



Neutron Engineering Inc.

Radio Test Report

FCC ID: TQYBSJS6303WA10

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

Issued Date : Aug. 08, 2013
Project No. : 1307318
Equipment : Home Theatre System
Model Name : JS6303WA
(Part No.: JS6303WA Sound Bar)

Applicant : JAZZ HIPSTER CORPORATION
Address : 2FD, NO.512, YUAN-SAN RD.,
CHUNG-HO DISTRICT, NEW TAIPEI
CITY, TAIWAN.

Tested by: Neutron Engineering Inc. EMC Laboratory

Date of Receipt: Aug. 01, 2013

Date of Test: Aug. 01, 2013 ~ Aug. 07, 2013

Testing Engineer: Gary Chou
(Gary Chou)

Technical Manager: Jeff Yang
(Jeff Yang)

Authorized Signatory: Andy Chiu
(Andy Chiu)

Neutron Engineering Inc.
B1, No. 37, Lane 365, YangGuang St.,
NeiHu District 114, Taipei, Taiwan.
TEL: +886-2-2657-3299
FAX: +886-2-2657-3331





Declaration

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

Neutron's reports apply only to the specific samples tested under conditions. It is manufacturer's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **Neutron** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **Neutron** issued reports.

Neutron's reports must not be used by the client to claim product endorsement by the authorities or any agency of the Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and **Neutron-self**, extracts from the test report shall not be reproduced except in full with **Neutron's** authorized written approval.

Neutron's laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

Limitation

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



Table of Contents

| | |
|--|----|
| REPORT ISSUED HISTORY | 6 |
| 1 CERTIFICATION | 7 |
| 2 . SUMMARY OF TEST RESULTS | 8 |
| 2.1 TEST FACILITY | 9 |
| 2.2 MEASUREMENT UNCERTAINTY | 9 |
| 3 GENERAL INFORMATION | 10 |
| 3.1 GENERAL DESCRIPTION OF EUT | 10 |
| 3.2 DESCRIPTION OF TEST MODES | 11 |
| 3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED | 12 |
| 3.4 DESCRIPTION OF SUPPORT UNITS | 13 |
| 4 CONDUCTED EMISSION | 14 |
| 4.1 LIMIT | 14 |
| 4.2 MEASUREMENT INSTRUMENTS LIST | 14 |
| 4.3 TEST PROCEDURES | 15 |
| 4.4 TEST SETUP LAYOUT | 15 |
| 4.5 DEVIATION FROM TEST STANDARD | 15 |
| 4.6 EUT OPERATING CONDITIONS | 16 |
| 4.7 TEST RESULTS | 17 |
| 5 ANTENNA CONDUCTED SPURIOUS EMISSION | 19 |
| 5.1 LIMIT | 19 |
| 5.2 MEASUREMENT INSTRUMENTS LIST | 19 |
| 5.3 TEST PROCEDURES | 19 |
| 5.4 TEST SETUP LAYOUT | 19 |
| 5.5 DEVIATION FROM TEST STANDARD | 19 |
| 5.6 EUT OPERATING CONDITIONS | 19 |
| 5.7 TEST RESULTS | 20 |
| 6 6 DB BANDWIDTH | 24 |
| 6.1 LIMIT | 24 |
| 6.2 MEASUREMENT INSTRUMENTS LIST | 24 |
| 6.3 TEST PROCEDURES | 24 |
| 6.4 TEST SETUP LAYOUT | 24 |
| 6.5 DEVIATION FROM TEST STANDARD | 24 |
| 6.6 EUT OPERATING CONDITIONS | 24 |
| 6.7 TEST RESULTS | 25 |
| 7 MAXIMUM PEAK CONDUCTED OUTPUT POWER | 27 |
| 7.1 LIMIT | 27 |
| 7.2 MEASUREMENT INSTRUMENTS LIST | 27 |
| 7.3 TEST PROCEDURES | 27 |



Table of Contents

| | | |
|------|---|----|
| 7.4 | TEST SETUP LAYOUT | 27 |
| 7.5 | DEVIATION FROM TEST STANDARD | 27 |
| 7.6 | EUT OPERATING CONDITIONS | 27 |
| 7.7 | TEST RESULTS | 28 |
| 8 | RADIATED SPURIOUS EMISSION (9 KHZ TO 1 GHZ) | 29 |
| 8.1 | LIMIT | 29 |
| 8.2 | MEASUREMENT INSTRUMENTS LIST | 30 |
| 8.3 | MEASURING INSTRUMENTS SETTING | 30 |
| 8.4 | TEST PROCEDURES | 31 |
| 8.5 | DEVIATION FROM TEST STANDARD | 31 |
| 8.6 | TEST SETUP LAYOUT | 31 |
| 8.7 | EUT OPERATING CONDITIONS | 32 |
| 8.8 | TEST RESULTS | 33 |
| 9 | RADIATED SPURIOUS EMISSION (ABOVE 1 GHZ) | 35 |
| 9.1 | LIMIT | 35 |
| 9.2 | MEASUREMENT INSTRUMENTS LIST | 36 |
| 9.3 | MEASURING INSTRUMENTS SETTING | 36 |
| 9.4 | TEST PROCEDURES | 37 |
| 9.5 | DEVIATION FROM TEST STANDARD | 37 |
| 9.6 | TEST SETUP LAYOUT | 37 |
| 9.7 | EUT OPERATING CONDITIONS | 38 |
| 9.8 | TEST RESULTS | 39 |
| 9.9 | TEST RESULTS (RESTRICTED BANDS) | 51 |
| 10 | POWER SPECTRAL DENSITY | 55 |
| 10.1 | LIMIT | 55 |
| 10.2 | MEASUREMENT INSTRUMENTS LIST | 55 |
| 10.3 | TEST PROCEDURES | 55 |
| 10.4 | TEST SETUP LAYOUT | 55 |
| 10.5 | DEVIATION FROM TEST STANDARD | 55 |
| 10.6 | EUT OPERATING CONDITIONS | 55 |
| 10.7 | TEST RESULTS | 56 |
| 11 | RF EXPOSURE COMPLIANCE | 58 |
| 11.1 | LIMIT | 58 |
| 11.2 | MEASUREMENT INSTRUMENTS LIST | 58 |
| 11.3 | MPE CALCULATION METHOD | 58 |
| 11.4 | TEST SETUP LAYOUT | 59 |
| 11.5 | DEVIATION FROM TEST STANDARD | 59 |
| 11.6 | EUT OPERATING CONDITIONS | 59 |



Table of Contents

| | | |
|------|----------------|----|
| 11.7 | TEST RESULTS | 60 |
| 12 | EUT TEST PHOTO | 61 |



REPORT ISSUED HISTORY

| Revised Version No. | Description | Issued Date |
|---------------------|----------------|---------------|
| - | Initial Issue. | Aug. 08, 2013 |



1 CERTIFICATION

Equipment : Home Theatre System

Brand Name : JS

Model Name : JS6303WA (Part No.: JS6303WA Sound Bar)

Applicant : JAZZ HIPSTER CORPORATION

Date of Test : Aug. 01, 2013 ~ Aug. 07, 2013

Standards : FCC Part 15, Subpart C: 2012

ANSI C63.4: 2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-2-1307318) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).



2. SUMMARY OF TEST RESULTS

| Standard Clause | Test Item | Result |
|--------------------------------------|-------------------------------------|--------|
| 15.207 | Conducted Emission | PASS |
| 15.247 (c) | Antenna conducted Spurious Emission | PASS |
| 15.247 (a)(2) | 6dB Bandwidth | PASS |
| 15.247 (b) | Maximum Peak Conducted Output Power | PASS |
| 15.247 (c) | Radiated Spurious Emission | PASS |
| 15.247 (d)(e) | Power Spectral Density | PASS |
| 15.205 | Restricted Bands | PASS |
| 15.203 | Antenna Requirement | PASS |
| 1.1307 1.1310 2.1091 2.1093 | RF Exposure Compliance | PASS |

NOTE:

- (1) N/A: denotes test is not applicable in this Test Report
- (2) Portable device; SAR report is required.



2.1 TEST FACILITY

The test facilities used to collect the test data in this report:

Conducted emission Test:

C03: B1, No. 37, Lane 365, YangGuang St., NeiHu District 114, Taipei, Taiwan.

Radiated emission Test (Below 1 GHz):

CB08: (FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

Radiated emission Test (Above 1 GHz):

CB08: (VCCI RN: G-91; FCC RN: 614388; FCC DN: TW1054; IC Assigned Code: 4428C-1)
1F., No. 61, Ln. 77, Sing-ai Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty is not specified by FCC rules and for reference only.

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

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

A. Conducted emission test:

| Test Site | Measurement Frequency Range | U, (dB) | NOTE |
|-----------|-----------------------------|---------|------|
| C03 | 150 kHz ~ 30 MHz | 1.94 | |

B. Radiated emission test:

| Test Site | Item | Measurement Frequency Range | Uncertainty | NOTE |
|-----------|-------------------------|-----------------------------|---------------|---------|
| CB08 | Radiated emission at 3m | Horizontal Polarization | 30 - 200MHz | 3.35 dB |
| | | | 200 - 1000MHz | 3.11 dB |
| | | | 1 - 18GHz | 3.97 dB |
| | | | 18 - 40GHz | 4.01 dB |
| | Vertical Polarization | | 30 - 200MHz | 3.22 dB |
| | | | 200 - 1000MHz | 3.24 dB |
| | | | 1 - 18GHz | 4.05 dB |
| | | | 18 - 40GHz | 4.04 dB |

Our calculated Measurement Instrumentation Uncertainty is shown in the tables above. These are our U_{lab} values in CISPR 16-4-2 terminology.

Since Table 1 of CISPR 16-4-2 has values of measurement instrumentation uncertainty, called U_{CISPR} , as follows:

Conducted Disturbance (mains port) – 150 kHz – 30 MHz: 3.6 dB

Radiated Disturbance (electric field strength on an open area test site or alternative test site) –
30 MHz – 1000 MHz: 5.2 dB

It can be seen that our U_{lab} values are smaller than U_{CISPR} .

If U_{lab} is less than or equal to U_{CISPR} , then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{CISPR} , then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{CISPR})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{CISPR})$, exceeds the disturbance limit.



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

| | | |
|------------------------|--|--|
| Equipment | Home Theatre System | |
| Brand Name | JS | |
| Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) | |
| OEM Brand/Model Name | N/A | |
| Model Difference | N/A | |
| Product Description | The EUT is a Home Theatre System. Operation Frequency 2405.376 MHz ~ 2466.816 MHz Modulation Type GFSK Bit Rate of Transmitter 1 Mbps Number Of Channel Please refer to the Note 2. Antenna Designation Please refer to the Note 3. Antenna Gain(Peak) Please refer to the Note 3. Maximum Peak Conducted Output Power: 15.09 dBm | |
| | More details of EUT technical specification, please refer to the User's Manual. | |
| Power Source | DC Voltage supplied from External Power Supply. | |
| Power Rating | 1. EUT: I/P: DC 24V 2. External Power Supply: I/P: AC 100-240V 50/60Hz 1.5A / O/P: DC 24V 2500mA 60W | |
| Connecting I/O Port(s) | Please refer to the User's Manual | |
| Products Covered | 1 * Bluetooth Module 1 * RF Module 1 * SWITCHING MODE POWER SUPPLY: GPE, GPE060D-240250D 1 * Power Cable 1 * Remote Control 1 * Audio Cable | |
| EUT Modification(s) | N/A | |

NOTE:

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

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|
| 01 | 2405.376 | 04 | 2433.024 | 07 | 2460.672 |
| 02 | 2414.592 | 05 | 2442.24 | 08 | 2466.816 |
| 03 | 2423.808 | 06 | 2451.456 | | |

3. Table for Filed Antenna

| Ant. | Brand | Model Name | Antenna Type | Connector | Gain (dBi) |
|------|-------|------------|--------------|-----------|------------|
| 1 | N/A | N/A | Printed | N/A | 2.32 |



3.2 DESCRIPTION OF TEST MODES

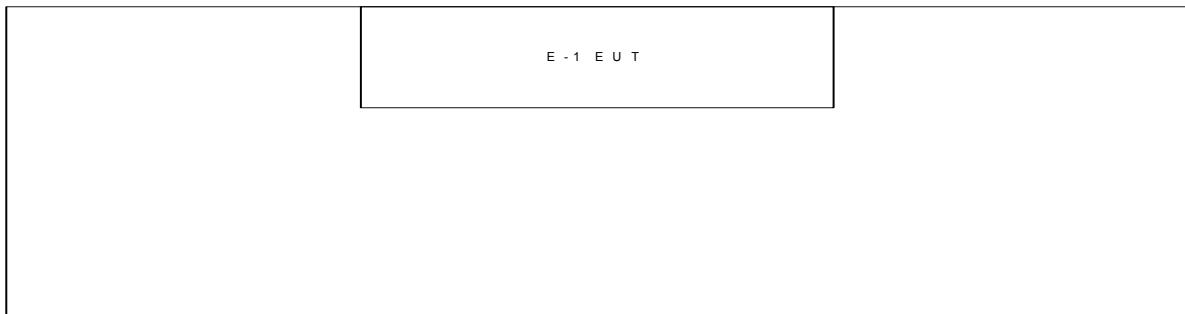
To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration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

| Test Items | Mode | Data Rate | Channel | Note |
|--|-------|-----------|----------|------|
| Conducted Emission | GFSK | 1 Mbps | 04 | |
| Antenna conducted Spurious Emission | GFSK | 1 Mbps | 01/04/08 | |
| 6 dB Bandwidth | GFSK | 1 Mbps | 01/04/08 | |
| Maximum Peak Conducted Output Power | GFSK | 1 Mbps | 01/04/08 | |
| Radiated Spurious Emission (30 MHz to 1 GHz) | GFSK | 1 Mbps | 04 | |
| Radiated Spurious Emission (above 1 GHz) | GFSK | 1 Mbps | 01/04/08 | |
| Restricted Bands | GFSK | 1 Mbps | 01/04/08 | |
| Antenna Requirement | ----- | ----- | ----- | |
| RF Exposure Compliance | ----- | ----- | ----- | |

NOTE: The measurements are performed at the highest, middle, lowest available channels.



3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED





3.4 DESCRIPTION OF SUPPORT UNITS

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

| Item | Equipment | Mfr/Brand | Model/Type No. | FCC ID | Series No. | Note |
|------|---------------------|-----------|---|-----------------|------------|------|
| E-1 | Home Theatre System | JS | JS6303WA (Part No.: JS6303WA Sound Bar) | TQYBSJS6303WA10 | N/A | EUT |

| Item | Shielded Type | Ferrite Core | Length | Note |
|------|---------------|--------------|--------|------|
| N/A | - | - | - | - |

NOTE: The support equipment was authorized by Declaration of Conformity (DOC).



