FCC PART 15 B

TEST REPORT

For

HONG KONG IPRO TECHNOLOGY CO.,LIMITED

FLAT/RM A3, 9/F SILVERCORP INT TOWER 707-713 NATHAN RD MONGKOK, HONGKONG

FCC ID: PQ4IPROKYLIN50

Report Type:	Product Type:
Original Report	Mobile Phone

Report Number: RDG160908010-00A

Report Date: 2016-09-22

Reviewed By: Dean Liu, RF Engineer

Approved by: Jerry Zhang, EMC Manager

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *HONG KONG IPRO TECHNOLOGY CO.,LIMITED*'s product, model number: *Kylin 5.0 (FCC ID: PQ4IPROKYLIN50)* (the "EUT") in this report was a *Mobile Phone,* which was measured approximately: 14.3cm (L) x 7.3cm (W) x1.0 cm (H), rated input voltage: DC 3.7V rechargeable Li-ion battery or DC5.0V charging from adapter. The highest operating frequency is 2480MHz.

Adapter information:
Model: NTR-S01
Input: AC100-240V-50/60 Hz,150mA
Output: DC5.0V, 700mA

All measurement and test data in this report was gathered from production sample serial number: 160908010 (Assigned by BACL, Dongguan). The EUT was received on 2016-09-08.

Objective

This test report is prepared on behalf of *HONG KONG IPRO TECHNOLOGY CO.,LIMITED* 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)

FCC Part15C DTS submissions with FCC ID: PQ4IPROKYLIN50 .
FCC Part 15C DSS submissions with FCC ID: PQ4IPROKYLIN50 .
FCC Part 22H & 24E PCE submissions with FCC ID: PQ4IPROKYLIN50 .

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, 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 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.

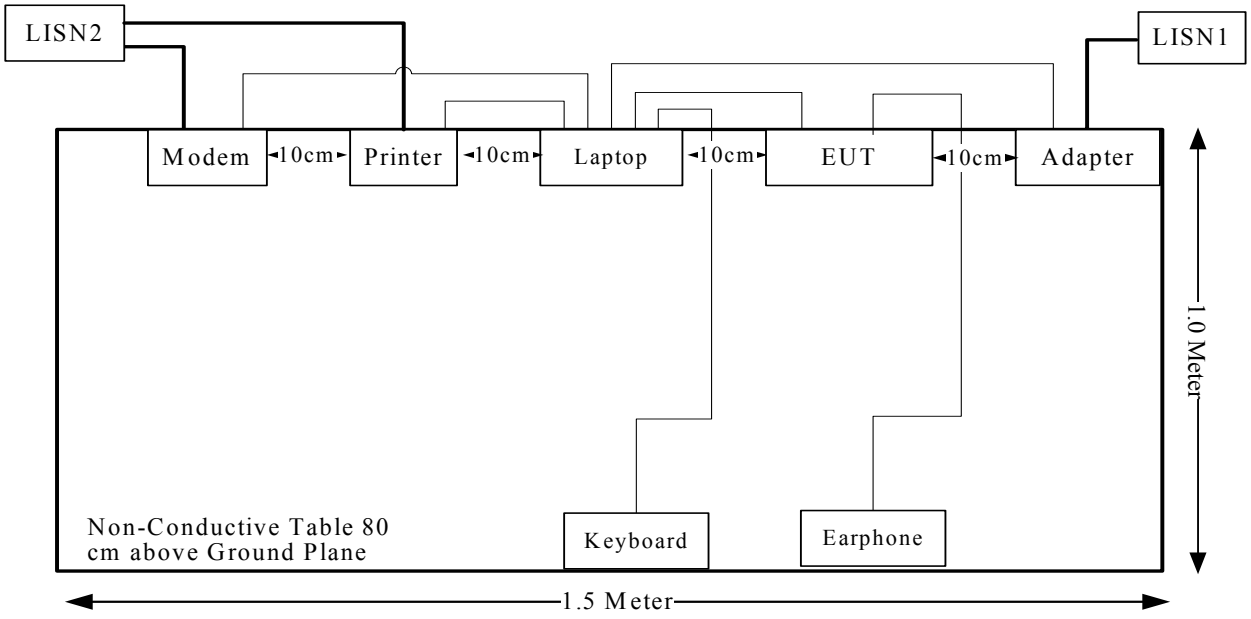
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017
HP	Printer	C3941A	JPTVOB2337
DELL	Keyboard	L100	CNORH656658907BL05DC
SAST	Modem	AEM-2100	0293

