FCC TEST REPORT

REPORT NO. : RF941206L06
MODEL NO. : Qpe V601
RECEIVED : Dec. 12, 2005
TESTED : Jan. 16, 2006
ISSUED : Jan. 24, 2006

APPLICANT : ViewSun Technology Co., Ltd.

ADDRESS : 1F., No.9, Lane 52, Hesing Rd., Wunshan District, Taipei City 116, Taiwan R.O.C.

ISSUED BY : Advance Data Technology Corporation

LAB ADDRESS : No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang 244, Taipei Hsien, Taiwan, R.O.C.

TEST LOCATION : No. 19, Hwa Ya 2nd Rd., Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

ACCREDITED
No. 2177-01

ilac-MRA

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1. CERTIFICATION

PRODUCT :	Headset and USB dongle
BRAND NAME :	Qpe
MODEL NO. :	Qpe V601
APPLICANT :	ViewSun Technology Co., Ltd.
TESTED :	Jan. 16, 2006
TEST SAMPLE :	ENGINEERING SAMPLE
STANDARDS :	FCC Part 15, Subpart C (Section 15.249) ANSI C63.4-2003

The above equipment have been tested by **Advance Data Technology Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Windy Chou , **DATE:** Jan. 24, 2006
Windy Chou

TECHNICAL ACCEPTANCE : Long Chen , **DATE:** Jan. 24, 2006
Responsible for RF
Long Chen

APPROVED BY : Gary Chang , **DATE:** Jan. 24, 2006
Gary Chang / Supervisor

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C (Section 15.249)			
STANDARD PARAGRAPH	**TEST TYPE**	**RESULT**	**REMARK**
15.207	Conducted Emission Test	PASS	Meet the requirement of limit Minimum passing margin is –18.74dB at 0.236MHz
15.209 15.249 15.249 (d)	Radiated Emission Test Band Edge Measurement Limit: 50dB less than the peak value of fundamental frequency or meet radiated emission limit in section 12.209	PASS	Meet the requirement of limit Minimum passing margin is –3.01dB at 4810.00MHz

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.73 dB
	200MHz ~1000MHz	3.74 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Headset and USB dongle
MODEL NO.	Qpe V601
FCC ID	TVSHDFCC1
POWER SUPPLY	5Vdc from host equipment
MODULATION TYPE	GFSK
FREQUENCY RANGE	2405 ~ 2479 MHz
NUMBER OF CHANNEL	75
ANTENNA TYPE	Mono-pole antenna with –0.95dBi gain
DATA CABLE	NA
I/O PORT	USB

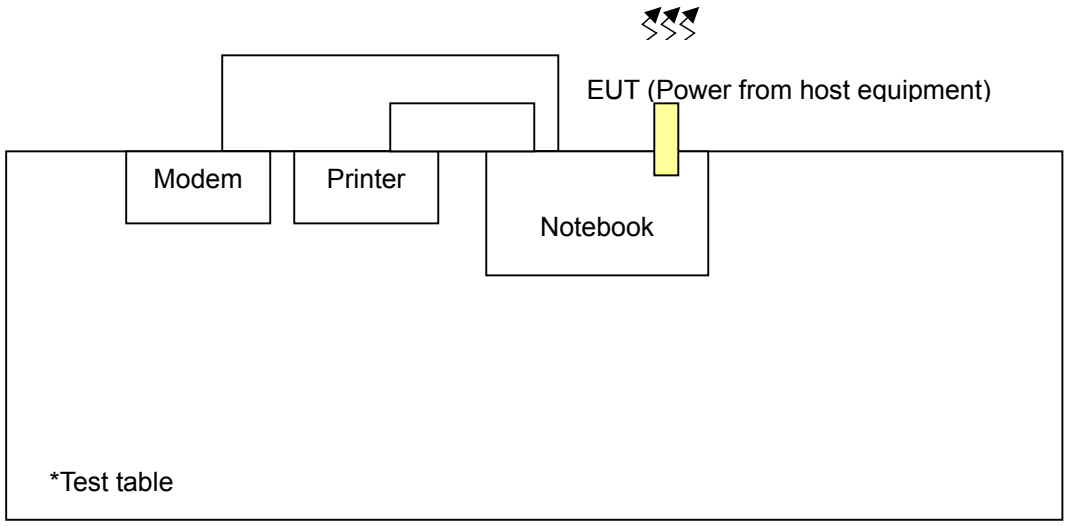
NOTE: The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

75 channels are provided to this EUT.

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
1	2405	20	2424	39	2443	58	2462
2	2406	21	2425	40	2444	59	2463
3	2407	22	2426	41	2445	60	2464
4	2408	23	2427	42	2446	61	2465
5	2409	24	2428	43	2447	62	2466
6	2410	25	2429	44	2448	63	2467
7	2411	26	2430	45	2449	64	2468
8	2412	27	2431	46	2450	65	2469
9	2413	28	2431	47	2451	66	2470
10	2414	29	2433	48	2452	67	2471
11	2415	30	2434	49	2453	68	2472
12	2416	31	2435	50	2454	69	2473
13	2417	32	2436	51	2455	70	2474
14	2418	33	2437	52	2456	71	2475
15	2419	34	2438	53	2457	72	2476
16	2420	35	2439	54	2458	73	2477
17	2421	36	2440	55	2459	74	2478
18	2422	37	2441	56	2460	75	2479
19	2423	38	2442	57	2461		

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT Configure Mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
-	√	√	√	Note 1	-

Where **PLC:** Power Line Conducted Emission **RE<1G:** Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

Note 1: Conducted RF measurement is in independent of adapter.

Power Line Conducted Emission Test:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Type
1 ~ 75	1, 38, 75	GFSK

Radiated Emission Test (Below 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Type
1 ~ 75	75	GFSK

Radiated Emission Test (Above 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Type
1 ~ 3	1, 38, 75	GFSK

Bandedge Measurement:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

Available Channel	Tested Channel	Modulation Type
1 ~ 3	1, 75	GFSK

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Headset and USB dongle. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:
FCC Part 15, Subpart C (Section 15.249)
ANSI C63.4-2003
All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP05L	12130898320	E2K24CLNS
2	PRINTER	EPSON	LQ-300+	DCGY054147	FCC DoC Approved
3	MODEM	ACEEX	1414V/3	0401008269	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.2 m shielded cable without core
3	1.2 m shielded cable without core

NOTE: All power cords of the above support units are non shielded (1.8m).