4 CONDUCTED EMISSION

4.1 LIMIT

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

NOTE:

1. The tighter limit applies at the band edges.
2. The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
3. The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)

Margin Level = Measurement Value – Limit Value

4.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|-------------------------|--------------|-----------------------------|------------|------------------|
| 1 | TWO-LINE V-NETWORK | R&S | ENV216 | 101050 | Apr. 22, 2014 |
| 2 | Test Cable | TIMES | LMR-400 | C01 | Aug. 16, 2013 |
| 3 | EMI Test Receiver | R&S | ESCI | 100082 | Mar. 21, 2014 |
| 4 | Measurement Software | EZ | EZ_EMCA (Version NB-03A) | N/A | N/A |

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

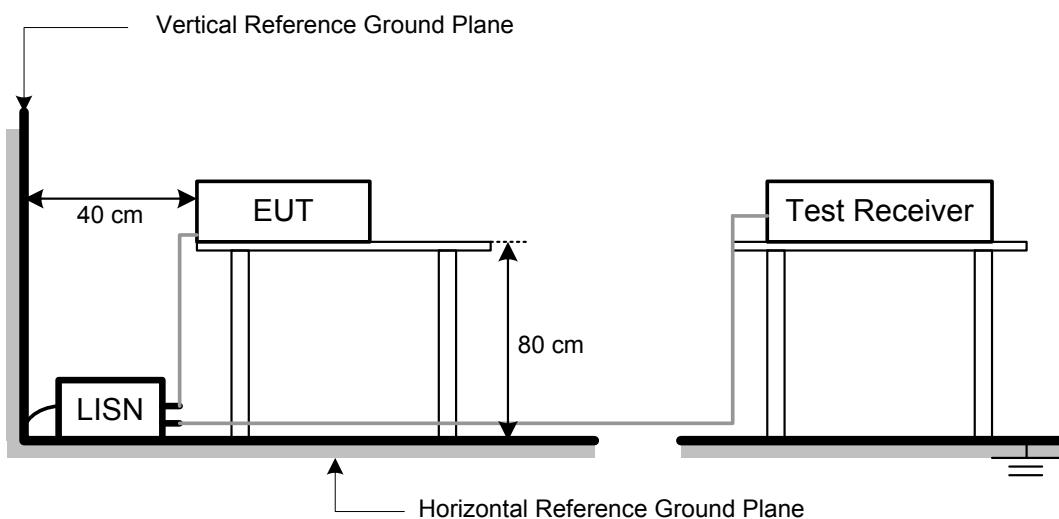
4.3 TEST PROCEDURES

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

NOTE:

- a. Reading in which marked as Peak, QP or AVG means measurements by using are Quasi-Peak or Average Mode with Detector BW=9 kHz (6 dB Bandwidth).
- b. All readings are Peak Mode value unless otherwise stated QP or AVG in column of Note. If the Peak or QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only Peak or QP Mode was measured, but AVG Mode didn't perform.

4.4 TEST SETUP LAYOUT



4.5 DEVIATION FROM TEST STANDARD

No deviation



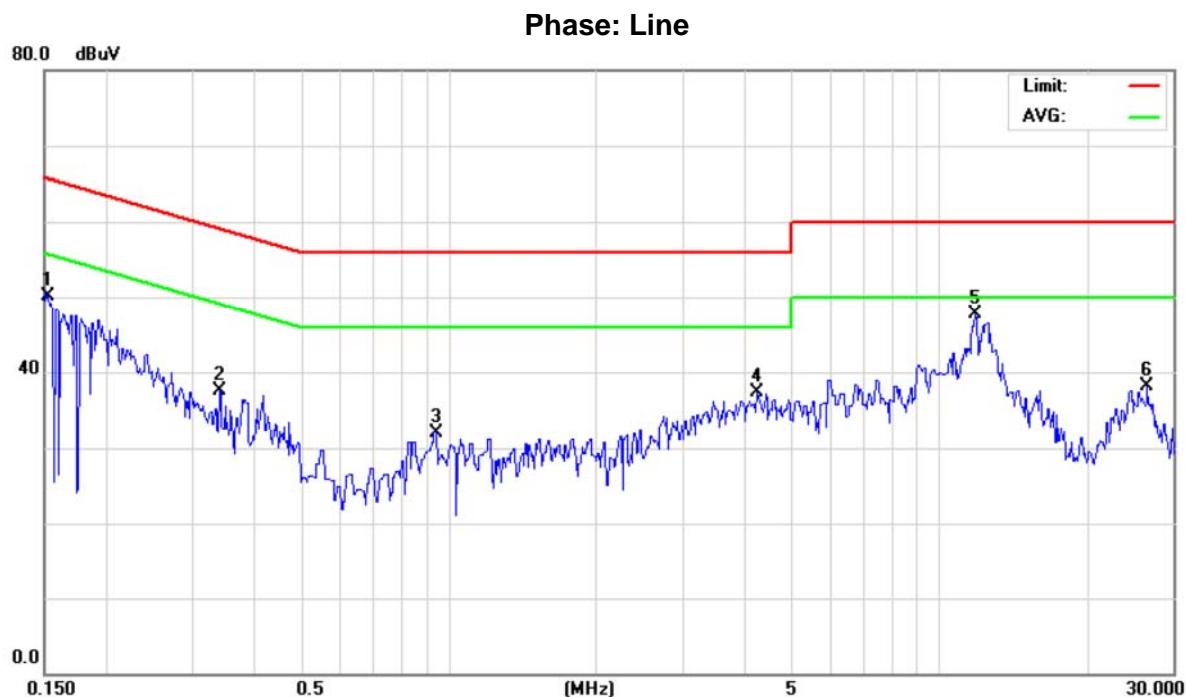
4.6 EUT OPERATING CONDITIONS

The EUT used during radiated and/or conducted emission measurement was designed to exercise in a manner similar to a typical use.



4.7 TEST RESULTS

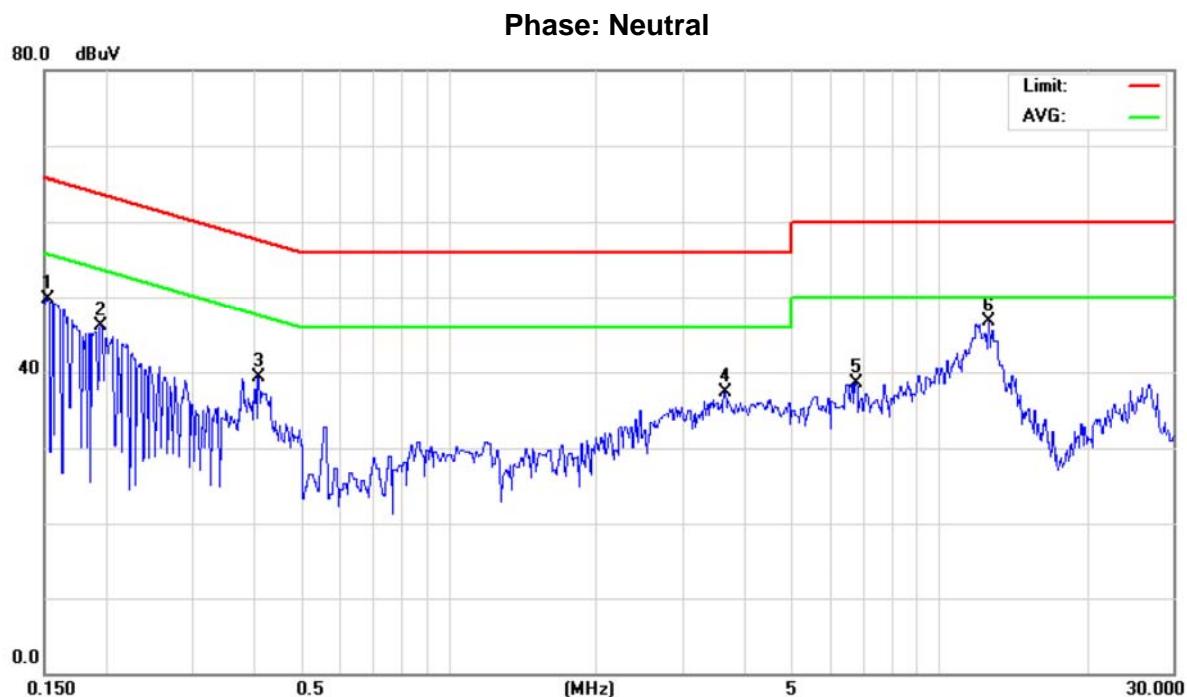
| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 24°C | Relative Humidity | 48% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2433.024 MHz | | |



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|---------|---------|---------|----------|-------|--------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 0.1521 | 40.41 | 9.65 | 50.06 | 65.88 | -15.82 | peak | |
| 2 | | 0.3410 | 27.95 | 9.61 | 37.56 | 59.18 | -21.62 | peak | |
| 3 | | 0.9410 | 22.39 | 9.61 | 32.00 | 56.00 | -24.00 | peak | |
| 4 | | 4.2350 | 27.79 | 9.59 | 37.38 | 56.00 | -18.62 | peak | |
| 5 | * | 11.8500 | 37.97 | 9.66 | 47.63 | 60.00 | -12.37 | peak | |
| 6 | | 26.5500 | 28.32 | 9.87 | 38.19 | 60.00 | -21.81 | peak | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 24°C | Relative Humidity | 48% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2433.024 MHz | | |



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|---------|---------|---------|----------|-------|--------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 0.1521 | 40.04 | 9.72 | 49.76 | 65.88 | -16.12 | peak | |
| 2 | | 0.1955 | 36.01 | 10.13 | 46.14 | 63.80 | -17.66 | peak | |
| 3 | | 0.4090 | 29.60 | 9.73 | 39.33 | 57.67 | -18.34 | peak | |
| 4 | | 3.6500 | 27.62 | 9.65 | 37.27 | 56.00 | -18.73 | peak | |
| 5 | | 6.7500 | 28.78 | 9.68 | 38.46 | 60.00 | -21.54 | peak | |
| 6 | * | 12.6000 | 36.99 | 9.73 | 46.72 | 60.00 | -13.28 | peak | |



5 ANTENNA CONDUCTED SPURIOUS EMISSION

5.1 LIMIT

| Test Item | Frequency Range (MHz) | Limit |
|-------------------------------------|-----------------------|---|
| Antenna conducted Spurious Emission | 30-25000 | 20 dB less than the peak value of fundamental frequency |

5.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|-------------------|--------------|----------|------------|------------------|
| 1 | Spectrum Analyzer | R&S | FSP-40 | 100129 | Oct. 01, 2013 |

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

5.3 TEST PROCEDURES

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

5.4 TEST SETUP LAYOUT



5.5 DEVIATION FROM TEST STANDARD

No deviation

5.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

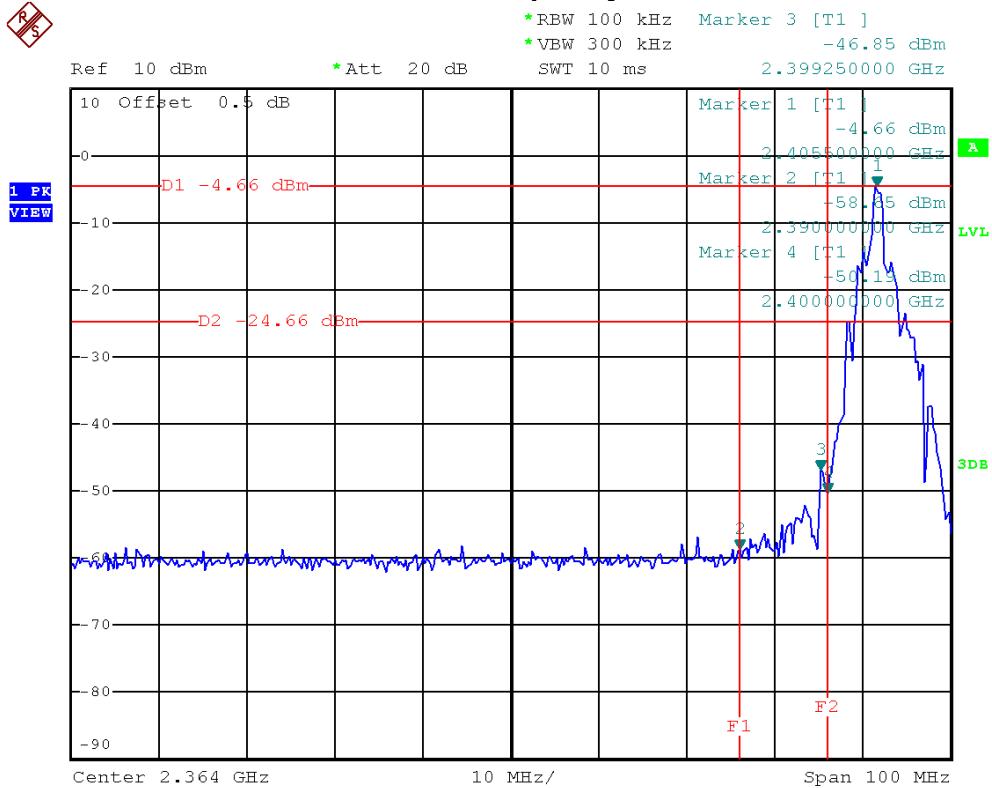
**5.7 TEST RESULTS**

| | | | |
|--------------|---------------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz/2466.816 MHz | | |

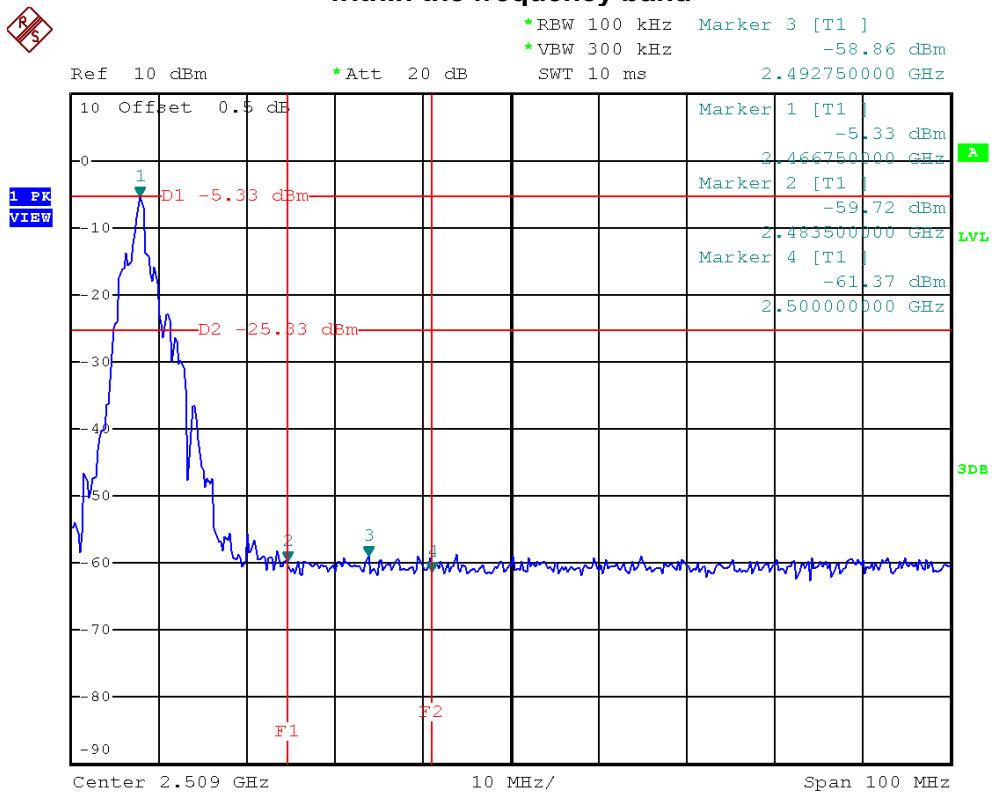
| Channel of Worst Data | | | |
|---|------------|--|------------|
| The max. radio frequency power in any 100kHz bandwidth outside the frequency band | | The max. radio frequency power in any 100 kHz bandwidth within the frequency band. | |
| FREQUENCY(MHz) | POWER(dBm) | FREQUENCY(MHz) | POWER(dBm) |
| 2399.25 | -46.85 | 2492.75 | -58.86 |
| Result | | | |
| In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest lever of the desired power. | | | |



