TEST REPORT

Reference No.	:	WTS14S0413450E
FCC ID	:	2AAGEAV5-AV7
Applicant	:	Chengdu Vantron Technology, Ltd.
Address	:	No.5 Gaopeng Road, Hi-Tech Zone, Chengdu, Sichuan, P.R. China 610045
Manufacturer	:	The same as above
Address	:	The same as above
Product Name	:	AirVend 5, AirVend 7
Model No.	:	AV 5, AV 7
Standards	:	FCC PART15 SUBPART B: 2012
Date of Receipt sample	:	Apr.26, 2014
Date of Test	:	May 04 – 23, 2014
Date of Issue	:	Jun.13, 2014
Test Result	:	**Pass ***

*****Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company.The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

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Compiled by:

Zero Zhou / Project Engineer

Approved by:

Philo Zhong / Manager

1 Test Summary

Test Item	Test Requirement	Class	Test Method	Test Result
Power Line Conducted Emission (150kHz to 30MHz)	FCC PART 15, SUBPART B: 2012	Class B	ANSI C63.4: 2003	N/A
Radiated Emission (Below 30MHz)	FCC PART 15, SUBPART B: 2012	Class B	ANSI C63.4: 2003	Pass
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2012	Class B	ANSI C63.4: 2003	Pass
Radiated Emission (Above 1GHz)	FCC PART 15, SUBPART B: 2012	Class B	ANSI C63.4: 2003	Pass

Remark:

Pass	Test item meets the requirement
Fail	Test item does not meet the requirement
N/A	Test case does not apply to the test object

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3 General Information

3.1 General Description of E.U.T.

Product Name	:	AirVend 5, AirVend 7
Model No.	:	AV 5, AV 7
Model Difference	:	The models are different in size and appearance. Two models were tested. The worst data of AV 5 is recorded in the report.
The lowest oscillator	:	32.768kHz
The highest oscillator	:	1000MHz

3.2 Details of E.U.T.

Technical Data	:	DC 12-34V

3.3 Standards Applicable for Testing

The tests were performed according to following standards:

FCC PART 15, SUBPART B: Electronic Code of Federal Regulations- Unintentional Radiators 2012

3.4 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A-1**

Waltek Services(Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration 7760A-1, July 12, 2012.

- **FCC – Registration No.: 880581**

Waltek Services (Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 880581, April 29, 2014.

3.5 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test Lab: N/A

Lab address: N/A

Test items: N/A

3.6 Abnormalities from Standard Conditions

None.

4 Equipment Used during Test

4.1 Equipment List

3m Semi-anechoic Chamber for Radiation						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	EMC Analyzer	Agilent	E7405A	MY45114943	Sep.18,2013	Sep.17,2014
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	Sep.18,2013	Sep.17,2014
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	Apr.19,2014	Apr.18,2015
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	Sep.18,2013	Sep.17,2014
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	Apr.19,2014	Apr.18,2015
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	Apr.19,2014	Apr.18,2015
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	Mar.17,2014	Mar.16,2015
8	Coaxial Cable (above 1GHz)	Top	1GHz-25GHz	EW02014-7	Apr.10,2014	Apr.09,2015

4.2 Measurement Uncertainty

Test Item	**Frequency Range**	**Uncertainty**	**Note**
Conduction disturbance	150kHz~30MHz	±3.64dB	(1)
Radiation Emission	30MHz~1000MHz	±5.03dB	(1)
	1GHz~6GHz	±5.47dB	(1)

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

5 Emission Test Results

5.1 Power Line Conducted Emission, 150kHz to 30MHz

Test Requirement	:	FCC PART 15, SUBPART B
Test Method	:	ANSI C63.4
Test Result	:	Pass
Frequency Range.....	:	150kHz to 30MHz
Class	:	Class B
Remark	:	This device powered by DC power, this test is not applicable.

