FCC Test Report

FCC EVALUATION REPORT FOR CERTIFICATION	
Project Reference No.	273927
Product	Tablet PC
Brand Name	N/A
Model	W850
Alternate Model	N/A
Tested according to	FCC Rules and Regulations Part 15 Subpart B Class B, ANSI C63.4-2009

Tested in period	2014-12-30	
Issued date	2014-12-31	
Name and address of the Test House	Nemko Shanghai Ltd Shenzhen Branch. Unit CD, Floor 10, Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen, China Phone : +86 755 8221 1420 Fax : +86 755 8221 1420	
Tested by	Zone Peng	2014-12-31
	Zone Peng	***date***
Verified by	Daria Liu	2014-12-31
	Daria Liu	***date***

Contents of This Report

1. Client Information

1.1 Applicant

Company Name:	South Holdings Industrial Limited
Company Address:	Building 1, Hao'er JiaShiTai Industrial Park, FengTang Rd., Tangwei, FuYong Town, Bao'an District, Shenzhen, 518103, China

1.2 Manufacturer

Company Name:	South Holdings Industrial Limited
Company Address:	Building 1, Hao'er JiaShiTai Industrial Park, FengTang Rd., Tangwei, FuYong Town, Bao'an District, Shenzhen, 518103, China

1.3 Scope

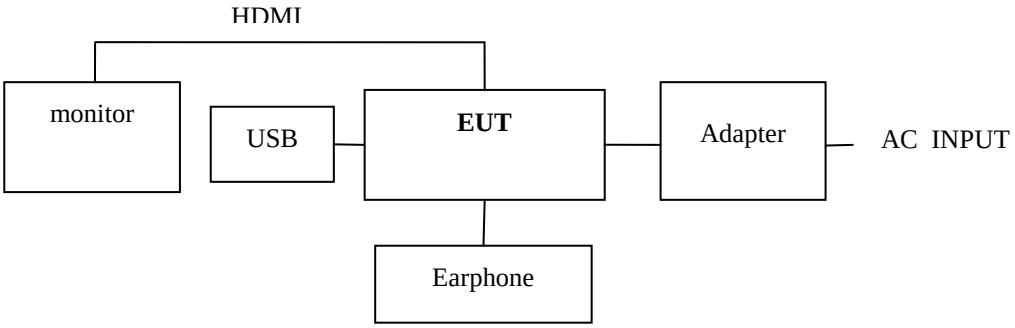
●Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC part 15B.

2. Equipment under Test (EUT)

2.1 Identification of EUT

Category:	Tablet PC
Model Name:	W850
Alternate model:	N/A
Brand name:	N/A
Technical data (Rating, etc.):	AC/DC Adapter: *KA24-0503000US* Input: 100-240V~, 50/60Hz, 0.55A max.Class II Output: 5Vdc,3000mA
Remark:	This report 273927 is on the basis of the report 274749, The model:W850, FCC ID:2ACEK-W850, trademark: N/A is electrically identical to the model:W850, FCC ID:2ACEK-W850-1, trademark:XTRATECH, only FCC ID number and trademark are different. Additional test is not need, all data are from the report 274749.

2.2 Setup drawing



2.3 Additional Information Related to Testing

TM 1	120V AC 60Hz	USB & SD card data exchange mode
TM 2	120V AC 60Hz	Camera recording mode
TM 3	120V AC 60Hz	Video playing & HDMI connection mode

Remark: all modes are tested and only list worse case result in report.

3. General Test Conditions

3.1 Location

Global United Technology Services Co., Ltd. -- Nemko ELA 632

2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

FCC Registration No.:600491

IC Registration No.9079A-2

Note: all test are witnessed by NEMKO engineer

3.2 Operating Environment

All tests and measurements were performed in a shielded enclosure or a controlled environment suitable for the tests conducted. The climatic conditions in the test area are automatically controlled and recorded continuously.

Parameters	Recording during test	Accepted deviation
Ambient temperature	20-21°C	15 – 35 ºC
Relative humidity	45-50%	30 - 60%
Atmospheric pressure	101.1 kPa -101.2kPa	86-106kPa

3.3 Operating During Test

●AC 120V 60Hz, DC 5V from adapter.

3.4 Test Equipment

The test equipments used in testing are calibrated on a regular basis. For most of the testing equipments accredited calibration is conducted once a year. For certain equipment the calibration interval is longer. Between the calibrations all test equipment are controlled and verified on a regular basis. The test equipments used are defined in each test section of this report.

A.E. used during testing:

1. HDMI cable: detachable, shielded with electric conductivity fabric and 2 magnetic core fixed at both end of the HDMI line (1m).
2. Earphone: detachable, un-shield with a magnetic core at the jack end (0.8m).
   manufacture: Aoni, model no: MP-105 (FCC VOC)
3. AC power cable: detachable, un-shield (1.5m)
3. Monitor: manufacture: AOC, model no: V22T (FCC DOC)
4: SD CARD: manufacture:Sony, model no: SR-32C4 (FCC DOC)
5: USB cable: detachable, shielded (0.2m)

4. Measurement Uncertainty

The Measurement Uncertainties stated were calculated in accordance with the requirements of NIST Technical Note 1297 with the confidence level of 95 %.

No.	Item	Uncertainty	Remark
1	Conducted Emission Test	0.15~30MHz 3.45dB	
2	Radiated Emission Test	30MHz~1000MHz 4.50dB 1GHz-18GHz 4.70dB	3m chamber

5. Conducted Emission (150 KHz to 30 MHz)

5.1 Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network. This provided a 50-ohm coupling impedance for the EUT (Please refer to the test setup photographs). The other peripheral devices power cord connected to the power mains through another line impedance stabilization network.

Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2009 on conducted Emission test.

The bandwidth of test receiver is set at 9kHz. The frequency range from 150kHz to 30MHz is checked. The test result are reported as below.

5.2 Measurement Equipment

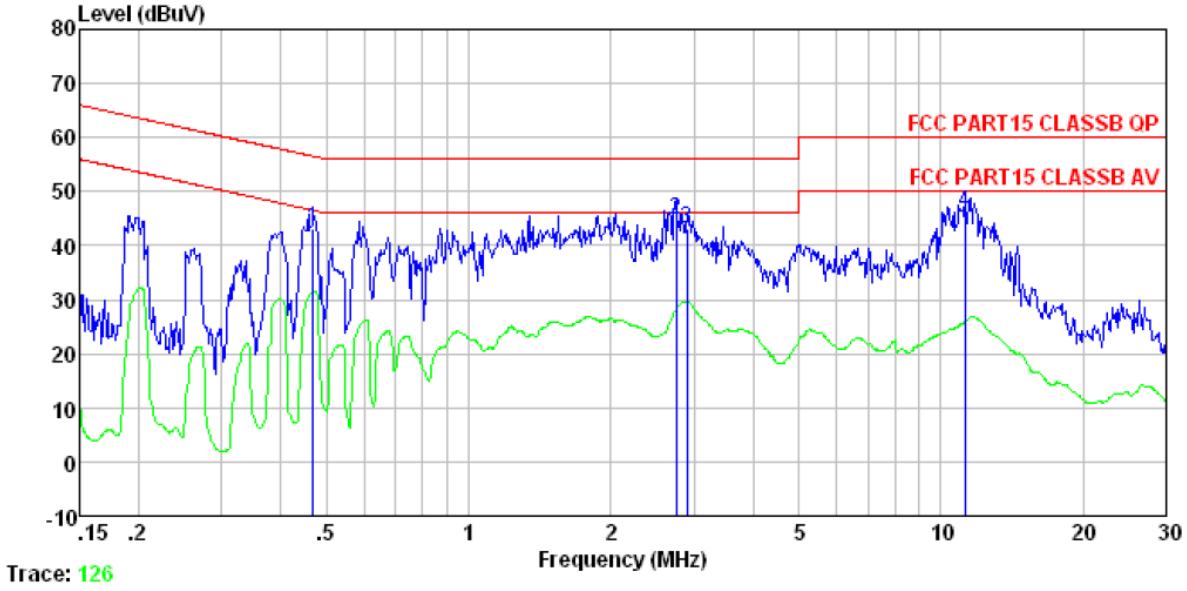
	Equipment	Calibration due	Type	Serial No.	Manufacturer
☒	Shielding Room	Jul. 04 2015	7.0(L)x3.0(W)x3.0(H)	GTS252	ZhongYu Electron
☒	EMI Test Receiver	Jul. 04 2015	ESCS30	1102.4500K30	Rohde & Schwarz
☒	10dB Pulse Limita	Jul. 04 2015	N/A	GTS224	Rohde & Schwarz
☒	LISN	Jul. 04 2015	NSLK 8127	8127549	SCHWARZBECK
☒	Coaxial Cable	Apr. 01 2015	N/A	N/A	GTS

