## FCC PART 15C TEST REPORT FOR CERTIFICATION On Behalf of

### Polk Audio

Surroundbar 5000 Instant Home Theater

Model Number: SB5000 IHT SPEAKER

FCC ID: WLQSB5000CDTX

Prepared for: Polk Audio

5601 Metro Drive, Baltimore, Maryland, United States, 21215

Prepared By: EST Technology Co., Ltd.

Santun(guantai Road), Houjie Town, DongGuan City,

GuangDong, China.

Tel: 86-769-83081888-808

Report Number: ESTE-R1307004 Date of Test : June 21~ July 9, 2013

Date of Report: July 11, 2013

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**Test Report Verification** 

	rest Keport verincand	<i>)</i> 11						
Applicant:	Polk Audio							
Address:	5601 Metro Drive, Baltimore, Maryland,	United States, 21215						
	Zhao Yang Electronic (Shenzhen) Co.,Ltd	d						
Manufacturer	Section A, 4th Floor, Building 1& Building 2, De Yong Jia Industrial Park,							
Address:	Guang Qiao Road, Yu Lv Community, Gong Ming Street, Guang Ming New							
	District, Shenzhen							
E.U.T:								
<b>Model Number:</b>	SB5000 IHT SPEAKER							
Power Supply:	DC 20V From Adapter Input AC 100-240	0V~50/60Hz						
Test Voltage:	DC 20V From Adapter Input AC 120V/6	0Hz						
Trade Name:	Polk Serial No.:							
Date of Receipt:	June 20, 2013 Date of Test:	June 21~ July 9, 2013						
Test Specification:	FCC Rules and Regulations Part 15 Subp ANSI C63.4:2009	oart C:2012						
Test Result:	The device described above is tested by EST Technology Co., Ltd The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the ETSI EN FCC Rules and Regulations Part 15 Subpart C requirements.							
	This report applies to above tested sampl in part without written approval of EST T	•						
Prepared by:	Tested by:	Approved by:						
Ada	tom	Trementhe						
Ada / Assistant	Tony.Tang/ Engineer	IcemanHu / Manager						
Other Aspects: None.								
Abbreviations: OK/P=pass	ed fail/F=failed n.a/N=not applicable	E.U.T=equipment under tested						
_ <u>-</u>	a single evaluation of one sample of above mention out written approval of EST Technology Co., Ltd.	ned products ,It is not permitted to be						

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## 1. GENERAL INFORMATION

1.1. Description of Device (EUT)

**Product Name** : Surroundbar 5000 Instant Home Theater

**Model Number** : SB5000 IHT SPEAKER

FCC ID : WLQSB5000CDTX

**Operation frequency** : 2402MHz~2480MHz

Number of channel : 79

**Antenna** : Internal antenna, 0 dBi gain

**Modulation** : FHSS (GFSK,  $\pi/4$ -DQPSK, 8-DPSK)

**Power Supply** : DC 20V From Adapter Input AC 120V/60Hz

Sample Type : Prototype production

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# 2. SUMMARY OF TEST

# 2.1. Summary of test result

Description of Test Item	Standard	Results
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) DA 00-705	PASS
20dB Bandwidth	FCC Part 15: 15.215 DA 00-705	PASS
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) DA 00-705	PASS
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.4: 2003 DA 00-705	PASS
Band Edge Compliance	FCC Part 15: 15.247(d) DA 00-705	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.4: 2003 DA 00-705	PASS
Antenna requirement	FCC Part 15: 15.203	PASS

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#### 2.2. Test Facilities

EMC Lab : Certificated by CNAL, CHINA

Registration No.: L5288

Date of registration: October 28, 2011

Certificated by FCC, USA Registration No.: 989591

Date of registration: December 07, 2010

Certificated by Industry Canada Registration No.: 46405-9405

Date of registration: December 16, 2010

Certificated by VCCI, Japan

Registration No.: R-3663 & C-4103 Date of registration: July 25, 2011

Certificated by TUV Rheinland, Germany Registration No.: UA 50195514 0001 Date of registration: January 07, 2011

Certificated by TUV/PS, Shenzhen

Registration No.: SCN1017

Date of registration: January 27, 2011

Certificated by Intertek ETL SEMKO Registration No.: 2011-RTL-L1-18 Date of registration: April 28, 2011

Certificated by Siemic, Inc. Registration No.: SLCN021

Date of registration: November 8, 2011

Certificated by Nemko, Hong Kong

Registration No.: 175193

Date of registration: May 4, 2011

Name of Firm : EST Technology Co., Ltd.

Site Location : San Tun Management Zone, Houjie Town, Dongguan,

Guangdong, China

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## 2.3. Assistant equipment used for test

## 2.3.1. Adapter

M/N : S065BP2000220

Input : AC 100-240V~50/60Hz 1800mA Max

Output : DC 20V/2200mA

## 2.4. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 meter high above ground.EUT was be set into BT test mode by software before test.



(EUT: Surroundbar 5000 Instant Home Theater)

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## 2.5. Test mode

The test software was used to control EUT work in Continuous TX mode, and select test channel, wireless mode

Mode	Channel	Frequency
	Low	2402MHz
GFSK	Middle	2441MHz
	High	2480MHz
	Low	2402MHz
8-DPSK	Middle	2441MHz
	High	2480MHz

## 2.6. Channel List for Bluetooth

Channel No.	Frequency (MHz)						
1	2402	2	2403	3	2404	4	2405
5	2406	6	2407	7	2408	8	2409
9	2410	10	2411	11	2412	12	2413
13	2414	14	2415	15	2416	16	2417
17	2418	18	2419	19	2420	20	2421
21	2422	22	2423	23	2424	24	2425
25	2426	26	2427	27	2428	28	2429
29	2430	30	2431	31	2432	32	2433
33	2434	34	2435	35	2436	36	2437
37	2438	38	2439	39	2440	40	2441
41	2442	42	2443	43	2444	44	2445
45	2446	46	2447	47	2448	48	2449
49	2450	50	2451	51	2452	52	2453
53	2454	54	2455	55	2456	56	2457
57	2458	58	2459	59	2460	60	2461
61	2462	62	2463	63	2464	64	2465
65	2466	66	2467	67	2468	68	2469
69	2470	70	2471	71	2472	72	2473
73	2474	74	2475	75	2476	76	2477
77	2478	78	2479	79	2480	_	_

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# 2.7. Test Equipment

## 2.7.1. For conducted emission test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESHS30	832354	May,30,13	1 Year
Artificial Mains Networ	Rohde & Schwarz	ENV216	101260	May,30,13	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	101100	July.25,12	1 Year

## 2.7.2. For radiated emission test(30-1000MHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESVS10	100004	May,30,13	1 Year
Spectrum Analyzer	Agilent	E4411B	MY50140697	May,30,13	1 Year
Bilog Antenna	Teseq	CBL 6111D	25872	Nov,08,12	1.5 Year
Signal Amplifier	Agilent	310N	187037	July.25,12	1 Year

## 2.7.3. For radiated emission test(above 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Next Cal.
Temperature controller	Terchy	MHQ	120	May.08,13   1 Year
Spectrum Analyzer	Agilent	E4408B	MY44211139	May.08,13   1 Year
Vector Signal Generator	R&S	SMBV100A	1407.6004K02	May.08,13   1 Year
Double Ridged Horn Antenna	R&S	HF907	100276	Jan.16.13   2 Year
Double Ridged Horn Antenna	R&S	HF907	100268	Jan.16.13   2 Year
Log-periodic Dipole Antenna	R&S	HL223	100435	Jan.16.13   2 Year
Biconical Antenna	R&S	HK116	100431	Jan.16.13   2 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	9163-462	Jan.16.13   2 Year
Pre-amplifer	AH	PAM-0118	10008	May.08,13   1 Year
Pre-amplifer	R&S	SCU-01	10049	May.08,13   1 Year
High Pass filter	Micro	HPM50111	324455	May.08,13   1 Year
RF Cable	Hubersuhner	W10.02	534096	May.08,13   1 Year
RF Cable	Hubersuhner	W10.02	534123	May.08,13   1 Year
RF Cable	Hubersuhner	RG 214/U	513423	May.08,13   1 Year
RF Cable	Hubersuhner	RG 214/U	523455	May.08,13   1 Year

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## 3. MAXIMUM PEAK OUTPUT POWER

### 3.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts, the e.i.r.p shall not exceed 4W

## 3.2. Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer

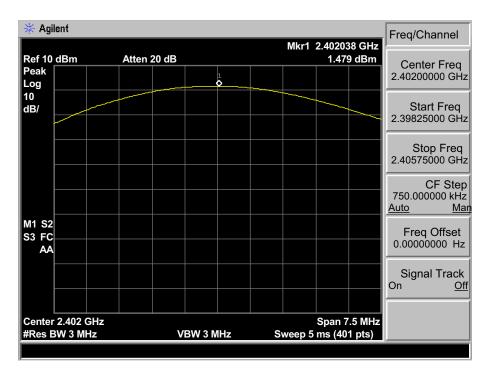
### 3.3. Test Result

EUT: Surroundbar 5000 Instant Home Theater M/N: SB5000 IHT SPEAKER							
Test date: 20	13-07-08	Test site: RF site	Tested b	y: Tony Tang	7		
Mode	Freq	Result	L	Margin			
Mode	(MHz)	(dBm)	dBm	W	(dB)		
	2402	1.479	30.00	1	28.521		
GFSK	2441	1.273	30.00	1	28.727		
	2480	1.074	30.00	1	28.926		
	2402	0.472	21.00	0.125	20.528		
8-DPSK	2441	0.034	21.00	0.125	20.966		
	2480	0.162	21.00	0.125	20.838		
Conclusion:	PASS						

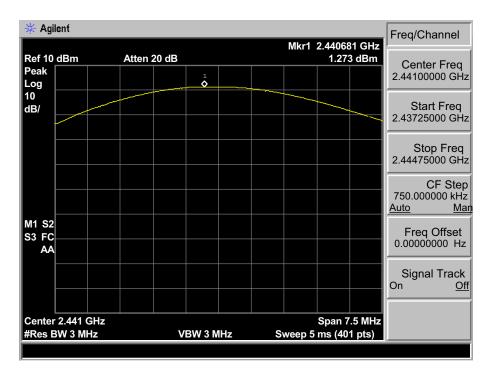
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### 3.4. Test Data

#### **GFSK 2402 MHz**

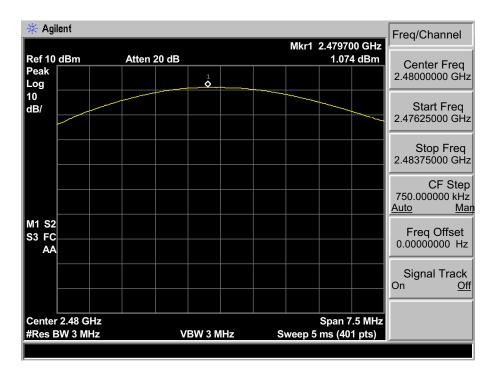


#### **GFSK 2441 MHz**



EST Technology Co., Ltd

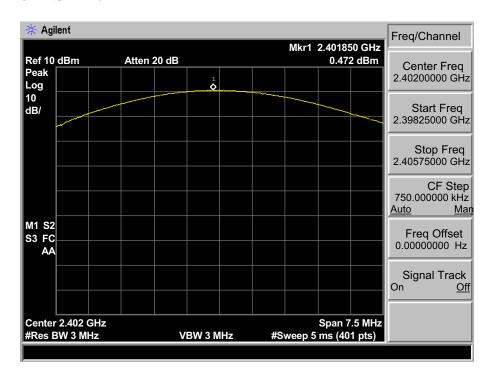
#### GFSK 2480 MHz



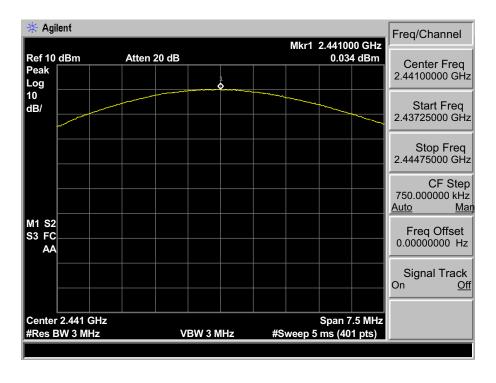


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#### 8-DPSK 2402 MHz



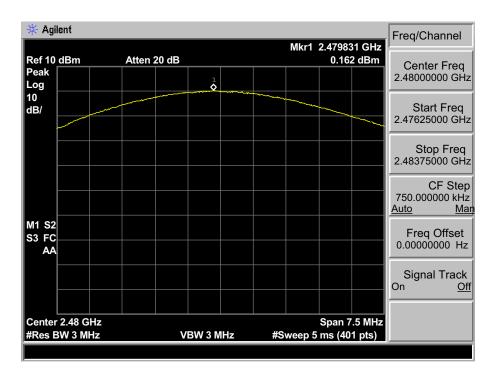
#### 8-DPSK 2441 MHz





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#### 8-DPSK 2480 MHz





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### 4. 20 DB BANDWIDTH

### 4.1. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

### 4.2. Test Procedure

The transmitter output was coupled to a spectrum analyzer via a antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 300kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

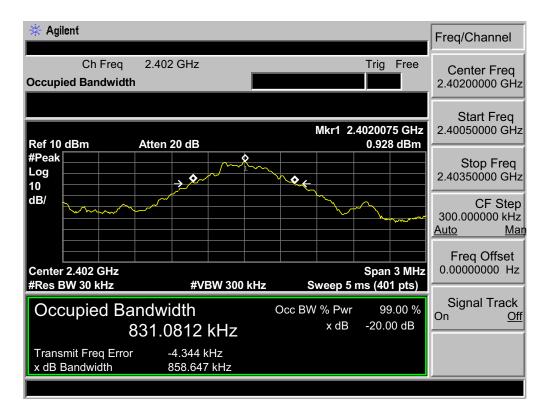
#### 4.3. Test Result

EUT: Surroundbar 5000 Instant Home Theater M/N: SB5000 IHT SPEAKER							
Test date: 20	Test date: 2013-07-08 Test site: RF site Tested by: Tony Tang						
Mode	Freq (MHz)	20dB Bandwidth (MHz)	Limit (kHz)	Conclusion			
	2402	0.859	/	PASS			
GFSK	2441	0.859	/	PASS			
	2480	0.855	/	PASS			
	2402	1.208	/	PASS			
8-DPSK	2441	1.221	/	PASS			
	2480	1.211	/	PASS			

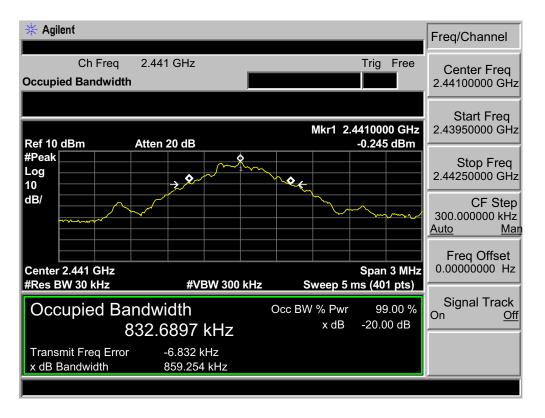
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#### 4.4. Test Data

