FCC Report

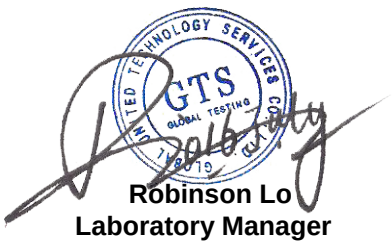
Applicant:	Quantum Creations LLC.
Address of Applicant:	16410 NE 19th Avenue Suite 102 North, Miami Beach, Florida United States 33162

Equipment Under Test (EUT)

Product Name:	Mini PC
Model No.:	A-1062-ABP, A-1062-ABP-1, A-1062-ABP-2, A-1062-ABP-3, A-1062-ABP-4, A-1062-ABP-5, A-1062-ABP-6, A-1062-ABP-7, A-1062-ABP-8
Trade Mark:	Azulle
FCC ID:	2AFJI20161062
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B:2015
Date of sample receipt:	July 11, 2016
Date of Test:	July 12-21, 2016
Date of report issue:	July 22, 2016
Test Result :	PASS *

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

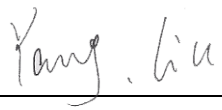
Authorized Signature:



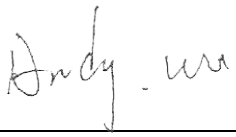
Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*July 22, 2016*	*Original*

Tested By:  ***Date:*** *July 22, 2016*

Project Engineer

Check By:  ***Date:*** *July 22, 2016*

Reviewer

3 Contents

Page

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:	Quantum Creations LLC.
Address of Applicant:	16410 NE 19th Avenue Suite 102 North, Miami Beach, Florida United States 33162
Manufacturer:	SHENZHEN MELE STAR TECHNOLOGY LIMITED
Address of Manufacturer:	3F,Bldg#1,28 Cuijing Road, Pingshan New District，Shenzhen, PR China.
Factory:	Shenzhen MeLE Precision Technology Limited
Address of Factory:	3F East,Bldg#1,28 Cuijing Road, Pingshan New District，Shenzhen, PR China.

5.2 General Description of EUT

Product Name:	Mini PC
Model No.:	A-1062-ABP, A-1062-ABP-1, A-1062-ABP-2, A-1062-ABP-3, A-1062-ABP-4, A-1062-ABP-5, A-1062-ABP-6, A-1062-ABP-7, A-1062-ABP-8
Power Supply:	SWITCHING ADAPTER: Model No.:S12B22-120A100-04 Input: AC 100~240V~50/60Hz 0.5A Output: DC 12V 1A

5.3 Test mode

Test mode:	
Burn in test mode	Keep the EUT at PC working mode and HDMI output mode
VGA mode	Keep the EUT in VGA 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 fuly 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, June 26, 2013.

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 Industrrial 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 Approval
PHILIPS	LCD TV	19PFL3120/T3	AU1A1212002906	FCC DoC
DELL	KEYBOARD	SK-8115	N/A	FCC DoC
DELL	MOUSE	N/A	N/A	FCC 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

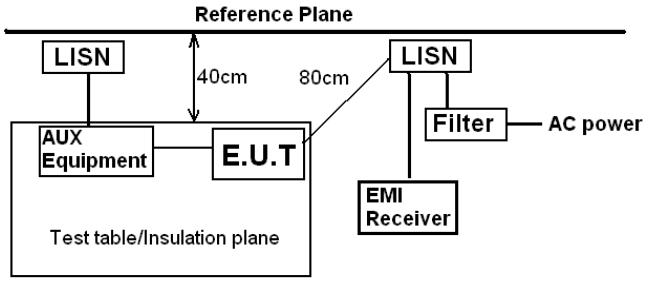
Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	July. 02 2016	July. 01 2017
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	July. 05 2016	July. 04 2017
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	July. 05 2016	July. 04 2017
6	RF Amplifier	HP	8347A	GTS204	July. 02 2016	July. 01 2017
7	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	July. 02 2016	July. 01 2017
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	July. 04 2016	July. 03 2017
10	Coaxial Cable	GTS	N/A	GTS211	July. 04 2016	July. 03 2017
11	Thermo meter	N/A	N/A	GTS256	July. 05 2016	July. 04 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	7.0(L)x3.0(W)x3.0(H)	GTS264	Jun. 29 2016	Jun. 28 2017
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jun. 29 2016	Jun. 28 2017
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jun. 29 2016	Jun. 28 2017
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jun. 29 2016	Jun. 28 2017
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jun. 29 2016	Jun. 28 2017
6	Coaxial Cable	GTS	N/A	GTS227	Jun. 29 2016	Jun. 28 2017
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

