

FCC TEST REPORT

REPORT NO.: RF950305H02

MODEL NO.: C-X2C31

RECEIVED: March 06, 2006

TESTED: March 16 to 17, 2006

ISSUED: March 22, 2006

APPLICANT: LOGITECH FAR EAST LTD.

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ISSUED BY: Advance Data Technology Corporation

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1 CERTIFICATION

PRODUCT : Logitech Cordless Precision
BRAND NAME : Logitech
MODEL NO : C-X2C31
TESTED: March 16 to 17, 2006
APPLICANT : LOGITECH FAR EAST LTD.
STANDARDS : 47 CFR Part 15, Subpart C (Section 15.249),
ANSI C63.4-2003

The above equipment (Model: C-X2C31) has 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 :  , **DATE:** March 22, 2006
(Midoli Peng)

TECHNICAL
ACCEPTANCE :  , **DATE:** March 22, 2006
Responsible for RF (Hank Chung)

APPROVED BY :  , **DATE:** March 22, 2006
(May Chen, Deputy Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Paragraph	Test Type	Result	Remark
15.207	Conducted Emission Test	NA	Minimum passing margin is -3.00dB at 0.158MHz
15.249	Radiated Emission Test	PASS	Minimum passing margin is -18.20dB at 864.0MHz & -18.20dB at 4880.0MHz
15.249	Band Edge Measurement	PASS	Meet the requirement of limit

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Logitech Cordless Precision
MODEL NO.	C-X2C31
FCC ID	JNZ222543
POWER SUPPLY	DC 3.5V from host equipment
MODULATION TYPE	GFSK
CARRIER FREQUENCY OF EACH CHANNEL	2401MHz ~ 2480MHz
NUMBER OF CHANNEL	80
ANTENNA TYPE	PCB strip antenna with 1.31dBi antenna gain
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

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

3.2 DESCRIPTION OF TEST MODES

Eighty channels are provided in this EUT.

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2401	14	2415	28	2429	42	2443	56	2457	70	2471
1	2402	15	2416	29	2430	43	2444	57	2458	71	2472
2	2403	16	2417	30	2431	44	2445	58	2459	72	2473
3	2404	17	2418	31	2431	45	2446	59	2460	73	2474
4	2405	18	2419	32	2433	46	2447	60	2461	74	2475
5	2406	19	2420	33	2434	47	2448	61	2462	75	2476
6	2407	20	2421	34	2435	48	2449	62	2463	76	2477
7	2408	21	2422	35	2436	49	2450	63	2464	77	2478
8	2409	22	2423	36	2437	50	2451	64	2465	78	2479
9	2410	23	2424	37	2438	51	2452	65	2466	79	2480
10	2411	24	2425	38	2439	52	2453	66	2467		
11	2412	25	2426	39	2440	53	2454	67	2468		
12	2413	26	2427	40	2441	54	2455	68	2469		
13	2414	27	2428	41	2442	55	2456	69	2470		

NOTE:

1. Below 1 GHz, the channel 0, 39, and 79 were pre-tested in chamber. The channel 79, worst case one, was chosen for final test.
2. Above 1 GHz, the channel 0, 39, and 79 were tested individually.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is the transmitter part of a Logitech Cordless Precision. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

47 CFR Part 15, Subpart C (Section 15.249)
ANSI C63.4: 2003

All tests have been performed and recorded as per the above standards.

3.4 DESCRIPTION OF SUPPORT UNITS

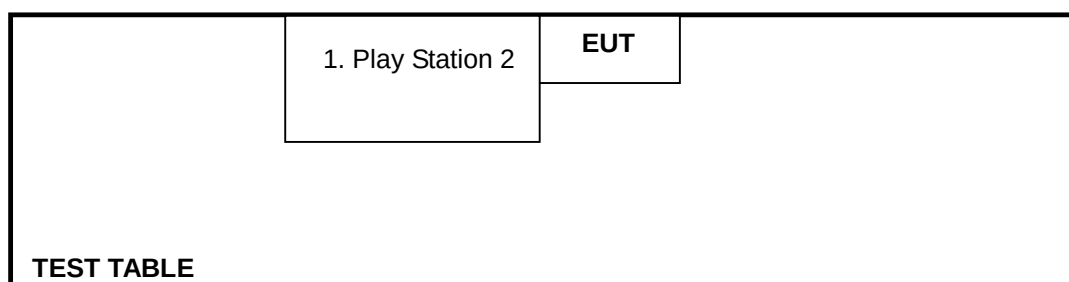
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	Play Station 2	Sony	SCPH-50007	FG3397818	NA

No.	Signal cable description
1	NA

Note: 1. All power cords of the above support units are unshielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST



NOTE: 1. Please refer to the photos of test configuration in Item 5 also.

