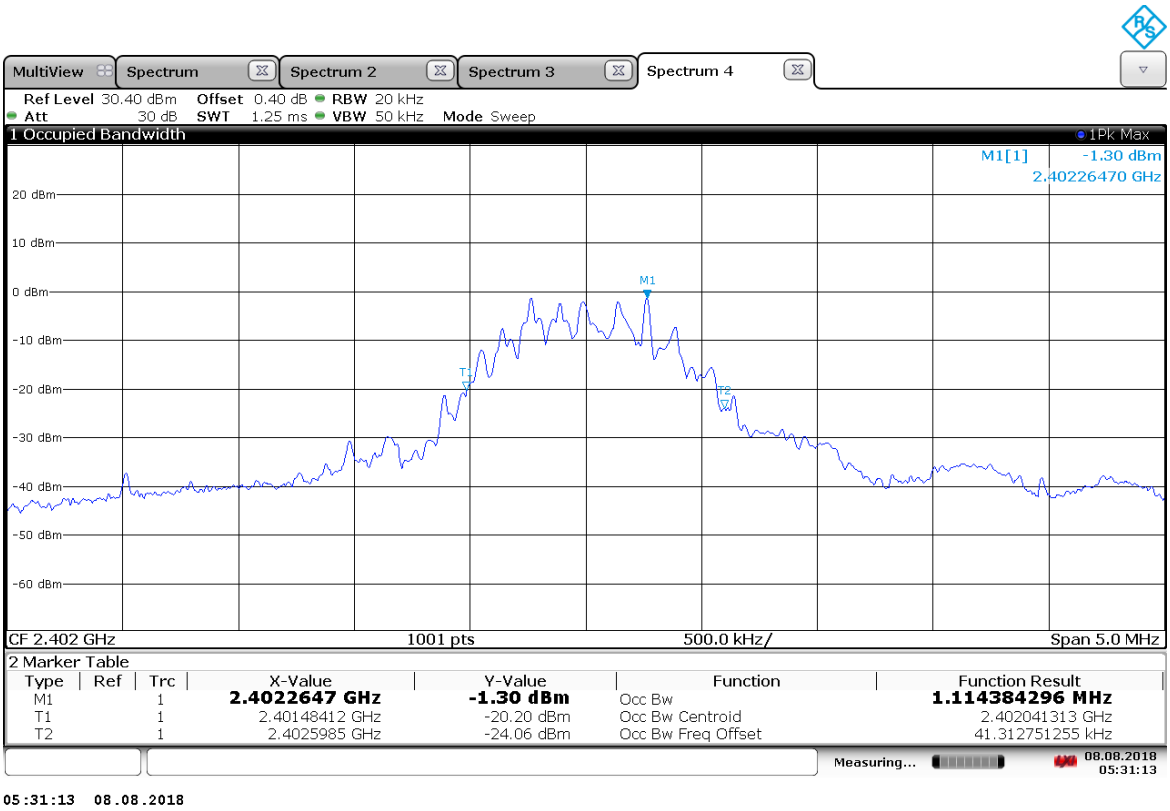

Figure 4 : 99% Bandwidth – BT LE – 2402MHz

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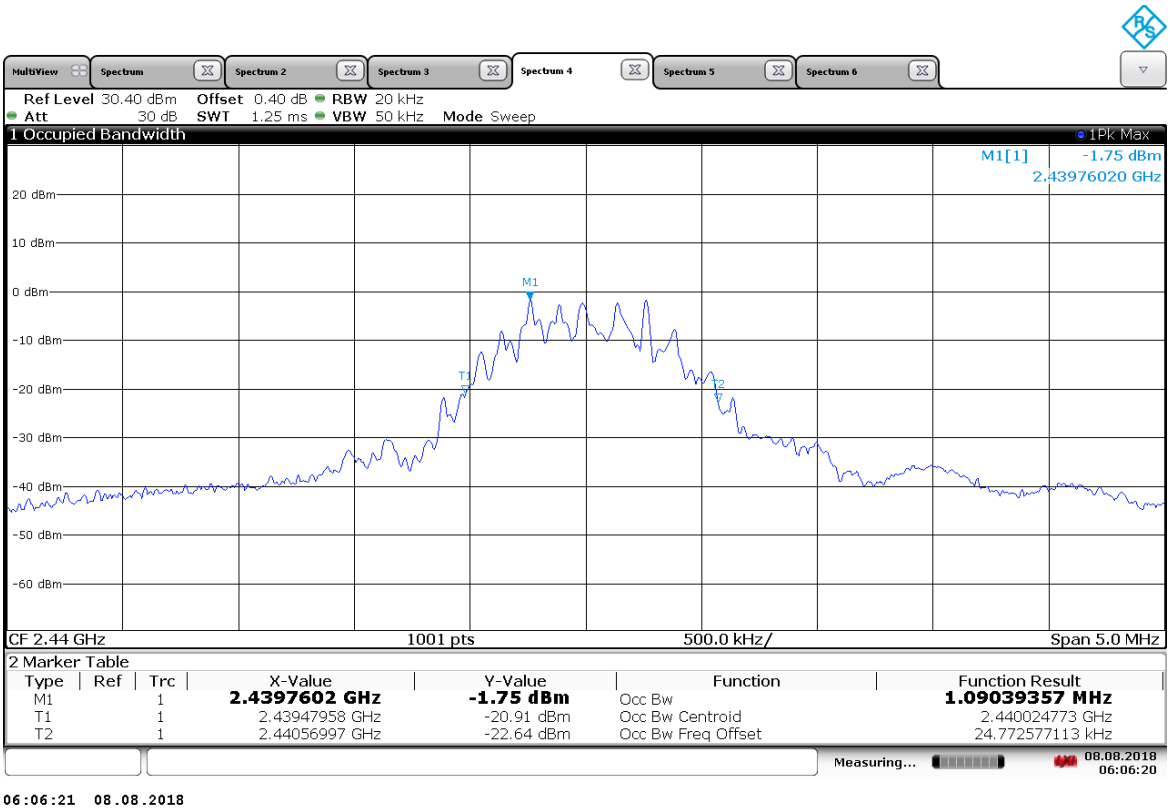


Figure 5 : 99% Bandwidth – BT LE – 2440MHz

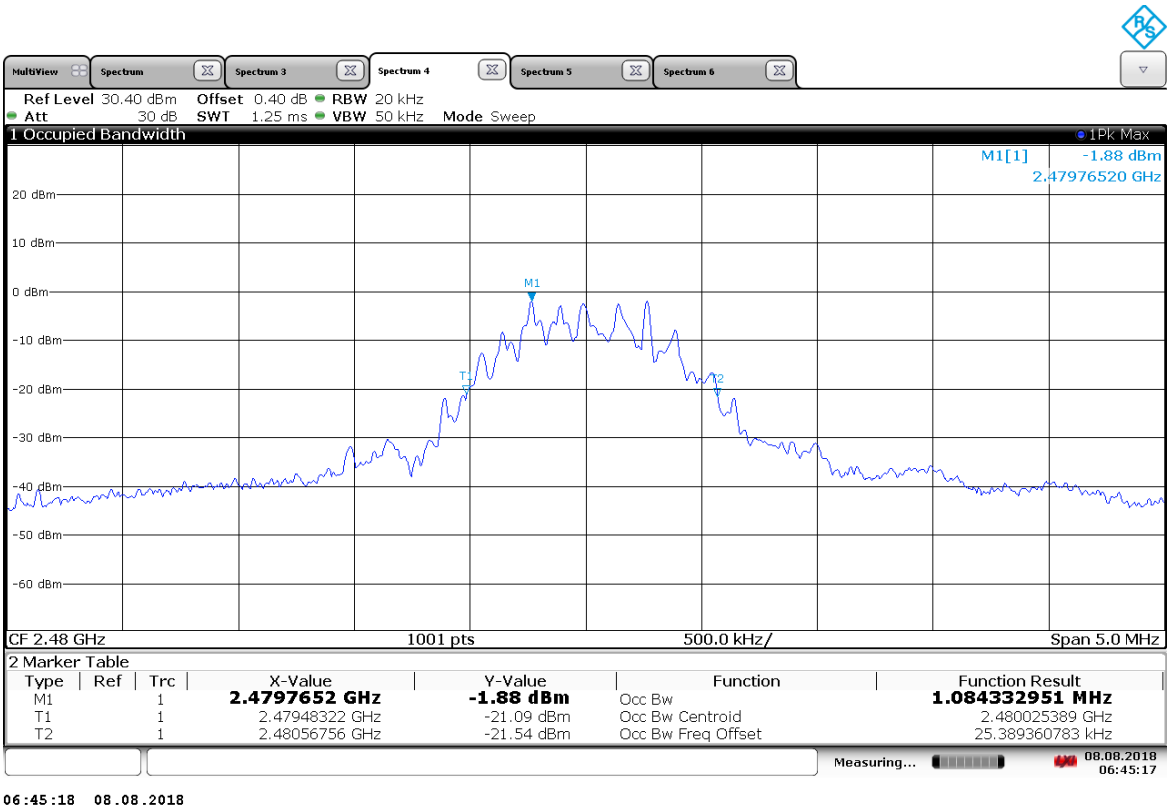


Figure 6 : 99% Bandwidth – BT LE – 2480MHz

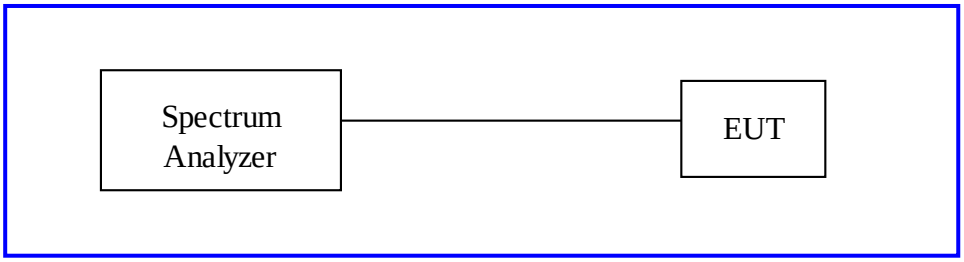
4.3 Peak Power Spectral Density

According to the CFR47 Part 15.247 (e) and RSS 247 Sect.5.2.2, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

4.3.1 Test Method

The conducted method was used to measure the channel power output per ANSI C63.10-2013 Section 11.10.2. The measurement was performed with modulation per CFR47 Part 15.247 (e) and RSS 247 Sect.5.2.2.

Test Setup:



4.3.2 Results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

Table 4: Peak Power Spectral Density – Test Results – BLE 4.0

Test Conditions: Conducted Measurement, Normal Temperature			
Antenna Type: Custom Integrated		**Power Setting:** See test plan	
Signal State: Modulated			
Ambient Temp.: 24° C		**Relative Humidity:** 39%	
Peak Power Spectral Density – BLE 4.0			
Freq. (MHz)	**Measured PSD [dBm/3kHz]**	**Limit [dBm/3kHz]**	**Margin [dB]**
2402	-2.3	8	10.3
2440	-2.7	8	10.7
2480	-2.8	8	10.8
Note: All insertion loss corrections are accounted for in the measurement plots.			