4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE:
1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Nov. 11, 2006
RF signal cable Woken	5D-FB	Cable-HYC01-01	Jan. 06, 2007
LISN SCHWARZBECK	NNBL 8226-2	8226-142	May 02, 2006
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Feb. 15, 2006
Software ADT	ADT_Cond_V3	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 1.

3. The VCCI Site Registration No. is C-2040.

4.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

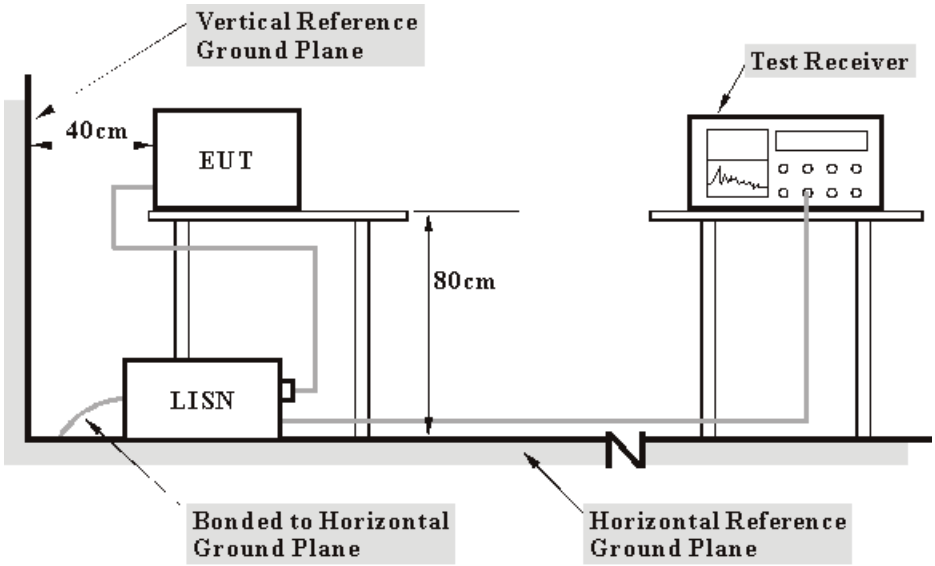
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.6 EUT OPERATING CONDITIONS

a. Plugged the EUT to a notebook system and placed on a testing table.

b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission/receiving condition continuously at specific channel frequency.

c. The notebook system sent "H" messages to its screen.

d. The notebook system sent “H” messages to modem.

e. The notebook system sent "H" messages to printer, and the printer printed them on paper.

f. Steps c ~ e were repeated.

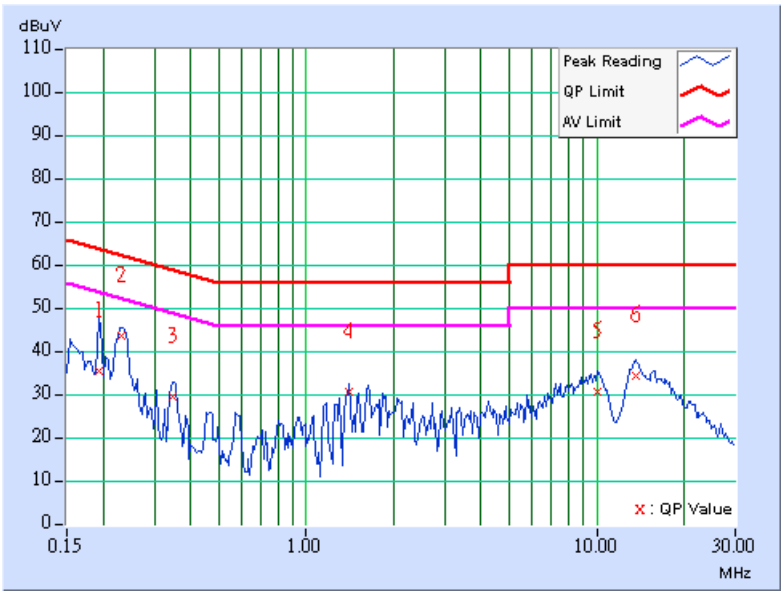
4.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
		PHASE	Line 1
CHANNEL	Channel 1	6dB BANDWIDTH	9 kHz
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.193	0.10	34.94	-	35.04	-	63.91	53.91	-28.87	-
2	0.232	0.10	43.20	-	43.30	-	62.38	52.38	-19.08	-
3	0.345	0.10	29.02	-	29.12	-	59.07	49.07	-29.95	-
4	1.410	0.20	30.07	-	30.27	-	56.00	46.00	-25.73	-
5	10.117	0.56	30.01	-	30.57	-	60.00	50.00	-29.43	-
6	13.719	0.69	33.64	-	34.33	-	60.00	50.00	-25.67	-

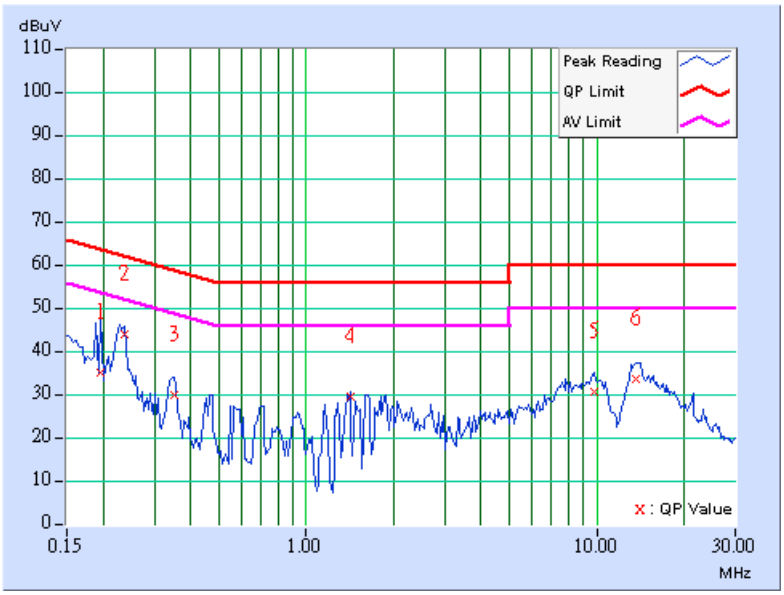
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
		PHASE	Line 2
CHANNEL	Channel 1	6dB BANDWIDTH	9 kHz
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.10	34.59	-	34.69	-	63.74	53.74	-29.05	-
2	**0.236**	**0.10**	**43.40**	**-**	**43.50**	**-**	**62.24**	**52.24**	**-18.74**	**-**
3	0.349	0.10	29.38	-	29.48	-	58.98	48.98	-29.50	-
4	1.414	0.20	28.96	-	29.16	-	56.00	46.00	-26.84	-
5	9.844	0.46	30.26	-	30.72	-	60.00	50.00	-29.28	-
6	13.703	0.59	33.21	-	33.80	-	60.00	50.00	-26.20	-

