

FCC Part 15C Measurement and Test Report

For

Koss Corporation

4129 N. Port Washington Avenue Milwaukee Wisconsin 53212 United States

FCC ID: L76-BT539I

FCC Rule(s):	<u>FCC Part 15.247</u>
Product Description:	<u>Bluetooth Headset</u>
Tested Model:	<u>BT539i</u>
Report No.:	<u>STR16038189I-2</u>
Tested Date:	<u>2016-03-11 to 2016-04-15</u>
Issued Date:	<u>2016-04-15</u>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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1. GENERAL INFORMATION

Client Information

Applicant: Koss Corporation
Address of applicant: 4129 N. Port Washington Avenue Milwaukee
Wisconsin 53212 United States

Manufacturer: Dongguan Baizhenrong Limited
Address of manufacturer: 3Xin Yuan Street, Ju-zhou NO.2 Industrial Zone,
Shijie Town, Dongguan, Guangdong Province, P.R.C

General Description of EUT

Product Name:	Bluetooth Headset
Brand Name:	KOSS
Model No.:	BT539i
Adding Model(s):	/
Rated Voltage:	Battery DC3.7V ; USB DC5V
Software Version:	V1.0
Hardware Version:	BT-539PCB

Note: The test data is gathered from a production sample provided by the manufacturer.

Technical Characteristics of EUT

Bluetooth Version:	Bluetooth V4.0 (BLE mode)
Frequency Range:	2402-2480MHz
RF Output Power:	1.454dBm (Conducted)
Data Rate:	1Mbps
Modulation:	GFSK
Quantity of Channels:	40
Channel Separation:	2MHz
Type of Antenna:	Integral Antenna
Antenna Gain:	0dBi
Lowest Internal Frequency:	26MHz

1.2 Test Standards

The following report is prepared on behalf of the Koss Corporation in accordance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices

1.4 Test Facility

FCC – Registration No.: 934118

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

CNAS Registration No.: L4062

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101).

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	BLE	2402MHz
TM2	BLE	2442MHz
TM3	BLE	2480MHz

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
USB Cable	1.0	Unshielded	Without Ferrite
AUX Cable	1.0	Unshielded	Without Ferrite

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E10	LR-63C8R
Adapter	Hongben	HB0500	/

Battery: The product use a rechargeable battery , while test , use a fully-charged battery.

Test Software: Use a CSR test fix connect to the product, test fix connect to Notebook with USB port. Open the test software Bluetest3, select the continue Tx mode. Use default power level setting, set dutycycle >98%.

Test Connect: While during test, it will use a RF cable connect to spectrum. The product need a temporary antenna connector, The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

1.6 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2015-06-17	2016-06-16
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2015-06-17	2016-06-16
Amplifier	Agilent	8447F	3113A06717	2015-06-17	2016-06-16
Amplifier	C&D	PAP-1G18	2002	2015-06-17	2016-06-16
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2015-06-17	2016-06-16
Horn Antenna	ETS	3117	00086197	2015-06-17	2016-06-16
Horn Antenna	ETS	3116B	00088203	2015-06-17	2016-06-16
Loop Antenna	Schwarz beck	FMZB 1516	9773	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2015-06-17	2016-06-16
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2015-06-17	2016-06-16
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2015-06-17	2016-06-16
ipex Connector	SEM	CN-2.4	SEMT-1083	2015-06-17	2016-06-16
RF Cable	SEM.Test	0M2	SEMT-1084	2015-06-17	2016-06-16
Coaxial Cable 30MHz~3GHz	SEM.Test	5M0RFC	SEMT-1042	2015-06-17	2016-06-16
Coaxial Cable 9kHz~30MHz	SEM.Test	5M0RFC	SEMT-1040	2015-06-17	2016-06-16
Coaxial Cable 3GHz~25GHz	Agilent	LL142-07-07-1 0M(A)	08050035	2015-06-17	2016-06-16

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 2.1093	RF Exposure	Compliant
§ 15.203; § 15.247(b)(4)(i)	Antenna Requirement	Compliant
§ 15.207(a)	Conducted Emission	Compliant
§ 15.247(e)	Power Spectral Density	Compliant
§ 15.247(a)(2)	6 dB Bandwidth	Compliant
§ 15.247(b)(3)	RF Output Power	Compliant
§ 15.209(a)	Radiated Emission	Compliant
§ 15.247(d)	Band Edge (Out of Band Emissions)	Compliant

N/A: not applicable

3. RF Exposure

3.1 Standard Applicable

According to § 1.1307 and § 2.1093, the portable transmitter must comply the RF exposure requirements.

3.2 Test Result

This product complied with the requirement of the RF exposure, please see the RF Exposure Report.

4. Power Spectral Density

4.1 Standard Applicable

According to FCC 15.247, The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

4.2 Test Procedure

The test method of power spectral density as below:

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set the VBW $\geq 3 \times \text{RBW}$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.
- If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

4.3 Environmental Conditions

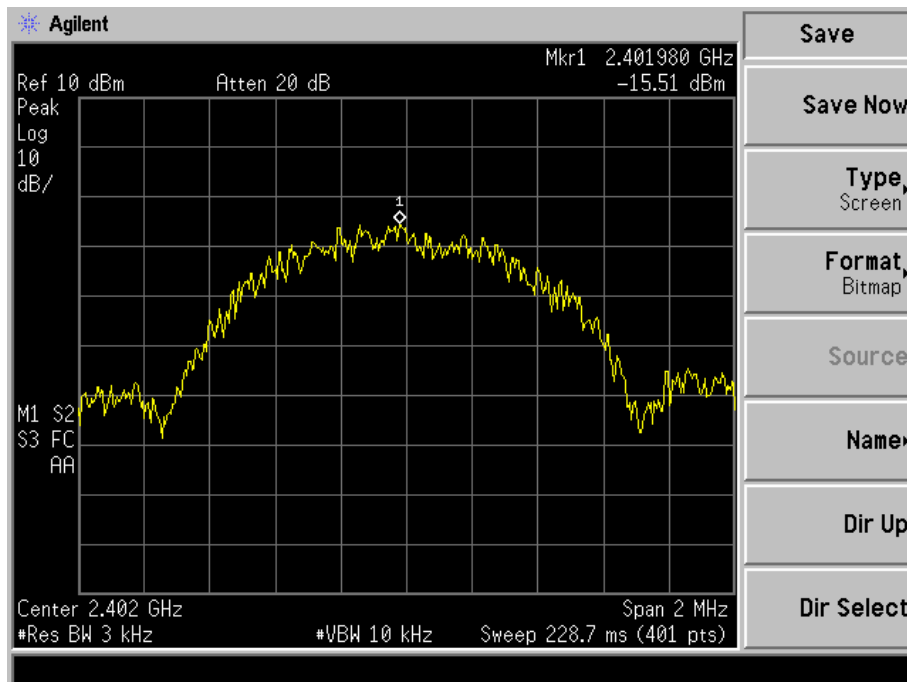
Temperature:	20° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

4.4 Summary of Test Results/Plots

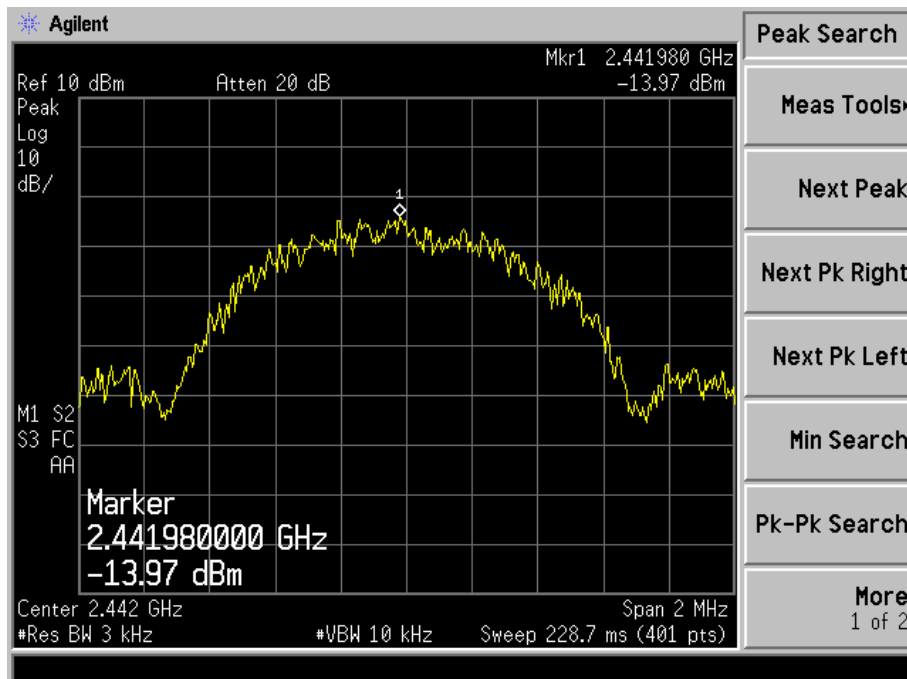
Test Mode	Test Channel MHz	Power Spectral Density dBm/3kHz	Limit dBm/3kHz
BLE	2402	-15.51	8
	2442	-13.97	8
	2480	-12.93	8

