FCC REPORT

Applicant:	Alco Electronics Ltd
Address of Applicant:	11/F, Metropole Square, 2 On Yiu Street, Sha Tin, New Territories, Hong Kong
Manufacturer/Factory:	Alco Electronics (Dongguan) Ltd.
Address of Manufacturer/Factory:	Gong Ye Xi Road, Houjie Technology Industrial Park, Houjie, Dongguan, Guangdong 523960, P.R.C.

Equipment Under Test (EUT)

Product Name:	Home Theater Receiver
Model No.:	AV62981HB, BWA18SB003
Trade Mark:	VENTURER, BLACKWEB
FCC ID:	A2HAV62981HB
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of sample receipt:	March 19, 2018
Date of Test:	March 20, 2018-April 08, 2018
Date of report issued:	April 09, 2018
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*April 09, 2018*	*Original*

Prepared By: Bill. Yuan ***Date:*** *April 09, 2018*

Project Engineer

Check By: Andy. Wu ***Date:*** *April 09, 2018*

Reviewer

3 Contents

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Pass: The EUT complies with the essential requirements in the standard.

Remark: Test according to ANSI C63.10: 2013 and ANSI C63.4: 2014.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 General Description of EUT

Product Name:	Home Theater Receiver
Model No.:	AV62981HB, BWA18SB003
Test Model No:	AV62981HB
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are color and model name for commercial purpose.	
Serial No.:	G1AH1Z0001H0
Test sample(s) ID:	GTS201802000025-1
Sample(s) Status	Engineer sample
Hardware:	V1.1
Software:	V1.1
Operation Frequency:	2404MHz~2479MHz
Channel numbers:	16
Channel separation:	5MHz
Modulation type:	GFSK
Antenna Type:	Integral Antenna
Antenna gain:	2.0dBi(declare by Applicant)
Power supply:	AC 120V,60Hz

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2404MHz	05	2424MHz	09	2444MHz	13	2464MHz
02	2409MHz	06	2429MHz	10	2449MHz	14	2469MHz
03	2414MHz	07	2434MHz	11	2454MHz	15	2474MHz
04	2419MHz	08	2439MHz	12	2459MHz	16	2479MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2404MHz
The middle channel	2444MHz
The Highest channel	2479MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
Remark: During the test, the dutycycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	94.56	95.17	93.63

5.3 Description of Support Units

None.

5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383, January 08, 2018.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.6 Other Information Requested by the Customer

None.

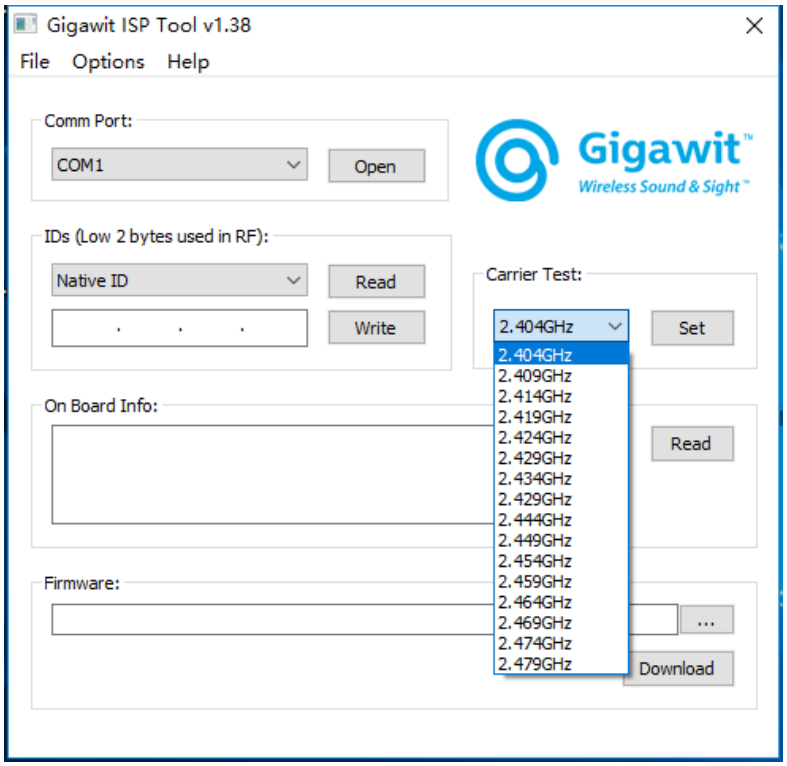
5.7 Additional instructions

Software (Used for test) from client

Mode	Special software is used. The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

Power level setup in software			
Test Software Name	Gigawit ISP Tool		
Test Software Version	V1.38		
Support Units (Software installation media)	Description	Manufacturer	Model
	Laptop	Apple	A1278
Mode	Channel	Frequency (MHz)	Soft Set
GFSK	CH01	2404	TX LEVEL: Default
	CH09	2444	
	CH16	2479	