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	July 06 2016	July 05 2017

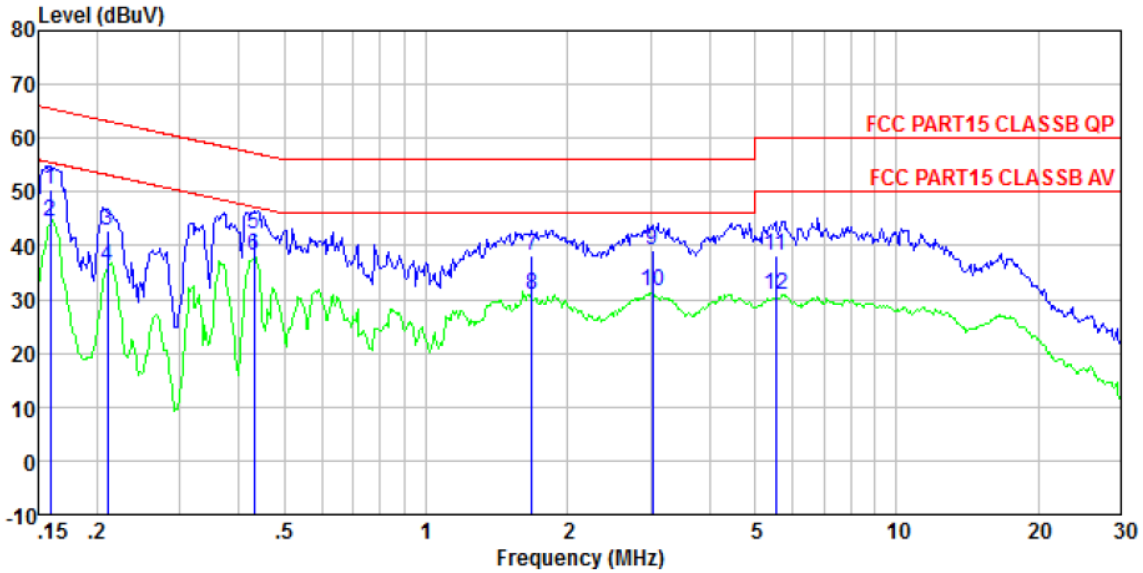
7 Test Results and Measurement Data

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:	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 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	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. 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). 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.
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

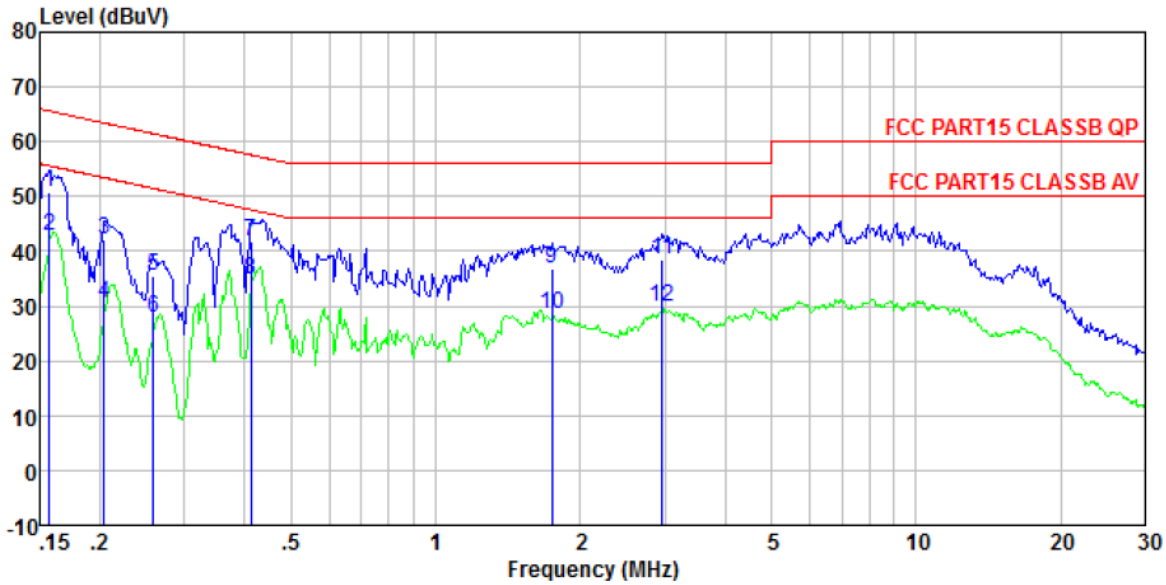
Line:



Site : Shielded room
Condition : FCC PART15 CLASSB QP LISN-2013 LINE
Job No. : 0010
Test Mode : Burn in 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	0.159	50.25	0.15	0.12	50.52	65.52	-15.00	QP
2	0.159	44.36	0.15	0.12	44.63	55.52	-10.89	Average
3	0.211	42.51	0.13	0.13	42.77	63.18	-20.41	QP
4	0.211	35.84	0.13	0.13	36.10	53.18	-17.08	Average
5	0.431	41.82	0.12	0.11	42.05	57.24	-15.19	QP
6	0.431	38.06	0.12	0.11	38.29	47.24	-8.95	Average
7	1.680	37.82	0.12	0.14	38.08	56.00	-17.92	QP
8	1.680	30.62	0.12	0.14	30.88	46.00	-15.12	Average
9	3.025	38.95	0.16	0.15	39.26	56.00	-16.74	QP
10	3.025	31.22	0.16	0.15	31.53	46.00	-14.47	Average
11	5.535	37.94	0.22	0.15	38.31	60.00	-21.69	QP
12	5.535	30.49	0.22	0.15	30.86	50.00	-19.14	Average

Neutral:



Site : Shielded room
Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL
Job No. : 0010
Test Mode : Burn in test mode
Test Engineer: Boy

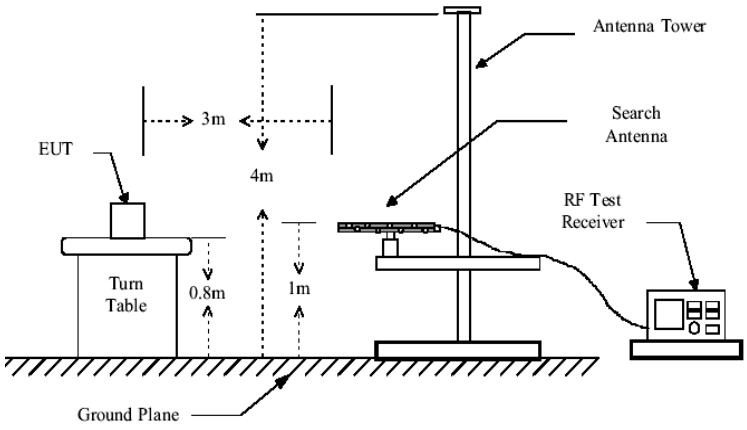
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.157	50.69	0.07	0.12	50.88	65.60	-14.72	QP
2	0.157	42.51	0.07	0.12	42.70	55.60	-12.90	Average
3	0.204	41.81	0.07	0.13	42.01	63.45	-21.44	QP
4	0.204	30.26	0.07	0.13	30.46	53.45	-22.99	Average
5	0.259	35.22	0.06	0.11	35.39	61.47	-26.08	QP
6	0.259	27.73	0.06	0.11	27.90	51.47	-23.57	Average
7	0.413	41.52	0.06	0.11	41.69	57.59	-15.90	QP
8	0.413	34.79	0.06	0.11	34.96	47.59	-12.63	Average
9	1.744	36.45	0.09	0.14	36.68	56.00	-19.32	QP
10	1.744	28.15	0.09	0.14	28.38	46.00	-17.62	Average
11	2.962	38.12	0.11	0.15	38.38	56.00	-17.62	QP
12	2.962	29.50	0.11	0.15	29.76	46.00	-16.24	Average

Notes:

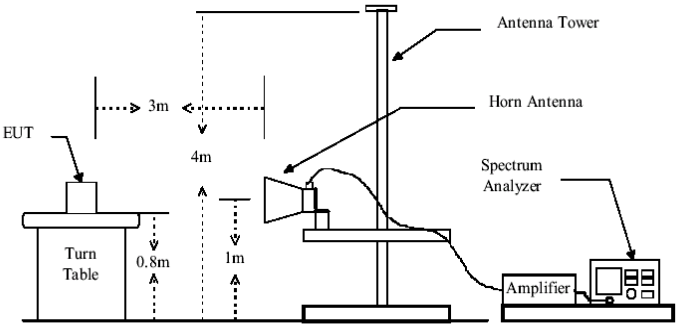
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak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