5.2 Radiation Emission, Below 30MHz

Test Requirement..... : FCC PART 15, SUBPART B

Test Method ..... : ANSI C63.4

Test Result..... : Pass

Frequency Range..... : 32.768kHz to 30MHz

Class. ..... : Class B

Limit..... :

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$

5.2.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 23°C

Humidity..... : 54.1%RH

Atmospheric Pressure..... : 101.2kPa

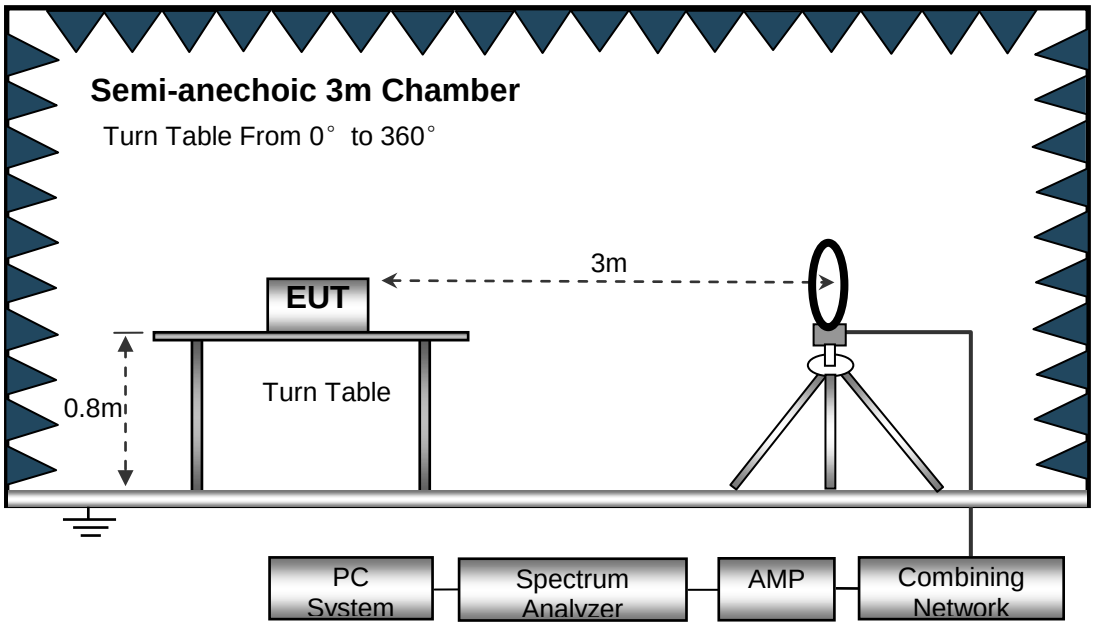
EUT Operation:

Input Voltage..... : DC 34V

Operating Mode ..... : Playing mode

5.2.2 Block Diagram of Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4.



5.2.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Quasi-peak measurements were performed if peak emissions were within 6dB of the Quasi-peak limit line.

5.2.4 Radiated Emission Test Data

Frequency Range: 32.768kHz to 30MHz

The measurements were more than 20 dB below the limit and not reported.

5.3 Radiation Emission, 30MHz ~ 1000MHz

Test Requirement..... : FCC PART 15, SUBPART B

Test Method ..... : ANSI C63.4

Test Result ..... : Pass

Frequency Range..... : 30MHz to 1000MHz

Class. ..... : Class B

Limit..... :

