APPLICATION FOR CERTIFICATION

On Behalf of

Wacom Co., Ltd.

LCD TABLET

Model No.：DTK-2400

FCC ID：HV4DTK2400

Brand : Wacom

REF. No.: JS-12502

Prepared for : Wacom Co., Ltd.
2-510-1 Toyonodai, Kazo-shi,
Saitama 349-1148, Japan

Prepared by : AUDIX Technology Corporation
EMC Department
No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang,
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File Number	:	C1M1107029
Report Number	:	EM-F1000663
Date of Test	:	Jul. 18 ~ 19, 2011
Date of Report	:	Jul. 26, 2011

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TEST REPORT CERTIFICATION

Applicant	:	Wacom Co., Ltd.
Manufacturer #1	:	Qisda Optronics (Suzhou) Co., Ltd.
Manufacturer #2	:	Qisda Corporation
EUT Description	:	LCD TABLET
FCC ID	:	HV4DTK2400

(A) Model No.	:	DTK-2400
(B) Serial No.	:	N/A
(C) Brand	:	Wacom
(D) Ref. No.	:	JS-12502
(E) Power Supply	:	DC 24V, 5A
(F) Test Voltage	:	AC 120V/60Hz (Via AC Adapter)

Measurement Procedure Used:

Industry Canada Rules and Regulations RSS-Gen (Issue 3), December 2010 and RSS-210 (Issue 8), December 2010

FCC RULES AND REGULATIONS PART 15 SUBPART C, October 2010
AND ANSI C63.4/2003
(Canada RSS-210 §Annex 2.2 and FCC CFR 47 Part 15C, §15.207 and §15.209 and §15.221)

The device described above was tested by AUDIX Technology Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15 Subpart C and Canada RSS-210 (Issue 8) Annex 2.2. limits.

The measurement results are contained in this test report and AUDIX Technology Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the requirements of FCC Part 15 and Industry Canada RSS-Gen, RSS-210 standards.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology Corporation.

Date of Test : Jul. 18 ~ 19, 2011 Date of Report : Jul. 26, 2011

Producer : _____
(Julie Hsu/Administrator)

Signatory : _____
(Ben Cheng/Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	LCD TABLET (The EUT is a LCD Tablet, which is transceiver. The pen will be sold together with the EUT)
Model Number	:	DTK-2400
Serial Number	:	N/A
Brand	:	Wacom
Ref. No	:	JS-12502
FCC ID	:	HV4DTK2400
Applicant	:	Wacom Co., Ltd. 2-510-1 Toyonodai, Kazo-shi, Saitama 349-1148, Japan
Manufacturer #1	:	Qisda Optronics (Suzhou) Co., Ltd. 169, Zhujiang Road, New District, Suzhou, Jiangsu Province, P.R. China
Manufacturer #2	:	Qisda Corporation 157, Shan-Ying Road, Gueishan, Taoyuan, 333 Taiwan
Frequency	:	667.8kHz
Number of Channel	:	1
LCD Panel (w/Touch Function)	:	Qisda, M/N EP24TF0
Pen	:	Wacom, M/N KP-501E-01
DP Cable	:	Shielded, Detachable, 3.0m
USB Cable	:	Non-Shielded, Detachable, 3.0m Bonded two ferrite cores
DVI→D-Sub Cable	:	Shielded, Detachable, 3.0m Bonded two ferrite cores

AC Adapter	:	ADAPTER TECH, M/N: STD-24050 FCC by DoC, BSMI ID: R33154 AC Input: AC 100-240V~, 47-63Hz, 1.6A MAX DC Input: DC 24V, 5A Cord: Non-Shielded, Undetachable, 1.5m Bonded a ferrite core
Power Cord	:	Non-Shielded, Detachable, 1.8m
Date of Receipt of Sample	:	Jul. 01, 2011
Date of Test	:	Jul. 18 ~ 19, 2011

1.2. Tested Supporting System Details

1.2.1. PC SYSTEM

Model Number	:	DC8M1F
Serial Number	:	24283942660
FCC ID	:	By DoC
BSMI ID	:	R33002
Manufacturer	:	DELL (Brand: DELL)
DP Cable	:	Shielded, Detachable, 3.0m
DVI Cable	:	Shielded, Detachable, 3.0m Bonded two ferrite cores
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.2. USB KEYBOARD

