

# ***FCC Part 74 Subpart H***

## ***EMI TEST REPORT***

*of*

E.U.T. : Wireless Tour Guide System  
FCC ID. : 2ADLG-TG201RU  
Model No. : TG-201R  
Working Frequency : 470~608MHz; 944~952MHz

*for*

APPLICANT : LINKX ELECTRONICS CO., LTD  
ADDRESS : 4F-1, No.332 Ming-Chen 2nd Road, Tsou-In Dist.,  
Kaohsiung Taiwan.

Test Performed by

ELECTRONICS TESTING CENTER (ETC) , TAIWAN  
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Report Number : 17-08-RBF-024-01

## TEST REPORT CERTIFICATION

Applicant : LINKX ELECTRONICS CO., LTD  
4F-1, No.332 Ming-Chen 2nd Road, Tsou-In Dist., Kaohsiung  
Taiwan.

Manufacturer : LINKX ELECTRONICS CO., LTD  
4F-1, No.332 Ming-Chen 2nd Road, Tsou-In Dist., Kaohsiung  
Taiwan.

Description of EUT :

a) Type of EUT : Wireless Tour Guide System

b) Trade Name : Linkx

c) Model No. : TG-201R

d) FCC ID : 2ADLG-TG201RU

e) Working Frequency : 470~608MHz; 944~952MHz

f) Power Supply : DC 3.7V

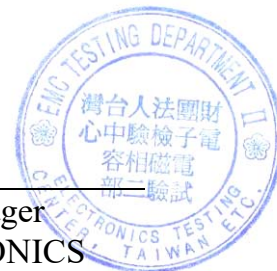
Regulation Applied: FCC Rules and Regulations Part 74 Subpart H

I HEREBY CERTIFY THAT; The data shown in this report were made in accordance with the procedures given in ANSI C63.10-2013 and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

Issued Date : Dec. 21, 2017

Test Engineer : Kazuma Ho  
(Kazuma Ho, Engineer )

Approve & Authorized Signer : S. S. Liou  
S. S. Liou, Section Manager  
EMC Dept. II of ELECTRONICS  
TESTING CENTER, TAIWAN



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## 1. GENERAL INFORMATION

### 1.1 Product Description

- a) Type of EUT : Wireless Tour Guide System
- b) Trade Name : Linkx
- c) Model No. : TG-201R
- d) FCC ID : 2ADLG-TG201RU
- e) Working Frequency : 470~608MHz; 944~952MHz
- f) Power Supply : DC3.7V
- g) Emission Designator : 169KF1D

### 1.2 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.10-2013. Test also follow "TIA-603-D(2010)-Land Mobile FM or PM Communications Equipment Measurement and Performance Standards" and section 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, and 2.1055 of Part 2 of CFR 47.

#### Measurement Software

Software	Version	Note
e3	Version 6.100618b	Radiated Emission Test
e3	Version 6.100421	Conducted Emission Test

### 1.3 Test Facility

Location of the Test site: No.34, Lin 5, Dingfu Vil., Linkou Dist., New Taipei City, Taiwan 24442, R.O.C.

Designation Number: TW2628.

## 2. REQUIREMENTS OF PROVISIONS

### 2.1 Definition

Intentional radiator:

A device that intentionally generates and emits radio frequency energy by radiation or induction.

### 2.2 Frequencies Available

According to sec. 74.802 of Part 74, the following frequencies are available for low power auxiliary station :

Frequencies (MHz)	
26.100-26.480	455.000-456.000
54.000-72.000	470.000-488.000
76.000-88.000	488.000-494.000
161.625-161.775	494.000-608.000
174.000-216.000	614.000-698.000
450.000-451.000	941.500-944.000
	944.000-952.000

### 2.3 Requirements for Radio Equipment on Certification

#### (1) RF Output Power

For transmitters, the power output shall be measured at the RF output terminals.

#### (2) Modulation Characteristics

For Voice Modulated Communication Equipment, a curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted.

#### (3) Occupied Bandwidth

For radiotelephone transmitter, other than single sideband or independent sideband transmitter, when modulated by a 2.5kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation.

#### (4) Spurious Emissions at Antenna Terminals

The radio frequency voltage or power generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminal when properly loaded with a suitable artificial antenna.

**(5) Field Strength of Spurious Emissions**

Measurements shall be made to detect spurious emission that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal condition of installation and operation.

**(6) Frequencies Tolerance**

- a) The frequency stability shall be measured with variation of ambient temperature.
- b) The frequency stability shall be measured with variation of primary supply voltage.

**2.4 Labeling Requirement**

Each equipment for which a type acceptance application is filed on or after May 1,1981, shall bear an identification plate or label pursuant to § 2.925 ( Identification of equipment ) and §2.926 ( FCC identifier ) .

### 3. OUTPUT POWER MEASUREMENT

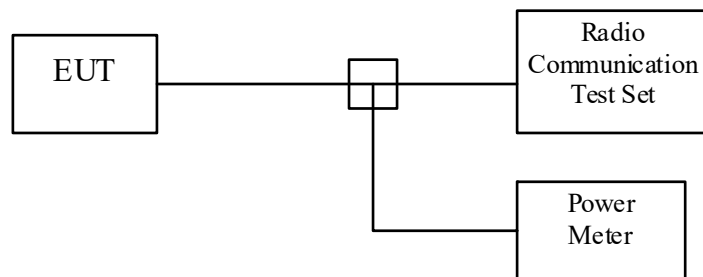
#### 3.1 Provision Applicable

According to §74.861(e)(1)(ii), the output power shall not exceed 250 milliwatts.

#### 3.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 1, and Install new batteries in the EUT. Turn on the EUT and set it to any one convenient frequency within its operating range.
3. Apply a 2.5 kHz modulation signal to EUT. Record the readings on the instrument.
4. Repeat above procedures until all frequencies measured were complete.

Figure 1: Transmit power measurement configuration.



**3.3 Test Data****(A)**Operated mode : TX  
Temperature : 21°CTest Date : Nov. 27, 2017  
Humidity : 60 %

Frequency (MHz)	Transmit Power		Limit (mW)
	(dBm)	(mW)	
470.050	10.00	10.000	250.0
607.950	10.01	10.023	250.0
944.050	9.99	9.977	250.0
951.950	10.01	10.023	250.0

**3.4 Test Equipment**

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
POWER METER +SENSOR	ANRITSU	ML2487A +MA2491A	2017/05/18	2018/05/17
Communications Service Monitor	AEROFLEX	2945B	2017/11/18	2018/11/17



## 4. MODULATION CHARACTERISTICS

### 4.1 Provisions Applicable

According to § 2.1047 (a), for Voice Modulated Communication Equipment, the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be measured.

### 4.2 Measurement Method

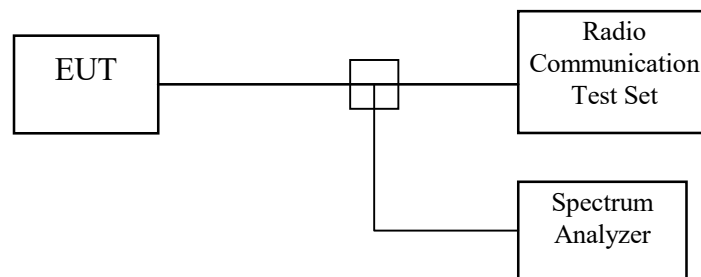
#### A) Modulation Limit

1. Position the EUT as shown in figure 2, adjust the audio input frequency to 100 Hz and the input level from 0V to maximum permitted input voltage with recording each carrier frequency deviation responding to respective input level.
2. Repeat step 1 with changing the input frequency for 200, 500, 1000, 3000, and 5000 Hz in sequence.

#### B) Frequency response of all circuits

1. Position the EUT as shown in figure 2.
2. Vary the modulating frequency from 100 Hz to 15000 Hz with constant input voltage (derived from 5.4(a) of this test report), and observe the change in output.

Figure 2 : Modulation characteristic measurement configuration



### 4.3 Measurement Instrument

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Communications Service Monitor	AEROFLEX	2945B	2017/01/09	2018/01/08
Spectrum Analyzer	Rohde & Schwarz	FSP40	2017/11/02	2018/11/01

### 4.4 Measurement Result

N/A

Note: This test is not applicable because this device has digital modulation.

## 5. OCCUPIED BANDWIDTH OF EMISSION

### 5.1 Provisions Applicable

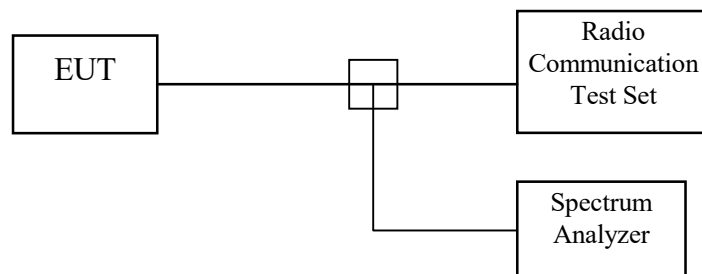
According to §2.1049 (c)(1), For radiotelephone transmitter, other than single sideband or indenpent sideband transmitter, when modulateed by a 2.5kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation.

According to §74.861( e)(5), the frequency emission bandwidth shall not exceed 200 kHz.

### 5.2 Measurement Method

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 3, and Install new batteries in the EUT. Turn on the EUT ant set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Apply a 2.5 kHz modulation signal to EUT and measure the frequencies of the modulated signal from the EUT where it is the specified number of dB below the reference level set in step 2. This is the occupied bandwidth specified.

Figure 3 : Occupied bandwidth measurement configuration



### 5.3 Occupied Bandwidth Test Equipment

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Communications Service Monitor	AEROFLEX	2945B	2017/01/09	2018/01/08
Spectrum Analyzer	Rohde & Schwarz	FSP40	2017/11/02	2018/11/01

