

FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Polk Audio

SURROUNDBAR 6500BT

Model Number: SB6500BT 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-R1309006


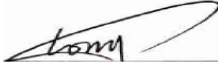

Date of Test : August 20~ 31, 2013

Date of Report : September 07, 2013

TABLE OF CONTENTS

| Description | Page |
|---|------|
| TEST REPORT VERIFICATION..... | 3 |
| 1. GENERAL INFORMATION | 4 |
| 1.1. Description of Device (EUT) | 4 |
| 2. SUMMARY OF TEST | 5 |
| 2.1. Summary of test result..... | 5 |
| 2.2. Test Facilities | 6 |
| 2.3. Assistant equipment used for test..... | 7 |
| 2.4. Block Diagram | 7 |
| 2.5. Test mode | 8 |
| 2.6. Channel List for FHSS | 8 |
| 2.7. Test Equipment..... | 9 |
| 3. RADIATED EMISSIONS..... | 10 |
| 3.1. Limit | 10 |
| 3.2. Block Diagram of Test setup..... | 11 |
| 3.3. Test Procedure | 11 |
| 3.4. Test Result..... | 11 |
| 3.5. Test Data | 12 |
| 4. BAND EDGE COMPLIANCE | 30 |
| 4.1. Limit | 30 |
| 4.2. Block Diagram of Test setup..... | 30 |
| 4.3. Test Procedure | 30 |
| 4.4. Test Result..... | 30 |
| 4.5. Test Data | 31 |
| 5. POWER LINE CONDUCTED EMISSIONS | 39 |
| 5.1. Limit | 39 |
| 5.2. Test Procedure..... | 39 |
| 6. TEST SETUP PHOTO..... | 42 |
| 7. PHOTOS OF EUT | 44 |

Test Report Verification

| | | | |
|---|--|---|--------------------|
| Applicant: | Polk Audio | | |
| Address: | 5601 Metro Drive, Baltimore, Maryland, United States, 21215 | | |
| Manufacturer | Polk Audio | | |
| Address: | 5601 Metro Drive, Baltimore, Maryland, United States, 21215 | | |
| E.U.T: | SURROUNDBAR 6500BT | | |
| Model Number: | SB6500BT SPEAKER | | |
| Power Supply: | DC 24V From Adapter Input AC 100-240V~50/60Hz | | |
| Test Voltage: | DC 24V From Adapter Input AC 120V/60Hz | | |
| Trade Name: | Polk | Serial No.: | ----- |
| Date of Receipt: | August 20, 2013 | Date of Test: | August 20~31, 2013 |
| Test Specification: | FCC Rules and Regulations Part 15 Subpart C:2012 ANSI C63.4:2009 | | |
| Test Result: | <p>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.</p> <p style="text-align: right;">This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. Date: September 07, 2013</p> | | |
| Prepared by: | Tested by: | Approved by: | |
|  |  |  | |
| Ada / Assistant | Tony.Tang/ Engineer | IcemanHu / Manager | |
| Other Aspects: | None. | | |
| Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested | | | |
| This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd. | | | |

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

| | |
|----------------------------|---|
| Product Name | : SURROUNDBAR 6500BT |
| Model Number | : SB6500BT SPEAKER |
| FCC ID | : WLQSB5000CDTX |
| Operation frequency | : 2403.5MHz~2477.3MHz |
| Number of channel | : 49 |
| Antenna | : Internal antenna, 3.3 dBi gain |
| Modulation | : FHSS (GFSK) |
| Power Supply | : DC 24V From Adapter Input AC 120V/60Hz |
| Sample Type | : Prototype production |
| Note | : The EUT Have a NFC module, it's only have receiver function |

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 | N/A |
| 20dB Bandwidth | FCC Part 15: 15.215 DA 00-705 | N/A |
| Carrier Frequency Separation | FCC Part 15: 15.247(a)(1) DA 00-705 | N/A |
| Number Of Hopping Channel | FCC Part 15: 15.247(a)(1)(iii) DA 00-705 | N/A |
| Dwell Time | FCC Part 15: 15.247(a)(1)(iii) DA 00-705 | N/A |
| 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 | N/A |
| Note: Because the transmitter module it self has not changed. So relevant test needn't re-tested, Test data refer to test report "ESTE-R1307006". | | |

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 |

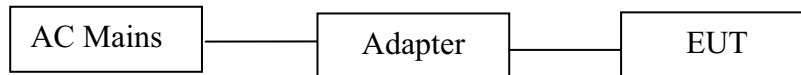
2.3. Assistant equipment used for test

2.3.1. Adapter

| | | | |
|--------|---|---------------------|------------|
| M/N | : | S065BP2400250 | |
| Input | : | AC 100-240V~50/60Hz | 1800mA Max |
| Output | : | DC 24V/2500mA | |

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 6500BT)

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 |
|------|---------|-----------|
| GFSK | Low | 2403.5MHz |
| | Middle | 2440.4MHz |
| | High | 2477.3MHz |

2.6. Channel List for FHSS

| | | | |
|----|--------|----|--------|
| 1 | 2.4035 | 26 | 2.4420 |
| 2 | 2.4051 | 27 | 2.4435 |
| 3 | 2.4066 | 28 | 2.4450 |
| 4 | 2.4081 | 29 | 2.4466 |
| 5 | 2.4097 | 30 | 2.4481 |
| 6 | 2.4112 | 31 | 2.4496 |
| 7 | 2.4128 | 32 | 2.4512 |
| 8 | 2.4143 | 33 | 2.4527 |
| 9 | 2.4158 | 34 | 2.4543 |
| 10 | 2.4174 | 35 | 2.4558 |
| 11 | 2.4189 | 36 | 2.4573 |
| 12 | 2.4204 | 37 | 2.4589 |
| 13 | 2.4220 | 38 | 2.4604 |
| 14 | 2.4235 | 39 | 2.4619 |
| 15 | 2.4251 | 40 | 2.4635 |
| 16 | 2.4266 | 41 | 2.4650 |
| 17 | 2.4281 | 42 | 2.4666 |
| 18 | 2.4297 | 43 | 2.4681 |
| 19 | 2.4312 | 44 | 2.4696 |
| 20 | 2.4327 | 45 | 2.4712 |
| 21 | 2.4343 | 46 | 2.4727 |
| 22 | 2.4358 | 47 | 2.4742 |
| 23 | 2.4374 | 48 | 2.4758 |
| 24 | 2.4389 | 49 | 2.4773 |
| 25 | 2.4404 | | |

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,24,13 | 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,24,13 | 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-amplifier | AH | PAM-0118 | 10008 | May,08,13 | 1 Year |
| Pre-amplifier | 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 |

3. RADIATED EMISSIONS

3.1. 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.

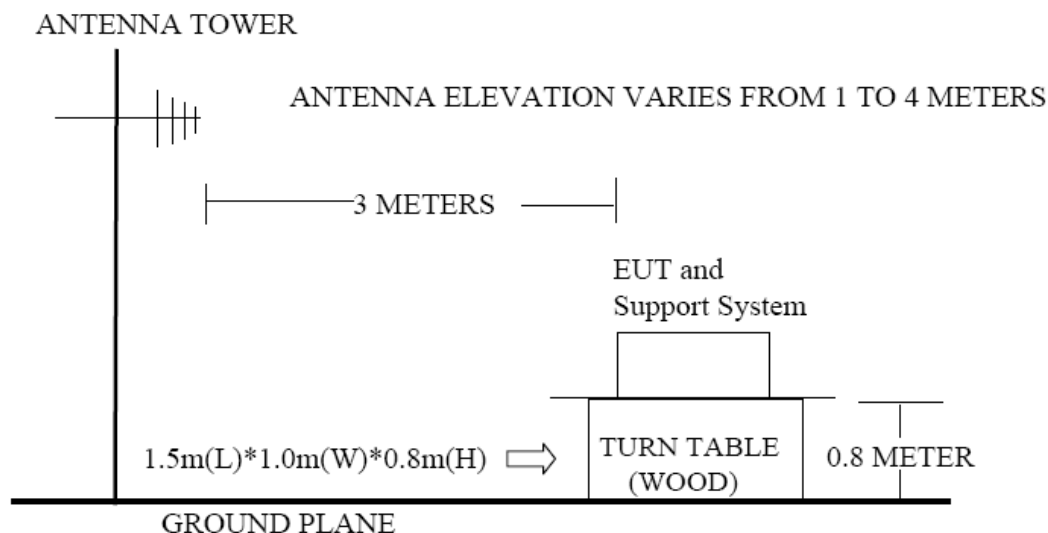
15.205 Restricted frequency band

| MHz | MHz | MHz | GHz |
|----------------------------|-----------------------|-----------------|------------------|
| 0.090 - 0.110 | 16.42 - 16.423 | 399.9 - 410 | 4.5 - 5.15 |
| ¹ 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 | (²) |

15.209 Limit

| FREQUENCY MHz | DISTANCE Meters | FIELD STRENGTHS LIMIT | |
|------------------|--------------------|---|----------|
| | | 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) | |

3.2. Block Diagram of Test setup



3.3. 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.

3.4. Test Result

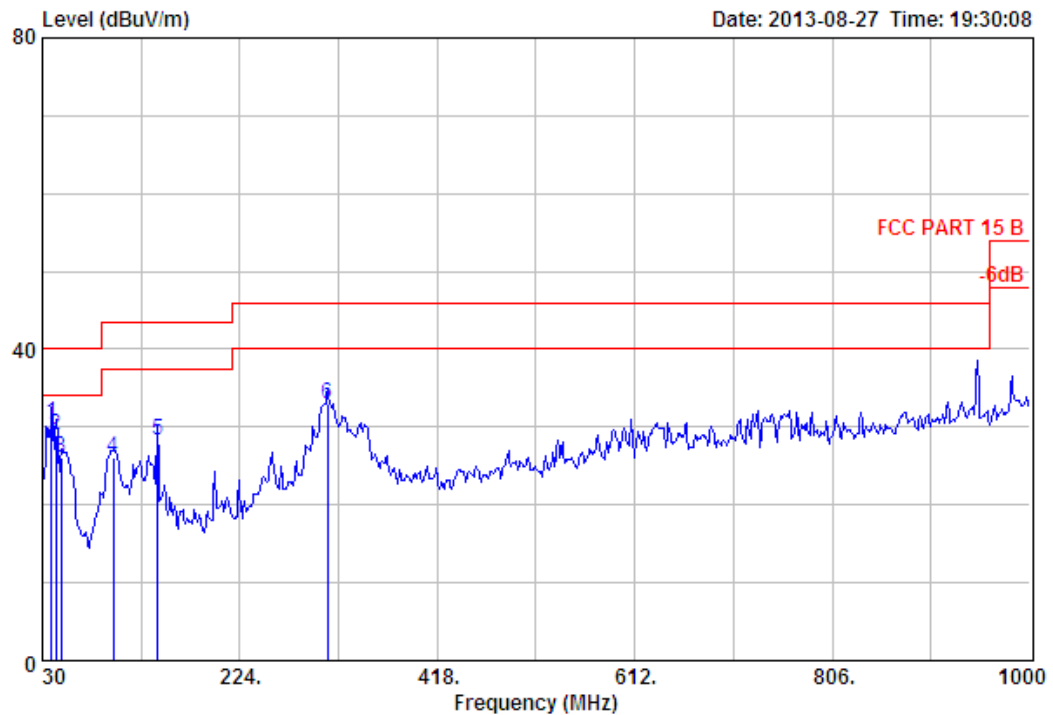
| 30MHz—25GHz Radiated emissison Test result | |
|---|--|
| EUT: SURROUNDBAR 6500BT | |
| M/N: SB6500BT SPEAKER | |
| Power: DC 24V From Adapter Input AC 120V/60Hz | |
| Test date: 2013-08-23~27 Test site: 3m Chamber Tested by: Tony Tang | |
| Test mode: Tx Mode | |
| Pass | |

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 2403.5MHz 、 2440.4MHz and 2477.3MHz 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.

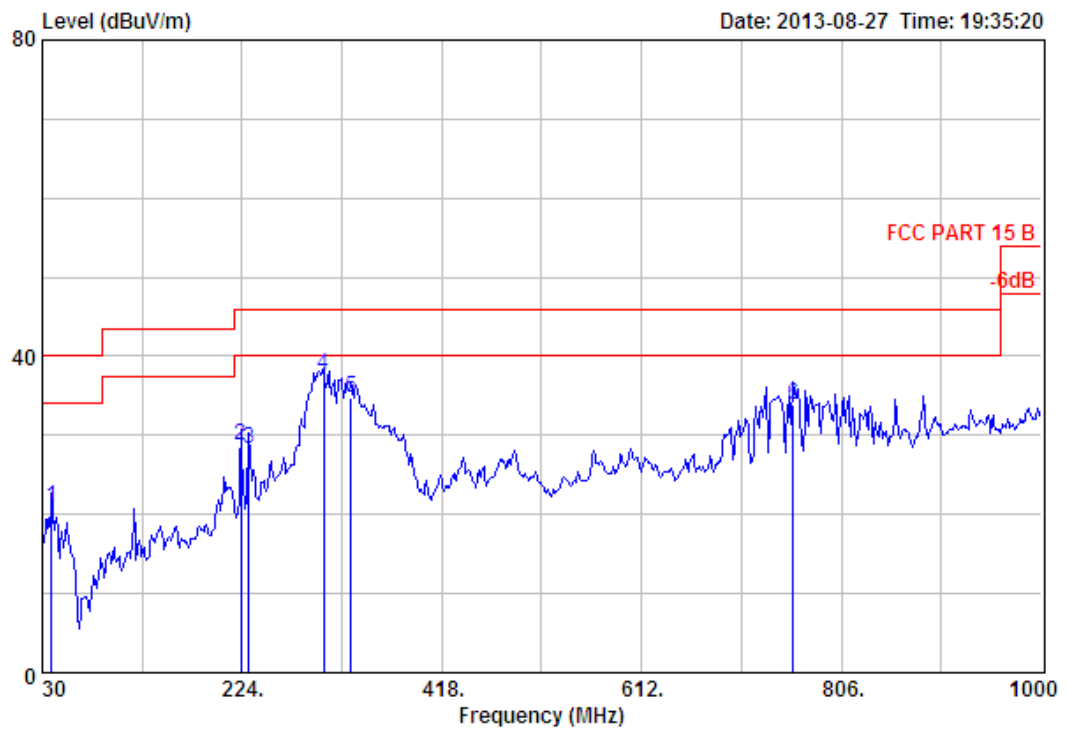
3.5. Test Data

30 MHz – 1000 MHz



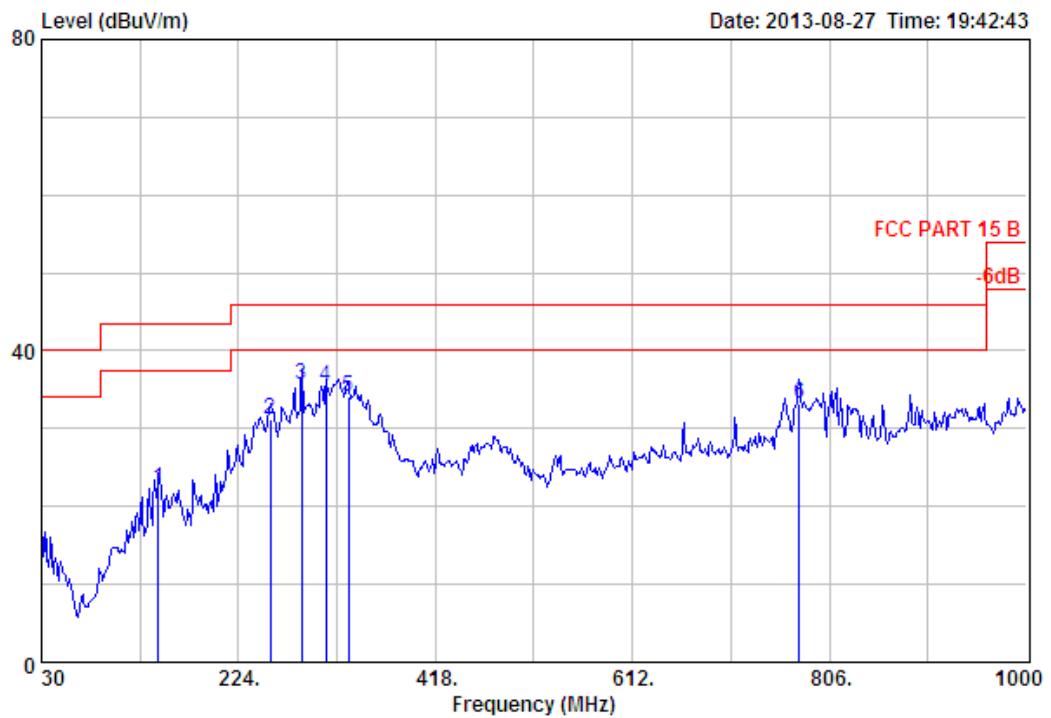
Site no. : 3m Chamber Data no. : 113
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark (dB) |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|----------------|
| 1 | 38.73 | 13.48 | 2.10 | 14.95 | 30.53 | 40.00 | 9.47 | QP |
| 2 | 43.58 | 10.52 | 2.21 | 16.32 | 29.05 | 40.00 | 10.95 | QP |
| 3 | 48.43 | 8.37 | 2.30 | 15.48 | 26.15 | 40.00 | 13.85 | QP |
| 4 | 99.84 | 9.45 | 3.04 | 13.65 | 26.14 | 43.50 | 17.36 | QP |
| 5 | 143.49 | 11.29 | 3.71 | 13.27 | 28.27 | 43.50 | 15.23 | QP |
| 6 | 310.33 | 13.20 | 5.32 | 14.47 | 32.99 | 46.00 | 13.01 | QP |



