FCC PART 15 B

TEST REPORT

For

Century Longmai Technology Co.,Ltd

3rd F, GongKong Building, No.1 Wangzhuang, Haidian District, Beijing, China

FCC ID: 2AEXF201505LM

Report Type:	**Product Type:**
Original Report	mToken Crypto ID

Test Engineer: Jone Lv

Report Number: RBJ150527050-00

Report Date: 2015-06-09

Reviewed By: Harry Wu
EMC Leader

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *Century Longmai Technology Co.,Ltd*'s product, model number: *201505LM (FCC ID: 2AEXF201505LM) or* ("EUT") in this report is a *mToken Crypto ID*, appearance 1 was measured approximately: 5.2 cm (L) x 1.65 cm (W) x0.9 cm (H), appearance 2 and appearance 3 was measured approximately: 5.57 cm (L) x 1.7 cm (W) x0.79 cm (H), rated input voltage: DC5V from USB port.

Note: The series products, model 201505LM are electrically identical, the difference between them is just the appearance color, appearance size and appearance material, we selected all for fully testing, the detail was explained in the attached declaration letter.

** All measurement and test data in this report was gathered from production sample serial number: 150527050 (Assigned by BACL, Dongguan). The EUT was received on 2015-05-28.*

Objective

This test report is prepared on behalf of *Century Longmai Technology Co.,Ltd* in accordance with Part 2, Subpart J, and Part 15-Subparts A and B of the Federal Communications Commission's rules.

The objective of the manufacturer is to determine the compliance of EUT with FCC Part 15 B Class B.

Related Submittal(s)/Grant(s)

N/A

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 06, 2015. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

N/A

Equipment Modifications

No modification was made to the EUT tested.

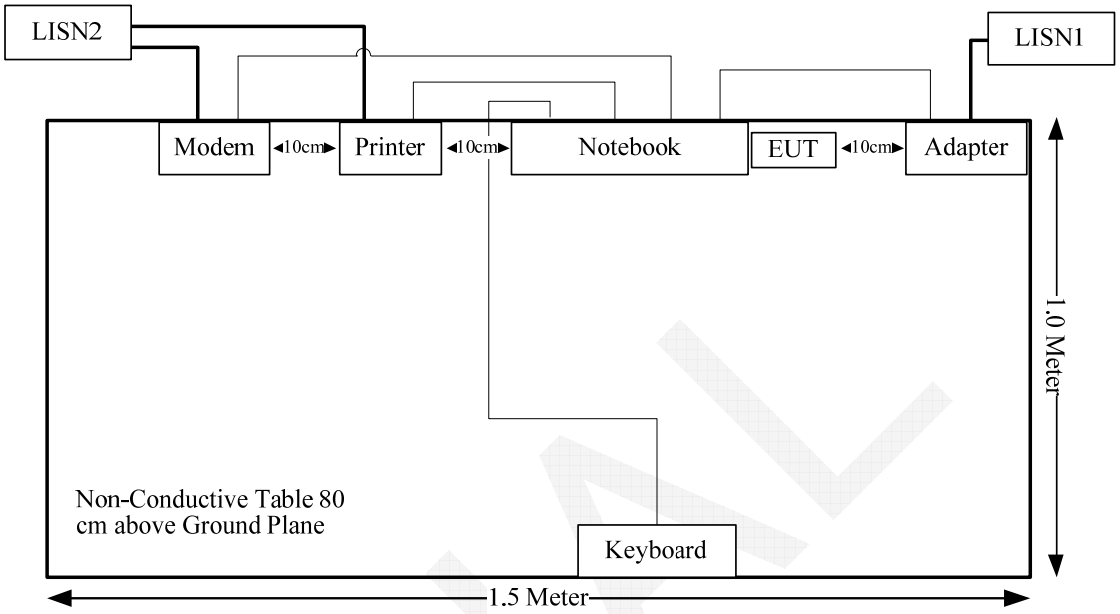
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Notebook computer	PP11L	QDS-BRCM1017
HP	Printer	C3941A	JPTVOB2337
DELL	Keyboard	SK-8115	CN-0DJ313-716716-05A-0DSO
SAST	Modem	AEM-2100	090200213

Support Cable List and Details

Cable Description	Length (m)	From	To
Shielded Detachable Printer Cable	1.2	Parallel Port of PC	Printer
Shielded Detachable Serial Cable	1.2	Serial Port of PC	Modem
Shielded Detachable Keyboard Cable	1.5	Keyboard Port of PC	Keyboard

Configuration of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	Conducted Emissions	Compliance
§15.109	Radiated Emissions	Compliance

FCC§15.107 - CONDUCTED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are Receiver, cable loss, and LISN.

Compliance or non- compliance with a disturbance limit shall be determined in the following manner：

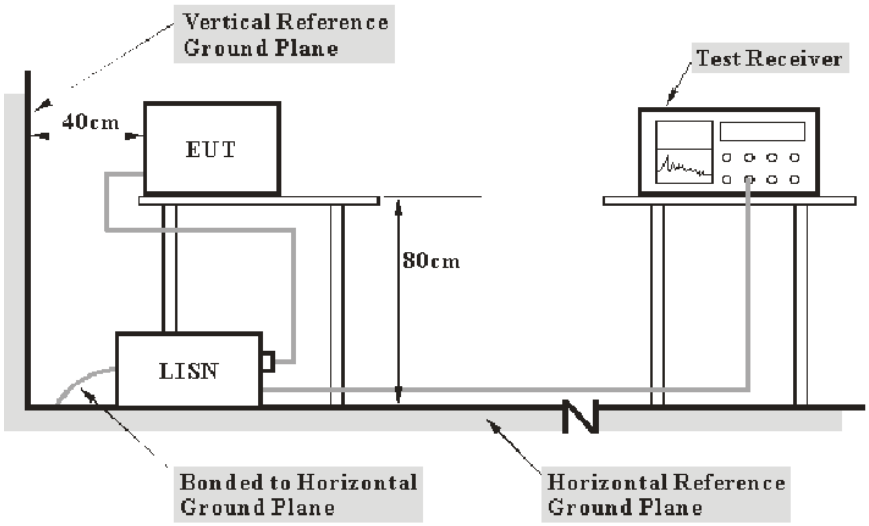
If U_{lab} is less than or equal to U_{cispr} of Table 1, then:
–compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
–non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.
If U_{lab} is greater than U_{cispr} of Table 1, then:
–compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
–non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cispr}

