FCC TEST REPORT

(CO-LOCATED)

REPORT NO.:	RF120302C15A-1
MODEL NO.:	DIR-826L
FCC ID:	KA2IR636LA1
RECEIVED:	Mar. 22, 2012
TESTED:	Mar. 26 ~ Mar. 27, 2012
ISSUED:	Apr. 11, 2012

APPLICANT:	D-Link Corporation
ADDRESS:	17595 Mt. Hermann, Fountain Valley, CA 92708, U.S.A.

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, 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.

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120302C15A-1	Original release	Apr. 11, 2012

1. CERTIFICATION

PRODUCT:	Wireless N600 Dual Band Gigabit Cloud Router (refer to item 3.1 for more detail)
MODEL NO.:	DIR-826L
BRAND:	D-Link
APPLICANT:	D-Link Corporation
TESTED:	Mar. 26 ~ Mar. 27, 2012
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 15, Subpart C (Section 15.247)** **FCC Part 15, Subpart E (Section 15.407)** ANSI C63.10-2009

The above equipment (Model: DIR-826L) 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 : Apr. 11, 2012
Ivy Lin / Specialist

APPROVED BY : _____ , DATE : Apr. 11, 2012
Gary Chang / Technical Manager

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD:	FCC PART 15, SUBPART C (SECTION 15.247) FCC PART 15, SUBPART E (SECTION 15.407)		
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
15.247(d) 15.407(b/1/2/3) (b)(5)	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.0dB at 7500.00MHz.

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:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 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	Wireless N600 Dual Band Gigabit Cloud Router (refer to NOTE for more detail)
MODEL NO.	DIR-826L
POWER SUPPLY	12Vdc (adapter)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b:11.0/ 5.5/ 2.0/ 1.0Mbps 802.11g: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300.0Mbps
OPERATING FREQUENCY	2412 ~ 2462MHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
OUTPUT POWER	123.32mW
ANTENNA TYPE	PCB antenna with 0dBi gain
ANTENNA CONNECTOR	UFL
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ACCESSORY DEVICES	Adapter

NOTE:

1. A Certified 5G WLAN module (FCC ID: KA2IR826LMO1) is installed in this device.
2. The following product names are provided to this EUT.

PRODUCT NAME	DESCRIPTION
Wireless N600 Dual Band Gigabit Cloud Router	All product names are electrically identical, different product names are for marketing purpose.
Cloud Router 2000	

3. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

MODULATION MODE	TX FUNCTION
802.11b	1TX
802.11g	1TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX

4. The EUT consumes power from the following adapter.

ADAPTER 1	
BRAND:	D-Link
MODEL:	CG2412-B
INPUT:	100-240Vac, 0.5A, 50-60Hz
OUTPUT:	+12Vdc, 2A
POWER LINE:	1.5m non-shielded cable without core

ADAPTER 2	
BRAND:	D-Link
MODEL:	CG2412-B IW
INPUT:	100-240Vac, 0.6A, 50-60Hz
OUTPUT:	+12Vdc, 2A
POWER LINE:	1.5m non-shielded cable without core

ADAPTER 3	
BRAND:	D-Link
MODEL:	SAG024F 4 US 24.0W
INPUT:	100-240Vac, 47-63Hz, 0.8A
OUTPUT:	12.0Vdc, 2.0A
POWER LINE:	1.5m non-shielded cable without core

*After radiated emission pre-testing, adapter 2 is the worst case for final test.

5. The above EUT information is 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

11 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2422MHz	5	2442MHz
2	2427MHz	6	2447MHz
3	2432MHz	7	2452MHz
4	2437MHz		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO		DESCRIPTION
	RE>1G	RE<1G	
-	√	√	EUT with Adapter 2

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz

NOTE:

The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane.**

RADIATED EMISSION TEST (ABOVE 1GHz):

☒ 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.

EUT CONFIGURE MODE	MODE	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (20MHz) + 802.11an (40MHz)	2412~2462	1 to 11	11 + 46	OFDM	BPSK	7.2
		5190-5230	38 to 46		OFDM	BPSK	15.0
	802.11n (20MHz) + 802.11an (20MHz)	2412~2462	1 to 11	11 + 157	OFDM	BPSK	7.2
		5745~5825	149 to 165		OFDM	BPSK	7.2

RADIATED EMISSION TEST (BELOW 1GHz):

☒ 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.

