FCC Test Report

APPLICANT	:	Bullitt Group
EQUIPMENT	:	Rugged Smart Phone
BRAND NAME	:	CAT
MODEL NAME	:	S41
MARKETING NAME	:	S41
FCC ID	:	ZL5S41
STANDARD	:	FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION	:	Certification

The product was received on Jun. 09, 2017 and testing was completed on Aug. 06, 2017. 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.

Louis Wu

Reviewed by: Louis Wu / Manager

Jones Tsai

Approved by: Jones Tsai / Manager

ilac-MRA TAF Testing Laboratory 1190

SPORTON INTERNATIONAL INC.

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC732839-01	Rev. 01	Initial issue of report	Aug. 22, 2017

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 10.70 dB at 0.614 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 3.04 dB at 41.300 MHz for Quasi-Peak

1. General Description

1.1. Applicant

Bullitt Group
One Valpy, Valpy Street, Reading, Berkshire, England RG1 1AR

1.2. Manufacturer

Compal Electronics, INC.
No. 385, Yangguang St. Neihu District, Taipei City 11491, Taiwan, R.O.C

1.3. Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n, FM Receiver, NFC, and GPS.

Product Specification subjective to this standard	
Antenna Type	WWAN: PIFA + Coupling type (LDS) Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna GPS / Glonass : PIFA Antenna NFC: Loop Antenna FM: Integral Antenna (Earphone acting as FM antenna deemed as an integral antenna)

<Sample Information>

S41 has 2 different Variant	
Sample 1	Dual SIM
Sample 2	Single SIM
For Dual-SIM or Single-SIM control by SW, The HW difference is SIM holder.	

Remark: All test items were performed with Sample 1.

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. TW1093/TW1095 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 1st 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.**
	OS03-LK

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: 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

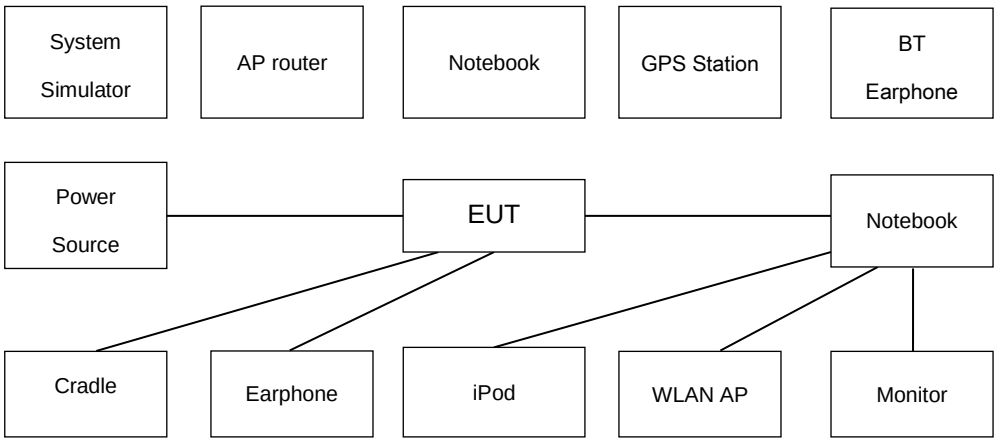
2.1. Test Mode

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 emission (150 kHz to 30 MHz), radiation emission (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 Idle + NFC on + MPEG4 + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 1 Mode 2: WCDMA Band II Idle + Bluetooth Idle + WLAN Idle + NFC on + Camera (Front) + Earphone + Battery + Battery + USB Cable (Charging from Adapter) + SIM 1 Mode 3: LTE Band 12 Idle + Bluetooth Idle + WLAN Idle + NFC on + Camera (Rear) + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 1 Mode 4: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + NFC on + FM Rx (98MHz) + Earphone + Battery + Battery + USB Cable (Charging from Adapter) + SIM 1 Mode 5: Flight mode + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 Mode 6: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + NFC on + FM Rx (98MHz) + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 2
Radiated Emissions	Mode 1: GSM 850 Idle + Bluetooth Idle + WLAN Idle + NFC on + Earphone + MPEG4 + Battery + USB Cable (Charging from Adapter) + SIM 1 Mode 2: WCDMA Band II Idle + Bluetooth Idle + WLAN Idle + NFC on + Earphone + Camera (Front) + Battery + USB Cable (Charging from Adapter) + SIM 1 Mode 3: LTE Band 12 Idle + Bluetooth Idle + WLAN Idle + NFC on + Earphone + Camera (Rear) + Battery + USB Cable (Charging from Adapter) + SIM 1 Mode 4: LTE Band 7 Idle + Bluetooth Idle + WLAN Idle + NFC on + Earphone + FM Rx (98MHz) + Battery + USB Cable (Charging from Adapter) + SIM 1 Mode 5: Flight mode + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 Mode 6: Flight mode + Earphone + Battery + OTG Cable (Data Link with USB storage devices) + SIM 1 Mode 7: GSM850 Idle + Bluetooth Idle + WLAN Idle + NFC on + Earphone + MPEG4 + Battery + USB Cable (Charging from Adapter) + SIM 2
Remark: **1.** The worst case of AC is mode 4; only the test data of this mode was reported. **2.** The worst case of RE is mode 7; the mode 5 and mode 7 test data were reported. **3.** Data Link with Notebook means data application transferred mode between EUT and Notebook.	

2.2. Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

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.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
4.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded,1.8m
5.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A
6.	USB Dongle	Kingston	DataTraveler 100	FCC Doc	N/A	N/A
7.	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
8.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
9.	SD Card	SanDisk	microSDHC 16GB Class 10 UHS-I	FCC DoC	N/A	N/A

2.4. EUT Operation Test Setup

The EUT was in GSM, WCDMA, LTE 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 EUT via USB cable.
2. Execute "Video Player" to play MPEG4 files.
3. Turn on camera to capture images.
4. Turn on 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.