5.3 Test Result

Connect mode	Power Line	Test Data	Test Result
TM1	Line	Diagram 001	Pass
	Neutral	Diagram 002	Pass
TM2	Line	Diagram 003	Pass
	Neutral	Diagram 004	Pass
TM3	Line	Diagram 005	Pass
	Neutral	Diagram 006	Pass
Remark	TM1~ TM3 is pre-scan, and only list the worse result in the report		

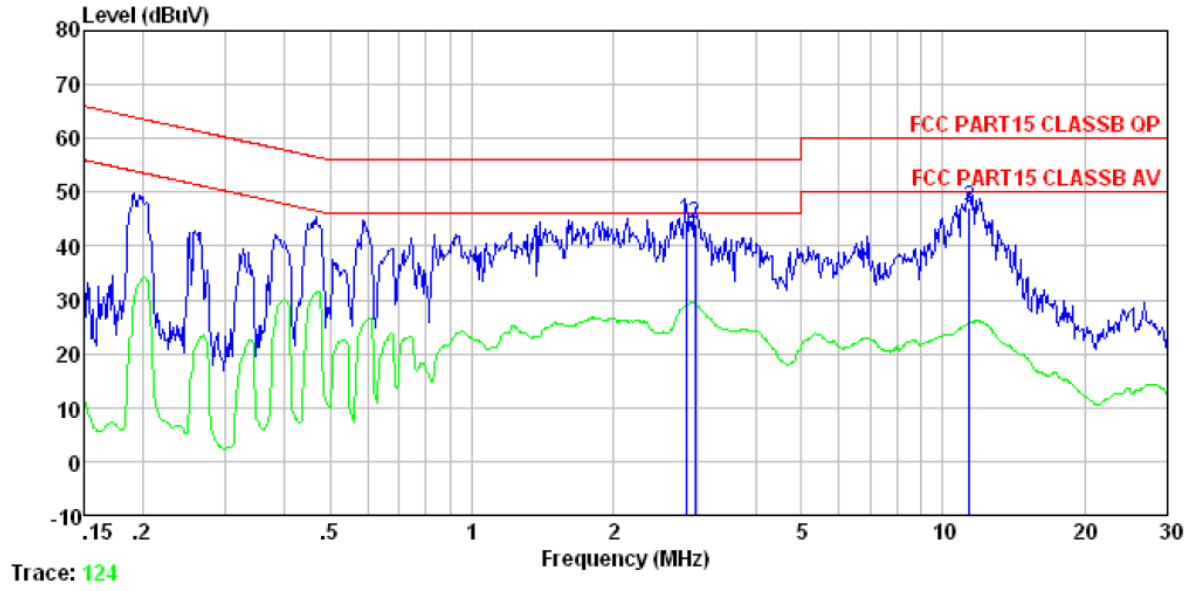
NOTES:
1. Measurements using CISPR quasi-peak mode & average mode.
2. All modes of operation were investigated and the worst -case emission are reported. See attached Plots.
3. Emission level = LISN Factor + Cable Loss + Reading
4. LINE: L1 =Line, N = Neutral
5. The limit for Class B device is on the FCC Part section 15.107.
6: If PK value is lower than AV limit then no reading value listed in report .If QP value is Lower than AV limit ,then AV value don't listed in report.

5.3.1 Diagram 001



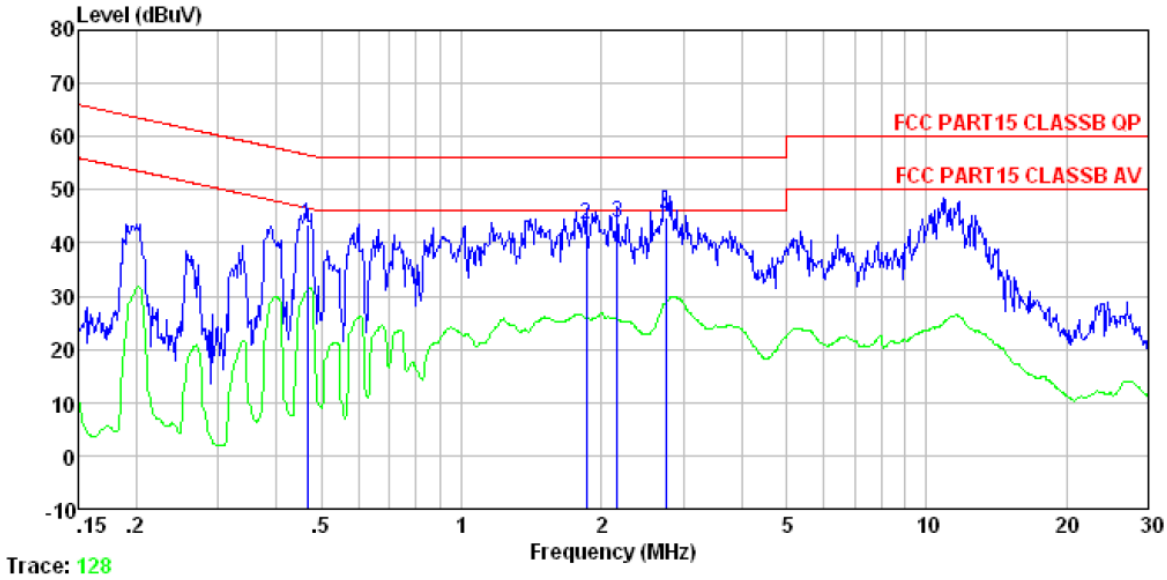
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.469	43.07	0.06	0.11	43.24	56.54	-13.30	QP
2	2.750	44.56	0.10	0.15	44.81	56.00	-11.19	QP
3	2.900	42.82	0.11	0.15	43.08	56.00	-12.92	QP
4	11.257	45.61	0.29	0.20	46.10	60.00	-13.90	QP