EUT CONFIGURE MODE	MODE	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11n (20MHz) + 802.11an (40MHz)	2412~2462	1 to 11	11 + 46	OFDM	BPSK	7.2
		5190-5230	38 to 46		OFDM	BPSK	15.0
	802.11n (20MHz) + 802.11an (20MHz)	2412~2462	1 to 11	11 + 157	OFDM	BPSK	7.2
		5745~5825	149 to 165		OFDM	BPSK	7.2

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE>1G	25deg. C, 65%RH	120Vac, 60Hz	Sun Lin
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Anderson Hong

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.

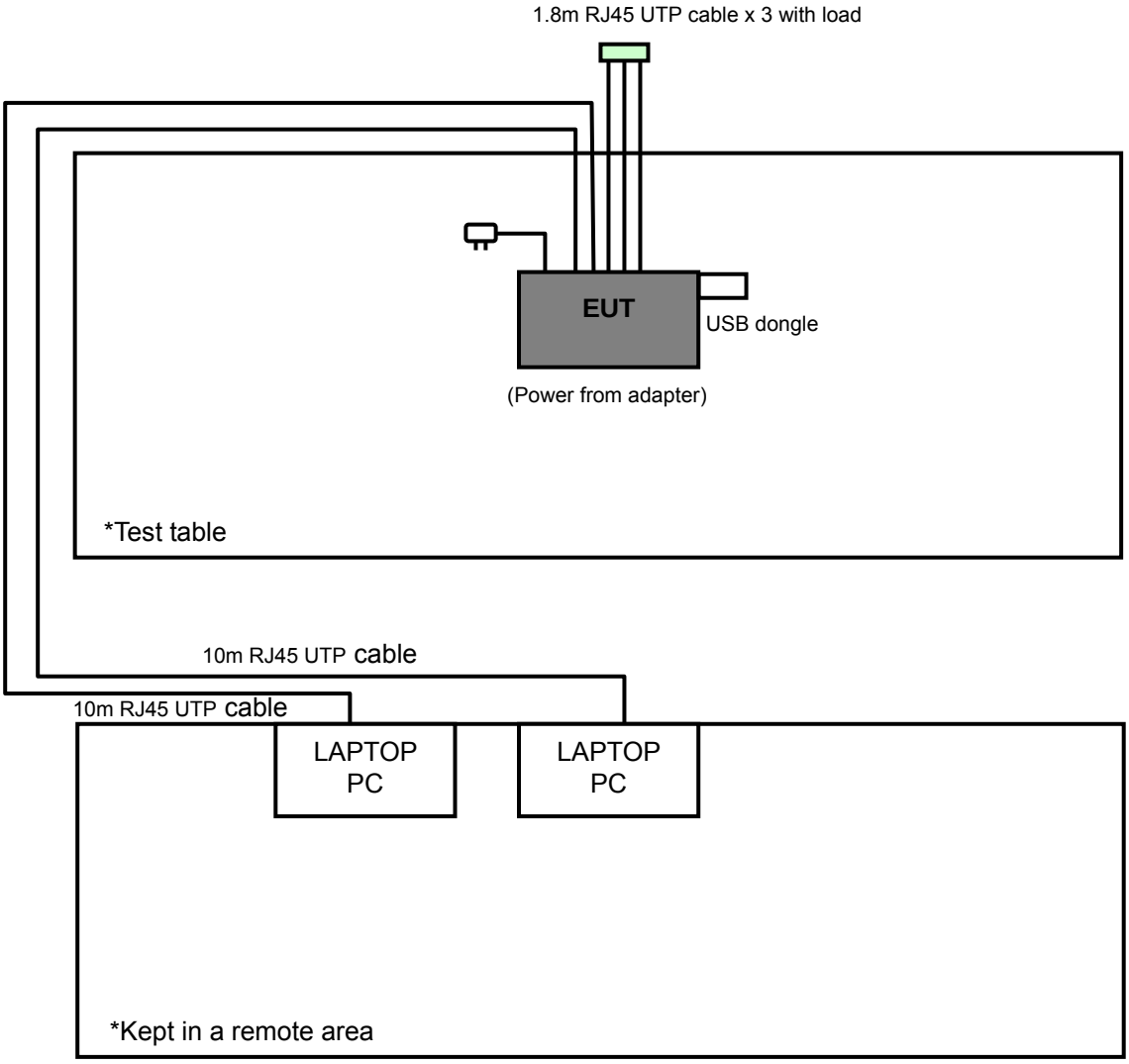
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	LAPTOP PC	DELL	D531	CN-0XM006-48643-81U-2610	QDS-BRCM1020
2	LAPTOP PC	DELL	D531	CN-0XM006-48643-81U-2973	QDS-BRCM1020
3	USB DONGLE	TRANSCEND	NA	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ45 UTP cable
2	10m RJ45 UTP cable
3	NA

NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Items 1-2 acted as communication partner to transfer data.

