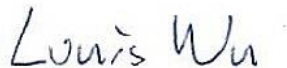


FCC Test Report

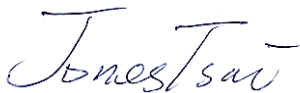
APPLICANT : Sony Mobile Communications Inc.
EQUIPMENT : GSM/WCDMA/LTE Phone+Bluetooth, DTS/UNII
a/b/g/n and NFC
BRAND NAME : Sony
FCC ID : PY7-PM0920
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : FCC CLASS B PERSONAL COMPUTERS AND
PERIPHERALS

The product was received on Oct. 07, 2015 and testing was completed on Jan. 23, 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



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.

SPORTON INTERNATIONAL INC.

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FCC ID : PY7-PM0920

Page Number : 1 of 35

Report Issued Date : Jan. 25, 2016

Report Version : Rev. 02

Report Template No.: BU5-FC15B Version 1.2



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC5O0716	Rev. 01	Initial issue of report	Jan. 14, 2016
FC5O0716	Rev. 02	Adding the 9kHz ~ 30MHz worst case data of Radiated Emission Measurement.	Jan. 25, 2016



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 7.60 dB at 0.158 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 4.36 dB at 862.800 MHz



1. General Description

1.1. Applicant

Sony Mobile Communications Inc.
Nya Vattentorget, 22188 Lund, Sweden

1.2. Manufacturer

Sony Mobile Communications Inc.
1-8-15 Konan, Minato-ku, Tokyo, 108-0075, Japan

1.3. Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, DTS/UNII a/b/g/n, NFC, and GPS

Product Specification subjective to this standard	
Antenna Type	WWAN: Coupling type (LDS) Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna GPS: PIFA Antenna NFC: Loop Antenna

EUT Information List				
IMEI	HW Version	SW Version	S/N	Performed Test Item
004402455535215	A	33.2.A.0.19	RQ3000D4J1	Radiated Spurious Emission Conducted Emission

Accessory List	
AC Adapter 1	Model No. : UCH20
	Type No. : AC-0060-US
	S/N : 1215W48600011
AC Adapter 2	Model No. : UCH20
	Type No. : AC-0061-US
	S/N : 3515W45302513
Battery 1	Model No. : LIS1618ERPC
Battery 2	Model No. : GB-S10-385871-010H
Earphone	Model No. : MH410c
	Type No. : AG-1100
	S/N : 1541A8170036EC2
USB Cable 1	Model No. : EC803
	Type No. : AI-0404
	S/N : 153812AA503376C
USB Cable 2	Model No. : UCB16
	Type No. : AI-0142
	S/N : N/A

Note:

1. Above EUT list and accessory list used are electrically identical per declared by manufacturer.
2. Above the accessories list are used to exercise the EUT during test.
3. For other wireless features of this EUT, test report will be issued separately.

1.4. Modification of EUT

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

1.5. Test Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 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 ; 03CH07-HY

1.6. 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:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. For FCC 15 Subpart B - Unintentional Radiators, device supporting USB interface or similar peripherals (defined as the Section 15.3 (r) Peripheral device) acting as a peripheral for personal computers shall be authorized as "The Class B personal computers and peripherals" per the Section 15.101 (a) Equipment authorization of unintentional radiators.
3. For other Unintentional Radiators features of this EUT, test reports are be issued separately.
Per the Note of the Section 15.101, when device supports features (USB, FM Radio, digital devices...etc) more than one category of authorization, type of authorization shall be appropriately chosen for FCC 15B compliance rule, and the Section 15.101 (b), only those receivers that operate (tune) within the frequency range of 30-960 MHz, CB receivers and radar detectors are subject to the authorizations shown in paragraph (a) of the Section 15.101. However, receivers indicated as being subject to Declaration of Conformity that are contained within a transceiver, the transmitter portion of which is subject to certification, shall be authorized under the verification procedure.



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 (9kHz 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.

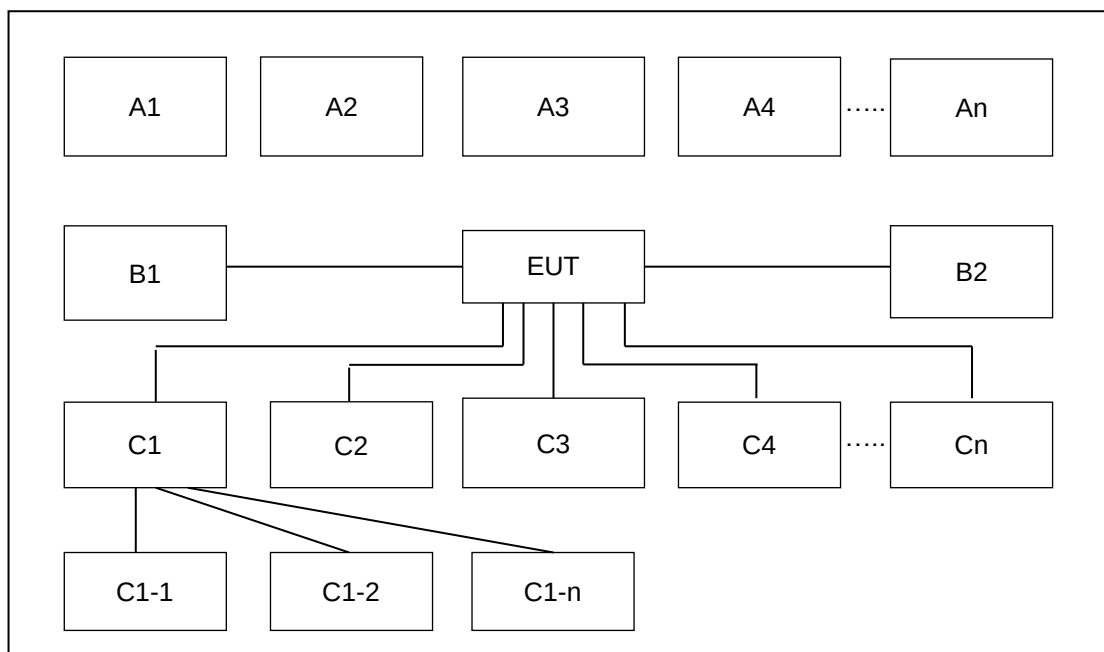
Item	EUT Configuration	Test Condition	
		EMI AC	EMI RE
1.	Data Link with Notebook	☒	☒

The data application (each file size is greater than 30Mbytes) is continuously transferred between the EUT and Notebook connected via USB cable, while GSM, WLAN, and Bluetooth and GPS idle.

Abbreviations:

- EMI AC: AC conducted emissions
- EMI RE: EUT radiated emissions

2.2. Connection Diagram of Test System



Conduction Test Setup									
No.	Wireless Station	Connection Type	Test Mode						
			1	2	3	-	-	-	-
A1	Bluetooth Earphone	Bluetooth	X	X	X				
A2	System Simulator	GSM/UMTS/CDMA/ WCDMA/LTE	X	X	X				
A3	GPS Station	GPS	X		X				
A4	AP router	WiFi	X	X	X				
A5	NFC Card	NFC		X					
No.	Setup Peripherals	Connection Type	1	2	3	-	-	-	-
C1	Notebook	USB Cable	X	X	X				
C1-1	iPod	USB Cable to C1	X	X	X				
C1-2	AP router	RJ-45 Cable to C1	X	X	X				
C2	Earphone	Earphone jack	X	X	X				
C3	SD card	SD I/O interface without Cable	X	X	X				



Radiation Test Setup									
No.	Wireless Station	Connection Type	Test Mode						
			1	2	3	-	-	-	-
A1	BT Earphone	Bluetooth	X	X	X				
A2	System Simulator	GSM	X	X	X				
A3	GPS Station	GPS	X						
A4	AP router	WiFi	X	X	X				
A5	NFC Card	NFC		X	X				
No.	Setup Peripherals	Connection Type	1	2	3	-	-	-	-
C1	Notebook	USB cable	X	X	X				
C1-1	iPod	USB Cable to C1	X	X	X				
C1-2	WLAN AP	RJ-45 Cable to C1	X	X	X				
C2	Earphone	Earphone jack	X	X	X				
C3	SD card	SD I/O interface without cable	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.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
4.	Bluetooth Earphone	Sony	SBH20	PY7-RD0010	Unshielded, 0.75m	N/A
5.	WLAN AP	D-Link	DIR-865L	KA2IR865LA1	N/A	Unshielded, 1.8 m
6.	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
7.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
8.	NFC Card	Metro Taipei	Easy Card	N/A	N/A	N/A
9.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
10.	iPod	Apple	A1199	FCC DoC	Shielded, 1.0 m	N/A

2.4. EUT Operation Test Setup

The data application (each file size is greater than 30Mbytes) is continuously transferred between the EUT and Notebook connected via USB cable, while GSM and Bluetooth, WLAN, and GPS idle.