5.3.2 Diagram 002



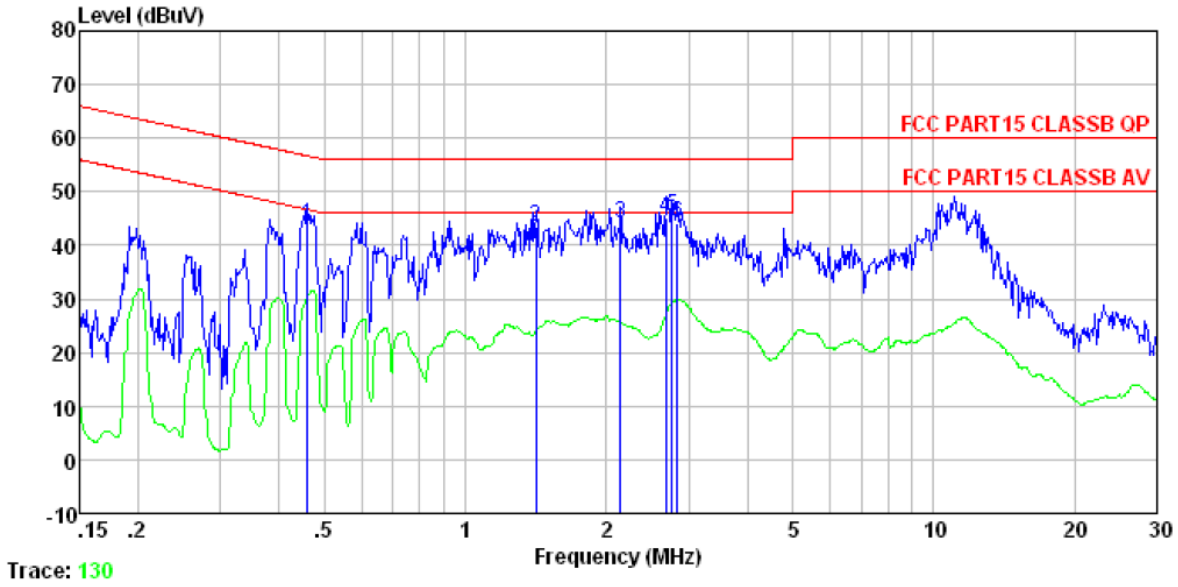
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	2.854	44.45	0.15	0.15	44.75	56.00	-11.25	QP
2	2.978	43.74	0.15	0.15	44.04	56.00	-11.96	QP
3	11.377	46.44	0.35	0.20	46.99	60.00	-13.01	QP

5.3.3 Diagram 003



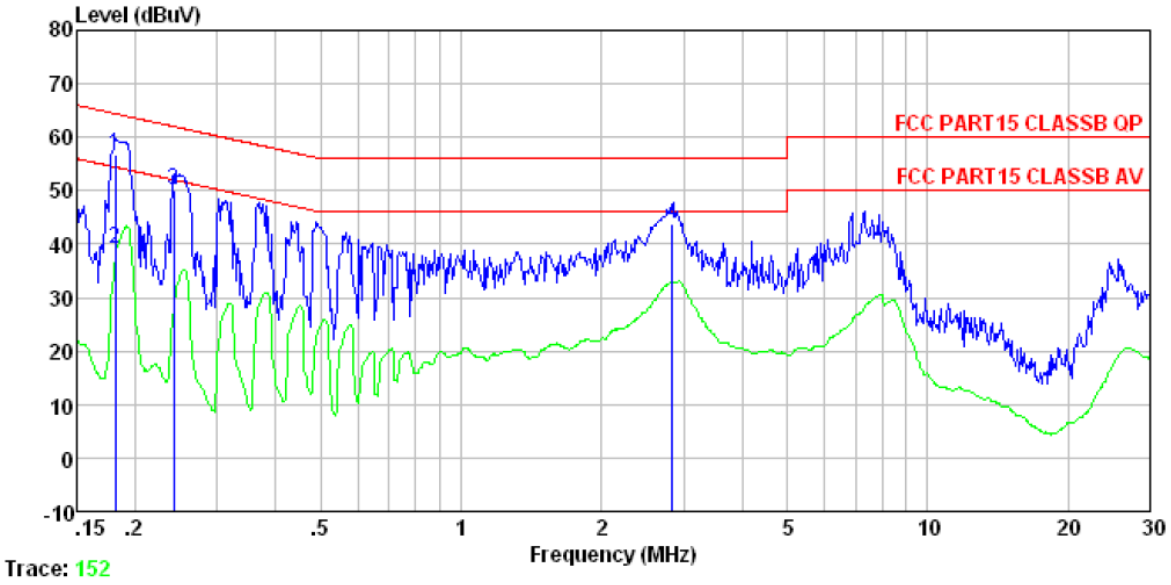
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.466	43.37	0.06	0.11	43.54	56.58	-13.04	QP
2	1.858	43.08	0.09	0.14	43.31	56.00	-12.69	QP
3	2.167	43.40	0.09	0.15	43.64	56.00	-12.36	QP
4	2.750	44.58	0.10	0.15	44.83	56.00	-11.17	QP

5.3.4 Diagram 004



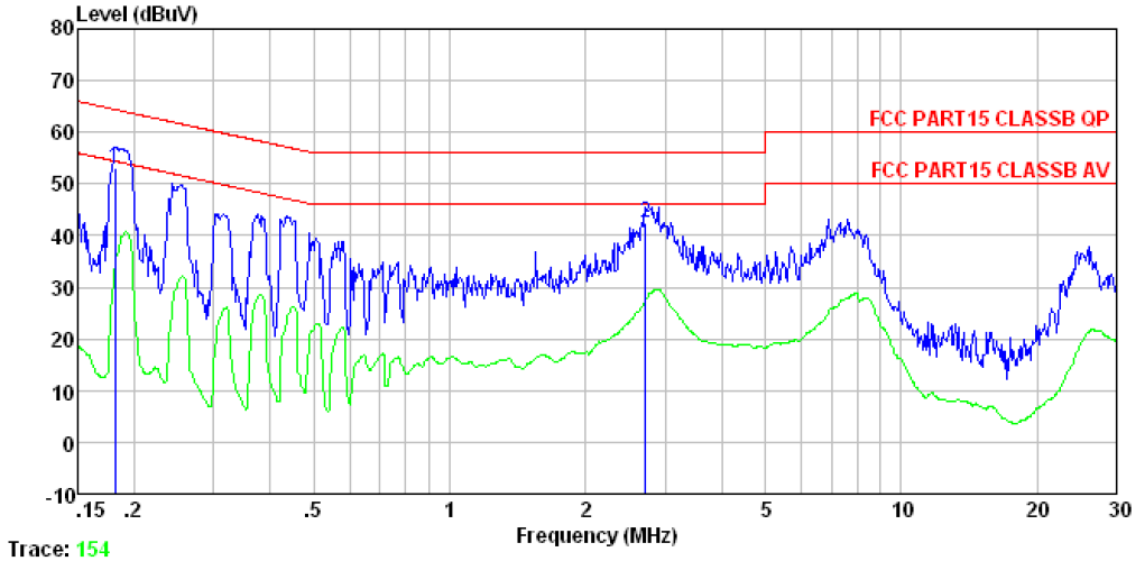
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.461	43.58	0.12	0.11	43.81	56.67	-12.86	QP
2	1.418	43.09	0.12	0.13	43.34	56.00	-12.66	QP
3	2.144	43.84	0.12	0.15	44.11	56.00	-11.89	QP
4	2.678	44.89	0.14	0.15	45.18	56.00	-10.82	QP
5	2.765	45.10	0.14	0.15	45.39	56.00	-10.61	QP
6	2.839	43.86	0.15	0.15	44.16	56.00	-11.84	QP

5.3.5 Diagram 005



	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.182	56.46	0.14	0.13	56.73	64.42	-7.69	QP
2	0.182	38.73	0.14	0.13	39.00	54.42	-15.42	Average
3	0.242	49.86	0.12	0.12	50.10	62.04	-11.94	QP
4	2.839	43.35	0.15	0.15	43.65	56.00	-12.35	QP

5.3.6 Diagram 006



	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.182	52.99	0.07	0.13	53.19	64.42	-11.23	QP
2	2.721	42.37	0.10	0.15	42.62	56.00	-13.38	QP

