



FCC Test Report

APPLICANT : SHARP CORPORATION, IoT Communication BU
EQUIPMENT : Smart Phone
FCC ID : APYHRO00245
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Oct. 15, 2016 and testing was completed on Nov. 14, 2016. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in 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: Louis Wu / Manager

Approved by: Jones Tsai / Manager



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FCC ID : APYHRO00245

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 11.40 dB at 0.150 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 4.43 dB at 169.090 MHz for Quasi-Peak



1. General Description

1.1. Applicant

SHARP CORPORATION, IoT Communication BU

2-13-1, Hachihonmatsu-lida, Higashi-hiroshima-shi, Hiroshima pref. 739-0192, Japan

1.2. Manufacturer

SHARP CORPORATION, IoT Communication BU

2-13-1, Hachihonmatsu-lida, Higashi-hiroshima-shi, Hiroshima pref. 739-0192, Japan

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Phone
FCC ID	APYHRO00245
Sample 1	eMMC Brand Name : Samsung
Sample 2	eMMC Brand Name : hynix
EUT supports Radios application	GSM/GPRS/WCDMA/HSPA/LTE/NFC WLAN 11b/g/n HT20 WLAN 11a HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	PP1
SW Version	CA240
EUT Stage	Identical Prototype

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



1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5700 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Rx Frequency	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a/n/ac: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5700 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz NFC : 13.56 MHz
Antenna Type	WWAN : PIFA Antenna LTE : PIFA Antenna WLAN : ILA Antenna Bluetooth : ILA Antenna NFC : Loop Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK WCDMA: QPSK (Uplink) HSDPA: 16QAM (Downlink) HSUPA: QPSK (Uplink) LTE: QPSK / 16QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11a/g/n/ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : $\pi/4$ -DQPSK Bluetooth (3Mbps) : 8-DPSK GPS : BPSK NFC: ASK

1.5. Modification of EUT

No modifications are made to the EUT during all test items.

1.6. Test Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 and TW1023 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	CO05-HY	03CH06-HY

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 30-2, Dingfu Tsuen, Linkou District, New Taipei City, Taiwan 244, R.O.C. TEL: +886-2-2603-5367 / +886-2-2601-1640 FAX: +886-2-2601-1695	
Test Site No.	Sporton Site No.	FCC Registration No.
	OS03-LK	TW1023

1.7. Applicable 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 C63.4-2014

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



2. Test Configuration of Equipment Under Test

2.1. Test Mode

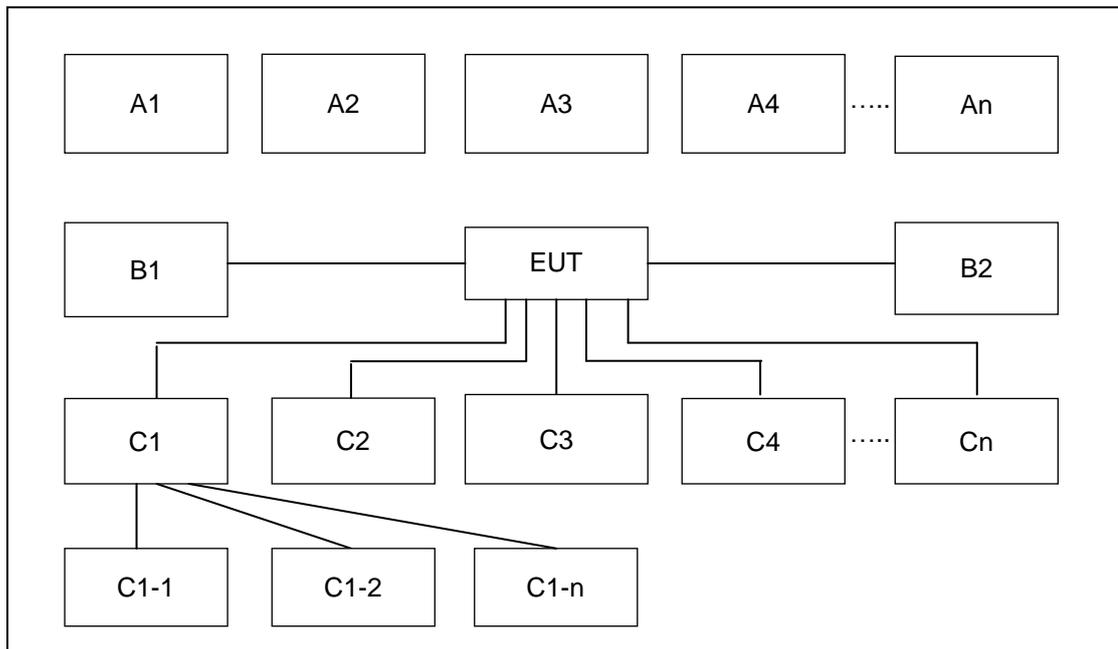
The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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).



