FCC/IC Radio Test Report

FCC ID: TN5SB300CGG

IC: 6132C-SB300CGG

This report concerns (check one) : ■ Original Grant ☐ Class II Change

Issued Date	: Jan. 20, 2011
Project No.	: 1009C113
Equipment	: Powered soundbar
Model Name	: SB300 CNTR
Applicant	: Harman Consumer, Inc.
Address	: 8500 Balboa Blvd., Northridge, CA 91329 USA
Manufacturer	: GUOGUANG ELECTRIC CO.,Ltd
Address	: No.8 Jinghu Road, Xinhua Town, Huadu Reg.Guangzhou,510800

Tested by:

Neutron Engineering Inc. EMC Laboratory

Date of Receipt: Oct. 16, 2010

Date of Test:

Oct. 16, 2010 ~ Jan. 19, 2011

Testing Engineer : _____ (Ivan Cao)

Technical Manager : _____ (Vic Chiu)

Authorized Signatory : _____ (Steven Lu)

Neutron Engineering Inc.

No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.

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Declaration

Neutron represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C**., or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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1. CERTIFICATION

Equipment:	Powered soundbar
Brand Name :	JBL
Model Name :	SB300 CNTR
Applicant:	Harman Consumer, Inc.
Factory:	GUOGUANG ELECTRIC CO.,Ltd
Address:	No.8 Jinghu Road, Xinhua Town, Huadu Reg.Guangzhou,510800
Date of Test:	Oct. 16, 2010 ~ Jan. 19, 2011
Test Item:	ENGINEERING SAMPLE
Standards:	FCC Part15, Subpart C(15.247) / ANCI C63.4 : 2003; Canada RSS-210:2010

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-ICP-1-1009C113) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

FCC Part15 (15.247) , Subpart C / RSS-210: 2010				
Standard	Section	Test Item	Judgment	Remark
RSS-GEN 7.2.2	15.207	Conducted Emission	PASS	
RSS-210 A8.5	15.247 (d)	Antenna conducted Spurious Emission	PASS	
RSS-210 A8.2(a)	15.247 (a)(2)	6dB Bandwidth	PASS	
RSS-210 A8.4(4)	15.247 (b)	Peak Output Power	PASS	
RSS-210 A8.2(b)	15.247 (e)	Power Spectral Density	PASS	
-	15.203	Antenna Requirement	PASS	
RSS-210 Annex 8 (A8.5)	15.247(d)	Transmitter Radiated Emissions FCC Limit: Table 15.209 RSS-210 Limit: Table 3	PASS	
RSS-Gen 7.2.3	Note(1)	Receiver Radiated Emissions RSS-210 Limit: Table 3	PASS	
-	1.1307 1.1310 2.1091 2.1093	RF Exposure Compliance	PASS	

Test procedures according to the technical standards:

NOTE:

(1)” N/A” denotes test is not applicable in this Test Report

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-CB02/DG-C03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792
Neutron's test firm number for FCC 319330
Neutron's test firm number for IC 4428B-1

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

The reported uncertainty of measurement **y** ± **U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)	NOTE
DG-C02	CISPR	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U，(dB)	NOTE
DG-CB03	CISPR	30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Powered soundbar
Brand Name	JBL
Model Name	SB300 CNTR
OEM Brand/Model Name	N/A
Model Difference	
Product Description	The EUT is a Powered soundbar. Operation Frequency: 2412~2464 MHz Modulation Type: QPSK (digital modulation) Bit Rate of Transmitter 22 Mbps Number Of Channel 3 CH, Please see Note 2. (please see page 8) Antenna Designation: / Antenna Gain(Peak) Please see Note 3. (please see page 8) Output Power: 18.00 dBm Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification please refer to the User's Manual.
Power Source	AC Mains
Power Rating	I/P AC 100-240V~ 50/60Hz 80W
Connecting I/O Port(s)	Please refer to the User's Manual
Products Covered	N/A
EUT Modification(s)	N/A

Note

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2.

Freqeuncy Band	Channel No.	Frequency
2400~2483.5MHz	01	2412 MHz
	02	2438 MHz
	03	2464 MHz

3.

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Printed Antenna	N/A	1.5

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Channel 01//02/03
Mode 2	AUX IN

For Conducted Test	
Final Test Mode	Description
Mode 2	AUX IN

For Radiated Test	
Final Test Mode	Description
Mode 1	Channel 01//02/03

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

(2) The EUT power board have two Brand/Model for testing in Radiated emission (below 1GHz) and conducted emissions in test report.

Power board	Brand	Model
Center	TianBao	S06TAF18003003
Center	HanWei	Hanny24W75

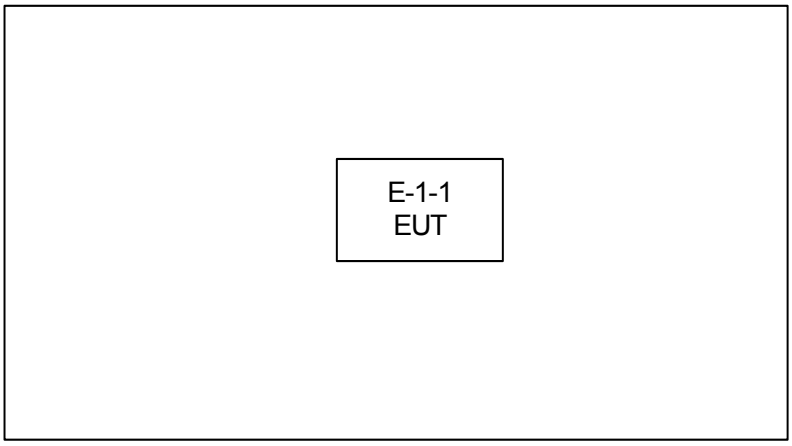
3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN

Test software Version	Test Program: Hardware		
Frequency	2412 MHz	2438 MHz	2464 MHz
	N/A	N/A	N/A

3.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated TX Mode:



3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID/IC	Series No.	Note
E-1	Powered soundbar	JBL	SB300 CNTR	TN5SB300CGG 6132C-SB300CGG	N/A	EUT-1

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in m in『Length』column.

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

4.1.2 MEASUREMENT INSTRUMENTS LIST AND SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	EMCO	3816/2	00052765	May.26.2011
2	LISN	R&S	ENV216	100087	May.26.2011
3	Test Cable	N/A	C_17	N/A	Mar.31.2011
4	EMI TEST RECEIVER	R&S	ESCS30	8333641017	May.27.2011
5	50Ω Terminator	SHX	TF2-3G-A	08122902	May.26.2011

Remark: ” N/A” denotes No Model Name. , Serial No. or No Calibration specified.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

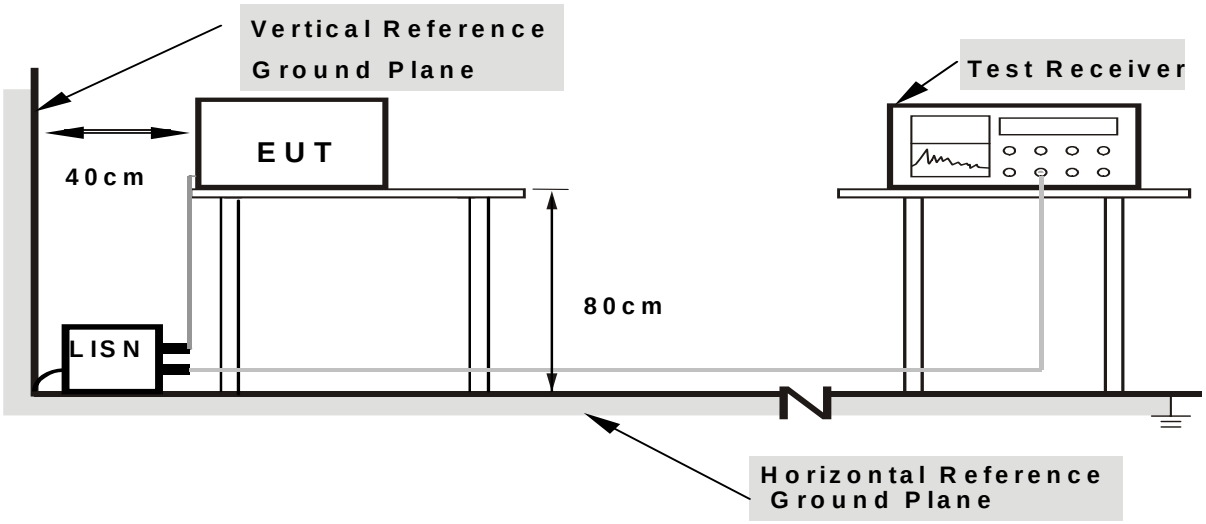
4.1.3 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

4.1.7 TEST RESULTS

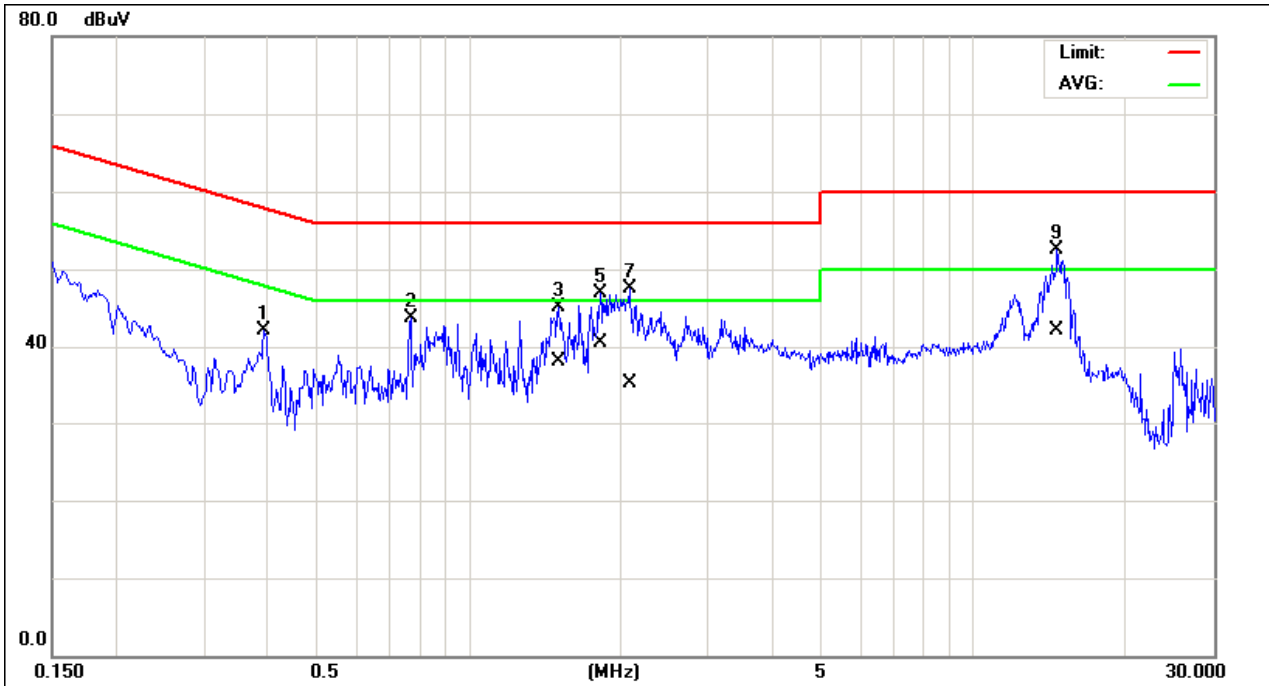
EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	54 %
Pressure：	1010hPa	Test Power ：	AC 120V/60Hz
Test Mode ：	AUX IN (Center / TianBao)		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.39	Line	42.09	*	57.99	47.99	-15.90	(QP)
0.77	Line	43.67	*	56.00	46.00	-12.33	(QP)
1.50	Line	45.07	38.19	56.00	46.00	-7.81	(AV)
1.82	Line	46.89	40.52	56.00	46.00	-5.48	(AV)
2.08	Line	40.52	35.09	56.00	46.00	-10.91	(AV)
14.67	Line	52.56	42.17	60.00	50.00	-7.44	(QP)

Remark

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform。In this case, a " * " marked in AVG Mode column of Interference Voltage Measured。

(2) Measuring frequency range from 150KHz to 30MHz。



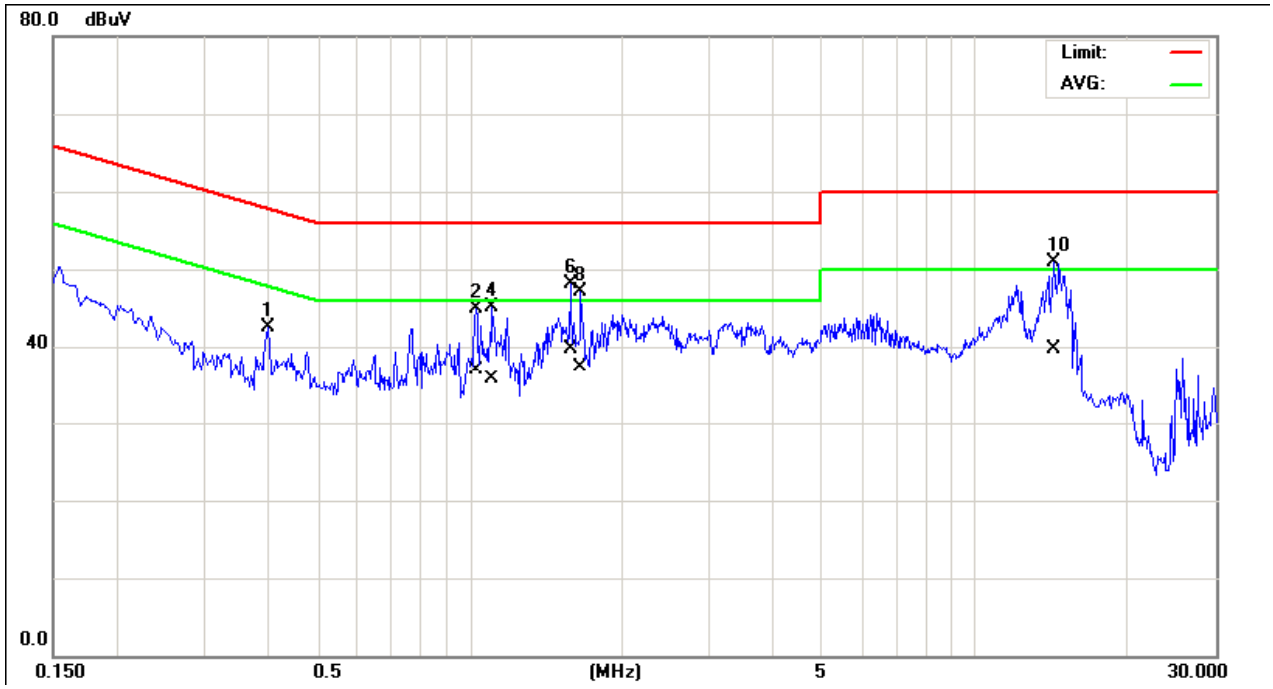
EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	50 %
Pressure：	1010hPa	Test Power ：	AC 120V/60Hz
Test Mode ：	AUX IN (Center / TianBao)		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.40	Neutral	42.50	*	57.90	47.90	-15.40	(QP)
1.03	Neutral	44.86	36.82	56.00	46.00	-9.18	(AV)
1.11	Neutral	45.16	35.74	56.00	46.00	-10.26	(AV)
1.58	Neutral	48.06	39.62	56.00	46.00	-6.38	(AV)
1.65	Neutral	47.17	37.25	56.00	46.00	-8.75	(AV)
14.36	Neutral	50.91	39.67	60.00	50.00	-9.09	(QP)

Remark

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform。In this case, a " * " marked in AVG Mode column of Interference Voltage Measured。