Model Number	:	SK-8115
Serial Number	:	CN-ONM433-71616-7C5-0A4O
FCC ID	:	By DoC
BSMI ID	:	T3A002
Manufacturer	:	DELL (Brand: DELL)
Data Cable	:	Shielded, Undetachable, 2.0m Bonded a ferrite core

1.2.3. USB MOUSE

Model Number	:	MINI 801 USB
Serial Number	:	CE2400301031
FCC ID	:	By DoC
BSMI ID	:	3892B623
Manufacturer	:	DELL (Brand: DELL)
Data Cable	:	Non-Shielded, Undetachable, 1.0m

1.2.4. LASER PRINTER

Model Number	:	ML-1630
Serial Number	:	4561B1CP600023X
FCC ID	:	A3LML1630
BSMI ID	:	R33475
Manufacturer	:	Samsung
Data Cable	:	Shielded, Detachable, 1.8m
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.5. USB 2.0 STORAGE MEDIA #1 (LINK TO EUT)

Model Number	:	U172P
Serial Number	:	95110870047019
FCC ID	:	By DoC
BSMI ID	:	D33311
Manufacturer	:	pqi
Data Cable	:	Shielded, Detachable, 1.8m

1.2.6. USB 2.0 STORAGE MEDIA #2

Model Number	:	U172P
Serial Number	:	95110870047037
FCC ID	:	By DoC
BSMI ID	:	D33311
Manufacturer	:	pqi
Data Cable	:	Shielded, Detachable, 1.8m

1.3. Description of Test Facility

Name of Firm	:	**AUDIX Technology Corporation** **EMC Department** No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang, Taipei Hsien, Taiwan
Test Location & Facility (C4/AC)	:	**No. 4 Shielded Room** No. 67-4, Tin-Fu Tsun, Lin-Kou Hsiang, Taipei Hsien, Taiwan. **Semi-Anechoic Chamber** No. 53-11, Tin-Fu Tsun, Lin-Kou Hsiang, Taipei Hsien, Taiwan. Renewal on May 14, 2009 Federal Communication Commission Registration Number: 90993
NVLAP Lab Code	:	200077-0
TAF Accreditation No	:	1724

1.4. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)
Conduction Test	150kHz~30MHz	±1.73dB
Radiation Test (Distance: 3m)	30MHz~300MHz	± 2.91dB
	300MHz~1000MHz	± 2.74dB

