

# FCC Report

**Applicant:** SHENZHEN GIEC DIGITAL CO., LTD

**Address of Applicant:** No.1 Building,Factory,No.7 District,Dayang Development Areas,FuYongStreet,Baoan,Shenzhen,China

**Equipment Under Test (EUT)**

Product Name: Tablet PC

Model No.: TM101W635L, GK-MER1027, TM101W638L,GK-MEV1027

**FCC ID:** 2AHYKTM1011

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart B:2015

**Date of sample receipt:** November 01, 2016

**Date of Test:** November 02-17, 2016

**Date of report issue:** November 18, 2016

**Test Result :** PASS \*

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

Authorized Signature:



**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.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of GTS or testing done by GTS in connection with, distribution or use of the product described in this report must be approved by GTS in writing.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

## 2 Version

Version No.	Date	Description
00	November 18, 2016	Original

**Prepared By:**

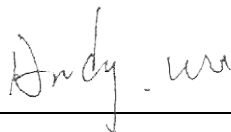


**Date:**

November 18, 2016

**Project Engineer**

**Check By:**



**Date:**

November 18, 2016

**Reviewer**

## 3 Contents

	Page
1 COVER PAGE .....	1
2 VERSION .....	2
3 CONTENTS .....	3
4 TEST SUMMARY .....	4
4.1 MEASUREMENT UNCERTAINTY .....	4
5 GENERAL INFORMATION .....	5
5.1 CLIENT INFORMATION .....	5
5.2 GENERAL DESCRIPTION OF EUT .....	5
5.3 TEST MODE .....	5
5.4 TEST FACILITY .....	6
5.5 TEST LOCATION .....	6
5.6 DESCRIPTION OF SUPPORT UNITS .....	6
5.7 DEVIATION FROM STANDARDS .....	6
5.8 ABNORMALITIES FROM STANDARD CONDITIONS .....	6
5.9 OTHER INFORMATION REQUESTED BY THE CUSTOMER .....	6
6 TEST INSTRUMENTS LIST .....	7
7 TEST RESULTS AND MEASUREMENT DATA .....	8
7.1 CONDUCTED EMISSIONS .....	8
7.2 RADIATED EMISSION .....	11
8 TEST SETUP PHOTO .....	17
9 EUT CONSTRUCTIONAL DETAILS .....	18

## 4 Test Summary

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

*PASS: The EUT complies with the essential requirements in the standard.*

*Remark : Test according to ANSI C63.4:2014.*

### 4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

## 5 General Information

### 5.1 Client Information

Applicant:	SHENZHEN GIEC DIGITAL CO., LTD
Address of Applicant:	No.1 Building,Factory,No.7 District,Dayang Development Areas,FuYongStreet,Baoan,Shenzhen,China
Manufacturer:	SHENZHEN GIEC DIGITAL CO., LTD
Address of Manufacturer:	No.1 Building,Factory,No.7 District,Dayang Development Areas,FuYongStreet,Baoan,Shenzhen,China

### 5.2 General Description of EUT

Product Name:	Tablet PC
Model No.:	TM101W635L, GK-MER1027, TM101W638L,GK-MEV1027
Test Model:	TM101W635L
<i>Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is the model name and battery capacity for commercial purpose.</i>	
Power Supply:	Quick Charger: Model:A68-502000 Input: AC 100-240V, 50/60Hz, 0.35A Output: DC 5V, 2A or DC 3.7V 6000mAh Li-ion Battery for TM101W635L and GK-MER1027 DC 3.7V 6800mAh Li-ion Battery for TM101W638L and GK-MEV1027

### 5.3 Test mode

Test mode:	
HDMI mode	Keep the EUT in HDMI mode
REC mode	Keep the EUT in video record mode.
USB playing mode	Keep the EUT in USB flash disk playing mode.
TF card playing mode	Keep the EUT in SD card playing mode.
Buring test mode	Keep the EUT in PC working mode

## 5.4 Test Facility

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

● **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 22, 2016.

