



FCC TEST REPORT

REPORT NO.: RF120806E02

MODEL NO.: C-U0010

FCC ID: JNZCU0010

RECEIVED: Aug. 06, 2012

TESTED: Aug. 08 to 09, 2012

ISSUED: Aug. 17, 2012

APPLICANT: LOGITECH FAR EAST LTD.

ADDRESS: #2 Creation Rd. 4, Science-Based Ind. Park Hsinchu
Taiwan, R.O.C.

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

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

TEST LOCATION (1): No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen,
Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.

TEST LOCATION (2): No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung
Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification



Table of Contents

RELEASE CONTROL RECORD.....	3
1. CERTIFICATION	4
2. SUMMARY OF TEST RESULTS.....	5
2.1 MEASUREMENT UNCERTAINTY	5
3. GENERAL INFORMATION	6
3.1 GENERAL DESCRIPTION OF EUT.....	6
3.2 DESCRIPTION OF TEST MODES.....	7
3.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	7
3.4 DESCRIPTION OF SUPPORT UNITS.....	9
3.4.1 CONFIGURATION OF SYSTEM UNDER TEST.....	9
3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS.....	10
4. TEST TYPES AND RESULTS.....	11
4.1 CONDUCTED EMISSION MEASUREMENT.....	11
4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	11
4.1.2 TEST INSTRUMENTS	11
4.1.3 TEST PROCEDURES	12
4.1.4 TEST SETUP	12
4.1.5 EUT OPERATING CONDITIONS.....	13
4.1.6 TEST RESULTS	14
4.2 RADIATED EMISSION AND BAND EDGE MEASUREMENT	16
4.2.1 LIMITS OF RADIATED EMISSION AND BAND EDGE MEASUREMENT	16
4.2.2 TEST INSTRUMENTS	17
4.2.3 TEST PROCEDURES	18
4.2.4 DEVIATION FROM TEST STANDARD	18
4.2.5 TEST SETUP	19
4.2.6 EUT OPERATING CONDITIONS.....	19
4.2.7 TEST RESULTS	20
5. PHOTOGRAPHS OF THE TEST CONFIGURATION	24
6. INFORMATION ON THE TESTING LABORATORIES.....	25
7. APPENDIX A – MODIFICATION RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....	26



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120806E02	Original release	Aug. 17, 2012



1. CERTIFICATION

PRODUCT : 2.4GHz Transceiver
BRAND NAME : Logitech
MODEL NO. : C-U0010
TEST SAMPLE : ENGINEERING SAMPLE
APPLICANT : LOGITECH FAR EAST LTD.
TESTED : Aug. 08, 2012
STANDARDS : **FCC Part 15, Subpart C (Section 15.249)**
ANSI C63.10-2009

The above equipment (Model: C-U0010) 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 :  , **DATE:** Aug. 17, 2012
(Claire Kuan, Specialist)

APPROVED BY :  , **DATE:** Aug. 17, 2012
(May Chen, Deputy Manager)



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 -11.67dB at 0.19687MHz
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 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -3.1dB at 2405.00MHz

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

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

Measurement	Value
Conducted emissions	2.98 dB
Radiated emissions (30MHz-1GHz)	5.69 dB
Radiated emissions (1GHz -6GHz)	3.84 dB
Radiated emissions (6GHz -18GHz)	4.09 dB
Radiated emissions (18GHz -40GHz)	4.24 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	2.4GHz Transceiver
MODEL NO.	C-U0010
POWER SUPPLY	DC 5V from host equipment
MODULATION TYPE	GFSK
CARRIER FREQUENCY OF EACH CHANNEL	2405MHz ~ 2474MHz
NUMBER OF CHANNEL	24
ANTENNA TYPE	PCB printed antenna (Gain: -0.45dBi)
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT operates in the 2.4GHz frequency spectrum and complies with GFSK techniques.
2. 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

Twelve channels are provided in this EUT.

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2405	7	2423	13	2441	19	2459
2	2408	8	2426	14	2444	20	2462
3	2411	9	2429	15	2447	21	2465
4	2414	10	2432	16	2450	22	2468
5	2417	11	2435	17	2453	23	2471
6	2420	12	2438	18	2456	24	2474

3.3 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO			DESCRIPTION
	PLC	RE<1G	RE≥1G	
-	√	√	√	-

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

POWER LINE CONDUCTED EMISSION TEST:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations axis 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 to 24	1	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 axis 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 to 24	1	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 axis 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 to 24	1, 14, 24	GFSK