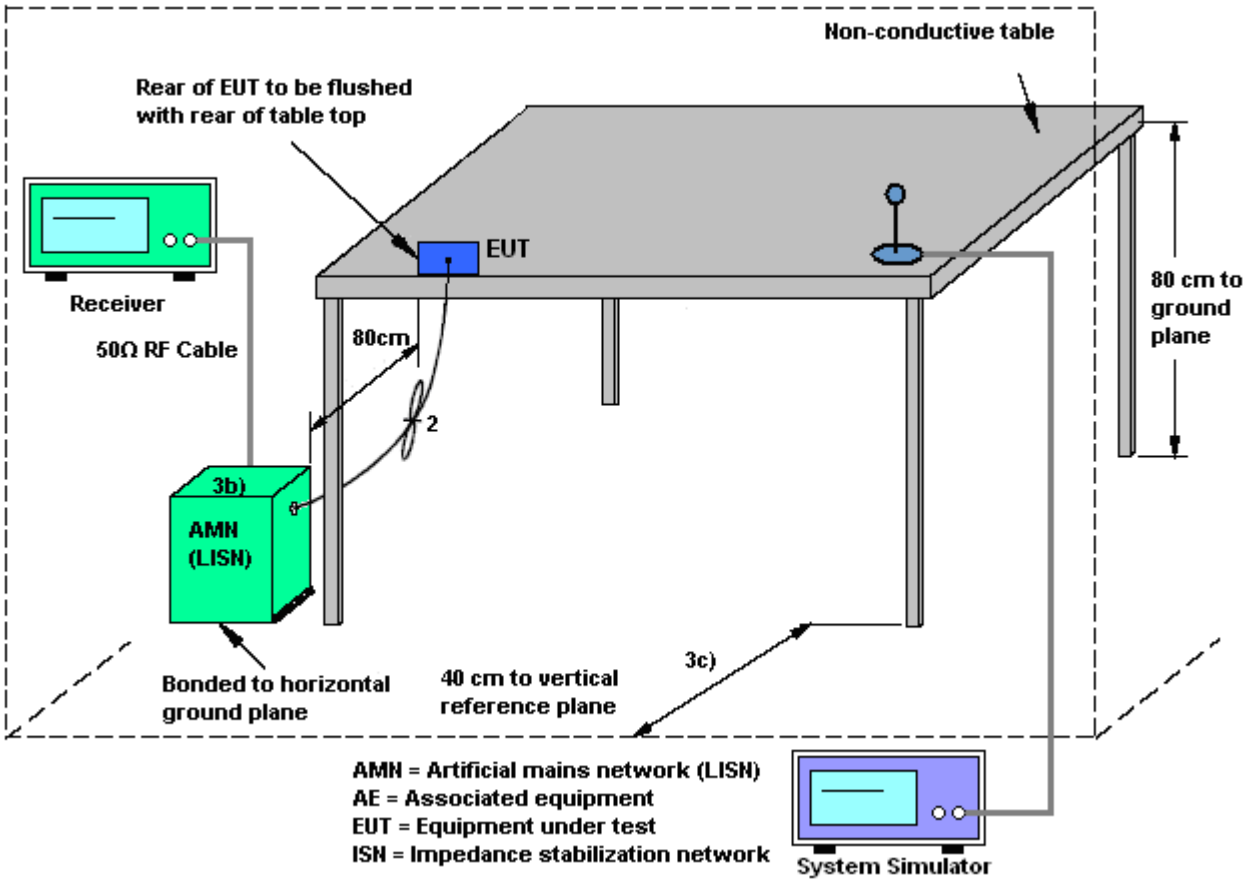
3.1.2 Measuring Instruments

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

3.1.3 Test Procedure

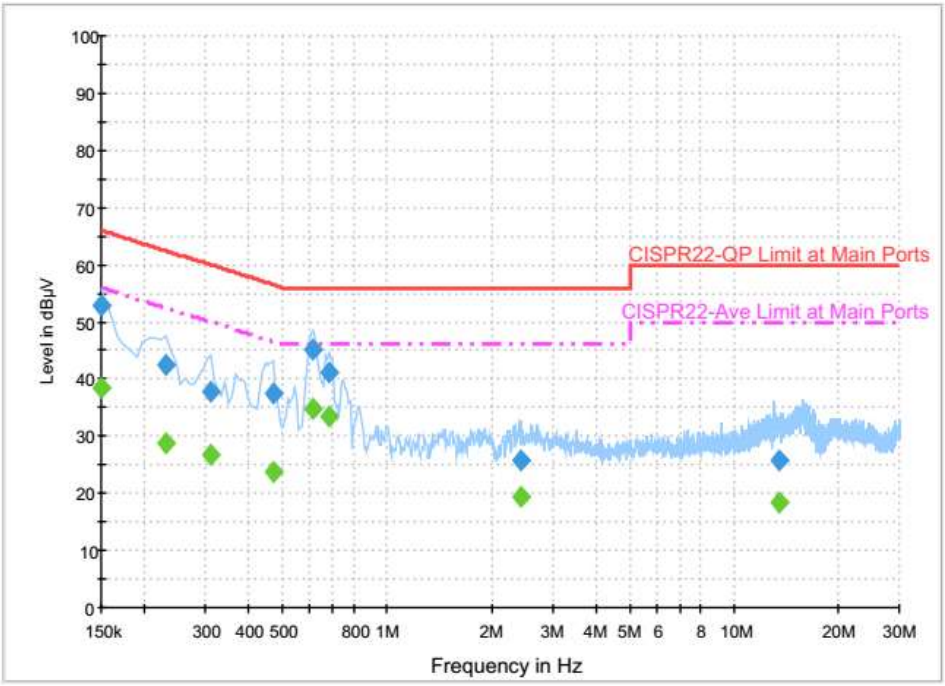
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
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 Engineer :	Shareef Yu	Temperature :	26~27℃
		Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Line



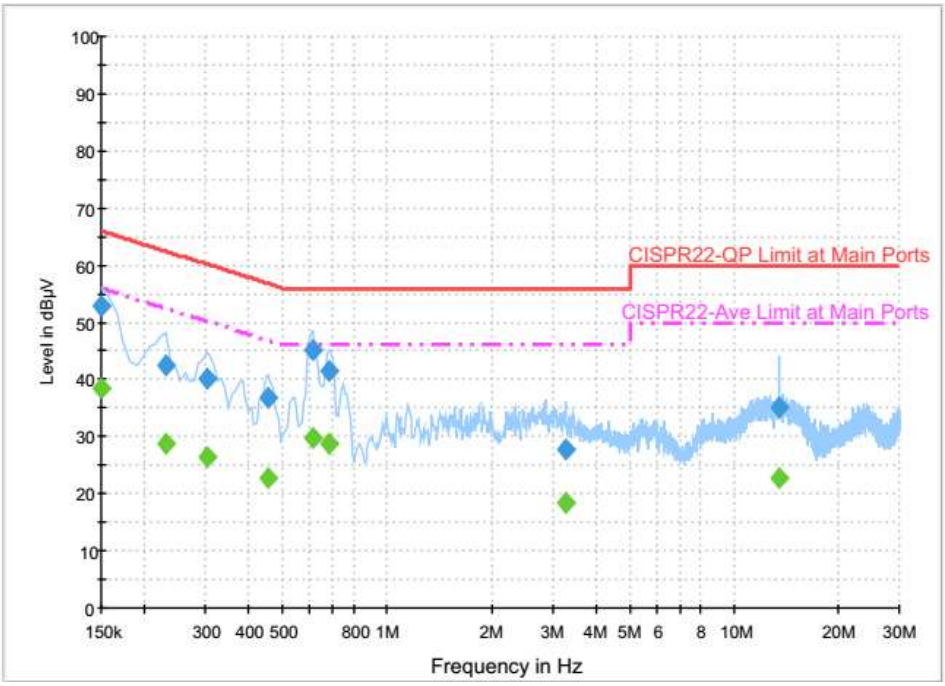
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	52.8	Off	L1	19.6	13.2	66.0
0.230000	42.6	Off	L1	19.6	19.8	62.4
0.310000	37.8	Off	L1	19.6	22.2	60.0
0.470000	37.3	Off	L1	19.6	19.2	56.5
0.614000	45.2	Off	L1	19.6	10.8	56.0
0.678000	41.1	Off	L1	19.6	14.9	56.0
2.446000	25.7	Off	L1	19.2	30.3	56.0
13.558000	25.8	Off	L1	20.2	34.2	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	38.4	Off	L1	19.6	17.6	56.0
0.230000	28.8	Off	L1	19.6	23.6	52.4
0.310000	26.9	Off	L1	19.6	23.1	50.0
0.470000	23.7	Off	L1	19.6	22.8	46.5
0.614000	34.8	Off	L1	19.6	11.2	46.0
0.678000	33.6	Off	L1	19.6	12.4	46.0
2.446000	19.3	Off	L1	19.2	26.7	46.0
13.558000	18.4	Off	L1	20.2	31.6	50.0

