

TEST REPORT

Reference No..... : WTD21D01003713E V2
FCC ID 2ADCS6310
Applicant..... : Smart Wireless Computing, Inc
Address..... : 39870 Eureka Dr, Newark, CA 94560, United States of America
Manufacturer : Smart Wireless Computing, Inc
Address..... : 39870 Eureka Dr, Newark, CA 94560, United States of America
Product..... : 6310™ APPLICATION READY PLATFORM
Model(s) : 6310
Standards : FCC PART15 SUBPART B
Date of Receipt sample : 2021-01-13
Date of Test : 2021-01-14 to 2021-03-16
Date of Issue..... : 2021-06-09
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.

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3 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTD21D01003713 E	2021-01-13	2021-01-14 to 2021-03-16	2021-03-16	Original	-	Replaced
WTD21D01003713 E V1	2021-01-13	2021-01-14 to 2021-03-16	2021-05-14	Version 1	Updated	Replaced
WTD21D01003713 E V2	2021-01-13	2021-01-14 to 2021-03-16	2021-06-09	Version 2	Updated	Valid

4 General Information

4.1 General Description of E.U.T.

Product : 6310™ APPLICATION READY PLATFORM
Model(s)..... : 6310
Model Description..... : N/A

4.2 Details of E.U.T.

Ratings : DC 12V For Battery

4.3 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

4.4 Test Facility

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

ISED CAB identifier: CN0013. Test Firm Registration No.: 7760A.

Waltek Testing Group 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 number 7760A, October 15, 2016.

FCC Designation No.: CN1201. Test Firm Registration No.: 523476. Certificate Number: 4243.01

Waltek Testing Group Co., Ltd. EMC Laboratory 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 number 523476, September 10, 2019.

4.5 Abnormalities from Standard Conditions

None.

5 Test Summary

Test Item	Test Requirement	Test Result
AC Power Line Conducted Emission (150kHz to 30MHz)	FCC PART 15, SUBPART B	N/A
Disturbance voltage at the antenna terminals (30MHz to 2150MHz)	FCC PART 15, SUBPART B	N/A
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B	Pass
Radiated Emission (Above 1GHz)	FCC PART 15, SUBPART B	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

6 Equipment Used during Test

6.1 Equipment List

Conducted Emissions Test Site 1#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMI Test Receiver	R&S	ESCI	100947	2020-07-30	2021-07-29
2.	LISN	R&S	ENV216	101215	2020-07-30	2021-07-29
3.	Cable	Top	TYPE16(3.5M)	-	2020-07-30	2021-07-29
Conducted Emissions Test Site 2#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMI Test Receiver	R&S	ESCI	101155	2020-07-30	2021-07-29
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	2020-07-30	2021-07-29
3.	Limiter	York	MTS-IMP-136	261115-001-0024	2020-07-30	2021-07-29
4.	Cable	LARGE	RF300	-	2020-07-30	2021-07-29
3m Semi-anechoic Chamber for Radiation Emissions Test site 1#						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1	Spectrum Analyzer	R&S	FSP	100091	2020-04-20	2021-04-19
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	2020-04-20	2021-04-19
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	2020-08-22	2021-08-21
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	2020-04-20	2021-04-19
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	2020-04-25	2021-04-24
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	2020-04-20	2021-04-19
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	2020-04-20	2021-04-19
8	Coaxial Cable (above 1GHz)	Top	1GHz-25GHz	EW02014-7	2020-04-20	2021-04-19
9	Universal Radio Communication Tester	R&S	CMU 200	112461	2020-04-20	2021-04-19
10	Smart Antenna	SCHWARZBECK	HA08	-	2020-04-20	2021-04-19
11	Signal Generator	R&S	SMR20	100046	2020-07-30	2021-07-29
12.	Universal Radio Communication Tester	R&S	CMW 500	127818	2020-04-20	2021-04-19