## **5.4 Bandwidth Measured**

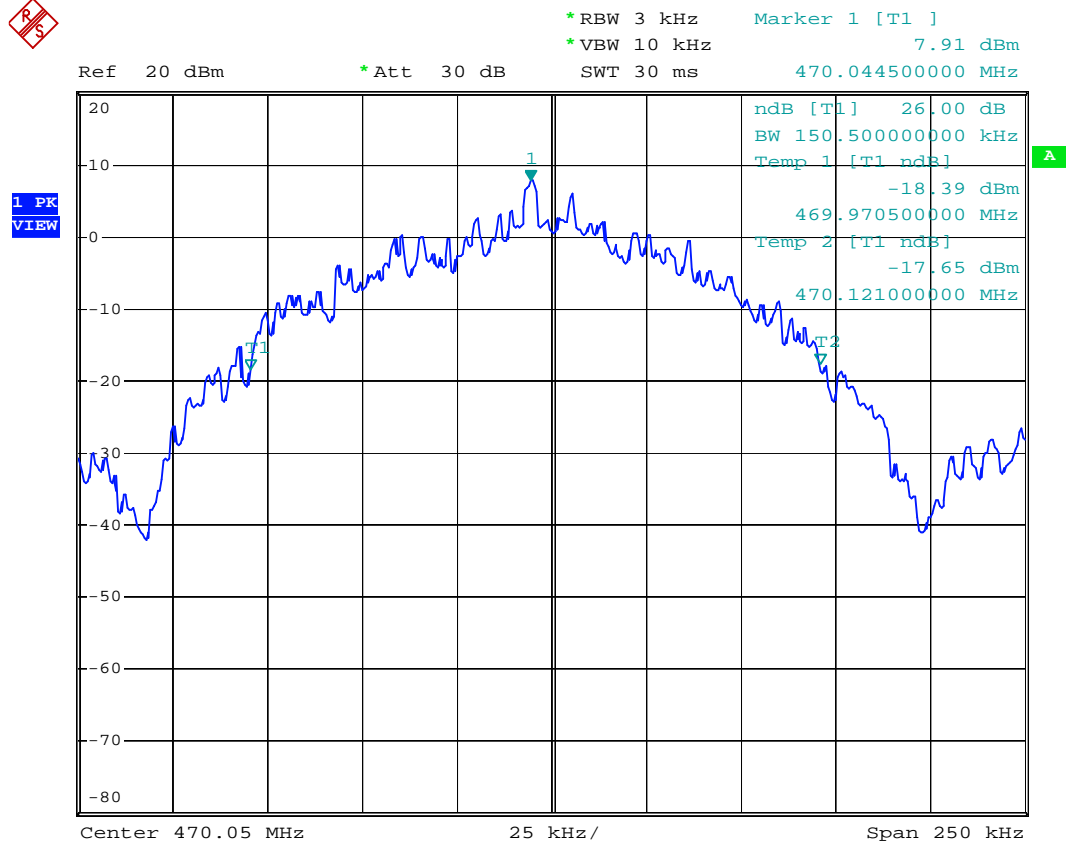
### **5.4.1 Input Level Derived**

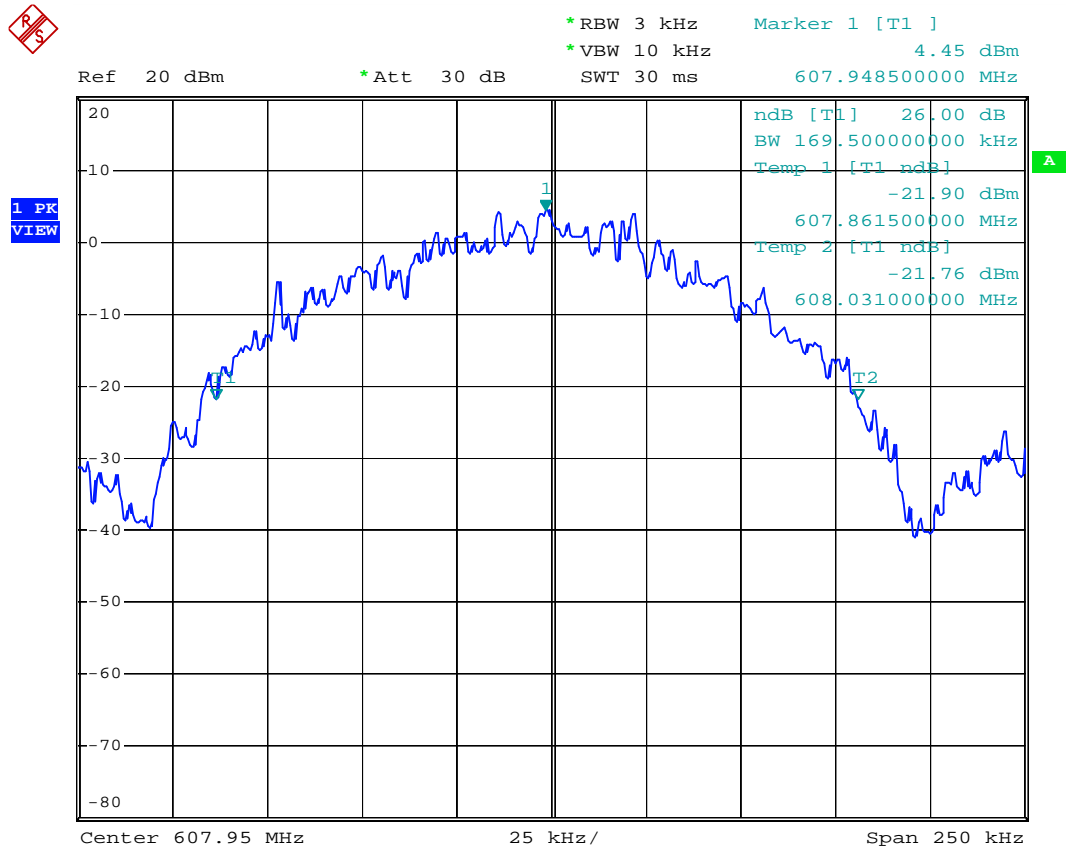
N/A

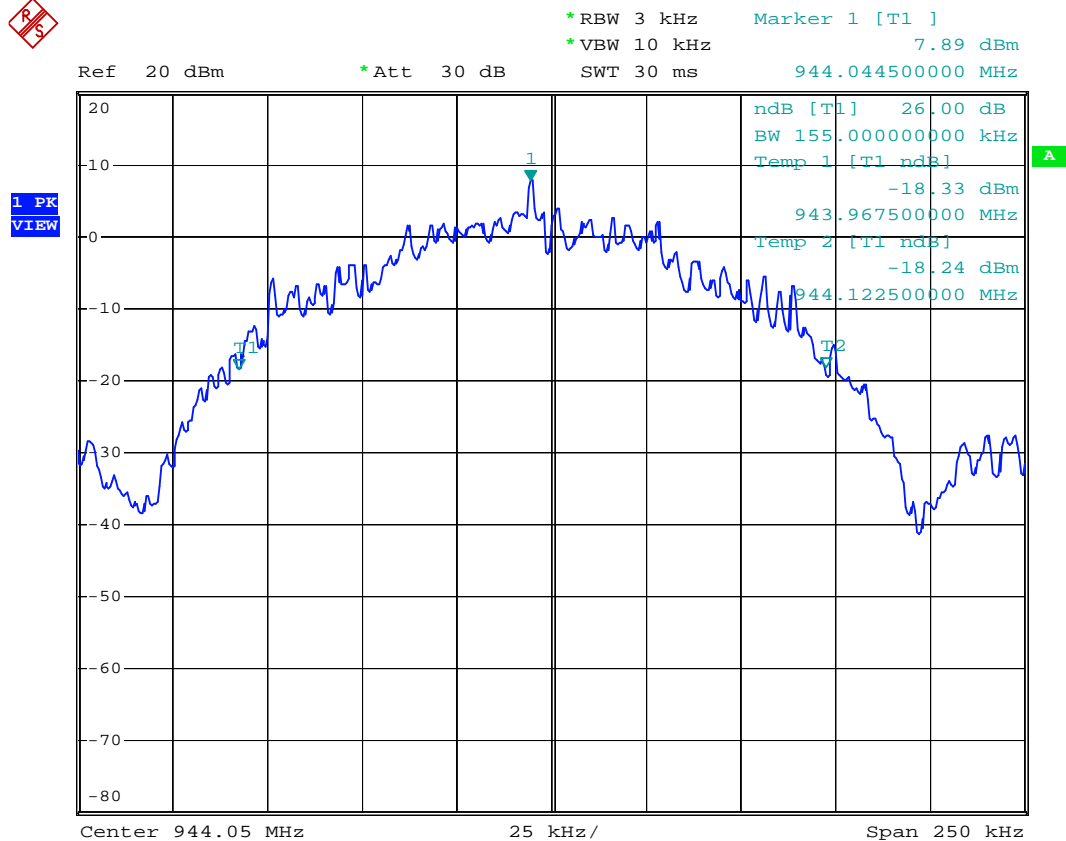
Note: This test is not applicable because this device has digital modulation.

**5.4.2 Occupied Bandwidth Plotted**Test Date : Nov. 27, 2017Temperature : 21 °CHumidity : 60 %

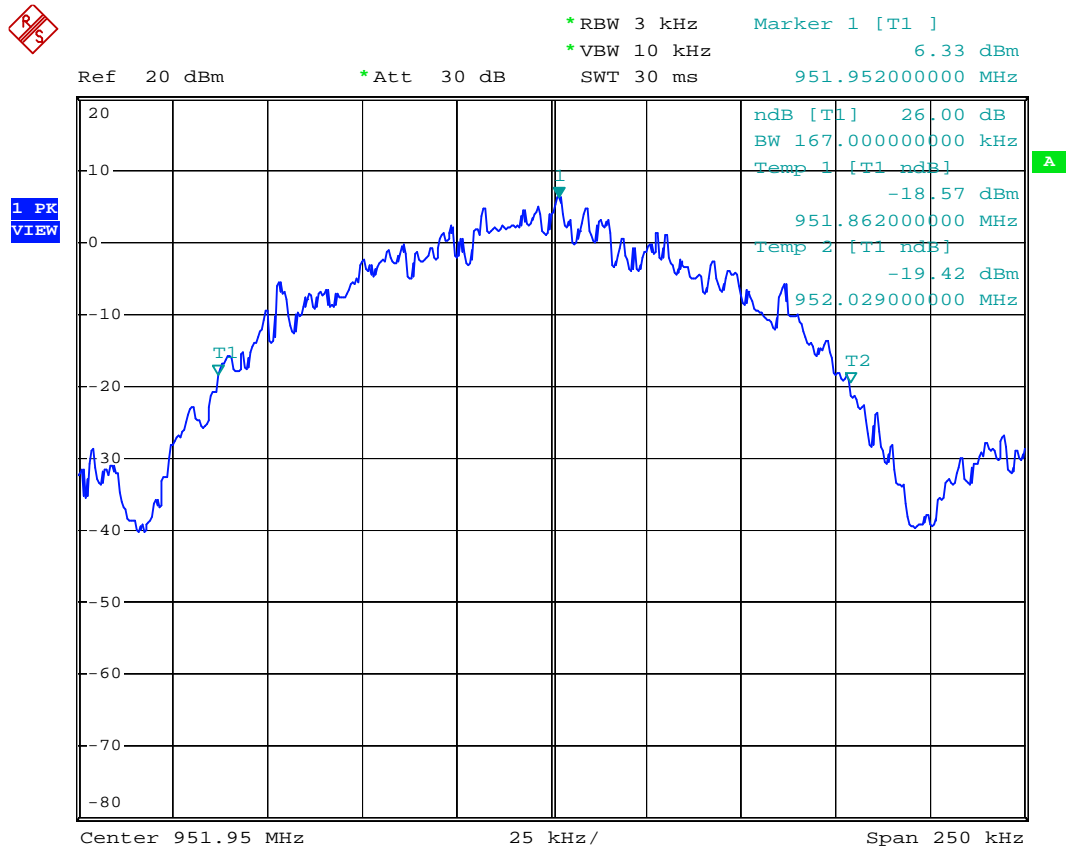
<b>RF Frequency (MHz)</b>	<b>26 dB Bandwidth (kHz)</b>
470.05	150.5
607.95	169.5
944.05	155.0
951.95	167.0











## 6. FIELD STRENGTH OF EMISSION

### 6.1 Provisions Applicable

According to §2.1053, measurements shall be made to detect spurious emission that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal condition of installation and operation. Information submitted shall include the relative radiated power of spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from a halfwave dipole antenna.

According to §74.861(e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

- (i) on any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB.
- (ii) on any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB.
- (iii) on any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth shall be attenuated below the unmodulated carrier by at least 43 plus 10 Log(output power in watts) dB.

### 6.2 Measurement Procedure

1. Setup the configuration per figure 4 and 5 for frequencies measured below and above 1 GHz respectively.
2. For emission frequencies measured below and above 1 GHz, set the spectrum analyzer on a 100 kHz and 1 MHz resolution bandwidth respectively.
3. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° with a speed as slow as possible, and keep the azimuth that highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.
4. Repeat step 3 until all frequencies need to be measured were complete.
5. Repeat step 5 with search antenna in vertical polarized orientations.
6. Check the three frequencies of highest emission with varying the placement of cables associated with EUT (if any) to obtain the worse case and record the result.

**Note:**

According to 12.7.2(d)(2) of ANSI C63.10-2013:

$$E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] + 95.2, \text{ for } d = 3 \text{ m.}$$

12.7.2(e) of ANSI C63.10-2013:

For conducted measurements below 1000 MHz, the field strength shall be computed as specified in item d), and then an additional 4.7 dB shall be added as an upper bound on the field strength that would be observed on a test range with a ground plane for frequencies between 30 MHz and 1000 MHz, or an additional 6 dB shall be added for frequencies below 30 MHz.

Figure 4 : Frequencies measured below 1 GHz configuration

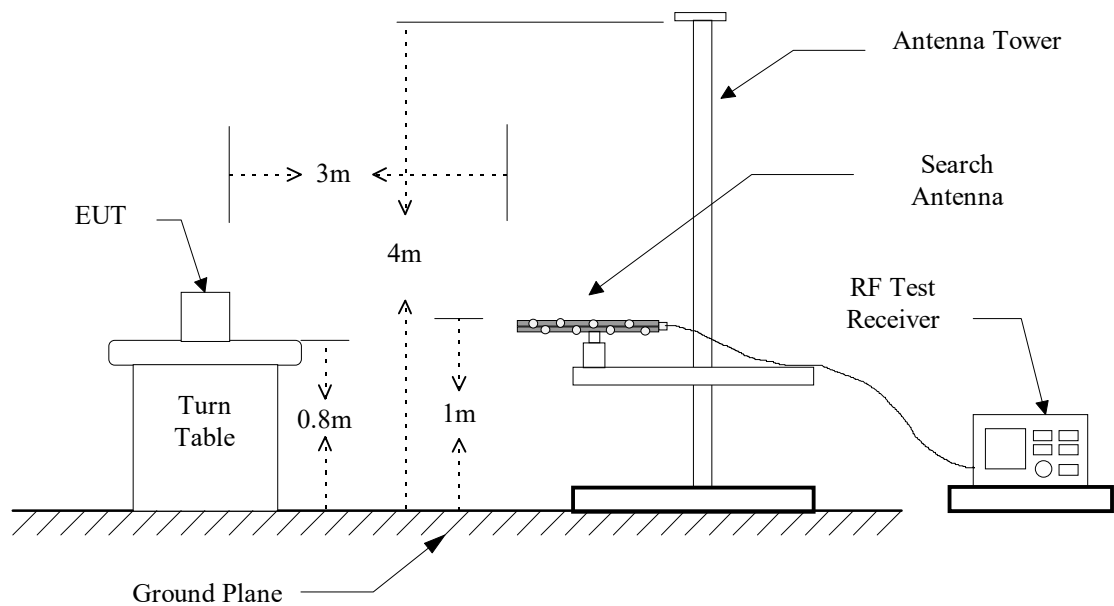
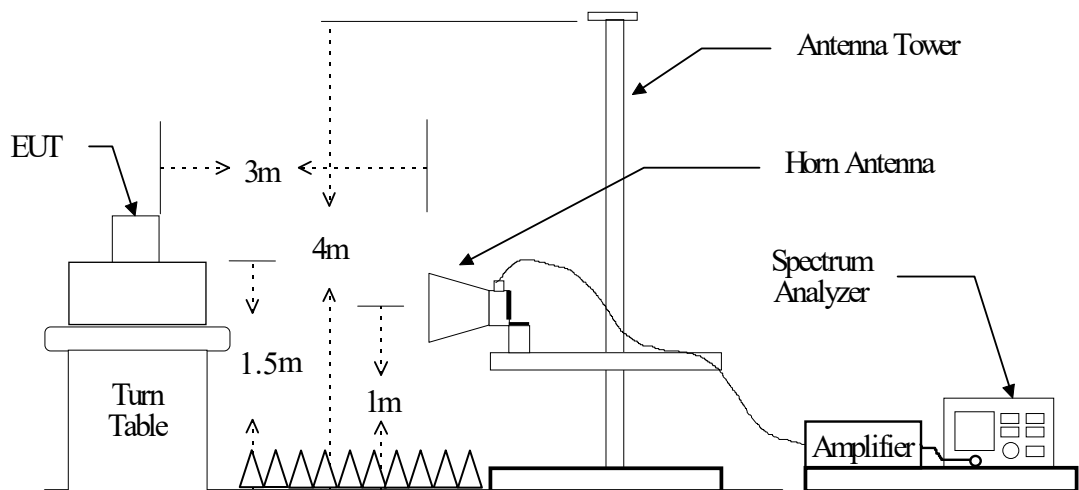


Figure 6 : Frequencies measured above 1 GHz configuration



### 6.3 Measuring Instrument

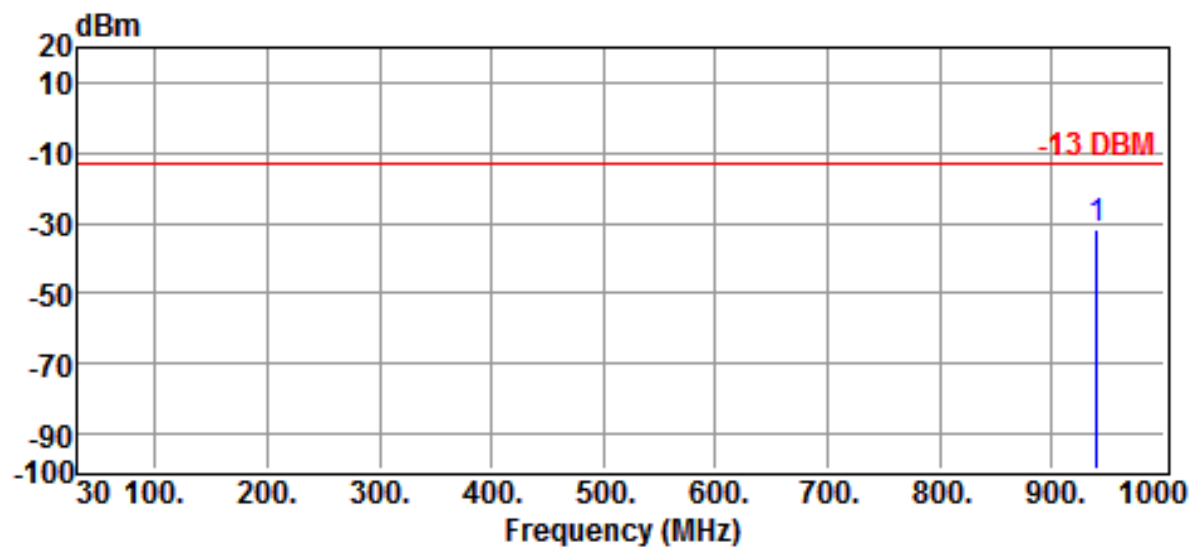
Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Spectrum Analyzer	Rohde & Schwarz	FSP40	2017/11/02	2018/11/01
Double Ridged Antenna	EMCO	3115	2017/10/11	2018/10/10
Log-periodic Antenna	EMCO	3146	2017/08/10	2018/08/09
Biconical Antenna	EMCO	3110	2017/07/04	2018/07/03
Amplifier	HP	8449B	2017/10/05	2018/10/04
Amplifier	HP	8447D	2016/12/05	2017/12/04
Signal generator	HP	83732B	2016/12/06	2017/12/05

Measuring instrument setup in frequency band measured is as following :

Frequency Band (MHz)	Instrument	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	Spectrum Analyzer	Peak	100 kHz	100 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz

## 6.4 Measuring Data

### 6.4.1. Harmonic Frequencies

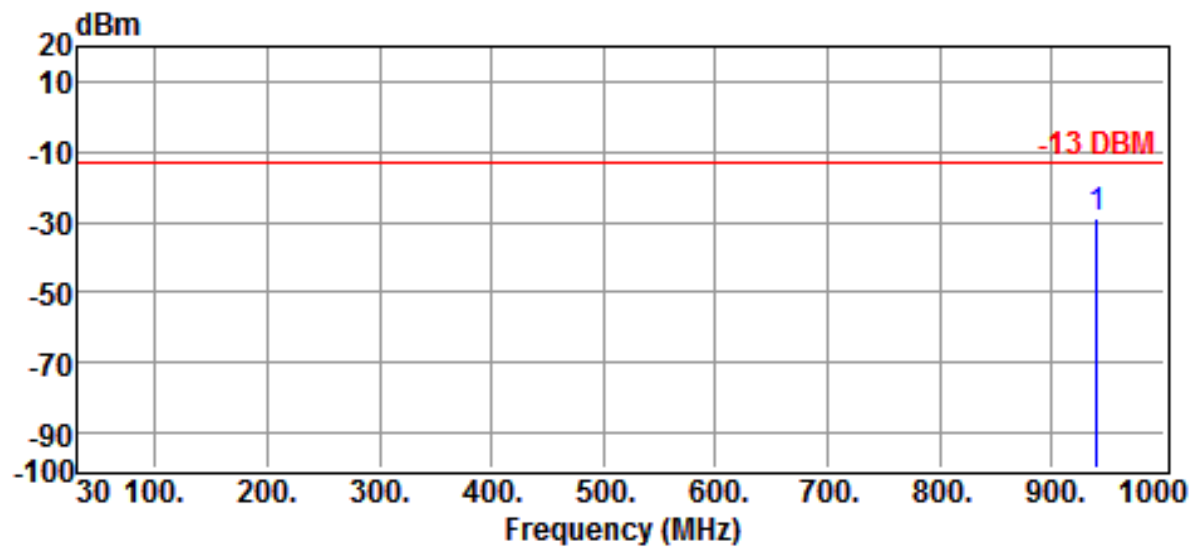


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20° C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:470-608MHz		
Test Mode	:TX		

Freq	Reading	Correction	Result	Limits	Over limit	Detector
MHz	dBuV	Factor	dBm	dBm	dB	
940.1000	62.13	-93.82	-31.69	-13.00	-18.69	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

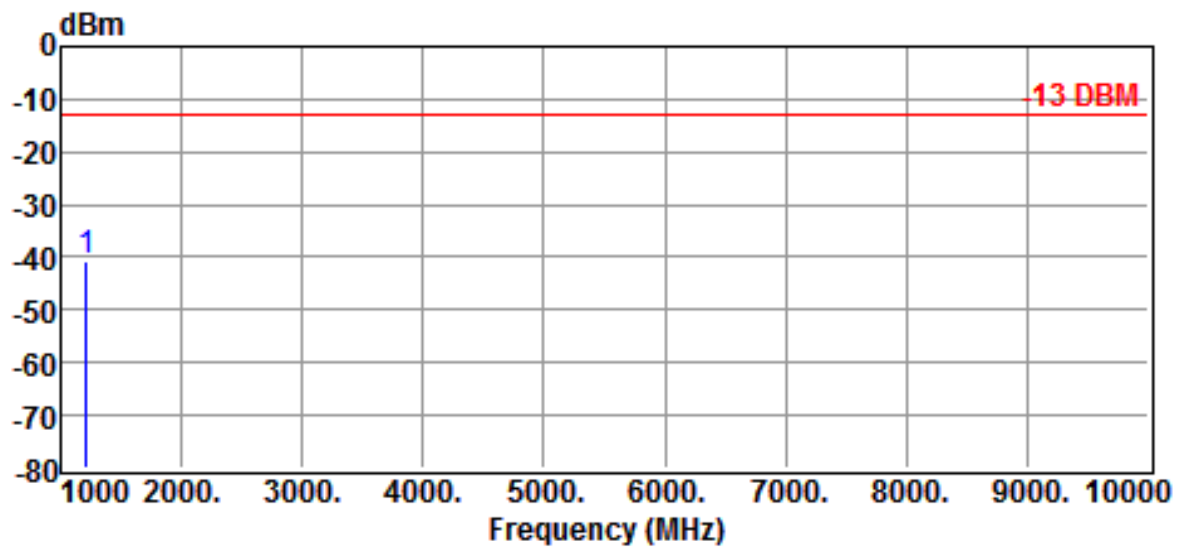


Site	:CHAMBER #2	Date	:2017-11-20
Limit	: -13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:470-608MHz		
Test Mode	:TX		

Freq	Reading	Correction	Result	Limits	Over limit	Detector
MHz	dBuV	Factor	dBm	dBm	dB	
940.1000	65.22	-93.82	-28.60	-13.00	-15.60	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

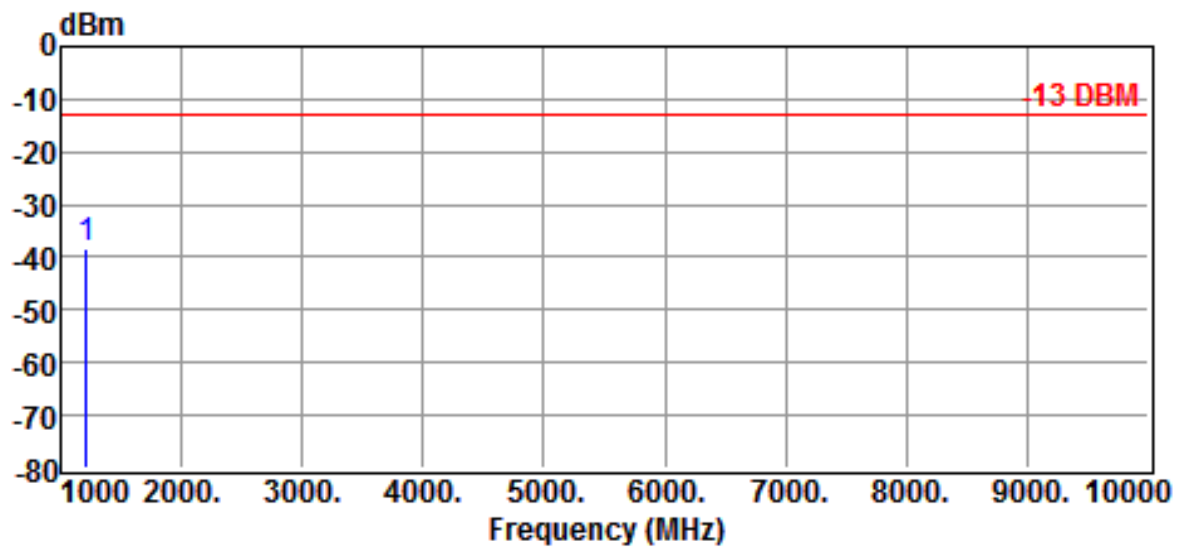


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:470-608MHz		
Test Mode	:TX		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1215.9000	67.42	-108.14	-40.72	-13.00	-27.72	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



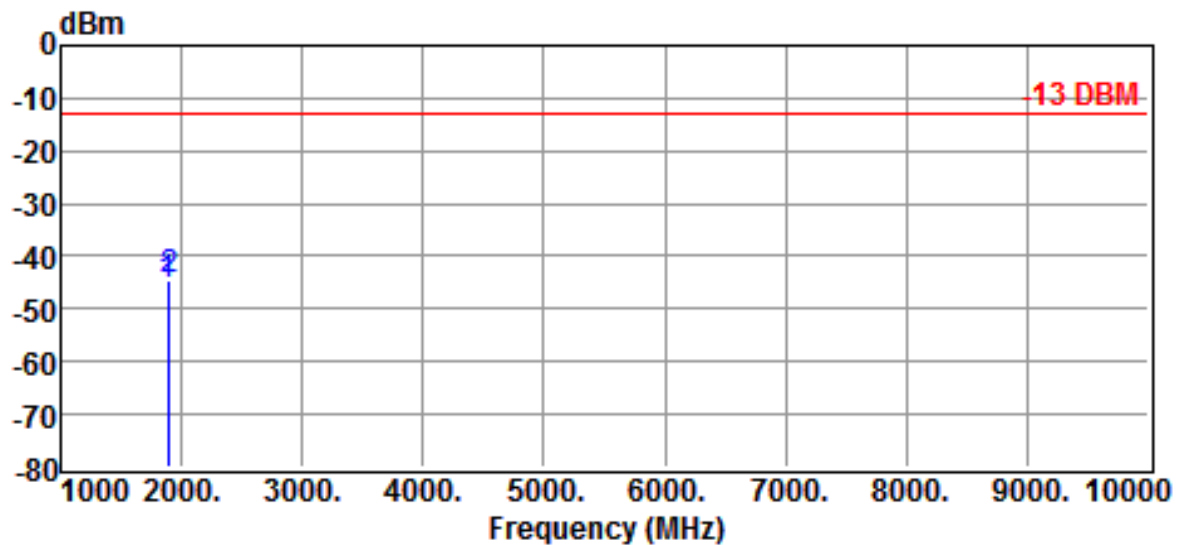
Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:470-608MHz		
Test Mode	:TX		

Freq	Reading	Correction	Result	Limits	Over limit	Detector
MHz	dBuV	Factor	dBm	dBm	dB	
		dB				
1215.9000	69.66	-108.14	-38.48	-13.00	-25.48	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit – Result



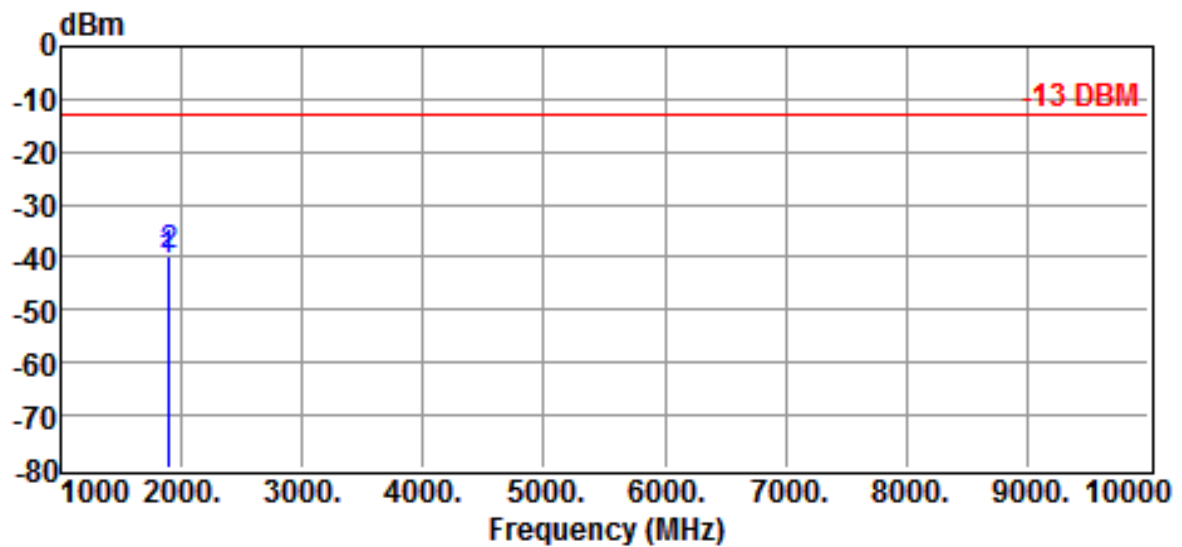


Site	:CHAMBER #2	Date	:2017-11-20
Limit	: -13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20° C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:944-952MHz		
Test Mode	:TX		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1888.1000	59.26	-104.69	-45.43	-13.00	-32.43	Peak
1903.9000	60.29	-104.60	-44.31	-13.00	-31.31	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit – Result



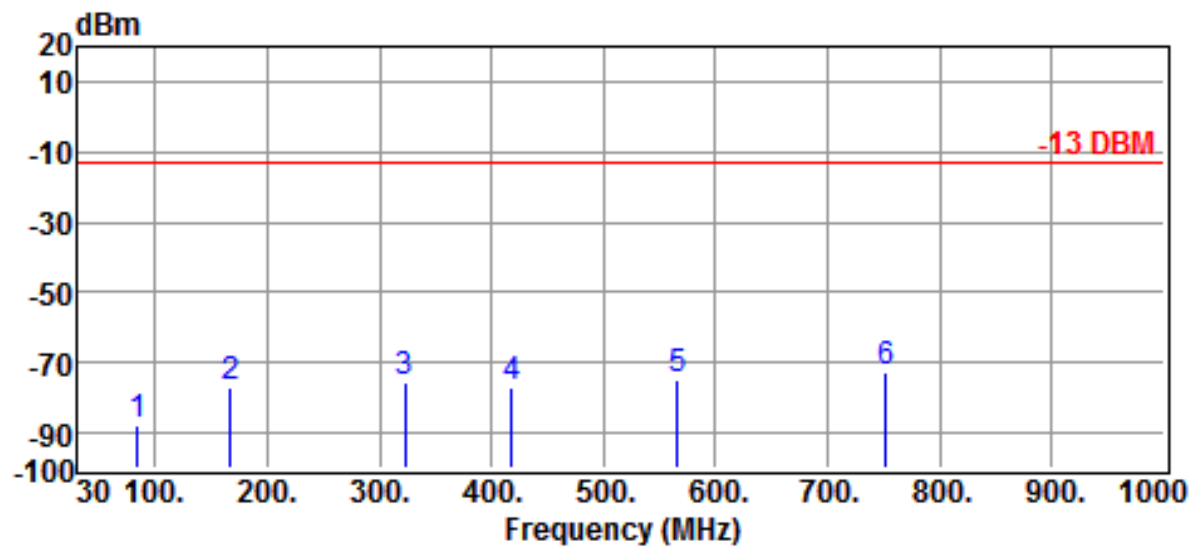
Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:944-952MHz		
Test Mode	:TX		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1888.1000	63.91	-104.69	-40.78	-13.00	-27.78	Peak
1903.9000	64.72	-104.60	-39.88	-13.00	-26.88	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit – Result

## 6.4.2 Spurious Emissions

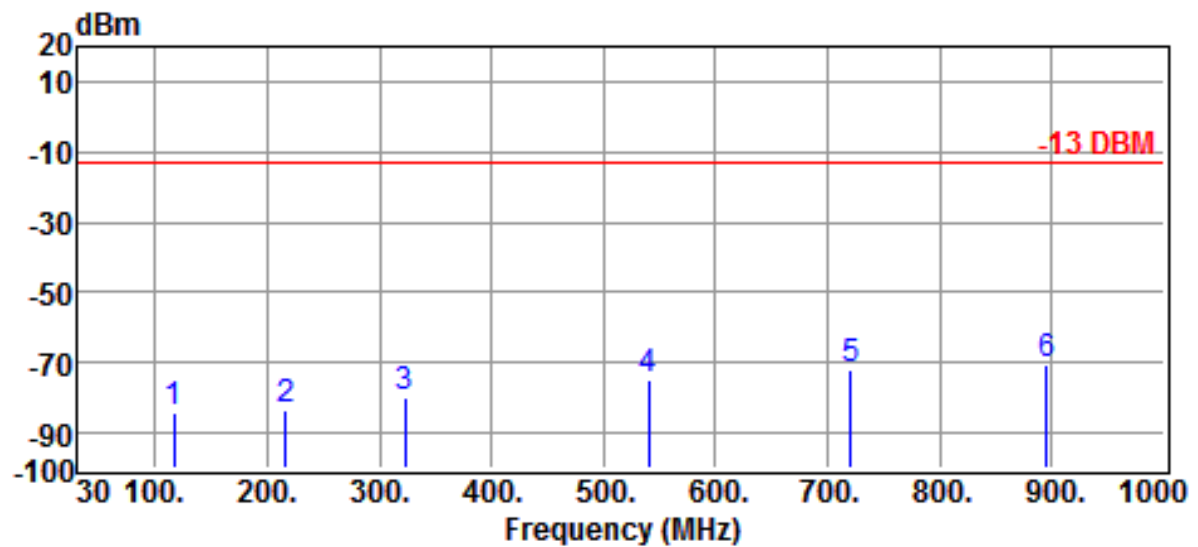


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC5V(Power from PC)	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:Charging		
Test Mode	:470-608MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
84.3200	26.49	-113.93	-87.44	-13.00	-74.44	Peak
167.7400	32.84	-110.17	-77.33	-13.00	-64.33	Peak
322.9400	28.97	-104.67	-75.70	-13.00	-62.70	Peak
418.0000	25.88	-102.61	-76.73	-13.00	-63.73	Peak
565.4400	26.38	-100.98	-74.60	-13.00	-61.60	Peak
751.6800	25.30	-98.04	-72.74	-13.00	-59.74	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
{EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
{ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