Measurement	U_{cispr}
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15 B Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The adapter was connected to a 120V/60Hz AC power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2014-10-20	2015-10-20
R&S	L.I.S.N	ESH2-Z5	892107/021	2014-06-09	2015-06-09
R&S	Two-line V-network	ENV 216	3560.6550.12	2014-12-11	2015-12-11
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$

Herein,
V_C: corrected voltage amplitude

V_R: reading voltage amplitude

A_c: attenuation caused by cable loss

VDF: voltage division factor of AMN or ISN

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15 B Class B, with the worst margin reading of:

11.4 dB at **0.171759 MHz** in the **Line** conducted mode (appearance 1)

Test Data

Environmental Conditions

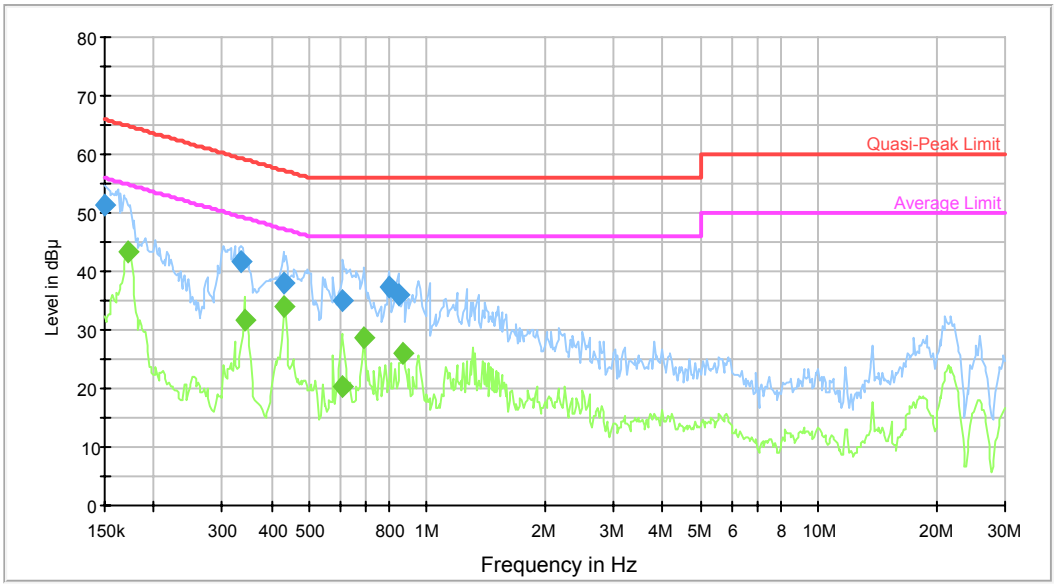
Temperature:	28.6 °C
Relative Humidity:	55 %
ATM Pressure:	100.1kPa

The testing was performed by Jone Lv on 2015-06-03.

Test Mode: Operating

Appearance 1

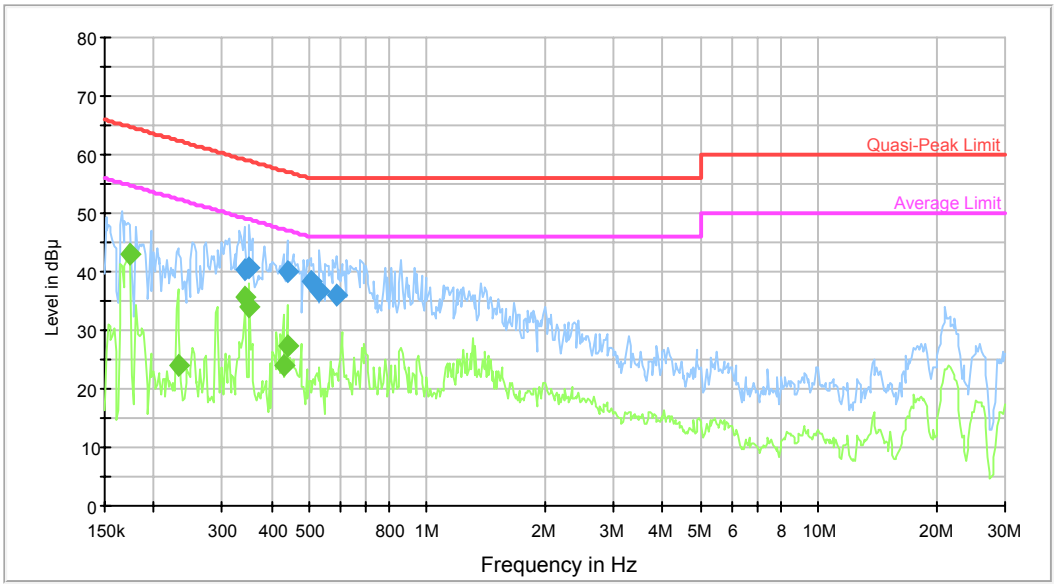
AC120V, 60Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	51.3	9.000	L1	10.2	14.7	66.0	Compliance
0.335433	41.5	9.000	L1	10.3	17.8	59.3	Compliance
0.429420	38.0	9.000	L1	10.2	19.3	57.3	Compliance
0.609741	34.9	9.000	L1	10.3	21.1	56.0	Compliance
0.799472	37.2	9.000	L1	10.4	18.8	56.0	Compliance
0.845331	36.1	9.000	L1	10.4	19.9	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.171759	43.5	9.000	L1	10.2	11.4	54.9	Compliance
0.340821	31.6	9.000	L1	10.3	17.6	49.2	Compliance
0.432855	34.1	9.000	L1	10.2	13.1	47.2	Compliance
0.604902	20.4	9.000	L1	10.3	25.6	46.0	Compliance
0.692650	28.6	9.000	L1	10.4	17.4	46.0	Compliance
0.865782	26.0	9.000	L1	10.4	20.0	46.0	Compliance

