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FCC TEST REPORT

REPORT NO.: RF971121H04

MODEL NO.: N-R0002

RECEIVED: Nov. 21, 2008

TESTED: Nov. 21 to Dec. 02, 2008

ISSUED: Dec. 16, 2008

APPLICANT: Logitech Inc. - Canada

ADDRESS: 2355 Skymark Avenue, Suite 200 Mississauga,
ON Canada L4W 4Y6

ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

LAB LOCATION: No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen,
Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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Table of Contents

1	CERTIFICATION	3
2	SUMMARY OF TEST RESULTS	4
2.1	MEASUREMENT UNCERTAINTY	4
3	GENERAL INFORMATION	5
3.1	GENERAL DESCRIPTION OF EUT	5
3.1	GENERAL DESCRIPTION OF TEST MODE	6
3.2	GENERAL DESCRIPTION OF APPLIED STANDARDS	7
3.3	DESCRIPTION OF SUPPORT UNITS	8
3.4	CONFIGURATION OF SYSTEM UNDER TEST	9
4	TEST PROCEDURES AND RESULTS	12
4.1	CONDUCTED EMISSION MEASUREMENT	12
4.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	12
4.1.2	TEST INSTRUMENTS	12
4.1.3	TEST PROCEDURES	13
4.1.4	TEST SETUP	13
4.1.5	EUT OPERATING CONDITIONS	14
4.1.6	TEST RESULTS (MODE 1)	15
4.1.7	TEST RESULTS (MODE 2)	17
4.2	RADIATED EMISSION MEASUREMENT	19
4.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT	19
4.2.2	TEST INSTRUMENTS	20
4.2.3	TEST PROCEDURES	21
4.2.4	DEVIATION FROM TEST STANDARD	21
4.2.5	TEST SETUP	22
4.2.6	EUT OPERATING CONDITIONS	22
4.2.7	TEST RESULTS	23
4.3	CONDUCTED OUT-BAND EMISSION MEASUREMENT	25
4.3.1	LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT	25
4.3.2	TEST INSTRUMENTS	25
4.3.3	TEST PROCEDURE	25
4.3.4	DEVIATION FROM TEST STANDARD	25
4.3.5	EUT OPERATING CONDITION	25
4.3.6	TEST RESULTS	26
5	INFORMATION ON THE TESTING LABORATORIES	27
6	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	28



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1 CERTIFICATION

PRODUCT : H1100- Remote Controller
BRAND : Logitech
MODEL NO. : N-R0002
TESTED : Nov. 21 to Dec. 02, 2008
TEST SAMPLE : MASS-PRODUCTION
APPLICANT : Logitech Inc. - Canada
STANDARDS : 47 CFR Part 15, Subpart C (Section 15.249),
ANSI C63.4-2003

The above equipment (Model: N-R0002) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, 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 : Sunny Wen , **DATE:** Dec 16, 2008
(Sunny Wen, Specialist)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** Dec 16, 2008
Responsible for RF (Hank Chung, Deputy Manager)

APPROVED BY : May Chen , **DATE:** Dec 16, 2008
(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	PASS	Minimum passing margin is -6.43 dB at 0.525 MHz
15.249	Radiated Emission Test	PASS	Minimum passing margin is -4.60 dB at 2725.26MHz
15.249	Band Edge Measurement	PASS	Meet the requirement of limit

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:

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

Measurement	Value
Conducted Emission	2.44 dB
Radiated emissions (30MHz-1GHz)	3.94 dB
Radiated emissions (1GHz -18GHz)	2.49 dB
Radiated emissions (18GHz -40GHz)	2.70 dB

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	H1100- Remote Controller
MODEL NO.	N-R0002
FCC ID	TOB-ZM3102H
POWER SUPPLY	DC 5.5V from Adapter, DC 3.7V from battery
MODULATION TYPE	FSK
CARRIER FREQUENCY OF EACH CHANNEL	908.42MHz
NUMBER OF CHANNEL	1
ANTENNA TYPE	Whip Antenna (Rigid Wire) with 4 dBi antenna gain
DATA CABLE	USB cable (shielded, 1.61m with one core)
I/O PORTS	USB port x 1
ASSOCIATED DEVICES	Cradle (Brand : Logitech / Model : L-L0001) x 1 Adapter x 1 Battery x 1

NOTE:

- The EUT must be supplied with a power adapter / battery as following:

Adapter (for Cradle use)		
Brand	Model No.	Spec.
Logitech	KSAA0550080W1US	AC Input: 100-240V, 50/60MHz, 0.18A DC Output: 5.5V, 0.8A DC output cable (unshielded, 1.8m)
Battery (Li-ion Rechargeable battery)		
Brand	Model No.	Spec.
Logitech	L-LU18	1250mAh 3.7V

2. The EUT was pre-tested under the following test modes:

Test Mode	Description
Mode A	Remote (X-Y plane)
Mode B	Remote (X-Z plane)
Mode C	Remote (Y-Z plane)
Mode D	Remote + Cradle + Adapter
Mode E	Remote + USB cable

From the above modes, the worst radiated emission was found in **Mode B**. Therefore only the test data of the modes were recorded in this report individually.

