TESTING LABORATORY
CERTIFICATE #4820.01

FCC PART 15B

TEST REPORT

For

HONG KONG IPRO TECHNOLOGY CO.,LIMITED

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

FCC ID:PQ4IPROX1

Report Type:	**Product Type:**
Original Report	Mobile Phone
Report Number:	RDG190422001-00A
Report Date:	2019-05-14
Reviewed By:	Jerry Zhang EMC Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:		Mobile Phone
EUT Model:		X1
Highest Operation Frequency:		2480 MHz
Rated Input Voltage:		DC3.8V from Battery or DC5V from adapter
Adapter Information	**Model:**	NTR-S01
	Input:	AC 100-240V, 50/60Hz, 0.2A
	Output:	DC5V, 1000mA
External Dimension:		158mm(L)*77mm(W)*9.5mm(H)
Serial Number:		190422001
EUT Received Date:		2019-04-24

Objective

This report is prepared on behalf of ***HONG KONG IPRO TECHNOLOGY CO.,LIMITED*** in accordance with FCC Part 15B Part 2, subpart J, and Part 15, Subpart 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 Part 22H, 24E PCE submissions with FCC ID:PQ4IPROX1
FCC Part 15C DSS submissions with FCC ID:PQ4IPROX1
FCC Part 15C DTS submissions with FCC ID:PQ4IPROX1

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).

Measurement Uncertainty

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.55 dB,200M~1GHz: 5.92 dB,1G~6GHz: 4.98 dB, 6G~18GHz: 5.89 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Temperature	±1℃
Humidity	±5%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

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 Industry Area, Tangxia, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier : CN0022.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in downloading mode.

Equipment Modifications

No modification was made to the EUT.

EUT Exercise Software

The software "Winthrax.exe" was used during test.

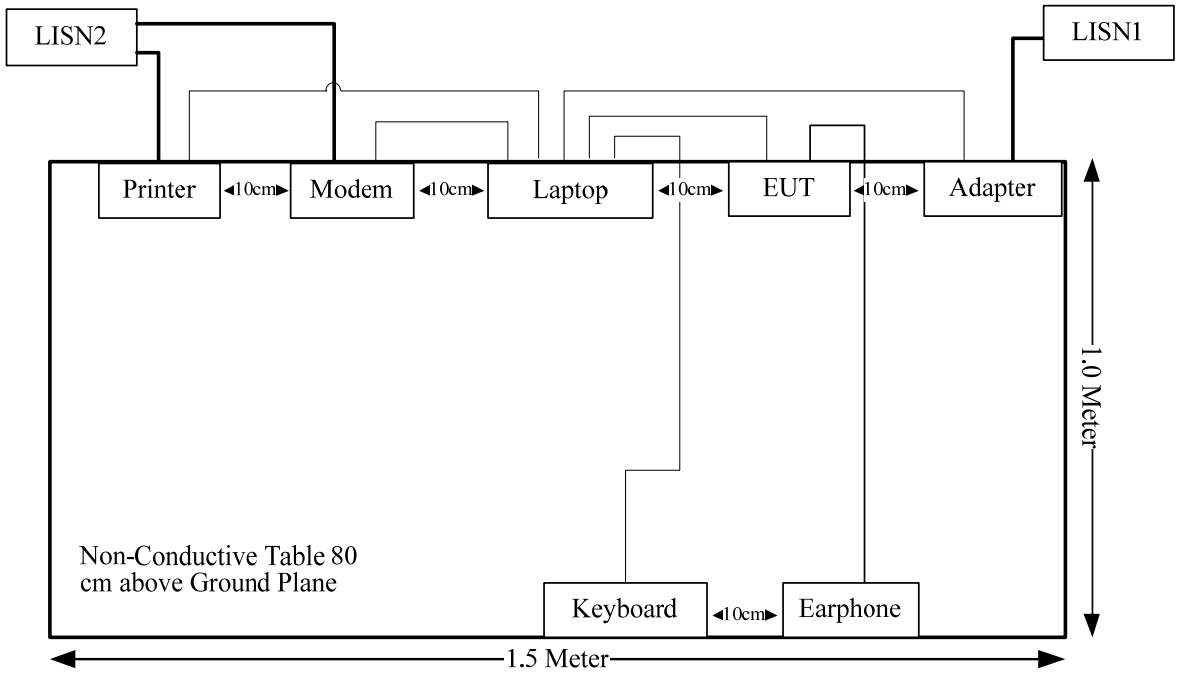
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	1CVM0C1
SAST	modem	AEM-2100	90200213
DELL	Keyboard	SK-8115	CN-0J4628-71616-52H-0RT6
HP	Printer	C3941A	JPTV013237

