



FCC VERIFICATION TEST REPORT

REPORT NO.: LUZ-16AU0034VNTY

MODEL NO.: LHT-V16S/LHT-V16S-W1

RECEIVED: Sep.26, 2016

ISSUED: Oct.26, 2016

APPLICANT: Le Shi Zhi Xin Electronic Technology (Tianjin) Limited

ADDRESS: 201-427 2F B1 District, Anime building, No.126
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ISSUED BY: BUREAU VERITAS ADT (Shanghai) Corporation

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All the modifications applied in this document are identified by a vertical line on the left at the place where information has been modified regarding to the previous edition of the document.



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1 TEST REQUIREMENT

PRODUCT: LeEco Soundbar/LeEco Subwoofer

MODEL NO.: LHT-V16S/LHT-V16S-W1

APPLICANT: Le Shi Zhi Xin Electronic Technology (Tian jin) Limited

MANUFACTURER 201-427 2F B1 District, Anime building, No.126 Anime Middle Road, Eco-city Tian jin, China

TESTED: Sep.26, 2016~Oct.26, 2016

STANDARDS: CFR 47 FCC Part 15B, Class B

ANSI C63.4-2014

We, BUREAU VERITAS ADT (Shanghai) Corporation, declare that the equipment above has been tested in our facility and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

PREPARED BY : Bing YE, DATE: Oct.26, 2016

Bing YE

Testing Engineer

**TECHNICAL
ACCEPTANCE** : Joy ZHU, DATE: Oct.26, 2016

Joy ZHU

Testing Manager

APPROVED BY : Zhaoqian MU, DATE: Oct.26, 2016

Zhaoqian MU
Lab Manager



2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Remarks
FCC Part 15, Subpart B, Class B	Conducted Test	PASS	Meets Class B Limit
	Radiated Test	PASS	Meets Class B Limit

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2 Ed 1.0.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

This lab's measurement uncertainty U_{Lab} , is low than U_{Cispr} , Table 1 – Values of U_{Cispr} of CISPR 16-4-2 Ed. 1.0, therefore compliance is deemed to occur if no measured disturbance exceeds the disturbance limit.

Measurement	Value
Conducted emissions	2.55 dB
Radiated emissions	30 MHz ~ 1GHz
	Above 1GHz



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	LeEco Soundbar/LeEco Subwoofer
MODEL NO.	LHT-V16S/LHT-V16S-W1
POWER SUPPLY	100-240Vac, 50Hz/60Hz, 20W for LHT-V16S、100-240Vac, 50/60Hz, 30W for LHT-V16S-W1

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

2. The product covered in this report was Sound System, the system consists of soundbar (LHT-V16S) and wireless subwoofer (LHT-V16S-W1).

3.2 DESCRIPTION OF TEST MODES

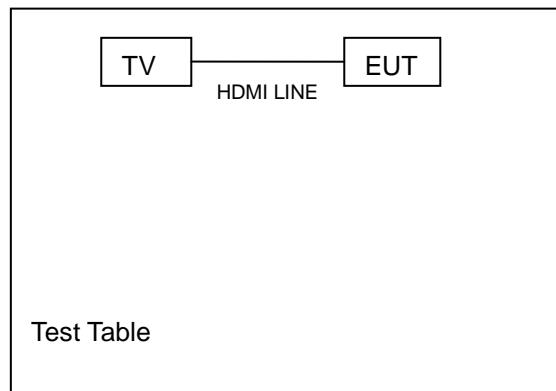
Test Mode	Description
1	HDMI ARC connection mode(the worst test mode)
2	AUX IN connection mode
3	USB connection mode
4	S/PDIF IN connection mode
5	BT connection mode

Special comments: The product have five work modes, respectively for bluetooth connection mode, HDMI ARC connection mode, AUX IN connection mode, USB connection mode, S/PDIF IN connection mode, After test, we list the worst test results in this report.



3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together without other necessary accessories or support units.



NO.	Manufacturer	Model Names	Model NO.
1	SONY	LCD colour TV	KLV-20S400A



4 EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

TEST STANDARD:

CFR 47 FCC Part 15, Subpart B (Section: 15.107)

FREQUENCY (MHz)	Class B (dB μ V)	
	Quasi-peak	Average
0.15 - 0.5	66-56	56-46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTES:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1002	Apr.07, 2017
LISN ROHDE & SCHWARZ	ENV216	E1L1011	Aug.24, 2017
Software ADT	ADT_Cond_V7.3.1	N/A	N/A