Please refer to the following test plots:

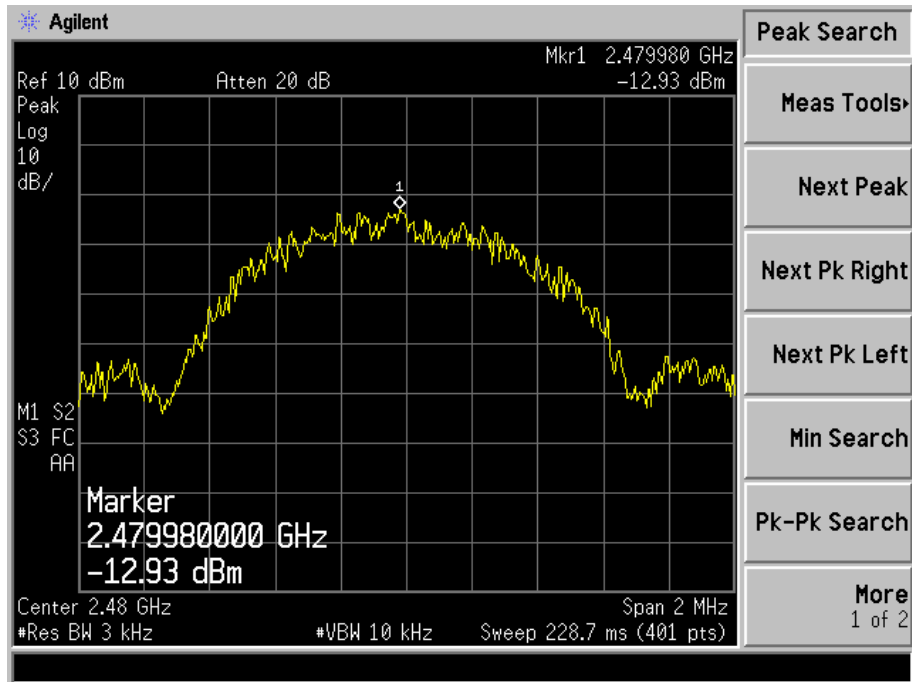
Low Channel



Middle Channel



High Channel



5. 6dB Bandwidth

5.1 Standard Applicable

According to FCC 15.247, the minimum 6 dB bandwidth shall be 500 kHz.

5.2 Test Procedure

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.3 Environmental Conditions

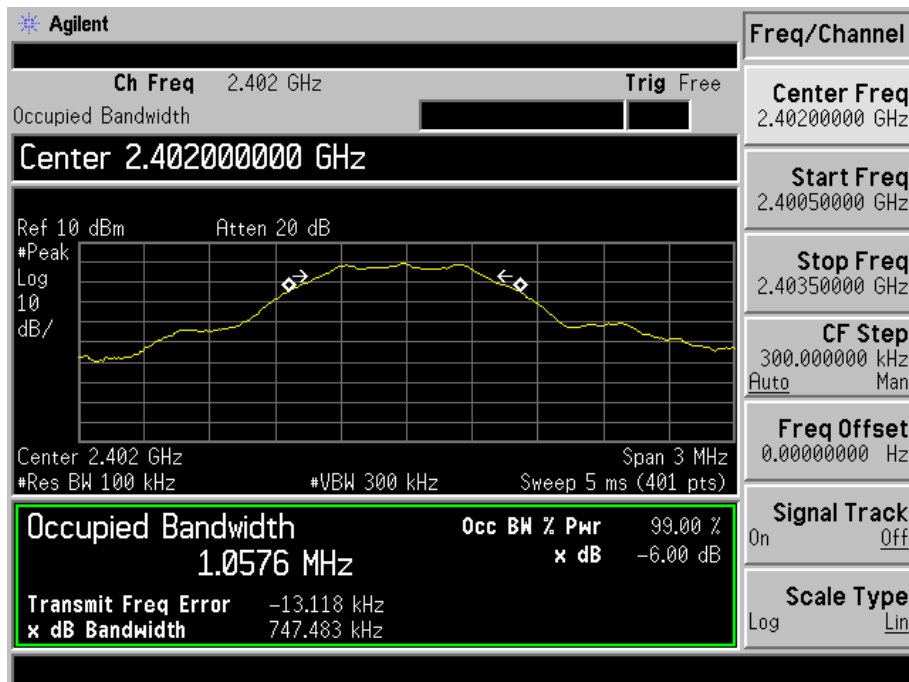
Temperature:	24° C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

5.4 Summary of Test Results/Plots

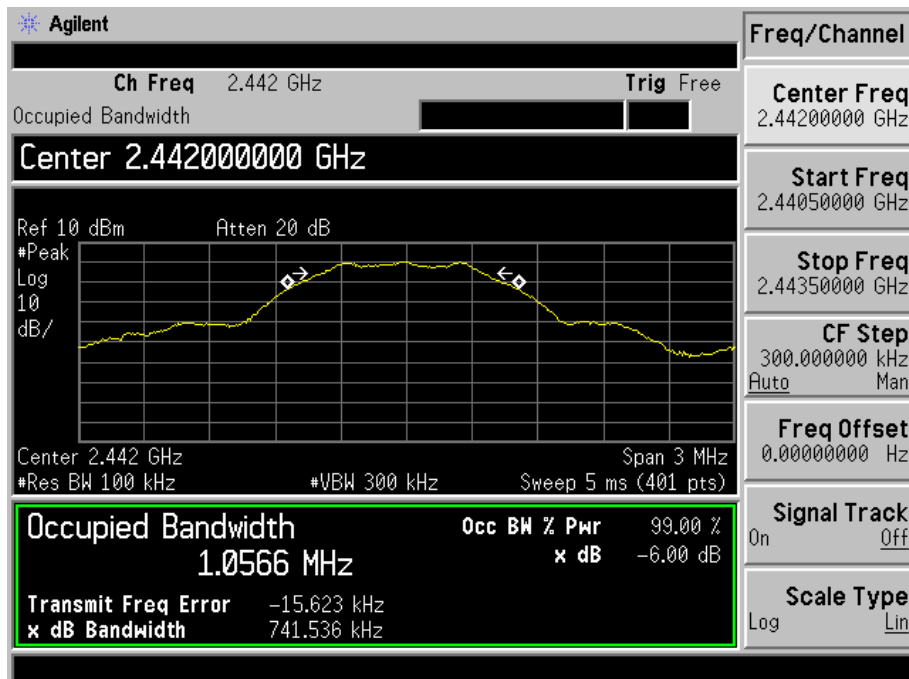
Test Mode	Test Channel MHz	6 dB Bandwidth kHz	99% Bandwidth kHz	Limit kHz
BLE	2402	747.483	1057.6	≥ 500
	2442	741.536	1056.6	≥ 500
	2480	744.429	1059.3	≥ 500

Please refer to the following test plots:

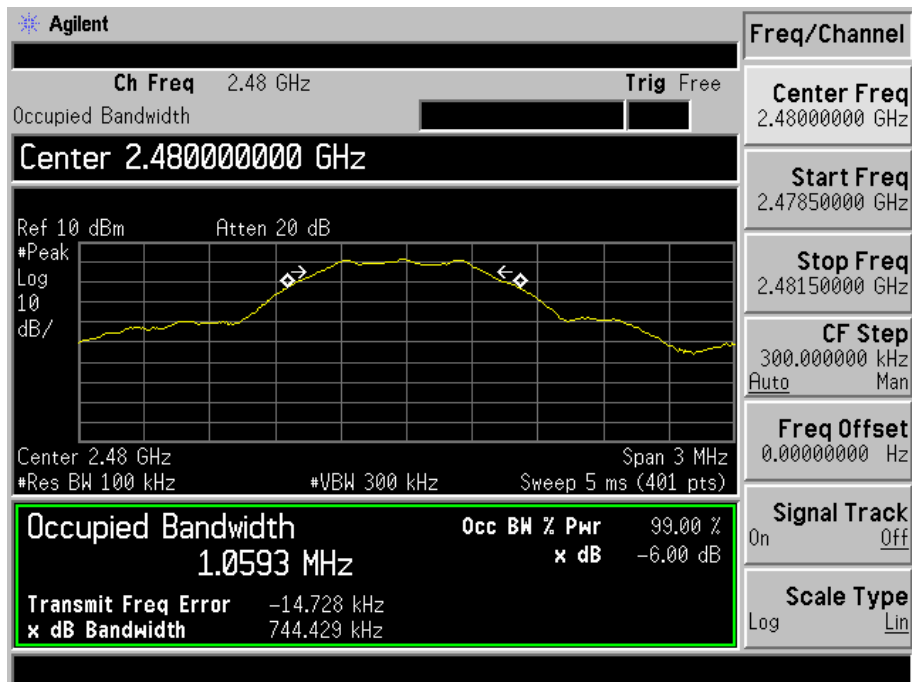
Low Channel



Middle Channel



High Channel



6. RF Output Power

6.1 Standard Applicable

According to FCC 15.247, For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W.

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power.

6.2 Test Procedure

This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater than the DTS bandwidth.