Test Engineer :	Shareef Yu	Temperature :	26~27℃
		Relative Humidity :	40~42%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	52.9	Off	N	19.5	13.1	66.0
0.230000	42.5	Off	N	19.5	19.9	62.4
0.302000	40.3	Off	N	19.5	19.9	60.2
0.454000	36.6	Off	N	19.5	20.2	56.8
0.614000	45.3	Off	N	19.5	10.7	56.0
0.678000	41.5	Off	N	19.5	14.5	56.0
3.270000	27.6	Off	N	19.6	28.4	56.0
13.558000	35.3	Off	N	20.3	24.7	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	38.3	Off	N	19.5	17.7	56.0
0.230000	28.8	Off	N	19.5	23.6	52.4
0.302000	26.5	Off	N	19.5	23.7	50.2
0.454000	22.9	Off	N	19.5	23.9	46.8
0.614000	29.8	Off	N	19.5	16.2	46.0
0.678000	28.7	Off	N	19.5	17.3	46.0
3.270000	18.5	Off	N	19.6	27.5	46.0
13.558000	22.8	Off	N	20.3	27.2	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

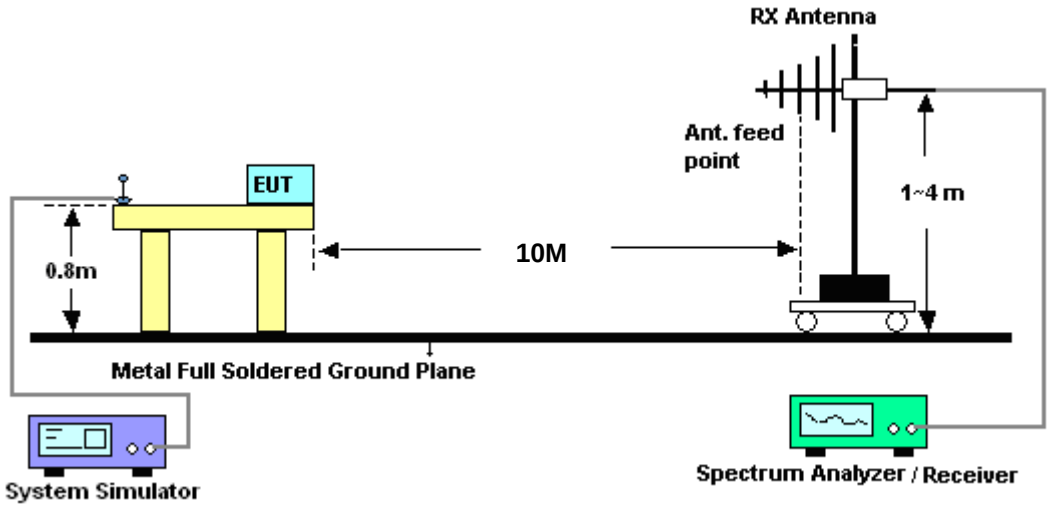
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

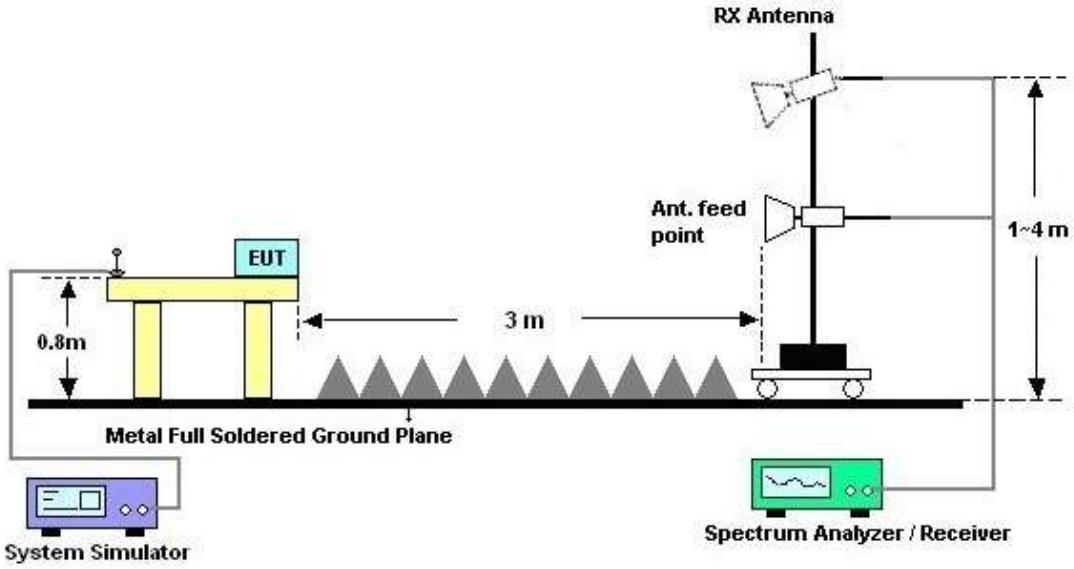
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 10 meters (30M~1G) and 3 meters (1G~ 13G) from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the 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 (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 from 30MHz to 1GHz