3.3.1 CONFIGURATION OF SYSTEM UNDER TEST



3.4 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 15.247)
FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10-2009

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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.

4.1.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

FREQUENCIES (MHz)	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBμV/m) *NOTE 3
	PK	PK
5150 ~ 5250	-27	68.3

NOTE: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts).

4.1.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100744	Apr. 19, 2011	Apr. 18, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 04, 2011	Aug. 03, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 12, 2011	Apr. 11, 2012
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-563	Sep. 06, 2011	Sep. 05, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 20, 2011	Jul. 19, 2012
Preamplifier Agilent	8449B	3008A01911	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8447D	2944A10638	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295013/4 283403/4	Aug. 19, 2011	Aug. 18, 2012
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 13, 2011	Aug. 12, 2012
Software	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn Table Controller EMCO	2090	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 HwaYa Chamber 9.

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

4. The FCC Site Registration No. is 460141.

5. The IC Site Registration No. is IC 7450F-4.

4.1.4 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. Height of receiving 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 Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

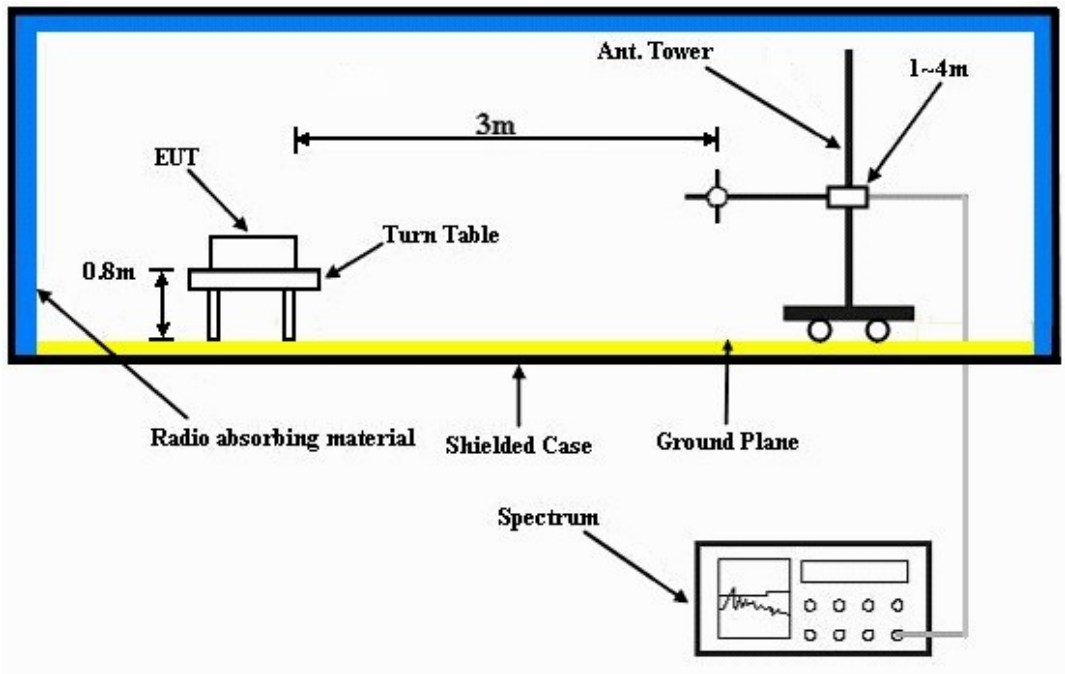
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 DEVIATION FROM TEST STANDARD

No deviation.

4.1.6 TEST SETUP



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

4.1.7 EUT OPERATING CONDITIONS

a. Placed the EUT on the testing table.
b. Prepared notebooks to act as communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a RJ45 cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The communication partner sent data to EUT by command "PING".
e. The necessary accessories enable the system in full functions.