● **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, August 15, 2016.

## 5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

## 5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC ID/DoC
DELL	KEYBOARD	SK-8115	N/A	DOC
DELL	MOUSE	N/A	N/A	DOC

## 5.7 Deviation from Standards

Biconical, log.per. antenna and horn antenna were used instead of dipole antenna. Semi-anechoic Chamber was used as alternation of open air test sites, and all test suites were performed with radiated method in it.

## 5.8 Abnormalities from Standard Conditions

None.

## 5.9 Other Information Requested by the Customer

None.

## 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	July. 03 2015	July. 02 2020
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	June. 29 2016	June. 28 2017
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	June. 29 2016	June. 28 2017
5	Double-ridged horn antenna	SCHWARZBECK	9120D	GTS208	June. 29 2016	June. 28 2017
6	RF Amplifier	HP	8347A	GTS204	June. 29 2016	June. 28 2017
7	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	June. 29 2016	June. 28 2017
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	N/A	N/A
10	Coaxial Cable	GTS	N/A	GTS211	N/A	N/A
11	Thermo meter	N/A	N/A	GTS256	June. 29 2016	June. 28 2017

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	May.16 2014	May.15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 29 2016	June. 28 2017
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 29 2016	June. 28 2017
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 29 2016	June. 28 2017
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 29 2016	June. 28 2017

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	Jun. 29 2016	Jun. 28 2017

## 7 Test Results and Measurement Data

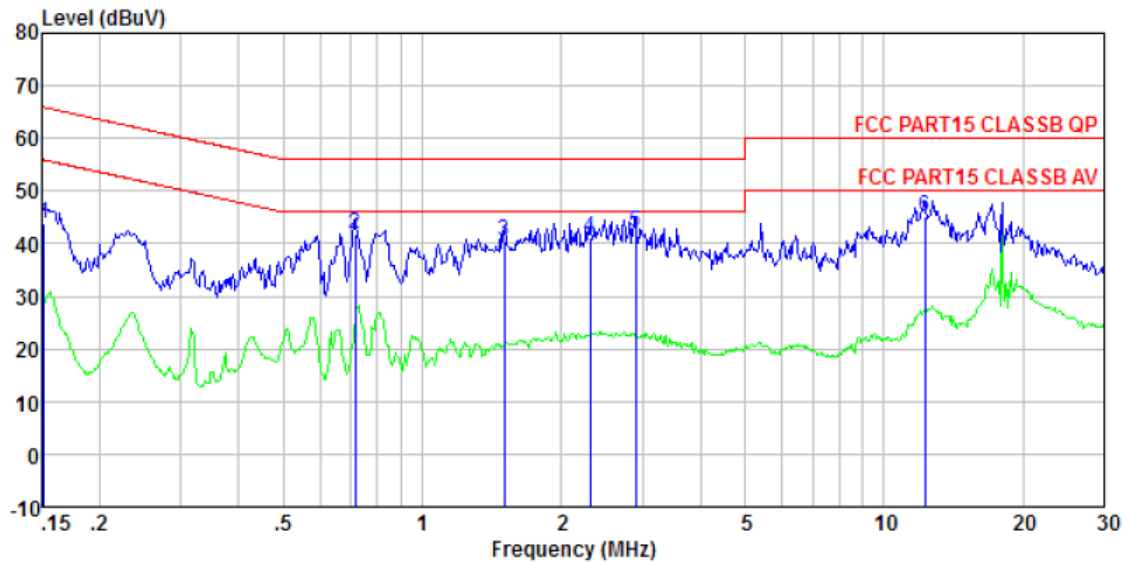
### 7.1 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107														
Test Method:	ANSI C63.4:2014														
Test Frequency Range:	150KHz to 30MHz														
Class / Severity:	Class B														
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto														
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBuV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <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>5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table> <p>* Decreases with the logarithm of the frequency.</p>	Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													
Test setup:	<p>Remark:  E.U.T: Equipment Under Test  LISN: Line Impedance Stabilization Network  Test table height=0.8m</p>														
Test procedure:	<ol style="list-style-type: none"> <li>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>3. 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: 2014 on conducted measurement.</li> </ol>														
Test Instruments:	Refer to section 6 for details														
Test mode:	Refer to section 5.3 for details														
Test results:	Pass														