#### GFSK 2402MHz



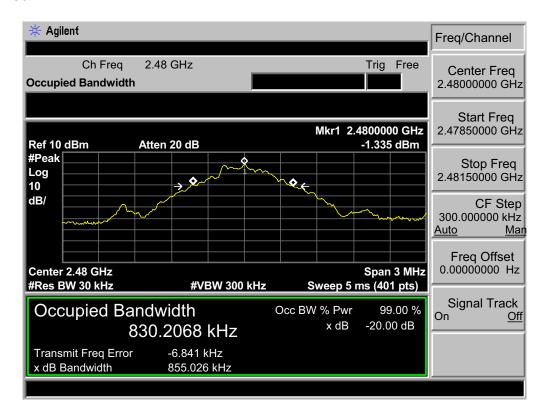
#### GFSK 2441MHz





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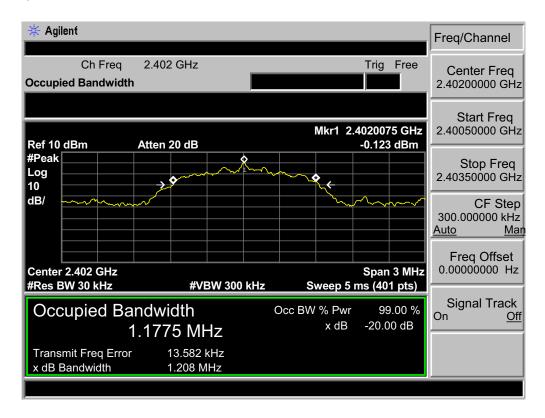
#### GFSK 2480MHz



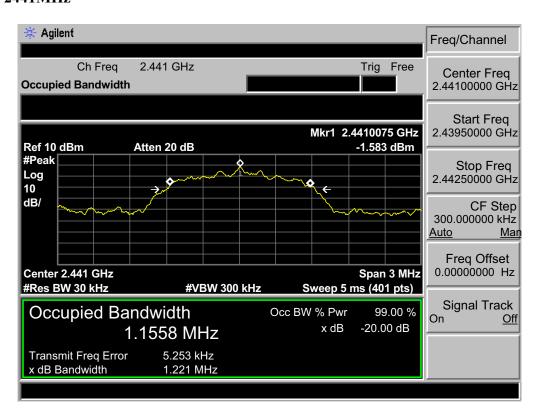


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#### 8-DPSK 2402MHz



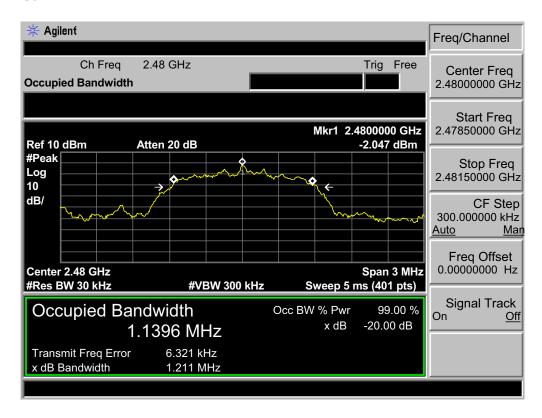
#### 8-DPSK 2441MHz





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#### 8-DPSK 2480MHz





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## 5. CARRIER FREQUENCY SEPARATION

### 5.1. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW

### 5.2. Test Procedure

The transmitter output was coupled to a spectrum analyzer via a antenna. The carrier frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW.

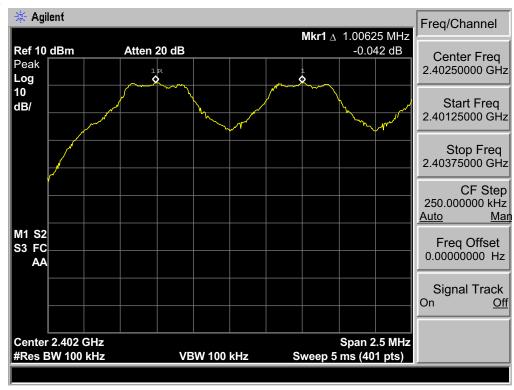
#### 5.3. Test Result

EUT: Surroundbar 5000 Instant Home Theater						
M/N: SB50	00 IHT SPEA	KER				
Test date: 20	013-07-08		Test site: RF site Tested by: Tony Ta	ng		
Mode	Channel	Channel				
		separation	Limit	Conclusion		
(MHz)						
	Low CH	1.006	0.859 MHz	PASS		
GFSK	Mid CH	1.013	0.859 MHz	PASS		
	High CH	1.000	0.855 MHz	PASS		
Low CH 1.006 PASS						
8-DPSK	Mid CH	1.000	> 2/3 of the 20dB Bandwidth or 25[kHz]( whichever is greater)	PASS		
	High CH	1.000	25[KHZ]( whichever is greater)	PASS		

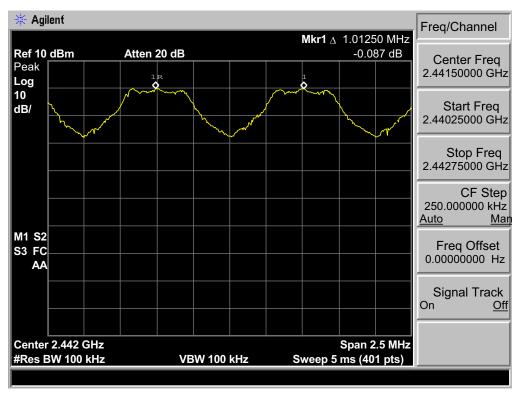


#### 5.4. Test Data

**GFSK Low Channel** 



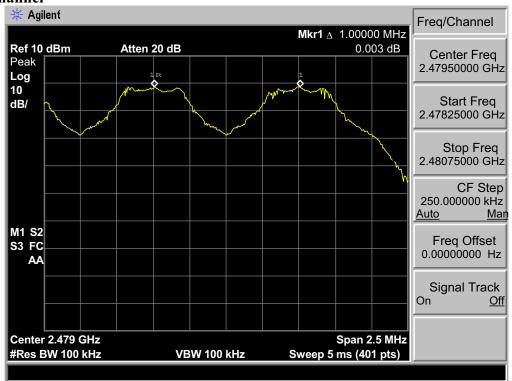
#### **Mid Channel**





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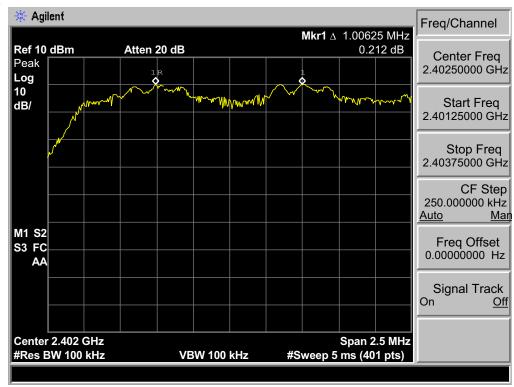
# High Channel



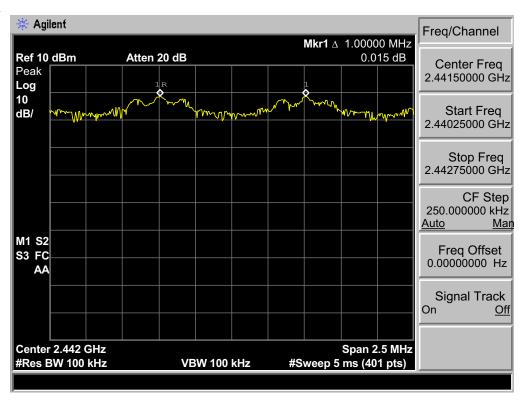


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## 8-DPSK Low Channel



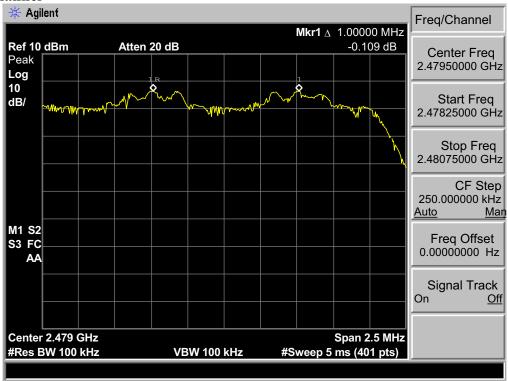
#### **Mid Channel**





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# High Channel





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## 6. NUMBER OF HOPPING CHANNEL

### 6.1. Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

## 6.2. Test Procedure

The transmitter output was coupled to a spectrum analyzer via a antenna. The number of hopping channel was measured by spectrum analyzer with 300kHz RBW and 300kHz VBW.

## 6.3. Test Result

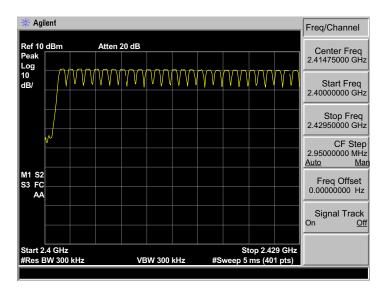
EUT: Surroundbar 5000 Instant Home Theater M/N: SB5000 IHT SPEAKER					
Test date: 2013-07-08 Test s		Test site: RF site	Tested by: To	Tested by: Tony.Tang	
Mode	Number of hopping channel		Limit	Conclusion	
GFSK	79		>15	PASS	
8-DPSK	79		>15	PASS	

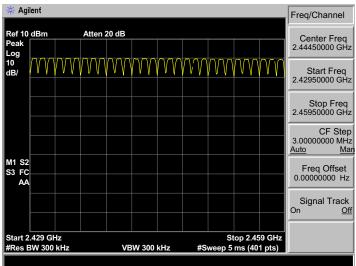
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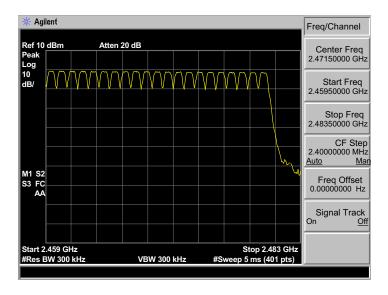


## 6.4. Test Data

#### **GFSK**



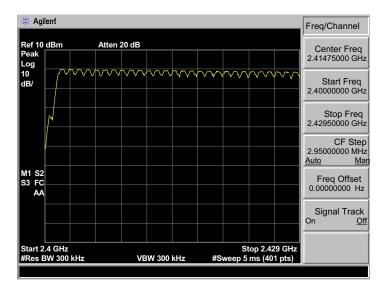


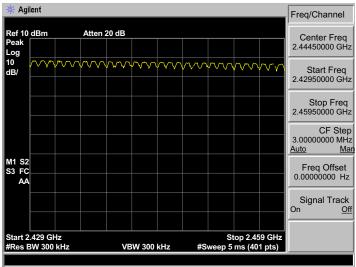


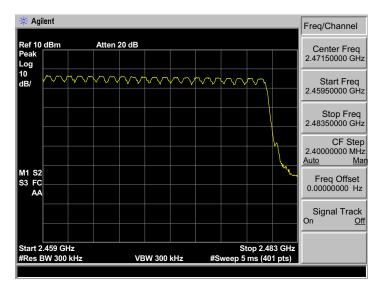


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#### 8-DPSK









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## 7. DWELL TIME

## 7.1. Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

## 7.2. Test Result

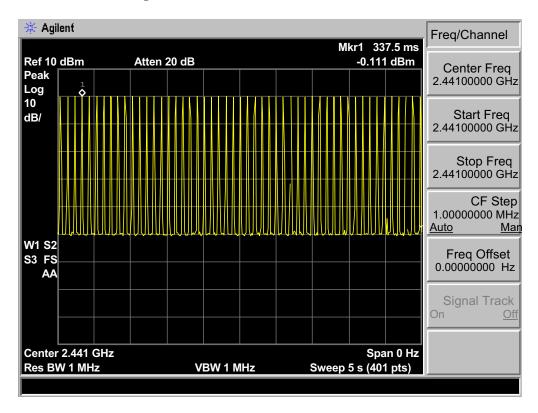
EUT: Surroundbar 5000 Instant Home Theater M/N: SB5000 IHT SPEAKER					
Test date: 2013-07-08	Test site: RF site	Tested by: Tony Tang			
Mode	Dwell time	Limit	Conclusion		
GFSK DH1	180.12	<400ms	PASS		
GFSK DH3	285.98	<400ms	PASS		
GFSK DH5	337.36	<400ms	PASS		
8-DPSK DH1	189.60	<400ms	PASS		
8-DPSK DH3	290.72	<400ms	PASS		
8-DPSK DH5	319.10	<400ms	PASS		

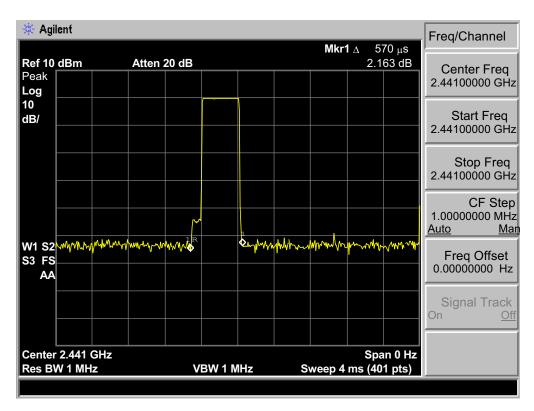




#### 7.3. Test Data

GFSK DH1: 50hop/5s \* 0.4 \* 79 \* 0.57ms = 180.12

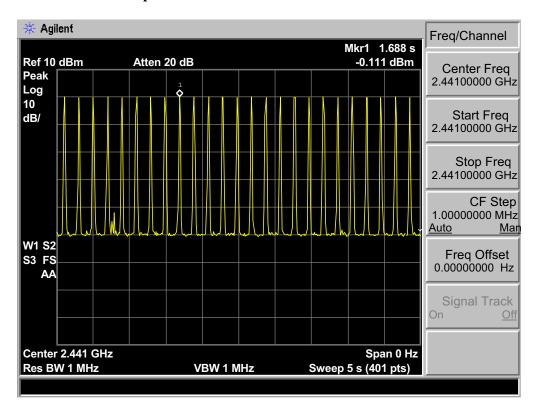


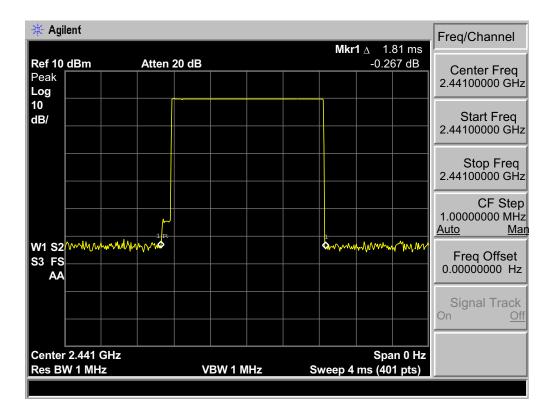




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GFSK DH3: 25hop/5s \* 0.4 \* 79 \* 1.81ms= 285.98