(2) Measuring frequency range from 150KHz to 30MHz。



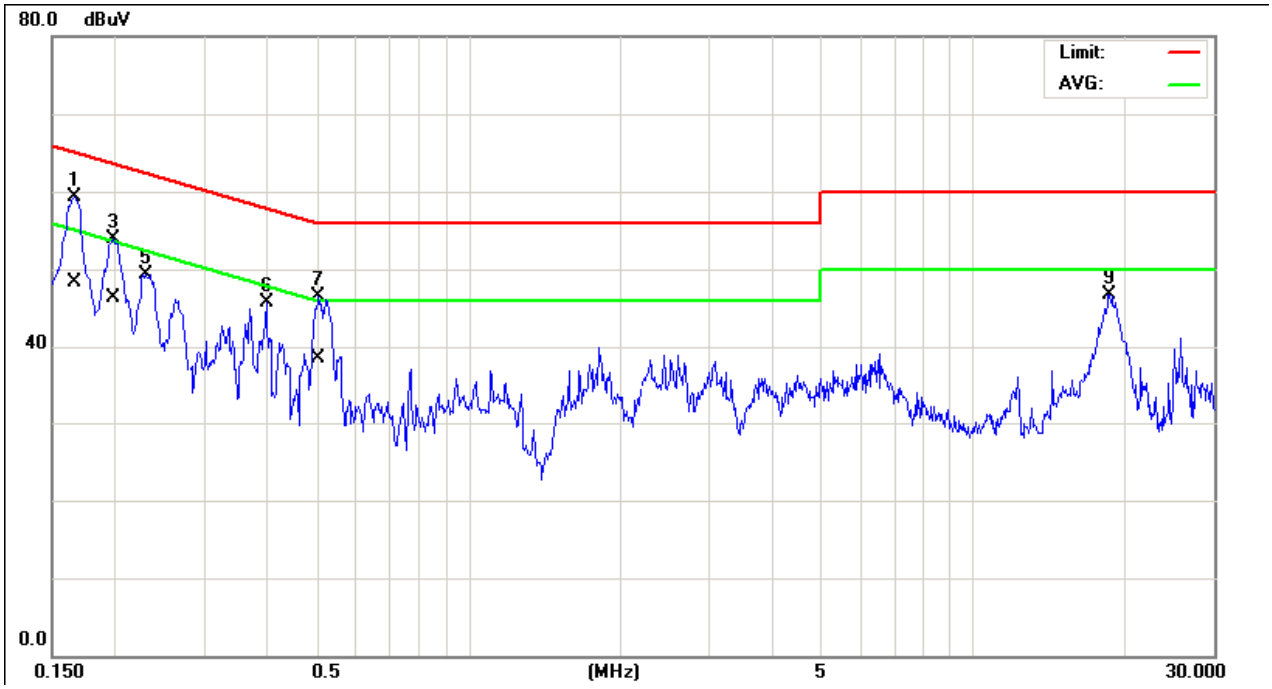
EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	54 %
Pressure：	1010hPa	Test Power ：	AC 120V/60Hz
Test Mode ：	AUX IN (Center / HanWei)		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.17	Line	59.35	48.29	65.17	55.17	-5.82	(QP)
0.20	Line	53.96	46.33	63.72	53.72	-7.39	(AV)
0.23	Line	49.26	*	62.44	52.44	-13.18	(QP)
0.40	Line	45.63	*	57.90	47.90	-12.27	(QP)
0.50	Line	46.45	38.55	56.00	46.00	-7.45	(AV)
18.62	Line	46.79	*	60.00	50.00	-13.21	(QP)

Remark

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform。In this case, a " * " marked in AVG Mode column of Interference Voltage Measured。

(2) Measuring frequency range from 150KHz to 30MHz。



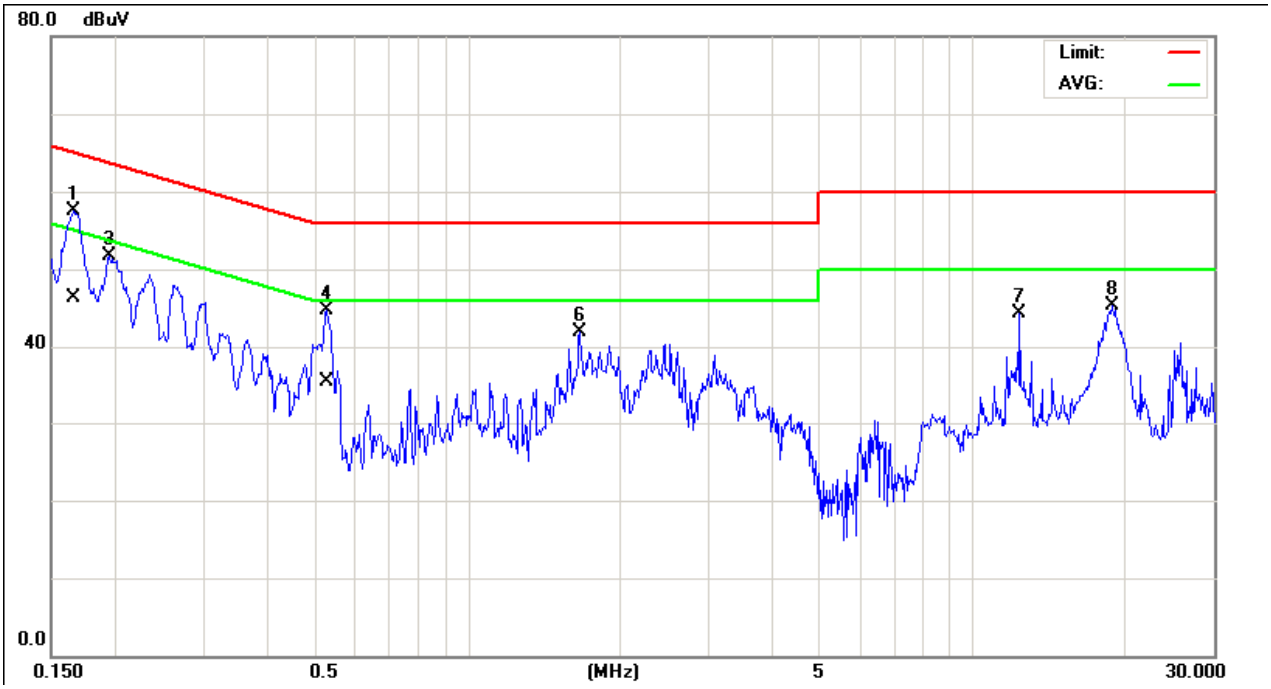
EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	50 %
Pressure：	1010hPa	Test Power ：	AC 120V/60Hz
Test Mode ：	AUX IN (Center / HanWei)		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.17	Neutral	57.42	46.39	65.17	55.17	-7.75	(QP)
0.20	Neutral	51.76	*	63.80	53.80	-12.04	(QP)
0.52	Neutral	44.67	35.28	56.00	46.00	-10.72	(AV)
1.66	Neutral	42.00	*	56.00	46.00	-14.00	(QP)
12.38	Neutral	44.36	*	60.00	50.00	-15.64	(QP)
18.92	Neutral	45.31	*	60.00	50.00	-14.69	(QP)

Remark

(1) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform。In this case, a " * " marked in AVG Mode column of Interference Voltage Measured。

(2) Measuring frequency range from 150KHz to 30MHz。



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (Frequency Range 9KHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	(dBuV/m) (at 3m)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

4.2.2 MEASUREMENT INSTRUMENTS LIST ANS SETTING

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Triple Loop Antenna	R&S	HFH2-Z2	830749/020	May.27.2011
2	Bi-log Antenna	Schwarbeck	VULB9160	9160-3232	May.26.2011
3	Horn Antenna	ETS	3115	00075789	May.12.2011
4	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170340	Dec.14.2011
5	Amplifier	HP	8447D	2944A09673	May.26.2011
6	Amplifier	Agilent	8449B	3008A02274	May.26.2011
7	Amplifier	EMC	EMC2654045	980039	Aug.12.2011
8	Test Receiver	R&S	ESCI	100895	May.26.2011
9	Spectrum Analyzer	R&S	FSP 40	100185	Nov.26.2011
10	Test Cable	N/A	C-01_CB03	N/A	Jul.05.2011
11	Test Cable	HUBER+SUHNER	SUCOFLEX_8m	313794/4	Apr.12.2011
12	Controller	CT	SC100	N/A	N/A

Remark: ” N/A” denotes No Model Name / Serial No. and No Calibration specified.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.2.3 TEST PROCEDURE

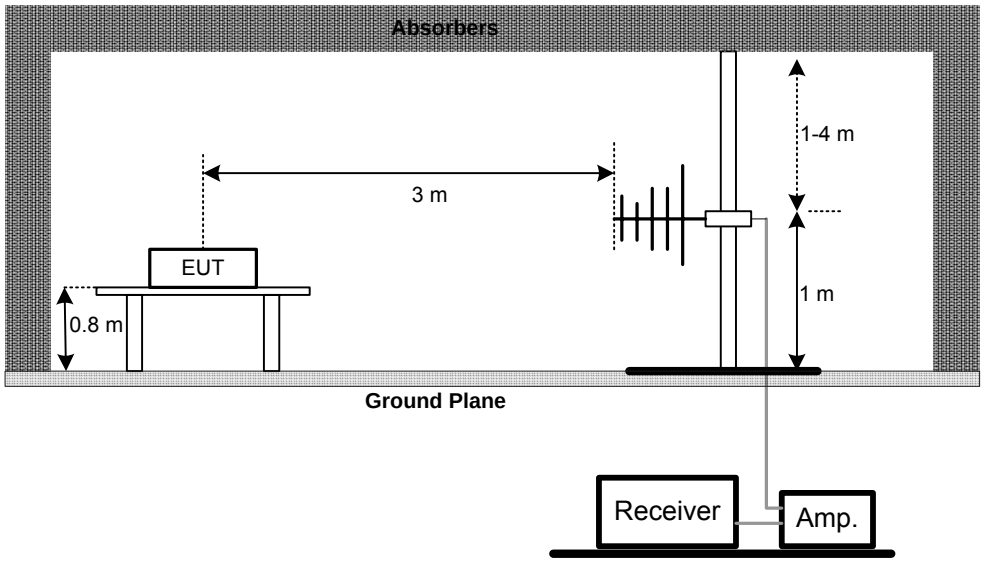
a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.4 DEVIATION FROM TEST STANDARD

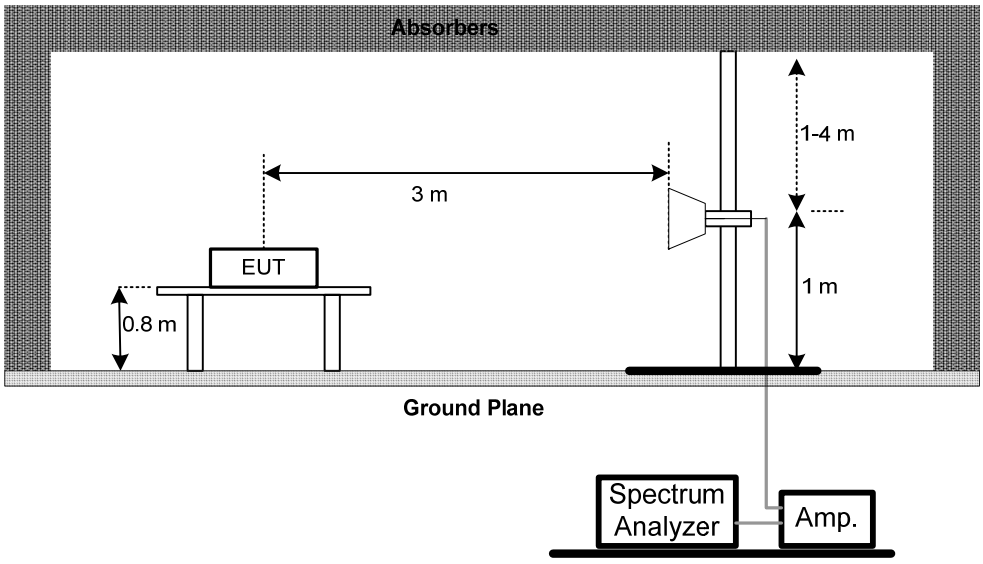
No deviation

4.2.5 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



4.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

4.2.7 TEST RESULTS (BETWEEN30 – 1000 MHZ)

EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	23 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode 2412MHz (Center / TianBao)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
82.14	V	54.94	-19.09	35.85	40.00	- 4.15	
119.35	V	50.46	-18.29	32.17	43.50	- 11.33	
303.41	V	42.11	-11.98	30.13	46.00	- 15.87	
328.07	V	42.90	-11.38	31.52	46.00	- 14.48	
452.36	V	36.10	-8.08	28.02	46.00	- 17.98	
554.76	V	32.48	-5.37	27.11	46.00	-18.89	

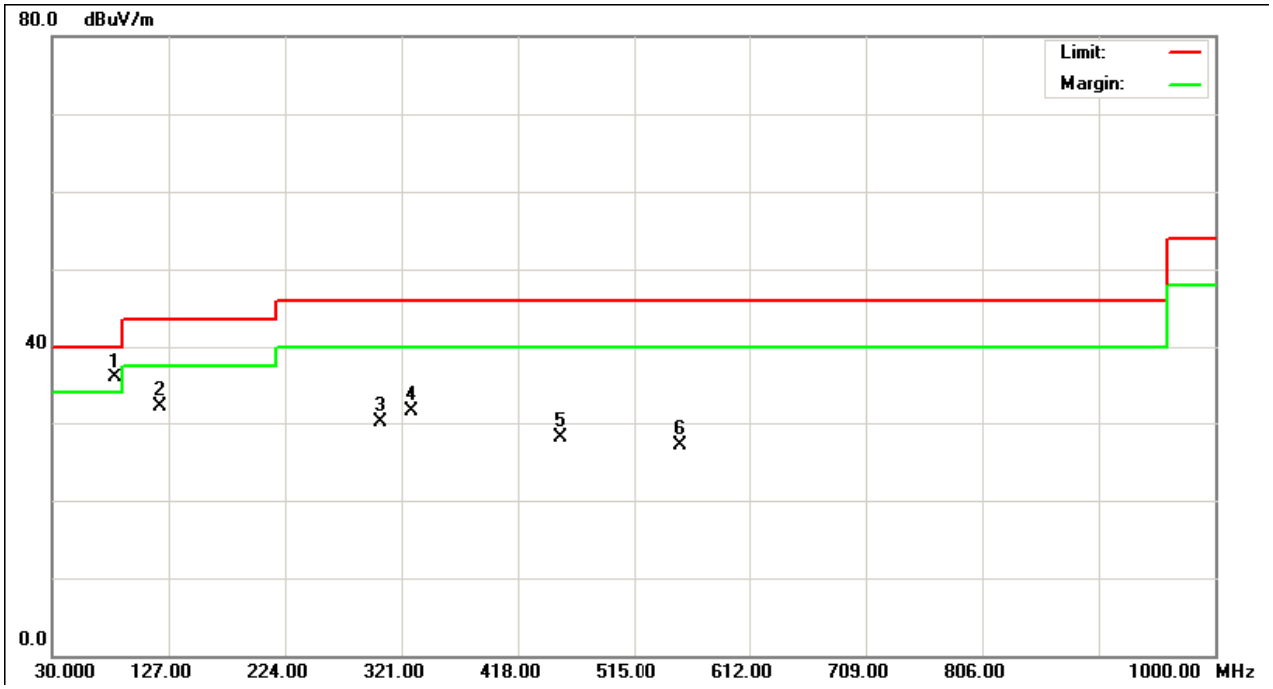
Remark：

(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz；SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz。

(2) All readings are Peak unless otherwise stated QP in column of 『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(3) Measuring frequency range from 30MHz to 1000MHz。

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table。



EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	23 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode 2412MHz (Center / TianBao)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
62.87	H	50.69	-17.54	33.15	40.00	- 6.85	
119.26	H	51.15	-18.29	32.86	43.50	- 10.64	
302.15	H	38.49	-12.02	26.47	46.00	- 19.53	
328.77	H	38.35	-11.36	26.99	46.00	- 19.01	
606.42	H	39.26	-4.14	35.12	46.00	- 10.88	
873.69	H	34.72	-0.51	34.21	46.00	-11.79	

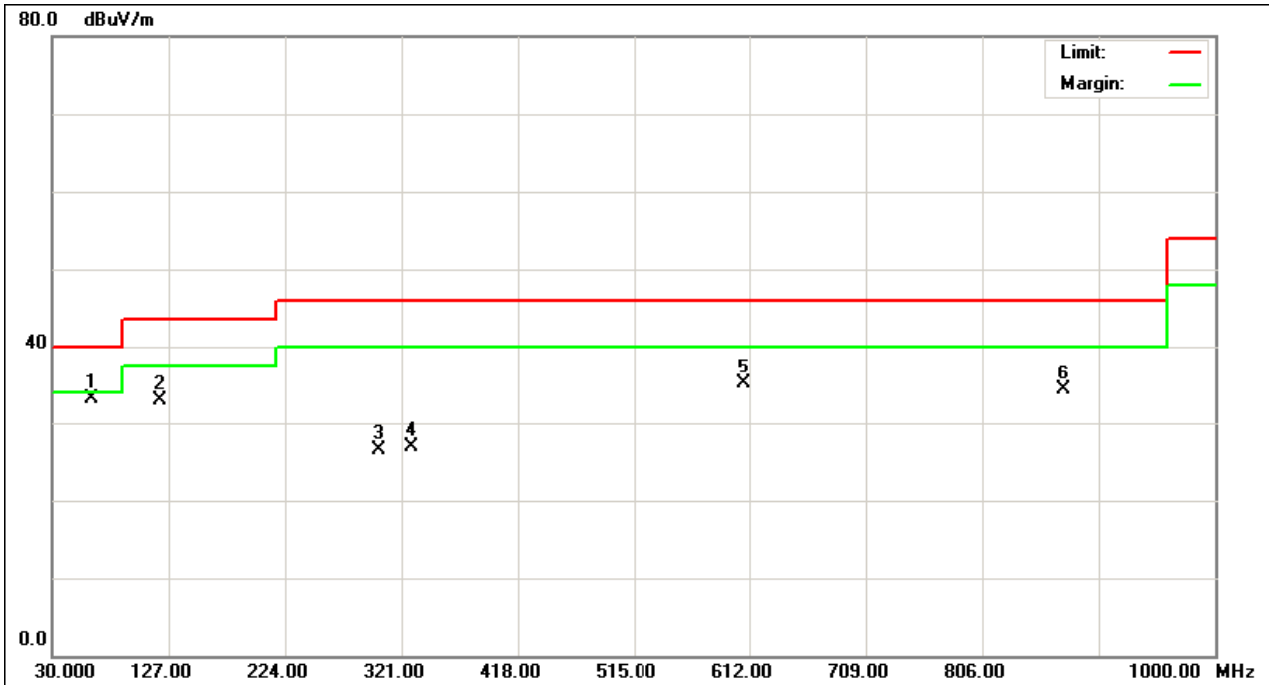
Remark：

(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz；SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz。