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER(SYSTEM)	TESTED BY
PLC	25deg. C, 65%RH	120Vac, 60Hz	Kyle Huang
RE<1G	26deg. C, 69%RH	120Vac, 60Hz	Robert Cheng
RE≥1G	26deg. C, 68%RH	120Vac, 60Hz	Robert Cheng



3.4 DESCRIPTION OF SUPPORT UNITS

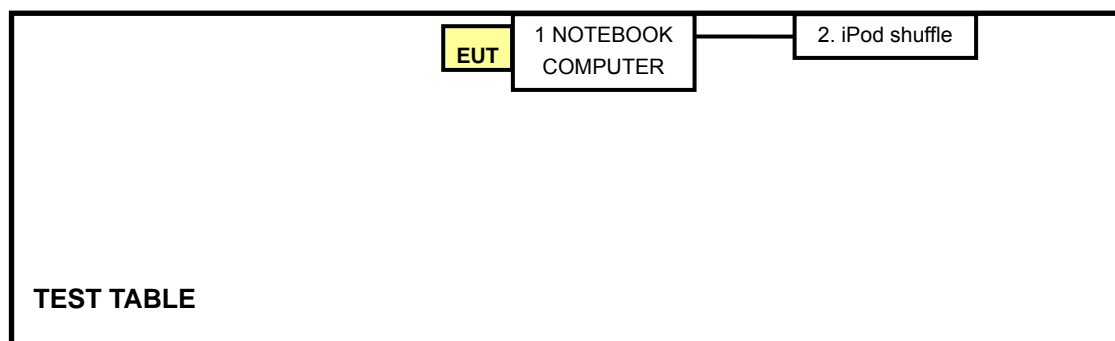
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	GSLB32S	FCC DoC
2	iPod shuffle	Apple	MC749TA/A	CC4DMFJUDFDM	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	USB cable, 0.1m

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

3.4.1 CONFIGURATION OF SYSTEM UNDER TEST





3.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. 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 C63.10-2009

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.



4. TEST TYPES 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. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100287	Feb. 29, 2012	Feb. 28, 2013
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK 8127	8127-523	Sep. 20, 2011	Sep. 19, 2012
Line-Impedance Stabilization Network (for Peripheral) ROHDE & SCHWARZ	ESH3-Z5	848773/004	Nov. 01, 2011	Oct. 31, 2012
RF Cable (JYEBAO)	5DFB	COACAB-002	Aug. 05, 2012	Aug. 04, 2013
50 ohms Terminator	50	4	Nov. 12, 2011	Nov. 11, 2012
Software ADT	BV ADT_Cond_V7.3.7 .3	NA	NA	NA

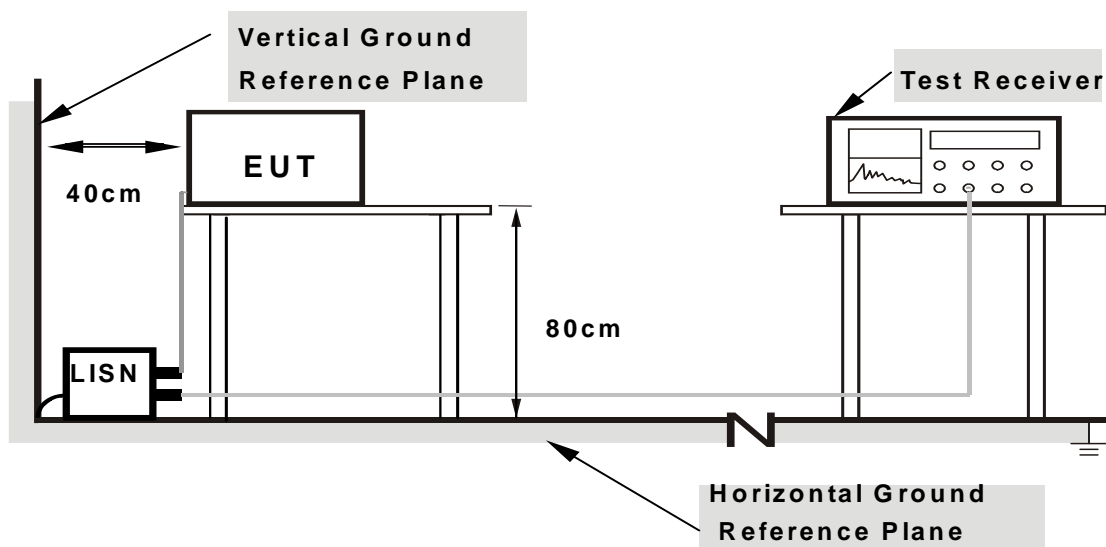
Note:

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. A.
3. The VCCI Con A Registration No. is C-817.
4. Tested Date: Aug. 09, 2012

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 TEST SETUP



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

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.5 EUT OPERATING CONDITIONS

1. Plug the EUT into support unit 1 (Notebook computer) and which placed on a testing table.
2. The support unit 1 (Notebook Computer) runs “Button function” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

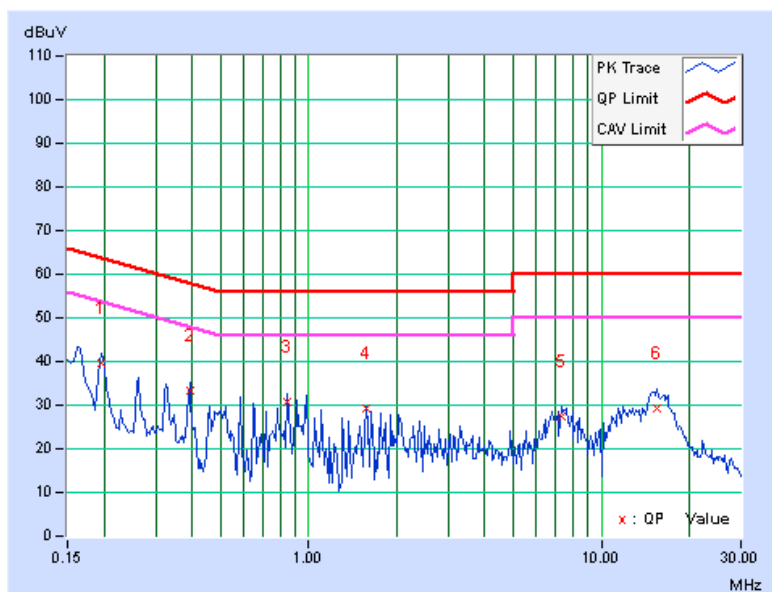
4.1.6 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
--------------	----------	----------------------	-------

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19687	0.06	39.70	38.20	39.76	38.26	63.74	53.74	-23.98	-15.48
2	0.39219	0.07	33.30	32.42	33.37	32.49	58.02	48.02	-24.65	-15.53
3	0.84922	0.11	30.69	29.32	30.80	29.43	56.00	46.00	-25.20	-16.57
4	1.56641	0.16	28.93	26.67	29.09	26.83	56.00	46.00	-26.91	-19.17
5	7.28125	0.34	27.20	11.97	27.54	12.31	60.00	50.00	-32.46	-37.69
6	15.50781	0.53	28.72	16.23	29.25	16.76	60.00	50.00	-30.75	-33.24

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

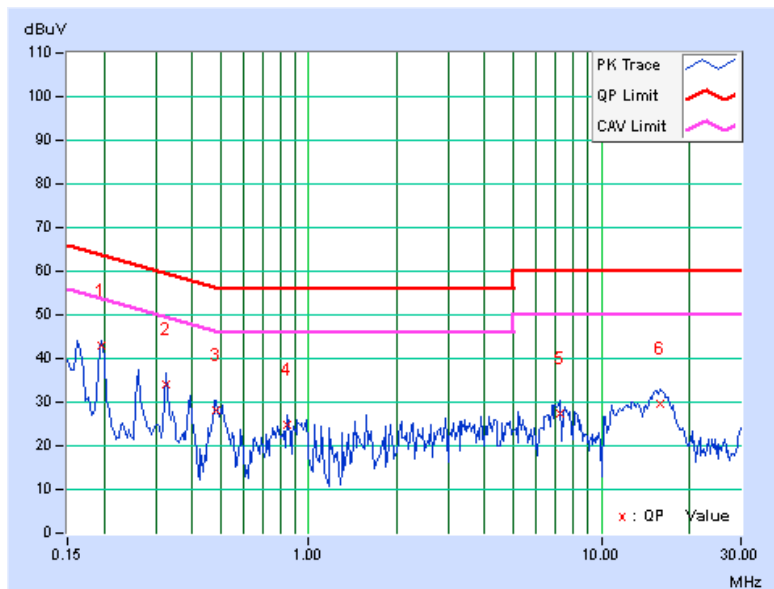


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
-------	-------------	---------------	-------

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]	[dB (uV)]
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19687	0.07	42.71	42.00	42.78	42.07	63.74	53.74	-20.96	-11.67
2	0.32578	0.08	33.99	33.09	34.07	33.17	59.56	49.56	-25.49	-16.39
3	0.48203	0.09	27.90	21.77	27.99	21.86	56.30	46.30	-28.32	-24.45
4	0.84922	0.11	24.88	23.38	24.99	23.49	56.00	46.00	-31.01	-22.51
5	7.26172	0.32	27.26	15.91	27.58	16.23	60.00	50.00	-32.42	-33.77
6	15.96875	0.52	29.29	16.00	29.81	16.52	60.00	50.00	-30.19	-33.48

REMARKS:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.