4 TEST PROCEDURES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	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. All emanations from a class 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

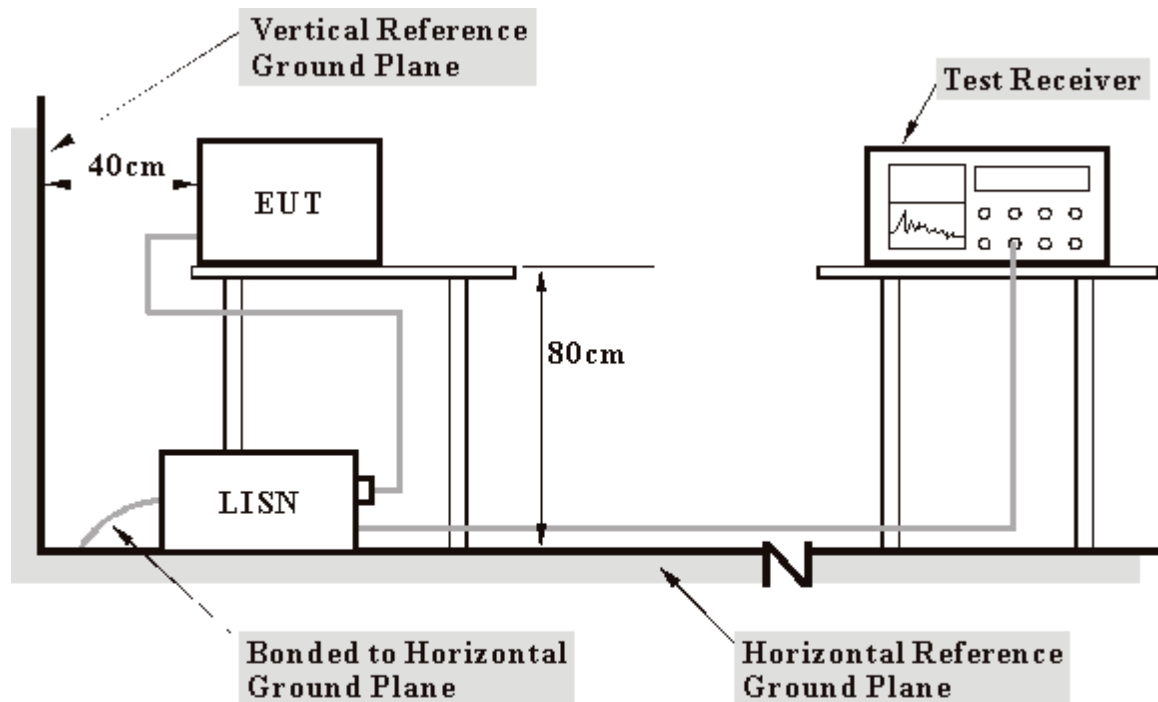
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Sep. 19, 2006
Line-Impedance Stabilization Network(for EUT)	ENV-216	100071	Nov. 10, 2006
ROHDE & SCHWARZ LISN	KNW-407	8/1395/12	Jul. 19, 2006
RF Signal Cable	RG233/U	Cable_CA_02	Dec. 10, 2006
Terminator(for KYORITSU)	50	2	Oct. 08, 2006
Software	ADT_Cond_V7.3.2	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 ADT Shielded Room No. B.
3. The VCCI Con B Registration No. is C-2193.

4.1.3 TEST PROCEDURES

- The EUT/HOST was placed 0.4 meters from the conducting wall of the shielded room with EUT/HOST 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.
- Both lines of the power mains connected to the EUT/HOST were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.4 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.