(2) All readings are Peak unless otherwise stated QP in column of 『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(3) Measuring frequency range from 30MHz to 1000MHz。

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table。



EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	23 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode 2412MHz (Center / HanWei)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
82.41	V	54.51	-19.10	35.41	40.00	- 4.59	
119.52	V	54.51	-18.29	36.22	43.50	- 7.28	
303.64	V	46.36	-11.98	34.38	46.00	- 11.62	
328.75	V	44.65	-11.36	33.29	46.00	- 12.71	
454.21	V	42.76	-8.05	34.71	46.00	- 11.29	
553.71	V	41.29	-5.40	35.89	46.00	-10.11	

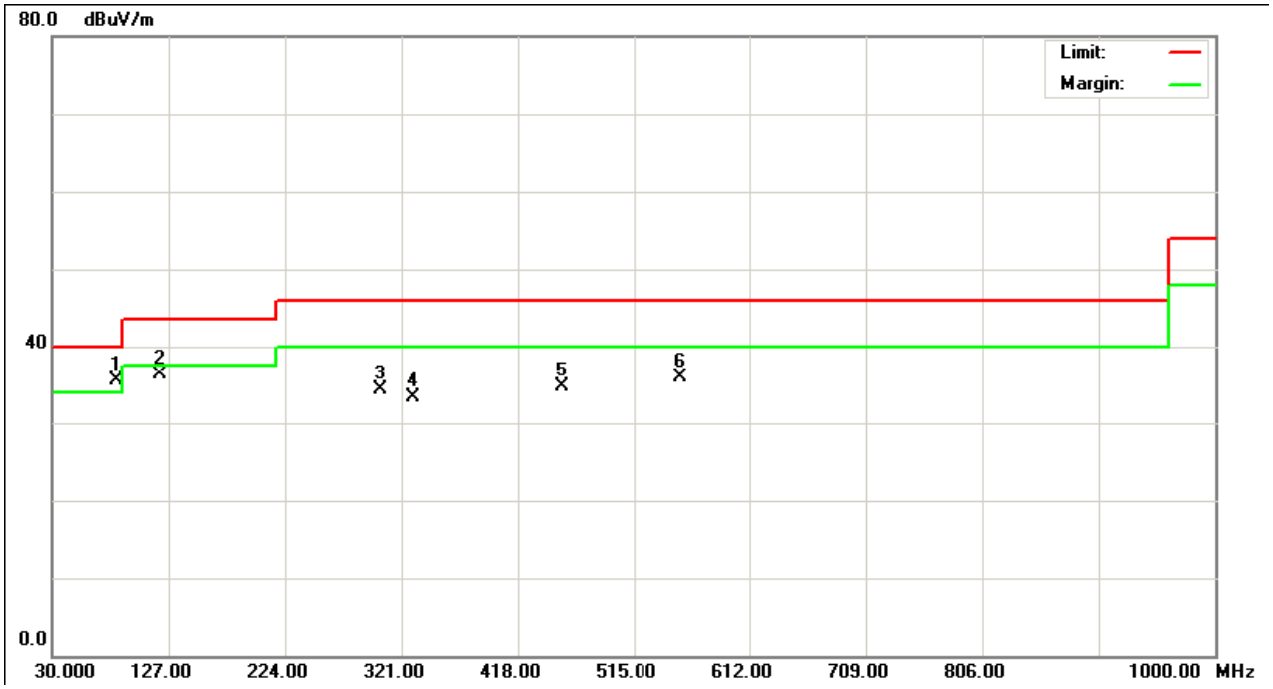
Remark：

(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz；SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz。

(2) All readings are Peak unless otherwise stated QP in column of 『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(3) Measuring frequency range from 30MHz to 1000MHz。

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table。



EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	23 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode 2412MHz (Center / HanWei)		

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
62.92	H	49.70	-17.55	32.15	40.00	- 7.85	
119.35	H	48.73	-18.29	30.44	43.50	- 13.06	
303.29	H	45.84	-11.98	33.86	46.00	- 12.14	
328.74	H	48.08	-11.37	36.71	46.00	- 9.29	
606.25	H	39.58	-4.15	35.43	46.00	- 10.57	
873.91	H	35.47	-0.50	34.97	46.00	-11.03	

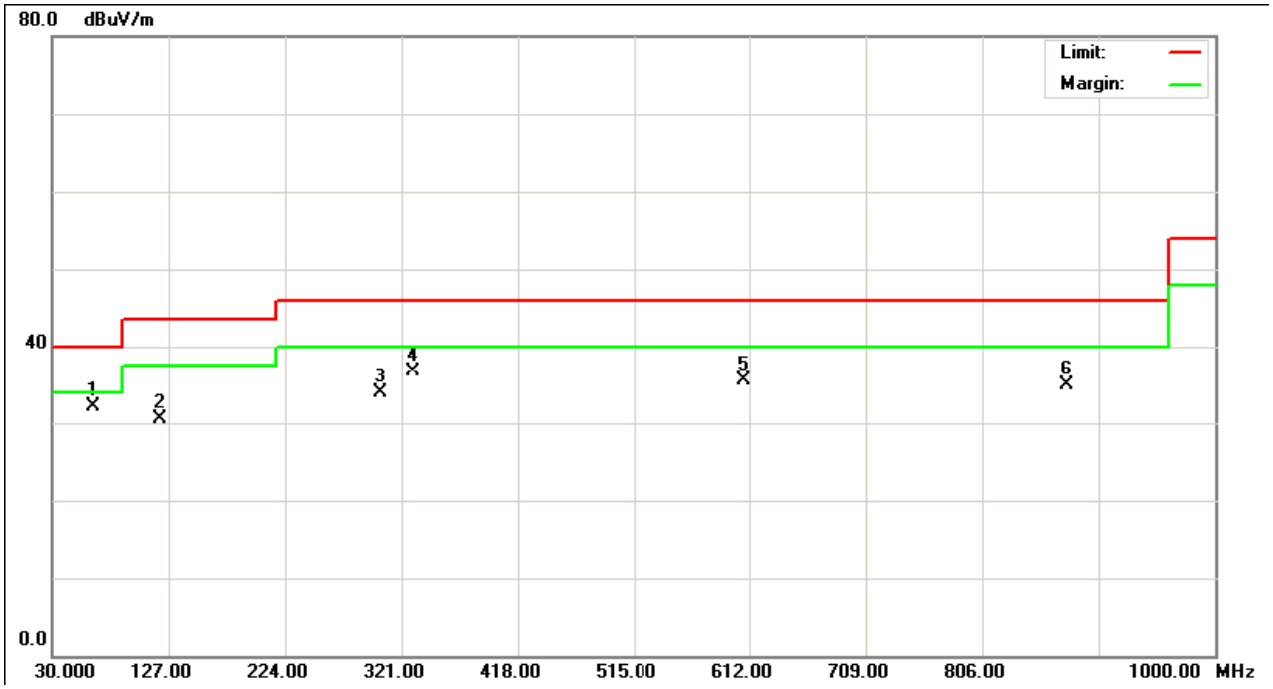
Remark：

(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz；SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz。

(2) All readings are Peak unless otherwise stated QP in column of 『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(3) Measuring frequency range from 30MHz to 1000MHz。

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table。



4.2.8 TEST RESULTS (ABOVE 1000 MHZ)

EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	V	29.80	20.48	31.08	60.88	51.56	74.00	54.00	X/E
2411.20	**V**	**75.33**	**67.05**	**31.07**	**106.40**	**98.12**			**X/F**
4823.87	V	46.66	42.77	5.39	52.05	48.16	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

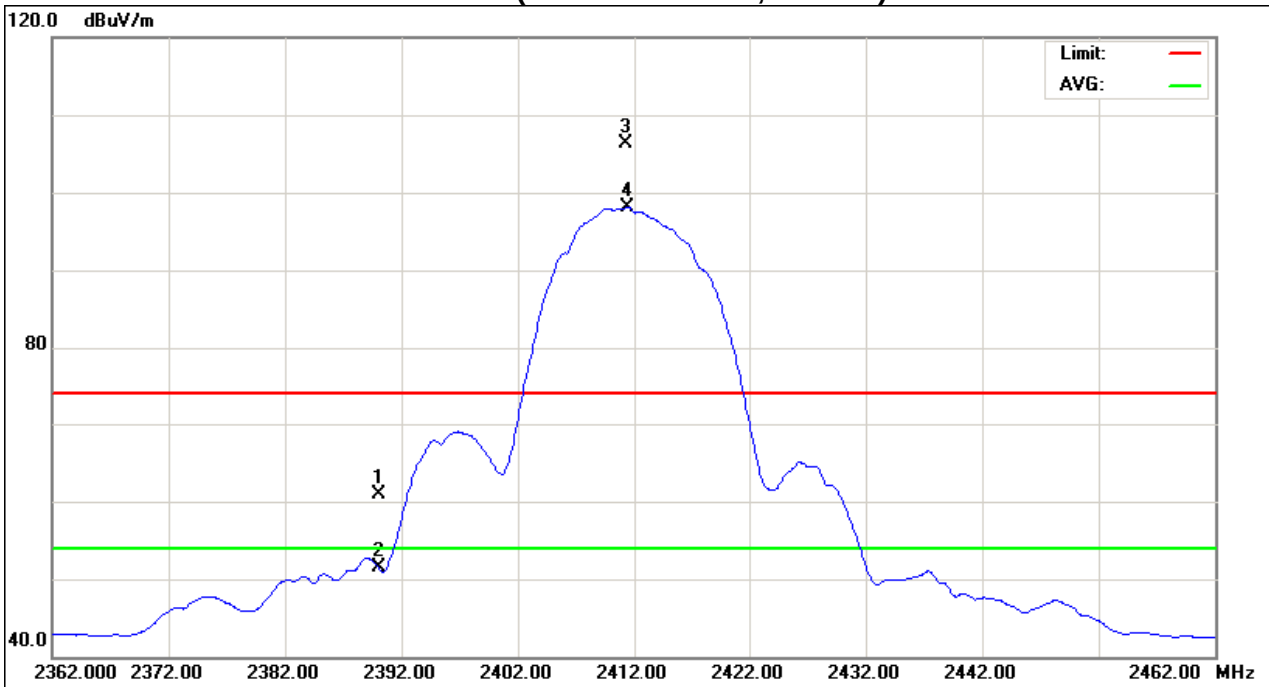
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

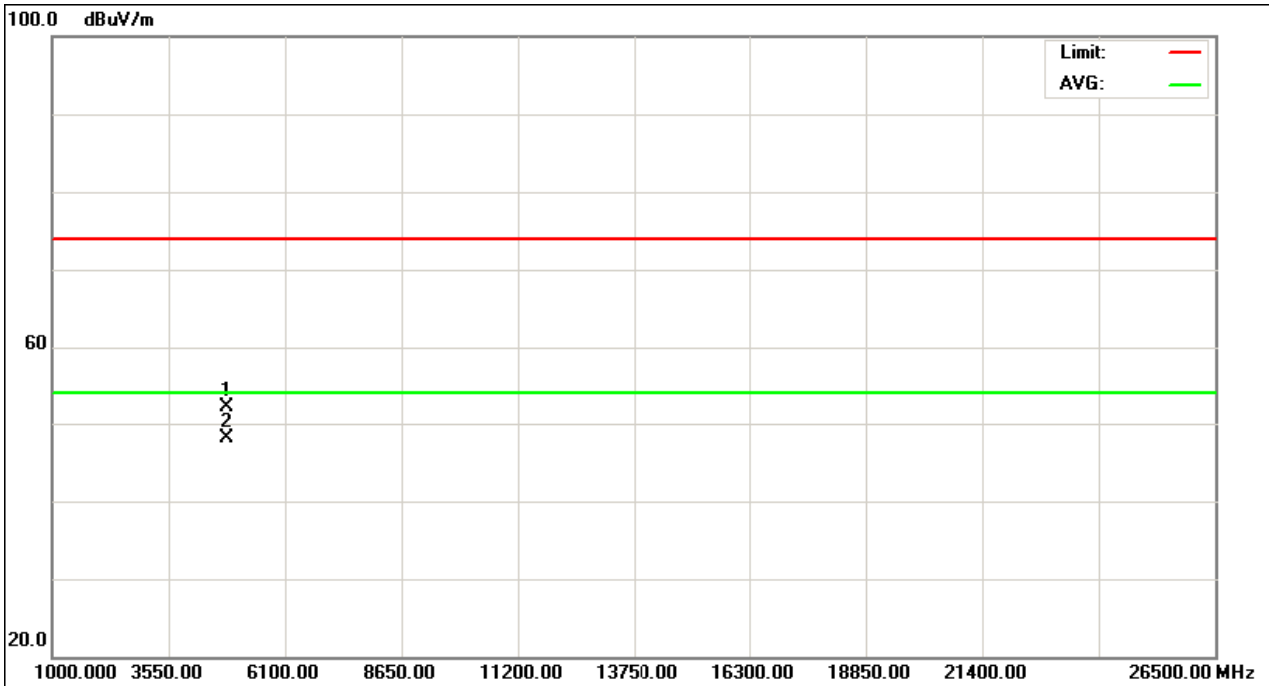
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH01 (Above 1000 MHz, Vertical)





EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2390.00	H	24.05	13.56	31.08	55.13	44.64	74.00	54.00	X/E
2408.80	**H**	**75.08**	**66.83**	**31.07**	**106.15**	**97.90**			**X/F**
4823.75	H	42.80	39.93	5.39	48.19	45.32	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

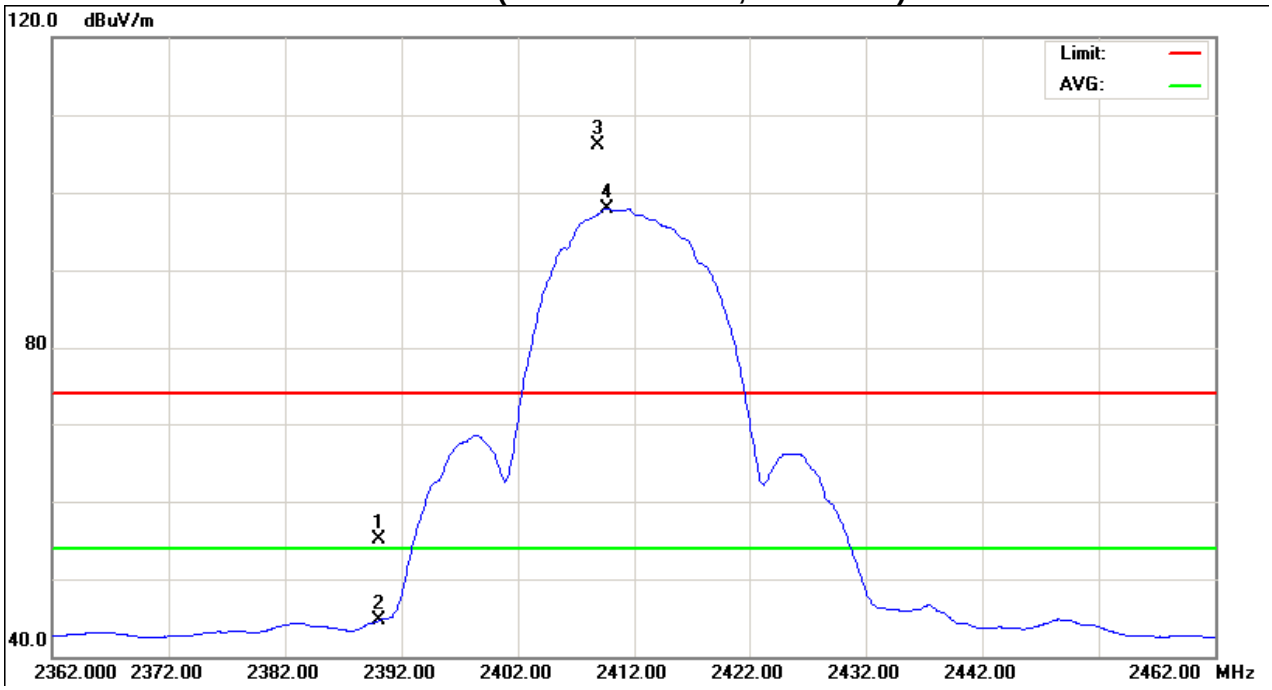
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