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From	To
Serial Cable	yes	No	1.2	Serial Port of Laptop	Modem
Parallel Cable	yes	No	1.2	Parallel Port of Laptop	Printer
Keyboard Cable	yes	No	1.8	USB Port of Laptop	Keyboard
USB Cable	yes	No	0.9	USB Port of Laptop	EUT
Earphone Cable	No	No	1.2	EUT	N/A

Configuration of Test Setup



SUMMARY OF TEST RESULTS

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

Test Time: 2016-09-13 ~ 2016-09-13.

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.

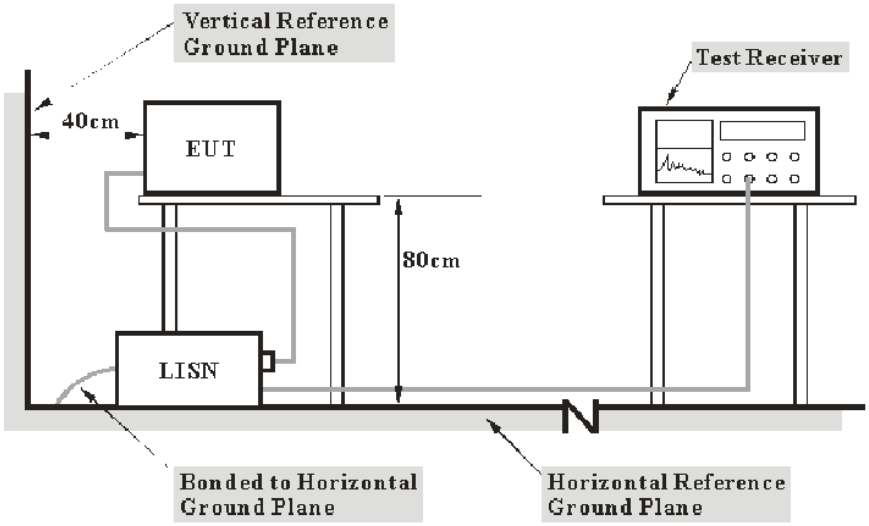
Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.12 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cispr}

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

Note: The $U_{lab} > U_{cispr}$, so the U_{lab} is add in the calculation.

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 C63.4-2014 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	2015-12-10	2016-12-09
R&S	L.I.S.N	ESH2-Z5	892107/021	2016-09-01	2017-09-01
R&S	Two-line V-network	ENV 216	3560.6550.12	2015-11-26	2016-11-25
N/A	Coaxial Cable	1.8m	N/A	2016-05-06	2017-05-06
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 in accordance to NVLAP requirements, 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.