3m Semi-anechoic Chamber for Radiation Emissions Test site 2#						
Item	Equipment	Manufacturer	Model No.	Serial No	Last Calibration Date	Calibration Due Date
1	Test Receiver	R&S	ESCI	101296	2020-04-20	2021-04-19
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2020-04-25	2021-04-24
3	Amplifier	Compliance pirection systems inc	PAP-0203	22024	2020-04-20	2021-04-19
4	Cable	HUBER+SUHNER	CBL2	525178	2020-04-20	2021-04-19

6.2 Description of Support Units

Equipment	Manufacturer	Model No.	Series No.
Display	Letv	30243	/
Mouse	Lenovo	AP01	/
USB flash disk	Kingston	KS64G	/
HDMI LINE	Lenovo	E3012	/
Battery	MH47211	/	/
SD Card	Kingston	K32G	/
Router	TP-Link	0312	/

6.3 Measurement Uncertainty

Parameter	Uncertainty (Note 1)
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 3\%$
Conducted Emission (150kHz-30MHz)	$\pm 3.64\text{dB}$
Radiated Emission(30MHz~1GHz)	$\pm 5.03\text{dB}$
Radiated Emission(1GHz~18GHz)	$\pm 5.47\text{dB}$

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

6.4 Test Equipment Calibration

All the test equipments used are valid and calibrated by GUANG ZHOU GRG METROLOGY & TEST CO., LTD. address is No.163, Pingyun Rd. West of Huangpu Ave, Tianhe District, Guangzhou, Guangdong, China.

6.5 Test Mode

Test Item	Test Mode:Working Mode	Test Voltage
FCC PART 15B		
Radiated Emissions (30MHz-1GHz)	1.Network Playing 2.USB Playing* 3.SD Card Playing	Radiated Emissions (30MHz-1GHz)
Radiated Emissions (1GHz-6GHz)	1.Network Playing 2.USB Playing* 3.SD Card Playing	Radiated Emissions (1GHz-6GHz)
“*” shows the mode which were recorded in this report		

7 Emission Test Results

7.1 Radiation Emission, 30MHz to 1000MHz

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

Test Method..... : ANSI C63.4-2014

Test Result : Pass

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

Class. : Class B

Limit..... :

Frequency (MHz)	Distance (Meter)	Limit (dB μ V/m)
		Quasi-peak
30 to 88	3	40
88 to 216	3	43.5
216 to 960	3	46
960 to 1000	3	54

1.1.1 E.U.T. Operation

Operating Environment:

Temperature..... : 22.5°C

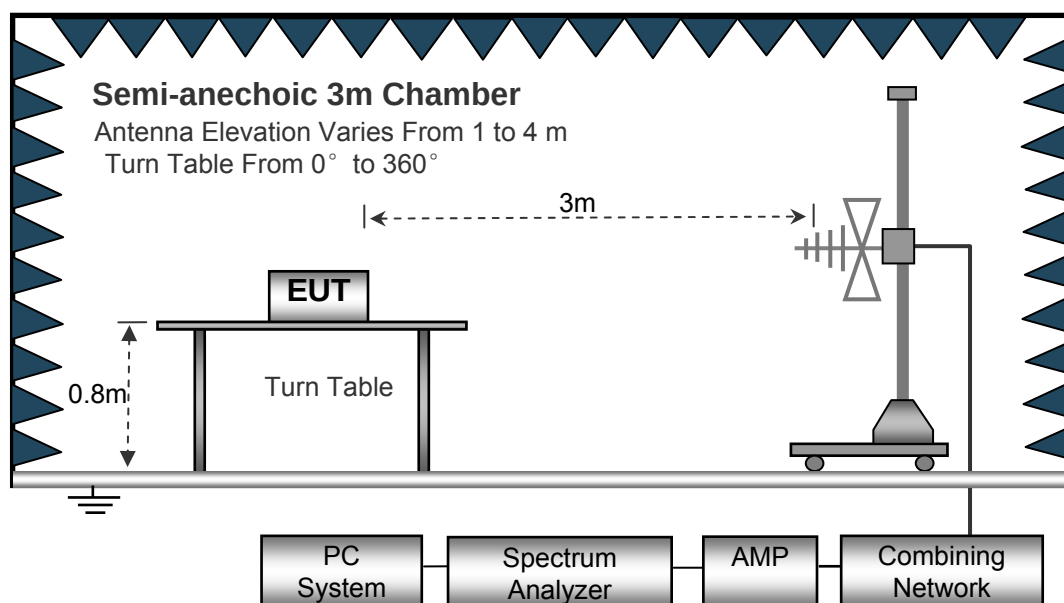
Humidity..... : 52.6%RH

Atmospheric Pressure..... : 101.8kPa

EUT Operation : Refer to section 5.5.