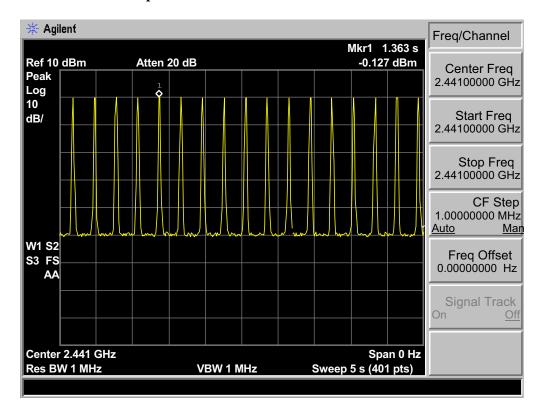


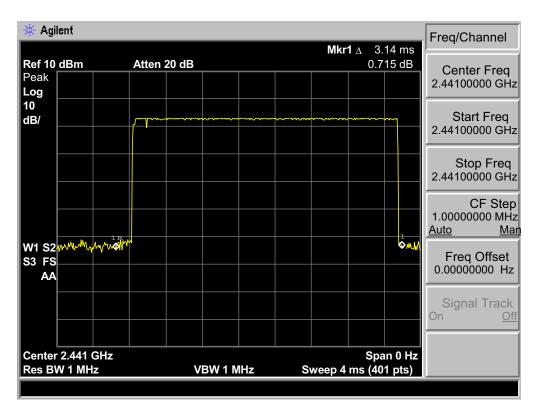




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GSFK DH5: 17hop/5s \* 0.4 \* 79 \*3.14ms = 337.36

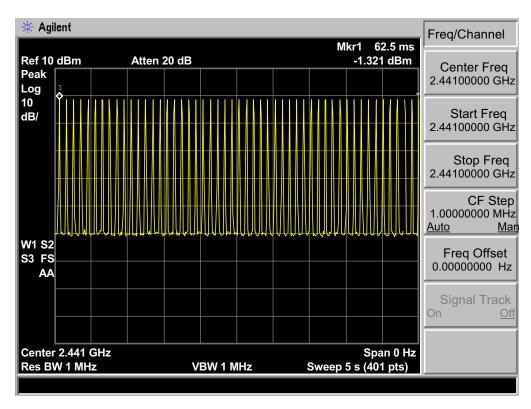


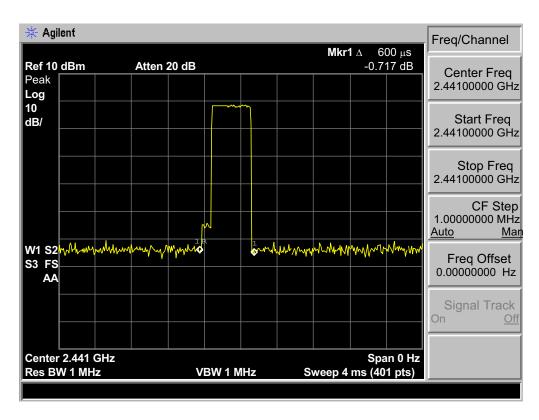




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### 8-DPSK DH1: 50hop/5s \* 0.4 \* 79 \* 0.60ms = 189.60

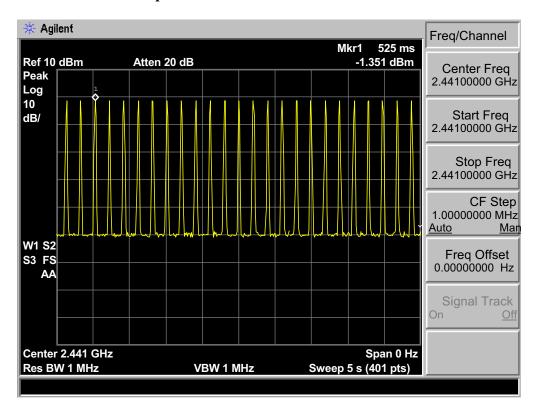


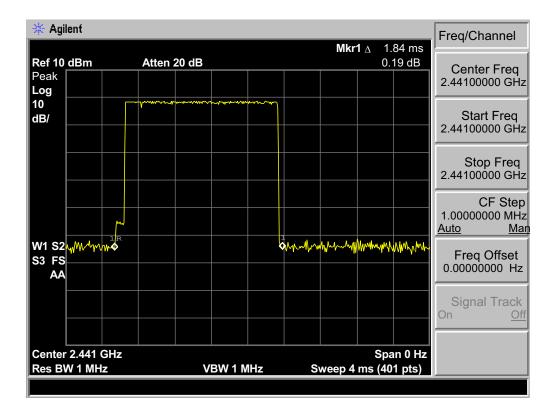




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## 8-DPSK DH3: 25hop/5s \* 0.4 \* 79 \* 1.84ms= 290.72

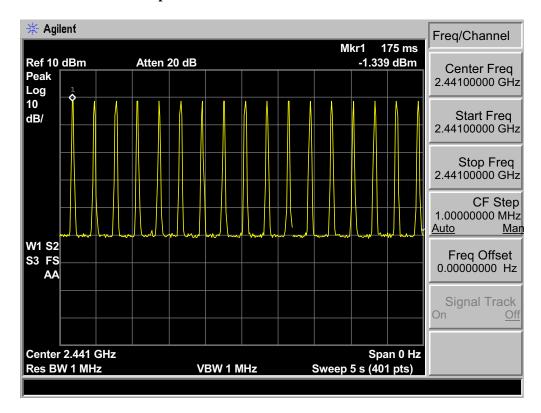


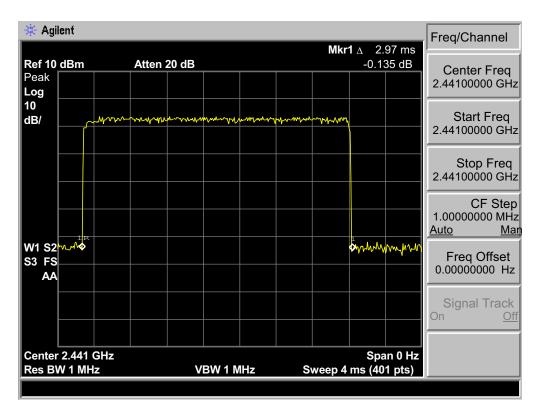




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### 8-DPSK DH5: 17hop/5s \* 0.4 \* 79 \*2.97ms = 319.10







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### 8. RADIATED EMISSIONS

## 8.1. Limit

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	( <sup>2</sup> )

15.209 Limit

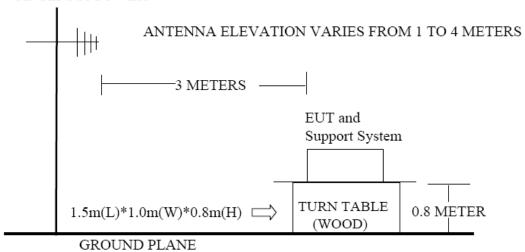
FREQUENCY		DISTANCE	FIELD STRENGTHS LIMIT	
MHz		Meters	μV/m	dB(μV)/m
30 ~ 88		3	100	40.0
88 ~ 216		3	150	43.5
216 ~ 960		3	200	46.0
960 ~ 1000		3	500	54.0
Above	1000	3	74.0 dB(µV)/m (Peak)	
			54.0 dB(µV)/m (Average)	

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# 8.2. Block Diagram of Test setup

#### ANTENNA TOWER



### 8.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

The frequency range from 30MHz to 10th harmonic (25GHz) are checked.

### 8.4. Test Result

30MHz	z—25GHz Radiated emi	ssison Test result	
EUT: Surroundbar 5000 I	nstant Home Theater		
M/N: SB5000 IHT SPEA	KER		
Power: DC 12V From Ad	apter Input AC 120V/60	Hz	
Test date: 2013-07-02	Test site: 3m Chamber	Tested by: Tony Tang	
Test mode: Tx Mode			
	Pass		

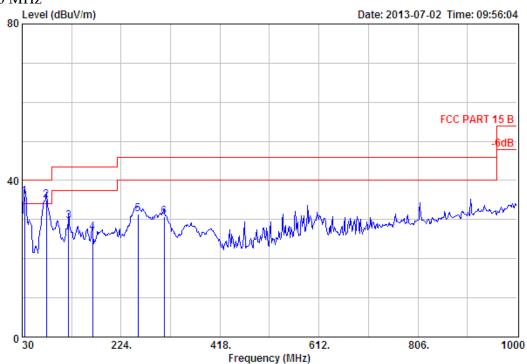
Note: 1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

2. The frequency 2402MHz . 2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

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# 8.5. Test Data

### 30 MHz - 1000 MHz



Site no. : 3m Chamber Data no. : 39

Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL

Limit : FCC PART 15 B
Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

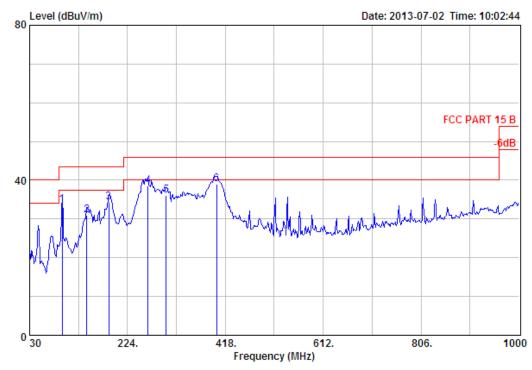
: Surroundbar 5000 Instant Home Theater EUT : DC 20V From Adapter Input AC 120V/60Hz Power

: SB5000 IHT SPEAKER Test Mode : GFSK TX 2402MHz

			Ant.	Cable		Emission				
		-			_	Level (dBuV/m)		_		
_	1	34.85	15.55	2.01	18.26	35.82	40.00	4.18	QP	
	2	77.53	6.80	2.83	25.28	34.91	40.00	5.09	QP	
	3	121.18	11.20	3.38	15.14	29.72	43.50	13.78	QP	
	4	167.74	9.43	3.97	13.40	26.80	43.50	16.70	QP	
	5	256.98	12.63	4.91	13.90	31.44	46.00	14.56	QP	
	6	308.39	13.17	5.30	12.21	30.68	46.00	15.32	QP	

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Data no. : 40

Site no. : 3m Chamber Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL

: FCC PART 15 B Limit

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

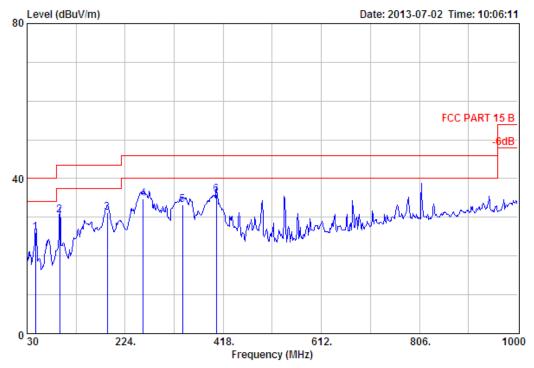
EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N Test Mode : GFSK TX 2402MHz

	-	Factor	Loss	Reading	Emission Level (dBuV/m)	Limits	_		
 1	94.99	8.83	2.99	21.82	33.64	43.50	9.86	QP	
2	143.49	11.29	3.71	16.00	31.00	43.50	12.50	QP	
3	187.14	8.26	4.19	21.94	34.39	43.50	9.11	QP	
4	264.74	12.94	4.97	20.65	38.56	46.00	7.44	QP	
5	300.63	13.03	5.24	17.94	36.21	46.00	9.79	QP	
6	400.54	16.07	5.98	17.00	39.05	46.00	6.95	QP	







Site no. : 3m Chamber Data no. : 41

Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 B

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

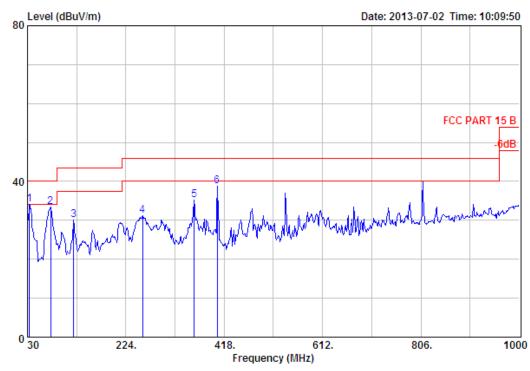
EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER Test Mode : GFSK TX 2441MHz

	-	Factor	Loss	Reading	Level (dBuV/m)	Limits	_		
1	46.49	9.20	2.28	14.67	26.15	40.00	13.85	QP	
2	94.99	8.83	2.99	18.70	30.52	43.50	12.98	QP	
3	189.08	8.05	4.20	19.06	31.31	43.50	12.19	QP	
4	259.89	12.97	4.93	16.79	34.69	46.00	11.31	QP	
5	337.49	14.08	5.55	13.49	33.12	46.00	12.88	QP	
6	404.42	16.16	6.04	13.64	35.84	46.00	10.16	QP	







Data no.: 42

Site no. : 3m Chamber Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL

: FCC PART 15 B

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

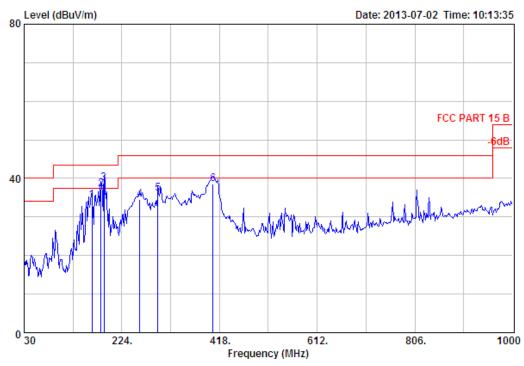
EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

: SB5000 IHT SPEAKER M/N Test Mode : GFSK TX 2441MHz

		-	Factor	Loss	Reading	Emission Level (dBuV/m)	Limits	_		
_	1	33.88	16.11	1.99	15.92	34.02	40.00	5.98	QP	
	2	75.59	6.51	2.80	24.10	33.41	40.00	6.59	QP	
	3	121.18	11.20	3.38	15.55	30.13	43.50	13.37	QP	
	4	256.98	12.63	4.91	13.57	31.11	46.00	14.89	QP	
	5	358.83	14.45	5.73	15.13	35.31	46.00	10.69	QP	
	6	404.42	16.16	6.04	16.63	38.83	46.00	7.17	QP	







Site no. : 3m Chamber Dis. / Ant. : 3m 27137 Data no. : 43

Ant. pol. : HORIZONTAL

Limit : FCC PART 15 B
Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

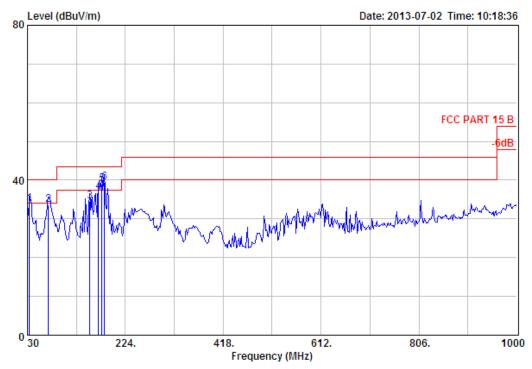
: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

: SB5000 IHT SPEAKER Test Mode : GFSK TX 2480MHz

		Ant.	Cable		Emission				
	-	Factor (dB/m)		_			_		
1	164.83	9.77	3.79	20.70	34.26	43.50	9.24	OP	
2	182.29	8.76	3.98	24.48	37.22	43.50	6.28	QP	
3	189.08	8.05	4.04	26.78	38.87	43.50	4.63	QP	
4	259.89	12.97	4.91	16.63	34.51	46.00	11.49	QP	
5	295.78	12.98	5.25	17.96	36.19	46.00	9.81	QP	
6	405.39	16.18	6.13	16.34	38.65	46.00	7.35	OP	