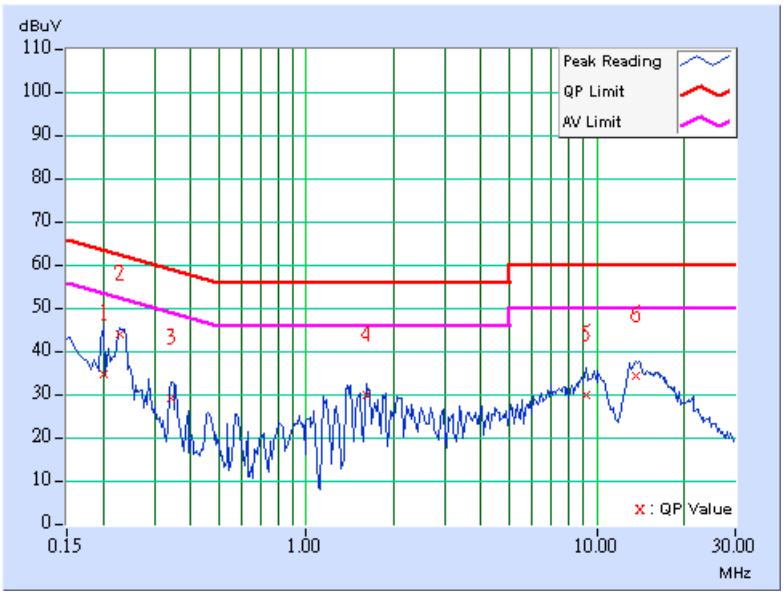
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
		PHASE	Line 1
CHANNEL	Channel 38	6dB BANDWIDTH	9 kHz
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.201	0.10	34.15	-	34.25	-	63.58	53.58	-29.33	-
2	0.228	0.10	43.41	-	43.51	-	62.52	52.52	-19.01	-
3	0.341	0.10	28.66	-	28.76	-	59.17	49.17	-30.41	-
4	1.605	0.20	29.44	-	29.64	-	56.00	46.00	-26.36	-
5	9.199	0.55	29.37	-	29.92	-	60.00	50.00	-30.08	-
6	13.711	0.69	33.72	-	34.41	-	60.00	50.00	-25.59	-

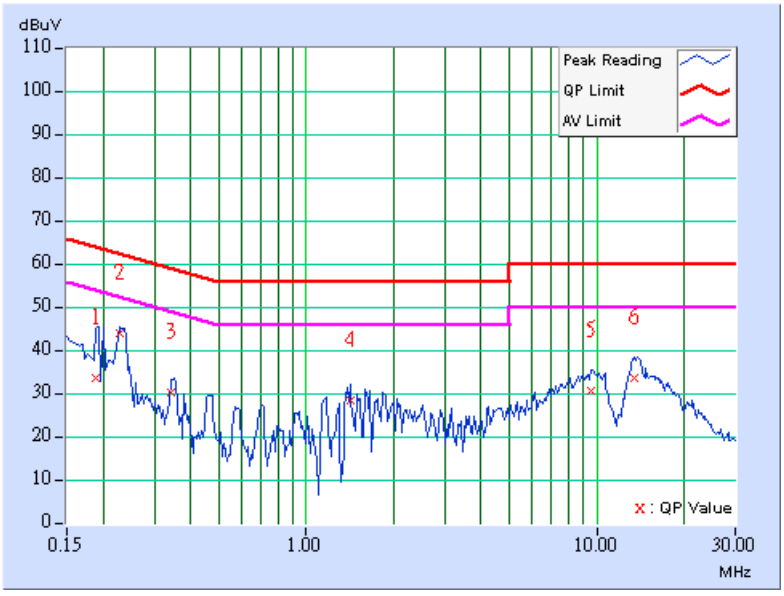
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
		PHASE	Line 2
CHANNEL	Channel 38	6dB BANDWIDTH	9 kHz
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.10	33.25	-	33.35	-	64.08	54.08	-30.73	-
2	0.228	0.10	43.43	-	43.53	-	62.52	52.52	-18.99	-
3	0.341	0.10	29.61	-	29.71	-	59.17	49.17	-29.46	-
4	1.422	0.20	27.80	-	28.00	-	56.00	46.00	-28.00	-
5	9.602	0.46	30.10	-	30.56	-	60.00	50.00	-29.44	-
6	13.531	0.58	33.10	-	33.68	-	60.00	50.00	-26.32	-

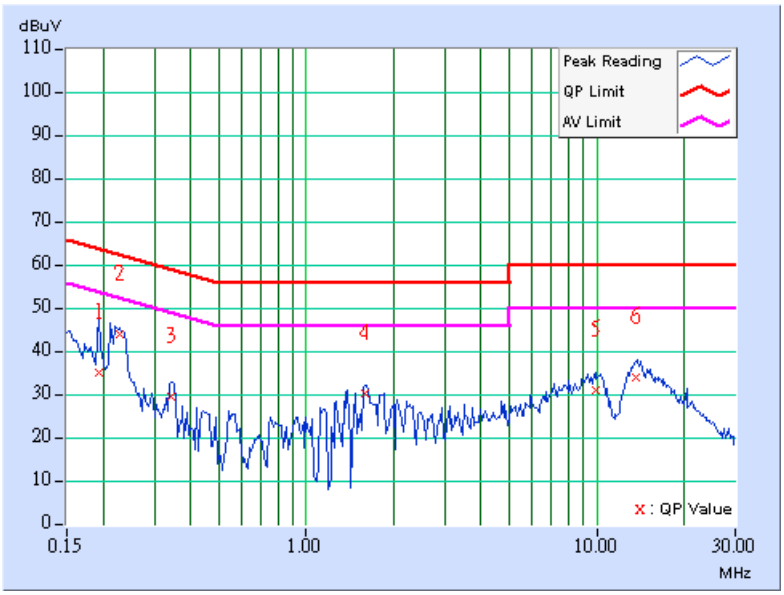
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
		PHASE	Line 1
CHANNEL	Channel 75	6dB BANDWIDTH	9 kHz
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.193	0.10	34.41	-	34.51	-	63.91	53.91	-29.40	-
2	0.228	0.10	43.21	-	43.31	-	62.52	52.52	-19.21	-
3	0.341	0.10	28.88	-	28.98	-	59.17	49.17	-30.19	-
4	1.594	0.20	29.87	-	30.07	-	56.00	46.00	-25.93	-
5	9.922	0.56	30.31	-	30.87	-	60.00	50.00	-29.13	-
6	13.680	0.69	33.52	-	34.21	-	60.00	50.00	-25.79	-