1.1.2 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 C63.4-2014

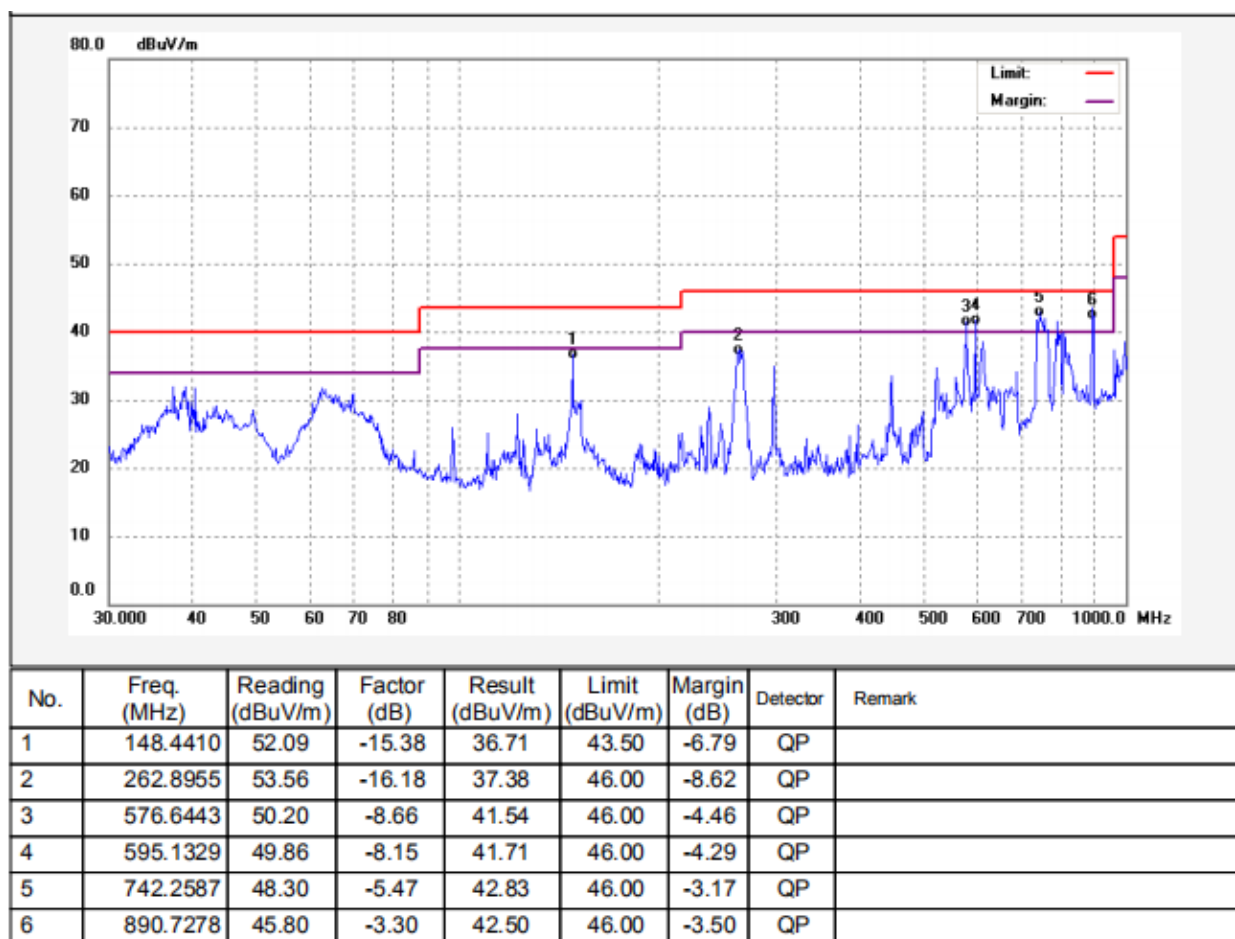


1.1.3 Measurement Data

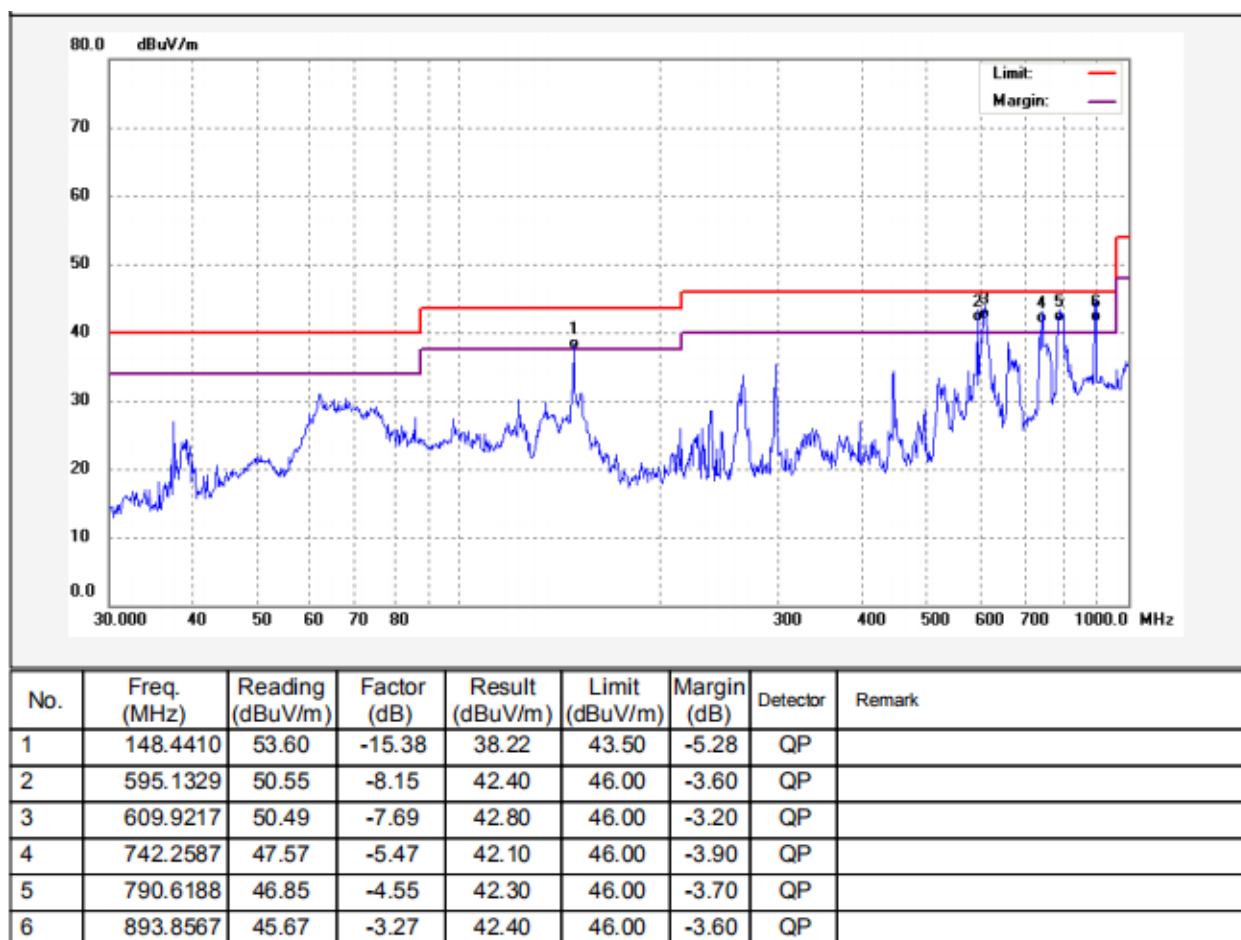
The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Quasi-peak measurements were performed if peak emissions were within 6dB of the Quasi-peak limit line.