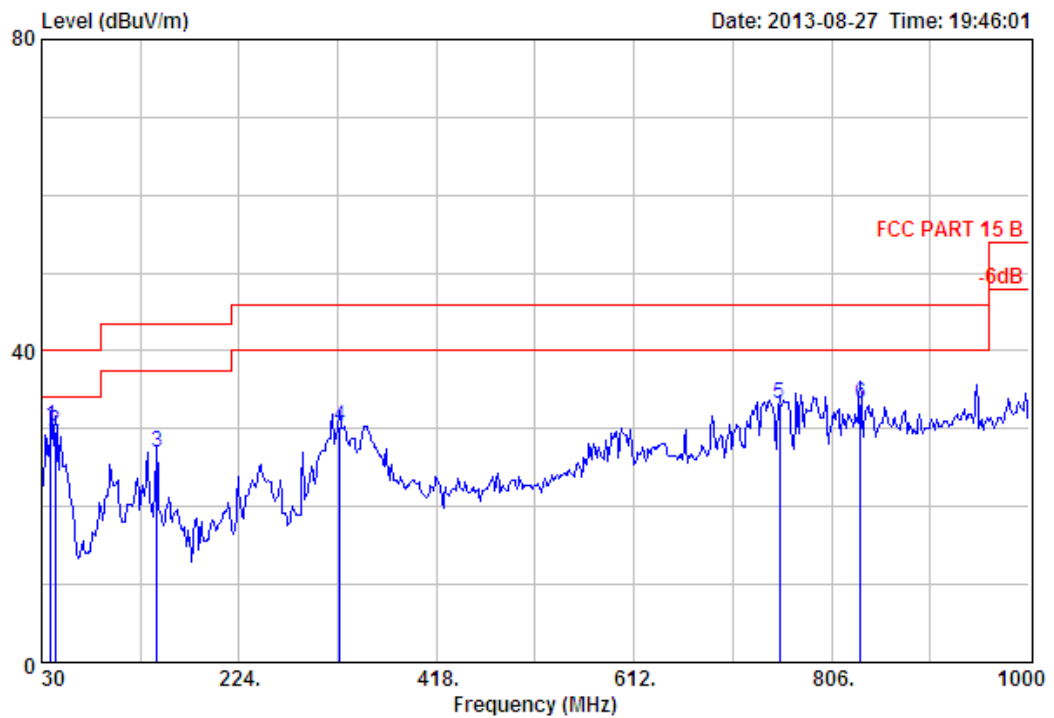
Site no. : 3m Chamber Data no. : 114
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Reamark (dB) |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|-----------------|
| 1 | 38.73 | 13.48 | 2.10 | 5.26 | 20.84 | 40.00 | 19.16 | QP |
| 2 | 223.03 | 9.37 | 4.47 | 14.80 | 28.64 | 46.00 | 17.36 | QP |
| 3 | 230.79 | 9.49 | 4.58 | 14.31 | 28.38 | 46.00 | 17.62 | QP |
| 4 | 303.54 | 13.08 | 5.27 | 19.24 | 37.59 | 46.00 | 8.41 | QP |
| 5 | 329.73 | 13.85 | 5.47 | 15.41 | 34.73 | 46.00 | 11.27 | QP |
| 6 | 759.44 | 22.04 | 8.42 | 3.31 | 33.77 | 46.00 | 12.23 | QP |



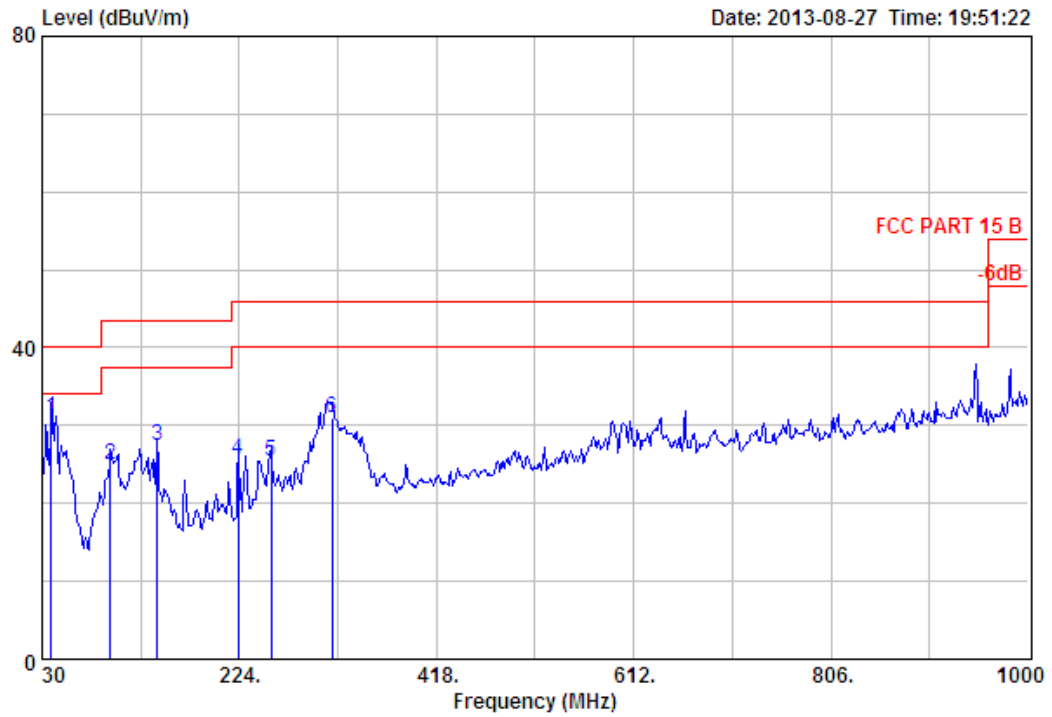
Site no. : 3m Chamber Data no. : 115
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2440.4MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark (dB) |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|----------------|
| 1 | 145.43 | 11.22 | 3.73 | 7.25 | 22.20 | 43.50 | 21.30 | QP |
| 2 | 255.04 | 12.41 | 4.87 | 13.89 | 31.17 | 46.00 | 14.83 | QP |
| 3 | 286.08 | 12.59 | 5.14 | 18.00 | 35.73 | 46.00 | 10.27 | QP |
| 4 | 310.33 | 13.20 | 5.32 | 16.86 | 35.38 | 46.00 | 10.62 | QP |
| 5 | 332.64 | 13.93 | 5.52 | 14.57 | 34.02 | 46.00 | 11.98 | QP |
| 6 | 775.93 | 22.02 | 8.52 | 2.76 | 33.30 | 46.00 | 12.70 | QP |



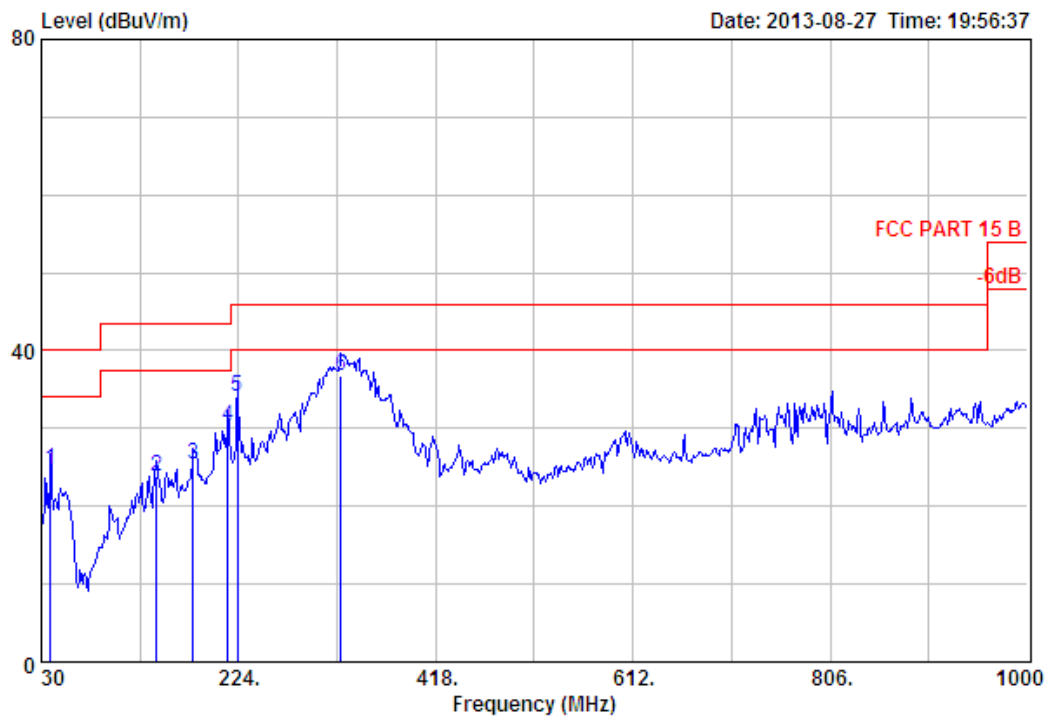
Site no. : 3m Chamber Data no. : 116
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2440.4MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Reamark (dB) |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|-----------------|
| 1 | 38.73 | 13.48 | 2.10 | 14.65 | 30.23 | 40.00 | 9.77 | QP |
| 2 | 43.58 | 10.52 | 2.21 | 16.85 | 29.58 | 40.00 | 10.42 | QP |
| 3 | 143.49 | 11.29 | 3.71 | 11.96 | 26.96 | 43.50 | 16.54 | QP |
| 4 | 322.94 | 13.65 | 5.41 | 11.28 | 30.34 | 46.00 | 15.66 | QP |
| 5 | 754.59 | 22.12 | 8.32 | 2.80 | 33.24 | 46.00 | 12.76 | QP |
| 6 | 834.13 | 22.54 | 8.56 | 2.03 | 33.13 | 46.00 | 12.87 | QP |



Site no. : 3m Chamber Data no. : 117
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL
 Limit : FCC PART 15 B
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2477.3MHz

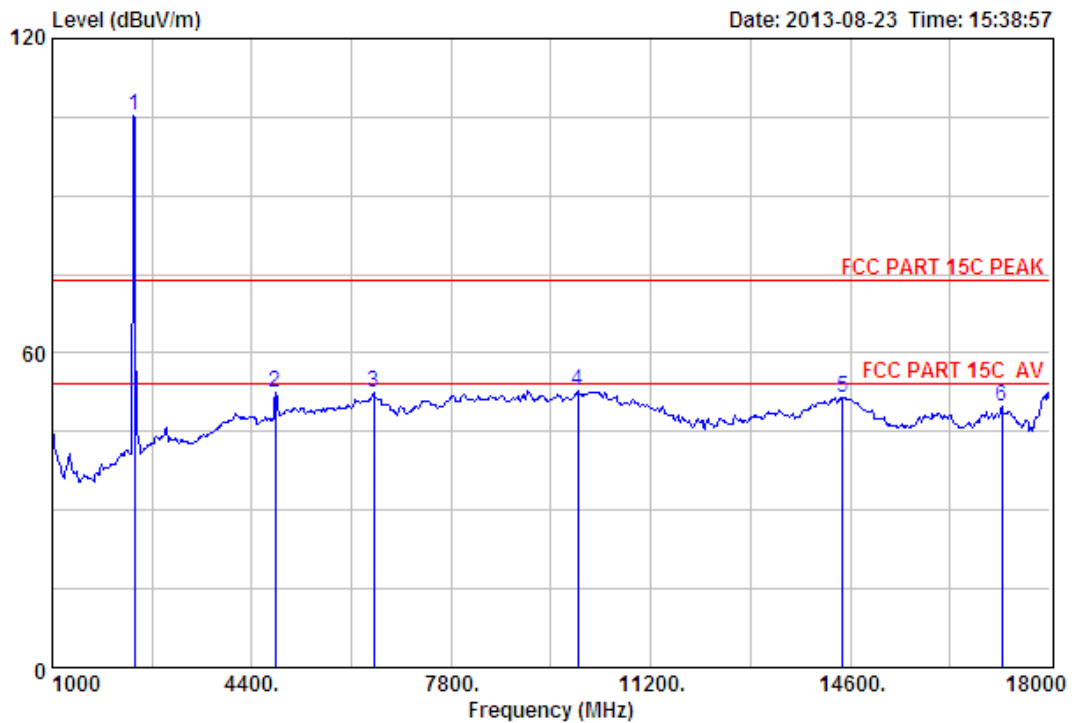
| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Reamark (dB) |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|-----------------|
| 1 | 38.73 | 13.48 | 2.10 | 15.30 | 30.88 | 40.00 | 9.12 | QP |
| 2 | 96.93 | 8.92 | 3.03 | 13.06 | 25.01 | 43.50 | 18.49 | QP |
| 3 | 143.49 | 11.29 | 3.71 | 12.34 | 27.34 | 43.50 | 16.16 | QP |
| 4 | 223.03 | 9.37 | 4.47 | 11.80 | 25.64 | 46.00 | 20.36 | QP |
| 5 | 255.04 | 12.41 | 4.87 | 8.08 | 25.36 | 46.00 | 20.64 | QP |
| 6 | 315.18 | 13.39 | 5.33 | 12.33 | 31.05 | 46.00 | 14.95 | QP |



Site no. : 3m Chamber Data no. : 118
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2477.3MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Reamark (dB) |
|---|----------------|--------------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|-----------------|
| 1 | 38.73 | 13.48 | 2.10 | 9.15 | 24.73 | 40.00 | 15.27 | QP |
| 2 | 143.49 | 11.29 | 3.71 | 8.90 | 23.90 | 43.50 | 19.60 | QP |
| 3 | 179.38 | 8.96 | 4.11 | 12.25 | 25.32 | 43.50 | 18.18 | QP |
| 4 | 213.33 | 8.60 | 4.35 | 17.32 | 30.27 | 43.50 | 13.23 | QP |
| 5 | 223.03 | 9.37 | 4.47 | 20.32 | 34.16 | 46.00 | 11.84 | QP |
| 6 | 324.88 | 13.71 | 5.43 | 17.53 | 36.67 | 46.00 | 9.33 | QP |

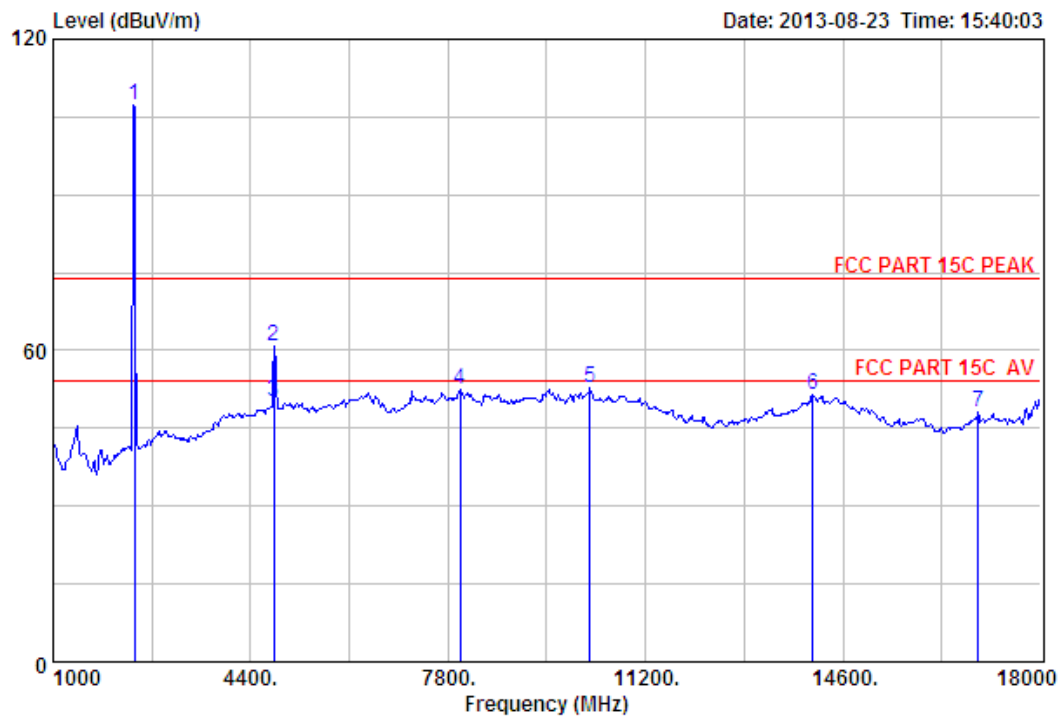
1000 MHz – 18000MHz



Site no. : 3m Chamber Data no. : 57
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz

| Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission | | Limits (dBuV/m) | Margin (dB) | Remark |
|----------------|--------------------------|-----------------------|-----------------------|-------------------|----------|--------|--------------------|----------------|--------|
| | | | | | Level | | | | |
| 1 | 2403.50 | 27.61 | 6.64 | 34.18 | 105.14 | 105.21 | 74.00 | -31.21 | Peak |
| 2 | 4807.00 | 31.25 | 11.77 | 31.81 | 41.25 | 52.46 | 74.00 | 21.54 | Peak |
| 3 | 6474.00 | 34.16 | 12.22 | 31.98 | 37.93 | 52.33 | 74.00 | 21.67 | Peak |
| 4 | 9959.00 | 38.13 | 11.60 | 31.77 | 34.72 | 52.68 | 74.00 | 21.32 | Peak |
| 5 | 14464.00 | 41.85 | 10.93 | 32.96 | 31.67 | 51.49 | 74.00 | 22.51 | Peak |
| 6 | 17184.00 | 40.45 | 10.92 | 33.34 | 31.68 | 49.71 | 74.00 | 24.29 | Peak |