- a) Set the RBW $\geq$ DTS bandwidth.
- b) Set VBW $\geq 3 \times$ RBW.
- c) Set span $\geq 3 \times$ RBW
- d) Sweep time = auto couple.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

6.3 Environmental Conditions

Temperature:	21° C
Relative Humidity:	55%
ATM Pressure:	1011 mbar

6.4 Summary of Test Results/Plots

Test Mode	Frequency MHz	Reading dBm	Output Power mW	Limit mW
BLE	2402	-0.682	0.855	1000
	2442	0.471	1.146	1000
	2480	1.454	1.398	1000

Note: the antenna gain of 0dBi less than 6dBi maximum permission antenna gain value based on 1 watt peak output power limit.

7. Field Strength of Spurious Emissions

7.1 Measurement Uncertainty

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ± 5.10 dB.

7.2 Standard Applicable

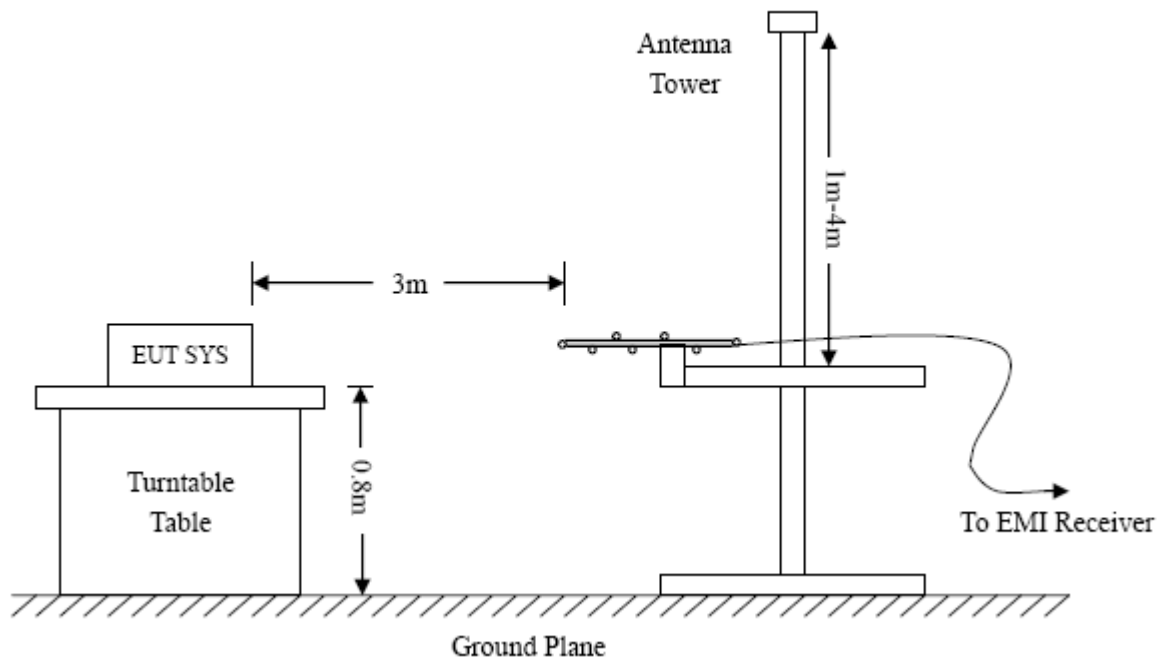
According to FCC 15.247, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in FCC 15 is not required.

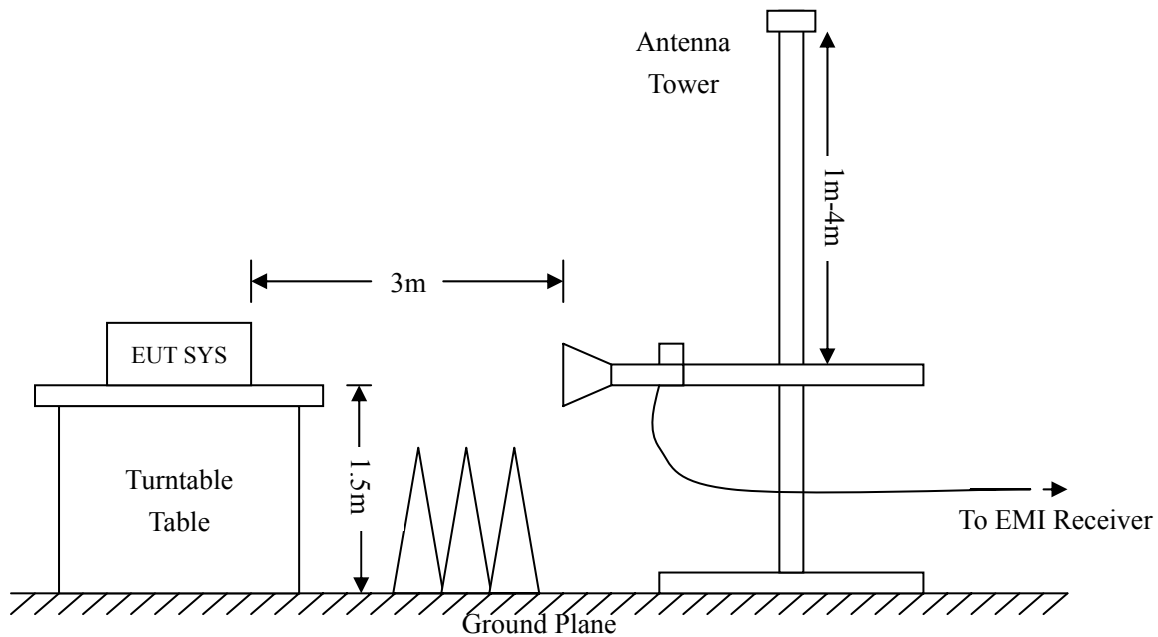
7.3 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

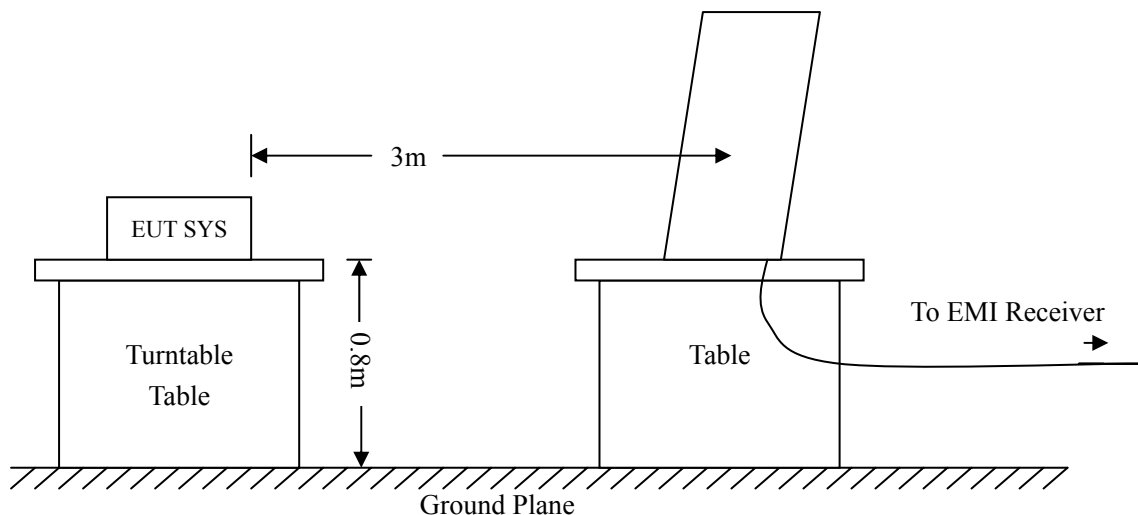
The spacing between the peripherals was 10 cm.





For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.



7.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Limit}$$

7.5 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

7.6 Summary of Test Results/Plots

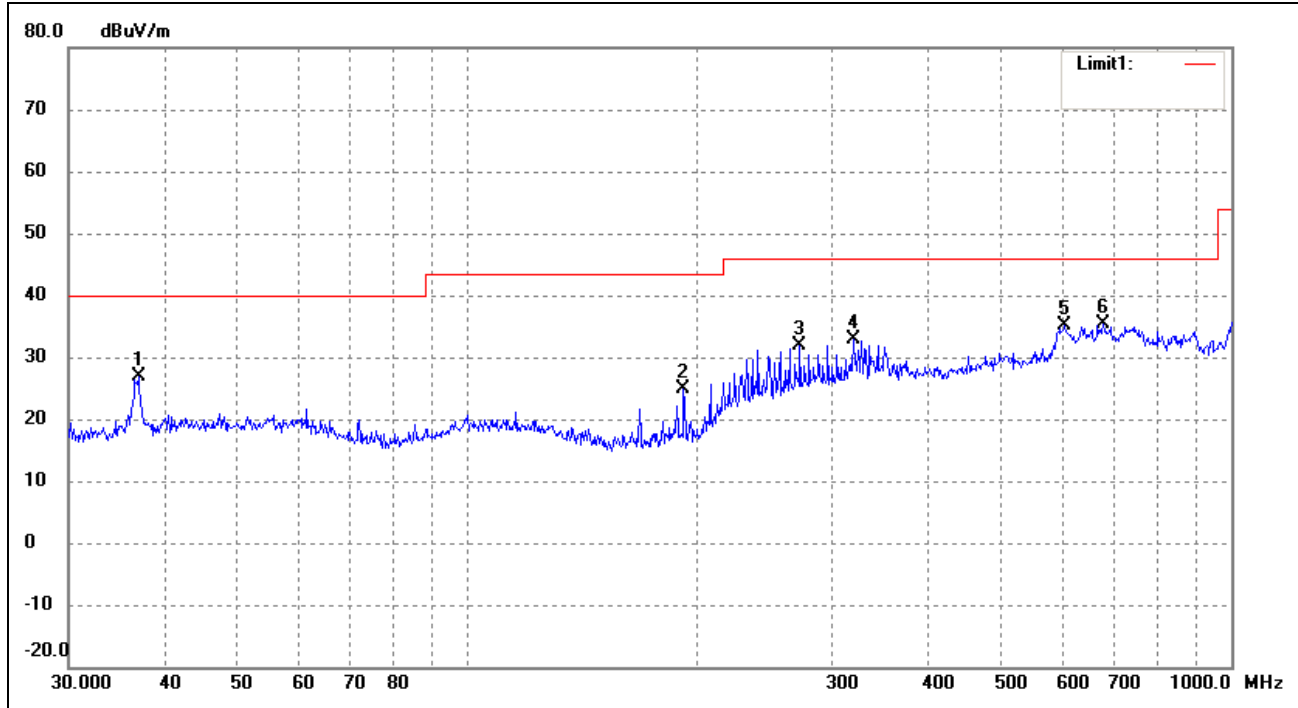
According to the data below, the FCC 15.247Issue 1 standard, and had the worst margin of:

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

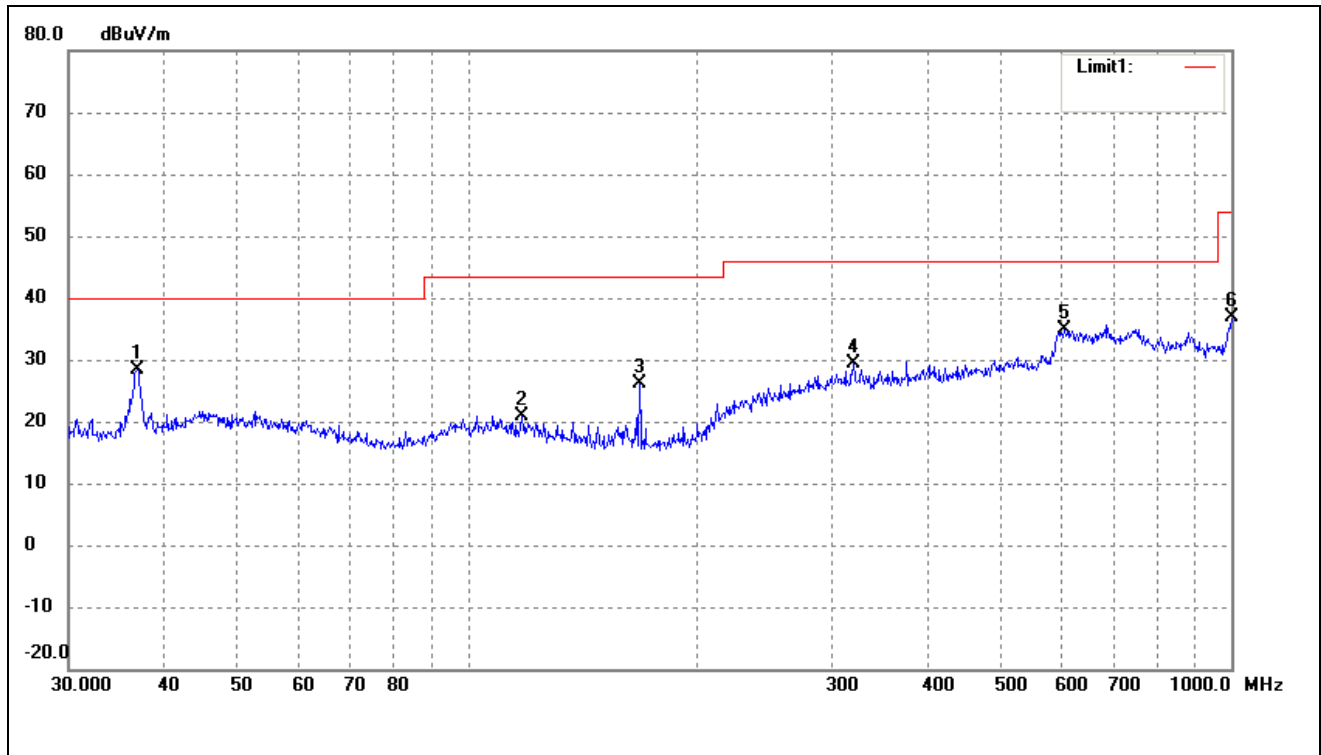
EUT: Bluetooth Headset
 Tested Model: BT539i
 Operating Condition: Transmitting-Low channel (2402MHz)
 Comment: DC 3.7V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	37.0249	10.42	16.54	26.96	40.00	-13.04	360	100	peak
2	191.7450	9.83	15.09	24.92	43.50	-18.58	360	100	peak
3	272.2776	9.31	22.67	31.98	46.00	-14.02	360	100	peak
4	319.9370	8.75	24.09	32.84	46.00	-13.16	360	100	peak
5	605.6592	4.33	30.72	35.05	46.00	-10.95	360	100	peak
6	679.9600	4.39	31.06	35.45	46.00	-10.55	360	100	peak

Test Specification: Vertical

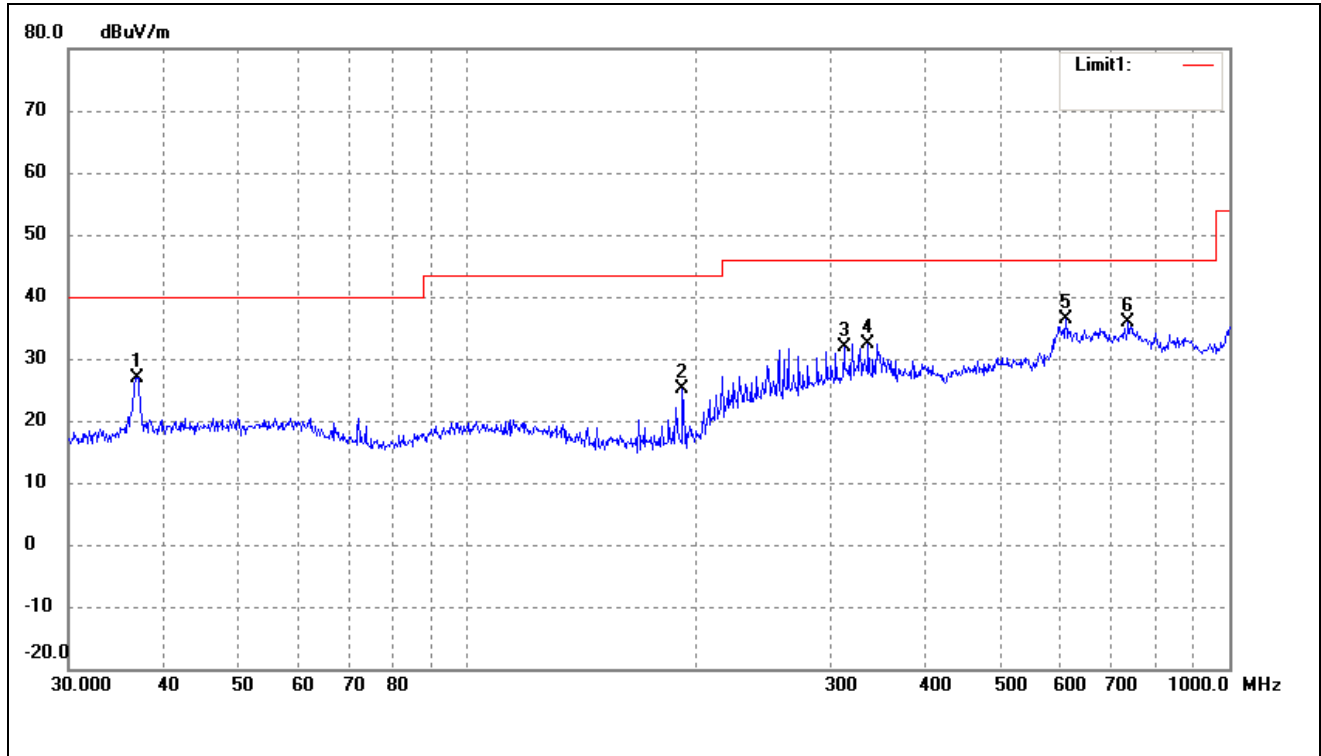


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	36.8953	11.77	16.52	28.29	40.00	-11.71	360	100	peak
2	117.7725	4.11	16.83	20.94	43.50	-22.56	360	100	peak
3	167.8243	11.59	14.47	26.06	43.50	-17.44	360	100	peak
4	319.9370	5.34	24.09	29.43	46.00	-16.57	360	100	peak
5	605.6592	4.21	30.72	34.93	46.00	-11.07	360	100	peak
6	1000.0000	6.13	30.71	36.84	54.00	-17.16	360	100	peak

Operating Condition: Transmitting-Low channel (2442MHz)