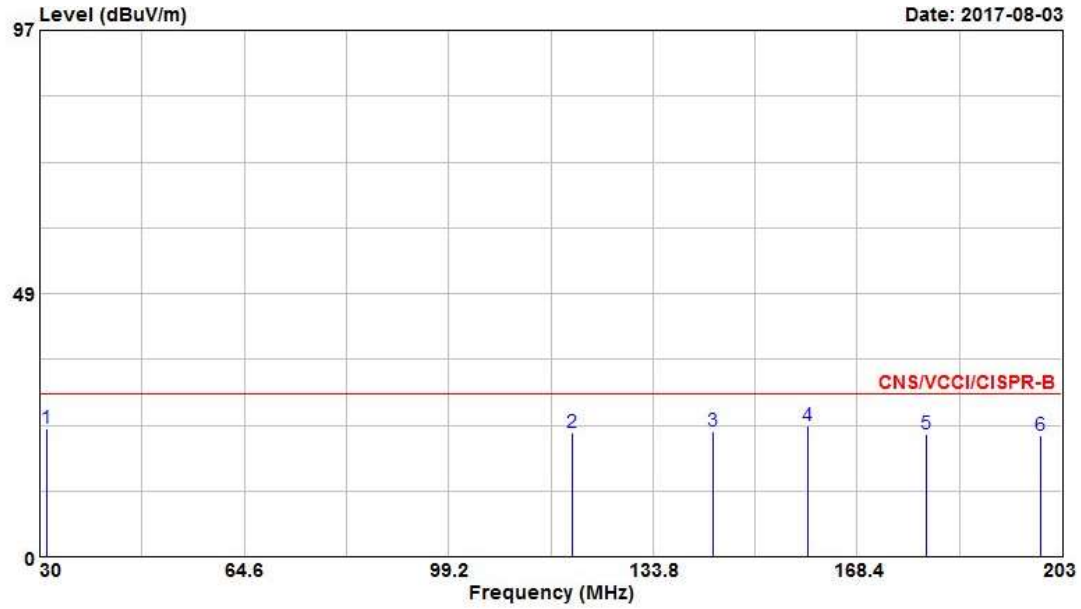


For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

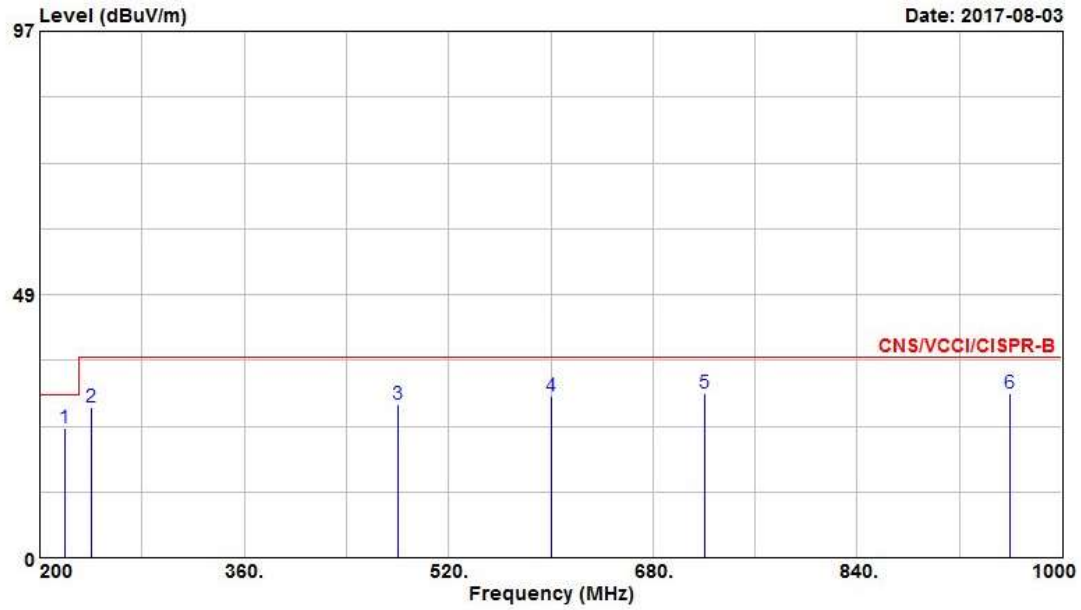
Test mode	Mode 5	Temperature :	22~26°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	52~55%
Test Distance :	10m	Polarization :	Horizontal



Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m HORIZONTAL
Project : 732839-01
Power : from system
Mode : Mode 5

	Freq	Level	Over Limit	Limit Line	Read 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	31.210	23.74	-6.26	30.00	27.15	22.63	0.96	27.00	Peak	---	---
2	120.200	22.94	-7.06	30.00	30.74	17.15	1.79	26.74	Peak	---	---
3	144.030	23.13	-6.87	30.00	31.93	15.86	1.97	26.63	Peak	---	---
4	160.000	24.25	-5.75	30.00	33.70	15.09	2.02	26.56	QP	400	119
5	179.990	22.63	-7.37	30.00	32.56	14.36	2.18	26.47	Peak	---	---
6	199.370	22.29	-7.71	30.00	32.11	14.30	2.26	26.38	Peak	---	---

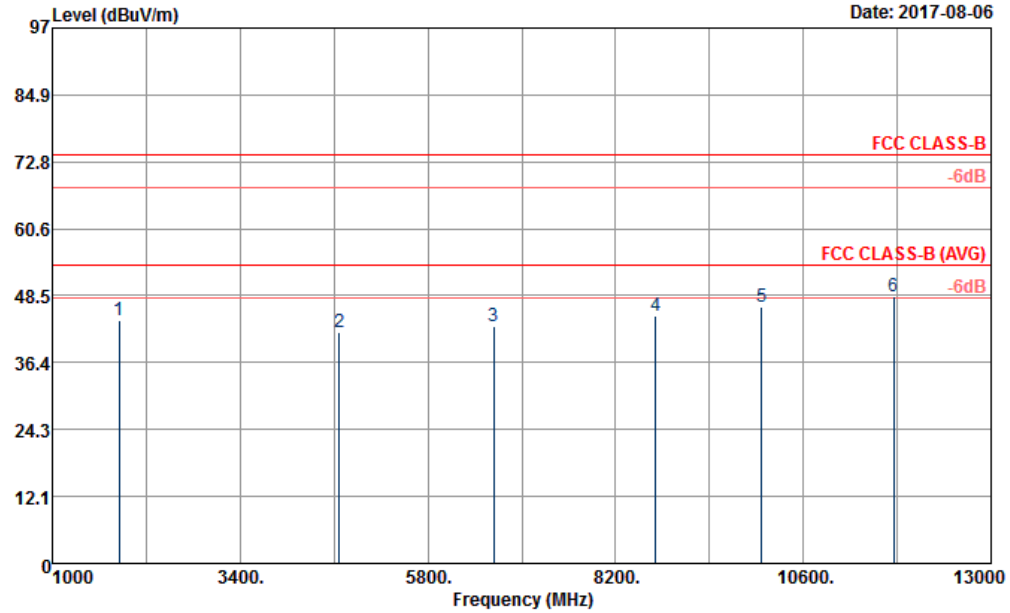
Test Mode	Mode 5	Temperature :	22~26°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	52~55%
Test Distance :	10m	Polarization :	Horizontal



Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m HORIZONTAL
Project : 732839-01
Power : from system
Mode : Mode 5

	Freq	Level	Over Limit	Limit Line	Read 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	219.500	23.76	-6.24	30.00	33.50	14.28	2.35	26.37	QP	400	219
2	240.010	27.74	-9.26	37.00	35.01	16.47	2.61	26.35	Peak	---	---
3	480.010	28.31	-8.69	37.00	29.68	22.41	3.71	27.49	Peak	---	---
4	600.800	29.67	-7.33	37.00	29.28	23.71	4.45	27.77	Peak	---	---
5	720.020	30.22	-6.78	37.00	28.40	24.28	5.22	27.68	Peak	---	---
6	960.030	30.35	-6.65	37.00	25.03	26.03	6.50	27.21	Peak	---	---

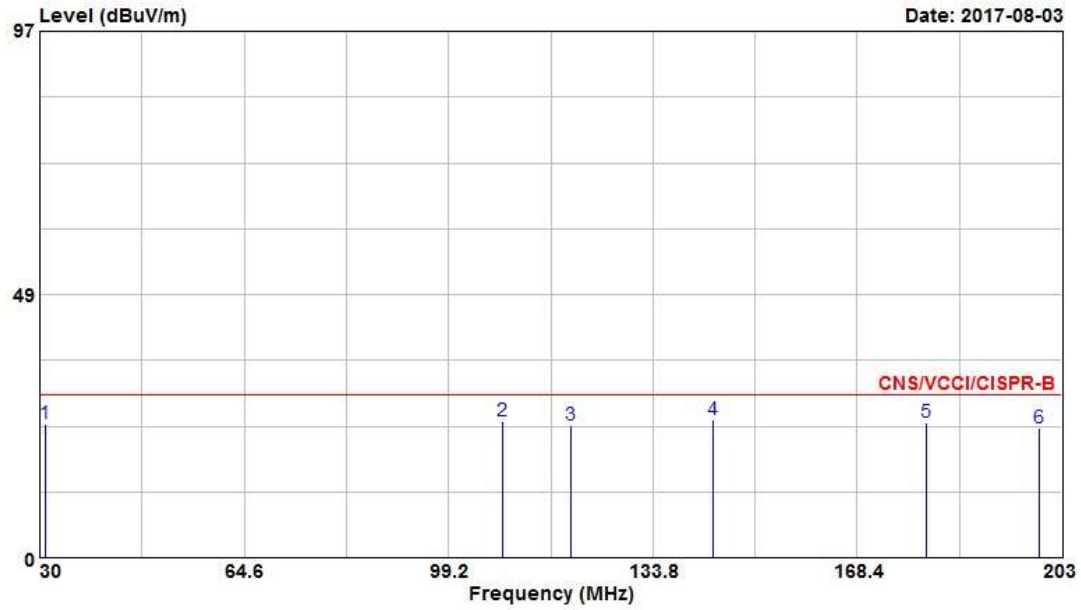
Test Mode	Mode 5	Temperature :	26~29˚C
Test Engineer :	Eric Jeng	Relative Humidity :	52~55%
Test Distance :	3m	Polarization :	Horizontal



