FCC TEST REPORT

For

Sanway Professional Audio Equipment Co., Limited.

Product Name:	Class-D Power Amplifier
Trademark	
Model Number:	DA2008 DA1004, DA1008, DA2004, DA2006, DA2008, DA5002, DA5004, DA5008.
Prepared For: Address:	Sanway Professional Audio Equipment Co., Limited. JinLe Industrial Park, Ping Bu Avenue, HuaDu District 510800, Guangzhou China.
Prepared By: Address:	Shenzhen BCTC Technology Co., Ltd. NO.101, Yousong Road, Longhua New District, Shenzhen, Guangdong, P.R.China
Report No.:	BCTC-160505456E

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Shenzhen BCTC Technology Co., Ltd.

Applicant	:	Sanway Professional Audio Equipment Co., Limited.
Address	:	JinLe Industrial Park, Ping Bu Avenue, HuaDu District 510800, Guangzhou China.
Manufacturer	:	Guangzhou City Huadu District Shiling Sanway Audio Factory
Address	:	Building E, JinLe Industrial Park, Yanger Village, Shiling Town, Huadu District 510800, Guangzhou, China.
EUT	:	Class-D Power Amplifier
Model Number	:	DA2008 DA1004, DA1008, DA2004, DA2006, DA2008, DA5002, DA5004, DA5008.
Trademark:	:	
Test Date	:	May 16 - May 24, 2016
Date of Report	:	May 24, 2016
Test Result:		The equipment under test was found to be compliance with the requirements of the standards applied.

Test Procedure Used:

FCC Part 15 B: 2014

ANSI C63.4:2014

Prepared by(Engineer)**:**

Reviewer(Supervisor)**:**

Approved & Authorized Signer(Manager)**:**

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 Shenzhen BCTC Technology Co., Ltd.

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Class-D Power Amplifier
Trademark	:	
Model Number	:	DA2008 DA1004, DA1008, DA2004, DA2006, DA2008, DA5002, DA5004, DA5008.
Trademark	:	N/A
Model Difference	:	The product is different for model number and outlook color.
Power Supply	:	90V-135V(110V) 50Hz/60Hz 2400W
Work Frequency	:	N/A

Note: DA2008 was selected as the test model and the datas have been recorded in this report.

1.2. Tested System Details

None.

1.3. Test Uncertainty

Conducted Emission Uncertainty	:	±2.66dB
Radiated Emission Uncertainty	:	±4.26dB

1.4. Test Facility

Site Description

Name of Firm	:	Shenzhen BCTC Technology Co., Ltd.
Site Location	:	NO.101, Yousong Road, Longhua New District, Shenzhen, Guangdong, P.R.China
Lab Qualifications	:	Certificated by Industry Canada Registration No.: 12655A Date of registration: January 19, 2015 Certificated by FCC, USA Registration No.: 187086 Date of registration: November 28, 2014 Certificated by CNAS China Registration No.: CNAS L6046 Date of registration: February 3, 2013