4.1.3 TEST PROCEDURE

- Refer ANSI C63.4 Clause 7.2

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

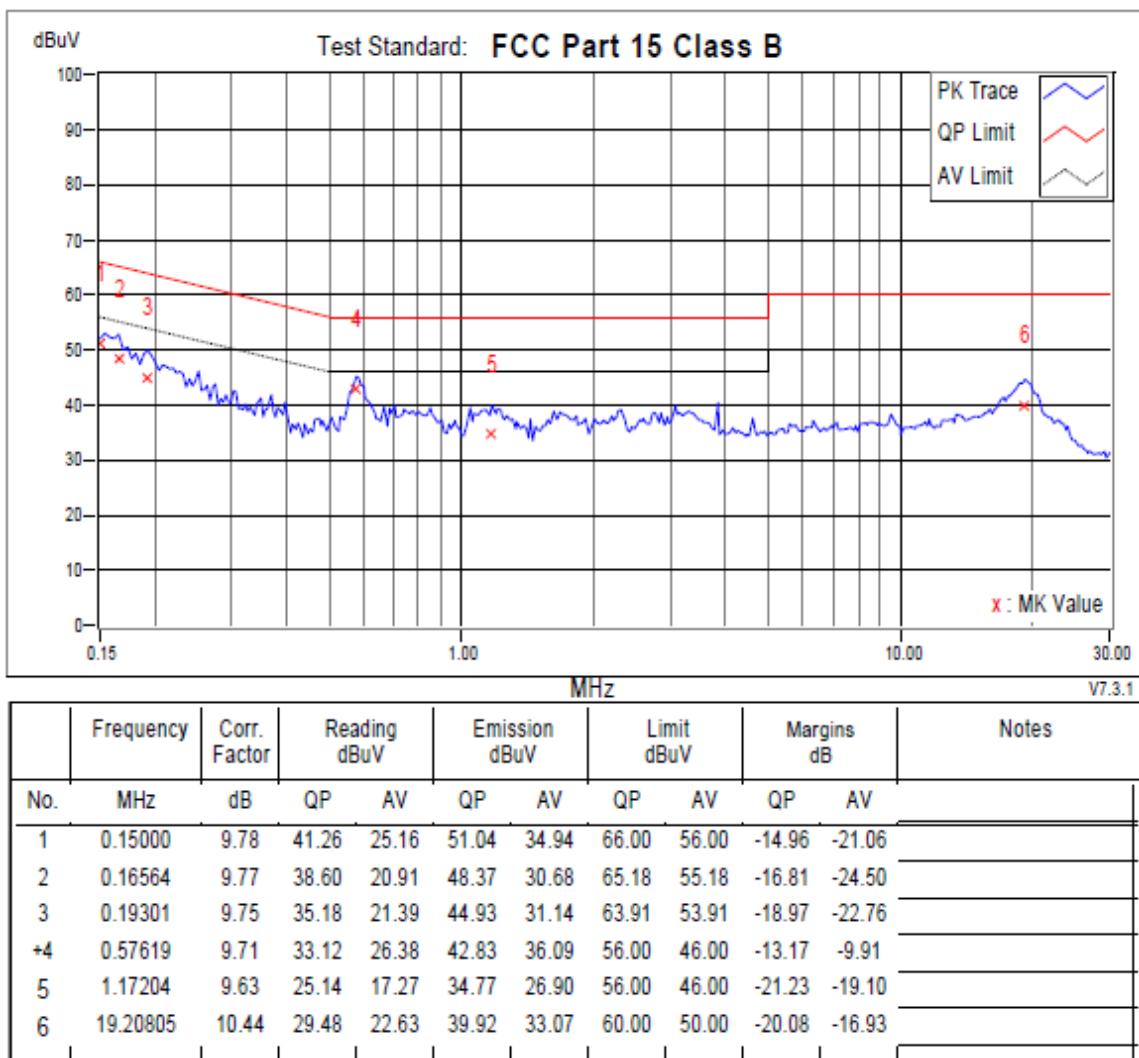
4.1.5 TEST SETUP

Refer ANSI C63.4 Figure 10a,

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.6 TEST RESULTS

TEST MODE	Mode 1 for soundbar	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	23deg. C, 53 %RH, 101kPa	TESTED BY	Chaojun Shi



REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

3. The emission levels of other frequencies were very low against the limit.

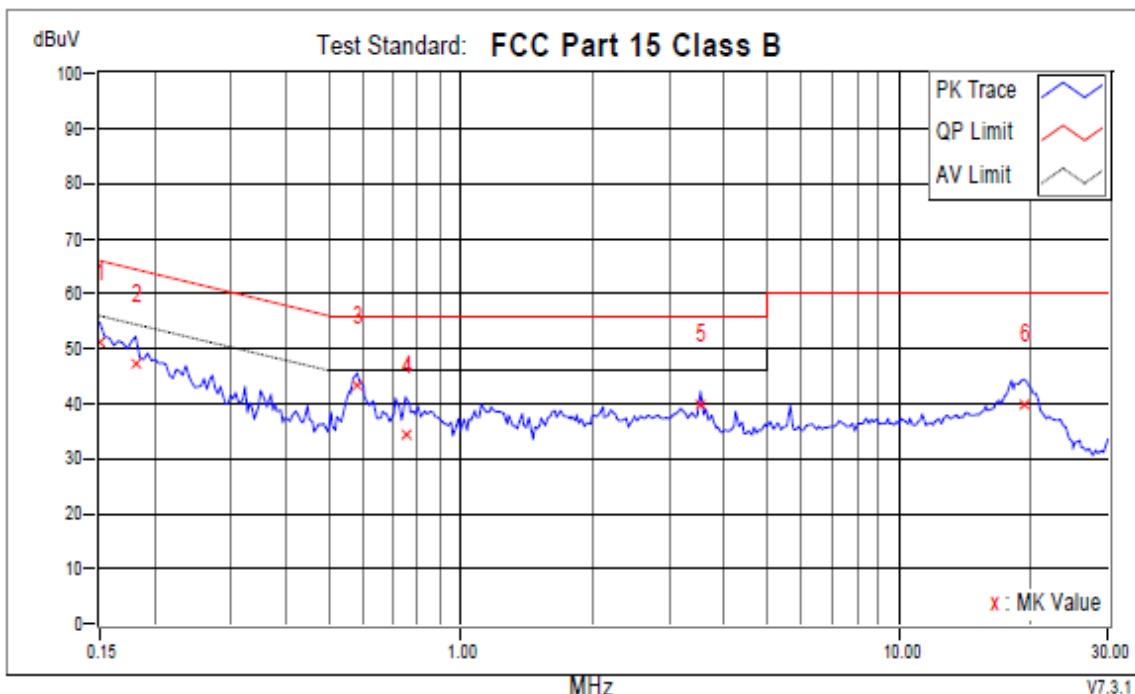
4. Margin value = Emission level - Limit value