6. Radiated Electromagnetic Disturbances

6.1 Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 3m or 10m from the EUT on an adjustable mast.
The EUT were rotated 0 to 360 degree and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. The test result are reported as below.
For below 1GHz
RBW=120 kHz; VBW=300KHz. QP detector.The frequency range from 30MHz to 1000MHz is checked.
For above 1GHz, The frequency range from 1GHz to 18GHz is checked.
RBW=1MHz ; VBW=1MHz,PK detector for peak emissions measurement above 1GHz
RBW=1MHz ; VBW=10Hz, PK detector for average emissions measure above 1GHz

6.2 Measurement Equipment

	Equipment	Calibration due	Type	Serial No.	Manufacturer
☒	EMI Test Receiver	Jul. 04 2015	ESU26	GTS203	R&S
☒	BiConiLog Antenna	Feb. 26 2015	VULB9163	GTS214	SCHWARZBECK
☒	Horn Antenna	Feb. 25 2015	BBHA9120D	GTS215	SCHWARZBECK
☒	Coaxial Cable	Apr. 01 2015	N/A	GTS213	GTS
☒	Coaxial Cable	Apr. 01 2015	N/A	GTS211	GTS
☒	Coaxial Cable	Apr. 01 2015	N/A	GTS211	GTS
☒	Coaxial cable	Apr. 01 2015	N/A	GTS210	GTS
☒	Amplifier	Jul. 04 2015	8347A	GTS204	HP

6.3 Test Result

Connect mode	Antenna Polarity	Test Data	Test Result
TM1 (below 1GHz) 3m test distance	Horizontal	Diagram 007	Pass
	Vertical	Diagram 008	Pass
TM2 (below 1GHz) 3m test distance	Horizontal	Diagram 009	Pass
	Vertical	Diagram 010	Pass
TM3 (below 1GHz) 3m test distance	Horizontal	Diagram 011	Pass
	Vertical	Diagram 012	Pass
TM1 (above 1GHz) 3m test distance	Horizontal	Diagram 013	Pass
	Vertical	Diagram 014	Pass
TM2 (above 1GHz) 3m test distance	Horizontal	Diagram 015	Pass
	Vertical	Diagram 016	Pass
TM3 (above 1GHz) 3m test distance	Horizontal	Diagram 017	Pass
	Vertical	Diagram 018	Pass
Remark :	TM1~ TM3 is pre-scan, and only list the worse result in the report		

NOTES:

1.All modes were measured and the worst case emission was reported.

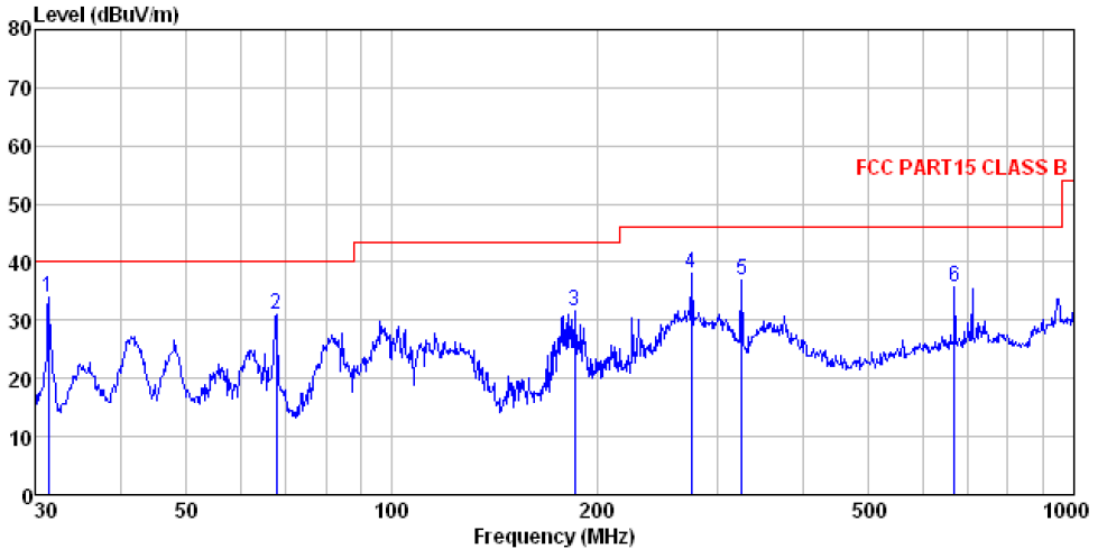
2.Measurements using CISPR quasi-peak mode for below 1GHz.

3.The limit for Class B device is on the FCC Part section 15.109.

4. For Above 1GHz , if Pk value is lower than AV limit , then AV reading is not listed in report .

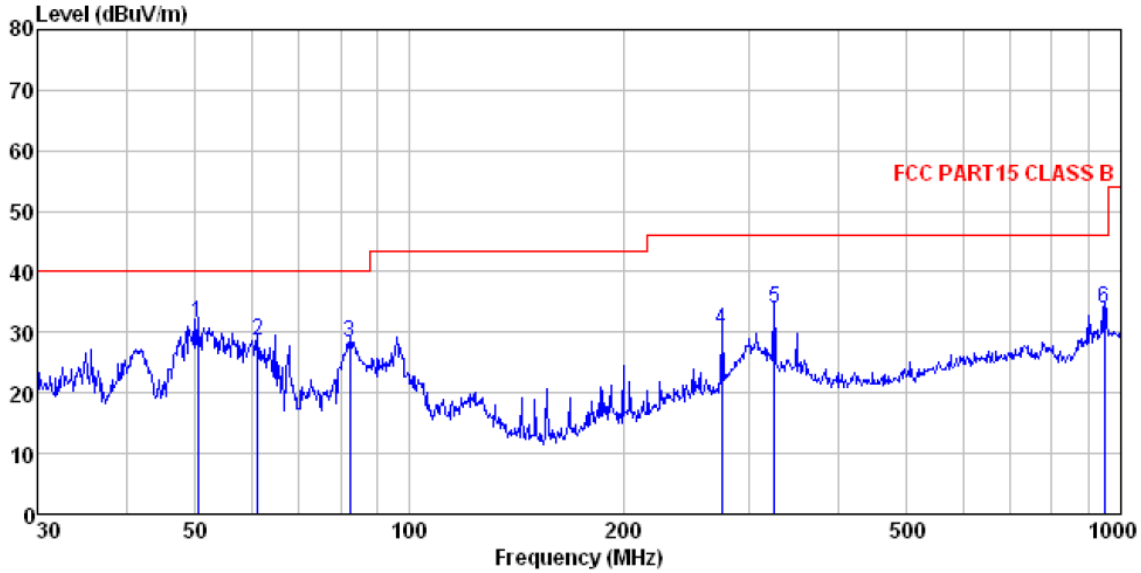
5. For above 1GHz, The frequency range from 1GHz to 12.5GHz is checked, but not found any emission above 10GHz, so, only list 1-10GHz result in the report.