**Measurement Data**

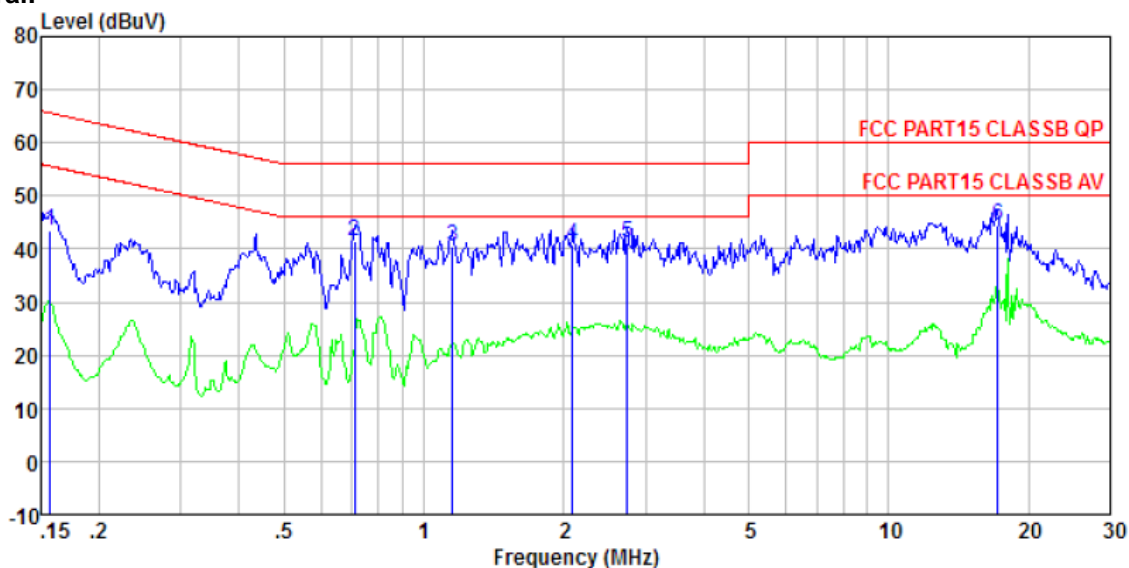
**Line:**



Site : Shielded room  
 Condition : FCC PART15 CLASSB QP LISN-2016 LINE  
 Job No. : 0003  
 Test mode : Burning test mode  
 Test Engineer: Boy

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.152	43.38	0.42	0.12	43.92	65.91	-21.99	QP
2	0.716	41.25	0.28	0.13	41.66	56.00	-14.34	QP
3	1.503	40.22	0.22	0.14	40.58	56.00	-15.42	QP
4	2.309	40.73	0.20	0.15	41.08	56.00	-14.92	QP
5	2.900	41.65	0.20	0.15	42.00	56.00	-14.00	QP
6	12.253	44.78	0.22	0.20	45.20	60.00	-14.80	QP

**Neutral:**



Site : Shielded room  
 Condition : FCC PART15 CLASSB QP LISN-2016 NEUTRAL  
 Job No. : 0003  
 Test mode : Burning test mode  
 Test Engineer: Boy