5. Correction factor = Insertion loss + Cable loss

6. Emission Level = Correction Factor + Reading Value.



TEST MODE	Mode 1 for soundbar	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	23deg. C, 53 %RH, 101kPa	TESTED BY	Chaojun Shi



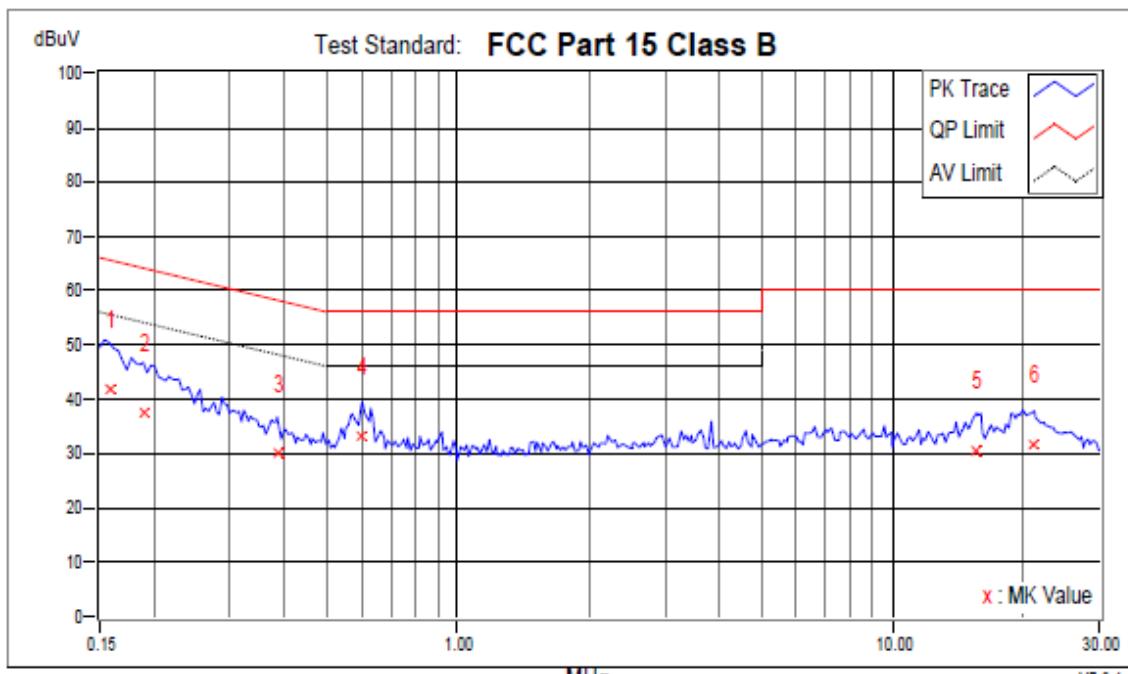
MTTS												Ver.3.1
	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes	
No.	MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV		
1	0.15000	9.76	41.26	25.43	51.02	35.19	66.00	56.00	-14.98	-20.81		
2	0.18128	9.70	37.44	22.53	47.14	32.23	64.43	54.43	-17.28	-22.19		
+3	0.58010	9.70	33.70	26.91	43.40	36.61	56.00	46.00	-12.60	-9.39		
4	0.74823	9.63	24.84	18.28	34.47	27.91	56.00	46.00	-21.53	-18.09		
5	3.52586	9.90	29.86	25.36	39.76	35.26	56.00	46.00	-16.24	-10.74		
6	19.22760	10.19	29.54	23.09	39.73	33.28	60.00	50.00	-20.27	-16.72		

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



TEST MODE	Mode 1 for subwoofer	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	23deg. C, 53 %RH, 101kPa	TESTED BY	Chaojun Shi



No.	Frequency MHz	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			dB	QP	AV	QP	AV	QP	AV	QP	
1	0.15782	10.06	31.70	14.17	41.76	24.23	65.58	55.58	-23.82	-31.35	
2	0.18910	10.03	27.64	12.26	37.67	22.29	64.08	54.08	-26.41	-31.79	
3	0.38460	10.06	20.00	16.66	30.06	26.72	58.18	48.18	-28.12	-21.46	
+4	0.60356	10.10	22.96	18.37	33.06	28.47	56.00	46.00	-22.94	-17.53	
5	15.66559	10.41	19.96	14.20	30.37	24.61	60.00	50.00	-29.63	-25.39	
6	21.23734	10.32	21.22	15.06	31.54	25.38	60.00	50.00	-28.46	-24.62	