AC120V, 60Hz, Neutral:

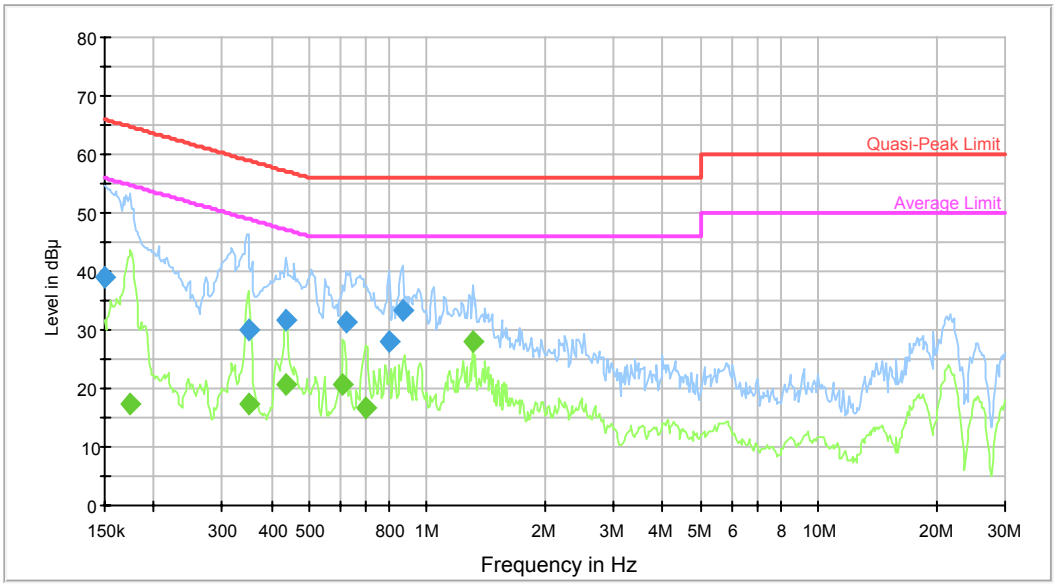


Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.340821	40.3	9.000	N	10.3	18.9	59.2	Compliance
0.351859	40.6	9.000	N	10.3	18.4	58.9	Compliance
0.439808	40.0	9.000	N	10.2	17.1	57.1	Compliance
0.503608	38.3	9.000	N	10.1	17.7	56.0	Compliance
0.532496	36.7	9.000	N	10.1	19.3	56.0	Compliance
0.585926	35.8	9.000	N	10.2	20.2	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.173134	43.0	9.000	N	10.2	11.8	54.8	Compliance
0.230654	23.9	9.000	N	10.2	28.5	52.4	Compliance
0.343548	35.6	9.000	N	10.3	13.5	49.1	Compliance
0.351859	34.1	9.000	N	10.3	14.8	48.9	Compliance
0.429420	24.1	9.000	N	10.2	23.1	47.3	Compliance
0.439808	27.4	9.000	N	10.2	19.7	47.1	Compliance

Appearance 2

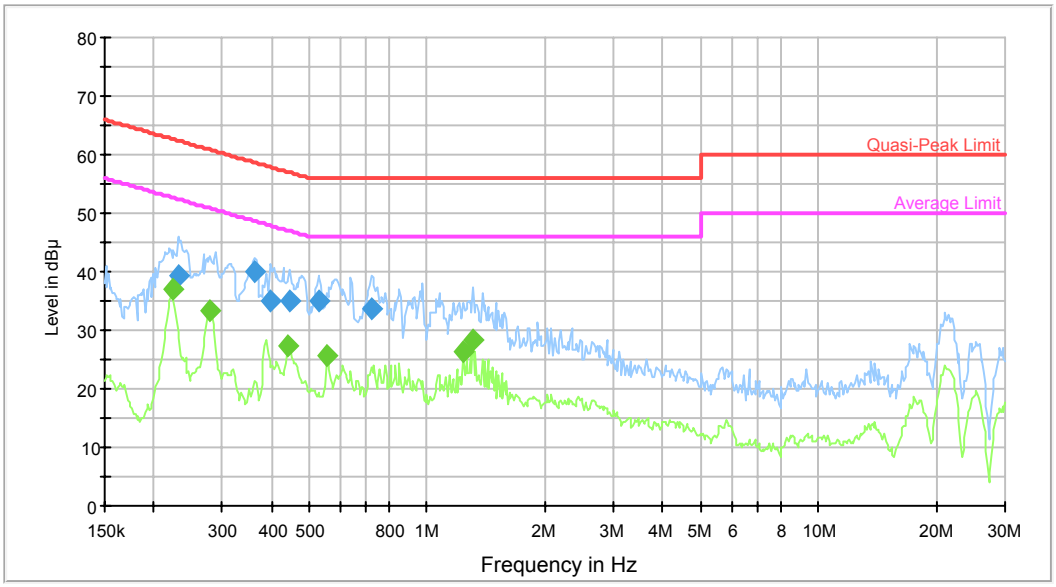
AC120V, 60Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	39.0	9.000	L1	10.2	27.0	66.0	Compliance
0.349066	29.9	9.000	L1	10.3	29.1	59.0	Compliance
0.436318	31.8	9.000	L1	10.2	25.3	57.1	Compliance
0.619536	31.2	9.000	L1	10.3	24.8	56.0	Compliance
0.799472	28.0	9.000	L1	10.4	28.0	56.0	Compliance
0.865782	33.4	9.000	L1	10.4	22.6	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.174519	17.4	9.000	L1	10.2	37.3	54.7	Compliance
0.349066	17.4	9.000	L1	10.3	31.6	49.0	Compliance
0.436318	20.6	9.000	L1	10.2	26.6	47.1	Compliance
0.609741	20.8	9.000	L1	10.3	25.2	46.0	Compliance
0.698191	16.6	9.000	L1	10.5	29.4	46.0	Compliance
1.310256	27.9	9.000	L1	10.4	18.1	46.0	Compliance