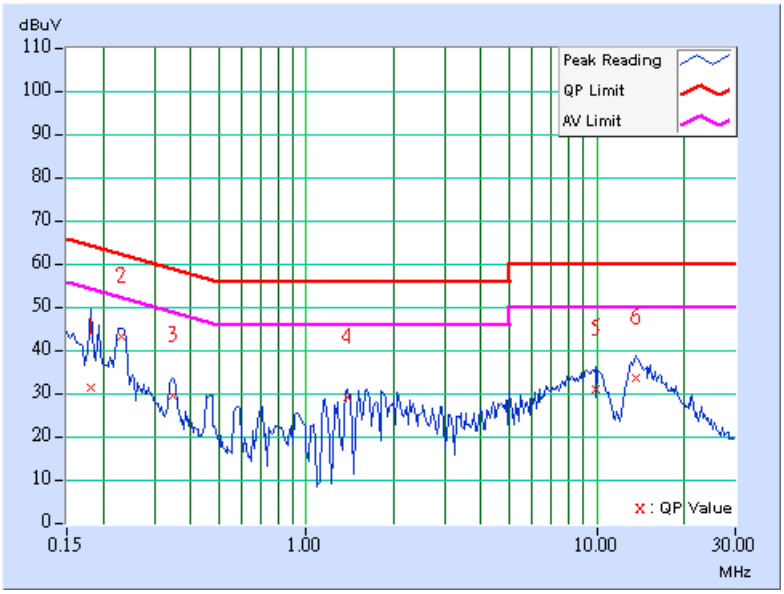
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
		PHASE	Line 2
CHANNEL	Channel 75	6dB BANDWIDTH	9 kHz
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.181	0.10	30.72	-	30.82	-	64.43	54.43	-33.61	-
2	0.232	0.10	42.74	-	42.84	-	62.38	52.38	-19.54	-
3	0.345	0.10	28.94	-	29.04	-	59.07	49.07	-30.03	-
4	1.395	0.20	28.55	-	28.75	-	56.00	46.00	-27.25	-
5	9.910	0.46	30.61	-	31.07	-	60.00	50.00	-28.93	-
6	13.605	0.58	33.27	-	33.85	-	60.00	50.00	-26.15	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Dec. 20, 2006
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Nov. 27, 2006
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Jan. 15, 2007
HORN Antenna EMCO	3117	00034130	Jan. 01, 2007
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170148	Jul. 04, 2006
Preamplifier Agilent	8449B	3008A01961	Oct. 23, 2006
Preamplifier Agilent	8447D	2944A10629	Oct. 27, 2006
RF signal cable HUBER+SUHNER	SUCOFLEX 104	214380/4	Jan. 16, 2007
RF signal cable HUBER+SUHNER	SUCOFLEX 104	219266/4	Jan. 16, 2007
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Chamber 1.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The IC Site Registration No. is IC4924-2.

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

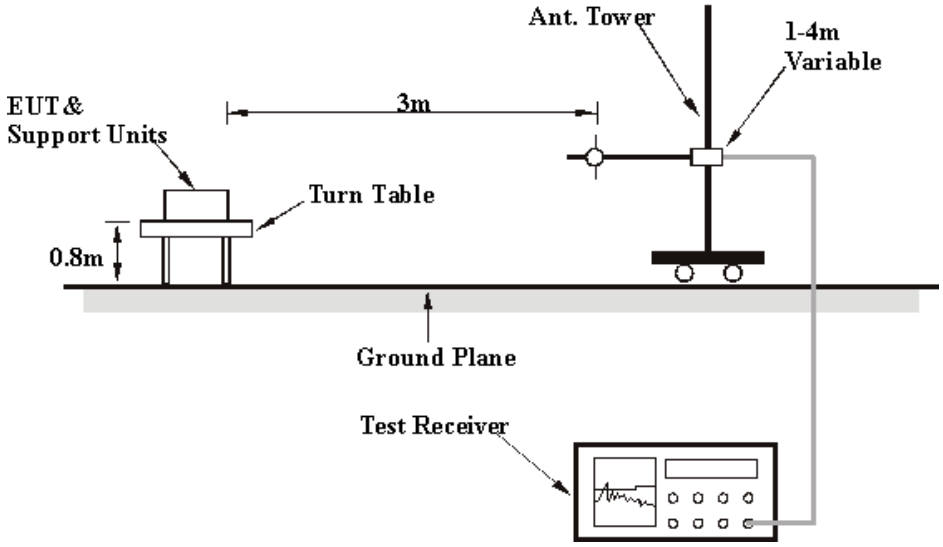
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.

4.2.7 TEST RESULTS

RADIATED WORST-CASE DATA: BELOW 1GHz

EUT TEST CONDITION		MEASUREMENT DETAIL	
		FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 75	**DETECTOR FUNCTION**	Quasi-Peak
MODULATION TYPE	GFSK	**ENVIRONMENTAL CONDITIONS**	25deg. C, 68%RH, 991hPa
TESTED BY	Match Tsui	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	113.59	33.08 QP	43.50	-10.42	1.50 H	280	22.24	10.84
2	160.24	29.45 QP	43.50	-14.05	1.25 H	355	16.28	13.17
3	168.02	32.43 QP	43.50	-11.07	1.25 H	286	19.70	12.74
4	214.67	28.76 QP	43.50	-14.74	1.50 H	250	17.67	11.09
5	665.65	31.37 QP	46.00	-14.63	1.75 H	232	7.66	23.71
6	733.69	31.30 QP	46.00	-14.70	1.75 H	208	6.47	24.83
7	879.48	34.76 QP	46.00	-11.24	1.00 H	271	7.96	26.79
8	951.40	33.55 QP	46.00	-12.45	1.75 H	208	5.61	27.94