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

5.3.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 23°C

Humidity ..... : 54.1%RH

Atmospheric Pressure..... : 101.4kPa

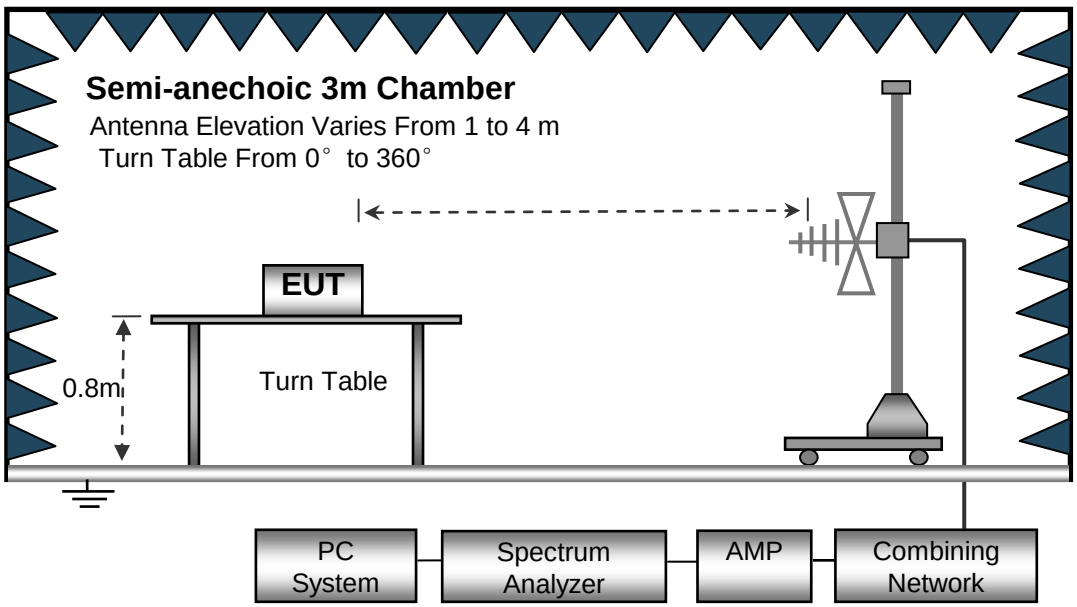
EUT Operation:

Input Voltage..... : DC 34V

Operating Mode ..... : Playing mode

5.3.2 Block Diagram of Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4.

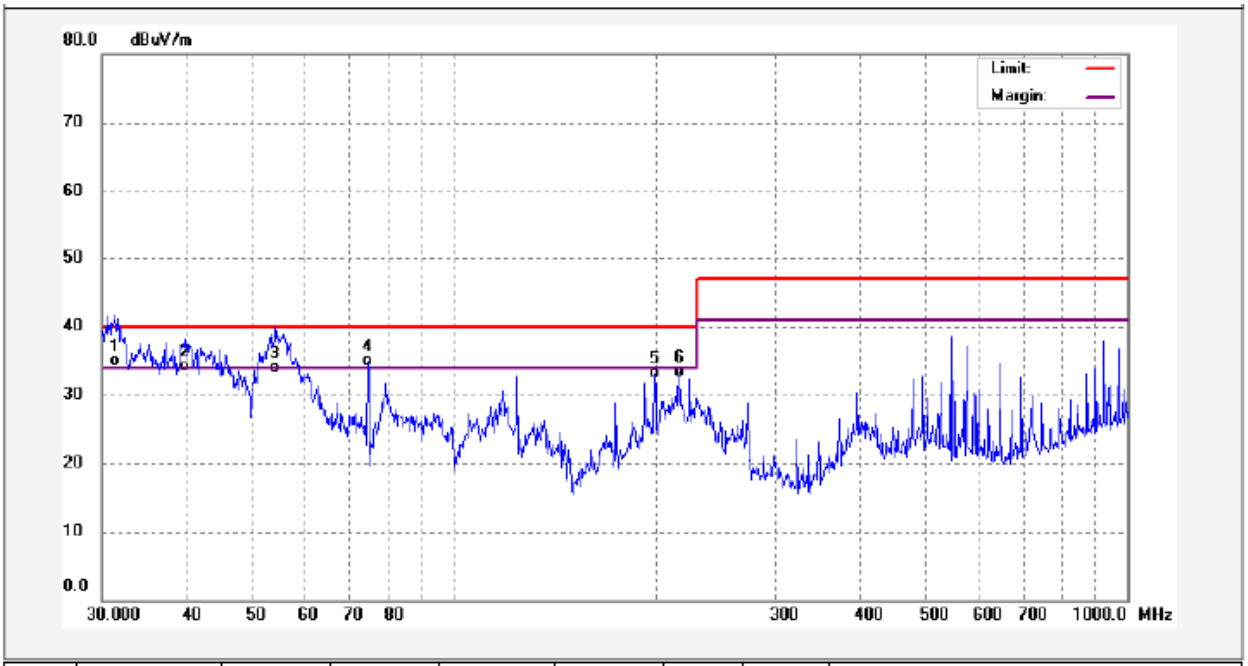


5.3.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Quasi-peak measurements were performed if peak emissions were within 6dB of the Quasi-peak limit line.

