

# TEST REPORT

**Applicant:** Widefly Ltd.

**Address of Applicant:** Unit 205, 2/F, Lakeside 2, Hong Kong Science Park, Shatin,  
N.T., HONG KONG

**Equipment Under Test (EUT)**

Product Name: POS TABLET

Model No.: WF360ST

**FCC ID:** ZXWWF360ST

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart B:2013

**Date of sample receipt:** June 25, 2014

**Date of Test:** July 20-24, 2014

**Date of report issued:** July 24, 2014

**Test Result :** Pass \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

A circular blue ink stamp from GTS Global United Technology Services Co., Ltd. is visible. The stamp contains the text "GTS", "GLOBAL UNITED TECHNOLOGY SERVICES CO., LTD.", and "HONG KONG". A handwritten signature in black ink is written over the stamp.

**Robinson Lo**  
**Laboratory Manager**

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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## 2 Version

Version No.	Date	Description
00	July 24, 2014	Original

Prepared by:

*Sam. Gao*

Date:

July 24, 2014

Project Engineer

Reviewed by:

*Hank. Yan*

Date:

July 24, 2014

Reviewer

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## 4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part15.107	Pass
Radiated Emissions	Part15.109	Pass

*Pass: The EUT comply with the essential requirements in the standard.*

## 5 General Information

### 5.1 Client Information

Applicant:	Widefly Ltd.
Address of Applicant:	Unit 205, 2/F, Lakeside 2, Hong Kong Science Park, Shatin, N.T., HONG KONG
Manufacturer/Factory:	Widefly Ltd.
Address of Manufacturer/Factory:	Unit 205, 2/F, Lakeside 2, Hong Kong Science Park, Shatin, N.T., HONG KONG

### 5.2 General Description of EUT

Product Name:	POS TABLET
Model No.:	WF360ST
Power supply:	Adapter: Model No.:WCF0500120E1BA Input: 100-240V 50/60Hz 0.15A Output: 5V 1.2A

### 5.3 Test mode and Test voltage

<b>Test mode:</b>	
Playing mode	Keep the EUT in video playing mode
Video Record mode	Keep the EUT in video Recording mode
PC mode	Keep the EUT in data exchanging wit PC mode.
<b>Test voltage:</b>	
AC 120V/60Hz	

### 5.4 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC Approval
HP	Printer	CB495A	05257893	DoC
Lenovo	PC Host	M6900	EA05257893	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC

### 5.5 Deviation from Standards

None.
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### 5.6 Abnormalities from Standard Conditions

None.
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## 5.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS —Registration No.: CNAS L5775**

CNAS has accredited Global United Technology Services Co., Ltd. to ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen 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 files. Registration 600491, June 28, 2013.

- **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

## 5.8 Test Location

Tests were performed at:

Global United Technology Services Co., Ltd.

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

Tel: 0755-27798480

Fax: 0755-27798960

## 6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 28 2014	Mar. 27 2015
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	Jul. 05 2014	Jul. 04 2015
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	Mar. 08 2014	Mar. 07 2015
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	Mar. 08 2014	Mar. 07 2015
6	RF Amplifier	HP	8347A	GTS204	Jul. 05 2014	Jul. 04 2015
7	Preamplifier	HP	8349B	GTS206	Jul. 05 2014	Jul. 04 2015
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	Jul. 05 2014	Jul. 04 2015
10	Coaxial Cable	GTS	N/A	GTS211	Jul. 05 2014	Jul. 04 2015
11	Thermo meter	N/A	N/A	GTS256	Jul. 05 2014	Jul. 04 2015

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	Sep. 07 2013	Sep. 06 2015
2	EMI Test Receiver	R&S	ESCS30	GTS223	Jul. 05 2014	Jul. 04 2015
3	Pulse Limiter	R&S	ESH3-Z2	GTS224	Jul. 05 2014	Jul. 04 2015
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 05 2014	Jul. 04 2015
5	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	Jul. 05 2014	Jul. 04 2015
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 05 2014	Jul. 04 2015
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Thermo meter	KTJ	TA328	GTS233	Jul. 25 2014	Jul. 24 2015