Remark：Uncertainty = $ku_c(y)$

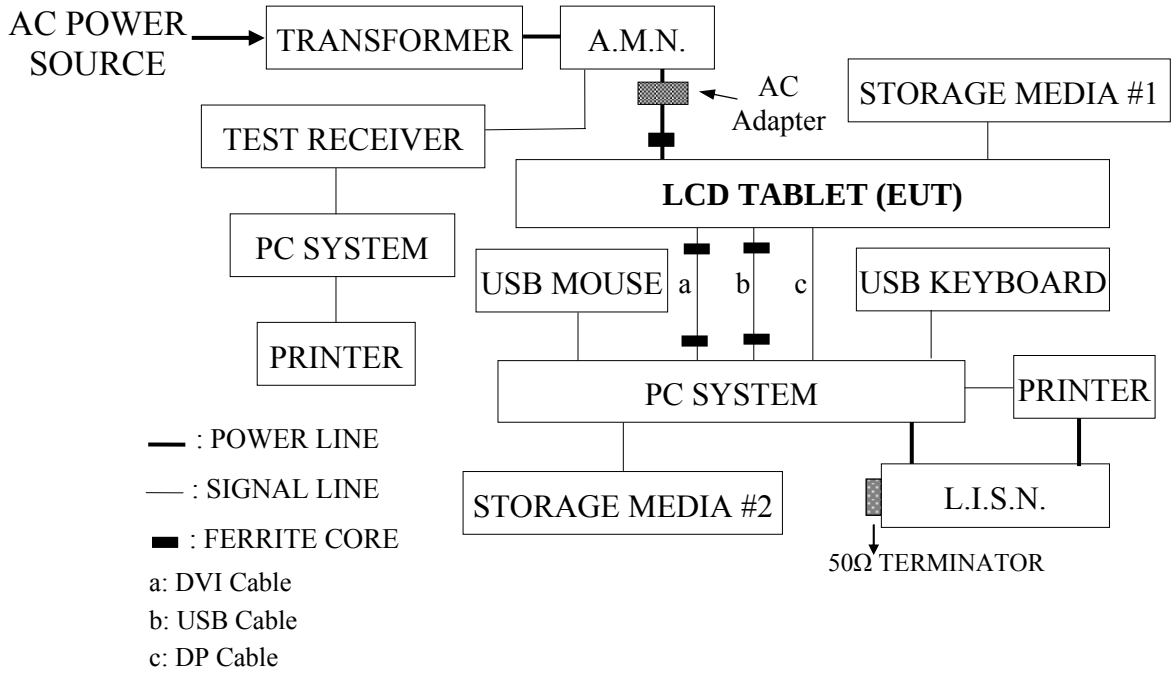
2. POWERLINE CONDUCTED EMISSION MEASUREMET

2.1. Test Equipment

The following test equipment were used during the conducted measurement:
(No. 4 Shielded Room)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCS30	100338	Jul. 12, 11’	Jul. 11, 12’
2.	A.M.N.	R&S	ENV4200	825358/003	Dec. 30, 10’	Dec. 29, 11’
3.	L.I.S.N.	Kyoritsu	KNW-407	8-1430-5	Sep. 18, 10’	Sep. 17, 11’

2.2. Block Diagram of Test Setup



2.3. Powerline Conducted Emission Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark1.: If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.
2.: The lower limit applies at the band edges.

2.4. Operating Condition of EUT

2.4.1. Set up the EUT and simulator as shown on 2.2.

2.4.2. To turn on the power of all equipment.

2.4.3. The PC System was running the test program "EMC Test H" by Windows 7 and sending "H" (Arial, 12) characters to the LCD TABLET (EUT), and then the screen of LCD TABLET (EUT) displaying pattern "H" by EUT's resolution via DVI Input.

2.4.4. The PC System was running the test program "win EMI4.0.9" by Windows 7 and read / write Data from / into USB 2.0 STORAGE MEDIA via the USB Input during all testing.

2.4.5. The other peripheral devices were driven and operated in turn during all testing.

2.5. Test Procedure

The EUT was put on table which was above the ground by 80cm and AC adapter's power cord connected to the AC mains through an Artificial Mains Network (A.M.N.). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions simulators of the interface cables should be manipulated according to FCC ANSI C63.4-2003 during conducted measurement.

The bandwidth of the R&S Test Receiver ESCS30 was set at 9kHz.

The frequency range from 150kHz to 30MHz was checked.

All the final readings from Test Receiver were measured with the Quasi-Peak detector and Average detector. (Remark: If the Average limit is met when using a Quasi-Peak detector, the Average detector is unnecessary)

2.6. Powerline Conducted Emission Measurement Results

PASSED.
(All the emissions not reported below are too low against the prescribed limits.)

EUT was performed during this section testing and all the test results are attached in next pages.

EUT：LCD TABLET M/N：DTK-2400

Test Date：Jul. 18, 2011 Temperature：25℃ Humidity：60%

Reference Test Data No.: Neutral: # 18 ; Line: # 17

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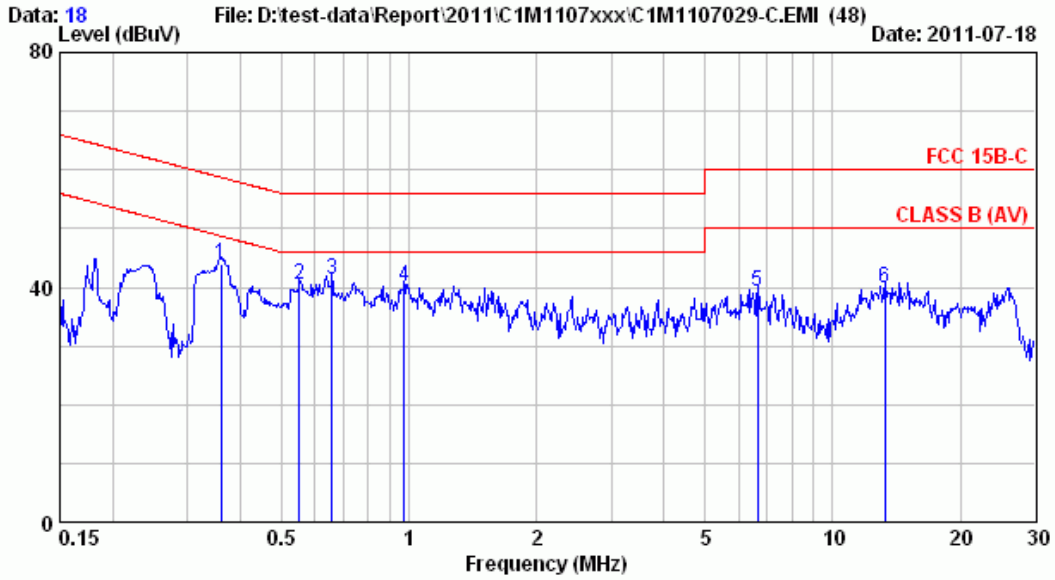