AC120V, 60Hz, Neutral:

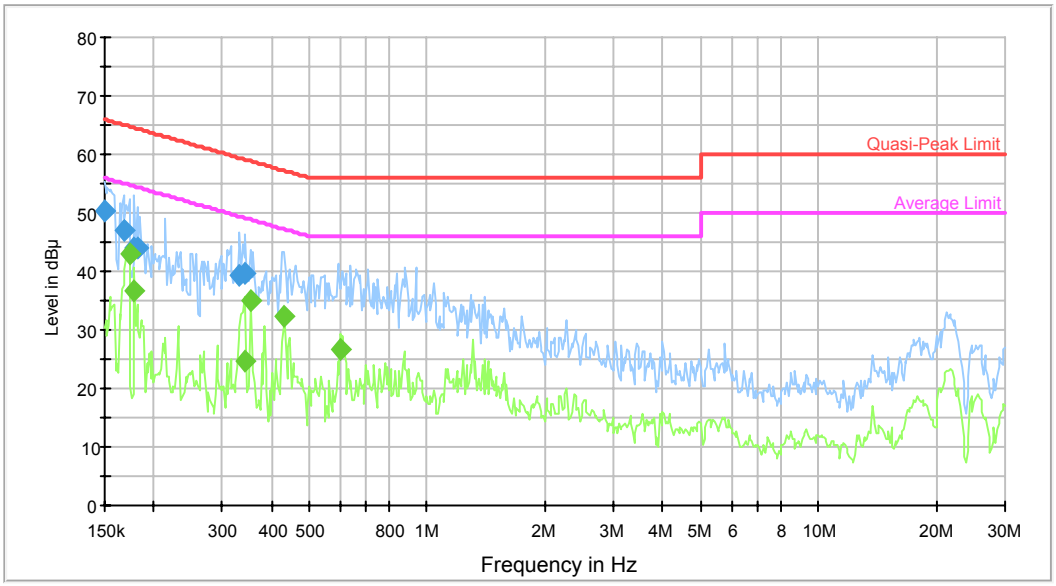


Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.230654	39.5	9.000	N	10.2	22.9	62.4	Compliance
0.363254	39.8	9.000	N	10.3	18.8	58.7	Compliance
0.399703	35.1	9.000	N	10.2	22.8	57.9	Compliance
0.446873	34.9	9.000	N	10.2	22.0	56.9	Compliance
0.528270	35.0	9.000	N	10.1	21.0	56.0	Compliance
0.720803	33.8	9.000	N	10.4	22.2	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.223418	37.0	9.000	N	10.2	15.7	52.7	Compliance
0.279263	33.4	9.000	N	10.3	17.5	50.8	Compliance
0.443327	27.4	9.000	N	10.2	19.6	47.0	Compliance
0.554139	25.6	9.000	N	10.1	20.4	46.0	Compliance
1.239175	26.2	9.000	N	10.4	19.8	46.0	Compliance
1.310256	28.2	9.000	N	10.4	17.8	46.0	Compliance

Appearance 3

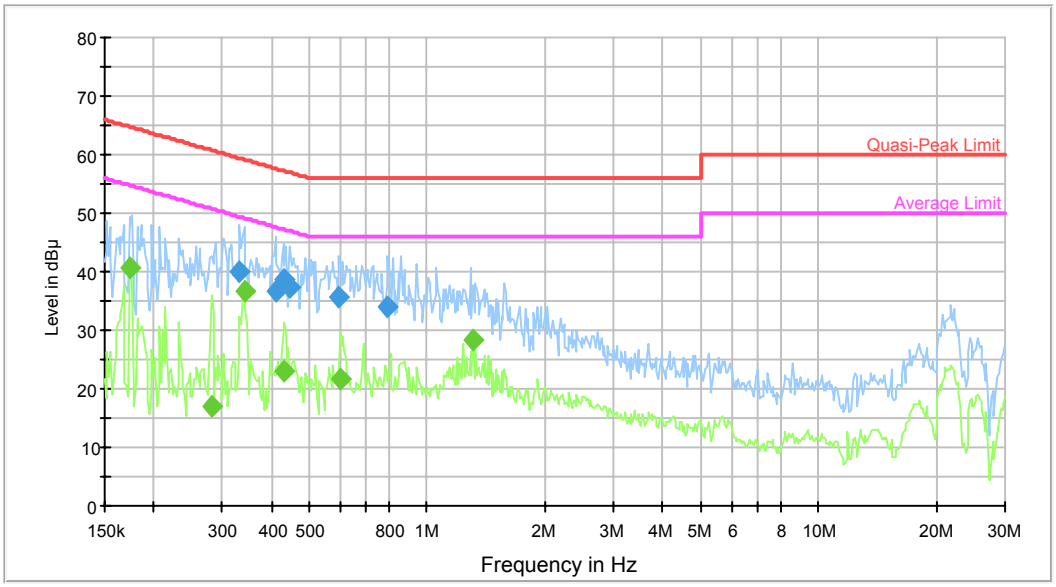
AC120V, 60Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	50.5	9.000	L1	10.2	15.5	66.0	Compliance
0.167702	47.0	9.000	L1	10.2	18.1	65.1	Compliance
0.178741	44.0	9.000	L1	10.2	20.5	64.5	Compliance
0.181612	43.9	9.000	L1	10.2	20.6	64.4	Compliance
0.332770	39.2	9.000	L1	10.3	20.2	59.4	Compliance
0.343548	39.5	9.000	L1	10.3	19.6	59.1	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.173134	42.9	9.000	L1	10.2	11.9	54.8	Compliance
0.178741	36.6	9.000	L1	10.2	18.0	54.5	Compliance
0.340821	24.6	9.000	L1	10.3	24.6	49.2	Compliance
0.354674	34.9	9.000	L1	10.3	13.9	48.9	Compliance
0.432855	32.2	9.000	L1	10.2	15.0	47.2	Compliance
0.600101	26.5	9.000	L1	10.3	19.5	46.0	Compliance