4.1.8 TEST RESULTS

ABOVE 1GHz WORST-CASE DATA

802.11n (20MHz) + 802.11an (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 11 + CH 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	*2462.00	108.1 PK			1.05 H	177	76.50	31.60
2	*2462.00	98.7 AV			1.05 H	177	67.10	31.60
3	2483.50	63.3 PK	74.0	-10.7	1.08 H	178	31.60	31.70
4	2483.50	47.2 AV	54.0	-6.8	1.08 H	178	15.50	31.70
5	2768.00	56.2 PK	74.0	-17.8	1.13 H	191	23.60	32.60
6	2768.00	39.8 AV	54.0	-14.2	1.13 H	191	7.20	32.60
7	4924.00	54.8 PK	74.0	-19.2	1.58 H	102	17.10	37.70
8	4924.00	40.3 AV	54.0	-13.7	1.58 H	102	2.60	37.70
9	*5230.00	96.9 PK			1.37 H	198	58.60	38.30
10	*5230.00	87.1 AV			1.37 H	198	48.80	38.30
11	5350.00	52.8 PK	74.0	-21.2	1.32 H	207	14.30	38.50
12	5350.00	41.9 AV	54.0	-12.1	1.32 H	207	3.40	38.50
13	7500.00	56.8 PK	74.0	-17.2	1.23 H	259	12.60	44.20
14	**7500.00**	**52.0 AV**	**54.0**	**-2.0**	**1.23 H**	**259**	**7.80**	**44.20**
15	7692.00	52.4 PK	74.0	-21.6	1.23 H	183	7.90	44.50
16	7692.00	40.6 AV	54.0	-13.4	1.23 H	183	-3.90	44.50
17	#10460.00	56.3 PK	68.3	-12.0	1.18 H	103	8.10	48.20

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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 11 + CH 46	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	*2462.00	109.6 PK			1.07 V	293	78.00	31.60
2	*2462.00	99.6 AV			1.07 V	293	68.00	31.60
3	2483.50	64.8 PK	74.0	-9.2	1.08 V	298	33.10	31.70
4	2483.50	48.1 AV	54.0	-5.9	1.08 V	298	16.40	31.70
5	2768.00	58.8 PK	74.0	-15.2	1.04 V	256	26.20	32.60
6	2768.00	41.3 AV	54.0	-12.7	1.04 V	256	8.70	32.60
7	4924.00	43.6 PK	74.0	-30.4	1.22 V	12	5.90	37.70
8	4924.00	33.8 AV	54.0	-20.2	1.22 V	12	-3.90	37.70
9	*5230.00	97.2 PK			1.18 V	43	58.90	38.30
10	*5230.00	87.5 AV			1.18 V	43	49.20	38.30
11	5350.00	53.8 PK	74.0	-20.2	1.12 V	58	15.30	38.50
12	5350.00	42.5 AV	54.0	-11.5	1.12 V	58	4.00	38.50
13	7500.00	54.7 PK	74.0	-19.3	1.28 V	257	10.50	44.20
14	7500.00	49.3 AV	54.0	-4.7	1.28 V	257	5.10	44.20
15	7692.00	51.7 PK	74.0	-22.3	1.31 V	92	7.20	44.50
16	7692.00	40.2 AV	54.0	-13.8	1.31 V	92	-4.30	44.50
17	#10460.00	55.8 PK	68.3	-12.5	1.43 V	222	7.60	48.20

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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

802.11n (20MHz) + 802.11an (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 11 + CH 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	*2462.00	108.3 PK			1.08 H	171	76.70	31.60
2	*2462.00	99.1 AV			1.08 H	171	67.50	31.60
3	2483.50	63.6 PK	74.0	-10.4	1.08 H	171	31.90	31.70
4	2483.50	47.5 AV	54.0	-6.5	1.08 H	171	15.80	31.70
5	#3323.00	39.6 PK	88.3	-48.7	1.31 H	208	5.80	33.80
6	#3323.00	30.8 AV	79.1	-48.3	1.31 H	208	-3.00	33.80
7	4924.00	53.8 PK	74.0	-20.2	1.20 H	52	16.10	37.70
8	4924.00	39.0 AV	54.0	-15.0	1.20 H	52	1.30	37.70
9	*5785.00	114.5 PK			1.22 H	289	75.10	39.40
10	*5785.00	97.2 AV			1.22 H	289	57.80	39.40
11	7500.00	56.8 PK	74.0	-17.2	1.25 H	265	12.60	44.20
12	7500.00	51.0 AV	54.0	-3.0	1.25 H	265	6.80	44.20
13	8247.00	52.2 PK	74.0	-21.8	1.32 H	41	7.40	44.80
14	8247.00	40.5 AV	54.0	-13.5	1.32 H	41	-4.30	44.80
15	11570.00	59.3 PK	74.0	-14.7	1.51 H	223	10.10	49.20
16	11570.00	45.6 AV	54.0	-8.4	1.51 H	223	-3.60	49.20