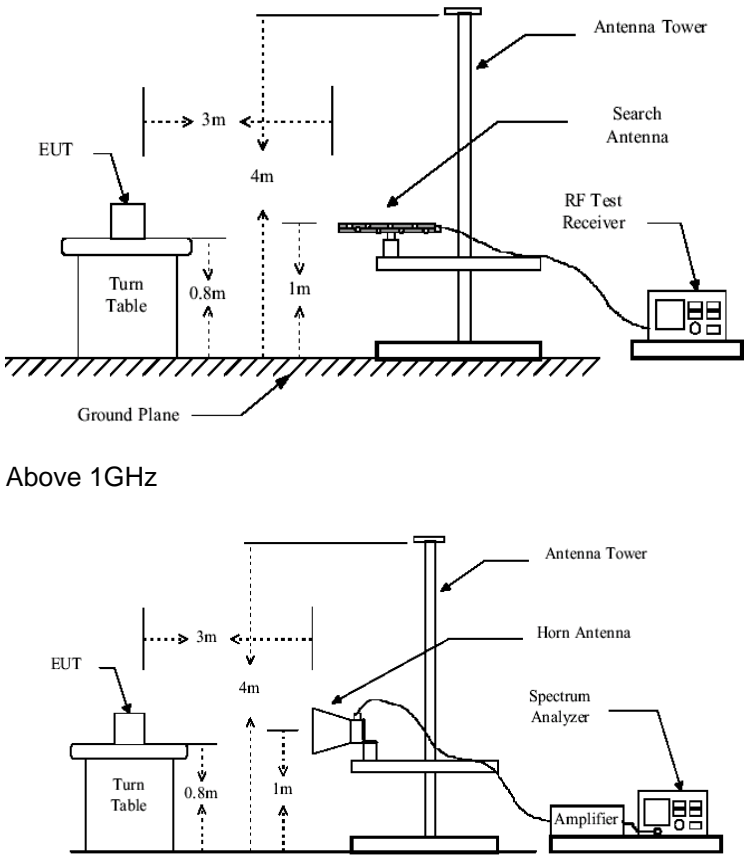
General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Barometer	ChangChun	DYM3	GTS257	July 08 2014	July 07 2015

## 7 Test Results and Measurement Data

### 7.1 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109																								
Test Method:	ANSI C63.4:2003																								
Test Frequency Range:	30MHz to 6GHz																								
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)																								
Receiver setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr><tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr><tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr></table>					Frequency	Detector	RBW	VBW	Remark	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value	Above 1GHz	Peak	1MHz	3MHz	Peak Value	Peak	1MHz	10Hz	Average Value	
Frequency	Detector	RBW	VBW	Remark																					
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value																					
Above 1GHz	Peak	1MHz	3MHz	Peak Value																					
	Peak	1MHz	10Hz	Average Value																					
Limit:	<table><tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr><tr><td>30MHz-88MHz</td><td>40.00</td><td>Quasi-peak Value</td></tr><tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak Value</td></tr><tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak Value</td></tr><tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr><tr><td>74.00</td><td>Peak Value</td></tr></table>					Frequency	Limit (dBuV/m @3m)	Remark	30MHz-88MHz	40.00	Quasi-peak Value	88MHz-216MHz	43.50	Quasi-peak Value	216MHz-960MHz	46.00	Quasi-peak Value	960MHz-1GHz	54.00	Quasi-peak Value	Above 1GHz	54.00	Average Value	74.00	Peak Value
Frequency	Limit (dBuV/m @3m)	Remark																							
30MHz-88MHz	40.00	Quasi-peak Value																							
88MHz-216MHz	43.50	Quasi-peak Value																							
216MHz-960MHz	46.00	Quasi-peak Value																							
960MHz-1GHz	54.00	Quasi-peak Value																							
Above 1GHz	54.00	Average Value																							
	74.00	Peak Value																							
Test Procedure:	<div>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</div> <div>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</div> <div>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</div> <div>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</div> <div>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</div> <div>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</div>																								
Test setup:	Below 1GHz																								



	 <p>Above 1GHz</p>
Test environment:	Temp.: 25 °C Humid.: 52% Press.: 1 012mbar
Measurement Record:	Uncertainty: ± 4.5dB
Test Instruments:	Refer to section 6 for details
Test mode:	Pre-scan all modes in section 5.3, and found the PC mode which is the worst mode, so only the data of worst mode was show on the test report.
Test results:	Pass