2. TEST INSTRUMENT USED

For Conducted Emission at the mains terminals Test

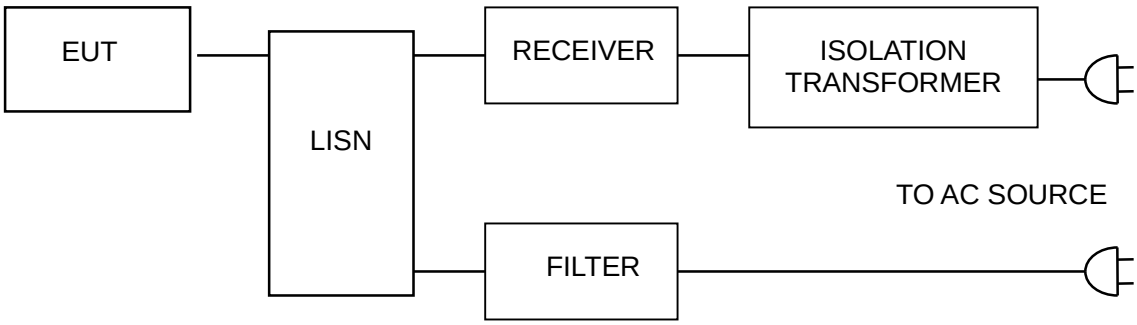
Conducted Emission Test (A --- site)					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
843 Shielded Room	ChengYu	843 Room	843	Aug. 25, 2015	Aug. 24, 2016
EMI Receiver	R&S	ESCI	101421	Aug. 27, 2015	Aug. 26, 2016
LISN	Schwarzbeck	NSLK8127	8127739	Sep. 07, 2015	Sep. 06, 2016
Attenuator	R&S	ESH3-Z2	BCTC021E	Aug. 25, 2015	Aug. 24, 2016
843 Cable 1#	FUJIKURA	843C1#	001	Aug. 25, 2015	Aug. 24, 2016

For Radiated Emission Test

Radiation Emission Test (966 chamber)					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
966 chamber	ChengYu	966 Room	966	Aug. 25, 2015	Aug. 24, 2016
Spectrum Analyzer	Agilent	E4407B	MY45109572	Aug. 27, 2015	Aug. 26, 2016
Amplifier	Schwarzbeck	BBV9743	9743-119	Aug. 25, 2015	Aug. 24, 2016
Amplifier	Schwarzbeck	BBV9718	9718-270	Aug. 25, 2015	Aug. 24, 2016
Log-periodic Antenna	Schwarzbeck	VULB9160	VULB9160-3369	Sep. 07, 2015	Sep. 06, 2016
EMI Receiver	R&S	ESCI	101421	Aug. 27, 2015	Aug. 26, 2016
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1275	Aug. 25, 2015	Aug. 24, 2016
966 Cable 1#	CHENGYU	966	004	Aug. 25, 2015	Aug. 24, 2016
966 Cable 2#	CHENGYU	966	003	Aug. 25, 2015	Aug. 24, 2016

3. CONDUCTED EMISSION AT THE MAINS TERMINALS TEST

3.1. Block Diagram Of Test Setup



3.2. Test Standard

FCC PART 15 B

3.3. Power Line Conducted Emission Limit

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet FCC PART 15 B requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.5. Operating Condition of EUT

3.5.1 Setup the EUT and simulators as shown in Section 3.1.
3.5.2 Turn on the power of all equipments.
3.5.3 Let the EUT work in test modes and test it.

3.6. Test Procedure

The EUT is put on the ground and connected to the AC mains through a Artificial Mains Network (AMN). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission levels according to the **FCC PART 15 B** regulations during conducted emission test.

The bandwidth of the test receiver (R&S Test Receiver ESCI) is set at 10KHz.