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

3. The emission levels of other frequencies were very low against the limit.

4. Margin value = Emission level - Limit value

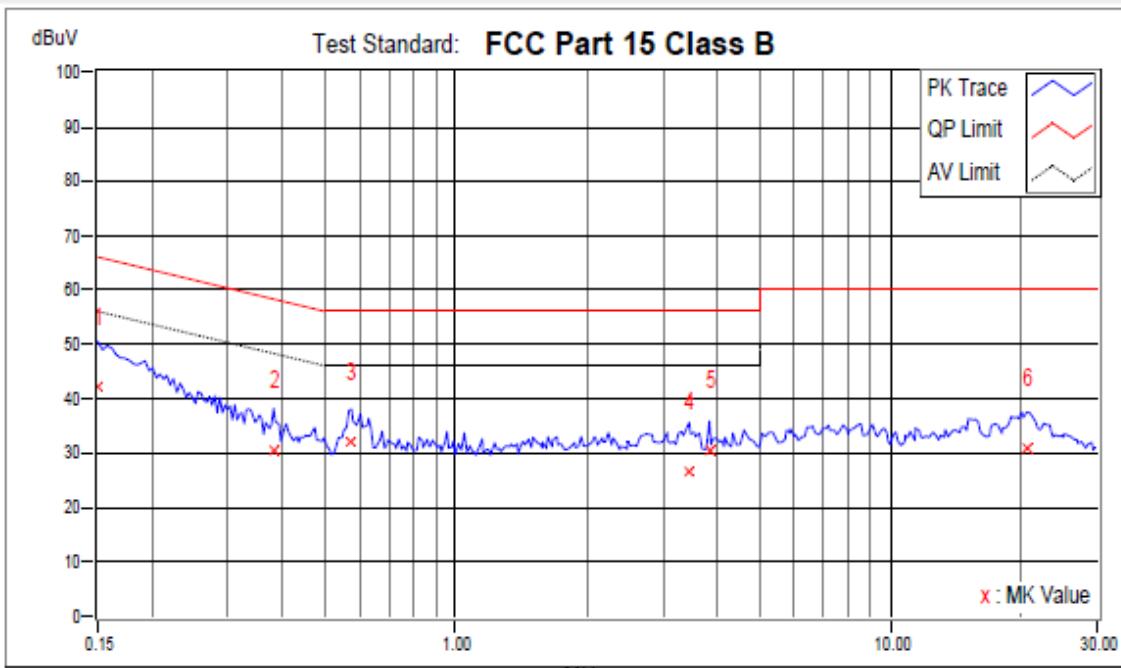
5. Correction factor = Insertion loss + Cable loss

6. Emission Level = Correction Factor + Reading Value.



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TEST MODE	Mode 1 for subwoofer	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	23deg. C, 53 %RH, 101kPa	TESTED BY	Chaojun Shi



V7.3.1

No.	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
	MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV	
1	0.15000	9.97	32.30	11.92	42.27	21.89	66.00	56.00	-23.73	-34.11	
2	0.38069	10.05	20.58	16.56	30.63	26.61	58.26	48.26	-27.64	-21.66	
3	0.57619	10.06	21.92	15.12	31.98	25.18	56.00	46.00	-24.02	-20.82	
4	3.45157	10.24	16.32	10.90	26.56	21.14	56.00	46.00	-29.44	-24.86	
+5	3.83866	10.27	20.30	15.43	30.57	25.70	56.00	46.00	-25.43	-20.30	
6	20.59610	10.46	20.42	14.06	30.88	24.52	60.00	50.00	-29.12	-25.48	

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.

2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

3. The emission levels of other frequencies were very low against the limit.

4. Margin value = Emission level - Limit value

5. Correction factor = Insertion loss + Cable loss

6. Emission Level = Correction Factor + Reading Value.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

TEST STANDARD:

CFR 47 FCC Part 15, Subpart B (Section: 15.109)

FOR FREQUENCY BELOW 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	µV/m	dBµV/m	µV/m	dBµV/m
30 – 88	90	39.1	100	40.0
88 – 216	150	43.5	150	43.5
216 – 960	210	46.4	200	46.0
960 – 1000	300	49.5	500	54.0

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (dBµV/m) (at 3m)		Class B (dBµV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

Note: (1) The lower limit shall apply at the transition frequencies.
(2) Emission level (dBµV/m) = 20 log Emission level (uV/m).
(2) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

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

As the highest frequency inside the EUT is 135MHz, so radiated emission were performed up to frequency 2000 MHz.



4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4403B	E1S1001	Aug. 24, 2017
Receiver R&S	ESCS30	E1R1001	Apr. 09, 2017
Broadband Antenna Schwarzbeck	VULB 9168	E1A1001	Apr. 09, 2017
Preamplifier Agilent	8447D	E1A2001	Nov. 06, 2016
Software ADT	ADT_Radiated_V7.5	N/A	N/A

4.2.3 TEST PROCEDURE

Refer to ANSI C 63.4 Clause 8.3

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP

Refer to ANSI C 63.4 Figure 11a

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.