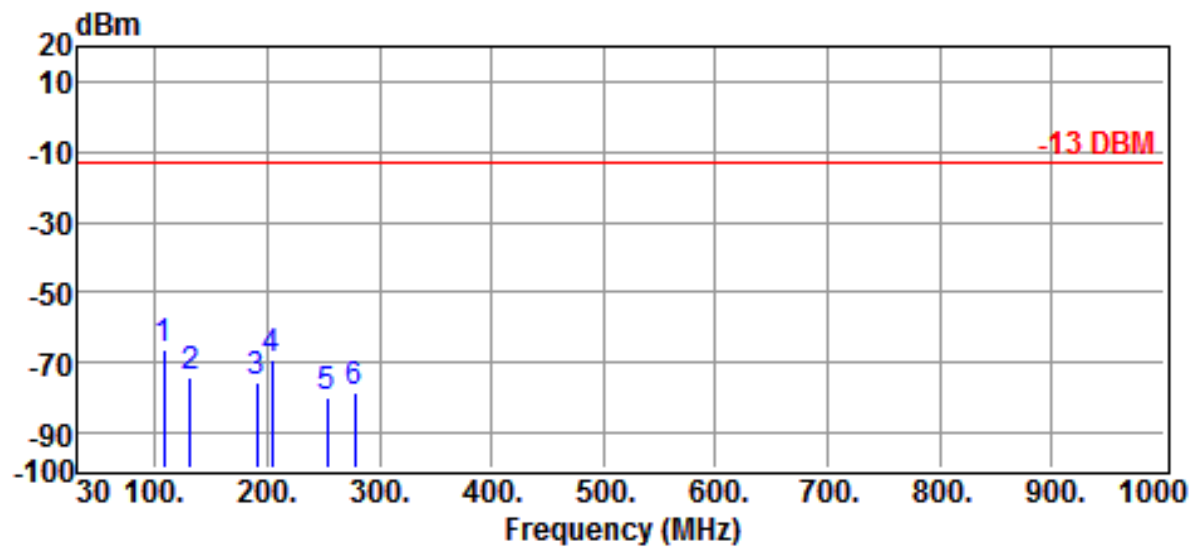


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC5V(Power from PC)	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:Charging		
Test Mode	:470-608MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
117.3000	26.13	-110.32	-84.19	-13.00	-71.19	Peak
216.2400	25.24	-108.94	-83.70	-13.00	-70.70	Peak
322.9400	24.59	-104.67	-80.08	-13.00	-67.08	Peak
540.2200	26.86	-101.36	-74.50	-13.00	-61.50	Peak
720.6400	26.21	-98.33	-72.12	-13.00	-59.12	Peak
895.2400	24.93	-95.41	-70.48	-13.00	-57.48	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit – Result

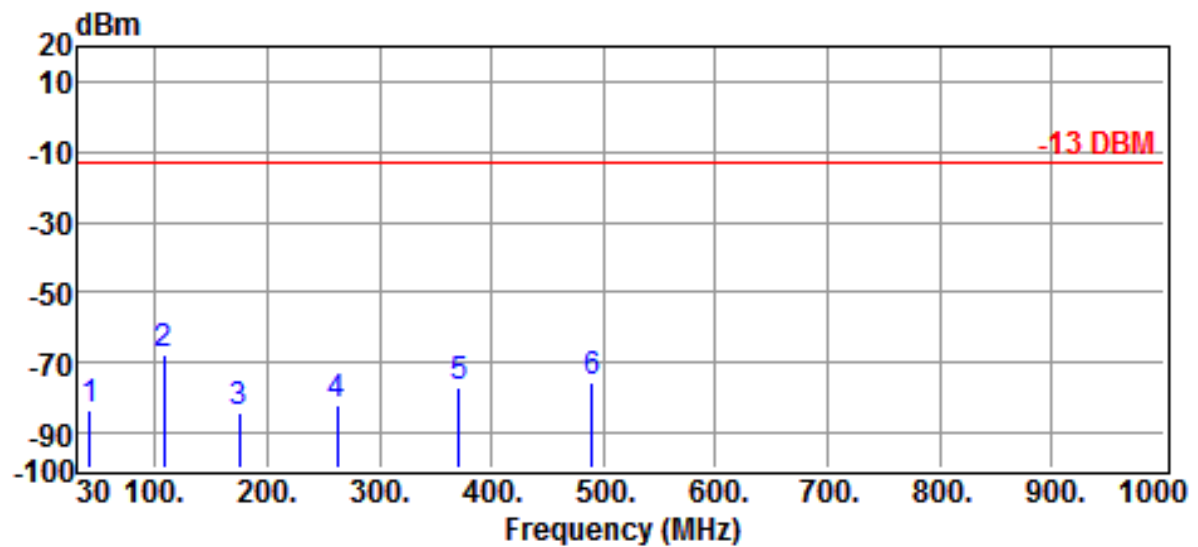


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:TX		
Test Mode	:470-608MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
107.6000	44.63	-111.02	-66.39	-13.00	-53.39	Peak
130.8800	35.03	-109.49	-74.46	-13.00	-61.46	Peak
191.0200	35.51	-111.33	-75.82	-13.00	-62.82	Peak
204.6000	40.28	-109.65	-69.37	-13.00	-56.37	Peak
253.1000	27.09	-106.93	-79.84	-13.00	-66.84	Peak
278.3200	27.82	-106.24	-78.42	-13.00	-65.42	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

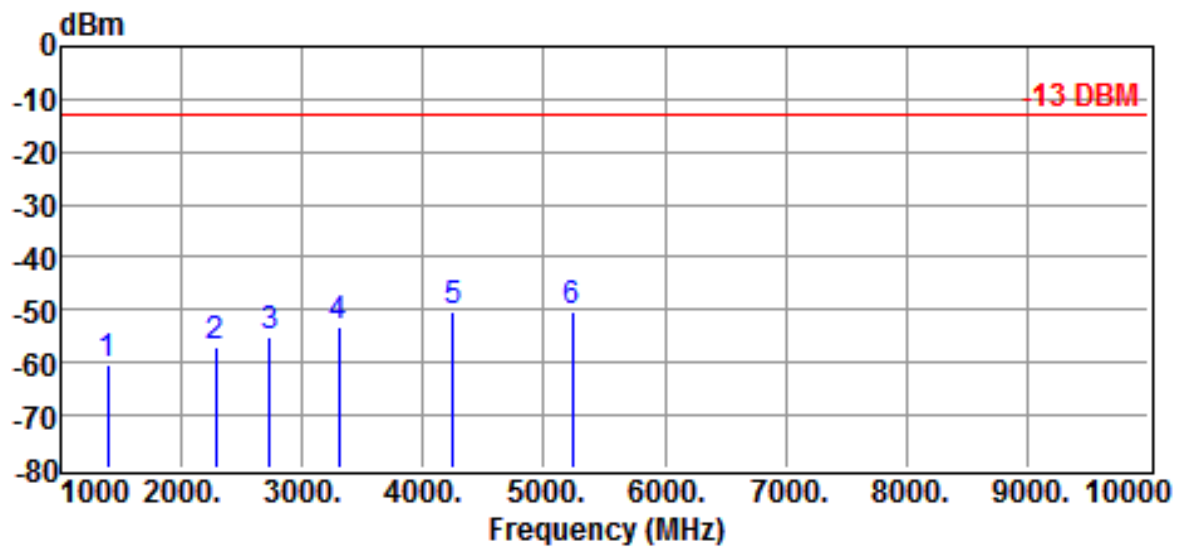


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:TX		
Test Mode	:470-608MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
41.6400	25.95	-109.10	-83.15	-13.00	-70.15	Peak
107.6000	43.17	-111.02	-67.85	-13.00	-54.85	Peak
175.5000	26.65	-110.69	-84.04	-13.00	-71.04	Peak
262.8000	24.97	-106.77	-81.80	-13.00	-68.80	Peak
371.4400	26.50	-103.68	-77.18	-13.00	-64.18	Peak
489.7800	26.23	-101.94	-75.71	-13.00	-62.71	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit – Result

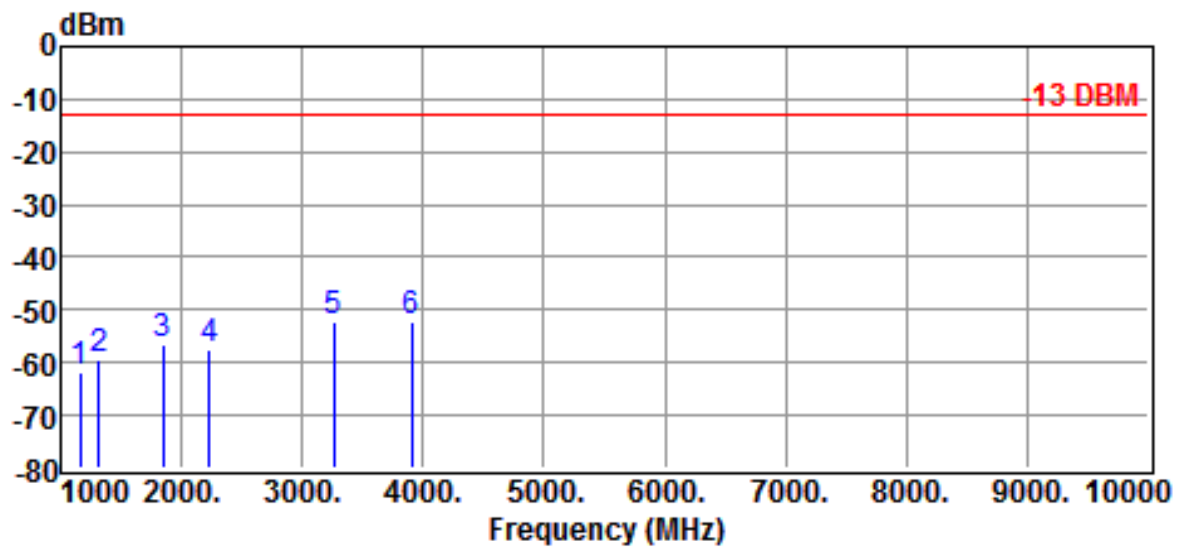


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC5V(Power from PC)	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:Charging		
Test Mode	:470-608MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1390.0000	47.40	-107.61	-60.21	-13.00	-47.21	Peak
2280.0000	46.08	-103.31	-57.23	-13.00	-44.23	Peak
2730.0000	46.96	-101.87	-54.91	-13.00	-41.91	Peak
3300.0000	46.69	-99.89	-53.20	-13.00	-40.20	Peak
4250.0000	47.21	-97.28	-50.07	-13.00	-37.07	Peak
5230.0000	44.98	-95.06	-50.08	-13.00	-37.08	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
{EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
{ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



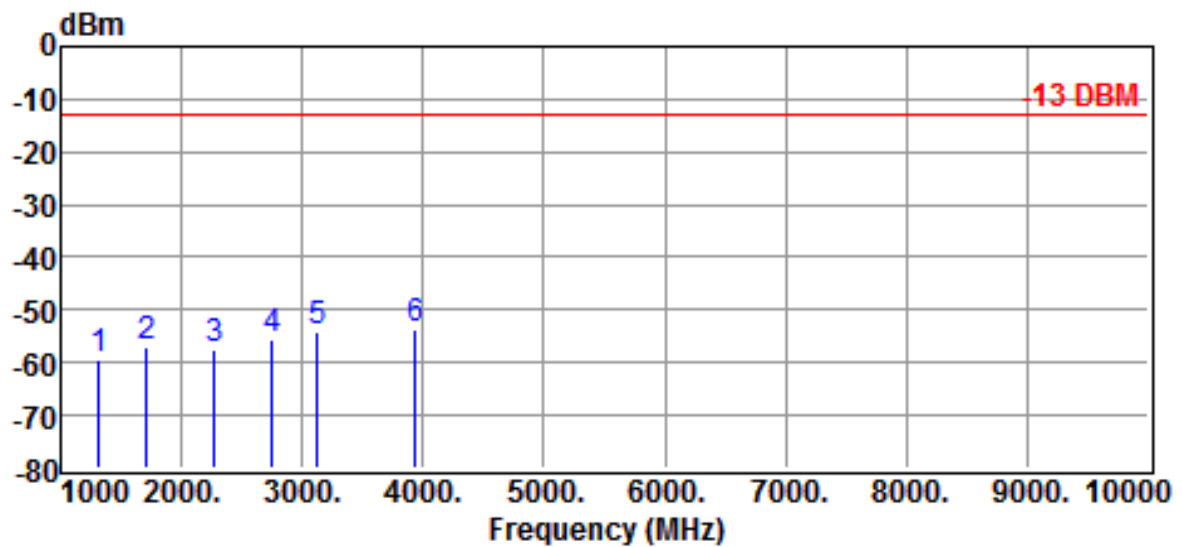
Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC5V(Power from PC)	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:Charging		
Test Mode	:470-608MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1160.0000	46.58	-108.31	-61.73	-13.00	-48.73	Peak
1320.0000	48.22	-107.77	-59.55	-13.00	-46.55	Peak
1850.0000	48.60	-104.93	-56.33	-13.00	-43.33	Peak
2230.0000	46.14	-103.41	-57.27	-13.00	-44.27	Peak
3260.0000	47.80	-100.00	-52.20	-13.00	-39.20	Peak
3900.0000	45.55	-97.70	-52.15	-13.00	-39.15	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
{EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
{ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