AC120V, 60Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.332770	40.1	9.000	N	10.3	19.3	59.4	Compliance
0.409372	36.5	9.000	N	10.2	21.1	57.7	Compliance
0.429420	38.5	9.000	N	10.2	18.7	57.3	Compliance
0.446873	37.4	9.000	N	10.2	19.5	56.9	Compliance
0.595338	35.7	9.000	N	10.2	20.3	56.0	Compliance
0.793127	33.9	9.000	N	10.4	22.1	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.174519	40.6	9.000	N	10.2	14.1	54.7	Compliance
0.281497	17.1	9.000	N	10.3	33.7	50.8	Compliance
0.340821	36.6	9.000	N	10.3	12.6	49.2	Compliance
0.432855	22.9	9.000	N	10.2	24.3	47.2	Compliance
0.600101	21.8	9.000	N	10.3	24.2	46.0	Compliance
1.310256	28.3	9.000	N	10.4	17.7	46.0	Compliance

FCC §15.109 - RADIATED SPURIOUS EMISSIONS

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner：

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:
–compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
–non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.
If U_{lab} is greater than U_{cispr} of Table 1, then:
–compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
–non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

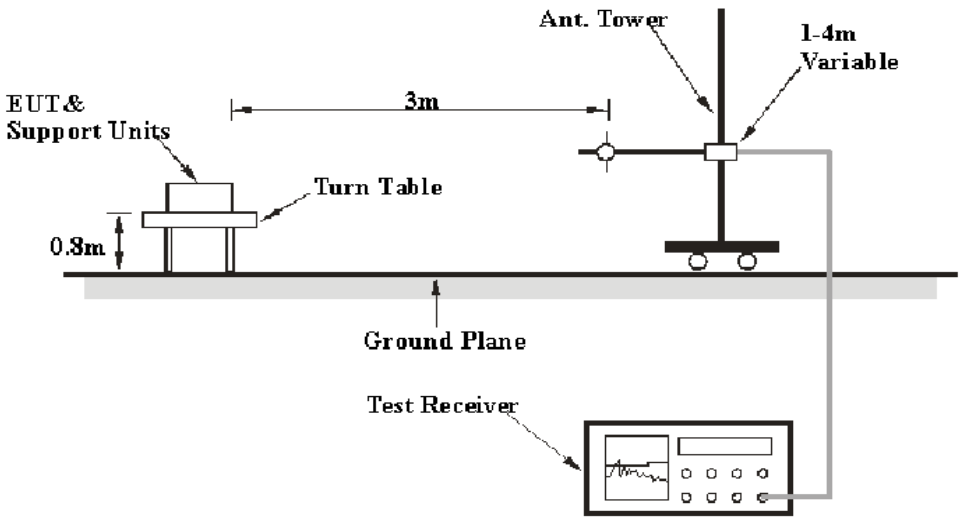
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:30M~200MHz: 5.0 dB; 200M~1GHz: 6.2 dB; 1G~6GHz: 4.45 dB, 6G~18GHz: 5.23 dB

Table 1 – Values of U_{cispr}

Measurement		U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC)	(30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR)	(1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR)	(6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15.109 Class B limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 1 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP

Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-05-09	2016-05-09
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2014-09-01	2015-09-01
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW-1840553 6-JO	15964001001	2014-09-06	2015-09-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Loss + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15 B Class B, with the worst margin reading of:

8.0 dB at **174.5300 MHz** in the **Vertical** polarization (Appearance 2)