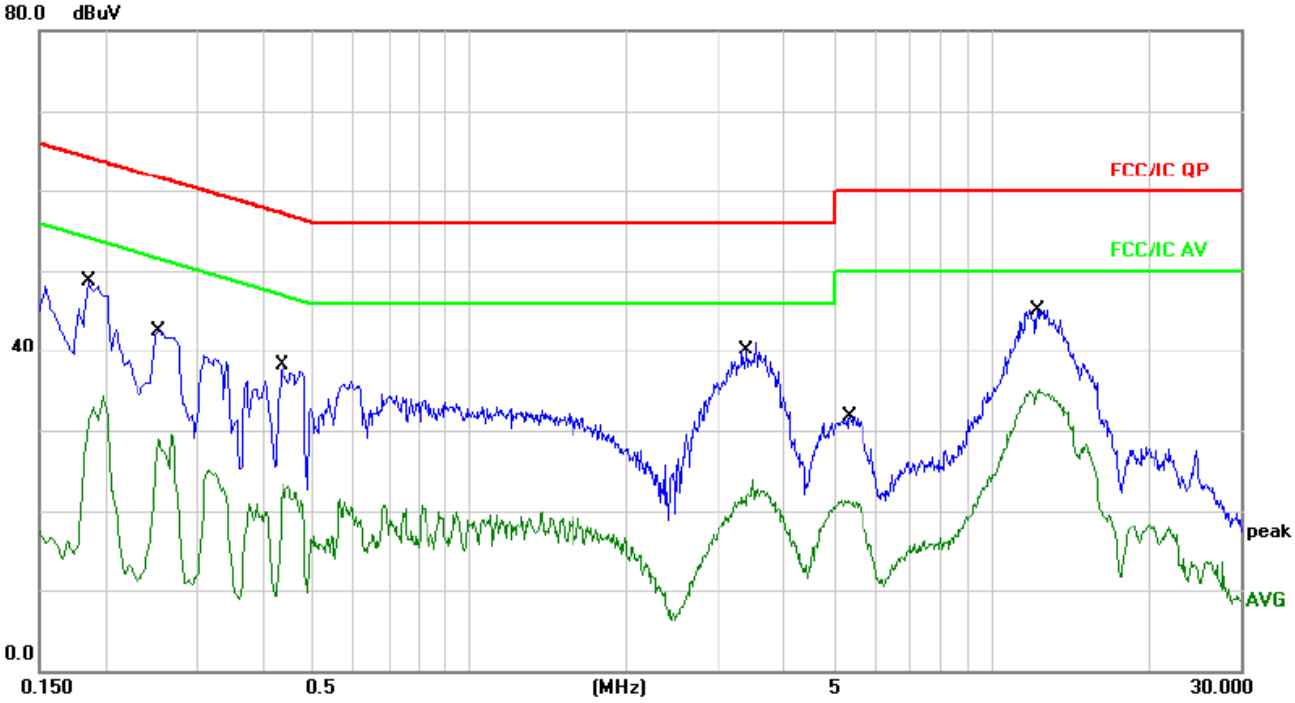
The frequency range from 150 KHz to 30 MHz is investigated.

3.7. Test Result

PASS

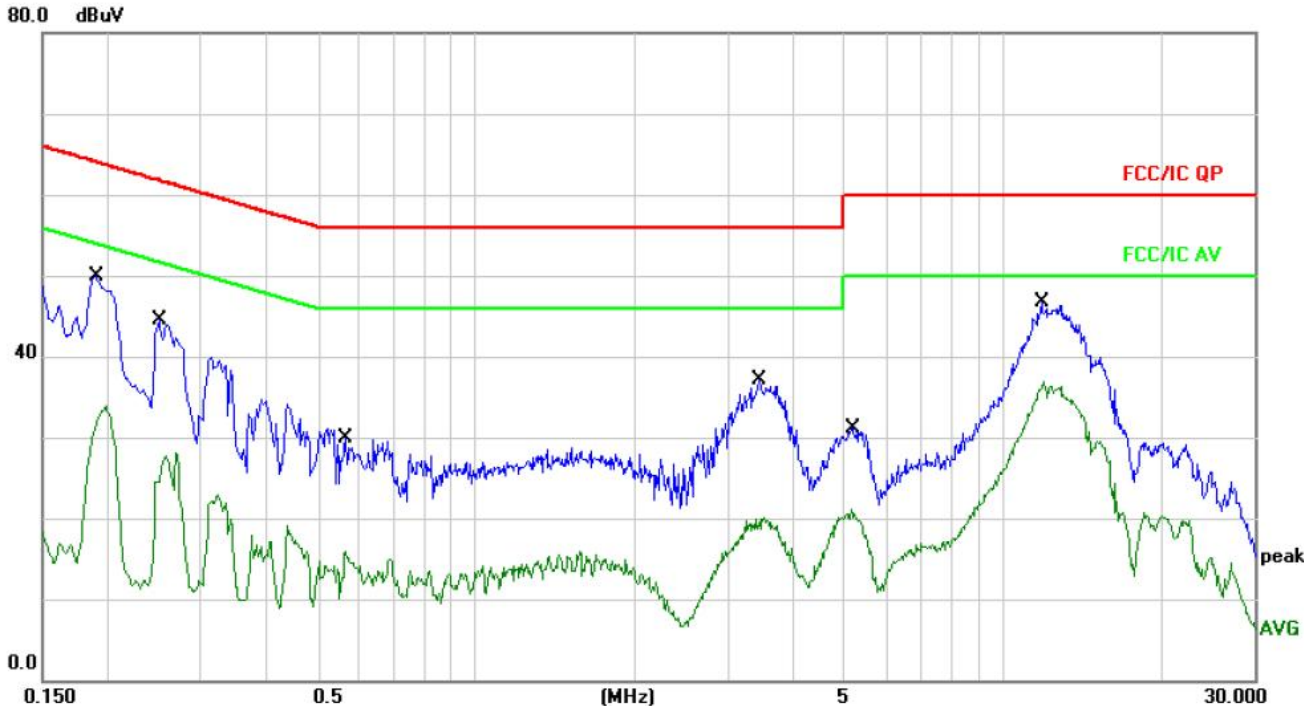
Please refer to the following page.