Run Software



6 Test Instruments list

Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July 03 2015	July 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June 28 2017	June 27 2018
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June 28 2017	June 27 2018
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June 28 2017	June 27 2018
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 28 2017	June 27 2018
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 28 2017	June 27 2018
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	June 28 2017	June 27 2018
10	Coaxial Cable	GTS	N/A	GTS211	June 28 2017	June 27 2018
11	Coaxial cable	GTS	N/A	GTS210	June 28 2017	June 27 2018
12	Coaxial Cable	GTS	N/A	GTS212	June 28 2017	June 27 2018
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June 28 2017	June 27 2018
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June 28 2017	June 27 2018
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 28 2017	June 27 2018
16	Band filter	Amindeon	82346	GTS219	June 28 2017	June 27 2018
17	Power Meter	Anritsu	ML2495A	GTS540	June 28 2017	June 27 2018
18	Power Sensor	Anritsu	MA2411B	GTS541	June 28 2017	June 27 2018
19	Loop Antenna	ZHINAN	ZN30900A	GTS534	June 28 2017	June 27 2018

Conducted Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June 28 2017	June 27 2018
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 28 2017	June 27 2018
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June 28 2017	June 27 2018
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June 28 2017	June 27 2018

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	ChangChun	DYM3	GTS257	June 28 2017	June 27 2018

7 Test results and Measurement Data

7.1 Antenna requirement

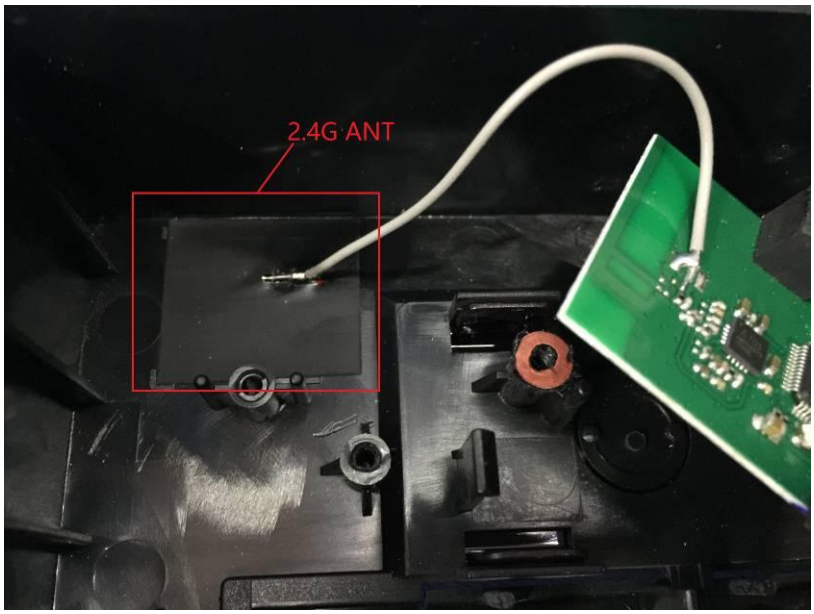
Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

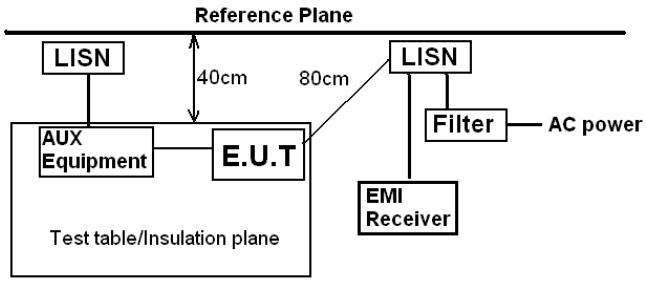
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integral antenna, the best case gain of the antenna is 2.0dBi.