Test Data

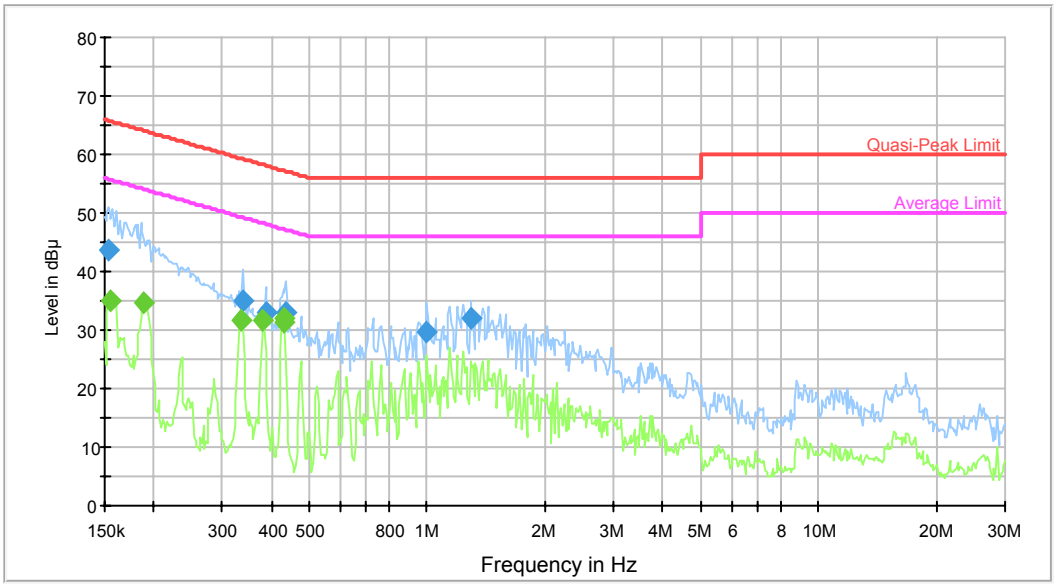
Environmental Conditions

Temperature:	29.1°C
Relative Humidity:	58 %
ATM Pressure:	100.2 kPa

The testing was performed by Robin Zheng on 2016-09-13.

Test Mode: Downloading

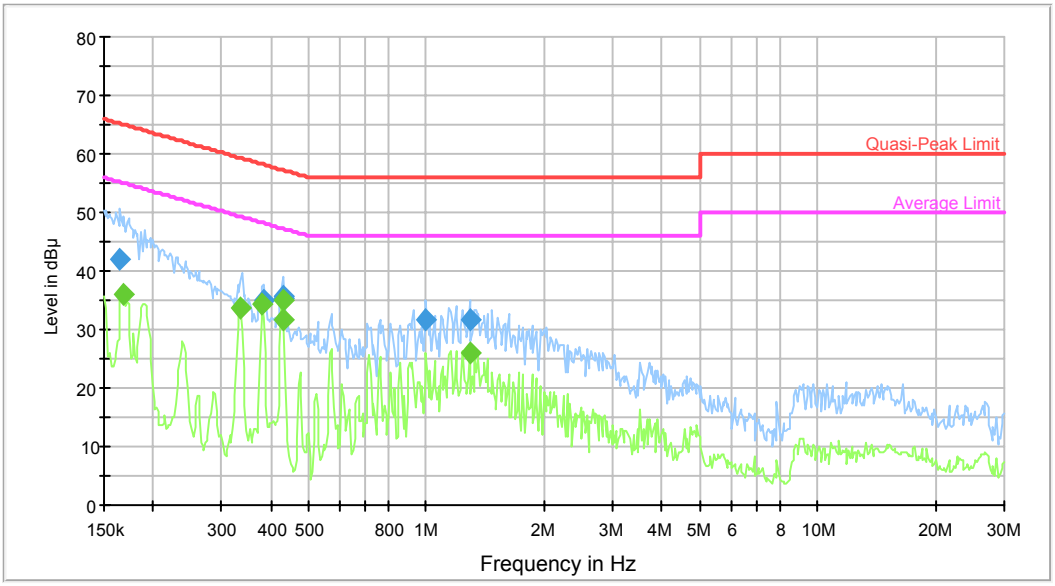
AC120V, 60Hz, Line:



Frequency (MHz)	Quasi Peak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.153629	43.6	9.000	L1	9.7	22.2	65.8	Compliance
0.338116	34.9	9.000	L1	9.6	24.3	59.2	Compliance
0.387164	32.9	9.000	L1	9.7	25.2	58.1	Compliance
0.436318	33.0	9.000	L1	9.7	24.1	57.1	Compliance
0.999305	29.7	9.000	L1	9.7	26.3	56.0	Compliance
1.289541	32.0	9.000	L1	9.7	24.0	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.156097	35.2	9.000	L1	9.7	20.5	55.7	Compliance
0.188994	34.8	9.000	L1	9.7	19.3	54.1	Compliance
0.335433	31.8	9.000	L1	9.6	17.5	49.3	Compliance
0.381043	31.6	9.000	L1	9.7	16.7	48.3	Compliance
0.429420	31.2	9.000	L1	9.7	16.1	47.3	Compliance
0.432855	32.1	9.000	L1	9.7	15.1	47.2	Compliance

AC120V, 60Hz, Neutral:



Frequency (MHz)	Quasi Peak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.165051	42.2	9.000	N	9.6	23.0	65.2	Compliance
0.384091	35.0	9.000	N	9.6	23.2	58.2	Compliance
0.429420	35.6	9.000	N	9.6	21.7	57.3	Compliance
0.432855	35.4	9.000	N	9.6	21.8	57.2	Compliance
0.999305	31.8	9.000	N	9.7	24.2	56.0	Compliance
1.289541	31.6	9.000	N	9.7	24.4	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.167702	36.1	9.000	N	9.6	19.0	55.1	Compliance
0.335433	33.5	9.000	N	9.6	15.8	49.3	Compliance
0.381043	34.2	9.000	N	9.6	14.1	48.3	Compliance
0.429420	35.0	9.000	N	9.6	12.3	47.3	Compliance
0.432855	31.6	9.000	N	9.6	15.6	47.2	Compliance
1.289541	26.0	9.000	N	9.7	20.0	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.