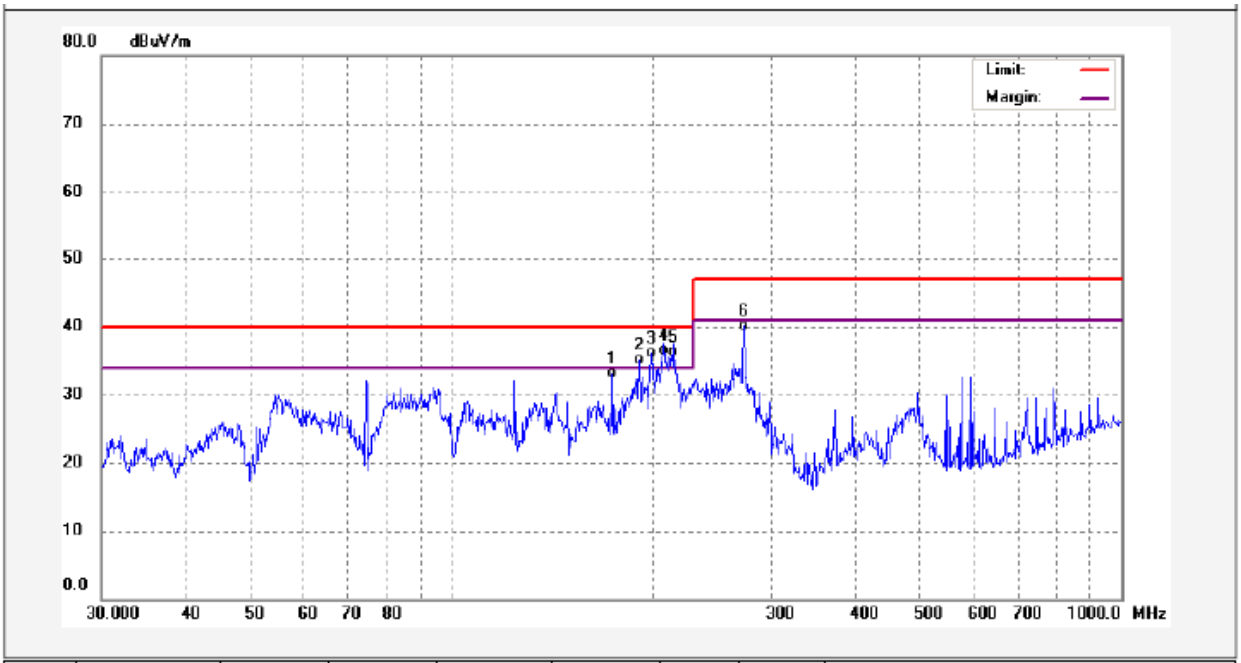
5.3.4 Radiated Emission Test Data

Antenna Polarization: Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	31.3992	54.99	-19.99	35.00	40.00	-5.00	QP	
2	39.7146	53.65	-19.55	34.10	40.00	-5.90	QP	
3	54.2610	53.67	-19.77	33.90	40.00	-6.10	QP	
4	74.3955	56.31	-21.39	34.92	40.00	-5.08	QP	
5	198.5879	51.30	-18.23	33.07	40.00	-6.93	QP	
6	216.0240	52.35	-19.03	33.32	40.00	-6.68	QP	

Antenna Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	173.8135	51.06	-17.95	33.11	40.00	-6.89	QP	
2	190.4050	53.98	-18.86	35.12	40.00	-4.88	QP	
3	198.5880	55.80	-19.69	36.11	40.00	-3.89	QP	
4	207.1226	57.52	-21.02	36.50	40.00	-3.50	QP	
5	214.5143	58.62	-22.22	36.40	40.00	-3.60	QP	
6	273.2341	60.70	-20.59	40.11	47.00	-6.89	QP	

5.4 Radiation Emission, Above 1000MHz

Test Requirement ..... : FCC PART 15, SUBPART B

Test Method ..... : ANSI C63.4

Test Result ..... : Pass

Frequency Range..... : 1GHz~6GHz

Class. : Class B

Limit. ..... :