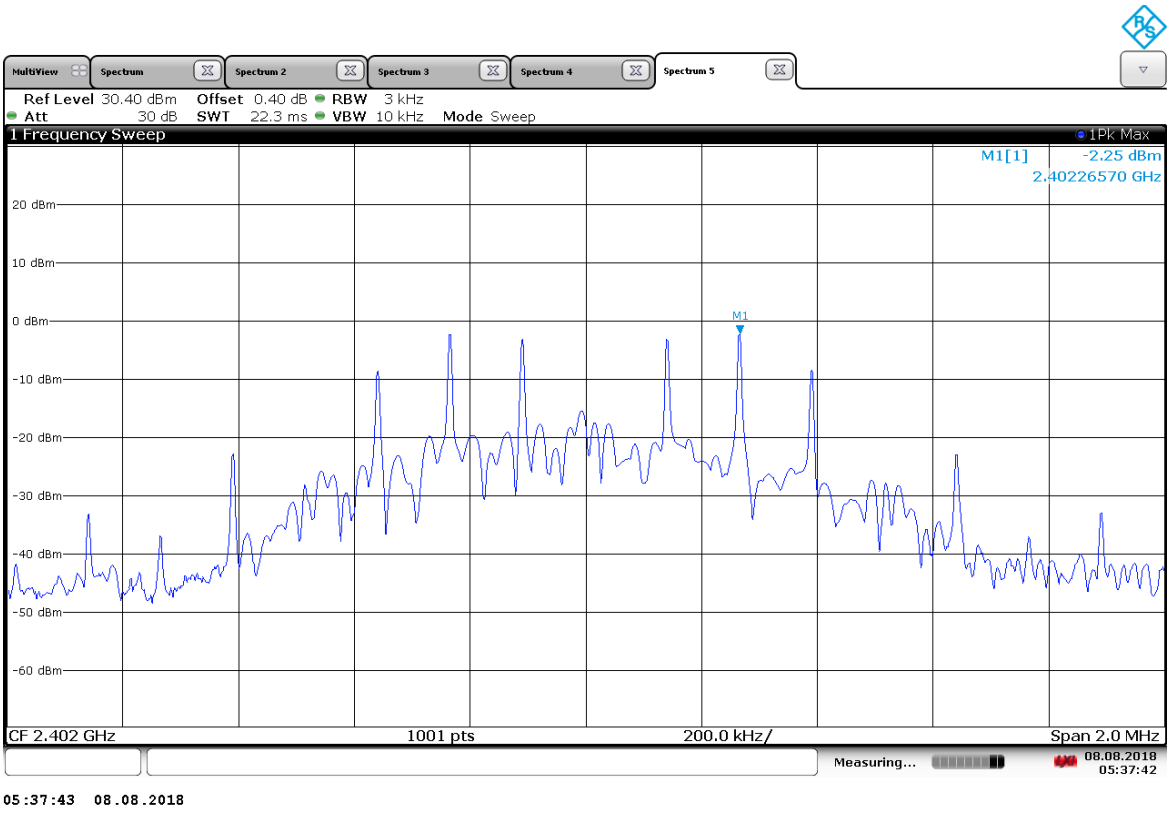


Figure 7: Power Spectral Density – BLE – 2402 MHz

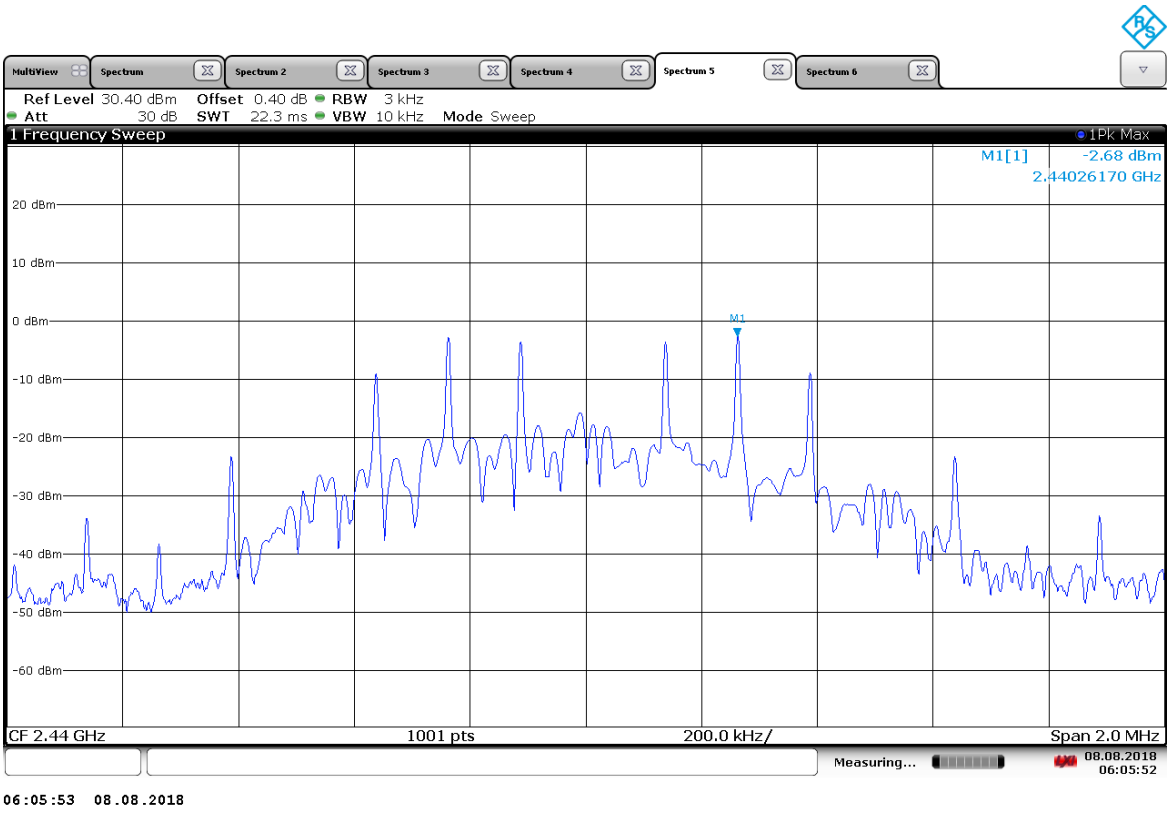


Figure 8: Power Spectral Density – BLE – 2440 MHz

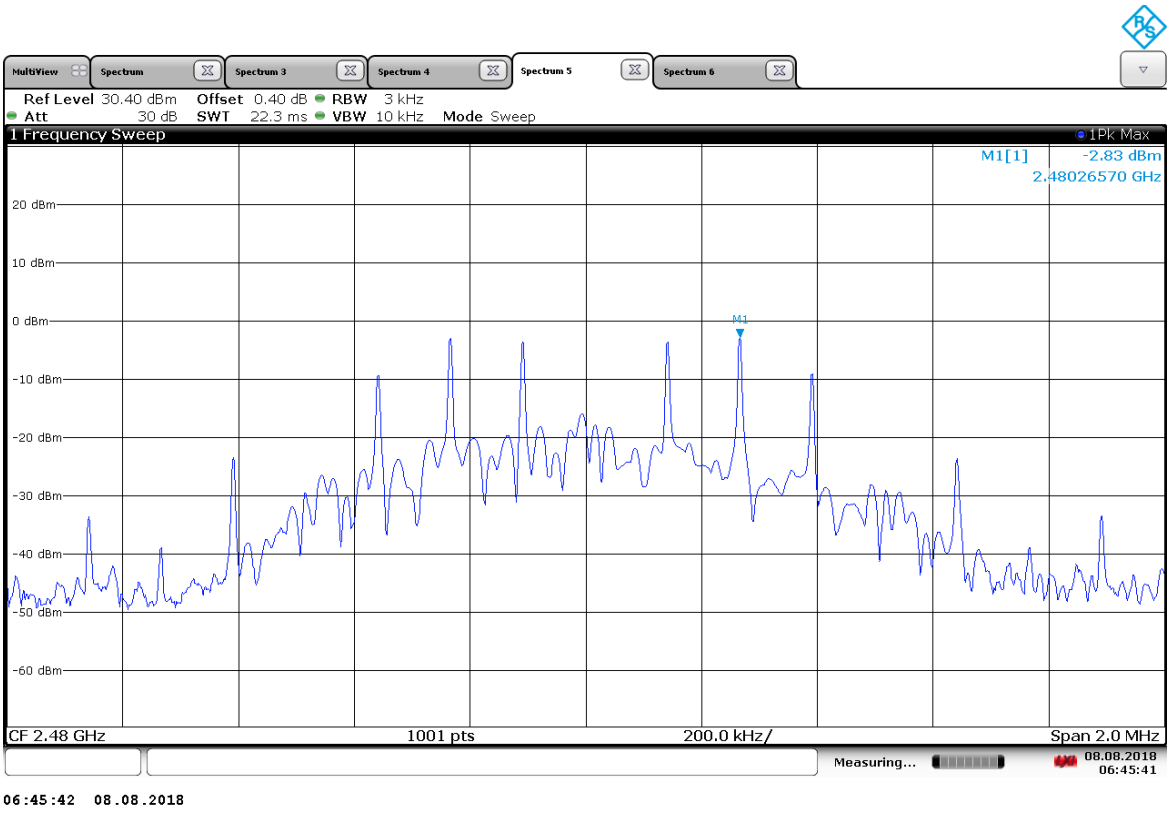


Figure 9: Power Spectral Density – BLE – 2480 MHz

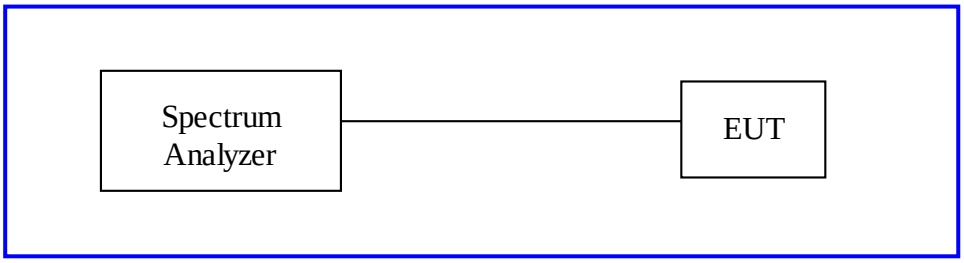
4.4 Out of Band Emissions- Non-Restricted and Restricted Bands

Transmitter spurious emissions are emissions outside the frequency range of the equipment when the equipment is in transmitting mode; per requirement of CFR47 15.205, 15.209, 15.247(d).

4.4.1 Test Method

The conducted method was used to measure the undesirable emission requirement for non-restricted bands. The radiated method was used to measure the undesirable emission requirement for non-restricted bands. The measurement was performed with modulation. Duty Cycle Measurements were performed according to ANSI 63.10 Section 11.6. Measurements for emissions in nonrestricted frequency bands were performed according to ANSI 63.10-2013 sections 6.10.4 and 11.11. Measurements for emissions in nonrestricted frequency bands were performed according to ANSI 63.10-2013 sections 6.10.5, 11.12.2.4 and 11.12.2.5.2.

4.4.2 Test Setup:



For Restricted Bandedge Average measurements, a peak detector with a RBW=1MHz and VBW=3KHz was used.

For Restricted Bandedge Peak measurements, a peak detector with a RBW=1MHz and VBW=MHz was used.

4.4.3 Duty Cycle

The duty cycle of the EUT while operating in each supported mode was measured. Applicable corrections have been applied to emissions measured while operating in modes with a duty cycle less than 98%. Application of the appropriate corrections are in accordance with ANSI 63.10 Section 11.

Mode	Continuous (>98%)	DC Constant?	On Time per period (µs)	Period (µs)	Duty Cycle	Duty Cycle Correction Factor (dB)
BT LE	No	Yes	380	626	60.7%	2.2

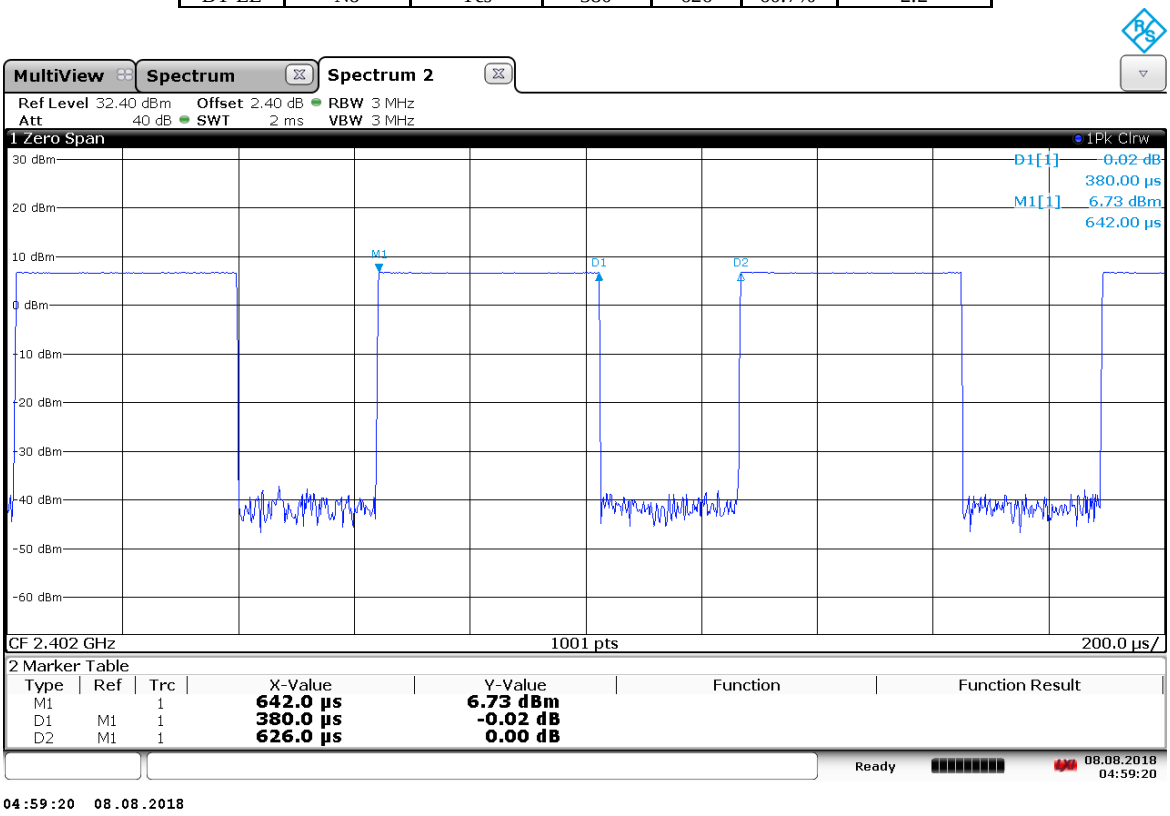


Figure 10: Duty Cycle (60.7%)

4.4.4 Results

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

Table 5: Out of Band Emissions including the Band-Edge – Test Results – BT LE

Test Conditions: Conducted Measurement, Normal Temperature					
Antenna Type: Integrated			**Power Setting:** See test plan		
Max. Directional Gain: -1 dBi			**Low Channel Maximum Level in 100kHz BW:** 4.0 dBm		
Signal State: Modulated					
Ambient Temp.: 24° C			**Relative Humidity:** 37%		
Non-Restricted Frequency Band Emissions – BT LE 4.0					
Operating Freq. (MHz)	**Measured Freq. (MHz)**	**Measured (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Result**
2402	2400	-31.4	-26	5.6	Pass
Note: 1. The stated limits are 30dBc relative to the max output measured in a 100kHz bandwidth					

Table 6: Out of Band Emissions including the Band-Edge – Test Results – BT LE

Test Conditions: Radiated Measurement, Normal Temperature					
Antenna Type: Integrated			**Power Setting:** See test plan		
Max. Directional Gain: -1 dBi			**Signal State:** Modulated		
Ambient Temp.: 24° C			**Relative Humidity:** 38%		
Restricted Frequency Band Emissions – BLE 4.0					
Operating Freq. (MHz)	**Measured Freq. (MHz)**	**Measured (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Result**
2402	2386.0	67.7	74	6.3	Pass
2402	2390.0	44.4	54	9.6	Pass
2480	2483.5	70.1	74	3.9	Pass
2480	2483.5	51.0	54	3.0	Pass
Note: Unless otherwise specified, corrections for insertion losses are included in the plots					