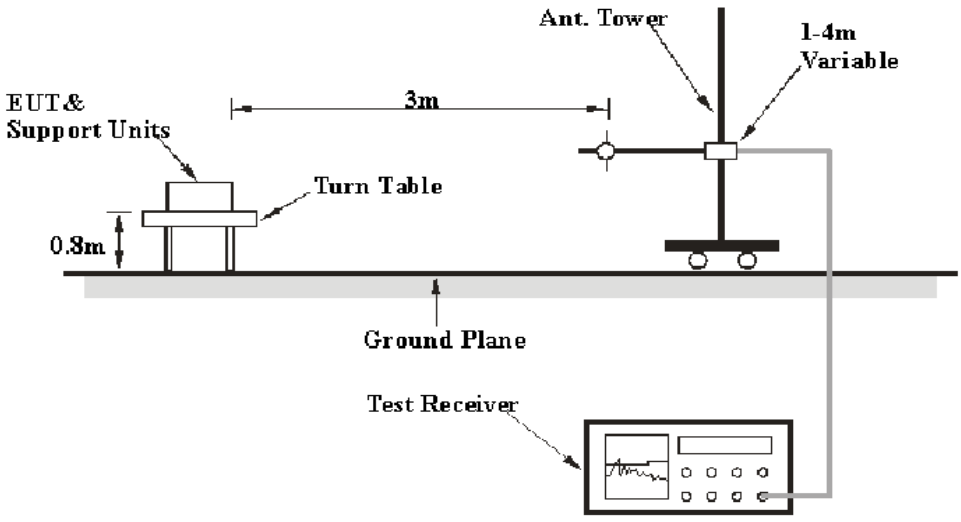
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is: 30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical; 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical; 1G~6GHz: 4.45 dB, 6G~18GHz: 5.23 dB

Table 1 – Values of U_{cispr}

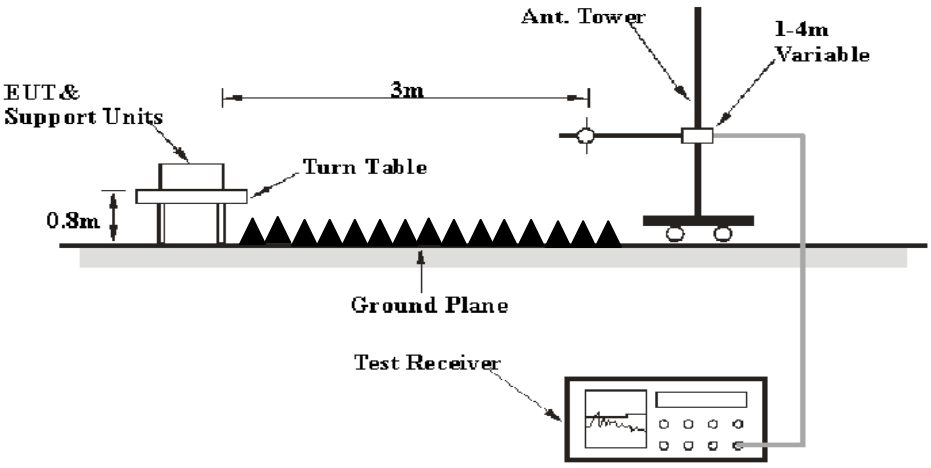
Measurement		U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC)	(30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR)	(1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR)	(6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 13 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
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	10 Hz	/	AVG

Test Procedure

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, peak and average detection mode above 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2016-09-01	2017-09-01
Sunol Sciences	Antenna	JB3	A060611-3	2014-07-28	2017-07-27
HP	Amplifier	8447E	2434A02181	2016-09-01	2017-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2015-11-23	2016-11-22
ETS-Lindgren	Horn Antenna	3115	9808-5557	2016-01-05	2019-01-04
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2016-02-19	2017-02-19
N/A	Coaxial Cable	14m	N/A	2016-05-06	2017-05-06
N/A	Coaxial Cable	8m	N/A	2016-05-06	2017-05-06
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, 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.