Frequency Range (MHz)	Distance (Meter)	Average Limit dB(uV/m)	Peak Limit (dBuV/m)
Above 1GHz	3	54	74

5.4.1 E.U.T. Operation

Operating Environment:

Temperature..... : 23°C

Humidity ..... : 52.6%RH

Atmospheric Pressure ..... : 101.3kPa

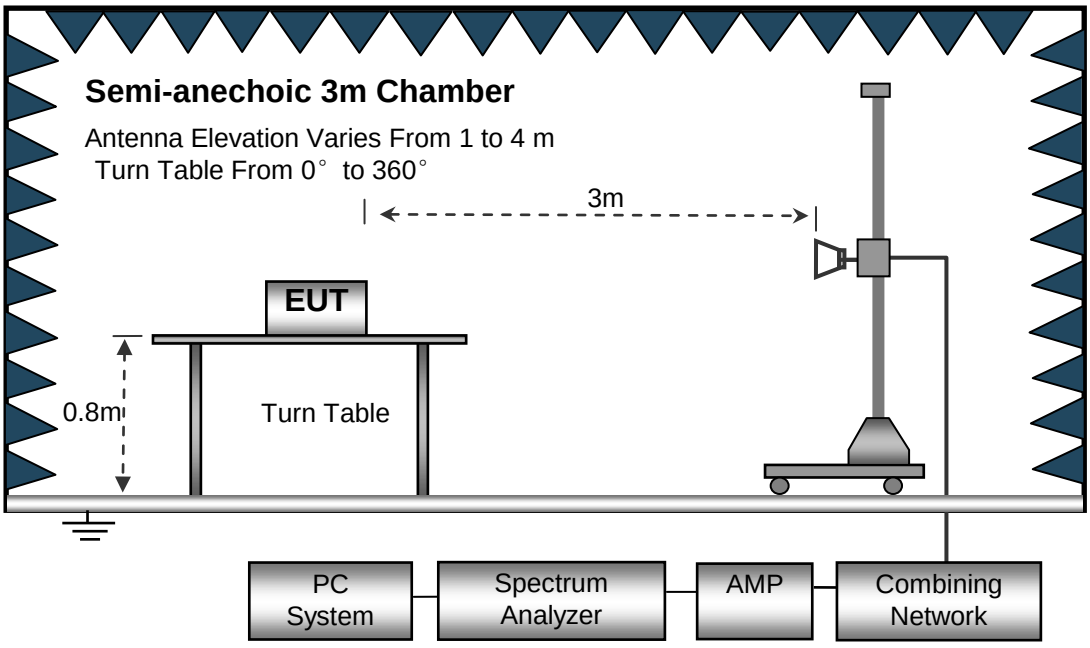
EUT Operation:

Input Voltage ..... : DC 34V

Operating Mode..... : Playing mode

5.4.2 Block Diagram of Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4.

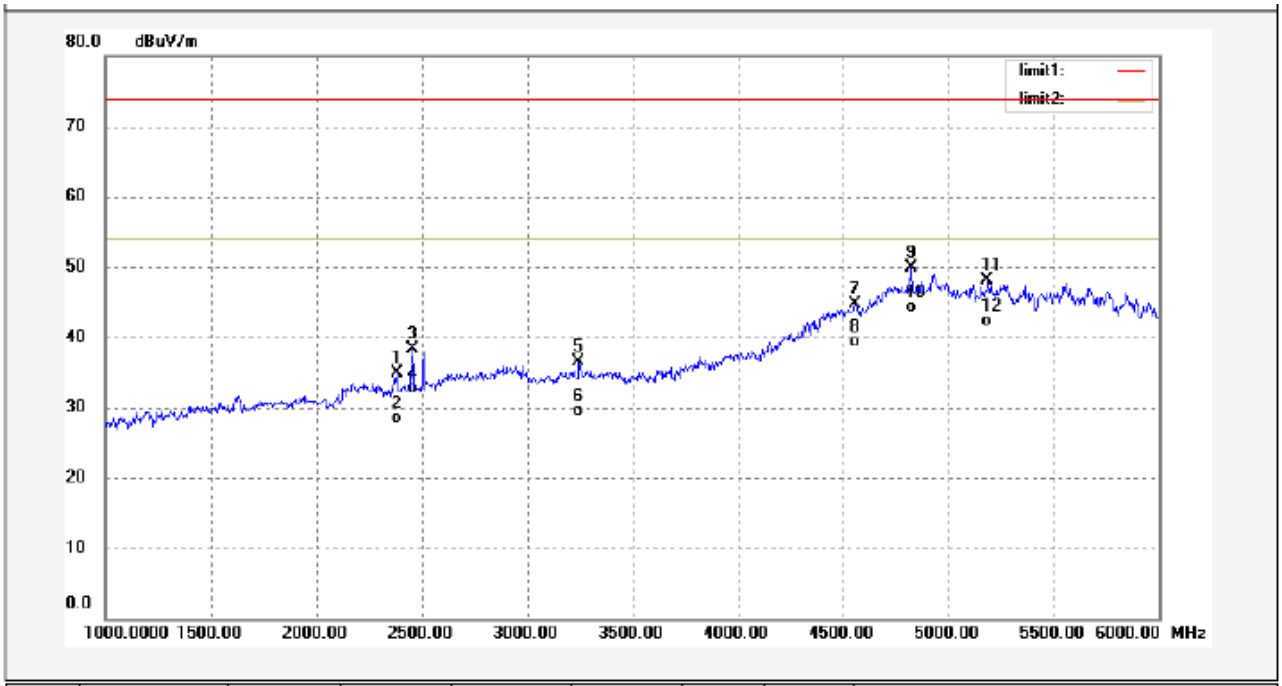


5.4.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Average measurements were performed if peak emissions were within 6dB of the average limit line

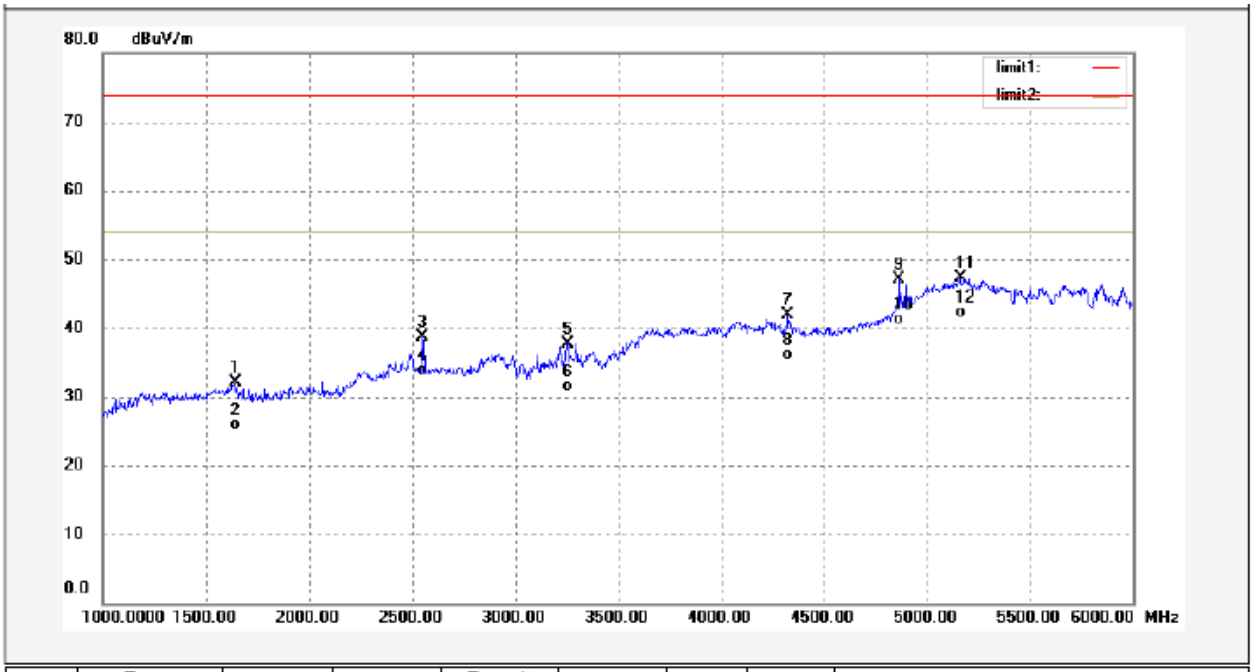
5.4.4 Radiated Emission Test Data, Above 1000MHz