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4.4.5 Measurement Plots

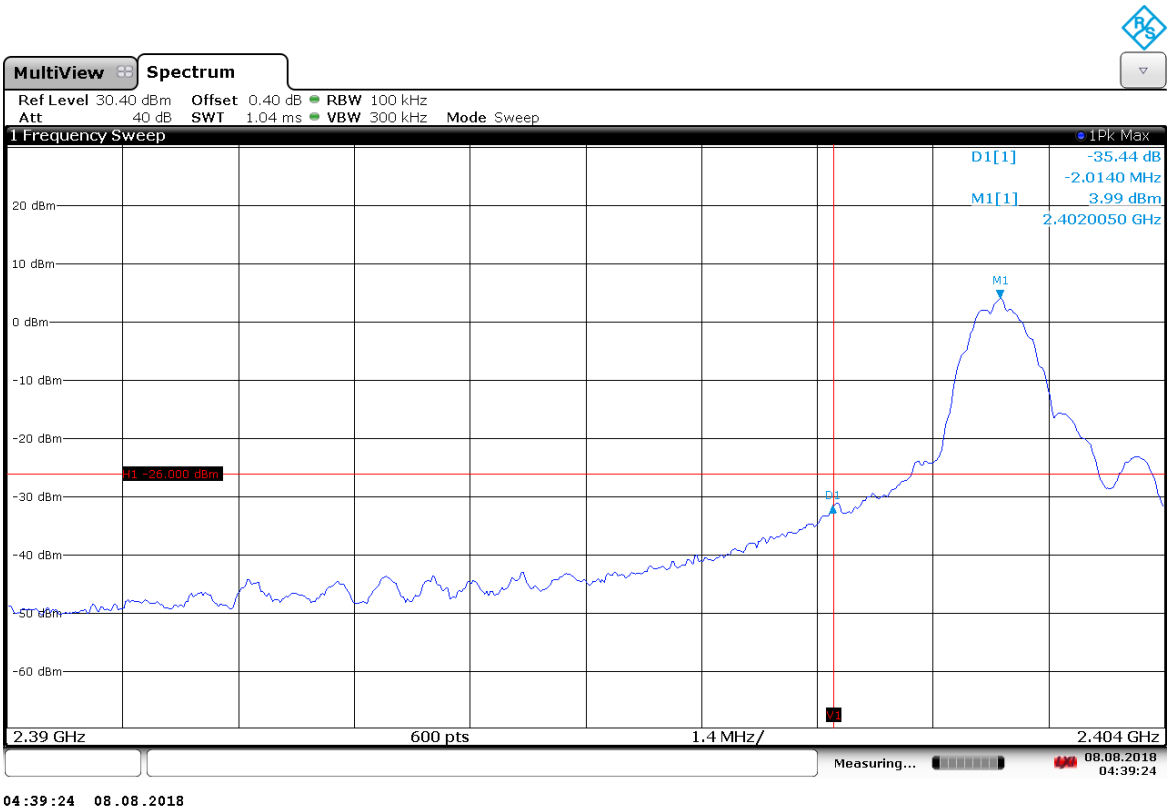


Figure 11: Low Channel Non-Restricted Band Edge– BT LE

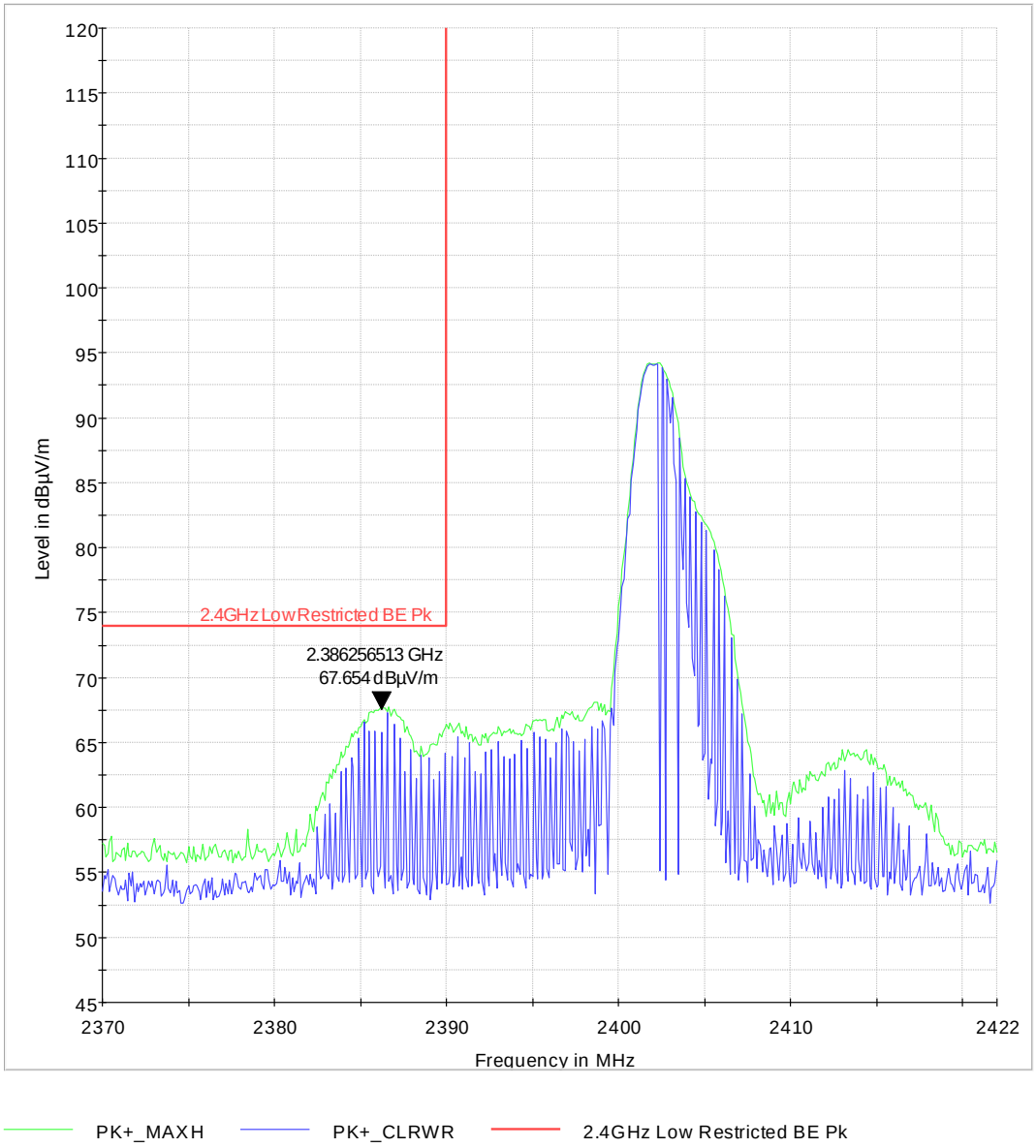


Figure 12: Low Channel Restricted Band Edge Peak Detector– BT LE

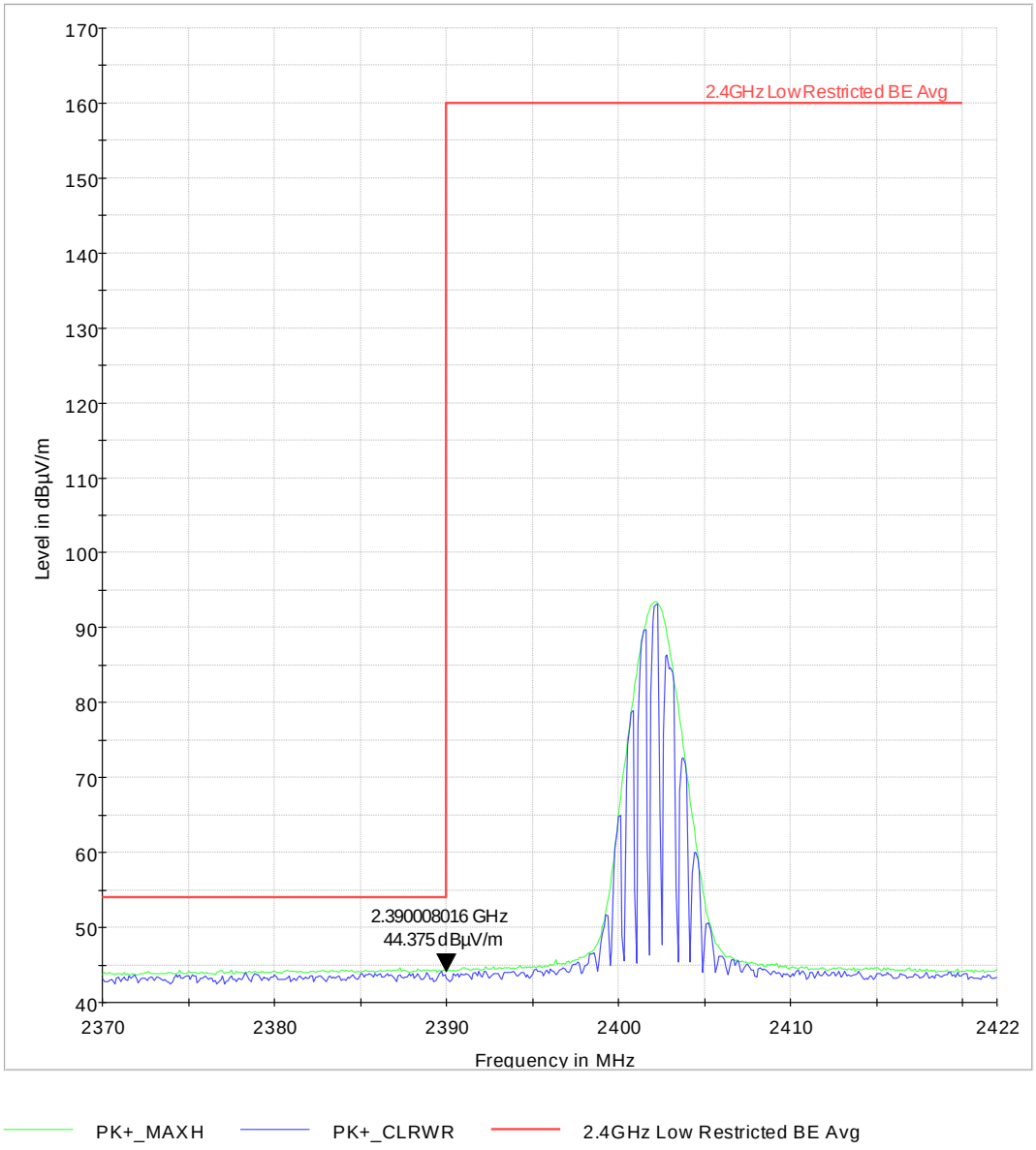


Figure 13: Low Channel Restricted Band Edge Average Detector– BT LE

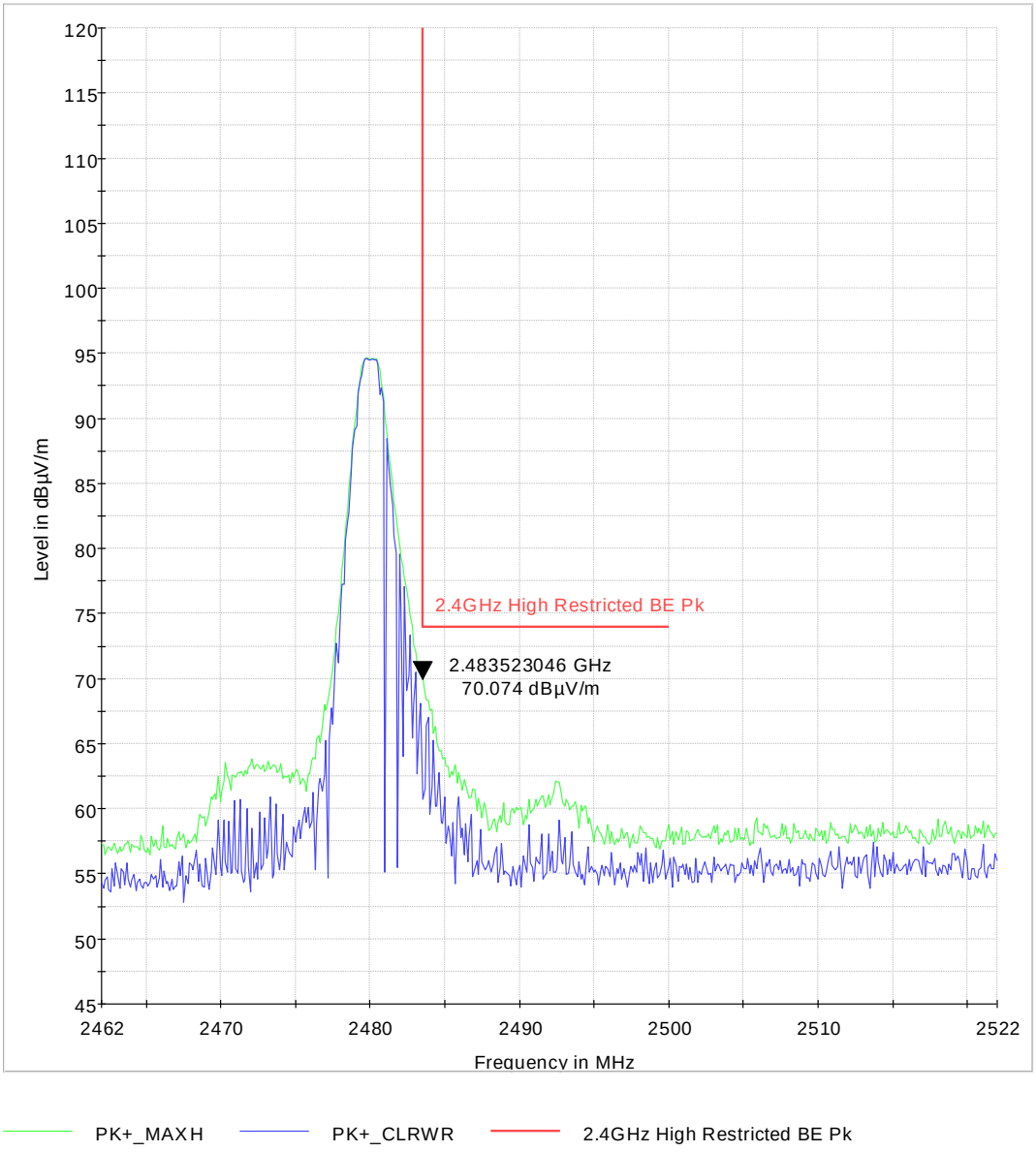


Figure 14: High Channel Restricted Band Edge Peak Detector– BT LE

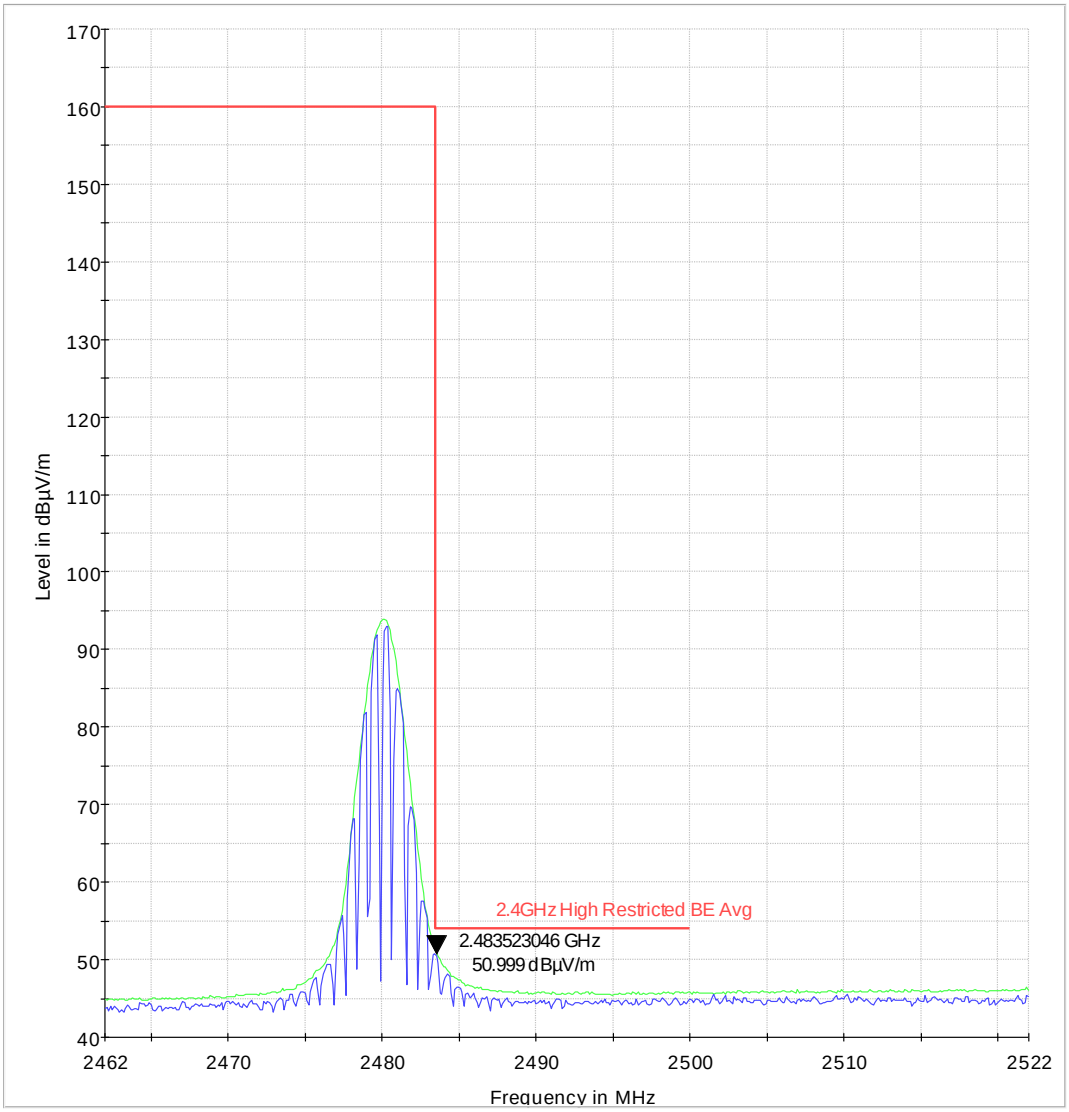


Figure 15: High Channel Restricted Band Edge Average Detector– BT LE

4.5 Transmit Radiated Spurious Emissions

Transmitter spurious emissions are emissions outside the frequency range of the equipment when the equipment is in transmit mode; per requirement of CFR47 15.205, 15.209, 15.247(d).

4.5.1 Test Methodology

4.5.1.1 Preliminary Test

A test program that controls instrumentation and data logging was used to automate the preliminary RF emissions test procedure. The frequency range of interest was divided into sub-ranges. For each sub-range peak emission data was recorded and plotted while the turntable was rotated 360° and the measurement antenna was rotated in horizontal and vertical antenna polarization.

Preliminary emission profile testing was performed inside a semi-anechoic chamber. The EUT was placed on a non-conductive table 80 cm above the floor for emissions less than 1 GHz and 150cm above the floor for emissions greater than 1 GHz. The EUT was positioned as shown in the setup photographs. The measurement antenna was placed at a distance of 3m.

4.5.1.2 Final Test

Final testing was performed on an NSA compliant test site.

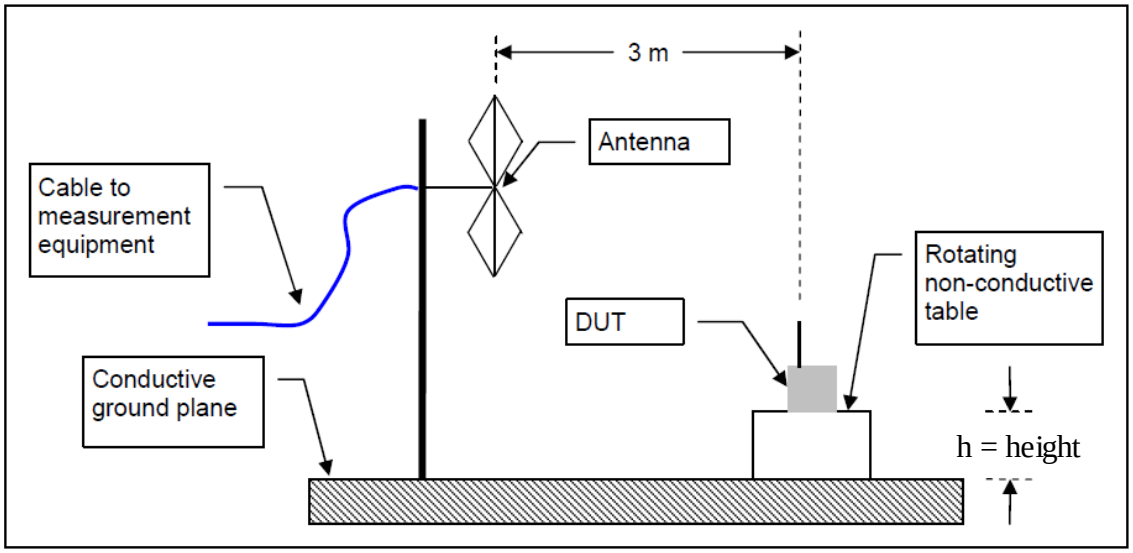
For each frequency measured, the peak emission was maximized by manipulating the receiving antenna from 1 to 4 meters above the ground plane and placing it at the position that produced the maximum signal strength reading. The turntable was then rotated through 360° while observing the peak signal and placing the EUT at the position that produced maximum radiation. Preliminary emissions within 10 dB of the limit were measured.

The final scans were performed on the worst EUT axis for three operating channels in the operating mode with the highest power.

4.5.1.3 Deviations

None.

Test Setup:



Where h = 80cm for <1GHz and 150cm for >1GHz

4.5.2 Transmitter Spurious Emission Limit

The spurious emissions of the transmitter shall not exceed the values in CFR47 Part 15.205, 15.209.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490.....	2400/F(kHz)	300
0.490-1.705.....	24000/F(kHz)	30
1.705-30.0.....	30	30
30-88.....	100 **	3
88-216.....	150 **	3
216-960.....	200 **	3
Above 960.....	500	3

All harmonics and spurious emission which are outside of the restricted band shall be 20dB below the in-band emission.

4.5.3 Test Results

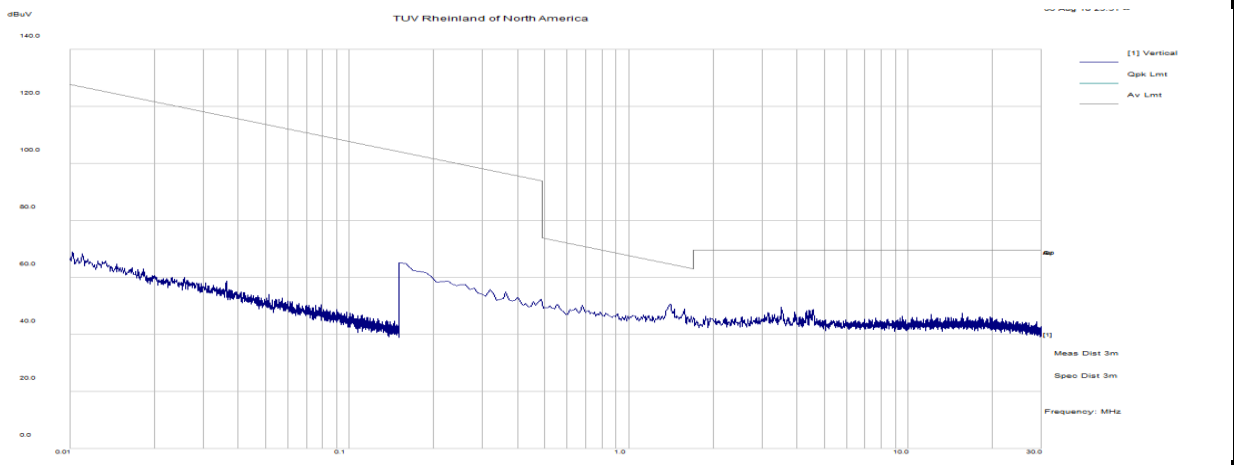
The final measurement data was taken under the worst case operating modes, configurations, and/or cable positions. It also reflects the results including any modifications and/or special accessories listed in Sections 1.4 and test plan.