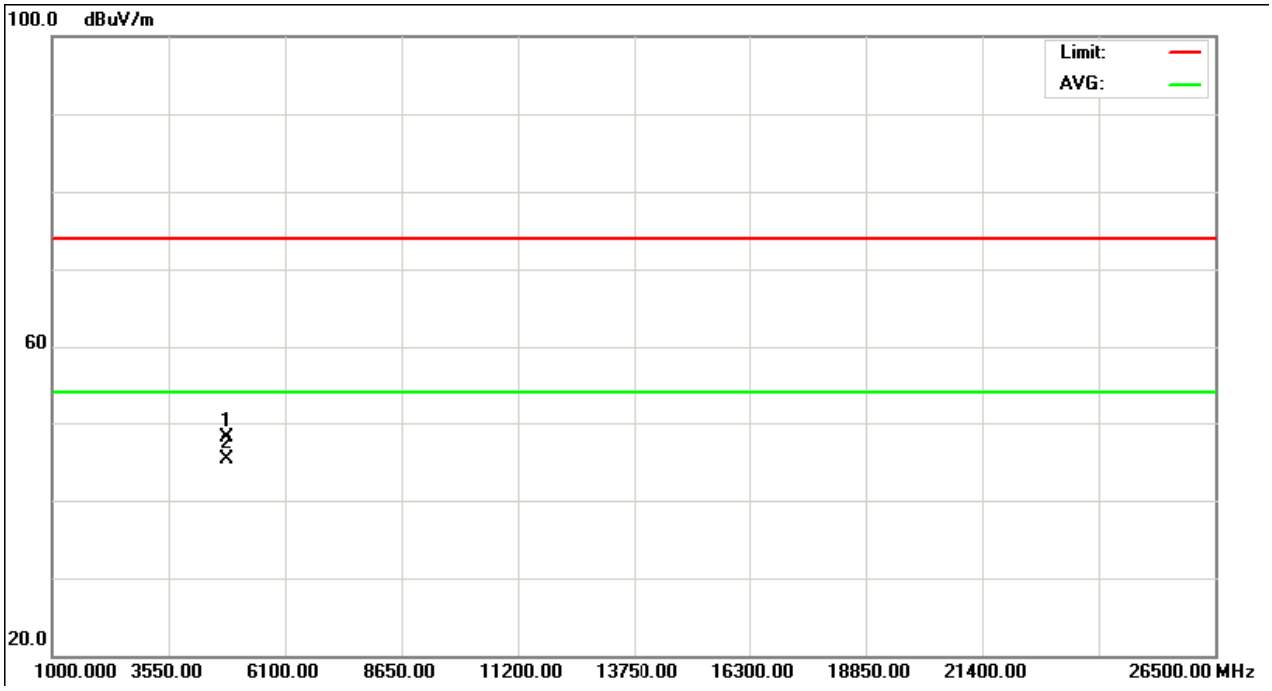
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH01 (Above 1000 MHz, Horizontal)





EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode 2438MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2440.10	**V**	**75.74**	**67.02**	**31.05**	**106.79**	**98.08**			**X/F**
4875.89	V	45.68	42.22	5.64	51.32	47.86	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

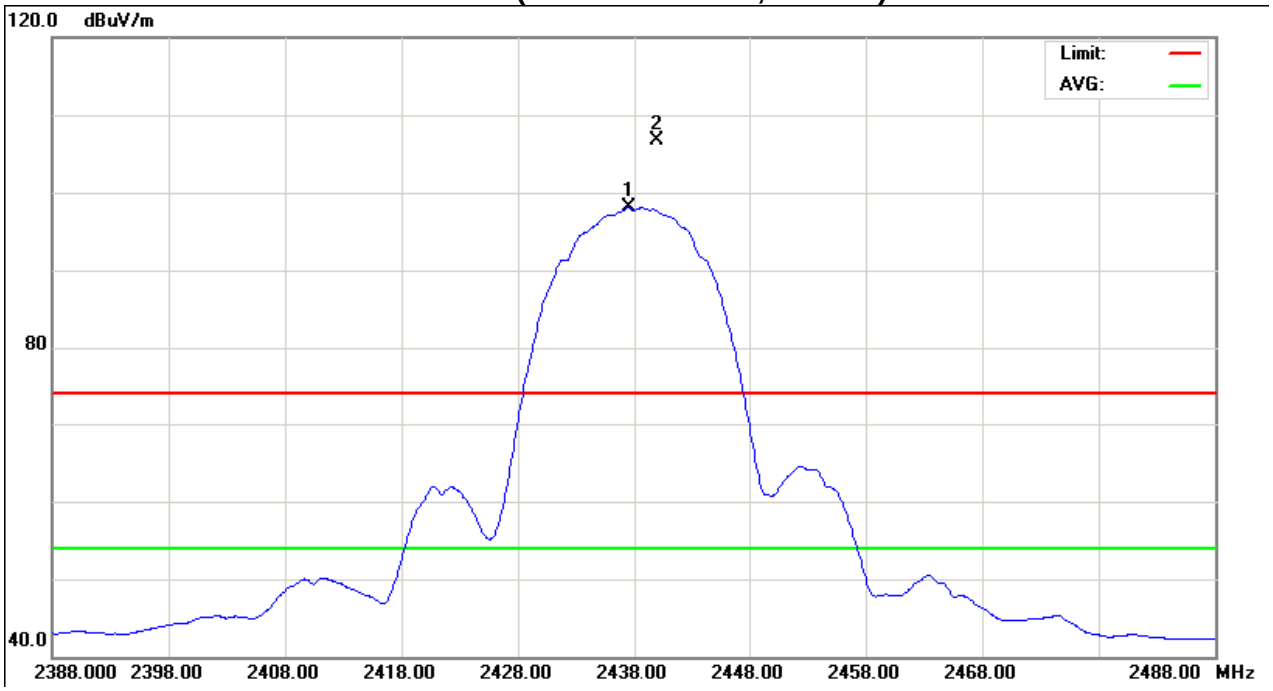
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

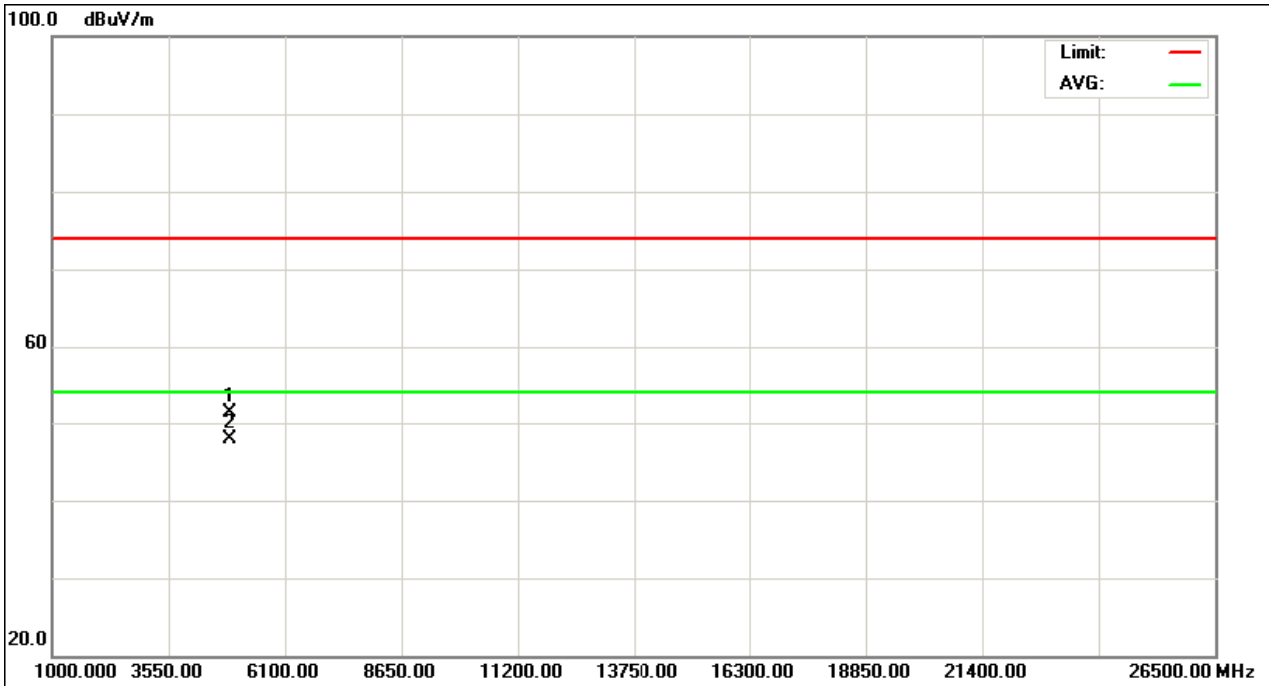
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH02 (Above 1000 MHz, Vertical)





EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode 2438MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2434.90	**H**	**74.19**	**65.81**	**31.06**	**105.25**	**96.87**			**X/F**
4875.84	H	41.52	38.17	5.64	47.16	43.81	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

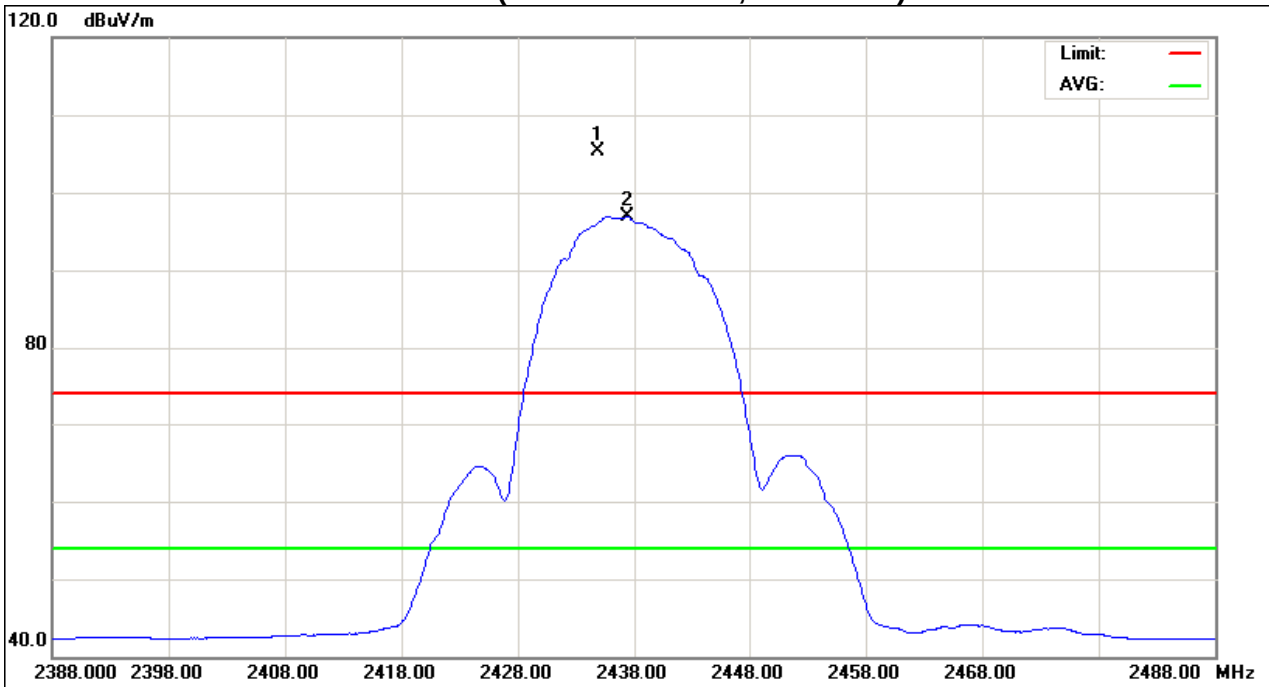
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

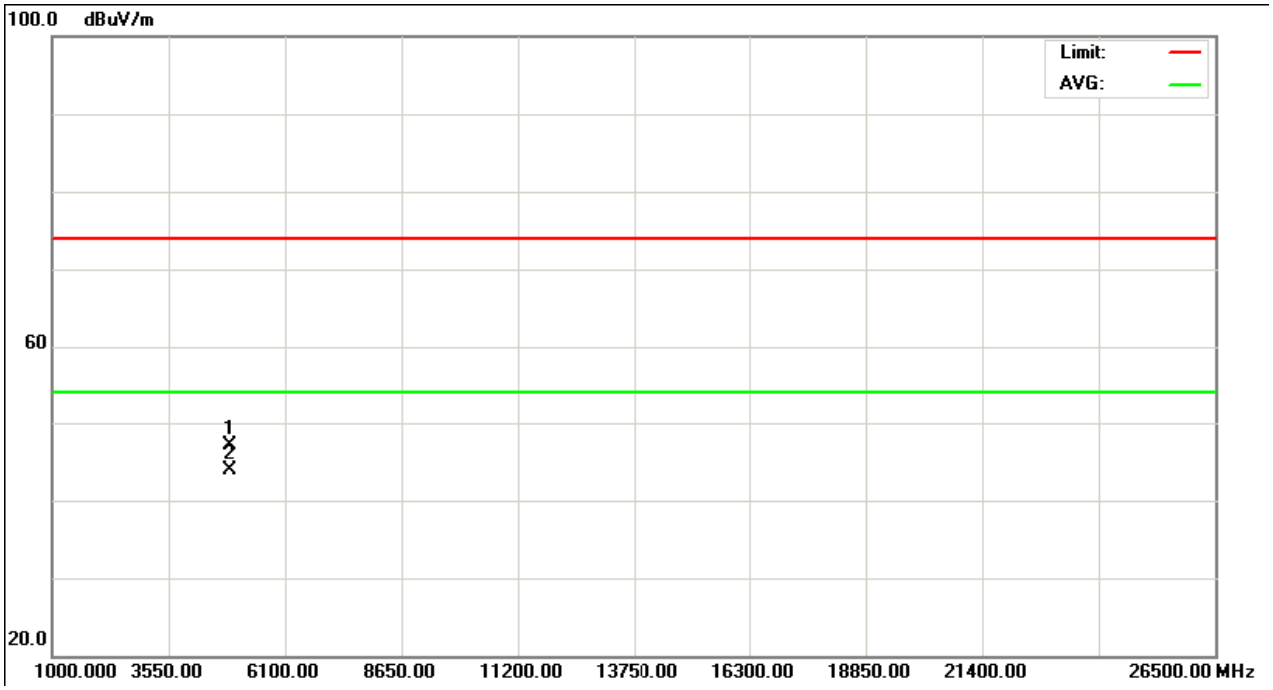
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH02 (Above 1000 MHz, Horizontal)





EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode 2464MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2466.00	**V**	**74.85**	**66.52**	**31.04**	**105.89**	**97.56**			**X/F**
2483.50	V	23.97	14.14	31.03	55.00	45.17	74.00	54.00	X/E
4927.69	V	45.76	42.17	5.89	51.65	48.06	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

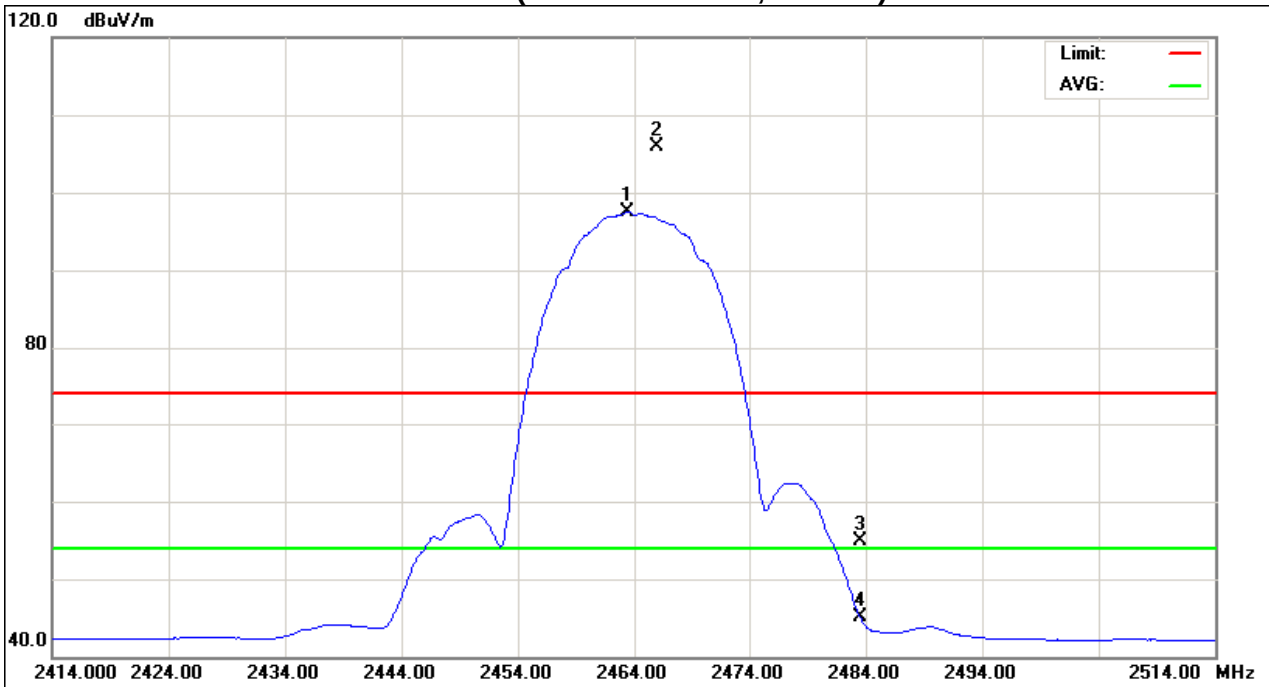
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

