

FCC Test Report

APPLICANT : Intel Corp.
EQUIPMENT : Android Smart Phone
BRAND NAME : Intel
MODEL NAME : Black Bay/XOLO
MARKETING NAME : AZ510
FCC ID : O2Z-AZ510
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Sep. 26, 2012 and completely tested on Nov. 02, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:



Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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SPORTON INTERNATIONAL INC.

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FCC ID : O2Z-AZ510

Page Number : 1 of 32

Report Issued Date : Nov. 12, 2012

Report Version : Rev. 01

TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1. GENERAL DESCRIPTION	5
1.1. Applicant.....	5
1.2. Manufacturer	5
1.3. Feature of Equipment Under Test.....	5
1.4. Test Site	7
1.5. Applied Standards	7
1.6. Ancillary Equipment List.....	7
2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST	8
2.1. Test Mode	8
2.2. Connection Diagram of Test System	11
2.3. Test Software	12
3. TEST RESULT	13
3.1. Test of AC Conducted Emission Measurement	13
3.2. Test of Radiated Emission Measurement	25
4. LIST OF MEASURING EQUIPMENT	31
5. UNCERTAINTY OF EVALUATION	32
APPENDIX A. PHOTOGRAPHS OF EUT	
APPENDIX B. SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC232306-04	Rev. 01	Initial issue of report	Nov. 12, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.107	7.2.4	AC Conducted Emission	< 15.107 limits < RSS-Gen table 2 limits	PASS	Under limit 3.60 dB at 3.806 MHz
3.2	15.109	7.2.3.2	Radiated Emission	< 15.109 limits < RSS-Gen table 1 limits	PASS	Under limit 3.70 dB at 148.530 MHz

1. General Description

1.1. Applicant

Intel Corp.

SC1-20, 2200 Mission College Blvd, Santa Clara, CA 95054, USA

1.2. Manufacturer

Chi Mei Communication Systems, Inc.

No. 4, Mingsheng Street, Tucheng City, New Taipei City 23678, Taiwan

1.3. Feature of Equipment Under Test

Product Feature	
Equipment	Android Smart Phone
Brand Name	Intel
Model Name	Black Bay/XOLO
Marketing Name	AZ510
FCC ID	O2Z-AZ510
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA WLAN 11abgn / Bluetooth / NFC
HW Version	PR3.3
SW Version	6892
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n: 5150 MHz ~ 5350 MHz; 5470 MHz ~ 5725 MHz (with 5600 MHz ~ 5650 MHz) Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Rx Frequency Range	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n: 5150 MHz ~ 5350 MHz; 5470 MHz ~ 5725 MHz (with 5600 MHz ~ 5650 MHz) Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz NFC : 13.56 MHz
Antenna Type	WWAN : PIFA Antenna WLAN / Bluetooth : PIFA Antenna NFC : FPC Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) 802.11b : DSSS (BPSK / QPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth (1Mbps) : GFSK Bluetooth 2.1 EDR (2Mbps) : $\pi/4$ -DQPSK Bluetooth 2.1 EDR (3Mbps) : 8-DPSK GPS : BPSK NFC: ASK

1.4. Test Site

Test Site	SPORTON INTERNATIONAL INC.		
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978		
Test Site No.	Sporton Site No.		FCC/IC Registration No.
	CO05-HY	03CH06-HY	722060/4086B-1

1.5. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2003
- IC RSS-Gen Issue 3

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

1.6. Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
4.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
5.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
6.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
7.	LCD Monitor	Dell	U2410	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
8.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
9.	iPod Earphone	Apple	N/A	FCC DoC	Unshielded, 1.0 m	N/A

2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction (150 KHz to 30 MHz), radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test modes as the worst cases and recorded in this report.

Item	EUT Configuration	Test Condition		
		EMI AC	EMI RE<1G	EMI RE≥1G
1.	Charging Mode (EUT with adapter)	☒	☒	☒
2.	Data application transferred mode (EUT with notebook)	☒	☒	☒

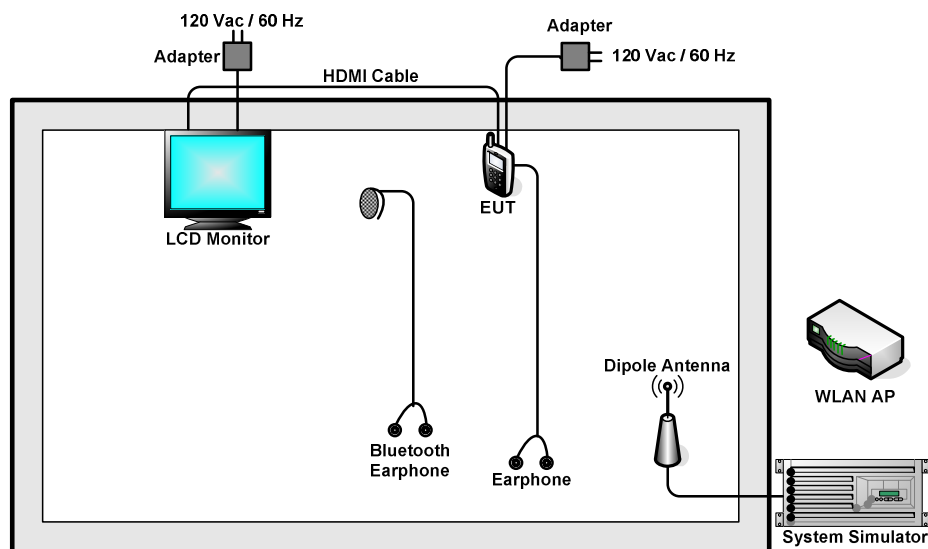
Abbreviations:

- EMI AC: AC conducted emissions
- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz

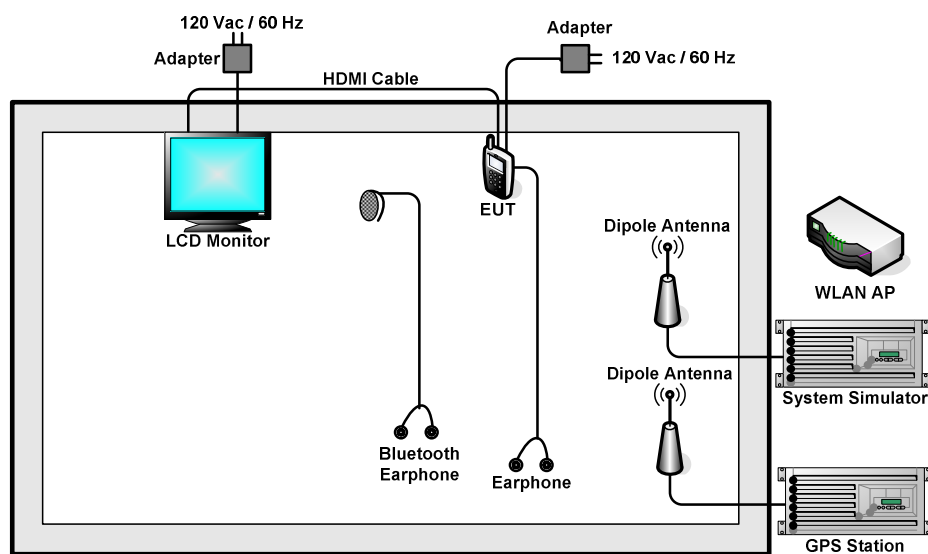
Test Items	EUT Configure Mode	Function Type
AC Conducted Emission	1/2	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable <Fig. 1> Mode 2: WCDMA Band V Idle + Bluetooth Idle + WLAN (5G) Idle + MPEG4 + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable <Fig. 1> Mode 3: WCDMA Band II Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable <Fig. 2> Mode 4: GSM1900 Idle + Bluetooth Idle + WLAN (5G) Idle + NFC + Earphone + Battery + USB Cable (Data Link with Notebook) + HDMI Cable <Fig. 3>
Radiated Emissions < 1GHz	1/2	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable <Fig. 1> Mode 2: WCDMA Band V Idle + Bluetooth Idle + WLAN (5G) Idle + MPEG4 + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable <Fig. 1> Mode 3: WCDMA Band II Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable <Fig. 2> Mode 4: GSM1900 Idle + Bluetooth Idle + WLAN (5G) Idle + NFC + Earphone + Battery + USB Cable (Data Link with Notebook) + HDMI Cable <Fig. 3>