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

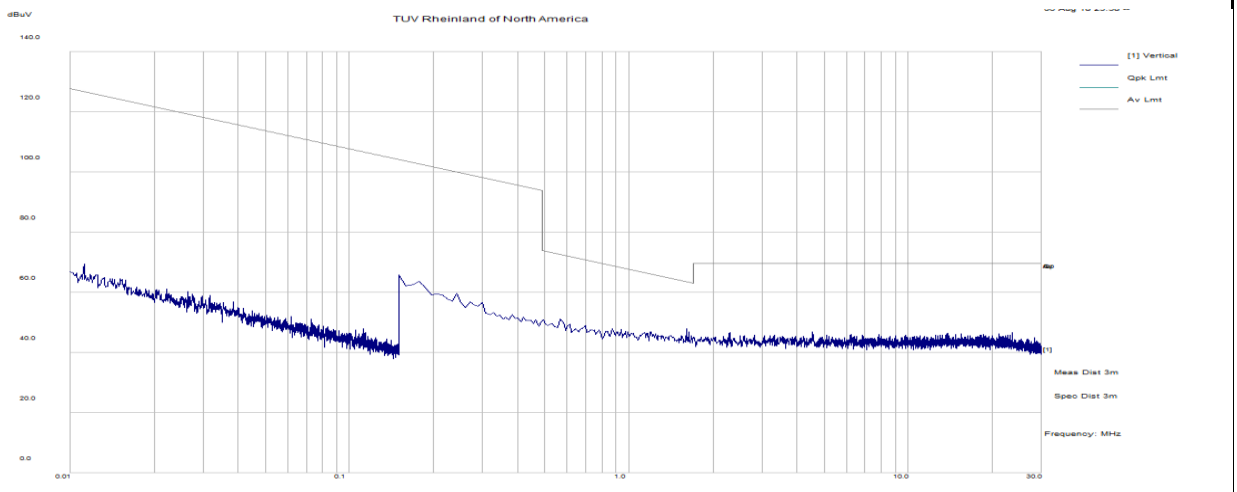
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	24° C / 34%rh
EUT Serial	E007A40000178CC3	**Temp / Hum out**	N/A
EUT Config.	2402MHz – BT LE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	9KHz-150KHz :200Hz/1KHz 150KHz-30Mhz:9 kHz/30KHz
Dist/Ant Used	3m / 6502	**Performed by**	Benjamin Atsu

9KHz-30MHz Transmit at 2402 MHz (Low Channel)

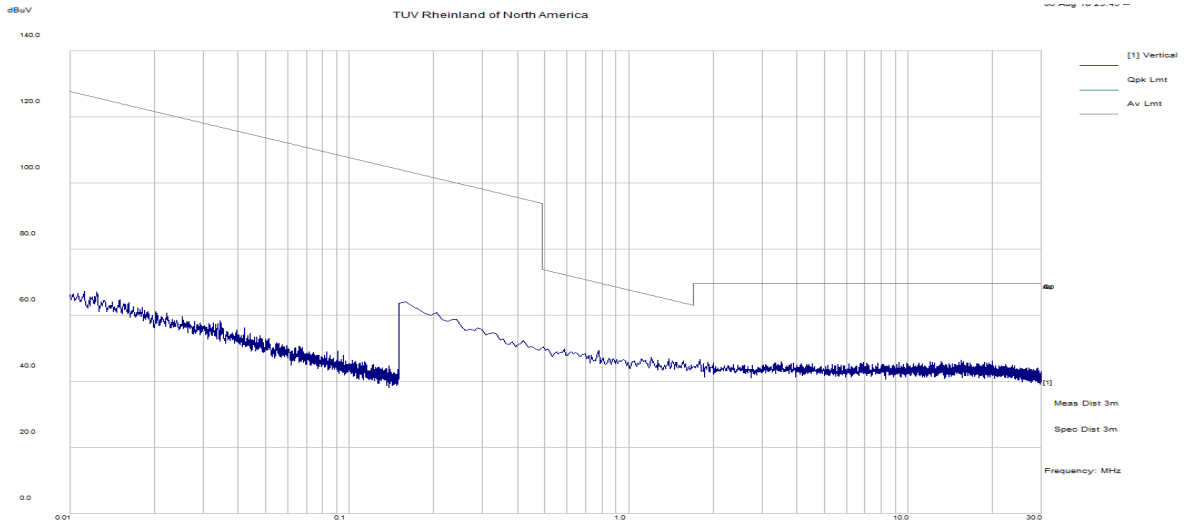
EUT Horizontal, Antenna Vertical



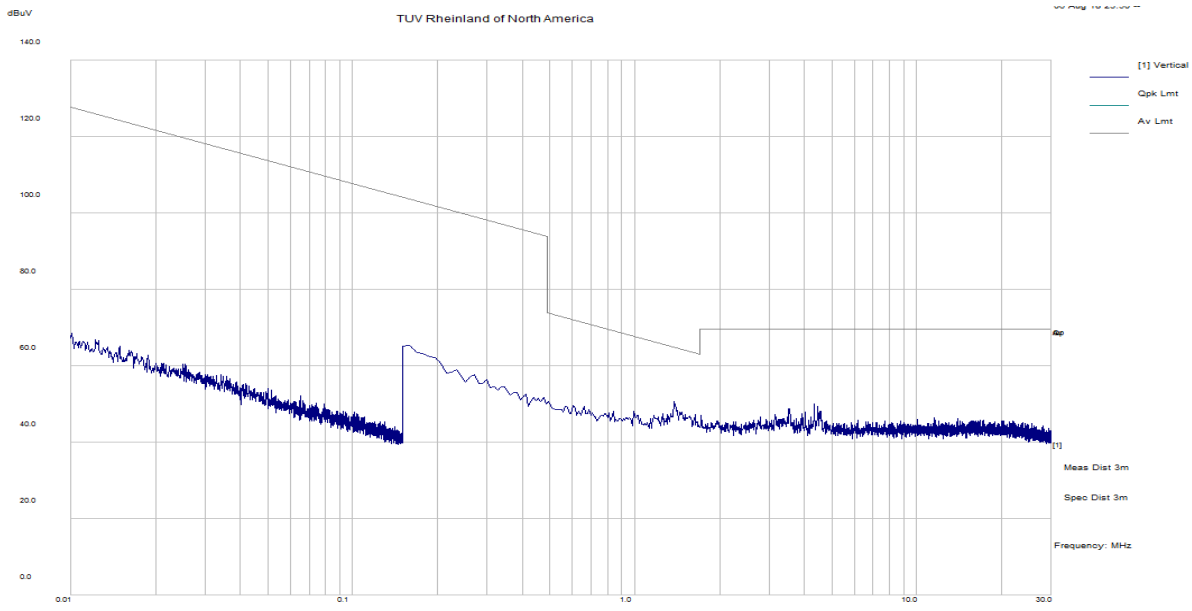
EUT Horizontal, Antenna Horizontal



EUT Vertical, Antenna Horizontal



EUT Vertical, Antenna Vertical

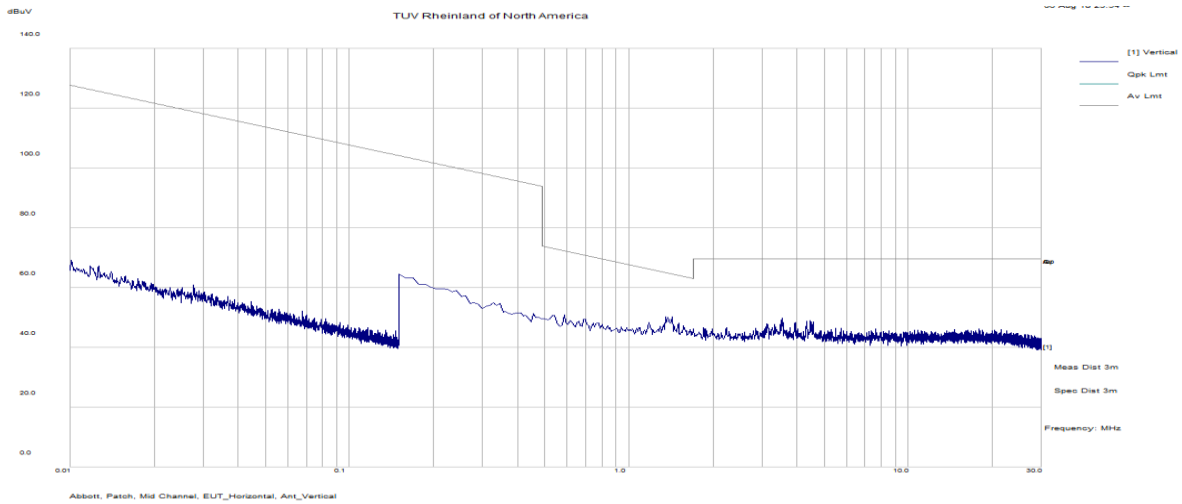


Note:

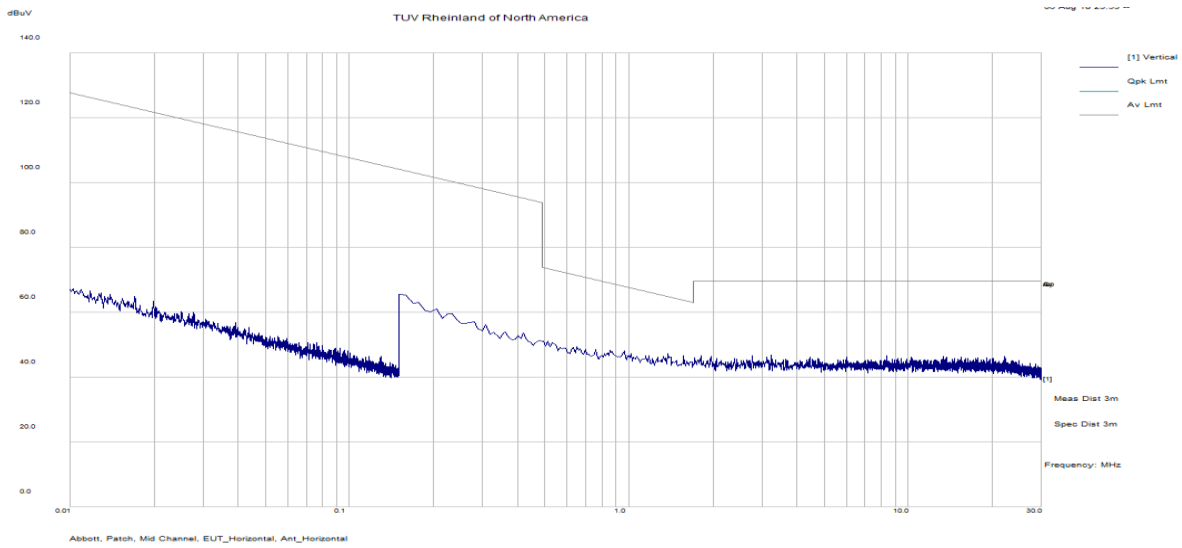
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	24° C / 34%rh
EUT Serial	E007A40000178CBD	**Temp / Hum out**	N/A
EUT Config.	2440MHz – BT LE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	9KHz-150KHz :200Hz/1KHz 150KHz-30Mhz:9 kHz/30KHz
Dist/Ant Used	3m / 6502	**Performed by**	Benjamin Atsu

9KHz-30MHz Transmit at 2440 MHz (Mid Channel)

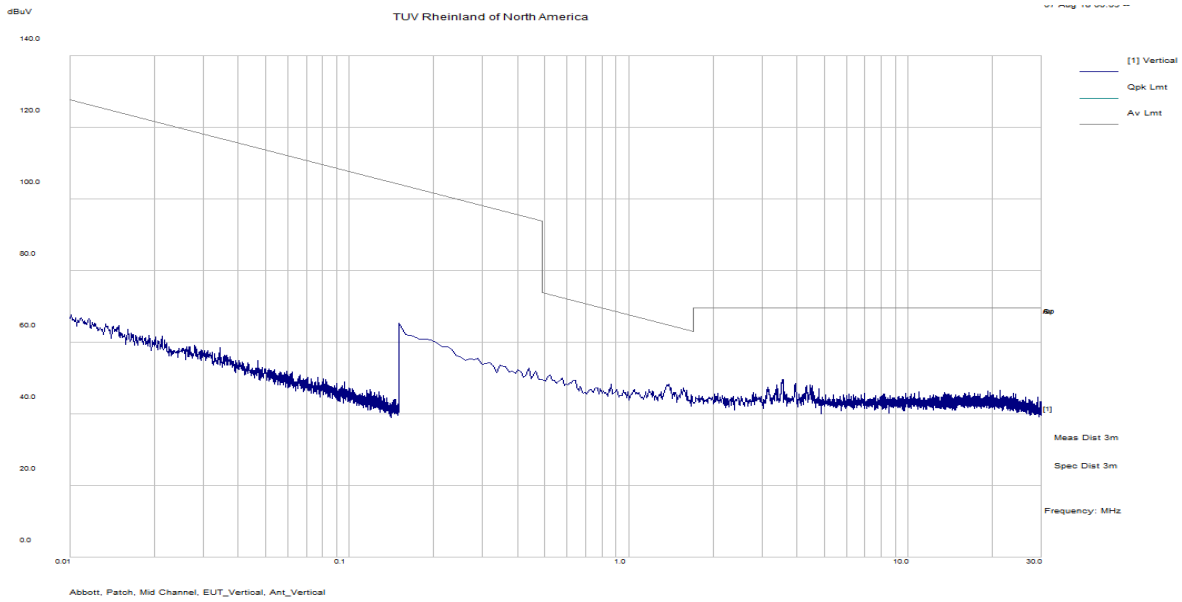
EUT Horizontal, Antenna Vertical



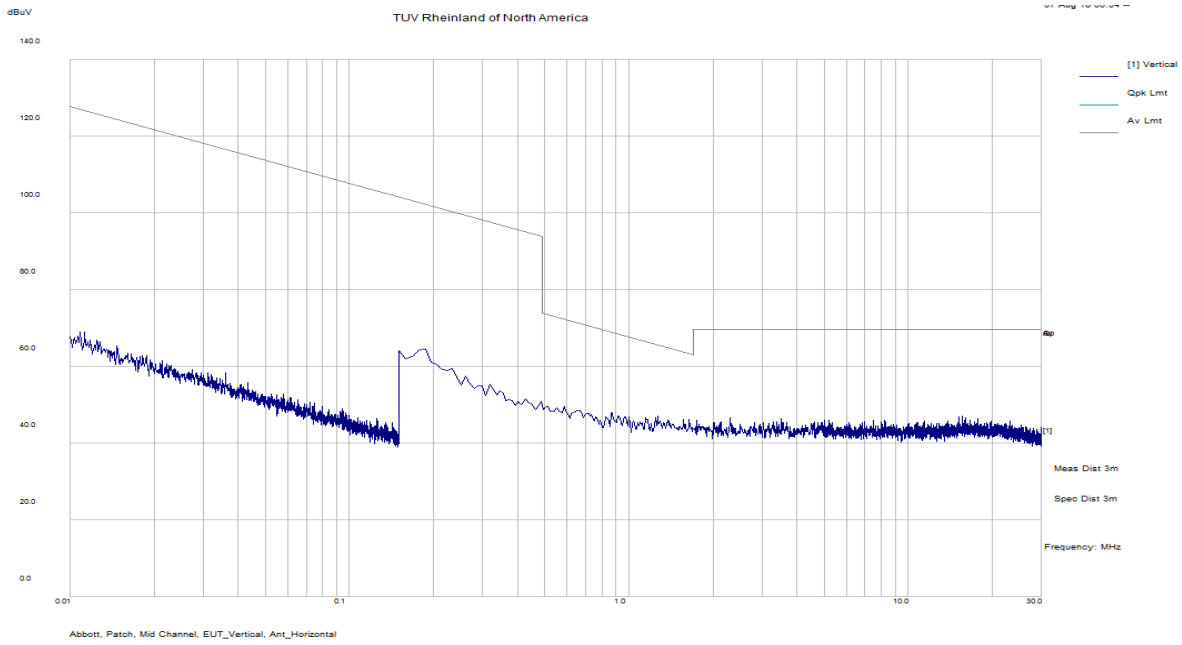
EUT Horizontal, Antenna Horizontal



EUT Vertical, Antenna Vertical



EUT Vertical, Antenna Horizontal

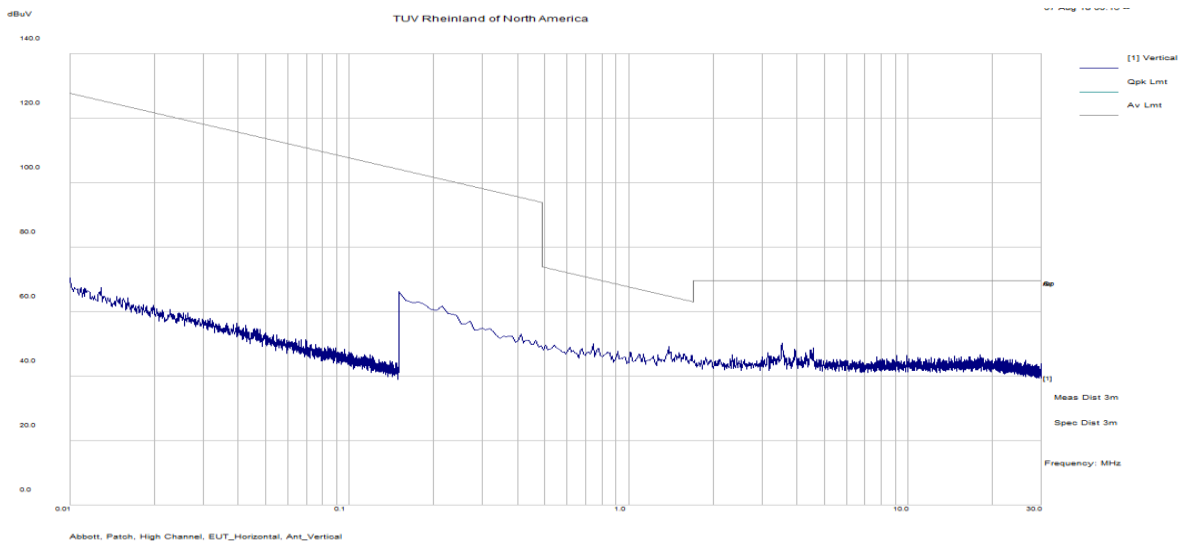


Note:

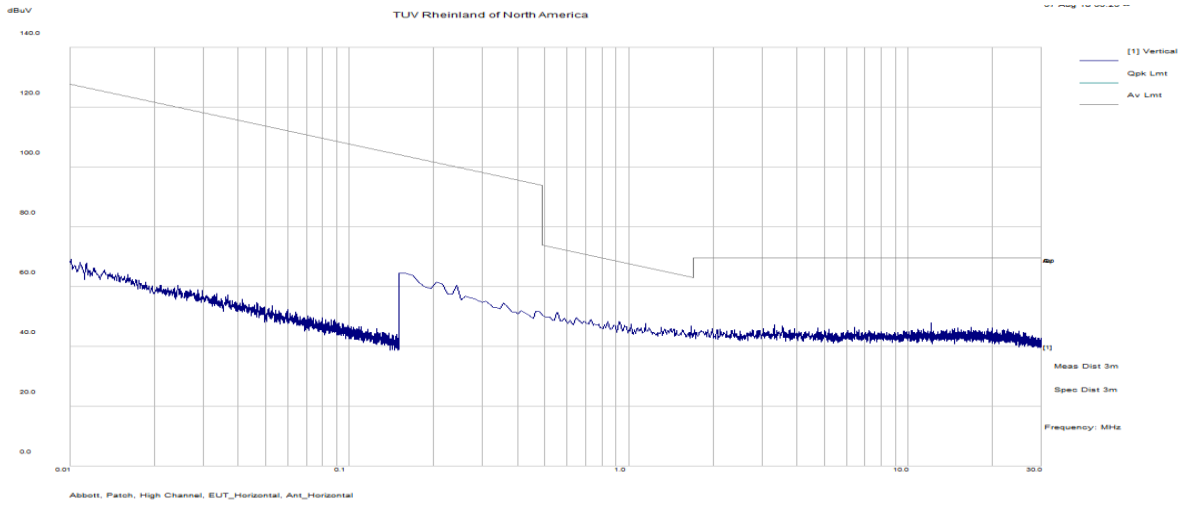
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	24° C / 34%rh
EUT Serial	E007A40000178CBB	**Temp / Hum out**	N/A
EUT Config.	2480MHz – BT LE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	9KHz-150KHz :200Hz/1KHz 150KHz-30Mhz:9 kHz/30KHz
Dist/Ant Used	3m / 6502	**Performed by**	Benjamin Atsu

9KHz-30MHz Transmit at 2480 MHz (High Channel)

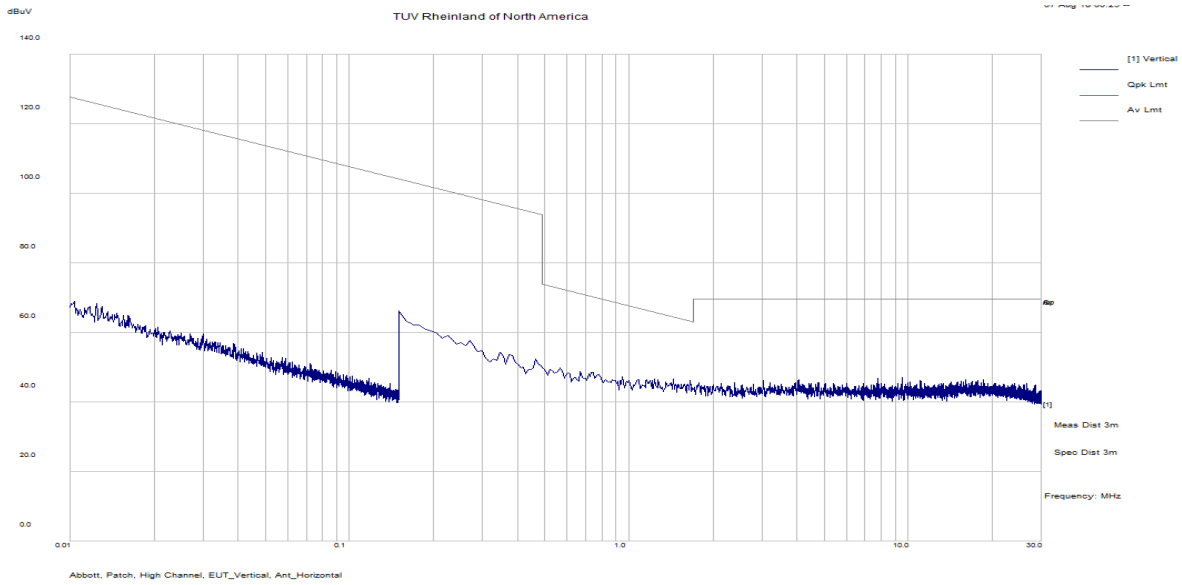
EUT Horizontal, Antenna Vertical



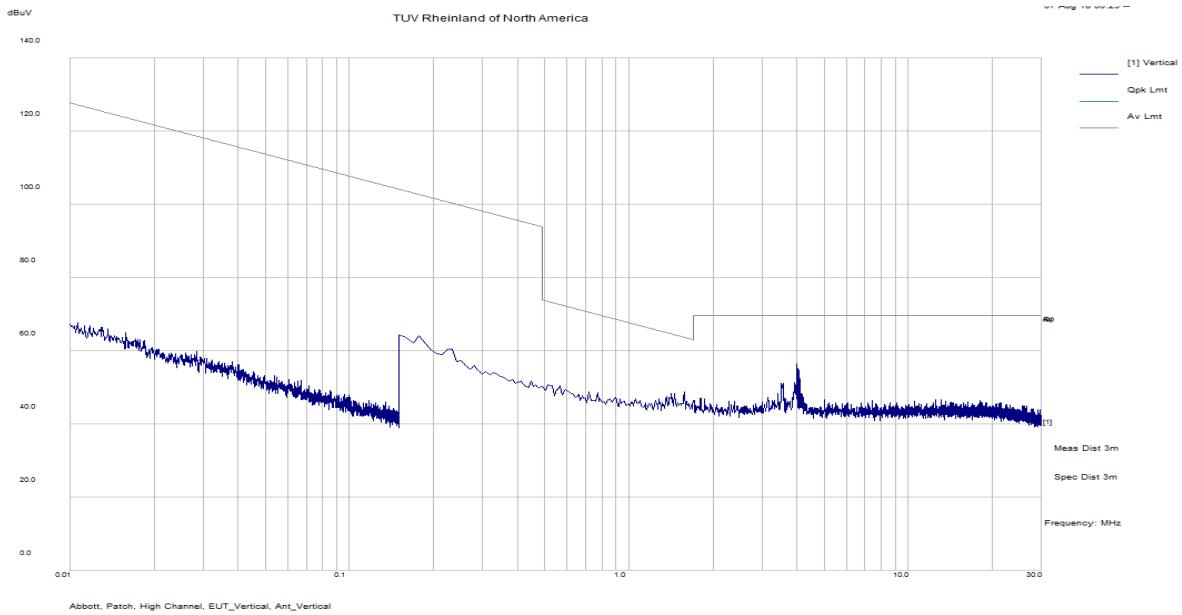
EUT Horizontal, Antenna Horizontal



EUT Vertical, Antenna Horizontal



EUT Vertical, Antenna Vertical

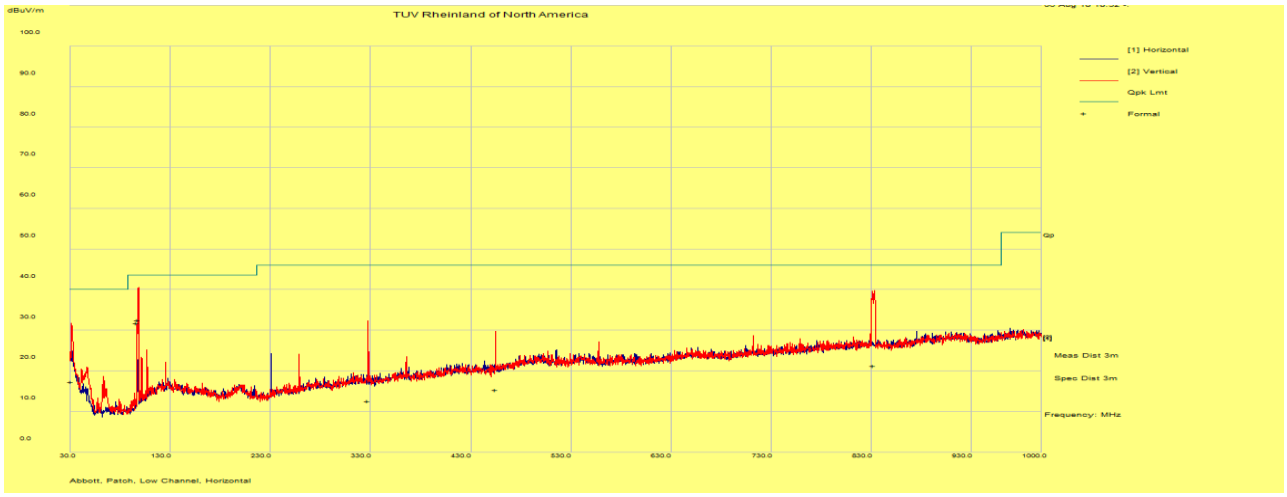


Note:

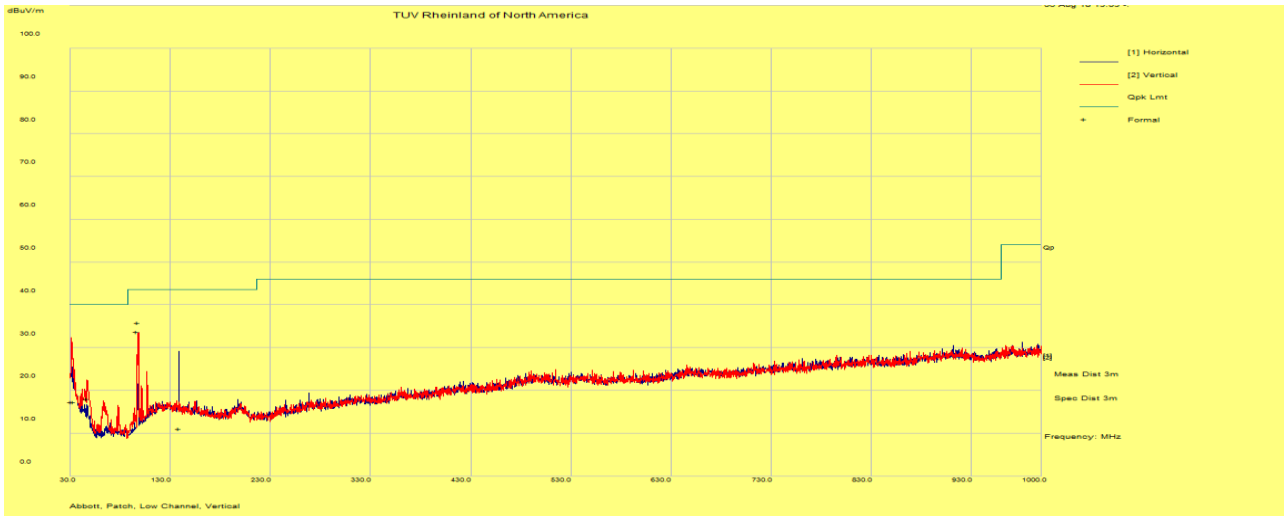
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	21° C / 37%rh
EUT Serial	E007A40000178CC3	**Temp / Hum out**	N/A
EUT Config.	2402MHz - BLE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	100KHz/ 300KHz
Dist/Ant Used	3m/ JB3	**Performed by**	Benjamin Atsu

30MHz– 1 GHz Transmit at 2402 MHz (Low Channel)

EUT Horizontal



EUT Vertical

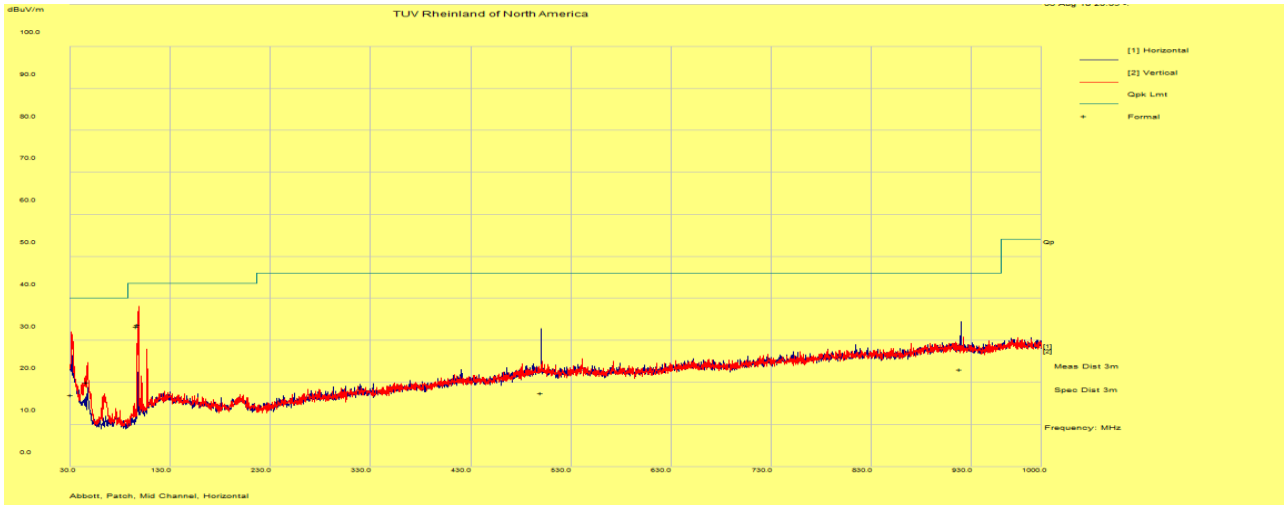


Note:

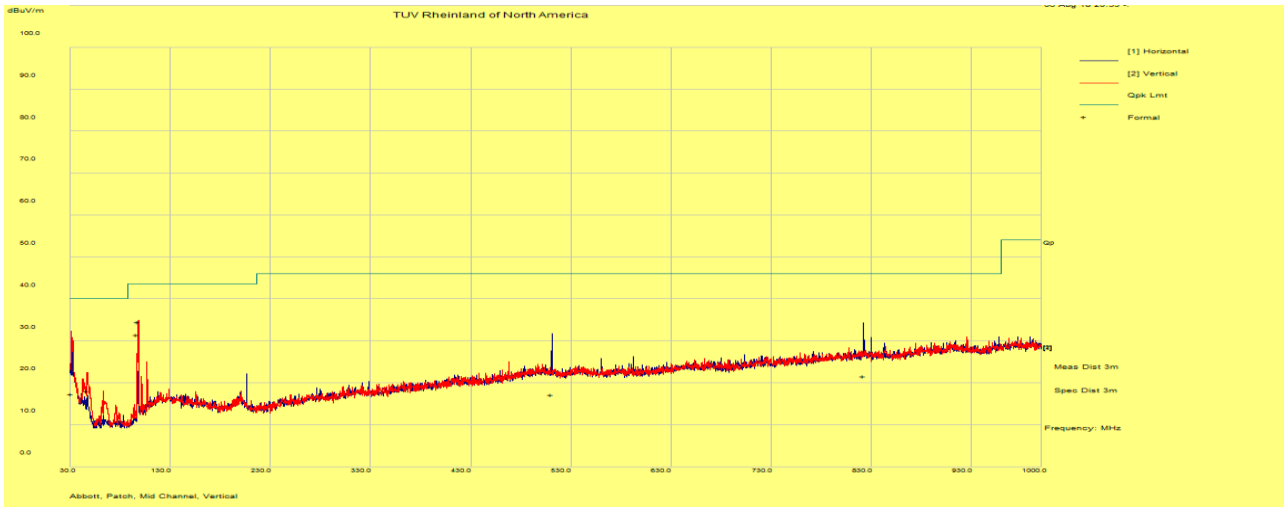
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	21° C / 37%rh
EUT Serial	E007A40000178CBD	**Temp / Hum out**	N/A
EUT Config.	2440MHz - BLE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	100KHz/ 300KHz
Dist/Ant Used	3m/ JB3	**Performed by**	Benjamin Atsu

30MHz-1GHz Transmit at 2440 MHz (Mid Channel)