4.1.5 EUT OPERATING CONDITIONS

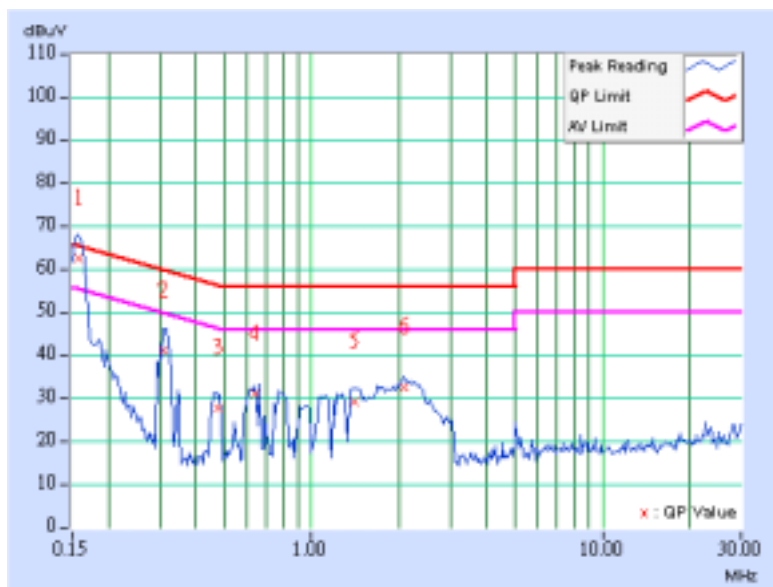
- a. Plug the EUT into the support unit 1 (PS2) that placed on a testing table.
- b. The support unit 1 (PS2) ran a test program to enable EUT under transmission condition continuously at specific channel frequency.

4.1.6 TEST RESULTS

INPUT POWER (SYSTEM)	120Vac, 60 Hz	6DB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 60%RH, 969 hPa	PHASE	Line (L)
TESTED BY	Eric Lee		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	9.60	52.95	42.98	62.55	52.58	65.58	55.58	-3.03	-3.00
2	0.310	9.60	31.59	-	41.19	-	59.97	49.97	-18.78	-
3	0.474	9.60	17.97	-	27.57	-	56.44	46.44	-28.87	-
4	0.641	9.60	21.46	-	31.06	-	56.00	46.00	-24.94	-
5	1.396	9.64	19.48	-	29.12	-	56.00	46.00	-26.88	-
6	2.076	9.70	22.89	-	32.59	-	56.00	46.00	-23.41	-

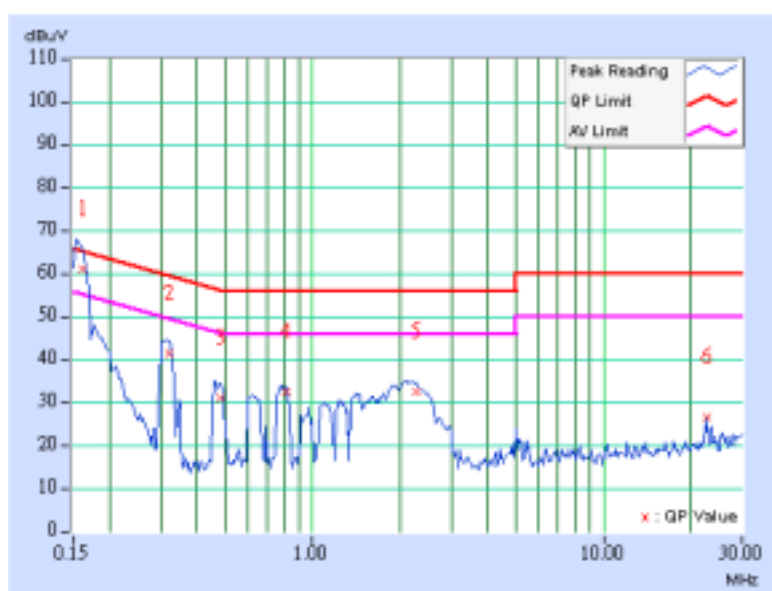
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 60%RH, 969 hPa	PHASE	Neutral (N)
TESTED BY	Eric Lee		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	9.60	51.11	42.68	60.71	52.28	65.38	55.38	-4.67	-3.10
2	0.320	9.60	31.55	-	41.15	-	59.71	49.71	-18.56	-
3	0.480	9.60	20.97	-	30.57	-	56.34	46.34	-25.77	-
4	0.814	9.60	22.52	-	32.12	-	56.00	46.00	-23.88	-
5	2.275	9.70	22.42	-	32.12	-	56.00	46.00	-23.88	-
6	22.570	10.10	16.57	-	26.67	-	60.00	50.00	-33.33	-