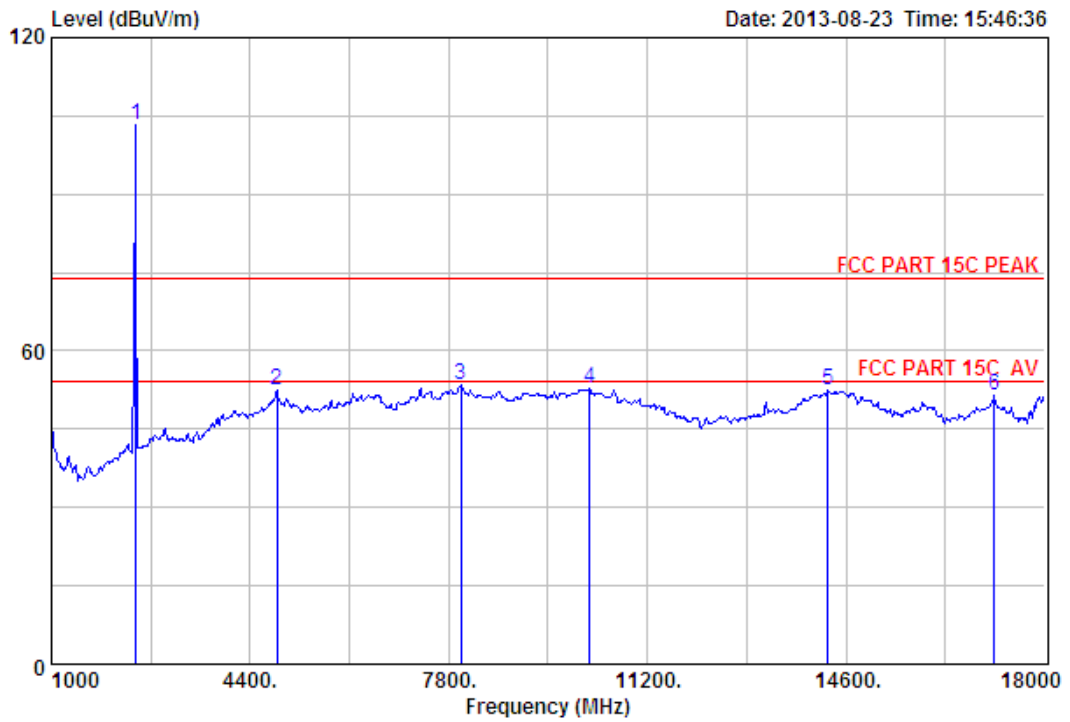
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 58
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|---------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2403.50 | 27.61 | 6.64 | 34.18 | 107.32 | 107.39 | 74.00 | -33.39 | Peak |
| 2 | 4807.00 | 31.25 | 11.77 | 31.81 | 49.78 | 60.99 | 74.00 | 13.01 | Peak |
| 3 | 4807.00 | 31.25 | 11.77 | 31.81 | 38.80 | 50.01 | 54.00 | 3.99 | Average |
| 4 | 8004.00 | 37.01 | 11.40 | 31.22 | 35.19 | 52.38 | 74.00 | 21.62 | Peak |
| 5 | 10248.00 | 38.53 | 11.45 | 32.24 | 34.91 | 52.65 | 74.00 | 21.35 | Peak |
| 6 | 14073.00 | 41.52 | 10.90 | 33.75 | 32.65 | 51.32 | 74.00 | 22.68 | Peak |
| 7 | 16929.00 | 39.54 | 10.93 | 33.64 | 31.14 | 47.97 | 74.00 | 26.03 | Peak |

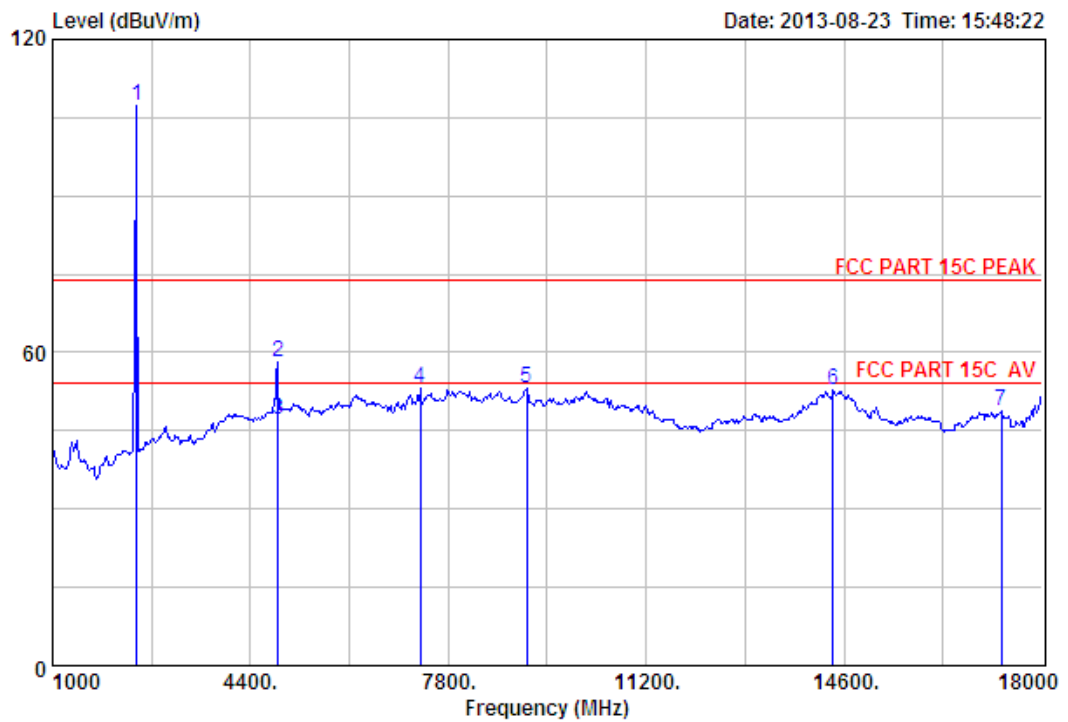
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 61
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2440.4MHz

| | | 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 | 2440.40 | 27.60 | 6.67 | 34.12 | 102.97 | 103.12 | 74.00 | -29.12 | Peak |
| 2 | 4859.00 | 31.34 | 11.99 | 31.88 | 41.06 | 52.51 | 74.00 | 21.49 | Peak |
| 3 | 8004.00 | 37.01 | 11.40 | 31.22 | 36.24 | 53.43 | 74.00 | 20.57 | Peak |
| 4 | 10214.00 | 38.48 | 11.47 | 32.17 | 35.09 | 52.87 | 74.00 | 21.13 | Peak |
| 5 | 14294.00 | 41.71 | 10.92 | 33.08 | 33.08 | 52.63 | 74.00 | 21.37 | Peak |
| 6 | 17133.00 | 40.26 | 10.94 | 33.03 | 33.36 | 51.53 | 74.00 | 22.47 | Peak |

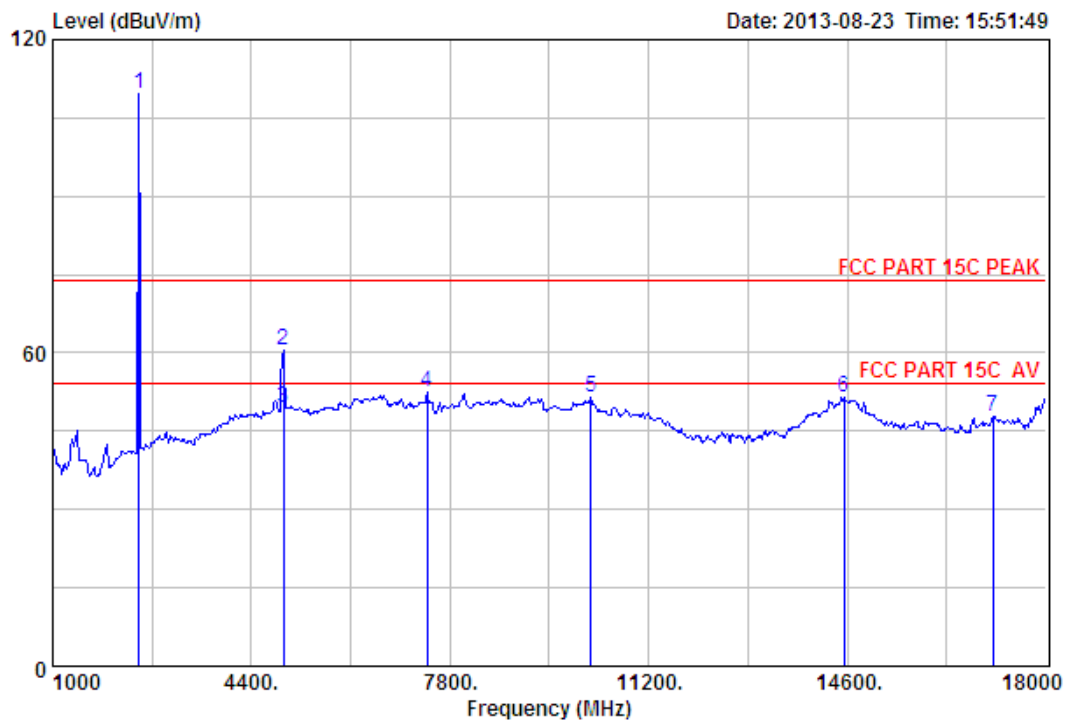
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 62
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2440.4MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Emission | | | | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|----------|----------|----------|--------|---------|
| | | | | | Reading | Level | Limits | Margin | |
| | | | | | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2440.40 | 27.60 | 6.67 | 34.12 | 107.17 | 107.32 | 74.00 | -33.32 | Peak |
| 2 | 4880.80 | 31.37 | 12.07 | 31.90 | 46.57 | 58.11 | 74.00 | 15.89 | Peak |
| 3 | 4880.80 | 31.37 | 12.07 | 31.90 | 35.67 | 47.21 | 54.00 | 6.79 | Average |
| 4 | 7324.00 | 36.55 | 11.57 | 31.99 | 36.87 | 53.00 | 74.00 | 21.00 | Peak |
| 5 | 9143.00 | 37.65 | 11.53 | 32.39 | 36.28 | 53.07 | 74.00 | 20.93 | Peak |
| 6 | 14413.00 | 41.80 | 10.92 | 32.78 | 32.78 | 52.72 | 74.00 | 21.28 | Peak |
| 7 | 17303.00 | 40.84 | 10.88 | 33.97 | 31.12 | 48.87 | 74.00 | 25.13 | Peak |

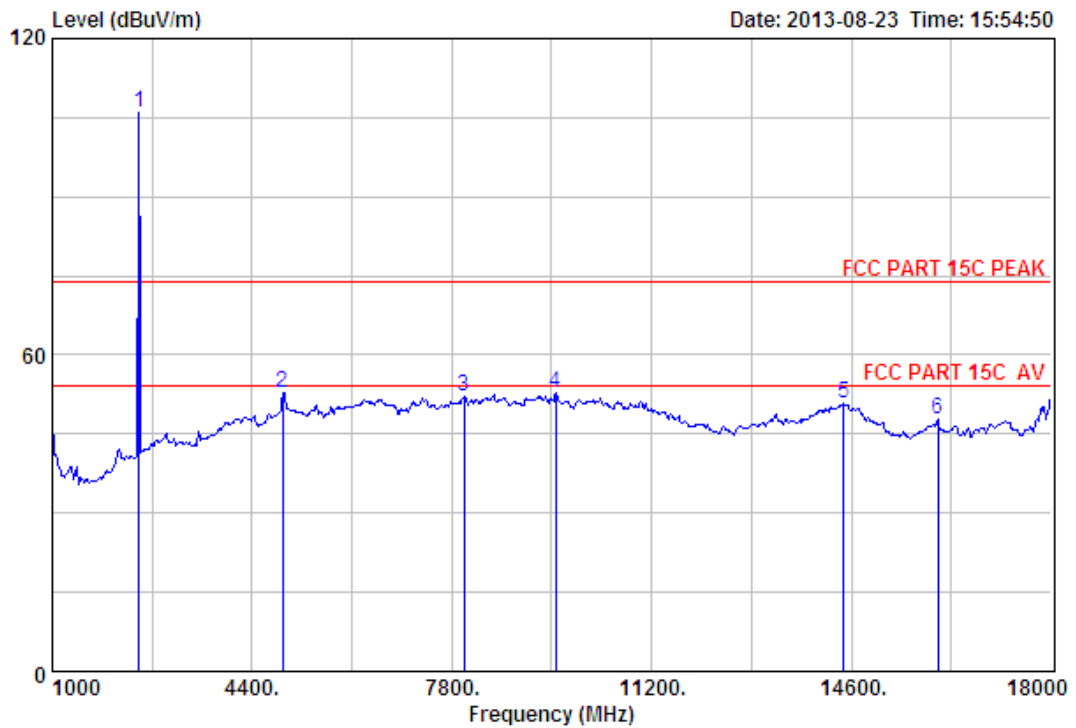
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 63
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2477.3MHz

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|---------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2477.30 | 27.58 | 6.71 | 34.03 | 109.31 | 109.57 | 74.00 | -35.57 | Peak |
| 2 | 4954.60 | 31.49 | 12.44 | 31.97 | 48.62 | 60.58 | 74.00 | 13.42 | Peak |
| 3 | 4954.60 | 31.49 | 12.44 | 31.97 | 37.67 | 49.63 | 54.00 | 4.37 | Average |
| 4 | 7409.00 | 36.58 | 11.60 | 31.97 | 36.43 | 52.64 | 74.00 | 21.36 | Peak |
| 5 | 10214.00 | 38.48 | 11.47 | 32.17 | 33.65 | 51.43 | 74.00 | 22.57 | Peak |
| 6 | 14549.00 | 41.77 | 10.92 | 33.26 | 32.05 | 51.48 | 74.00 | 22.52 | Peak |
| 7 | 17099.00 | 40.13 | 10.95 | 32.96 | 29.84 | 47.96 | 74.00 | 26.04 | 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.

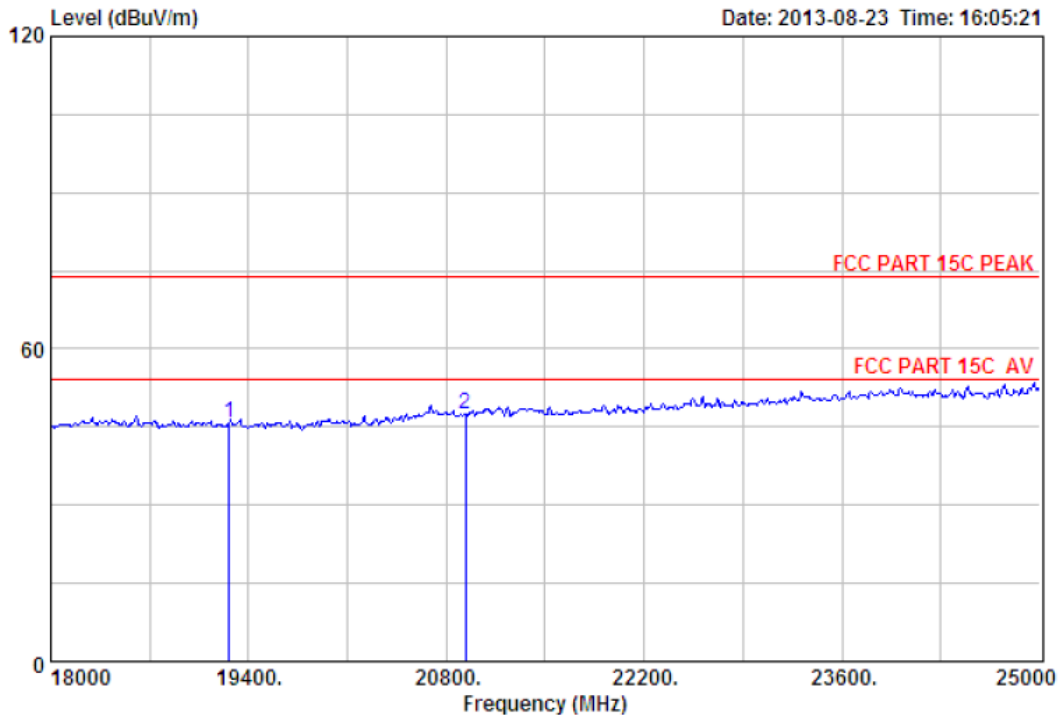


Site no. : 3m Chamber Data no. : 64
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2477.3MHz

| | | 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 | 2477.30 | 27.58 | 6.71 | 34.03 | 105.81 | 106.07 | 74.00 | -32.07 | Peak |
| 2 | 4927.00 | 31.45 | 12.29 | 31.95 | 41.16 | 52.95 | 74.00 | 21.05 | Peak |
| 3 | 8004.00 | 37.01 | 11.40 | 31.22 | 35.09 | 52.28 | 74.00 | 21.72 | Peak |
| 4 | 9568.00 | 37.94 | 11.69 | 31.93 | 35.15 | 52.85 | 74.00 | 21.15 | Peak |
| 5 | 14464.00 | 41.85 | 10.93 | 32.96 | 30.84 | 50.66 | 74.00 | 23.34 | Peak |
| 6 | 16079.00 | 37.22 | 10.65 | 32.93 | 32.80 | 47.74 | 74.00 | 26.26 | 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.