3. 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.

3.1 GENERAL DESCRIPTION OF TEST MODE

The EUT was tested under following test modes:

Conducted test	
Test Mode	Description
Mode 1	Remote + Cradle + Adapter
Mode 2	Remote + USB cable
Radiated test	
Test Mode	Description
Mode 1	Remote (X-Z plane)



3.2 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a H1100- Remote Controller. 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.

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.



3.3 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.

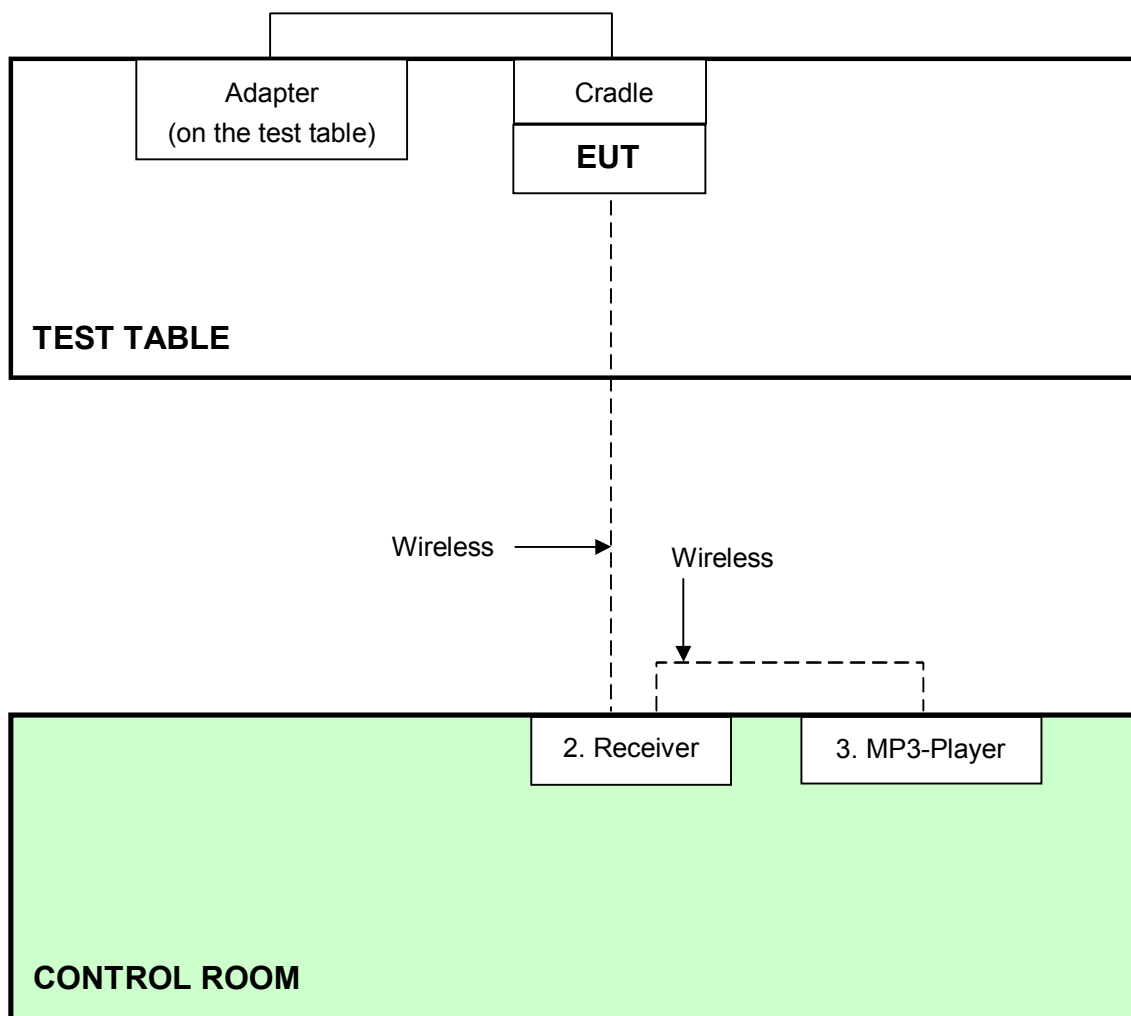
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook Computer	DELL	PP19L	CN-OHC416-70166-5CA-0448	PIW632500516610
2	Receiver	Logitech	C-RE4A	NA	TOB-LZM2102
3	MP3 Player	Philips	MCM240/21T	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	NA
3	NA