Test Items	EUT Configure Mode	Function Type
Radiated Emissions $\geq 1\text{GHz}$	1/2	Mode 1 : WCDMA Band II Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable <Fig. 2> Mode 2 : GSM1900 Idle + Bluetooth Idle + WLAN (5G) Idle + NFC + Earphone + Battery + USB Cable (Data Link with Notebook) + HDMI Cable <Fig. 3>
Remark: 1. The worst case of AC is mode 1; the test data of this mode was reported. 2. The USB Link mode of AC Conducted Emission is mode 4; the test data of this mode was reported. 3. The worst case of RE < 1G is mode 3; the test data of this mode was reported. 4. The USB Link mode of Radiated Emissions is mode 4; the test data of this mode was reported. 5. Link with Notebook means data application transferred mode between EUT and Notebook. 6. HDMI Cable means media application transferred between EUT and external display		

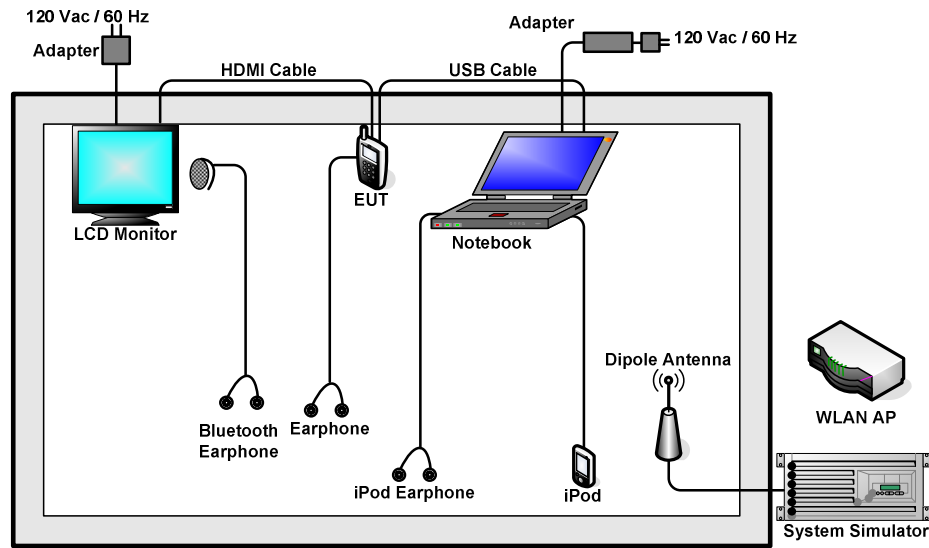
2.2. Connection Diagram of Test System



<Fig. 1>



<Fig. 2>



<Fig. 3>

2.3. Test Software

The EUT was in GSM or WCDMA idle mode during the testing. The EUT was synchronized to the BCCH, and was in continuous receiving mode by setting system simulator's paging reorganization.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Execute the programs, "Winthrax", installed in notebook for files transfer with EUT via USB cable.
2. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
3. Execute "Video Player" to play MPEG4 files.
4. Turn on camera to capture images.
5. The EUT plays files to show on the LCD Monitor via HDMI Cable.
6. Turn on the NFC Function

3. Test Result

3.1. Test of AC Conducted Emission Measurement

3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 KHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted 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.

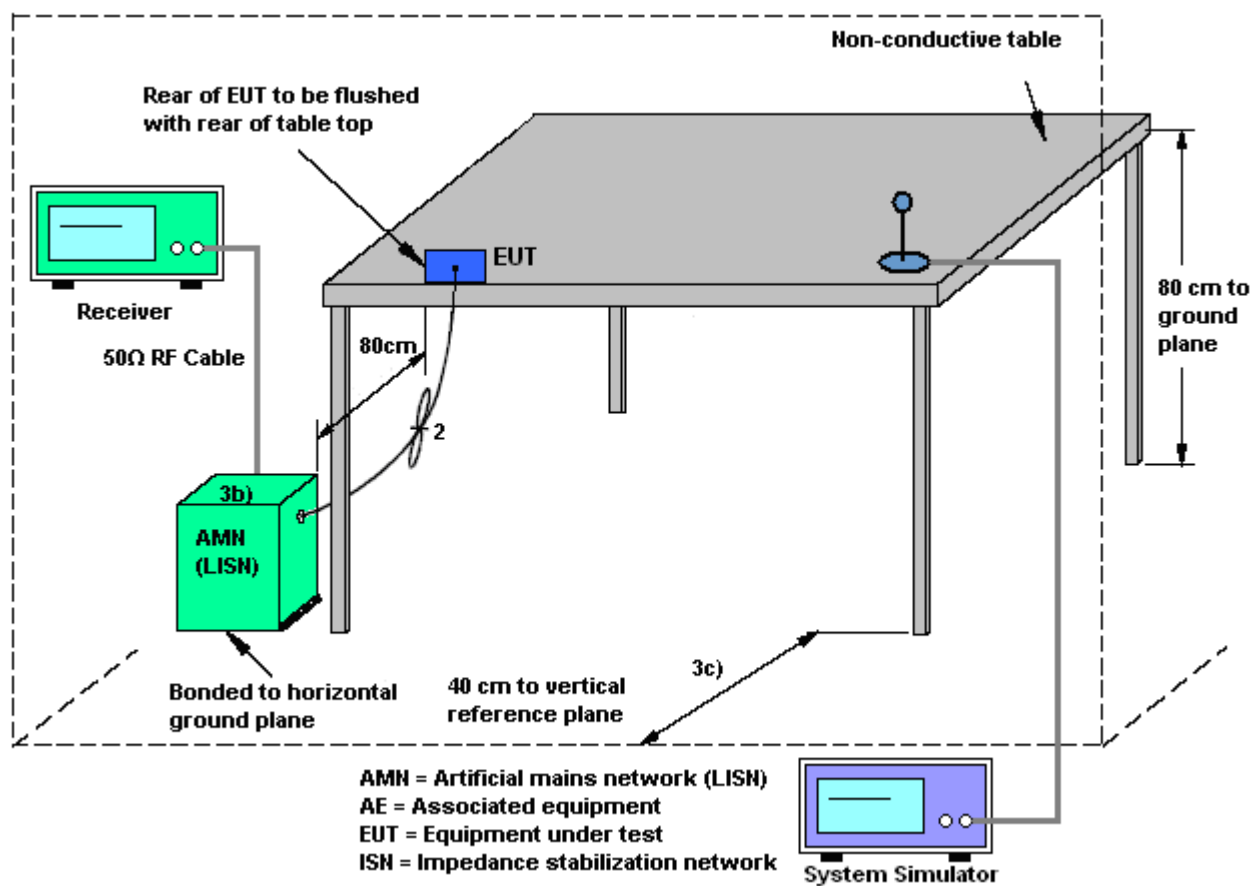
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedure

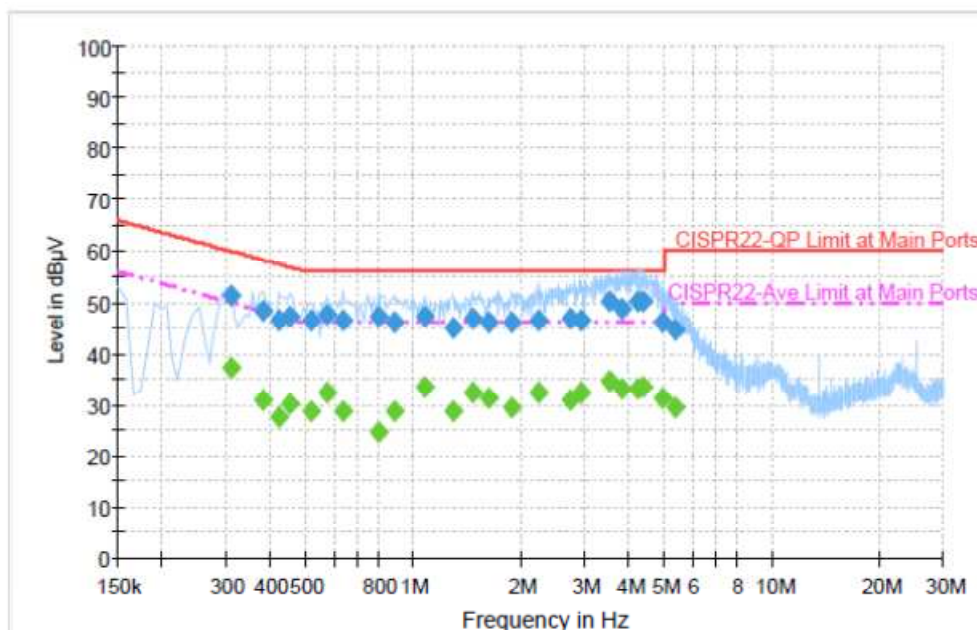
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 KHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.1.4 Test Setup