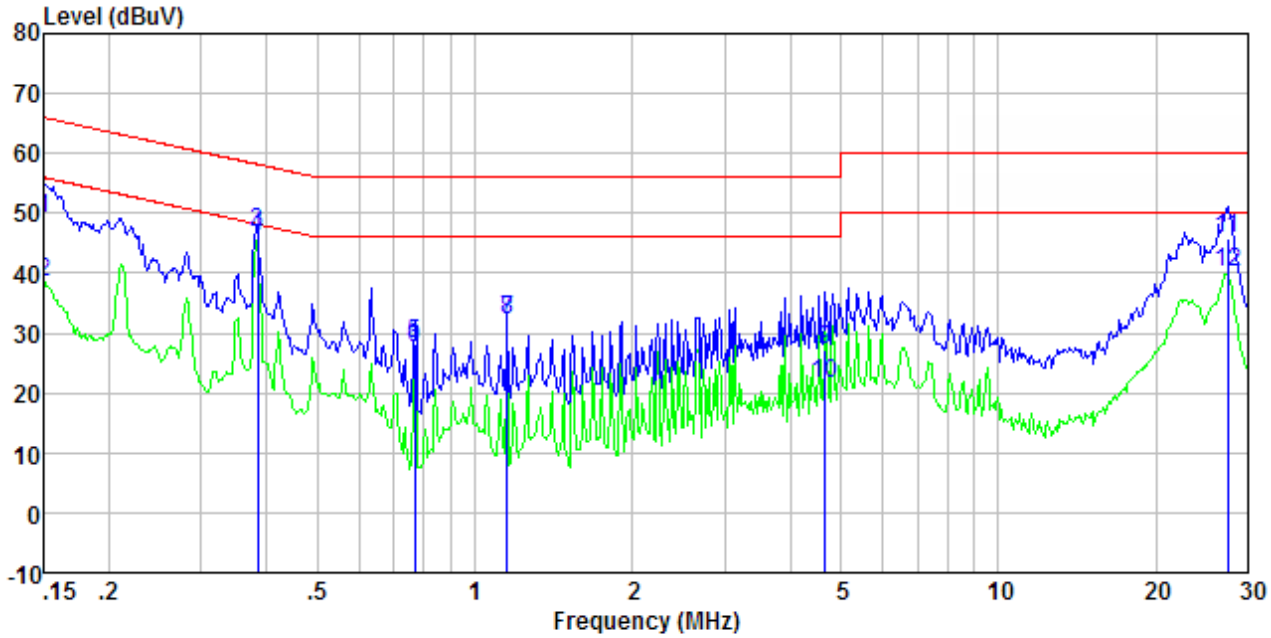
7.2 Conducted Emissions

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>150KHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td>Class B</td></tr>
<tr><td>Receiver setup:</td><td>RBW=9KHz, VBW=30KHz, Sweep time=auto</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* Decreases with the logarithm of the frequency.
</td></tr>
<tr><td>Test setup:</td><td>


Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m
</td></tr>
<tr><td>Test procedure:</td><td>1. The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

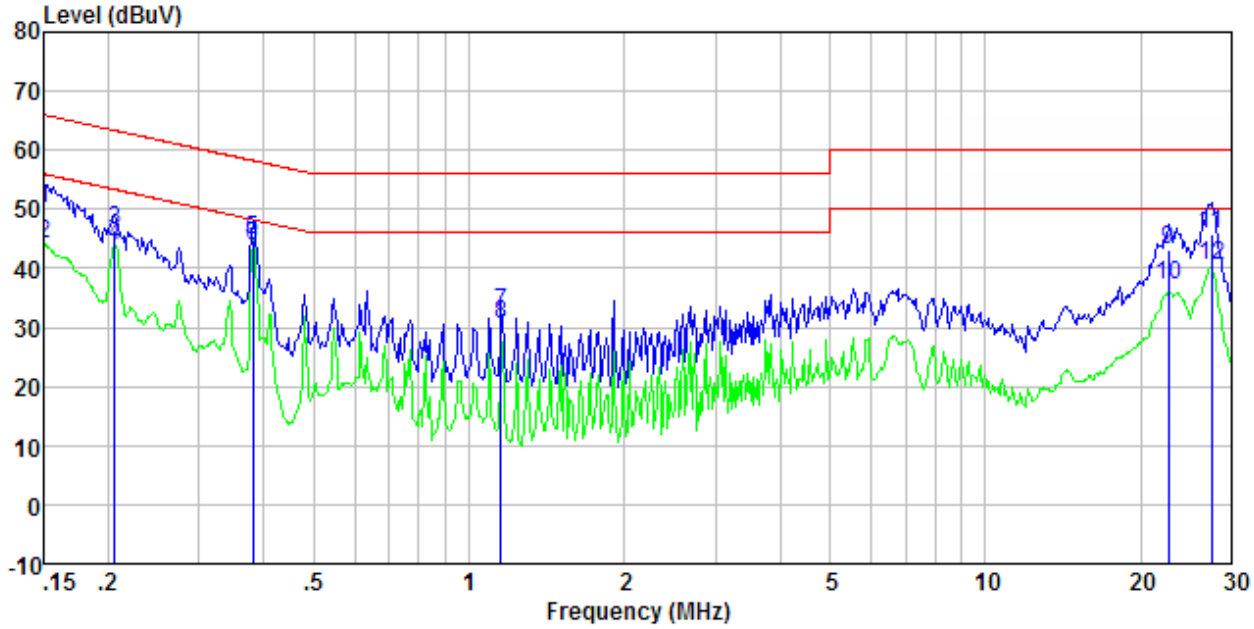
Measurement data

Line:



Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.150	48.53	0.40	0.12	49.05	66.00	-16.95	QP
0.150	37.90	0.40	0.12	38.42	56.00	-17.58	Average
0.385	46.23	0.36	0.10	46.69	58.17	-11.48	QP
0.385	45.55	0.36	0.10	46.01	48.17	-2.16	Average
0.767	27.91	0.24	0.13	28.28	56.00	-27.72	QP
0.767	27.13	0.24	0.13	27.50	46.00	-18.50	Average
1.153	31.75	0.20	0.13	32.08	56.00	-23.92	QP
1.153	31.75	0.20	0.13	32.08	46.00	-13.92	Average
4.672	26.77	0.20	0.15	27.12	56.00	-28.88	QP
4.672	21.18	0.20	0.15	21.53	46.00	-24.47	Average
27.416	45.06	0.38	0.23	45.67	60.00	-14.33	QP
27.416	39.58	0.38	0.23	40.19	50.00	-9.81	Average

Neutral:



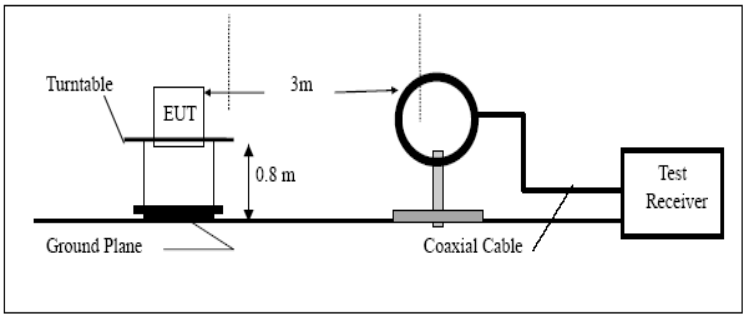
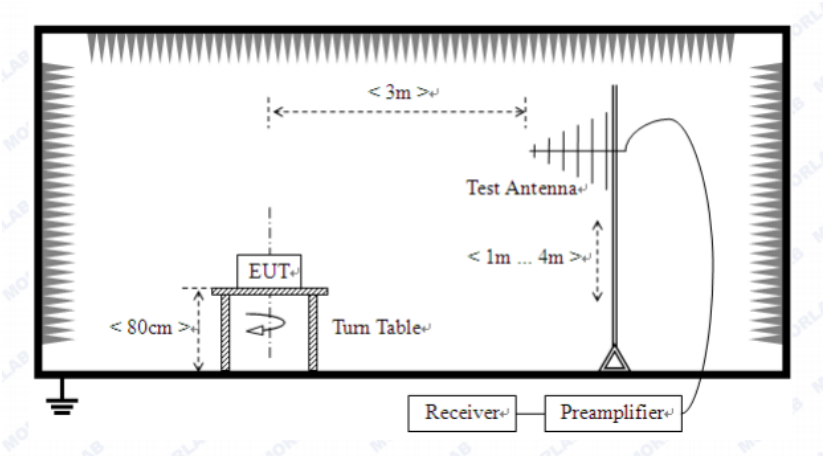
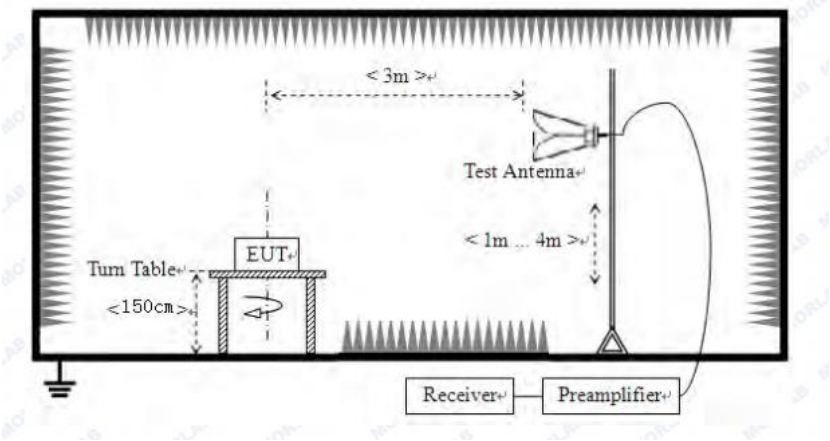
Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.150	49.59	0.40	0.12	50.11	66.00	-15.89	QP
0.150	43.47	0.40	0.12	43.99	56.00	-12.01	Average
0.206	45.82	0.40	0.13	46.35	63.36	-17.01	QP
0.206	43.24	0.40	0.13	43.77	53.36	-9.59	Average
0.381	44.26	0.36	0.10	44.72	58.25	-13.53	QP
0.381	43.31	0.36	0.10	43.77	48.25	-4.48	Average
1.153	32.06	0.20	0.13	32.39	56.00	-23.61	QP
1.153	30.07	0.20	0.13	30.40	46.00	-15.60	Average
22.655	42.59	0.33	0.23	43.15	60.00	-16.85	QP
22.655	36.68	0.33	0.23	37.24	50.00	-12.76	Average
27.416	45.25	0.38	0.23	45.86	60.00	-14.14	QP
27.416	39.79	0.38	0.23	40.40	50.00	-9.60	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. *If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.*

7.3 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Value</th></tr>
<tr><td>9KHz-150KHz</td><td>PK/AV</td><td>200Hz</td><td>600Hz</td><td>PK/AV</td></tr>
<tr><td>150KHz-30MHz</td><td>PK/AV/QP</td><td>9KHz</td><td>30KHz</td><td>PK/AV/QP</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Field strength of the fundamental signal)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td rowspan="2">2400MHz-2483.5MHz</td><td>94.00</td><td>Average Value</td></tr>
<tr><td>114.00</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Spurious Emissions)</td><td>
<table>
<tr><th>Frequency</th><th>Limit (uV/m)</th><th>Value</th><th>Measurement Distance</th></tr>
<tr><td>0.009MHz-0.490MHz</td><td>2400/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>0.490MHz-1.705MHz</td><td>24000/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>1.705MHz-30MHz</td><td>30</td><td>QP</td><td>30m</td></tr>
<tr><td>30MHz-88MHz</td><td>100</td><td>QP</td><td rowspan="7">3m</td></tr>
<tr><td>88MHz-216MHz</td><td>150</td><td>QP</td></tr>
<tr><td>216MHz-960MHz</td><td>200</td><td>QP</td></tr>
<tr><td>960MHz-1GHz</td><td>500</td><td>QP</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500</td><td>Average</td></tr>
<tr><td>5000</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(band edge)</td><td>Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.</td></tr>
</table>

Test setup:	Below 30MHz  Below 1GHz  Above 1GHz 

Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement data:

9 kHz ~ 30 MHz

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

7.3.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2404.00	91.04	27.58	5.39	30.18	93.83	114.00	-20.17	Vertical
2404.00	88.63	27.58	5.39	30.18	91.42	114.00	-22.58	Horizontal
2444.00	89.44	27.55	5.43	30.06	92.36	114.00	-21.64	Vertical
2444.00	87.65	27.55	5.43	30.06	90.57	114.00	-23.43	Horizontal
2479.00	92.11	27.52	5.47	29.93	95.17	114.00	-18.83	Vertical
2479.00	89.08	27.52	5.47	29.93	92.14	114.00	-21.86	Horizontal

Average value:

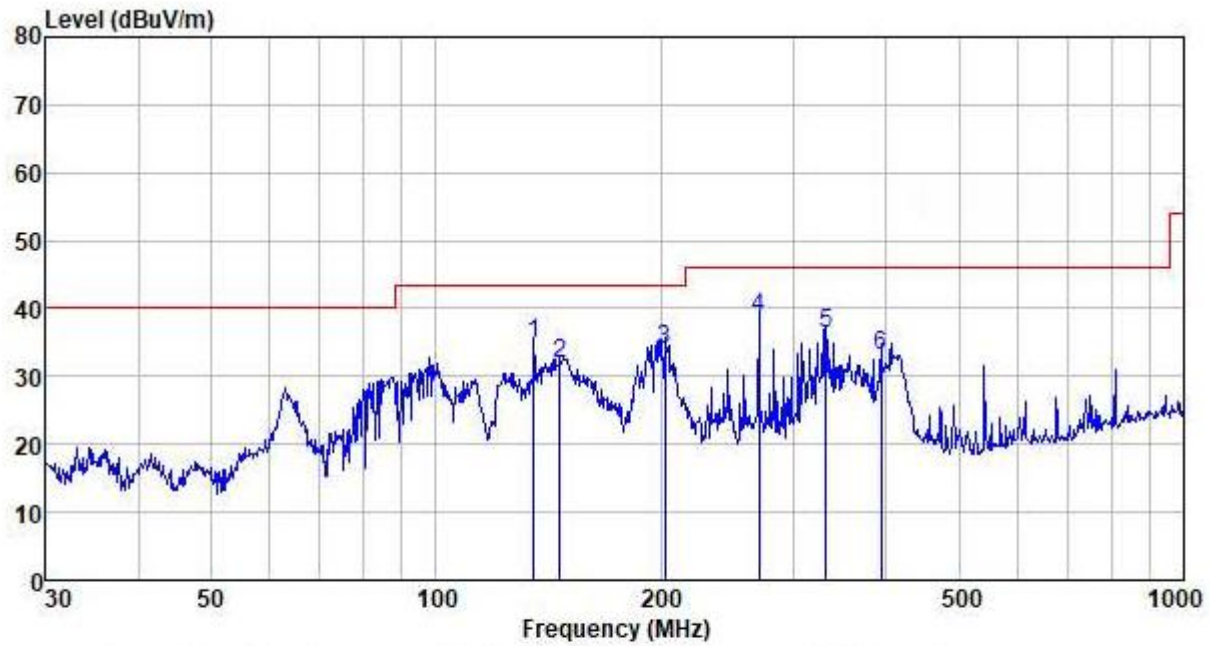
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2404.00	79.55	27.58	5.39	30.18	82.34	94.00	-11.66	Vertical
2404.00	77.29	27.58	5.39	30.18	80.08	94.00	-13.92	Horizontal
2444.00	77.83	27.55	5.43	30.06	80.75	94.00	-13.25	Vertical
2444.00	74.99	27.55	5.43	30.06	77.91	94.00	-16.09	Horizontal
2479.00	80.59	27.52	5.47	29.93	83.65	94.00	-10.35	Vertical
2479.00	77.67	27.52	5.47	29.93	80.73	94.00	-13.27	Horizontal

Note: RBW 2MHz VBW >=3xRBW ,Peak Detector is for PK value , RMS detector is for AV value