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Data no. : 44

Site no. : 3m Chamber Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL

: FCC PART 15 B

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

Engineer : Tony

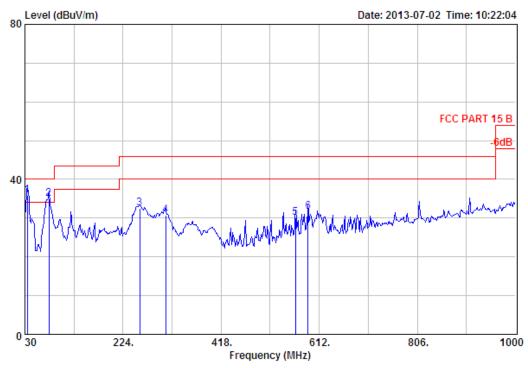
EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N Test Mode : GFSK TX 2480MHz

	-	Factor	Loss	Reading	Emission Level (dBuV/m)	Limits	_		
1	33.88	16.11	1.59	16.25	33.95	40.00	6.05	QP	
2	71.71	6.03	2.47	25.21	33.71	40.00	6.29	QP	
3	153.19	10.75	3.66	20.04	34.45	43.50	9.05	QP	
4	170.65	9.16	3.86	23.96	36.98	43.50	6.52	QP	
5	177.44	8.97	3.93	26.05	38.95	43.50	4.55	QP	
6	182.29	8.76	3.98	26.63	39.37	43.50	4.13	QP	







Data no. : 45

Site no. : 3m Chamber Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL

: FCC PART 15 B

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

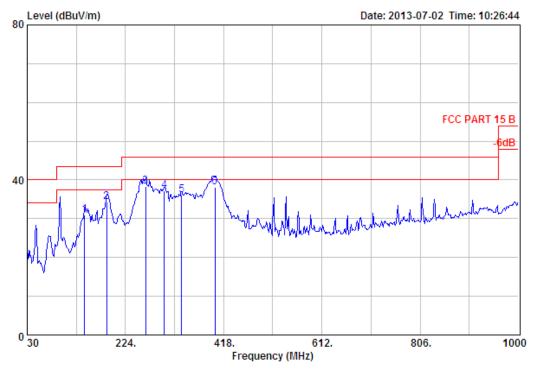
EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

: SB5000 IHT SPEAKER M/N Test Mode : 8-DPSK TX 2402MHz

	-	Ant. Factor (dB/m)	Loss	Reading		Limits	_		
1	34.85	15.55	2.01	18.26	35.82	40.00	4.18	QP	
2	77.53	6.80	2.83	25.28	34.91	40.00	5.09	QP	
3	256.98	12.63	4.91	14.90	32.44	46.00	13.56	QP	
4	308.39	13.17	5.30	12.21	30.68	46.00	15.32	QP	
5	565.44	19.65	7.13	3.21	29.99	46.00	16.01	QP	
6	589.69	19.43	7.29	4.84	31.56	46.00	14.44	QP	







Site no. : 3m Chamber Data no.: 46

Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL

: FCC PART 15 B

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

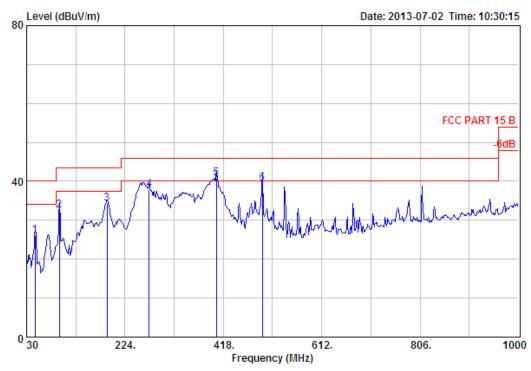
: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER Test Mode : 8-DPSK TX 2402MHz

		-	Factor	Loss	Reading	Emission Level (dBuV/m)	Limits	_		
1		143.49	11.29	3.71	16.00	31.00	43.50	12.50	QP	
2	2	187.14	8.26	4.19	21.94	34.39	43.50	9.11	QP	
3	3	263.77	12.95	4.96	20.38	38.29	46.00	7.71	QP	
4	ł	300.63	13.03	5.24	18.94	37.21	46.00	8.79	QP	
5	5	334.58	13.99	5.52	16.48	35.99	46.00	10.01	QP	
6	5	400.54	16.07	5.98	16.00	38.05	46.00	7.95	QP	





Site no. : 3m Chamber Dis. / Ant. : 3m 27137 Data no. : 47

Ant. pol. : HORIZONTAL

: FCC PART 15 B Limit

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

: Tony

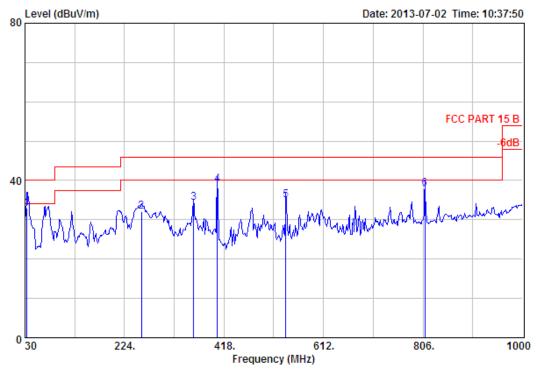
EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N : 8-DPSK TX 2441MHz Test Mode

		Ant.	Cable		Emission	1			
	_	Factor (dB/m)		_			_		
1	46.49	9.20	2.28	14.67	26.15	40.00	13.85	QP	
2	94.99	8.83	2.99	20.70	32.52	43.50	10.98	QP	
3	189.08	8.05	4.20	22.06	34.31	43.50	9.19	QP	
4	271.53	12.49	5.02	20.26	37.77	46.00	8.23	QP	
5	404.42	16.16	6.04	18.64	40.84	46.00	5.16	QP	
6	494.63	17.84	6.70	14.88	39.42	46.00	6.58	QP	







Data no. : 48

Site no. : 3m Chamber Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL

: FCC PART 15 B Limit

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

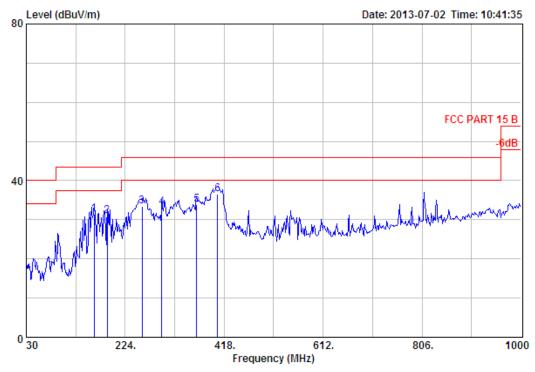
EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N Test Mode : 8-DPSK TX 2441MHz

		Ant.	Cable		Emission	L			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Reamark	
	(MHz)	(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	
1	33.88	16.11	1.99	14.92	33.02	40.00	6.98	QP	
2	256.98	12.63	4.91	14.57	32.11	46.00	13.89	QP	
3	358.83	14.45	5.73	14.13	34.31	46.00	11.69	QP	
4	405.39	16.18	6.05	16.67	38.90	46.00	7.10	QP	
5	538.28	19.24	6.97	8.82	35.03	46.00	10.97	QP	
6	809.88	22.38	8.46	6.97	37.81	46.00	8.19	QP	

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Data no. : 49

Site no. : 3m Chamber Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL

: FCC PART 15 B Limit

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony

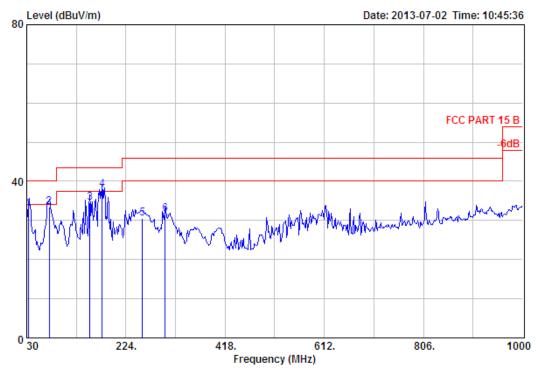
EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER : 8-DPSK TX 2480MHz Test Mode

	-	Ant. Factor (dB/m)	Loss	Reading		Limits	_		
1	162.89	10.01	3.91	17.47	31.39	43.50	12.11	QP	
2	189.08	8.05	4.20	18.62	30.87	43.50	12.63	QP	
3	256.98	12.63	4.91	15.98	33.52	46.00	12.48	QP	
4	295.78	12.98	5.21	15.00	33.19	46.00	12.81	QP	
5	363.68	14.61	5.72	13.48	33.81	46.00	12.19	QP	
6	405.39	16.18	6.05	14.42	36.65	46.00	9.35	QP	

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: 3m Chamber Site no. Data no. : 50

Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL

Limit : FCC PART 15 B
Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

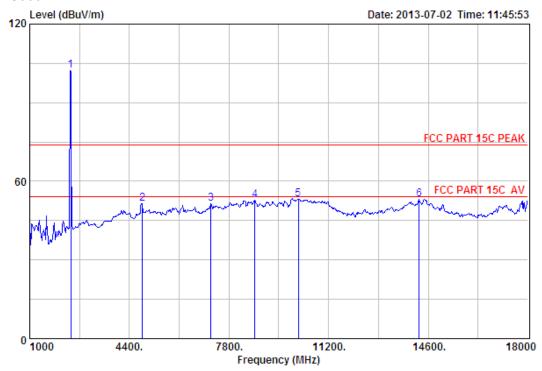
M/N : SB5000 IHT SPEAKER Test Mode : 8-DPSK TX 2480MHz

		Ant.	Cable		Emission	L			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Reamark	
	(MHz)	(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	
1	33.88	16.11	1.99	14.85	32.95	40.00	7.05	QP	
2	73.65	6.22	2.82	24.32	33.36	40.00	6.64	QP	
3	153.19	10.75	3.81	19.89	34.45	43.50	9.05	QP	
4	177.44	8.97	4.09	24.89	37.95	43.50	5.55	QP	
5	256.01	12.52	4.89	13.08	30.49	46.00	15.51	QP	
6	300.63	13.03	5.24	13.38	31.65	46.00	14.35	QP	

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# 1000 MHz - 18000 MHz



Data no. : 63

Site no. : 3m Chamber
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

: FCC PART 15C PEAK Limit

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N : GFSK TX 2402MHz Test Mode

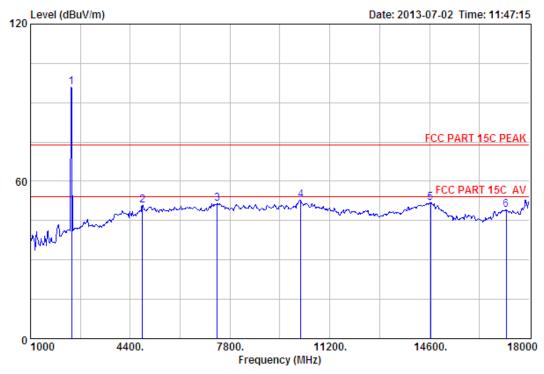
	-	Factor	Loss	Factor	r Reading	Emission g Level (dBuV/m)	Limits	_	Remark
1	2402.00	27.61	6.62	34.18	102.37	102.42	74.00	-28.42	Peak
2	4842.00	31.31	11.92	31.85	40.18	51.56	74.00	22.44	Peak
3	7188.00	36.43	11.53	32.14	35.65	51.47	74.00	22.53	Peak
4	8684.00	37.32	11.45	32.43	36.55	52.89	74.00	21.11	Peak
5	10163.00	38.39	11.50	32.08	35.39	53.20	74.00	20.80	Peak
6	14294.00	41.71	10.92	33.08	33.75	53.30	74.00	20.70	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Data no. : 64

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N Test Mode : GFSK TX 2402MHz

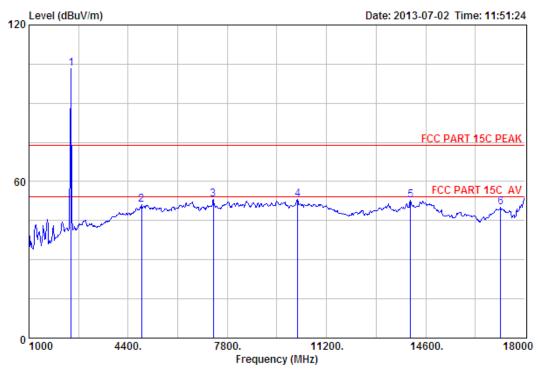
	Freq.	Factor	Loss	Factor	Reading	Emission g Level (dBuV/m)	Limits	_	Remark
1	2402.00	27.61	6.62	34.18	95.80	95.85	74.00	-21.85	Peak
2	4808.00	31.25	11.77	31.81	39.60	50.81	74.00	23.19	Peak
3	7358.00	36.56	11.58	31.99	35.39	51.54	74.00	22.46	Peak
4	10214.00	38.48	11.47	32.17	34.92	52.70	74.00	21.30	Peak
5	14634.00	41.48	10.91	33.56	33.03	51.86	74.00	22.14	Peak
6	17218.00	40.58	10.91	33.55	31.13	49.07	74.00	24.93	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Data no.: 65

Ant. pol. : VERTICAL

: FCC PART 15C PEAK Limit

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER Test Mode : GFSK TX 2441MHz

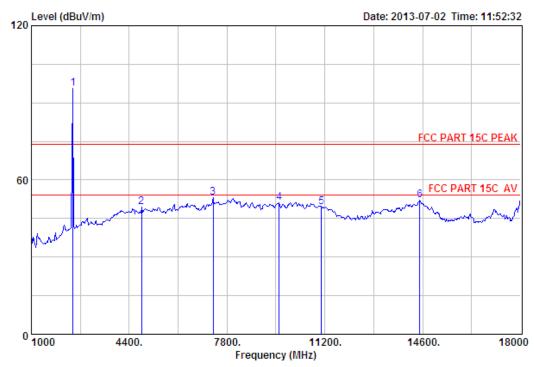
	-	Factor	Loss	Factor	Reading	Emission Level (dBuV/m)	Limits	_	Remark
1	2441.00	27.60	6.67	34.12	103.14	103.29	74.00	-29.29	Peak
2	4859.00	31.34	11.99	31.88	39.59	51.04	74.00	22.96	Peak
3	7324.00	36.55	11.57	31.99	37.18	53.31	74.00	20.69	Peak
4	10214.00	38.48	11.47	32.17	35.24	53.02	74.00	20.98	Peak
5	14073.00	41.52	10.90	33.75	34.18	52.85	74.00	21.15	Peak
6	17167.00	40.39	10.93	33.24	32.08	50.16	74.00	23.84	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Data no. : 66

Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

: SB5000 IHT SPEAKER M/N Test Mode : GFSK TX 2441MHz

	Freq.	Factor	Loss	Factor	Reading	Emission Level (dBuV/m)	Limits	Margin (dB)	Remark
1	2441.00	27.60	6.67	34.12	95.52	95.67	74.00	-21.67	Peak
2	4825.00	31.28	11.84	31.83	38.31	49.60	74.00	24.40	Peak
3	7324.00	36.55	11.57	31.99	36.91	53.04	74.00	20.96	Peak
4	9619.00	37.93	11.68	31.92	33.47	51.16	74.00	22.84	Peak
5	11081.00	39.46	11.23	33.81	32.66	49.54	74.00	24.46	Peak
6	14498.00	41.88	10.93	33.08	32.25	51.98	74.00	22.02	Peak