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.

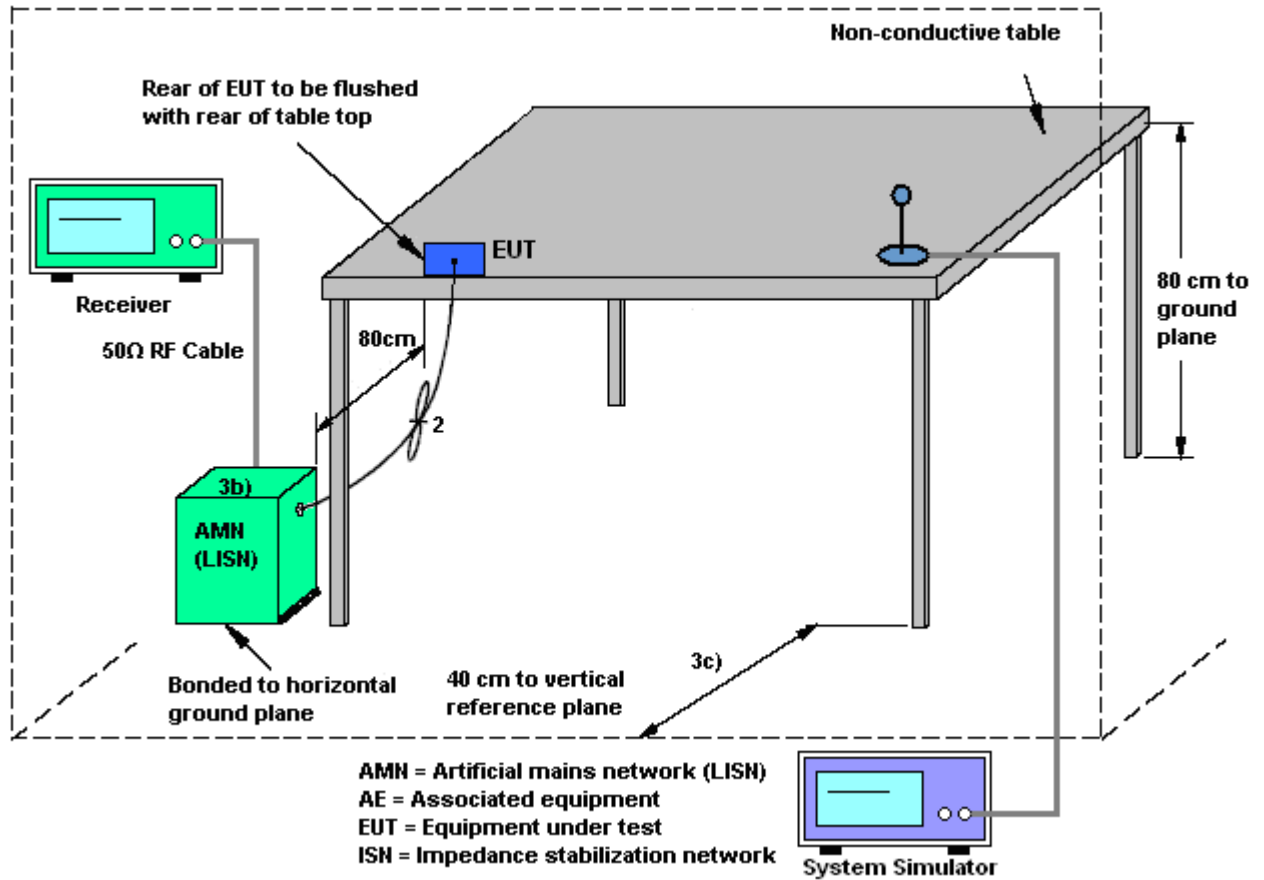
3.1.2 Measuring Instruments

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

3.1.3 Test Procedure

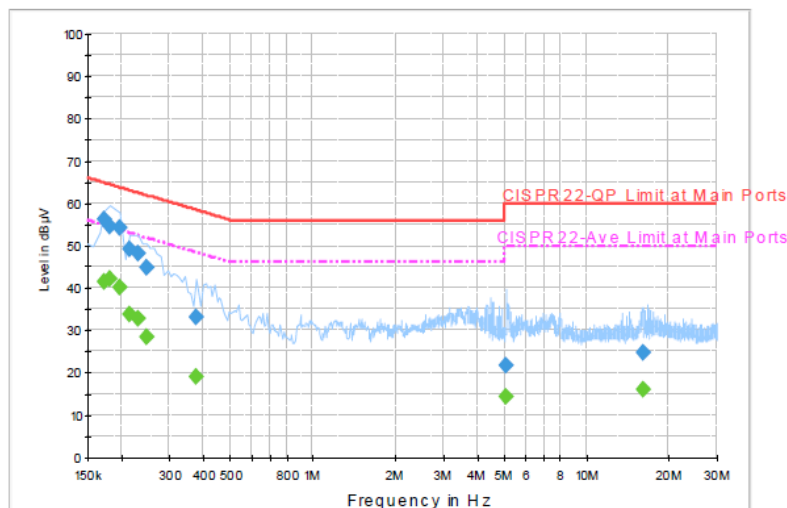
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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 1	Temperature :	22~23℃
Test Engineer :	Derreck Chen	Relative Humidity :	52~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Data Link with Notebook (with USB Cable 1) + WLAN (2.4GHz) Idle + GPS Rx + Earphone + Battery 1		



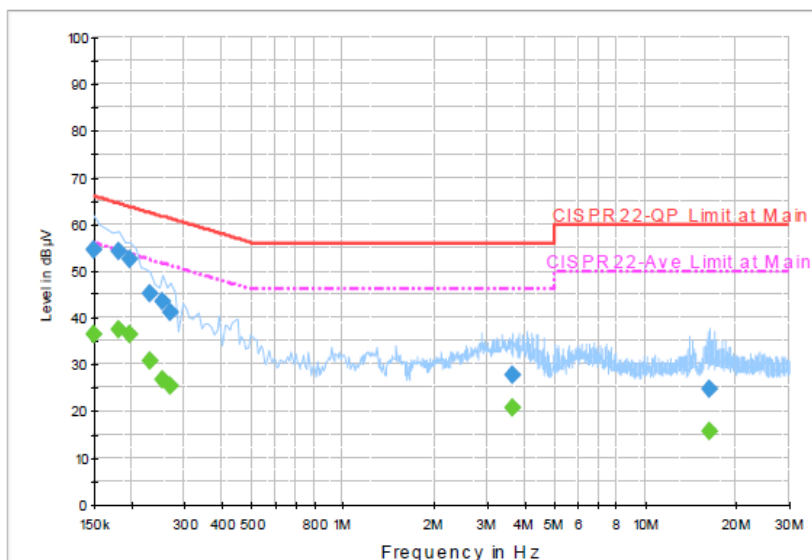
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.174000	56.2	Off	L1	19.5	8.6	64.8
0.182000	54.6	Off	L1	19.5	9.8	64.4
0.198000	54.3	Off	L1	19.4	9.4	63.7
0.214000	49.1	Off	L1	19.5	13.9	63.0
0.230000	48.2	Off	L1	19.5	14.2	62.4
0.246000	44.7	Off	L1	19.5	17.2	61.9
0.374000	33.3	Off	L1	19.6	25.1	58.4
5.094000	21.9	Off	L1	19.7	38.1	60.0
16.142000	24.6	Off	L1	19.9	35.4	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.174000	41.3	Off	L1	19.5	13.5	54.8
0.182000	42.3	Off	L1	19.5	12.1	54.4
0.198000	40.0	Off	L1	19.4	13.7	53.7
0.214000	33.9	Off	L1	19.5	19.1	53.0
0.230000	32.8	Off	L1	19.5	19.6	52.4
0.246000	28.3	Off	L1	19.5	23.6	51.9
0.374000	19.2	Off	L1	19.6	29.2	48.4
5.094000	14.3	Off	L1	19.7	35.7	50.0
16.142000	16.1	Off	L1	19.9	33.9	50.0