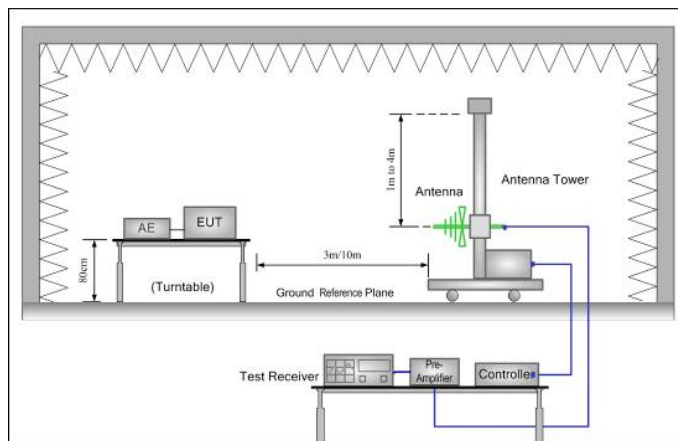
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.157	42.81	0.41	0.12	43.34	65.60	-22.26	QP
2	0.708	41.19	0.24	0.13	41.56	56.00	-14.44	QP
3	1.153	40.27	0.21	0.13	40.61	56.00	-15.39	QP
4	2.088	40.49	0.20	0.15	40.84	56.00	-15.16	QP
5	2.736	40.94	0.20	0.15	41.29	56.00	-14.71	QP
6	17.199	44.08	0.27	0.22	44.57	60.00	-15.43	QP

*Notes:*

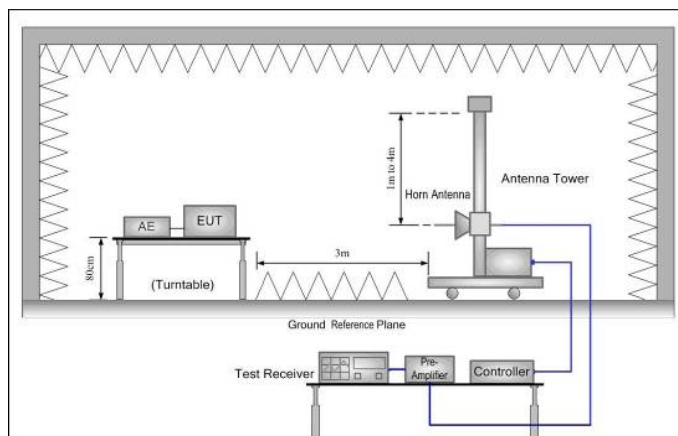
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak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

## 7.2 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109																				
Test Method:	ANSI C63.4:2014																				
Test Frequency Range:	30MHz to 25GHz																				
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)																				
Receiver setup:	<table border="1"> <thead> <tr> <th>Frequency</th> <th>Detector</th> <th>RBW</th> <th>VBW</th> <th>Remark</th> </tr> </thead> <tbody> <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> </tbody> </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 border="1"> <thead> <tr> <th>Frequency</th> <th>Limit (dBuV/m @3m)</th> <th>Remark</th> </tr> </thead> <tbody> <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> </tbody> </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:	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>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.</li> </ol>																				
Test setup:	Below 1GHz																				



Above 1GHz



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:	Refer to section 5.3 for details		
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:

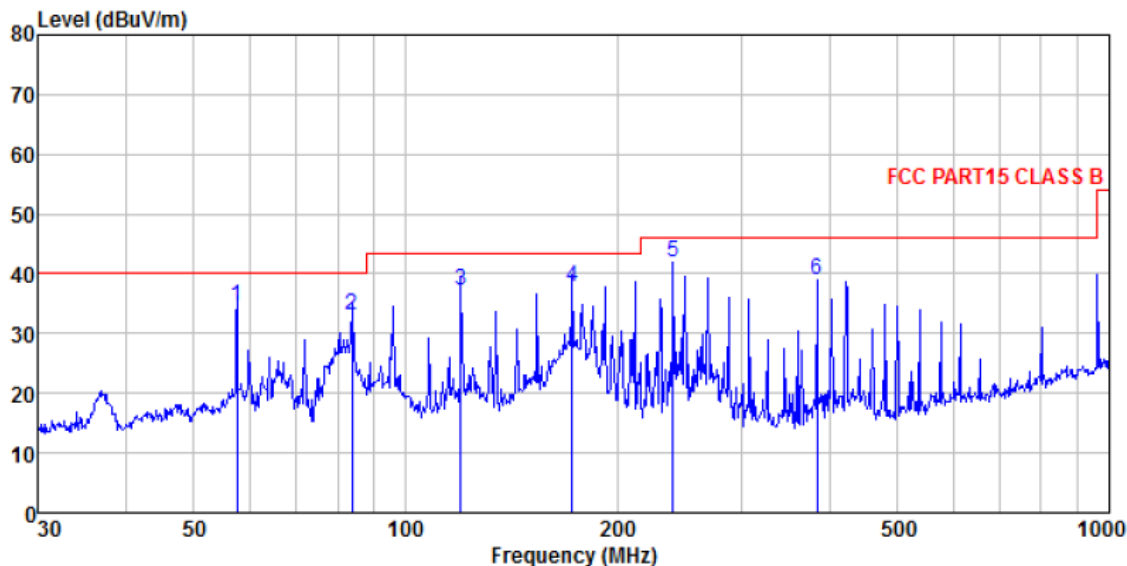
$$\text{Final Test Level} = \text{Receiver Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Preamplifier Factor}$$

For above 1GHz test ,1GHz to 25GHz all have been tested, only worse case 1GHz to 6GHz is reported, from 6GHz to 25GHz, no emission is found.

## Measurement Data

Below 1GHz

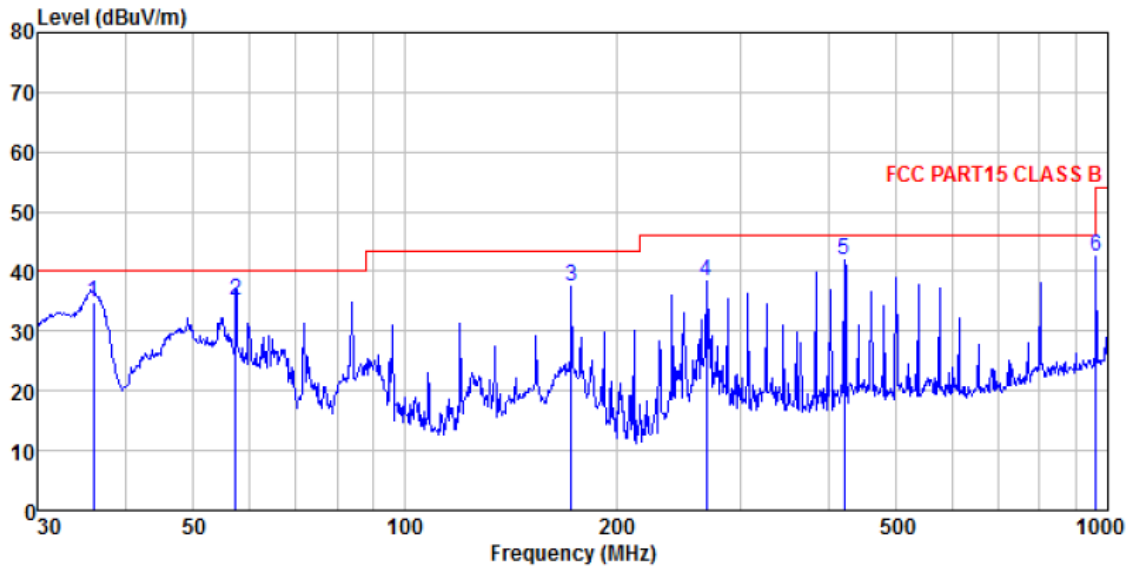
Horizontal:



Site : 3m chamber  
 Condition : FCC PART15 CLASS B 3m HORIZONTAL  
 Job No. : 0003  
 Test Mode : Burning test mode  
 Test Engineer: Sky