1.1.4 Radiated Emission Test Data, 30MHz to 1000MHz

Antenna Polarization: Vertical



Antenna Polarization: Horizontal



7.2 Radiation Emission, Above 1000MHz

Test Requirement..... : FCC PART 15, SUBPART B
 Test Method..... : ANSI C63.4-2014
 Test Result : Pass
 Frequency Range..... : Above 1GHz
 Class. : Class B
 Limit. :

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

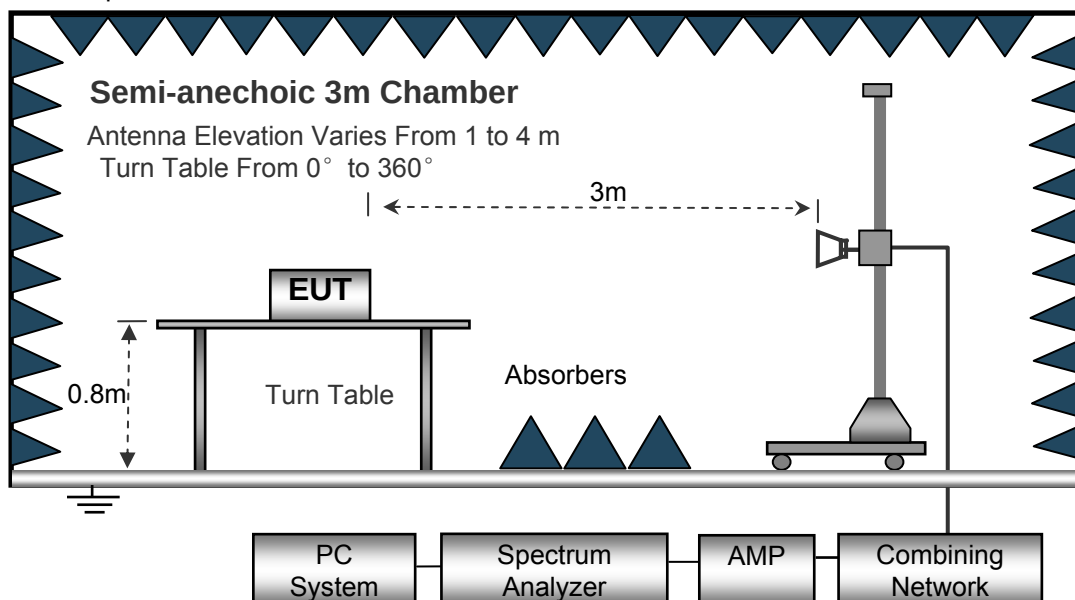
1.1.5 E.U.T. Operation

Operating Environment:

Temperature..... : 22.5°C
 Humidity..... : 52.6%RH
 Atmospheric Pressure : 101.8kPa
 EUT Operation : Refer to section 5.5.