Test Mode :	Mode 1	Temperature :	22~23°C
Test Engineer :	Derreck Chen	Relative Humidity :	52~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Data Link with Notebook (with USB Cable 1) + WLAN (2.4GHz) Idle + GPS Rx + Earphone + Battery 1		

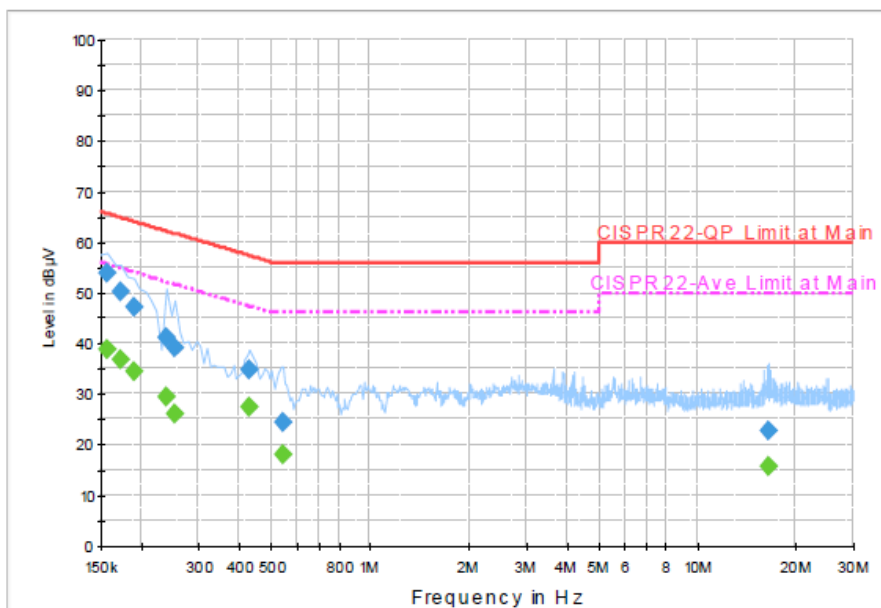

Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	54.6	Off	N	19.5	11.4	66.0
0.182000	54.1	Off	N	19.5	10.3	64.4
0.198000	52.5	Off	N	19.4	11.2	63.7
0.230000	45.2	Off	N	19.5	17.2	62.4
0.254000	43.5	Off	N	19.6	18.1	61.6
0.270000	41.2	Off	N	19.5	19.9	61.1
3.630000	27.9	Off	N	19.7	28.1	56.0
16.302000	24.6	Off	N	19.9	35.4	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	36.4	Off	N	19.5	19.6	56.0
0.182000	37.6	Off	N	19.5	16.8	54.4
0.198000	36.6	Off	N	19.4	17.1	53.7
0.230000	30.8	Off	N	19.5	21.6	52.4
0.254000	26.9	Off	N	19.6	24.7	51.6
0.270000	25.5	Off	N	19.5	25.6	51.1
3.630000	20.9	Off	N	19.7	25.1	46.0
16.302000	15.6	Off	N	19.9	34.4	50.0

Test Mode :	Mode 2	Temperature :	22~23°C
Test Engineer :	Derreck Chen	Relative Humidity :	52~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Data Link with Notebook (with USB Cable 1) + WLAN (5GHz) Idle + NFC On + Earphone + Battery 1		

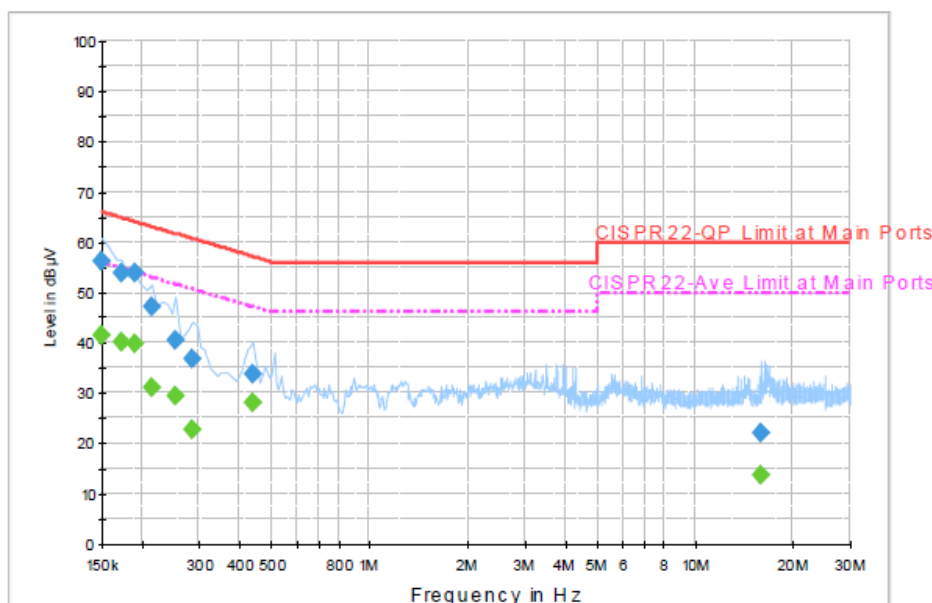

Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	53.7	Off	L1	19.5	11.9	65.6
0.174000	50.1	Off	L1	19.5	14.7	64.8
0.190000	47.1	Off	L1	19.5	16.9	64.0
0.238000	41.2	Off	L1	19.5	21.0	62.2
0.254000	39.1	Off	L1	19.6	22.5	61.6
0.430000	34.6	Off	L1	19.5	22.7	57.3
0.542000	24.3	Off	L1	19.5	31.7	56.0
16.614000	22.8	Off	L1	19.9	37.2	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	38.8	Off	L1	19.5	16.8	55.6
0.174000	36.8	Off	L1	19.5	18.0	54.8
0.190000	34.5	Off	L1	19.5	19.5	54.0
0.238000	29.6	Off	L1	19.5	22.6	52.2
0.254000	25.9	Off	L1	19.6	25.7	51.6
0.430000	27.6	Off	L1	19.5	19.7	47.3
0.542000	18.1	Off	L1	19.5	27.9	46.0
16.614000	15.8	Off	L1	19.9	34.2	50.0

Test Mode :	Mode 2	Temperature :	22~23°C
Test Engineer :	Derreck Chen	Relative Humidity :	52~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Data Link with Notebook (with USB Cable 1) + WLAN (5GHz) Idle + NFC On + Earphone + Battery 1		

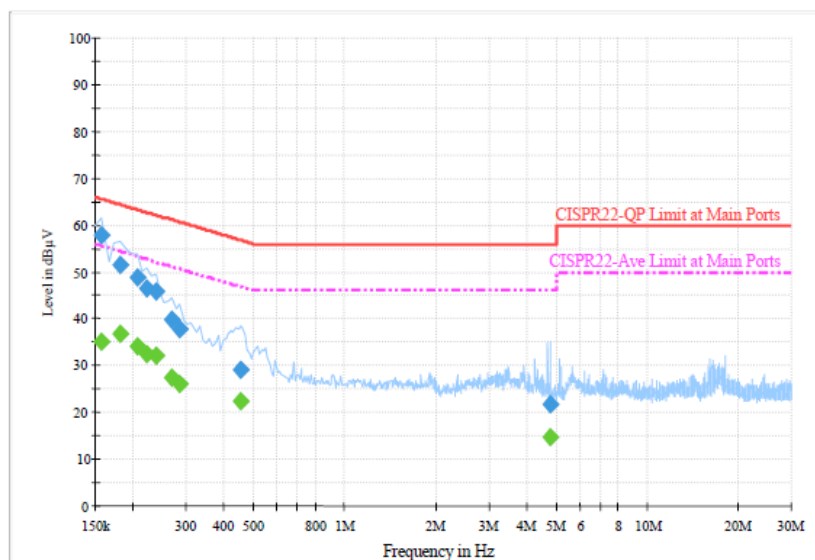

Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	56.3	Off	N	19.5	9.7	66.0
0.174000	53.7	Off	N	19.5	11.1	64.8
0.190000	54.0	Off	N	19.5	10.0	64.0
0.214000	47.0	Off	N	19.5	16.0	63.0
0.254000	40.3	Off	N	19.6	21.3	61.6
0.286000	36.8	Off	N	19.5	23.8	60.6
0.438000	33.9	Off	N	19.5	23.2	57.1
16.054000	22.1	Off	N	19.9	37.9	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	41.6	Off	N	19.5	14.4	56.0
0.174000	40.2	Off	N	19.5	14.6	54.8
0.190000	39.9	Off	N	19.5	14.1	54.0
0.214000	31.2	Off	N	19.5	21.8	53.0
0.254000	29.5	Off	N	19.6	22.1	51.6
0.286000	22.7	Off	N	19.5	27.9	50.6
0.438000	28.0	Off	N	19.5	19.1	47.1
16.054000	13.6	Off	N	19.9	36.4	50.0

