

FCC TEST REPORT

CERTIFICATION

according to

**47 CFR FCC Rules and Regulations Part 15 Subpart B,
Class B Digital Device**

Equipment : 8" Tablet PC

Model No. : QTAQZ3

FCC ID : HFS-QTAQZ3

Filing Type : Certification

Applicant : **Quanta Computer Inc.**
No. 188, Wen Hwa 2nd RD., Kuei Shan Hsiang,
Tao Yuan Shien, Taiwan

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SPORTON International Inc.

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

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CERTIFICATION

according to

**47 CFR FCC Rules and Regulations Part 15 Subpart B,
Class B Digital Device**

Equipment : 8"Tablet PC
Model No. : QTAQZ3
FCC ID : H15-S-QTAQZ3
Applicant : **Quanta Computer Inc.**
No 188, Wen Hwa 2nd RD., Kuei Shan Hsiang,
Tao Yuan Shien, Taiwan

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 2009** and the energy emitted by this equipment was **passed CISPR PUB. 22 and FCC Part 15 Subpart B** in both radiated and conducted emission **Class B** limits.

The product sample received on **Jun. 17, 2014** and completely tested on **Jul. 01, 2014** at **SPORTON International Inc. LAB.**



Kero Kuo
Assistant Manager

SPORTON International Inc.

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

1.4 Feature of Equipment under Test

	QZ3
CPU	Marvell / PXA1920 quad core, 1.5GHz
System Memory	DDR3L 1GB
LCD	Innolux / N080ICP-G01 (8"W TFT, IPS, 1280 x 800, MIPI interface)
Touch Screen	Novatek / NT11205
Storage	Sandisk / SDIN8DE2-16G
G Sensors	BOSCH / BMC150
Ambient Light Sensor	Capella / CM32180A3OP-AD
Gyro	BOSCH / BMG160
Digital Compass	BOSCH / BMC150
I/O	3.5mm Headphone-out & Mic-in Combo Jack x 1
	Micro USB x 1 (Support PC connection and DC-in charge)
	Micro SD card (up to 64GB)
	Micro SIM card for LTE
Switch	Power switch for Power on / off / suspend / Resume x 1 Volume Key for Volume +/- x 2
WLAN/Bluetooth	Marvell / 88W8777
GPS	Marvell / 88L2000
Modem Connection	Marvell / 88RF858
Antenna	WiFi_BT_GPS x1 , LTE main x 1 , LTE Aux x 1
Front Camera	Lite-on / 3SF166T2
Rear Camera	Lite-on / 3SA501T2
Speakers	Stereo speakers 1W x 2
Microphone	Internal digital microhpne x 1
AC Adapter1	TPT / SSS050200BU Input : 100-240V , 50/60Hz , 0.3A Output : 5.0 Vdc / 2.0A
AC Adapter2	PI ELECTRONICS (H.K.) Ltd. / AD83531 Input : 100-240V, 50/60Hz , 0.3A Output : 5.0 Vdc / 2.0A
AC Adapter3	PI ELECTRONICS (H.K.) Ltd. / AD897F20 Input : 100-240V, 50/60Hz , 0.3A Output : 5.0 Vdc / 2.0A
Operationg System	Android, K.K. 4.4.2
Battery1	McNair / MLP32100107 Power Rating: 3.7V / 4300mAH / 15.91 WH
Battery2	Smp / SQU-1408 Power Rating: 3.7V / 4300mAH / 15.91 WH
Battery3	Smp / SQU-1408 Power Rating: 3.7V / 4900mAH / 18.13 WH
Battery4	McNair / MLP32100107 Power Rating: 3.7V / 4900mAH / 18.13 WH
Target Dimension	123.6 x 205 x 8.8mm

Note :The Battery 3 and 4 Capacity minimum is 4900 mAH and design is 5100mAh.

Please refer to user's manual.

2. Test Configuration of Equipment under Test

2.1 Test Manner

- a. The EUT has been associated with peripherals pursuant to ANSI C63.4-2009 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The complete test system included remote workstation, Earphone, Micro SD Card, SIM Card, PC, LCD Monitor, Modem, Printer, Mouse, Keyboard and EUT for EMI test. The remote workstation included AP and Base Station. **(For conducted emission test)**
- c. The complete test system included remote workstation, Earphone, Micro SD Card, SIM Card, and EUT for EMI. The remote workstation included AP and Base Station. **(For radiated emission below and above 1GHz test)**
- d. The following test modes were pretested for conducted test: **(During the test, the WLAN and Bluetooth function are at working condition)**

Mode 1. Sku1(Vertical) + Adapter:AD83531 + play SD music + H pattern + Wi-Fi +BT + Earphone +USB Cable 1 + LTE Band 4 Link + Battery 1.

Mode 2. Sku1 (Vertical) + Adapter:AD83531 + play SD music + H pattern + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 13 IDLE + Battery 2.

Mode 3. Sku1(Vertical) + Adapter:AD83531 + play SD music + CCD(Rear) + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 4. Sku1(Vertical) + Adapter:AD83531 + play SD music + CCD(Front) + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 5. Sku1(Vertical) + Adapter:AD83531 + play SD music + GPS + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 6. Sku1(Vertical) + Adapter:AD83531 + play SD music + GPS + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 7. Sku1(Vertical) + Adapter:SSS050200BU + play SD music + H pattern + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 8. Sku1(Vertical) + USB LINK PC + play SD music + H pattern + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 9. Sku1(Vertical) + Adapter:AD897F20 + play SD music + H pattern + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 3

Mode 10. Sku1(Vertical) + USB LINK PC + play SD music + H pattern + Wi-Fi + BT+ Earphone + USB Cable 1 + LTE BAND 4 LINK+Battery 4.

⇒ Cause **“Mode 8”** generated the worst test result; it was reported as final data.

e. The following test modes were pretested for radiated test: (During the test, the WLAN and Bluetooth function are at working condition)

Mode 1. Sku1(Vertical) + Adapter:AD83531 + play SD music + H pattern + Wi-Fi + BT + Earphon + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 2. Sku1(Vertical) + Adapter:AD83531 + play SD music + H pattern + Wi-Fi i + BT + Earphone + USB Cable 1 + LTE Band 13 IDLE + Battery 2.

Mode 3. Sku1(Vertical) + Adapter:AD83531 + play SD music + CCD(Rear) + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 4. Sku1(Vertical) + Adapter:AD83531 + play SD music + CCD(Front) + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 5. Sku1(Vertical) + Adapter:AD83531 + play SD music + GPS + Wi-Fi + BT+ Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 6. Sku1(Vertical) + Adapter:AD83531 + Play Movie+ Wi-Fi + BT+ Earphone+ USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 7. Sku1(Horizontal) + Wi-Fi +BT + H pattern + Earphone + LTE Band 4 LINK + Battery 1.