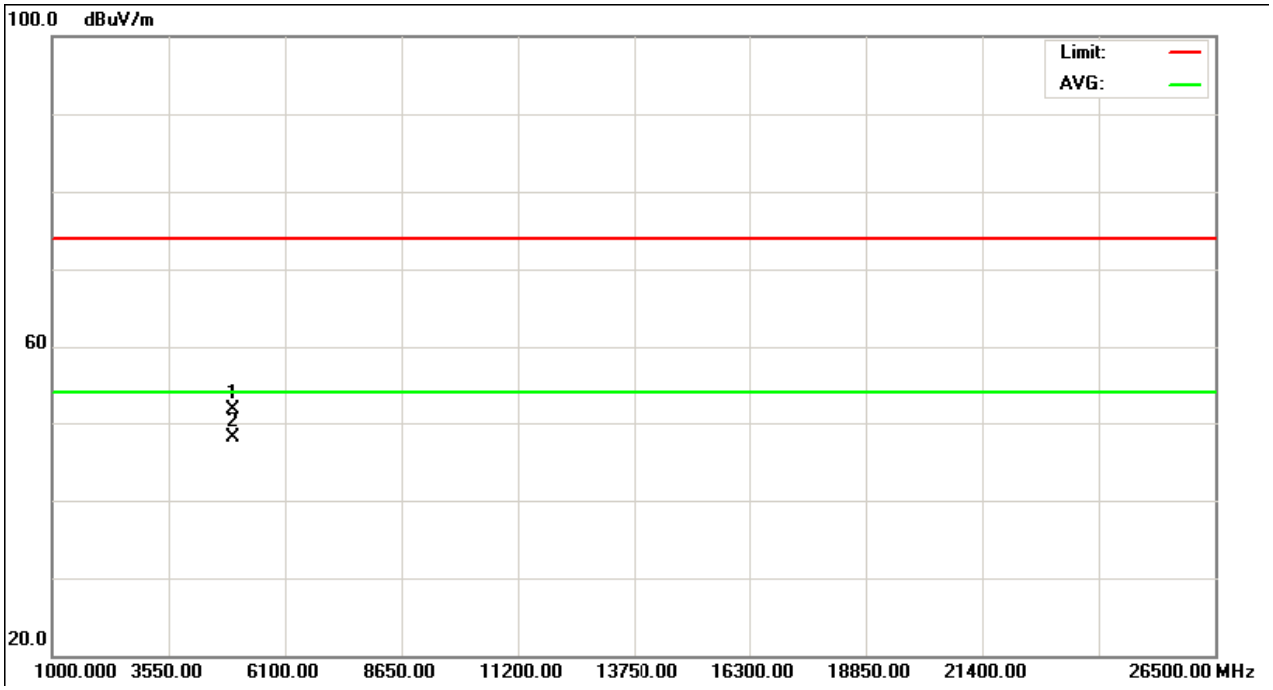
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH03 (Above 1000 MHz, Vertical)





EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode 2464MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
2463.00	**H**	**73.11**	**65.08**	**31.04**	**104.15**	**96.12**			**X/F**
2483.50	H	22.70	11.92	31.03	53.73	42.95	74.00	54.00	X/E
4927.68	H	42.32	38.72	5.89	48.21	44.61	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

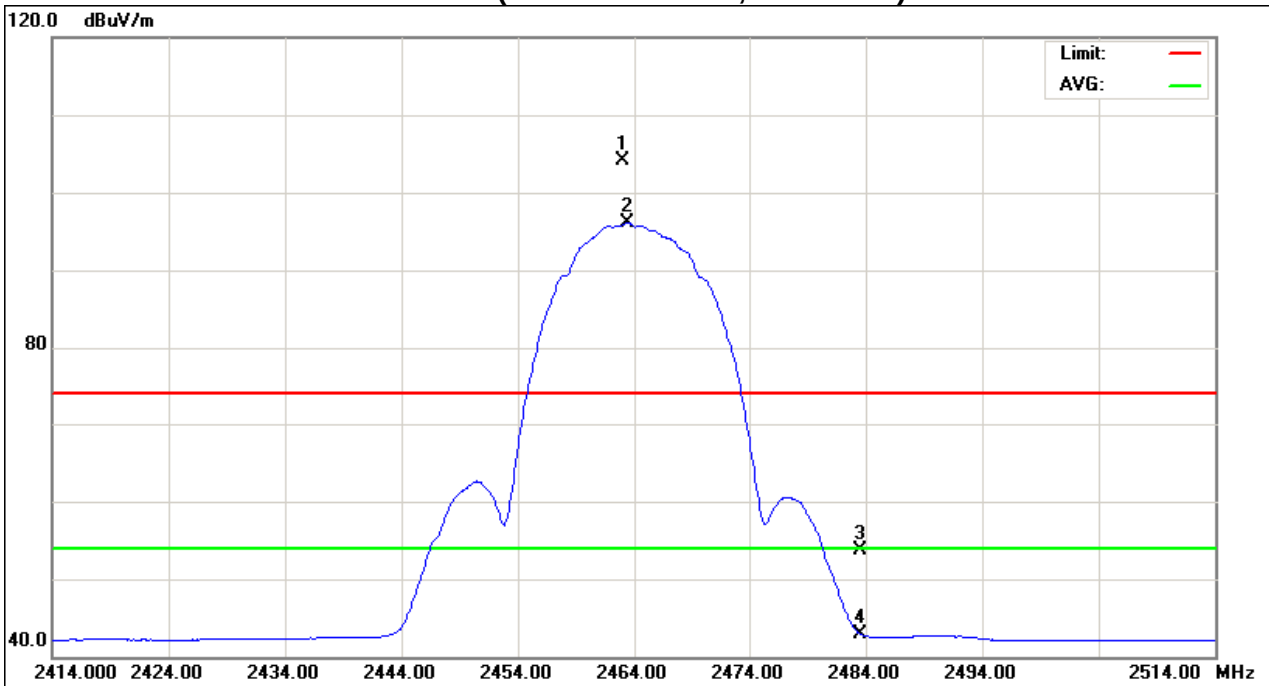
(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

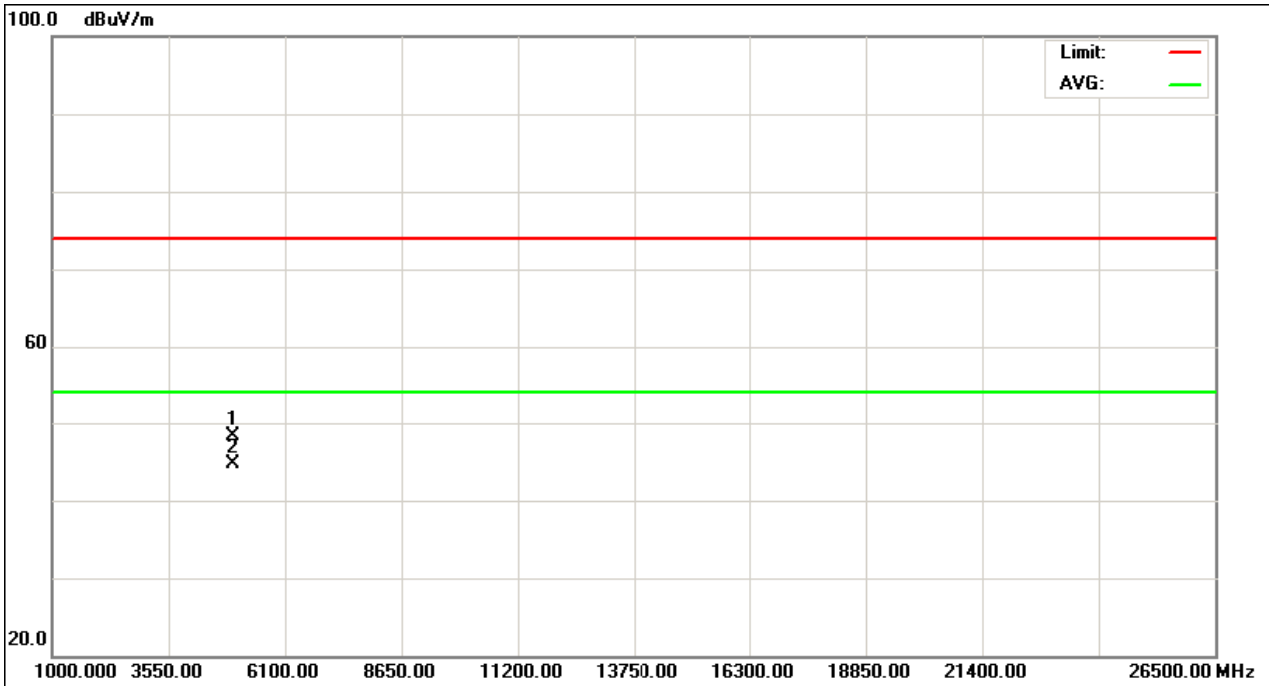
(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand

(7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna

TX CH03 (Above 1000 MHz, Horizontal)





EUT：	Powered soundbar	Model Name ：	SB300SUB
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	RX Mode 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
1608.11	V	51.29	46.05	-4.82	46.47	41.23	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 1000MHz to 6000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

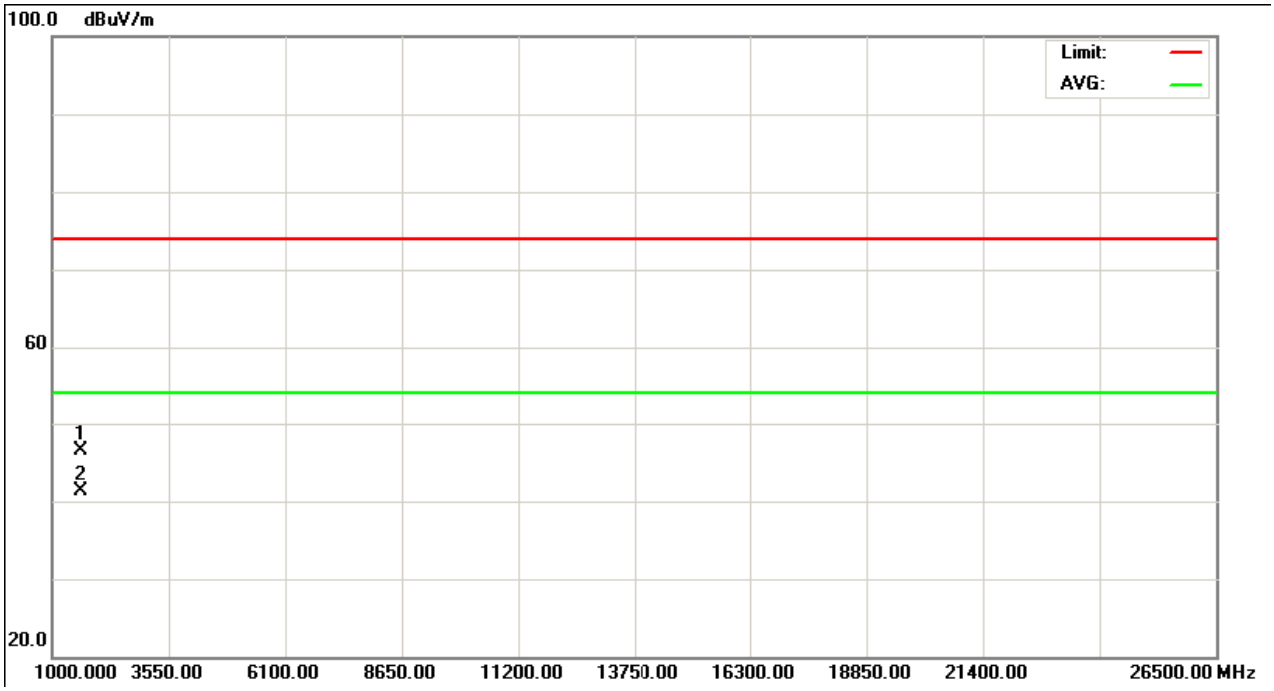
(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：

"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand



EUT：	Powered soundbar	Model Name ：	SB300SUB
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	RX Mode 2412MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
1608.05	H	49.57	43.31	-4.82	44.75	38.49	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

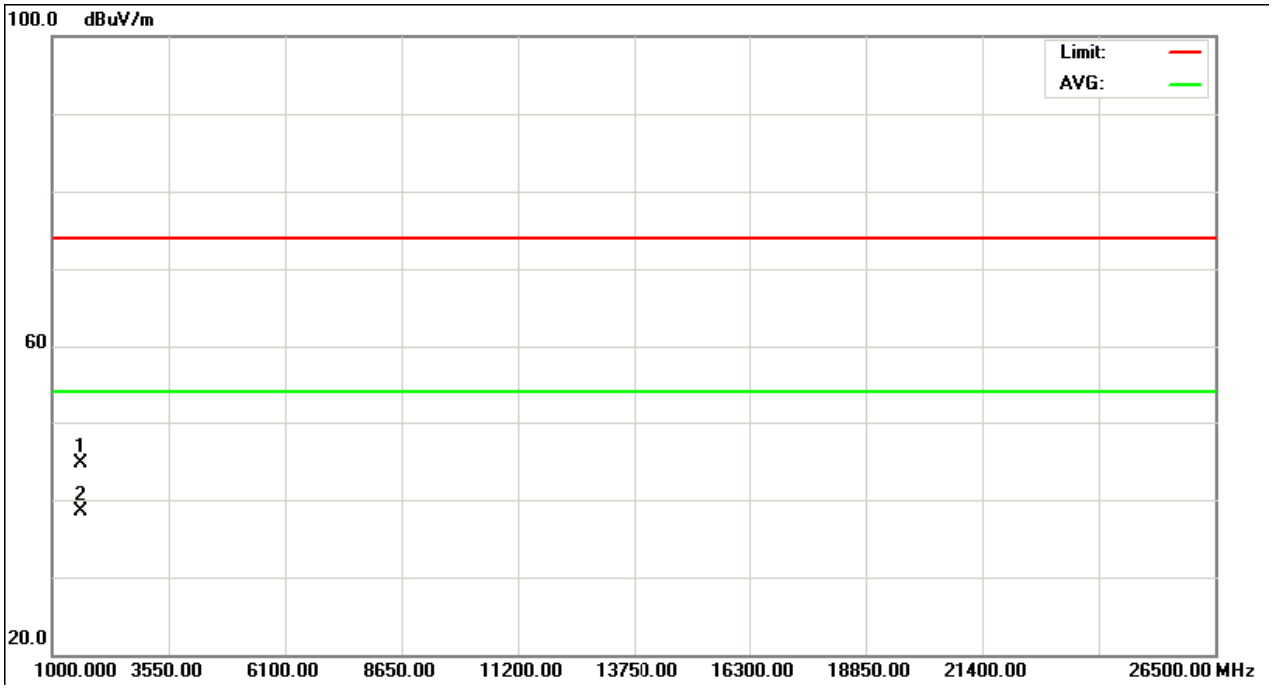
(2) Measuring frequency range from 1000MHz to 6000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand



EUT：	Powered soundbar	Model Name ：	SB300SUB
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	RX Mode 2438MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
1625.71	V	48.42	41.71	-4.65	43.77	37.06	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 1000MHz to 6000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