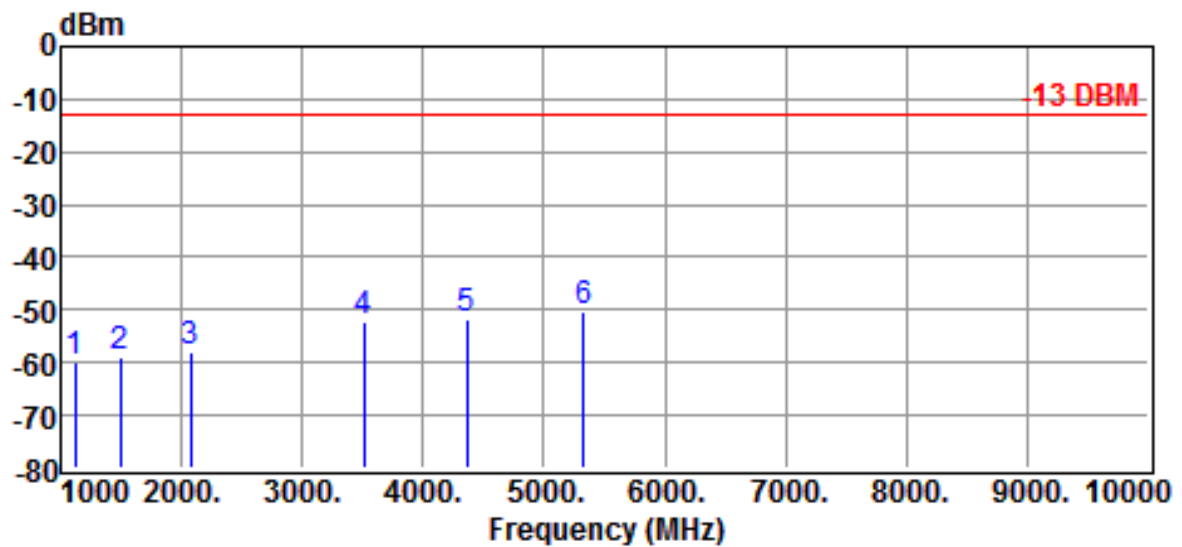


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:TX		
Test Mode	:470-608MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1320.0000	48.38	-107.77	-59.39	-13.00	-46.39	Peak
1710.0000	48.71	-105.81	-57.10	-13.00	-44.10	Peak
2270.0000	45.99	-103.31	-57.32	-13.00	-44.32	Peak
2750.0000	46.30	-101.80	-55.50	-13.00	-42.50	Peak
3130.0000	46.22	-100.44	-54.22	-13.00	-41.22	Peak
3940.0000	44.13	-97.57	-53.44	-13.00	-40.44	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

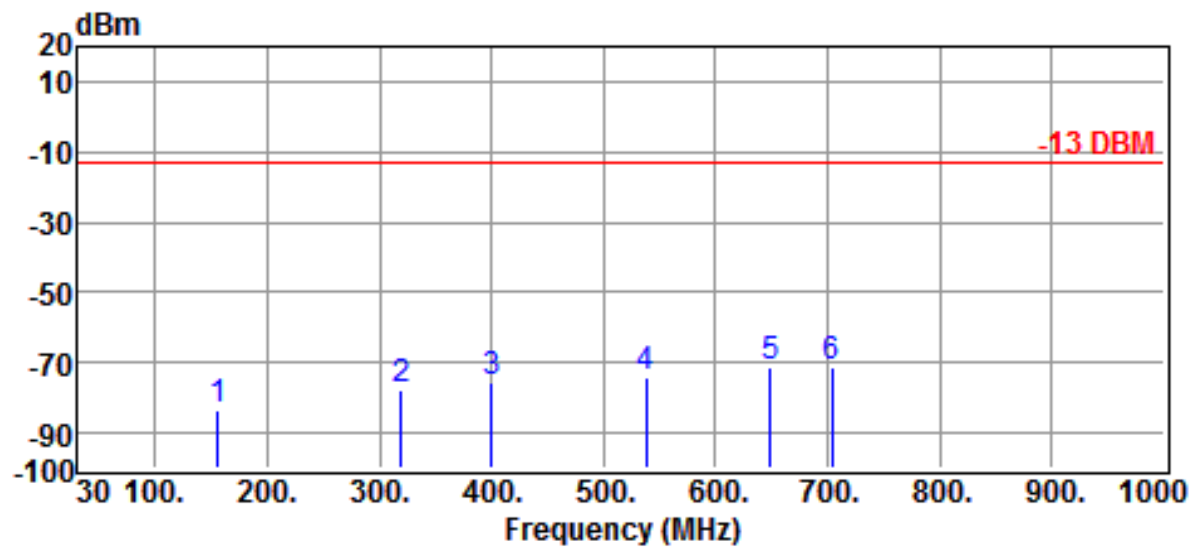


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:TX		
Test Mode	:470-608MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1120.0000	48.31	-108.39	-60.08	-13.00	-47.08	Peak
1490.0000	48.19	-107.29	-59.10	-13.00	-46.10	Peak
2080.0000	45.75	-103.74	-57.99	-13.00	-44.99	Peak
3510.0000	46.77	-99.19	-52.42	-13.00	-39.42	Peak
4360.0000	45.27	-97.22	-51.95	-13.00	-38.95	Peak
5330.0000	44.53	-94.86	-50.33	-13.00	-37.33	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
{EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
{ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

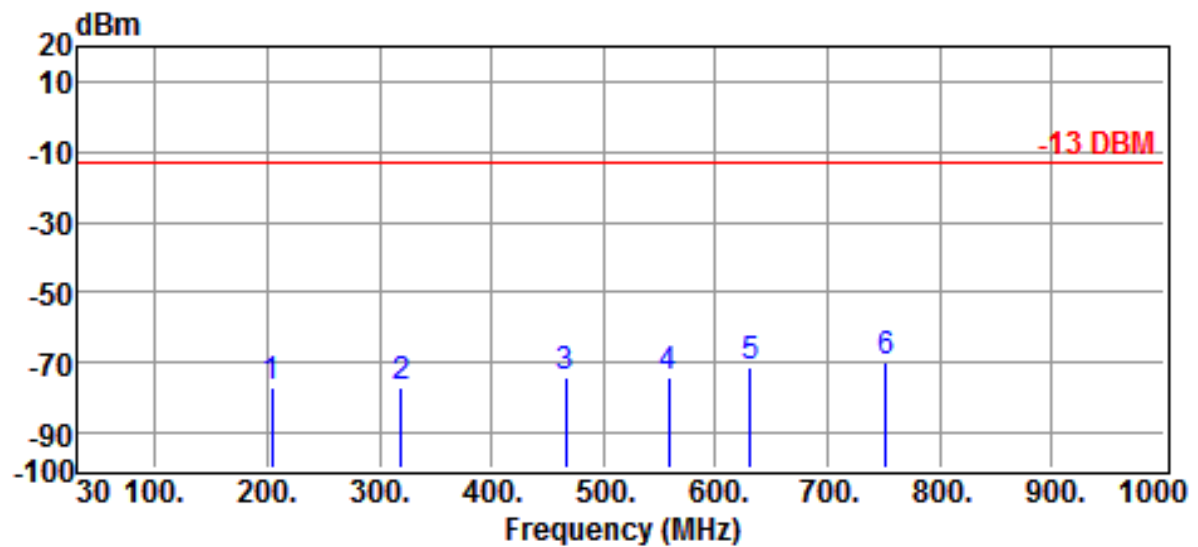


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC5V(Power from PC)	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:Charging		
Test Mode	:944-952MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
156.1000	26.52	-109.71	-83.19	-13.00	-70.19	Peak
319.0600	26.65	-104.71	-78.06	-13.00	-65.06	Peak
400.5400	26.97	-102.80	-75.83	-13.00	-62.83	Peak
538.2800	27.50	-101.38	-73.88	-13.00	-60.88	Peak
648.8600	28.30	-99.22	-70.92	-13.00	-57.92	Peak
703.1800	26.95	-98.46	-71.51	-13.00	-58.51	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
{EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
{ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

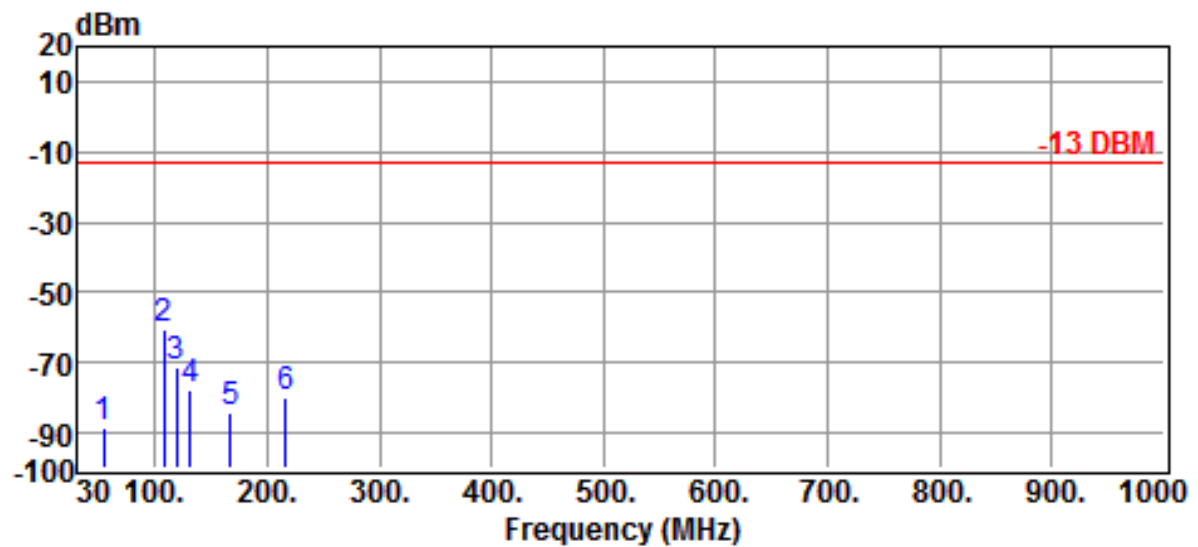


Site	:CHAMBER #2	Date	:2017-11-20
Limit	: -13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC5V(Power from PC)	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:Charging		
Test Mode	:944-952MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
204.6000	32.46	-109.65	-77.19	-13.00	-64.19	Peak
319.0600	27.72	-104.71	-76.99	-13.00	-63.99	Peak
466.5000	28.06	-102.14	-74.08	-13.00	-61.08	Peak
557.6800	27.07	-101.10	-74.03	-13.00	-61.03	Peak
631.4000	28.04	-99.65	-71.61	-13.00	-58.61	Peak
751.6800	28.33	-98.04	-69.71	-13.00	-56.71	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
{EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
{ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

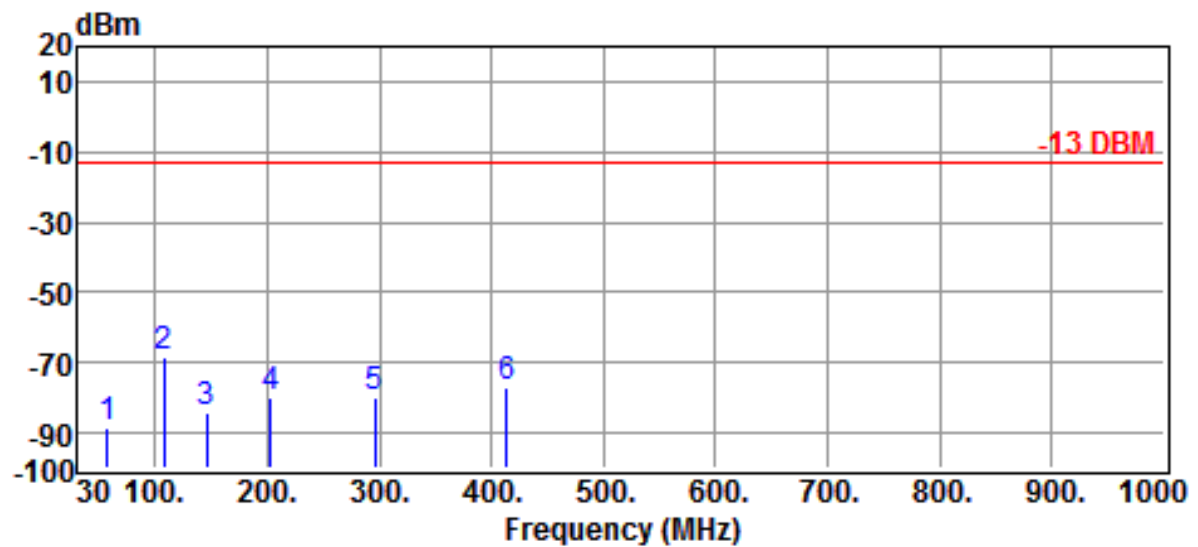


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:TX		
Test Mode	:944-952MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
54.2500	26.54	-114.75	-88.21	-13.00	-75.21	Peak
107.6000	50.80	-111.02	-60.22	-13.00	-47.22	Peak
119.2400	39.21	-110.18	-70.97	-13.00	-57.97	Peak
130.8800	31.70	-109.49	-77.79	-13.00	-64.79	Peak
167.7400	26.32	-110.17	-83.85	-13.00	-70.85	Peak
216.2400	29.20	-108.94	-79.74	-13.00	-66.74	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

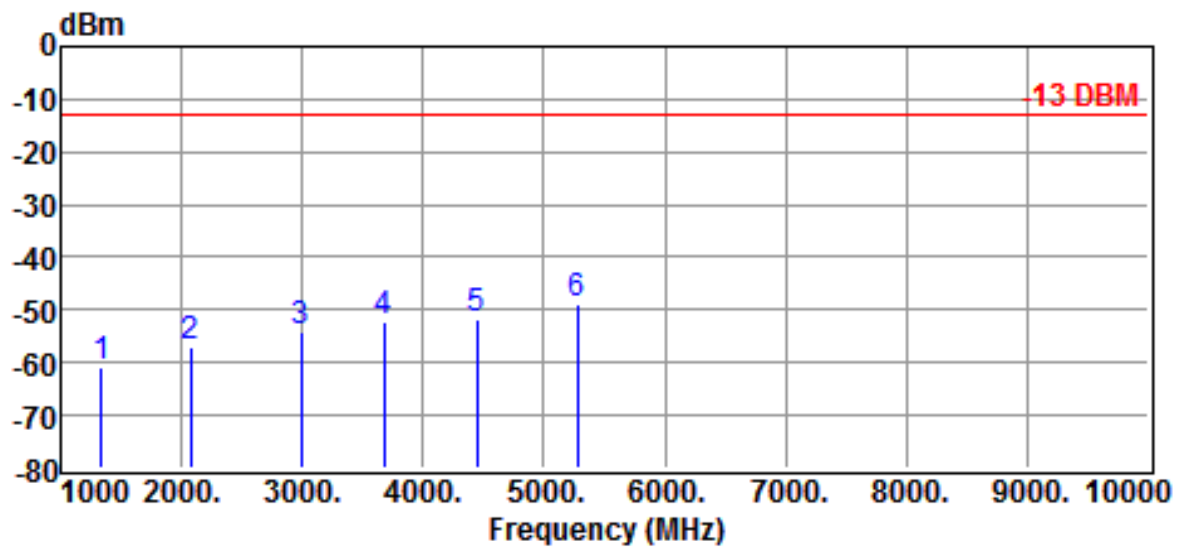


Site	:CHAMBER #2	Date	:2017-11-20
Limit	: -13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:TX		
Test Mode	:944-952MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
57.1600	27.68	-115.85	-88.17	-13.00	-75.17	Peak
107.6000	42.31	-111.02	-68.71	-13.00	-55.71	Peak
146.4000	25.33	-109.42	-84.09	-13.00	-71.09	Peak
202.6600	30.16	-109.99	-79.83	-13.00	-66.83	Peak
295.7800	25.37	-105.19	-79.82	-13.00	-66.82	Peak
414.1200	25.74	-102.66	-76.92	-13.00	-63.92	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
 {EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
 {ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