Test Data

Environmental Conditions

Temperature:	24.3°C
Relative Humidity:	54 %
ATM Pressure:	100.1 kPa

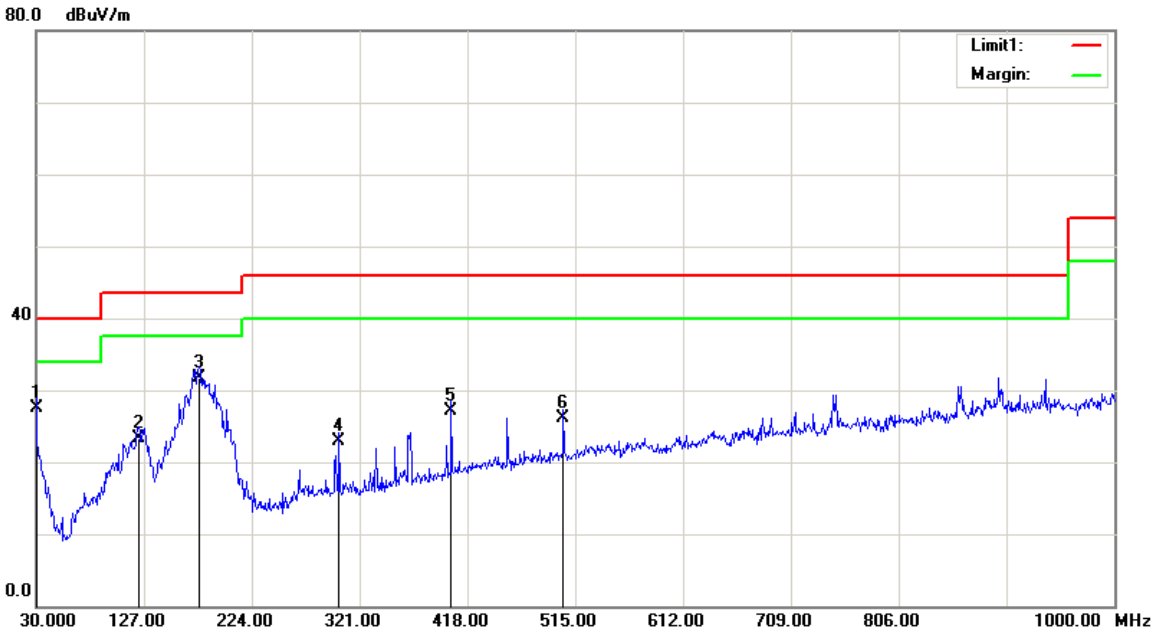
The testing was performed by Jone Lv on 2015-06-03.

Test Mode: Operating

Test Result: Compliance

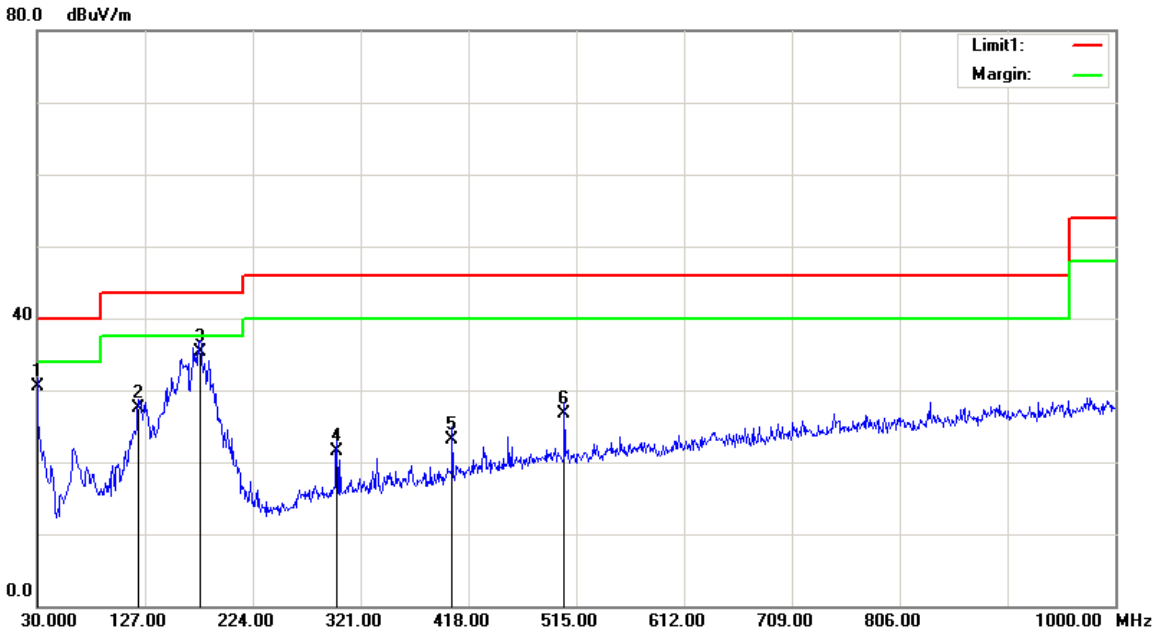
Appearance 1

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	26.62	QP	0.88	27.50	40.00	12.50
122.1500	29.08	QP	-5.68	23.40	43.50	20.10
176.4700	40.26	QP	-8.46	31.80	43.50	11.70
302.5700	28.93	QP	-5.93	23.00	46.00	23.00
403.4500	30.76	QP	-3.56	27.20	46.00	18.80
504.3300	27.76	QP	-1.66	26.10	46.00	19.90