6.3.1 Diagram 007



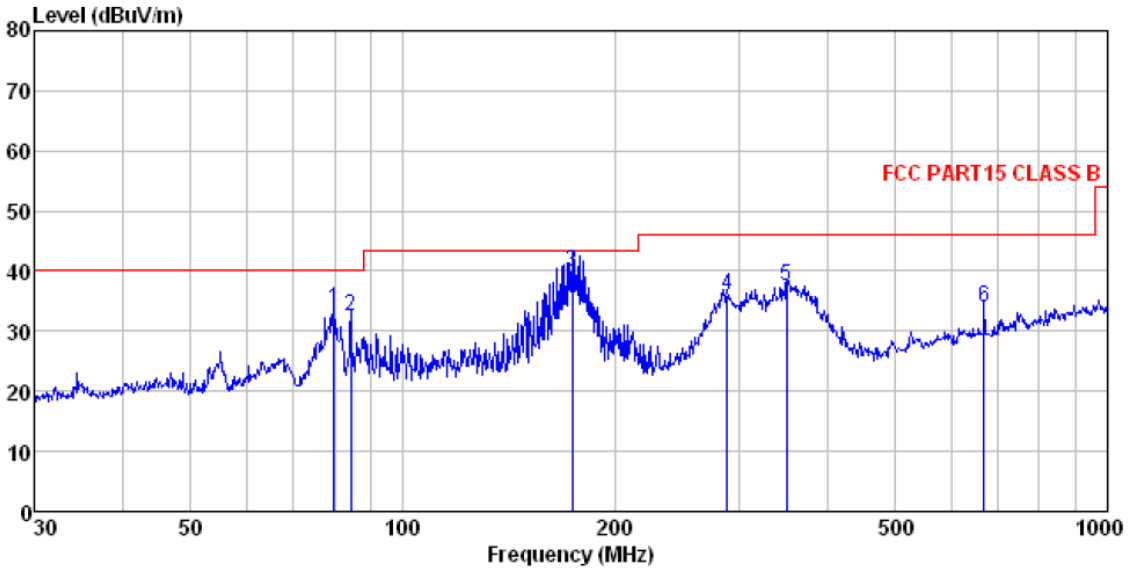
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	31.399	39.57	14.32	0.57	20.50	33.96	40.00	-6.04	QP
2	67.675	38.99	11.61	0.92	20.50	31.02	40.00	-8.98	QP
3	185.138	38.90	12.16	1.77	21.39	31.44	43.50	-12.06	QP
4	275.157	42.46	14.55	2.25	21.28	37.98	46.00	-8.02	QP
5	325.596	40.08	15.59	2.49	21.16	37.00	46.00	-9.00	QP
6	668.142	31.57	20.69	3.97	20.66	35.57	46.00	-10.43	QP

6.3.2 Diagram 008



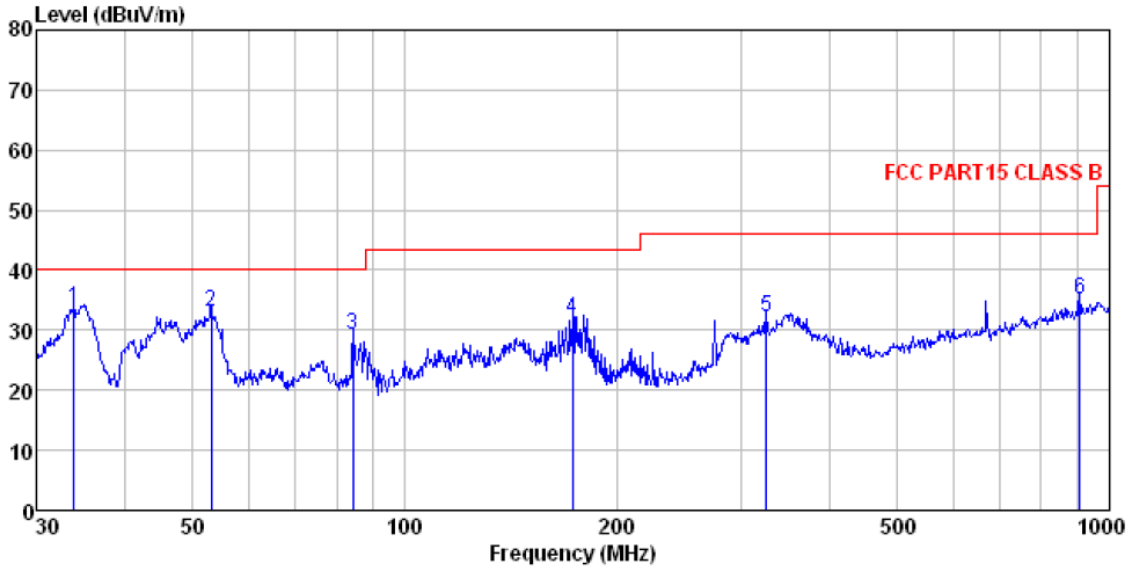
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	50.409	36.04	15.24	0.77	20.50	31.55	40.00	-8.45	QP
2	61.132	33.95	14.29	0.87	20.50	28.61	40.00	-11.39	QP
3	82.359	36.31	11.43	1.05	20.50	28.29	40.00	-11.71	QP
4	275.157	34.87	14.55	2.25	21.28	30.39	46.00	-15.61	QP
5	325.596	37.11	15.59	2.49	21.16	34.03	46.00	-11.97	QP
6	948.761	25.99	23.40	5.04	20.42	34.01	46.00	-11.99	QP

6.3.3 Diagram 009



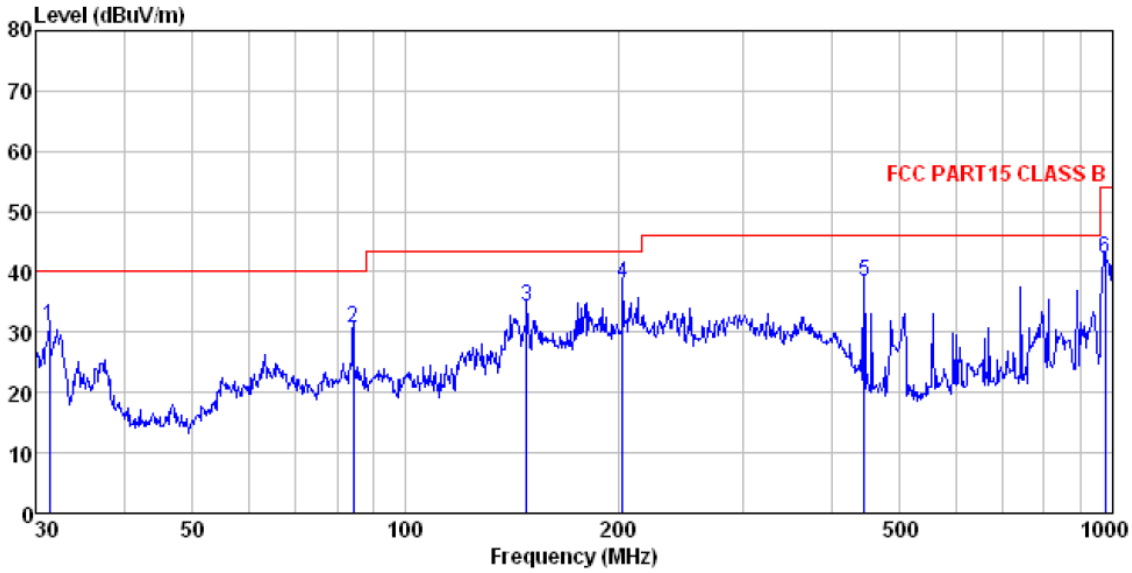
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	79.800	53.70	10.54	1.03	31.76	33.51	40.00	-6.49	QP
2	84.405	50.84	12.16	1.07	31.74	32.33	40.00	-7.67	QP
3	173.814	58.99	11.23	1.71	32.06	39.87	43.50	-3.63	QP
4	289.002	51.06	14.84	2.31	32.18	36.03	46.00	-9.97	QP
5	350.477	50.59	16.27	2.62	32.02	37.46	46.00	-8.54	QP
6	668.142	40.36	20.69	3.97	31.15	33.87	46.00	-12.13	QP