The max. radio frequency power in any 100kHz bandwidth outside the frequency band

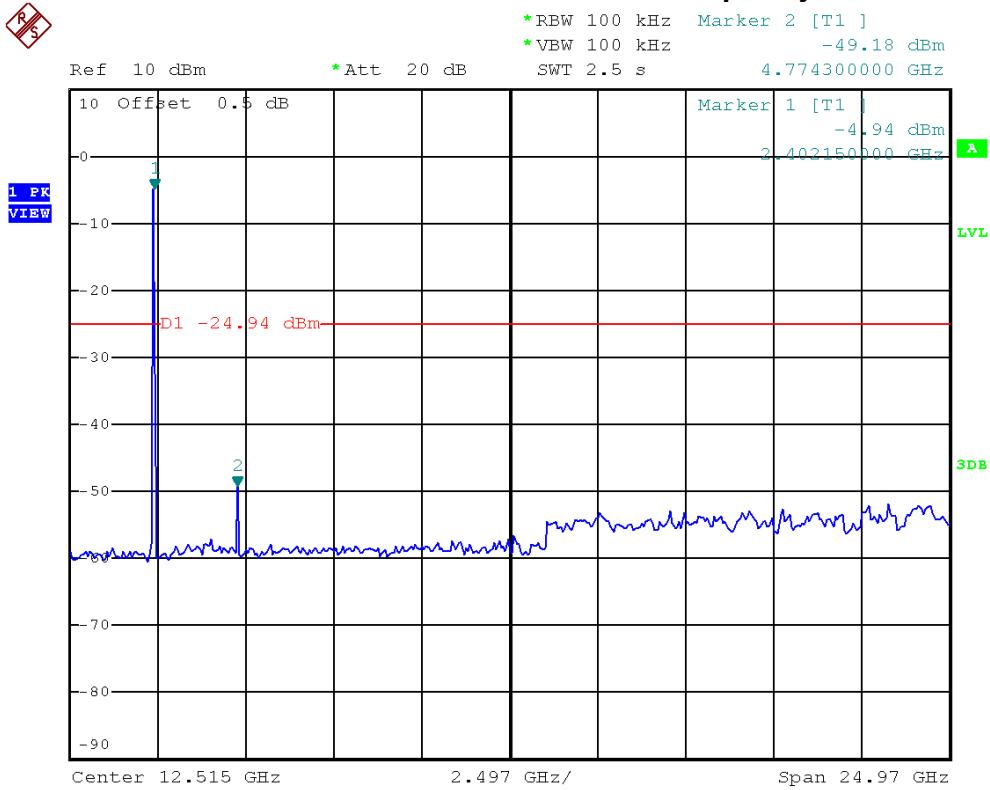


The max. radio frequency power in any 100 kHz bandwidth within the frequency band

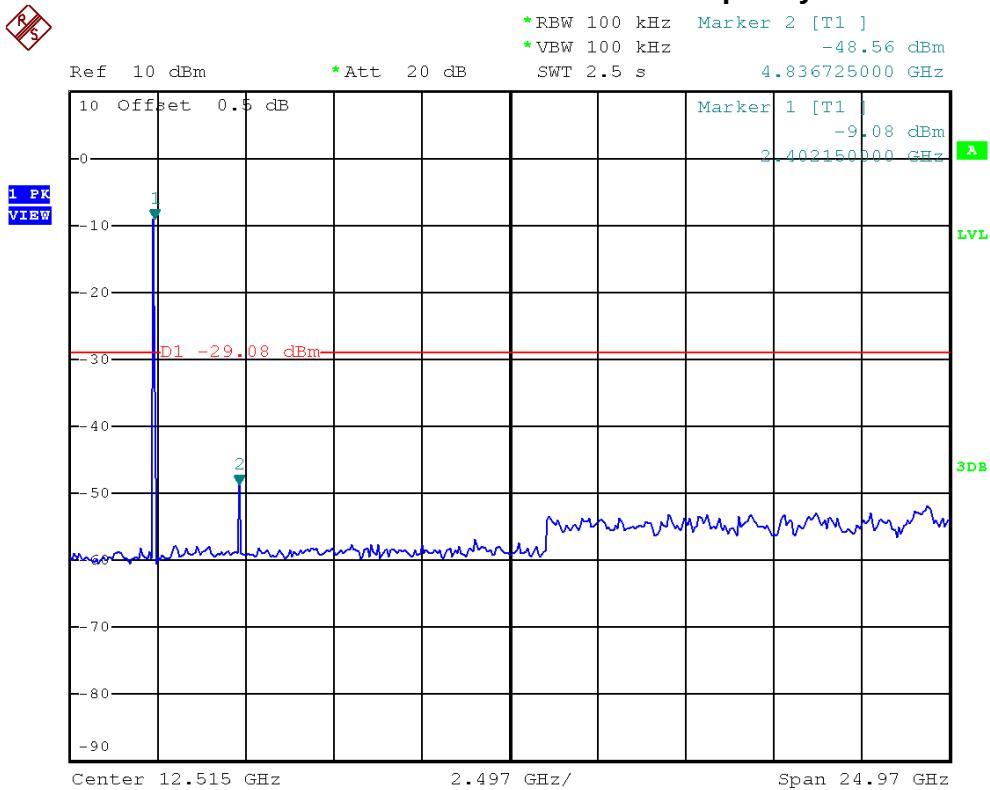




2405.376 MHz/10 Harmonic of the frequency

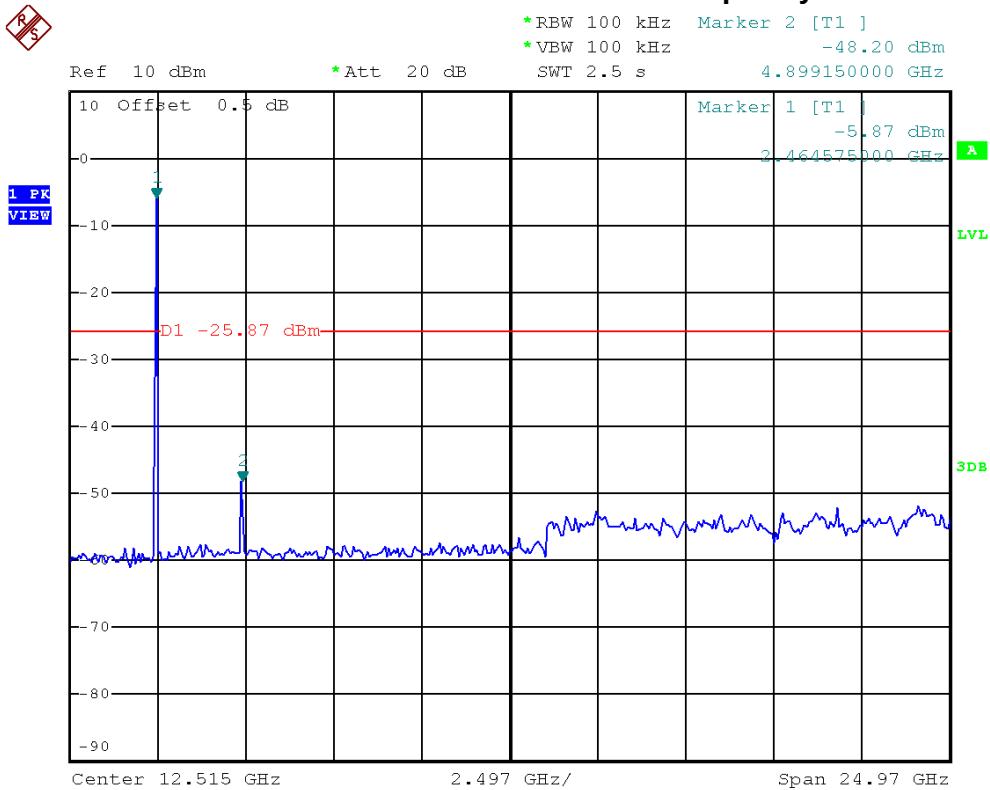


2433.024 MHz/10 Harmonic of the frequency





2466.816 MHz/10 Harmonic of the frequency





6 6 DB BANDWIDTH

6.1 LIMIT

| Test Item | Frequency Range (MHz) | Limit |
|-----------|-----------------------|-------------------------------|
| Bandwidth | 2400-2483.5 | >= 500KHz (6 dB bandwidth) |

6.2 MEASUREMENT INSTRUMENTS LIST

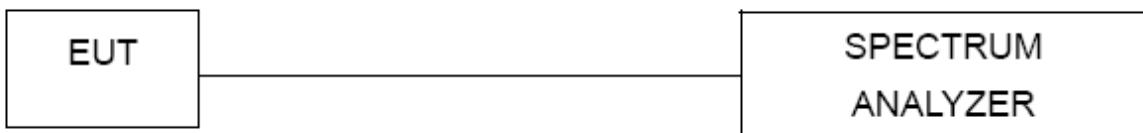
| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|-------------------|--------------|----------|------------|------------------|
| 1 | Spectrum Analyzer | R&S | FSP-40 | 100129 | Oct. 01, 2013 |

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

6.3 TEST PROCEDURES

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

6.4 TEST SETUP LAYOUT



6.5 DEVIATION FROM TEST STANDARD

No deviation

6.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 4.6 Unless otherwise a special operating condition is specified in the follows during the testing.

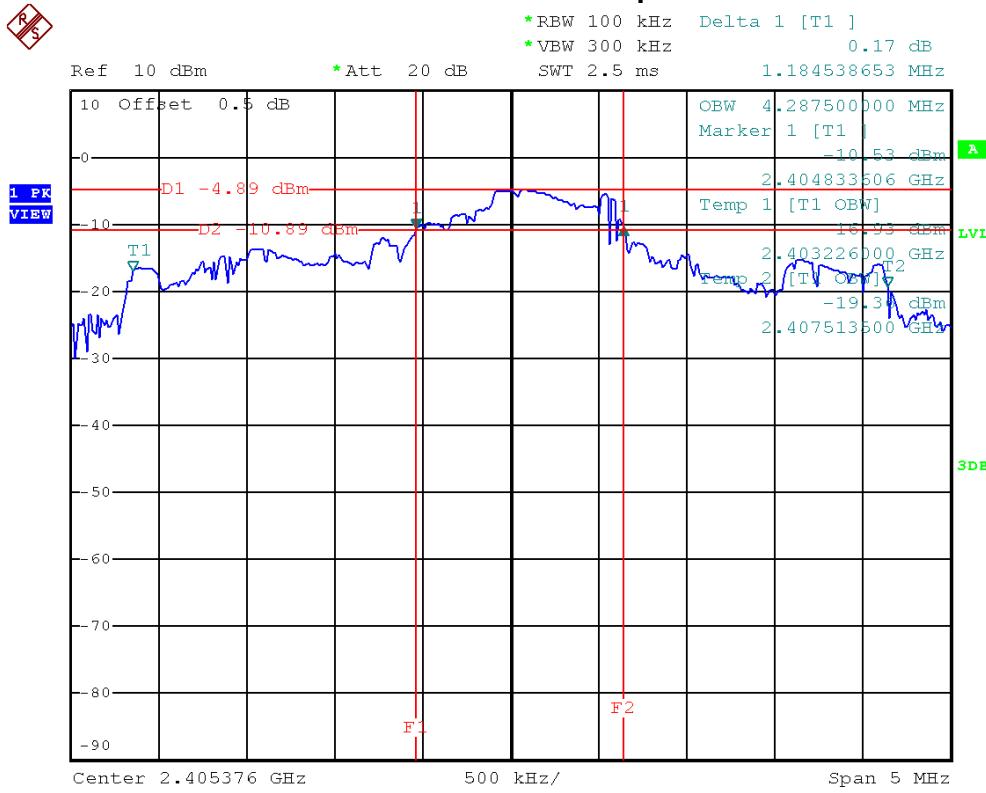


6.7 TEST RESULTS

| | | | |
|--------------|--|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz, 2433.024 MHz, 2466.816 MHz | | |

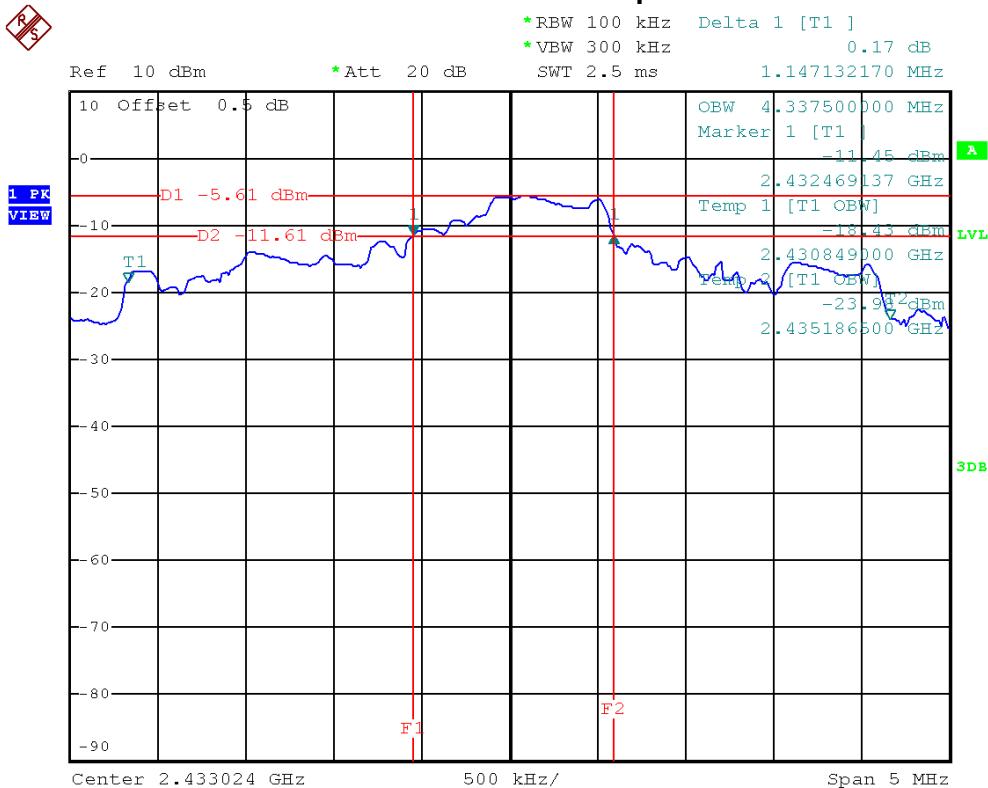
| Frequency | 6 dB Bandwidth (MHz) | 99% Occupied Bandwidth (MHz) | Limit | Result |
|--------------|----------------------|------------------------------|-----------|--------|
| 2405.376 MHz | 1.18 | 4.29 | >=500 kHz | PASS |
| 2433.024 MHz | 1.15 | 4.34 | >=500 kHz | PASS |
| 2466.816 MHz | 1.11 | 4.36 | >=500 kHz | PASS |