Test Items	Function Type
AC Conducted Emission	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + NFC + Earphone + USB Cable (Charging from Adapter) for Sample 1 Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN (5GHz) Idle + MPEG4 + Earphone + USB Cable (Charging from Adapter) for Sample 1 Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + Camera (Front) + Earphone + USB Cable (Charging from Adapter) for Sample 1 Mode 4: LTE Band XVII Idle + Bluetooth Idle + WLAN (5GHz) Idle + Camera (Rear) + Earphone + USB Cable (Charging from Adapter) for Sample 1 Mode 5: GSM850 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + GPS Rx + Earphone + USB Cable (Charging from Adapter) for Sample 1 Mode 6: GSM850 Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1 Mode 7: GSM850 Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 2
Radiated Emissions < 1GHz	Mode 1: GSM850 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + NFC + Earphone + USB Cable (Charging from Adapter) for Sample 1 Mode 2: GSM1900 Idle + Bluetooth Idle + WLAN (5GHz) Idle + MPEG4 + Earphone + USB Cable (Charging from Adapter) for Sample 1 Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + Camera (Front) + Earphone + USB Cable (Charging from Adapter) for Sample 1 Mode 4: LTE Band XVII Idle + Bluetooth Idle + WLAN (5GHz) Idle + Camera (Rear) + Earphone + USB Cable (Charging from Adapter) for Sample 1 Mode 5: GSM850 Idle + Bluetooth Idle + WLAN (2.4GHz) Idle + GPS Rx + Earphone + USB Cable (Charging from Adapter) for Sample 1 Mode 6: GSM850 Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1 Mode 7: GSM850 Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 2
Radiated Emissions ≥ 1GHz	Mode 1: LTE Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1
Remark: <ol style="list-style-type: none"> The worst case of AC is mode 6; only the test data of this mode was reported. The worst case of RE < 1G is mode 6; only the test data of this mode was reported. Data Link with Notebook means data application transferred mode between EUT and Notebook. 	

2.2. Connection Diagram of Test System



Conduction Test Setup									
No.	Wireless Station	Connection Type	Test Mode						
			1	2	3	4	5	6	7
A1	BT Earphone	Bluetooth	X	X	X	X	X	X	X
A2	System Simulator	GSM/WCDMA/LTE	X	X	X	X	X	X	X
A3	GPS Station	GPS					X	X	X
A4	AP router	WiFi	X	X	X	X	X	X	X
No.	Power Source	Connection Type	1	2	3	4	5	6	7
B1	AC : 120V/60Hz	AC Power Cable	X	X	X	X	X		
No.	Setup Peripherals	Connection Type	1	2	3	4	5	6	7
C1	Notebook	USB Cable						X	X
C1-1	iPod	USB Cable to C1						X	X
C1-2	AP router	RJ-45 Cable to C1						X	X
C2	Earphone	Earphone jack	X	X	X	X	X	X	X
C3	SD card	SD I/O interface without Cable	X	X	X	X	X	X	X



Radiation Test Setup									
No.	Wireless Station	Connection Type	Test Mode						
			1	2	3	4	5	6	7
A1	BT Earphone	Bluetooth	X	X	X	X	X	X	X
A2	System Simulator	GSM/WCDMA/LTE	X	X	X	X	X	X	X
A3	GPS Station	GPS					X	X	X
A4	AP router	WiFi	X	X	X	X	X	X	X
No.	Power Source	Connection Type	1	2	3	4	5	6	7
B1	AC : 120V/60Hz	AC Power Cable	X	X	X	X	X		
No.	Setup Peripherals	Connection Type	1	2	3	4	5	6	7
C1	Notebook	USB Cable						X	X
C1-1	iPod	USB Cable to C1						X	X
C1-2	AP router	RJ-45 Cable to C1						X	X
C2	Earphone	Earphone jack	X	X	X	X	X	X	X
C3	SD card	SD I/O interface without Cable	X	X	X	X	X	X	X



2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
4.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
5.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
6.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
7.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
8.	USB Cable	SHARP(P1X accessory)	CUBB01M-FA002-DH	N/A	Shielded, 0.9m	N/A
9.	Earphone	SONY	SHLDL1	N/A	Unshielded, 1.5m	N/A
10.	Adapter	SHARP	DSA-10PFL-05 FUS 050200	N/A	N/A	N/A



2.4. EUT Operation Test Setup

The EUT was in GSM, WCDMA or HSDPA idle mode during the testing. The EUT was synchronized to the BCCH, and is 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. Data application is transferred between Laptop and SD Card.
2. Turned on NFC function.
3. Turned on Camera (Front) function.
4. Turned on Camera (Rear) function.
5. Execute "Windows Media Player" to play MPEG4 files.
6. Execute "A-GPS Field" to make the EUT receive continuous signals from GPS station.



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.