- 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

According to 15.249 the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m)	
	Peak	Average
2400 ~ 2483.5	114	94

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	$2400/F(\text{kHz})$	300
0.490-1.705	$24000/F(\text{kHz})$	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	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
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 07, 2006
HP Pre_Amplifier	8449B	3008A01922	Oct. 02, 2006
ROHDE & SCHWARZ Test Receiver	ESCS30	100287	Dec. 08, 2006
CHASE Broadband Antenna	VULB9168	138	Dec. 21, 2006
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 11, 2006
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 05, 2007
SCHWARZBECK Biconical Antenna	VHBA9123	459	Jun. 26, 2006
SCHWARZBECK Periodic Antenna	UPA6108	1148	Jun. 26, 2006
RF Switches (ARNITSU)	CS-201	1565157	NA
RF CABLE (Chaintek) 1GHz-20GHz	SF102	22054-2	Nov. 16, 2006
RF Cable(RICHTEC)	9913-30M	STCCAB-30M-1GHz-021	Jul. 16, 2006
Software	ADT_Radiated_V 5.14	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	NA

- Note: 1. The calibration interval of the above test instruments is 12 months (36 months for Periodic Antenna) and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in ADT Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 4824-3.
7. The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Radiated emissions (30MHz-1GHz)	2.98 dB
Radiated emissions (1GHz ~18GHz)	2.21 dB
Radiated emissions (18GHz ~20GHz)	1.88 dB

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 10 meter open area test site. 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 peak, quasi-peak or average method as specified and then reported in a data sheet.

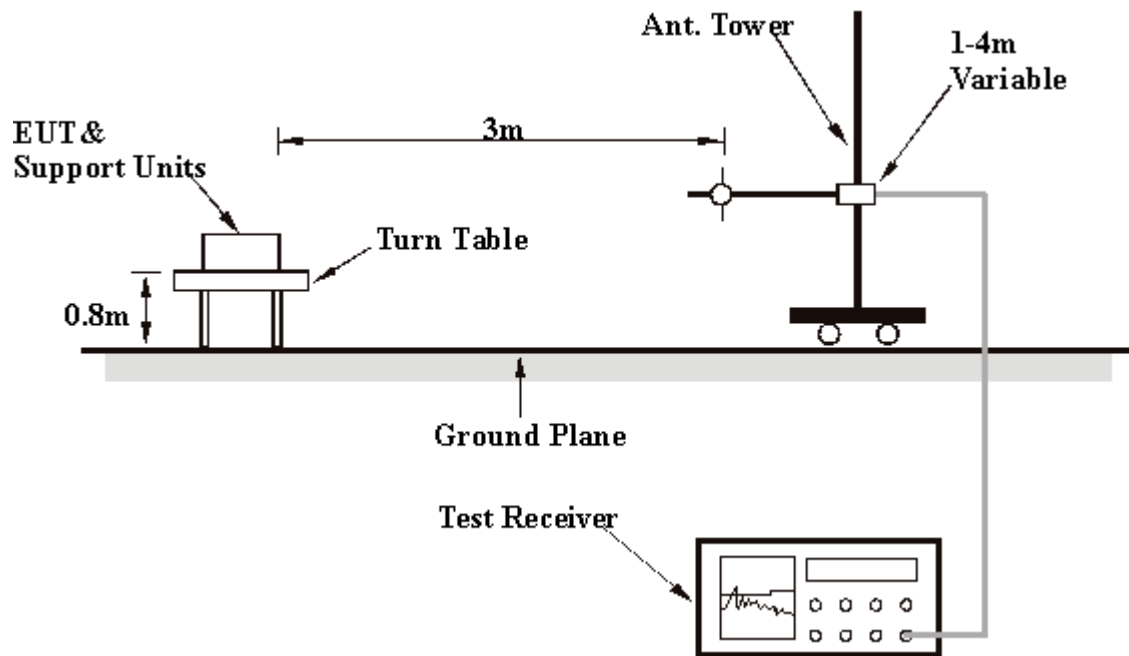
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) 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 4.1.5