Site : 03CH06-HY
Condition : FCC CLASS-B 3m 9120D_1156_160817 HORIZONTAL
Project : 732839-01
Power : From System
Memo : Mode 5

	Freq	Level	Over Limit	Limit Line	Read 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	1858.00	44.04	-29.96	74.00	72.09	26.28	6.07	60.40	---	---	Peak
2	4665.00	41.76	-32.24	74.00	60.86	31.21	10.44	60.75	---	---	Peak
3	6640.00	43.00	-31.00	74.00	54.90	35.82	12.26	59.98	---	---	Peak
4	8714.00	44.73	-29.27	74.00	51.55	38.33	14.35	59.50	---	---	Peak
5	10068.00	46.57	-27.43	74.00	52.31	41.26	13.52	60.52	---	---	Peak
6	11752.00	48.23	-25.77	74.00	48.66	41.34	16.42	58.19	100	0	Peak

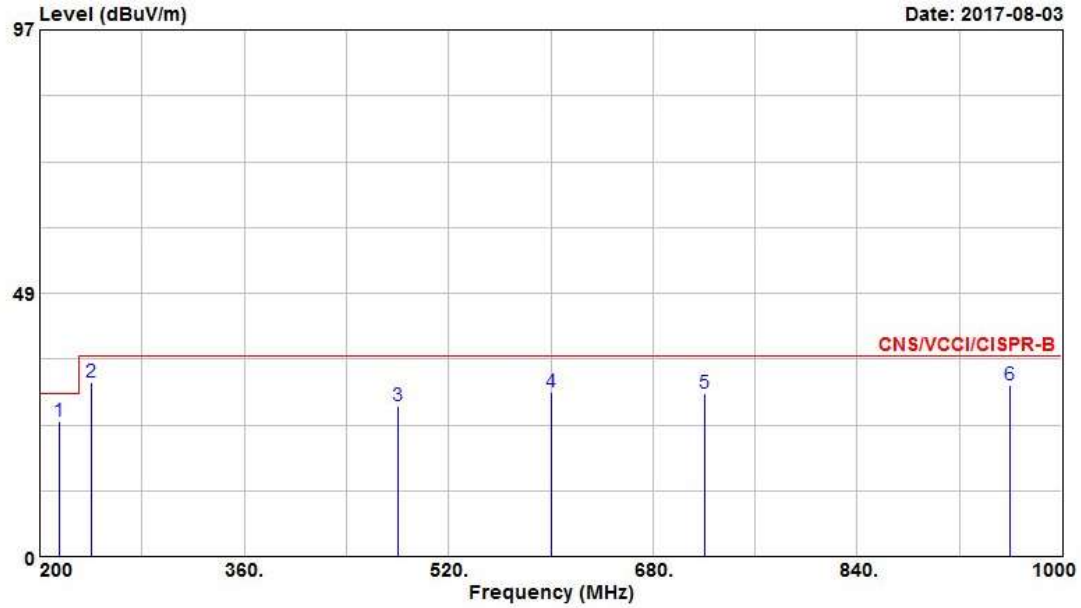
Test Mode	Mode 5	Temperature :	22~26°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	52~55%
Test Distance :	10m	Polarization :	Vertical



Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m VERTICAL
Project : 732839-01
Power : from system
Mode : Mode 5

	Freq	Level	Over Limit	Limit Line	Read 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	30.870	24.73	-5.27	30.00	28.14	22.63	0.96	27.00	Peak	---	---
2	108.370	25.13	-4.87	30.00	33.55	16.76	1.62	26.80	Peak	---	---
3	120.010	24.30	-5.70	30.00	32.10	17.15	1.79	26.74	Peak	---	---
4	144.020	25.45	-4.55	30.00	34.25	15.86	1.97	26.63	Peak	---	---
5	179.990	24.87	-5.13	30.00	34.80	14.36	2.18	26.47	Peak	---	---
6	199.190	23.88	-6.12	30.00	33.72	14.28	2.26	26.38	Peak	---	---

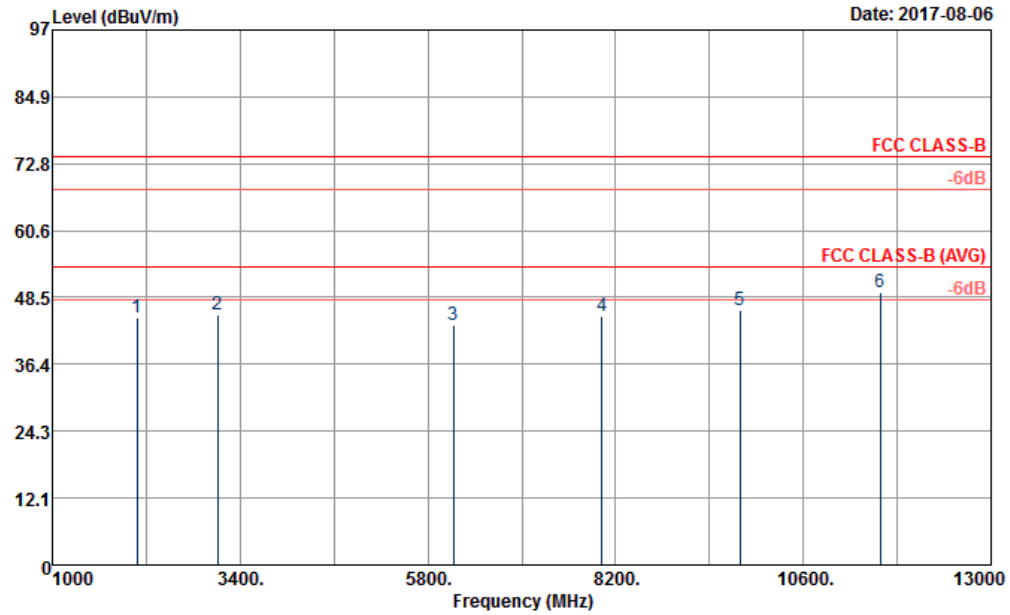
Test Mode	Mode 5	Temperature :	22~26°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	52~55%
Test Distance :	10m	Polarization :	Vertical



Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m VERTICAL
Project : 732839-01
Power : from system
Mode : Mode 5

	Freq	Level	Over Limit	Limit Line	Read 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	215.200	24.84	-5.16	30.00	34.71	14.18	2.32	26.37	Peak	---	---
2	240.010	32.13	-4.87	37.00	39.40	16.47	2.61	26.35	QP	100	60
3	480.020	27.64	-9.36	37.00	29.01	22.41	3.71	27.49	Peak	---	---
4	600.000	30.30	-6.70	37.00	29.91	23.71	4.45	27.77	Peak	---	---
5	720.020	30.16	-6.84	37.00	28.34	24.28	5.22	27.68	Peak	---	---
6	960.010	31.69	-5.31	37.00	26.37	26.03	6.50	27.21	Peak	---	---