Test Mode :	Mode 3	Temperature :	22~23°C
Test Engineer :	Derreck Chen	Relative Humidity :	52~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	Data Link with Notebook (with USB Cable 2) + WLAN (2.4GHz) Idle + GPS Rx + Earphone + Battery 2		

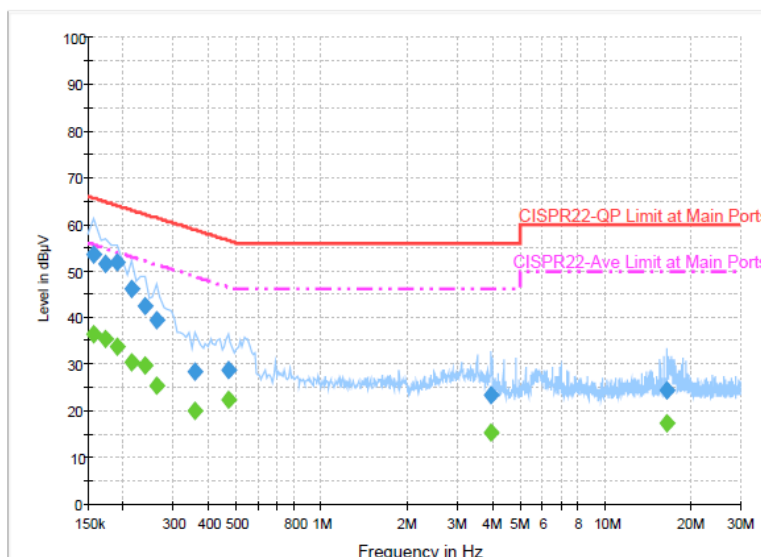

Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	58.0	Off	L1	19.6	7.6	65.6
0.182000	51.5	Off	L1	19.6	12.9	64.4
0.206000	48.8	Off	L1	19.6	14.6	63.4
0.222000	46.5	Off	L1	19.7	16.2	62.7
0.238000	45.8	Off	L1	19.6	16.4	62.2
0.270000	39.9	Off	L1	19.6	21.2	61.1
0.286000	37.8	Off	L1	19.6	22.8	60.6
0.454000	29.2	Off	L1	19.6	27.6	56.8
4.782000	21.7	Off	L1	19.7	34.3	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	35.2	Off	L1	19.6	20.4	55.6
0.182000	36.8	Off	L1	19.6	17.6	54.4
0.206000	34.1	Off	L1	19.6	19.3	53.4
0.222000	32.5	Off	L1	19.7	20.2	52.7
0.238000	32.1	Off	L1	19.6	20.1	52.2
0.270000	27.3	Off	L1	19.6	23.8	51.1
0.286000	26.1	Off	L1	19.6	24.5	50.6
0.454000	22.4	Off	L1	19.6	24.4	46.8
4.782000	14.7	Off	L1	19.7	31.3	46.0

Test Mode :	Mode 3	Temperature :	22~23°C
Test Engineer :	Derreck Chen	Relative Humidity :	52~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	Data Link with Notebook (with USB Cable 2) + WLAN (2.4GHz) Idle + GPS Rx + Earphone + Battery 2		


Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.158000	53.4	Off	N	19.6	12.2	65.6
0.174000	51.7	Off	N	19.6	13.1	64.8
0.190000	51.9	Off	N	19.6	12.1	64.0
0.214000	46.2	Off	N	19.6	16.8	63.0
0.238000	42.4	Off	N	19.6	19.8	62.2
0.262000	39.4	Off	N	19.6	22.0	61.4
0.358000	28.6	Off	N	19.6	30.2	58.8
0.470000	28.7	Off	N	19.6	27.8	56.5
3.958000	23.5	Off	N	19.6	32.5	56.0
16.542000	24.5	Off	N	19.8	35.5	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.158000	36.6	Off	N	19.6	19.0	55.6
0.174000	35.5	Off	N	19.6	19.3	54.8
0.190000	33.6	Off	N	19.6	20.4	54.0
0.214000	30.4	Off	N	19.6	22.6	53.0
0.238000	29.6	Off	N	19.6	22.6	52.2
0.262000	25.3	Off	N	19.6	26.1	51.4
0.358000	20.1	Off	N	19.6	28.7	48.8
0.470000	22.3	Off	N	19.6	24.2	46.5
3.958000	15.2	Off	N	19.6	30.8	46.0
16.542000	17.5	Off	N	19.8	32.5	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)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

For below 30MHz

Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);

Limit line = specific limits (dB μ V) + distance extrapolation factor.

3.2.2. Measuring Instruments

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

3.1.6 Measuring Instrument Setting

The following table is the setting of receiver.

Receiver Parameter	Setting
Attenuation	Auto
Frequency Range: 9kHz~150kHz	RBW 200Hz for QP
Frequency Range: 150kHz~30MHz	RBW 9kHz for QP
Frequency Range: 30MHz~1000MHz	RBW 120kHz for Peak

Note: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.



3.2.3. Test Procedures

<For below 30MHz>

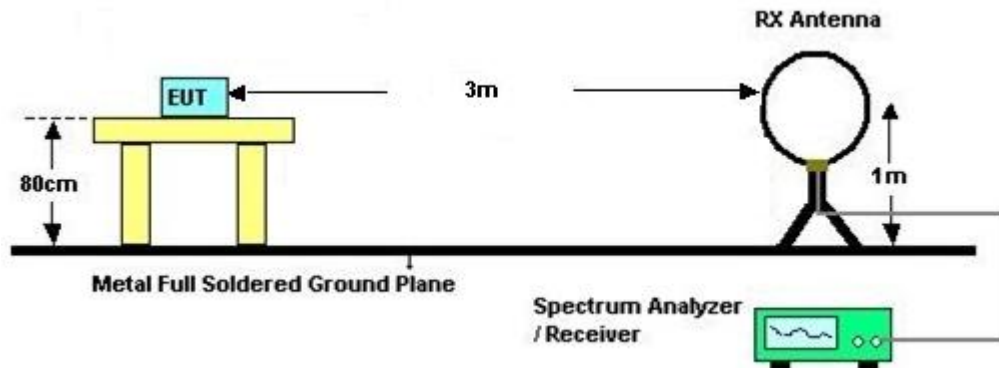
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied 0.8 meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (0.8 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Average and CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
7. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. Antenna Requirements

**<For 30MHz to 1GHz and above 1GHz>**

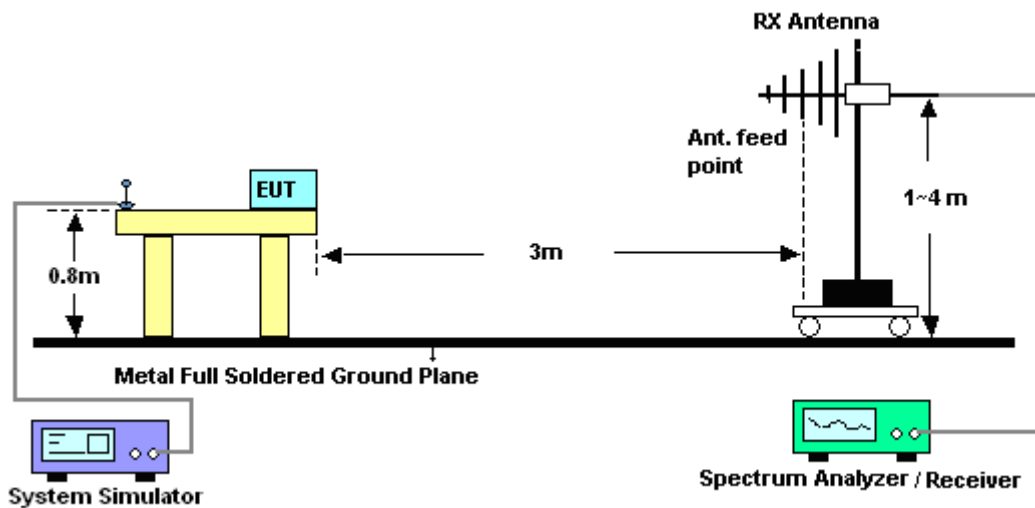
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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 (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 (dBμV/m) = 20 log Emission level (μV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.2.4. Test Setup of Radiated Emission