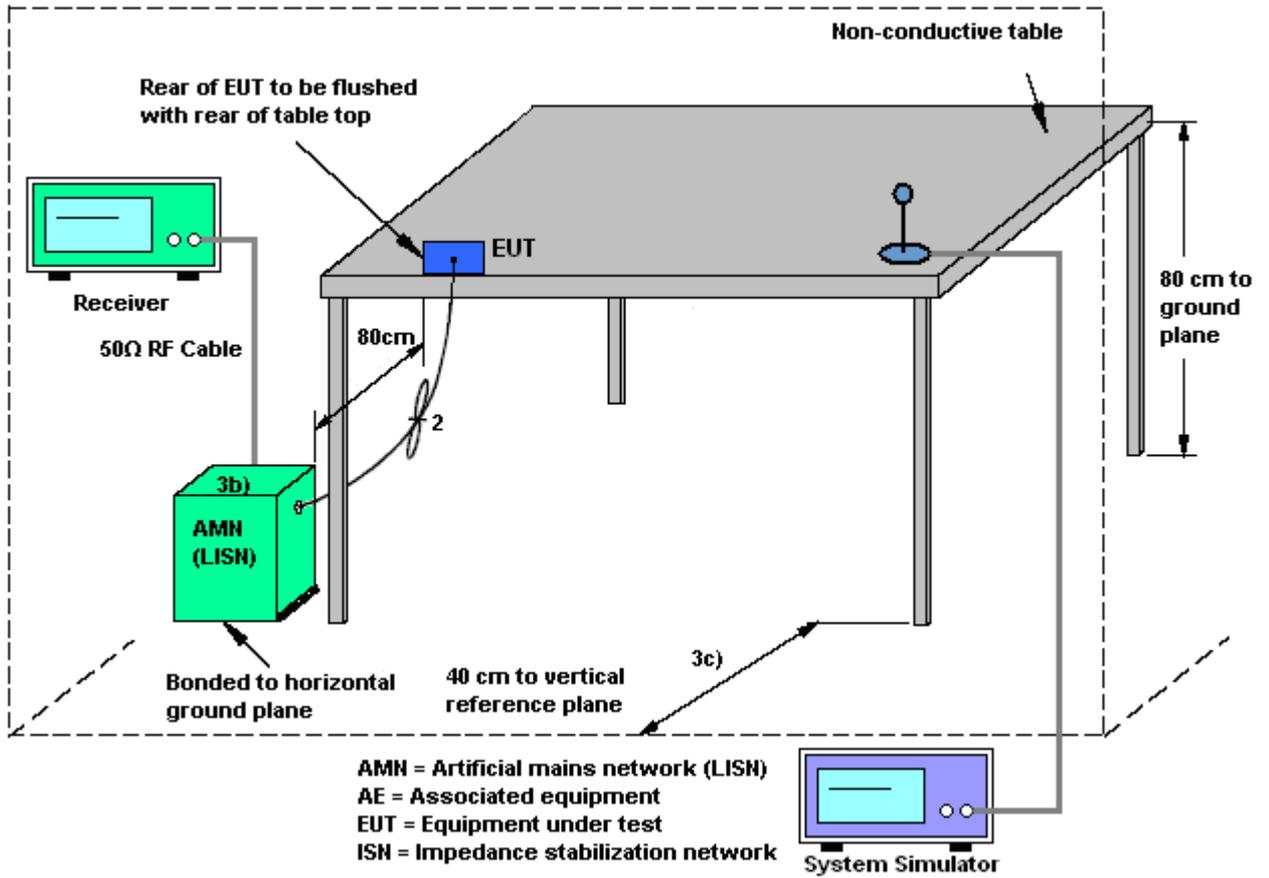
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 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 (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

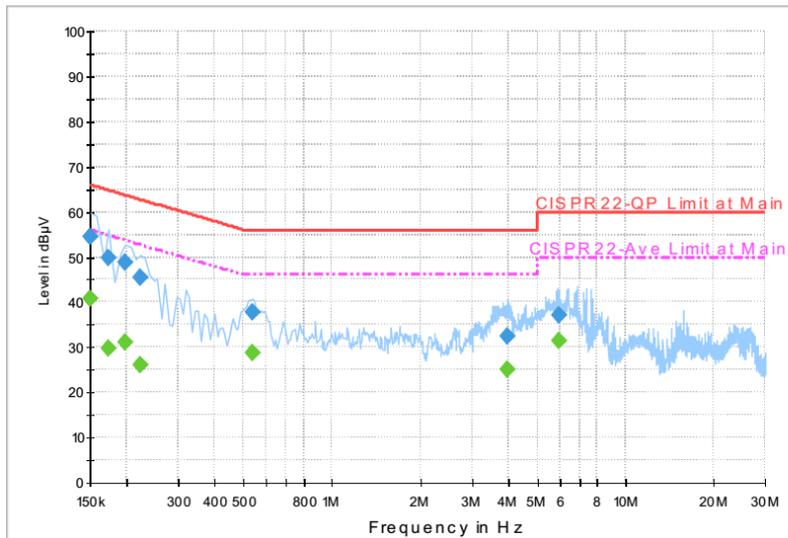
3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 6	Temperature :	24~25°C
Test Engineer :	Kai-Chun Chu and Arthur Hsieh	Relative Humidity :	54~56%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1		



Final Result : Quasi-Peak

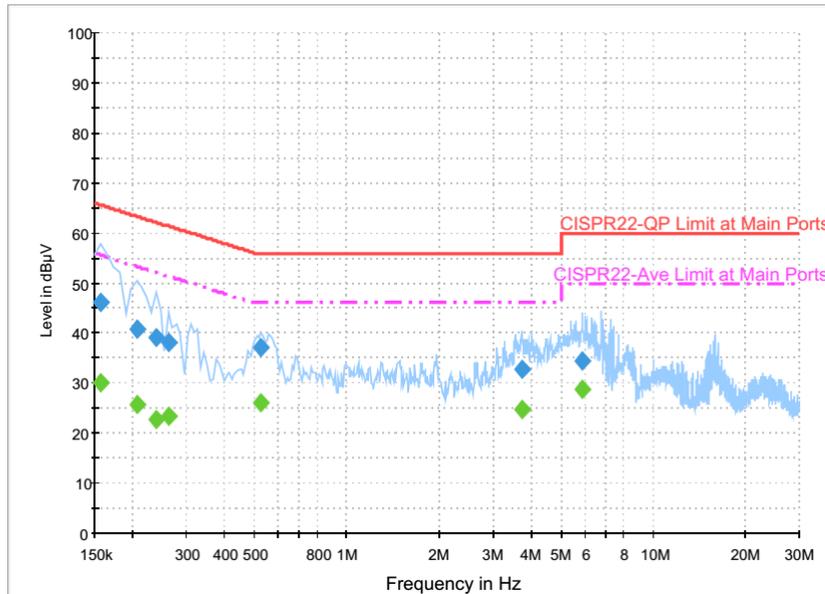
Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	54.6	Off	L1	19.6	11.4	66.0
0.174000	50.0	Off	L1	19.6	14.8	64.8
0.198000	48.7	Off	L1	19.6	15.0	63.7
0.222000	45.5	Off	L1	19.6	17.2	62.7
0.534000	37.6	Off	L1	19.6	18.4	56.0
3.982000	32.5	Off	L1	19.7	23.5	56.0
5.958000	37.0	Off	L1	19.7	23.0	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	40.8	Off	L1	19.6	15.2	56.0
0.174000	29.7	Off	L1	19.6	25.1	54.8
0.198000	31.1	Off	L1	19.6	22.6	53.7
0.222000	26.2	Off	L1	19.6	26.5	52.7
0.534000	28.7	Off	L1	19.6	17.3	46.0
3.982000	25.0	Off	L1	19.7	21.0	46.0
5.958000	31.3	Off	L1	19.7	18.7	50.0