EUT Horizontal



EUT Vertical

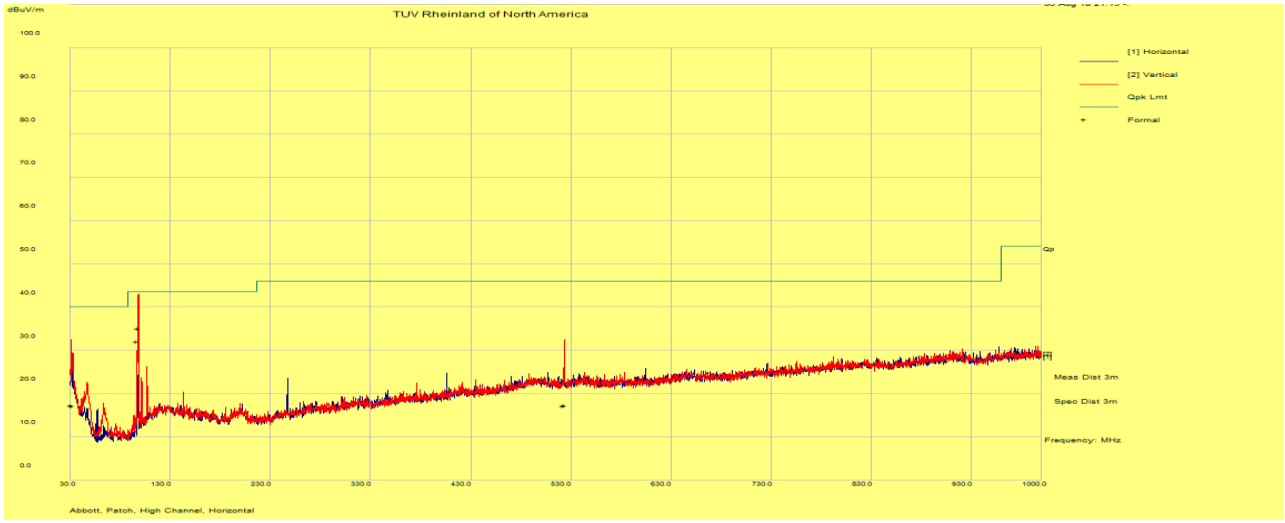


Note:

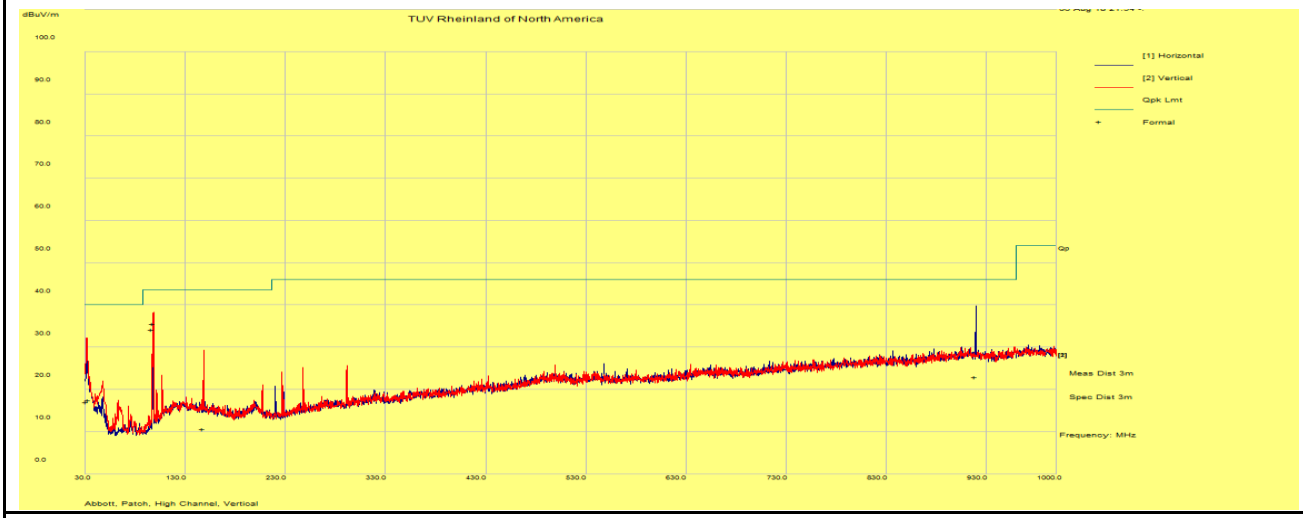
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	21° C / 37%rh
EUT Serial	E007A40000178CBB	**Temp / Hum out**	N/A
EUT Config.	2480MHz - BLE	**Line AC / Freq**	120 VAC
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	100KHz/ 300KHz
Dist/Ant Used	3m/ JB3	**Performed by**	Benjamin Atsu

30MHz-1GHz Transmit at 2480 MHz (High Channel)

EUT Horizontal



EUT Vertical

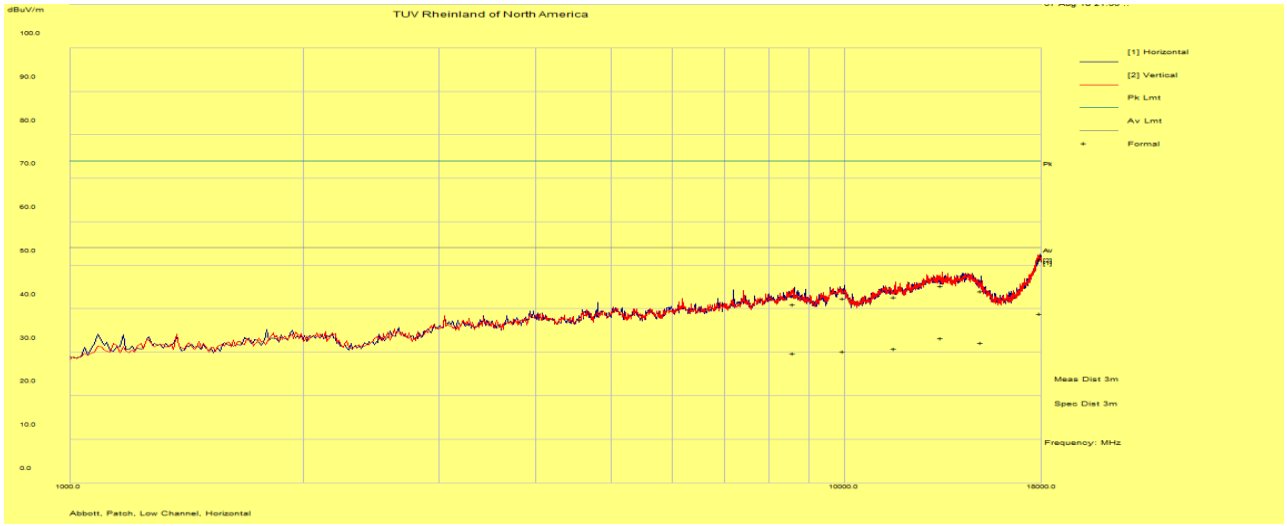


Note:

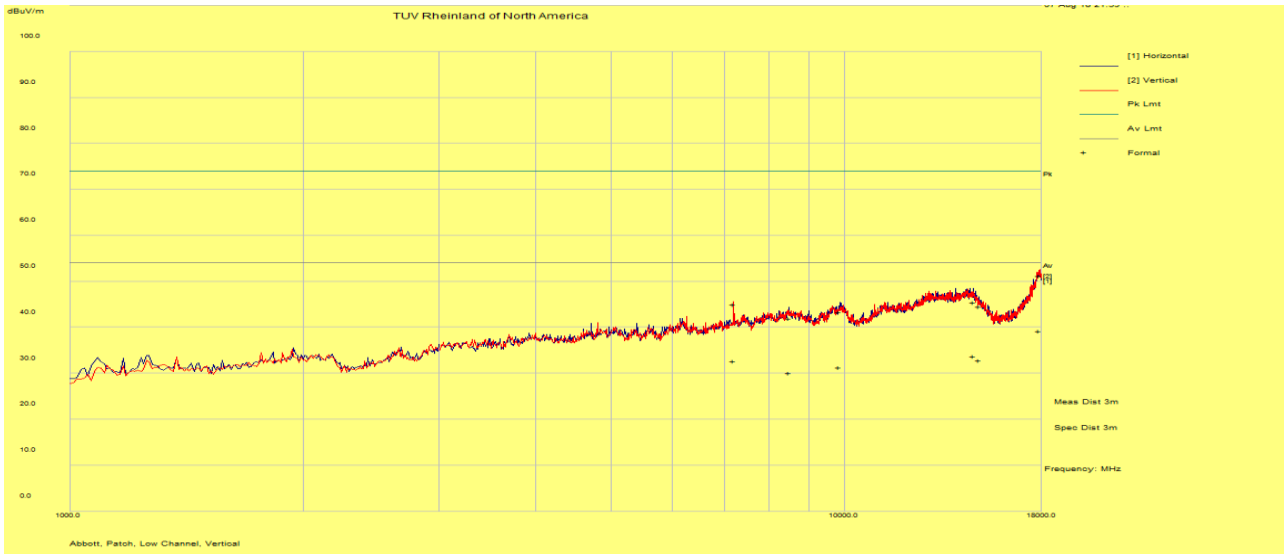
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	20° C / 34%rh
EUT Serial	E007A40000178CC3	**Temp / Hum out**	N/A
EUT Config.	2402MHz - BLE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m/EMCO3115	**Performed by**	Benjamin Atsu

1-18 GHz Transmit at 2402 MHz (Low Channel)

EUT Horizontal



EUT Vertical

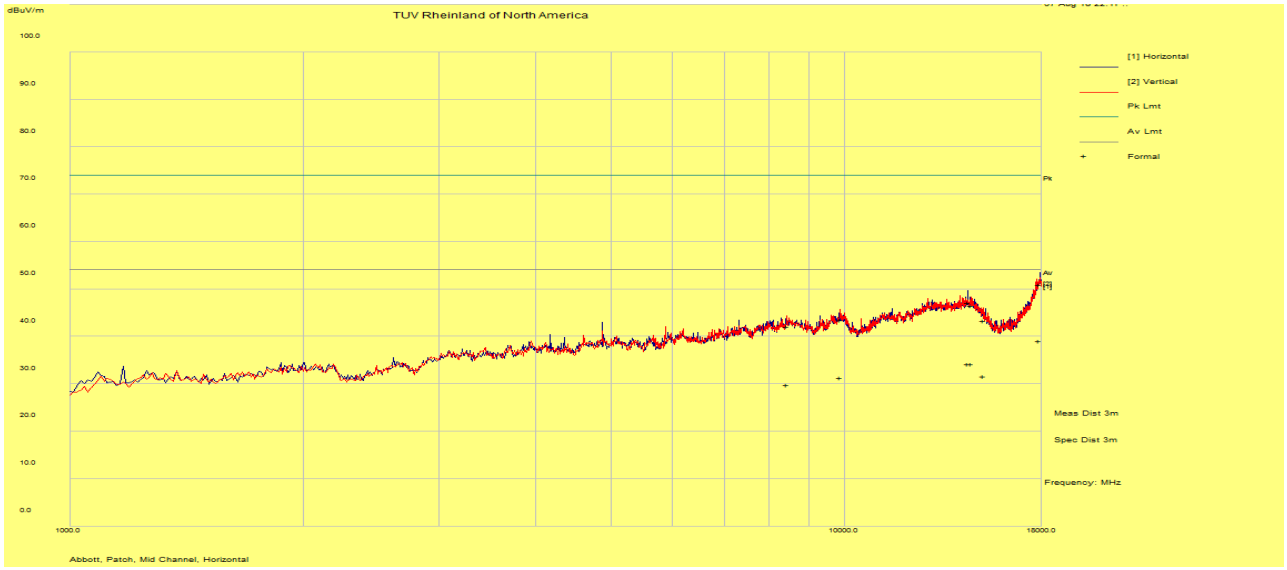


Note:

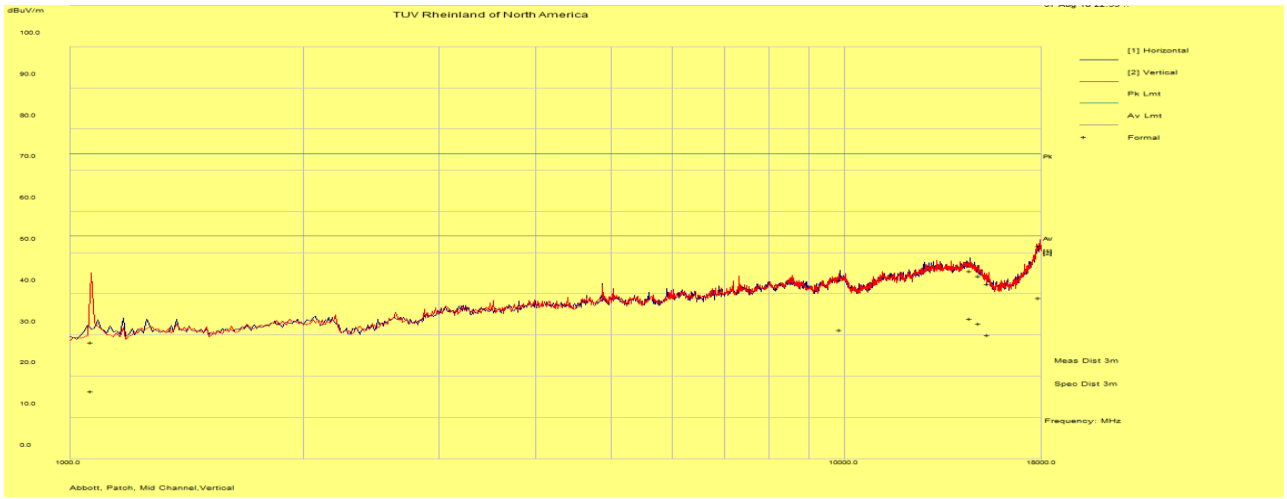
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	20° C / 34%rh
EUT Serial	E007A40000178CBD	**Temp / Hum out**	N/A
EUT Config.	2440MHz - BLE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m/EMCO3115	**Performed by**	Benjamin Atsu

1-18 GHz Transmit at 2440 MHz (Mid Channel)

EUT Horizontal



EUT Vertical

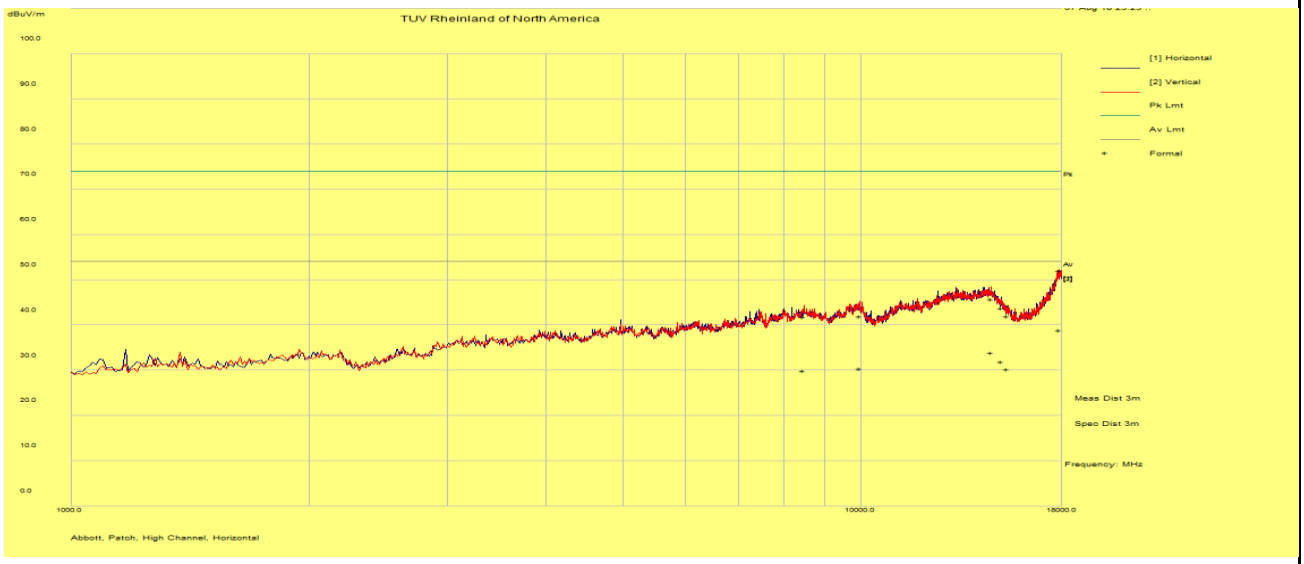


Note:

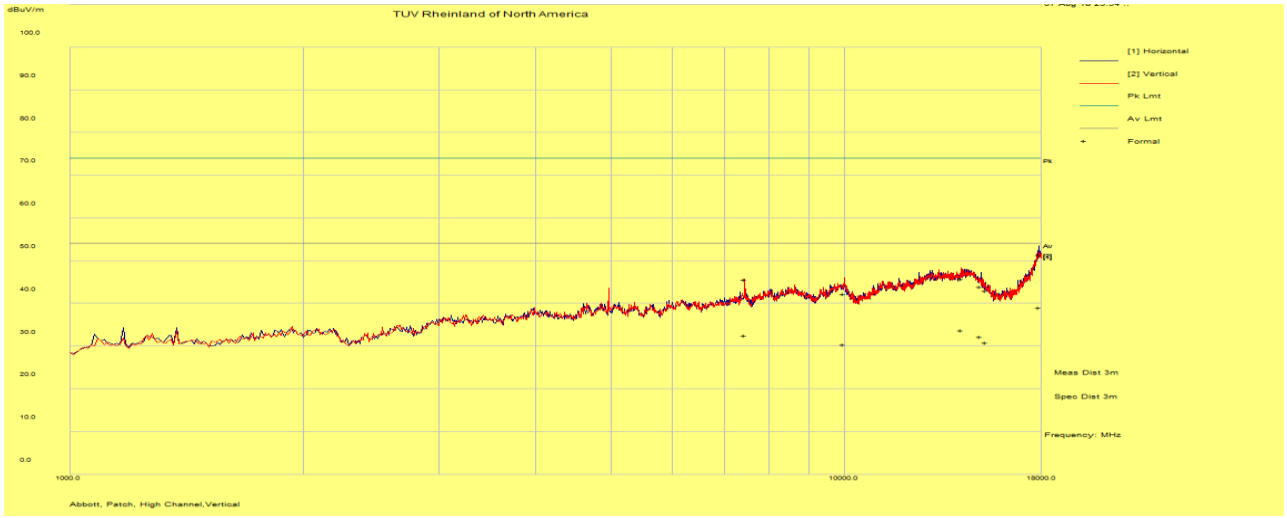
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	20° C / 34%rh
EUT Serial	E007A40000178CBB	**Temp / Hum out**	N/A
EUT Config.	2480MHz - BLE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m/EMCO3115	**Performed by**	Benjamin Atsu