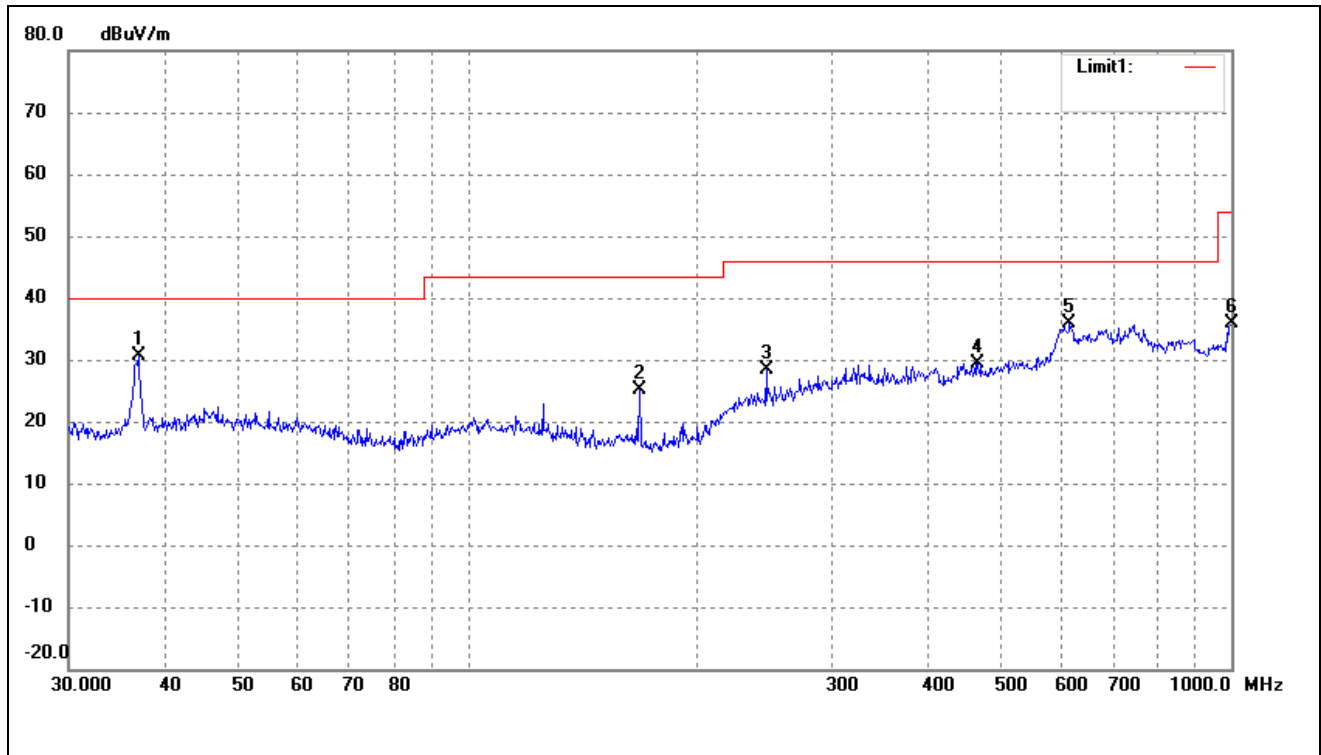
Comment: DC 3.7V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	36.8953	10.30	16.52	26.82	40.00	-13.18	360	100	peak
2	191.7450	10.13	15.09	25.22	43.50	-18.28	360	100	peak
3	312.1794	7.76	24.04	31.80	46.00	-14.20	360	100	peak
4	336.0352	8.67	23.64	32.31	46.00	-13.69	360	100	peak
5	609.9217	5.90	30.43	36.33	46.00	-9.67	360	100	peak
6	737.0714	4.59	31.17	35.76	46.00	-10.24	360	100	peak

Test Specification: Vertical

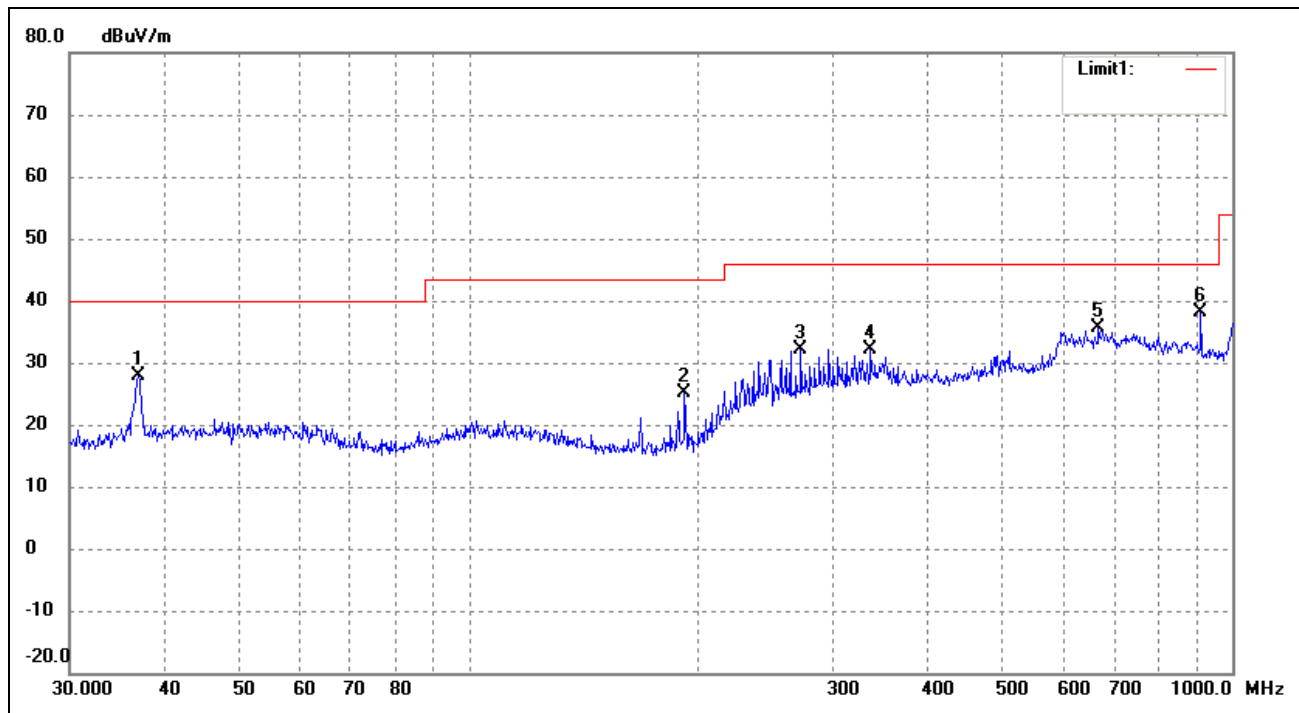


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	37.0249	14.03	16.54	30.57	40.00	-9.43	360	100	peak
2	167.8243	10.78	14.47	25.25	43.50	-18.25	360	100	peak
3	245.9509	7.08	21.35	28.43	46.00	-17.57	360	100	peak
4	465.5994	4.22	25.24	29.46	46.00	-16.54	360	100	peak
5	614.2142	5.86	30.12	35.98	46.00	-10.02	360	100	peak
6	1000.0000	5.11	30.71	35.82	54.00	-18.18	360	100	peak

Operating Condition: Transmitting-Low channel (2480MHz)

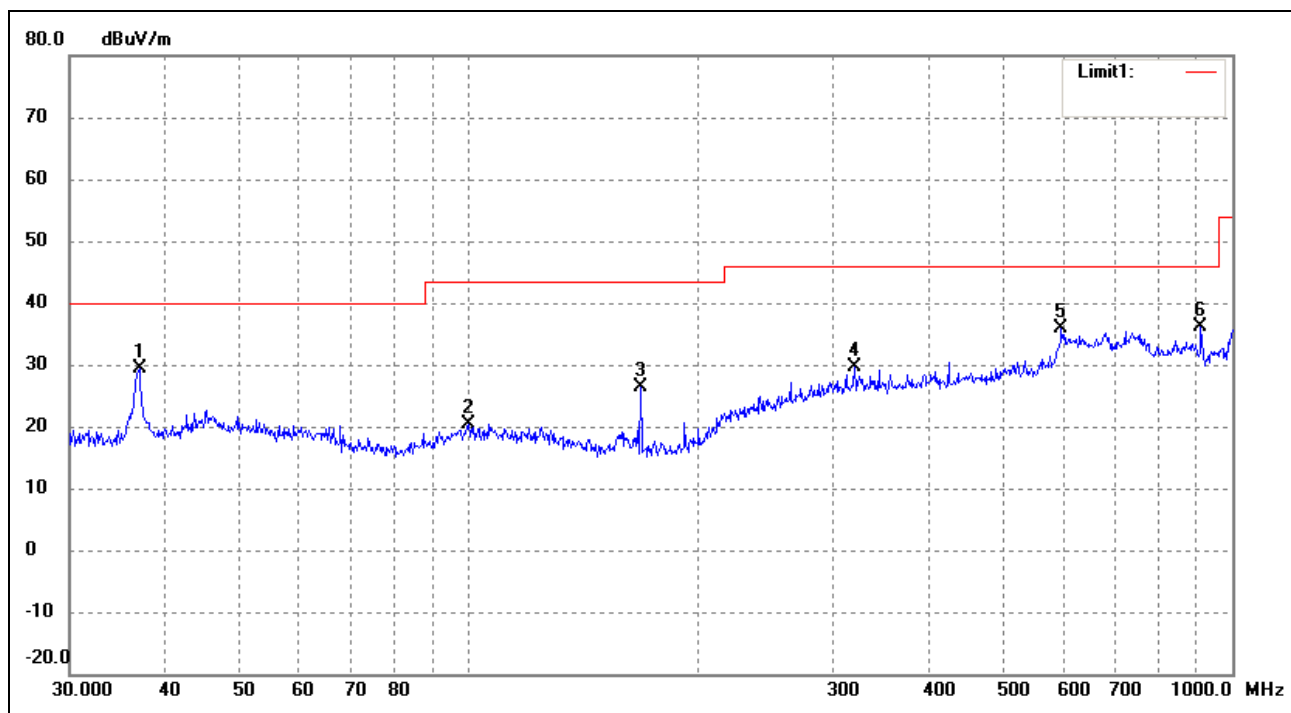
Comment: DC 3.7V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	36.8953	11.26	16.52	27.78	40.00	-12.22	360	100	peak
2	191.7450	9.97	15.09	25.06	43.50	-18.44	360	100	peak
3	272.2776	9.41	22.67	32.08	46.00	-13.92	360	100	peak
4	336.0352	8.54	23.64	32.18	46.00	-13.82	360	100	peak
5	668.1423	5.17	30.40	35.57	46.00	-10.43	360	100	peak
6	909.6667	10.06	27.99	38.05	46.00	-7.95	360	100	peak