Antenna Polarization: Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	2380.000	50.95	-16.08	34.87	74.00	-39.13	peak	
2	2380.000	43.88	-16.08	27.80	54.00	-26.20	AVG	
3	2455.000	54.30	-16.02	38.28	74.00	-35.72	peak	
4	2455.000	47.89	-16.02	31.87	54.00	-22.13	AVG	
5	3245.000	48.92	-12.44	36.48	74.00	-37.52	peak	
6	3245.000	41.11	-12.44	28.67	54.00	-25.33	AVG	
7	4555.000	48.15	-3.53	44.62	74.00	-29.38	peak	
8	4555.000	42.08	-3.53	38.55	54.00	-15.45	AVG	
9	4820.000	51.76	-1.90	49.86	74.00	-24.14	peak	
10	4820.000	45.34	-1.90	43.44	54.00	-10.56	AVG	
11	5185.000	49.37	-1.28	48.09	74.00	-25.91	peak	
12	5185.000	42.84	-1.28	41.56	54.00	-12.44	AVG	

Antenna Polarization: Horizontal

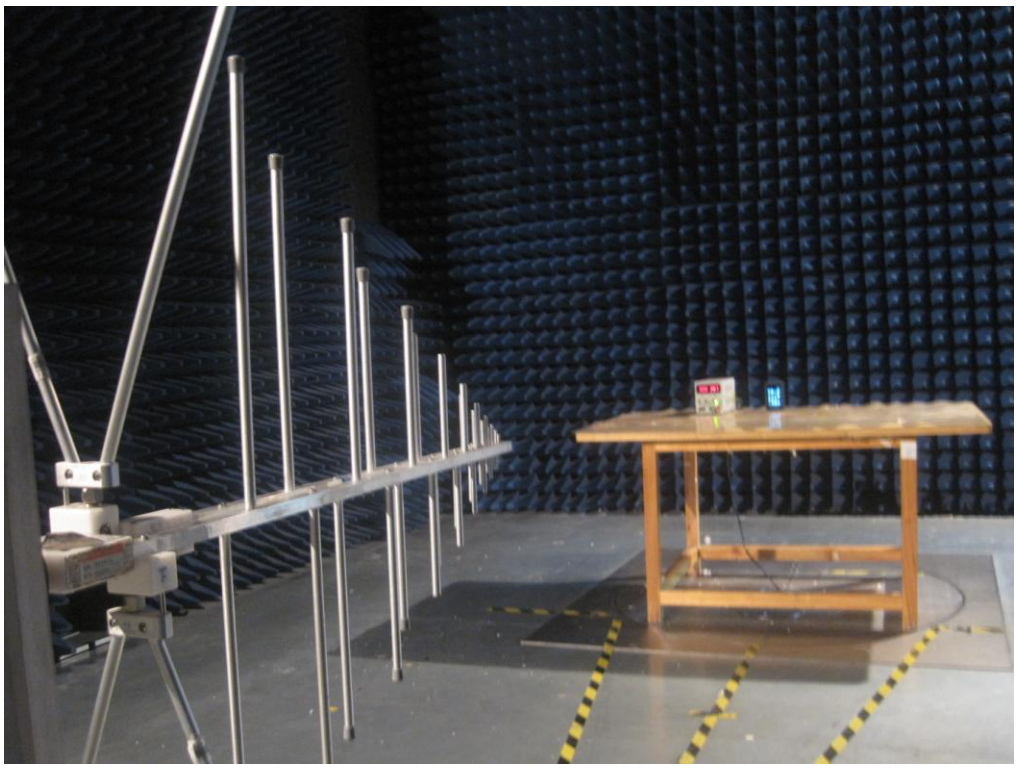


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	1640.000	49.67	-17.61	32.06	74.00	-41.94	peak	
2	1640.000	42.68	-17.61	25.07	54.00	-28.93	AVG	