Mode 8. Sku1(Vertical) + Adapter:SSS050200BU + play SD music + H pattern + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 9. Sku1(Vertical) + USB LINK PC + play SD music + H pattern + Wi-Fi + BT + Earphone + USB Cable 1 + LTE Band 4 LINK + Battery 1.

Mode 10. Sku1(Vertical) + Adapter:AD897F20 + play SD music + H pattern + Wi-Fi + BT + Earphone +USB Cable 1 + LTE BAND 4 LINK+Battery 3.

Mode 11. Sku1(Vertical) + Adapter:AD83531 + play SD music + H pattern + Wi-Fi + BT+ Earphone +USB Cable 1 + LTE BAND 4 LINK+Battery 4.

⇒ Cause "**Mode 1**" generated the worst test result; it was reported as final data.

f. The following test mode was referring to radiated pretest worst case "**Mode 1**" for radiated (1GHz / 5th of harmonic CPU fundamental) final test: (During the test, the WLAN and Bluetooth function are at working condition)

Mode 1. Sku1(Vertical) + Adapter:AD83531 + play SD music +H pattern + Wi-Fi +BT+Earphon + USB Cable 1 + LTE Band 4 LINK + Battery 1.

g. Frequency range investigated: Conducted 150 kHz to 30 MHz, Radiated 30 MHz to 13,000 MHz

2.2 Description of Test System

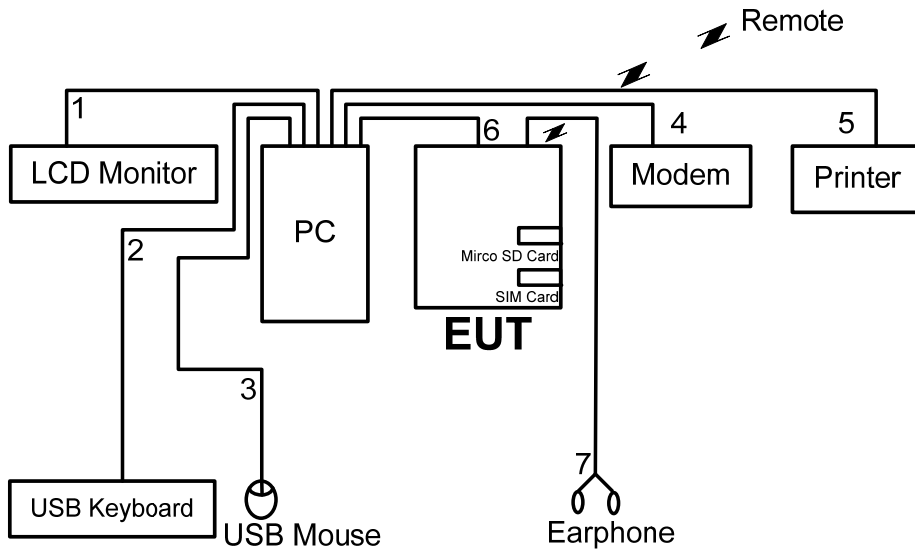
For conduction emission

No.	Description	Manufacturer	Model	FCC ID	Signal Cable Description
For Local					
1	PC	HP	DC7700	DoC	USB Cable, D-Shielded,0.9m
2	LCD Monitor	DELL	U2410f	DoC	D-SUB Cable, D-Shielded,1.8m
3	keyboard(USB)	Microsoft	1366	DoC	USB Cable , AL-F-Shielded , 2m
4	Mouse(USB)	Microsoft	1113	DoC	USB Cable , AL-F-Shielded , 1.8m
5	Modem	ACEEX	DM141	IFAXDM1414	RS232 Cable , D-Shielded 1.15m
6	Printer	EPSON	LQ300+	--	LPT Cable , D-Shielded , 1.8m
7	Micro SD Card (Inserted into EUT)	Apacer	4GB	DoC	--
8	SIM Card (Inserted into EUT)	R&S	--	--	--
9	Earphone	APPLE	MB770FE/A	--	Audio Cable , Non-Shielded , 1.5m
For Remote					
-	AP	ASUS	RT-AC66U	--	--
-	Bluetooth Headset	SONY	Z354	PY7DDA-2006	--
-	Base Station	R&S	CMW500(LTE)	--	--

For radiation emission below and above 1GHz

No.	Description	Manufacturer	Model	FCC ID	Signal Cable Description
For Local					
1	Micro SD Card (Inserted into EUT)	Apacer	4GB	DoC	--
2	SIM Card (Inserted into EUT)	R&S	--	--	--
3	Earphone	APPLE	MB770FE/A	--	Audio Cable , Non-Shielded , 1.5m
For Remote					
-	AP	ASUS	RT-AC66U	--	--
-	Bluetooth Headset	SONY	Z354	PY7DDA-2006	--
-	Base Station	R&S	CMW500(LTE)	--	--

2.3 Connection Diagram of Test System for conduction emission



The support unit 8 and unit 9 insert into EUT

1. The D-Sub cable is connected from support unit 1 to the support unit 2.
2. The USB cable is connected from support unit 1 to the support unit 3.
3. The USB cable is connected from support unit 1 to the support unit 4.
4. The RS232 cable is connected from support unit 1 to the support unit 5.
5. The LPT cable is connected from support unit 1 to the support unit 6
6. The USB cable is connected from EUT to the support unit 1.
7. The Audio cable is connected from EUT to the support unit 9.

Note: Above support unit on behalf of the meaning, please refer to section 2.2.

3. Test Software

< EMI >

During testing, the following program under "Android 4.2.2" was executed:

At the same time, the following programs were executed:

- The EUT plays MP3 music from Micro SD card via Earphone.
- The EUT opens "Bluetooth" function to link with the remote workstation (Bluetooth Headset) to maintain the connection by BT.
- The EUT opens "Wi-Fi" to link with the remote workstation (AP) to maintain the connection by wireless.
- The EUT opens "LTE" to link with the remote workstation (Base Station) to maintain the connection by 4G.
- The EUT executed "SDC Test Utility.exe" to display H pattern.