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	37.0249	12.74	16.54	29.28	40.00	-10.72	360	100	peak
2	99.8777	3.45	16.91	20.36	43.50	-23.14	360	100	peak
3	167.8243	11.79	14.47	26.26	43.50	-17.24	360	100	peak
4	319.9370	5.54	24.09	29.63	46.00	-16.37	360	100	peak
5	597.2234	5.39	30.60	35.99	46.00	-10.01	360	100	peak
6	909.6667	8.07	27.99	36.06	46.00	-9.94	360	100	peak

Spurious Emissions Above 1GHz

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2402MHz							
4804	55.36	-3.59	51.77	74	-22.23	H	PK
4804	42.51	-3.59	38.92	54	-15.08	H	AV
7206	51.39	-0.52	50.87	74	-23.13	H	PK
7206	39.53	-0.52	39.01	54	-14.99	H	AV
4804	57.46	-3.59	53.87	74	-20.13	V	PK
4804	44.52	-3.59	40.93	54	-13.07	V	AV
7206	53.12	-0.52	52.6	74	-21.4	V	PK
7206	45.61	-0.52	45.09	54	-8.91	V	AV
Middle Channel-2442MHz							
4884	56.74	-3.49	53.25	74	-20.75	H	PK
4884	45.6	-3.49	42.11	54	-11.89	H	AV
7326	51.87	-0.47	51.4	74	-22.6	H	PK
7326	42.69	-0.47	42.22	54	-11.78	H	AV
4884	52.38	-3.49	48.89	74	-25.11	V	PK
4884	42.29	-3.49	38.8	54	-15.2	V	AV
7326	52.38	-0.47	51.91	74	-22.09	V	PK
7326	40.64	-0.47	40.17	54	-13.83	V	AV
High Channel-2480MHz							
4960	57.23	-3.41	53.82	74	-20.18	H	PK
4960	44.99	-3.41	41.58	54	-12.42	H	AV
7440	49.68	-0.42	49.26	74	-24.74	H	PK
7440	41.09	-0.42	40.67	54	-13.33	H	AV
4960	55.16	-3.41	51.75	74	-22.25	V	PK
4960	43.5	-3.41	40.09	54	-13.91	V	AV
7440	53.67	-0.42	53.25	74	-20.75	V	PK
7440	42.86	-0.42	42.44	54	-11.56	V	AV

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
The measurements greater than 20dB below the limit from 9kHz to 30MHz.

8. Out of Band Emissions

8.1 Standard Applicable

According to FCC 15.247, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in FCC 15 is not required.

8.2 Test Procedure

The band-edge radiated test method as follows:

Set span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation (2310MHz to 2420MHz for low bandedge, 2460MHz to 2500MHz for the high bandedge)

RBW = 1MHz, VBW = 1MHz for peak value measured

RBW = 1MHz, VBW = 10Hz for average value measured

Sweep = auto; Detector function = peak/average; Trace = max hold

All the trace to stabilize, set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. Those emission must comply with the 15.209 limit for fall in the restricted bands listed in section 15.205. Note that the method of measurement KDB publication number: 913591 may be used for the radiated bandedge measurements.

The conducted spurious emissions test method as follows:

1. Set start frequency to DTS channel edge frequency.
2. Set stop frequency so as to encompass the spectrum to be examined.
3. Set RBW = 100 kHz.
4. Set VBW $\geq$ 300 kHz.
5. Detector = peak.
6. Trace Mode = max hold.
7. Sweep = auto couple.
8. Allow the trace to stabilize (this may take some time, depending on the extent of the span).
9. Use peak marker function to determine maximum amplitude of all unwanted emissions within any 100 kHz bandwidth.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in section 8.1. Report the three highest emissions relative to the limit.

8.3 Environmental Conditions

Temperature:	23°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

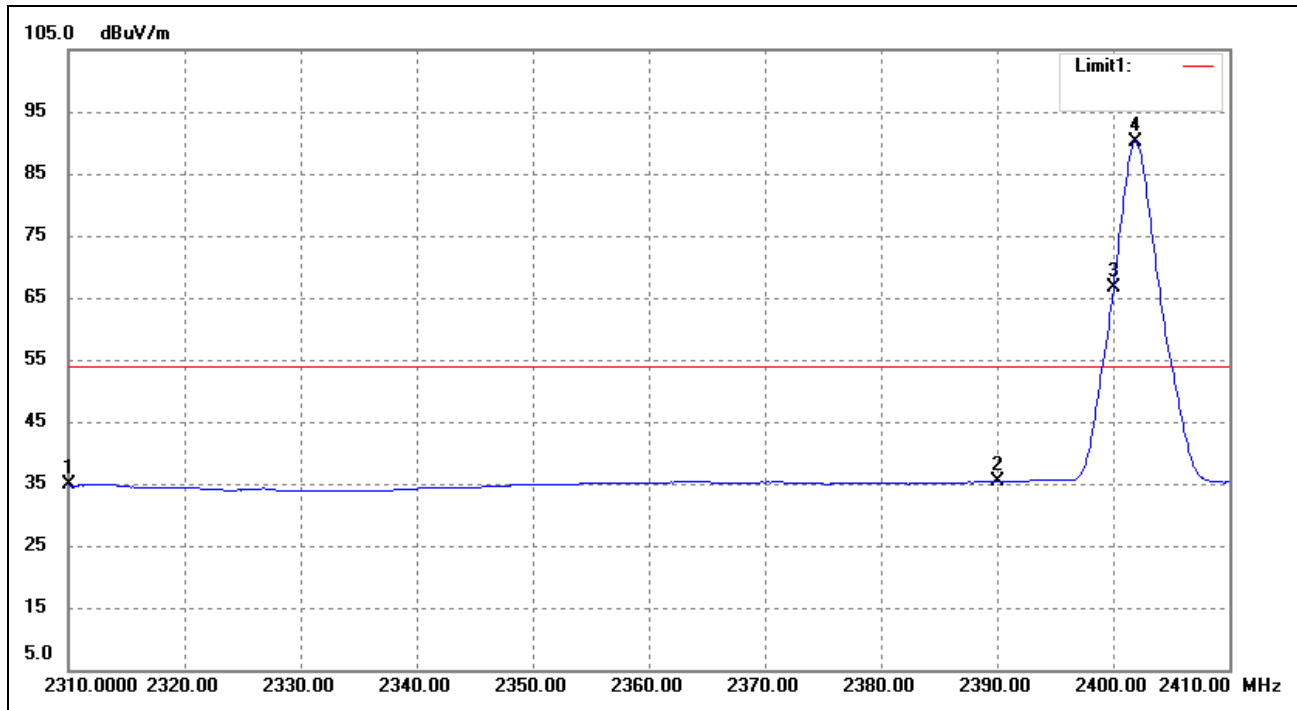
8.4 Summary of Test Results/Plots

Test Mode	Test Frequency MHz	Limit dBuV / dBc	Result
Lowest	2310.000	<54 dBuV	Pass
	2390.000	<54 dBuV	Pass
	2400.000	<54 dBuV	Pass
Highest	2483.500	<54 dBuV	Pass
	2500.000	<54 dBuV	Pass

The edge emissions are below the FCC Limits. Please refer to the test plots below.