**Note:**

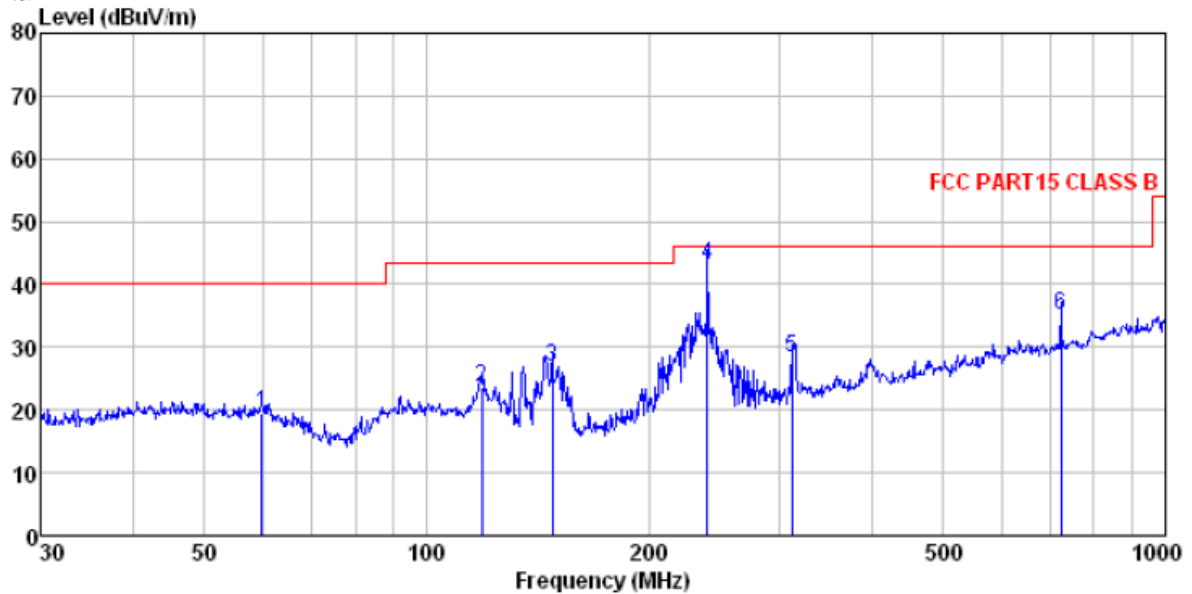
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

$$\text{Final Test Level} = \text{Receiver Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Preamplifier Factor}$$

## Measurement Data

Below 1GHz

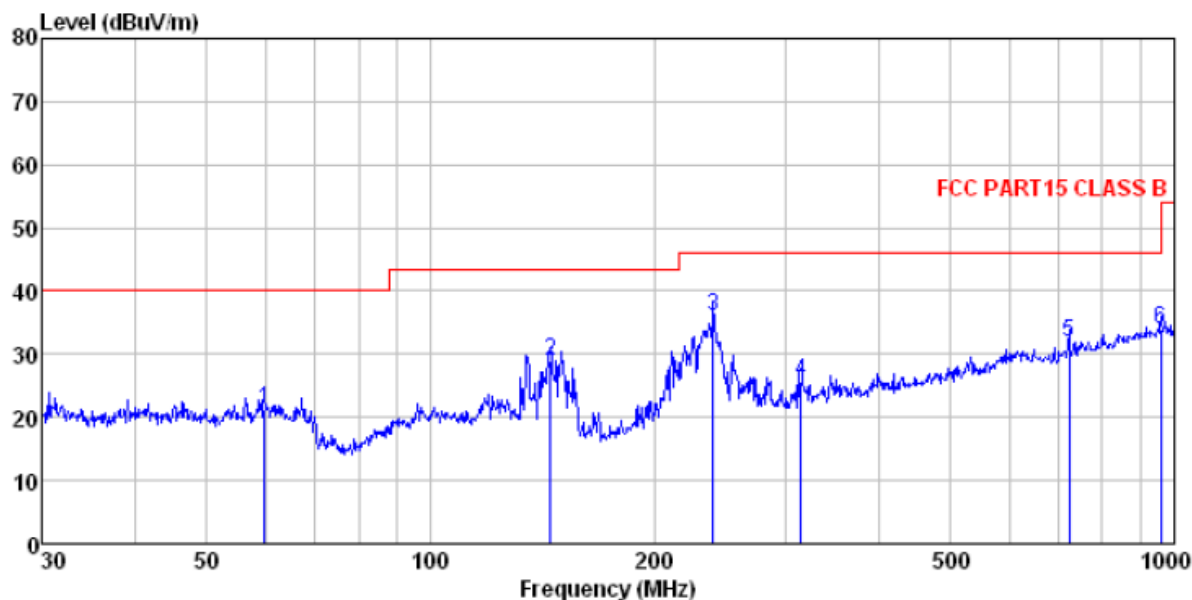
Horizontal:



Site : 3m chamber  
 Condition : FCC PART15 CLASS B 3m VULB9163-2013M HORIZONTAL  
 Job No. : 1075RF  
 Test Mode : PC mode  
 Test Engineer: Mike

	Freq	ReadAntenna	Cable Preamp		Limit	Over	
	Level	Factor	Loss Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB
1	59.859	35.73	14.71	0.86	31.94	19.36	40.00 -20.64 QP
2	118.601	41.53	12.69	1.35	31.85	23.72	43.50 -19.78 QP
3	147.921	47.01	10.24	1.56	31.97	26.84	43.50 -16.66 QP
4	239.987	59.00	14.09	2.07	32.16	43.00	46.00 -3.00 QP
5	312.179	42.95	15.22	2.42	32.14	28.45	46.00 -17.55 QP
6	721.726	41.01	21.10	4.17	31.22	35.06	46.00 -10.94 QP

Vertical:

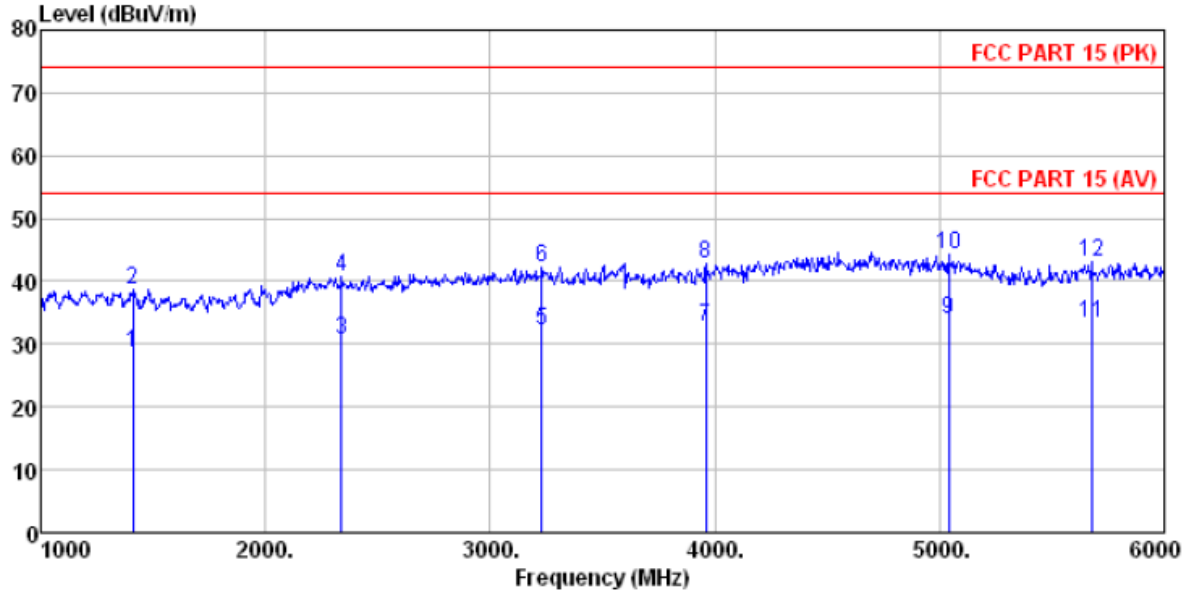


Site : 3m chamber  
 Condition : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL  
 Job No. : 1075RF  
 Test Mode : PC mode  
 Test Engineer: Mike

	Freq	ReadAntenna	Cable Preamp		Limit	Over	
		Level Factor	Loss Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB
1	59.859	37.75	14.71	0.86	31.94	21.38	40.00 -18.62 QP
2	144.842	49.15	10.23	1.53	31.96	28.95	43.50 -14.55 QP
3	239.987	52.06	14.09	2.07	32.16	36.06	46.00 -9.94 QP
4	314.377	40.17	15.26	2.44	32.13	25.74	46.00 -20.26 QP
5	721.726	37.82	21.10	4.17	31.22	31.87	46.00 -14.13 QP
6	958.794	36.69	23.49	5.08	31.22	34.04	46.00 -11.96 QP