3.1.5 Test Result of AC Conducted Emission

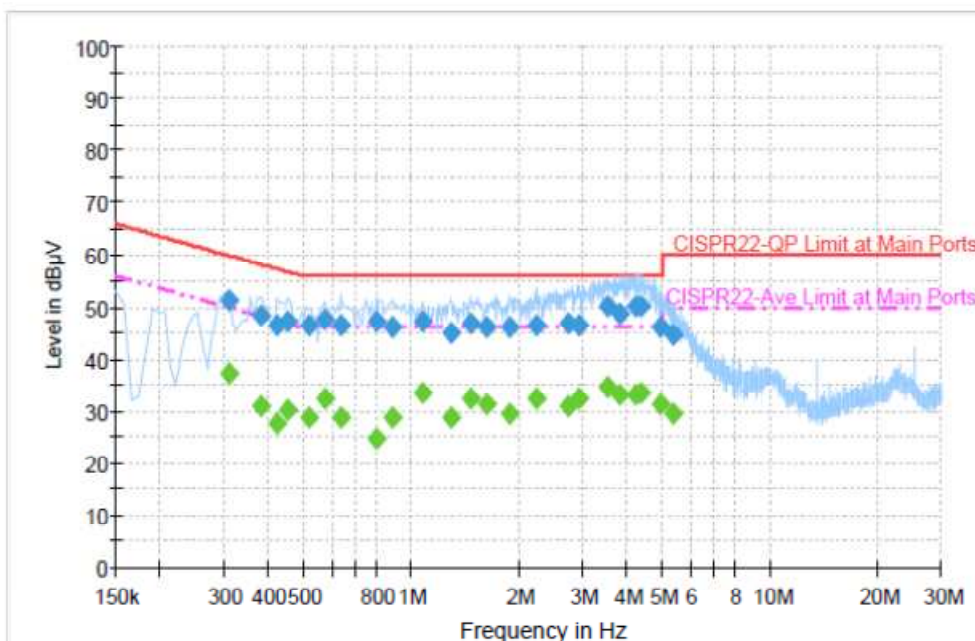
Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Quasi-Peak

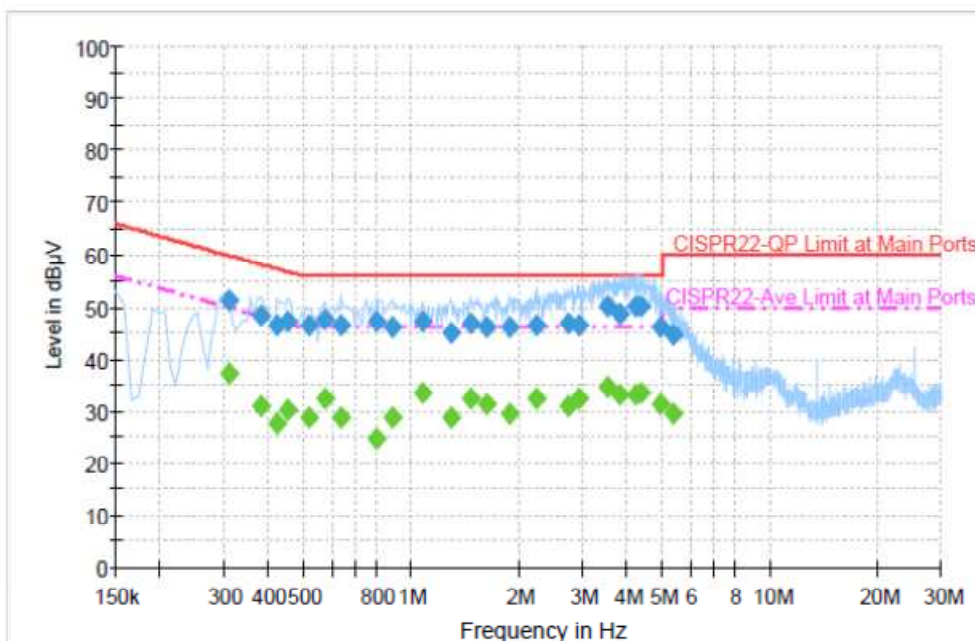
Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.310000	51.2	Off	L1	19.4	8.8	60.0
0.382000	48.4	Off	L1	19.4	9.8	58.2
0.422000	46.6	Off	L1	19.4	10.8	57.4
0.454000	47.4	Off	L1	19.3	9.4	56.8
0.518000	46.7	Off	L1	19.4	9.3	56.0
0.574000	47.6	Off	L1	19.4	8.4	56.0
0.638000	46.7	Off	L1	19.4	9.3	56.0
0.798000	47.1	Off	L1	19.5	8.9	56.0
0.886000	46.0	Off	L1	19.4	10.0	56.0
1.078000	47.1	Off	L1	19.5	8.9	56.0
1.294000	45.0	Off	L1	19.5	11.0	56.0
1.462000	46.9	Off	L1	19.5	9.1	56.0
1.614000	46.2	Off	L1	19.4	9.8	56.0

Test Mode :	Mode 1	Temperature :	20~22°C
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result : Quasi-Peak

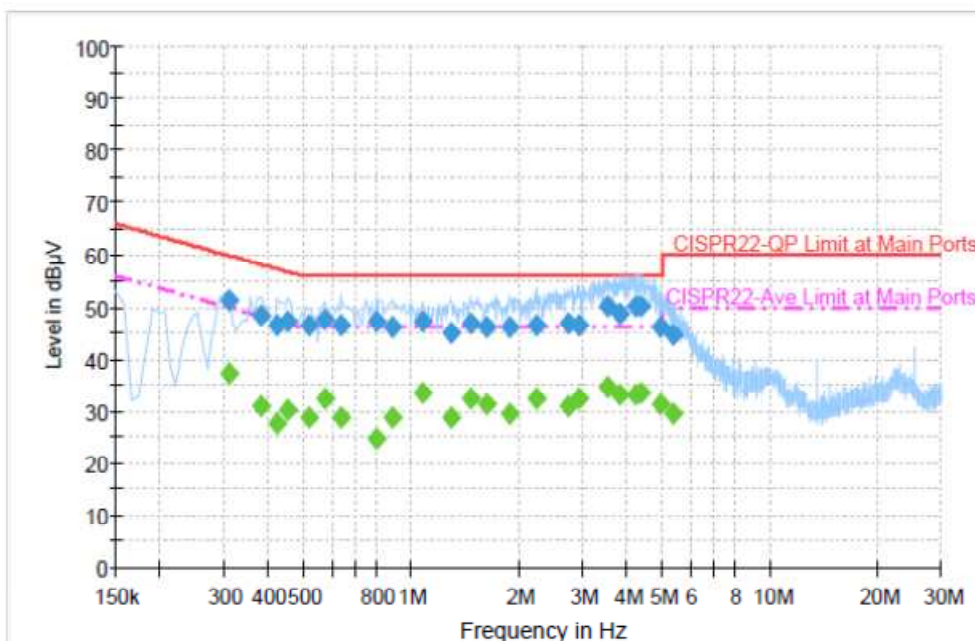
Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
1.886000	46.1	Off	L1	19.5	9.9	56.0
2.238000	46.6	Off	L1	19.5	9.4	56.0
2.726000	46.8	Off	L1	19.6	9.2	56.0
2.942000	46.7	Off	L1	19.6	9.3	56.0
3.510000	50.3	Off	L1	19.6	5.7	56.0
3.830000	48.7	Off	L1	19.6	7.3	56.0
4.246000	50.3	Off	L1	19.6	5.7	56.0
4.366000	50.0	Off	L1	19.6	6.0	56.0
4.966000	46.1	Off	L1	19.7	9.9	56.0
5.398000	44.5	Off	L1	19.6	15.5	60.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result : Average