4.2.7 TEST RESULTS

MODE	Channel 79	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	22 deg. C, 66%RH, 969 hPa	TESTED BY	Sky Liao

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	160.00	18.10 QP	43.50	-25.40	1.18 H	236	4.00	14.10
2	240.00	17.90 QP	46.00	-28.10	1.30 H	19	4.60	13.30
3	320.00	17.90 QP	46.00	-28.10	1.06 H	132	0.80	17.00
4	400.00	19.00 QP	46.00	-27.00	1.29 H	308	0.00	19.00
5	480.00	20.60 QP	46.00	-25.40	1.40 H	207	-0.70	21.20
6	528.00	22.80 QP	46.00	-23.20	1.12 H	45	0.20	22.60
7	624.00	21.60 QP	46.00	-24.40	1.24 H	343	-3.20	24.70
8	864.00	25.50 QP	46.00	-20.50	1.35 H	125	-3.00	28.50

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	160.00	20.80 QP	43.50	-22.80	1.18 V	279	6.60	14.10
2	240.06	17.30 QP	46.00	-28.70	1.08 V	82	4.00	13.30
3	320.02	16.70 QP	46.00	-29.30	1.00 V	215	-0.40	17.10
4	399.95	22.10 QP	46.00	-23.90	1.00 V	332	3.10	19.00
5	480.00	20.30 QP	46.00	-25.70	1.22 V	287	-0.90	21.20
6	528.00	22.40 QP	46.00	-23.60	1.04 V	345	-0.20	22.60
7	624.00	24.90 QP	46.00	-21.10	1.11 V	238	0.20	24.70
8	864.00	27.80 QP	46.00	-18.20	1.12 V	70	-0.80	28.50

- 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.

MODE	Channel 0	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	1000~25000MHz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	21 deg. C, 69%RH, 969 hPa	TESTED BY	Sky Liao

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	2390.00	43.80 PK	74.00	-30.20	1.22 H	152	10.10	33.70
1	2390.00	12.40 AV	54.00	-41.60	1.22 H	152	-21.30	33.70
2	*2401.00	90.30 PK	114.00	-23.70	1.20 H	6	60.50	29.80
2	*2401.00	58.90 AV	94.00	-35.10	1.20 H	6	29.10	29.80
3	4800.00	55.40 PK	74.00	-18.60	1.00 H	280	20.40	35.00
3	4800.00	24.00 AV	54.00	-30.00	1.00 H	280	-11.00	35.00
4	7200.00	49.10 PK	74.00	-24.90	1.22 H	152	8.60	40.40
4	7200.00	17.70 AV	54.00	-36.30	1.22 H	152	-22.80	40.40

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	2390.00	34.40 PK	74.00	-39.60	1.71 V	154	0.70	33.70
1	2390.00	3.00 AV	54.00	-51.00	1.71 V	154	-30.70	33.70
2	*2401.00	84.80 PK	114.00	-29.20	1.71 V	154	55.00	29.80
2	*2401.00	53.40 AV	94.00	-40.60	1.71 V	154	23.60	29.80
3	4800.00	51.80 PK	74.00	-22.20	1.17 V	2	16.80	35.00
3	4800.00	20.40 AV	54.00	-33.60	1.17 V	2	-14.60	35.00
4	7200.00	48.40 PK	74.00	-25.60	1.02 V	25	7.90	40.40
4	7200.00	17.00 AV	54.00	-37.00	1.02 V	25	-23.50	40.40

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. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

MODE	Channel 39	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	1000~25000MHz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	21 deg. C, 69%RH, 969 hPa	TESTED BY	Sky Liao

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	*2440.00	90.50 PK	114.00	-23.50	1.17 H	12	60.60	29.90
1	*2440.00	59.10 AV	94.00	-34.90	1.17 H	12	29.20	29.90
2	4880.00	55.80 PK	74.00	-18.20	1.08 H	212	20.40	35.30
2	4880.00	24.40 AV	54.00	-29.60	1.08 H	212	-11.00	35.30
3	7320.00	49.20 PK	74.00	-24.80	1.15 H	109	8.50	40.70
3	7320.00	17.80 AV	54.00	-36.20	1.15 H	109	-22.90	40.70