Conducted Emission At The Mains Terminals Test Data			
Temperature:	24.5 ℃	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Line
Test Voltage :	AC120V/60Hz	Test Mode:	ON Mode



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1860	38.67	10.06	48.73	64.21	-15.48	QP	
2		0.1860	24.15	10.06	34.21	54.21	-20.00	AVG	
3		0.2540	32.44	10.08	42.52	61.62	-19.10	QP	
4		0.2540	19.43	10.08	29.51	51.62	-22.11	AVG	
5		0.4380	25.94	10.11	36.05	57.10	-21.05	QP	
6		0.4380	13.27	10.11	23.38	47.10	-23.72	AVG	
7		3.4140	31.00	10.18	41.18	56.00	-14.82	QP	
8		3.4140	11.71	10.18	21.89	46.00	-24.11	AVG	
9		5.3220	21.56	10.13	31.69	60.00	-28.31	QP	
10		5.3220	11.13	10.13	21.26	50.00	-28.74	AVG	
11	*	12.3100	35.07	10.13	45.20	60.00	-14.80	QP	
12		12.3100	24.89	10.13	35.02	50.00	-14.98	AVG	

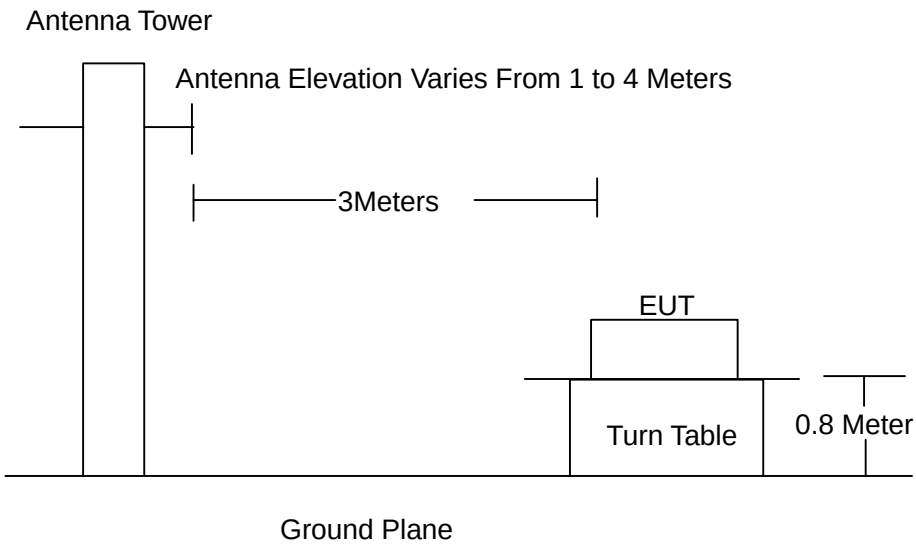
Conducted Emission At The Mains Terminals Test Data			
Temperature:	24.5 ℃	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Neutral
Test Voltage :	AC120V/60Hz	Test Mode:	ON Mode