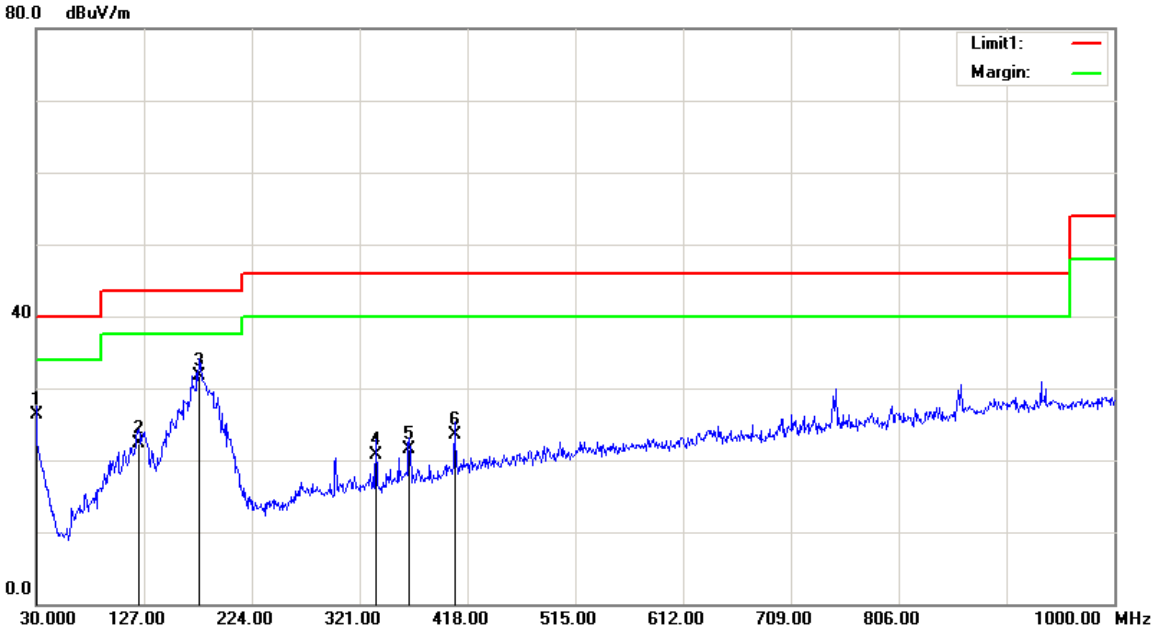
Vertical



Frequency (MHz)	Receiver Reading (dBµV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	29.72	QP	0.88	30.60	40.00	9.40
121.1800	33.27	QP	-5.77	27.50	43.50	16.00
176.4700	43.86	QP	-8.46	35.40	43.50	8.10
299.6600	27.49	QP	-5.99	21.50	46.00	24.50
403.4500	26.66	QP	-3.56	23.10	46.00	22.90
504.3300	28.46	QP	-1.66	26.80	46.00	19.20

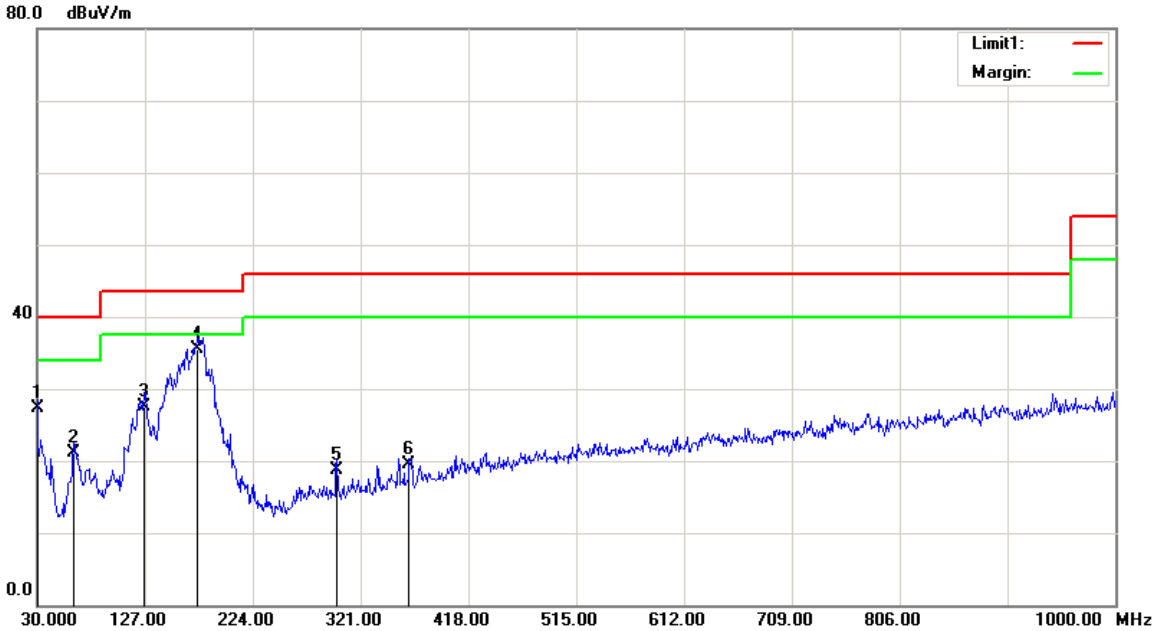
Appearance 2

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	25.42	QP	0.88	26.30	40.00	13.70
122.1500	28.08	QP	-5.68	22.40	43.50	21.10
176.4700	40.26	QP	-8.46	31.80	43.50	11.70
335.5500	26.18	QP	-5.38	20.80	46.00	25.20
365.6200	26.23	QP	-4.63	21.60	46.00	24.40
406.3600	26.96	QP	-3.46	23.50	46.00	22.50