Site : No.4 Shielded Room Data : 18
Condition : ENV-4200 Phase : NEUTRAL
Limit : FCC 15B-C
Env. / Ins. : 25*C / 60% ESCS 30 (339) Engineer: Ken-Yang
EUT M/N : DTK-2400
Power Rating : 120Vac / 60Hz
Test Mode : 1920*1200/60Hz (DVI)

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.360	10.22	0.09	33.70	44.00	58.74	14.74	QP
2	0.552	10.16	0.10	30.10	40.36	56.00	15.64	QP
3	0.658	10.15	0.10	31.03	41.28	56.00	14.72	QP
4	0.974	10.10	0.10	29.89	40.09	56.00	15.91	QP
5	6.662	10.16	0.16	28.92	39.24	60.00	20.76	QP
6	13.267	10.20	0.20	29.37	39.77	60.00	20.23	QP

Remarks: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasi-peak detector ,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

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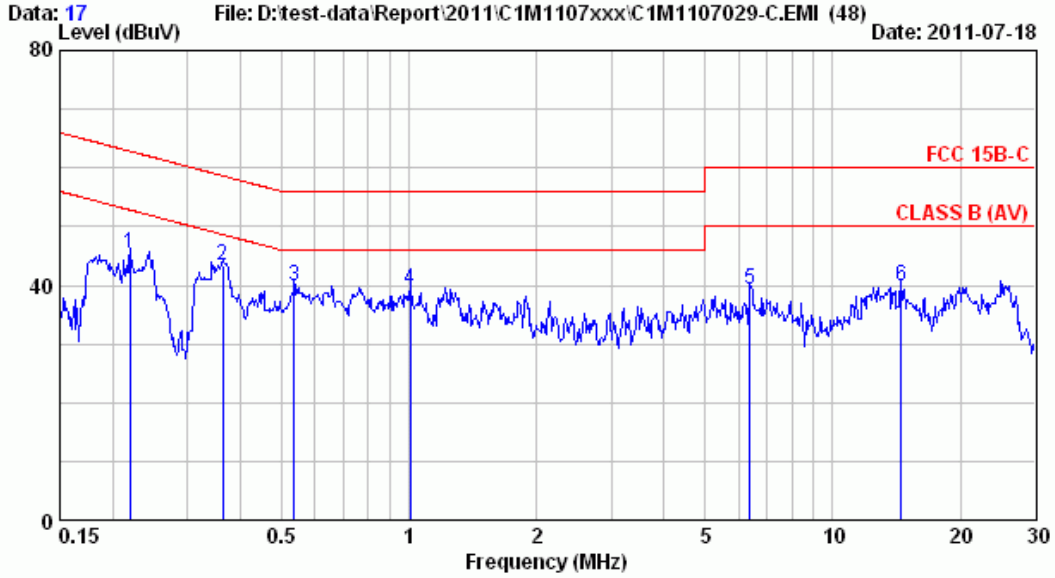


Site : No.4 Shielded Room Data : 17
Condition : ENV-4200 Phase : LINE
Limit : FCC 15B-C
Env. / Ins. : 25*C / 60% ESCS 30 (339) Engineer: Ken-Yang
EUT M/N : DTK-2400
Power Rating : 120Vac / 60Hz
Test Mode : 1920*1200/60Hz (DVI)

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.220	10.29	0.09	34.93	45.31	62.83	17.52	QP
2	0.363	10.21	0.09	32.93	43.23	58.65	15.42	QP
3	0.535	10.17	0.10	29.67	39.94	56.00	16.06	QP
4	1.005	10.10	0.10	29.19	39.39	56.00	16.61	QP
5	6.386	10.15	0.16	28.87	39.18	60.00	20.82	QP
6	14.517	10.20	0.21	29.37	39.78	60.00	20.22	QP