7.2 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 B Section 15.109</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2014</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 40GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></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>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></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>
</td></tr>
<tr><td>Test Procedure:</td><td>
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.
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.
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.
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.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
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.
</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz</td></tr>
</table>



Above 1GHz



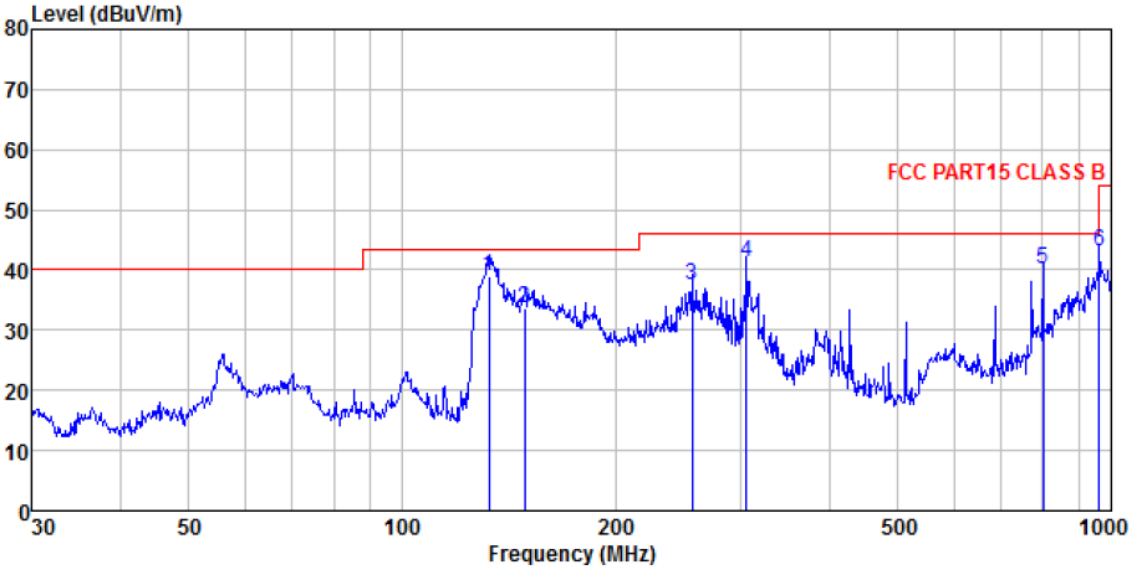
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Measurement Record:	See 4.1					
Test Instruments:	Refer to section 6 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Pass					

Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
No emission found above 6GHz ,so only report worse case from 30MHz to 6GHz .
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

Measurement Data

Below 1GHz

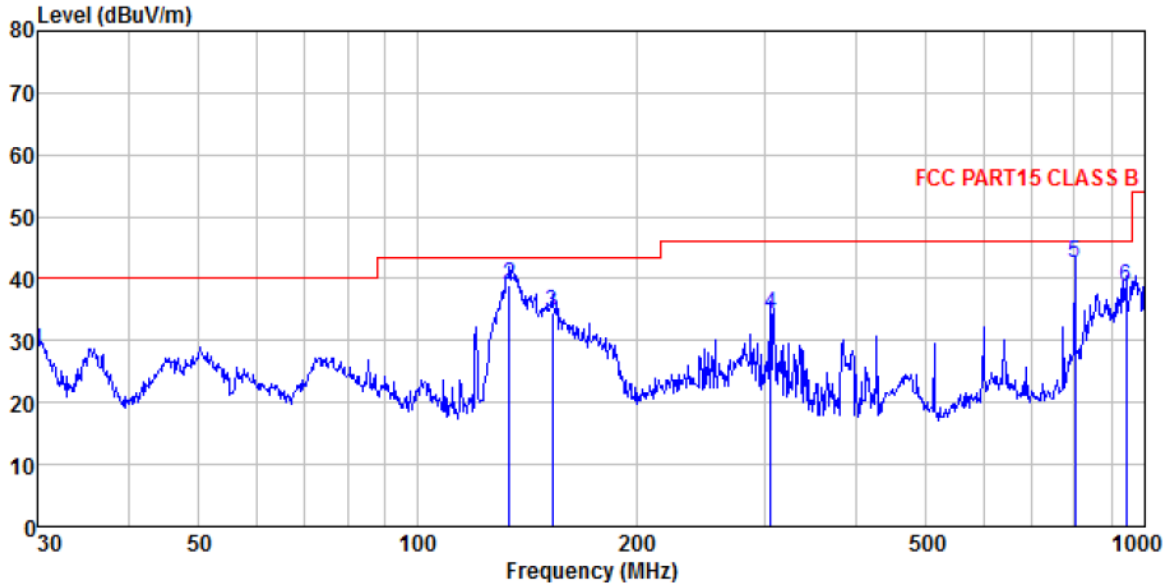
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B VULB9163-2013M HORIZONTAL
Job No. : 0010
Test Mode : Burn in test mode
Test Engineer: Sky