4. General Information of Test

4.1 Test Facility

For Conducted Emission

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang,
Tao Yuan Hsien, Taiwan, R.O.C.
TEL: 886-3-327-3456
FAX: 886-3-327-0973

Test Site No. : CO01-HY

For Radiated Emission

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang,
Tao Yuan Hsien, Taiwan, R.O.C.
TEL: 886-3-327-3456
FAX: 886-3-327-0973

Test Site No. : 03CH04-HY, 10CH01-HY

4.2 Uncertainty of Test Site

Test Items	Test Site No.	Uncertainty	Remark
Conducted Emissions	CO01-HY	± 2.2dB	Confidence levels of 95%
Radiated Emissions below 1GHz	10CH01-HY	± 2.5dB	Confidence levels of 95%
Radiated Emissions above 1GHz	03CH04-HY	± 4.7dB	Confidence levels of 95%

4.3 Test Voltage

AC 120V / 60Hz

4.4 Measurement Procedure

ANSI C63.4-2009

4.5 Test in Compliance with

CISPR PUB. 22 and Part 15 Subpart B

4.6 Frequency Range Investigated

- Conducted emission test: from 150 kHz to 30 MHz
- Radiated emission test: from 30 MHz to 13 GHz

4.7 Test Distance

- a. The test distance of radiated emission test from antenna to EUT is 10 M (from 30MHz~1000MHz).
- b. The test distance of radiated emission test from antenna to EUT is 3 M (from 1GHz~ 9GHz).
- c. The test distance of radiated emission test from antenna to EUT is 1 M (from 9GHz~ 13GHz).

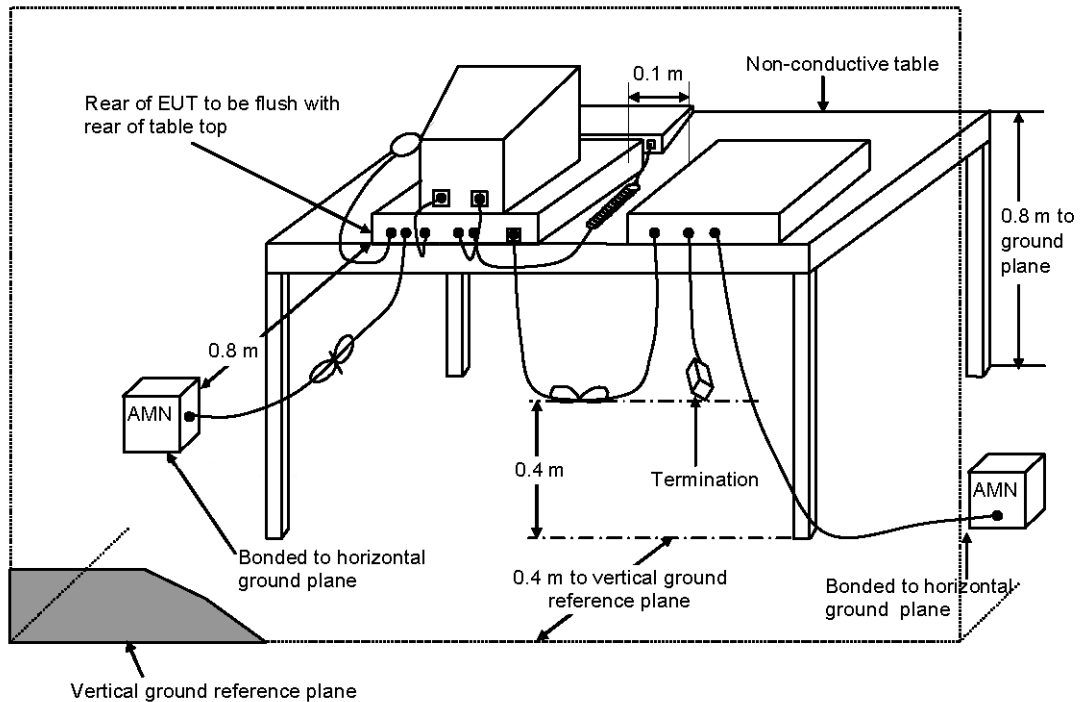
5. Test of Conducted Powerline

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz and return leads of the EUT according to the methods defined in ANSI C63.4, Clause 7. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 5.3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position producing maximum conducted emissions.

5.1 Test Procedures

- a. The EUT was warmed up for 15 minutes before testing started.
- b. The EUT was placed on a desk 0.8 meters height from the metal ground plane and 0.4 meter from the conducting wall of the shielding room and it was kept at least 0.8 meters from any other grounded conducting surface.
- c. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- d. All the support units are connect to the other LISN.
- e. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- f. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- g. Both sides of AC line were checked for maximum conducted interference.
- h. The frequency range from 150 kHz to 30 MHz was searched.
- i. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

5.2 Typical Test Setup Layout of Conducted Powerline

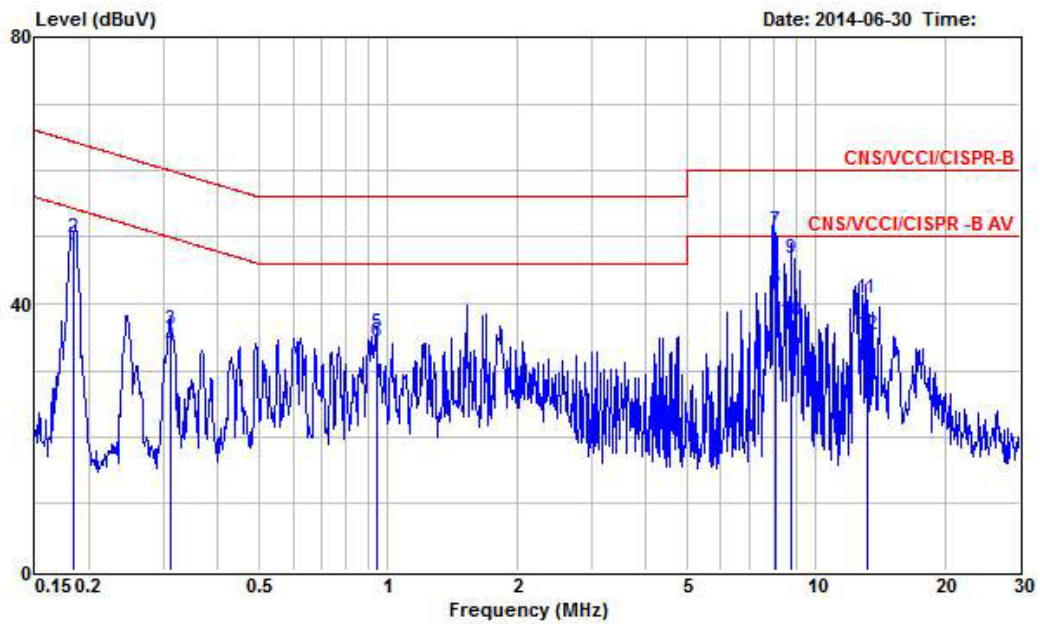


- a. AMN is 80 cm from the EUT and at least 80 cm from other units and other metal planes.
- b. EUT is connected to one artificial mains network (AMN).
- c. All other units of a system are powered from a second AMN. A multiple outlet strip can be used for multiple mains cords.
- d. Rear of EUT to be flushed with rear of table top.
- e. Peripherals shall be placed at a distance of 10 cm from each other and from the controller, except for the monitor which, if this is an acceptable installation practice, shall be placed directly on the top of the controller.
- f. If cables, which hang closer than 40 cm to the horizontal metal ground plane, cannot be shortened to appropriate length, the excess shall be folded back and forth forming a bundle 30 cm to 40 cm long.
- g. Mains cords and signal cables shall be positioned for their entire lengths, as far as possible, at 40 cm from the vertical reference plane.
- h. Cables of hand operated devices, such as keyboards, mice, etc. shall be placed as for normal usage.