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.93	27.95 QP	40.00	-12.05	1.00 V	148	15.57	12.38
2	99.98	29.03 QP	43.50	-14.47	1.00 V	148	20.29	8.74
3	455.71	30.45 QP	46.00	-15.55	1.50 V	244	11.40	19.05
4	531.52	30.55 QP	46.00	-15.45	1.00 V	214	9.61	20.94
5	665.65	30.78 QP	46.00	-15.22	1.00 V	247	7.07	23.71
6	735.63	30.89 QP	46.00	-15.11	1.00 V	226	6.02	24.87
7	803.67	32.52 QP	46.00	-13.48	1.00 V	241	6.94	25.57
8	879.48	34.17 QP	46.00	-11.83	1.00 V	253	7.37	26.79
9	945.57	31.81 QP	46.00	-14.19	1.00 V	214	3.99	27.82

REMARKS: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

ABOVE 1GHZ WORST-CASE DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
		FREQUENCY RANGE	1 ~ 25 GHz
CHANNEL	Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	GFSK	ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH, 991hPa
TESTED BY	Match Tsui	INPUT POWER (SYSTEM)	120Vac, 60 Hz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1202.00	41.12 PK	74.00	-32.88	1.20 H	219	13.40	27.72
1	1202.00	24.64 AV	54.00	-29.36	1.20 H	219	-3.08	27.72
2	2390.00	54.11 PK	74.00	-19.89	1.32 H	247	22.14	31.97
2	2390.00	44.93 AV	54.00	-9.07	1.32 H	247	12.96	31.97
3	*2405.00	92.55 PK	114.00	-21.45	1.32 H	247	60.52	32.03
3	*2405.00	76.07 AV	94.00	-17.93	1.32 H	247	44.04	32.03
4	4810.00	62.58 PK	74.00	-11.42	1.29 H	320	24.48	38.11
4	4810.00	46.10 AV	54.00	-7.90	1.29 H	320	8.00	38.11
5	7215.00	51.55 PK	74.00	-22.45	1.30 H	41	7.22	44.33
5	7215.00	35.07 AV	54.00	-18.93	1.30 H	41	-9.26	44.33

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1202.00	38.31 PK	74.00	-35.69	1.46 V	4	10.59	27.72
1	1202.00	21.83 AV	54.00	-32.17	1.46 V	4	-5.89	27.72
2	2390.00	53.42 PK	74.00	-20.58	1.20 V	34	21.45	31.97
2	2390.00	44.86 AV	54.00	-9.14	1.20 V	34	12.89	31.97
3	*2405.00	95.97 PK	114.00	-18.03	1.20 V	34	63.94	32.03
3	*2405.00	79.83 AV	94.00	-14.17	1.20 V	34	47.80	32.03
4	4810.00	67.47 PK	74.00	-6.53	1.06 V	321	29.37	38.11
4	**4810.00**	**50.99 AV**	**54.00**	**-3.01**	**1.06 V**	**321**	**12.89**	**38.11**
5	7215.00	51.29 PK	74.00	-22.71	1.05 V	0	6.96	44.33
5	7215.00	34.81 AV	54.00	-19.19	1.05 V	0	-9.52	44.33
6	9620.00	56.45 PK	74.00	-17.55	1.05 V	360	8.74	47.72
6	9620.00	39.97 AV	54.00	-14.03	1.05 V	360	-7.74	47.72

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * " : Fundamental frequency

EUT TEST CONDITION		MEASUREMENT DETAIL	
		FREQUENCY RANGE	1 ~ 25 GHz
CHANNEL	Channel 38	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
MODULATION TYPE	GFSK	**ENVIRONMENTAL CONDITIONS**	25deg. C, 68%RH, 991hPa
TESTED BY	Match Tsui	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2442.00	94.57 PK	114.00	-19.43	1.37 H	210	62.38	32.19
1	*2442.00	78.09 AV	94.00	-15.91	1.37 H	210	45.90	32.19
2	4884.00	62.08 PK	74.00	-11.92	1.28 H	355	23.77	38.31
2	4884.00	45.60 AV	54.00	-8.40	1.28 H	355	7.29	38.31
3	7326.00	51.59 PK	74.00	-22.41	1.00 H	333	7.00	44.58
3	7326.00	35.11 AV	54.00	-18.89	1.00 H	333	-9.48	44.58

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2442.00	97.31 PK	114.00	-16.69	1.14 V	273	65.12	32.19
1	*2442.00	80.83 AV	94.00	-13.17	1.14 V	273	48.64	32.19
2	4884.00	64.21 PK	74.00	-9.79	1.19 V	308	25.90	38.31
2	4884.00	47.73 AV	54.00	-6.27	1.19 V	308	9.42	38.31
3	7326.00	52.49 PK	74.00	-21.51	1.18 V	57	7.90	44.58
3	7326.00	36.01 AV	54.00	-17.99	1.18 V	57	-8.58	44.58

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * " : Fundamental frequency

EUT TEST CONDITION		MEASUREMENT DETAIL	
		FREQUENCY RANGE	1 ~ 25 GHz
CHANNEL	Channel 75	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
MODULATION TYPE	GFSK	**ENVIRONMENTAL CONDITIONS**	25deg. C, 68%RH, 991hPa
TESTED BY	Match Tsui	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2479.00	90.72 PK	114.00	-23.28	1.10 H	316	58.37	32.35
1	*2479.00	74.24 AV	94.00	-19.76	1.10 H	316	41.89	32.35
2	2483.50	53.98 PK	74.00	-20.02	1.10 H	316	21.61	32.37
2	2483.50	45.84 AV	54.00	-8.16	1.10 H	316	13.47	32.37
3	4958.00	64.57 PK	74.00	-9.43	1.15 H	334	26.08	38.49
3	4958.00	48.09 AV	54.00	-5.91	1.15 H	334	9.60	38.49
4	7437.00	51.97 PK	74.00	-22.03	1.08 H	36	7.15	44.82
4	7437.00	35.49 AV	54.00	-18.51	1.08 H	36	-9.33	44.82

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2479.00	97.82 PK	114.00	-16.18	1.42 V	288	65.47	32.35
1	*2479.00	81.34 AV	94.00	-12.66	1.42 V	288	48.99	32.35
2	2483.50	53.74 PK	74.00	-20.26	1.42 V	288	21.37	32.37
2	2483.50	48.28 AV	54.00	-5.72	1.42 V	288	15.91	32.37
3	4958.00	64.92 PK	74.00	-9.08	1.05 V	319	26.43	38.49
3	4958.00	48.44 AV	54.00	-5.56	1.05 V	319	9.95	38.49
4	7437.00	52.41 PK	74.00	-21.59	1.18 V	7	7.59	44.82
4	7437.00	35.93 AV	54.00	-18.07	1.18 V	7	-8.89	44.82

REMARKS:
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * " : Fundamental frequency

4.3 BAND EDGES MEASUREMENT

4.3.1 LIMITS OF BAND EDGES MEASUREMENT

Below –50dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz and 100 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.
The spectrum plots are attached on the following pages.