Remarks: 1.Emission Level= AMN Factor + Cable Loss + Reading.
2.If the average limit is met when using a quasi-peak detector ,the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipment was used during the radiated emission measurement:

3.1.1. For Frequency Range 9kHz~30MHz (at Semi-Anechoic Chamber)

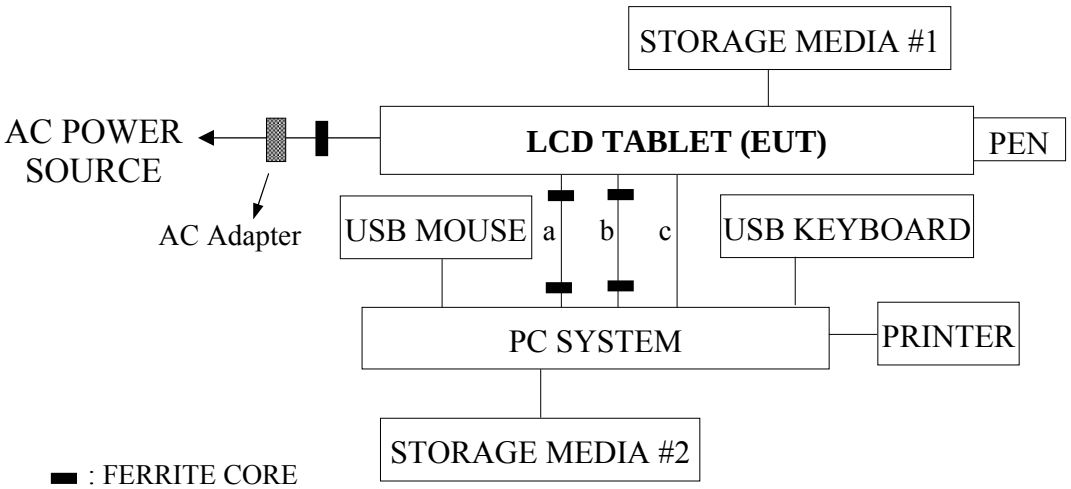
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 10’	Aug. 03, 11’
2.	Test Receiver	R&S	ESCS30	100339	Mar. 08, 11’	Mar. 07, 12’
3.	Loop Antenna	R&S	HFH2-Z2	891847/27	Jul. 22, 09’	Jul. 21, 11’

3.1.2. For Frequency Range 30MHz~1000MHz (at Semi-Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	Aug. 04, 10’	Aug. 03, 11’
2.	Test Receiver	R&S	ESCS30	100339	Mar. 08, 11’	Mar. 07, 12’
3.	Pre-Amplifier	HP	8447D	2944A06305	Feb. 10, 11’	Feb. 09, 12’
4.	Biconical Antenna	CHASE	VBA6106A	1264	Mar. 08, 11’	Mar. 07, 12’
5.	Log Periodic Antenna	Schwarzbeck	UHALP9108-A	0810	Mar. 08, 11’	Mar. 07, 12’

3.2. Test Setup

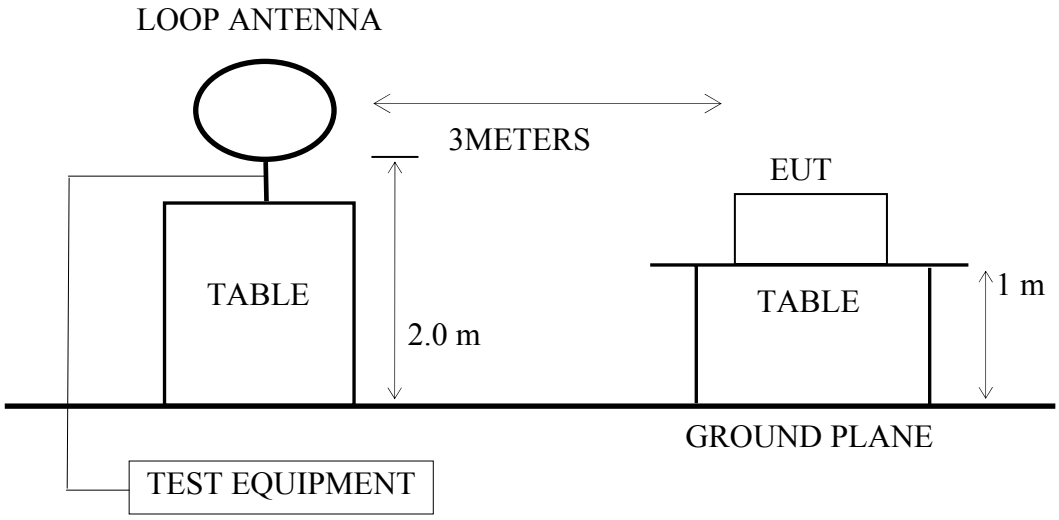
3.2.1. Block Diagram of connection between EUT and simulators