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	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	No	No	1.0	USB Port of Laptop	EUT
Earphone Cable	No	No	1.0	EUT	Earphone

Block Diagram of Test Setup



Test Equipment List

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted emissions					
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-01	2018-09-05	2019-09-05
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
R&S	Two-line V-network	ENV 216	101614	2018-12-10	2019-12-10
R&S	EMI Test Receiver	ESCI	101121	2019-03-23	2020-03-23
Radiated emissions Below 1GHz					
R&S	EMI Test Receiver	ESCI	100035	2018-08-03	2019-08-03
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Sunol Sciences	Antenna	JB3	A060611-3	2017-07-21	2019-07-21
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2018-09-05	2019-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-02	2018-09-05	2019-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0530-01	2018-09-24	2019-09-24
Sonoma	Amplifier	310N	185914	2018-10-13	2019-10-13
Radiated emissions Above 1GHz					
R&S	Spectrum Analyzer	FSP 38	100478	2018-12-10	2019-12-10
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
TDK RF	Horn Antenna	HRN-0118	130 084	2018-10-12	2021-10-12
MICRO-COAX	Coaxial Cable	UFA147-1-2362-100100	64639 231029-001	2019-02-24	2020-02-24
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2018-09-05	2019-09-05

* 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).

Environmental Conditions

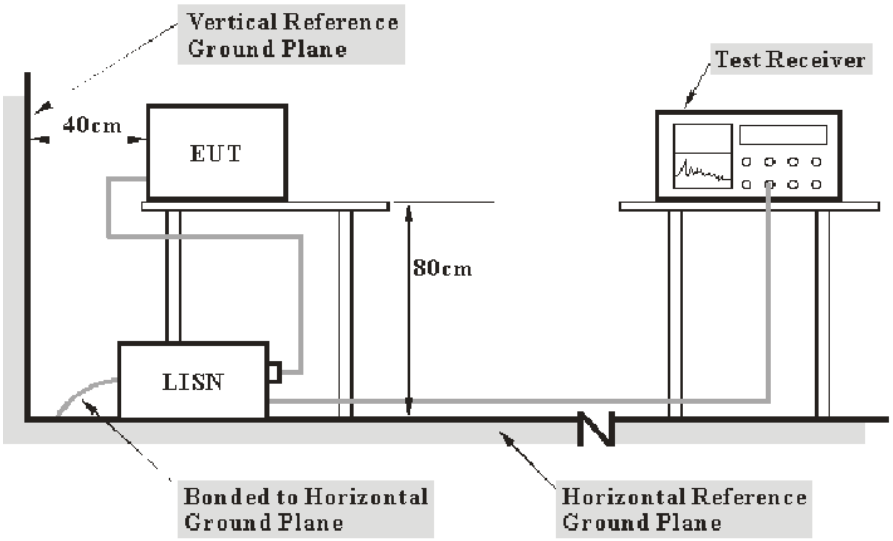
Test Item:	Conducted emissions	Radiated emissions Below 1GHz	Radiated emissions Above 1GHz
Test Date:	2019-05-13	2019-04-26	2019-04-28
Tester:	Lily Xie	Sunny Cen	Neil Liao
Temperature:	26.4 °C	24.4°C	25.9°C
Relative Humidity:	56 %	59 %	61%
ATM Pressure:	100.3 kPa	100.2kPa	100.7kPa