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	*2440.00	85.10 PK	114.00	-28.90	1.60 V	152	55.20	29.90
1	*2440.00	53.70 AV	94.00	-40.30	1.60 V	152	23.80	29.90
2	4880.00	52.00 PK	74.00	-22.00	1.02 V	26	16.60	35.30
2	4880.00	20.60 AV	54.00	-33.40	1.02 V	26	-14.80	35.30
3	7320.00	48.40 PK	74.00	-25.60	1.08 V	32	7.70	40.70
3	7320.00	17.00 AV	54.00	-37.00	1.08 V	32	-23.70	40.70

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. Margin value = Emission level - Limit value
4. “ * ” : Fundamental frequency
5. The other emission levels were very low against the limit.

MODE	Channel 79	INPUT POWER (SYSTEM)	120Vac, 60 Hz
FREQUENCY RANGE	1000~25000MHz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	21 deg. C, 69%RH, 969 hPa	TESTED BY	Sky Liao

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	*2480.00	90.50 PK	114.00	-23.50	1.25 H	3	60.40	30.10
1	*2480.00	59.10 AV	94.00	-34.90	1.25 H	3	29.00	30.10
2	2483.50	47.30 PK	74.00	-26.70	1.25 H	3	17.20	30.10
2	2483.50	15.90 AV	54.00	-38.10	1.25 H	3	-14.20	30.10
3	4960.00	55.50 PK	74.00	-18.50	1.02 H	252	19.80	35.70
3	4960.00	24.10 AV	54.00	-29.90	1.02 H	252	-11.60	35.70
4	7440.00	49.90 PK	74.00	-24.10	1.44 H	128	8.90	40.90
4	7440.00	18.50 AV	54.00	-35.50	1.44 H	128	-22.50	40.90

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	*2480.00	85.20 PK	114.00	-28.80	1.68 V	147	55.10	30.10
1	*2480.00	53.80 AV	94.00	-40.20	1.68 V	147	23.70	30.10
2	2483.50	42.00 PK	74.00	-32.00	1.68 V	147	11.90	30.10
2	2483.50	10.60 AV	54.00	-43.40	1.68 V	147	-19.50	30.10
3	4960.00	52.70 PK	74.00	-21.30	1.16 V	44	17.00	35.70
3	4960.00	21.30 AV	54.00	-32.70	1.16 V	44	-14.40	35.70
4	7440.00	48.90 PK	74.00	-25.10	1.08 V	72	7.90	40.90
4	7440.00	17.50 AV	54.00	-36.50	1.08 V	72	-23.50	40.90

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. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

4.3 BAND EDGES MEASUREMENT

4.3.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB 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
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2006

NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.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 loss cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