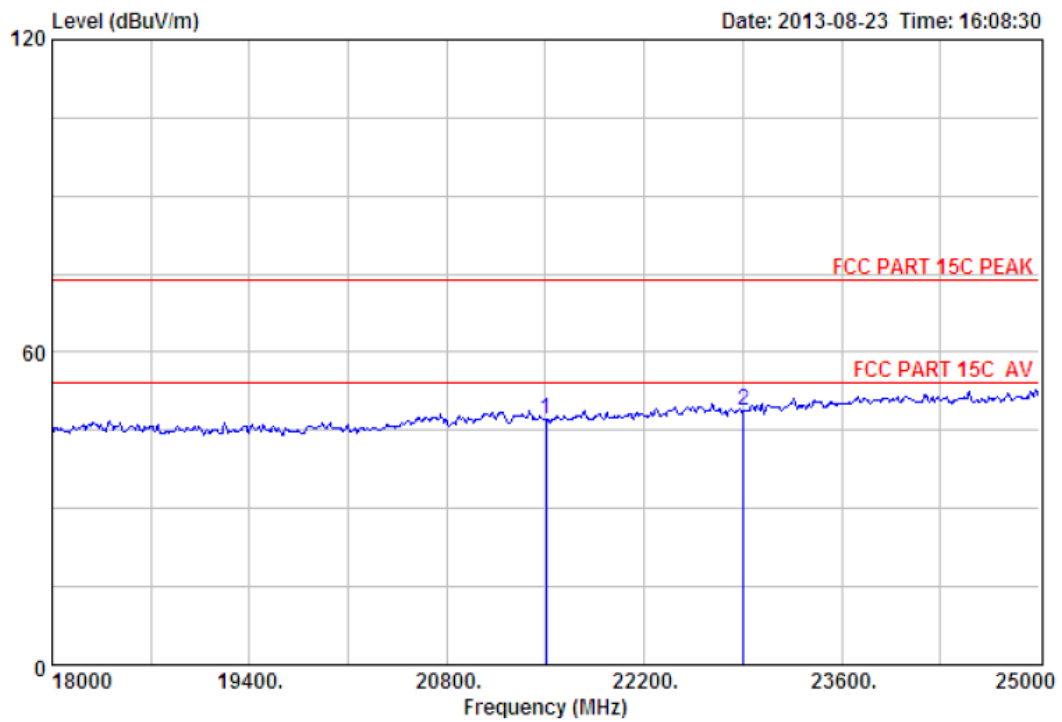
18000MHz – 25000MHz



Site no. : 3m Chamber Data no. : 67
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 19260.00 | 45.66 | 18.84 | 36.06 | 17.23 | 45.67 | 74.00 | 28.33 | Peak |
| 2 | 20933.00 | 46.26 | 20.10 | 35.87 | 17.07 | 47.56 | 74.00 | 26.44 | Peak |

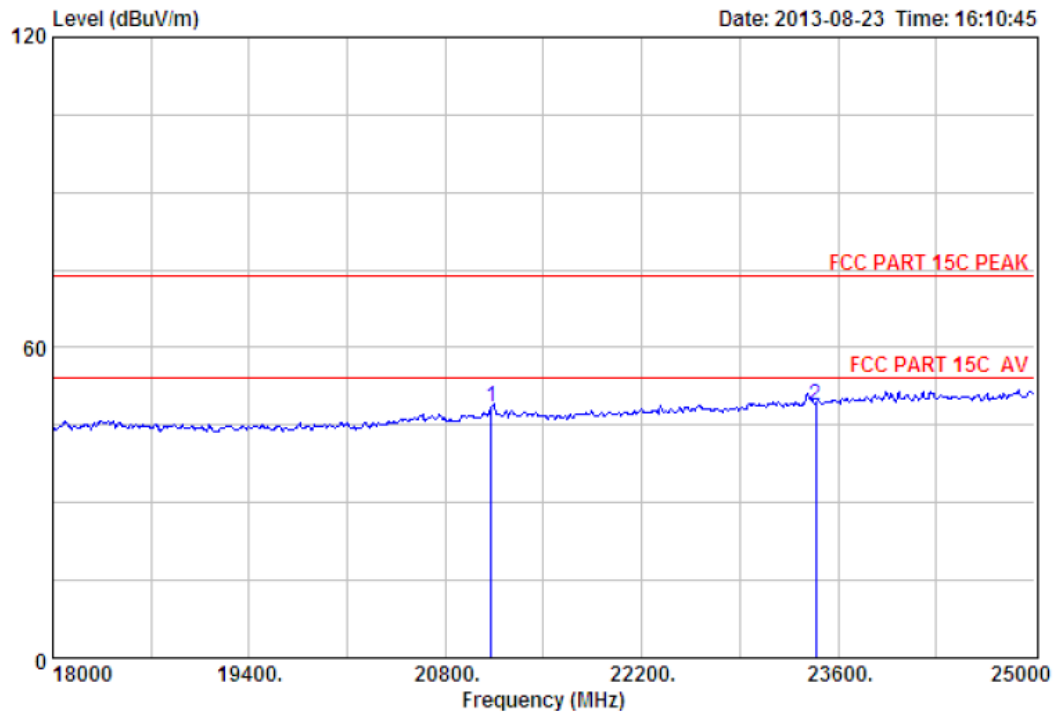
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 68
 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
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz

| | | 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 | 21500.00 | 46.00 | 20.35 | 35.35 | 16.09 | 47.09 | 74.00 | 26.91 | Peak |
| 2 | 22907.00 | 45.64 | 21.09 | 33.96 | 15.99 | 48.76 | 74.00 | 25.24 | Peak |

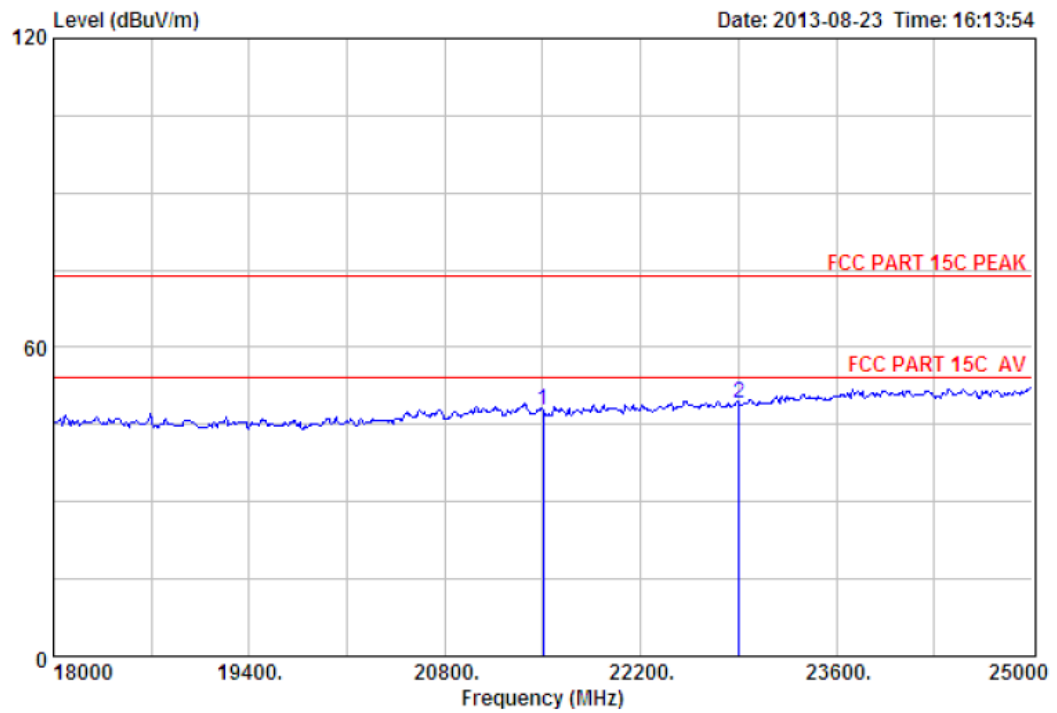
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 69
 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
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2440.4MHz

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Emission | | | | |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------|--------------------|----------------|--------|
| | | | | | Reading (dBuV) | Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
| 1 | 21129.00 | 46.22 | 20.19 | 35.69 | 17.62 | 48.34 | 74.00 | 25.66 | Peak |
| 2 | 23439.00 | 45.69 | 21.54 | 33.38 | 15.10 | 48.95 | 74.00 | 25.05 | Peak |

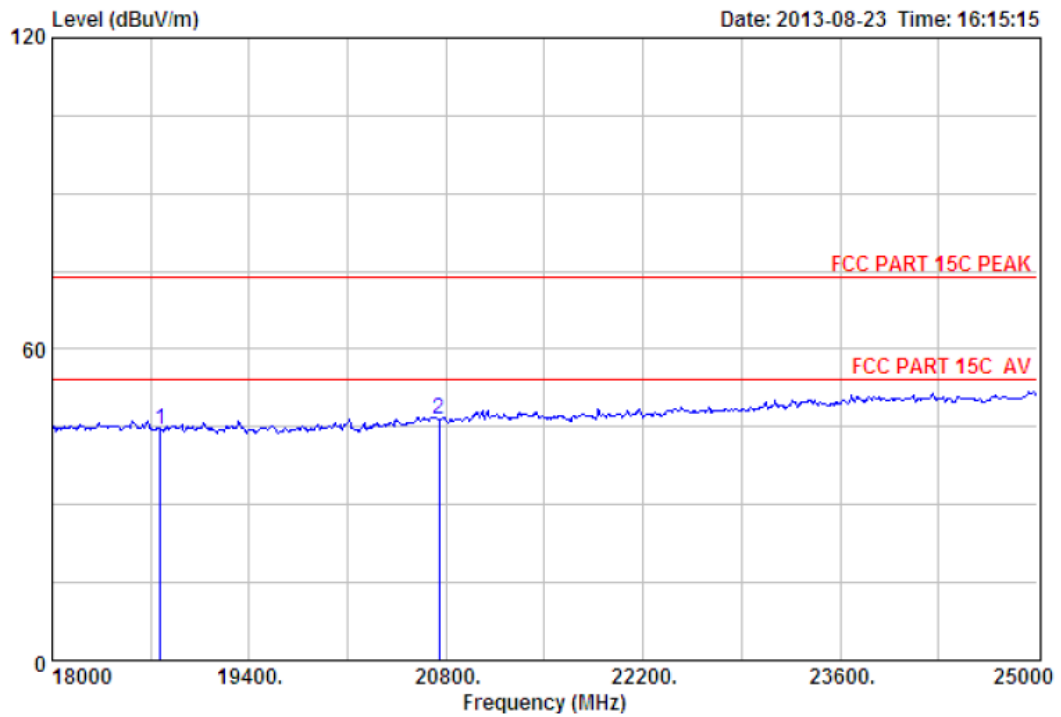
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 70
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2440.4MHz

| Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Emission | | | | | Remark |
|----------------|--------------------------|-----------------------|-----------------------|----------|-------|--------|--------|--|--------|
| | | | | Reading | Level | Limits | Margin | | |
| 1 21500.00 | 46.00 | 20.35 | 35.35 | 16.89 | 47.89 | 74.00 | 26.11 | | Peak |
| 2 22907.00 | 45.64 | 21.09 | 33.96 | 16.34 | 49.11 | 74.00 | 24.89 | | Peak |

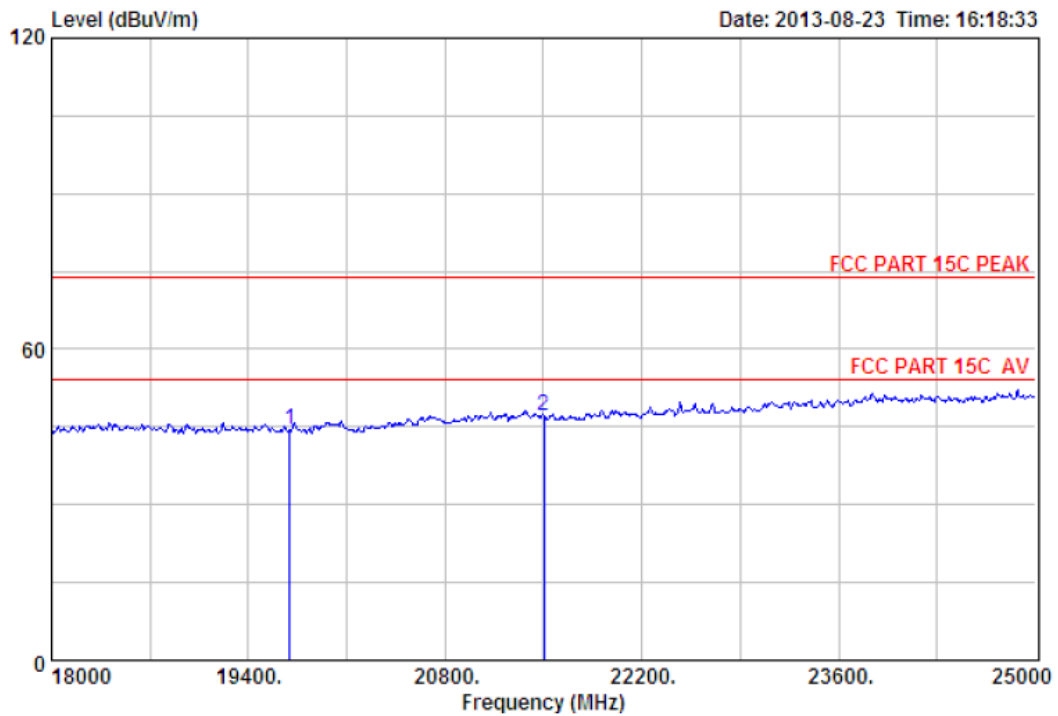
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 71
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2477.3MHz

| | | 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 18770.00 | 45.17 | 18.27 | 35.66 | 16.83 | 44.61 | 74.00 | 29.39 | Peak | |
| 2 20751.00 | 46.15 | 20.02 | 36.03 | 16.29 | 46.43 | 74.00 | 27.57 | 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. : 72
 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
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2477.3MHz

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|----------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 19694.00 | 45.98 | 19.33 | 36.44 | 15.45 | 44.32 | 74.00 | 29.68 | Peak |
| 2 | 21500.00 | 46.00 | 20.35 | 35.35 | 16.13 | 47.13 | 74.00 | 26.87 | Peak |

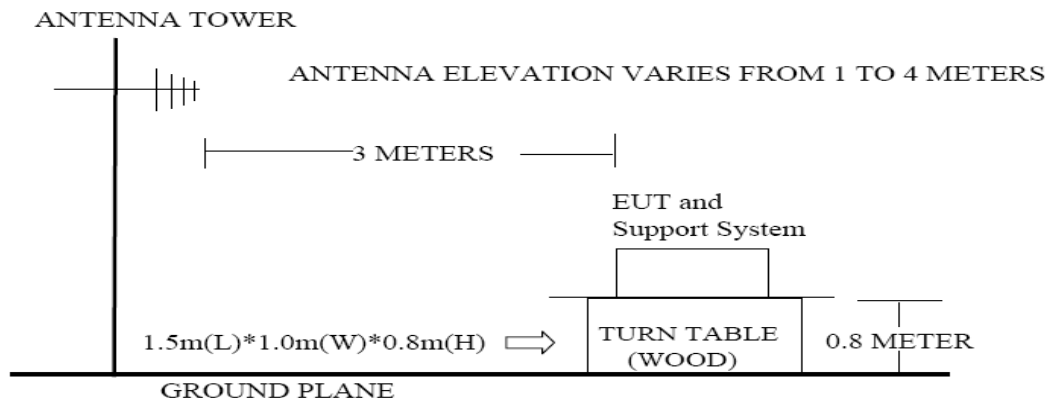
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

4. BAND EDGE COMPLIANCE

4.1. 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.