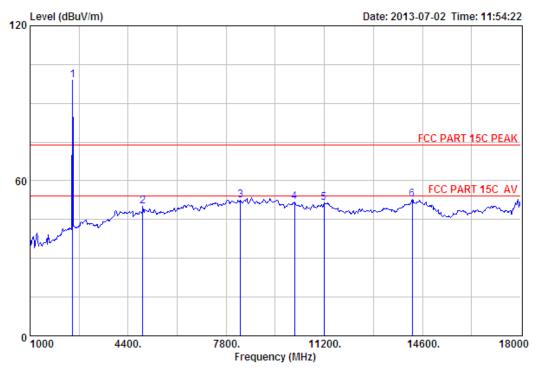
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 67

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK Limit

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER Test Mode : GFSK TX 2480MHz

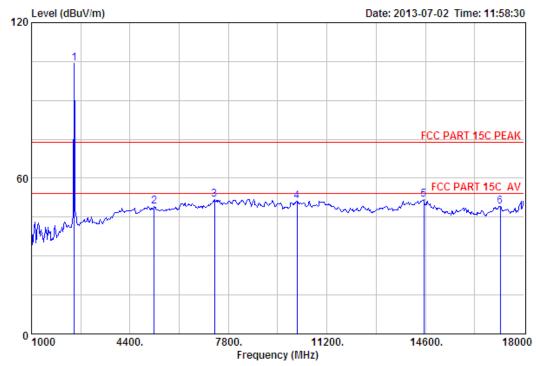
	Freq.	Factor	Loss	Factor	Reading	Emission Level (dBuV/m)	Limits	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	98.76	99.02	74.00	-25.02	Peak
2	4910.00	31.42	12.22	31.93	38.58	50.29	74.00	23.71	Peak
3	8293.00	36.67	11.43	31.57	36.00	52.53	74.00	21.47	Peak
4	10163.00	38.39	11.50	32.08	34.10	51.91	74.00	22.09	Peak
5	11183.00	39.40	11.15	34.00	35.06	51.61	74.00	22.39	Peak
6	14243.00	41.67	10.91	33.24	33.33	52.67	74.00	21.33	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Data no. : 68

Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N : GFSK TX 2480MHz Test Mode

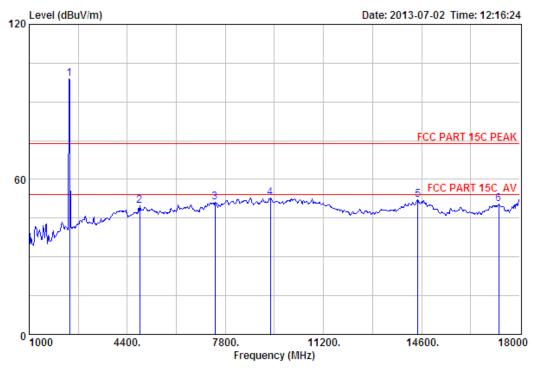
	Freq.	Factor	Loss	Factor	Reading	Emission Level (dBuV/m)	Limits	Margin (dB)	Remark
1	2480.00	27.58	6.71	34.03	104.16	104.42	74.00	-30.42	Peak
2	5233.00	31.68	12.31	32.18	37.28	49.09	74.00	24.91	Peak
3	7324.00	36.55	11.57	31.99	35.59	51.72	74.00	22.28	Peak
4	10163.00	38.39	11.50	32.08	33.49	51.30	74.00	22.70	Peak
5	14549.00	41.77	10.92	33.26	32.30	51.73	74.00	22.27	Peak
6	17184.00	40.45	10.92	33.34	31.11	49.14	74.00	24.86	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Data no. : 75

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

: SB5000 IHT SPEAKER M/N Test Mode : 8-DPSK TX 2402MHz

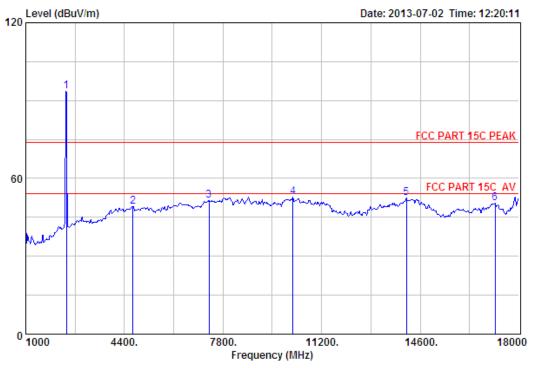
		Ant.	Cable	Amp		Emission	L .		
	Freq.	Factor	Loss	Factor	Reading	g Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
	2402.00	27 61	6 62	24 10	00 07	00 02	74 00	_25_02	Peak
_									
2	4825.00	31.28	11.84	31.83	38.37	49.66	74.00	24.34	Peak
3	7443.00	36.54	11.61	31.93	34.80	51.02	74.00	22.98	Peak
4	9364.00	38.02	11.64	32.06	35.06	52.66	74.00	21.34	Peak
5	14464.00	41.85	10.93	32.96	32.47	52.29	74.00	21.71	Peak
6	17269.00	40.78	10.89	33.87	32.51	50.31	74.00	23.69	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Data no. : 76

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

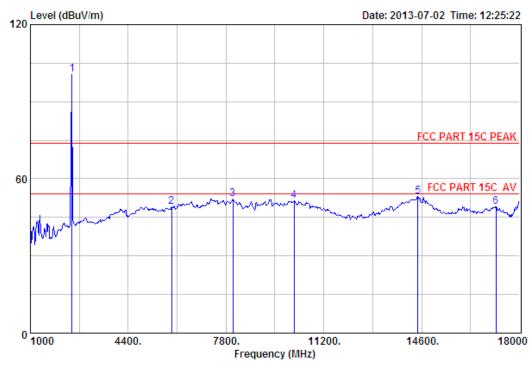
: SB5000 IHT SPEAKER M/N Test Mode : 8-DPSK TX 2402MHz

			Ant.	Cable	Amp		Emission			
		Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
		(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
_	1	2402.00	27 61	6 62	34 18	93 57	93 62	74 00	_19 62	Peak
		4689.00								Peak
	3	7324.00	36.55	11.57	31.99	35.31	51.44	74.00	22.56	Peak
	4	10214.00	38.48	11.47	32.17	35.19	52.97	74.00	21.03	Peak
	5	14124.00	41.57	10.91	33.59	33.45	52.34	74.00	21.66	Peak
	6	17184.00	40.45	10.92	33.34	32.35	50.38	74.00	23.62	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Data no. : 77

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER
Test Mode : 8-DPSK TX 2441MHz

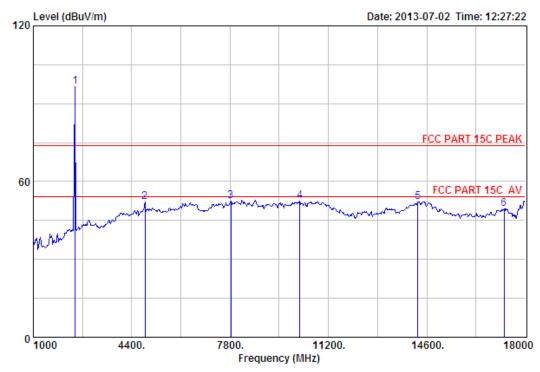
		Ant.	Cable	Amp		Emission			
	-					g Level (dBuV/m)		_	Remark
1	2441.00	27.60	6.67	34.12	100.60	100.75	74.00	-26.75	Peak
2	5913.00	32.60	12.10	32.32	36.72	49.10	74.00	24.90	Peak
3	8038.00	36.95	11.40	31.28	34.93	52.00	74.00	22.00	Peak
4	10163.00	38.39	11.50	32.08	33.57	51.38	74.00	22.62	Peak
5	14464.00	41.85	10.93	32.96	33.33	53.15	74.00	20.85	Peak
6	17184.00	40.45	10.92	33.34	31.09	49.12	74.00	24.88	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 78

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK Limit

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N Test Mode : 8-DPSK TX 2441MHz

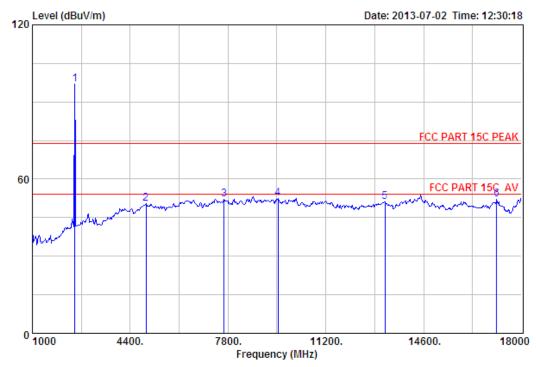
	_	Factor	Loss	Factor	Reading	Emission Level (dBuV/m)	Limits	_	Remark
	2441.00	27 60	6 67	24 12	06 50	06 72	74 00	22 72	Doole
_									
2	4859.00	31.34	11.99	31.88	40.63	52.08	74.00	21.92	Peak
3	7834.00	36.68	11.47	31.40	35.58	52.33	74.00	21.67	Peak
4	10214.00	38.48	11.47	32.17	34.76	52.54	74.00	21.46	Peak
5	14294.00	41.71	10.92	33.08	32.54	52.09	74.00	21.91	Peak
6	17269.00	40.78	10.89	33.87	31.73	49.53	74.00	24.47	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Data no.: 79

Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

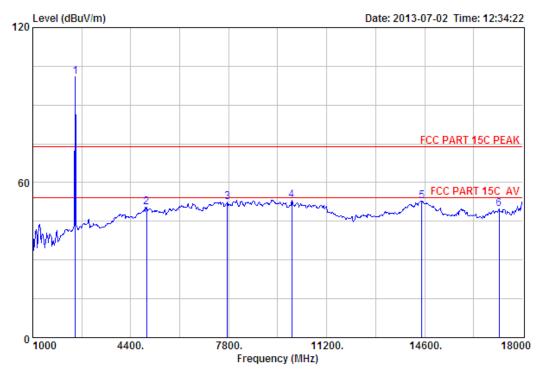
M/N : SB5000 IHT SPEAKER Test Mode : 8-DPSK TX 2480MHz

	Freq.	Factor	Loss	Factor	Reading	Emission Level (dBuV/m)	Limits	_	Remark
1	2480.00	27.58	6.71	34.03	96.81	97.07	74.00	-23.07	Peak
2	4944.00	31.47	12.37	31.96	38.46	50.34	74.00	23.66	Peak
3	7664.00	36.45	11.55	31.61	35.85	52.24	74.00	21.76	Peak
4	9534.00	37.97	11.70	31.92	34.69	52.44	74.00	21.56	Peak
5	13257.00	39.50	11.47	34.75	34.95	51.17	74.00	22.83	Peak
6	17133.00	40.26	10.94	33.03	33.97	52.14	74.00	21.86	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official  $\,$ limit are not reported.





Site no. : 3m Chamber Data no. : 80

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

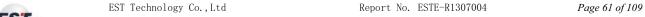
EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER Test Mode : 8-DPSK TX 2480MHz

	-	Factor	Loss	Factor	Reading	Emission Level (dBuV/m)	Limits	_	Remark
1	2480.00	27.58	6.71	34.03	100.62	100.88	74.00	-26.88	Peak
2	4944.00	31.47	12.37	31.96	38.65	50.53	74.00	23.47	Peak
3	7749.00	36.55	11.51	31.49	36.06	52.63	74.00	21.37	Peak
4	9993.00	38.12	11.59	31.78	35.18	53.11	74.00	20.89	Peak
5	14498.00	41.88	10.93	33.08	33.06	52.79	74.00	21.21	Peak
6	17184.00	40.45	10.92	33.34	31.91	49.94	74.00	24.06	Peak

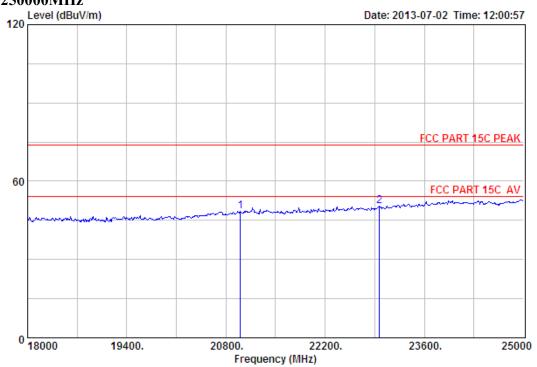
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

The emission levels that are 20dB below the official limit are not reported.





# 18000MHz - 250000MHz



Site no. : 3m Chamber Data no. : 69

Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

: Surroundbar 5000 Instant Home Theater EUT Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N Test Mode : GFSK TX 2402MHz

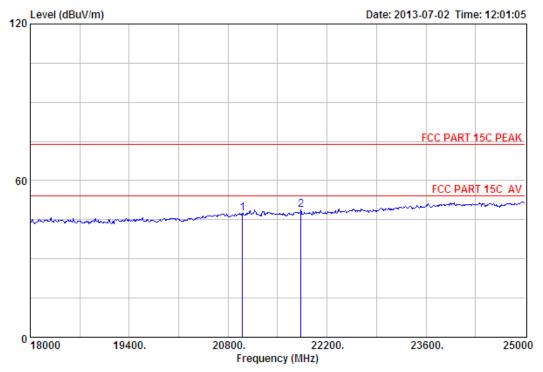
		Ant.	Cable	Amp		Emission			
	-				_	Level (dBuV/m)	Margin (dB)	Remark	
	21003.00 22963.00							Peak Peak	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

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2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber
Dis. / Ant. : 3m ANT ABVOE 18G Data no.: 70

Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK Limit

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

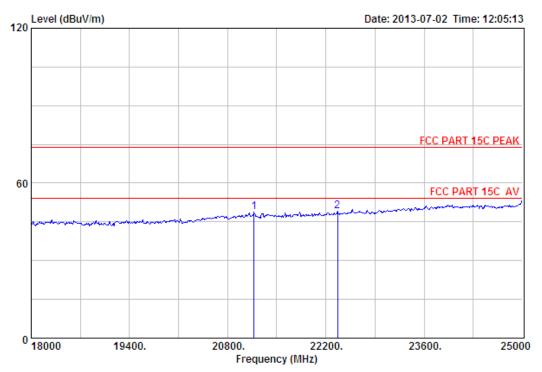
M/N : SB5000 IHT SPEAKER Test Mode : GFSK TX 2402MHz

	-	Factor	Loss	Factor	Reading	Limits (dBuV/m)	_	Remark
_	21003.00 21829.00					 		Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official  $\ \ \ \,$ limit are not reported.