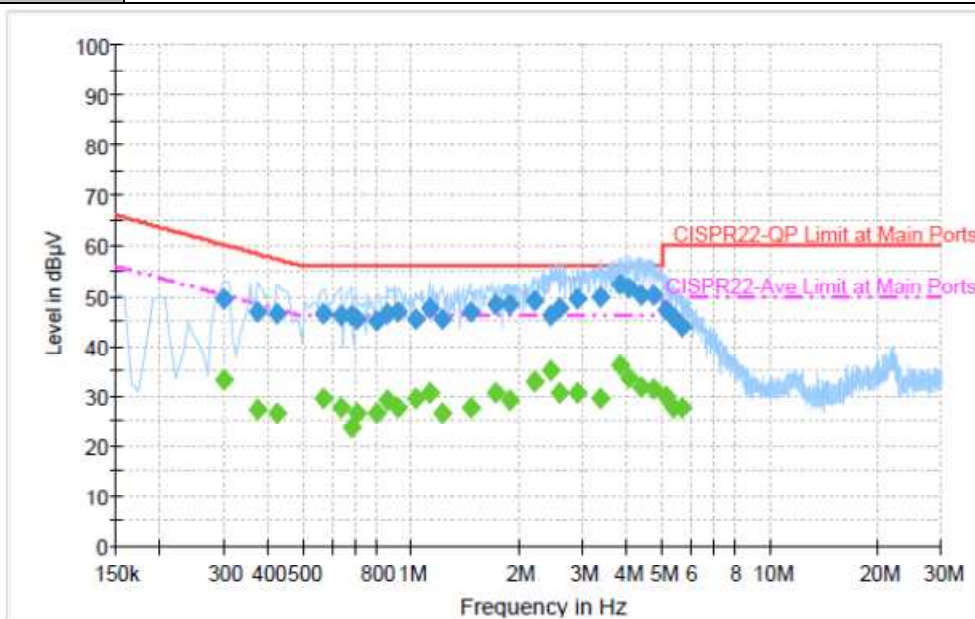
Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.310000	37.2	Off	L1	19.4	12.8	50.0
0.382000	31.1	Off	L1	19.4	17.1	48.2
0.422000	27.8	Off	L1	19.4	19.6	47.4
0.454000	30.2	Off	L1	19.3	16.6	46.8
0.518000	28.9	Off	L1	19.4	17.1	46.0
0.574000	32.4	Off	L1	19.4	13.6	46.0
0.638000	28.9	Off	L1	19.4	17.1	46.0
0.798000	24.8	Off	L1	19.5	21.2	46.0
0.886000	28.9	Off	L1	19.4	17.1	46.0
1.078000	33.5	Off	L1	19.5	12.5	46.0
1.294000	28.9	Off	L1	19.5	17.1	46.0
1.462000	32.3	Off	L1	19.5	13.7	46.0
1.614000	31.2	Off	L1	19.4	14.8	46.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result : Average

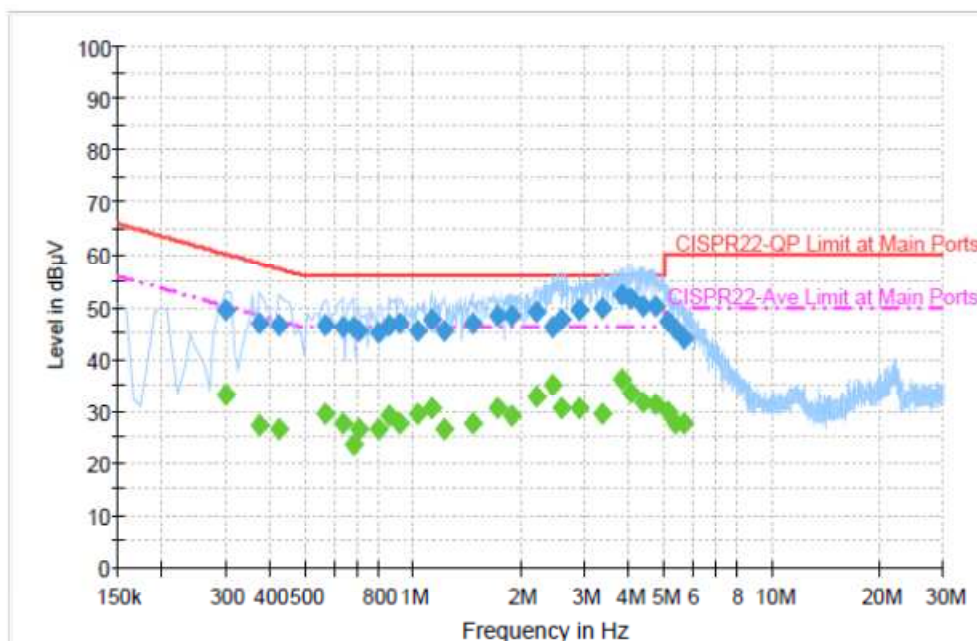
Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
1.886000	29.5	Off	L1	19.5	16.5	46.0
2.238000	32.5	Off	L1	19.5	13.5	46.0
2.726000	30.8	Off	L1	19.6	15.2	46.0
2.942000	32.4	Off	L1	19.6	13.6	46.0
3.510000	34.6	Off	L1	19.6	11.4	46.0
3.830000	33.3	Off	L1	19.6	12.7	46.0
4.246000	33.3	Off	L1	19.6	12.7	46.0
4.366000	33.7	Off	L1	19.6	12.3	46.0
4.966000	31.4	Off	L1	19.7	14.6	46.0
5.398000	29.5	Off	L1	19.6	20.5	50.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result : Quasi-Peak

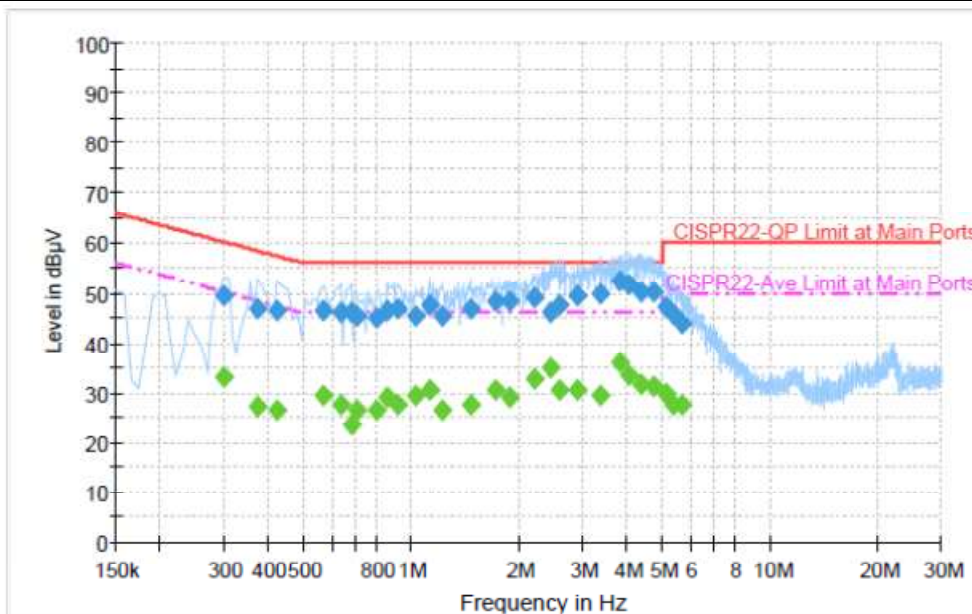
Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.302000	49.6	Off	N	19.4	10.6	60.2
0.374000	46.9	Off	N	19.4	11.5	58.4
0.422000	46.4	Off	N	19.4	11.0	57.4
0.566000	46.5	Off	N	19.4	9.5	56.0
0.638000	46.2	Off	N	19.4	9.8	56.0
0.686000	46.0	Off	N	19.5	10.0	56.0
0.710000	45.2	Off	N	19.5	10.8	56.0
0.798000	44.9	Off	N	19.5	11.1	56.0
0.854000	46.3	Off	N	19.6	9.7	56.0
0.918000	47.0	Off	N	19.4	9.0	56.0
1.030000	45.4	Off	N	19.4	10.6	56.0
1.126000	47.4	Off	N	19.5	8.6	56.0
1.214000	45.2	Off	N	19.5	10.8	56.0
1.462000	47.0	Off	N	19.5	9.0	56.0
1.718000	48.2	Off	N	19.5	7.8	56.0
1.878000	48.3	Off	N	19.5	7.7	56.0
2.214000	49.2	Off	N	19.6	6.8	56.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result : Quasi-Peak