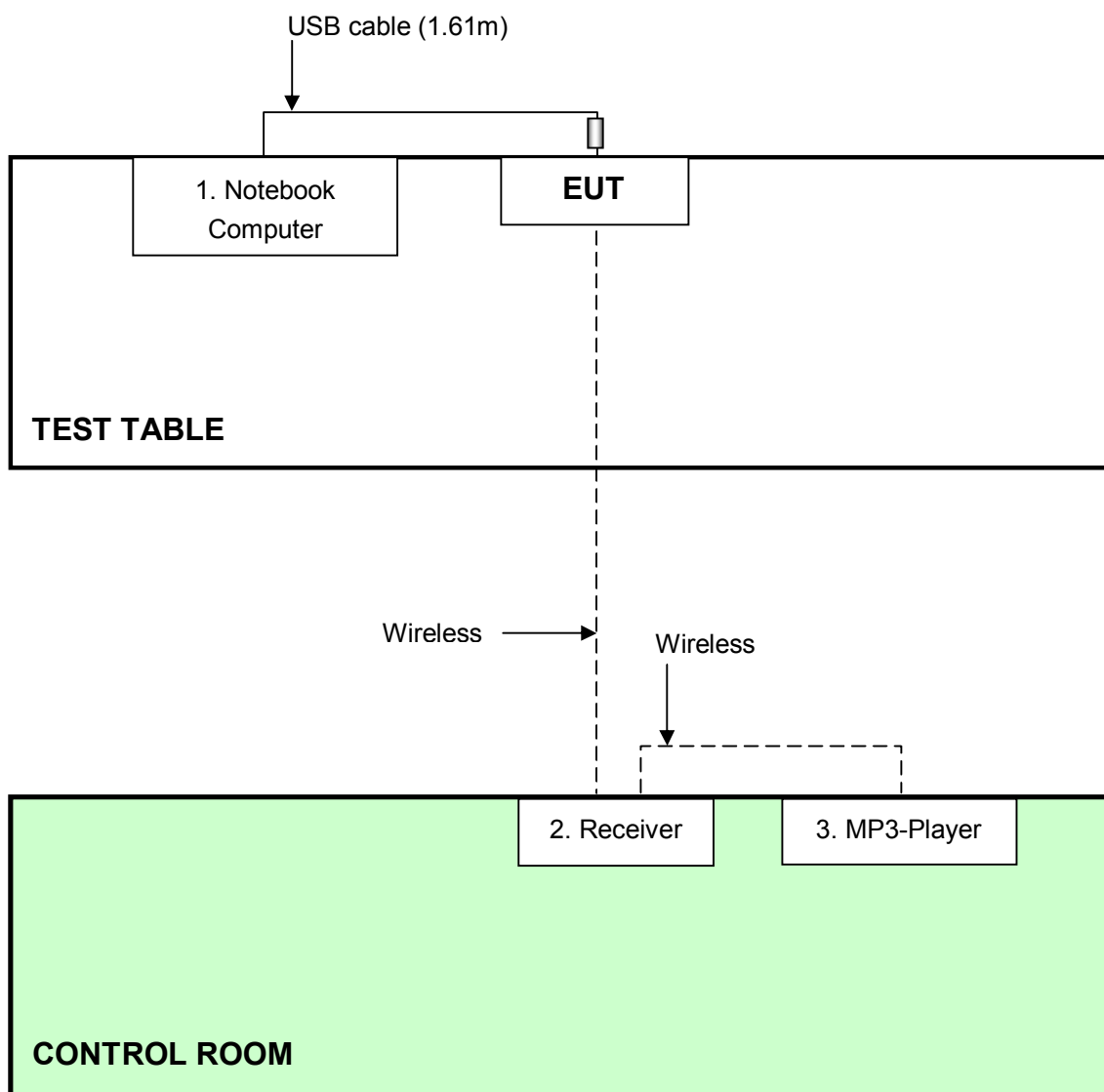
NOTE: All power cords of the above support units are non-shielded (1.8m).

3.4 CONFIGURATION OF SYSTEM UNDER TEST

For Conducted test Mode 1:

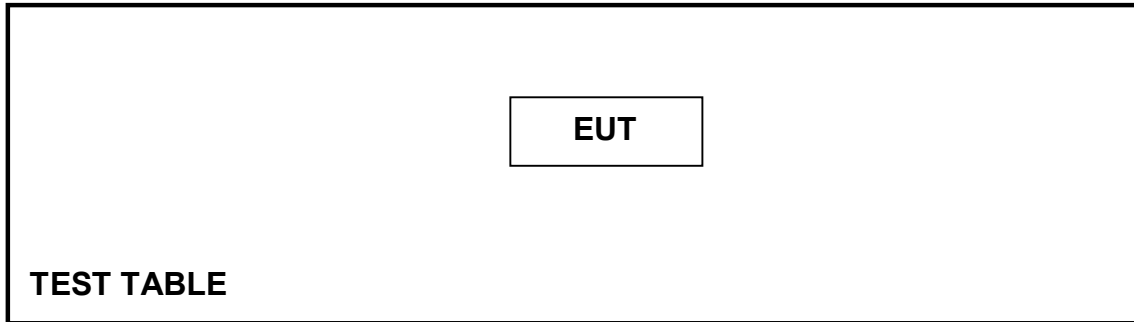


For Conducted test Mode 2:





For Radiated test Mode 1:





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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 DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	847124/029	Feb. 29, 2008	Feb. 28, 2009
Line-Impedance Stabilization Network (for EUT)	ENV-216	100071	Nov. 25, 2008	Nov. 24, 2009
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 05, 2008	Nov. 04, 2009
RF Cable (JYEBAO)	5DFB	COBCAB-001	July 24, 2008	July 23, 2009
50 ohms Terminator	50	3	Nov. 05, 2008	Nov. 04, 2009
Software	BV ADT_Cond_V7.3.6	NA	NA	NA

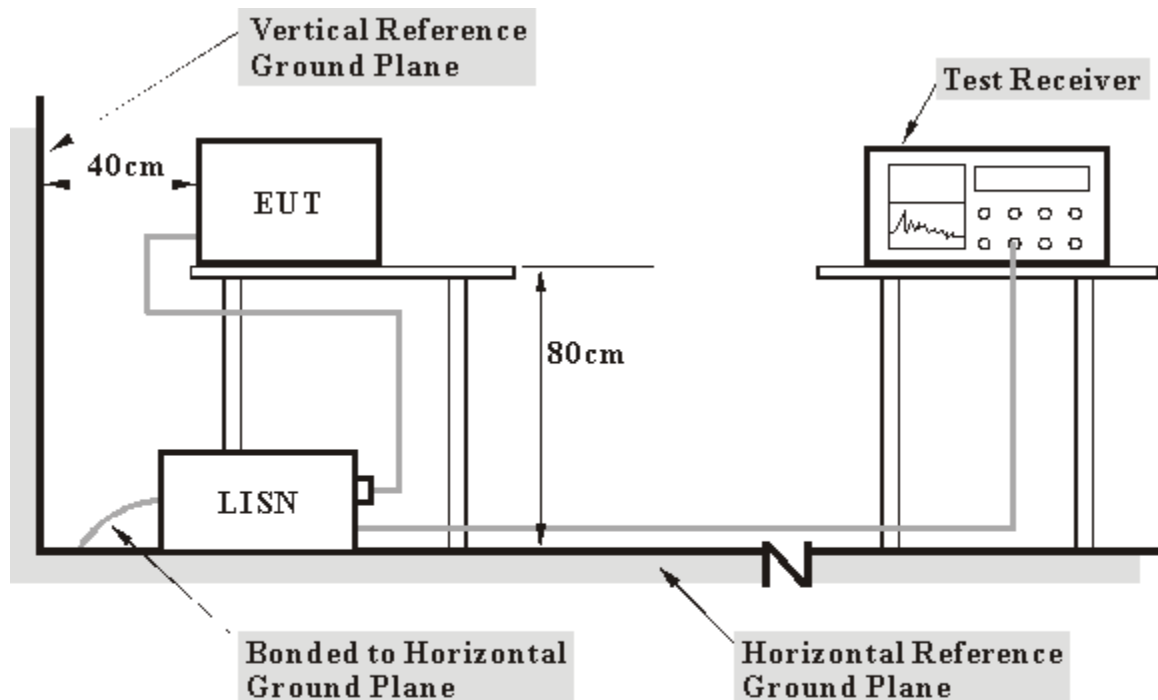
Note:

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 Shielded Room No. B.
3. The VCCI Con B Registration No. is C-2193.

4.1.3 TEST PROCEDURES

- a. 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.
- b. Both lines of the power mains connected to the EUT/HOST were checked for maximum conducted interference.
- c. 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

For test Mode 1:

1. Turn on the power of EUT.
2. Set the EUT under charger condition.
3. The EUT communicate with MP3 Player via receiver.

For test Mode 2:

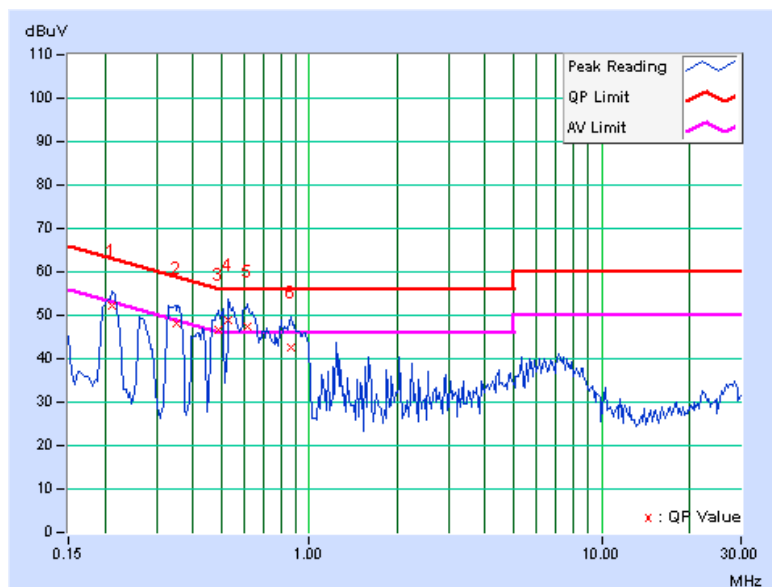
1. Turn on the power of all equipment.
2. Notebook computer runs the test program "Ping.exe" to enable EUT under transmission/receiving condition continuously via USB cable
3. The EUT communicate with MP3 Player via receiver.

4.1.6 TEST RESULTS (MODE 1)

INPUT POWER (SYSTEM)	120Vac, 60 Hz	6DB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 65%RH, 965 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	0.213	9.72	42.49	-	52.21	-	63.11	53.11	-10.90	-
2	0.349	9.89	38.42	-	48.31	-	58.98	48.98	-10.67	-
3	0.486	9.91	36.82	23.85	46.73	33.76	56.24	46.24	-9.51	-12.48
4	0.529	9.89	38.83	24.37	48.72	34.26	56.00	46.00	-7.28	-11.74
5	0.611	9.85	37.42	23.49	47.27	33.34	56.00	46.00	-8.73	-12.66
6	0.861	9.73	33.00	-	42.73	-	56.00	46.00	-13.27	-

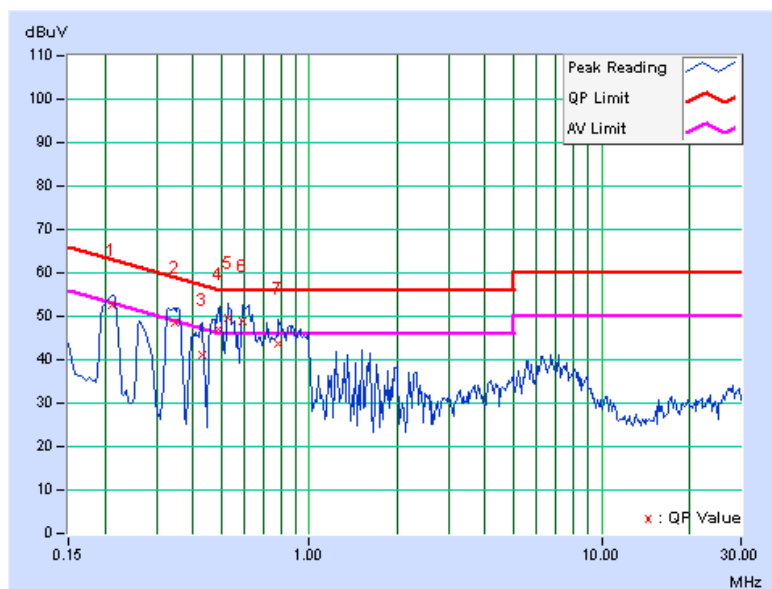
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	25 deg. C, 65%RH, 965 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	0.213	9.72	42.89	-	52.61	-	63.11	53.11	-10.50	-
2	0.345	9.87	38.66	-	48.53	-	59.07	49.07	-10.54	-
3	0.431	9.93	31.27	-	41.20	-	57.23	47.23	-16.03	-
4	0.486	9.90	37.18	24.12	47.08	34.02	56.24	46.24	-9.16	-12.22
5	0.525	9.88	39.69	24.13	49.57	34.01	56.00	46.00	-6.43	-11.99
6	0.591	9.85	39.21	22.80	49.06	32.65	56.00	46.00	-6.94	-13.35
7	0.787	9.77	34.00	-	43.77	-	56.00	46.00	-12.23	-

- 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.