1-18GHz Transmit at 2480 MHz (High Channel)

EUT Horizontal



EUT Vertical

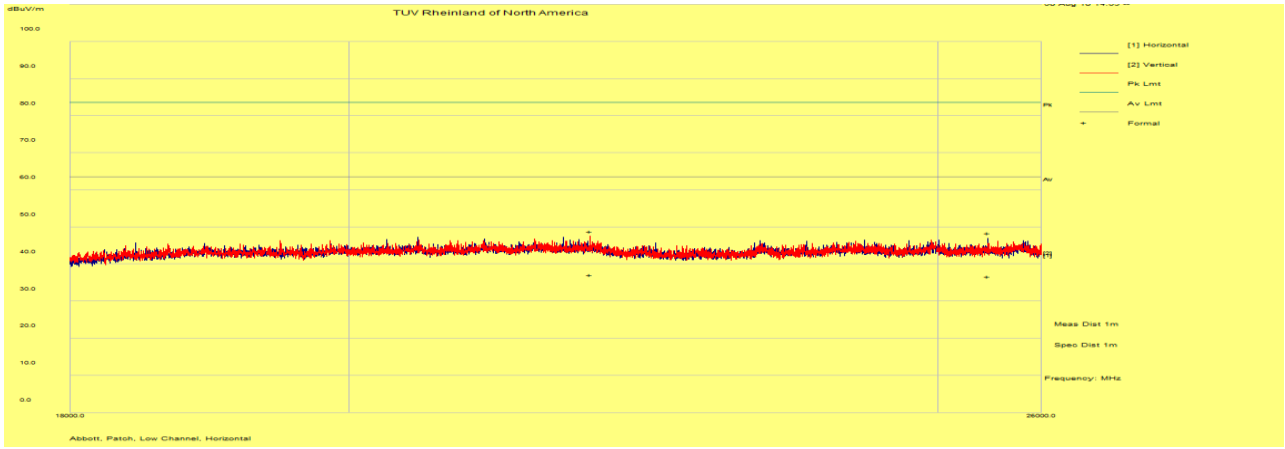


Note:

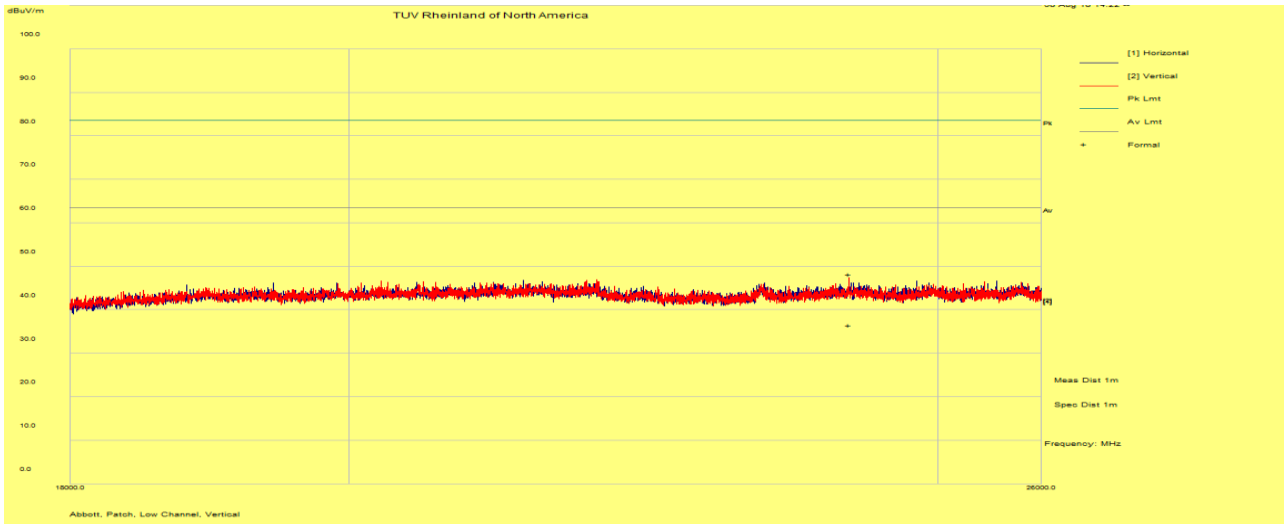
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	24° C / 34%rh
EUT Serial	E007A40000178CC3	**Temp / Hum out**	N/A
EUT Config.	2402MHz – BT LE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m/EMCO3115	**Performed by**	Benjamin Atsu

18-26 GHz Transmit at 2402MHz(Low Channel)

EUT Horizontal



EUT Vertical

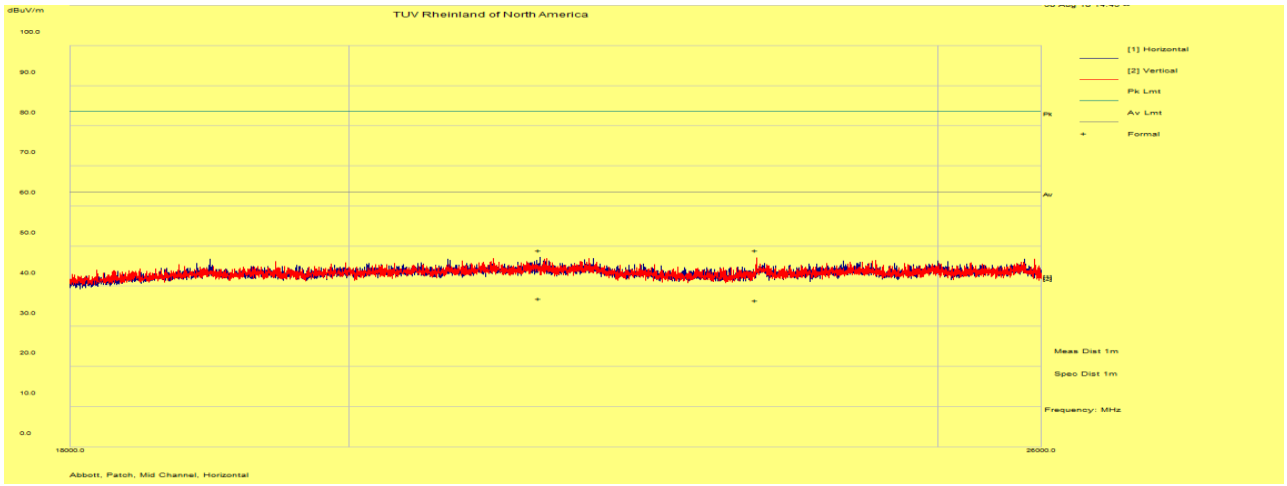


Note:

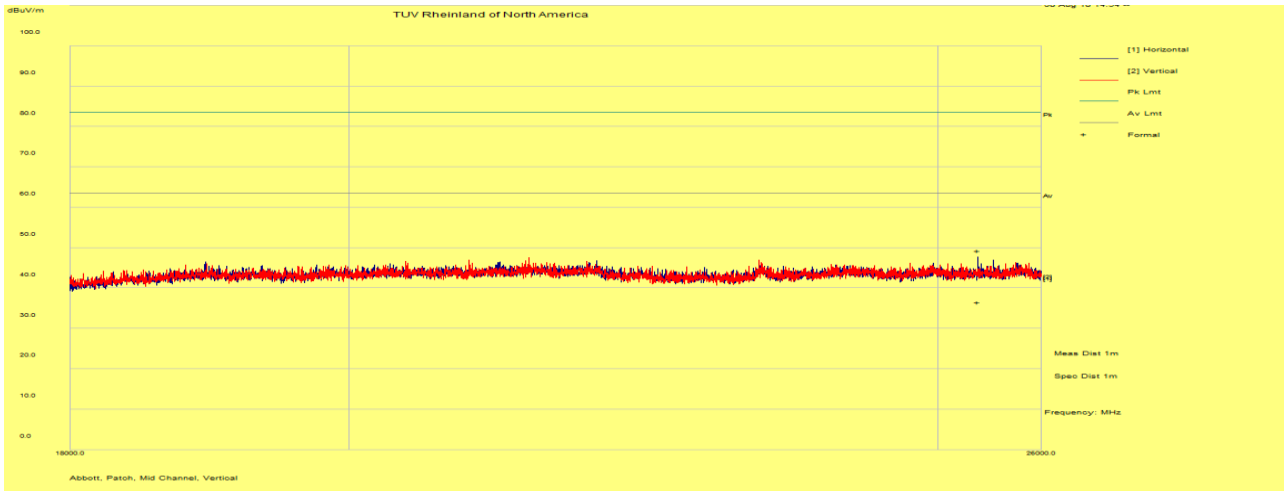
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	21° C / 37%rh
EUT Serial	E007A40000178CBD	**Temp / Hum out**	N/A
EUT Config.	2440MHz – BT LE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m/EMCO3115	**Performed by**	Benjamin Atsu

18-26 GHz Transmit at 2440 MHz (Mid Channel)

EUT Horizontal



EUT Vertical

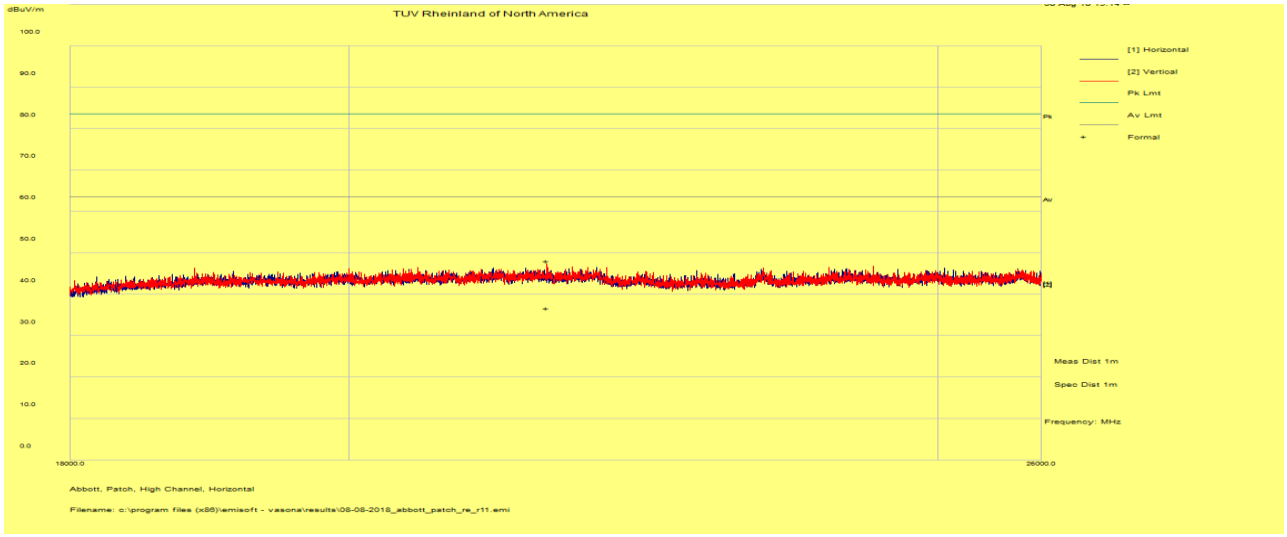


Note:

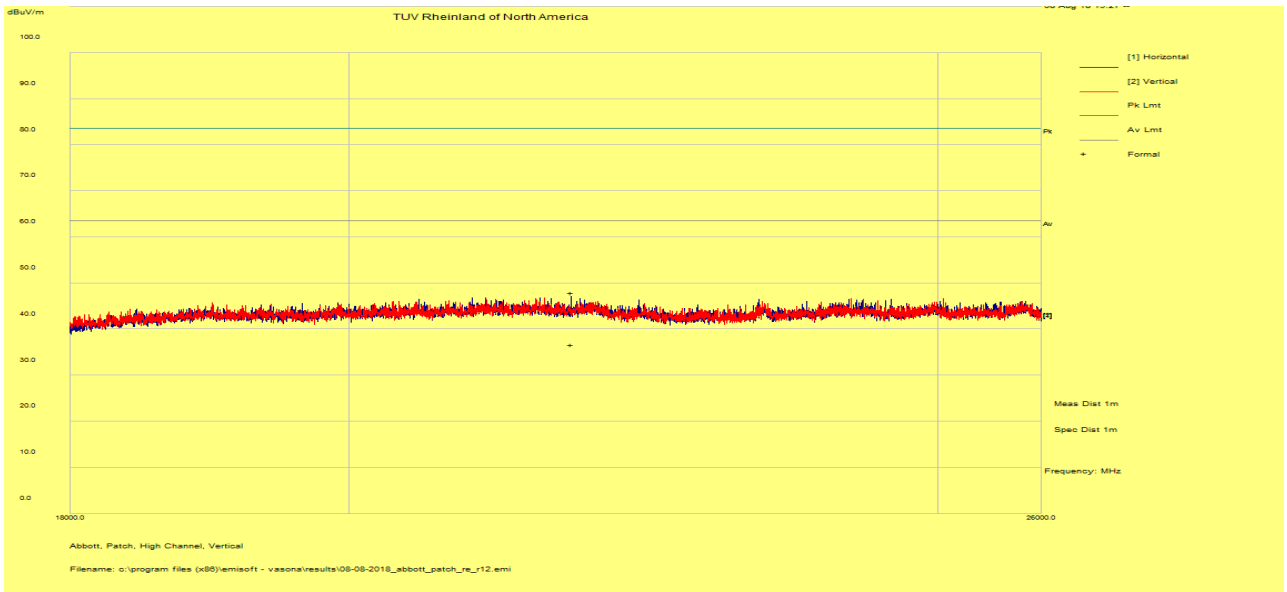
SOP 1 Radiated Emissions			
EUT Name	Glucose Monitoring System Sensor		
EUT Model	Freestyle Libre 2 Sensor	**Temp / Hum in**	21° C / 37%rh
EUT Serial	E007A40000178CBB	**Temp / Hum out**	N/A
EUT Config.	2480MHz – BT LE	**Line AC / Freq**	N/A
Standard	CFR47 Part 15 Subpart C	**RBW / VBW**	1 MHz/ 3 MHz
Dist/Ant Used	3m/EMCO3115	**Performed by**	Benjamin Atsu

18-26 GHz Transmit at 2480 MHz (High Channel)

EUT Horizontal



EUT Vertical



Measurement Data

Final Tabulated Data –30MHz-1GHz Horizontal- Low Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
98.125938	47.95	2.87	-18.34	32.48	Quasi Max	V	103	102	43.5	-11.02
97.266563	47.41	2.86	-18.55	31.72	Quasi Max	V	141	326	43.5	-11.78
832.487813	21.94	4.84	-5.43	21.35	Quasi Max	V	254	298	46	-24.65
31.239688	22.39	2.49	-7.59	17.29	Quasi Max	V	102	334	40	-22.71
327.423438	22.38	3.69	-13.45	12.62	Quasi Max	V	118	142	46	-33.38
454.781875	22.26	4.02	-10.94	15.34	Quasi Max	V	374	214	46	-30.66

Final Tabulated Data –30MHz-1GHz Vertical- Low Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
31.311875	22.46	2.49	-7.65	17.3	Quasi Max	V	148	46	40	-22.7
98.080938	51.44	2.87	-18.35	35.96	Quasi Max	V	117	0	43.5	-7.55
97.285	49.48	2.86	-18.55	33.8	Quasi Max	V	130	144	43.5	-9.7
138.594063	22.82	3.06	-14.8	11.08	Quasi Max	H	308	327	43.5	-32.42
33.887188	24.71	2.51	-9.82	17.4	Quasi Max	V	157	42	40	-22.6
46.809375	33.7	2.6	-18.23	18.07	Quasi Max	V	100	60	40	-21.93

Final Tabulated Data –30MHz-1GHz Horizontal- Mid Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
98.06875	49.31	2.87	-18.36	33.82	Quasi Max	V	117	268	43.5	-9.68
31.65	22.43	2.49	-7.95	16.97	Quasi Max	V	311	200	40	-23.03
97.304063	49.03	2.86	-18.54	33.36	Quasi Max	V	122	206	43.5	-10.14
919.216563	22.05	4.99	-3.97	23.06	Quasi Max	H	255	130	46	-22.94
500.502813	22.49	4.12	-9.13	17.49	Quasi Max	H	137	222	46	-28.51
47.111875	35.88	2.6	-18.39	20.09	Quasi Max	V	109	342	40	-19.91