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1900	39.87	10.06	49.93	64.03	-14.10	QP	
2		0.1900	23.77	10.06	33.83	54.03	-20.20	AVG	
3		0.2500	34.46	10.08	44.54	61.75	-17.21	QP	
4		0.2500	18.01	10.08	28.09	51.75	-23.66	AVG	
5		0.5660	19.57	10.12	29.69	56.00	-26.31	QP	
6		0.5660	5.77	10.12	15.89	46.00	-30.11	AVG	
7		3.4420	26.97	10.18	37.15	56.00	-18.85	QP	
8		3.4420	9.86	10.18	20.04	46.00	-25.96	AVG	
9		5.1660	20.94	10.14	31.08	60.00	-28.92	QP	
10		5.1660	10.91	10.14	21.05	50.00	-28.95	AVG	
11		11.8260	36.55	10.13	46.68	60.00	-13.32	QP	
12	*	11.8260	26.84	10.13	36.97	50.00	-13.03	AVG	

4. RADIATION EMISSION TEST

4.1. Block Diagram of Test Setup



4.2. Test Standard

FCC PART 15 B

4.3. Radiation Limit

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dBμV/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

4.4. EUT Configuration on Test

The FCC PART 15 B regulations test method must be used to find the maximum emission during radiated emission test.
The configuration of EUT is the same as used in conducted emission test. Please refer to Section 2.2.

4.5. Operating Condition of EUT

Same as conducted emission test, which is listed in Section 2.2 except the test set up replaced as Section 4.1.

4.6. Test Procedure

The EUT and its simulators are placed on a turned table that is 0.8 meter above the ground. The turned table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna that is mounted on the antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on test. In order to find the maximum emission levels, the interface cable must be manipulated according to FCC PART 15 B on radiated emission test.
The bandwidth setting on the field strength meter (R&S Test Receiver ESCI) is set at 120KHz below 1GHz, set at 1MHz above 1GHz
The frequency range from 30MHz to 1000MHz is checked.

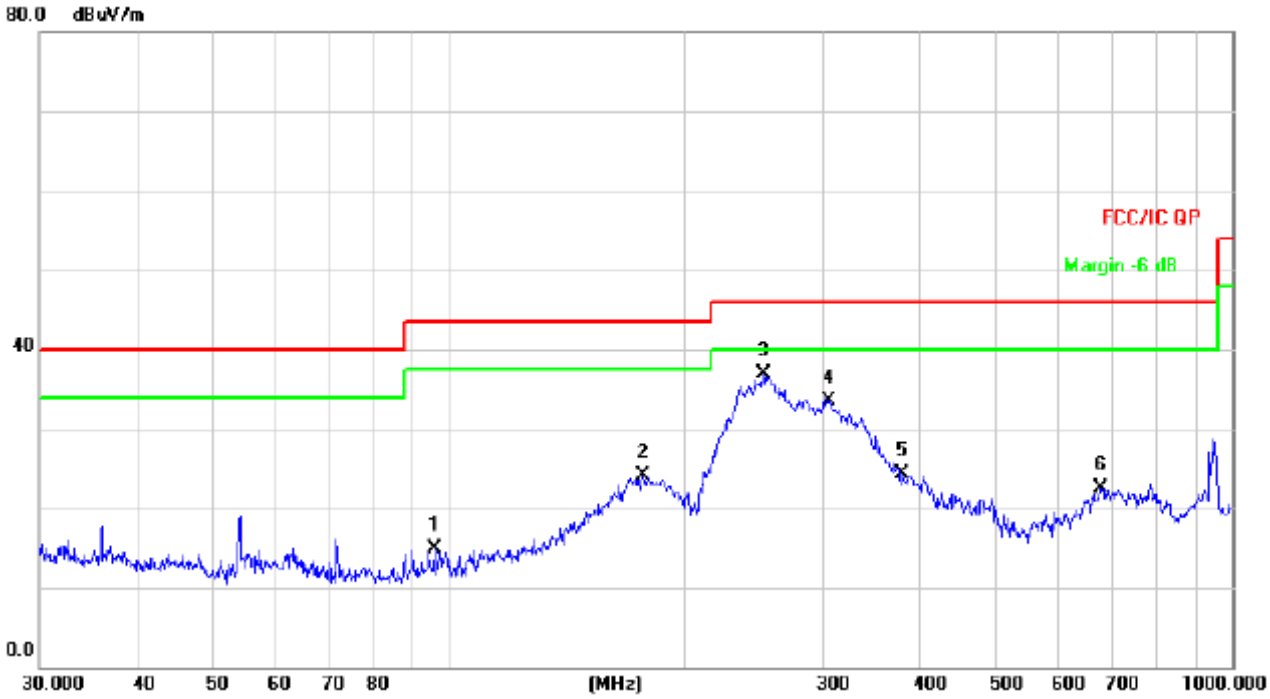
The highest frequency of the internal sources of the EUT was 1.3GHz, so the measurement was only made up to 6GHz.