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Site no. : 3m Chamber
Dis. / Ant. : 3m ANT ABVOE 18G Data no.: 71

Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER Test Mode : GFSK TX 2441MHz

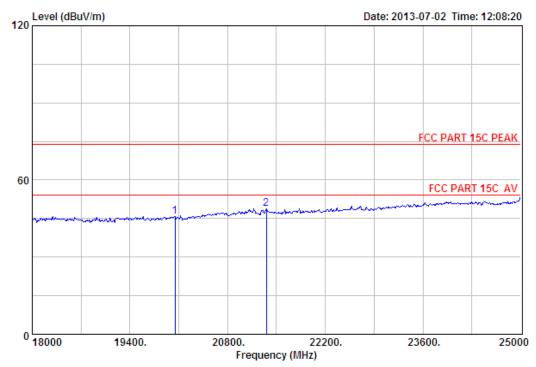
_	Factor	Loss	Factor	Reading	Limits (dBuV/m)	_	Remark
21178.00 22368.00							Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber
Dis. / Ant. : 3m ANT ABOVE 18G Data no.: 72

Ant. pol. : VERTICAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

: SB5000 IHT SPEAKER M/N : GFSK TX 2441MHz Test Mode

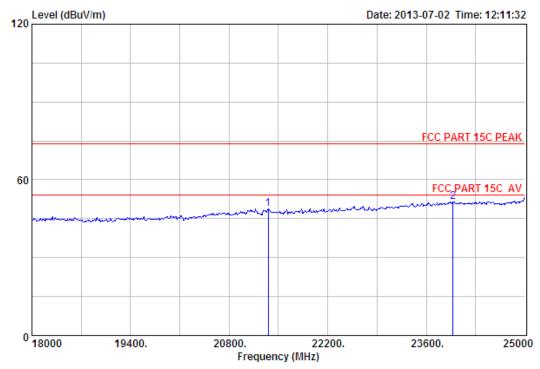
		Ant.	Cable	Amp		Emission				
	Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark	
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
										-
1	20044.00	46.09	19.70	36.66	16.71	45.84	74.00	28.16	Peak	
2	21353.00	46.09	20.28	35.49	17.93	48.81	74.00	25.19	Peak	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Data no.: 73

Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

: Surroundbar 5000 Instant Home Theater EUT Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER Test Mode : GFSK TX 2480MHz

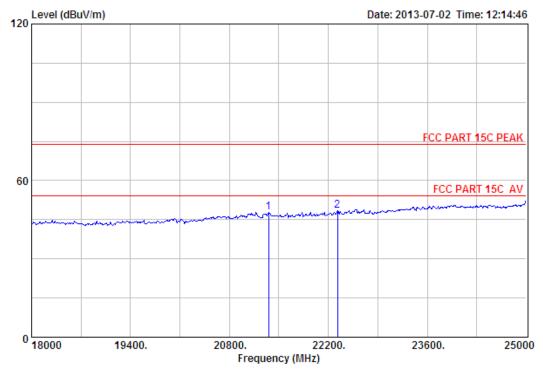
-	Ant. Factor (dB/m)	Loss	Factor	Reading	Limits	_	Remark
1 21353.00 2 23978.00							Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Data no.: 74

Site no. : 3m Chamber
Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK Limit

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

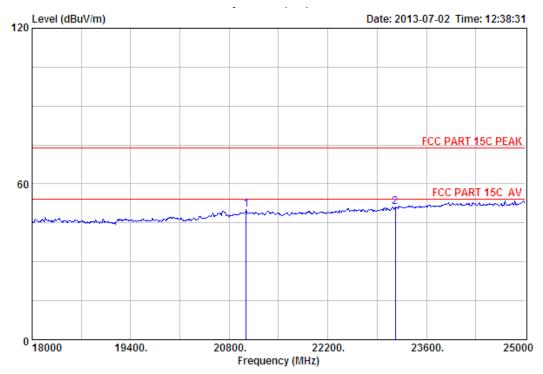
: SB5000 IHT SPEAKER Test Mode : GFSK TX 2480MHz

		Ant.	Cable	Amp		Emission			
	-				_		Limits	_	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	21353.00	46.09	20.28	35.49	16.93	47.81	74.00	26.19	Peak
2	22333.00	45.77	20.75	34.56	16.51	48.47	74.00	25.53	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Data no. : 81

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m ANT ABVOE 18G

Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N Test Mode : 8-DPSK TX 2402MHz

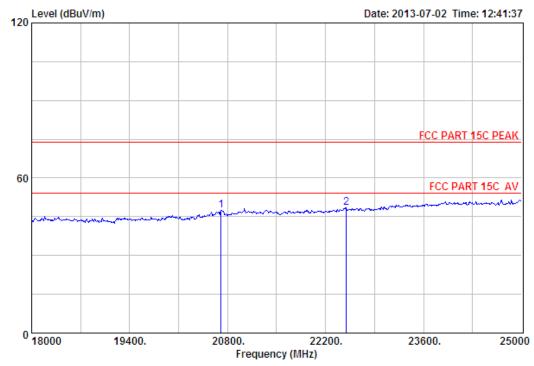
	Ant.	Cable	Amp	]	Emission		
 -				_	Level (dBuV/m)	_	Remark
21038.00 23159.00							

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber
Dis. / Ant. : 3m ANT ABOVE 18G Data no. : 82

Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

: Surroundbar 5000 Instant Home Theater EUT Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N : 8-DPSK TX 2402MHz Test Mode

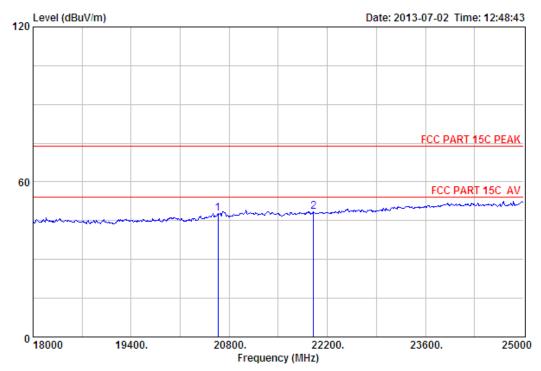
	Ant.	Cable	Amp		Emission			
-				_		Limits (dBuV/m)	_	Remark
20709.00 22494.00								Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Data no. : 83

Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N Test Mode : 8-DPSK TX 2441MHz

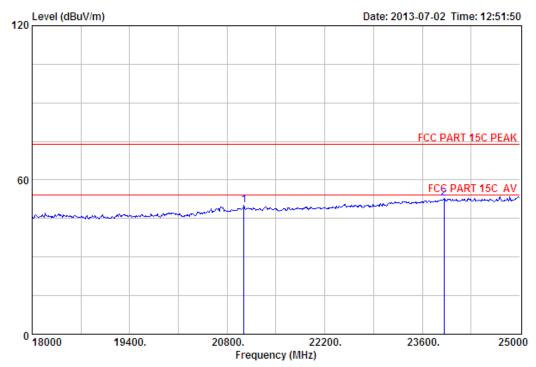
	Ant.	Cable	Amp		Emission				
-				_		Limits (dBuV/m)	_	Remark	
20639.00 22004.00								Peak Peak	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber
Dis. / Ant. : 3m ANT ABVOE 18G Data no. : 84

Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

: SB5000 IHT SPEAKER M/N Test Mode : 8-DPSK TX 2441MHz

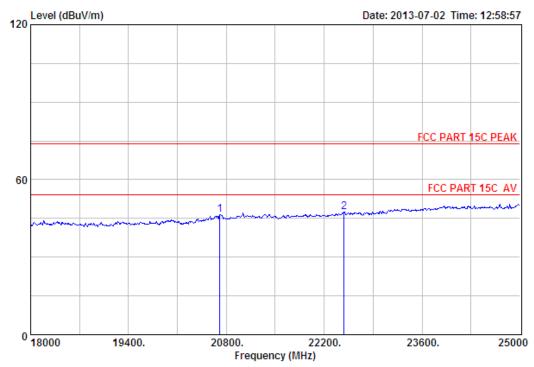
		Ant.	Capie	Amp		Lm13310n				
	-				_		Limits (dBuV/m)	_	Remark	
_	21038.00 23908.00								Peak Peak	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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: 3m Chamber Site no. Data no. : 85

Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

: Surroundbar 5000 Instant Home Theater EUT Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER Test Mode : 8-DPSK TX 2480MHz

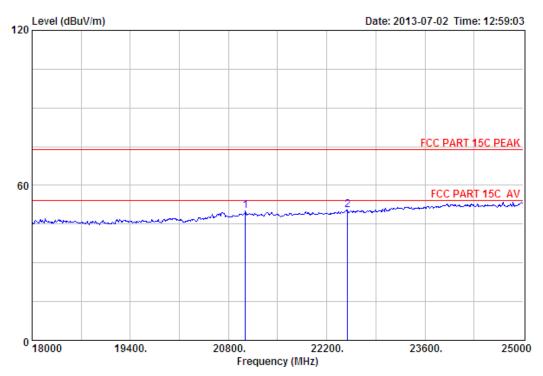
Ant. req. Factor IHz) (dB/m)	Loss	Factor	Reading	Limits	_	Remark
9.00 46.12 87.00 45.80						Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Data no. : 86

Site no. : 3m Chamber
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

: Surroundbar 5000 Instant Home Theater EUT : DC 20V From Adapter Input AC 120V/60Hz Power

M/N : SB5000 IHT SPEAKER Test Mode : 8-DPSK TX 2480MHz

			Ant.	Cable	Amp		Emission			
		-				_		Limits (dBuV/m)	_	Remark
1	L	21038.00	46.27	20.15	35.76	19.43	50.09	74.00	23.91	Peak
2	2	22494.00	45.80	20.85	34.38	18.13	50.40	74.00	23.60	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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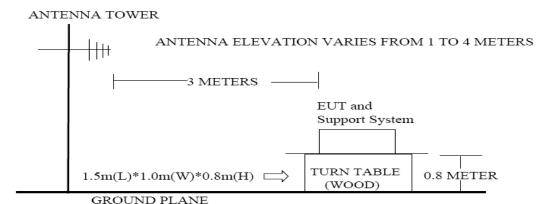


### 9. BAND EDGE COMPLIANCE

#### 9.1. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

### 9.2. Block Diagram of Test setup



### 9.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions

- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

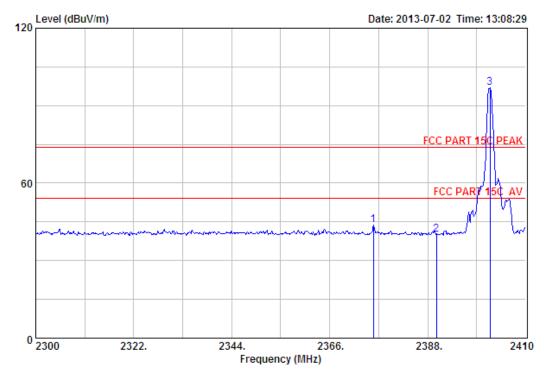
#### 9.4. Test Result

EUT: Surroundbar 5000 Instant Home Theater									
M/N: SB5000 IHT SPEAKER									
Power: DC 12V From Adapter Input AC 120V/60Hz									
Test date: 2013-07-02 Test site: 3m Chamber Tested by: Tony Tang									
Test mode: Tx Mode (Hopping On & No Hopping)									
Pass									

- Note: 1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
  - 2. The frequency 2402MHz . 2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

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## 9.5. Test Data



Site no. : 3m Chamber Data no. : 87

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER

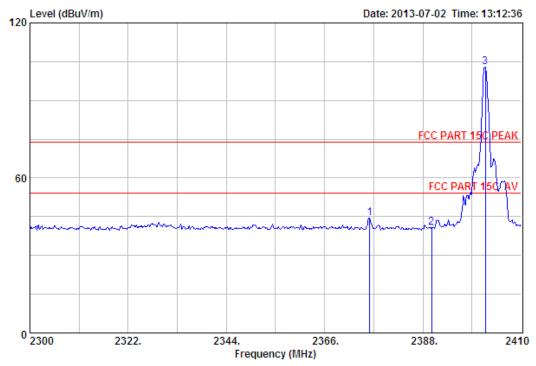
Test Mode : GFSK TX 2402MHz(No Hopping)

		Ant.	Cable	Amp	Emission				
	-				-	(dBuV/m)		_	Remark
1	2375.79	27.64	6.60	34.19	43.69	43.74	74.00	30.26	Peak
2	2390.00	27.64	6.62	34.19	40.09	40.16	74.00	33.84	Peak
3	2401.97	27.61	6.62	34.18	96.84	96.89	74.00	-22.89	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.



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Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Data no.: 88

Ant. pol. : VERTICAL

: FCC PART 15C PEAK

Limit : FOO FART 100 FEAT.

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N

: GFSK TX 2402MHz(No Hopping) Test Mode

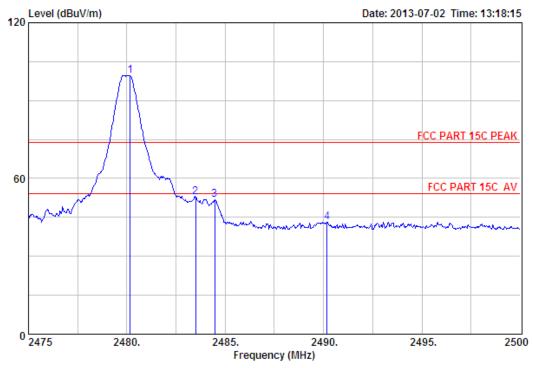
		Ant.	Cable	Amp		Emission			
	-				-		Limits (dBuV/m)	_	Remark
1	2376.12	27.64	6.60	34.19	44.34	44.39	74.00	29.61	Peak
2	2390.00	27.64	6.62	34.19	40.62	40.69	74.00	33.31	Peak
3	2401.97	27.61	6.62	34.18	102.84	102.89	74.00	-28.89	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.



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Data no.: 89

Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

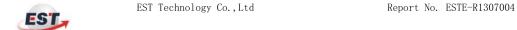
EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

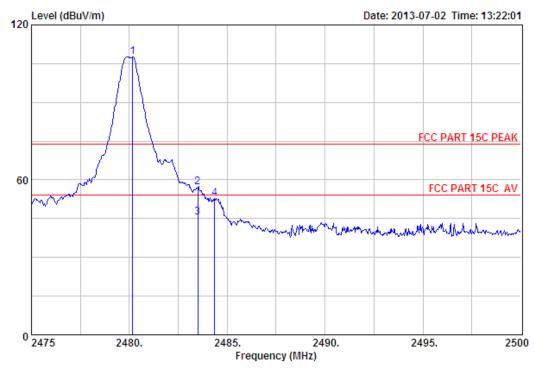
: SB5000 IHT SPEAKER M/N

Test Mode : GFSK TX 2480MHz(No Hopping)

		Ant.	Cable	Amp	Emission				
	Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2480.18	27.58	6.71	34.03	99.51	99.77	74.00	-25.77	Peak
2	2483.50	27.58	6.71	34.03	52.67	52.93	74.00	21.07	Peak
3	2484.48	27.58	6.71	34.03	51.67	51.93	74.00	22.07	Peak
4	2490.18	27.58	6.73	34.03	42.86	43.14	74.00	30.86	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Site no. : 3m Chamber
Dis. / Ant. : 3m ANT 1-18G Data no. : 90 Ant. pol. : VERTICAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa Engineer : Tony

: Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N

: GFSK TX 2480MHz(No Hopping) Test Mode

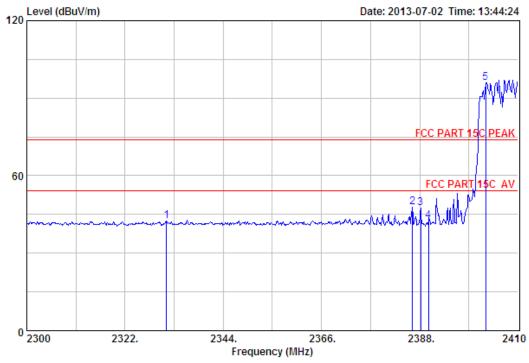
	Ant.	Cable	Amp		Emission			
-				-	•		_	Remark
2480.18	27.58	6.71	34.03	107.48	107.74	74.00	-33.74	Peak
2483.50	27.58	6.71	34.03	56.77	57.03	74.00	16.97	Peak
2483.50	27.58	6.71	34.03	45.10	45.36	54.00	8.64	Average
2484.35	27.58	6.71	34.03	52.66	52.92	74.00	21.08	Peak
	(MHz) 2480.18 2483.50 2483.50	Freq. Factor (MHz) (dB/m) 2480.18 27.58 2483.50 27.58 2483.50 27.58	Freq. Factor Loss (MHz) (dB/m) (dB) 2480.18 27.58 6.71 2483.50 27.58 6.71 2483.50 27.58 6.71	Freq. Factor Loss Factor (MHz) (dB/m) (dB) (dB)  2480.18 27.58 6.71 34.03 2483.50 27.58 6.71 34.03 2483.50 27.58 6.71 34.03	Freq. Factor Loss Factor Reading (MHz) (dB/m) (dB) (dB) (dBuV)  2480.18 27.58 6.71 34.03 107.48 2483.50 27.58 6.71 34.03 56.77 2483.50 27.58 6.71 34.03 45.10	Freq. Factor Loss Factor Reading Level (MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m)  2480.18 27.58 6.71 34.03 107.48 107.74 2483.50 27.58 6.71 34.03 56.77 57.03 2483.50 27.58 6.71 34.03 45.10 45.36	(MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) (dBuV/m) 2480.18 27.58 6.71 34.03 107.48 107.74 74.00 2483.50 27.58 6.71 34.03 56.77 57.03 74.00 2483.50 27.58 6.71 34.03 45.10 45.36 54.00	Freq. Factor Loss Factor Reading Level Limits Margin