SUMMARY OF TEST RESULTS

Rule and Clause	Description of Test	Test Result
FCC §15.107	Conducted emissions	Compliance
FCC §15.109	Radiated emissions	Compliance

CONDUCTED EMISSIONS

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 the Main LISN with 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 Procedure

During the conducted emission test, the Adapter of Laptop 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

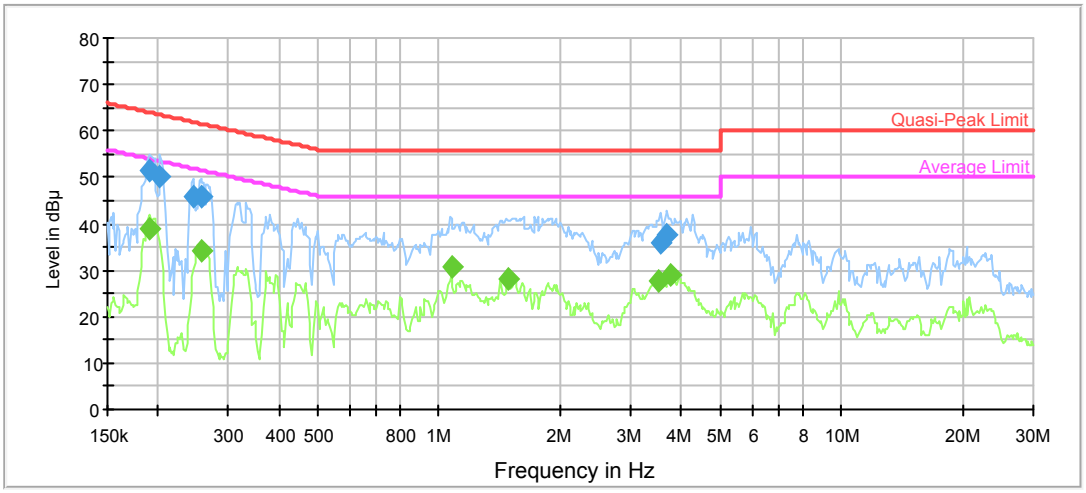
The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Data

Please refer to following table and plots:

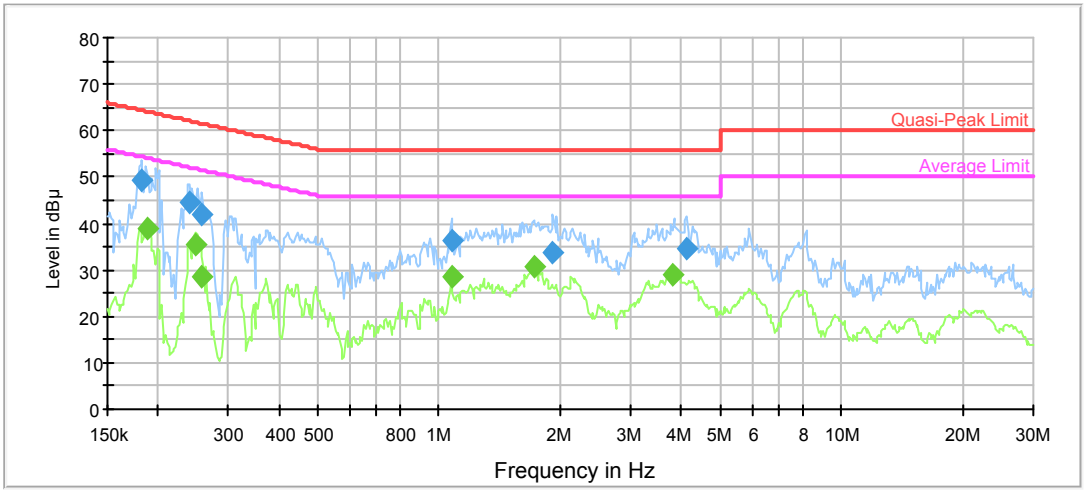
Port:	L
Test Mode:	Downloading
Power Source:	AC120V/60Hz