2405.376 MHz/6 dB and 99% Occupied Bandwidth

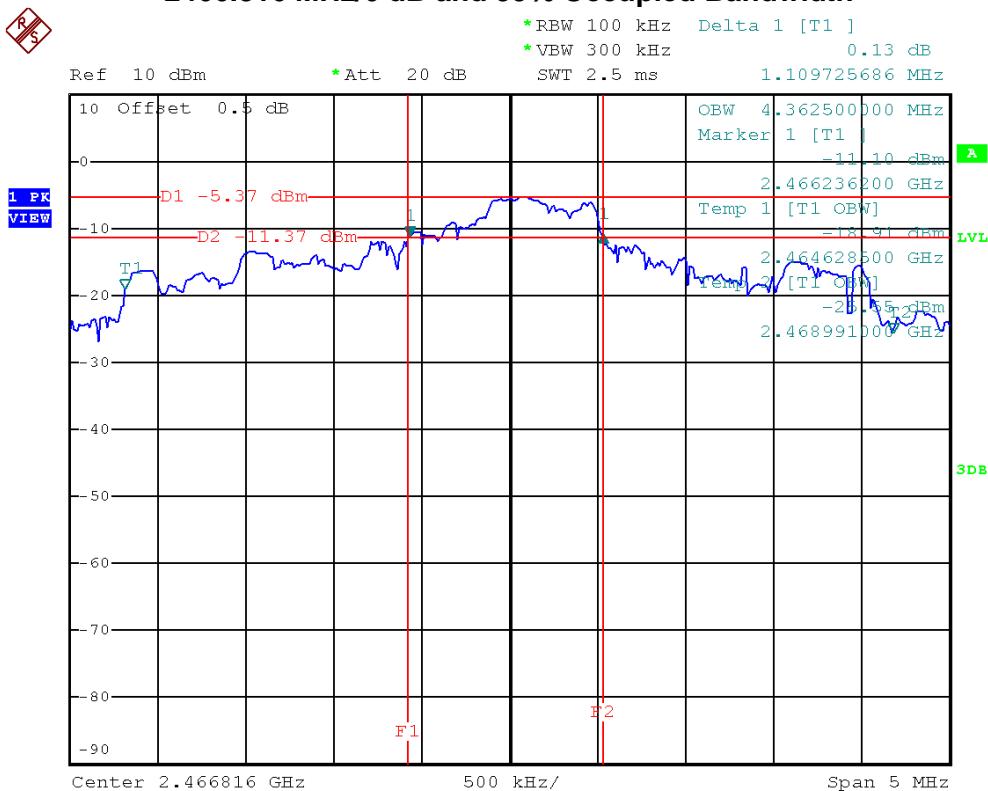




2433.024 MHz/6 dB and 99% Occupied Bandwidth



2466.816 MHz/6 dB and 99% Occupied Bandwidth





7 MAXIMUM PEAK CONDUCTED OUTPUT POWER

7.1 LIMIT

| Test Item | Frequency Range (MHz) | Limit |
|-------------------------------------|-----------------------|------------------|
| Maximum Peak Conducted Output Power | 2400-2483.5 | 1 watt or 30 dBm |

7.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|--------------------|--------------|----------|------------|------------------|
| 1 | Power Meter | Anritsu | ML2495A | 1128008 | Feb,26,2014 |
| 2 | Power Meter Sensor | Anritsu | MA2411B | 1126001 | Feb,26,2014 |

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

7.3 TEST PROCEDURES

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

7.4 TEST SETUP LAYOUT



7.5 DEVIATION FROM TEST STANDARD

No deviation

7.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.



7.7 TEST RESULTS

| | | | |
|--------------|--|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 46% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz, 2433.024 MHz, 2466.816 MHz | | |

| Frequency | Peak Output Power (dBm) | LIMIT (dBm) | Result |
|--------------|-------------------------|-------------|--------|
| 2405.376 MHz | 15.09 | 30 | PASS |
| 2433.024 MHz | 14.4 | 30 | PASS |
| 2466.816 MHz | 14.28 | 30 | PASS |

**8 RADIATED SPURIOUS EMISSION (9 KHZ TO 1 GHZ)****8.1 LIMIT**

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

| Frequency Range: 9 kHz to 1 GHz | | |
|---------------------------------|-----------------------------------|-------------------------------|
| FREQUENCY (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
| 0.009~0.490 | 2400/F(kHz) | 300 |
| 0.490~1.705 | 24000/F(kHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

| Frequency Range: above 1 GHz | | | | |
|------------------------------|--------------------------|---------|--------------------------|---------|
| FREQUENCY (MHz) | Class A (dBuV/m) (at 3m) | | Class B (dBuV/m) (at 3m) | |
| | PEAK | AVERAGE | PEAK | AVERAGE |
| above 1 GHz | 80 | 60 | 74 | 54 |

NOTE:

1. The limit for radiated test was performed according to FCC PART 15B.

2. The tighter limit applies at the band edges.

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

4. The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use)

Margin Level = Measurement Value – Limit Value



8.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|-------------------------|--------------|--------------|------------|------------------|
| 1 | Spectrum Analyzer | R&S | FSP-40 | 100129 | Oct. 01, 2013 |
| 2 | Horn Antenna | Schwarzbeck | BBHA 9120 | D-325 | Apr. 15, 2014 |
| 3 | Microwave Pre_amplifier | Agilent | 8449B | 3008A01714 | Apr. 16, 2014 |
| 4 | Microflex Cable | N/A | 27478LL142 | 1m | May. 14, 2014 |
| 5 | Microflex Cable | AISI | S104-SMAP-1 | 8m | May. 14, 2014 |
| 6 | Microflex Cable | N/A | 27478LL142 | 3m | May. 14, 2014 |
| 7 | Test Cable | N/A | LMR-400 | 966_12m | May. 14, 2014 |
| 8 | Test Cable | N/A | LMR-400 | 966_3m | May. 14, 2014 |
| 9 | Pre-Amplifier | EMC | EMC-330 | 980001 | Jul. 06, 2014 |
| 10 | Log-Bicon Antenna | Schwarzbeck | VULB9168-352 | 9168-352 | Jun. 11, 2014 |

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

8.3 MEASURING INSTRUMENTS SETTING

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



8.4 TEST PROCEDURES

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1 GHz. For frequencies above 1 GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
- g. The testing follows the guidelines in ANSI C63.4 and FCC Public Notice DA 00-705 Measurement Guidelines. In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

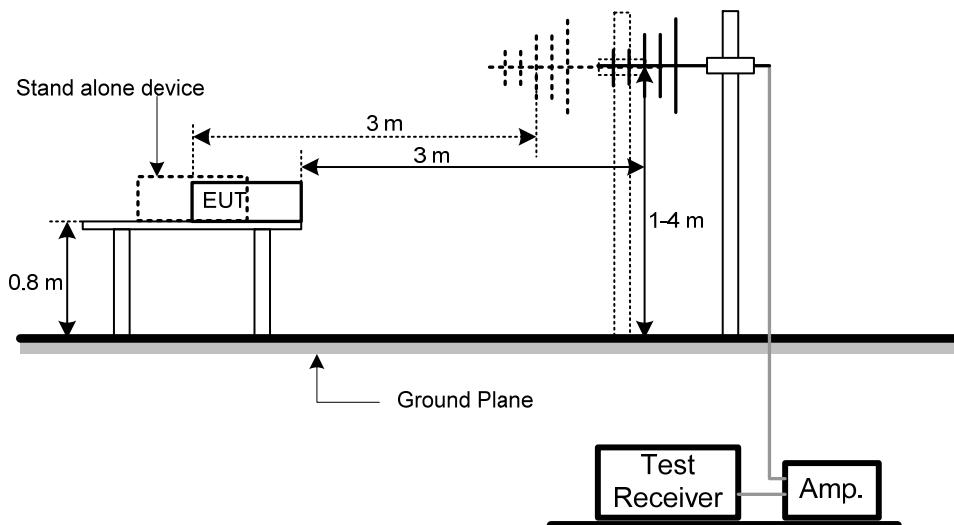
NOTE:

- a. Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode with Detector BW=120 kHz; SPA setting in RBW=100 kHz, VBW =100 kHz, Swp. Time = 0.3 sec./ MHz.
- b. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

8.5 DEVIATION FROM TEST STANDARD

No deviation

8.6 TEST SETUP LAYOUT





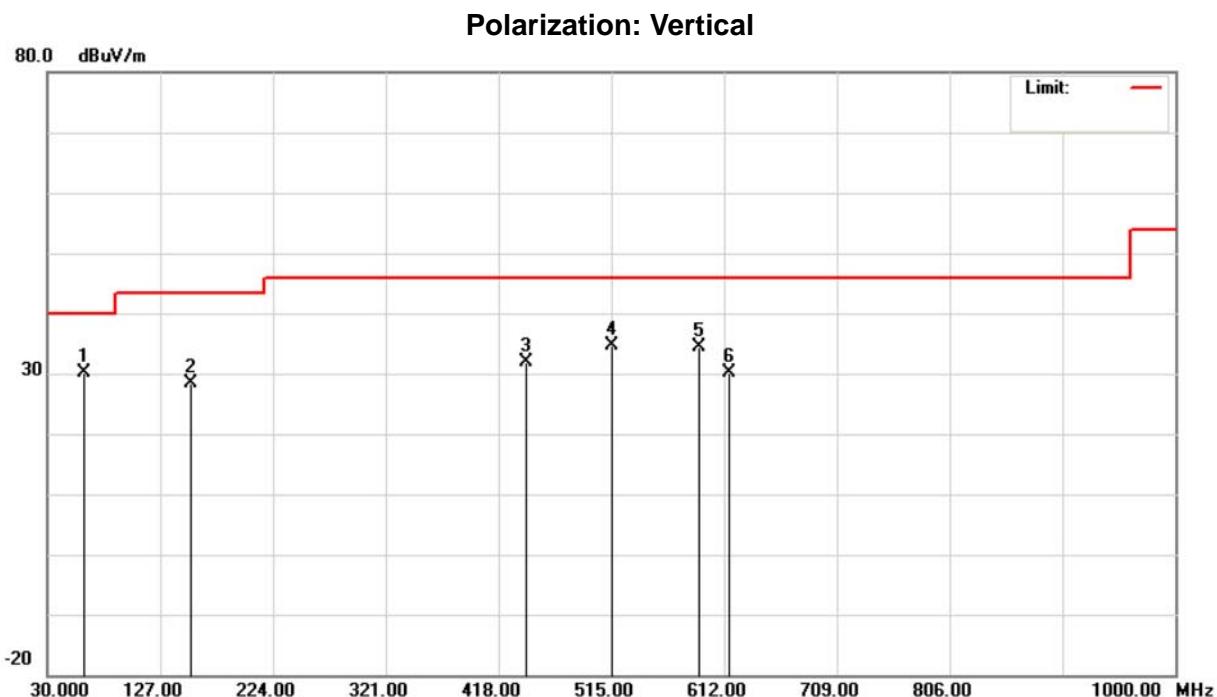
8.7 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.



8.8 TEST RESULTS

| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2433.024 MHz | | |

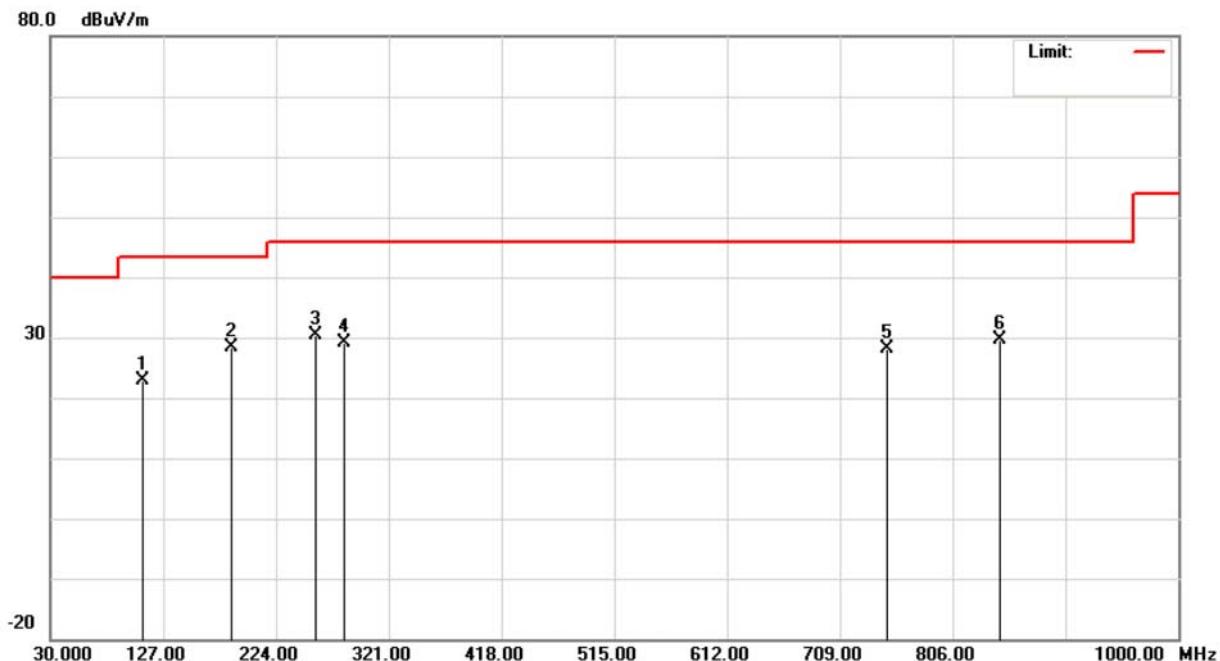


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|--------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | * | 61.5250 | 44.49 | -14.45 | 30.04 | 40.00 | -9.96 | peak | |
| 2 | | 153.6750 | 42.52 | -14.21 | 28.31 | 43.50 | -15.19 | peak | |
| 3 | | 442.2500 | 41.86 | -9.98 | 31.88 | 46.00 | -14.12 | peak | |
| 4 | | 515.0000 | 43.80 | -9.11 | 34.69 | 46.00 | -11.31 | peak | |
| 5 | | 590.1749 | 41.41 | -7.05 | 34.36 | 46.00 | -11.64 | peak | |
| 6 | | 616.8499 | 36.93 | -6.80 | 30.13 | 46.00 | -15.87 | peak | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2433.024 MHz | | |