5.3 Test Result of AC Powerline Conducted Emission

Test Mode	Mode 8	Test Site No.	CO01-HY
Test Frequency	0.15 MHz ~ 30 MHz	Test Engineer	David
Temperature	24 °C	Relative Humidity	55 %
Note: 1. Corrected Reading (dBµV) = LISN Factor + Cable Loss + Read Level = Level			
2. All emissions not reported here are more than 10 dB below the prescribed limit.			
■ The test was passed at the minimum margin that marked by the frame in the following data			

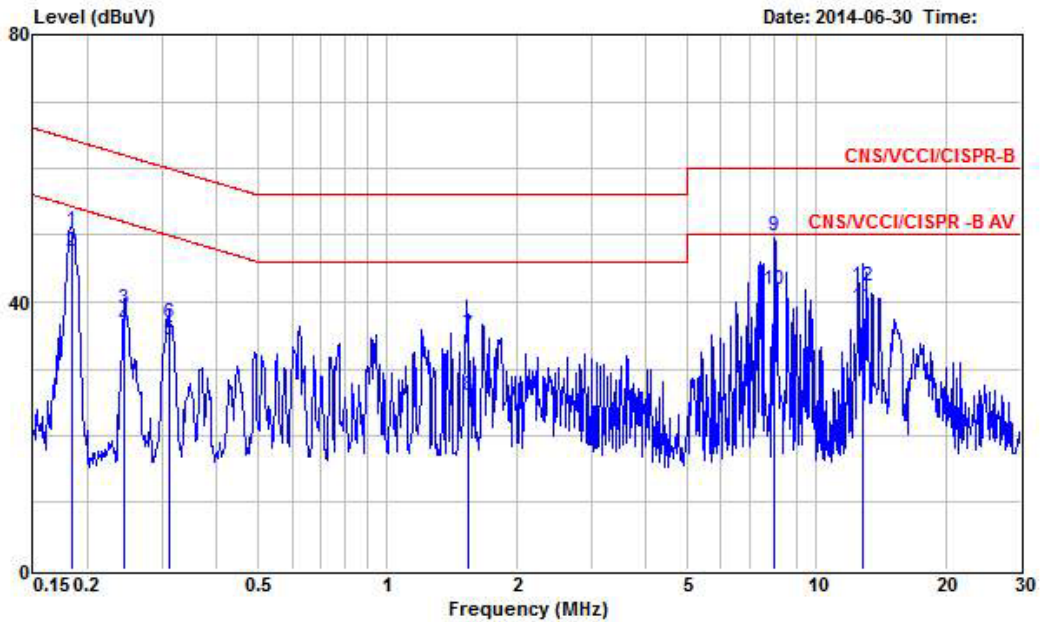
Line



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B LISN 2001/004-131105 LINE
 EUT :
 Model :
 Power : 120V/60Hz
 Memo : Mode 8
 Memo :
 Memo :
 Memo :

	Freq	Level	Over	Limit	Read	Probe	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.185	47.21	-7.05	54.26	46.98	0.10	0.13	Average
2	0.185	49.96	-14.30	64.26	49.73	0.10	0.13	QP
3	0.310	36.22	-23.75	59.97	36.02	0.10	0.10	QP
4	0.310	33.59	-16.38	49.97	33.39	0.10	0.10	Average
5	0.938	35.48	-20.52	56.00	35.26	0.12	0.10	QP
6	0.938	34.32	-11.68	46.00	34.10	0.12	0.10	Average
7	8.027	50.81	-9.19	60.00	50.45	0.26	0.10	QP
8	8.027	42.23	-7.77	50.00	41.87	0.26	0.10	Average
9	8.764	46.66	-13.34	60.00	46.29	0.27	0.10	QP
10	8.764	37.41	-12.59	50.00	37.04	0.27	0.10	Average
11	13.175	40.85	-19.15	60.00	40.30	0.38	0.17	QP
12	13.180	35.23	-14.77	50.00	34.68	0.38	0.17	Average

Neutral



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B LISN 2001/004-131105 NEUTRAL
 EUT :
 Model :
 Power : 120V/60Hz
 Memo : Mode 8
 Memo :
 Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.184	50.59	-13.71	64.30	50.37	0.09	0.13	QP
2	0.184	47.66	-6.64	54.30	47.44	0.09	0.13	Average
3	0.244	38.87	-23.09	61.96	38.68	0.09	0.10	QP
4	0.244	36.33	-15.63	51.96	36.14	0.09	0.10	Average
5	0.310	34.18	-15.79	49.97	33.99	0.09	0.10	Average
6	0.310	36.86	-23.11	59.97	36.67	0.09	0.10	QP
7	1.540	35.05	-20.95	56.00	34.81	0.14	0.10	QP
8	1.540	26.06	-19.94	46.00	25.82	0.14	0.10	Average
9	7.970	49.89	-10.11	60.00	49.53	0.26	0.10	QP
10	7.970	41.92	-8.08	50.00	41.56	0.26	0.10	Average
11	12.816	39.14	-10.86	50.00	38.61	0.37	0.16	Average
12	12.816	42.33	-17.67	60.00	41.80	0.37	0.16	QP