4.2. Block Diagram of Test setup



4.3. 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

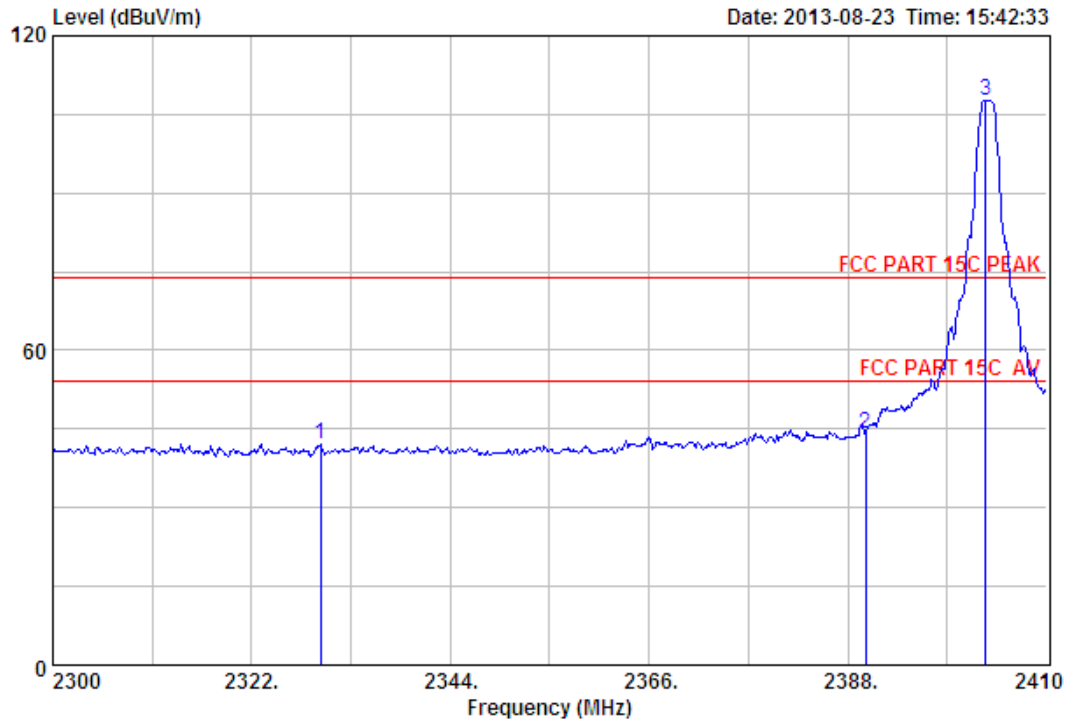
4.4. Test Result

| |
|--|
| EUT: SURROUNDBAR 6500BT |
| M/N: SB6500BT SPEAKER |
| Power: DC 24V From Adapter Input AC 120V/60Hz |
| Test date: 2013-08-23 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 2403.5MHz 、 2440.4MHz and 2477.3MHz 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.

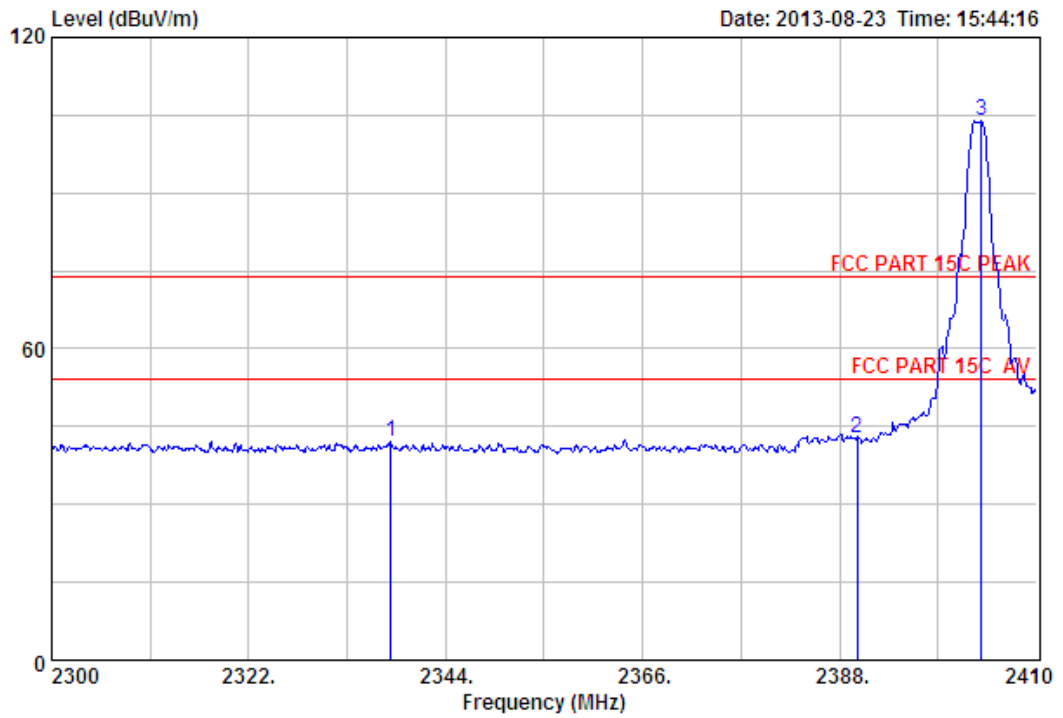
4.5. Test Data



Site no. : 3m Chamber Data no. : 59
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz (No Hopping)

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|---------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2329.59 | 27.73 | 6.54 | 34.23 | 42.09 | 42.13 | 74.00 | 31.87 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.19 | 44.12 | 44.19 | 74.00 | 29.81 | Peak |
| 3 | 2403.29 | 27.61 | 6.64 | 34.18 | 107.73 | 107.80 | 74.00 | -33.80 | Peak |

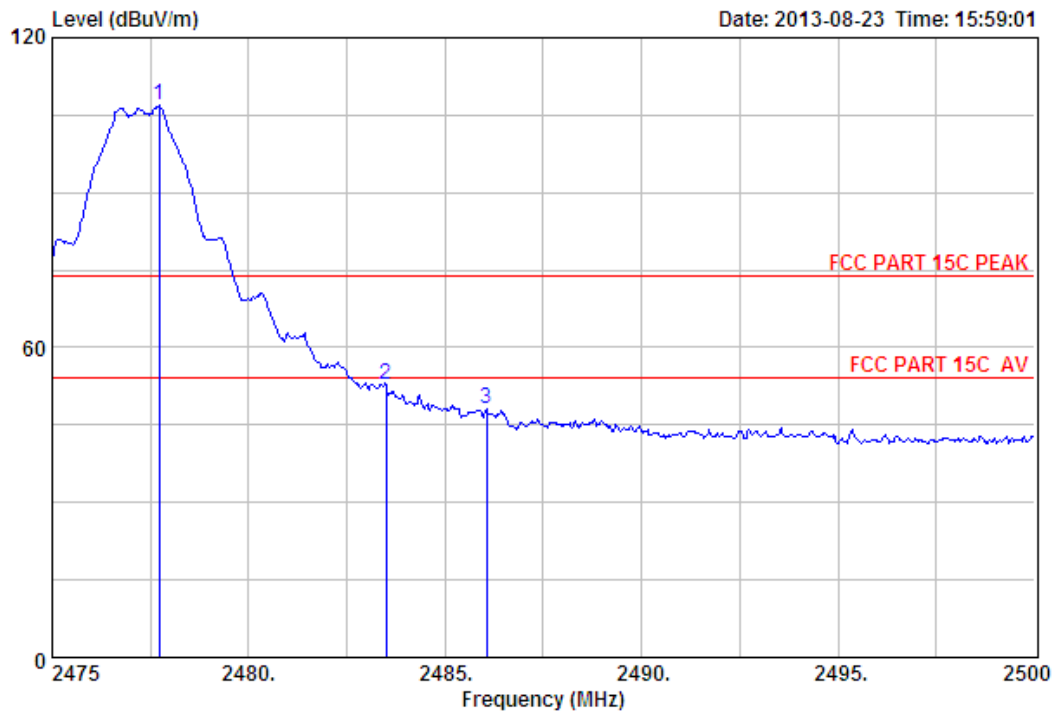
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 60
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz(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 | 2337.84 | 27.73 | 6.56 | 34.23 | 42.01 | 42.07 | 74.00 | 31.93 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.19 | 42.72 | 42.79 | 74.00 | 31.21 | Peak |
| 3 | 2403.84 | 27.61 | 6.64 | 34.18 | 103.96 | 104.03 | 74.00 | -30.03 | Peak |

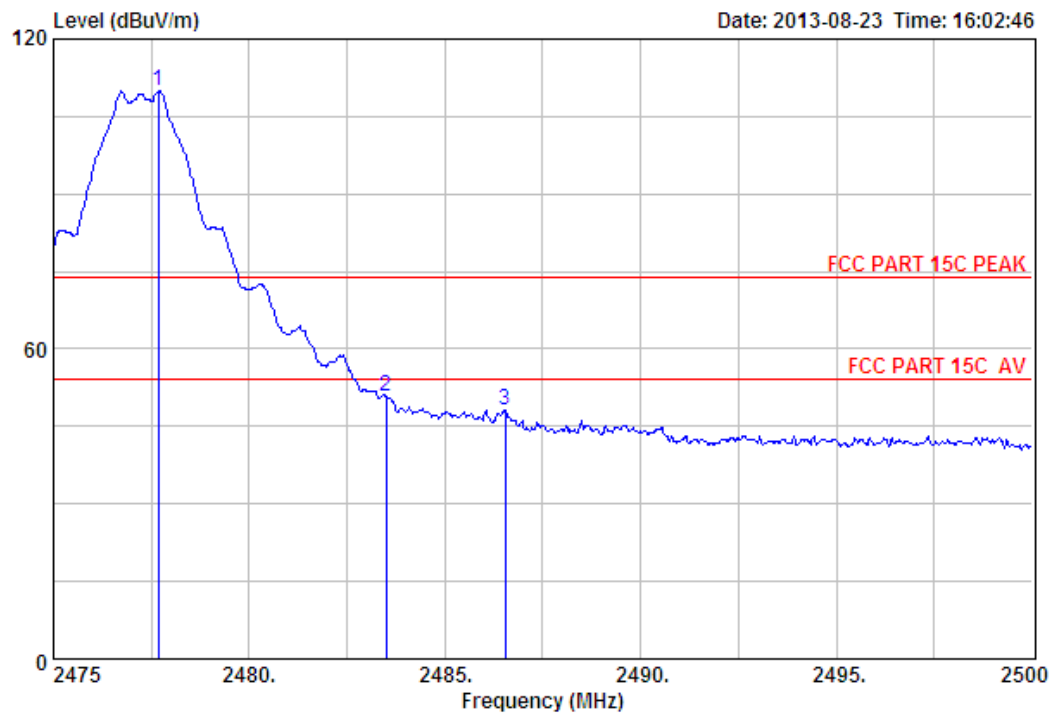
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 65
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2477.3MHz(No Hopping)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2477.73 | 27.58 | 6.71 | 34.03 | 106.62 | 106.88 | 74.00 | -32.88 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 52.49 | 52.75 | 74.00 | 21.25 | Peak |
| 3 | 2486.05 | 27.58 | 6.71 | 34.03 | 47.90 | 48.16 | 74.00 | 25.84 | Peak |

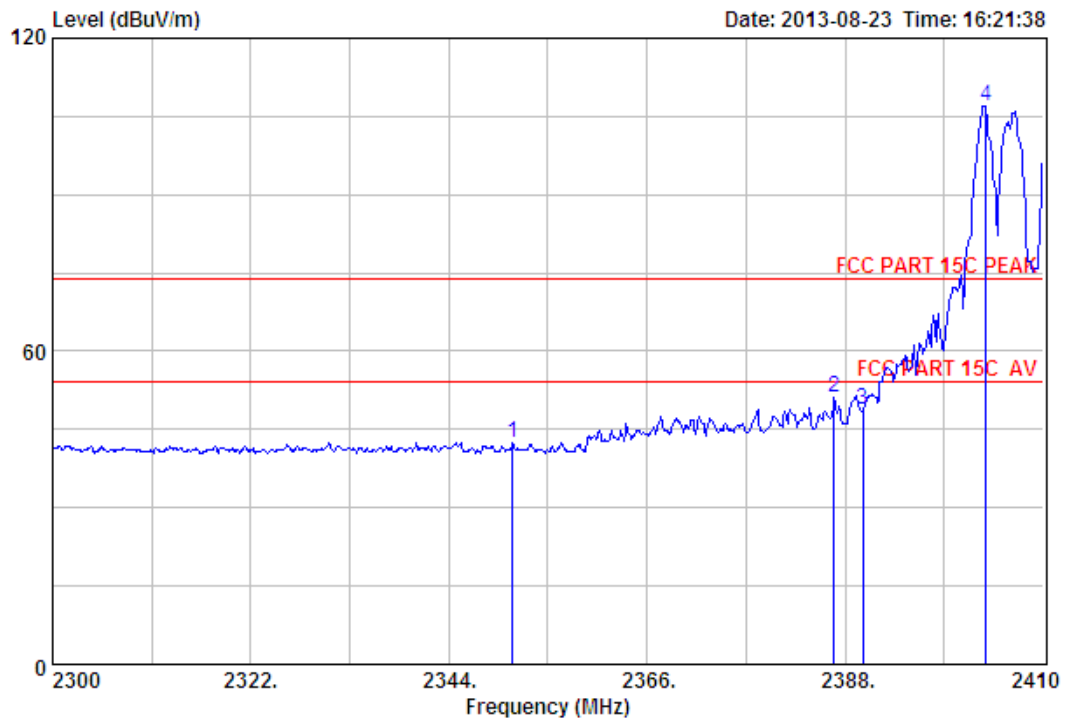
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 66
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2477.3MHz (No Hopping)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2477.68 | 27.58 | 6.71 | 34.03 | 109.66 | 109.92 | 74.00 | -35.92 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 50.41 | 50.67 | 74.00 | 23.33 | Peak |
| 3 | 2486.55 | 27.58 | 6.71 | 34.03 | 47.90 | 48.16 | 74.00 | 25.84 | Peak |

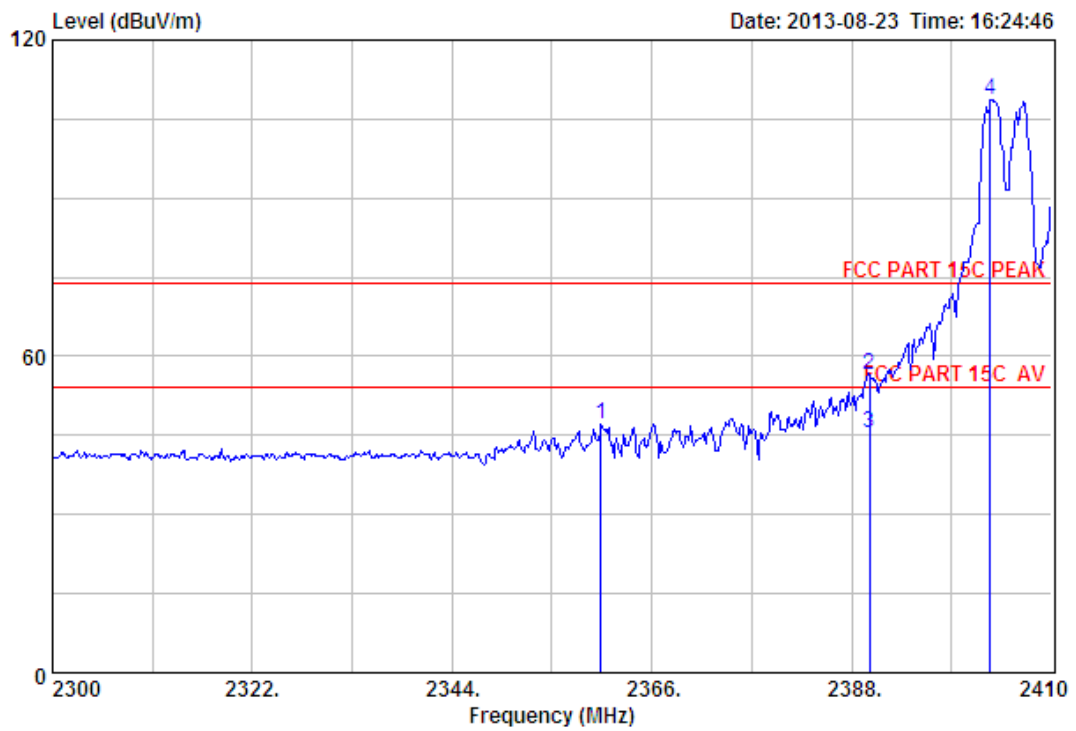
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 73
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz (Hopping On)

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Emission | | Limits (dBuV/m) | Margin (dB) | Remark |
|---|----------------|--------------------------|-----------------------|-----------------------|----------|----------|--------------------|----------------|--------|
| | | | | | Reading | Level | | | |
| | | | | | (dBuV) | (dBuV/m) | | | |
| 1 | 2351.04 | 27.70 | 6.56 | 34.22 | 42.50 | 42.54 | 74.00 | 31.46 | Peak |
| 2 | 2386.79 | 27.64 | 6.62 | 34.19 | 51.16 | 51.23 | 74.00 | 22.77 | Peak |
| 3 | 2390.00 | 27.64 | 6.62 | 34.19 | 48.65 | 48.72 | 74.00 | 25.28 | Peak |
| 4 | 2403.62 | 27.61 | 6.64 | 34.18 | 106.86 | 106.93 | 74.00 | -32.93 | Peak |