Test Mode :	Mode 6	Temperature :	24~25°C
Test Engineer :	Kai-Chun Chu and Arthur Hsieh	Relative Humidity :	54~56%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	46.1	Off	N	19.6	19.5	65.6
0.206000	40.7	Off	N	19.6	22.7	63.4
0.238000	39.3	Off	N	19.6	22.9	62.2
0.262000	38.2	Off	N	19.6	23.2	61.4
0.526000	37.2	Off	N	19.6	18.8	56.0
3.718000	32.7	Off	N	19.6	23.3	56.0
5.862000	34.5	Off	N	19.7	25.5	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	30.2	Off	N	19.6	25.4	55.6
0.206000	25.7	Off	N	19.6	27.7	53.4
0.238000	22.7	Off	N	19.6	29.5	52.2
0.262000	23.6	Off	N	19.6	27.8	51.4
0.526000	26.1	Off	N	19.6	19.9	46.0
3.718000	24.9	Off	N	19.6	21.1	46.0
5.862000	28.8	Off	N	19.7	21.2	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)
Above 960	500	3

Note: Measurement below 1GHz follows the CISPR 22 limit line as below :

15.109 (g) As an alternative to the radiated emission limits shown in paragraphs (a) and (b) of this section, digital devices may be shown to comply with the standards contained in Third Edition of the International Special Committee on Radio Interference (CISPR), Pub. 22, "Information Technology Equipment - Radio Disturbance Characteristics - Limits and Methods of Measurement"

Frequency (MHz)	Field Strength (dBuV/meter)	Measurement Distance (meters)
30 – 230	30	10
230 – 1000	37	10

3.2.2. Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

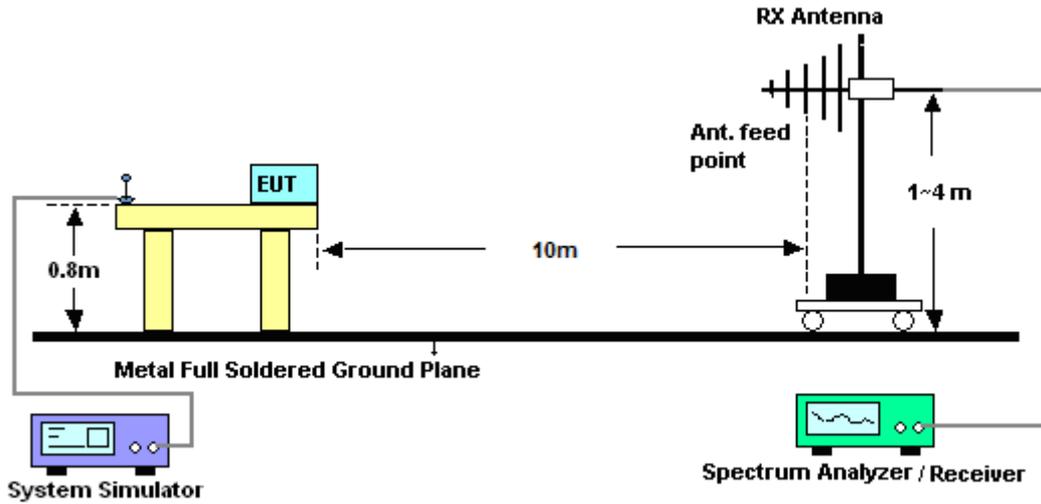


3.2.3. Test Procedures

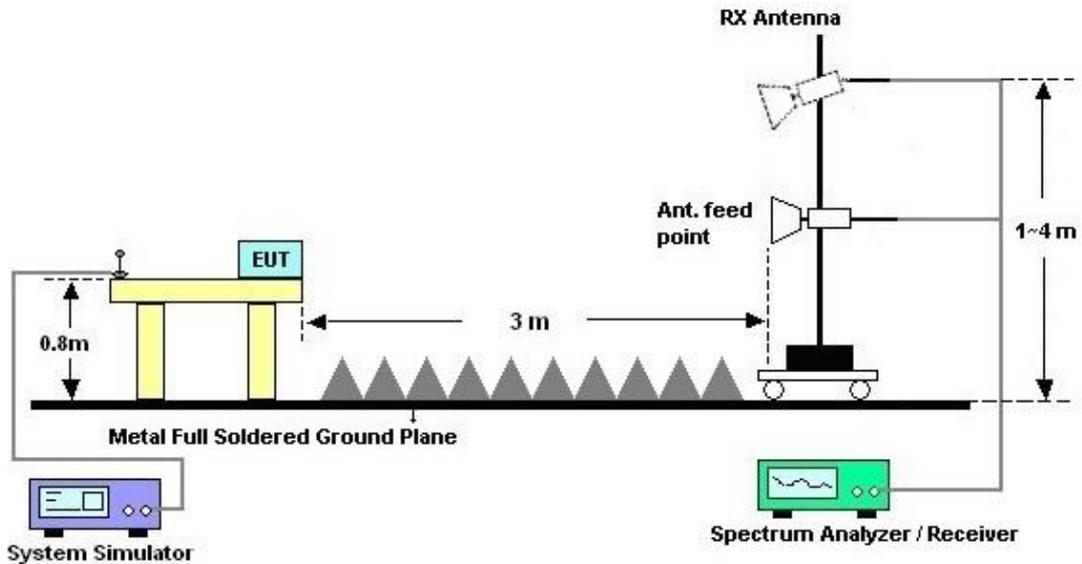
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 10 meters (30M~1G) and 3 meters (1G~ 13G) from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the 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 (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
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 (dB μ V/m) = 20 log Emission level (μ V/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