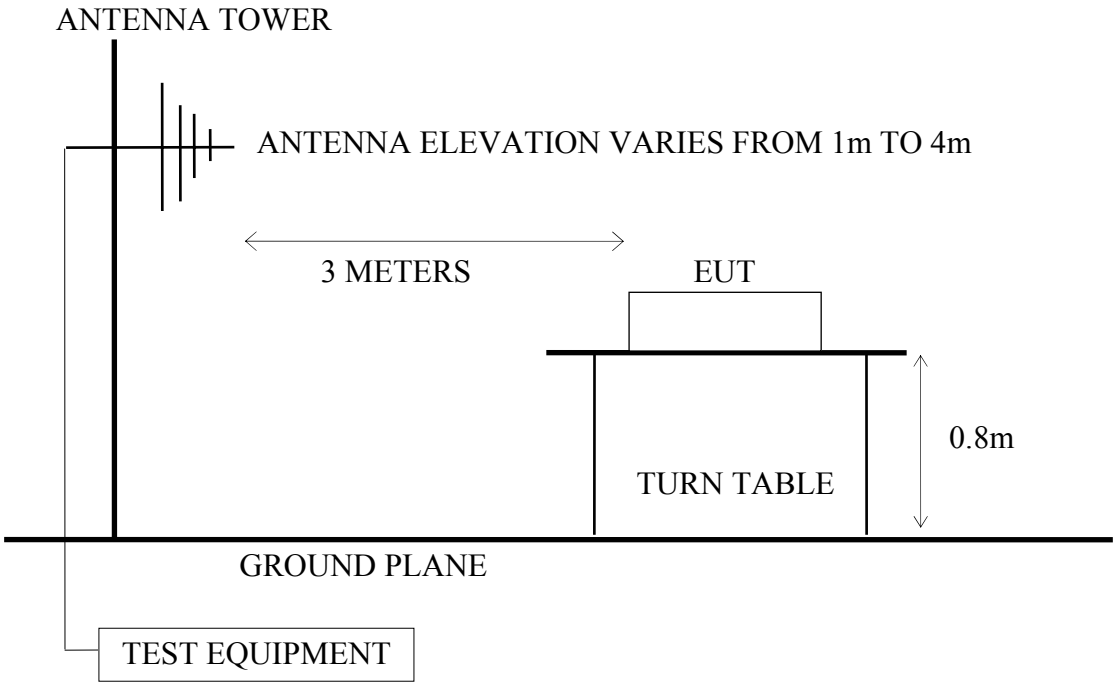
▬ : FERRITE CORE

a: DVI Cable
b: USB Cable
c: DP Cable

3.2.2. Semi-Anechoic Chamber Setup Diagram (9kHz-30MHz, 3m)



3.2.3. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000MHz



3.3. Radiated Emission Limits (§15.209)

3.3.1. Frequency 9kHz-30MHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMITS
		μV/m
0.009-0.490	300	2400/F(kHz)
0.490-1.705	30	24000/F(kHz)
1.705-30.0	30	30

Remark：(1) Limit (dBμV/m)=20log [24000/F(kHz)] (The measurement distance at 30m)+40log(30/3)(The measurement distance at 3m)
(2) The tighter limit applies at the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.3.2. Frequency Above 30MHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMITS	
		μV/m	dBμV/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

Remark：(1) Emission level (dBμV/m) = 20log Emission level (μV/m)
(2) The tighter limit applies at the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4. Operating Condition of EUT

3.4.1. Set up the EUT and simulator as shown on 3.2.

3.4.2. To turn on the power of all equipment.

3.4.3. The EUT was continuously transmitting frequency to pen during testing.

3.4.4. The other peripheral devices were driven and operated in turn during all testing.

3.5. Test Procedure

3.5.1. For Frequency Range 9kHz-30MHz which measurement distance was 3m at Semi-Anechoic Chamber:

The EUT was placed on a turn table which was 1 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set to 3 meters away from the Loop Antenna which is mounted on table. The antenna is fixed, with the lower edge of the loop at 2m height above the floor to find out the maximum emission level.