6.3.4 Diagram 010



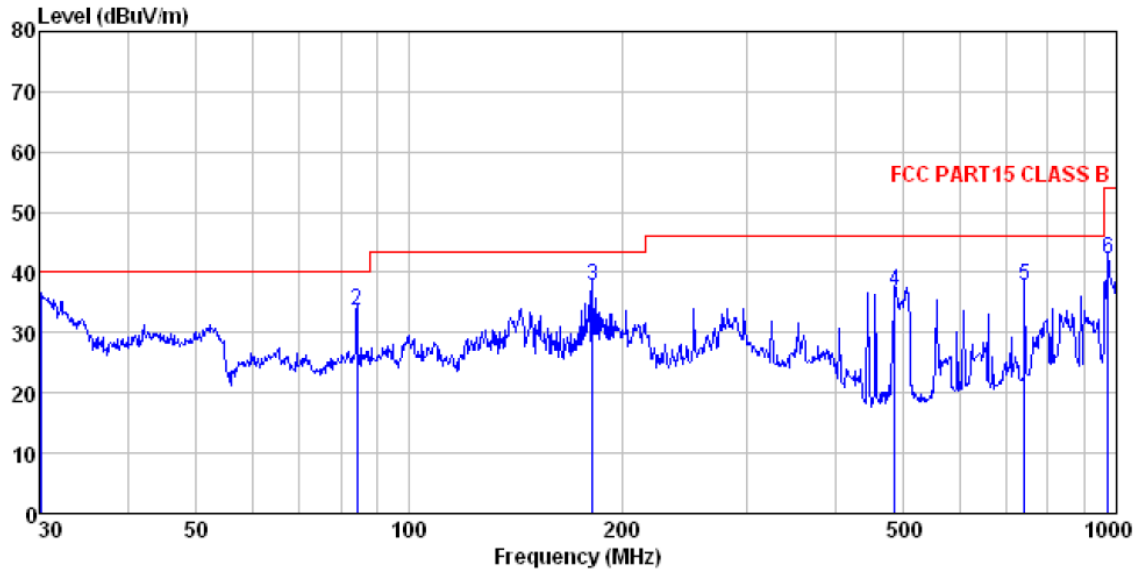
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	33.917	50.80	14.31	0.60	32.06	33.65	40.00	-6.35	QP
2	53.131	49.01	15.10	0.80	31.95	32.96	40.00	-7.04	QP
3	84.405	47.82	12.16	1.07	31.74	29.31	40.00	-10.69	QP
4	173.205	50.97	11.16	1.70	32.06	31.77	43.50	-11.73	QP
5	325.596	46.21	15.59	2.49	32.09	32.20	46.00	-13.80	QP
6	906.482	38.27	23.15	4.88	31.18	35.12	46.00	-10.88	QP

6.3.5 Diagram 011



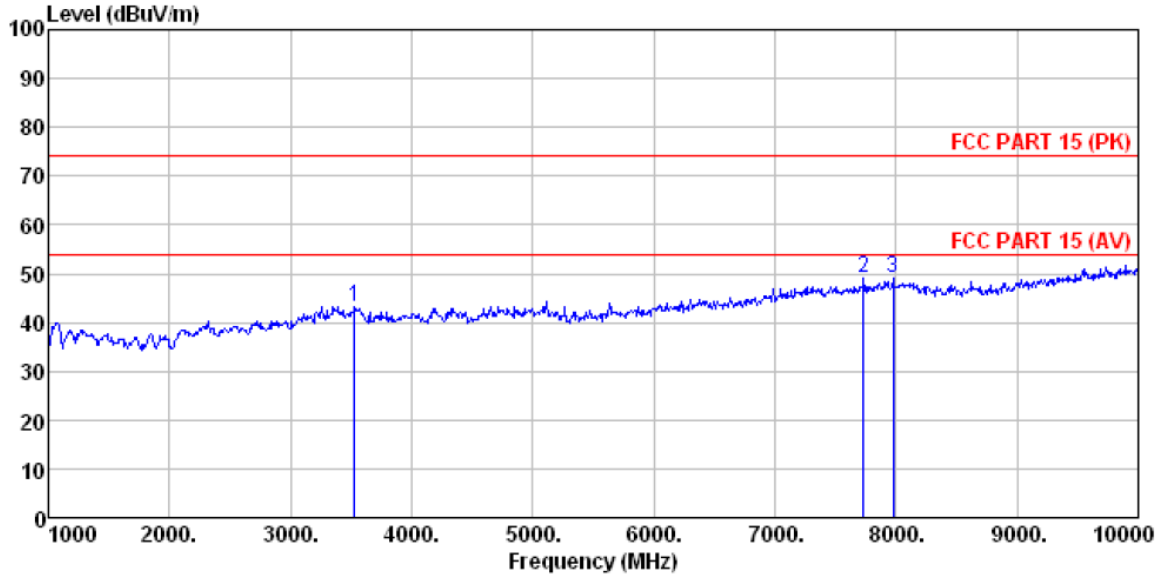
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	31.399	46.20	14.32	0.57	30.09	31.00	40.00	-9.00	QP
2	84.405	47.30	12.16	1.07	29.77	30.76	40.00	-9.24	QP
3	148.441	51.92	10.25	1.56	29.41	34.32	43.50	-9.18	QP
4	202.810	52.70	12.64	1.86	29.23	37.97	43.50	-5.53	QP
5	444.851	47.16	17.57	3.07	29.41	38.39	46.00	-7.61	QP
6	975.753	42.56	23.59	5.14	29.10	42.19	54.00	-11.81	QP

6.3.6 Diagram 012



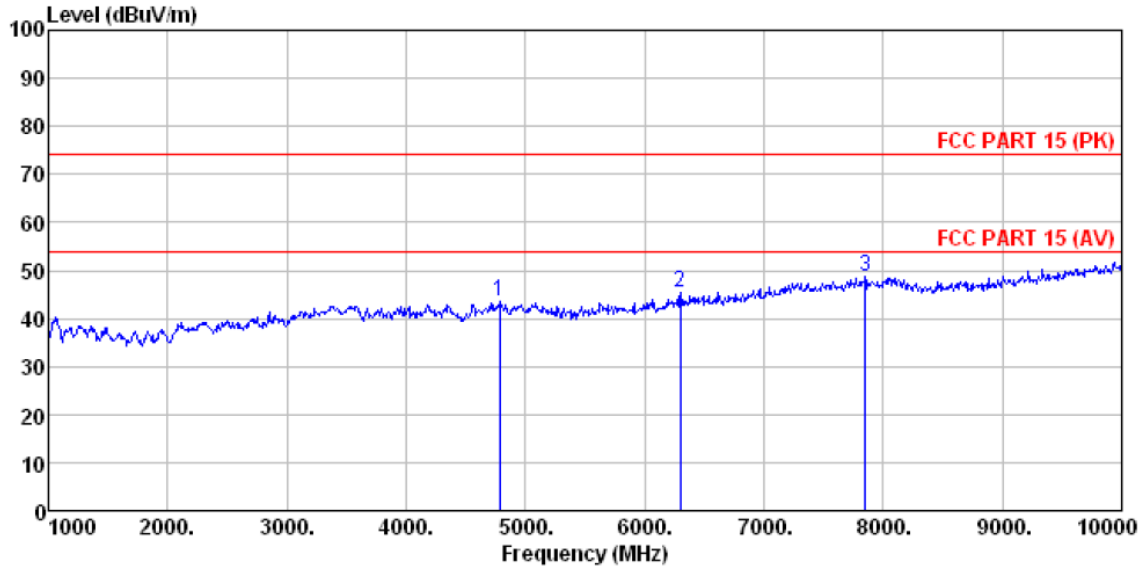
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	30.105	50.92	14.33	0.55	30.10	35.70	40.00	-4.30	QP
2	84.405	50.09	12.16	1.07	29.77	33.55	40.00	-6.45	QP
3	181.920	53.33	11.84	1.75	29.27	37.65	43.50	-5.85	QP
4	485.609	44.69	18.26	3.24	29.33	36.86	46.00	-9.14	QP
5	742.259	41.38	21.34	4.24	29.20	37.76	46.00	-8.24	QP
6	972.337	42.76	23.55	5.12	29.10	42.33	54.00	-11.67	QP