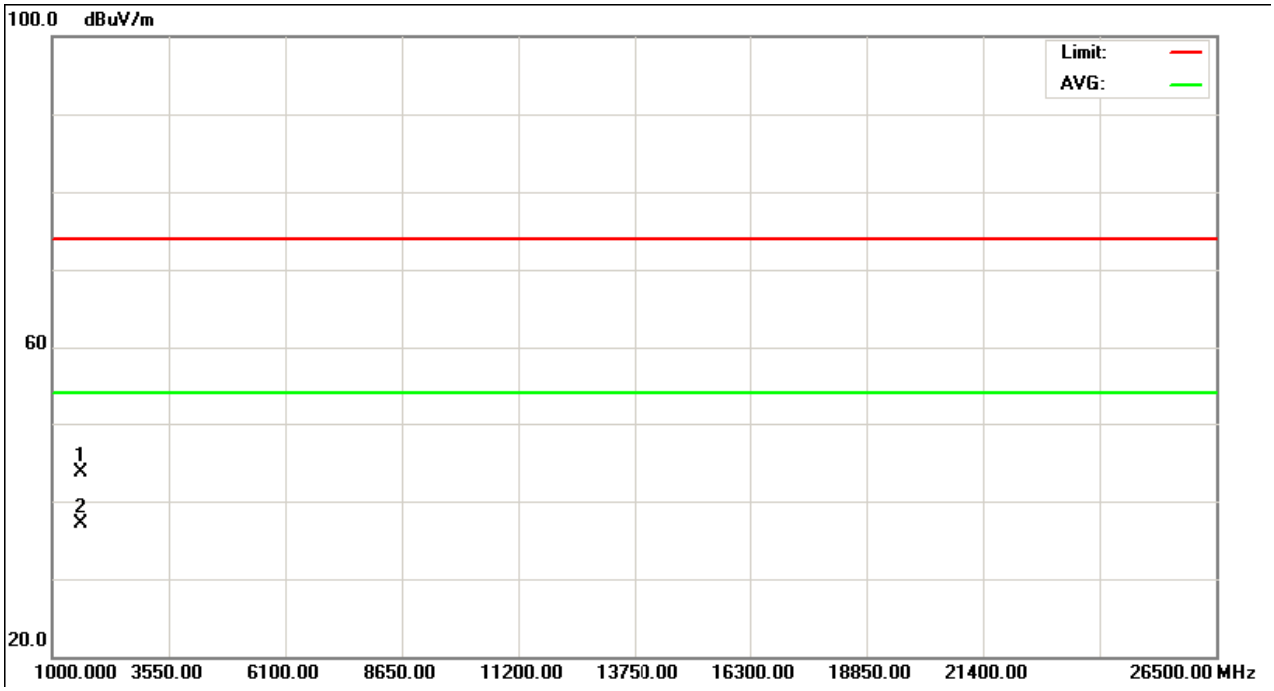
(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：

"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand



EUT：	Powered soundbar	Model Name ：	SB300SUB
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	RX Mode 2438MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
1625.71	H	50.49	44.81	-4.65	45.84	40.16	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

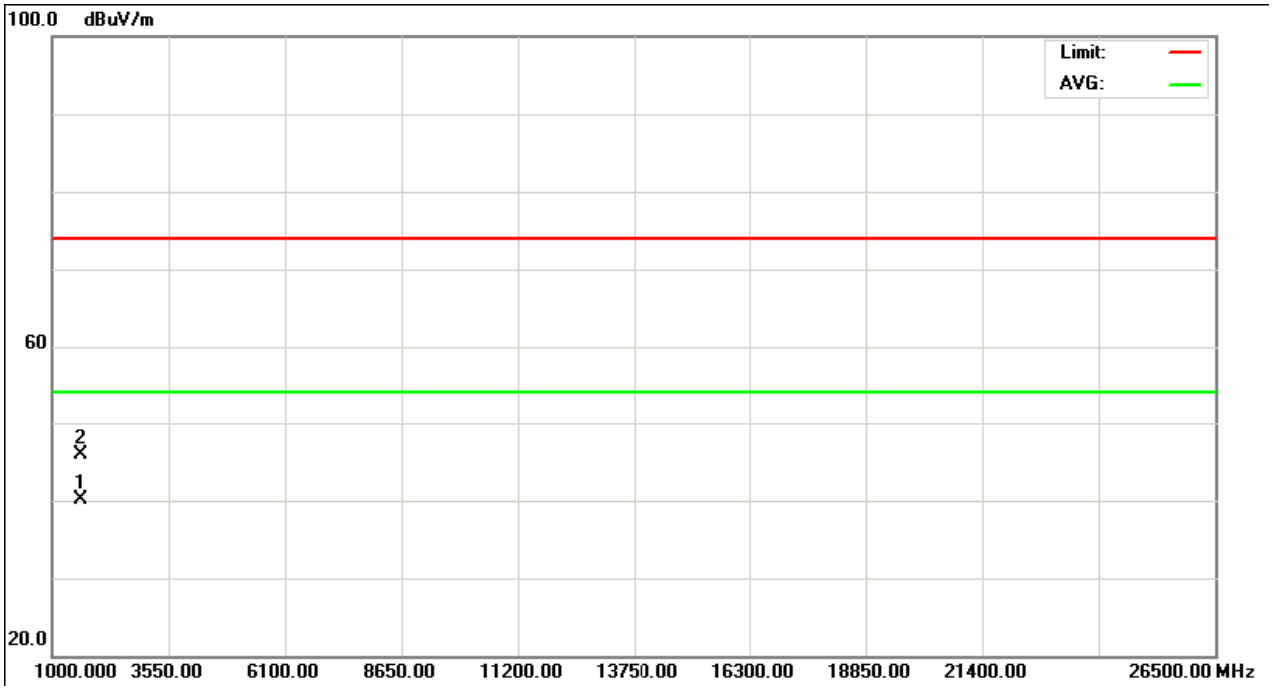
(2) Measuring frequency range from 1000MHz to 6000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand



EUT：	Powered soundbar	Model Name ：	SB300SUB
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	RX Mode 2464MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
1642.19	V	49.45	43.46	-4.50	44.95	38.96	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

(2) Measuring frequency range from 1000MHz to 6000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

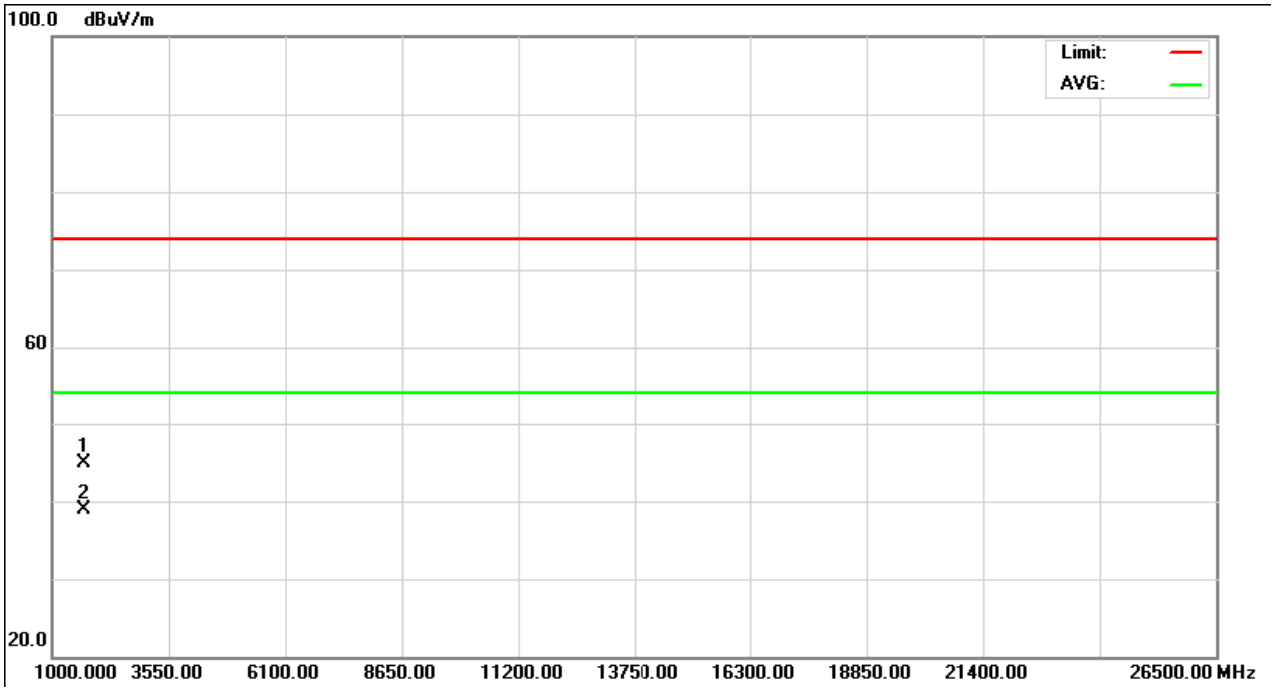
(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：

"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand



EUT：	Powered soundbar	Model Name ：	SB300SUB
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	RX Mode 2464MHz		

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
1642.19	H	51.65	47.38	-4.50	47.15	42.88	74.00	54.00	X/H

Remark：

(1) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform。

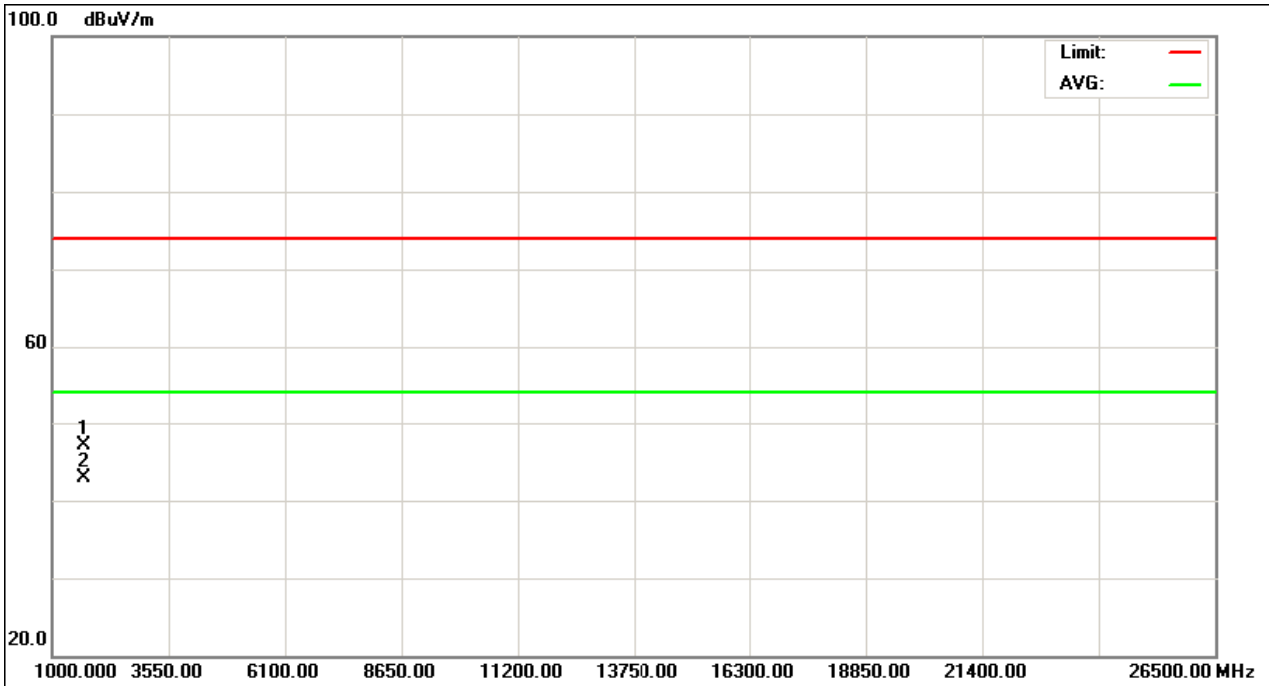
(2) Measuring frequency range from 1000MHz to 6000MHz or the 10th harmonic of highest fundamental frequency。"F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)

(3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission 。

(4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

(6) EUT Orthogonal Axis：
"X" - denotes Laid on Table；"Y" - denotes Vertical Stand；"Z" - denotes Side Stand



5. BANDWIDTH TEST

5.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS

5.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 04, 2012

Remark: ” N/A” denotes No Model Name. , Serial No. or No Calibration specified.

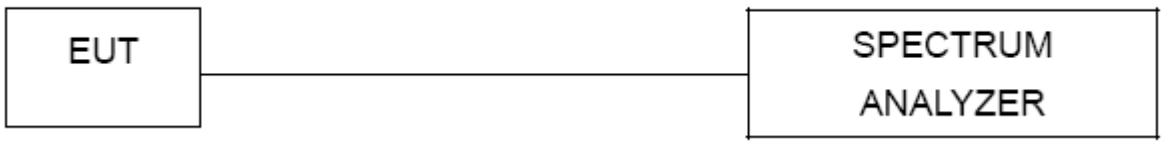
5.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = 5 ms.

5.1.3 DEVIATION FROM STANDARD

No deviation.

5.1.4 TEST SETUP



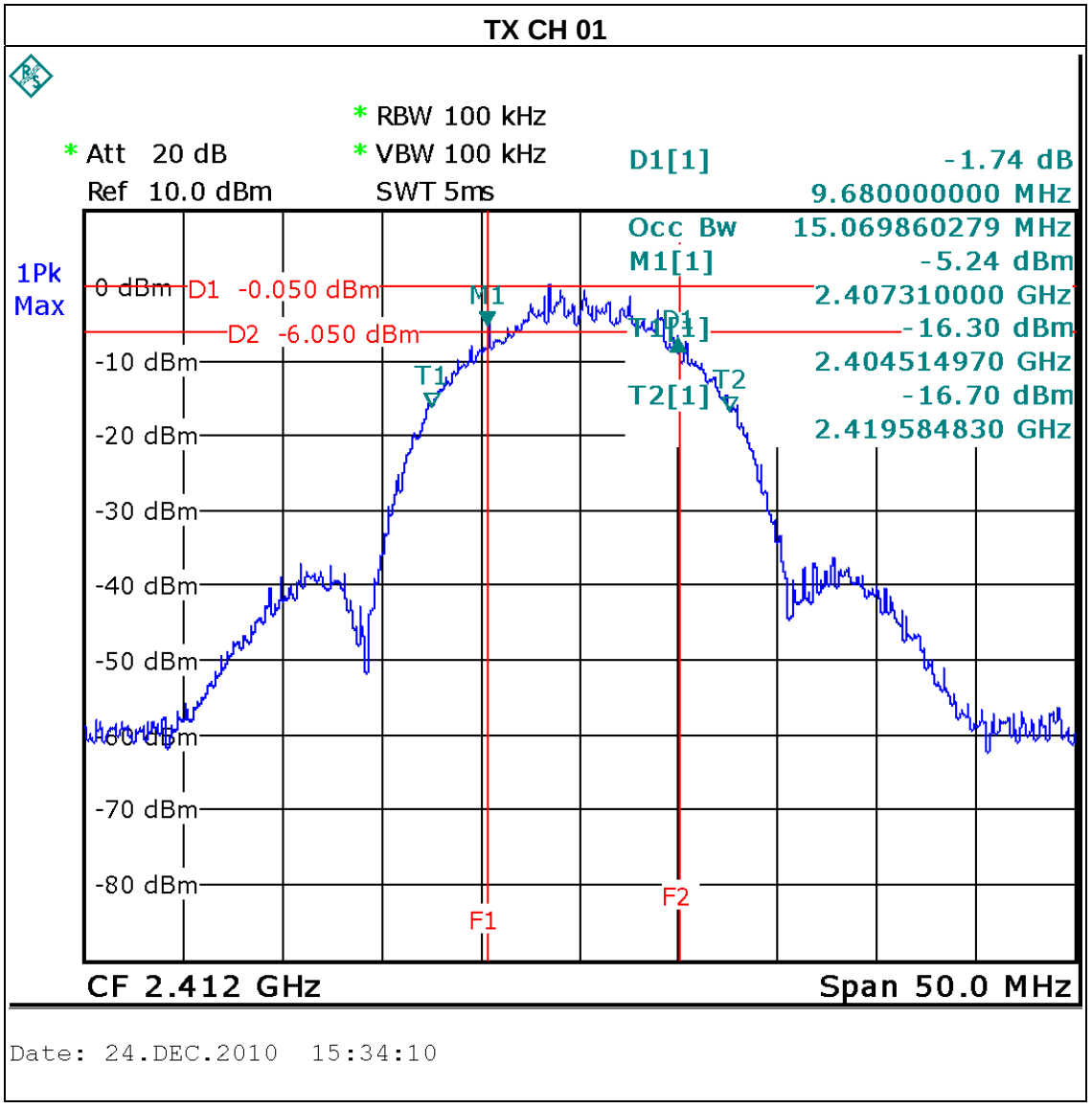
5.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