Above 1GHz

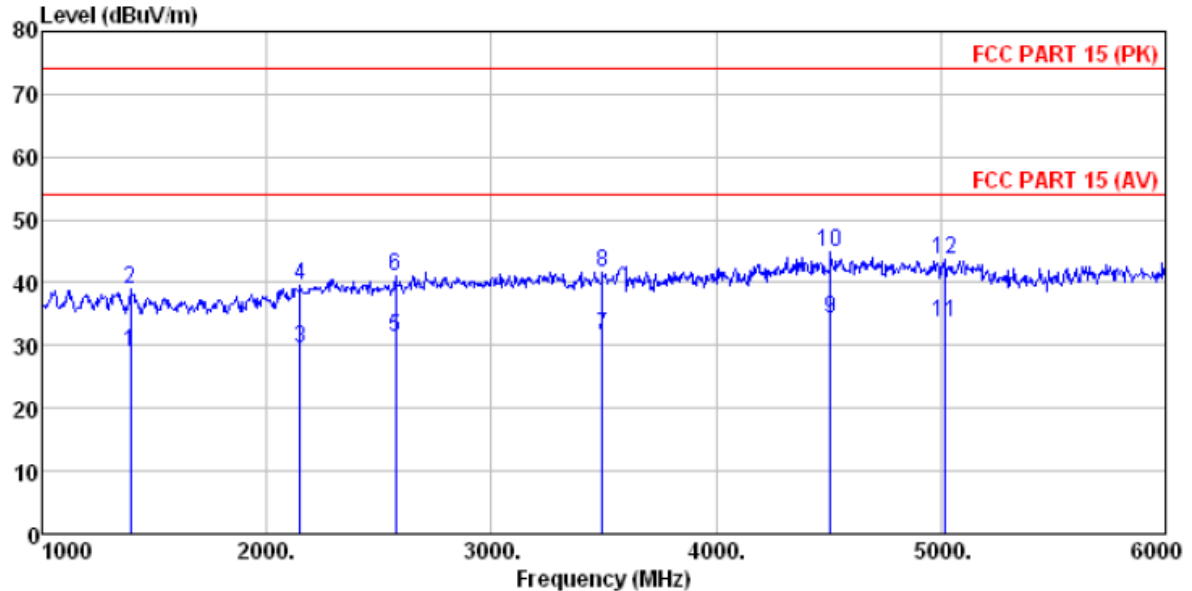
Horizontal:



Site : 3m chamber  
Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHz) HORIZONTAL  
Job No. : 1075RF  
Test Mode : PC mode  
Test Engineer: Mike

	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over	
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1410.000	31.88	25.53	4.62	33.45	28.58	54.00	-25.42	Average
2	1410.000	41.99	25.53	4.62	33.45	38.69	74.00	-35.31	Peak
3	2340.000	31.55	27.77	5.33	34.07	30.58	54.00	-23.42	Average
4	2340.000	41.83	27.77	5.33	34.07	40.86	74.00	-33.14	Peak
5	3230.000	30.13	28.62	6.43	33.06	32.12	54.00	-21.88	Average
6	3230.000	40.24	28.62	6.43	33.06	42.23	74.00	-31.77	Peak
7	3960.000	27.69	29.62	7.79	32.23	32.87	54.00	-21.13	Average
8	3960.000	37.56	29.62	7.79	32.23	42.74	74.00	-31.26	Peak
9	5040.000	25.47	31.98	8.83	32.21	34.07	54.00	-19.93	Average
10	5040.000	35.54	31.98	8.83	32.21	44.14	74.00	-29.86	Peak
11	5675.000	23.54	32.44	9.77	32.33	33.42	54.00	-20.58	Average
12	5675.000	33.22	32.44	9.77	32.33	43.10	74.00	-30.90	Peak

Vertical:



Site : 3m chamber  
Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL  
Job No. : 1075RF  
Test Mode : PC mode  
Test Engineer: Mike