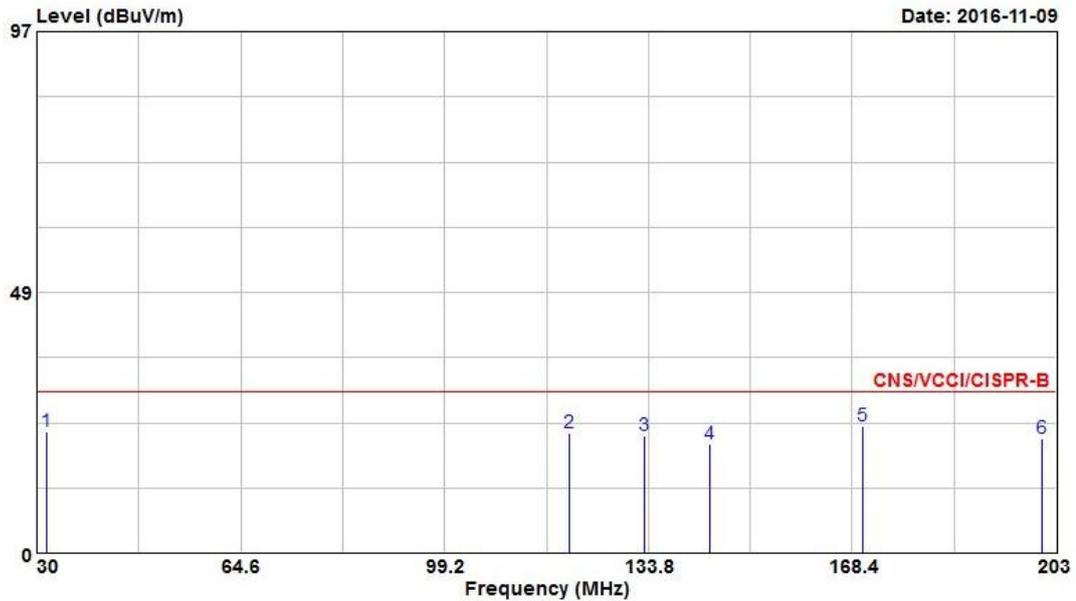
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 6	Temperature :	21~23°C
Test Engineer :	Eric Jeng	Relative Humidity :	51~53%
Test Distance :	10m	Polarization :	Horizontal
Function Type :	LTE Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1		

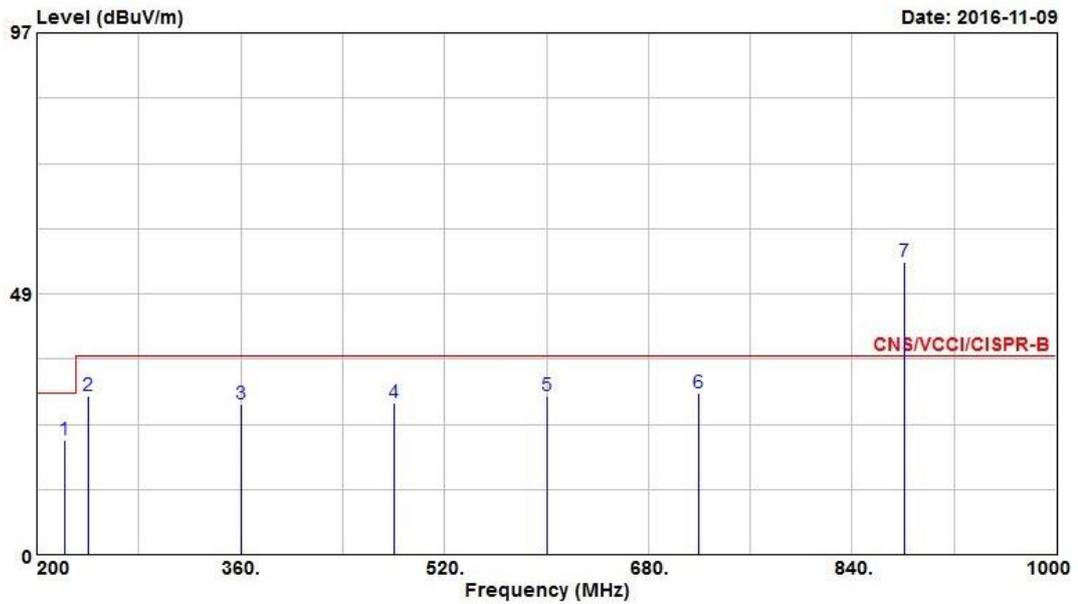


Site : OS03-LK
 Condition : CNS/VCCI/CISPR-B 10m HORIZONTAL
 Project : 601512
 Power : From System
 Mode : Mode 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg
1	31.730	22.54	-7.46	30.00	26.86	21.78	0.90	27.00	Peak	---	---
2	120.480	22.26	-7.74	30.00	30.06	17.32	1.77	26.89	Peak	---	---
3	133.110	21.73	-8.27	30.00	29.97	16.79	1.86	26.89	Peak	---	---
4	144.180	20.39	-9.61	30.00	29.54	15.96	1.78	26.89	Peak	---	---
5	170.130	23.69	-6.31	30.00	33.83	14.81	1.94	26.89	Peak	400	32
6	200.580	21.20	-8.80	30.00	31.55	14.41	2.13	26.89	Peak	---	---



Test Mode :	Mode 6	Temperature :	21~23%
Test Engineer :	Eric Jeng	Relative Humidity :	51~53%
Test Distance :	10m	Polarization :	Horizontal
Function Type :	LTE Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1		
Remark :	#7 is system simulator signal which can be ignored.		