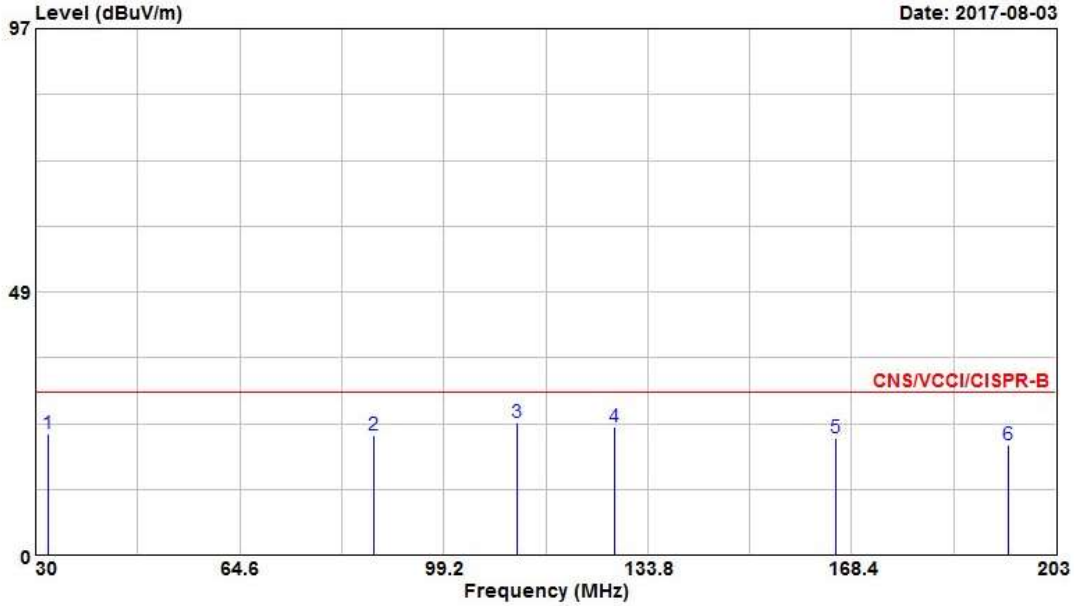
Test Mode	Mode 5	Temperature :	26~29˚C
Test Engineer :	Eric Jeng	Relative Humidity :	52~55%
Test Distance :	3m	Polarization :	Vertical



Site : 03CH06-HY
Condition : FCC CLASS-B 3m 9120D_1156_160817 VERTICAL
Project : 732839-01
Power : From System
Memo : Mode 5

	Freq	Level	Over Limit	Limit Line	Read 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	2080.00	44.93	-29.07	74.00	72.11	26.77	6.45	60.40	---	---	Peak
2	3114.00	45.46	-28.54	74.00	69.56	28.89	7.89	60.88	---	---	Peak
3	6128.00	43.48	-30.52	74.00	56.46	34.87	11.46	59.31	---	---	Peak
4	8024.00	45.03	-28.97	74.00	53.60	37.92	12.71	59.20	---	---	Peak
5	9786.00	46.19	-27.81	74.00	51.92	40.51	14.36	60.60	---	---	Peak
6	11584.00	49.36	-24.64	74.00	49.25	42.09	16.09	58.07	100	0	Peak

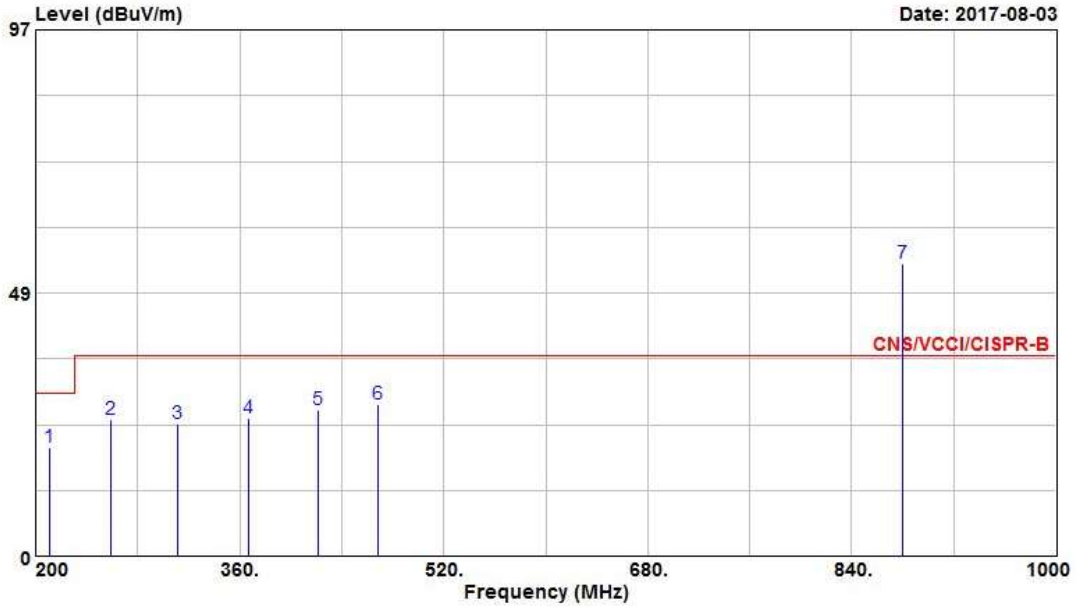
Test mode	Mode 7	Temperature :	22~26°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	52~55%
Test Distance :	10m	Polarization :	Horizontal



Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m HORIZONTAL
Project : 732839-01
Power : 120 Vac/ 60 Hz
Mode : Mode 7

	Freq	Level	Over Limit	Limit Line	Read 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	32.080	22.27	-7.73	30.00	26.23	22.05	0.99	27.00	Peak	---	---
2	87.440	22.01	-7.99	30.00	34.25	13.20	1.43	26.87	Peak	---	---
3	111.660	24.46	-5.54	30.00	32.57	17.01	1.66	26.78	Peak	400	81
4	128.260	23.51	-6.49	30.00	31.33	17.00	1.89	26.71	Peak	---	---
5	165.630	21.48	-8.52	30.00	31.04	14.90	2.07	26.53	Peak	---	---
6	195.040	20.22	-9.78	30.00	30.17	14.21	2.24	26.40	Peak	---	---