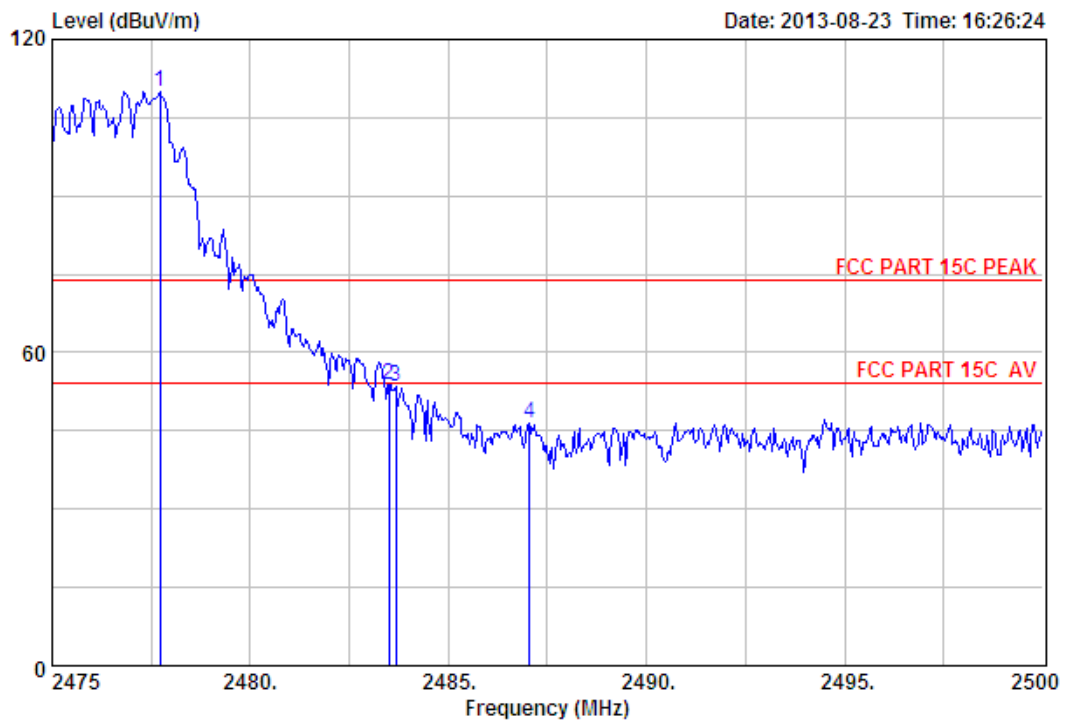
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 74
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz (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 | 2360.39 | 27.67 | 6.58 | 34.20 | 47.09 | 47.14 | 74.00 | 26.86 | Peak |
| 2 | 2390.00 | 27.64 | 6.62 | 34.19 | 56.39 | 56.46 | 74.00 | 17.54 | Peak |
| 3 | 2390.00 | 27.64 | 6.62 | 34.19 | 45.29 | 45.36 | 54.00 | 8.64 | Average |
| 4 | 2403.29 | 27.61 | 6.64 | 34.18 | 108.50 | 108.57 | 74.00 | -34.57 | Peak |

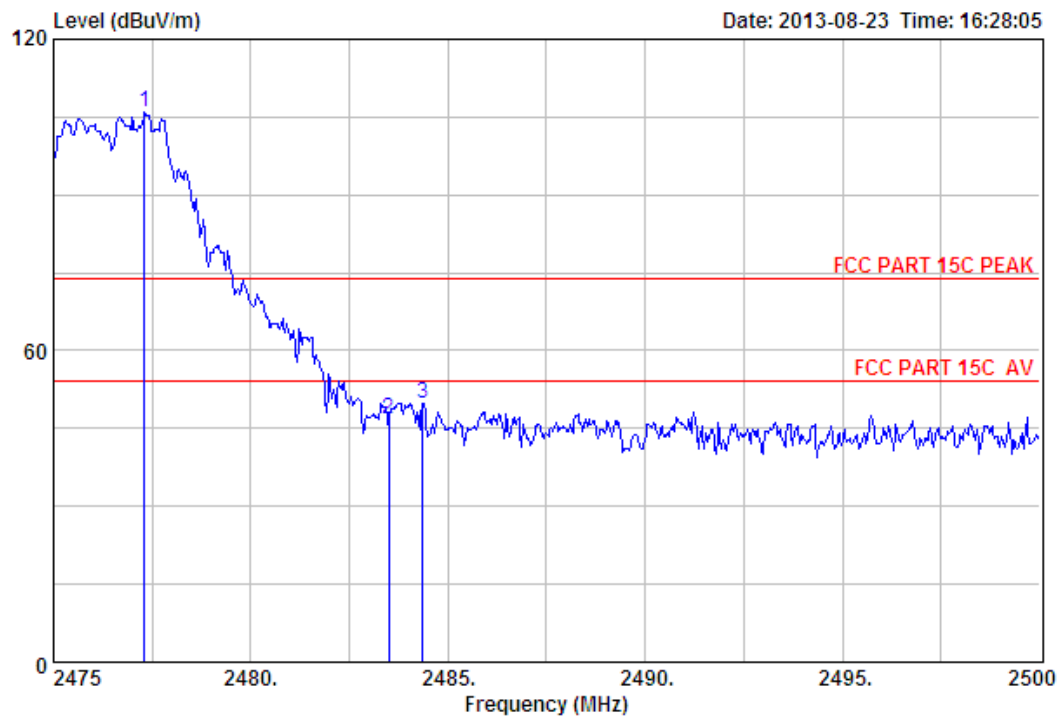
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 75
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz(Hopping On)

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|---------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2477.73 | 27.58 | 6.71 | 34.03 | 109.86 | 110.12 | 74.00 | -36.12 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 53.46 | 53.72 | 74.00 | 20.28 | Peak |
| 3 | 2483.68 | 27.58 | 6.71 | 34.03 | 53.12 | 53.38 | 74.00 | 20.62 | Peak |
| 4 | 2487.05 | 27.58 | 6.71 | 34.03 | 46.11 | 46.37 | 74.00 | 27.63 | 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. : 76
 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 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX 2403.5MHz (Hopping On)

| | Freq. | Ant. | Cable | Amp | Emission | | | | |
|---|---------|--------|-------|--------|----------|----------|----------|--------|--------|
| | (MHz) | Factor | Loss | Factor | Reading | Level | Limits | Margin | Remark |
| | | (dB/m) | (dB) | (dB) | (dBuV) | (dBuV/m) | (dBuV/m) | (dB) | |
| 1 | 2477.30 | 27.58 | 6.71 | 34.03 | 105.73 | 105.99 | 74.00 | -31.99 | Peak |
| 2 | 2483.50 | 27.58 | 6.71 | 34.03 | 46.50 | 46.76 | 74.00 | 27.24 | Peak |
| 3 | 2484.35 | 27.58 | 6.71 | 34.03 | 49.60 | 49.86 | 74.00 | 24.14 | 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.

5. POWER LINE CONDUCTED EMISSIONS

5.1. Limit

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

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

2. The lower limit shall apply at the transition frequencies.

5.2. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT was charged from 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.

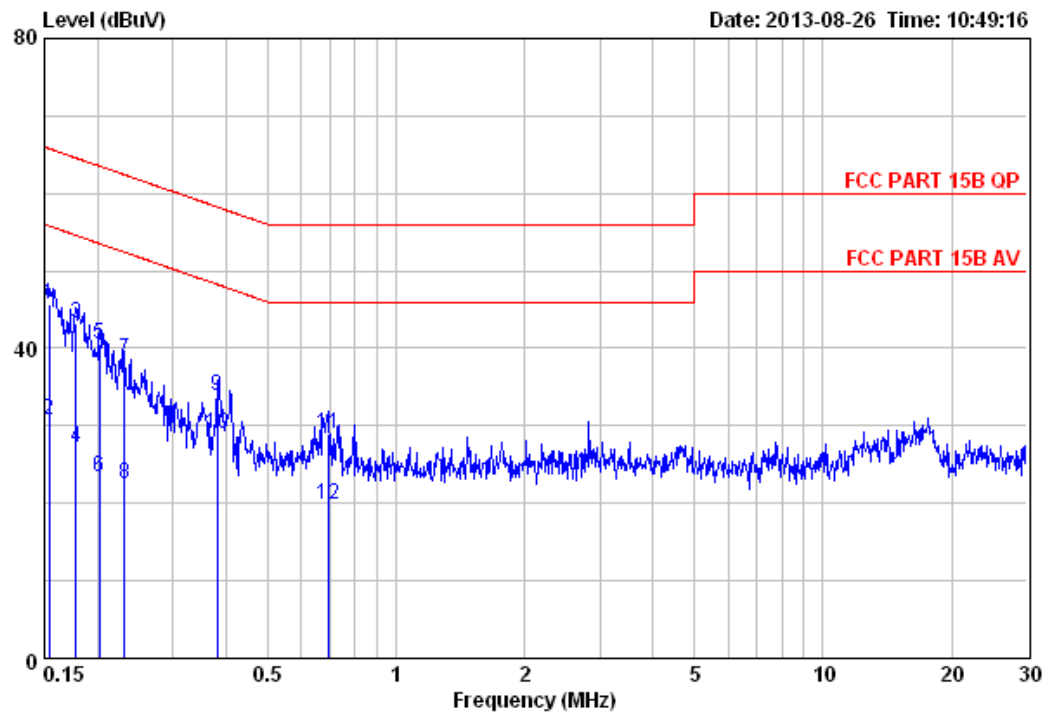
The bandwidth of test receiver (R & S ESHS30) is set at 10kHz.

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

5.3. Test Result

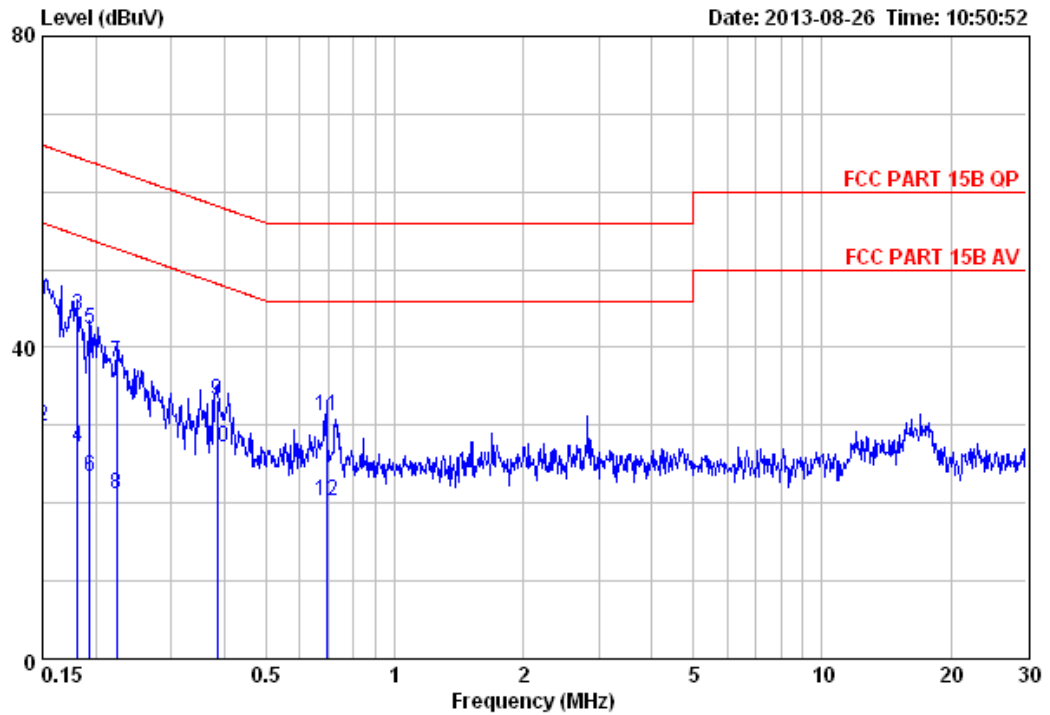
| 0.15MHz—30MHz Conducted emissison Test result | | |
|---|-----------------------|----------------------|
| EUT: SURROUNDBAR 6500BT | | |
| M/N: SB6500BT SPEAKER | | |
| Power: DC 24V From Adapter Input AC 120V/60Hz | | |
| Test date: 2013-08-26 | Test site: 3m Chamber | Tested by: Tony.Tang |
| Test mode: Tx Mode | | |
| Pass | | |

5.4. Test data



Site no : EST Conduction Shielded Room
 Limit : FCC PART 15B QP LINE Phase:LINE
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX Mode

| | Freq. (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|----|----------------|------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|---------|
| 1 | 0.15 | 9.61 | 9.81 | 26.37 | 45.79 | 65.78 | 19.99 | QP |
| 2 | 0.15 | 9.61 | 9.81 | 11.37 | 30.79 | 55.78 | 24.99 | Average |
| 3 | 0.18 | 9.61 | 9.80 | 23.76 | 43.17 | 64.59 | 21.42 | QP |
| 4 | 0.18 | 9.61 | 9.80 | 7.76 | 27.17 | 54.59 | 27.42 | Average |
| 5 | 0.20 | 9.61 | 9.80 | 21.04 | 40.45 | 63.54 | 23.09 | QP |
| 6 | 0.20 | 9.61 | 9.80 | 4.04 | 23.45 | 53.54 | 30.09 | Average |
| 7 | 0.23 | 9.61 | 9.80 | 19.17 | 38.58 | 62.39 | 23.81 | QP |
| 8 | 0.23 | 9.61 | 9.80 | 3.17 | 22.58 | 52.39 | 29.81 | Average |
| 9 | 0.38 | 9.61 | 9.82 | 14.45 | 33.88 | 58.25 | 24.37 | QP |
| 10 | 0.38 | 9.61 | 9.82 | 9.45 | 28.88 | 48.25 | 19.37 | Average |
| 11 | 0.70 | 9.59 | 9.81 | 9.49 | 28.89 | 56.00 | 27.11 | QP |
| 12 | 0.70 | 9.59 | 9.81 | 0.49 | 19.89 | 46.00 | 26.11 | Average |



Site no : EST Conduction Shielded Room
 Limit : FCC PART 15B QP LINE Phase: NEUTRAL
 Env. / Ins. : Temp: 25.3°C Humi: 58% Press: 101.50kPa
 Engineer : Tony
 EUT : SURROUNDBAR 6500BT
 Power : DC 24V From Adapter Input AC 120V/60Hz
 M/N : SB6500BT SPEAKER
 Test Mode : TX Mode

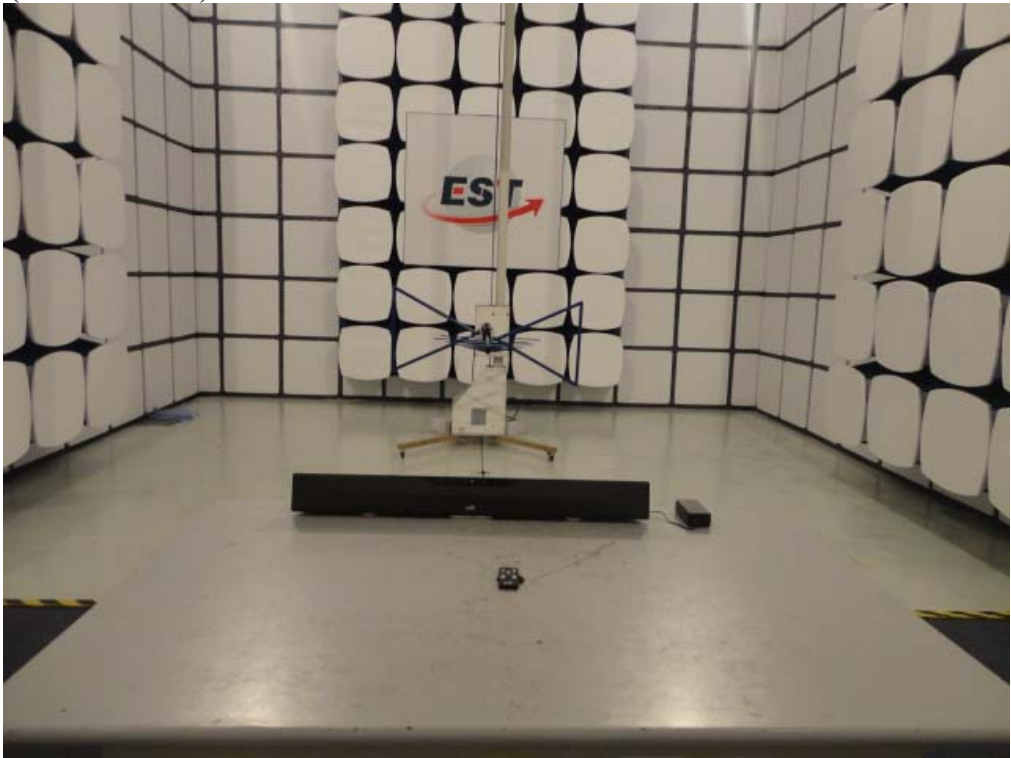
| | Freq. (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Remark |
|----|----------------|------------------------|-----------------------|-------------------|-------------------------------|-------------------|----------------|---------|
| 1 | 0.15 | 9.46 | 9.81 | 27.51 | 46.78 | 66.00 | 19.22 | QP |
| 2 | 0.15 | 9.46 | 9.81 | 10.51 | 29.78 | 56.00 | 26.22 | Average |
| 3 | 0.18 | 9.55 | 9.80 | 24.77 | 44.12 | 64.42 | 20.30 | QP |
| 4 | 0.18 | 9.55 | 9.80 | 7.77 | 27.12 | 54.42 | 27.30 | Average |
| 5 | 0.19 | 9.58 | 9.80 | 23.02 | 42.40 | 63.89 | 21.49 | QP |
| 6 | 0.19 | 9.58 | 9.80 | 4.02 | 23.40 | 53.89 | 30.49 | Average |
| 7 | 0.22 | 9.60 | 9.80 | 18.80 | 38.20 | 62.70 | 24.50 | QP |
| 8 | 0.22 | 9.60 | 9.80 | 1.80 | 21.20 | 52.70 | 31.50 | Average |
| 9 | 0.39 | 9.59 | 9.82 | 13.84 | 33.25 | 58.17 | 24.92 | QP |
| 10 | 0.39 | 9.59 | 9.82 | 7.84 | 27.25 | 48.17 | 20.92 | Average |
| 11 | 0.69 | 9.63 | 9.81 | 11.81 | 31.25 | 56.00 | 24.75 | QP |
| 12 | 0.69 | 9.63 | 9.81 | 0.81 | 20.25 | 46.00 | 25.75 | Average |