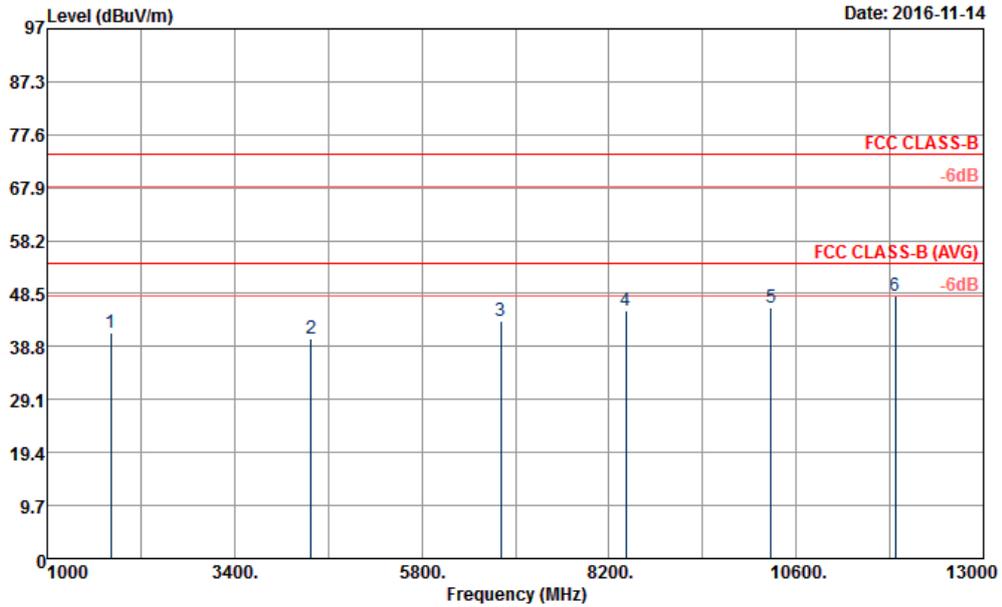


Site : OS03-LK
 Condition : CNS/VCCI/CISPR-B 10m HORIZONTAL
 Project : 601512
 Power : From System
 Mode : Mode 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	221.600	21.24	-8.76	30.00	31.20	14.50	2.30	26.76	Peak	---	---
2	240.000	29.49	-7.51	37.00	37.29	16.44	2.40	26.64	Peak	---	---
3	360.000	28.00	-9.00	37.00	31.98	19.68	3.10	26.76	Peak	---	---
4	480.000	28.20	-8.80	37.00	29.78	22.42	3.49	27.49	Peak	---	---
5	600.000	29.42	-7.58	37.00	29.44	23.69	4.08	27.79	Peak	---	---
6	720.000	30.15	-6.85	37.00	28.69	24.43	4.77	27.74	Peak	---	---
7 @	881.500	54.47			50.45	25.54	5.86	27.38	Peak	---	---



Test Mode :	Mode 6	Temperature :	20~23°C
Test Engineer :	Daniel Lee	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	LTE Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1		

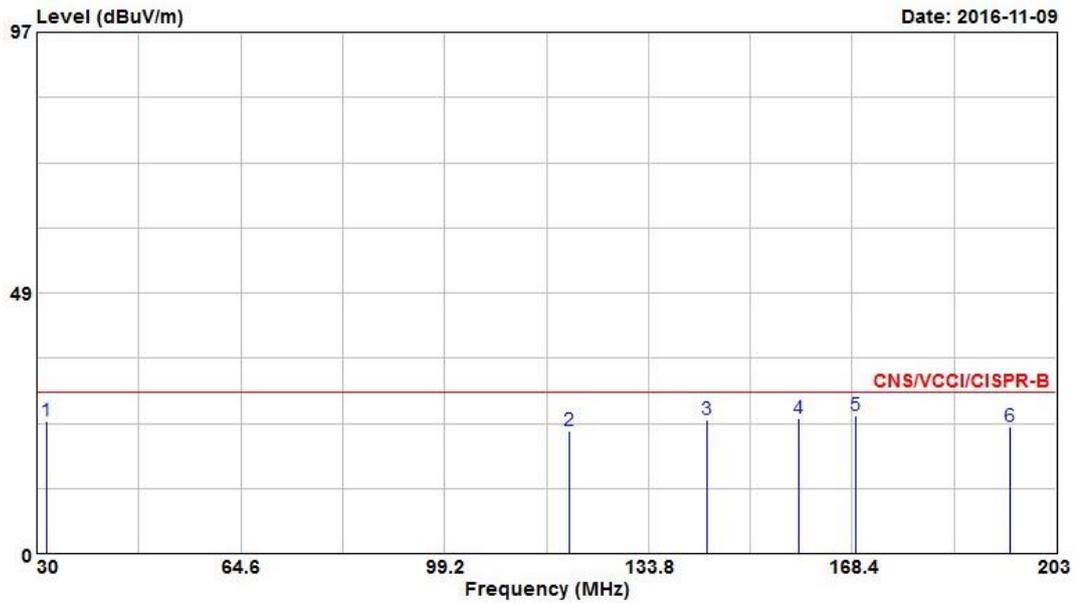


Site : 03CH06-HY
 Condition : FCC CLASS-B 3m 9120D_1156_160817 HORIZONTAL
 Project : 6O1512
 Power : From System
 Memo : Mode 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1818.00	41.45	-32.55	74.00	69.67	26.19	5.99	60.40	---	---	Peak
2	4382.00	40.15	-33.85	74.00	59.61	30.88	11.01	61.35	---	---	Peak
3	6814.00	43.63	-30.37	74.00	55.90	36.10	11.72	60.09	---	---	Peak
4	8414.00	45.36	-28.64	74.00	52.27	38.40	13.89	59.20	---	---	Peak
5	10272.00	46.04	-27.96	74.00	51.33	41.14	13.85	60.28	---	---	Peak
6	11874.00	48.16	-25.84	74.00	49.15	40.68	16.63	58.30	100	0	Peak