4.3.4 DEVIATION FROM TEST STANDARD

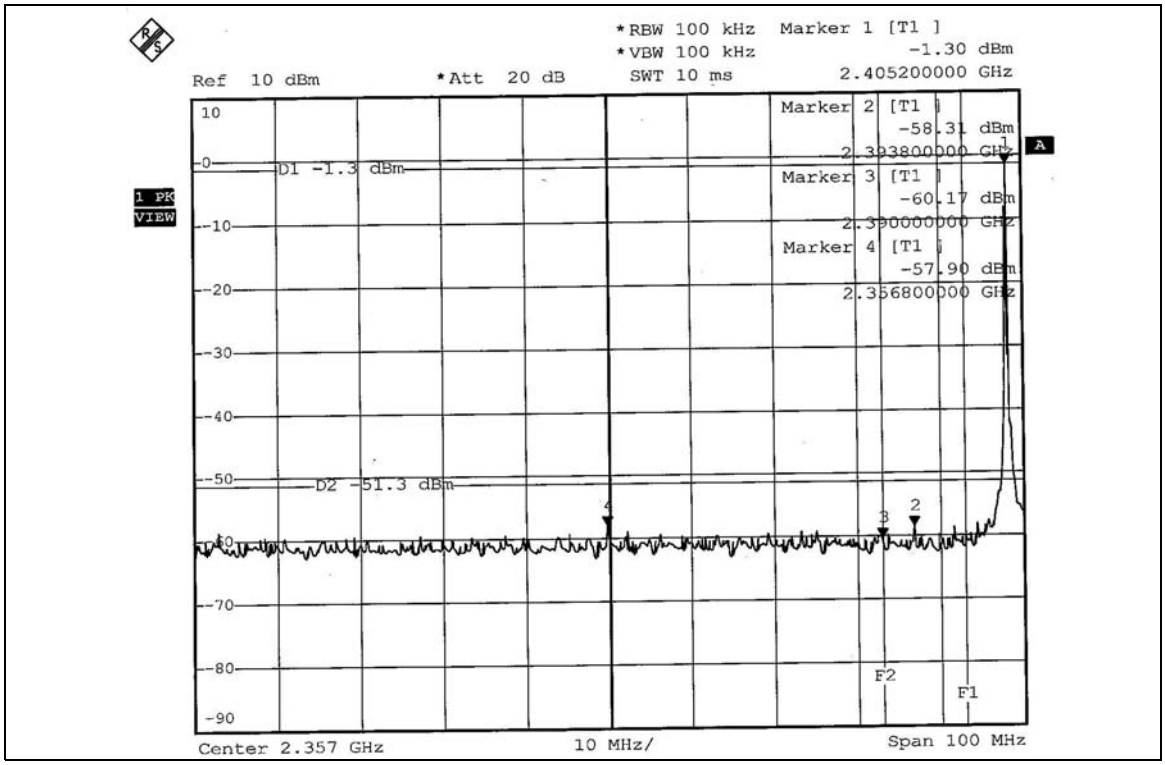
No deviation.