The bandwidth of the R&S Test Receiver ESCS30 & the HP Spectrum Analyzer was set at 200Hz. (Frequency range 9kHz-150kHz)

The bandwidth of the R&S Test Receiver ESCS30 & the HP Spectrum Analyzer was set at 9kHz. (Frequency range 150kHz-30MHz)

The frequency range from 9kHz to 30MHz was pre-scanned with a peak detector. All the final readings from test receiver were measured with Quasi-Peak detector.

3.5.2. For Frequency Range 30-1000MHz which measurement distance was 3m at Semi-Anechoic Chamber:

The EUT and its simulators were placed on a turn table which was 0.8 meter above the ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna which was mounted on an antenna tower. The antenna moved up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna such as calibrated biconical and log-periodical antenna were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to FCC ANSI C63.4-2003 regulation.

The bandwidth of the R&S Test Receiver ESCS30 was set at 120kHz.

3.6. Test Results

PASSED.
(All emissions not reported below are too low against the prescribed limits.)

EUT：LCD TABLET M/N：DTK-2400

For Frequency Range 9kHz-30MHz:

The EUT with **test Frequency 667.8kHz** was measured at Semi-Anechoic Chamber and all the test results are listed in following list.

Date of Test： Jul. 19, 2011 Temperature： 27℃

EUT： LCD TABLET, M/N DTK-2400 Humidity： 63%

Test Mode： Frequency: 667.8kHz

Frequency (kHz)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)
667.8	50.58	71.11	-20.53
1335.6	38.23	65.09	-28.86
2003.4	37.14	61.57	-24.43
2671.2	28.50	59.07	-30.57
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"--"The filed strength too low against the limit.

For Frequency Range 30~1000MHz:

The EUT was measured at Semi-Anechoic Chamber and all the test results are listed in next pages.

Test Date：Jul. 19, 2011 Temperature：27℃ Humidity：63%

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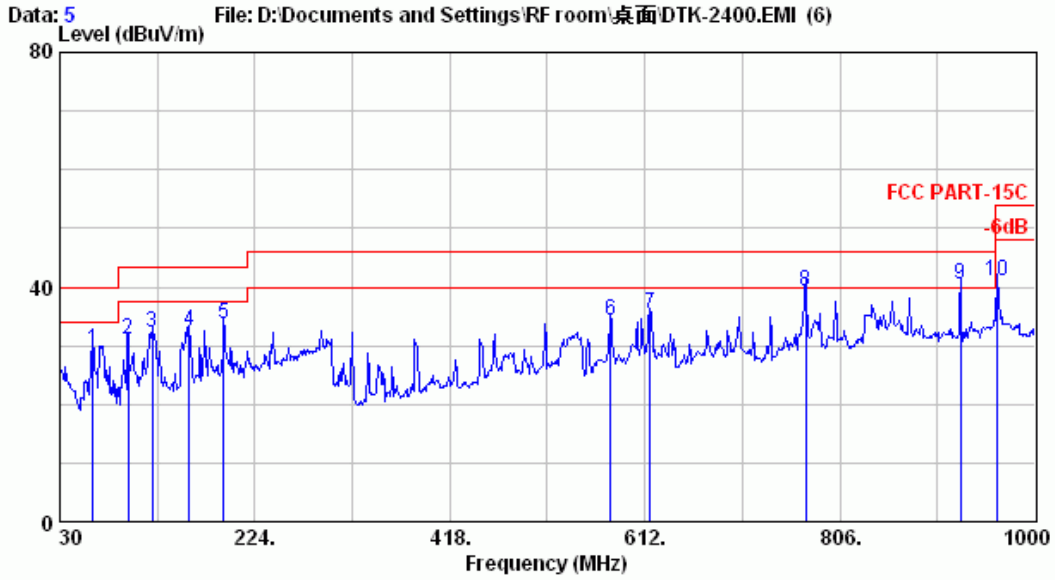