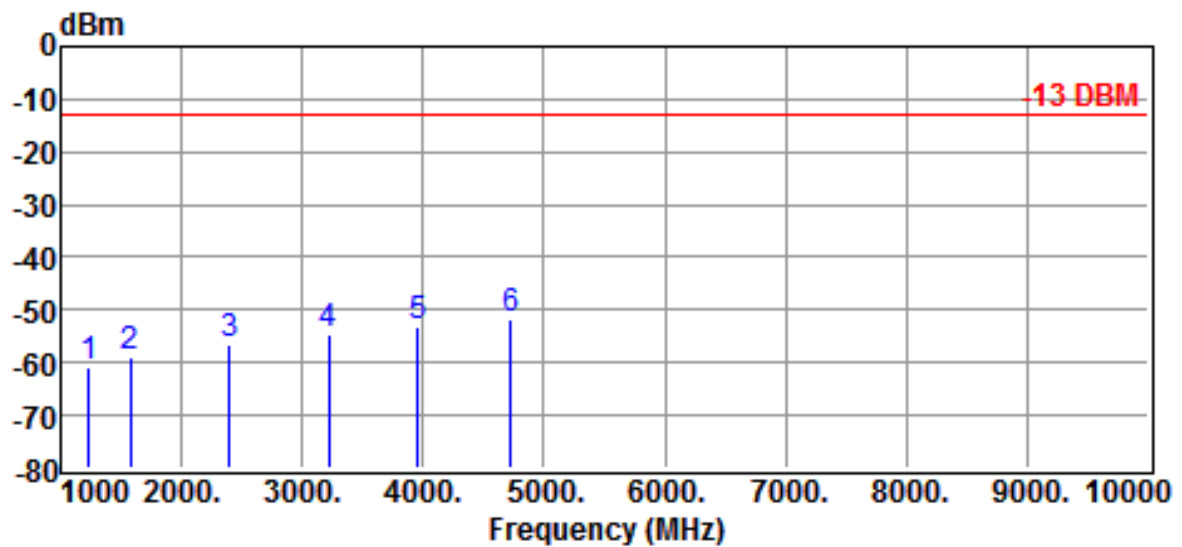


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC5V(Power from PC)	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:Charging		
Test Mode	:944-952MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1340.0000	47.01	-107.76	-60.75	-13.00	-47.75	Peak
2080.0000	46.83	-103.74	-56.91	-13.00	-43.91	Peak
2990.0000	46.96	-100.89	-53.93	-13.00	-40.93	Peak
3680.0000	46.22	-98.54	-52.32	-13.00	-39.32	Peak
4440.0000	45.26	-97.19	-51.93	-13.00	-38.93	Peak
5280.0000	46.34	-94.97	-48.63	-13.00	-35.63	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
{EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
{ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



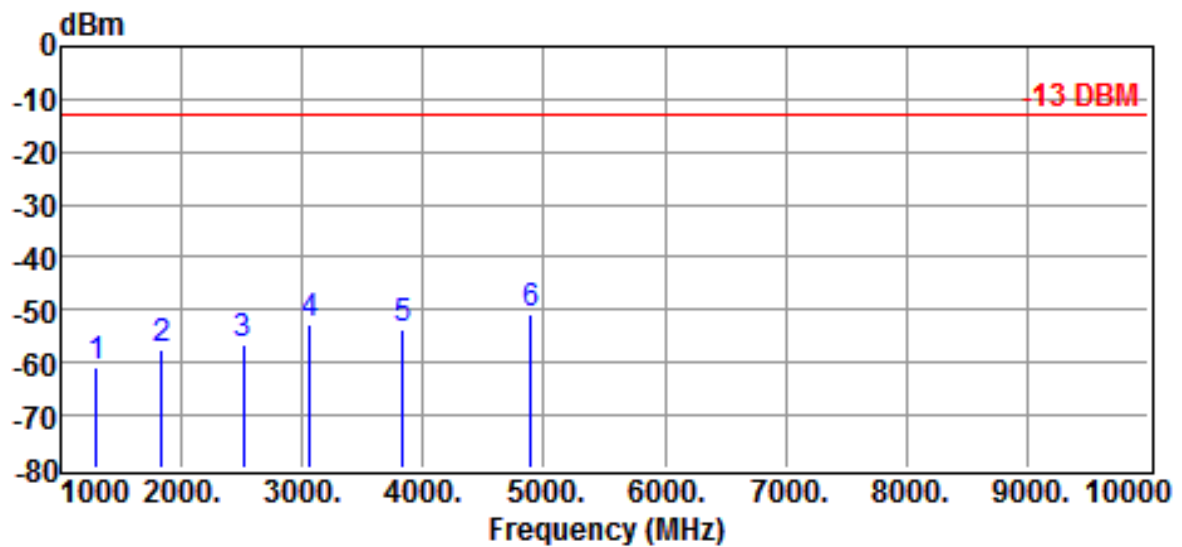
Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC5V(Power from PC)	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:Charging		
Test Mode	:944-952MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1230.0000	47.12	-108.07	-60.95	-13.00	-47.95	Peak
1580.0000	47.57	-106.68	-59.11	-13.00	-46.11	Peak
2400.0000	46.60	-103.03	-56.43	-13.00	-43.43	Peak
3220.0000	45.51	-100.12	-54.61	-13.00	-41.61	Peak
3960.0000	44.52	-97.51	-52.99	-13.00	-39.99	Peak
4730.0000	44.80	-96.45	-51.65	-13.00	-38.65	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
{EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
{ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



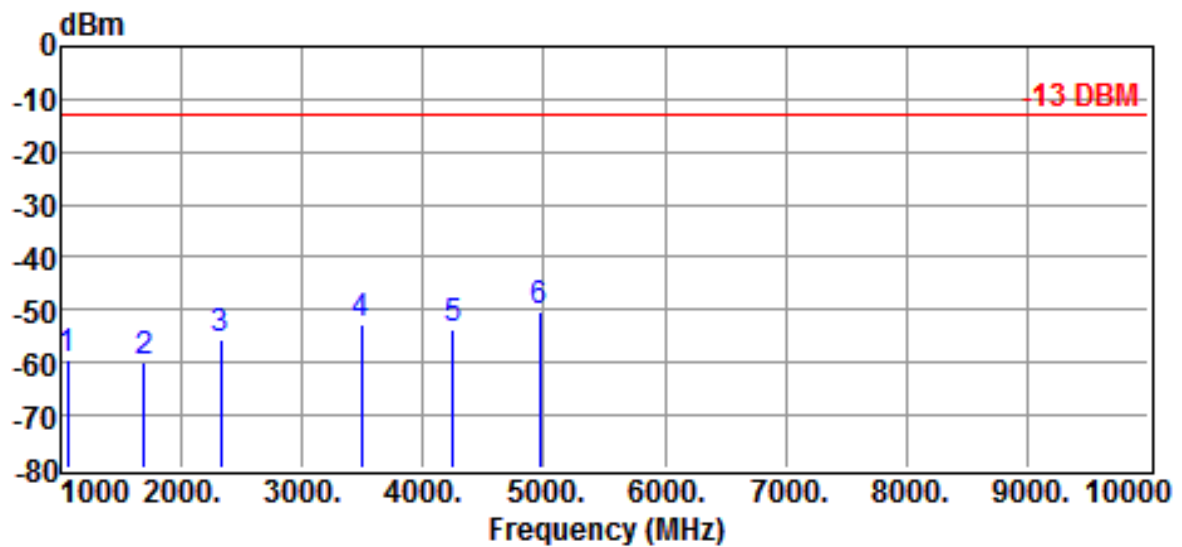


Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:HORIZONTAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:TX		
Test Mode	:944-952MHz		

Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1300.0000	47.12	-107.84	-60.72	-13.00	-47.72	Peak
1840.0000	47.61	-105.02	-57.41	-13.00	-44.41	Peak
2510.0000	46.08	-102.72	-56.64	-13.00	-43.64	Peak
3060.0000	48.20	-100.66	-52.46	-13.00	-39.46	Peak
3830.0000	44.41	-98.02	-53.61	-13.00	-40.61	Peak
4890.0000	44.92	-95.88	-50.96	-13.00	-37.96	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
{EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
{ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result



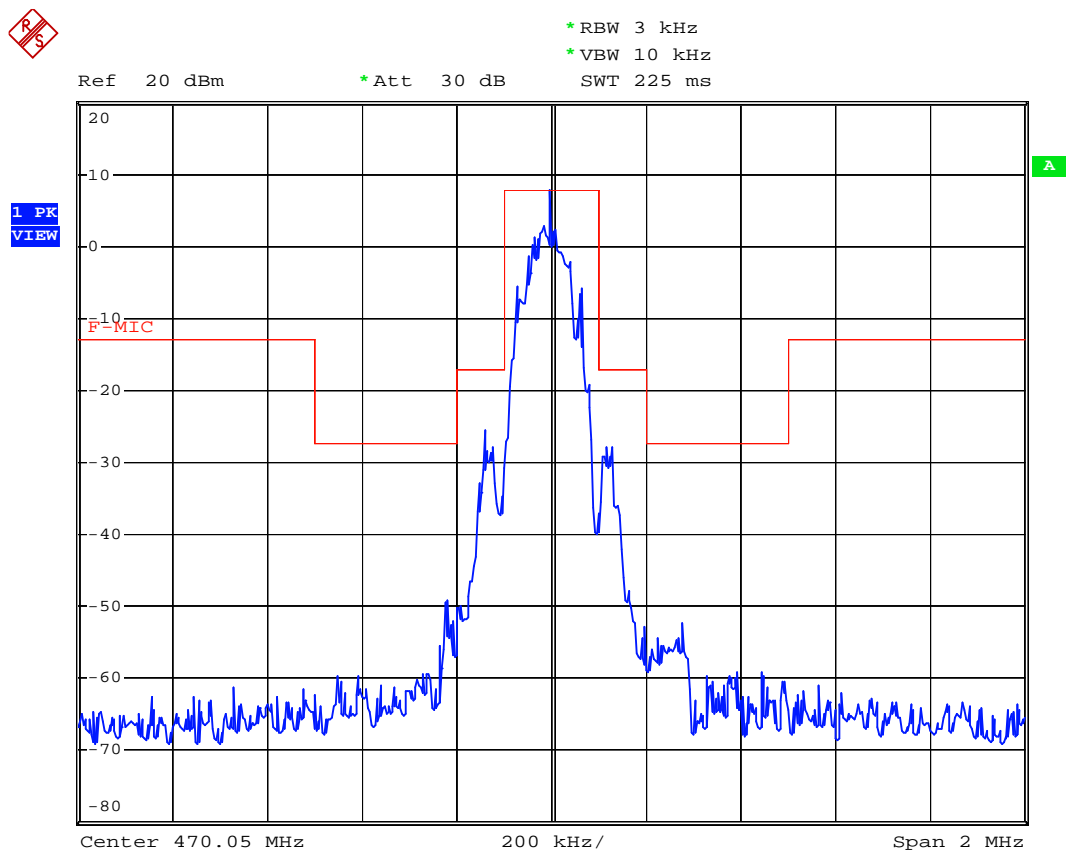
Site	:CHAMBER #2	Date	:2017-11-20
Limit	:-13 DBM	Ant. Pol.	:VERTICAL
EUT	: Wireless Tour Guide System	Model	:TG-201R
Power Rating	:DC3.7V Battery	Temp.	:20 °C
Engineer	: Kazuma Ho	Humi.	:68 %
Test Mode	:TX		
Test Mode	:944-952MHz		

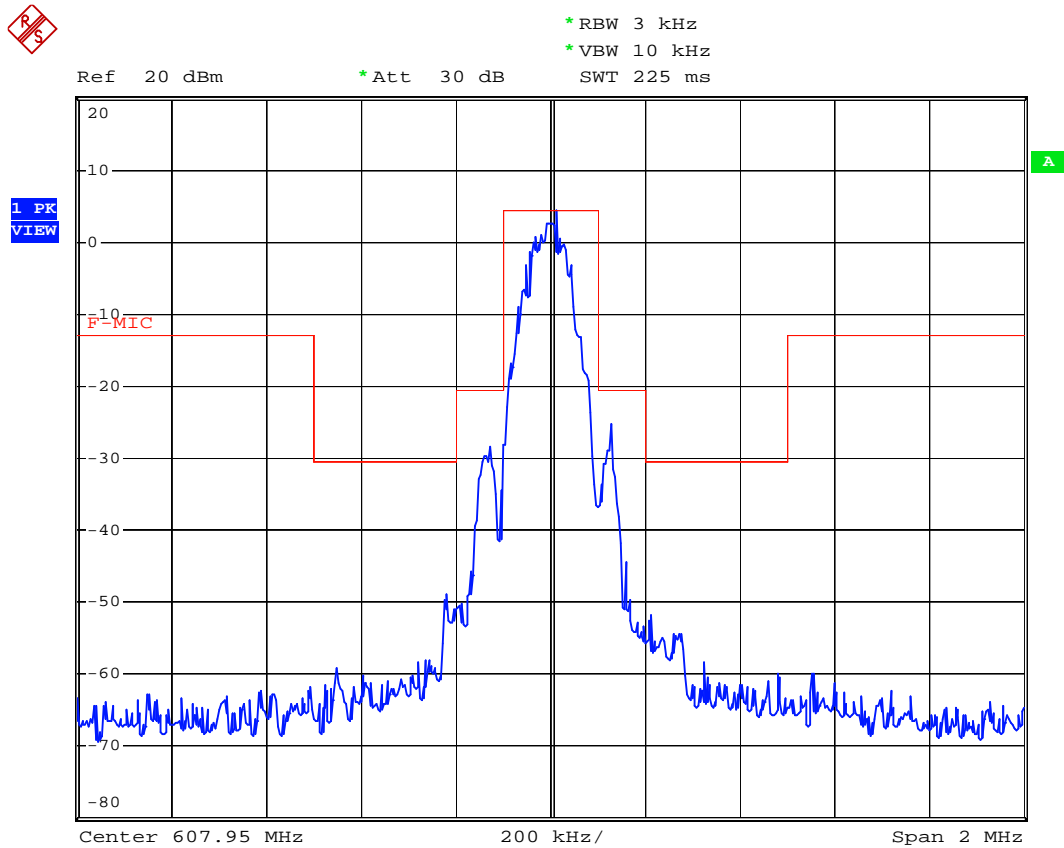
Freq MHz	Reading dBuV	Correction Factor dB	Result dBm	Limits dBm	Over limit dB	Detector
1060.0000	49.21	-108.61	-59.40	-13.00	-46.40	Peak
1690.0000	46.01	-105.93	-59.92	-13.00	-46.92	Peak
2330.0000	47.52	-103.19	-55.67	-13.00	-42.67	Peak
3490.0000	46.52	-99.29	-52.77	-13.00	-39.77	Peak
4250.0000	43.78	-97.28	-53.50	-13.00	-40.50	Peak
4960.0000	45.16	-95.68	-50.52	-13.00	-37.52	Peak

Note :

1. Result = Reading + Corrected Factor
2. Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)-EIRP Factor-2.15dB  
{EIRP Factor = 99.9dB (30MHz-1GHz) or 95.2dB (1GHz Above)}  
{ERP = EIRP – 2.15dB}
3. The expanded uncertainty of the radiated emission tests is 3.53 dB.
4. The margin value=Limit - Result