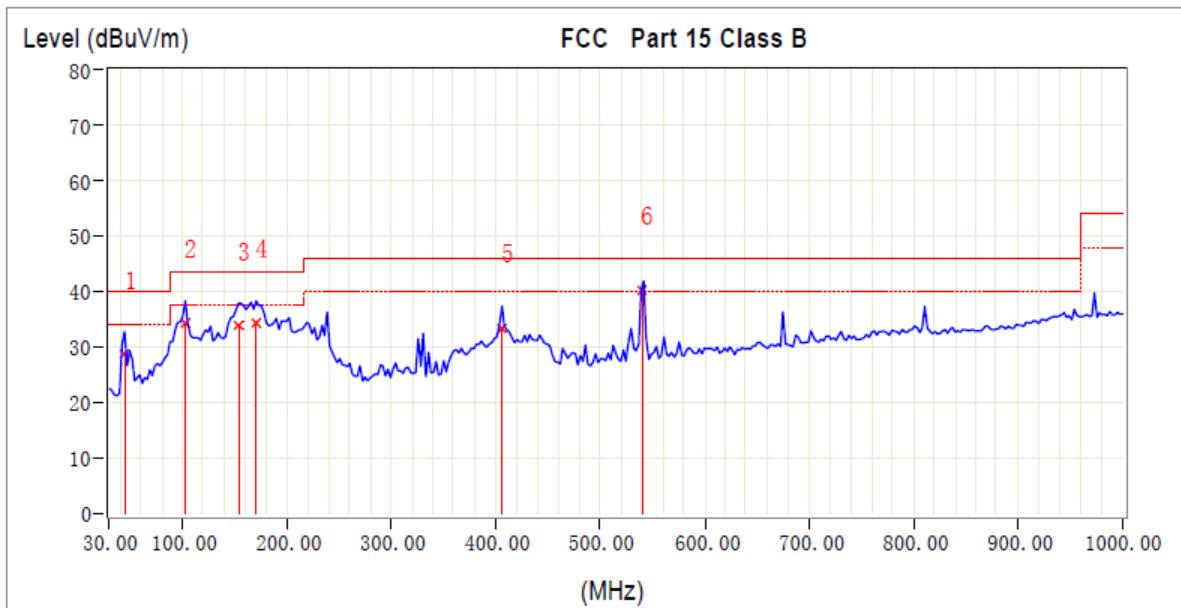
4.2.6 TEST RESULTS

INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ANTENNA POLARITY	Horizontal	TEST MODE	Mode 1
ENVIRONMENTAL CONDITIONS	25deg. C, 48 %RH, 101kPa	TESTED BY:	Wenbin Qiao

Temperature (C): 25.0

Humidity (%): 48

Polarity: Horizontal



No.	Frequency	Factor	Reading	Emission	Limit	Margin	Tower / Table	
	MHz	dB	dBuV/m	dBuV/m	dBuV/m	dB	cm	deg
1	44.55	13.82	14.94	28.76	40.00	-11.24	200	131
2	102.75	10.88	23.40	34.28	43.50	-9.22	200	284
3	153.68	14.51	19.38	33.89	43.50	-9.61	200	235
4	170.65	14.47	19.82	34.29	43.50	-9.21	200	204
5	405.87	17.45	15.88	33.33	46.00	-12.67	100	343
*	539.98	20.87	19.34	40.21	46.00	-5.79	200	262