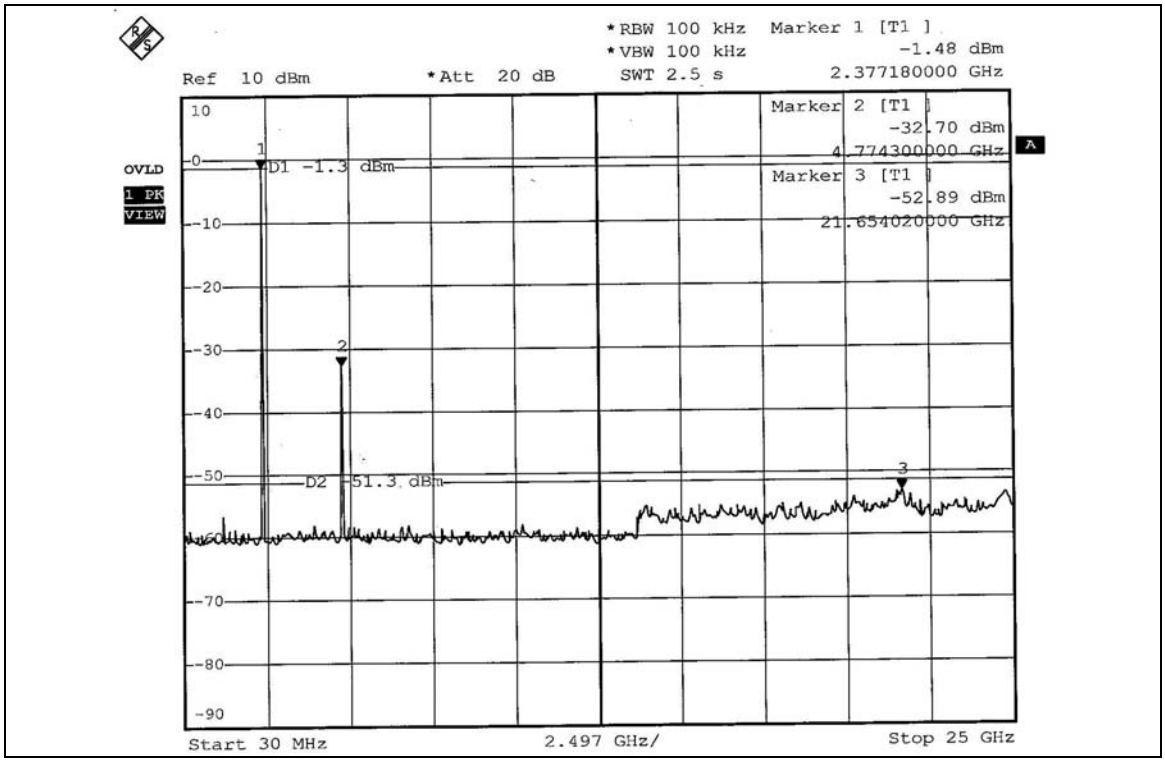
4.3.5 EUT OPERATING CONDITION

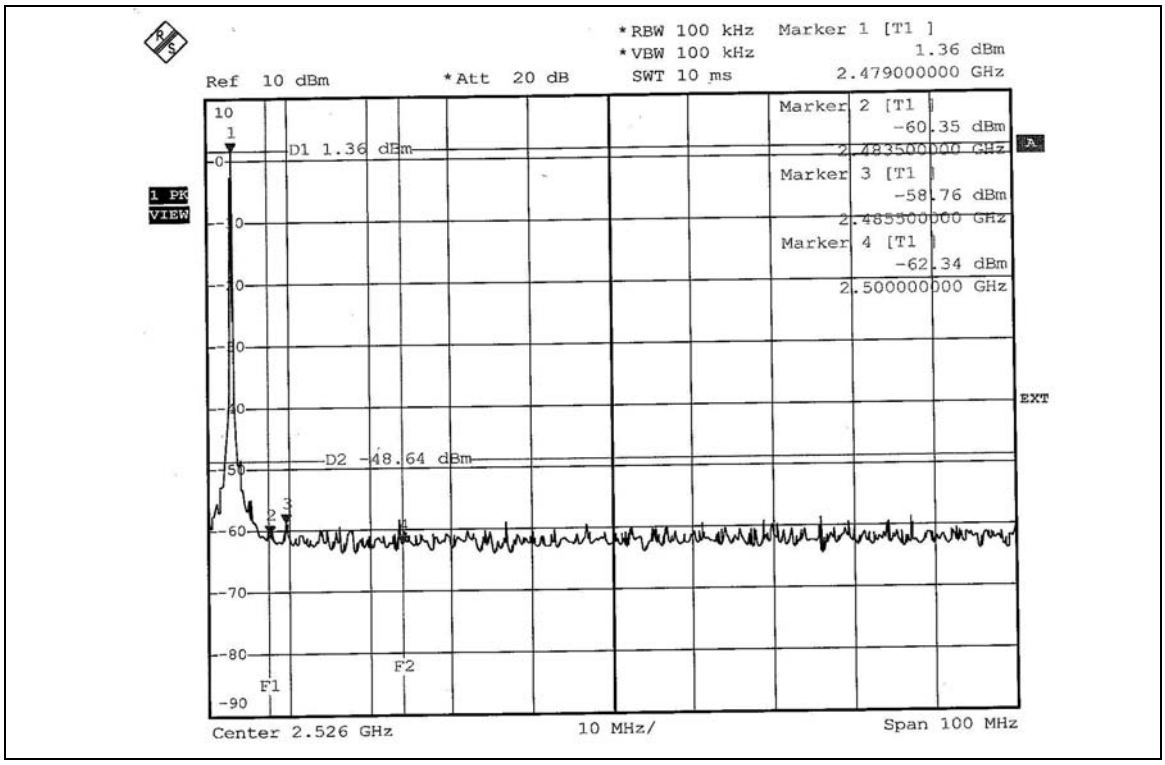
Same as Item 4.3.6.

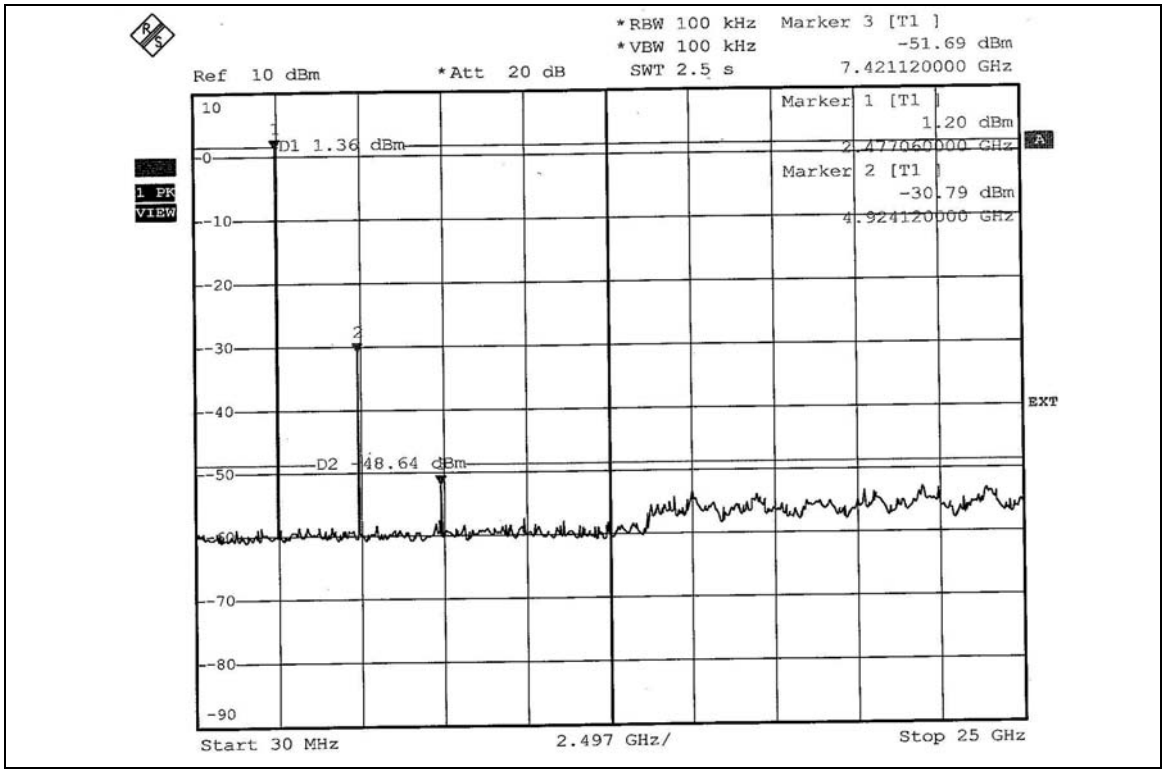
4.3.6 TEST RESULTS

The spectrum plots are attached on the following 4 images. D2 line indicates the highest level, and D1 line indicates the 50dB offset below D2. It shows compliance with the requirement in part 15.249 (d).