	Freq	ReadAntenna	Cable Preamp		Limit	Over	
	Level	Factor	Loss Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dB
1	1395.000	32.03	25.59	4.61	33.42	28.81	54.00 -25.19 Average
2	1395.000	42.24	25.59	4.61	33.42	39.02	74.00 -34.98 Peak
3	2150.000	31.09	27.52	5.13	34.29	29.45	54.00 -24.55 Average
4	2150.000	41.22	27.52	5.13	34.29	39.58	74.00 -34.42 Peak
5	2575.000	31.88	27.71	5.56	33.80	31.35	54.00 -22.65 Average
6	2575.000	41.45	27.71	5.56	33.80	40.92	74.00 -33.08 Peak
7	3495.000	28.40	28.96	6.95	32.75	31.56	54.00 -22.44 Average
8	3495.000	38.56	28.96	6.95	32.75	41.72	74.00 -32.28 Peak
9	4510.000	26.41	31.34	8.34	31.94	34.15	54.00 -19.85 Average
10	4510.000	37.00	31.34	8.34	31.94	44.74	74.00 -29.26 Peak
11	5015.000	25.14	31.97	8.78	32.19	33.70	54.00 -20.30 Average
12	5015.000	35.02	31.97	8.78	32.19	43.58	74.00 -30.42 Peak

Remark:

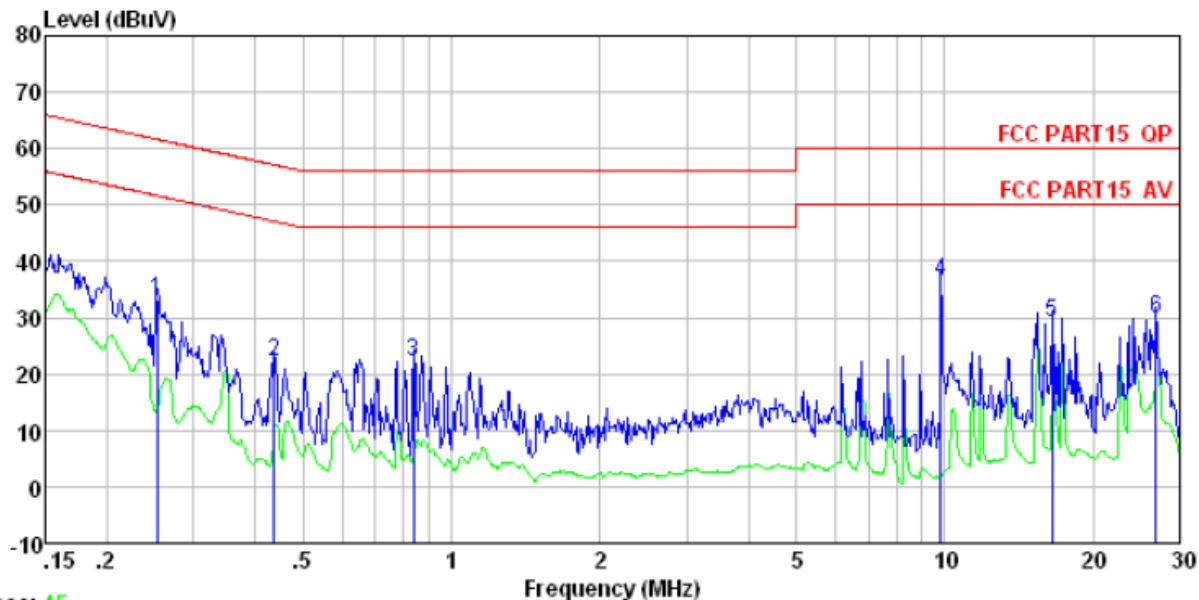
1. The EUT was test at 3m in field chamber.

## 7.2 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107																		
Test Method:	ANSI C63.4:2009																		
Test Frequency Range:	150kHz to 30MHz																		
Class / Severity:	Class B																		
Receiver setup:	RBW=9kHz, VBW=30kHz																		
Limit:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBμV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>0.5-30</td><td>60</td><td>50</td></tr></table>					Frequency range (MHz)	Limit (dBμV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	0.5-30	60	50
Frequency range (MHz)	Limit (dBμV)																		
	Quasi-peak	Average																	
0.15-0.5	66 to 56*	56 to 46*																	
0.5-5	56	46																	
0.5-30	60	50																	
Test setup:	<div><p style="text-align: center;"><b>Reference Plane</b></p><p style="text-align: center;">Test table/Insulation plane</p><p><i>Remark: E.U.T.: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</i></p></div>																		
Test procedure	<div><div>1.</div><div>The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment.</div></div> <div><div>2.</div><div>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs).</div></div> <div><div>3.</div><div>Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2009 on conducted measurement.</div></div>																		
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar													
Test Instruments:	Refer to section 6 for details																		
Test mode:	Refer to section 5.3 for details. All of the listed mode were tested, and found the PC mode as the worst case. Only the data of worst case is reported.																		
Test results:	Pass																		