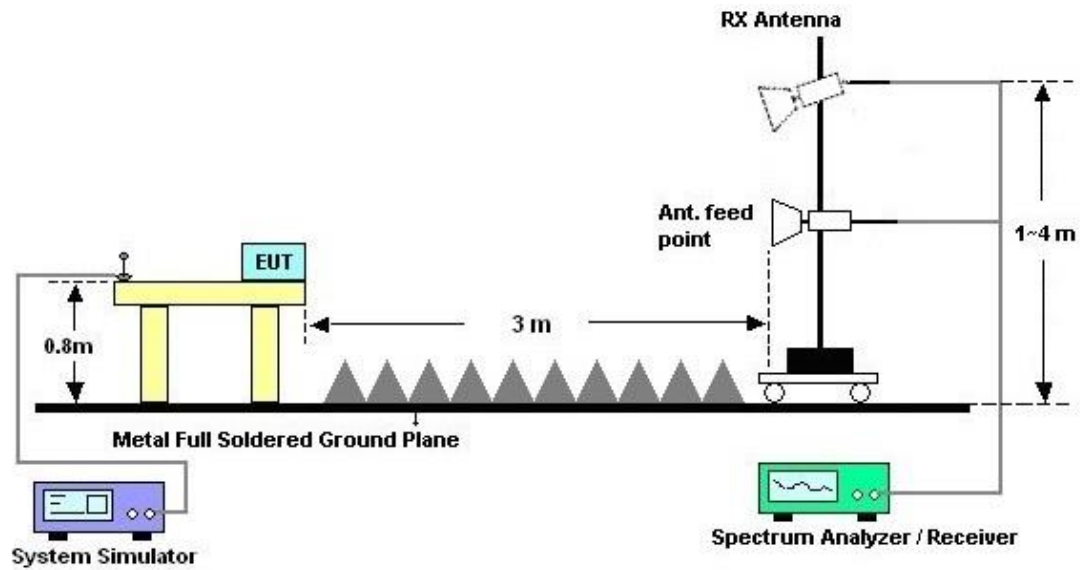
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



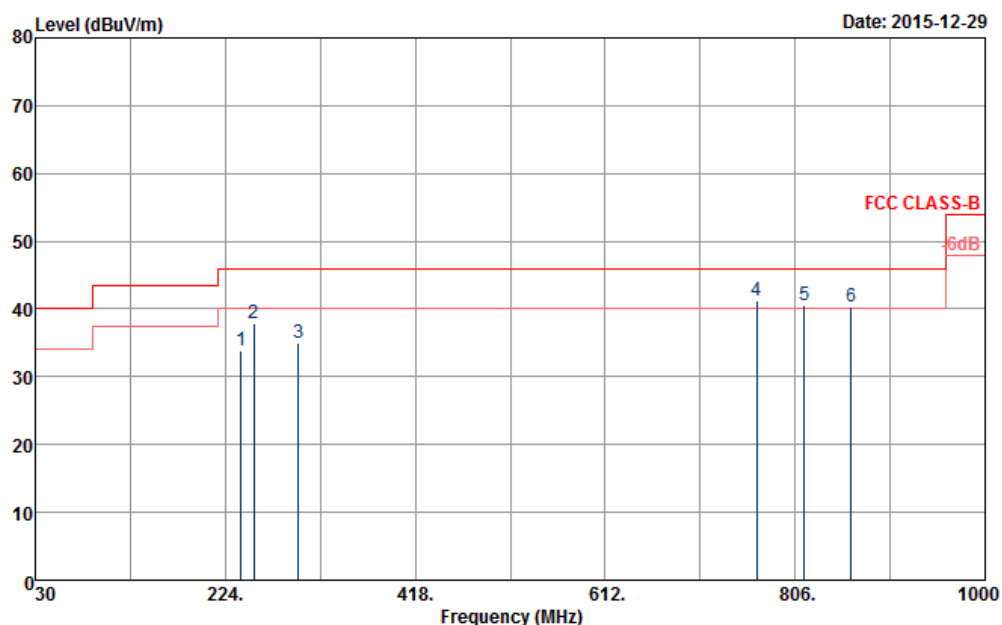
For radiated emissions above 1GHz





3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	20~23°C
Test Engineer :	Donny Pang	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	Data Link with Notebook (with USB Cable 1) + WLAN (2.4GHz) Idle + GPS Rx + Earphone + Battery 1		



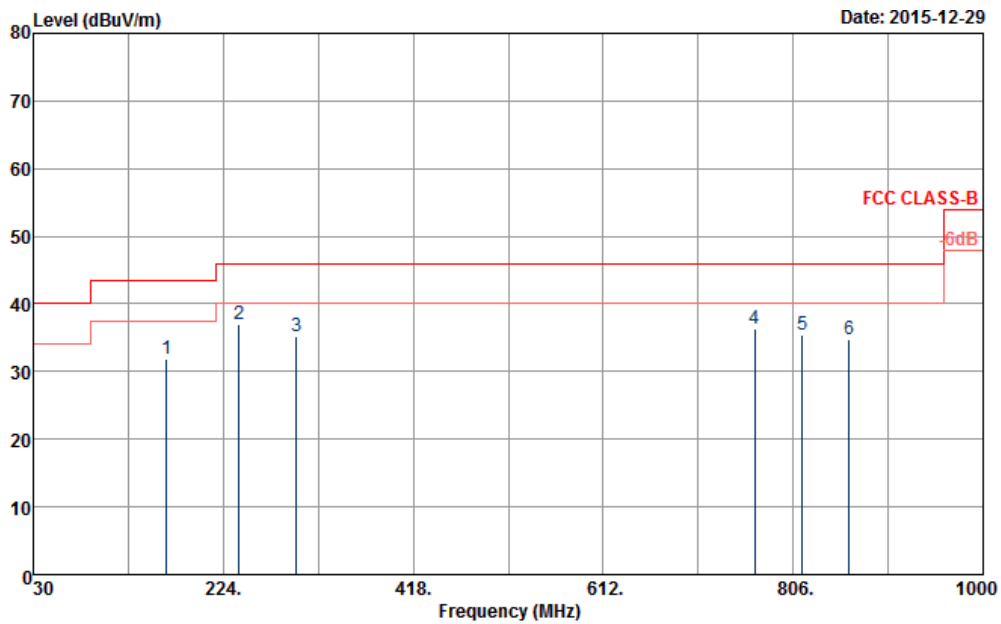
Site : 03CH06-HY
Condition : FCC CLASS-B 3m LF_ANT_2725 HORIZONTAL

Power : FromSystem
Mode : Mode 1

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	239.79	33.77	-12.23	46.00	46.10	17.70	1.69	31.72	---	---	Peak
2	253.29	37.83	-8.17	46.00	48.79	19.00	1.75	31.71	---	---	Peak
3	298.65	35.01	-10.99	46.00	45.31	19.50	1.90	31.70	---	---	Peak
4	766.90	41.16	-4.84	46.00	42.17	27.94	3.05	32.00	100	131	Peak
5	815.20	40.50	-5.50	46.00	40.81	28.46	3.11	31.88	---	---	Peak
6	862.80	40.44	-5.56	46.00	39.63	29.18	3.27	31.64	---	---	Peak



Test Mode :	Mode 1	Temperature :	20~23°C
Test Engineer :	Donny Pang	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Vertical
Function Type :	Data Link with Notebook (with USB Cable 1) + WLAN (2.4GHz) Idle + GPS Rx + Earphone + Battery 1		