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-1.30 dBm
2.405200000 GHz
Ref 10 dBm
*Att 20 dB
Marker 2 [T1]
-58.31 dBm
2.393800000 GHz
Marker 3 [T1]
-60.17 dBm
2.390000000 GHz
Marker 4 [T1]
-57.90 dBm
2.356800000 GHz
D1 -1.3 dBm
D2 -51.3 dBm
1 PK
VIEW
A
F2
F1
Center 2.357 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-1.48 dBm
2.377180000 GHz
Ref 10 dBm
*Att 20 dB
Marker 2 [T1]
-32.70 dBm
4.774300000 GHz
Marker 3 [T1]
-52.89 dBm
21.654020000 GHz
D1 -1.3 dBm
D2 -51.3 dBm
OVLD
1 PK
VIEW
A
Start 30 MHz
2.497 GHz/
Stop 25 GHz

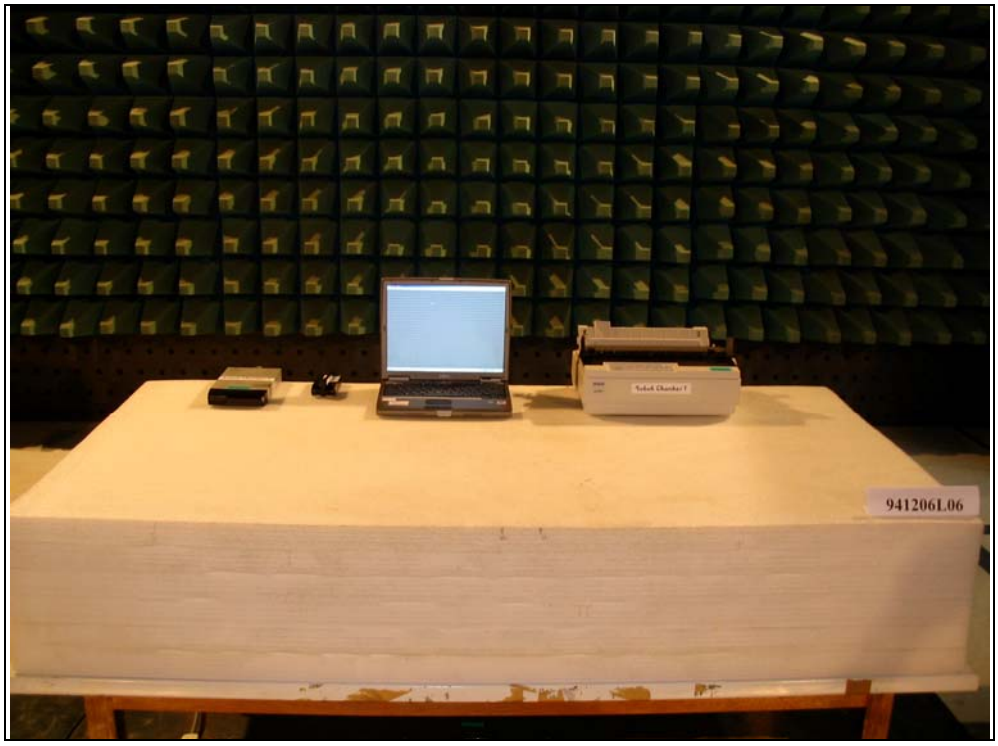

*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
1.36 dBm
2.479000000 GHz
Ref 10 dBm
*Att 20 dB
Marker 2 [T1]
-60.35 dBm
2.483500000 GHz
Marker 3 [T1]
-58.76 dBm
2.485500000 GHz
Marker 4 [T1]
-62.34 dBm
2.500000000 GHz
D1 1.36 dBm
D2 -48.64 dBm
1 PK
VIEW
EXT
F1
F2
Center 2.526 GHz
10 MHz/
Span 100 MHz

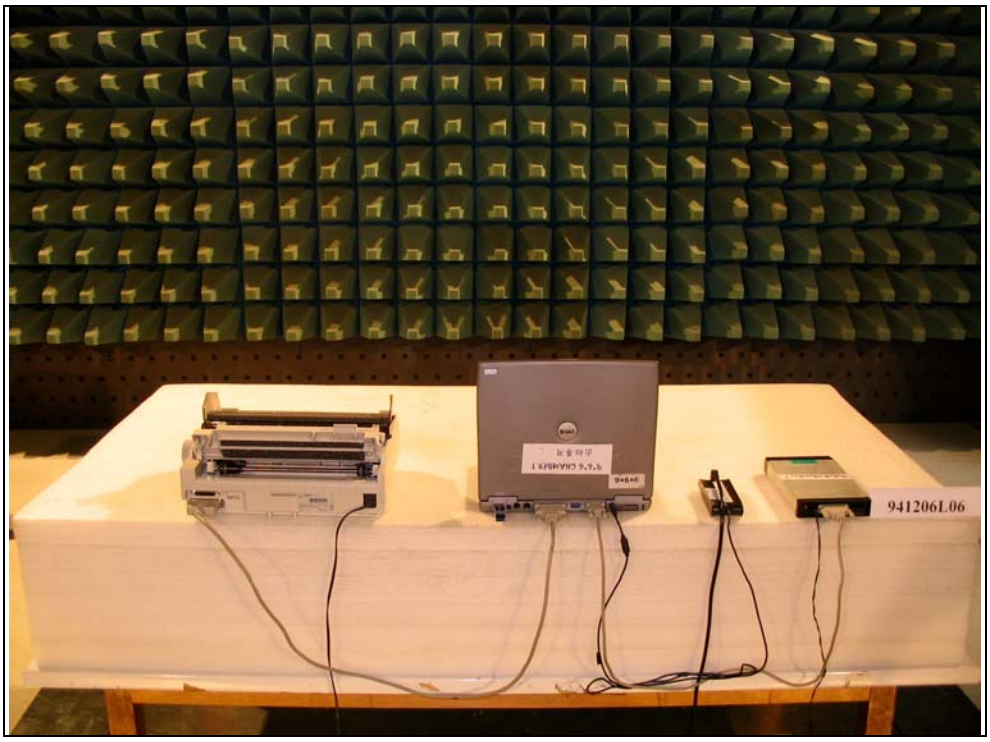

*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 3 [T1]
-51.69 dBm
7.421120000 GHz
Ref 10 dBm
*Att 20 dB
Marker 1 [T1]
1.20 dBm
2.477060000 GHz
Marker 2 [T1]
-30.79 dBm
4.924120000 GHz
D1 1.36 dBm
D2 -48.64 dBm
1 PK
VIEW
EXT
Start 30 MHz
2.497 GHz/
Stop 25 GHz

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Conducted Emission Test

Radiated Emission Test





6. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC, UL, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, DGT
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab
Tel: 886-3-3183232
Fax: 886-3-3185050

Linko RF Lab
Tel: 886-3-3270910
Fax: 886-3-3270892

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also

APPENDIX-A

MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.