1.1.6 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 C63.4-2014

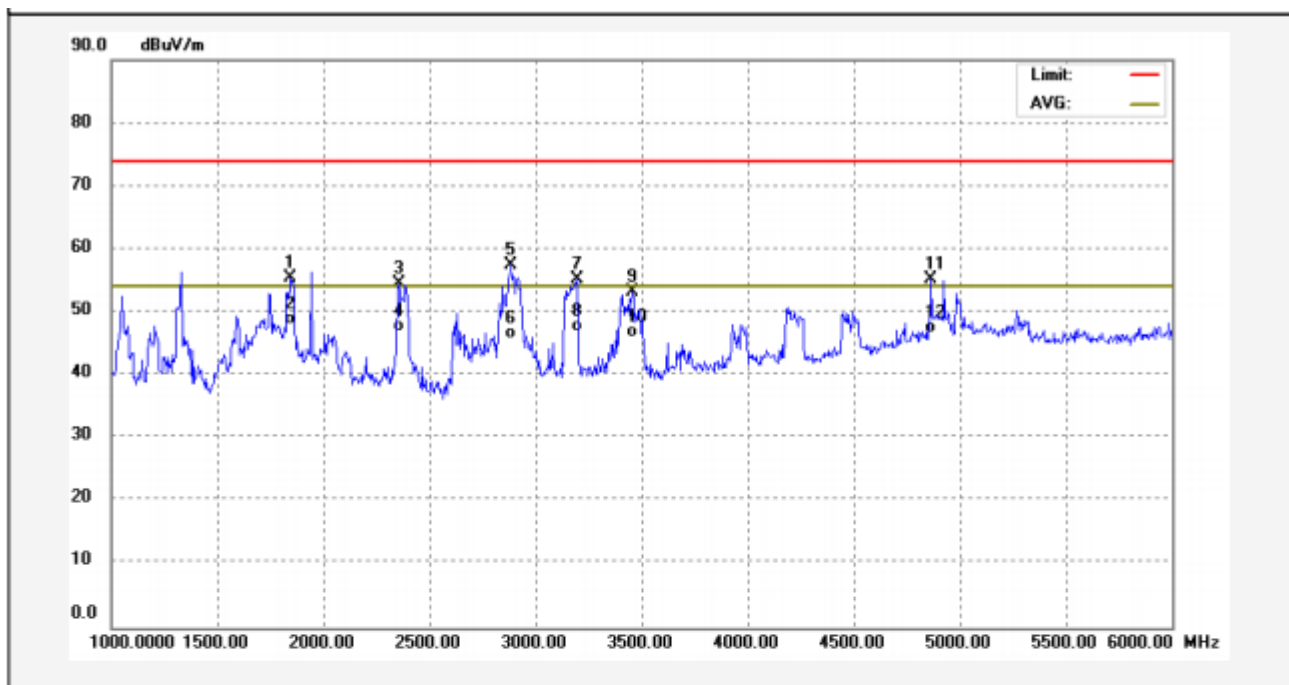


1.1.7 Measurement Data

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

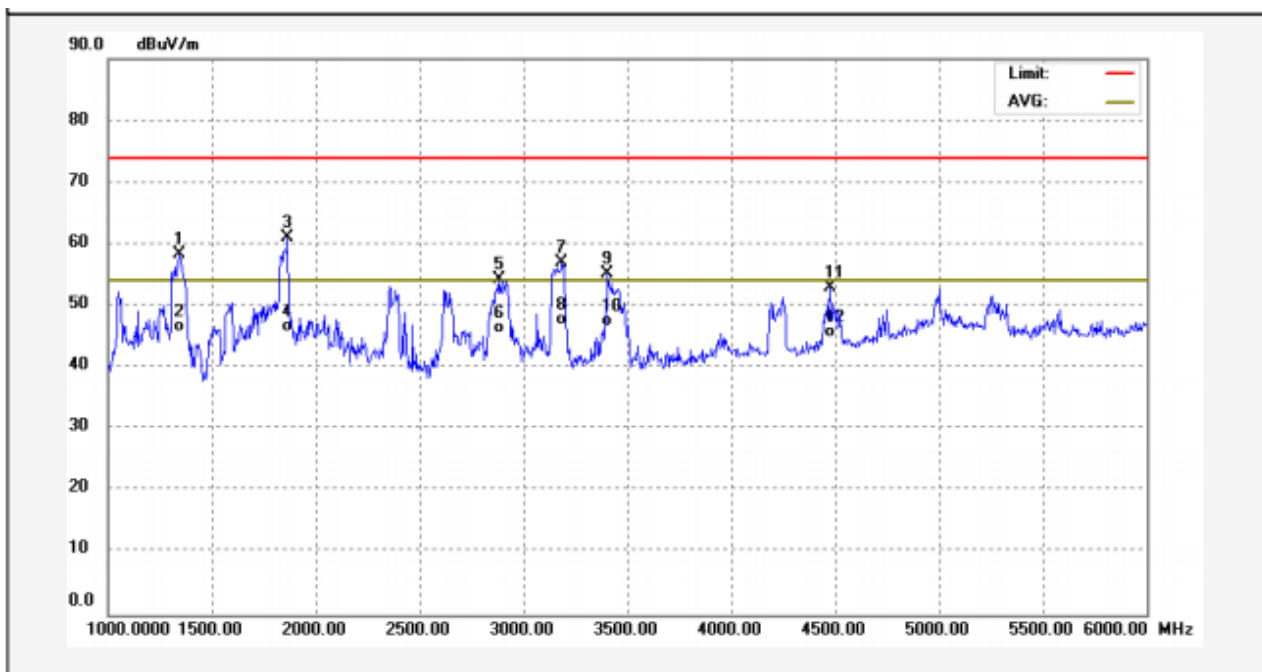
1.1.8 Radiated Emission test data, Above 1000MHz

Antenna Polarization: Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	1845.000	66.95	-11.41	55.54	74.00	-18.46	peak	
2	1845.000	60.36	-11.41	48.95	54.00	-5.05	AVG	
3	2355.000	66.14	-11.68	54.46	74.00	-19.54	peak	
4	2355.000	59.60	-11.68	47.92	54.00	-6.08	AVG	
5	2885.000	68.53	-11.02	57.51	74.00	-16.49	peak	
6	2885.000	57.64	-11.02	46.62	54.00	-7.38	AVG	
7	3195.000	65.38	-10.10	55.28	74.00	-18.72	peak	
8	3195.000	57.83	-10.10	47.73	54.00	-6.27	AVG	
9	3455.000	62.55	-9.36	53.19	74.00	-20.81	peak	
10	3455.000	56.17	-9.36	46.81	54.00	-7.19	AVG	
11	4865.000	57.66	-2.41	55.25	74.00	-18.75	peak	
12	4865.000	50.08	-2.41	47.67	54.00	-6.33	AVG	