Frequency (MHz)	QuasiPeak (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.190505	51.6	9.000	L1	10.7	12.4	64.0
0.203045	50.1	9.000	L1	10.6	13.4	63.5
0.245835	45.8	9.000	L1	10.3	16.1	61.9
0.255827	46.0	9.000	L1	10.3	15.6	61.6
3.547503	36.1	9.000	L1	9.8	19.9	56.0
3.691692	37.6	9.000	L1	9.8	18.4	56.0

Frequency (MHz)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.190505	39.1	9.000	L1	10.7	14.9	54.0
0.255827	34.1	9.000	L1	10.3	17.5	51.6
1.073601	30.8	9.000	L1	9.8	15.2	46.0
1.488418	27.9	9.000	L1	9.7	18.1	46.0
3.519348	27.5	9.000	L1	9.8	18.5	46.0
3.750995	29.0	9.000	L1	9.8	17.0	46.0

Port: N
Test Mode: Downloading
Power Source: AC120V/60Hz



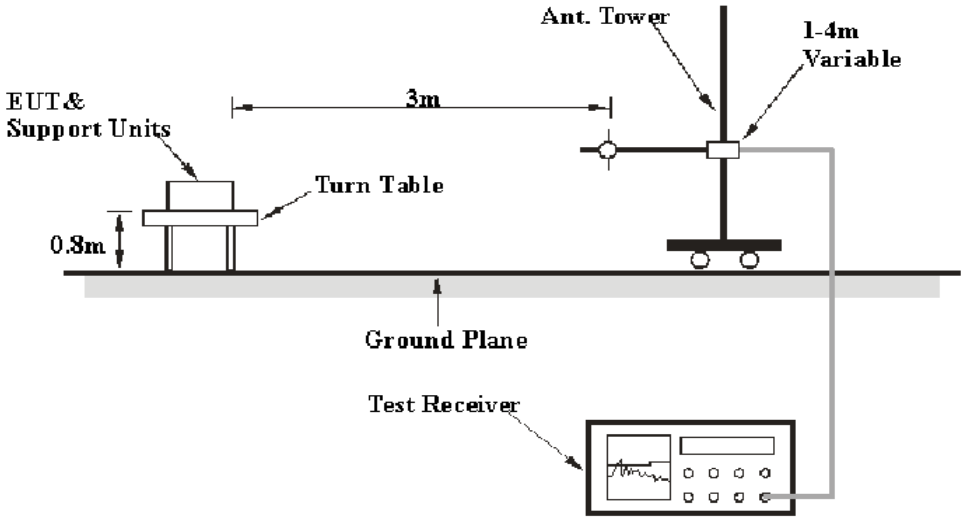
Frequency (MHz)	QuasiPeak (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.183065	49.3	9.000	N	10.8	15.0	64.3
0.240029	44.4	9.000	N	10.4	17.7	62.1
0.257874	41.9	9.000	N	10.3	19.6	61.5
1.073601	36.5	9.000	N	9.8	19.5	56.0
1.920710	33.7	9.000	N	9.7	22.3	56.0
4.127365	34.4	9.000	N	9.8	21.6	56.0

Frequency (MHz)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.188994	39.1	9.000	N	10.7	15.0	54.1
0.247802	35.4	9.000	N	10.3	16.4	51.8
0.255827	28.4	9.000	N	10.3	23.2	51.6
1.073601	28.6	9.000	N	9.8	17.4	46.0
1.717965	30.5	9.000	N	9.7	15.5	46.0
3.811251	29.1	9.000	N	9.8	16.9	46.0