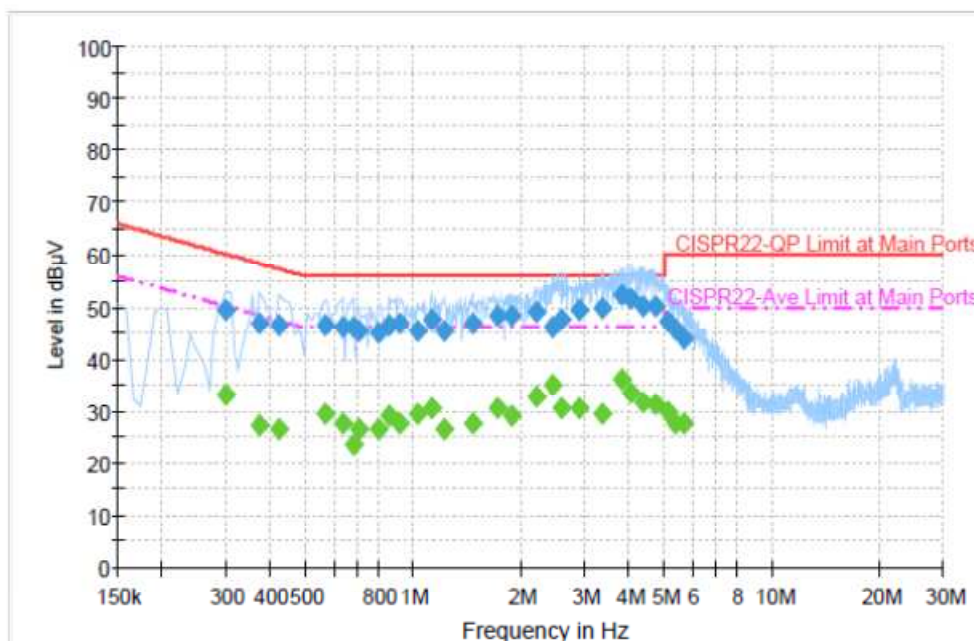
Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.446000	46.3	Off	N	19.7	9.7	56.0
2.598000	47.6	Off	N	19.6	8.4	56.0
2.910000	49.5	Off	N	19.6	6.5	56.0
3.382000	49.7	Off	N	19.7	6.3	56.0
3.806000	52.4	Off	N	19.6	3.6	56.0
4.038000	51.6	Off	N	19.6	4.4	56.0
4.390000	50.0	Off	N	19.7	6.0	56.0
4.742000	50.2	Off	N	19.6	5.8	56.0
5.118000	47.4	Off	N	19.6	12.6	60.0
5.390000	45.8	Off	N	19.6	14.2	60.0
5.662000	43.8	Off	N	19.7	16.2	60.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result : Average

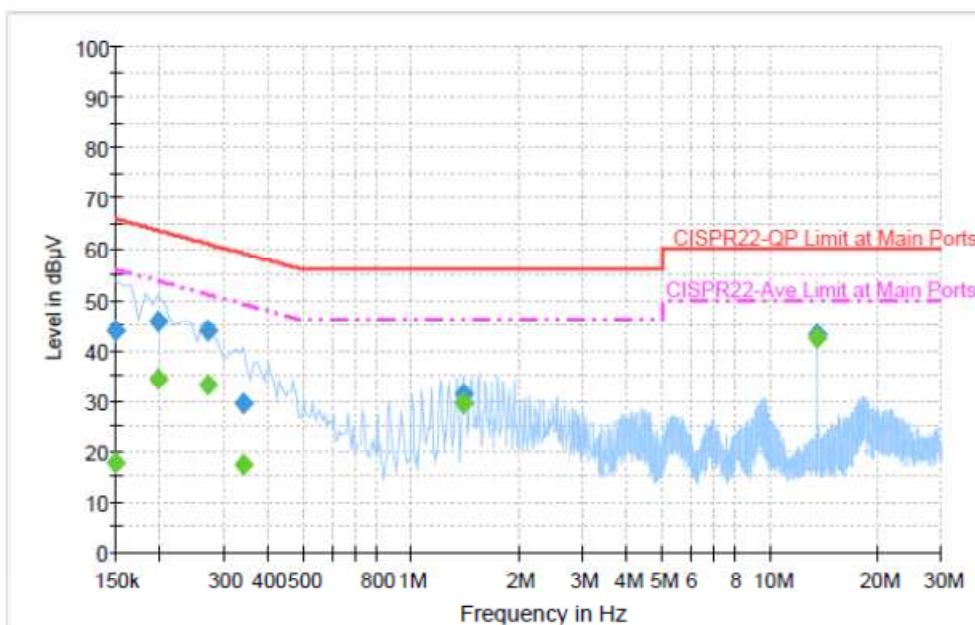
Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.302000	33.0	Off	N	19.4	17.2	50.2
0.374000	27.4	Off	N	19.4	21.0	48.4
0.422000	26.6	Off	N	19.4	20.8	47.4
0.566000	29.4	Off	N	19.4	16.6	46.0
0.638000	27.6	Off	N	19.4	18.4	46.0
0.686000	23.5	Off	N	19.5	22.5	46.0
0.710000	26.5	Off	N	19.5	19.5	46.0
0.798000	26.6	Off	N	19.5	19.4	46.0
0.854000	29.0	Off	N	19.6	17.0	46.0
0.918000	27.5	Off	N	19.4	18.5	46.0
1.030000	29.6	Off	N	19.4	16.4	46.0
1.126000	30.7	Off	N	19.5	15.3	46.0
1.214000	26.7	Off	N	19.5	19.3	46.0
1.462000	27.8	Off	N	19.5	18.2	46.0
1.718000	30.7	Off	N	19.5	15.3	46.0
1.878000	29.3	Off	N	19.5	16.7	46.0
2.214000	33.0	Off	N	19.6	13.0	46.0

Test Mode :	Mode 1	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN (2.4G) Idle + Camera + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
2.446000	35.1	Off	N	19.7	10.9	46.0
2.598000	30.7	Off	N	19.6	15.3	46.0
2.910000	30.5	Off	N	19.6	15.5	46.0
3.382000	29.6	Off	N	19.7	16.4	46.0
3.806000	36.0	Off	N	19.6	10.0	46.0
4.038000	33.5	Off	N	19.6	12.5	46.0
4.390000	31.7	Off	N	19.7	14.3	46.0
4.742000	31.3	Off	N	19.6	14.7	46.0
5.118000	29.7	Off	N	19.6	20.3	50.0
5.390000	27.8	Off	N	19.6	22.2	50.0
5.662000	27.7	Off	N	19.7	22.3	50.0

Test Mode :	Mode 4	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN (5G) Idle + NFC + Earphone + Battery + USB Cable (Data Link with Notebook) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		