	Freq	ReadAntenna 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	132.685	56.34	10.72	1.45	29.50	39.01	43.50	-4.49	QP
2	148.963	51.35	10.26	1.56	29.41	33.76	43.50	-9.74	QP
3	256.521	50.89	14.06	2.16	29.70	37.41	46.00	-8.59	QP
4	305.680	53.71	15.13	2.39	29.96	41.27	46.00	-4.73	QP
5	801.786	42.87	22.06	4.46	29.20	40.19	46.00	-5.81	QP
6	962.162	43.65	23.49	5.09	29.10	43.13	54.00	-10.87	QP

Vertical:

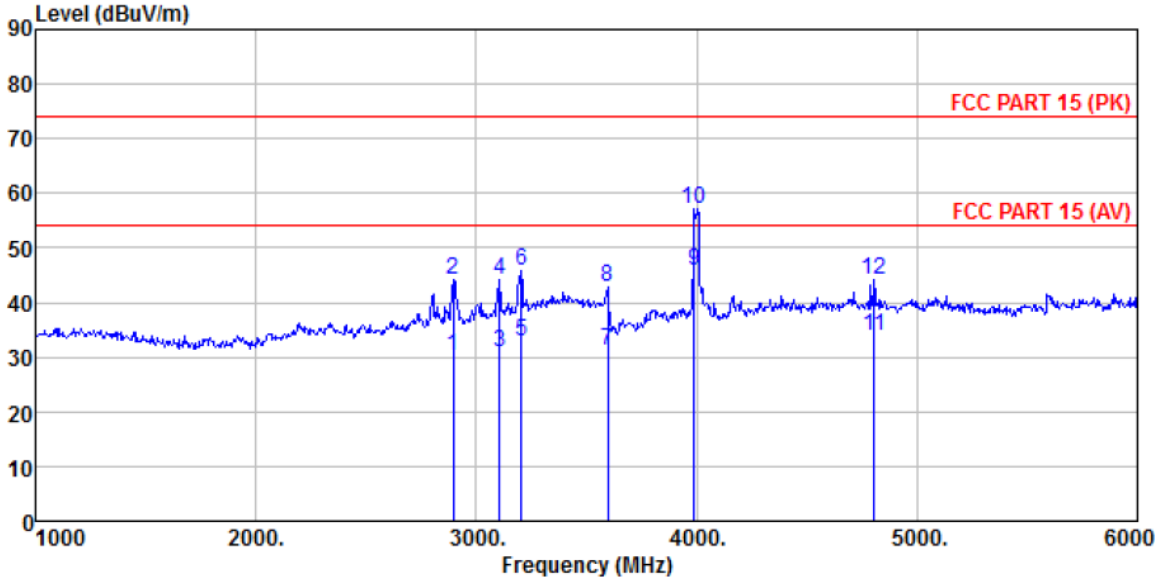


Site : 3m chamber
Condition : FCC PART15 CLASS B VULB9163-2013M VERTICAL
Job No. : 0010
Test Mode : Burn in test mode
Test Engineer: Sky

	Freq	ReadAntenna 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	30.000	43.54	14.33	0.55	30.10	28.32	40.00	-11.68	QP
2	133.619	56.35	10.67	1.46	29.49	38.99	43.50	-4.51	QP
3	153.200	52.04	10.39	1.59	29.39	34.63	43.50	-8.87	QP
4	305.680	46.66	15.13	2.39	29.96	34.22	46.00	-11.78	QP
5	801.786	45.19	22.06	4.46	29.20	42.51	46.00	-3.49	QP
6	942.131	39.25	23.37	5.01	29.10	38.53	46.00	-7.47	QP