4.7. Test Result

PASS

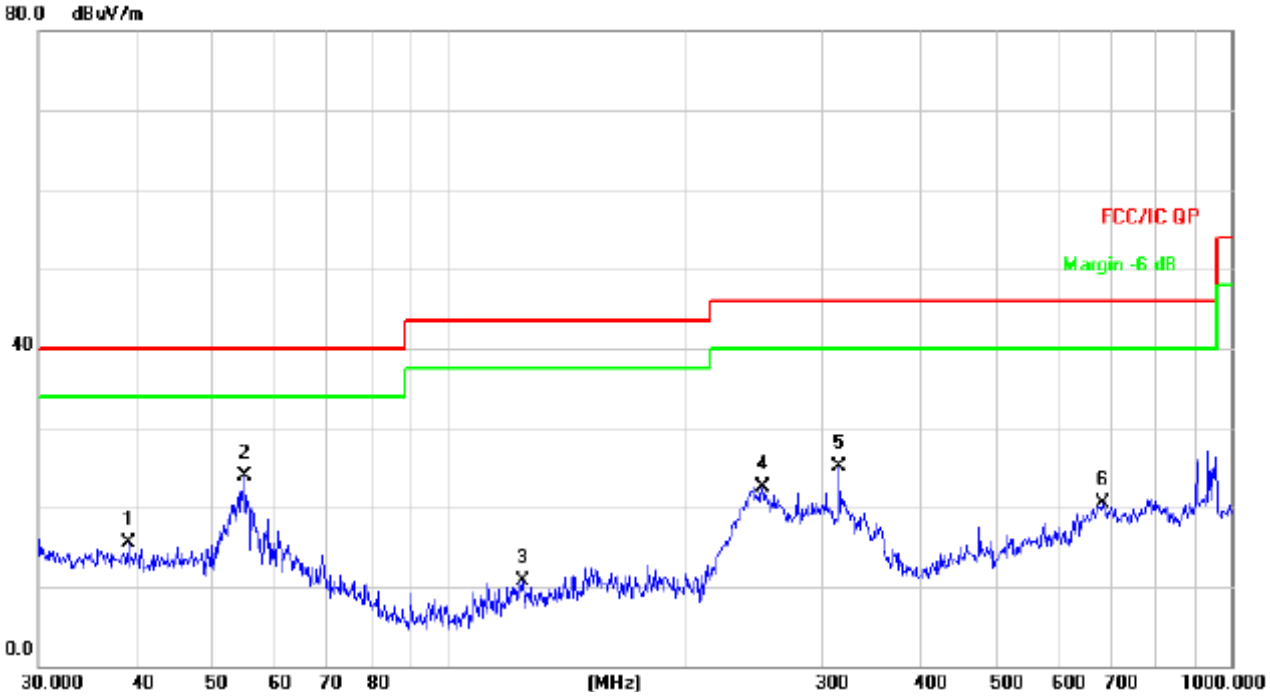
Please refer to the following page.