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

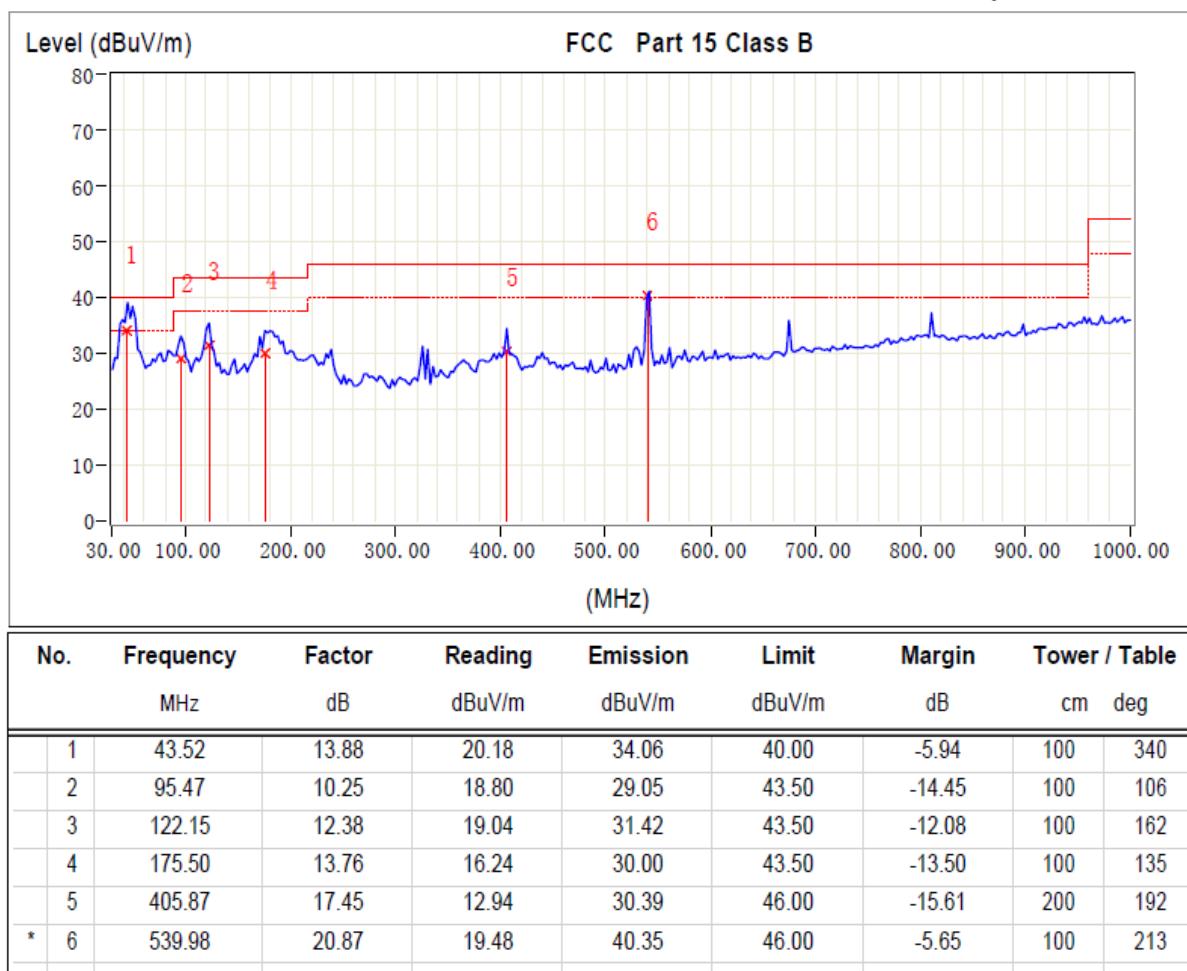


INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ANTENNA POLARITY	Vertical	TEST MODE	Mode 1
ENVIRONMENTAL CONDITIONS	25deg. C, 48 %RH, 101kPa	TESTED BY: Wenbin Qiao	

Temperature (C): 25.0

Humidity (%): 48

Polarity: Vertical

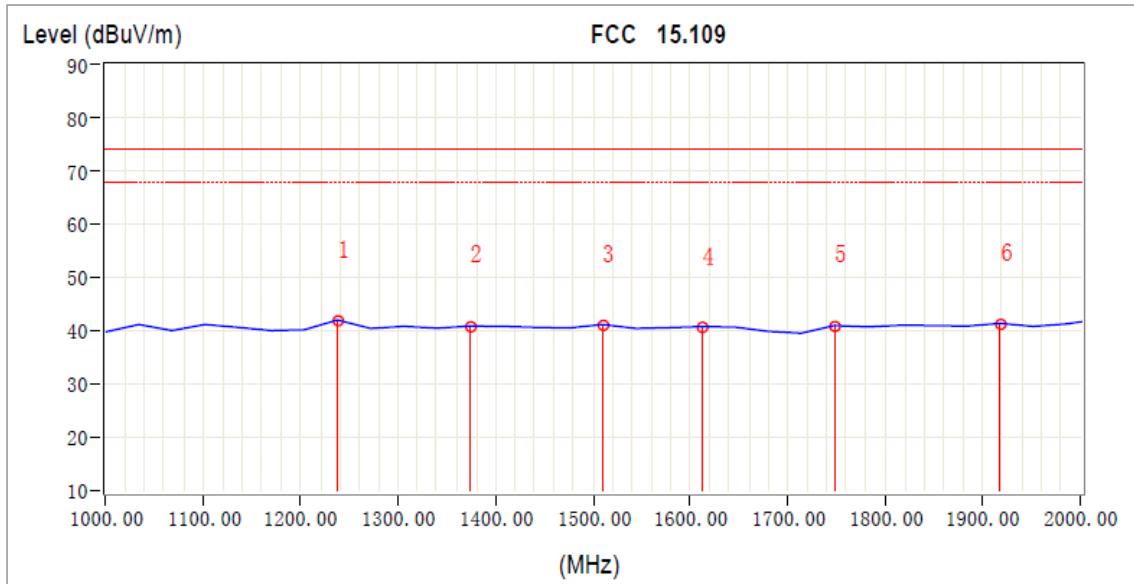


REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak
ANTENNA POLARITY	Horizontal	TEST MODE	Mode 1
ENVIRONMENTAL CONDITIONS	25deg. C, 48%RH, 101kPa	TESTED BY: Wenbin Qiao	



No.	Frequency	Factor	Reading	Emission	Limit	Margin	Tower / Table	
							dB	cm deg
*	1238.00	29.55	12.45	41.99	74.00	-32.01	99	0
2	1374.00	30.11	10.74	40.85	74.00	-33.15	99	0
3	1510.00	29.95	11.20	41.15	74.00	-32.85	100	345
4	1612.00	29.94	10.81	40.75	74.00	-33.25	99	0
5	1748.00	29.98	10.99	40.97	74.00	-33.03	99	0
6	1918.00	30.67	10.65	41.32	74.00	-32.68	99	0