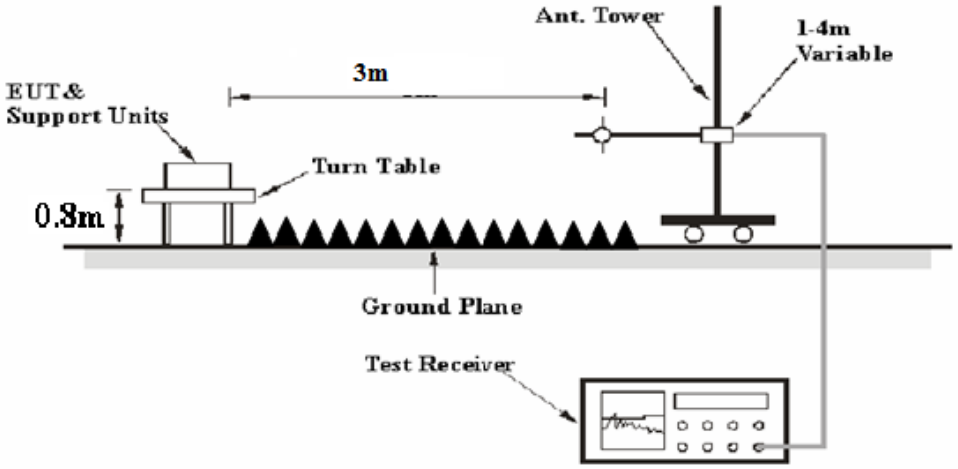
RADIATED EMISSIONS

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission below 1GHz tests were performed in the 10 meters chamber test site, above 1GHz tests were performed in the 3 meters chamber test site A, using the setup accordance with the ANSI C63.4-2014. The specification used was with the FCC Part 15 B 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	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	Reduced video bandwidth	/	AVG

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

Test Procedure

During the radiated emissions, the adapter of laptop 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, peak and average detection mode above 1 GHz.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Meter Reading+ Corrected

Note:
Corrected = Antenna Factor + Cable Loss - Amplifier Gain

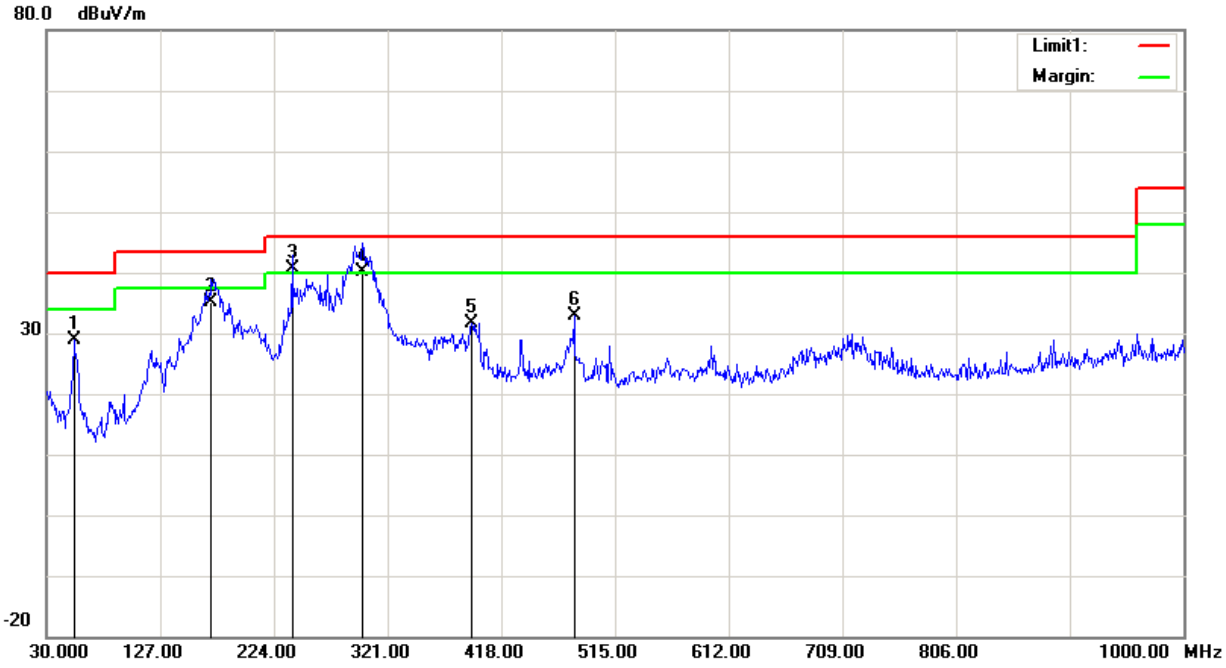
The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation
is as follows:

Margin = Limit – Result

Test Data

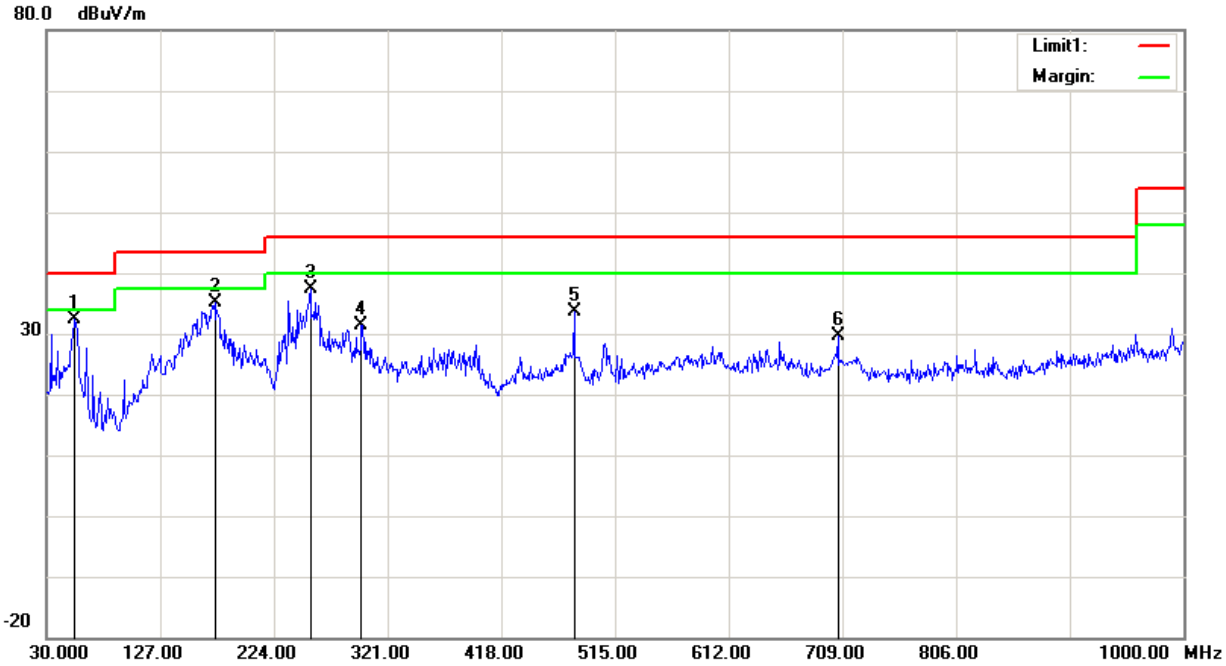
Please refer to following table and plots:

Condition:	FCC Part 15B Class B	**Polarization:**	Horizontal
EUT:	Mobile Phone	**Power:**	AC 120V/60Hz
Test Mode:	Downloading	**Distance:**	3m