Radiation Emission Test Data			
Temperature:	24.5 ℃	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Horizontal
Test Voltage :	AC120V/60Hz	Test Mode:	ON Mode



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		95.7622	31.88	-16.93	14.95	43.50	-28.55	QP			
2		176.8878	38.21	-14.07	24.14	43.50	-19.36	QP			
3	*	252.0627	50.98	-14.14	36.84	46.00	-9.16	QP			
4		305.6800	45.98	-12.44	33.54	46.00	-12.46	QP			
5		378.5843	35.09	-10.70	24.39	46.00	-21.61	QP			
6		679.9600	27.29	-4.69	22.60	46.00	-23.40	QP			

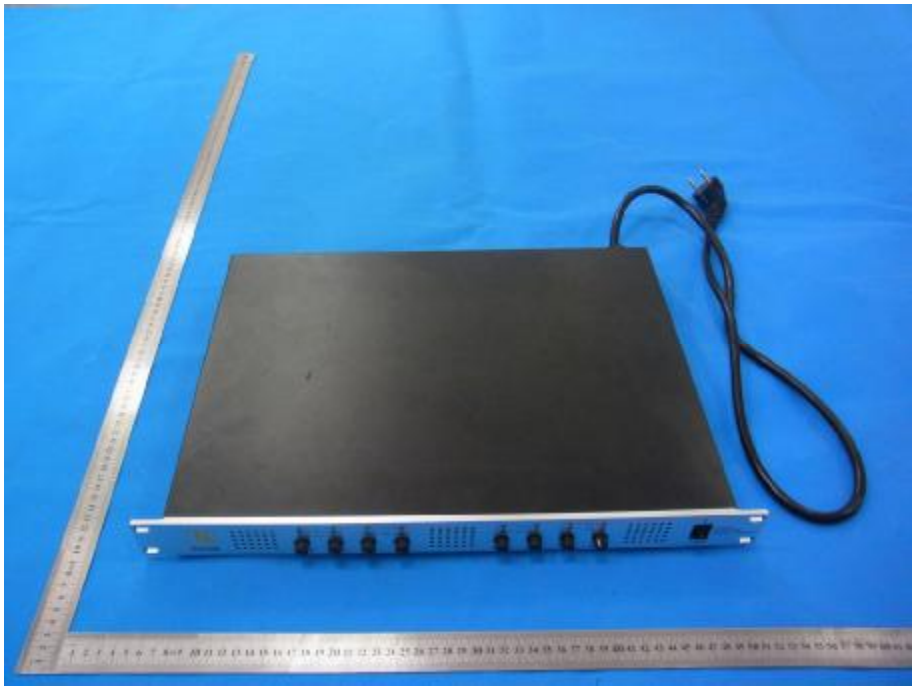
Radiation Emission Test Data			
Temperature:	24.5 ℃	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Vertical
Test Voltage :	AC120V/60Hz	Test Mode:	ON Mode



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		39.0245	24.39	-8.80	15.59	40.00	-24.41	QP			
2	*	55.0274	35.02	-11.13	23.89	40.00	-16.11	QP			
3		124.5690	25.22	-14.43	10.79	43.50	-32.71	QP			
4		252.0627	36.69	-14.14	22.55	46.00	-23.45	QP			
5		315.4808	37.35	-12.18	25.17	46.00	-20.83	QP			
6		684.7454	25.17	-4.63	20.54	46.00	-25.46	QP			