6. TEST SETUP PHOTO

Conducted Test



Radiated Test (30-1000 MHz)



Radiated Test (1000-25000 MHz)



7. PHOTOS OF EUT

External Photos
M/N: SB6500BT SPEAKER



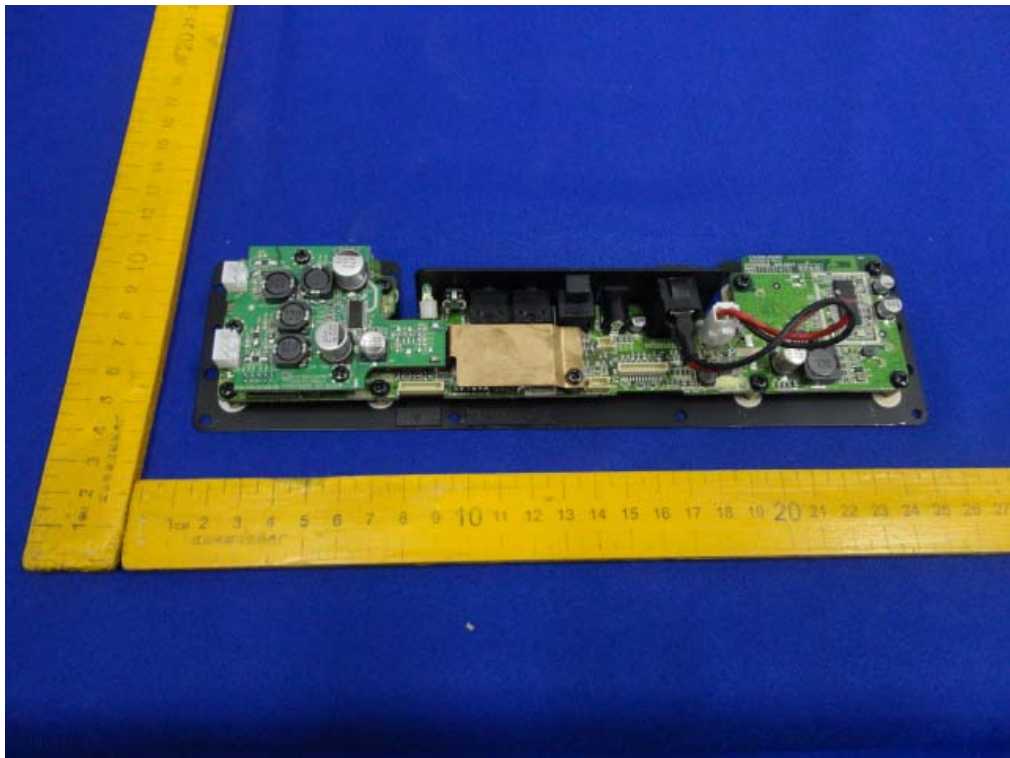
External Photos
M/N: SB6500BT SPEAKER



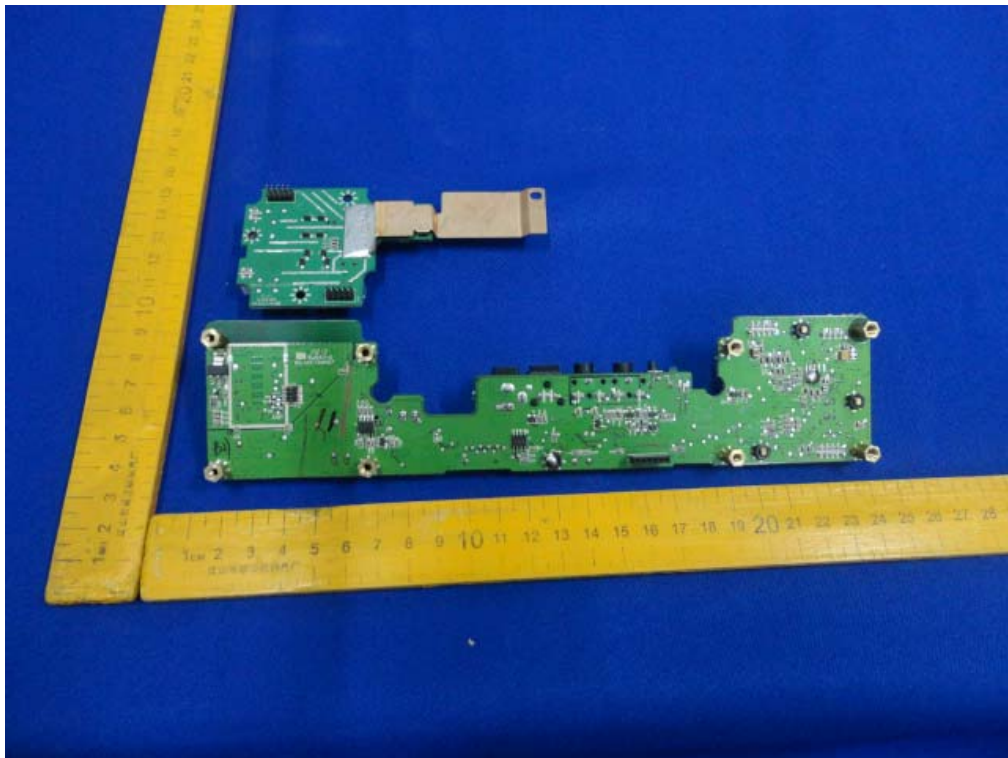
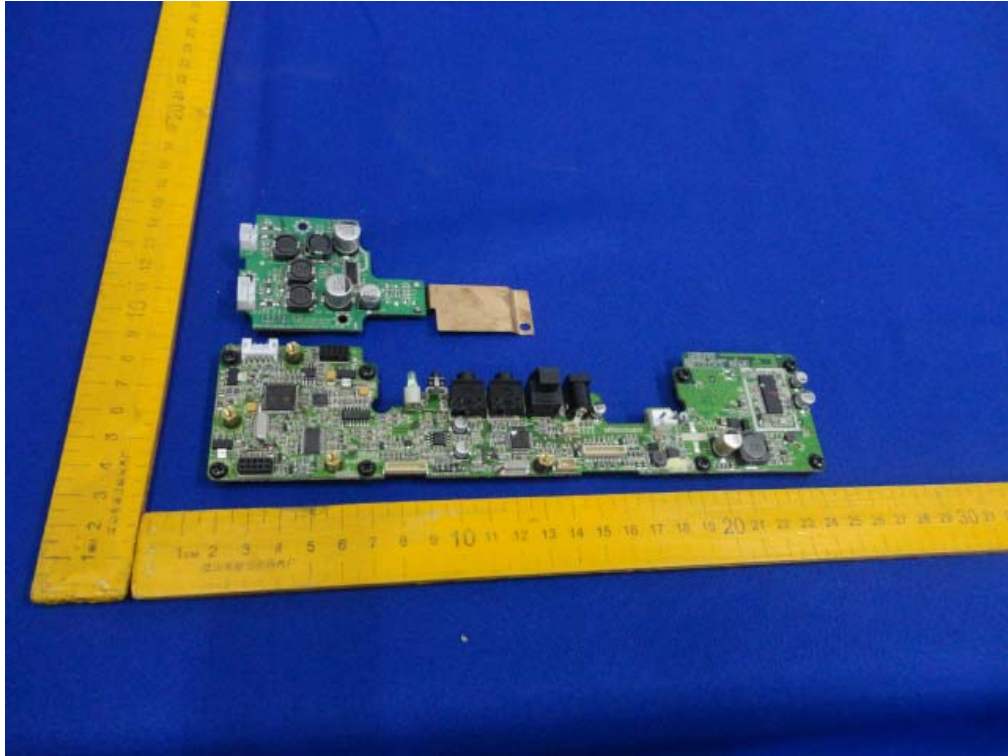
External Photos
M/N: SB6500BT SPEAKER