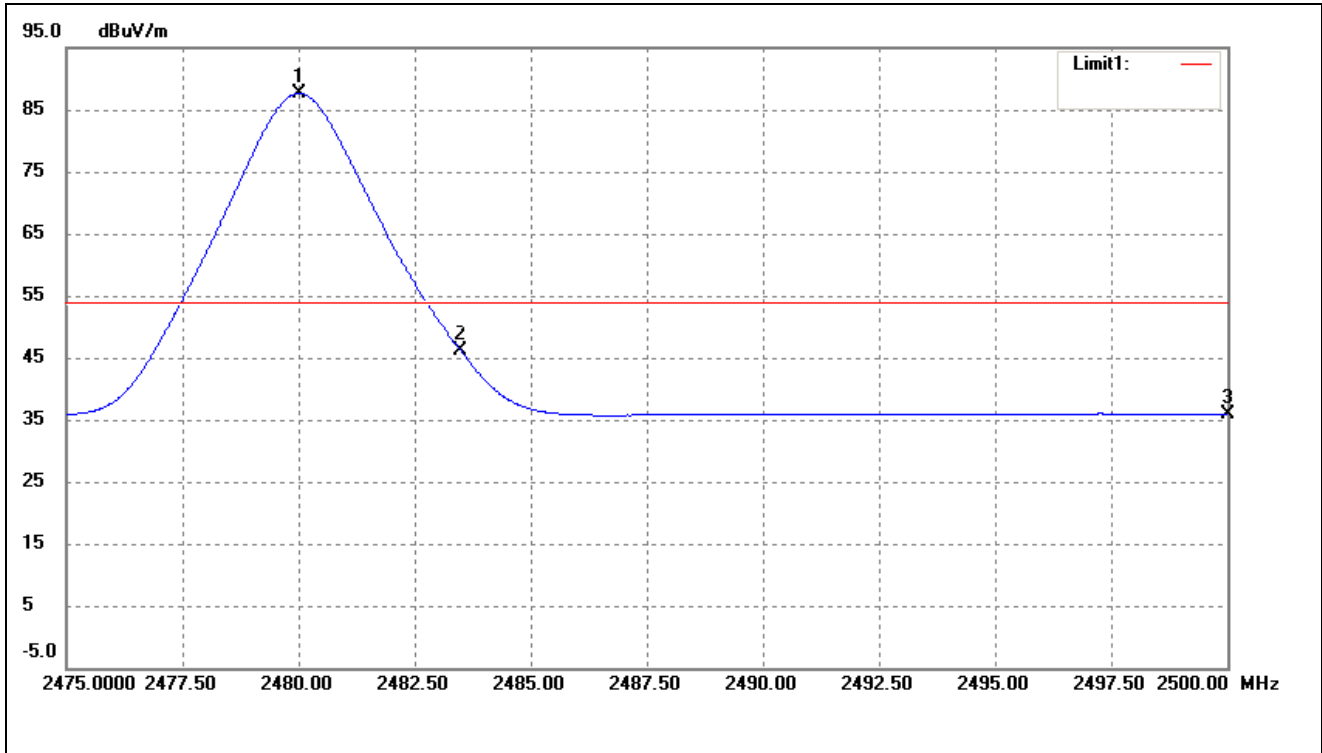
Please refer to the test plots as below.

Lowest Bandedge
Vertical (Worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	18.43	16.34	34.77	54.00	-19.23	Average Detector
	2310.000	30.21	16.34	46.55	74.00	-27.45	Peak Detector
2	2390.000	18.29	17.03	35.32	54.00	-18.68	Average Detector
	2390.000	31.10	17.03	48.13	74.00	-25.87	Peak Detector
3	2400.000	49.54	17.11	66.65	Delta = 23.47 dBc		Average Detector
4	2401.945	73.00	17.12	90.12			Average Detector

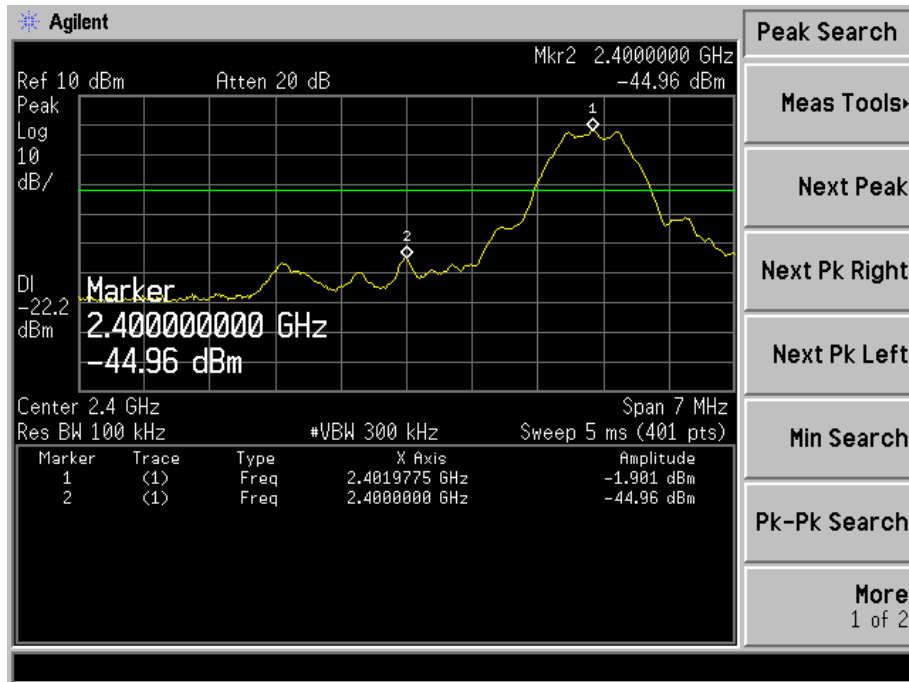
Highest Bandedge
Vertical (Worst case)



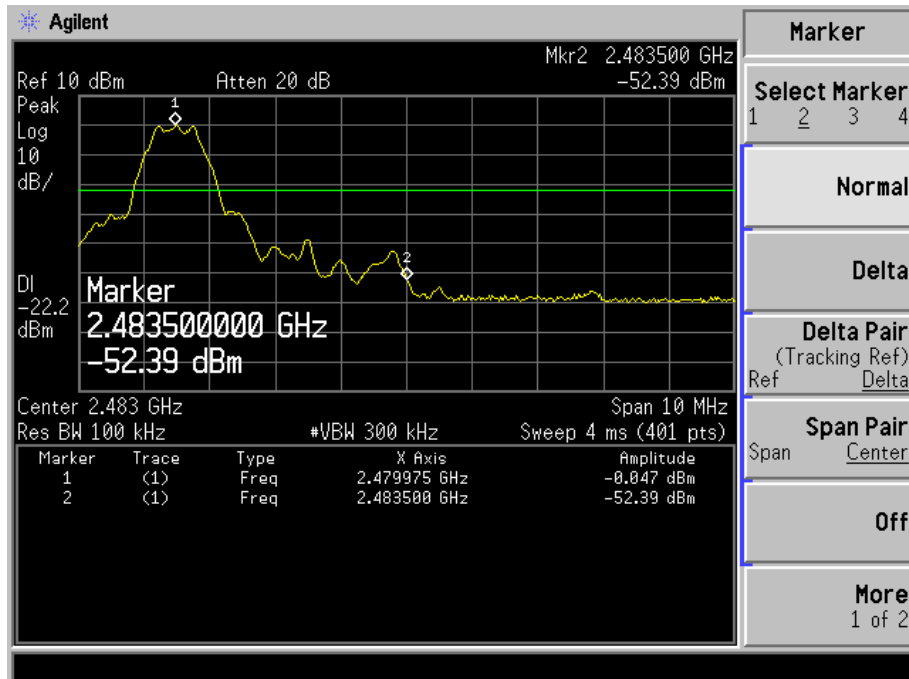
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.005	70.00	17.71	87.71	/	/	Average Detector
	2480.030	73.81	17.71	91.52	/	/	Peak Detector
2	2483.500	Delta = 41.67 dBc		46.04	54.00	-7.96	Average Detector
	2483.500			53.35	74.00	-20.65	Peak Detector
3	2500.000	17.99	17.86	35.85	54.00	-18.15	Average Detector
	2500.000	31.13	17.86	48.99	74.00	-25.01	Peak Detector

Bandedge (Conducted)