	ReadAntenna	Cable Preamp	Limit	Over				
Freq	Level Factor	Loss Factor	Level	Line	Limit Remark			
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	57.594	48.66	14.85	0.84	29.94	34.41	40.00	-5.59 QP
2	83.816	50.02	11.87	1.06	29.78	33.17	40.00	-6.83 QP
3	119.856	52.90	12.48	1.36	29.57	37.17	43.50	-6.33 QP
4	172.599	54.32	11.16	1.70	29.31	37.87	43.50	-5.63 QP
5	239.987	55.20	14.09	2.07	29.56	41.80	46.00	-4.20 QP
6	383.932	48.98	16.68	2.78	29.57	38.87	46.00	-7.13 QP

Vertical:

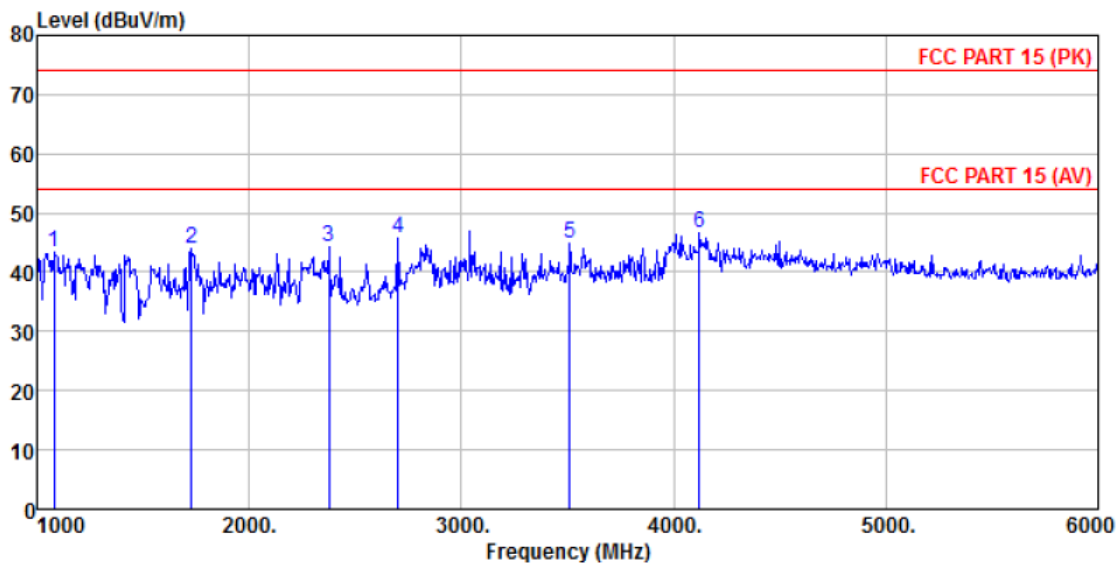


Site : 3m chamber  
 Condition : FCC PART15 CLASS B 3m VERTICAL  
 Job No. : 0003  
 Test Mode : Burning test mode  
 Test Engineer: Sky

	ReadAntenna	Cable	Preamp	Limit	Over				
Freq	Level	Factor	Loss	Factor	Level	Line			
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m			
1	36.001	49.74	14.58	0.62	30.06	34.88	40.00	-5.12	QP
2	57.392	49.38	14.85	0.84	29.94	35.13	40.00	-4.87	QP
3	172.599	53.81	11.16	1.70	29.31	37.36	43.50	-6.14	QP
4	268.485	51.48	14.34	2.21	29.79	38.24	46.00	-7.76	QP
5	422.058	50.98	17.48	2.96	29.45	41.97	46.00	-4.03	QP
6	962.162	43.06	23.49	5.09	29.10	42.54	54.00	-11.46	QP