Site : 03CH06-HY

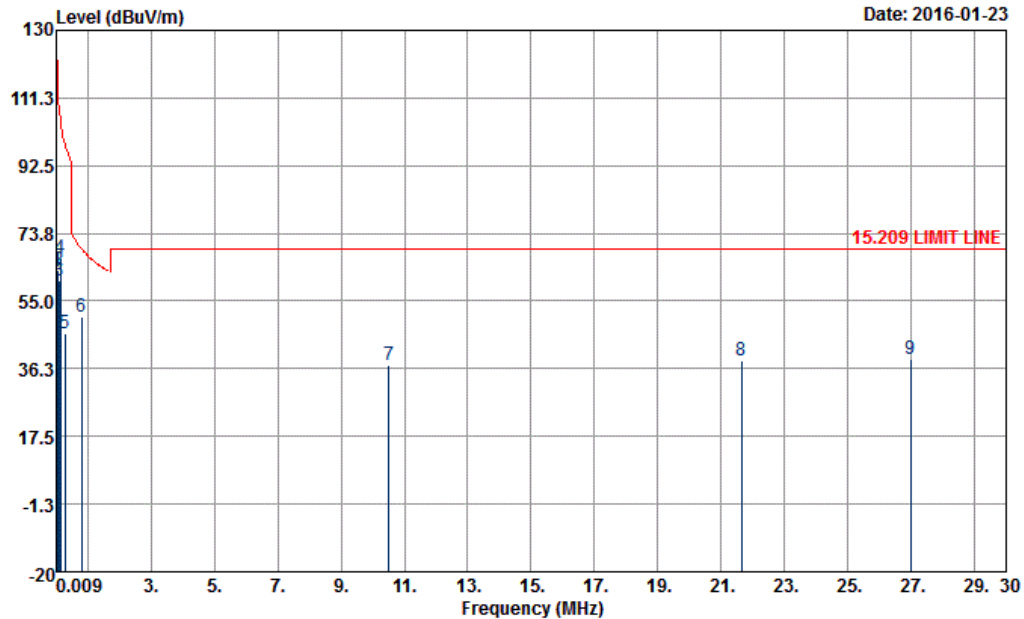
Condition : FCC CLASS-B 3m LF_ANT_2725 VERTICAL

Power : FromSystem

Mode : Mode 1

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	165.81	31.96	-11.54	43.50	45.96	16.16	1.57	31.73	---	---	Peak
2	240.06	37.01	-8.99	46.00	49.25	17.79	1.69	31.72	100	164	Peak
3	298.65	35.21	-10.79	46.00	45.51	19.50	1.90	31.70	---	---	Peak
4	766.90	36.35	-9.65	46.00	37.36	27.94	3.05	32.00	---	---	Peak
5	815.20	35.44	-10.56	46.00	35.75	28.46	3.11	31.88	---	---	Peak
6	862.80	34.77	-11.23	46.00	33.96	29.18	3.27	31.64	---	---	Peak

Test Mode :	Mode 2	Temperature :	20~23°C
Test Engineer :	Donny Pang	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	Data Link with Notebook (with USB Cable 1) + WLAN (5GHz) Idle + NFC On + Earphone + Battery 1		

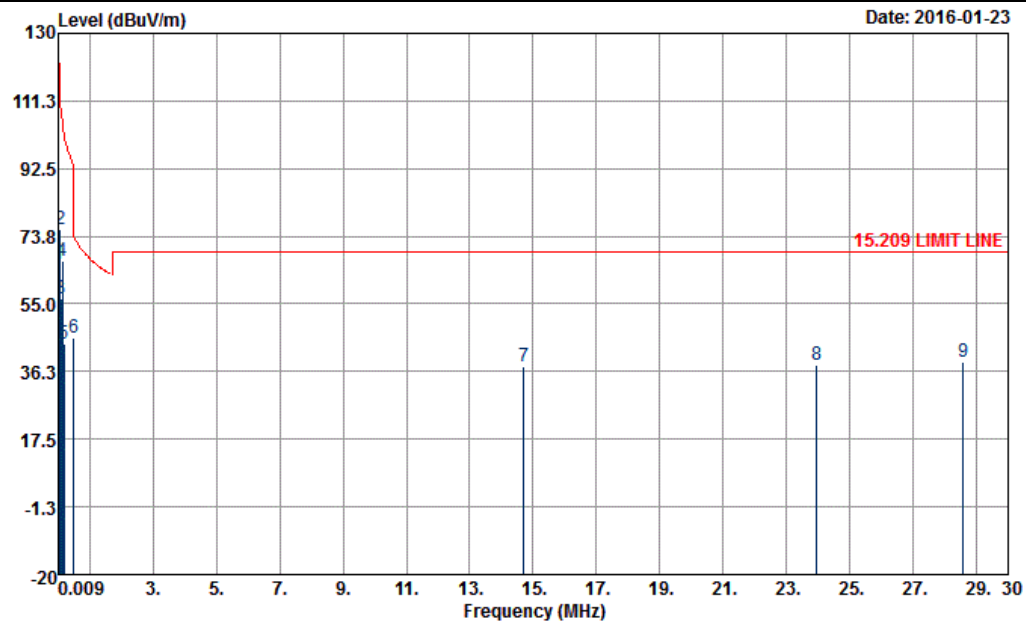


Site : 03CH07-HY
Condition : 15.209 LIMIT LINE 3m LOOP_ANT(H) HORIZONTAL

Mode : 2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	0.01	63.10	-61.97	125.07	41.83	20.25	1.02	0.00	---	---
2	0.06	63.49	-47.89	111.38	42.43	20.04	1.02	0.00	---	---
3	0.10	60.43	-47.57	108.00	39.42	19.99	1.02	0.00	---	---
4	0.13	66.86	-38.50	105.36	45.87	19.97	1.02	0.00	---	---
5	0.28	45.87	-52.71	98.58	24.93	19.92	1.02	0.00	---	---
6	0.81	50.73	-18.75	69.48	29.81	19.90	1.02	0.00	100	256
7	10.52	37.19	-32.31	69.50	16.14	20.03	1.02	0.00	---	---
8	21.63	38.50	-31.00	69.50	16.20	20.53	1.77	0.00	---	---
9	26.98	39.08	-30.42	69.50	16.68	20.63	1.77	0.00	---	---

Test Mode :	Mode 2	Temperature :	20~23°C
Test Engineer :	Donny Pang	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Vertical
Function Type :	Data Link with Notebook (with USB Cable 1) + WLAN (5GHz) Idle + NFC On + Earphone + Battery 1		



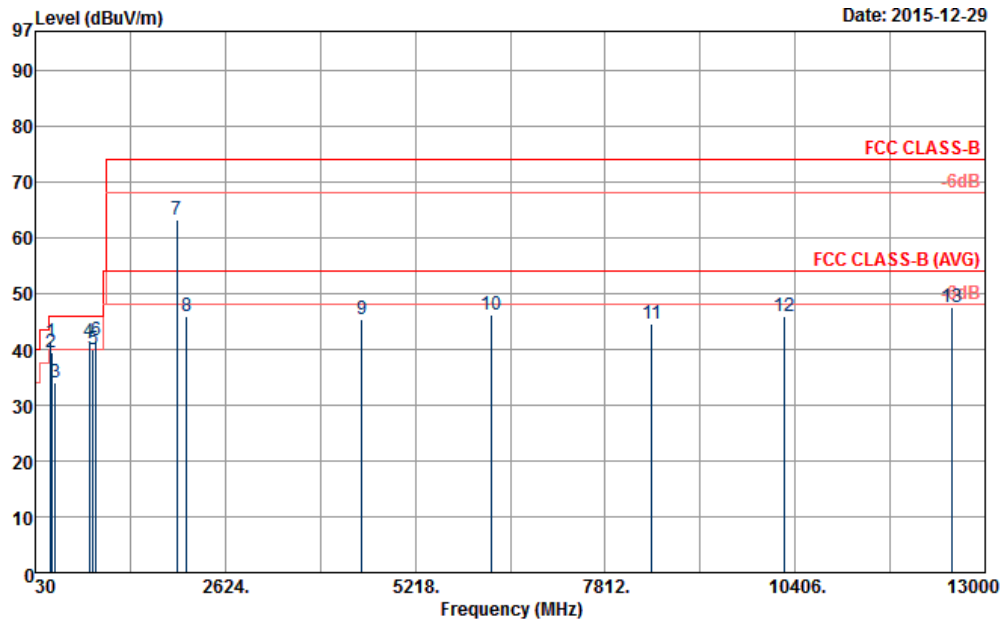
Site : 03CH07-HY
Condition : 15.209 LIMIT LINE 3m LOOP_ANT(V) VERTICAL

Mode : 2

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	cm	deg	
			dB	dBuV/m	dBuV	dB/m	dB	dB		
1	0.01	66.22	-58.88	125.10	44.95	20.25	1.02	0.00	---	Average
2	0.06	75.68	-35.70	111.38	54.62	20.04	1.02	0.00	---	Average
3	0.10	56.32	-51.70	108.02	35.31	19.99	1.02	0.00	---	QP
4	0.13	67.03	-38.33	105.36	46.04	19.97	1.02	0.00	---	Average
5	0.19	44.00	-57.85	101.85	23.05	19.93	1.02	0.00	---	Average
6	0.51	45.75	-27.79	73.54	24.83	19.90	1.02	0.00	100	59 QP
7	14.70	37.79	-31.71	69.50	16.72	20.05	1.02	0.00	---	QP
8	23.95	37.89	-31.61	69.50	15.55	20.57	1.77	0.00	---	QP
9	28.58	38.74	-30.76	69.50	16.42	20.55	1.77	0.00	---	QP



Test Mode :	Mode 2	Temperature :	20~23°C
Test Engineer :	Donny Pang	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	Data Link with Notebook (with USB Cable 1) + WLAN (5GHz) Idle + NFC On + Earphone + Battery 1		
Remark :	#7 is system simulator signal which can be ignored.		