Lowest



Highest



9. Conducted Emissions

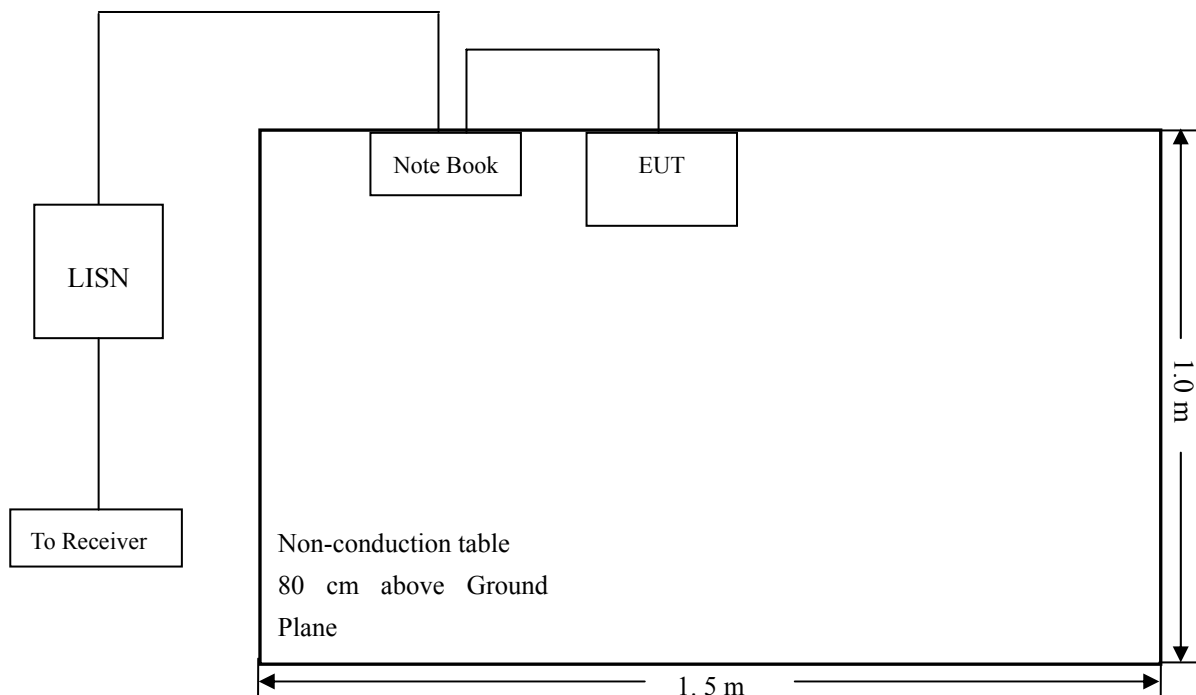
9.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

9.2 Test Procedure

Test is conducting under the description of ANSI C63.10-2013, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

9.3 Basic Test Setup Block Diagram



9.4 Environmental Conditions

Temperature:	20° C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

9.5 Summary of Test Results/Plots

According to the data in section 9.7, the EUT complied with the FCC Conducted margin for this device, with the *worst* margin reading of:

-4.97 dB at 0.5660 MHz in the **Line, Average** detector, 0.15-30MHz

9.6 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

EUT: Bluetooth Headset

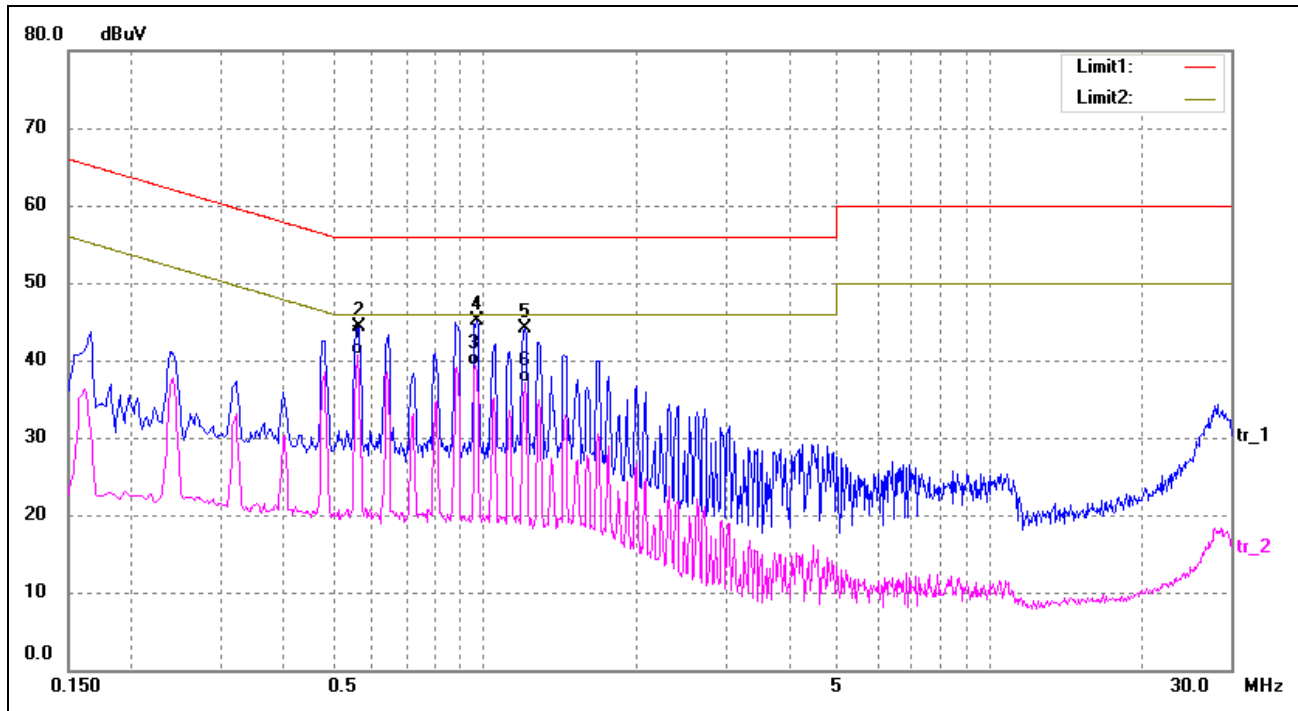
Tested Model: BT539i

Operating Condition: BLE Link

Comment: AC 120V/60Hz; Notebook USB 5V

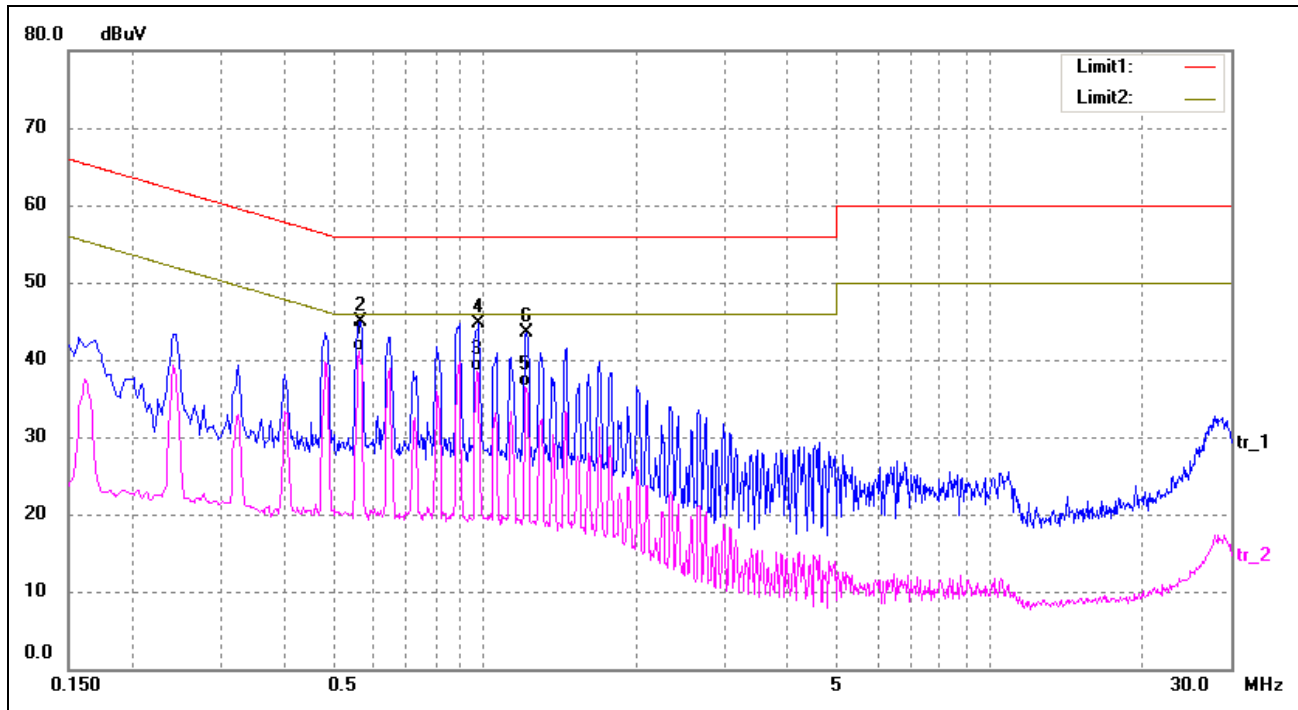
Test with adapter and notebook, Connect to notebook is worse case

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.5620	31.07	9.57	40.64	46.00	-5.36	AVG
2	0.5660	34.79	9.58	44.37	56.00	-11.63	peak
3	0.9620	29.54	9.67	39.21	46.00	-6.79	AVG
4	0.9660	35.43	9.67	45.10	56.00	-10.90	peak
5	1.1980	34.34	9.71	44.05	56.00	-11.95	peak
6	1.1980	27.44	9.71	37.15	46.00	-8.85	AVG

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.5660	31.45	9.58	41.03	46.00	-4.97	AVG
2	0.5700	35.31	9.58	44.89	56.00	-11.11	peak
3	0.9660	28.87	9.67	38.54	46.00	-7.46	AVG
4	0.9740	34.97	9.67	44.64	56.00	-11.36	peak
5	1.2060	26.73	9.71	36.44	46.00	-9.56	AVG
6	1.2140	33.74	9.71	43.45	56.00	-12.55	peak