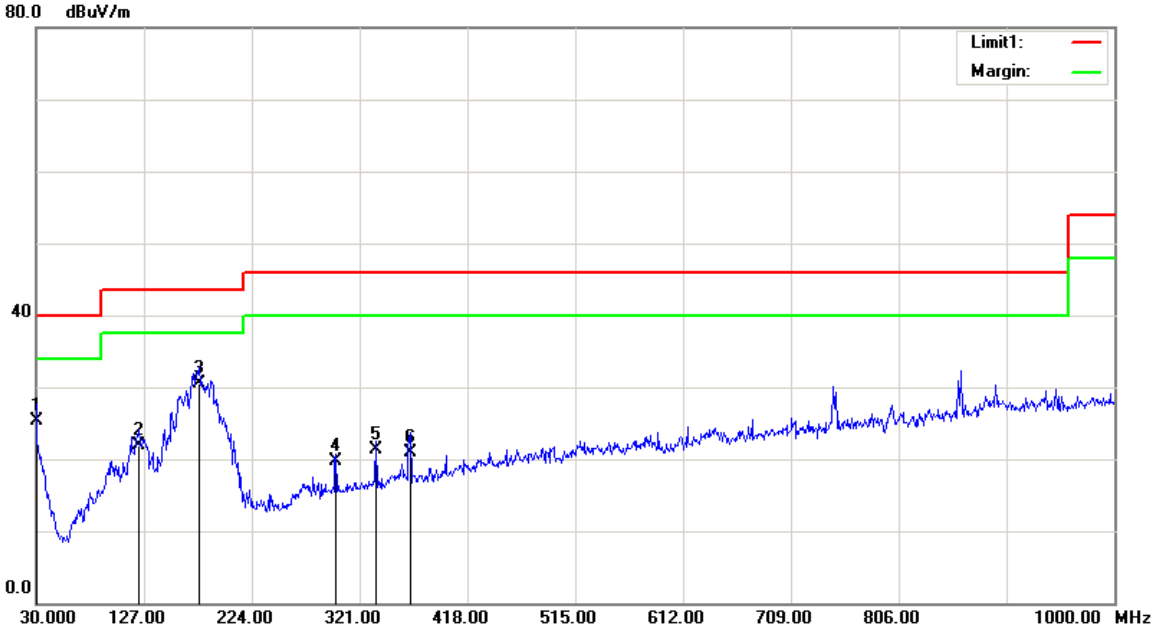
Vertical



Frequency (MHz)	Receiver Reading (dBµV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	26.42	QP	0.88	27.30	40.00	12.70
62.9800	33.87	QP	-12.77	21.10	40.00	18.90
126.0300	33.45	QP	-5.85	27.60	43.50	15.90
174.5300	43.87	QP	-8.37	35.50	43.50	8.00
299.6600	24.79	QP	-5.99	18.80	46.00	27.20
364.6500	24.15	QP	-4.65	19.50	46.00	26.50

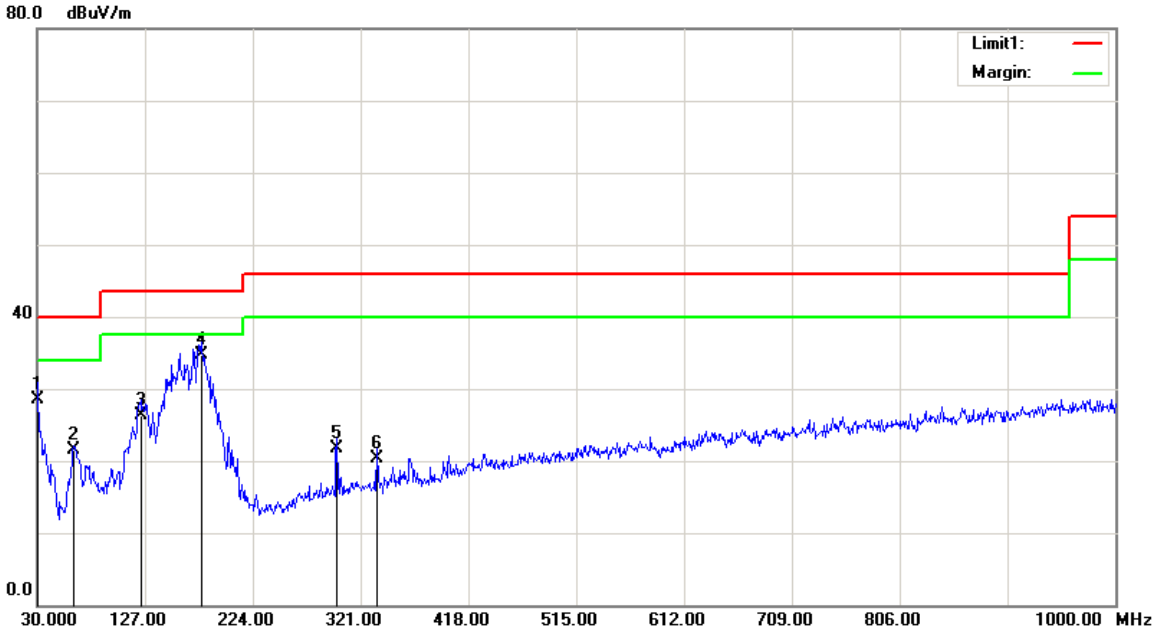
Appearance 3

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	24.52	QP	0.88	25.40	40.00	14.60
122.1500	27.68	QP	-5.68	22.00	43.50	21.50
176.4700	39.06	QP	-8.46	30.60	43.50	12.90
299.6600	25.79	QP	-5.99	19.80	46.00	26.20
335.5500	26.68	QP	-5.38	21.30	46.00	24.70
366.5900	25.53	QP	-4.63	20.90	46.00	25.10

Vertical



Frequency (MHz)	Receiver Reading (dBµV)	Detector (PK/QP/Ave)	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	27.72	QP	0.88	28.60	40.00	11.40
62.9800	34.37	QP	-12.77	21.60	40.00	18.40
123.1200	32.00	QP	-5.70	26.30	43.50	17.20
177.4400	43.31	QP	-8.51	34.80	43.50	8.70
299.6600	27.79	QP	-5.99	21.80	46.00	24.20
335.5500	25.68	QP	-5.38	20.30	46.00	25.70

DECLARATION LETTER

Product Similarity Declaration

Date:2015-06-09

To Whom It May Concern,

We, Century Longmai Technology Co.,Ltd hereby declare that our product mToken Crypto ID, Model Number: 201505LM are electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics. They are certified by BACL. What there are differences as follow: Appearance Material、Appearance size、Appearance color

The rest are the same.

Please contact me if you have any question.

Signature:

Print Name: Joan mei gao

Title: manager

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