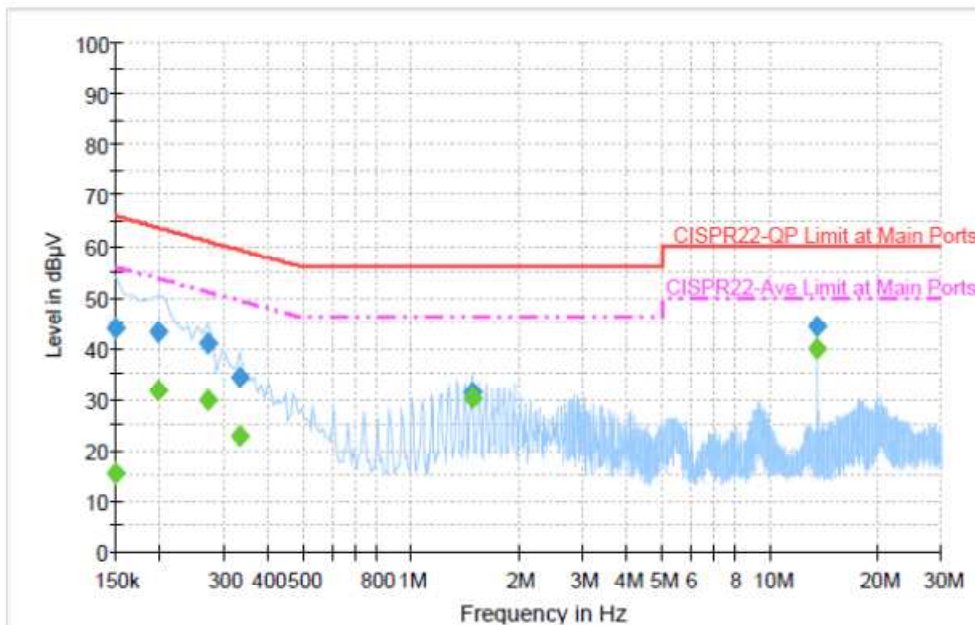

Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	44.1	Off	L1	19.4	21.9	66.0
0.198000	45.9	Off	L1	19.4	17.8	63.7
0.270000	43.8	Off	L1	19.4	17.3	61.1
0.342000	29.5	Off	L1	19.4	29.7	59.2
1.406000	31.3	Off	L1	19.4	24.7	56.0
13.558000	43.3	Off	L1	19.6	16.7	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	17.6	Off	L1	19.4	38.4	56.0
0.198000	34.3	Off	L1	19.4	19.4	53.7
0.270000	33.3	Off	L1	19.4	17.8	51.1
0.342000	17.2	Off	L1	19.4	32.0	49.2
1.406000	29.6	Off	L1	19.4	16.4	46.0
13.558000	42.6	Off	L1	19.6	7.4	50.0

Test Mode :	Mode 4	Temperature :	20~22℃
Test Engineer :	Slash Huang	Relative Humidity :	45~47%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN (5G) Idle + NFC + Earphone + Battery + USB Cable (Data Link with Notebook) + HDMI Cable		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		


Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	43.7	Off	N	19.4	22.3	66.0
0.198000	43.2	Off	N	19.4	20.5	63.7
0.270000	41.0	Off	N	19.4	20.1	61.1
0.334000	34.1	Off	N	19.4	25.3	59.4
1.478000	31.3	Off	N	19.5	24.7	56.0
13.558000	44.3	Off	N	19.7	15.7	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	15.6	Off	N	19.4	40.4	56.0
0.198000	31.6	Off	N	19.4	22.1	53.7
0.270000	29.9	Off	N	19.4	21.2	51.1
0.334000	23.1	Off	N	19.4	26.3	49.4
1.478000	30.1	Off	N	19.5	15.9	46.0
13.558000	40.0	Off	N	19.7	10.0	50.0

3.2. Test of Radiated Emission Measurement

3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.2.2. Measuring Instruments

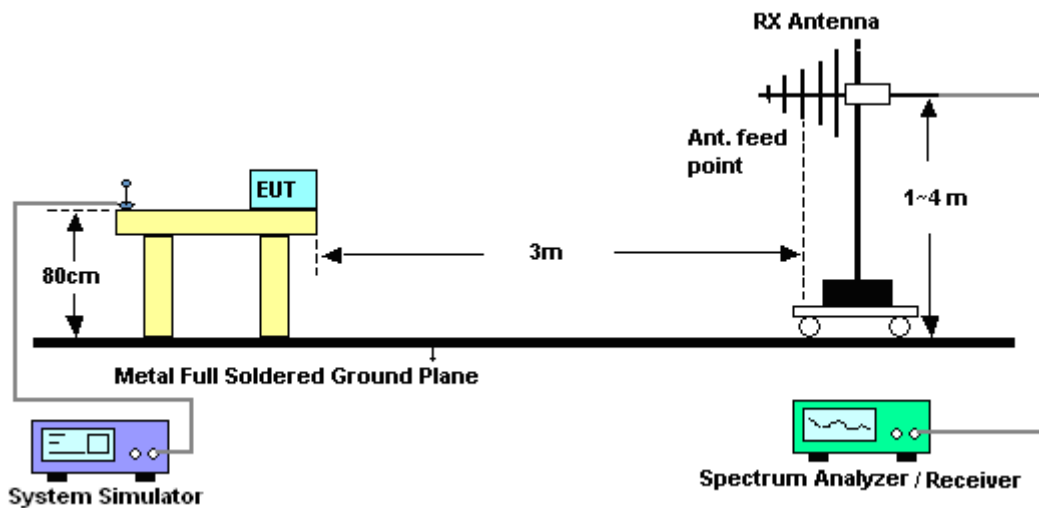
See list of measuring instruments of this test report.

3.2.3. Test Procedures

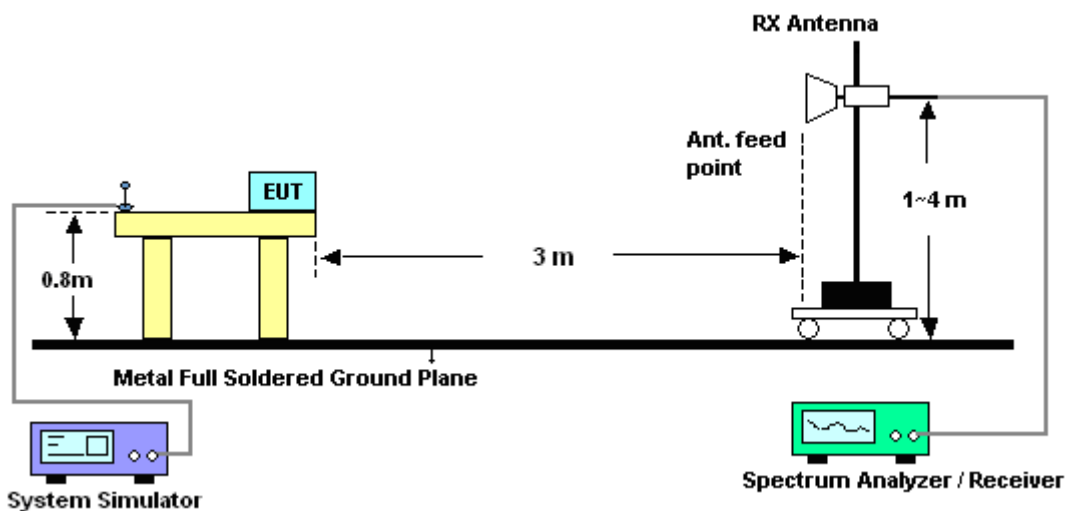
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBuV/m) = 20 log Emission level (uV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz

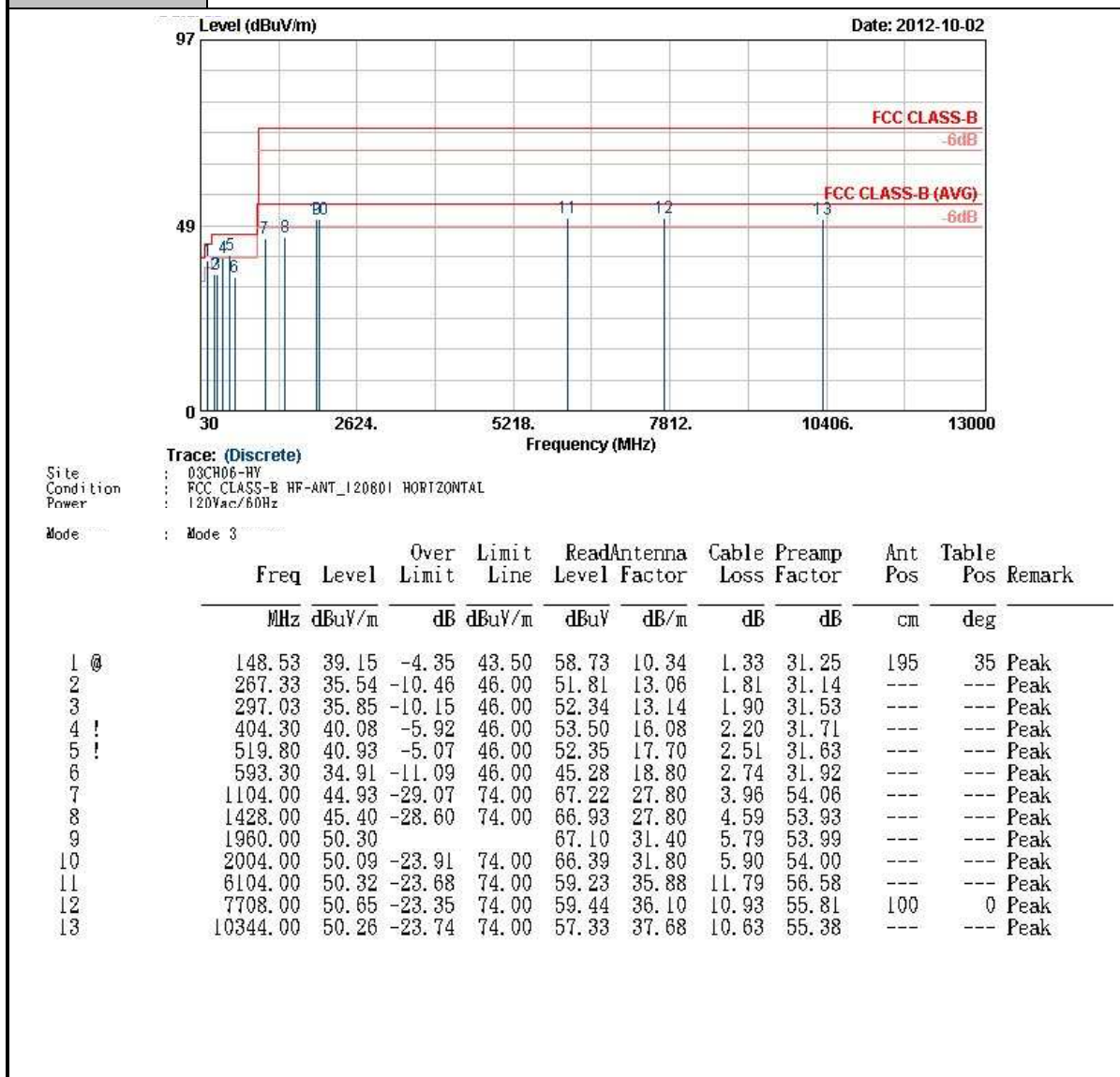


For radiated emissions above 1GHz



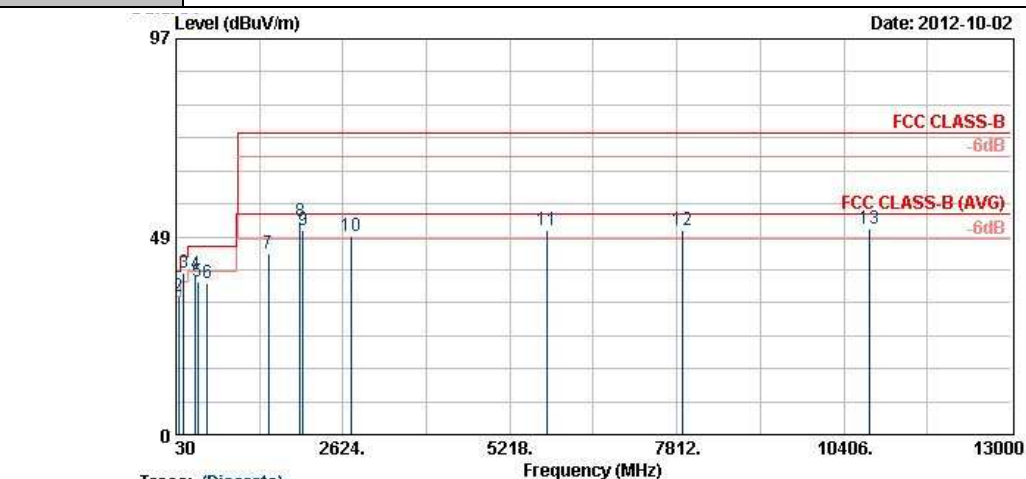
3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 3	Temperature :	23~24°C
Test Engineer :	Hayden Wu	Relative Humidity :	47~48%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WCDMA Band II Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	#9 is system simulator signal which can be ignored.		



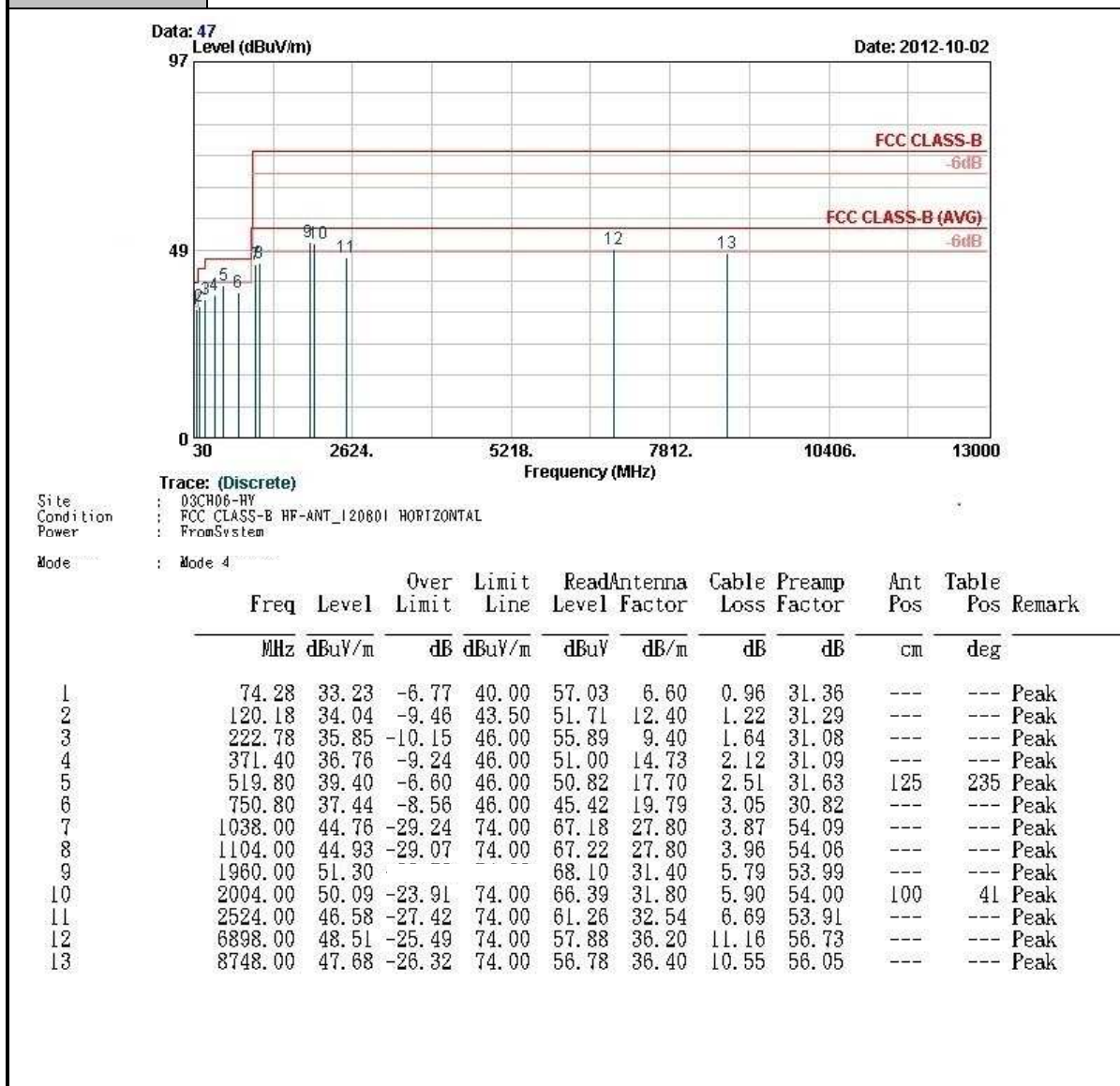


Test Mode :	Mode 3	Temperature :	23~24°C
Test Engineer :	Hayden Wu	Relative Humidity :	47~48%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WCDMA Band II Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	#8 is system simulator signal which can be ignored.		