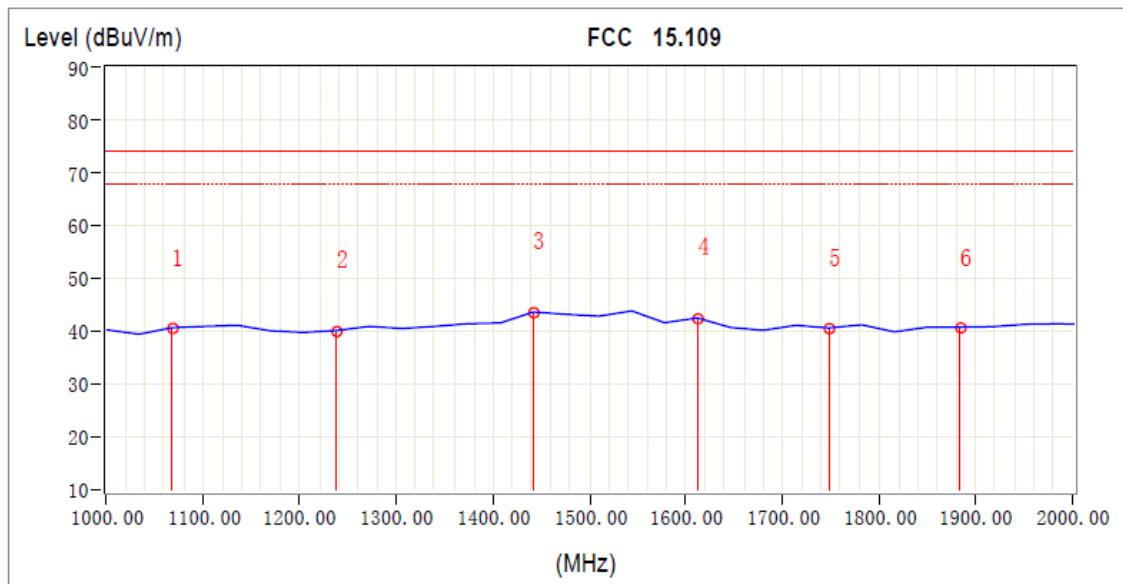
REMARKS:

1. Emission level (dB_{uV/m}) = Raw Value (dB_{uV}) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



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INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak
ANTENNA POLARITY	Vertical	TEST MODE	Mode 1
ENVIRONMENTAL CONDITIONS	25deg. C, 48 %RH, 101kPa	TESTED BY: Wenbin Qiao	



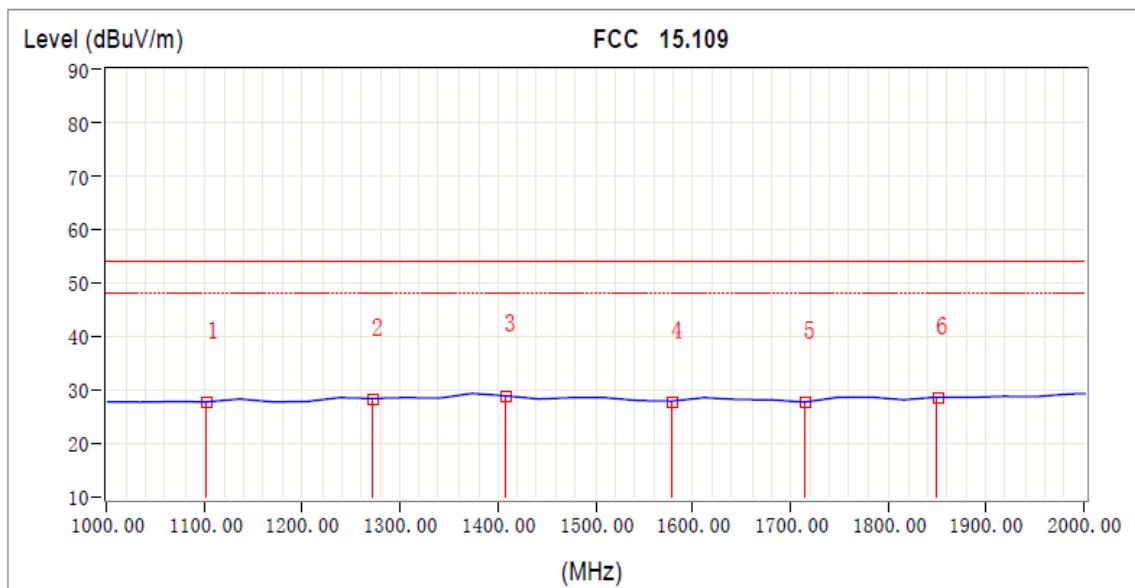
No.	Frequency	Factor	Reading	Emission	Limit	Margin	Tower / Table	
							MHz	dB
1	1068.00	29.06	11.63	40.69	74.00	-33.31	99	0
2	1238.00	29.55	10.53	40.08	74.00	-33.92	99	0
*	3	1442.00	30.06	13.56	43.62	-30.38	100	4
4	1612.00	29.94	12.57	42.51	74.00	-31.49	99	0
5	1748.00	29.98	10.64	40.62	74.00	-33.38	99	0
6	1884.00	30.50	10.28	40.78	74.00	-33.22	99	0