7.3.2 Spurious emissions

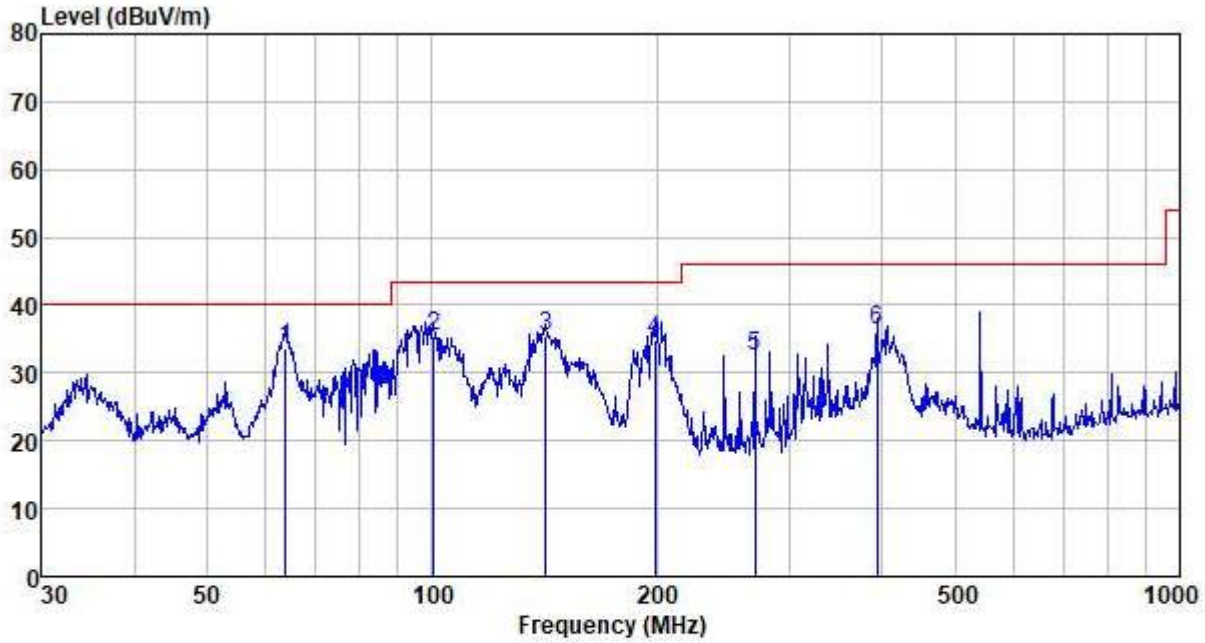
- Below 1GHz

Horizontal:



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
135.032	62.58	7.78	1.47	36.98	34.85	43.50	-8.65	QP
146.374	59.82	7.53	1.55	37.06	31.84	43.50	-11.66	QP
202.100	58.83	10.47	1.85	37.33	33.82	43.50	-9.68	QP
270.375	60.95	12.76	2.22	37.40	38.53	46.00	-7.47	QP
332.519	57.10	14.20	2.53	37.46	36.37	46.00	-9.63	QP
393.472	52.43	15.22	2.82	37.51	32.96	46.00	-13.04	QP

Vertical:



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
63.759	59.19	9.80	0.89	36.37	33.51	40.00	-6.49	QP
100.581	58.77	12.10	1.19	36.73	35.33	43.50	-8.17	QP
141.826	63.37	7.43	1.52	37.03	35.29	43.50	-8.21	QP
198.588	60.00	10.31	1.83	37.32	34.82	43.50	-8.68	QP
270.375	54.94	12.76	2.22	37.40	32.52	46.00	-13.48	QP
393.472	55.67	15.22	2.82	37.51	36.20	46.00	-9.80	QP

■ Above 1GHz

Test channel:	Lowest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4808.00	37.86	31.78	8.60	32.09	46.15	74.00	-27.85	Vertical
7212.00	32.20	36.15	11.65	32.00	48.00	74.00	-26.00	Vertical
9616.00	31.80	37.95	14.14	31.62	52.27	74.00	-21.73	Vertical
12020.00	*					74.00		Vertical
14424.00	*					74.00		Vertical
4808.00	42.26	31.78	8.60	32.09	50.55	74.00	-23.45	Horizontal
7212.00	34.00	36.15	11.65	32.00	49.80	74.00	-24.20	Horizontal
9616.00	31.27	37.95	14.14	31.62	51.74	74.00	-22.26	Horizontal
12020.00	*					74.00		Horizontal
14424.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4808.00	26.57	31.78	8.60	32.09	34.86	54.00	-19.14	Vertical
7212.00	20.82	36.15	11.65	32.00	36.62	54.00	-17.38	Vertical
9616.00	19.86	37.95	14.14	31.62	40.33	54.00	-13.67	Vertical
12020.00	*					54.00		Vertical
14424.00	*					54.00		Vertical
4808.00	30.86	31.78	8.60	32.09	39.15	54.00	-14.85	Horizontal
7212.00	23.03	36.15	11.65	32.00	38.83	54.00	-15.17	Horizontal
9616.00	19.64	37.95	14.14	31.62	40.11	54.00	-13.89	Horizontal
12020.00	*					54.00		Horizontal
14424.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*

Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4888.00	38.42	31.85	8.67	32.12	46.82	74.00	-27.18	Vertical
7332.00	32.57	36.37	11.72	31.89	48.77	74.00	-25.23	Vertical
9776.00	32.13	38.35	14.25	31.62	53.11	74.00	-20.89	Vertical
12220.00	*					74.00		Vertical
14664.00	*					74.00		Vertical
4888.00	42.94	31.85	8.67	32.12	51.34	74.00	-22.66	Horizontal
7332.00	34.43	36.37	11.72	31.89	50.63	74.00	-23.37	Horizontal
9776.00	31.66	38.35	14.25	31.62	52.64	74.00	-21.36	Horizontal
12220.00	*					74.00		Horizontal
14664.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4888.00	27.04	31.85	8.67	32.12	35.44	54.00	-18.56	Vertical
7332.00	21.14	36.37	11.72	31.89	37.34	54.00	-16.66	Vertical
9776.00	20.15	38.35	14.25	31.62	41.13	54.00	-12.87	Vertical
12220.00	*					54.00		Vertical
14664.00	*					54.00		Vertical
4888.00	31.40	31.85	8.67	32.12	39.80	54.00	-14.20	Horizontal
7332.00	23.39	36.37	11.72	31.89	39.59	54.00	-14.41	Horizontal
9776.00	19.97	38.35	14.25	31.62	40.95	54.00	-13.05	Horizontal
12220.00	*					54.00		Horizontal
14664.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*

Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4958.00	38.24	31.93	8.73	32.16	46.74	74.00	-27.26	Vertical
7437.00	32.45	36.59	11.79	31.78	49.05	74.00	-24.95	Vertical
9916.00	32.02	38.81	14.38	31.88	53.33	74.00	-20.67	Vertical
12395.00	*					74.00		Vertical
14874.00	*					74.00		Vertical
4958.00	42.71	31.93	8.73	32.16	51.21	74.00	-22.79	Horizontal
7437.00	34.29	36.59	11.79	31.78	50.89	74.00	-23.11	Horizontal
9916.00	31.53	38.81	14.38	31.88	52.84	74.00	-21.16	Horizontal
12395.00	*					74.00		Horizontal
14874.00	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4958.00	26.99	31.93	8.73	32.16	35.49	54.00	-18.51	Vertical
7437.00	21.11	36.59	11.79	31.78	37.71	54.00	-16.29	Vertical
9916.00	20.12	38.81	14.38	31.88	41.43	54.00	-12.57	Vertical
12395.00	*					54.00		Vertical
14874.00	*					54.00		Vertical
4958.00	31.34	31.93	8.73	32.16	39.84	54.00	-14.16	Horizontal
7437.00	23.35	36.59	11.79	31.78	39.95	54.00	-14.05	Horizontal
9916.00	19.94	38.81	14.38	31.88	41.25	54.00	-12.75	Horizontal
12395.00	*					54.00		Horizontal
14874.00	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*
3. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

7.3.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	34.56	27.59	5.38	30.18	37.35	74.00	-36.65	Horizontal
2400.00	50.16	27.58	5.39	30.18	52.95	74.00	-21.05	Horizontal
2390.00	34.31	27.59	5.38	30.18	37.10	74.00	-36.90	Vertical
2400.00	51.30	27.58	5.39	30.18	54.09	74.00	-19.91	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	26.99	27.59	5.38	30.18	29.78	54.00	-24.22	Horizontal
2400.00	37.73	27.58	5.39	30.18	40.52	54.00	-13.48	Horizontal
2390.00	26.34	27.59	5.38	30.18	29.13	54.00	-24.87	Vertical
2400.00	38.59	27.58	5.39	30.18	41.38	54.00	-12.62	Vertical

Test channel:	Highest channel

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	35.67	27.53	5.47	29.93	38.74	74.00	-35.26	Horizontal
2500.00	36.43	27.55	5.49	29.93	39.54	74.00	-34.46	Horizontal
2483.50	35.13	27.53	5.47	29.93	38.20	74.00	-35.80	Vertical
2500.00	36.63	27.55	5.49	29.93	39.74	74.00	-34.26	Vertical

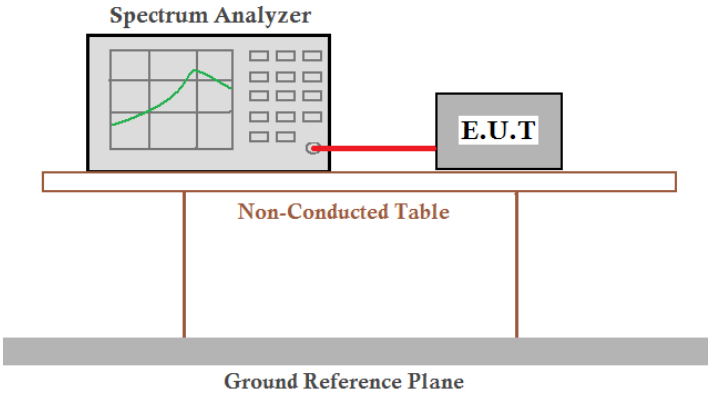
Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	29.72	27.53	5.47	29.93	32.79	54.00	-21.21	Horizontal
2500.00	28.91	27.55	5.49	29.93	32.02	54.00	-21.98	Horizontal
2483.50	30.24	27.53	5.47	29.93	33.31	54.00	-20.69	Vertical
2500.00	28.14	27.55	5.49	29.93	31.25	54.00	-22.75	Vertical

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

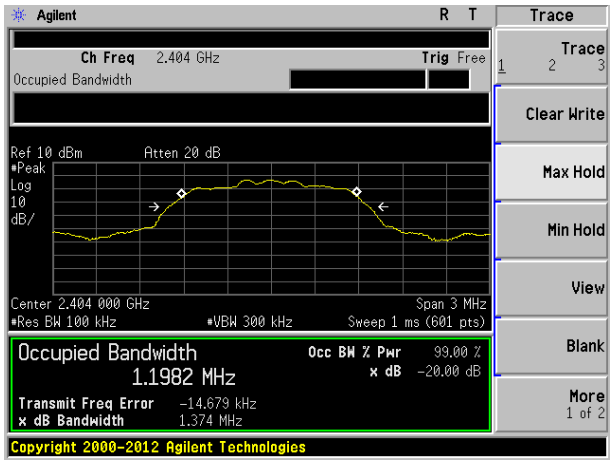
7.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