Test Data

Environmental Conditions

Temperature:	26 .7°C
Relative Humidity:	66 %
ATM Pressure:	100.2kPa

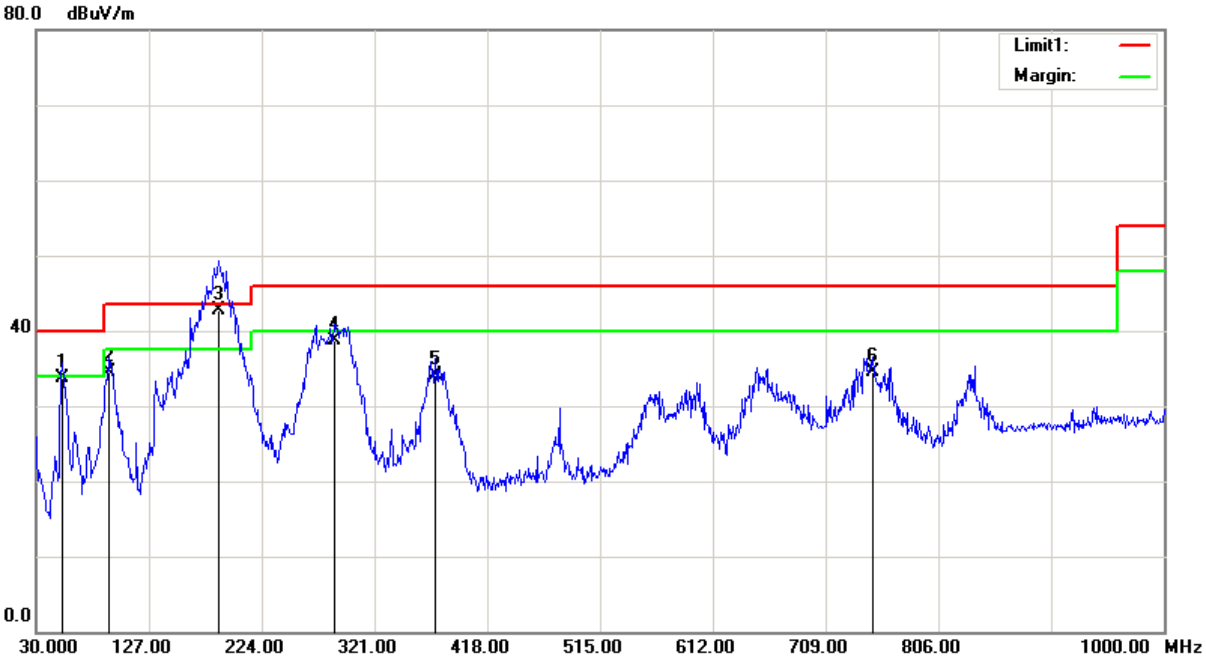
The testing was performed by Robin Zheng on 2016-09-13.

Test Result: Compliance

1) Below 1GHz:

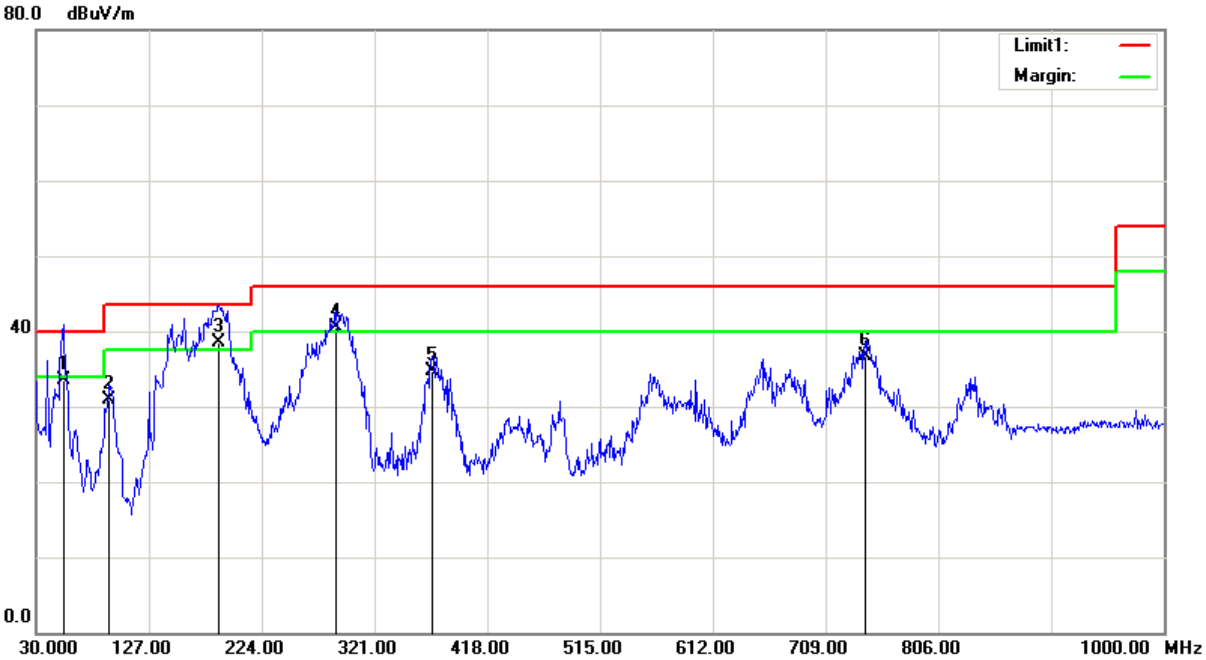
Test Mode: Downloading

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
52.3100	46.36	QP	-12.66	33.70	40.00	6.30
92.0800	46.36	QP	-11.86	34.50	43.50	9.00
187.1400	51.35	QP	-8.65	42.60	43.50	0.90
286.0800	45.00	QP	-6.20	38.80	46.00	7.20
373.3800	38.60	QP	-4.40	34.20	46.00	11.80
749.7400	32.77	QP	1.83	34.60	46.00	11.40