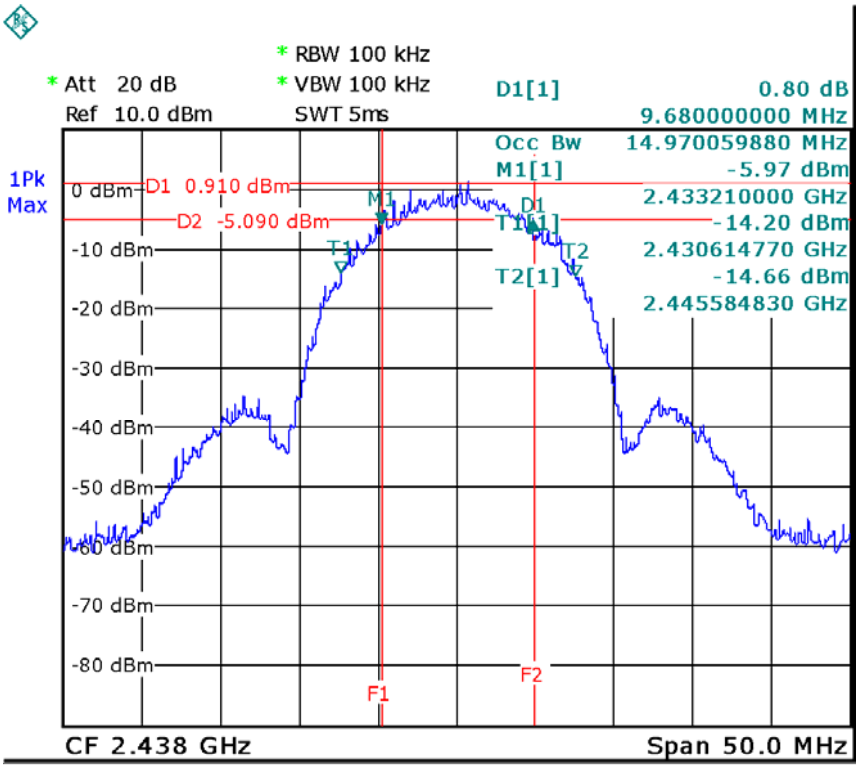
5.1.6 TEST RESULTS

EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	23 ℃	Relative Humidity：	50 %
Pressure：	1006 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX MODE /CH01, CH02, CH03		

Test Channel	Frequency (MHz)	Bandwidth (MHz)	99% Occupied BW (MHz)	LIMIT (MHz)
CH01	2412	9.68	15.07	>=500KHz
CH02	2438	9.68	14.97	>=500KHz
CH03	2464	9.68	15.07	>=500KHz

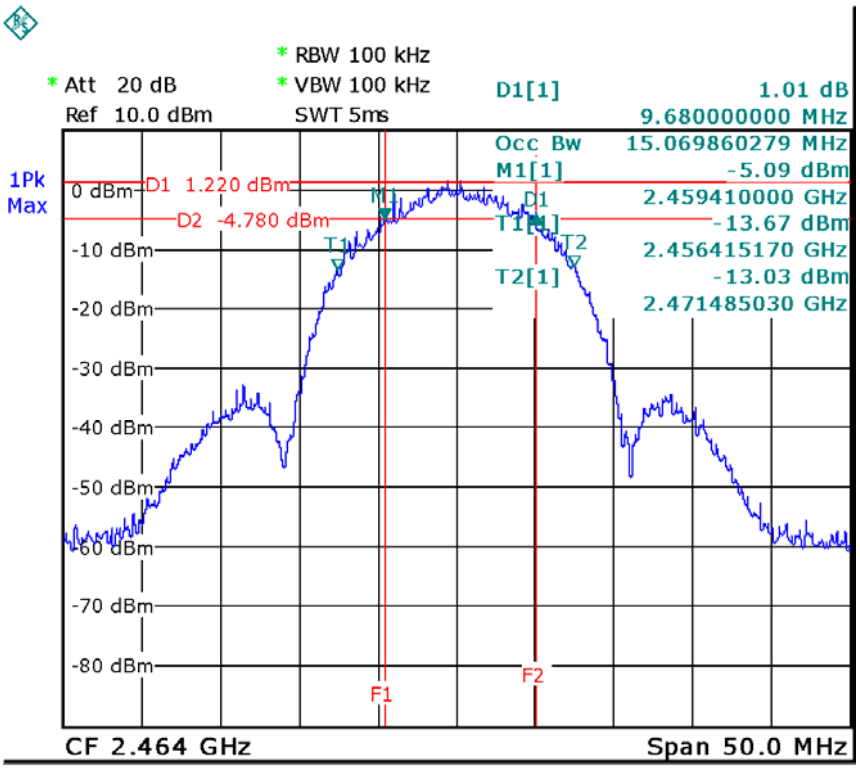


TX CH 02



Date: 24.DEC.2010 15:48:26

TX CH 03



Date: 24.DEC.2010 15:59:49

6. PEAK OUTPUT POWER TEST

6.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

6.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Power Meter	Anritsu	ML2487A	6K00004714	Feb. 09, 2012
2	Power Meter Sensor	Anritsu	MA2491A	34138	Feb. 09, 2012

Remark: ” N/A” denotes No Model Name. , Serial No. or No Calibration specified.

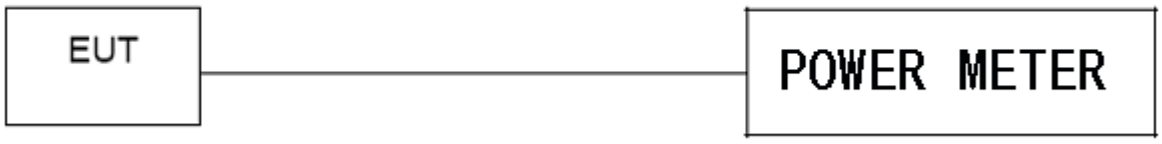
6.1.2 TEST PROCEDURE

a. The EUT was directly connected to the power metter and antenna output port as show in the block diagram below,

6.1.3 DEVIATION FROM STANDARD

No deviation.

6.1.4 TEST SETUP



6.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.6 TEST RESULTS

EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	21 ℃	Relative Humidity：	51 %
Pressure：	1006 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX MODE /CH01, CH02, CH03		

Peak Output Power

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH01	2412 MHz	17.83	30	1
CH02	2438 MHz	18.00	30	1
CH03	2464 MHz	17.86	30	1

7. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 Applied procedures / limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

7.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 04, 2012

Remark: ” N/A” denotes No Model Name. , Serial No. or No Calibration specified.

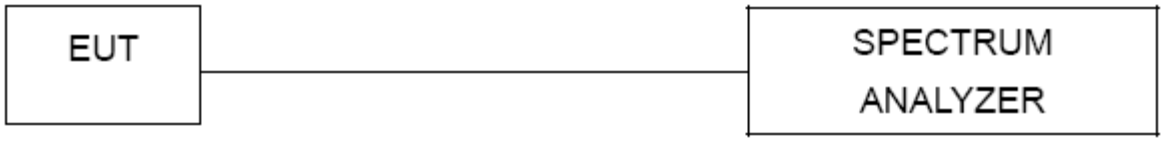
7.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = 10 ms.

7.1.3 DEVIATION FROM STANDARD

No deviation.

7.1.4 TEST SETUP



7.1.5 EUT OPERATION CONDITIONS

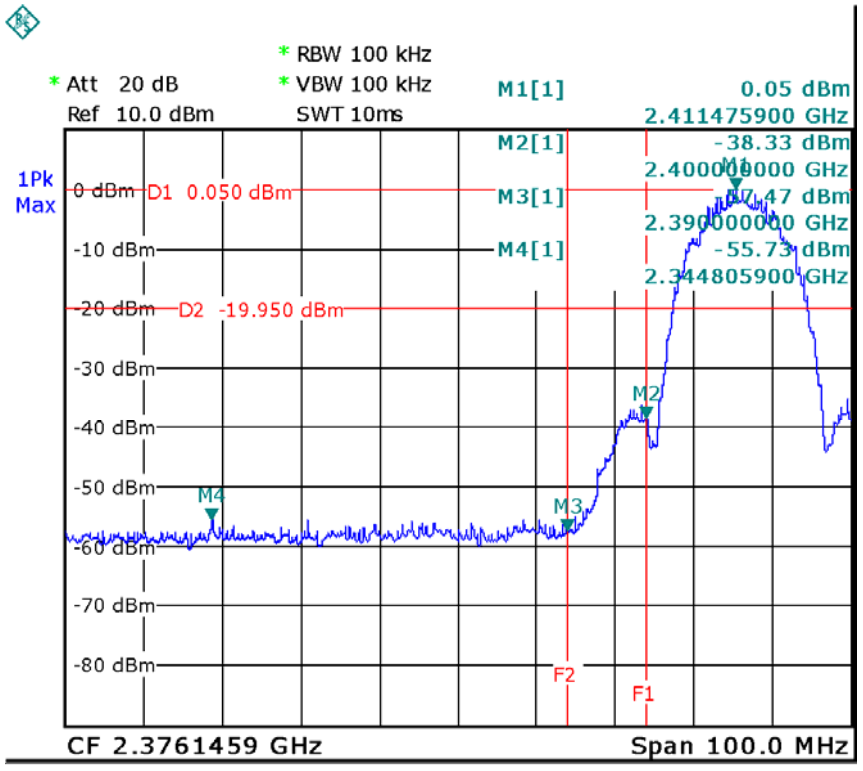
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.6 TEST RESULTS

EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	23 ℃	Relative Humidity：	50 %
Pressure：	1006 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX MODE /CH01, CH02, CH03		

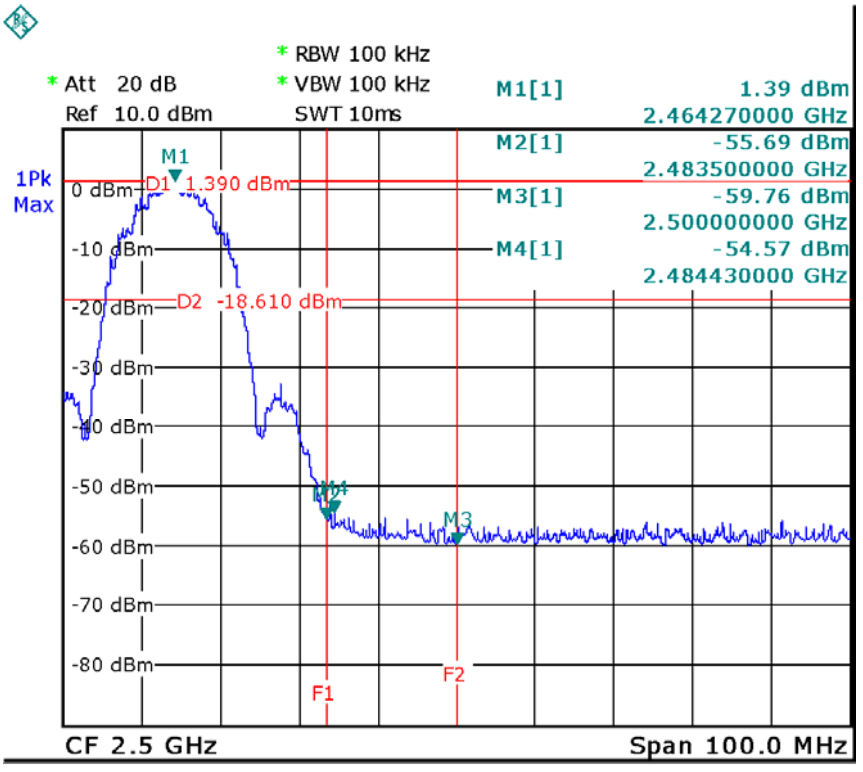
Channel of Worst Data: CH01			
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2344.80	-55.73	2484.43	-54.57
Result			
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power.			

TX CH01



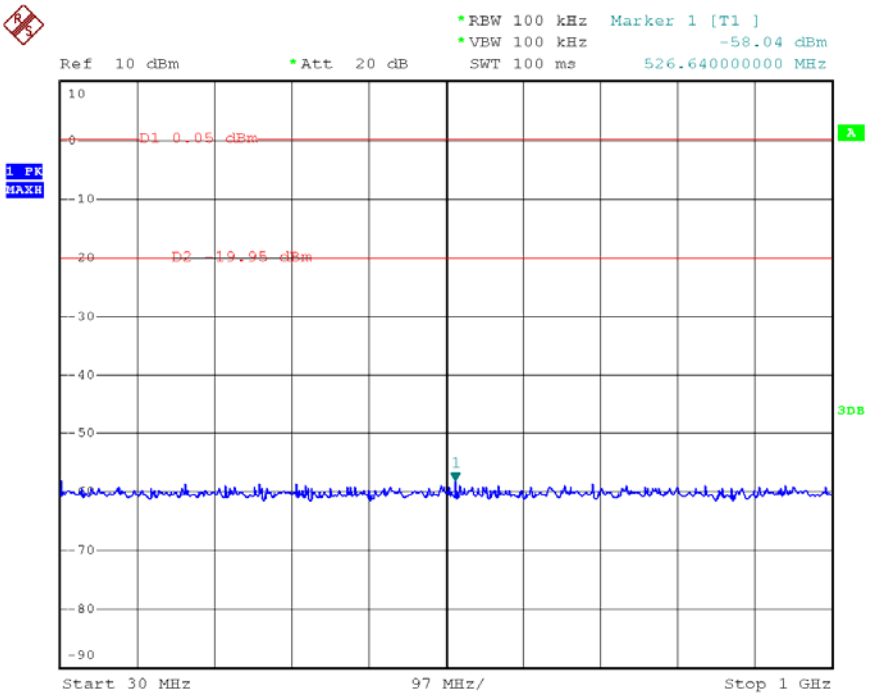
Date: 24.DEC.2010 15:46:35

TX CH03

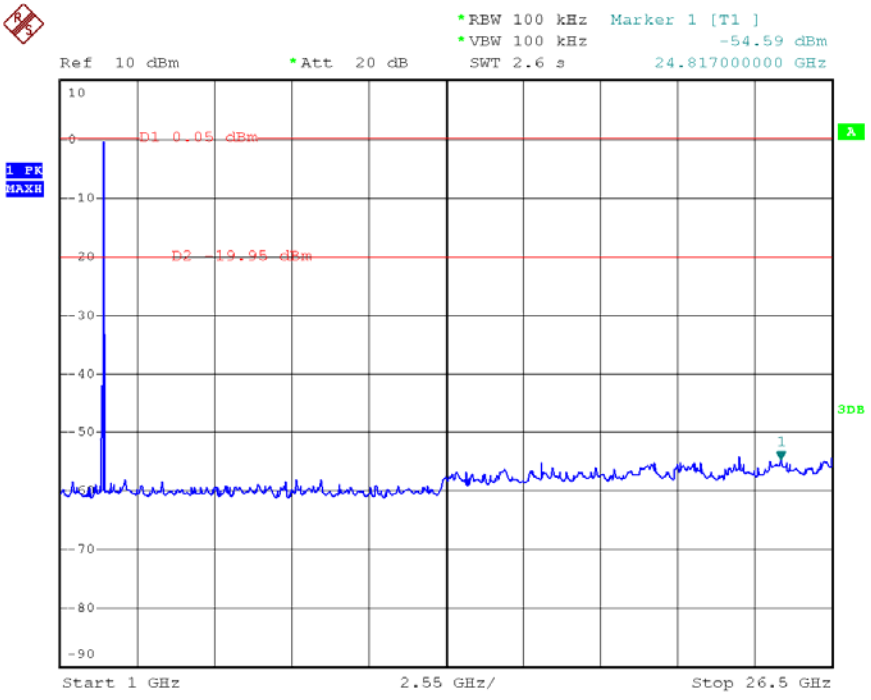


Date: 24.DEC.2010 16:01:57

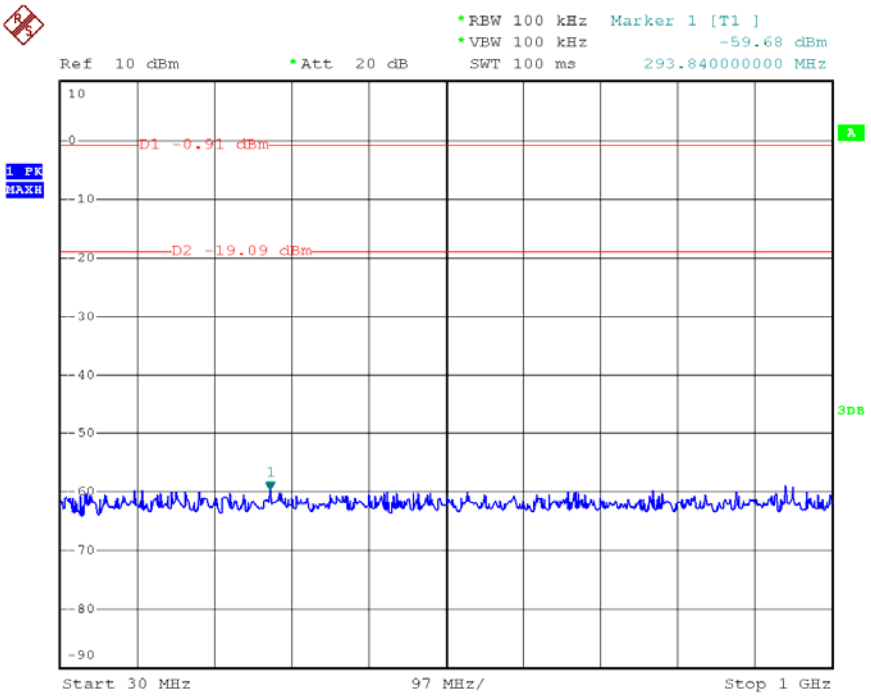
TX mode CH01 (30M~1000MHz)