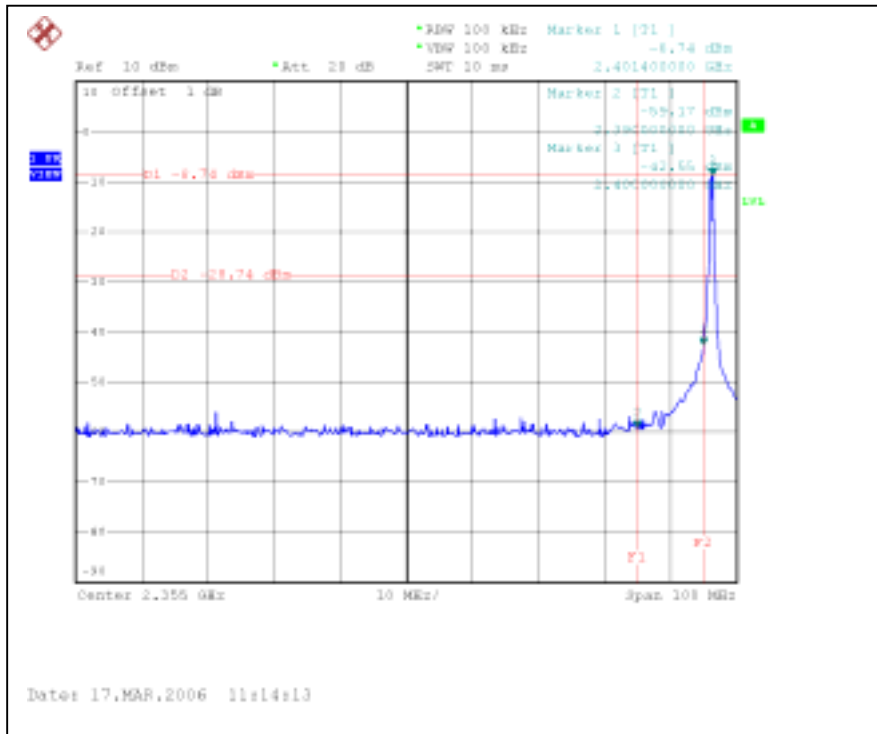
4.3.5 EUT OPERATING CONDITION

The software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

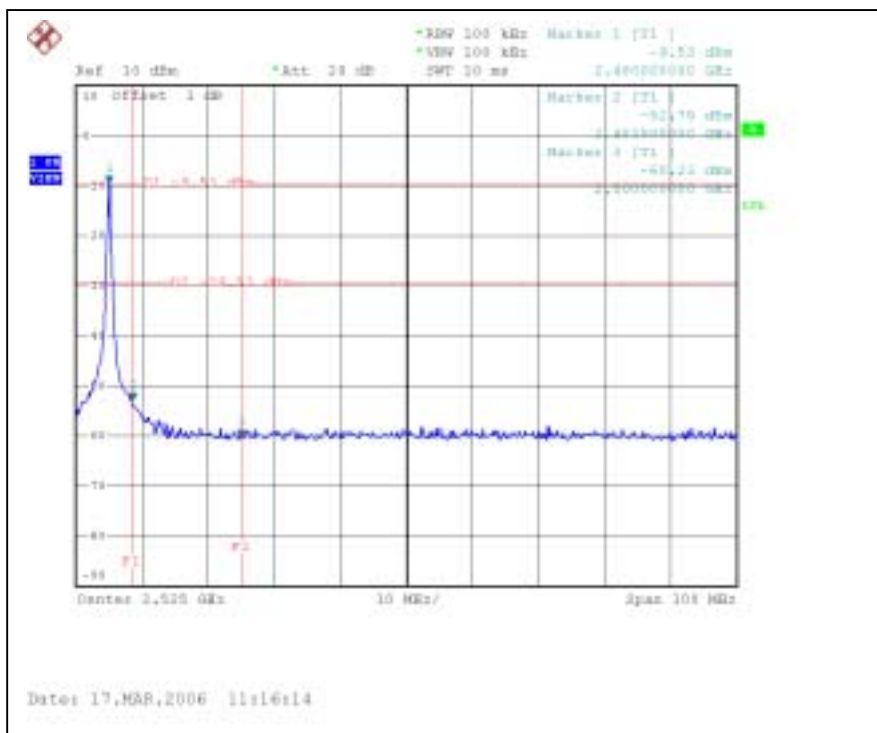
4.3.6 TEST RESULTS

Emissions radiated outside of the specified frequency bands, please refer pages form 13 to 20 for met the requirement of the general radiated emission limits in § 15.209.