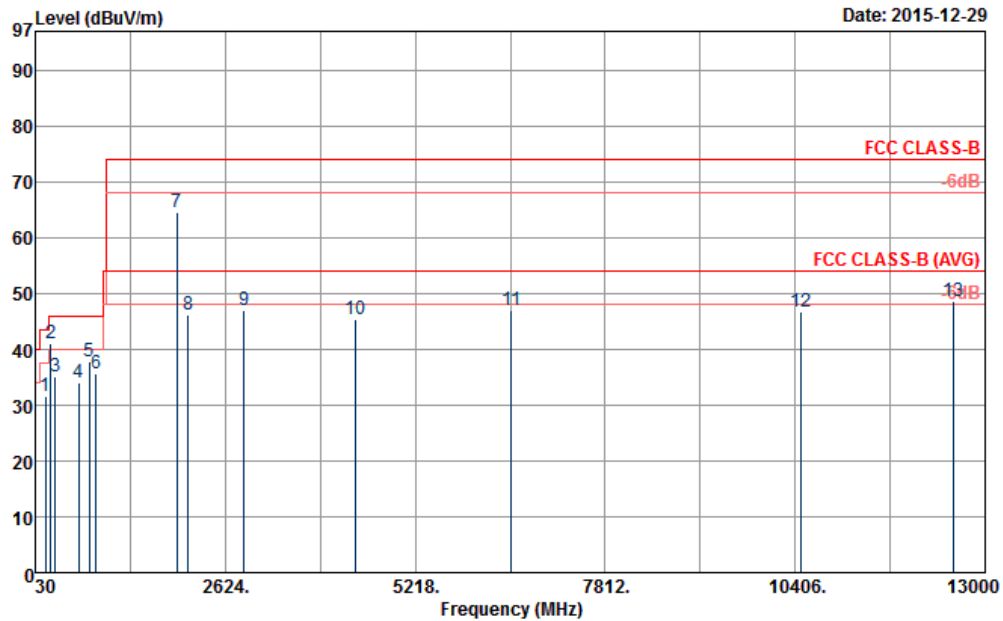
Site : 03CH06-HY
Condition : FCC CLASS-B 3m HF-ANT_583_150810 HORIZONTAL

Power : FromSystem
Mode : Mode 2

	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	240.06	41.40	-4.60	46.00	53.64	17.79	1.69	31.72	---	Peak
2	253.56	39.33	-6.67	46.00	50.29	19.00	1.75	31.71	---	Peak
3	298.65	33.96	-12.04	46.00	44.26	19.50	1.90	31.70	---	Peak
4	766.90	41.35	-4.65	46.00	42.36	27.94	3.05	32.00	---	Peak
5	815.20	40.10	-5.90	46.00	40.41	28.46	3.11	31.88	---	Peak
6	862.80	41.64	-4.36	46.00	40.83	29.18	3.27	31.64	100	297 Peak
7	1960.00	63.17			86.27	31.30	6.10	60.50	---	Peak
8	2098.00	45.93	-28.07	74.00	68.36	31.80	6.27	60.50	---	Peak
9	4484.00	45.43	-28.57	74.00	62.60	34.47	9.57	61.21	---	Peak
10	6250.00	46.20	-27.80	74.00	59.18	35.55	11.62	60.15	---	Peak
11	8448.00	44.45	-29.55	74.00	54.89	35.71	13.27	59.42	---	Peak
12	10252.00	45.99	-28.01	74.00	54.58	37.30	14.96	60.85	---	Peak
13	12554.00	47.56	-26.44	74.00	51.43	39.31	16.59	59.77	100	217 Peak



Test Mode :	Mode 2	Temperature :	20~23°C
Test Engineer :	Donny Pang	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Vertical
Function Type :	Data Link with Notebook (with USB Cable 1) + WLAN (5GHz) Idle + NFC On + Earphone + Battery 1		
Remark :	#7 is system simulator signal which can be ignored.		



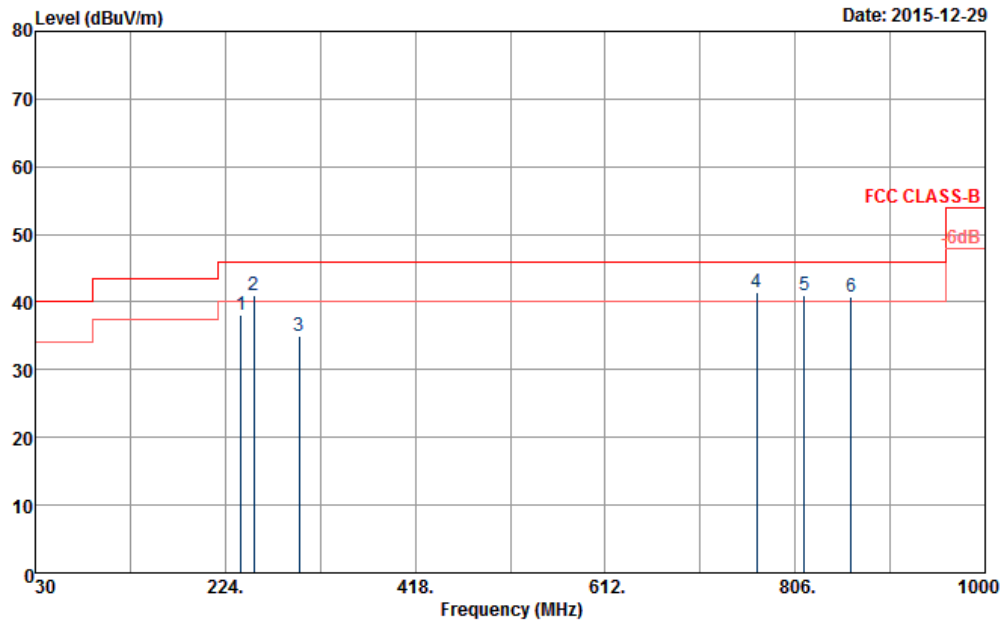
Site : 03CH06-HY
Condition : FCC CLASS-B 3m HF-ANT_583_150810 VERTICAL

Power : FromSystem
Mode : Mode 2

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	165.54	31.57	-11.93	43.50	45.57	16.16	1.57	31.73	---	Peak
2	240.06	40.98	-5.02	46.00	53.22	17.79	1.69	31.72	100	199 Peak
3	299.73	35.05	-10.95	46.00	45.34	19.50	1.91	31.70	---	Peak
4	620.60	34.07	-11.93	46.00	37.58	25.81	2.78	32.10	---	Peak
5	766.90	37.72	-8.28	46.00	38.73	27.94	3.05	32.00	---	Peak
6	862.80	35.68	-10.32	46.00	34.87	29.18	3.27	31.64	---	Peak
7	1960.00	64.54			87.64	31.30	6.10	60.50	---	Peak
8	2120.00	46.27	-27.73	74.00	68.63	31.82	6.32	60.50	---	Peak
9	2882.00	47.02	-26.98	74.00	67.74	32.66	7.43	60.81	---	Peak
10	4408.00	45.44	-28.56	74.00	62.99	34.30	9.41	61.26	---	Peak
11	6534.00	47.12	-26.88	74.00	59.98	35.80	11.73	60.39	---	Peak
12	10480.00	46.76	-27.24	74.00	54.62	37.58	15.18	60.62	---	Peak
13	12568.00	48.73	-25.27	74.00	52.60	39.31	16.59	59.77	100	139 Peak