TX mode CH01 (1000MHz~10th Harmonic)

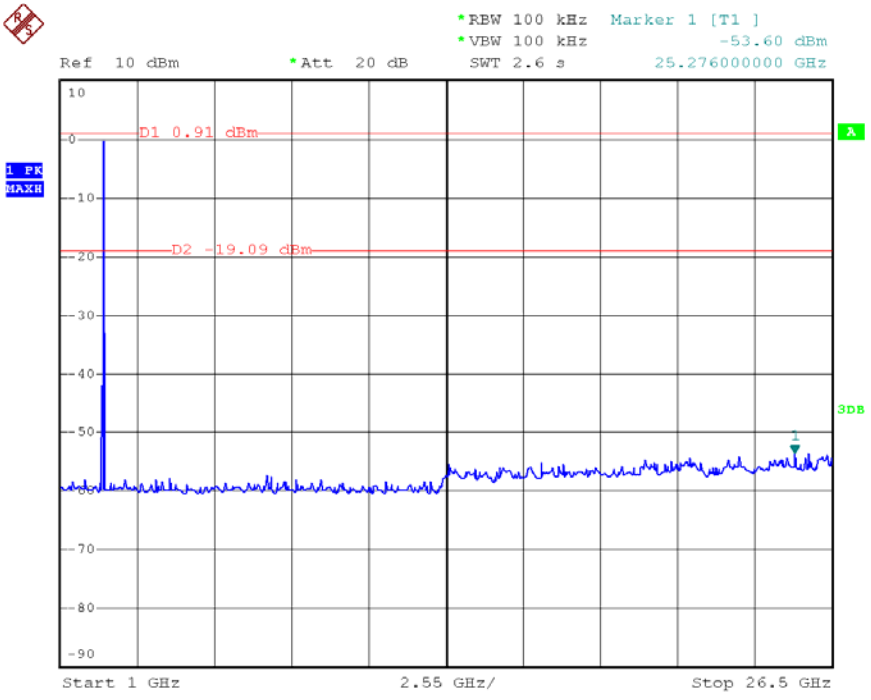


TX mode CH02 (30M~1000MHz)



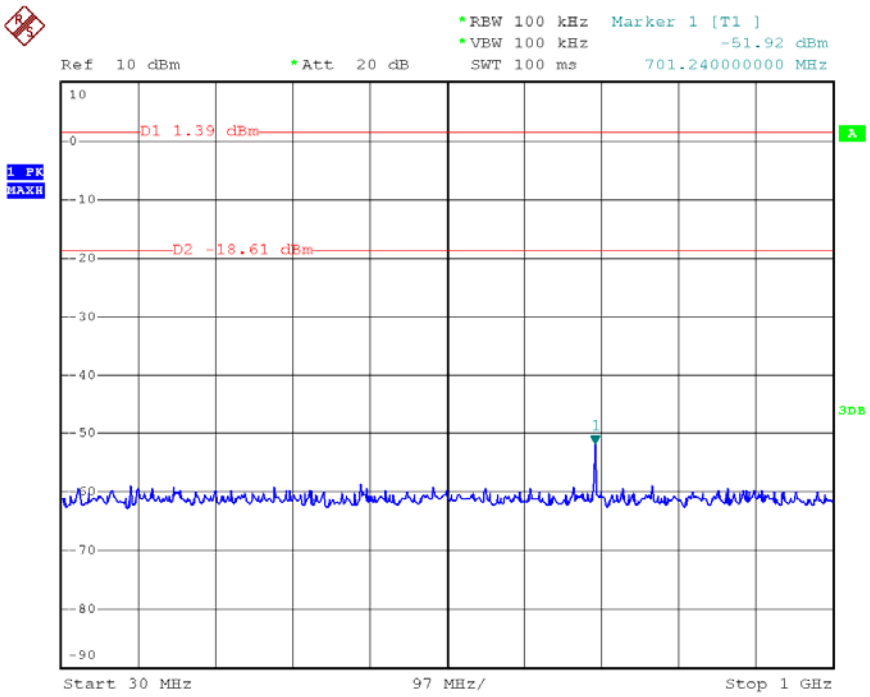
Date: 27.DEC.2010 16:54:39

TX mode CH02 (1000MHz~10th Harmonic)



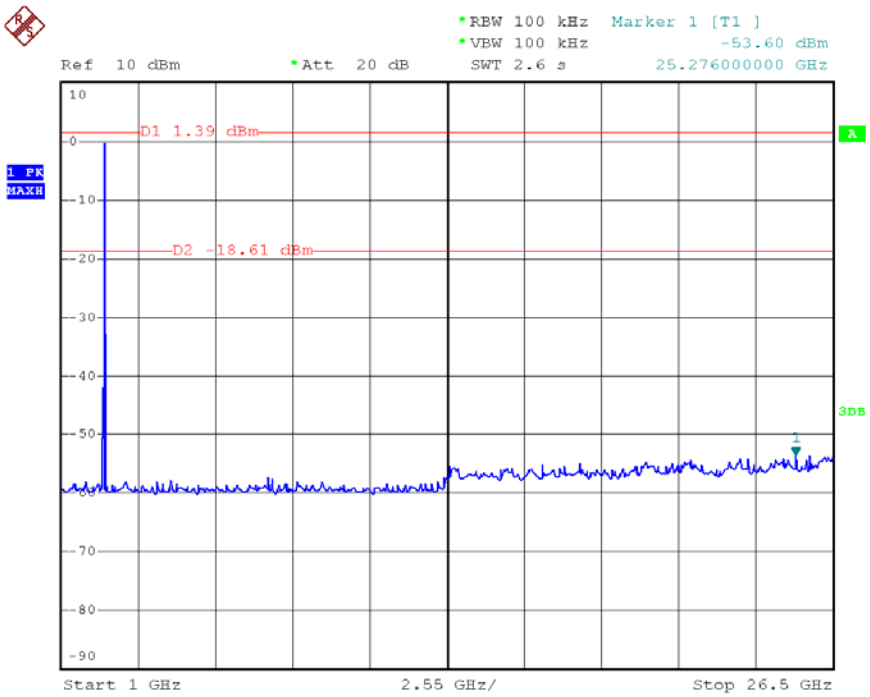
Date: 27.DEC.2010 16:53:27

TX mode CH03 (30M~1000MHz)



Date: 27.DEC.2010 16:54:13

TX mode CH03 (1000MHz~10th Harmonic)



Date: 27.DEC.2010 16:54:01

8. POWER SPECTRAL DENSITY TEST

8.1 Applied procedures / limit

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(e)	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

8.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 04, 2012

Remark: ” N/A” denotes No Model Name. , Serial No. or No Calibration specified.

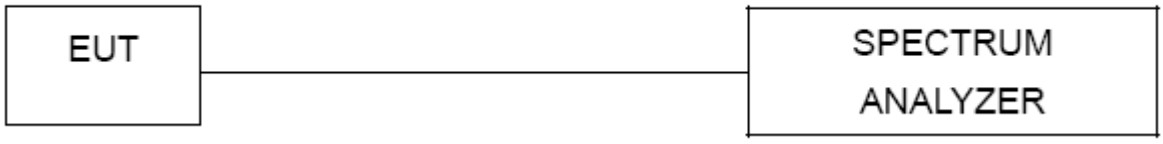
8.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
b. Spectrum Setting : RBW=3KHz, VBW=30 KHz, Sweep time = 500s.

8.1.3 DEVIATION FROM STANDARD

No deviation.

8.1.4 TEST SETUP



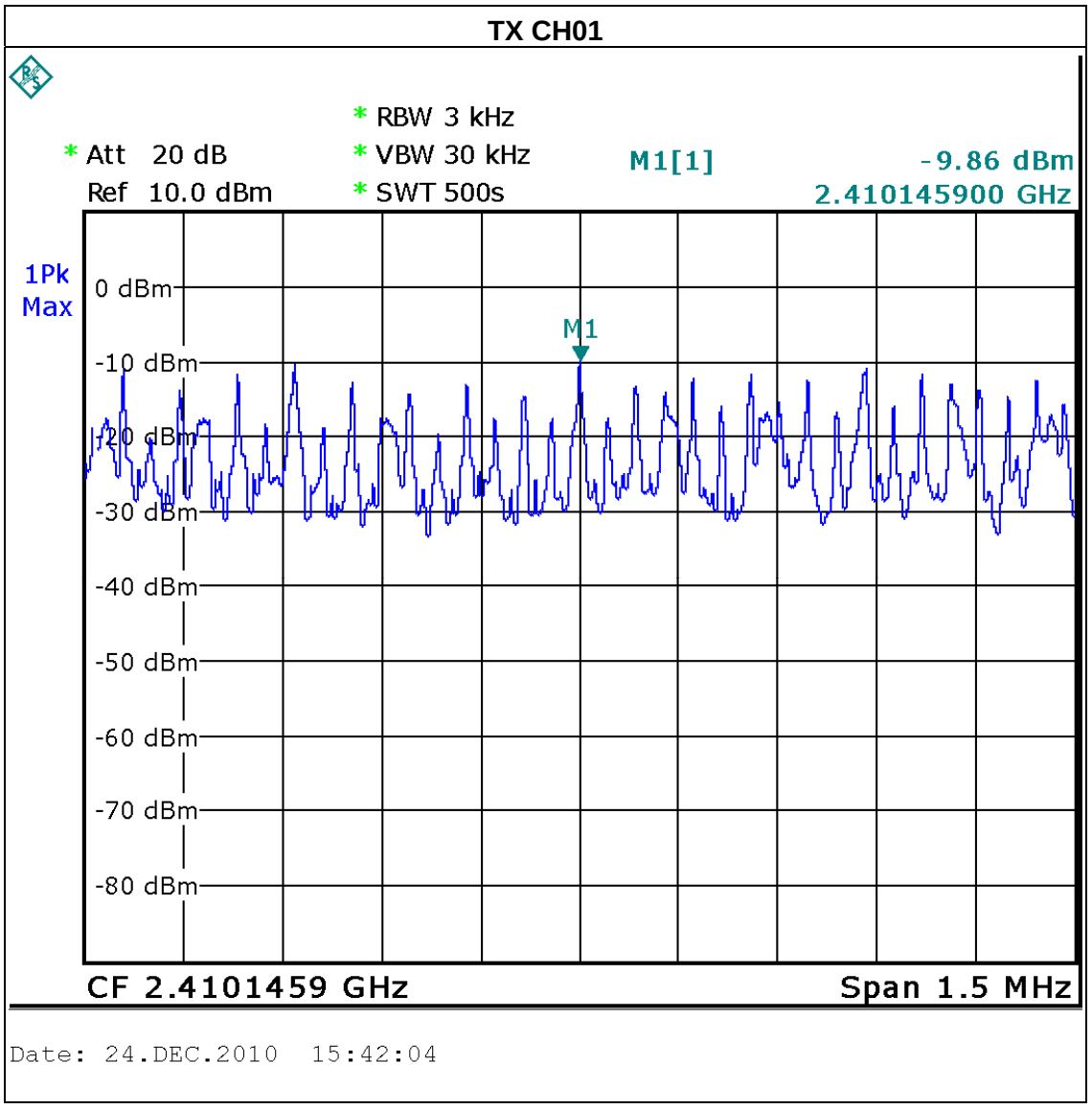
8.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

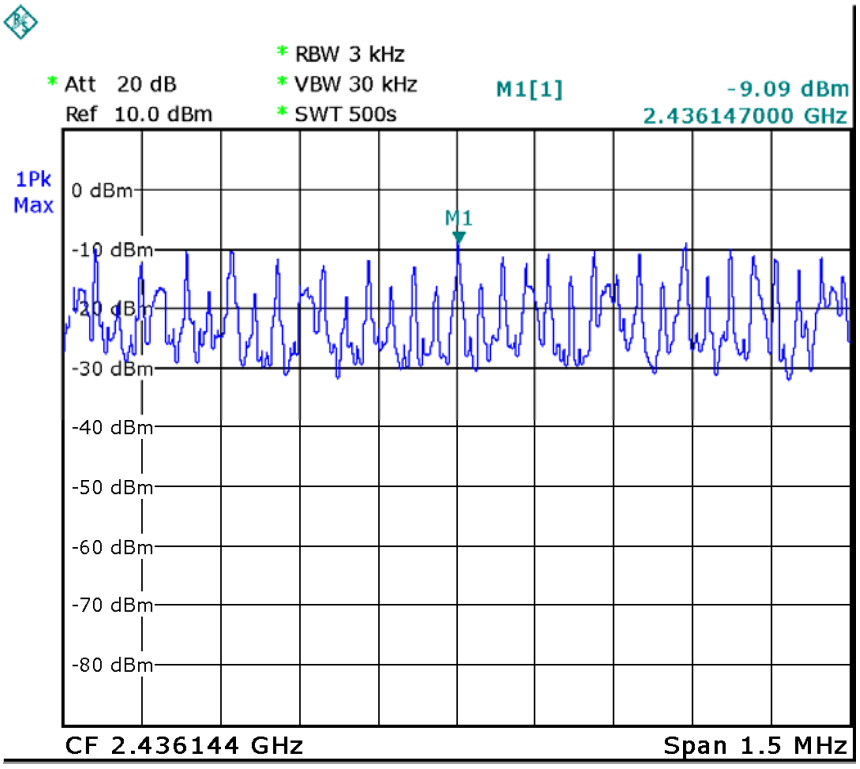
8.1.6 TEST RESULTS

EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	23℃	Relative Humidity：	50 %
Pressure：	1006 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX MODE /CH01, CH02, CH03		

Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH01	2412 MHz	-9.86	8
CH02	2438 MHz	-9.09	8
CH03	2464 MHz	-7.36	8

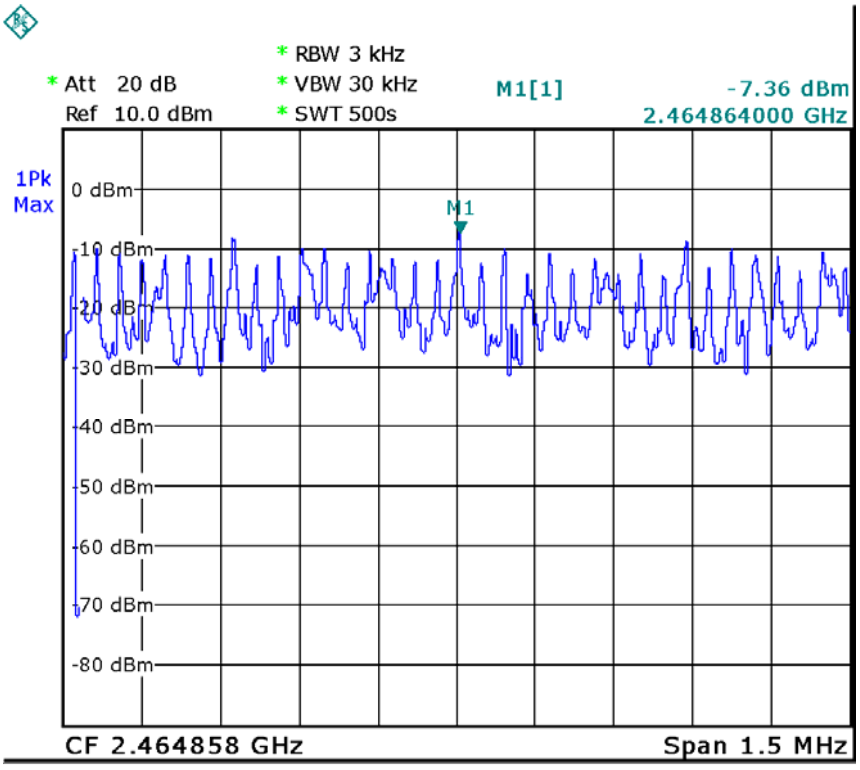


TX CH02



Date: 24.DEC.2010 15:49:51

TX CH03



Date: 24.DEC.2010 15:32:10

9. RF EXPOSURE TEST

9.1 APPLIED PROCEDURES / LIMIT

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

9.1.1 MPE CALCULATION METHOD

$$\text{E (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd\ (\text{W/m}^2) = \frac{E^2}{377}$$

E = Electric field (V/m)
P = Peak RF output power (W)
G = EUT Antenna numeric gain (numeric)
d = Separation distance between radiator and human body (m)
The formula can be changed to

$$\boldsymbol{Pd} = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

9.1.2 DEVIATION FROM STANDARD

No deviation.

9.1.3 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

9.1.4 TEST RESULTS

EUT：	Powered soundbar	Model Name ：	SB300 CNTR
Temperature：	23 ℃	Relative Humidity：	51 %
Pressure：	1006 hPa	Test Voltage ：	AC 120V/60Hz
Test Mode ：	TX Mode CH01, **CH02,** CH03		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
1.5	1.4125	17.8300	60.6736	0.01705887	1	Complies
1.5	**1.4125**	**18.0000**	**63.0957**	**0.01773987**	**1**	**Complies**
1.5	1.4125	17.8600	61.0942	0.01717712	1	Complies