5. EUT PHOTOGRAPHS

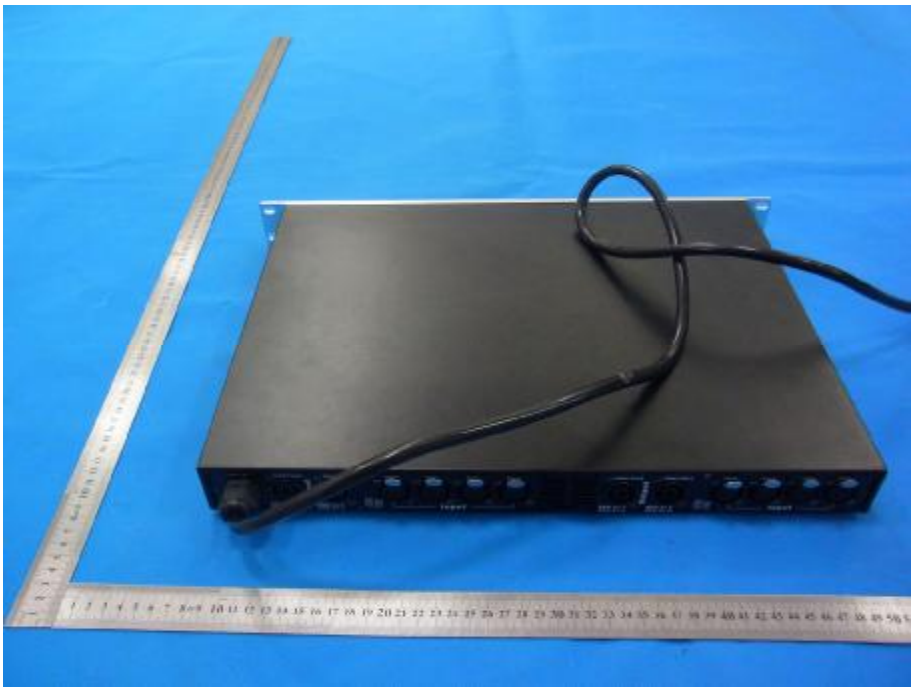
EUT Photo 1



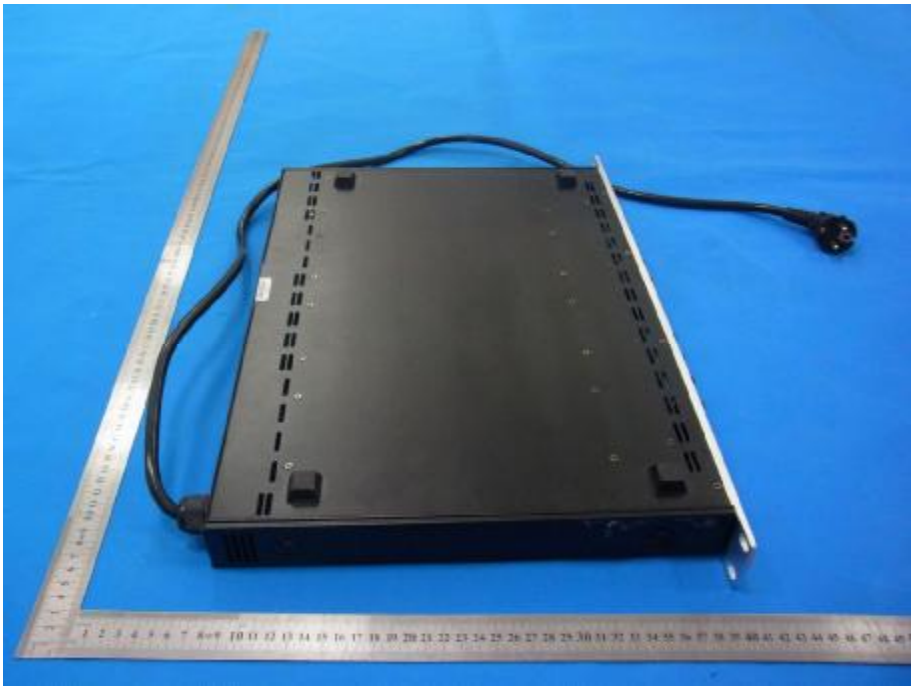
EUT Photo 2



EUT Photo 3



EUT Photo 4



EUT Photo 5



EUT Photo 6



EUT Photo 7


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6. EUT TEST PHOTOGRAPHS

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