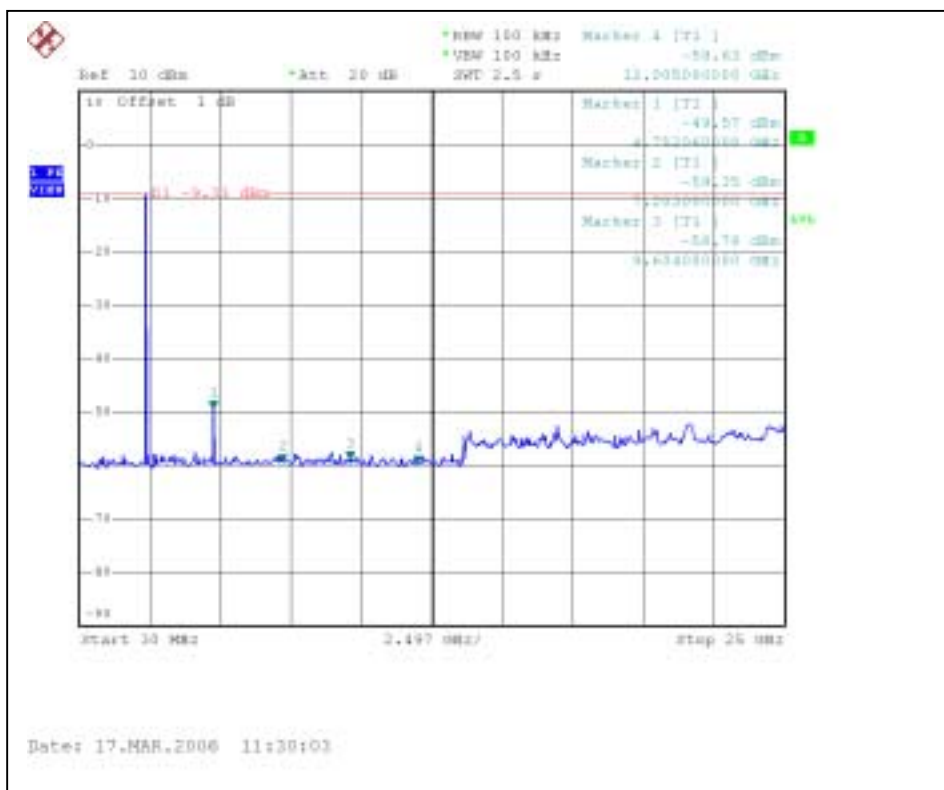
CH0



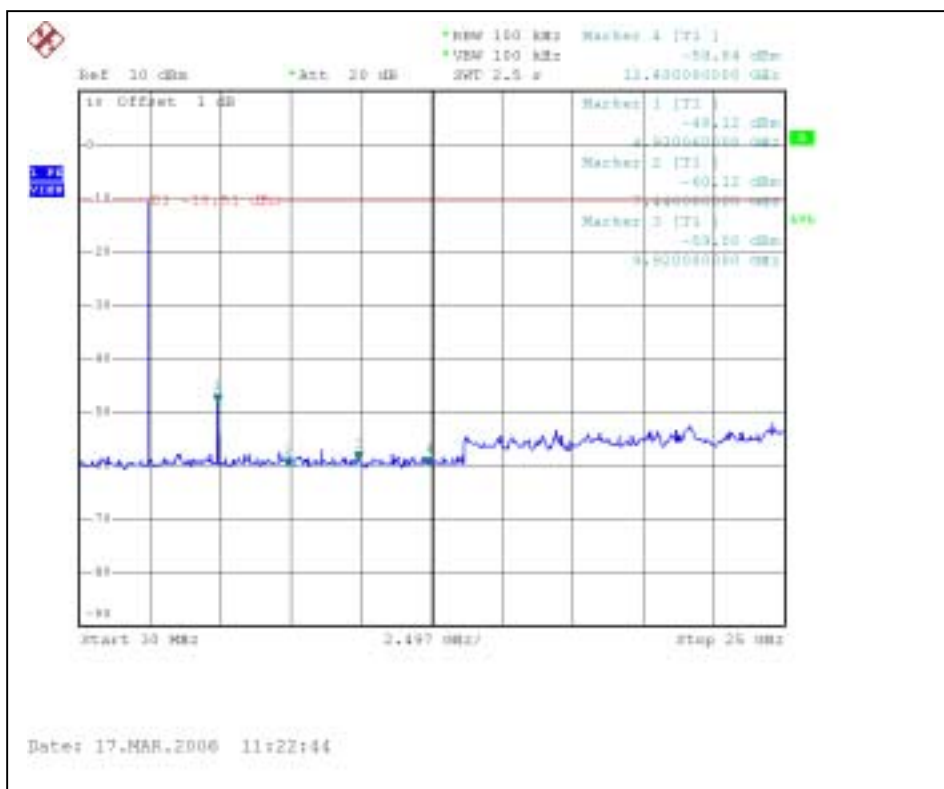
CH79



CH0



CH79



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:

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Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

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Fax: 886-3-3185050

Email: service@adt.com.tw

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.