6. Test of Radiated Emission

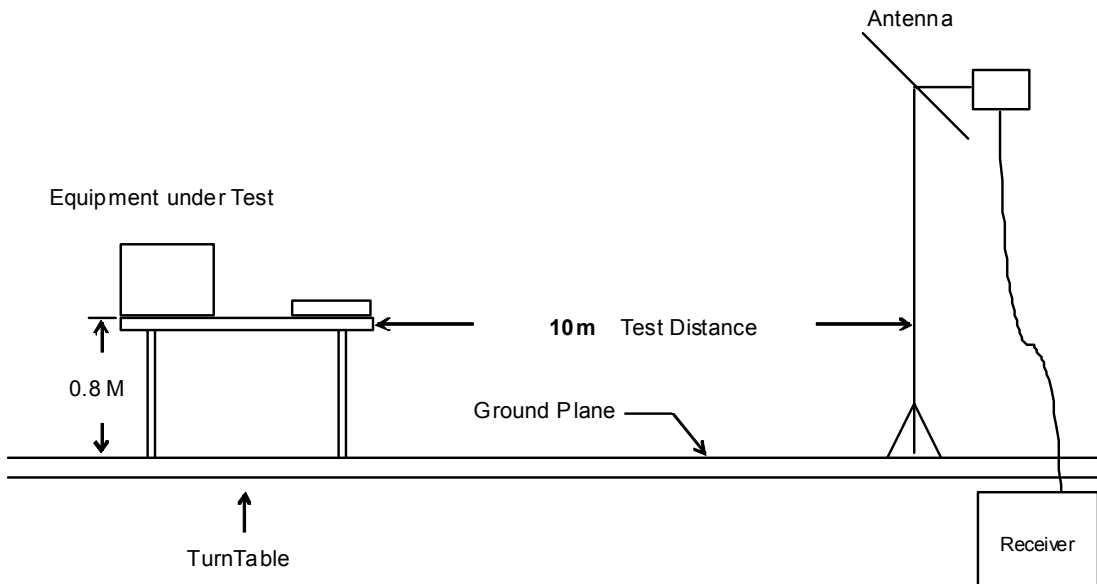
Radiated emissions below 1 GHz were measured with a bandwidth of 120 kHz for 30 MHz to 1,000 MHz and bandwidth of 1 MHz for above 1 GHz to 5th harmonic of highest frequency according to the methods defines in ANSI C63.4, Clause 8. The EUT was placed on a nonmetallic stand, 0.8 meter above the ground plane, as shown in section 6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

6.1 Test Procedures

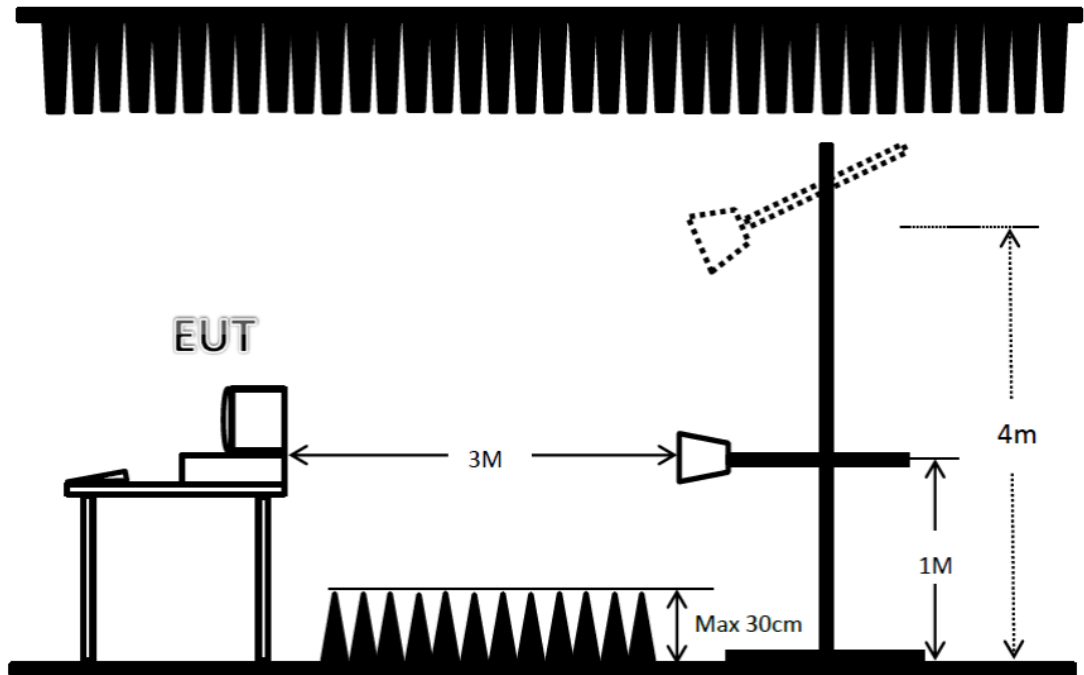
- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 1/3m(above 1GHz)/10m(below 1GHz) from the interference-receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. 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 turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- h. The FCC Part 15.109 (g) permit parties seeking to authorize a digital device to choose to demonstrate that the device complies with either the Part 15 standards or the international standards found in Publication 22 of the International Special Committee on Radio Interference (CISPR).
- i. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- j. The main board was tested in accordance with section 15.32 of the FCC rules. Testing for radiated emissions was first performed with the main board installed in a typical enclosure but with the enclosure's cover removed so that the internal circuitry is exposed at the top and on at least two sides. And then the EUT was tested with enclosure's cover unless it pass the required limits at first condition.

6.2 Typical Test Setup Layout of Radiated Emission

< Below 1GHz >



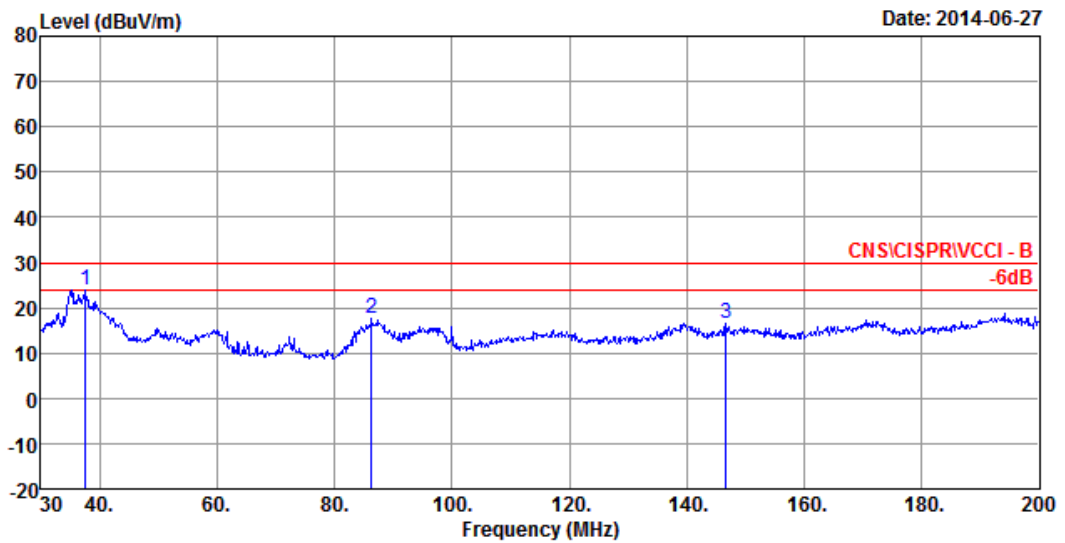
< Above 1GHz >



6.3 Test Result of Radiated Emission for Below 1GHz

Test mode	Mode 1	Test Site No.	10CH01-HY
Test frequency	30 MHz ~ 1000 MHz	Test Engineer	Verson
Temperature	20 °C	Relative Humidity	58 %
Note: 1. Emission level (dB μ V/m) = 20 log Emission level (μ V/m)			
2. Corrected Reading : Antenna Factor + Cable Loss + Read Level – Preamp Factor = Level			
■ The test was passed at the minimum margin that marked by the frame in the following data			