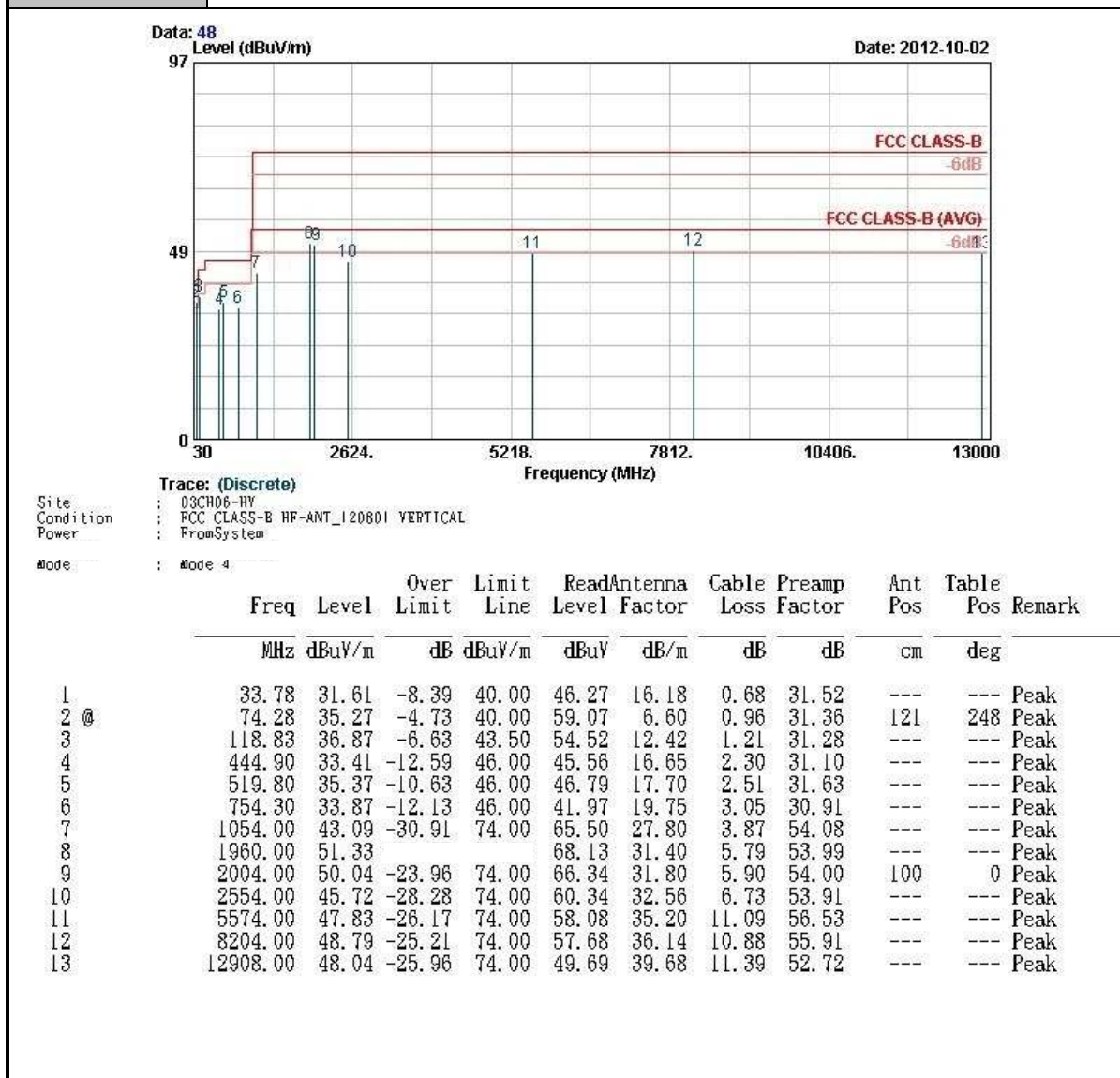


Mode 3											
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	35.13	35.65	-4.35	40.00	51.57	14.90	0.69	31.51	---	---	Peak
2	74.28	33.80	-6.20	40.00	57.60	6.60	0.96	31.36	---	---	Peak
3 @	148.53	39.80	-3.70	43.50	59.38	10.34	1.33	31.25	100	139	Peak
4	334.30	39.42	-6.58	46.00	54.59	13.79	2.00	30.96	---	---	Peak
5	371.40	37.47	-8.53	46.00	51.63	14.82	2.12	31.09	---	---	Peak
6	514.90	37.19	-8.81	46.00	48.70	17.70	2.50	31.72	---	---	Peak
7	1464.00	44.24	-29.76	74.00	65.71	27.80	4.64	53.91	---	---	Peak
8	1960.00	52.33			69.13	31.40	5.79	53.99	---	---	Peak
9	2004.00	50.04	-23.96	74.00	66.34	31.80	5.90	54.00	---	---	Peak
10	2744.00	48.66	-25.34	74.00	62.69	32.80	7.11	53.95	---	---	Peak
11	5804.00	50.04	-23.96	74.00	59.65	35.53	11.47	56.62	---	---	Peak
12	7894.00	50.27	-23.73	74.00	58.95	36.10	10.96	55.74	---	---	Peak
13	10808.00	50.56	-23.44	74.00	56.74	37.92	10.72	54.83	100	0	Peak

Test Mode :	Mode 4	Temperature :	23~24°C
Test Engineer :	Hayden Wu	Relative Humidity :	47~48%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN (5G) Idle + NFC + Earphone + Battery + USB Cable (Data Link with Notebook) + HDMI Cable		
Remark :	#9 is system simulator signal which can be ignored.		



Test Mode :	Mode 4	Temperature :	23~24°C
Test Engineer :	Hayden Wu	Relative Humidity :	47~48%
Test Distance :	3m	Polarization :	Vertical
Function Type :	GSM1900 Idle + Bluetooth Idle + WLAN (5G) Idle + NFC + Earphone + Battery + USB Cable (Data Link with Notebook) + HDMI Cable		
Remark :	#8 is system simulator signal which can be ignored.		



4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	R&S	ESCI 7	100724	9kHz~7GHz	Sep. 03, 2012	Oct. 02, 2012 ~ Nov. 02, 2012	Sep. 02, 2013	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Oct. 02, 2012 ~ Nov. 02, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Oct. 02, 2012 ~ Nov. 02, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Oct. 02, 2012 ~ Nov. 02, 2012	N/A	Conduction (CO05-HY)
GPS Station	T&E	GS-50	N/A	N/A	N/A	Oct. 02, 2012 ~ Nov. 02, 2012	N/A	Conduction (CO05-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9KHz ~ 26.5GHz	Nov. 23, 2011	Oct. 02, 2012 ~ Oct. 31, 2012	Nov. 22, 2012	Radiation (03CH06-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz-30GHz	Nov. 03, 2011	Oct. 02, 2012 ~ Oct. 31, 2012	Nov. 02, 2012	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz ~ 1000MHz	May 04, 2012	Oct. 02, 2012 ~ Oct. 31, 2012	May. 03, 2013	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz ~ 2GHz	Oct. 22, 2011	Oct. 02, 2012 ~ Oct. 05, 2012	Oct. 21, 2012	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz ~ 2GHz	Oct. 06, 2012	Oct. 06, 2012 ~ Oct. 31, 2012	Oct. 05, 2013	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Oct. 02, 2012 ~ Oct. 31, 2012	Jul. 31, 2013	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Sep. 28, 2012	Oct. 02, 2012 ~ Oct. 31, 2012	Sep. 27, 2013	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz ~ 26.5GHz	Apr. 13, 2012	Oct. 02, 2012 ~ Oct. 31, 2012	Apr. 12, 2013	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz ~ 1GHz	Apr. 11, 2012	Oct. 02, 2012 ~ Oct. 31, 2012	Apr. 10, 2013	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 21, 2012	Oct. 02, 2012 ~ Oct. 31, 2012	Jul. 20, 2013	Radiation (03CH06-HY)
Pre Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	159087	1GHz~18GHz	Feb. 27, 2012	Oct. 02, 2012 ~ Oct. 31, 2012	Feb. 26, 2013	Radiation (03CH06-HY)
GPS Station	Pendulum	GSG-54	N/A	N/A	N/A	Oct. 02, 2012 ~ Oct. 31, 2012	N/A	Radiation (03CH06-HY)
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Oct. 02, 2012 ~ Nov. 02, 2012	Jul. 27, 2013	-

5. Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.26
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP232306-04 as below.