A D T

4.2 RADIATED EMISSION AND BAND EDGE MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION AND BAND EDGE MEASUREMENT

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
902 ~ 928 MHz	50	500
2400 ~ 2483.5 MHz	50	500
5725 ~ 5875 MHz	50	500
24 ~ 24.25 GHz	250	2500

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 as below table, whichever is the lesser attenuation

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. 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
Spectrum Analyzer Agilent	E4446A	MY48250253	Aug. 29, 2011	Aug. 28, 2012
Pre-Selector Agilent	N9039A	MY46520310	Aug. 29, 2011	Aug. 28, 2012
Signal Generator Agilent	N5181A	MY49060347	July 25, 2011	July 24, 2012
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-04	Nov. 15, 2011	Nov. 14, 2012
Pre-Amplifier Agilent	8449B	3008A02465	Feb. 27, 2012	Feb. 26, 2013
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Apr. 06, 2012	Apr. 05, 2013
Horn_Antenna AISI	AIH.8018	0000220091110	Nov. 23, 2011	Nov. 22, 2012
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 07, 2011	Oct. 06, 2012
RF Cable	NA	RF104-205 RF104-207 RF104-202	Dec. 27, 2011	Dec. 26, 2012
RF Cable	NA	CHHCAB_001	Oct. 08, 2011	Oct. 07, 2012
Software	ADT_Radiated _V8.7.05	NA	NA	NA
Antenna Tower & Turn Table CT	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, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
- 3 The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
- 5 The CANADA Site Registration No. is IC 7450H-3.
- 6 Tested Date: Aug.08, 2012

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 chamber room. 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 height of antenna 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

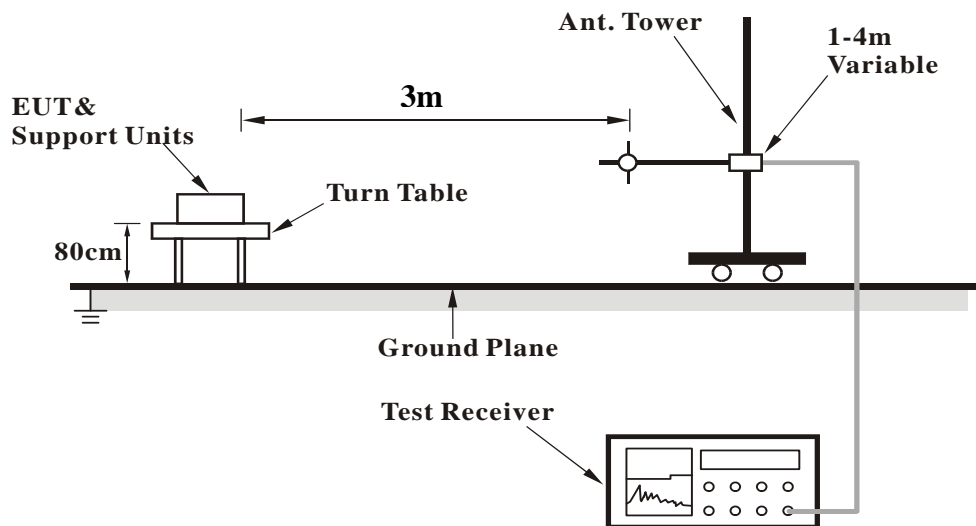
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) 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. All modes of operation were investigated and the worst-case emissions are reported.

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



A D T

4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

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	216.87	38.5 QP	46.0	-7.5	1.00 H	247	26.69	11.79
2	254.29	40.1 QP	46.0	-5.9	1.00 H	81	26.68	13.46
3	304.50	42.7 QP	46.0	-3.3	1.00 H	282	27.34	15.40
4	518.38	31.0 QP	46.0	-15.0	1.50 H	285	10.57	20.44
5	605.18	34.7 QP	46.0	-11.3	1.50 H	105	12.42	22.29
6	750.25	30.0 QP	46.0	-16.0	1.00 H	330	5.45	24.57

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	32.49	31.7 QP	40.0	-8.3	1.00 V	342	18.65	13.02
2	256.54	38.0 QP	46.0	-8.0	1.50 V	0	24.42	13.54
3	304.15	41.0 QP	46.0	-5.0	1.50 V	157	25.60	15.40
4	398.29	35.6 QP	46.0	-10.4	1.50 V	232	17.94	17.66
5	521.81	34.3 QP	46.0	-11.7	1.50 V	0	13.80	20.52
6	604.94	38.0 QP	46.0	-8.0	1.50 V	51	15.73	22.28

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.