Polarization: Horizontal



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|--------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 110.0250 | 40.21 | -17.37 | 22.84 | 43.50 | -20.66 | peak | |
| 2 | * | 185.1999 | 44.69 | -16.35 | 28.34 | 43.50 | -15.16 | peak | |
| 3 | | 257.9500 | 44.95 | -14.61 | 30.34 | 46.00 | -15.66 | peak | |
| 4 | | 282.2000 | 43.39 | -14.30 | 29.09 | 46.00 | -16.91 | peak | |
| 5 | | 750.2249 | 33.45 | -5.35 | 28.10 | 46.00 | -17.90 | peak | |
| 6 | | 847.2249 | 33.81 | -4.07 | 29.74 | 46.00 | -16.26 | peak | |

**9 RADIATED SPURIOUS EMISSION (ABOVE 1 GHZ)****9.1 LIMIT**

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

| Frequency Range: 9 kHz to 1 GHz | | |
|---------------------------------|-----------------------------------|-------------------------------|
| FREQUENCY (MHz) | Field Strength (micorvolts/meter) | Measurement Distance (meters) |
| 0.009~0.490 | 2400/F(kHz) | 300 |
| 0.490~1.705 | 24000/F(kHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

| Frequency Range: above 1 GHz | | | | |
|------------------------------|--------------------------|---------|--------------------------|---------|
| FREQUENCY (MHz) | Class A (dBuV/m) (at 3m) | | Class B (dBuV/m) (at 3m) | |
| | PEAK | AVERAGE | PEAK | AVERAGE |
| above 1 GHz | 80 | 60 | 74 | 54 |

NOTE:

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

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

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

(4) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain(if use)

Margin Level = Measurement Value – Limit Value



9.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|-------------------------|--------------|-------------|------------|------------------|
| 1 | Spectrum Analyzer | R&S | FSP-40 | 100129 | Oct. 01, 2013 |
| 2 | Horn Antenna | Schwarzbeck | BBHA 9120 | D-325 | Apr. 15, 2014 |
| 3 | Microwave Pre_amplifier | Agilent | 8449B | 3008A01714 | Apr. 16, 2014 |
| 4 | Microflex Cable | N/A | 27478LL142 | 1m | May. 14, 2014 |
| 5 | Microflex Cable | AISI | S104-SMAP-1 | 8m | May. 14, 2014 |
| 6 | Microflex Cable | N/A | 27478LL142 | 3m | May. 14, 2014 |

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

9.3 MEASURING INSTRUMENTS SETTING

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



9.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- c. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- d. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.
- f. The testing follows the guidelines in ANSI C63.4 and FCC Public Notice DA 00-705 Measurement Guidelines. In case the emission is fail due to the used RBW/VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

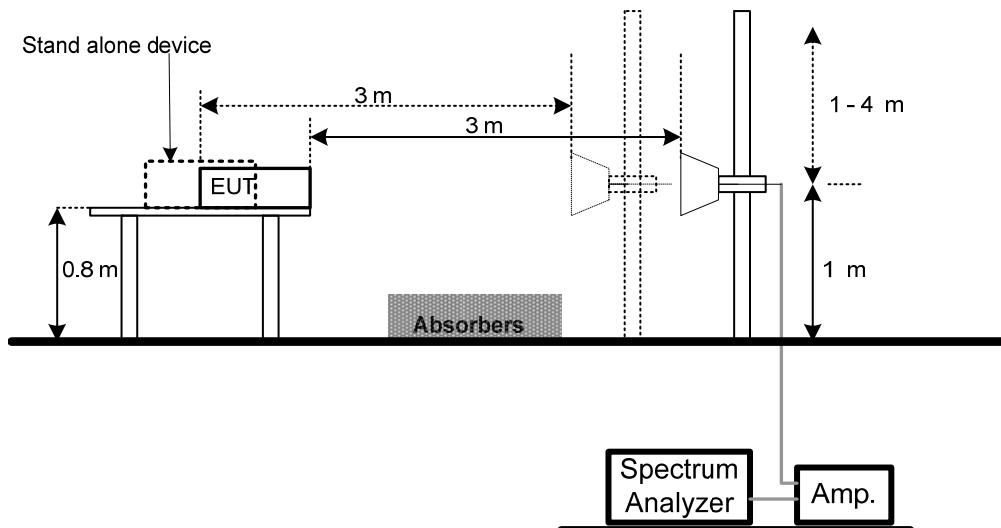
NOTE:

- a. Reading in which marked as Peak means measurements by using are Peak Mode with instrument setting in RBW= 1 MHz, VBW= 1 MHz, Swp. Time = Auto.
Reading in which marked as AVG means measurements by using are Average Mode with instrument setting in RBW= 1 MHz, VBW= 10 Hz, Swp. Time = Auto.
- b. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform.

9.5 DEVIATION FROM TEST STANDARD

No deviation

9.6 TEST SETUP LAYOUT





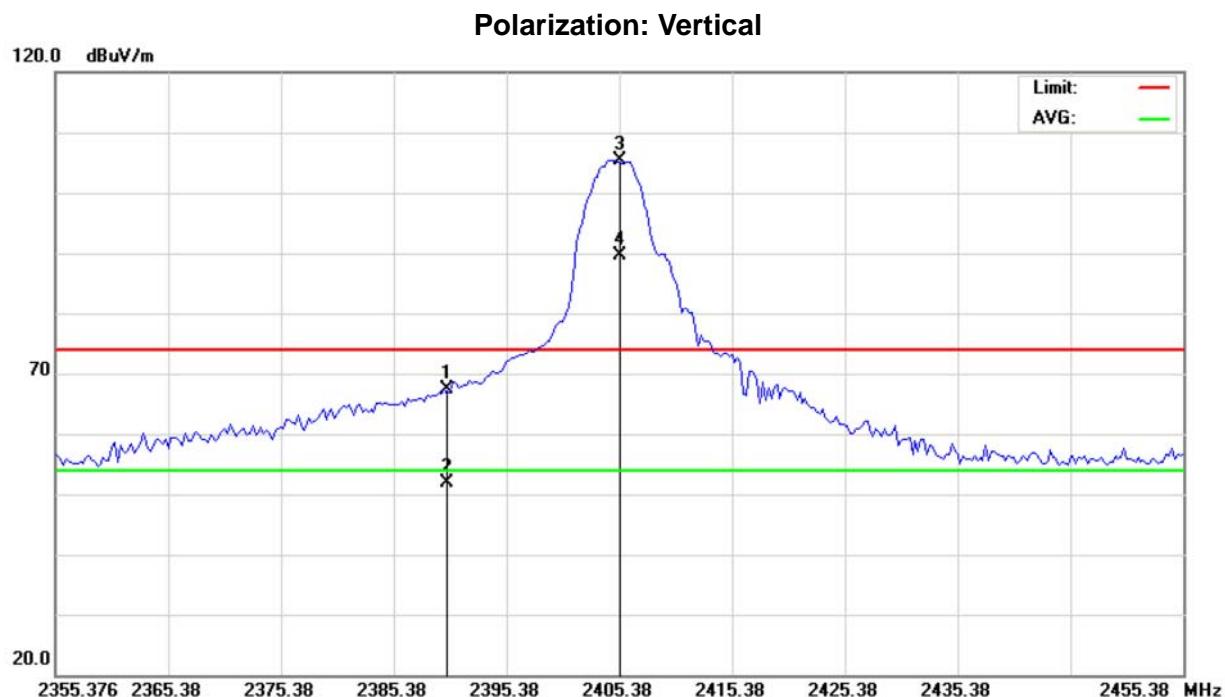
9.7 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.



9.8 TEST RESULTS

| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz | | |

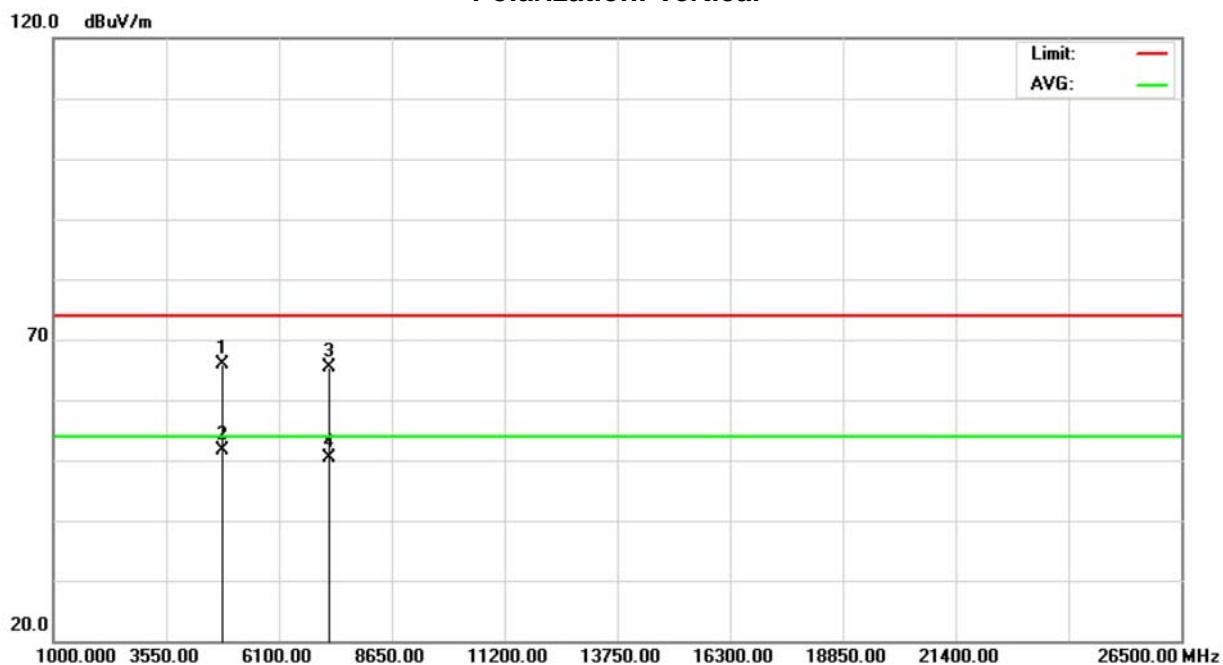


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|--------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 1 | | 2390.000 | 35.82 | 31.67 | 67.49 | 74.00 | -6.51 | peak | |
| 2 | | 2390.000 | 20.33 | 31.67 | 52.00 | 54.00 | -2.00 | AVG | |
| 3 | X | 2405.326 | 73.53 | 31.74 | 105.27 | 74.00 | 31.27 | peak | |
| 4 | * | 2405.326 | 57.84 | 31.74 | 89.58 | 54.00 | 35.58 | AVG | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz | | |

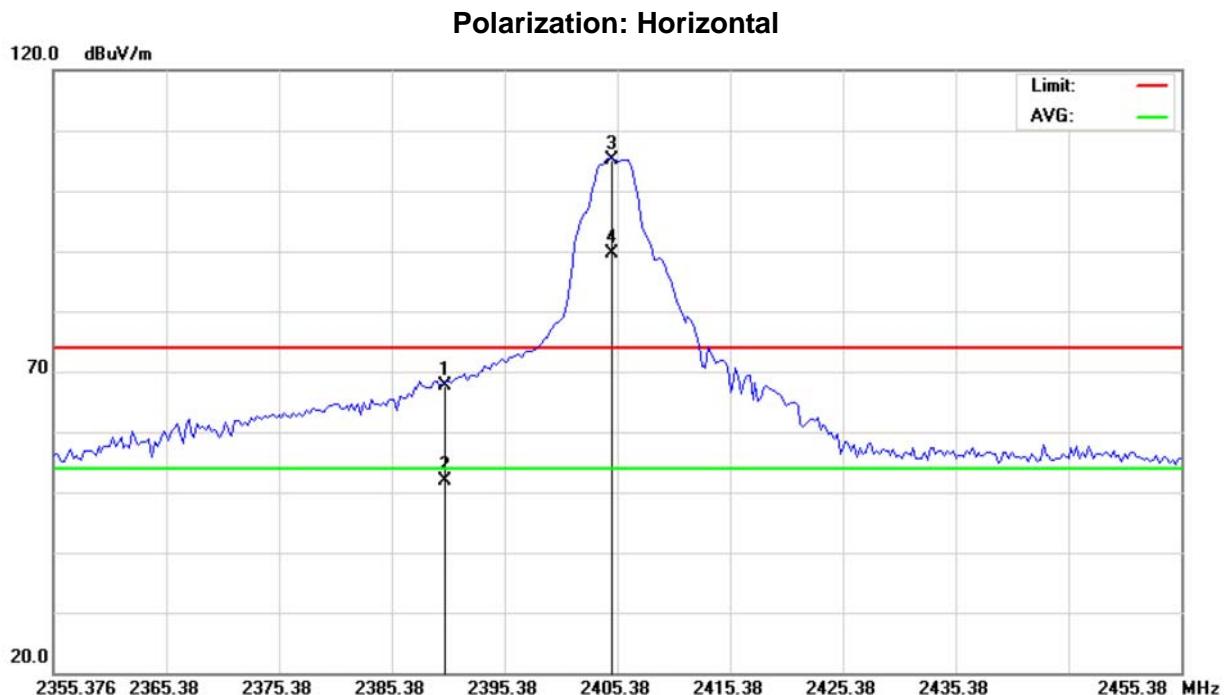
Polarization: Vertical



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 4810.752 | 60.28 | 5.70 | 65.98 | 74.00 | -8.02 | peak | |
| 2 | * | 4810.752 | 46.03 | 5.70 | 51.73 | 54.00 | -2.27 | AVG | |
| 3 | | 7216.128 | 53.13 | 12.21 | 65.34 | 74.00 | -8.66 | peak | |
| 4 | | 7216.128 | 38.24 | 12.21 | 50.45 | 54.00 | -3.55 | AVG | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz | | |

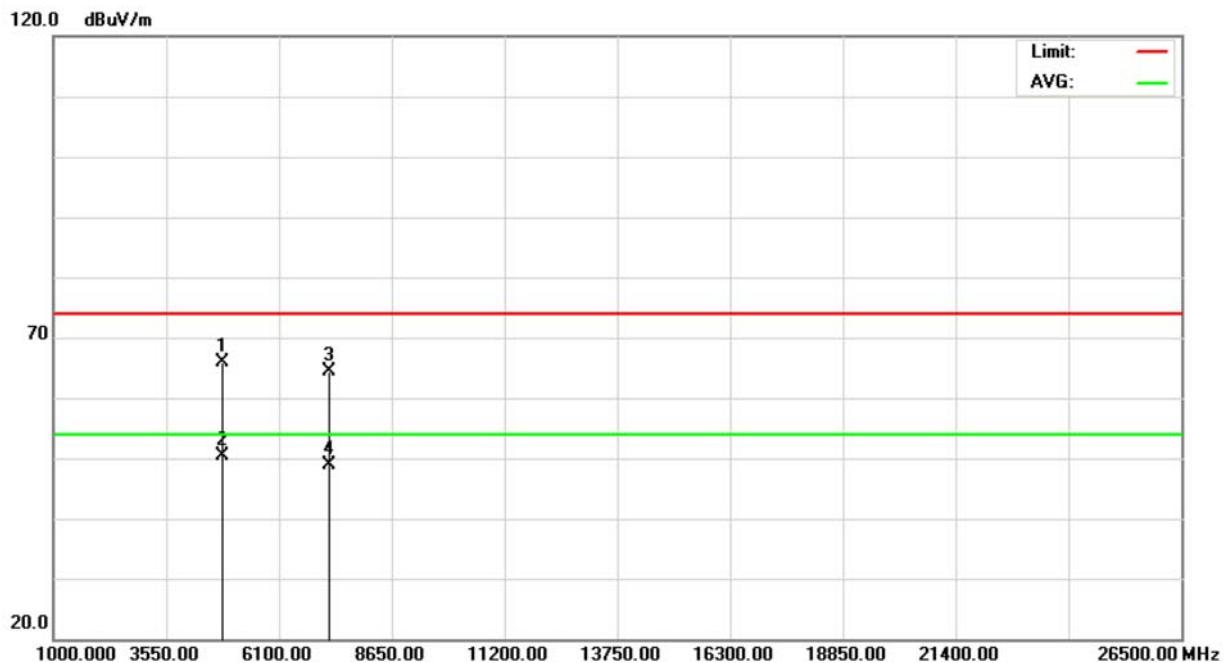


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|--------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 1 | | 2390.000 | 35.92 | 31.67 | 67.59 | 74.00 | -6.41 | peak | |
| 2 | | 2390.000 | 20.24 | 31.67 | 51.91 | 54.00 | -2.09 | AVG | |
| 3 | X | 2404.876 | 73.37 | 31.73 | 105.10 | 74.00 | 31.10 | peak | |
| 4 | * | 2404.876 | 57.84 | 31.73 | 89.57 | 54.00 | 35.57 | AVG | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz | | |

Polarization: Horizontal



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 4810.752 | 60.09 | 5.70 | 65.79 | 74.00 | -8.21 | peak | |
| 2 | * | 4810.752 | 44.77 | 5.70 | 50.47 | 54.00 | -3.53 | AVG | |
| 3 | | 7216.128 | 52.08 | 12.21 | 64.29 | 74.00 | -9.71 | peak | |
| 4 | | 7216.128 | 36.76 | 12.21 | 48.97 | 54.00 | -5.03 | AVG | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2433.024 MHz | | |

Polarization: Vertical

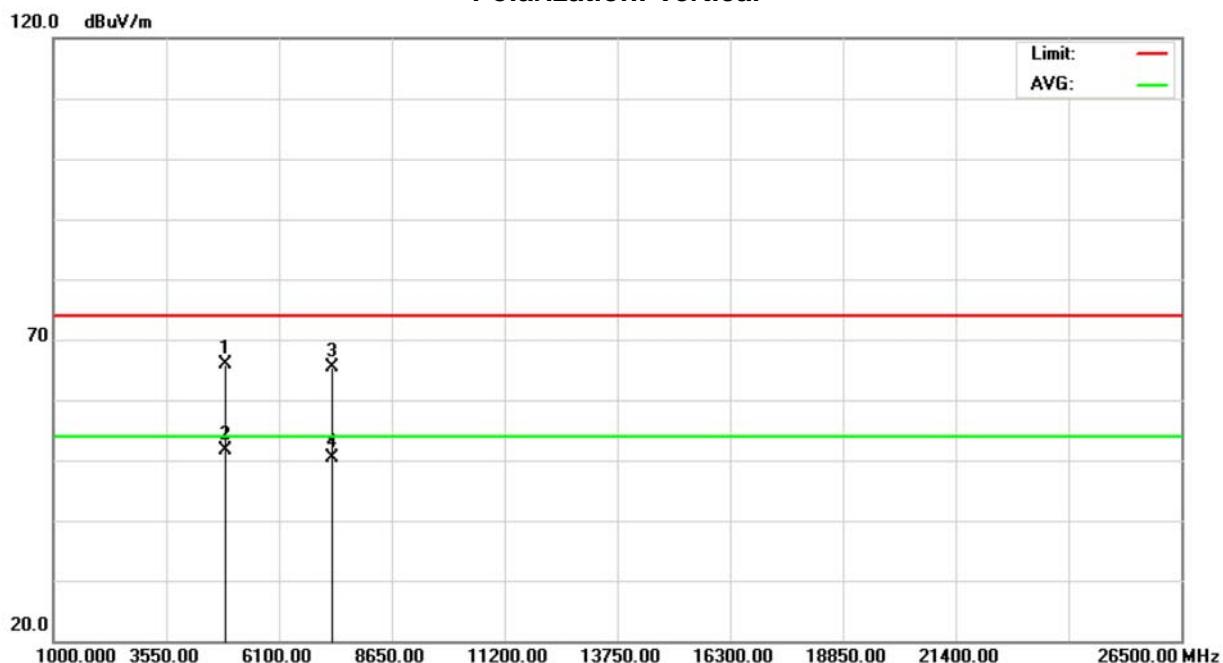


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|--------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 1 | X | 2432.274 | 72.31 | 31.86 | 104.17 | 74.00 | 30.17 | peak | |
| 2 | * | 2432.274 | 56.63 | 31.86 | 88.49 | 54.00 | 34.49 | AVG | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2433.024 MHz | | |

Polarization: Vertical



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 4866.048 | 60.21 | 5.77 | 65.98 | 74.00 | -8.02 | peak | |
| 2 | * | 4866.048 | 45.96 | 5.77 | 51.73 | 54.00 | -2.27 | AVG | |
| 3 | | 7299.072 | 52.82 | 12.52 | 65.34 | 74.00 | -8.66 | peak | |
| 4 | | 7299.072 | 37.93 | 12.52 | 50.45 | 54.00 | -3.55 | AVG | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2433.024 MHz | | |

Polarization: Horizontal

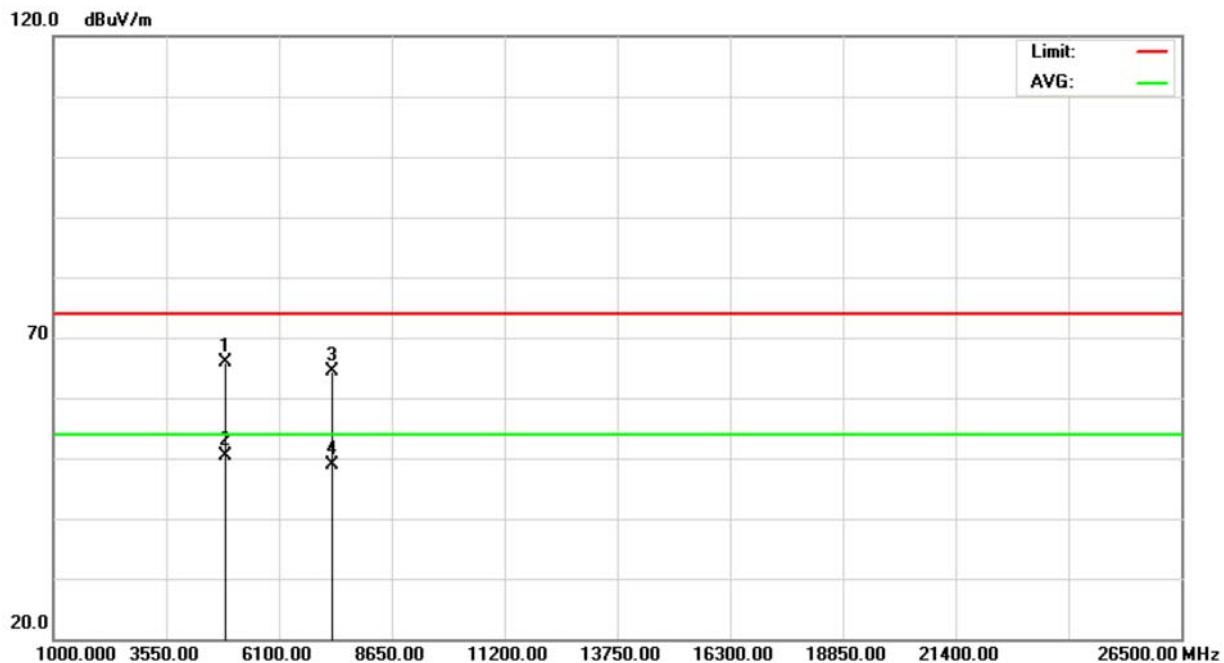


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|--------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 1 | X | 2432.274 | 72.43 | 31.86 | 104.29 | 74.00 | 30.29 | peak | |
| 2 | * | 2432.274 | 56.84 | 31.86 | 88.70 | 54.00 | 34.70 | AVG | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2433.024 MHz | | |

Polarization: Horizontal

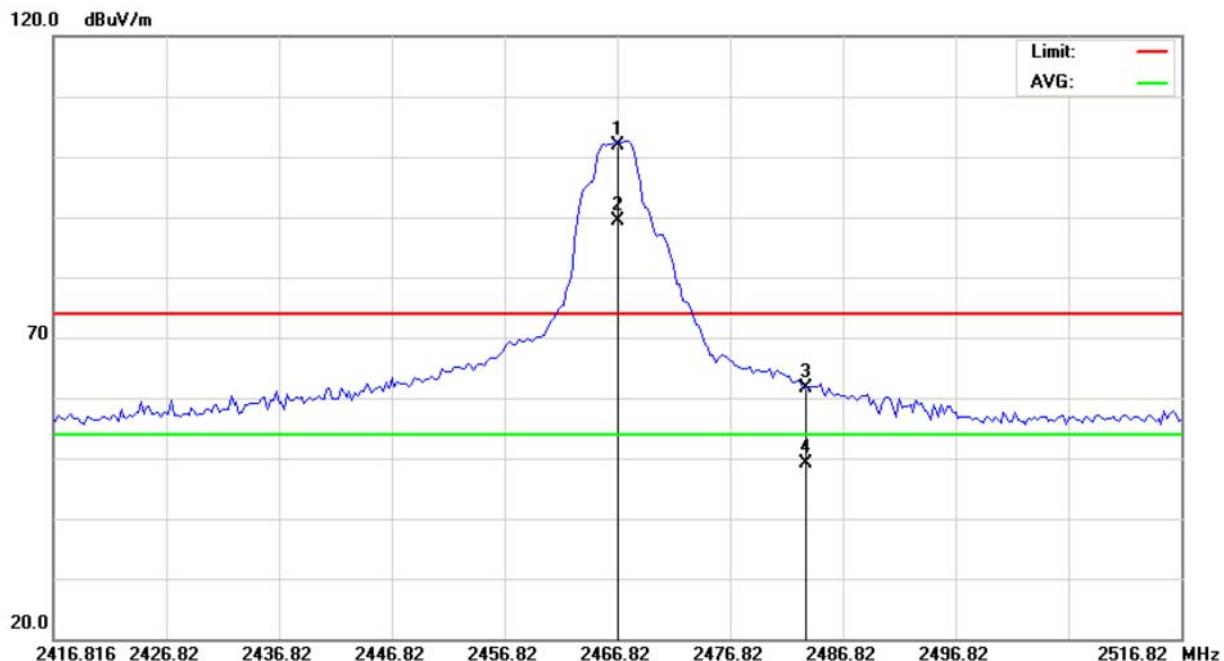


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 4866.048 | 60.02 | 5.77 | 65.79 | 74.00 | -8.21 | peak | |
| 2 | * | 4866.048 | 44.70 | 5.77 | 50.47 | 54.00 | -3.53 | AVG | |
| 3 | | 7299.072 | 51.77 | 12.52 | 64.29 | 74.00 | -9.71 | peak | |
| 4 | | 7299.072 | 36.45 | 12.52 | 48.97 | 54.00 | -5.03 | AVG | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2466.816 MHz | | |

Polarization: Vertical

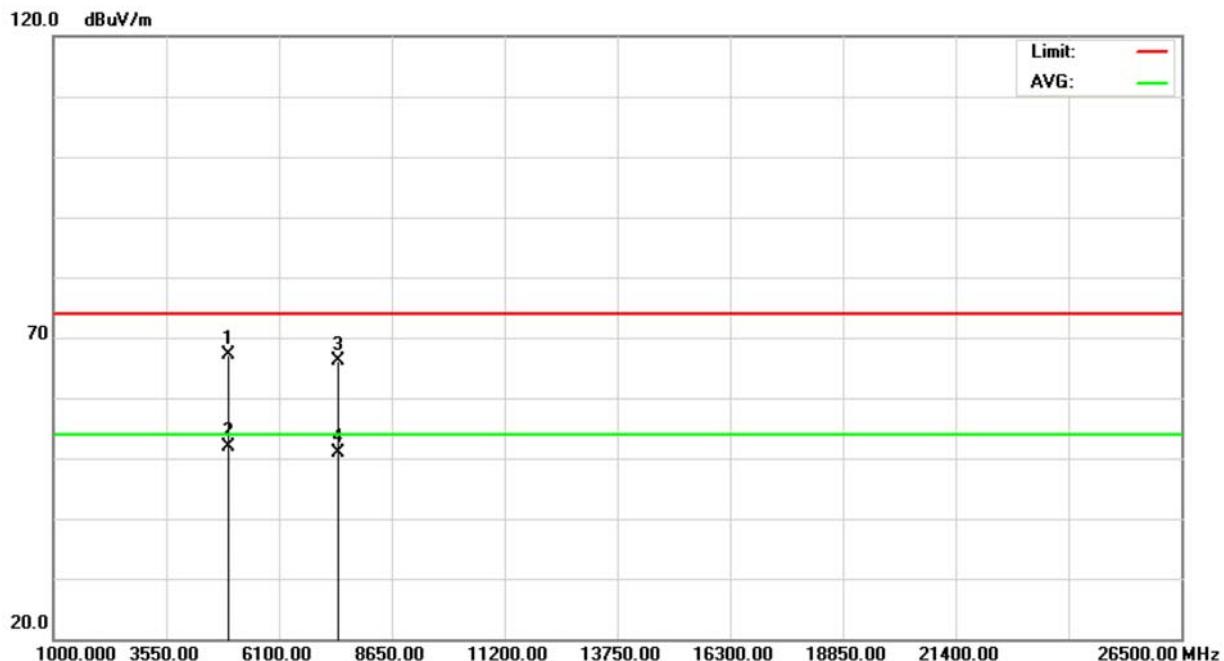


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|--------|--------|----------|---------|
| | | | Level | Factor | ment | | | | |
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 1 | X | 2466.766 | 69.92 | 32.01 | 101.93 | 74.00 | 27.93 | peak | |
| 2 | * | 2466.766 | 57.31 | 32.01 | 89.32 | 54.00 | 35.32 | Avg | |
| 3 | | 2483.500 | 29.42 | 32.09 | 61.51 | 74.00 | -12.49 | peak | |
| 4 | | 2483.500 | 16.94 | 32.09 | 49.03 | 54.00 | -4.97 | Avg | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2466.816 MHz | | |