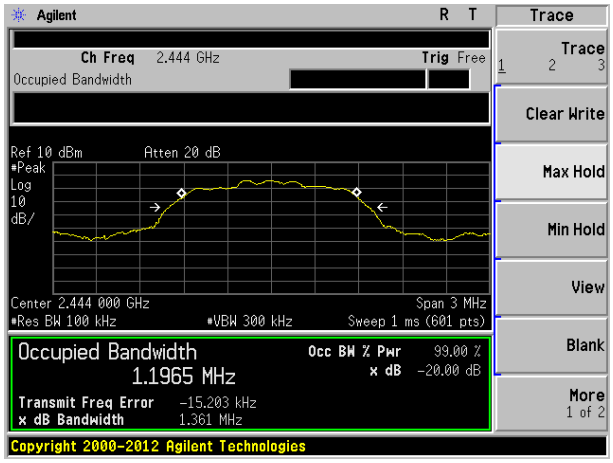
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	1.347	Pass
Middle	1.361	Pass
Highest	1.376	Pass

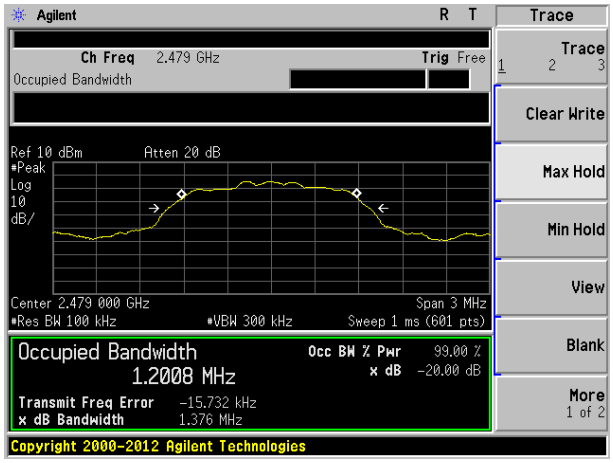
Test plot as follows:



Lowest channel



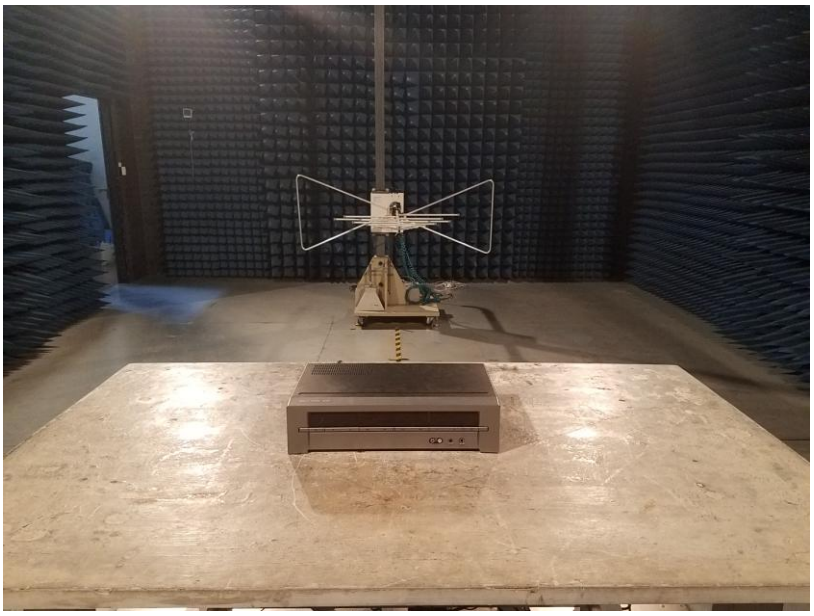
Middle channel

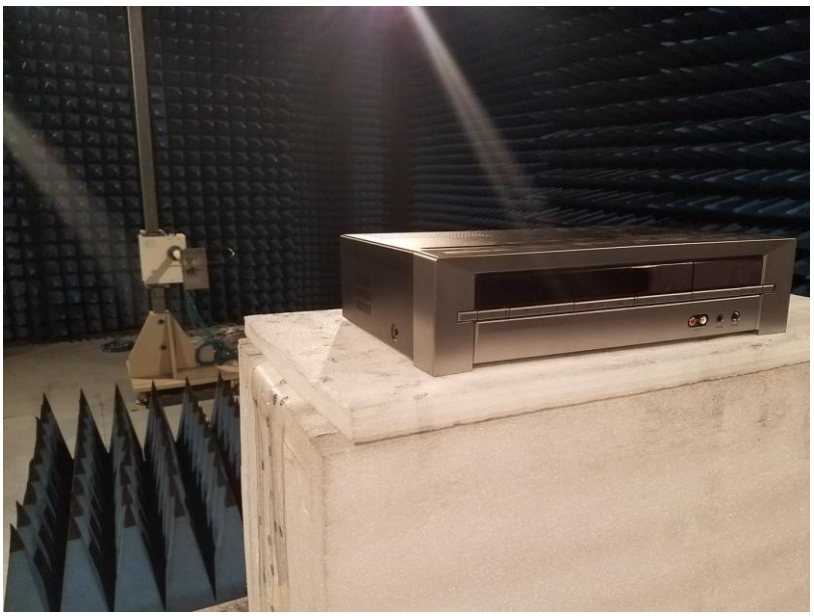


Highest channel

8 Test Setup Photo

Radiated Emission





Conducted Emission

9 EUT Constructional Details

Reference to the test report No. : GTS201802000025F01

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