## 6.4.3 Emission mask plots

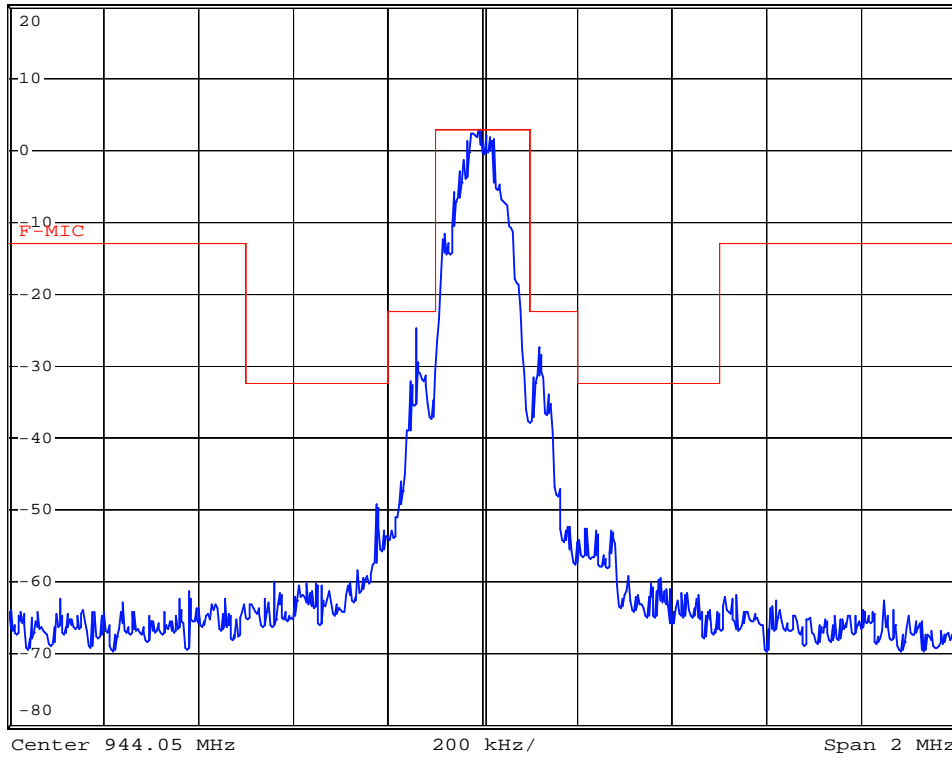


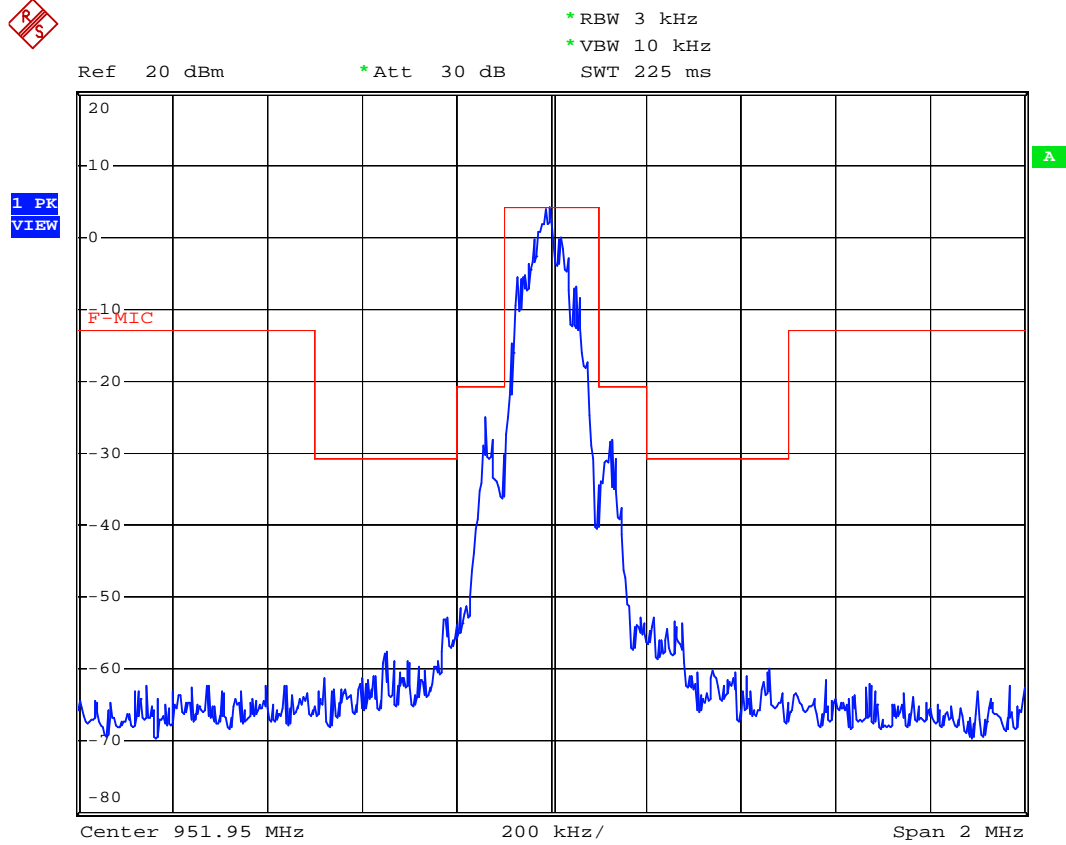




\* RBW 3 kHz  
\* VBW 10 kHz  
Ref 20 dBm \* Att 30 dB SWT 225 ms

1 PK  
VIEW

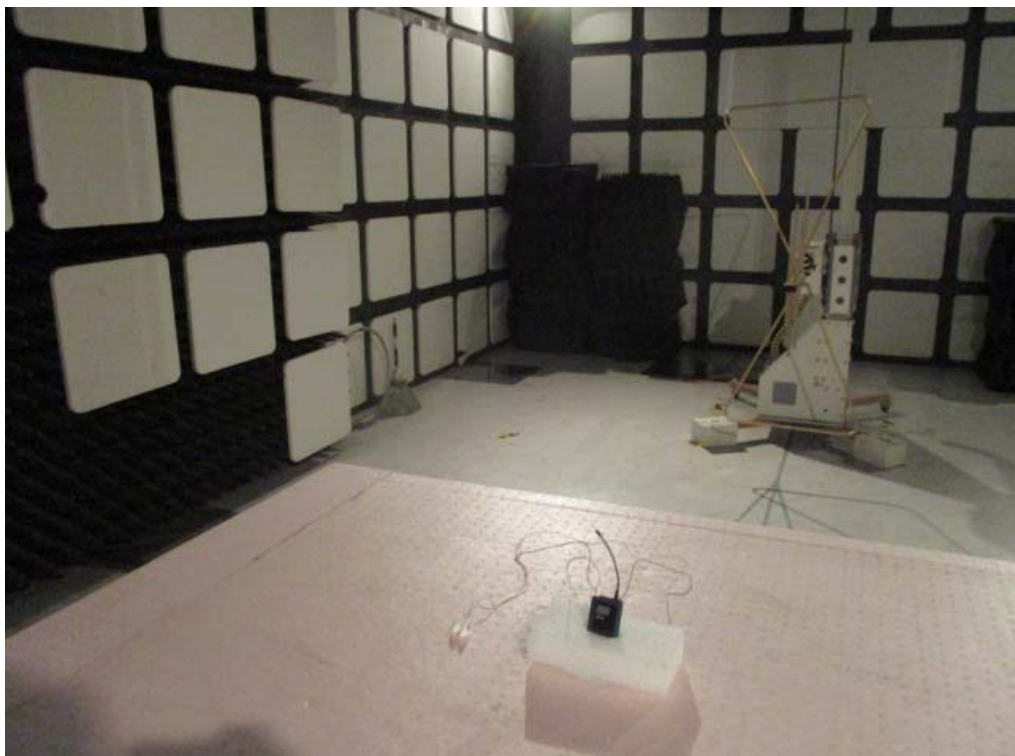




## 6.5 Radiated Measurement Photos

(Below 1GHz)

TX Mode



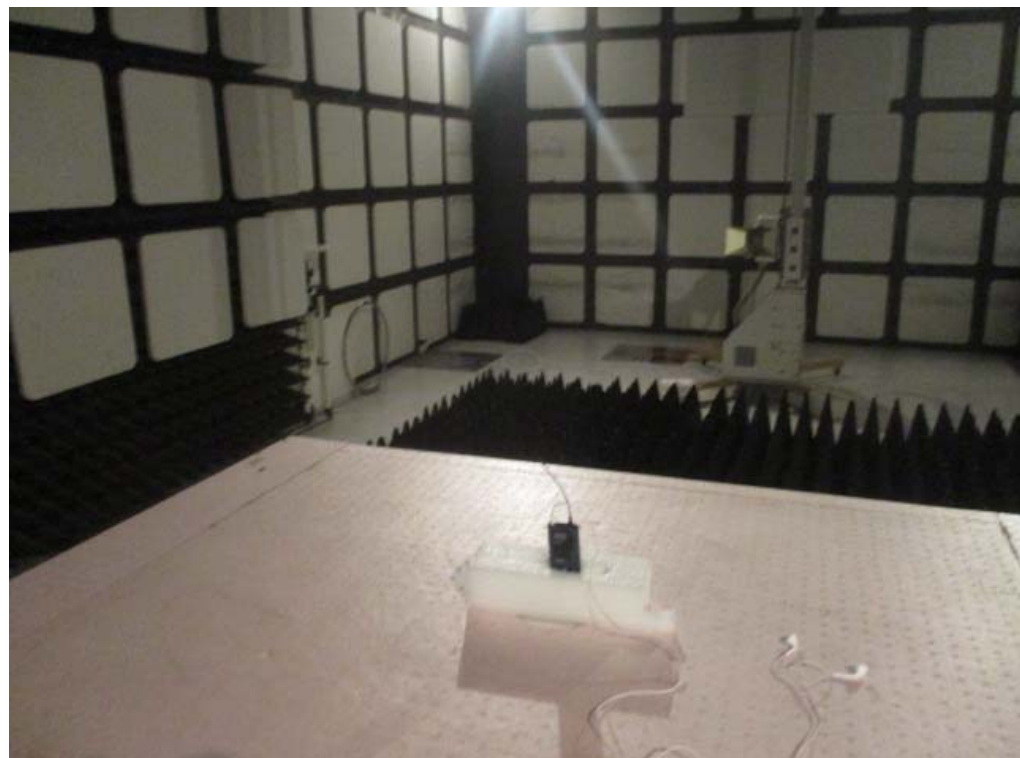
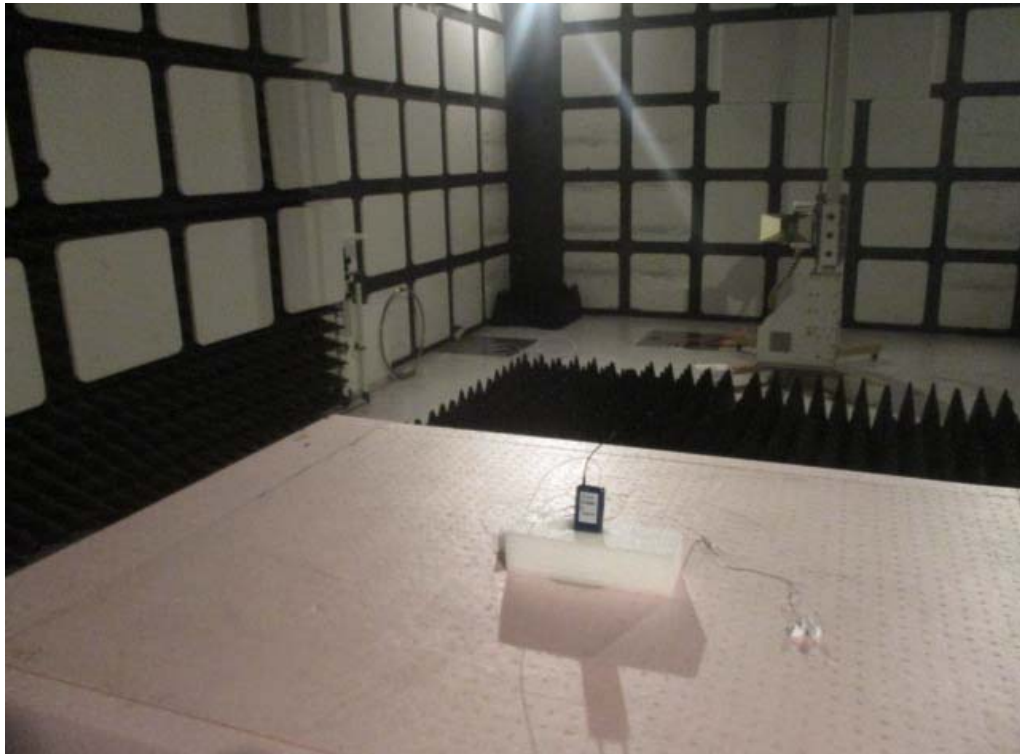
## Charging Mode



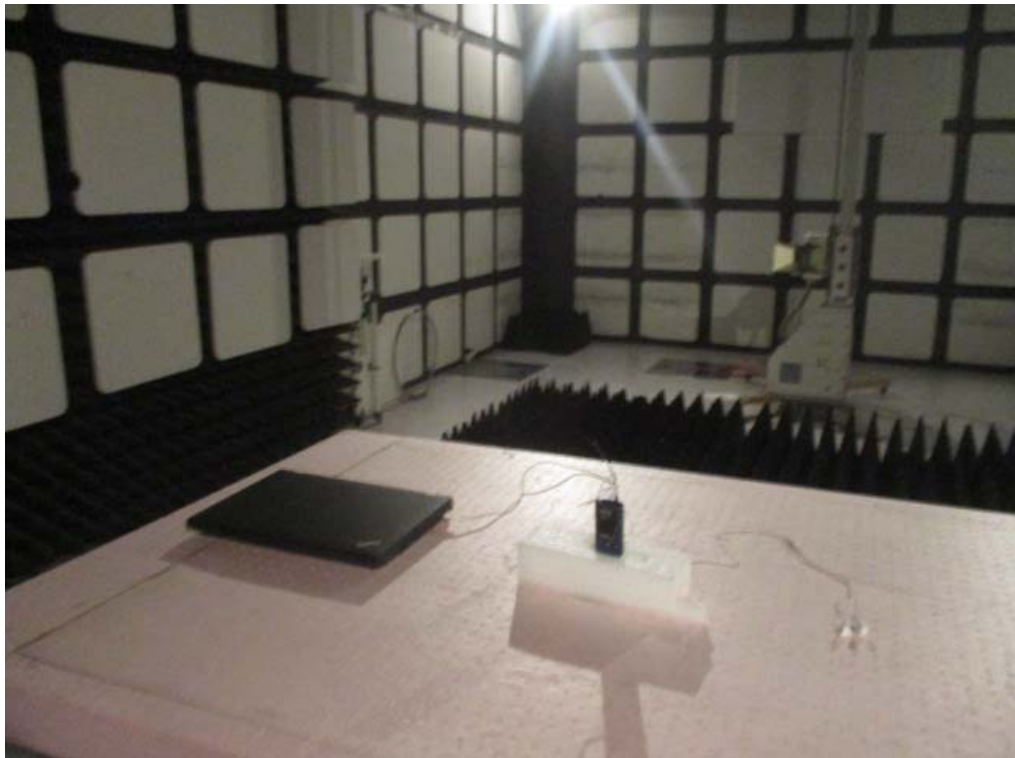


(Above 1GHz)

TX Mode



### Charging Mode



## 7. FREQUENCY STABILITY MEASUREMENT

### 7.1 Provisions Applicable

According to §2.1055 (a)(1), the frequency stability shall be measured with variation of ambient temperature from -30 to +50 centigrade.

According to §2.1055 (d)(1), the frequency stability shall be measured with variation of primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.

According to §2.1055 (d)(2), for hand carried, battery powered equipment, reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.

According to §74.861(e)(4), the frequency tolerance of the transmitter shall be 0.005 percent.