Above 1GHz

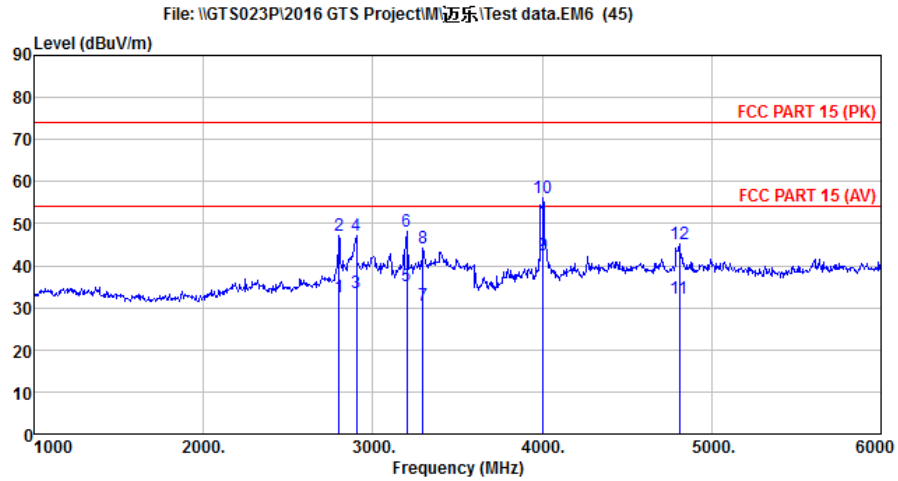
Horizontal:



Site : 3m chamber
Condition : FCC PART 15 (PK) BBHA9120D ANT(>1GHZ) HORIZONTAL
Job No. : 0010
Test Mode : Burn in test mode
Test Engineer: Sky

	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	2895.000	29.53	28.43	5.84	33.45	30.35	54.00	-23.65	Average
2	2895.000	43.48	28.43	5.84	33.45	44.30	74.00	-29.70	Peak
3	3105.000	29.35	28.70	6.15	33.20	31.00	54.00	-23.00	Average
4	3105.000	42.40	28.70	6.15	33.20	44.05	74.00	-29.95	Peak
5	3205.000	30.83	28.71	6.37	33.08	32.83	54.00	-21.17	Average
6	3205.000	43.98	28.71	6.37	33.08	45.98	74.00	-28.02	Peak
7	3595.000	27.43	29.13	7.15	32.64	31.07	54.00	-22.93	Average
8	3595.000	39.05	29.13	7.15	32.64	42.69	74.00	-31.31	Peak
9	3990.000	40.67	29.66	7.85	32.19	45.99	54.00	-8.01	Average
10	3990.000	51.79	29.66	7.85	32.19	57.11	74.00	-16.89	Peak
11	4805.000	25.69	31.78	8.60	32.09	33.98	54.00	-20.02	Average
12	4805.000	36.01	31.78	8.60	32.09	44.30	74.00	-29.70	Peak

Vertical:



Site : 3m chamber
Condition : FCC PART 15 (PK) BBHA9120D ANT(>1GHZ) VERTICAL
Job No. : 0010
Test Mode : Burn in test mode
Test Engineer: Sky

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2800.000	31.91	28.42	5.76	33.55	32.54	54.00	-21.46	Average
2	2800.000	46.45	28.42	5.76	33.55	47.08	74.00	-26.92	Peak
3	2905.000	32.66	28.44	5.84	33.43	33.51	54.00	-20.49	Average
4	2905.000	46.46	28.44	5.84	33.43	47.31	74.00	-26.69	Peak
5	3200.000	33.29	28.71	6.35	33.10	35.25	54.00	-18.75	Average
6	3200.000	46.17	28.71	6.35	33.10	48.13	74.00	-25.87	Peak
7	3295.000	28.55	28.35	6.56	32.99	30.47	54.00	-23.53	Average
8	3295.000	42.26	28.35	6.56	32.99	44.18	74.00	-29.82	Peak
9	4005.000	37.03	29.71	7.87	32.17	42.44	54.00	-11.56	Average
10	4005.000	50.56	29.71	7.87	32.17	55.97	74.00	-18.03	Peak
11	4810.000	24.08	31.78	8.60	32.09	32.37	54.00	-21.63	Average
12	4810.000	36.98	31.78	8.60	32.09	45.27	74.00	-28.73	Peak

8 Test Setup Photo

Radiated Emission

Conducted Emission

9 EUT Constructional Details

Reference to the test report No. GTS201607000010E01

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