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Data no. : 95

Site no. : 3m Chamber
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

: Surroundbar 5000 Instant Home Theater EUT : DC 20V From Adapter Input AC 120V/60Hz Power

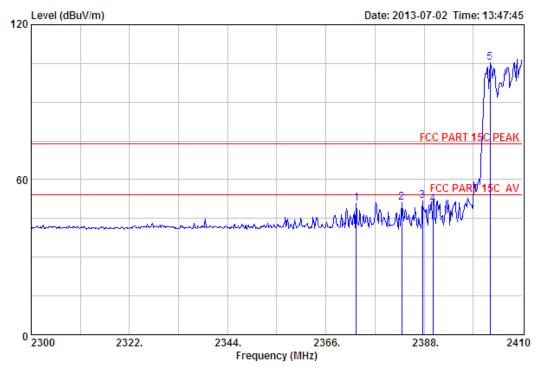
: SB5000 IHT SPEAKER Test Mode : GFSK (Hopping On)

		Ant.	Cable	Amp		Emission			
	Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2331.24	27.73	6.54	34.23	42.45	42.49	74.00	31.51	Peak
2	2386.35	27.64	6.62	34.19	47.66	47.73	74.00	26.27	Peak
3	2388.22	27.64	6.62	34.19	47.51	47.58	74.00	26.42	Peak
4	2390.00	27.64	6.62	34.19	42.25	42.32	74.00	31.68	Peak
5	2402.74	27.61	6.64	34.18	95.97	96.04	74.00	-22.04	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.







Site no. : 3m Chamber Data no. : 96

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater
Power : DC 20V From Adapter Input AC 120V/60Hz

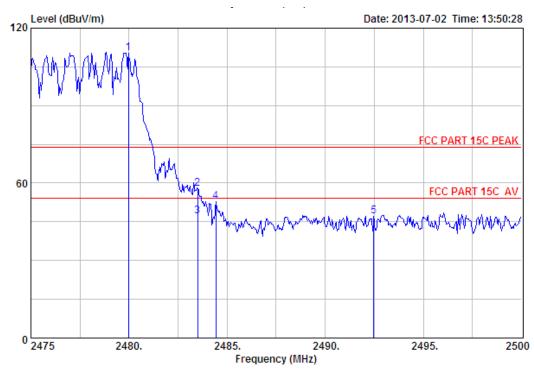
M/N : SB5000 IHT SPEAKER
Test Mode : GFSK (Hopping On)

	Ant. Cable Amp Emission								
	-				_	Level		_	Remark
1	2372.82	27.67	6.60	34.20	50.79	50.86	74.00	23.14	Peak
2	2382.94	27.64	6.60	34.19	51.23	51.28	74.00	22.72	Peak
3	2387.67	27.64	6.62	34.19	51.86	51.93	74.00	22.07	Peak
4	2390.00	27.64	6.62	34.19	50.44	50.51	74.00	23.49	Peak
5	2402.74	27.61	6.64	34.18	105.12	105.19	74.00	-31.19	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

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Data no.: 97

Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

: FCC PART 15C PEAK Limit

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony

: Surroundbar 5000 Instant Home Theater EUT : DC 20V From Adapter Input AC 120V/60Hz Power

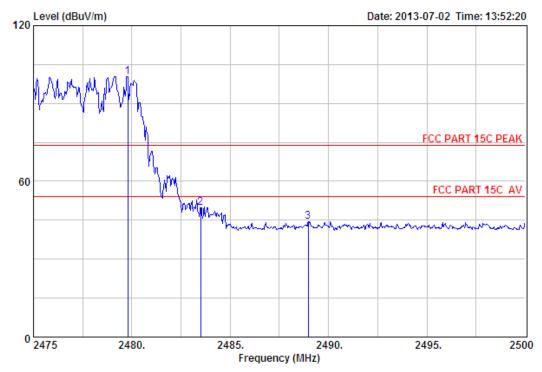
: SB5000 IHT SPEAKER M/N : GFSK (Hopping On) Test Mode

	Freq.		Loss	Factor	Reading	Emission g Level (dBuV/m)	Limits	_	Remark
1	2479.98	27.58	6.71	34.03	109.93	110.19	74.00	-36.19	Peak
2	2483.50	27.58	6.71	34.03	57.63	57.89	74.00	16.11	Peak
3	2483.50	27.58	6.71	34.03	46.73	46.99	54.00	7.01	Average
4	2484.43	27.58	6.71	34.03	52.40	52.66	74.00	21.34	Peak
5	2492.48	27.58	6.73	34.03	46.98	47.26	74.00	26.74	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.







Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Data no.: 98

Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N : GFSK (Hopping On) Test Mode

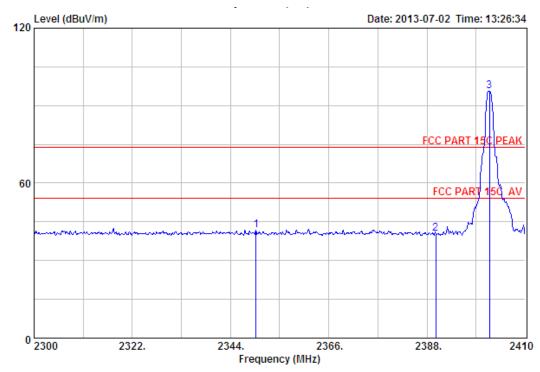
		Ant.	Cable	Amp	Emission					
	Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark	
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	2479.80	27.58	6.71	34.03	100.11	100.37	74.00	-26.37	Peak	
2	2483.50	27.58	6.71	34.03	49.51	49.77	74.00	24.23	Peak	
3	2488.98	27.58	6.73	34.03	44.30	44.58	74.00	29.42	Peak	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

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Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Data no.: 91

Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK Limit

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony

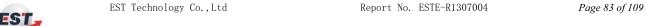
EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N

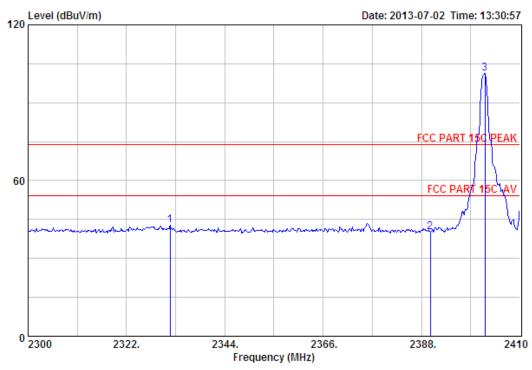
: 8-DPSK TX 2402MHz(No Hopping) Test Mode

		Ant.	Cable	Amp		Emission			
	-				_	Level (dBuV/m)		Margin (dB)	Remark
1	2349.72	27.70	6.56	34.22	41.88	41.92	74.00	32.08	Peak
2	2390.00	27.64	6.62	34.19	40.53	40.60	74.00	33.40	Peak
3	2401.97	27.61	6.62	34.18	95.47	95.52	74.00	-21.52	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.







Site no. : 3m Chamber
Dis. / Ant. : 3m ANT 1-18G Data no. : 92

Ant. pol. : VERTICAL

: FCC PART 15C PEAK Limit

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

: SB5000 IHT SPEAKER M/N

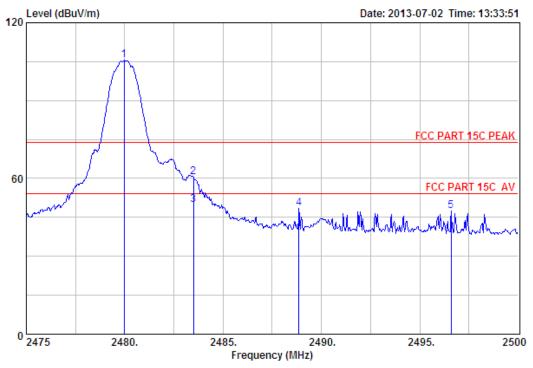
Test Mode : 8-DPSK TX 2402MHz (No Hopping)

		Ant.	Cable	Amp		Emission			
	-				-	Level (dBuV/m)		_	Remark
1	2331.79	27.73	6.54	34.23	42.75	42.79	74.00	31.21	Peak
2	2390.00	27.64	6.62	34.19	40.19	40.26	74.00	33.74	Peak
3	2402.19	27.61	6.62	34.18	101.22	101.27	74.00	-27.27	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.







Data no. : 93

Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

: SB5000 IHT SPEAKER M/N

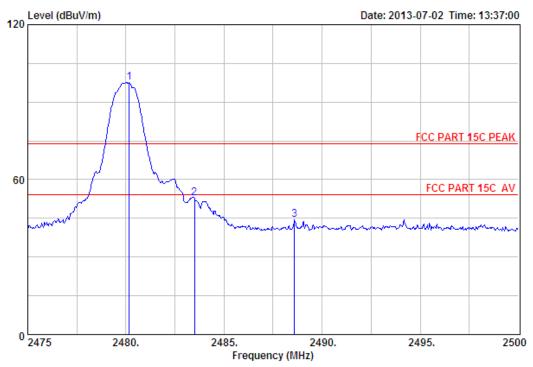
: 8-DPSK TX 2480MHz (No Hopping) Test Mode

	-	Factor	Loss	Factor	Readin	Emission g Level (dBuV/m)	Limits	_	Remark	
	,									
1	2479.98	27.58	6.71	34.03	105.30	105.56	74.00	-31.56	Peak	
2	2483.50	27.58	6.71	34.03	60.19	60.45	74.00	13.55	Peak	
3	2483.50	27.58	6.71	34.03	49.61	49.87	54.00	4.13	Average	
4	2488.85	27.58	6.73	34.03	48.15	48.43	74.00	25.57	Peak	
5	2496.60	27.57	6.73	34.00	47.18	47.48	74.00	26.52	Peak	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.







Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Data no. : 94

Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

: Surroundbar 5000 Instant Home Theater EUT : DC 20V From Adapter Input AC 120V/60Hz Power

: SB5000 IHT SPEAKER

Test Mode : 8-DPSK TX 2480MHz (No Hopping)

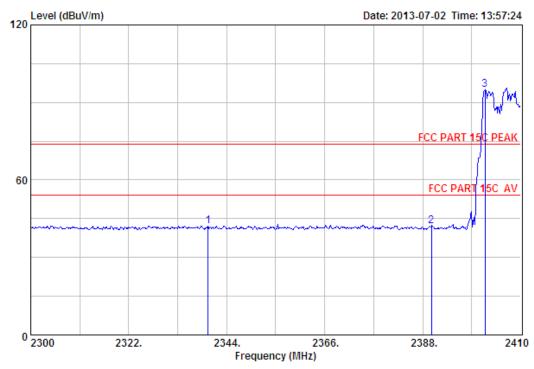
	_		Loss	Factor	Reading		Limits	Margin (dB)	Remark
2	2480.18 2483.50 2488.60	27.58	6.71	34.03	52.49	52.75	74.00	21.25	Peak Peak Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no.: 99

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

: Tony Engineer

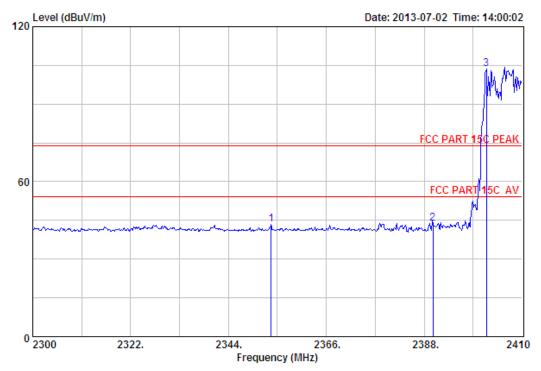
EUT : Surroundbar 5000 Instant Home Theater Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER Test Mode : 8-DPSK (Hopping On)

		Ant.	Cable	Amp	Emission				
	Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2339.82	27.70	6.56	34.22	42.20	42.24	74.00	31.76	Peak
2	2390.00	27.64	6.62	34.19	42.01	42.08	74.00	31.92	Peak
3	2401.97	27.61	6.62	34.18	94.72	94.77	74.00	-20.77	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Site no. : 3m Chamber Data no. : 100

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater
Power : DC 20V From Adapter Input AC 120V/60Hz

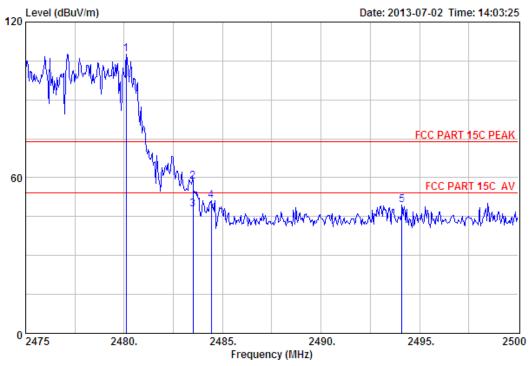
M/N : SB5000 IHT SPEAKER
Test Mode : 8-DPSK (Hopping On)

		Ant.	Cable	Amp	Emission				
	Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2353.57	27.70	6.58	34.22	43.26	43.32	74.00	30.68	Peak
2	2390.00	27.64	6.62	34.19	43.82	43.89	74.00	30.11	Peak
3	2401.97	27.61	6.62	34.18	103.67	103.72	74.00	-29.72	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

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Site no. : 3m Chamber Data no. : 101

Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa

Engineer : Tony

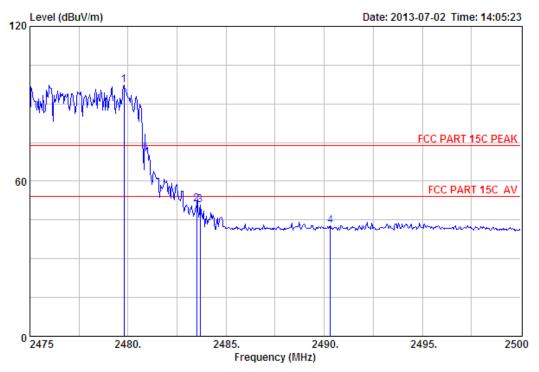
EUT : Surroundbar 5000 Instant Home Theater
Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER
Test Mode : 8-DPSK (Hopping On)

		Ant.	Cable	Amp		Emission			
	Freq.	Factor	Loss	Factor	Reading	g Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2480.10	27.58	6.71	34.03	107.39	107.65	74.00	-33.65	Peak
2	2483.50	27.58	6.71	34.03	58.20	58.46	74.00	15.54	Peak
3	2483.50	27.58	6.71	34.03	47.39	47.65	54.00	6.35	Average
4	2484.43	27.58	6.71	34.03	50.89	51.15	74.00	22.85	Peak
5	2494.10	27.58	6.73	34.03	49.25	49.53	74.00	24.47	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





Site no. : 3m Chamber Dis. / Ant. : 3m ANT 1-18G Data no. : 102

Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK

Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Home Theater : DC 20V From Adapter Input AC 120V/60Hz Power

M/N : SB5000 IHT SPEAKER Test Mode : 8-DPSK (Hopping On)

		Ant.	Cable	Amp	Emission					
	-				-	(dBuV/m)		_	Remark	
1	2479.80	27.58	6.71	34.03	97.07	97.33	74.00	-23.33	Peak	
2	2483.50	27.58	6.71	34.03	50.90	51.16	74.00	22.84	Peak	
3	2483.68	27.58	6.71	34.03	50.59	50.85	74.00	23.15	Peak	
4	2490.30	27.58	6.73	34.03	42.67	42.95	74.00	31.05	Peak	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.