### 7.2 Measurement Procedure

#### A) Frequency stability versus environmental temperature

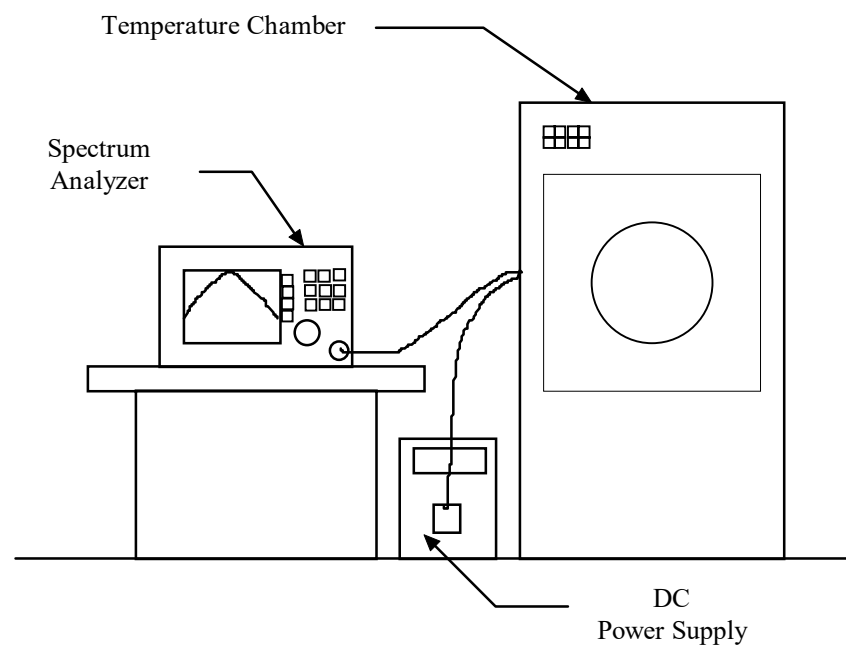
1. Setup the configuration per figure 6 for frequencies measured at an environmental chamber.
2. Turn on EUT and set SA center frequency to the right frequency needs to be measured. Set SA RBW to 30 kHz, VBW to 100kHz and frequency span to 500 kHz. Then turn off the EUT.
3. Set the temperature of chamber to 50°C. Allow sufficient time for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency when the frequency has stabilized.
4. Repeat step 3 with a 10°C decreased per stage until the lowest temperature -30°C is measured, record all measurement frequencies.

#### B) Frequency stability versus input voltage

1. Setup the configuration per figure 6 for frequencies measured at an environmental chamber set for a temperature of 25°C.

2. Set SA center frequency to the right frequency needs to be measured. Then set SA RBW to 30 kHz, VBW to 100kHz and frequency span to 500 kHz.
3. Supply the EUT primary voltage with 85 and 115 percent of the nominal value and record the frequency.

Figure 6 : Frequency stability measurement configuration



### 7.3 Measurement Instrument

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
Spectrum Analyzer	Rohde & Schwarz	FSP40	2017/11/02	2018/11/01
Temperature Chamber	MALLIER	MCT-2X-M	2016/12/14	2017/12/13

**7.4 Measurement Data**Test Date : Nov. 24, 2017Temperature : 22 °CHumidity : 65 %**A. Tx Frequency 470.050 MHz****A1. Frequency stability versus environment tempture**

Reference Frequency :470.050 MHz			Limit : 0.005%
Enviroment Tempture (°C)	Power Supplied (Vdc)	(MHz)	(%)
50	3.7	470.0365	-0.00287
40		470.0387	-0.00240
30		470.0406	-0.00200
20		470.0428	-0.00153
10		470.0451	-0.00104
0		470.0467	-0.00070
-10		470.0487	-0.00028
-20		470.0510	0.00021
-30		470.0535	0.00074

**A2. Frequency stability versus supplied voltage**

Reference Frequency : 470.050 MHz			Limit : 0.005%
Enviroment Tempture (°C)	Power Supplied (Vdc)	(MHz)	(%)
25	3.1	470.0417	-0.00177
25	4.3	470.0417	-0.00177

Test Date : Nov. 24, 2017Temperature : 22 °CHumidity : 65 %**B. Tx Frequency 951.950 MHz****B1. Frequency stability versus enviroment tempture**

Reference Frequency :951.950 MHz		Limit : 0.005%	
Enviroment Tempture (°C)	Power Supplied (Vdc)	(MHz)	(%)
50	3.7	951.9260	-0.00252
40		951.9290	-0.00221
30		951.9326	-0.00183
20		951.9372	-0.00134
10		951.9424	-0.00080
0		951.9464	-0.00038
-10		951.9508	0.00008
-20		951.9544	0.00046
-30		951.9584	0.00088

**B2. Frequency stability versus supplied voltage**

Reference Frequency : 951.950 MHz		Limit : 0.005%	
Enviroment Tempture (°C)	Power Supplied (Vdc)	(MHz)	(%)
25	3.1	951.9348	-0.00160
25	4.3	951.9348	-0.00160

## 8 CONDUCTED EMISSION MEASUREMENT

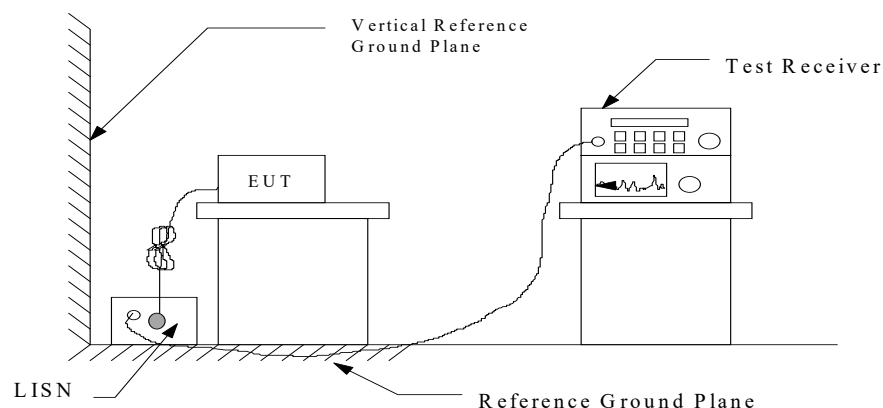
### 8.1 Standard Applicable

For unintentional and intentional device, Line Conducted Emission Limits are in accordance to § 15.107(a) and § 15.207(a) respectively. Both Limits are identical specification.

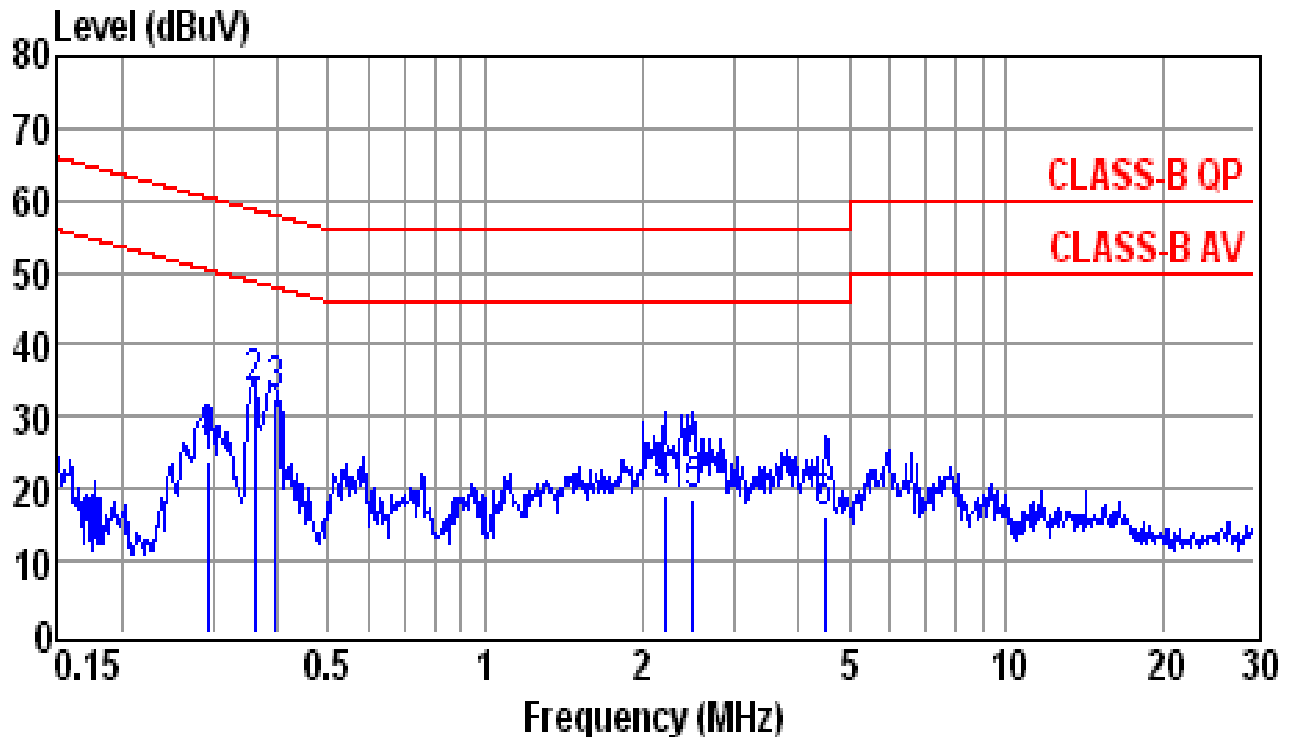
### 8.2 Measurement Procedure

1. Setup the configuration per figure 3.
2. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
3. Record the 6 or 8 highest emissions relative to the limit.
4. Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.
5. Confirm the highest three emissions with variation of the EUT cable configuration and record the final data.
6. Repeat all above procedures on measuring each operation mode of EUT.

Figure 3 : Conducted emissions measurement configuration



### 8.3 Conducted Emission Data



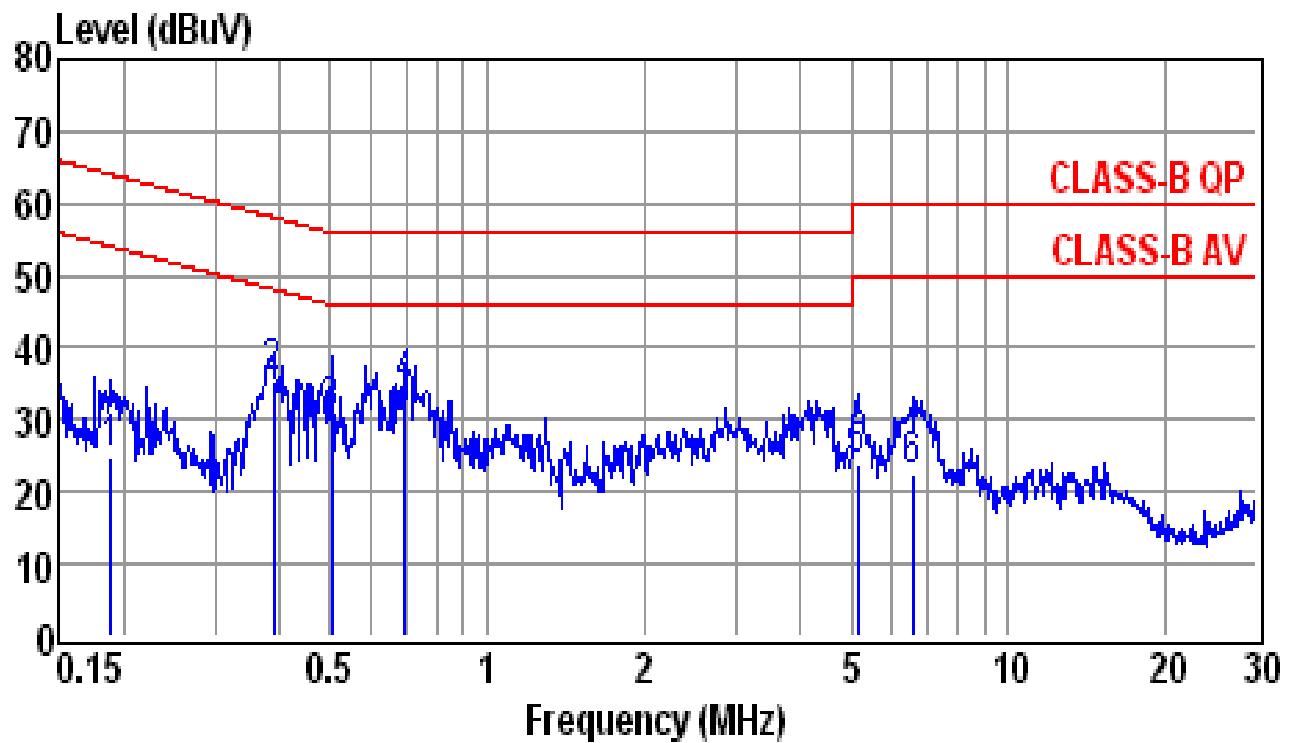
Site : conducted #1 Date : 10-13-2017  
 Condition : CLASS-B QP LISN : NEUTRAL  
 Tem / Hum : 25 °C / 55%  
 Test Mode : Charging Mode  
 EUT : TG-201R  
 Power Rating : DC5V(Power from PC)

Freq (MHz)	Reading (dBUV)	Factor (dB)	Emission Level (dBUV)	Limit Line (dBUV)	Over Limit (dB)	Remark
0.2955	13.55	10.19	23.74	60.37	-36.63	QP
0.3615	23.18	10.21	33.39	58.69	-25.30	QP
0.3955	22.19	10.21	32.40	57.95	-25.55	QP
2.2010	8.65	10.32	18.97	56.00	-37.03	QP
2.5130	8.11	10.34	18.45	56.00	-37.55	QP
4.4780	5.82	10.43	16.25	56.00	-39.75	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss





Site : conducted #1 Date : 10-13-2017  
 Condition : CLASS-B QP LISN : LINE  
 Tem / Hum : 25 °C / 55%  
 Test Mode : Charging Mode  
 EUT : TG-201R  
 Power Rating : DC5V(Power from PC)

Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
0.1904	14.69	10.19	24.88	64.02	-39.14	QP
0.3872	25.29	10.20	35.49	58.12	-22.63	QP
0.5020	20.00	10.21	30.21	56.00	-25.79	QP
0.6936	23.92	10.22	34.14	56.00	-21.86	QP
5.1390	13.54	10.47	24.01	60.00	-35.99	QP
6.5570	11.85	10.55	22.40	60.00	-37.60	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss

## 8.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

$$\text{RESULT} = \text{READING} + \text{LISN FACTOR}$$

Assume a receiver reading of 22.5 dB  $\mu$  V is obtained, and LISN Factor is 0.1 dB, then the total of disturbance voltage is 22.6 dB  $\mu$  V.

$$\text{RESULT} = 22.5 + 0.1 = 22.6 \text{ dB } \mu \text{ V}$$

$$\begin{aligned} \text{Level in } \mu \text{ V} &= \text{Common Antilogarithm}[(22.6 \text{ dB } \mu \text{ V})/20] \\ &= 13.48 \mu \text{ V} \end{aligned}$$

## 8.5 Conducted Measurement Equipment

The following test equipment are used during the conducted test .

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESCI	2017/09/19	2018/09/18
LISN	Rohde & Schwarz	ESH2-Z5	2017/04/01	2018/03/31

## 8.6 Photos of Conduction Measuring Setup