Site no. : A/C Chamber Data no. : 5
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : HORIZONTAL
Limit : FCC PART-15C
Env. / Ins. : E4446A 27*C /63% Engineer : Henning Chang
EUT : LCD Tablet M/N:DTK-2400
Power Rating : 120V/60Hz
Test Mode : Operating

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	62.980	12.04	1.63	15.59	29.26	40.00	10.74	
2	97.900	16.84	2.10	11.99	30.93	43.50	12.57	
3	122.150	19.20	2.30	10.66	32.17	43.50	11.33	
4	159.010	20.78	2.70	8.99	32.46	43.50	11.04	
5	192.960	21.66	3.00	8.94	33.59	43.50	9.91	
6	578.050	20.97	6.40	6.97	34.35	46.00	11.65	
7	616.850	21.31	6.30	7.86	35.47	46.00	10.53	
8	772.050	24.04	6.80	8.36	39.20	46.00	6.80	
9	926.280	24.67	7.43	8.29	40.39	46.00	5.61	
10	963.140	26.63	7.60	6.84	41.07	54.00	12.93	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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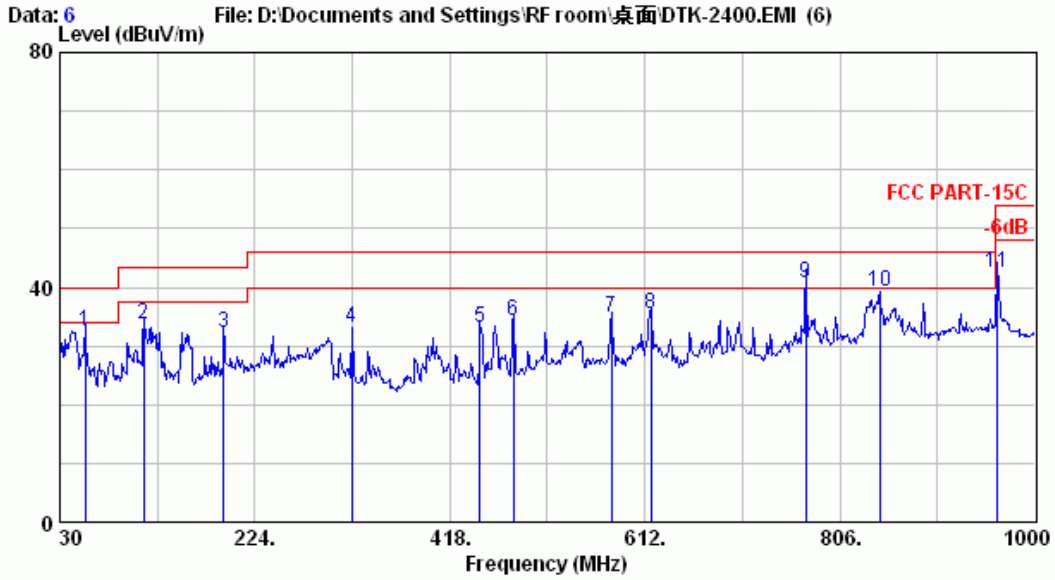

Site no. : A/C Chamber Data no. : 6
Dis. / Ant. : 3m VBA6106A/UHALP9108A Ant. pol. : VERTICAL
Limit : FCC PART-15C
Env. / Ins. : E4446A 27*C /63% Engineer : Henning Chang
EUT : LCD Tablet M/N:DTK-2400
Power Rating : 120V/60Hz
Test Mode : Operating

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBµV)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Remark
1	55.220	14.39	1.50	16.67	32.56	40.00	7.44	
2	113.420	18.47	2.26	12.94	33.67	43.50	9.83	
3	192.960	21.66	3.00	7.50	32.15	43.50	11.35	
4	320.030	14.99	4.20	14.03	33.22	46.00	12.78	
5	448.070	17.63	5.40	10.10	33.13	46.00	12.87	
6	481.050	18.74	6.10	9.51	34.35	46.00	11.65	
7	579.020	20.96	6.40	7.47	34.83	46.00	11.17	
8	617.820	21.32	6.30	7.75	35.37	46.00	10.63	
9	772.050	24.04	6.80	9.83	40.67	46.00	5.33	
10	845.770	25.35	7.10	6.93	39.38	46.00	6.62	
11	963.140	26.63	7.60	8.15	42.38	54.00	11.62	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.