A D T

ABOVE 1GHz DATA

CHANNEL	TX Channel 1	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	2400.00	57.2 PK	74.0	-16.8	1.10 H	153	24.79	32.41
2	2400.00	44.4 AV	54.0	-9.6	1.10 H	153	11.99	32.41
3	*2405.00	93.4 PK	114.0	-20.6	1.10 H	153	60.98	32.42
4	*2405.00	90.9 AV	94.0	-3.1	1.10 H	153	58.49	32.42
5	4810.00	54.2 PK	74.0	-19.8	1.18 H	33	12.28	41.92
6	4810.00	44.1 AV	54.0	-9.9	1.18 H	33	2.18	41.92
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	2400.00	57.5 PK	74.0	-16.5	1.00 V	219	25.09	32.41
2	2400.00	44.2 AV	54.0	-9.8	1.00 V	219	11.79	32.41
3	*2405.00	87.5 PK	114.0	-26.5	1.00 V	219	55.08	32.42
4	*2405.00	84.9 AV	94.0	-9.1	1.00 V	219	52.48	32.42
5	4810.00	51.9 PK	74.0	-22.1	1.02 V	101	9.98	41.92
6	4810.00	40.3 AV	54.0	-13.7	1.02 V	101	-1.62	41.92

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.



A D T

CHANNEL	TX Channel 24	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2444.00	92.8 PK	114.0	-21.2	1.06 H	151	60.28	32.52
2	*2444.00	90.3 AV	94.0	-3.7	1.06 H	151	57.78	32.52
3	4888.00	53.8 PK	74.0	-20.2	1.19 H	29	11.79	42.01
4	4888.00	43.8 AV	54.0	-10.2	1.19 H	29	1.79	42.01
5	7332.00	54.2 PK	74.0	-19.8	1.09 H	74	7.61	46.59
6	7332.00	42.2 AV	54.0	-11.8	1.09 H	74	-4.39	46.59
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	*2444.00	86.3 PK	114.0	-27.7	1.00 V	274	53.78	32.52
2	*2444.00	83.5 AV	94.0	-10.5	1.00 V	274	50.98	32.52
3	4888.00	51.7 PK	74.0	-22.3	1.00 V	102	9.69	42.01
4	4888.00	40.1 AV	54.0	-13.9	1.00 V	102	-1.91	42.01
5	7332.00	53.3 PK	74.0	-20.7	1.00 V	195	6.71	46.59
6	7332.00	40.9 AV	54.0	-13.1	1.00 V	195	-5.69	46.59

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.



A D T

CHANNEL	TX Channel 24	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

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	*2474.00	92.5 PK	114.0	-21.5	1.05 H	155	59.90	32.60
2	*2474.00	89.9 AV	94.0	-4.1	1.05 H	155	57.30	32.60
3	2483.50	57.9 PK	74.0	-16.1	1.05 H	155	25.27	32.63
4	2483.50	44.0 AV	54.0	-10.0	1.05 H	155	11.37	32.63
5	4948.00	53.2 PK	74.0	-20.8	1.16 H	25	11.20	42.00
6	4948.00	43.3 AV	54.0	-10.7	1.16 H	25	1.30	42.00
7	7422.00	53.9 PK	74.0	-20.1	1.15 H	77	7.11	46.79
8	7422.00	42.0 AV	54.0	-12.0	1.15 H	77	-4.79	46.79
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	*2474.00	86.1 PK	114.0	-27.9	1.00 V	274	53.50	32.60
2	*2474.00	83.1 AV	94.0	-10.9	1.00 V	274	50.50	32.60
3	2483.50	57.5 PK	74.0	-16.5	1.00 V	274	24.87	32.63
4	2483.50	43.9 AV	54.0	-10.1	1.00 V	274	11.27	32.63
5	4948.00	51.4 PK	74.0	-22.6	1.00 V	109	9.40	42.00
6	4948.00	39.9 AV	54.0	-14.1	1.00 V	109	-2.10	42.00
7	7422.00	53.5 PK	74.0	-20.5	1.05 V	189	6.71	46.79
8	7422.00	40.9 AV	54.0	-13.1	1.05 V	189	-5.89	46.79

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.



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



6. 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 according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

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: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.adt.com.tw

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

7. APPENDIX A – MODIFICATION RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---