6.3.7 Diagram 013



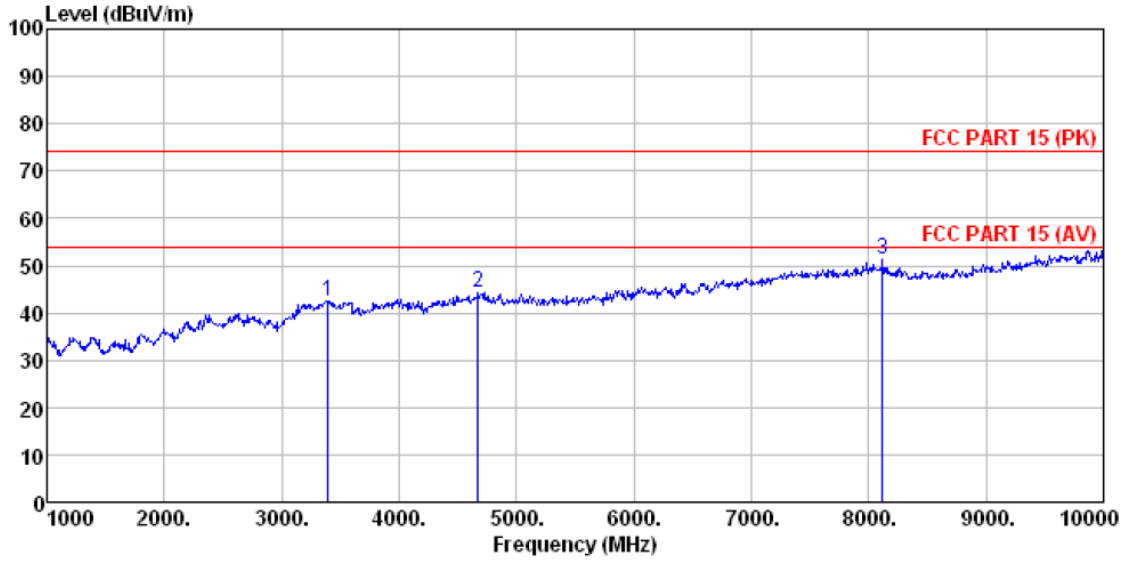
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3529.000	39.99	29.04	7.01	32.71	43.33	74.00	-30.67	Peak
2	7732.000	31.61	36.97	11.96	31.51	49.03	74.00	-24.97	Peak
3	7975.000	31.16	37.22	12.08	31.28	49.18	74.00	-24.82	Peak

6.3.8 Diagram 014



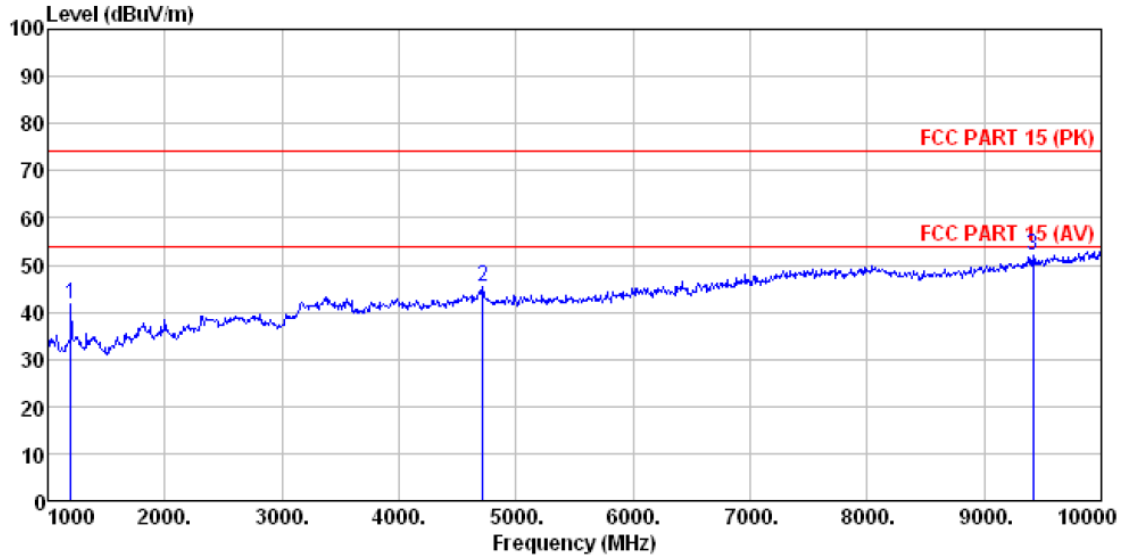
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	4780.000	35.32	31.75	8.58	32.07	43.58	74.00	-30.42	Peak
2	6301.000	33.54	33.30	10.63	32.05	45.42	74.00	-28.58	Peak
3	7849.000	31.08	37.09	12.02	31.39	48.80	74.00	-25.20	Peak

6.3.9 Diagram 015



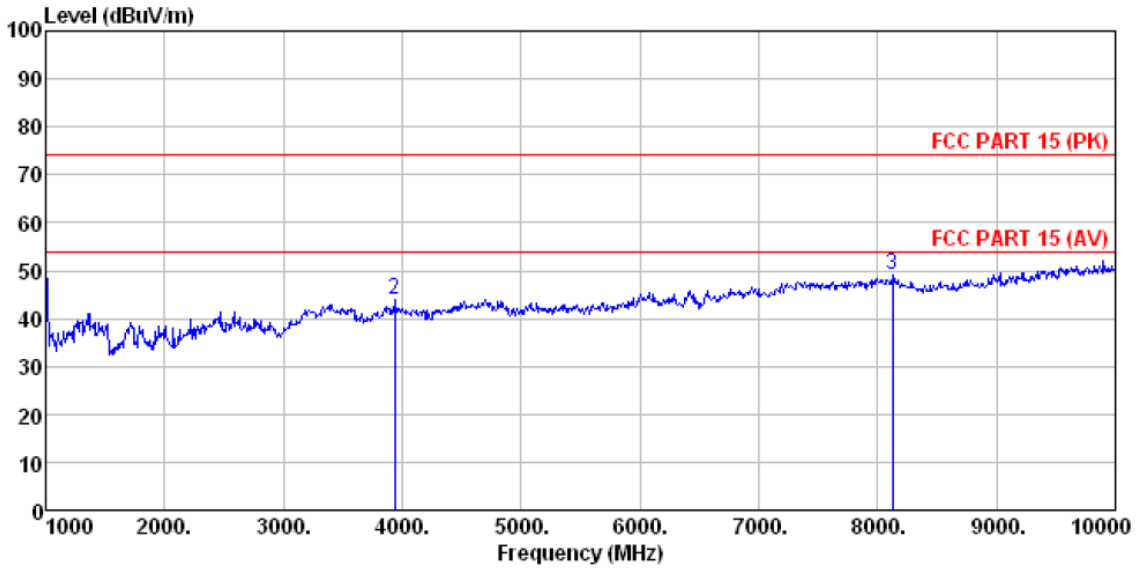
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	3394.000	40.11	28.60	6.76	32.87	42.60	74.00	-31.40	Peak
2	4672.000	36.37	31.61	8.48	32.02	44.44	74.00	-29.56	Peak
3	8119.000	33.18	37.12	12.32	31.49	51.13	74.00	-22.87	Peak