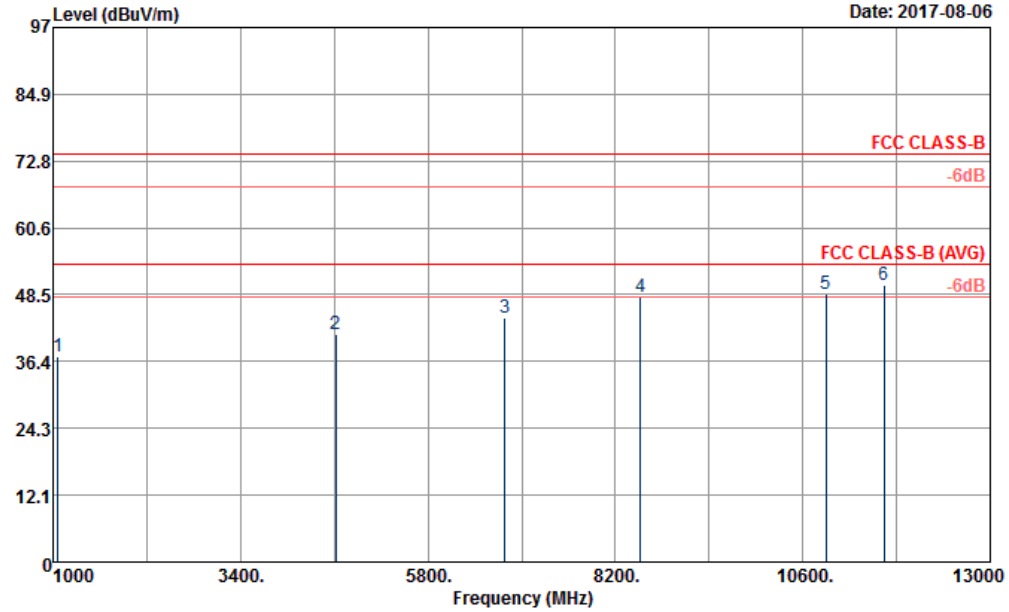
Test Mode	Mode 7	Temperature :	22~26°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	52~55%
Test Distance :	10m	Polarization :	Horizontal
Remark :	#7 is system simulator signal which can be ignored.		



Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m HORIZONTAL
Project : 732839-01
Power : 120 Vac/ 60 Hz
Mode : Mode 7

	Freq	Level	Over Limit	Limit Line	Read 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	211.200	20.15	-9.85	30.00	30.13	14.09	2.30	26.37	Peak	---	---
2	259.200	25.05	-11.95	37.00	30.20	18.41	2.78	26.34	Peak	---	---
3	311.200	24.44	-12.56	37.00	29.46	18.51	2.86	26.39	Peak	---	---
4	367.200	25.32	-11.68	37.00	29.07	19.78	3.29	26.82	Peak	---	---
5	421.600	27.02	-9.98	37.00	29.25	21.44	3.51	27.18	Peak	---	---
6	468.800	27.98	-9.02	37.00	29.47	22.25	3.69	27.43	Peak	---	---
7 @	880.200	53.83			49.63	25.40	6.19	27.39	Peak	---	---

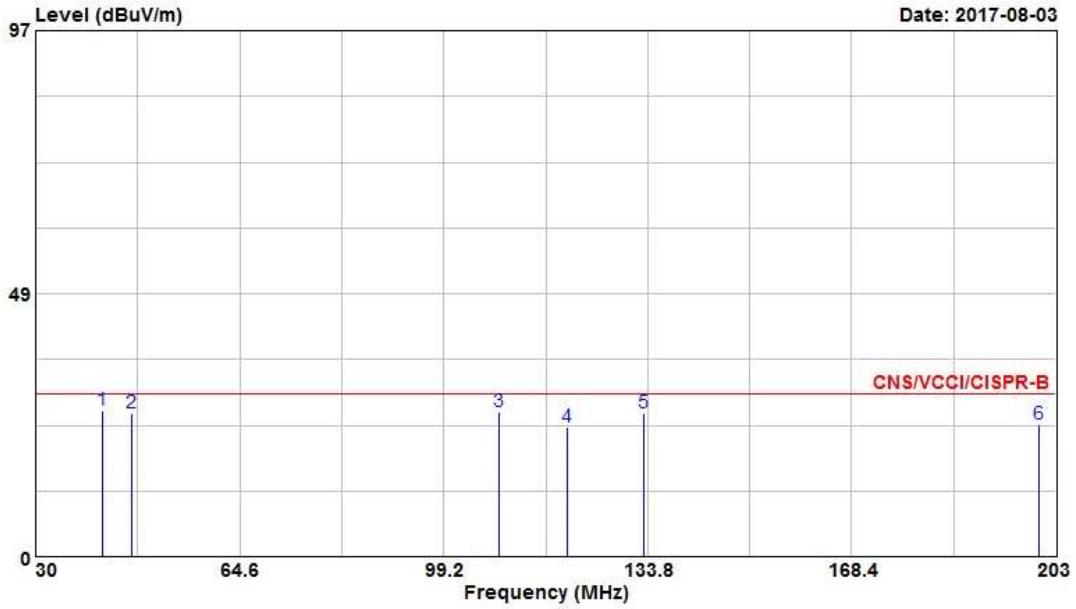
Test Mode	Mode 7	Temperature :	26~29°C
Test Engineer :	Eric Jeng	Relative Humidity :	52~55%
Test Distance :	3m	Polarization :	Horizontal



Site : 03CH06-HY
Condition : FCC CLASS-B 3m 9120D_1156_160817 HORIZONTAL
Project : 732839-01
Power : 120Vac/60Hz
Mode : Mode 7

	Freq	Level	Over Limit	Limit Line	Read 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	1062.00	37.18	-36.82	74.00	69.23	25.04	4.34	61.43	---	---	Peak
2	4622.00	41.22	-32.78	74.00	59.88	31.12	10.27	60.05	---	---	Peak
3	6786.00	44.45	-29.55	74.00	55.84	36.04	11.86	59.29	---	---	Peak
4	8524.00	47.97	-26.03	74.00	53.39	38.47	13.93	57.82	---	---	Peak
5	10896.00	48.51	-25.49	74.00	49.81	41.00	14.94	57.24	---	---	Peak
6	11640.00	50.14	-23.86	74.00	48.86	41.84	16.22	56.78	100	0	Peak

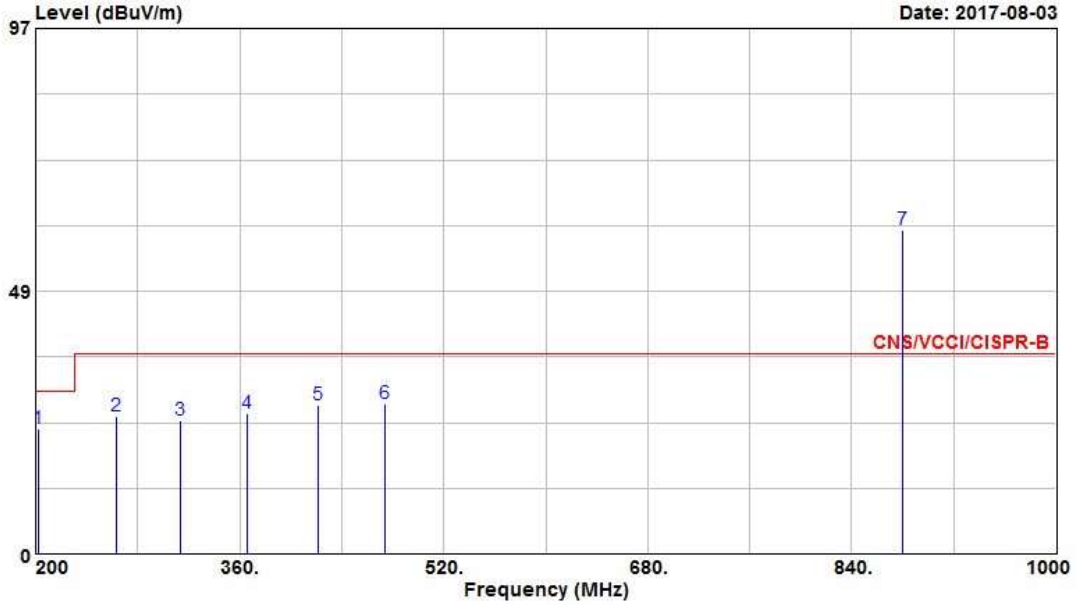
Test Mode	Mode 7	Temperature :	22~26°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	52~55%
Test Distance :	10m	Polarization :	Vertical



Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m VERTICAL
Project : 732839-01
Power : 120 Vac/ 60 Hz
Mode : Mode 7

	Freq	Level	Over Limit	Limit Line	Read 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	41.300	26.96	-3.04	30.00	36.10	16.65	1.20	26.99	QP	100	120
2	46.230	26.45	-3.55	30.00	37.73	14.43	1.28	26.99	QP	100	123
3	108.540	26.61	-3.39	30.00	35.03	16.76	1.62	26.80	Peak	---	---
4	120.130	23.80	-6.20	30.00	31.60	17.15	1.79	26.74	QP	100	253
5	133.110	26.57	-3.43	30.00	34.64	16.67	1.94	26.68	Peak	---	---
6	200.060	24.36	-5.64	30.00	34.18	14.30	2.26	26.38	Peak	---	---

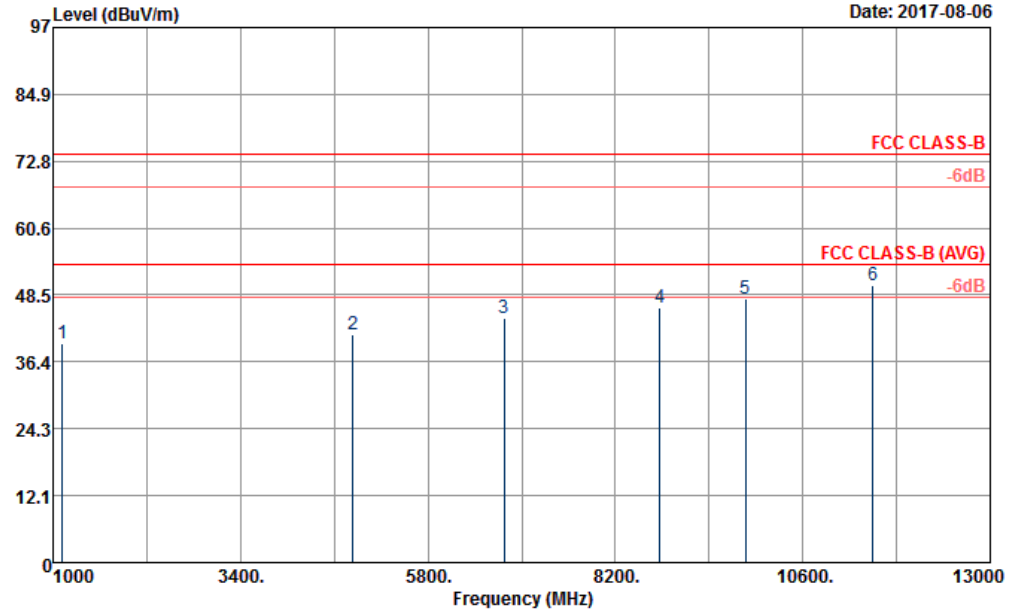
Test Mode	Mode 7	Temperature :	22~26°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	52~55%
Test Distance :	10m	Polarization :	Vertical
Remark :	#7 is system simulator signal which can be ignored.		



Site : OS03-LK
Condition : CNS/VCCI/CISPR-B 10m VERTICAL
Project : 732839-01
Power : 120 Vac/ 60 Hz
Mode : Mode 7

	Freq	Level	Over Limit	Limit Line	Read 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	202.400	23.10	-6.90	30.00	32.97	14.24	2.27	26.38	Peak	---	---
2	263.200	25.49	-11.51	37.00	30.74	18.30	2.79	26.34	Peak	---	---
3	313.600	24.55	-12.45	37.00	29.56	18.53	2.88	26.42	Peak	---	---
4	365.600	25.82	-11.18	37.00	29.58	19.76	3.28	26.80	Peak	---	---
5	421.600	27.43	-9.57	37.00	29.66	21.44	3.51	27.18	Peak	---	---
6	473.600	27.83	-9.17	37.00	29.25	22.33	3.70	27.45	Peak	---	---
7 @	880.200	59.68			55.48	25.40	6.19	27.39	Peak	---	---

Test Mode	Mode 7	Temperature :	26~29°C
Test Engineer :	Eric Jeng	Relative Humidity :	52~55%
Test Distance :	3m	Polarization :	Vertical



Site : 03CH06-HY
Condition : FCC CLASS-B 3m 9120D_1156_160817 VERTICAL
Project : 732839-01
Power : 120Vac/60Hz
Mode : Mode 7

	Freq	Level	Over Limit	Limit Line	Read 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	1120.00	39.66	-34.34	74.00	71.47	25.07	4.47	61.35	---	---	Peak
2	4840.00	41.36	-32.64	74.00	58.30	31.52	11.01	59.47	---	---	Peak
3	6780.00	44.25	-29.75	74.00	55.64	36.04	11.86	59.29	---	---	Peak
4	8770.00	46.32	-27.68	74.00	51.68	38.29	14.48	58.13	---	---	Peak
5	9864.00	47.93	-26.07	74.00	51.74	40.78	14.28	58.87	---	---	Peak
6	11494.00	50.26	-23.74	74.00	48.36	42.45	15.95	56.50	100	0	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	Aug. 04, 2017	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Aug. 04, 2017	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Nov. 29, 2016	Aug. 04, 2017	Nov. 28, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 06, 2016	Aug. 04, 2017	Dec. 05, 2017	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100472	20Hz~26.5GHz	Dec. 29, 2016	Aug. 06, 2017	Dec. 28, 2017	Radiation (03CH06-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1325	1GHz ~ 18GHz	Sep. 30, 2016	Aug. 06, 2017	Sep. 29, 2017	Radiation (03CH06-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1850117	1GHz ~ 18GHz	May 22, 2017	Aug. 06, 2017	May 21, 2018	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1m~4m	N/A	Aug. 06, 2017	N/A	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0-360 degree	N/A	Aug. 06, 2017	N/A	Radiation (03CH06-HY)
Amplifier	HP	8447D	2944A09068	0.1MHz ~ 1.3GHz	Dec. 12, 2016	Aug. 02, 2017~ Aug. 03, 2017	Dec. 11, 2017	Radiation (OS03-LK)
Test Receiver	R&S	ESR3	102052	9 kHz ~ 3.6 GHz	Apr. 05, 2017	Aug. 02, 2017~ Aug. 03, 2017	Apr. 04, 2018	Radiation (OS03-LK)
Bilog Antenna with 5dB Attenuator	TESEQ & WOKEN	CBL6112D & 00800N1D01N-05	25236 & 007	30 MHz ~ 1 GHz	Jul. 08, 2017	Aug. 02, 2017~ Aug. 03, 2017	Jul. 07, 2018	Radiation (OS03-LK)
Turn Table	EMCO	2080	9711-2021	0 ~ 360 degree	NCR	Aug. 02, 2017~ Aug. 03, 2017	NCR	Radiation (OS03-LK)
Antenna Mast	EMCO	2075	9711-2115	1 m ~ 4 m	NCR	Aug. 02, 2017~ Aug. 03, 2017	NCR	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**

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.10**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

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