Test Mode :	Mode 3	Temperature :	20~23°C
Test Engineer :	Donny Pang	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	Data Link with Notebook (with USB Cable 2) + WLAN (5GHz) Idle + NFC On + Earphone + Battery 2		



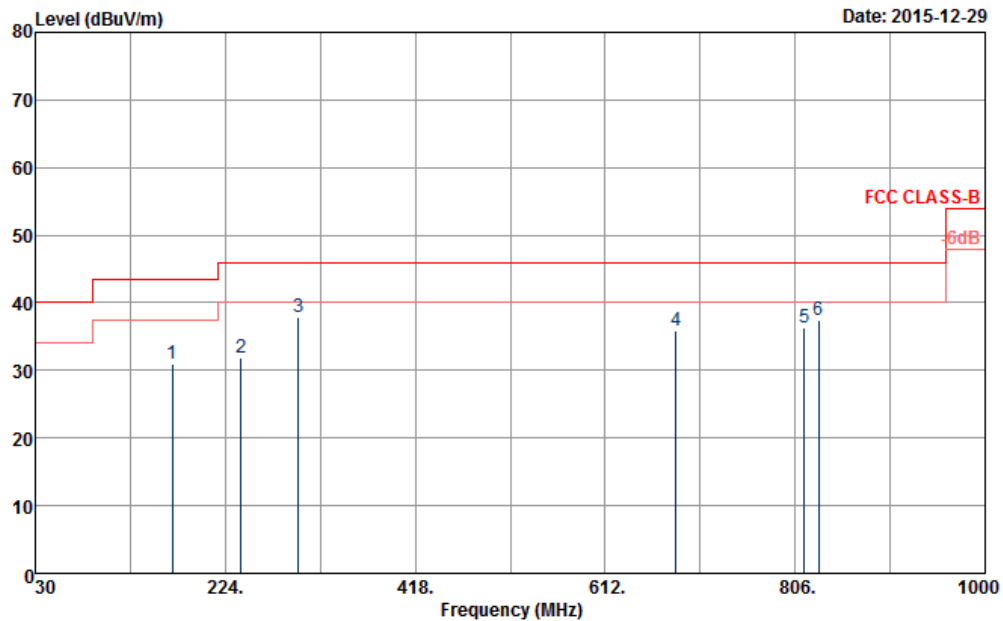
Site : 03CH06-HY
Condition : FCC CLASS-B 3m LF_ANT_2725 HORIZONTAL

Power : FromSystem
Mode : Mode 3

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	240.06	38.15	-7.85	46.00	50.39	17.79	1.69	31.72	---	---	Peak
2	253.56	40.91	-5.09	46.00	51.87	19.00	1.75	31.71	---	---	Peak
3	299.73	34.95	-11.05	46.00	45.24	19.50	1.91	31.70	---	---	Peak
4	766.90	41.37	-4.63	46.00	42.38	27.94	3.05	32.00	100	121	Peak
5	815.20	41.02	-4.98	46.00	41.33	28.46	3.11	31.88	---	---	Peak
6	862.80	40.88	-5.12	46.00	40.07	29.18	3.27	31.64	---	---	Peak



Test Mode :	Mode 3	Temperature :	20~23°C
Test Engineer :	Donny Pang	Relative Humidity :	50~53%
Test Distance :	3m	Polarization :	Vertical
Function Type :	Data Link with Notebook (with USB Cable 2) + WLAN (5GHz) Idle + NFC On + Earphone + Battery 2		



Site : 03CH06-HY

Condition : FCC CLASS-B 3m LF_ANT_2725 VERTICAL

Power : FromSystem

Mode : Mode 3

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	169.86	30.91	-12.59	43.50	45.21	15.80	1.63	31.73	---	---	Peak
2	240.06	31.92	-14.08	46.00	44.16	17.79	1.69	31.72	---	---	Peak
3	298.65	37.84	-8.16	46.00	48.14	19.50	1.90	31.70	100	219	Peak
4	684.30	35.80	-10.20	46.00	38.51	26.52	2.86	32.09	---	---	Peak
5	815.20	36.22	-9.78	46.00	36.53	28.46	3.11	31.88	---	---	Peak
6	829.90	37.41	-8.59	46.00	37.31	28.75	3.16	31.81	---	---	Peak



9. 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. 03, 2015 ~ Dec. 31, 2015	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz ~ 7GHz	Aug. 26, 2015	Nov. 03, 2015 ~ Dec. 31, 2015	Aug. 25, 2016	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Apr. 20, 2015	Nov. 03, 2015 ~ Dec. 31, 2015	Apr. 19, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2014	Nov. 03, 2015 ~ Nov. 30, 2015	Dec. 01, 2015	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	Dec. 03, 2015 ~ Dec. 31, 2015	Dec. 01, 2016	Conduction (CO05-HY)
LISN (for auxiliary equipment)	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 08, 2014	Nov. 03, 2015 ~ Nov. 30, 2015	Dec. 07, 2015	Conduction (CO05-HY)
LISN (for auxiliary equipment)	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 14, 2015	Dec. 14, 2015 ~ Dec. 31, 2015	Dec. 13, 2016	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 07, 2015	Nov. 03, 2015 ~ Dec. 31, 2015	Jan. 06, 2016	Conduction (CO05-HY)
Test Software	R & S	EMC32	8.40.0	N/A	N/A	Nov. 03, 2015 ~ Dec. 31, 2015	N/A	Conduction (CO05-HY)
Bilog Antenna	Schaffner	CBL6111C	2725	30MHz~1GHz	Nov. 17, 2015	Dec. 29, 2015	Nov. 16, 2016	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz~18GHz	Jul. 20, 2015	Dec. 29, 2015	Jul. 19, 2016	Radiation (03CH06-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100472	20Hz~26.5GHz	Jan. 19, 2015	Dec. 29, 2015	Jan. 18, 2016	Radiation (03CH06-HY)
Preamplifier	SONOMA	310N	186713	9kHz~1GHz	Apr. 20, 2015	Dec. 29, 2015	Apr. 19, 2016	Radiation (03CH06-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1850117	1GHz ~ 18GHz	Jul. 01, 2015	Dec. 29, 2015	Jun. 30, 2016	Radiation (03CH06-HY)
Controller	INN-CO	EM1000	060782	Control Turn table & Ant Mast	N/A	Dec. 29, 2015	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF78020821 2	1m~4m	N/A	Dec. 29, 2015	N/A	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0-360 degree	N/A	Dec. 29, 2015	N/A	Radiation (03CH06-HY)
Hygrometer	WISEWIND	410	BU5004	N/A	May 04, 2015	Dec. 29, 2015	May 03, 2016	Radiation (03CH06-HY)
RF Cable	HUBER + SUHNER	RG_142_B/U	NA	30MHz ~ 1GHz	Nov. 26, 2015	Dec. 29, 2015	Nov. 25, 2016	Radiation (03CH06-HY)
RF Cable	Infinet	LL142	Infinet CA3601-3601 -1000	1GHz ~ 26.5GHz	Nov. 26, 2015	Dec. 29, 2015	Nov. 25, 2016	Radiation (03CH06-HY)
Test Software	Audix	E3	6.2009-8-24	N/A	N/A	Dec. 29, 2015	N/A	Radiation (03CH06-HY)



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	34897197	N/A	May 04, 2015	Jan. 23, 2015	May 03, 2016	Radiation (03CH07-HY)
Loop Antenna	TESEQ	HLA6120	31244	9 kHz~30 MHz	Feb. 02 ,2015	Jan. 23, 2015	Feb. 01, 2016	Radiation (03CH07-HY)
Signal Analyzer	Rohde & Schwarz	FSV 30	101749	10Hz~30GHz	Mar. 10, 2015	Jan. 23, 2015	Mar. 09, 2016	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY84209521	9kHz~1GHz	Dec. 03, 2015	Jan. 23, 2015	Dec. 02, 2016	Radiation (03CH07-HY)
Controller	ChainTek	Chaintek 3000	N/A	Control Turn table	N/A	Jan. 23, 2015	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 degree	N/A	Jan. 23, 2015	N/A	Radiation (03CH07-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 26, 2015	Jan. 23, 2015	Aug. 25, 2016	Radiation (03CH07-HY)



10. 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 (9 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.70
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.00
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