Polarization: Vertical

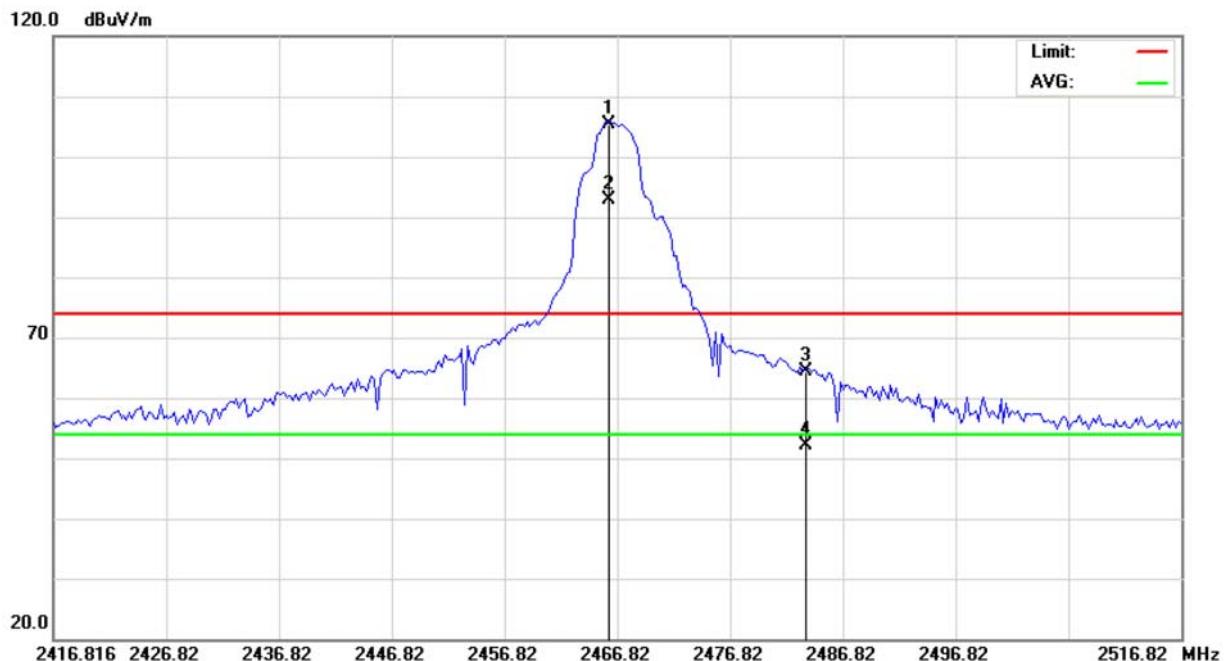


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 4931.882 | 61.29 | 5.85 | 67.14 | 74.00 | -6.86 | peak | |
| 2 | * | 4931.882 | 45.97 | 5.85 | 51.82 | 54.00 | -2.18 | AVG | |
| 3 | | 7398.548 | 53.22 | 12.89 | 66.11 | 74.00 | -7.89 | peak | |
| 4 | | 7398.548 | 37.90 | 12.89 | 50.79 | 54.00 | -3.21 | AVG | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2466.816 MHz | | |

Polarization: Horizontal

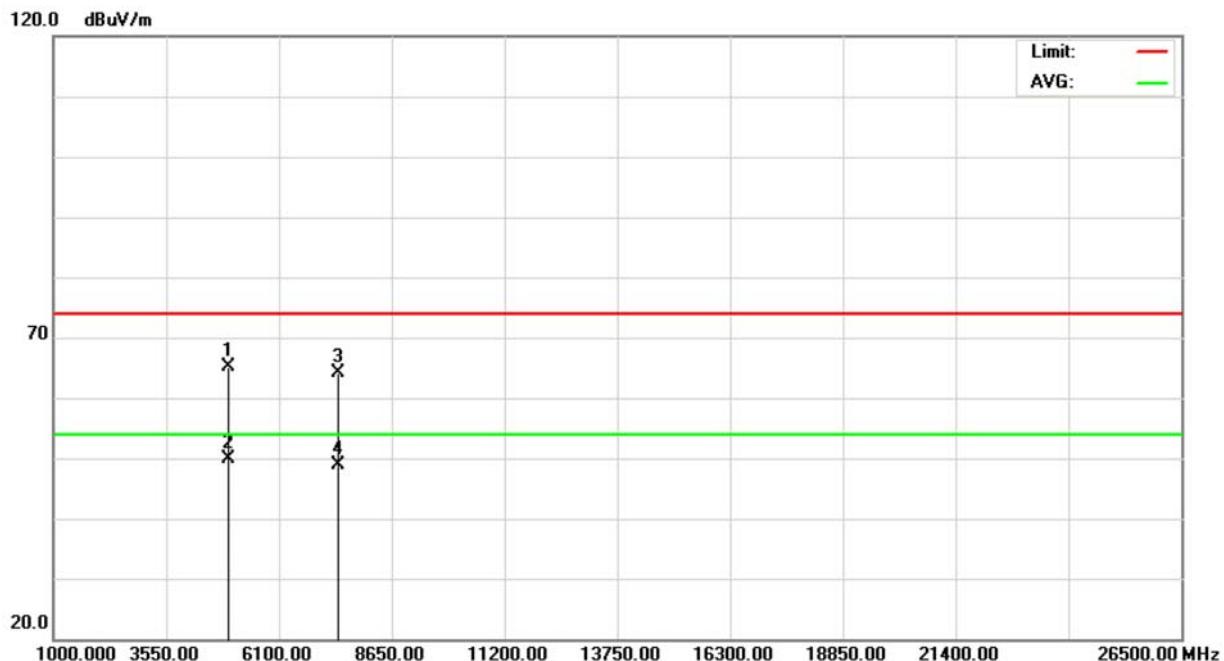


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|--------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | | |
| 1 | X | 2466.066 | 73.41 | 32.01 | 105.42 | 74.00 | 31.42 | peak | |
| 2 | * | 2466.066 | 60.76 | 32.01 | 92.77 | 54.00 | 38.77 | AVG | |
| 3 | | 2483.500 | 32.35 | 32.09 | 64.44 | 74.00 | -9.56 | peak | |
| 4 | | 2483.500 | 19.92 | 32.09 | 52.01 | 54.00 | -1.99 | AVG | |



| | | | |
|--------------|---------------------|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2466.816 MHz | | |

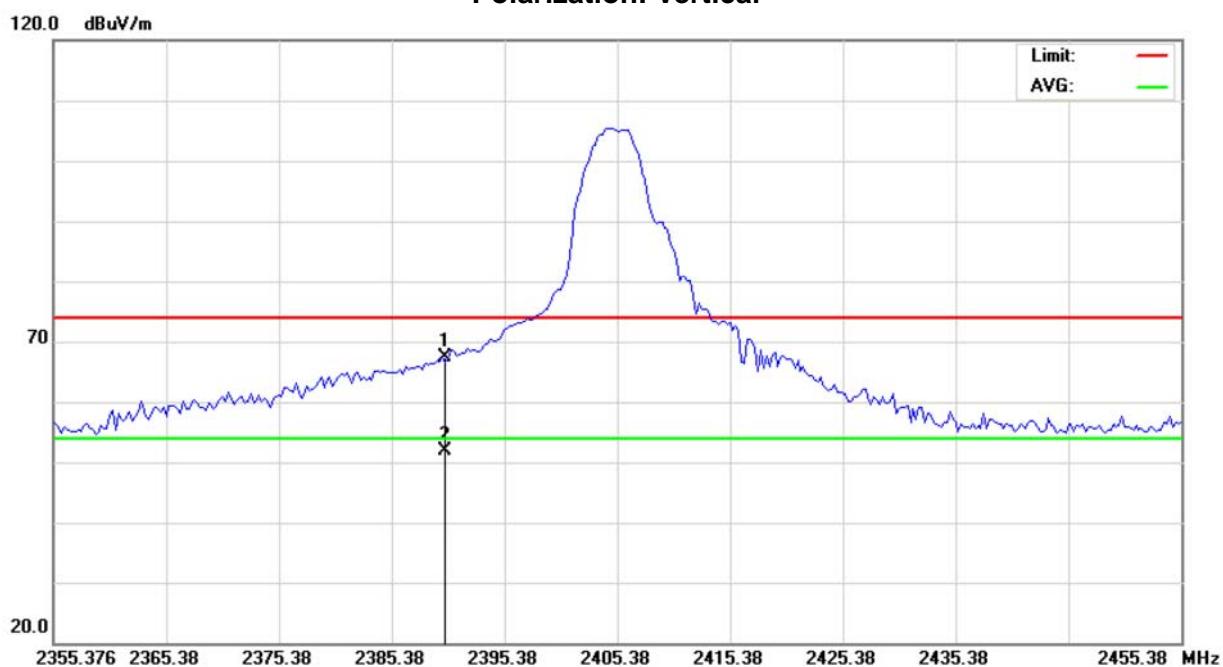
Polarization: Horizontal



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 4931.832 | 59.31 | 5.85 | 65.16 | 74.00 | -8.84 | peak | |
| 2 | * | 4931.832 | 44.02 | 5.85 | 49.87 | 54.00 | -4.13 | AVG | |
| 3 | | 7398.598 | 51.13 | 12.89 | 64.02 | 74.00 | -9.98 | peak | |
| 4 | | 7398.598 | 35.92 | 12.89 | 48.81 | 54.00 | -5.19 | AVG | |

**9.9 TEST RESULTS (RESTRICTED BANDS)**

| | | | |
|--------------|---|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz | | |
| NOTE | The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz. | | |

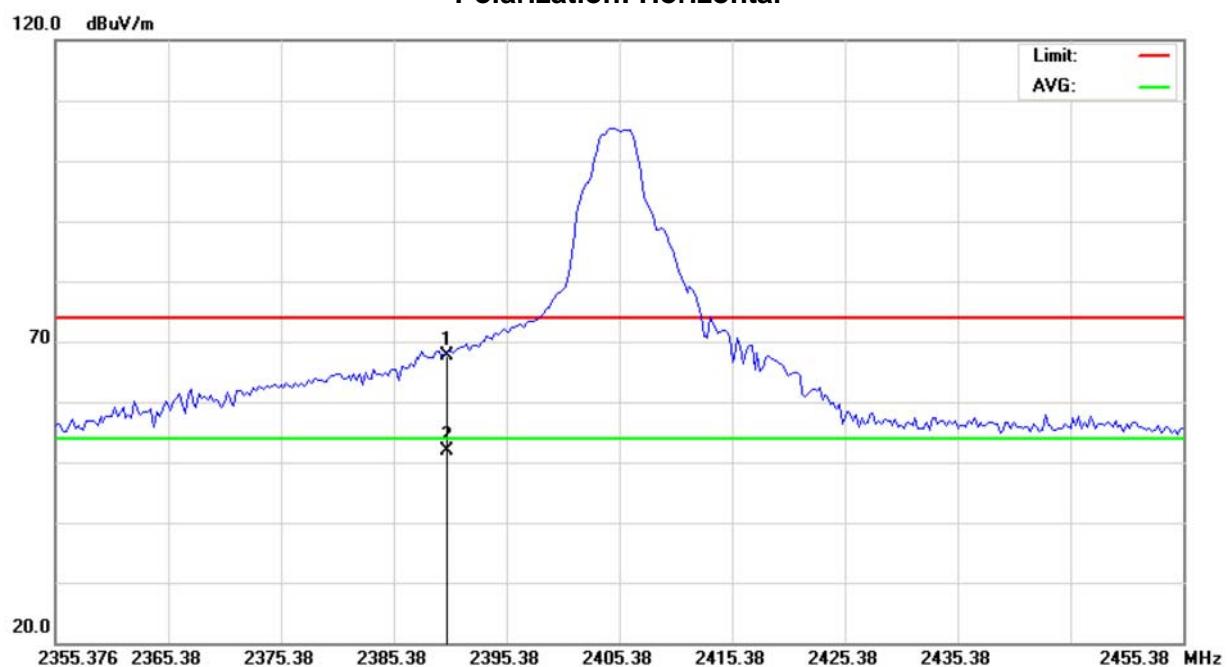
Polarization: Vertical

| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 2390.000 | 35.82 | 31.67 | 67.49 | 74.00 | -6.51 | peak | |
| 2 | * | 2390.000 | 20.33 | 31.67 | 52.00 | 54.00 | -2.00 | AVG | |



| | | | |
|--------------|---|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz | | |
| NOTE | The transmitter was setup to transmit at the lowest channel and the field strength was measured at 2310-2390 MHz. | | |

Polarization: Horizontal

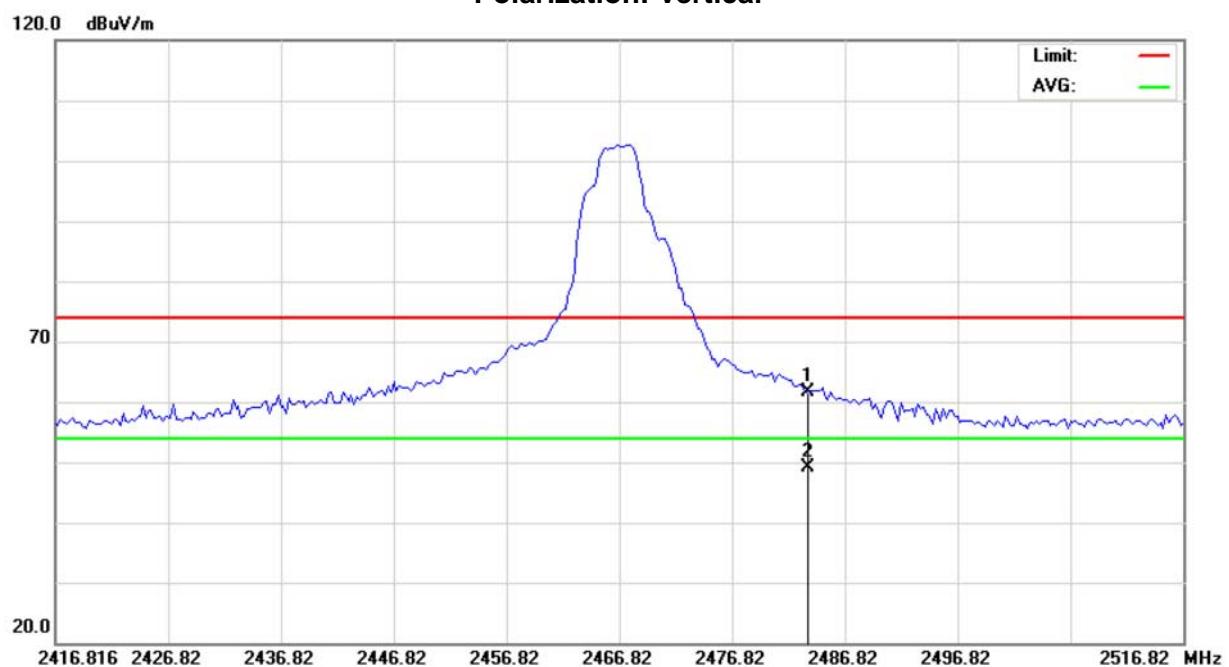


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 2390.000 | 35.92 | 31.67 | 67.59 | 74.00 | -6.41 | peak | |
| 2 | * | 2390.000 | 20.24 | 31.67 | 51.91 | 54.00 | -2.09 | AVG | |



| | | | |
|--------------|--|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2466.816 MHz | | |
| NOTE | The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz. | | |