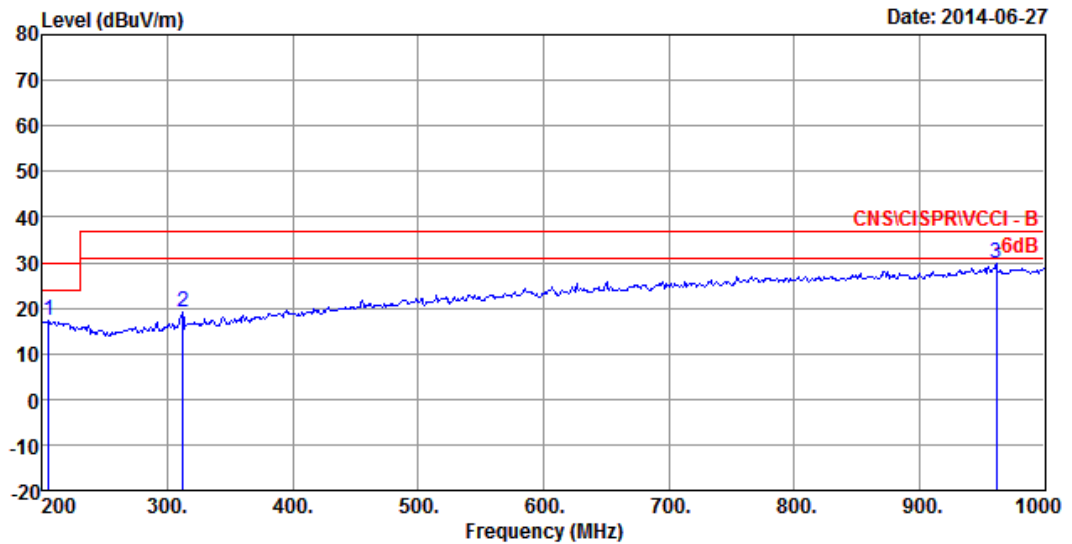
Vertical



Site : 10CH01-HY
 Condition: CNS\CISPR\VCCI - B 10m BICONICAL-1020802 VERTICAL
 EUT :
 Model :
 Power : 120V/60Hz
 Memo : MODE 1

	Freq	Level	Over Limit	Limit Line	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB/m	dB		cm	deg	
1	MX	37.65	23.95	-6.05	30.00	39.34	1.53	11.71	28.63	Peak	100	203
2		86.27	17.63	-12.37	30.00	34.75	2.36	9.00	28.48	Peak	---	---
3		146.62	16.54	-13.46	30.00	29.81	3.02	11.93	28.22	Peak	---	---

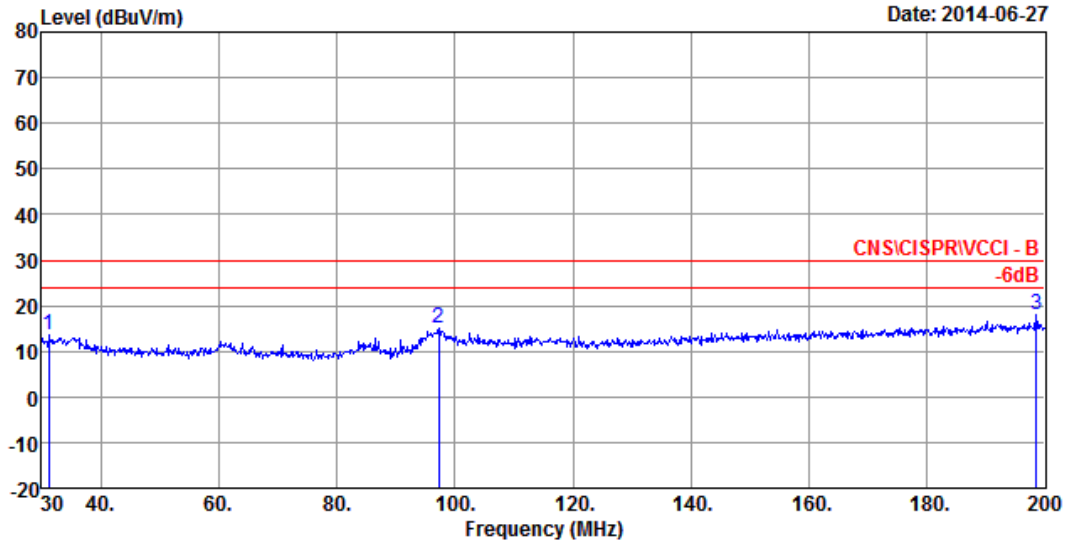
Vertical



Site : 10CH01-HY
 Condition: CNS\CISPR\VCCI - B 10m LOG-1020802 VERTICAL
 EUT :
 Model :
 Power : 120V/60Hz
 Memo : MODE 1

	Freq	Level	Over Limit	Limit Line	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB/m	dB		cm	deg
1	204.80	17.13	-12.87	30.00	26.48	3.63	14.53	27.51	Peak	---	---
2	312.00	19.04	-17.96	37.00	28.73	4.52	13.15	27.36	Peak	---	---
3 MX	961.60	29.67	-7.33	37.00	26.21	9.08	21.64	27.26	Peak	---	---