Antenna Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	1345.000	70.82	-12.41	58.41	74.00	-15.59	peak	
2	1345.000	59.03	-12.41	46.62	54.00	-7.38	AVG	
3	1865.000	70.41	-9.39	61.02	74.00	-12.98	peak	
4	1865.000	56.00	-9.39	46.61	54.00	-7.39	AVG	
5	2885.000	61.79	-7.49	54.30	74.00	-19.70	peak	
6	2885.000	54.01	-7.49	46.52	54.00	-7.48	AVG	
7	3185.000	64.16	-7.23	56.93	74.00	-17.07	peak	
8	3185.000	54.95	-7.23	47.72	54.00	-6.28	AVG	
9	3405.000	62.22	-7.09	55.13	74.00	-18.87	peak	
10	3405.000	54.76	-7.09	47.67	54.00	-6.33	AVG	
11	4475.000	58.50	-5.62	52.88	74.00	-21.12	peak	
12	4475.000	51.31	-5.62	45.69	54.00	-8.31	AVG	

8 Photographs – Test Setup

8.1 Photograph – Radiated Emission Test Setup For 30MHz-1000MHz



8.2 Photograph – Radiated Emission Test Setup For Above 1GHz



9 Photographs of test setup and EUT.

Note: Please refer to appendix: Appendix-6310-Photos.

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