Vertical

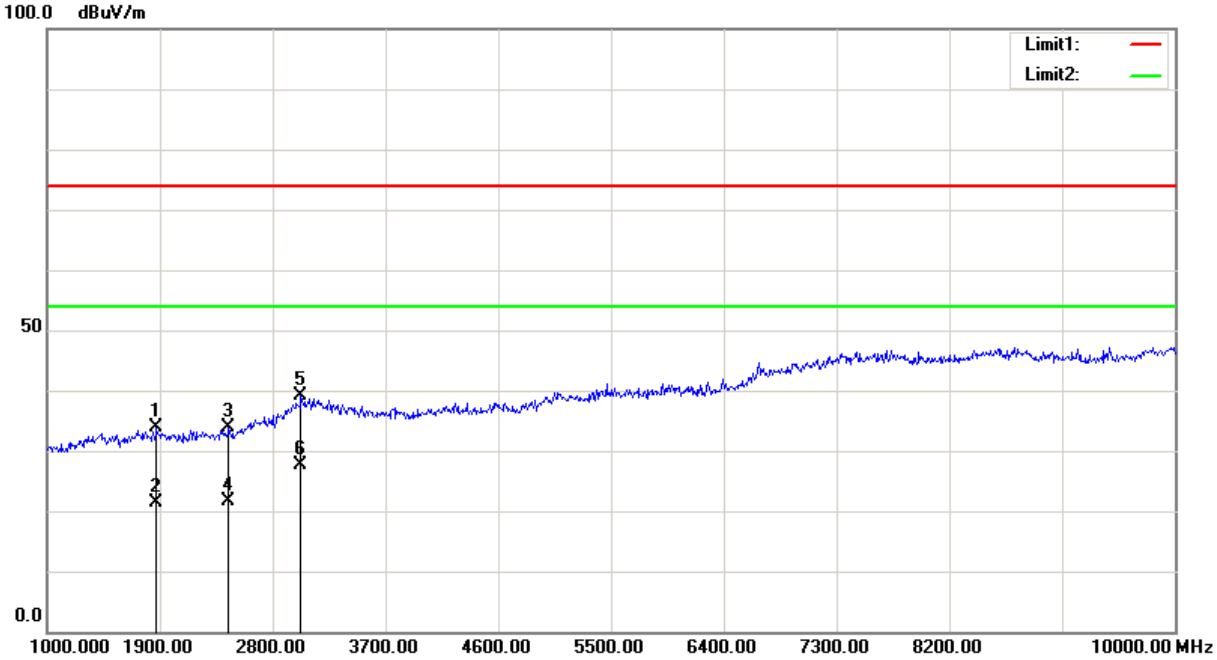


Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
53.2800	46.31	QP	-12.81	33.50	40.00	6.50
92.0800	42.76	QP	-11.86	30.90	43.50	12.60
187.1400	47.15	QP	-8.65	38.50	43.50	5.00
288.0200	46.82	QP	-6.22	40.60	46.00	5.40
370.4700	39.09	QP	-4.39	34.70	46.00	11.30
742.9500	35.12	QP	1.68	36.80	46.00	9.20

2) Above 1GHz:

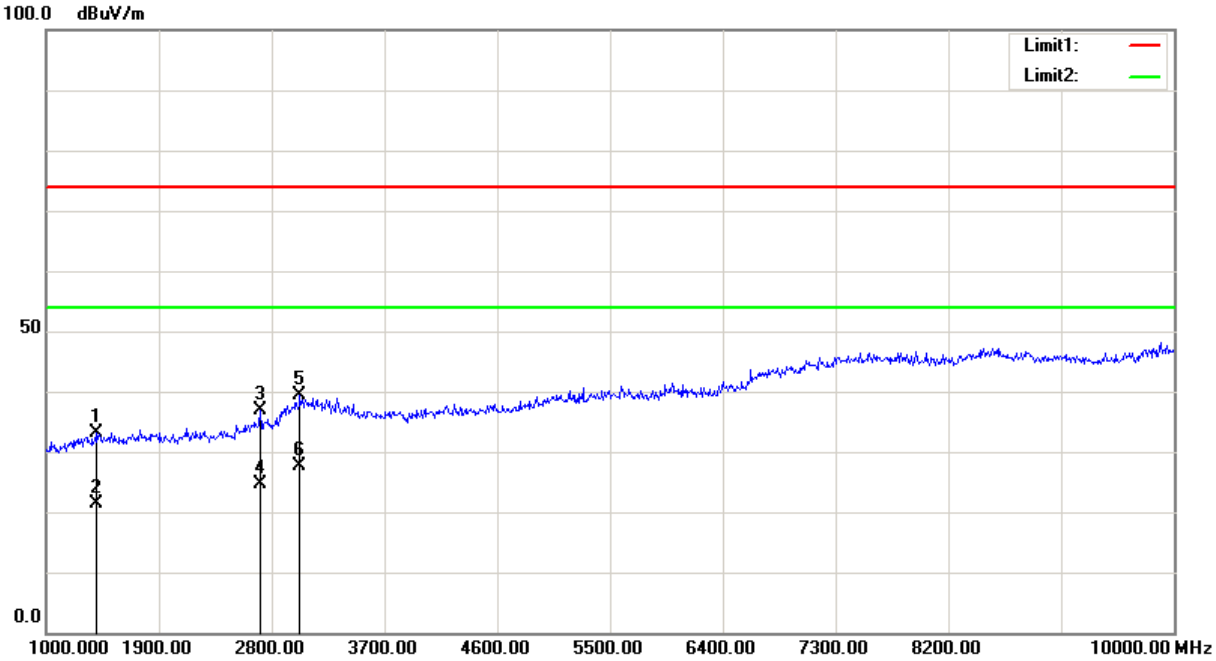
Test Mode: Downloading

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1877.500	33.84	peak	0.02	33.86	74.00	40.14
1877.500	21.35	AVG	0.02	21.37	54.00	32.63
2453.500	31.80	peak	2.11	33.91	74.00	40.09
2453.500	19.47	AVG	2.11	21.58	54.00	32.42
3029.500	32.48	peak	6.65	39.13	74.00	34.87
3029.500	20.90	AVG	6.65	27.55	54.00	26.45

Vertical



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1396.000	33.91	peak	-0.88	33.03	74.00	40.97
1396.000	22.27	AVG	-0.88	21.39	54.00	32.61
2714.500	33.40	peak	3.50	36.90	74.00	37.10
2714.500	21.17	AVG	3.50	24.67	54.00	29.33
3025.000	32.69	peak	6.66	39.35	74.00	34.65
3025.000	20.92	AVG	6.66	27.58	54.00	26.42

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