Above 1GHz

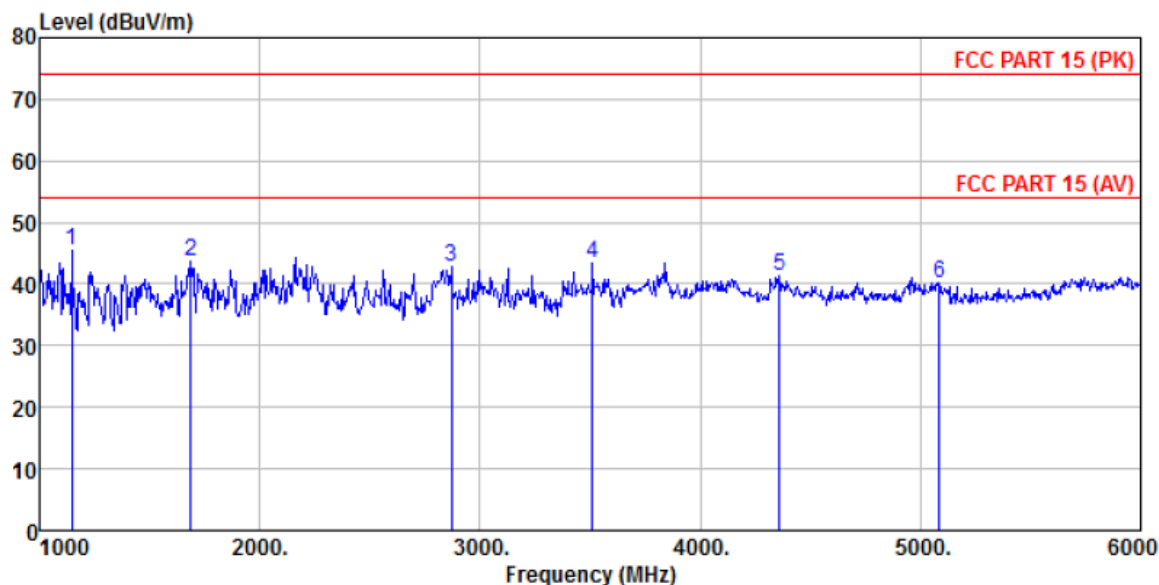
Horizontal:



Site : 3m chamber  
 Condition : FCC PART 15 (PK) 3m HORIZONTAL  
 Job No. : 0003  
 Test Mode : Burning test mode  
 Test Engineer: Sky

	ReadAntenna	Cable	Preamp	Limit	Over			
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1080.000	47.13	24.70	4.37	32.89	43.31	74.00	-30.69 Peak
2	1730.000	48.05	25.04	4.82	34.00	43.91	74.00	-30.09 Peak
3	2375.000	45.21	27.65	5.36	34.03	44.19	74.00	-29.81 Peak
4	2700.000	45.50	28.16	5.67	33.66	45.67	74.00	-28.33 Peak
5	3510.000	41.66	28.99	6.97	32.73	44.89	74.00	-29.11 Peak
6	4120.000	40.83	29.95	7.99	32.03	46.74	74.00	-27.26 Peak

Vertical:



Site : 3m chamber  
 Condition : FCC PART 15 (PK) 3m VERTICAL  
 Job No. : 0003  
 Test Mode : Burning test mode  
 Test Engineer: Sky

	Read	Antenna	Cable	Preamp	Limit	Over		
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1145.000	49.04	24.96	4.42	33.01	45.41	74.00	-28.59 Peak
2	1685.000	47.81	24.95	4.80	33.91	43.65	74.00	-30.35 Peak
3	2870.000	41.97	28.40	5.82	33.47	42.72	74.00	-31.28 Peak
4	3510.000	40.17	28.99	6.97	32.73	43.40	74.00	-30.60 Peak
5	4360.000	34.04	30.97	8.21	31.87	41.35	74.00	-32.65 Peak
6	5085.000	31.55	32.02	8.90	32.22	40.25	74.00	-33.75 Peak



## 8 Test Setup Photo

Radiated Emission



## Conducted Emission



## 9 EUT Constructional Details

Reference to the test report No. GTS20161100003E01

----- End-----