6.3.10 Diagram 016



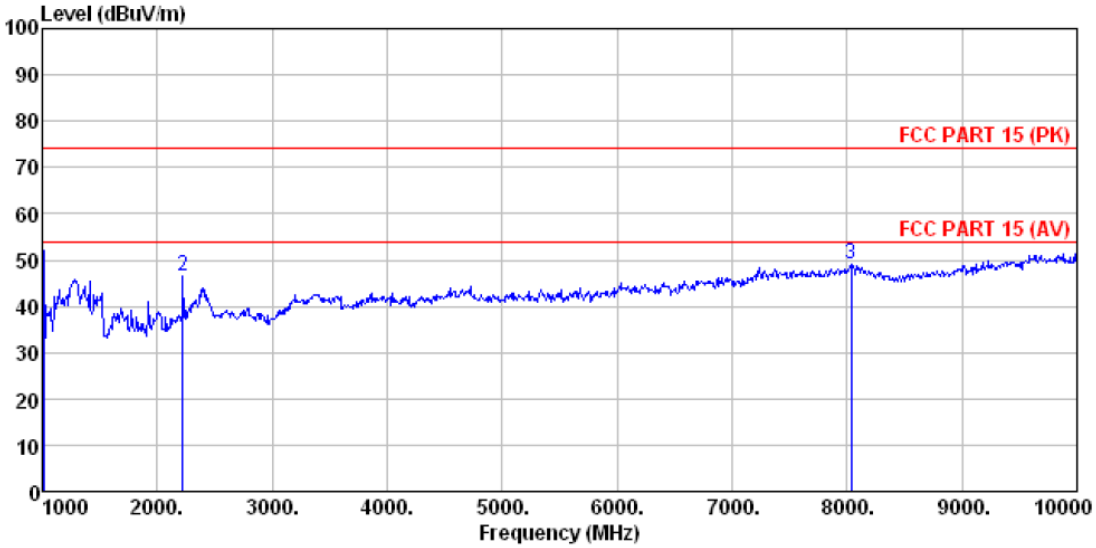
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1198.000	45.02	25.34	4.47	33.10	41.73	74.00	-32.27	Peak
2	4717.000	37.26	31.68	8.53	32.05	45.42	74.00	-28.58	Peak
3	9415.000	32.33	37.62	13.99	31.83	52.11	74.00	-21.89	Peak

6.3.11 Diagram 017



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1000.000	52.73	24.52	4.29	32.75	48.79	74.00	-25.21	Peak
2	3934.000	39.03	29.56	7.75	32.25	44.09	74.00	-29.91	Peak
3	8128.000	31.06	37.12	12.32	31.49	49.01	74.00	-24.99	Peak

6.3.12 Diagram 018



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1009.000	56.10	24.54	4.30	32.78	52.16	74.00	-21.84	Peak
2	2224.000	47.47	27.99	5.21	34.21	46.46	74.00	-27.54	Peak
3	8038.000	30.84	37.26	12.17	31.32	48.95	74.00	-25.05	Peak

Appendix A Sample Label

Labelling Requirements

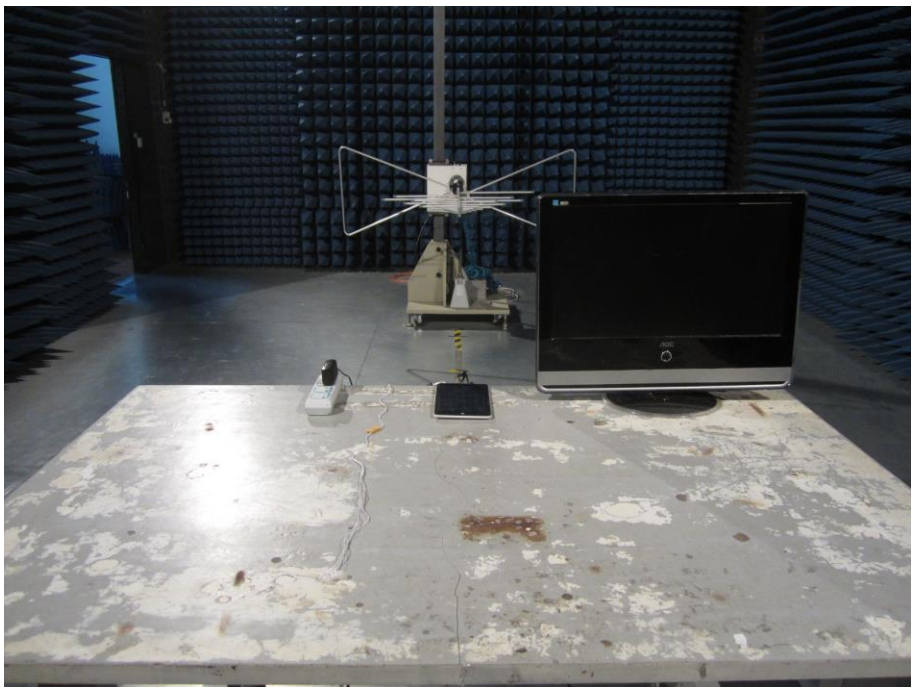
The sample label shown shall be permanently affixed at a conspicuous location on the device and be readily visible to the user at the time of purchase.

*** The following paragraph specified in the label.
FCC ID:2ACEK-W850-1

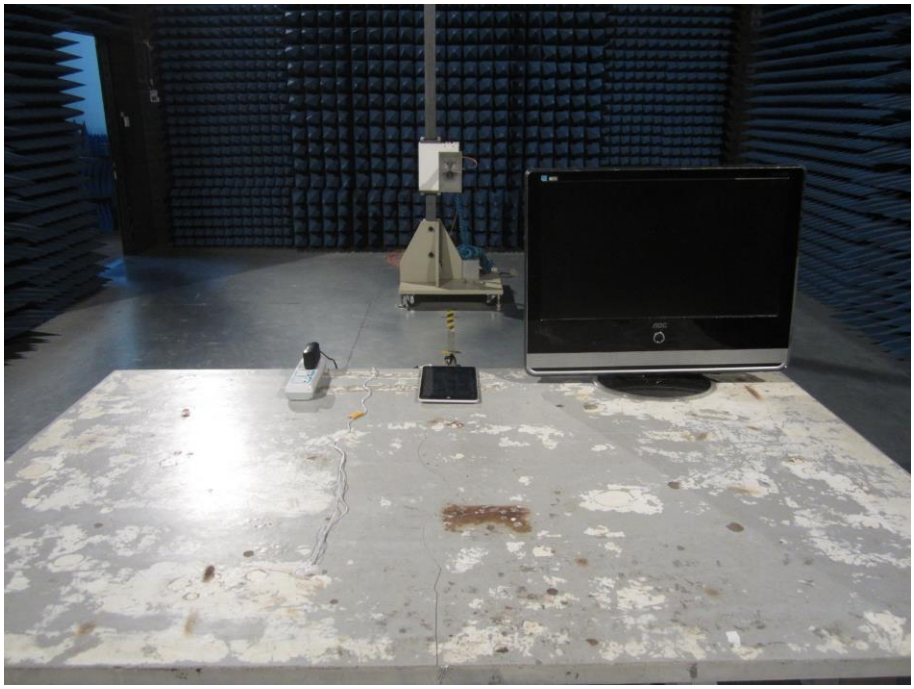
Appendix B Test Setup Photographs of EUT

B.1 Conducted Emission Test Setup Photographs

B.2 Radiated Emission (Below 1GHz)Test Setup Photographs



B.3 Radiated Emission (above 1GHz)Test Setup Photographs



*****END OF REPORT*****