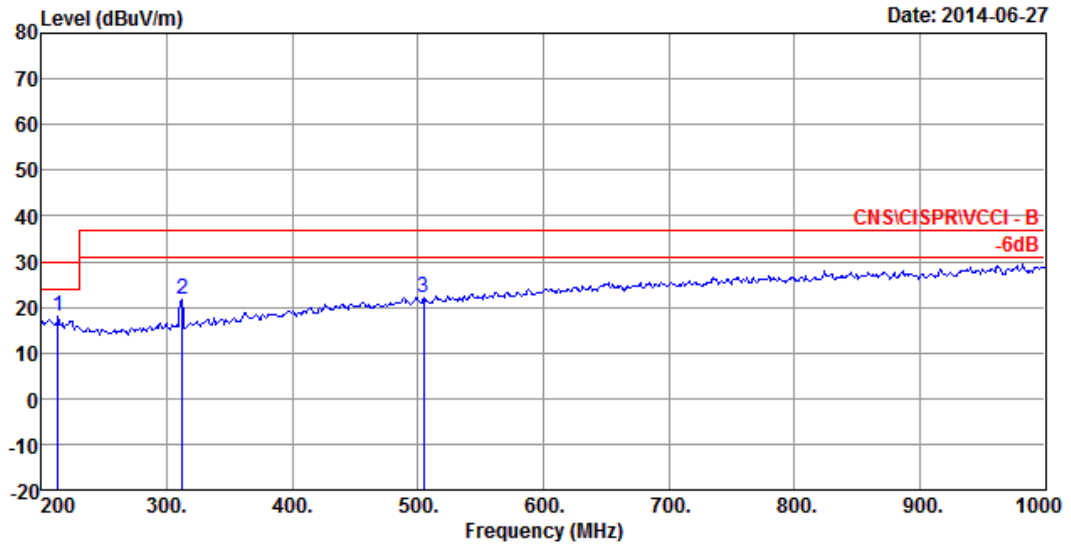
Horizontal



Site : 10CH01-HY
 Condition: CNS\CISPR\VCCI - B 10m BICONICAL-1020802 HORIZONTAL
 EUT :
 Model :
 Power : 120V/60Hz
 Memo : MODE 1

	Freq	Level	Over Limit	Limit Line	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB/m	dB		cm	deg
1	31.19	13.52	-16.48	30.00	27.66	1.39	13.11	28.64	Peak	---	---
2	97.32	15.24	-14.76	30.00	31.64	2.45	9.59	28.44	Peak	---	---
3 MX	198.47	18.00	-12.00	30.00	28.34	3.53	14.13	28.00	Peak	---	---

Horizontal



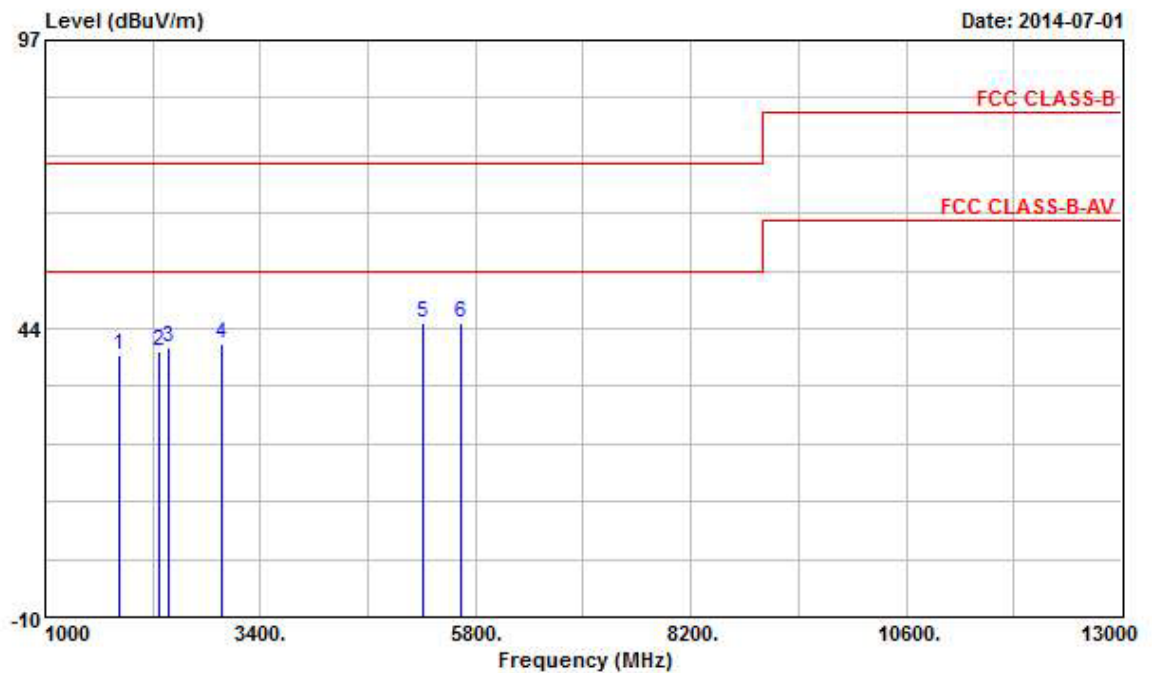
Site : 10CH01-HY
 Condition: CNS\CISPR\VCCI - B 10m LOG-1020802 HORIZONTAL
 EUT :
 Model :
 Power : 120V/60Hz
 Memo : MODE 1

	Over	Limit	Read	CableAntenna	Preamp	A/Pos	T/Pos			
Freq	Level	Limit	Line	Level	Loss	Factor	Factor	Remark		
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB/m	dB		cm deg	
1 MX	212.80	17.88	-12.12	30.00	27.49	3.79	14.08	27.48 Peak	---	---
2	312.00	21.62	-15.38	37.00	31.31	4.52	13.15	27.36 Peak	---	---
3	504.80	22.23	-14.77	37.00	27.21	5.91	17.45	28.34 Peak	---	---

6.4 Test Result of Radiated Emission for Above 1GHz

Test mode	Mode 1	Test Site No.	03CH04-HY
Test frequency	1 GHz ~ 13 GHz	Test Engineer	Ou
Temperature	26 °C	Relative Humidity	51 %
Note: 1. Emission level (dB μ V/m) = 20 log Emission level (μ V/m)			
2. Corrected Reading : Antenna Factor + Cable Loss + Read Level – Preamp Factor = Level			
■ The test was passed at the minimum margin that marked by the frame in the following data			