Final Tabulated Data –30MHz-1GHz Vertical- Mid Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
31.433125	22.67	2.49	-7.76	17.4	Quasi Max	V	146	24	40	-22.6
98.093125	50.03	2.87	-18.35	34.55	Quasi Max	V	103	146	43.5	-8.95
97.29875	47.14	2.86	-18.54	31.46	Quasi Max	V	100	234	43.5	-12.04
822.295	22.22	4.82	-5.5	21.53	Quasi Max	H	369	52	46	-24.47
510.835313	22.52	4.15	-9.51	17.16	Quasi Max	H	386	176	46	-28.84
47.030313	33.91	2.6	-18.35	18.16	Quasi Max	V	112	110	40	-21.84

Final Tabulated Data –30MHz-1GHz Horizontal- High Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
98.065	50.57	2.87	-18.36	35.08	Quasi Max	V	105	12	43.5	-8.42
97.239688	47.85	2.86	-18.56	32.16	Quasi Max	V	114	292	43.5	-11.34
31.135938	22.38	2.49	-7.5	17.37	Quasi Max	V	173	354	40	-22.63
32.85	23.61	2.49	-8.97	17.13	Quasi Max	V	183	261	40	-22.87
523.9525	22.42	4.18	-9.33	17.28	Quasi Max	V	157	232	46	-28.72
522.960625	22.43	4.18	-9.36	17.25	Quasi Max	V	232	360	46	-28.75

Final Tabulated Data –30MHz-1GHz Vertical- High Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
98.057813	51.08	2.87	-18.36	35.59	Quasi Max	V	109	10	43.5	-7.91
919.19125	21.98	4.99	-3.97	23	Quasi Max	H	159	18	46	-23.01
31.660313	22.56	2.49	-7.96	17.1	Quasi Max	V	219	90	40	-22.9
97.31375	49.95	2.86	-18.54	34.28	Quasi Max	V	119	2	43.5	-9.22
148.325938	22.83	3.1	-15.33	10.6	Quasi Max	V	270	0	43.5	-32.9
33.759375	24.71	2.51	-9.71	17.5	Quasi Max	V	140	176	40	-22.5

Final Tabulated Data –1-18GHz Horizontal- Low Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
17935.225	50.43	4.22	-3.32	51.33	Peak Max	H	270	46	74	-22.67
13379.73	52.92	3.53	-11.09	45.36	Peak Max	V	198	220	74	-28.64
15078.71	50.88	3.82	-10.55	44.15	Peak Max	V	228	52	74	-29.85
11647.65	52.04	3.34	-12.67	42.71	Peak Max	V	235	280	74	-31.29
10001.153	48.86	3.01	-9.46	42.42	Peak Max	H	172	52	74	-31.58
8619.1475	48.87	2.83	-10.59	41.11	Peak Max	H	124	130	74	-32.89
17935.225	38	4.22	-3.32	38.89	Average Max	H	270	46	54	-15.11
13379.73	40.92	3.53	-11.09	33.36	Average Max	V	198	220	54	-20.64
15078.71	38.91	3.82	-10.55	32.18	Average Max	V	228	52	54	-21.82
11647.65	40.2	3.34	-12.67	30.87	Average Max	V	235	280	54	-23.13
10001.153	36.78	3.01	-9.46	30.34	Average Max	H	172	52	54	-23.66
8619.1475	37.54	2.83	-10.59	29.79	Average Max	H	124	130	54	-24.21

Final Tabulated Data –1-18GHz Vertical- Low Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
17902.983	50.44	4.2	-3.37	51.28	Peak Max	V	126	272	74	-22.73
14715.143	51.38	3.8	-9.72	45.46	Peak Max	H	192	56	74	-28.54
14949.378	50.81	3.88	-10.11	44.58	Peak Max	H	278	216	74	-29.42
7206.3425	56.52	2.64	-14.12	45.05	Peak Max	V	125	172	74	-28.95
9871.19	49.81	3.02	-9.5	43.33	Peak Max	H	128	4	74	-30.68
8489.9175	49.98	2.9	-10.89	41.99	Peak Max	H	197	38	74	-32.02
17902.983	38.35	4.2	-3.37	39.19	Average Max	V	126	272	54	-14.81
14715.143	39.74	3.8	-9.72	33.82	Average Max	H	192	56	54	-20.18
14949.378	39.02	3.88	-10.11	32.79	Average Max	H	278	216	54	-21.22
7206.3425	44.18	2.64	-14.12	32.7	Average Max	V	125	172	54	-21.3
9871.19	37.8	3.02	-9.5	31.31	Average Max	H	128	4	54	-22.69
8489.9175	38.09	2.9	-10.89	30.1	Average Max	H	197	38	54	-23.9

Final Tabulated Data –1-18GHz Horizontal- Mid Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
17905.453	50.12	4.2	-3.36	50.96	Peak Max	H	291	260	74	-23.04
14449.795	53.14	3.79	-9.79	47.13	Peak Max	H	302	66	74	-26.87
14599.73	52.22	3.89	-9.54	46.58	Peak Max	V	193	62	74	-27.43
15143.693	50.29	3.85	-10.79	43.35	Peak Max	V	347	360	74	-30.66
9882.825	49.9	3.03	-9.49	43.43	Peak Max	V	231	342	74	-30.57
8435.6375	50.31	2.83	-10.99	42.15	Peak Max	V	346	146	74	-31.85
17905.453	38.24	4.2	-3.36	39.08	Average Max	H	291	260	54	-14.92
14449.795	40.29	3.79	-9.79	34.28	Average Max	H	302	66	54	-19.72
14599.73	39.87	3.89	-9.54	34.23	Average Max	V	193	62	54	-19.77
15143.693	38.6	3.85	-10.79	31.66	Average Max	V	347	360	54	-22.34
9882.825	37.74	3.03	-9.49	31.28	Average Max	V	231	342	54	-22.72
8435.6375	37.95	2.83	-10.99	29.79	Average Max	V	346	146	54	-24.21

Final Tabulated Data –1-18GHz Vertical- Mid Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
17902.953	50.88	4.2	-3.37	51.72	Peak Max	V	221	276	74	-22.28
14566.398	51.42	3.82	-9.61	45.62	Peak Max	H	181	66	74	-28.38
14949.26	50.57	3.88	-10.11	44.34	Peak Max	V	200	156	74	-29.66
9883.72	49.87	3.03	-9.49	43.4	Peak Max	H	335	90	74	-30.6
15365.128	50.04	3.94	-11.48	42.5	Peak Max	V	141	76	74	-31.5
1065.1775	53.91	0.95	-26.63	28.23	Peak Max	V	217	224	74	-45.77
17902.953	38.32	4.2	-3.37	39.15	Average Max	V	221	276	54	-14.85
14566.398	39.94	3.82	-9.61	34.14	Average Max	H	181	66	54	-19.86
14949.26	39.04	3.88	-10.11	32.81	Average Max	V	200	156	54	-21.19
9883.72	37.73	3.03	-9.49	31.27	Average Max	H	335	90	54	-22.73
15365.128	37.68	3.94	-11.48	30.14	Average Max	V	141	76	54	-23.86
1065.1775	42.1	0.95	-26.63	16.42	Average Max	V	217	224	54	-37.58

Final Tabulated Data –1-18GHz Horizontal- High Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
17872.145	51.27	4.22	-3.52	51.97	Peak Max	V	319	92	74	-22.03
14652.733	51.69	3.64	-9.5	45.83	Peak Max	V	277	92	74	-28.17
15090.348	50.51	3.86	-10.53	43.83	Peak Max	H	190	226	74	-30.17
9977.2375	48.43	3.03	-9.45	42.01	Peak Max	V	188	136	74	-31.99
15377.263	49.48	3.91	-11.44	41.95	Peak Max	V	204	60	74	-32.05
8481.165	49.85	2.89	-10.91	41.83	Peak Max	V	108	230	74	-32.17
17872.145	38.31	4.22	-3.52	39	Average Max	V	319	92	54	-15
14652.733	39.74	3.64	-9.5	33.88	Average Max	V	277	92	54	-20.12
15090.348	38.62	3.86	-10.53	31.94	Average Max	H	190	226	54	-22.06
9977.2375	36.82	3.03	-9.45	30.4	Average Max	V	188	136	54	-23.6
15377.263	37.77	3.91	-11.44	30.24	Average Max	V	204	60	54	-23.76
8481.165	37.99	2.89	-10.91	29.97	Average Max	V	108	230	54	-24.03

Final Tabulated Data –1-18GHz Vertical- High Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
17860.305	50.75	4.22	-3.58	51.39	Peak Max	H	126	48	74	-22.61
14186.058	52.23	3.68	-10.17	45.74	Peak Max	V	323	238	74	-28.26
15023.525	50.68	3.75	-10.48	43.95	Peak Max	H	177	204	74	-30.05
10008.41	48.75	3.04	-9.46	42.33	Peak Max	V	341	54	74	-31.67
7439.9725	55.97	2.7	-13.1	45.57	Peak Max	V	311	58	74	-28.43
15249.533	50.24	3.87	-11.07	43.04	Peak Max	H	327	360	74	-30.96
17860.305	38.47	4.22	-3.58	39.11	Average Max	H	126	48	54	-14.89
14186.058	40.27	3.68	-10.17	33.78	Average Max	V	323	238	54	-20.22
15023.525	39.02	3.75	-10.48	32.29	Average Max	H	177	204	54	-21.71
10008.41	36.9	3.04	-9.46	30.48	Average Max	V	341	54	54	-23.52
7439.9725	42.95	2.7	-13.1	32.55	Average Max	V	311	58	54	-21.45
15249.533	38.13	3.87	-11.07	30.94	Average Max	H	327	360	54	-23.07

Final Tabulated Data –18-26GHz Horizontal- Low Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
21917.267	41.58	7.7	-0.53	48.75	Peak Max	V	149	228	83.5	-34.75
25475.532	43.54	8.09	-3.34	48.29	Peak Max	H	149	244	83.5	-35.21
21917.267	29.94	7.7	-0.53	37.11	Average Max	V	149	228	63.5	-26.39
25475.532	31.89	8.09	-3.34	36.65	Average Max	H	149	244	63.5	-26.86

Final Tabulated Data –18-26GHz Vertical- Low Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
24172.358	42.96	8.1	-2.81	48.25	Peak Max	V	149	30	83.5	-35.25
24172.358	31.26	8.1	-2.81	36.55	Average Max	V	149	30	63.5	-26.95

Final Tabulated Data –18-26GHz Horizontal- Mid Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
21498.845	41.32	7.7	-0.02	49	Peak Max	H	149	224	83.5	-34.5
23340.419	43.17	7.72	-1.85	49.03	Peak Max	V	149	242	83.5	-34.47
21498.845	29.22	7.7	-0.02	36.9	Average Max	H	149	224	63.5	-26.6
23340.419	30.63	7.72	-1.85	36.5	Average Max	V	149	242	63.5	-27

Final Tabulated Data –18-26GHz Vertical- Mid Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
25385.35	44.42	8.14	-3.36	49.2	Peak Max	H	149	224	83.5	-34.3
25385.35	31.71	8.14	-3.36	36.49	Average Max	H	149	224	63.5	-27.02

Final Tabulated Data –18-26GHz Horizontal- High Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
21559.965	40.42	7.72	-0.09	48.04	Peak Max	V	149	168	83.5	-35.46
21559.965	29.03	7.72	-0.09	36.66	Average Max	V	149	168	63.5	-26.85

Final Tabulated Data –18-26GHz Vertical- High Channel

Freq	Raw Reading	Cable Loss	AF	Corrected	Detector Type	Pol H/V	Ant Height	Azi	Limit	Margin
MHz	dBuV/m	dB	dB	dBuV/m	Average		Cm	Deg	dBuV/m	dB
21761.425	40.49	7.78	-0.34	47.93	Peak Max	H	149	0	83.5	-35.57
21761.425	29.23	7.78	-0.34	36.67	Average Max	H	149	0	63.5	-26.83

5 Test Equipment List

5.1 Equipment List

Equipment	Manufacturer	Model #	Serial/Inst #	Last Cal mm/dd/yyyy	Next Cal mm/dd/yyyy
Bilog Antenna	Sunol Sciences	JB3	A020502	03/27/2018	03/27/2019
Horn Antenna	EMCO	3115	9211-3969	05/16/2017	05/16/2019
MXE EMI Receiver	Agilent	N9038A	MY52260210	01/22/2018	01/22/2019
Switch Matrix	Rohde & Schwarz	OSP120	101181	01/18/2018	01/18/2019
Power Sensors	Rohde & Schwarz	OSP-B157	26160467	01/18/2018	01/18/2019
Spectrum Analyzer	Rohde & Schwarz	FSV40	101410	09/19/2017	09/19/2018
Spectrum Analyzer	Rohde & Schwarz	FSW67	104088	06/11/2018	06/11/2019
Spectrum Analyzer	Rohde & Schwarz	FSL6	100169	01/13/2018	01/13/2019
Vector Signal Generator	Rohde & Schwarz	SMBV100A	257744	9/16/2016	9/16/2019
Thermometer	VWR	61161-378	160702310	08/15/2015	08/15/2018
Bluetooth Tester	Rohde & Schwarz	CBT32	100029	10/19/2017	10/19/2018
Vector Signal Generator	Rohde & Schwarz	SMU200A	101206	09/19/2016	09/19/2019
Thermo Chamber	Espec	BTZ-133	0613436	05/31/2018	05/31/2019
Amplifier	Sonoma	310N	185516	N/A (See Note)	
Amplifier	Miteq	TTA1800-30-HG	1842452	N/A (See Note)	
2.4GHz Notch Filter	Microtronics	BRM50702	037	N/A (See Note)	

Note: Equipment is characterized before use.

6 EMC Test Plan

6.1 Introduction

This section provides a description of the Equipment Under Test (EUT), configurations, operating conditions, and performance acceptance criteria. It is an overview of information provided by the manufacturer so that the test laboratory may perform the requested testing.

6.2 Customer

Table 7: Customer Information

Company Name	Abbott Diabetes Care
Address	1360 S. Loop Road
City, State, Zip	Alameda, CA 94502
Country	USA

6.3 Equipment Under Test (EUT)

The information provided in the following table should be listed as it should appear in the final report. For those products that have only a model name, list the model number as *non-applicable* and vice-versa.

Table 8 – EUT Designation

Product Name:	Glucose Monitoring System Sensor
Model Number:	Freestyle Libre 2 Sensor
System Name:	NA
Product Description: (Manufacturer supplied Information)	Glucose Monitoring System E The Glucose Monitoring System E is a unique sensor-based system that has two main parts: a disposable glucose Sensor, which is worn on your body, and the Reader, a handheld device that displays information from the Sensor. The Reader is used to wirelessly scan the Sensor to gather glucose readings. The Reader also receives glucose information for the Sensor via BLE.

6.4 Product Specifications

Table 9: EUT Specifications

EUT Specification	
DC Input	1.5 VDC (Battery)
Number of Antenna Feeds:	Transmit: 1 Receive: 1
Product Marketing Name (PMN)	Glucose Monitoring System (Patch)
Hardware Version Identification Number (HVIN)	PRT28449-003 rev B
Firmware Version Identification Number (FVIN)	2.2.04
RF Test Software Version	4.1.00 (Tx mode) & 4.2.00 (Rx Mode)
Radio Evaluated	Bluetooth Low Energy (LE)
Transmit Frequency Band	2400-2483.5MHz
Max. Power Output for Technology	4.6 dBm RMS (Measured, Conducted)
Antenna Gain	-1.0 dBi
Antenna Type	Internal
Modulation Type	GFSK
Type of Equipment	☒ Table Top ☐ Wall-mount ☐ Floor standing cabinet ☐ Other:

Table 10: Antenna Information

Number	Antenna Type	Description	Max Gain (dBi)
1	Internal	Integrated	-1.0

Table 11: Interface Specifications

Interface Type	Cabled with what type of cable?	Is the cable shielded?	Maximum potential length of the cable?	Metallic (M), Coax (C), Fiber (F), or Not Applicable?
N/A	N/A	N/A	N/A	N/A
Note: -				

Table 12: Support Equipment

Equipment	Manufacturer	Model	Serial	Used for
N/A	N/A	N/A	N/A	N/A
Note: -				

Table 13: Description of Sample used for Testing

Device	Serial Number	Configuration	Used For
Glucose Monitoring System Sensor	E007A40000178CBB	Radiated Sample	TX Spurious Emissions – High Channel (Channel 39)
Glucose Monitoring System Sensor	E007A40000178CBD	Radiated Sample	TX Spurious Emissions – Low Channel (Channel 0)
Glucose Monitoring System Sensor	E007A40000178CC3	Radiated Sample	TX Spurious Emissions – Low Channel (Channel 0)
Glucose Monitoring System Sensor	E007A40000145B25	Conducted Sample	All other measurements- High Channel (Channel 39)
Glucose Monitoring System Sensor	E007A40000145B27	Conducted Sample	All other measurements- Mid Channel (Channel 19)
Glucose Monitoring System Sensor	E007A40000145B30	Conducted Sample	All other measurements- Low Channel (Channel 0)
Note: -			

Table 14: Accessory Equipment

Equipment	Manufacturer	Model	Serial	Comment
N/A	N/A	N/A	N/A	N/A

6.5 Testing Notes:

The manufacturer provided 6 samples, 3 radiated and 3 conducted samples. Each sample was hard coded to either transmit on low, middle or high channel at the maximum power and duty cycle. More detailed information is in table 13 of this report.

END OF REPORT