## Measurement Data

Line:



Trace: 45

Condition : FCC PART15 QP LISN-2013 LINE

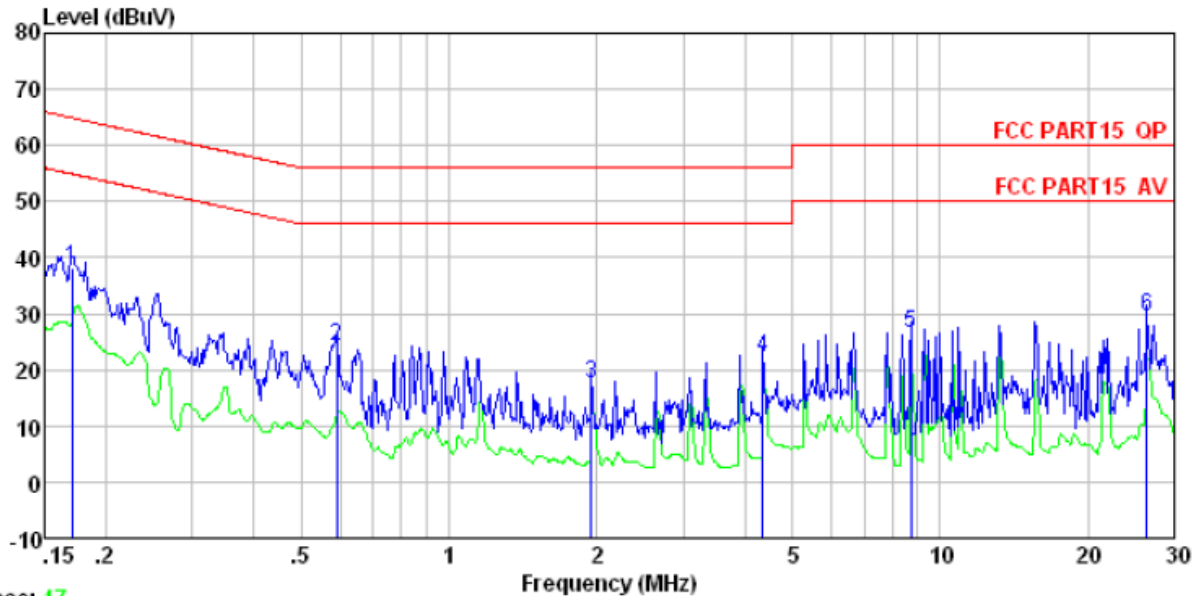
Job No. : 1075RF

Test mode : PC mode

Test Engineer: Qing

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.253	33.13	0.06	0.11	33.30	61.64	-28.34	QP
2	0.437	22.02	0.06	0.11	22.19	57.11	-34.92	QP
3	0.839	22.11	0.07	0.13	22.31	56.00	-33.69	QP
4	9.809	36.13	0.24	0.19	36.56	60.00	-23.44	QP
5	16.486	28.57	0.37	0.22	29.16	60.00	-30.84	QP
6	26.841	28.70	0.93	0.23	29.86	60.00	-30.14	QP

## Neutral:



Trace: 47

Condition : FCC PART15 QP LISN-2013 NEUTRAL

Job No. : 1075RF

Test mode : PC mode

Test Engineer: Qing

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.170	38.08	0.07	0.12	38.27	64.94	-26.67	QP
2	0.592	24.14	0.07	0.12	24.33	56.00	-31.67	QP
3	1.949	17.29	0.09	0.14	17.52	56.00	-38.48	QP
4	4.361	22.07	0.15	0.15	22.37	56.00	-33.63	QP
5	8.729	25.97	0.21	0.19	26.37	60.00	-33.63	QP
6	26.418	28.47	0.96	0.23	29.66	60.00	-30.34	QP

## Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.



## 8 Test Setup Photo

Radiated Emission



## Conducted Emission



## 9 EUT Constructional Details

Reference to the test report No. GTSE14060107501

-----End -----