3	2550.000	54.48	-15.72	38.76	74.00	-35.24	peak	
4	2550.000	48.74	-15.72	33.02	54.00	-20.98	AVG	
5	3255.000	50.19	-12.39	37.80	74.00	-36.20	peak	
6	3255.000	43.18	-12.39	30.79	54.00	-23.21	AVG	
7	4325.000	46.79	-4.85	41.94	74.00	-32.06	peak	
8	4325.000	40.08	-4.85	35.23	54.00	-18.77	AVG	
9	4865.000	48.74	-1.64	47.10	74.00	-26.90	peak	
10	4865.000	42.05	-1.64	40.41	54.00	-13.59	AVG	
11	5160.000	48.44	-1.21	47.23	74.00	-26.77	peak	
12	5160.000	42.77	-1.21	41.56	54.00	-12.44	AVG	

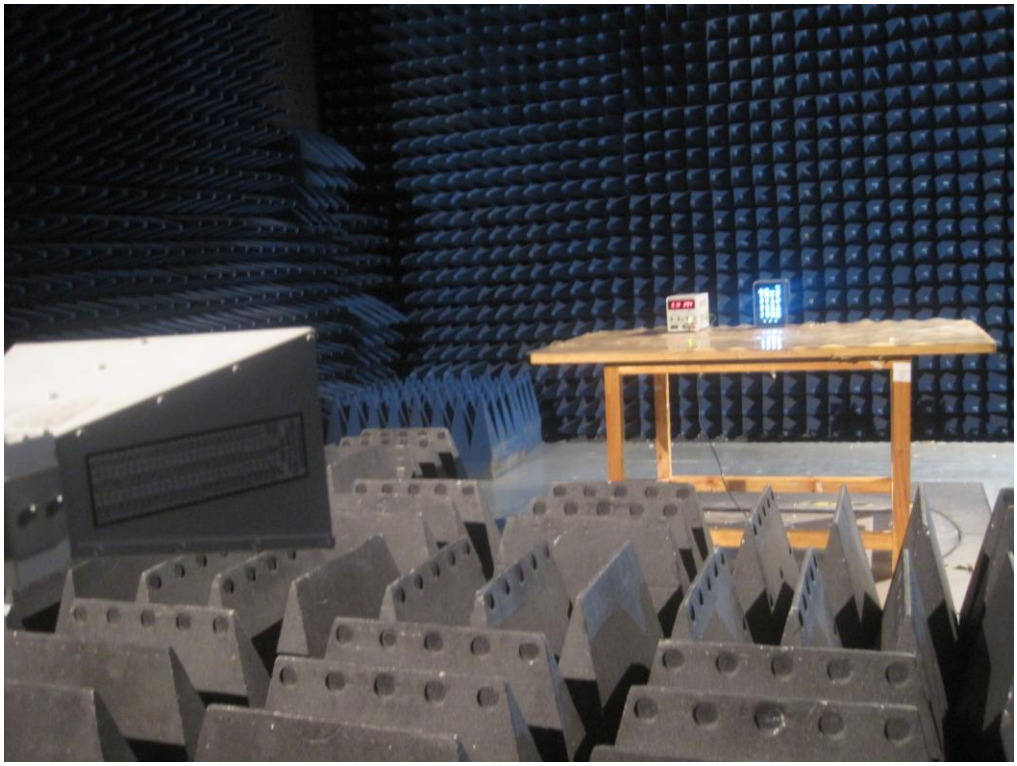
6 Photographs – Test Setup

6.1 Photograph – Radiated Emission Test Setup for 32.768Hz ~ 30MHz

6.2 Photograph – Radiated Emission Test Setup for 30MHz ~ 1000MHz



6.3 Photograph – Radiated Emission Test Setup for Above 1GHz



7 Photographs – Constructional Details

Remark: Please refer to Reference No. WTS14S0413447E report.

======End of Report======