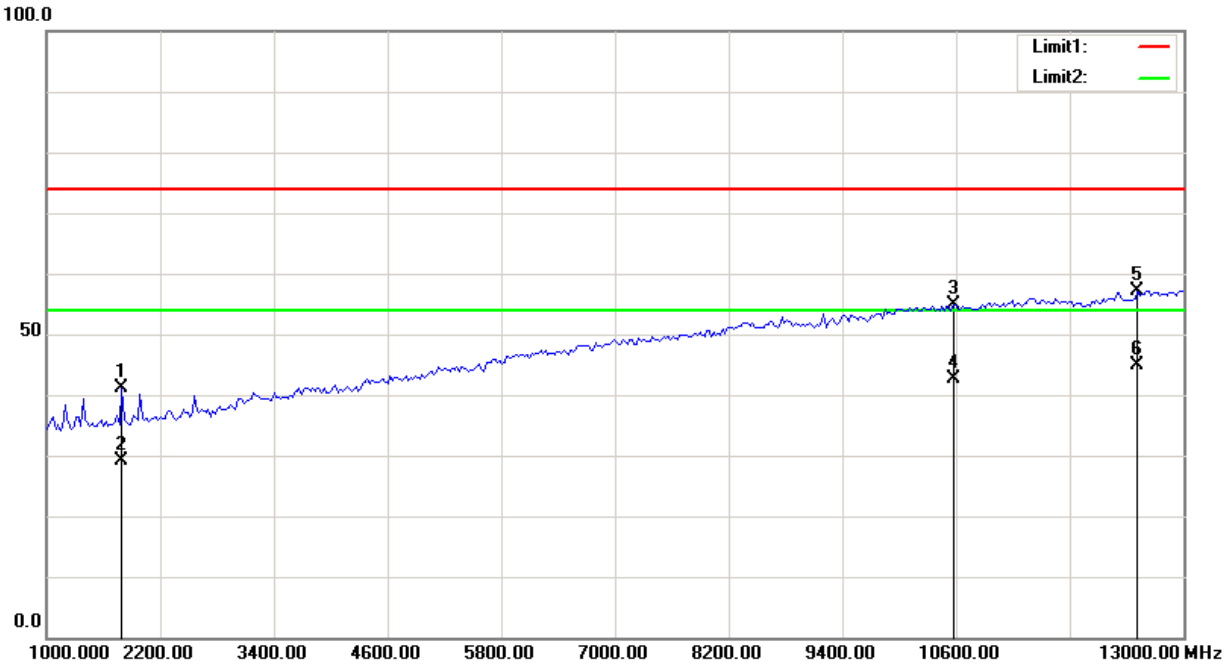
Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
53.2800	48.91	peak	-20.01	28.90	40.00	11.10
170.6500	48.12	QP	-12.92	35.20	43.50	8.30
239.5200	54.24	QP	-13.54	40.70	46.00	5.30
299.6600	51.03	QP	-10.83	40.20	46.00	5.80
392.7800	39.88	peak	-8.31	31.57	46.00	14.43
480.0800	39.45	peak	-6.57	32.88	46.00	13.12

Condition:	FCC Part 15B Class B	**Polarization:**	Vertical
EUT:	Mobile Phone	**Power:**	AC 120V/60Hz
Test Mode:	Downloading	**Distance:**	3m