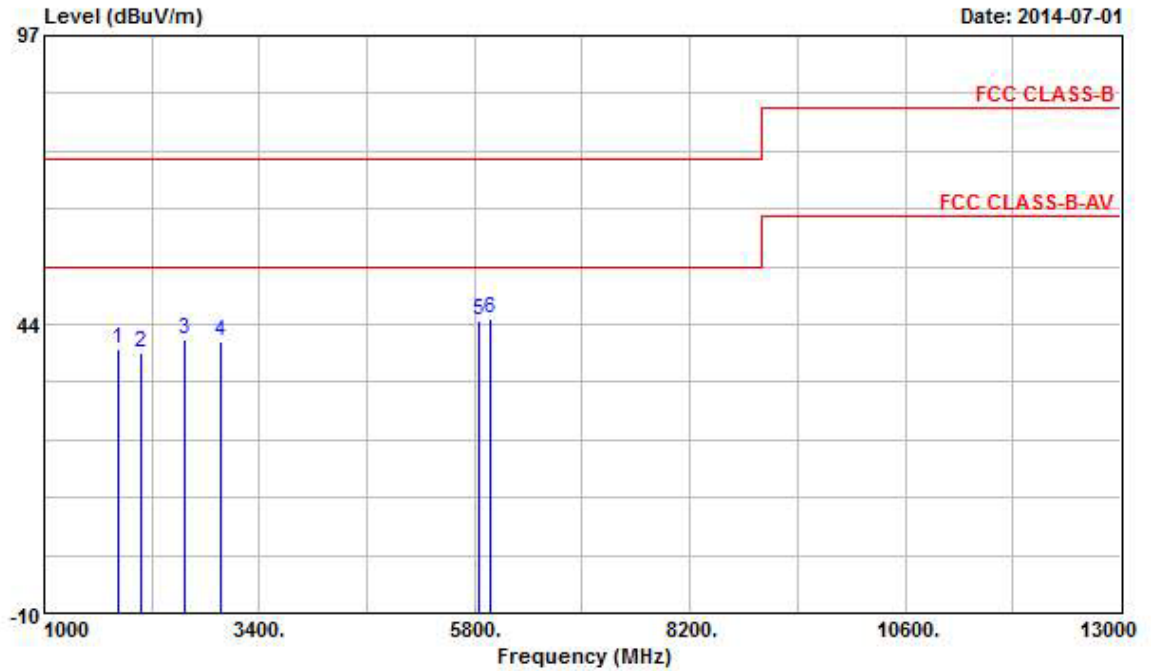
Vertical



Site : 03CH04-HY
 Condition: FCC CLASS-B 3m HF-ANT-9120D VERTICAL
 EUT :
 MODEL :
 POWER : AC 120V/ 60HZ
 MEMO : MODE 1
 MEMO :
 MEMO :

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Preamp Factor	Cable Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1820.000	38.52	-35.48	74.00	44.01	25.99	33.60	2.13	---	---	Peak
2	2278.000	39.24	-34.76	74.00	43.81	26.76	33.78	2.44	---	---	Peak
3	2372.000	40.09	-33.91	74.00	44.46	27.01	33.87	2.49	---	---	Peak
4	2964.000	40.60	-33.40	74.00	43.73	28.23	34.29	2.93	---	---	Peak
5 @	5205.000	44.64	-29.36	74.00	43.77	31.62	34.35	3.60	---	---	Peak
6 @	5637.000	44.71	-29.29	74.00	43.19	31.97	34.33	3.88	100	175	Peak

Horizontal



Site :03CH04-HY
 Condition:FCC CLASS-B 3m HF-ANT-9120D HORIZONTAL
 EUT :
 MODEL :
 POWER :AC 120V/ 60HZ
 MEMO :MODE 1
 MEMO :
 MEMO :

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Preamp Factor	Preamp Factor	Cable Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1820.000	38.89	-35.11	74.00	44.38	25.99	33.60	2.13	---	---	Peak
2	2076.000	38.22	-35.78	74.00	43.23	26.27	33.59	2.32	---	---	Peak
3	2574.000	40.72	-33.28	74.00	44.66	27.47	34.04	2.63	---	---	Peak
4	2966.000	40.48	-33.52	74.00	43.61	28.23	34.29	2.93	---	---	Peak
5	5850.000	44.34	-29.66	74.00	42.55	32.21	34.41	3.99	---	---	Peak
6 @	5982.000	44.53	-29.47	74.00	42.54	32.38	34.46	4.07	---	---	Peak

7. List of Measuring Equipment Used

< Conducted Emission >

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9kHz ~ 2.75GHz	Nov. 14, 2013	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz ~ 30MHz	Nov. 05, 2013	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/009	9kHz ~ 30MHz	Jan. 14, 2014	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	Conduction (CO01-HY)
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832010001	9kHz ~ 30MHz	Feb. 27, 2014	Conduction (CO01-HY)

※ Note: Calibration Interval of instruments listed above is one year.

< Radiated Emission below 1GHz >

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
10m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-10M	10CH01-HY	30MHz ~ 1GHz 10m/3m	Jun. 09, 2014	Radiation (10CH01-HY)
Spectrum Analyzer	R&S	FSP7	838858/013	9kHz ~ 7GHz	Feb. 18, 2014	Radiation (10CH01-HY)
Receiver	R&S	ESI7	838496/009	20Hz ~ 7GHz	Jul.23, 2013	Radiation (10CH01-HY)
Amplifier	Agilent	8447D	2944A10825	100kHz ~ 1.3GHz	Apr. 14, 2014	Radiation (10CH01-HY)
Amplifier	Agilent	8447D	2944A10826	100kHz ~ 1.3GHz	Apr. 08, 2014	Radiation (10CH01-HY)
Biconical Antenna	Schwarz beck	VHBB 9124	286	30MHz ~ 200MHz	Aug. 02, 2013	Radiation (10CH01-HY)
Log Antenna	Schwarz beck	VUSLP 9111	206	200MHz ~ 1GHz	Aug. 02, 2013	Radiation (10CH01-HY)
Turn Table	HD	DT 60 RPS	1513/004/00	0 ~ 360 degree	N/A	Radiation (10CH01-HY)
Antenna Mast	HD	MA240	240/556/00	1 ~ 4 m	N/A	Radiation (10CH01-HY)
Antenna Mast	HD	MA240	240/559/00	1 ~ 4 m	N/A	Radiation (10CH01-HY)
RF Cable-R10m	BELDEN	RG8/U	CB023-INSIDE	30MHz ~ 1GHz	Nov. 14, 2013	Radiation (10CH01-HY)
RF Cable-R10m	Suhner Switzerland + Rosenberger	RG223/U + UAA220A-0	CB022-DOOR	30MHz ~ 1GHz	Nov. 14, 2013	Radiation (10CH01-HY)

※ Note: Calibration Interval of instruments listed above is one year. NCR: NCR: No calibration request.

< Radiated Emission above 1GHz >

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP40	100593	9kHz ~ 40GHz	Oct. 03, 2013	Radiation (03CH04-HY)
Amplifier	Agilent	8449B	3008A02120	1GHz ~ 26.5GHz	Aug. 20, 2013	Radiation (03CH04-HY)
Horn Antenna	SCHWARZBECK	BBHA9120	BBHA9120D1130	1GHz ~ 18GHz	Sep.10, 2013	Radiation (03CH04-HY)
Turn Table	Chaintek	3000	MF7802056	0 ~ 360 degree	NCR	Radiation (03CH04-HY)
Antenna Mast	MF	MF-7802	MF780208163	1m ~ 4m	NCR	Radiation (03CH04-HY)
RF Cable-HIGH	SUHNER	SUCOFLEX 106	CB063-HF	1GHz ~ 4GHz	Nov. 20, 2013	Radiation (03CH04-HY)

※ Note: Calibration Interval of instruments listed above is one year. NCR: NCR: No calibration request.