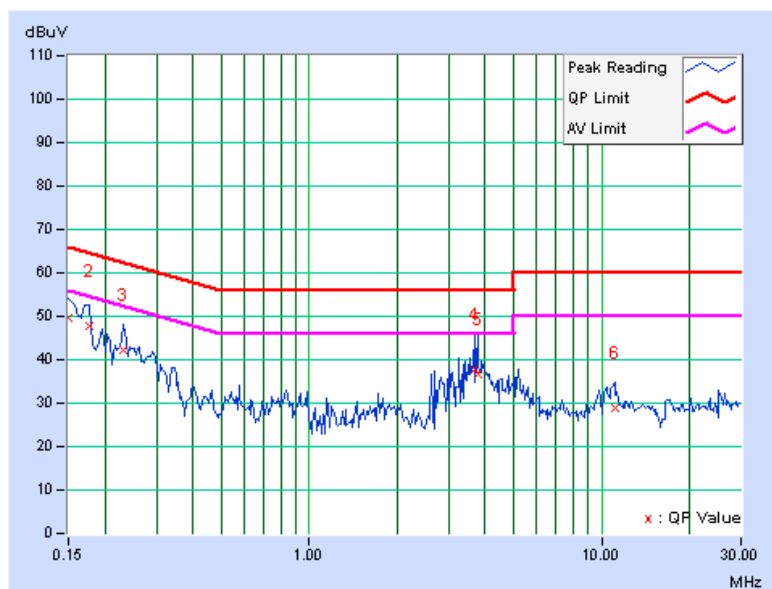


4.1.7 TEST RESULTS (MODE 2)

INPUT POWER (SYSTEM)	120Vac, 60 Hz	6DB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 60%RH, 965 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	0.150	9.67	40.08	-	49.75	-	66.00	56.00	-16.25	-
2	0.177	9.69	38.03	-	47.72	-	64.61	54.61	-16.89	-
3	0.232	9.74	32.53	-	42.27	-	62.38	52.38	-20.11	-
4	3.676	9.75	27.95	-	37.70	-	56.00	46.00	-18.30	-
5	3.762	9.76	26.89	-	36.65	-	56.00	46.00	-19.35	-
6	11.086	9.86	19.11	-	28.97	-	60.00	50.00	-31.03	-

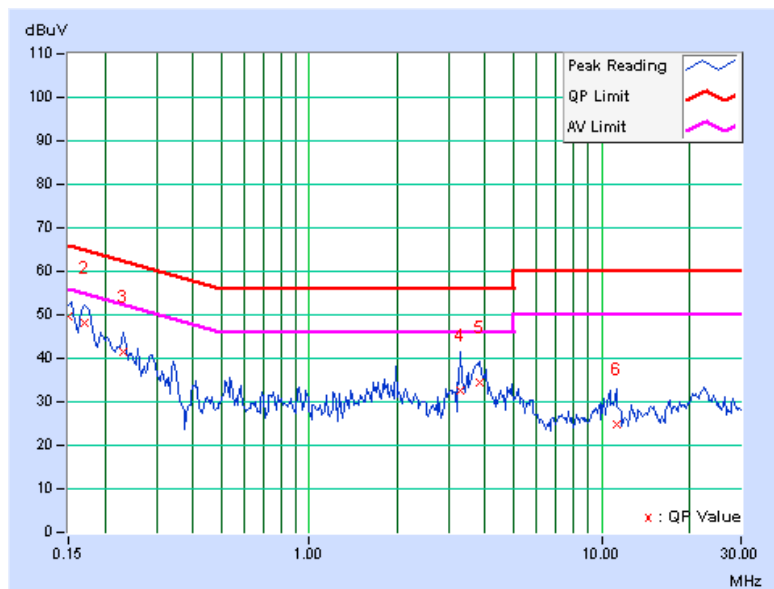
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = 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	25 deg. C, 60%RH, 965 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	0.150	9.67	39.88	-	49.55	-	66.00	56.00	-16.45	-
2	0.170	9.68	38.37	-	48.05	-	64.98	54.98	-16.93	-
3	0.232	9.74	31.64	-	41.38	-	62.38	52.38	-21.00	-
4	3.301	9.75	22.87	-	32.62	-	56.00	46.00	-23.38	-
5	3.848	9.76	24.60	-	34.36	-	56.00	46.00	-21.64	-
6	11.219	9.90	14.78	-	24.68	-	60.00	50.00	-35.32	-

- 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.



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
902 ~ 928	114	94
	Field Strength of Harmonics (dBuV/m)	
	74	54

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

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

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 DATE	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 16, 2008	July 15, 2009
HP Pre_Amplifier	8449B	3008A01922	Sep. 25, 2008	Sep. 24, 2009
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	April 01, 2008	Mar. 31, 2009
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	April 30, 2008	April 29, 2009
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 17, 2007	Dec. 16, 2008
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 28, 2008	Jan. 27, 2009
RF Switches	EMH-011	08009	Oct. 07, 2008	Oct. 06, 2009
RF CABLE (Chaintek)	SF102	22054-2	Dec. 07, 2007	Dec. 06, 2008
RF Cable	8DFB	STCCAB-30M-1GHz	Oct. 07, 2008	Oct. 06, 2009
Software	ADT_Radiated_V7.6.15.9.2	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	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 horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: R3271A) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 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 7450G-3.



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.