### 10. Power Line Conducted Emissions

#### 10.1.Limit

	Maximum RF Line Voltage					
Frequency	Quasi-Peak Level	Average Level				
	dB(µV)	dB(μV)				
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*				
500kHz ~ 5MHz	56	46				
5MHz ~ 30MHz	60	50				

Notes: 1. \* Decreasing linearly with logarithm of frequency.

### 10.2.Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT was charged form PC's USB port which connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#).. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESHS30) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked.

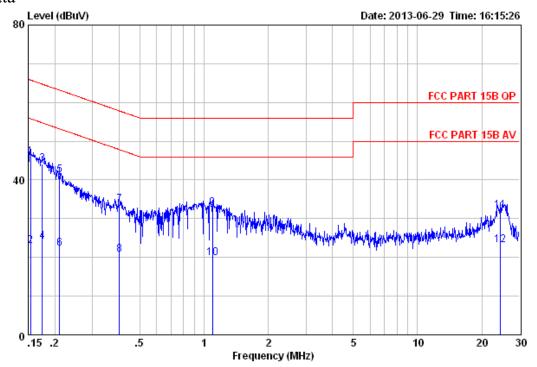
### 10.3.Test Result

0.15MHz—30MHz Conducted emissison Test result									
EUT: Surroundbar 5000	EUT: Surroundbar 5000 Instant Home Theater								
M/N: SB5000 IHT SPE	AKER								
Power: DC 12V From A	Power: DC 12V From Adapter Input AC 120V/60Hz								
Test date: 2013-06-29	Test site: 3m Chamber	Tested by: Tony.Tang							
Test mode: Tx Mode									
	Pass								

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<sup>2.</sup> The lower limit shall apply at the transition frequencies.

## 10.4. Test data



Site no. : EST Conduction Shielded RoomData no. : 77
Limit : FCC PART 15B QP LINE Phase : LINE

Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa

Engineer : Tony

EUT : Surroundbar 5000 Instant Homse Theater Power : DC 20V From Adapter Input AC 120V/60Hz

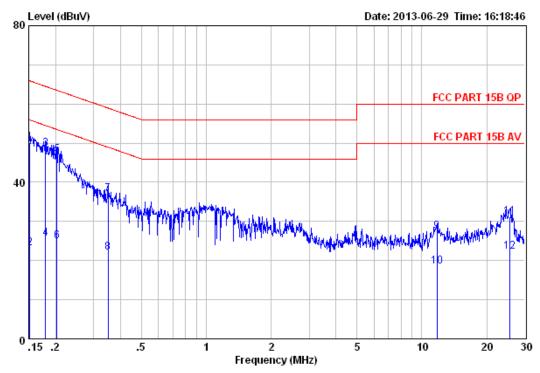
M/N : SB5000 IHT SPEAKER

Test Mode : TX Mode

		LISN	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dBuV)	(dBuv/m)	(dBuv/m)	(dB)	
1	0.15	9.61	9.81	26.47	45.89	65.78	 19.89	OP
2	0.15	9.61	9.81	3.47	22.89	55.78	32.89	Average
3	0.17	9.61	9.80	24.74	44.15	64.72	20.57	QP
4	0.17	9.61	9.80	4.74	24.15	54.72	30.57	Average
5	0.21	9.61	9.80	21.80	41.21	63.18	21.97	QP
6	0.21	9.61	9.80	2.80	22.21	53.18	30.97	Average
7	0.40	9.61	9.82	14.25	33.68	57.81	24.13	QP
8	0.40	9.61	9.82	1.25	20.68	47.81	27.13	Average
9	1.09	9.64	9.83	13.39	32.86	56.00	23.14	QP
10	1.09	9.64	9.83	0.39	19.86	46.00	26.14	Average
11	24.53	9.66	10.00	12.53	32.19	60.00	27.81	QP
12	24.53	9.66	10.00	3.53	23.19	50.00	26.81	Average

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Site no. : EST Conduction Shielded RoomData no. : 79 Limit : FCC PART 15B QP LINE Phase : NEUTRAL Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa

: Tony Engineer

: Surroundbar 5000 Instant Homse Theater EUT Power : DC 20V From Adapter Input AC 120V/60Hz

M/N : SB5000 IHT SPEAKER

Test Mode : TX Mode

	Freq.	LISN Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)		Limits (dBuv/m)	Margin (dB)	Remark
1	0.15	9.46	9.81	30.88	50.15	65.91	15.76	QP
2	0.15	9.46	9.81	3.88	23.15	55.91	32.76	Average
3	0.18	9.55	9.80	29.20	48.55	64.50	15.95	QP
4	0.18	9.55	9.80	6.20	25.55	54.50	28.95	Average
5	0.20	9.60	9.80	27.57	46.97	63.49	16.52	QP
6	0.20	9.60	9.80	5.57	24.97	53.49	28.52	Average
7	0.35	9.59	9.83	17.58	37.00	58.96	21.96	QP
8	0.35	9.59	9.83	2.58	22.00	48.96	26.96	Average
9	11.74	9.72	9.90	7.87	27.49	60.00	32.51	QP
10	11.74	9.72	9.90	-1.13	18.49	50.00	31.51	Average
11	25.59	9.81	10.03	11.42	31.26	60.00	28.74	QP
12	25.59	9.81	10.03	2.42	22.26	50.00	27.74	Average

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## 11. ANTENNA REQUIREMENTS

#### 11.1.Limit

For intentional device, according to FCC 47 CFR Section 15.203, 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

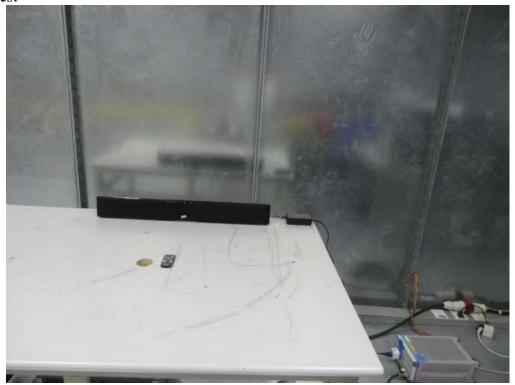
## 11.2.Result

The antennas used for this product are integral Patch Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0dBi.

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# 12. TEST SETUP PHOTO

# Conducted Test





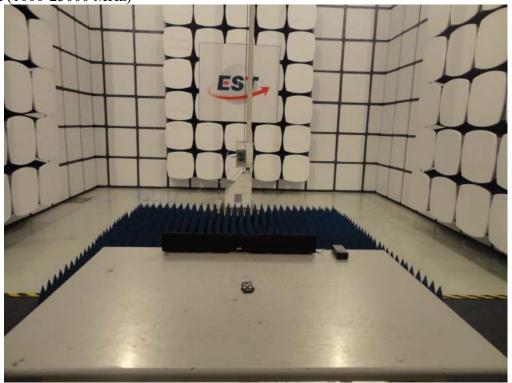


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Radiated Test (30-1000 MHz)



Radiated Test (1000-25000 MHz)





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# 13. PHOTOS OF EUT

**External Photos** M/N: SB5000 IHT SPEAKER







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**External Photos** M/N: SB5000 IHT SPEAKER





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**External Photos** M/N: SB5000 IHT SPEAKER







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**Internal Photos** M/N: SB5000 IHT SPEAKER

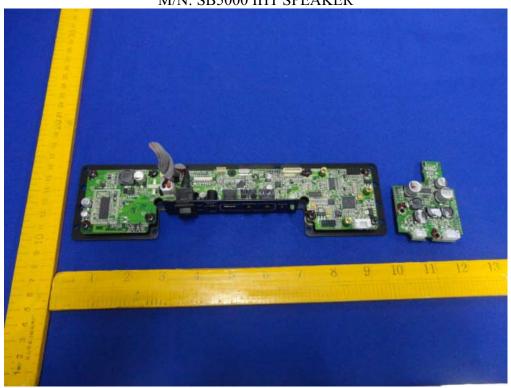


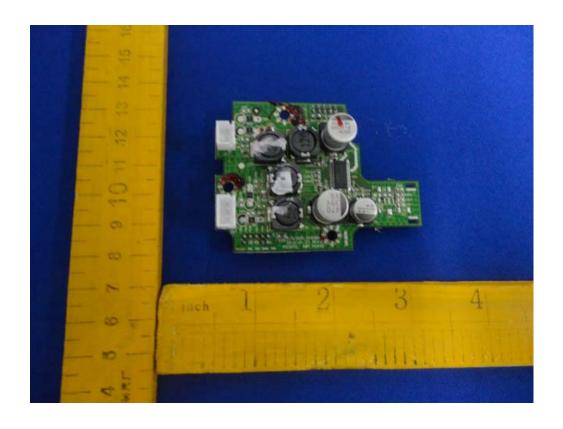




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**Internal Photos** M/N: SB5000 IHT SPEAKER



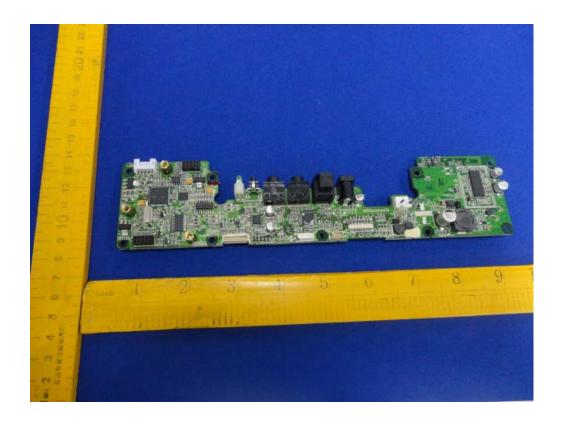




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**Internal Photos** M/N: SB5000 IHT SPEAKER

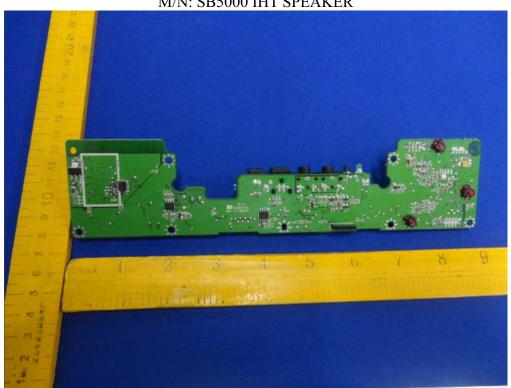






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**Internal Photos** M/N: SB5000 IHT SPEAKER





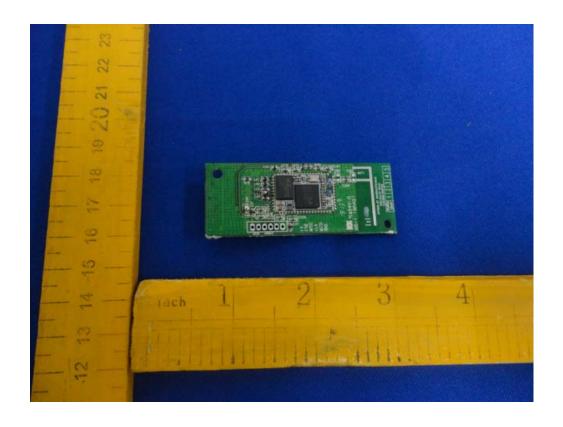
FHSS Antenna

EST

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**Internal Photos** M/N: SB5000 IHT SPEAKER

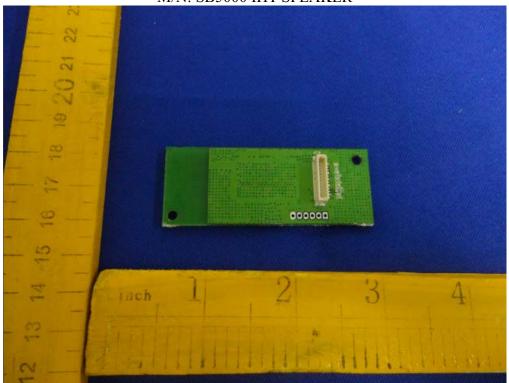






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**Internal Photos** M/N: SB5000 IHT SPEAKER

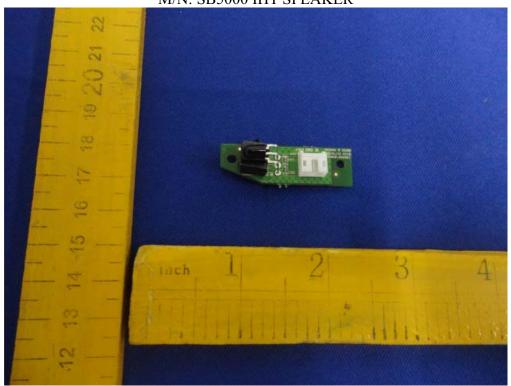




Bluetooth Antenna

EST

**Internal Photos** M/N: SB5000 IHT SPEAKER



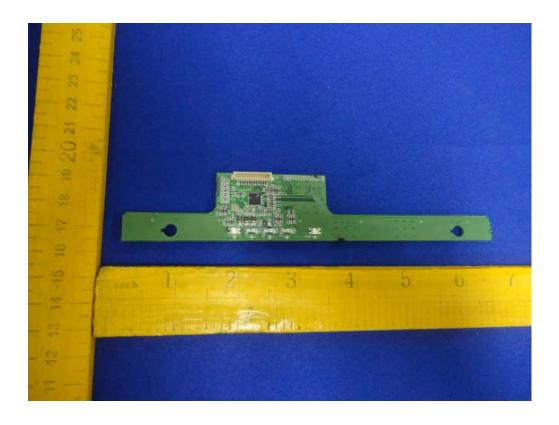




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**Internal Photos** M/N: SB5000 IHT SPEAKER

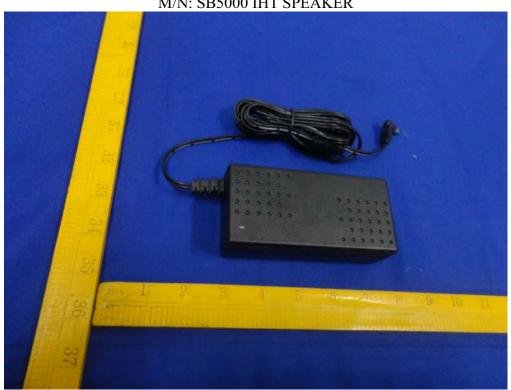






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**Adapter Photos** M/N: SB5000 IHT SPEAKER





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# Remote Control Photos







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