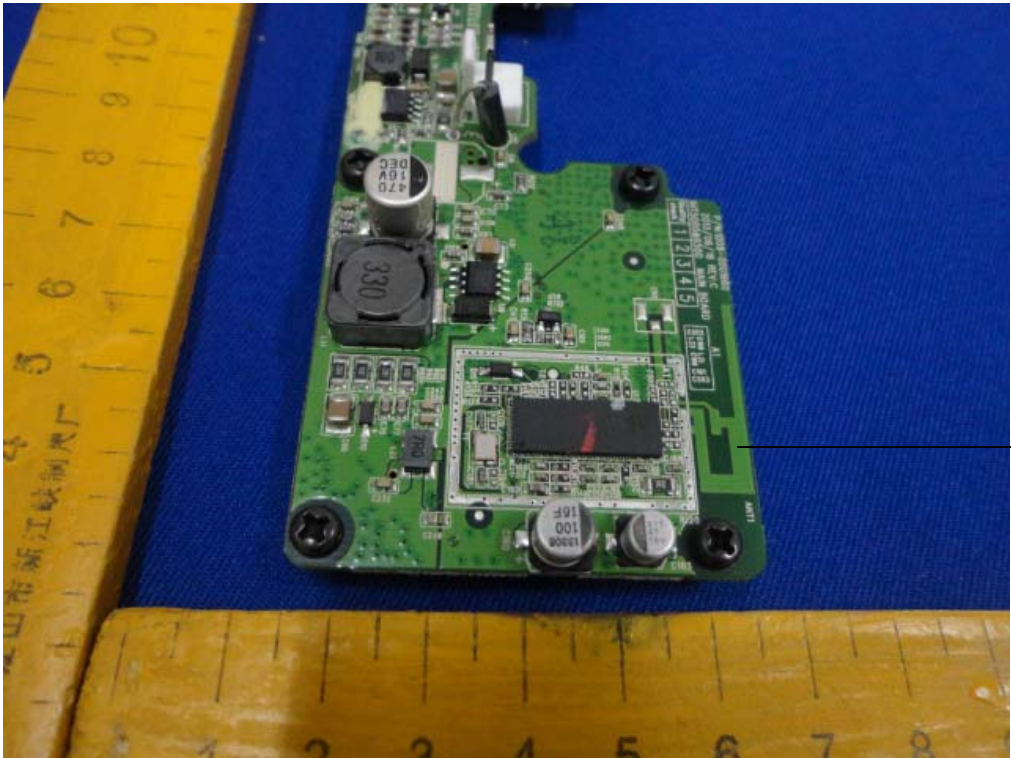
Internal Photos
M/N: SB6500BT SPEAKER



Internal Photos
M/N: SB6500BT SPEAKER

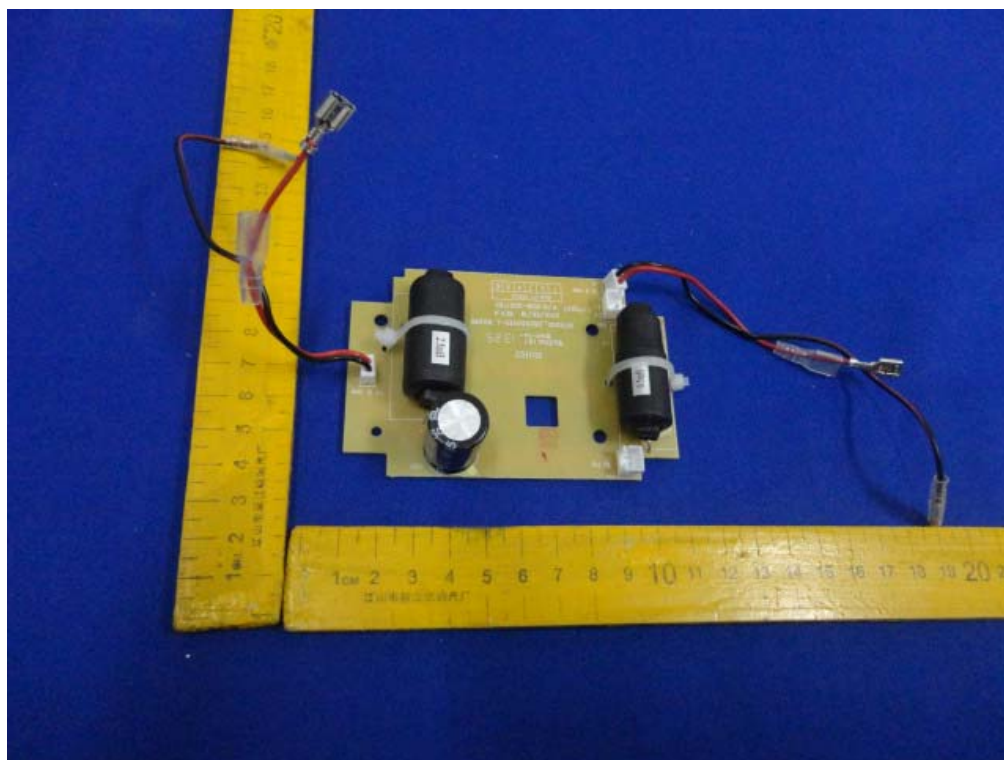


Internal Photos
M/N: SB6500BT SPEAKER

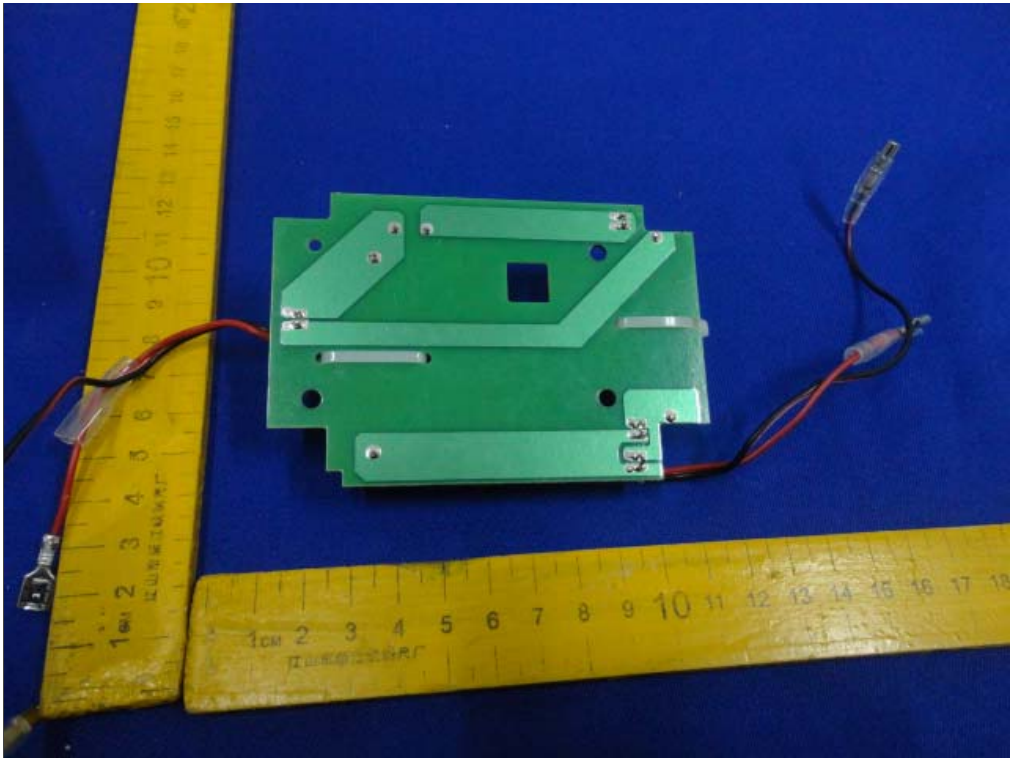


FHSS
Antenna

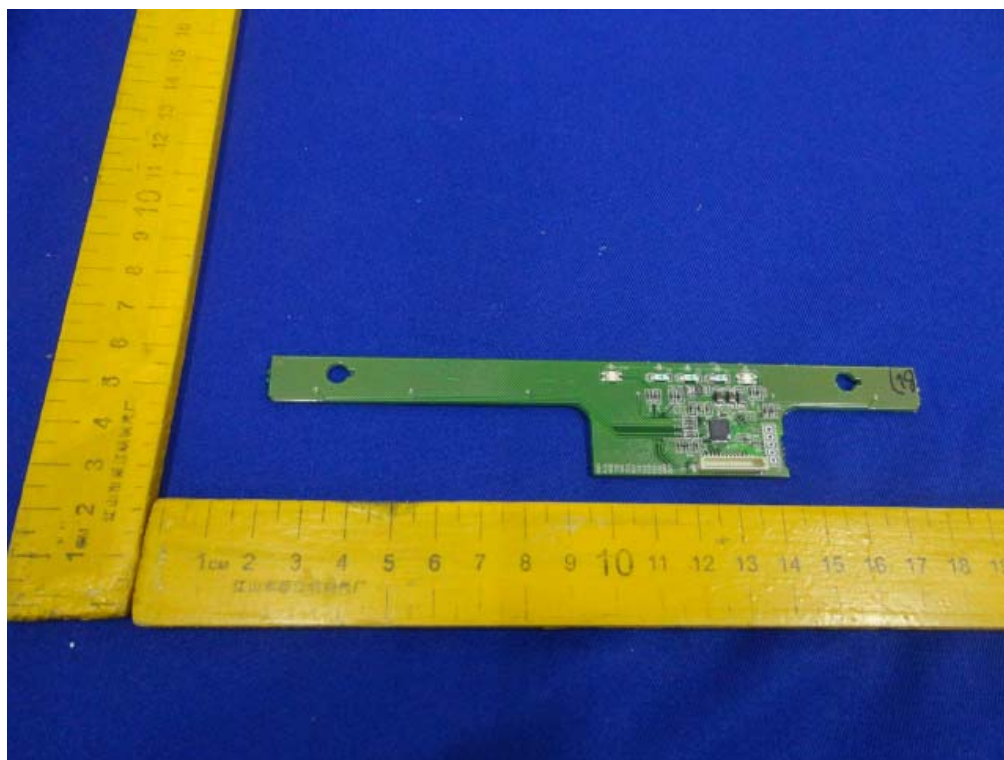
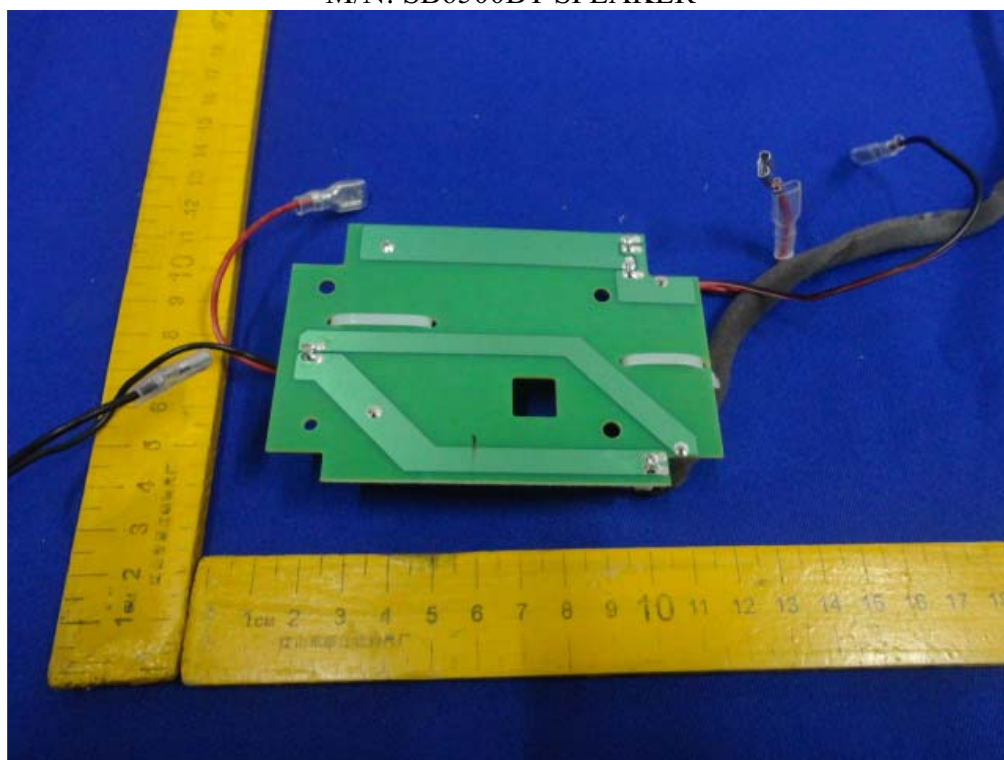
Internal Photos
M/N: SB6500BT SPEAKER



Internal Photos
M/N: SB6500BT SPEAKER



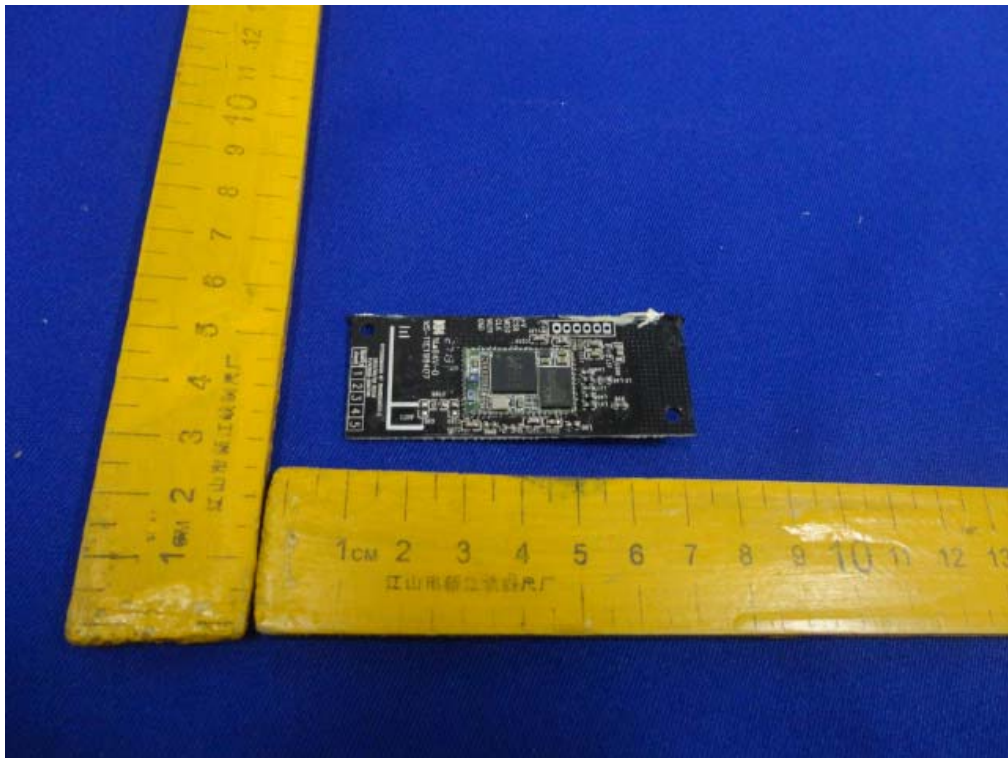
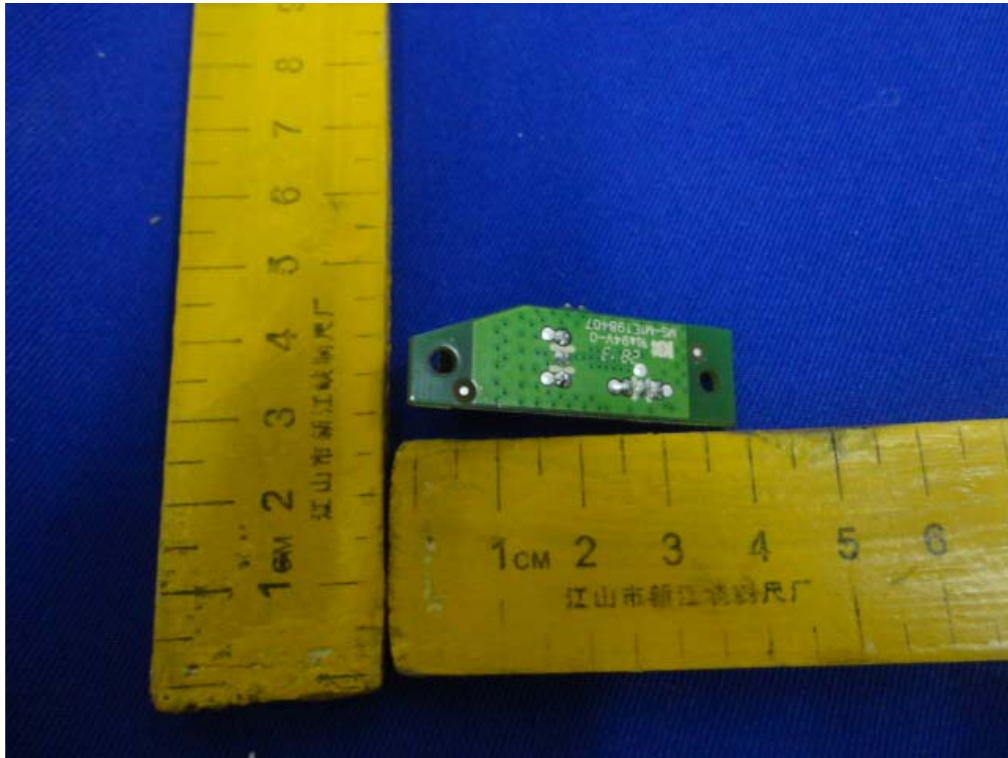
Internal Photos
M/N: SB6500BT SPEAKER



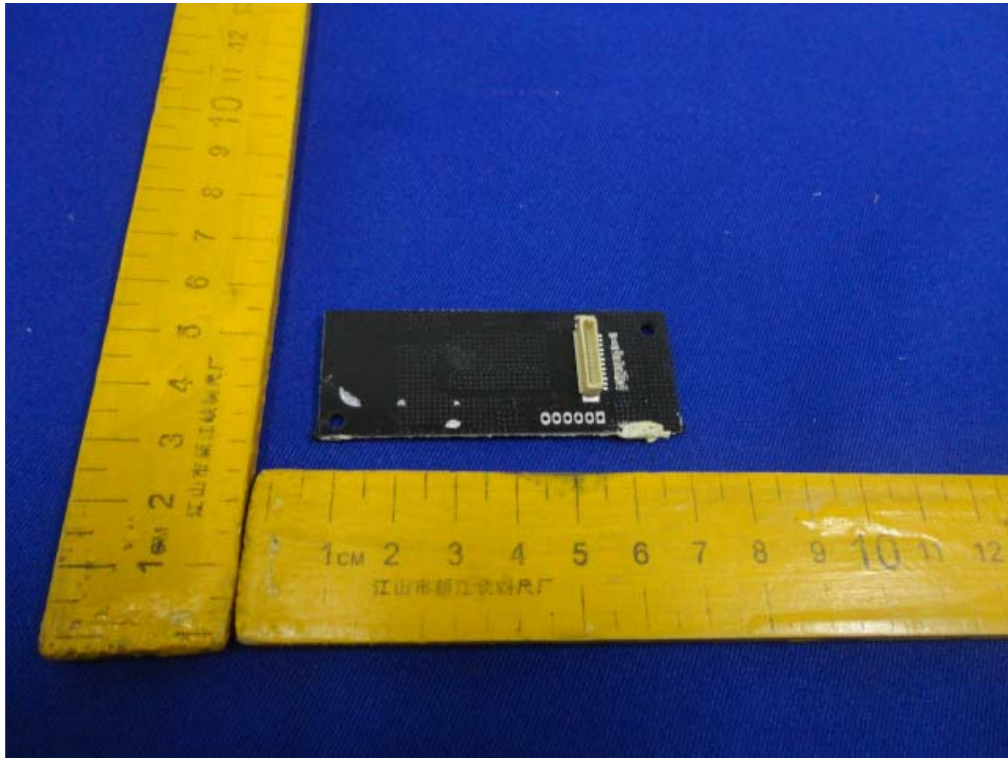
Internal Photos
M/N: SB6500BT SPEAKER



Internal Photos
M/N: SB6500BT SPEAKER

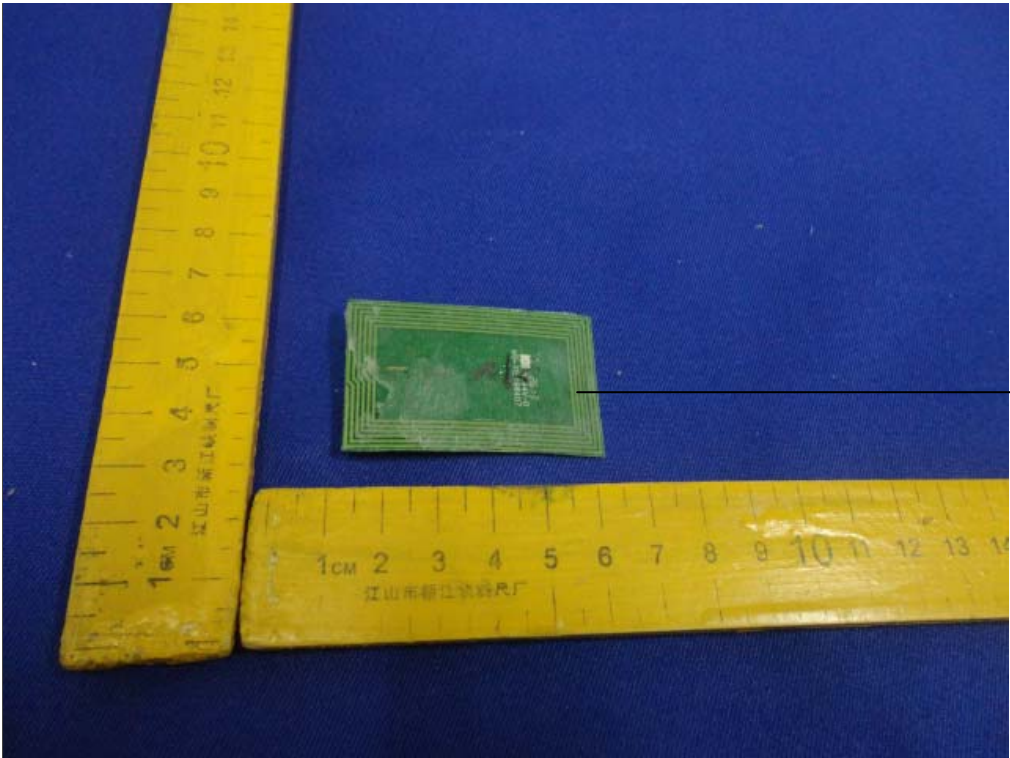


Internal Photos
M/N: SB6500BT SPEAKER

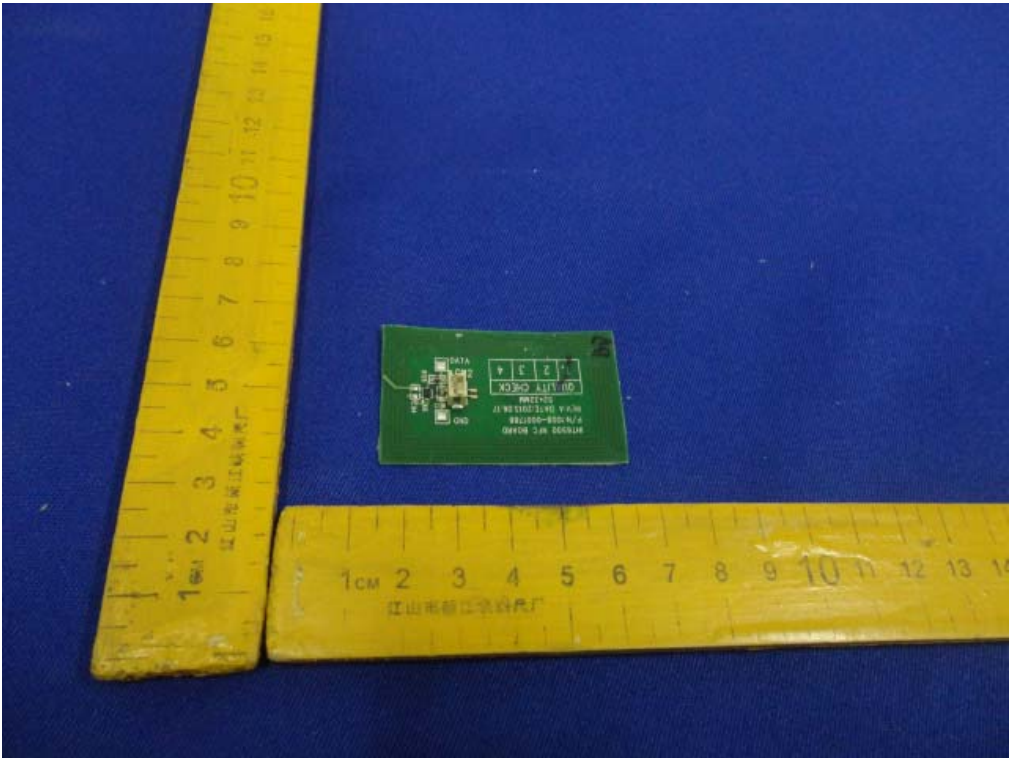


Bluetooth
Antenna

Internal Photos
M/N: SB6500BT SPEAKER



NFC
Antenna



Adapter Photos
M/N: SB6500BT SPEAKER



Remote Control Photos
M/N: SB6500BT SPEAKER