Polarization: Vertical

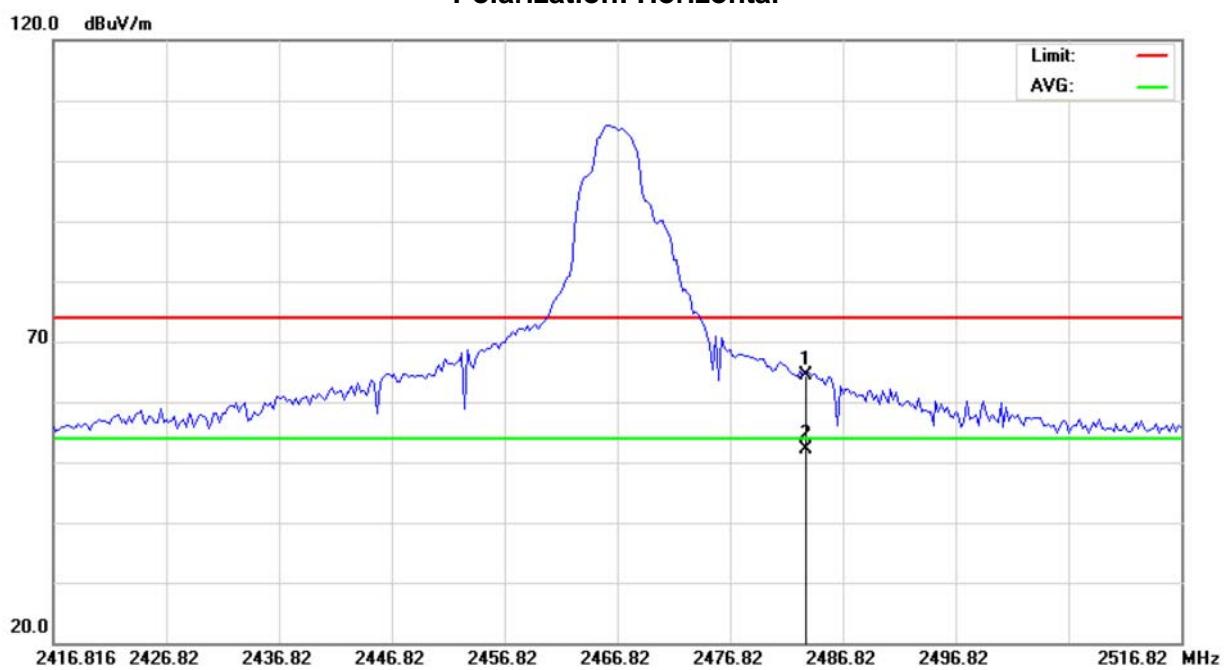


| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|--------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 2483.500 | 29.42 | 32.09 | 61.51 | 74.00 | -12.49 | peak | |
| 2 | * | 2483.500 | 16.94 | 32.09 | 49.03 | 54.00 | -4.97 | AVG | |



| | | | |
|--------------|--|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 24°C | Relative Humidity | 46% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2466.816 MHz | | |
| NOTE | The transmitter was setup to transmit at the highest channel and the field strength was measured at 2483.5-2500 MHz. | | |

Polarization: Horizontal



| No. | Mk. | Freq. | Reading | Correct | Measure- | Limit | Over | Detector | Comment |
|-----|-----|----------|---------|---------|----------|-------|-------|----------|---------|
| | | | Level | Factor | ment | | | | |
| 1 | | 2483.500 | 32.35 | 32.09 | 64.44 | 74.00 | -9.56 | peak | |
| 2 | * | 2483.500 | 19.92 | 32.09 | 52.01 | 54.00 | -1.99 | AVG | |



10 POWER SPECTRAL DENSITY

10.1 LIMIT

| Test Item | Frequency Range (MHz) | Limit |
|------------------------|-----------------------|----------------------|
| Power Spectral Density | 2400-2483.5 | 8 dBm (in any 3 kHz) |

10.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|-------------------|--------------|----------|------------|------------------|
| 1 | Spectrum Analyzer | R&S | FSP-40 | 100129 | Oct. 01, 2013 |

NOTE: **N/A:** denotes No Model Name, No Serial No. or No Calibration specified.

10.3 TEST PROCEDURES

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

10.4 TEST SETUP LAYOUT



10.5 DEVIATION FROM TEST STANDARD

No deviation

10.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.

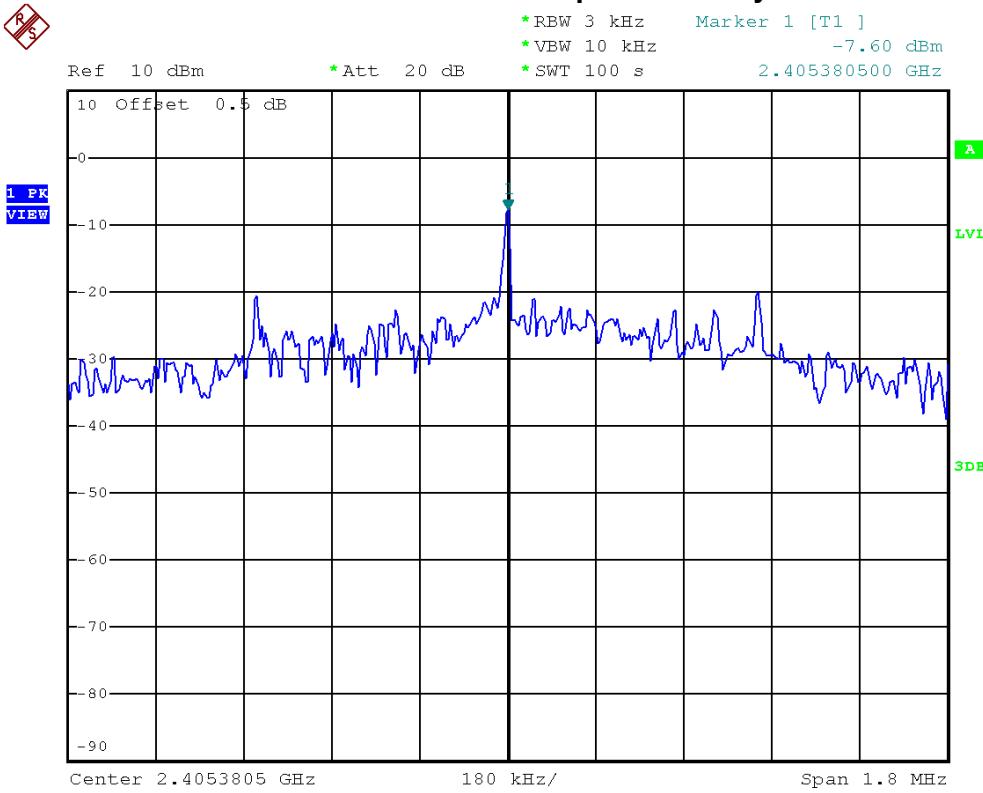


10.7 TEST RESULTS

| | | | |
|--------------|--|-------------------|---|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz, 2433.024 MHz, 2466.816 MHz | | |

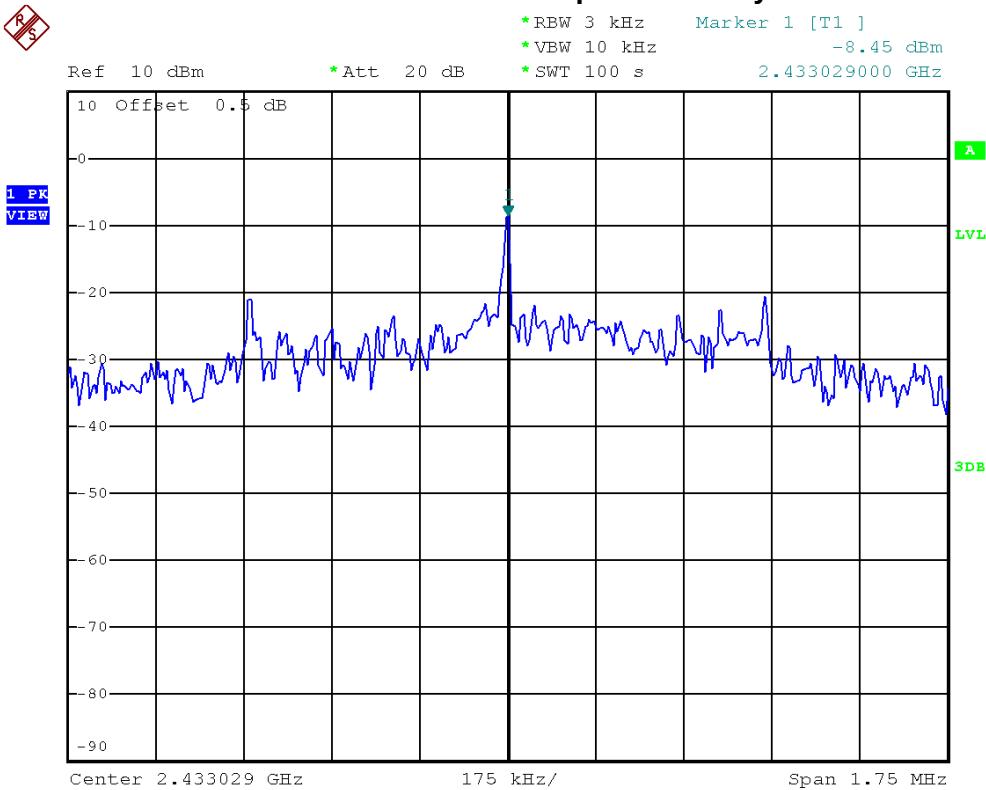
| Frequency | Power Density (dBm) | Limit (dBm) | Result |
|--------------|---------------------|-------------|--------|
| 2405.376 MHz | -7.60 | 8 | PASS |
| 2433.024 MHz | -8.45 | 8 | PASS |
| 2466.816 MHz | -8.31 | 8 | PASS |

2405.376 MHz/Power Sepctral Density

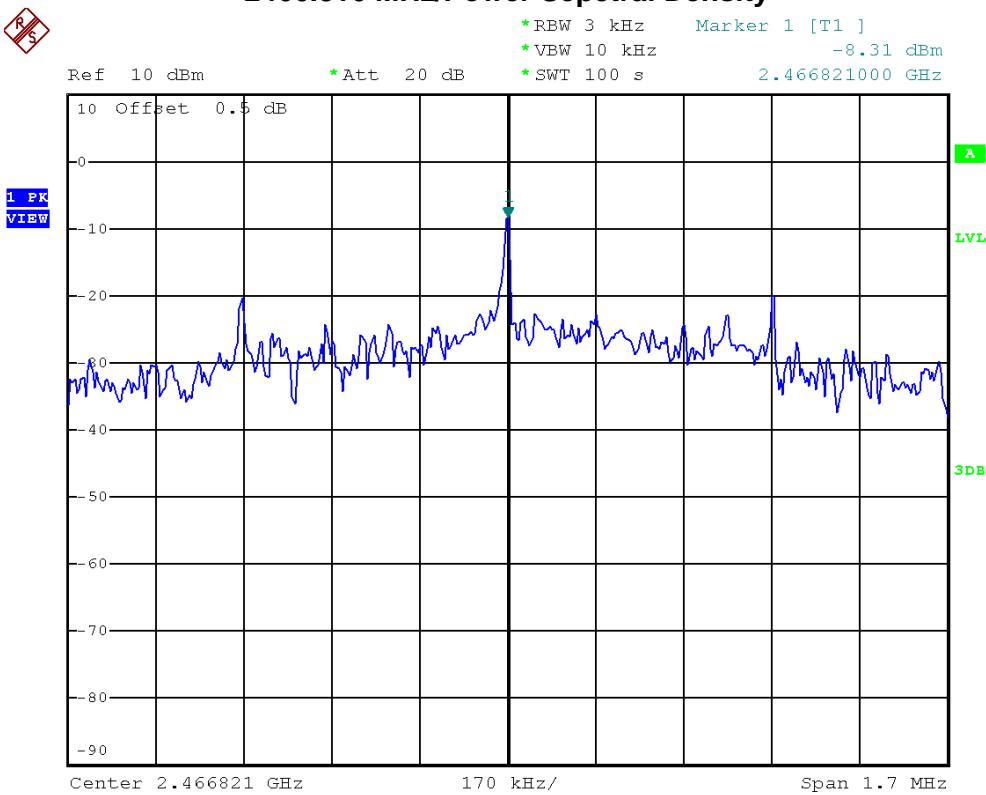




2433.024 MHz/Power Sepctral Density



2466.816 MHz/Power Sepctral Density





11 RF EXPOSURE COMPLIANCE

11.1 LIMIT

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

(A) Limits for Occupational / Controlled Exposure

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

(B) Limits for General Population / Uncontrolled Exposure

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

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

11.2 MEASUREMENT INSTRUMENTS LIST

| Item | Kind of Equipment | Manufacturer | Type No. | Serial No. | Calibrated until |
|------|--------------------|--------------|----------|------------|------------------|
| 1 | Power Meter | Anritsu | ML2495A | 1128008 | Feb,26,2014 |
| 2 | Power Meter Sensor | Anritsu | MA2411B | 1126001 | Feb,26,2014 |

NOTE: **N/A**: denotes No Model Name, No Serial No. or No Calibration specified.

11.3 MPE CALCULATION METHOD

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d}$$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

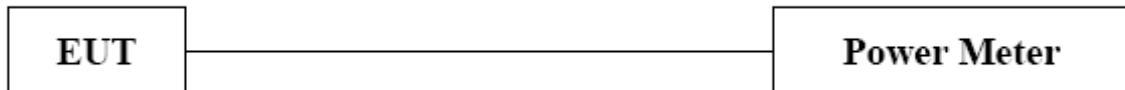
$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

$$\text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

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



11.4 TEST SETUP LAYOUT



11.5 DEVIATION FROM TEST STANDARD

No deviation

11.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 5.6 Unless otherwise a special operating condition is specified in the follows during the testing.



11.7 TEST RESULTS

| | | | |
|--------------|--|-------------------|--|
| E.U.T | Home Theatre System | Model Name | JS6303WA (Part No.: JS6303WA Sound Bar) |
| Temperature | 26°C | Relative Humidity | 60% |
| Test Voltage | AC 120V/60Hz | | |
| Test Mode | 2405.376 MHz, 2433.024 MHz, 2466.816 MHz | | |

| Frequency | Antenna Gain (dBi) | Antenna Gain (numeric) | Peak Output Power (dBm) | Peak Output Power (mW) | Power Density (S) (mW/cm²) | Limit of Power Density (S) (mW/cm²) | Result |
|--------------|--------------------|------------------------|-------------------------|------------------------|----------------------------|-------------------------------------|--------|
| 2405.376 MHz | 2.32 | 1.7061 | 15.0900 | 32.2849 | 0.010964 | 1 | PASS |
| 2433.024 MHz | 2.32 | 1.7061 | 14.4000 | 27.5423 | 0.009353 | 1 | PASS |
| 2466.816 MHz | 2.32 | 1.7061 | 14.2800 | 26.7917 | 0.009098 | 1 | PASS |