Test Mode :	Mode 6	Temperature :	21~23°C
Test Engineer :	Eric Jeng	Relative Humidity :	51~53%
Test Distance :	10m	Polarization :	Vertical
Function Type :	LTE Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1		

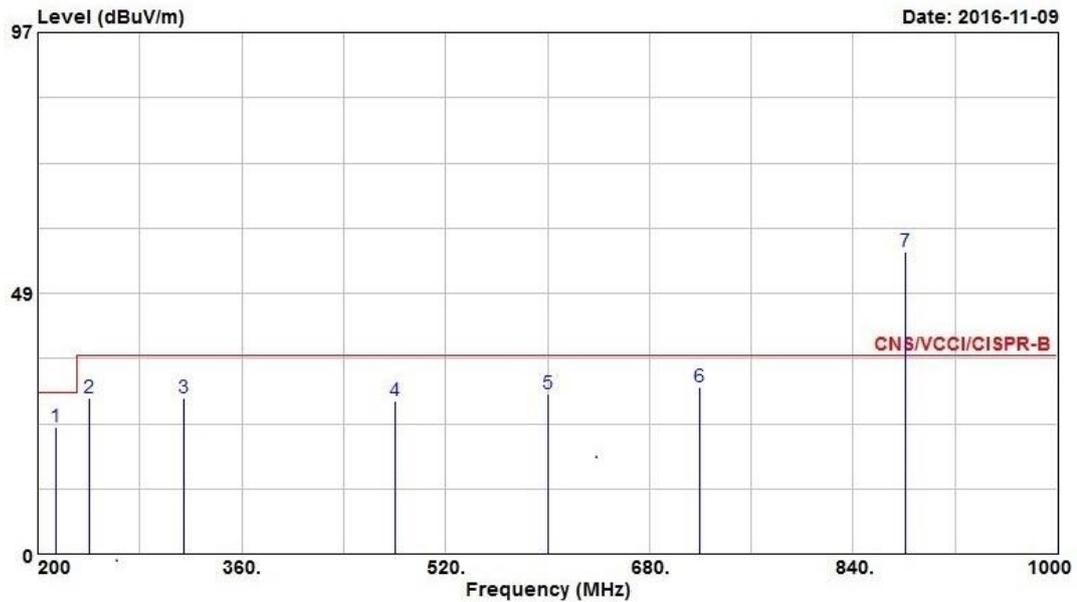


Site : OS03-LK
 Condition : CNS/VCCI/CISPR-B 10m VERTICAL
 Project : 601512
 Power : From System
 Mode : Mode 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg
1	31.730	24.77	-5.23	30.00	29.09	21.78	0.90	27.00	Peak	---	---
2	120.480	22.86	-7.14	30.00	30.66	17.32	1.77	26.89	Peak	---	---
3	143.830	24.98	-5.02	30.00	34.08	16.00	1.79	26.89	Peak	---	---
4	159.400	25.27	-4.73	30.00	35.08	15.25	1.83	26.89	Peak	---	---
5 @	169.090	25.57	-4.43	30.00	35.68	14.85	1.93	26.89	QP	100	37
6	195.220	23.70	-6.30	30.00	34.23	14.24	2.12	26.89	Peak	---	---



Test Mode :	Mode 6	Temperature :	21~23°C
Test Engineer :	Eric Jeng	Relative Humidity :	51~53%
Test Distance :	10m	Polarization :	Vertical
Function Type :	LTE Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1		
Remark :	#7 is system simulator signal which can be ignored.		