REMARKS:

1. Emission level (dB_{UV}/m) = Raw Value (dB_{UV}) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Average
ANTENNA POLARITY	Horizontal	TEST MODE	Mode 1
ENVIRONMENTAL CONDITIONS	25deg. C, 48 %RH, 101kPa	TESTED BY: Wenbin Qiao	



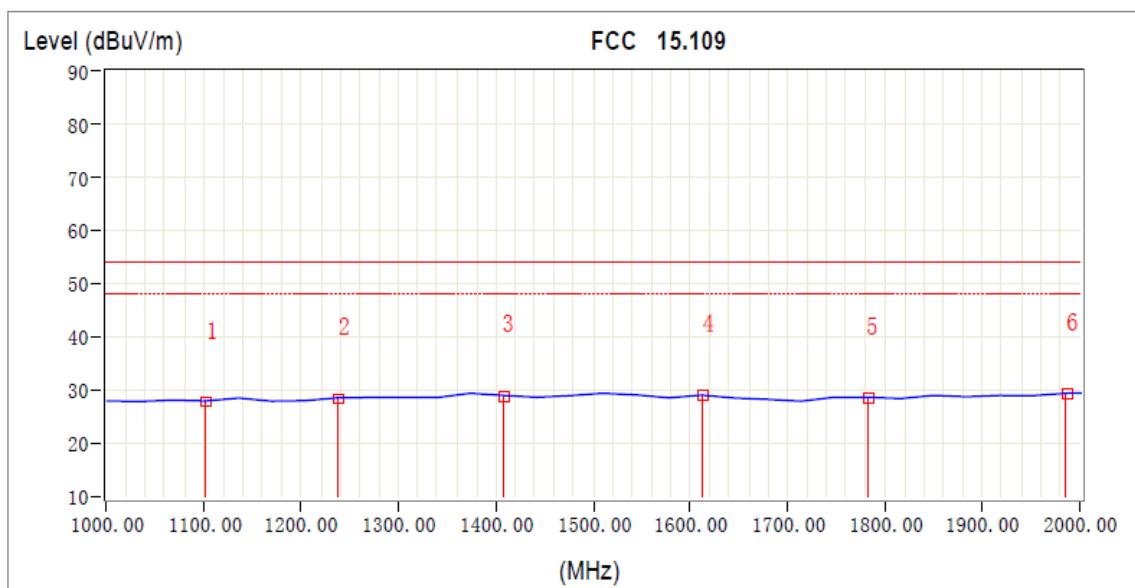
No.	Frequency	Factor	Reading	Emission	Limit	Margin	Tower / Table	
							MHz	dB
							dB	cm deg
1	1102.00	29.05	-1.31	27.73	54.00	-26.27	99	0
2	1272.00	29.79	-1.41	28.38	54.00	-25.62	99	0
*	3 1408.00	30.13	-1.22	28.91	54.00	-25.09	100	35
4	1578.00	29.95	-2.07	27.88	54.00	-26.12	99	0
5	1714.00	29.87	-2.14	27.73	54.00	-26.27	99	0
6	1850.00	30.36	-1.68	28.68	54.00	-25.32	99	0

REMARKS:

1. Emission level (dB_{UV}/m) = Raw Value (dB_{UV}) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Average
ANTENNA POLARITY	Vertical	TEST MODE	Mode 1
ENVIRONMENTAL CONDITIONS	25deg. C, 48 %RH, 101kPa	TESTED BY:	Wenbin Qiao



No.	Frequency	Factor	Reading	Emission	Limit	Margin	Tower / Table	
	MHz	dB	dBuV/m	dBuV/m	dBuV/m	dB	cm	deg
1	1102.00	29.05	-1.09	27.95	54.00	-26.05	99	0
2	1238.00	29.55	-1.04	28.51	54.00	-25.49	100	0
3	1408.00	30.13	-1.14	28.99	54.00	-25.01	99	0
4	1612.00	29.94	-0.90	29.04	54.00	-24.96	99	0
5	1782.00	30.09	-1.41	28.68	54.00	-25.32	99	0
*	1986.00	31.07	-1.70	29.37	54.00	-24.63	100	0

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.



5 PHOTOGRAPHS OF THE TEST CONFIGURATION CONDUCTED EMISSIO TEST



RADIATED EMISSION TEST





6 PHOTOGRAPHS OF THE EUT













7 APPENDIX - INFORMATION ON THE TESTING LABORATORIES

We, BUREAU VERITAS ADT (Shanghai) Corporation, were founded in 2004 to provide our best service in EMC, Radio and Vehicle consultation. Our laboratories are accredited by the following accreditation bodies according to ISO/IEC 17025 (2005) .

USA	A2LA
	Certificate No.: 2343.01
China	CNAS
	Certificate No.: L2810

Copies of accreditation certificates could be inquired from our office. If you have any comments, please feel free to contact us at the following:

EMC / RF / Vehicle Lab:

Tel: +86 21 6465 9091

Fax:+86 21 6465 9092

Email: bvadtshmail@cn.bureauveritas.com

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