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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 11 + CH 157	FREQUENCY RANGE	1 ~ 40GHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH	TESTED BY	Sun Lin

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	*2462.00	110.2 PK			1.05 V	303	78.60	31.60
2	*2462.00	100.3 AV			1.05 V	303	68.70	31.60
3	2483.50	65.3 PK	74.0	-8.7	1.05 V	303	33.60	31.70
4	2483.50	48.5 AV	54.0	-5.5	1.05 V	303	16.80	31.70
5	#3323.00	43.4 PK	90.2	-46.8	1.01 V	132	9.60	33.80
6	#3323.00	31.5 AV	80.3	-48.8	1.01 V	132	-2.30	33.80
7	4924.00	50.6 PK	74.0	-23.4	1.00 V	330	12.90	37.70
8	4924.00	38.4 AV	54.0	-15.6	1.00 V	330	0.70	37.70
9	*5785.00	114.2 PK			1.02 V	356	74.80	39.40
10	*5785.00	96.9 AV			1.02 V	356	57.50	39.40
11	7500.00	56.3 PK	74.0	-17.7	1.18 V	247	12.10	44.20
12	7500.00	50.0 AV	54.0	-4.0	1.18 V	247	5.80	44.20
13	8247.00	51.5 PK	74.0	-22.5	1.02 V	227	6.70	44.80
14	8247.00	38.7 AV	54.0	-15.3	1.02 V	227	-6.10	44.80
15	11570.00	64.0 PK	74.0	-10.0	1.12 V	283	14.80	49.20
16	11570.00	48.3 AV	54.0	-5.7	1.12 V	283	-0.90	49.20

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.
6. The limit value is defined as per 15.247.
7. "#":The radiated frequency is out the restricted band.

BELOW 1GHz WORST-CASE DATA

802.11n (20MHz) + 802.11an (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 11 + CH 46	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH	TESTED BY	Anderson Hong

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	192.96	38.2 QP	43.5	-5.3	1.00 H	117	26.50	11.70
2	204.60	39.2 QP	43.5	-4.3	1.00 H	115	27.80	11.40
3	375.32	36.2 QP	46.0	-9.8	1.00 H	3	19.40	16.80
4	625.58	37.4 QP	46.0	-8.6	1.00 H	190	14.90	22.50
5	751.68	40.4 QP	46.0	-5.6	1.00 H	218	16.40	24.00
6	875.84	41.4 QP	46.0	-4.6	1.50 H	278	15.40	26.00
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	109.54	35.1 QP	43.5	-8.4	1.00 V	135	24.50	10.60
2	198.78	34.7 QP	43.5	-8.8	1.00 V	84	23.40	11.30
3	383.08	34.9 QP	46.0	-11.1	1.00 V	54	17.90	17.00
4	450.98	35.0 QP	46.0	-11.0	1.00 V	217	16.20	18.80
5	625.58	36.9 QP	46.0	-9.1	1.50 V	165	14.40	22.50
6	875.84	40.7 QP	46.0	-5.3	1.00 V	110	14.70	26.00

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.

802.11n (20MHz) + 802.11an (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	CH 11 + CH 157	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 55%RH	TESTED BY	Anderson Hong

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	192.96	39.0 QP	43.5	-4.5	1.50 H	127	27.30	11.70
2	204.60	40.3 QP	43.5	-3.2	1.25 H	108	28.90	11.40
3	375.32	36.3 QP	46.0	-9.7	1.00 H	17	19.50	16.80
4	625.58	37.8 QP	46.0	-8.2	1.00 H	255	15.30	22.50
5	751.68	40.7 QP	46.0	-5.3	1.00 H	226	16.70	24.00
6	875.84	42.2 QP	46.0	-3.8	1.25 H	283	16.20	26.00
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	111.48	35.2 QP	43.5	-8.3	1.00 V	126	24.40	10.80
2	200.72	35.9 QP	43.5	-7.6	1.00 V	98	24.70	11.20
3	408.30	37.0 QP	46.0	-9.0	2.00 V	271	19.30	17.70
4	625.58	37.9 QP	46.0	-8.1	1.25 V	240	15.40	22.50
5	751.68	38.7 QP	46.0	-7.3	2.00 V	162	14.70	24.00
6	875.84	41.7 QP	46.0	-4.3	1.00 V	108	15.70	26.00

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. 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.

Copies of accreditation and authorization 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: 886-2-26051924

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: 886-3-3185050

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 - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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

---END---