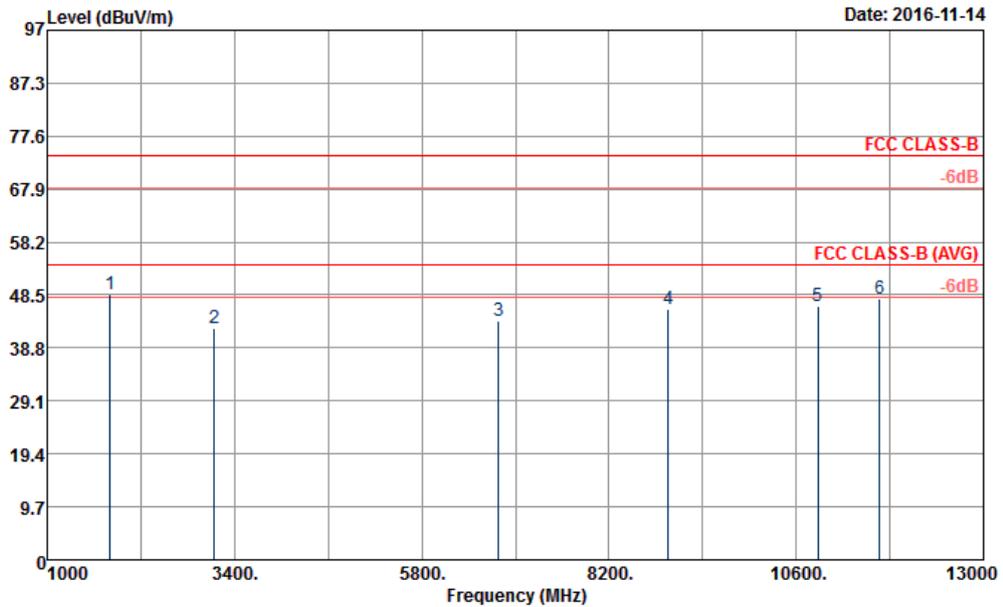


Site : OS03-LK
 Condition : CNS/VCCI/CISPR-B 10m VERTICAL
 Project : 601512
 Power : From System
 Mode : Mode 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	214.400	23.69	-6.31	30.00	34.06	14.25	2.18	26.80	Peak	---	---
2	240.000	28.97	-8.03	37.00	36.77	16.44	2.40	26.64	Peak	---	---
3	314.400	28.93	-8.07	37.00	34.07	18.59	2.65	26.38	Peak	---	---
4	480.000	28.60	-8.40	37.00	30.18	22.42	3.49	27.49	Peak	---	---
5	600.000	29.72	-7.28	37.00	29.74	23.69	4.08	27.79	Peak	---	---
6	720.000	30.54	-6.46	37.00	29.08	24.43	4.77	27.74	Peak	---	---
7 @	881.500	56.30			52.28	25.54	5.86	27.38	Peak	---	---



Test Mode :	Mode 6	Temperature :	20~23°C
Test Engineer :	Daniel Lee	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Vertical
Function Type :	LTE Band V Idle + Bluetooth Idle + WLAN (5GHz) Idle + Glonass Rx + Earphone + USB Cable (Data Link with Notebook) for Sample 1		



Site : 03CH06-HY
 Condition : FCC CLASS-B 3m 9120D_1156_160817 VERTICAL
 Project : 601512
 Power : From System
 Memo : Mode 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamp Loss	A/Pos	T/Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1810.00	48.58	-25.42	74.00	76.80	26.19	5.99	60.40	100	0 Peak	
2	3138.00	42.43	-31.57	74.00	66.57	28.82	7.95	60.91	---	---	Peak
3	6786.00	43.87	-30.13	74.00	56.04	36.04	11.86	60.07	---	---	Peak
4	8964.00	46.01	-27.99	74.00	53.54	38.14	14.16	59.83	---	---	Peak
5	10874.00	46.48	-27.52	74.00	49.62	41.00	14.87	59.01	---	---	Peak
6	11674.00	47.90	-26.10	74.00	48.08	41.67	16.29	58.14	---	---	Peak



4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Nov. 06, 2016 ~ Nov. 08, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Nov. 06, 2016 ~ Nov. 08, 2016	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	Nov. 06, 2016 ~ Nov. 08, 2016	Dec. 01, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 14, 2015	Nov. 06, 2016 ~ Nov. 08, 2016	Dec. 13, 2016	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 06, 2016	Nov. 06, 2016 ~ Nov. 08, 2016	Jan. 05, 2017	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 08, 2016	Nov. 06, 2016 ~ Nov. 08, 2016	Jan. 07, 2017	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100472	20Hz~26.5GHz	Jan. 07, 2016	Nov. 14, 2016	Jan. 06, 2017	Radiation (03CH06-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1156	1GHz~18GHz	Aug. 05, 2016	Nov. 14, 2016	Aug. 04, 2017	Radiation (03CH06-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1850117	1GHz ~ 18GHz	Jun. 22, 2016	Nov. 14, 2016	Jun. 21, 2017	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF78020821 2	1m~4m	N/A	Nov. 14, 2016	N/A	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0-360 degree	N/A	Nov. 14, 2016	N/A	Radiation (03CH06-HY)
Open Area Test Site	SPORTON	OATS-10	OS03-LK	30 MHz ~ 1 GHz 10m, 3m	May 21, 2016	Nov. 09, 2016 ~ Nov. 10, 2016	May 20, 2017	Radiation (OS03-LK)
Amplifier	HP	8447D	2944A09068	0.1MHz ~ 1.3GHz	Dec. 11, 2015	Nov. 06, 2016 ~ Nov. 08, 2016	Dec. 10, 2016	Radiation (OS03-LK)
Spectrum Analyzer	R&S	FSP 7	100641	9 kHz ~ 7 GHz	Jun. 23, 2016	Nov. 06, 2016 ~ Nov. 08, 2016	Jun. 22, 2017	Radiation (OS03-LK)
Test Receiver	R&S	ESCS 30	836858/024	9 kHz ~ 2.75 GHz	Jun. 24, 2016	Nov. 06, 2016 ~ Nov. 08, 2016	Jun. 23, 2017	Radiation (OS03-LK)
Bilog Antenna with 5dB Attenuator	TESEQ & WOKEN	CBL6112D & 00800N1D01N-05	25236 & 007	30 MHz ~ 1 GHz	Jul. 30, 2016	Nov. 06, 2016 ~ Nov. 08, 2016	Jul. 29, 2017	Radiation (OS03-LK)
Turn Table	EMCO	2080	9711-2021	0 ~ 360 degree	NCR	Nov. 06, 2016 ~ Nov. 08, 2016	NCR	Radiation (OS03-LK)
Antenna Mast	EMCO	2075	9711-2115	1 m ~ 4 m	NCR	Nov. 06, 2016 ~ Nov. 08, 2016	NCR	Radiation (OS03-LK)
RF Cable-R10m	MVE	CFD400E-LW	OS03-2500	30 MHz ~ 1 GHz	Jun. 02, 2016	Nov. 06, 2016 ~ Nov. 08, 2016	Jun. 01, 2017	Radiation (OS03-LK)
RF Cable-R03m	MVE	CFD400E-LW	OS03-1800	30 MHz ~ 1 GHz	Jun. 02, 2016	Nov. 06, 2016 ~ Nov. 08, 2016	Jun. 01, 2017	Radiation (OS03-LK)



5. Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.70
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.90
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 13000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.70
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