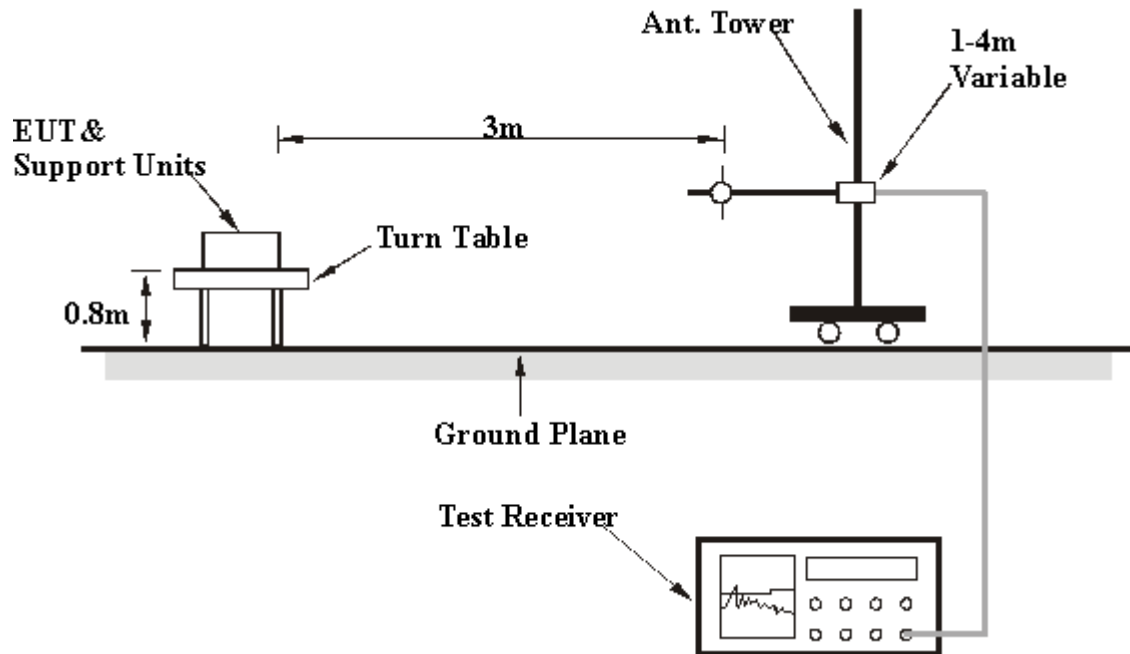
NOTE:

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 is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) 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

Turn on the power of EUT and set up the EUT in typical use.

4.2.7 TEST RESULTS

MODE	Channel 1	INPUT POWER	DC 3.7V from battery
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 60%RH, 965 hPa	TESTED BY	Rex Huang

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	23.95 QP	43.50	-19.55	2.02 H	52	7.88	16.07
2	200.00	21.54 QP	43.50	-21.96	1.71 H	115	8.56	12.98
3	240.00	22.23 QP	46.00	-23.77	1.61 H	172	7.30	14.93
4	400.00	26.88 QP	46.00	-19.12	1.15 H	269	5.74	21.14
5	480.00	28.30 QP	46.00	-17.70	1.30 H	19	5.95	22.35
6	720.00	31.69 QP	46.00	-14.31	1.48 H	288	4.08	27.61
7	902.00	34.51 QP	46.00	-11.49	1.54 H	0	3.47	31.04
8	928.00	35.04 QP	46.00	-10.96	1.54 H	0	3.59	31.45
9	960.00	34.83 QP	46.00	-11.17	1.26 H	152	2.86	31.97

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	120.00	22.64 QP	43.50	-20.86	1.00 V	288	8.81	13.83
2	200.00	23.46 QP	43.50	-20.04	1.00 V	276	10.48	12.98
3	240.00	22.42 QP	46.00	-23.58	1.00 V	101	7.49	14.93
4	400.00	28.04 QP	46.00	-17.96	1.00 V	100	6.90	21.14
5	480.00	28.34 QP	46.00	-17.66	1.00 V	157	5.99	22.35
6	720.00	31.85 QP	46.00	-14.15	1.11 V	307	4.24	27.61
7	902.00	34.61 QP	46.00	-11.39	1.00 V	29	3.57	31.04
8	928.00	35.08 QP	46.00	-10.92	1.00 V	29	3.63	31.45
9	960.00	35.83 QP	46.00	-10.17	1.10 V	281	3.86	31.97

- 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 1	INPUT POWER	DC 3.7V from battery
FREQUENCY RANGE	1000~25000MHz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 60%RH, 965 hPa	TESTED BY	Rex Huang

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	*908.42	99.44 PK	114.00	-14.56	1.54 H	0	68.30	31.14
2	*908.42	59.44 AV	94.00	-34.56	1.54 H	0	28.30	31.14
3	1816.84	56.70 PK	74.00	-17.30	1.00 H	9	28.43	28.27
4	1816.84	36.42 AV	54.00	-17.58	1.00 H	9	8.15	28.27
5	2725.26	69.40 PK	74.00	-4.60	1.00 H	1	38.24	31.16
6	2725.26	49.12 AV	54.00	-4.88	1.00 H	1	17.96	31.16
7	3633.68	43.70 PK	74.00	-30.30	1.17 H	43	10.98	32.72
8	3633.68	23.42 AV	54.00	-30.58	1.17 H	43	-9.30	32.72
9	4542.10	45.50 PK	74.00	-28.50	1.51 H	314	10.68	34.82
10	4542.10	25.22 AV	54.00	-28.78	1.51 H	314	-9.60	34.82