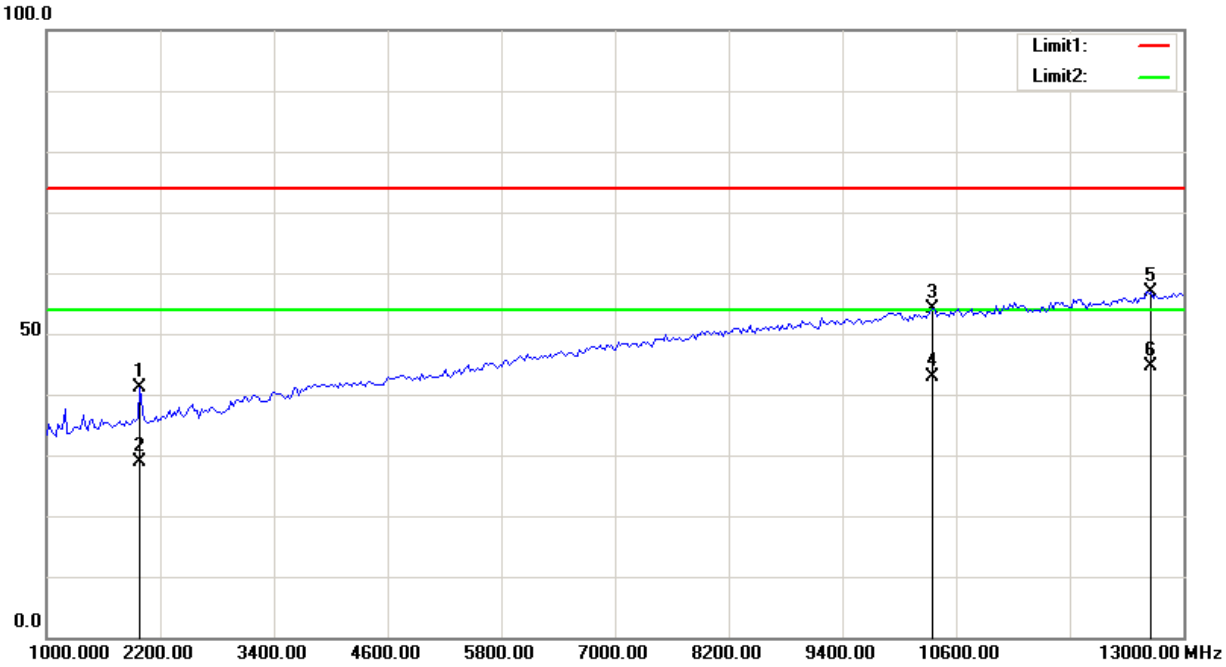
Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
54.2500	52.37	peak	-20.01	32.36	40.00	7.64
173.5600	48.14	peak	-13.13	35.01	43.50	8.49
255.0400	50.50	peak	-13.05	37.45	46.00	8.55
298.6900	42.40	peak	-10.90	31.50	46.00	14.50
480.0800	40.14	peak	-6.57	33.57	46.00	12.43
705.1200	31.42	peak	-1.78	29.64	46.00	16.36

Condition:	FCC Part 15B Class B	**Polarization:**	Horizontal
EUT:	Mobile Phone	**Power:**	AC 120V/60Hz
Test Mode:	Downloading	**Distance:**	3m



Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1793.587	42.03	peak	-0.84	41.19	74.00	32.81
1793.587	30.02	AVG	-0.84	29.18	54.00	24.82
10571.142	37.49	peak	17.37	54.86	74.00	19.14
10571.142	25.36	AVG	17.37	42.73	54.00	11.27
12519.038	37.59	peak	19.64	57.23	74.00	16.77
12519.038	25.13	AVG	19.64	44.77	54.00	9.23

Condition:	FCC Part 15B Class B	**Polarization:**	Vertical
EUT:	Mobile Phone	**Power:**	AC 120V/60Hz
Test Mode:	Downloading	**Distance:**	3m



Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1985.972	41.81	peak	-0.80	41.01	74.00	32.99
1985.972	29.69	AVG	-0.80	28.89	54.00	25.11
10354.709	37.06	peak	17.14	54.20	74.00	19.80
10354.709	25.74	AVG	17.14	42.88	54.00	11.12
12663.327	37.03	peak	19.92	56.95	74.00	17.05
12663.327	24.63	AVG	19.92	44.55	54.00	9.45

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