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	*908.42	91.04 PK	114.00	-22.96	1.00 V	29	59.90	31.14
2	*908.42	51.04 AV	94.00	-42.96	1.00 V	29	19.90	31.14
3	2725.26	50.70 PK	74.00	-23.30	1.00 V	87	19.57	31.13
4	2725.26	30.42 AV	54.00	-23.58	1.00 V	87	-0.71	31.13
5	3633.68	43.50 PK	74.00	-30.50	1.30 V	32	10.84	32.66
6	3633.68	23.22 AV	54.00	-30.78	1.30 V	32	-9.44	32.66
7	4542.10	45.60 PK	74.00	-28.40	1.13 V	56	10.61	34.99
8	4542.10	25.32 AV	54.00	-28.68	1.13 V	56	-9.67	34.99

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 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.3.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
- 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 lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 kHz bandwidth from band edge. The band edges was measured and recorded.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

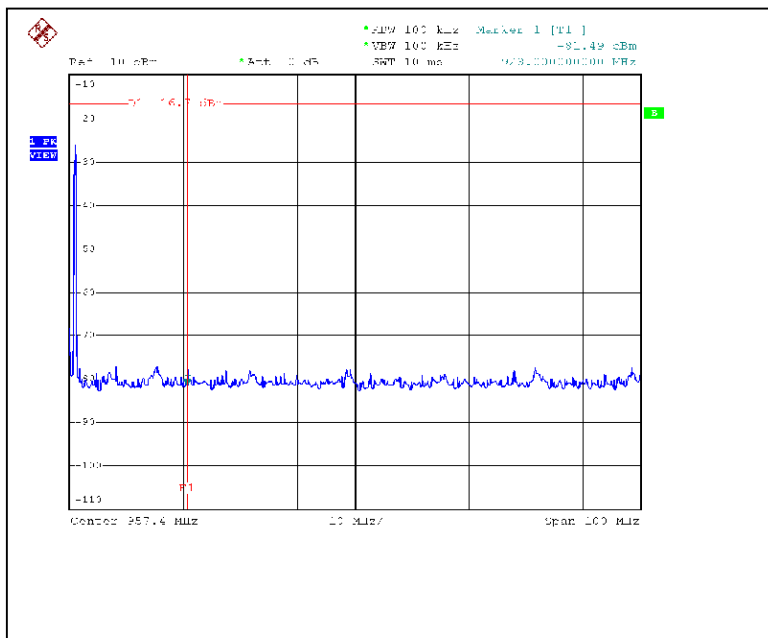
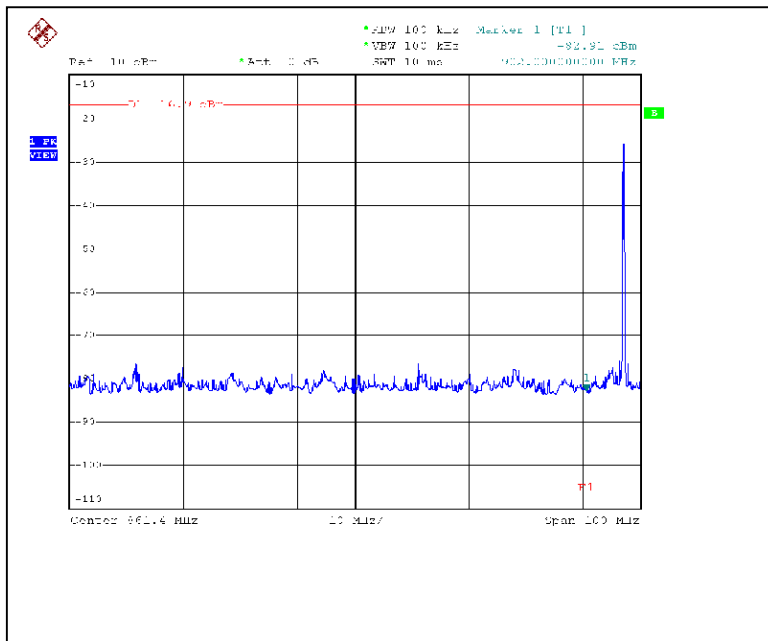
4.3.5 EUT OPERATING CONDITION

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 23 to 24 for met the requirement of the general radiated emission limits in § 15.209.

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5 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, 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, NVLAP
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA, CSA
R.O.C.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	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
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Hsin Chu EMC/RF Lab:
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Web Site: www.adt.com.tw

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



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6 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.

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