



FCC TEST REPORT

REPORT NO.: RF990816C22D
MODEL NO.: DSLR-2001N
(Refer to item 3.1 for more details)
FCC ID: NHPDSL2001N
RECEIVED: Apr. 07, 2011
TESTED: Apr. 13 ~ Apr. 15, 2011
ISSUED: Apr. 27, 2011

APPLICANT: CAMEO COMMUNICATIONS, INC.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	NA	Apr. 27, 2011



1. CERTIFICATION

PRODUCT: 802.11n WLAN ADSL2+ Router

MODEL: DSLR-2001N (Refer to item 3.1 for more details)

BRAND: CAMEO (Refer to item 3.1 for more details)

APPLICANT: CAMEO COMMUNICATIONS, INC.

TESTED: Apr. 13 ~ Apr. 15, 2011

TEST SAMPLE: ENGINEERING SAMPLE

STANDARDS: FCC Part 15, Subpart C (Section 15.247)

ANSI C63.4-2003

ANSI C63.10-2009

This report is issued as a supplementary report of RF990816C22. This report shall be used combined together with its original report.

PREPARED BY : Andrea Hsia , DATE: Apr. 27, 2011
Andrea Hsia / Specialist

APPROVED BY : Gary Chang , DATE: Apr. 27, 2011
Gary Chang / Assistant Manager

NOTE: The conducted emission & radiated emission tests were performed for the addendum. Refer to original report for the other test data.

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)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -10.51dB at 0.162MHz.
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	NA	Refer to Note
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	NA	Refer to Note
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is -1.0dB at 2483.50MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	NA	Refer to Note
15.247(d)	Band Edge Measurement Limit: 20dB less than the peak value of fundamental frequency	NA	Refer to Note
15.203	Antenna Requirement	NA	Refer to Note

NOTE: The conducted emission & radiated emission tests were performed for the addendum. Refer to original report for the other test data.

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	802.11n WLAN ADSL2+ Router
MODEL NO.	DSLRL-2001N (Refer to NOTE for more details)
FCC ID	NHPDSLRL2001N
POWER SUPPLY	12Vdc
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	538.4mW
ANTENNA TYPE	Dipole antenna with 2dBi gain
ANTENNA CONNECTOR	NA
DATA CABLE	NA
I/O PORTS	RJ45, RJ11
ACCESSORY DEVICES	Adapter

NOTE:

1. This report is issued as a supplementary report of BV ADT report no.: RF990816C22.
2. This report is prepared for FCC class II permissive change. The difference compared with the original report is removing shielded case on the main board. Therefore, we re-tested radiated emission and conducted emission tests and presented in the test report.
3. The models as below are electrically identical, different brand names and models no. are for marketing purpose.

BRAND NAME	MODEL NO.
CAMEO	DSLRL-2001N
TRENDnet	TEW-658BRM

4. 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)	1TX/ 2TX
802.11n (40MHz)	1TX/ 2TX



5. The EUT was powered by the following adapter:

BRAND:	LEADER ELECTRONICS INC.
MODEL:	MU12-N120100-A1
INPUT:	100-240Vac, 50/60Hz, 0.5A
OUTPUT:	12Vdc, 1A
POWER LINE:	1.5 m non-shielded cable without core

6. 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

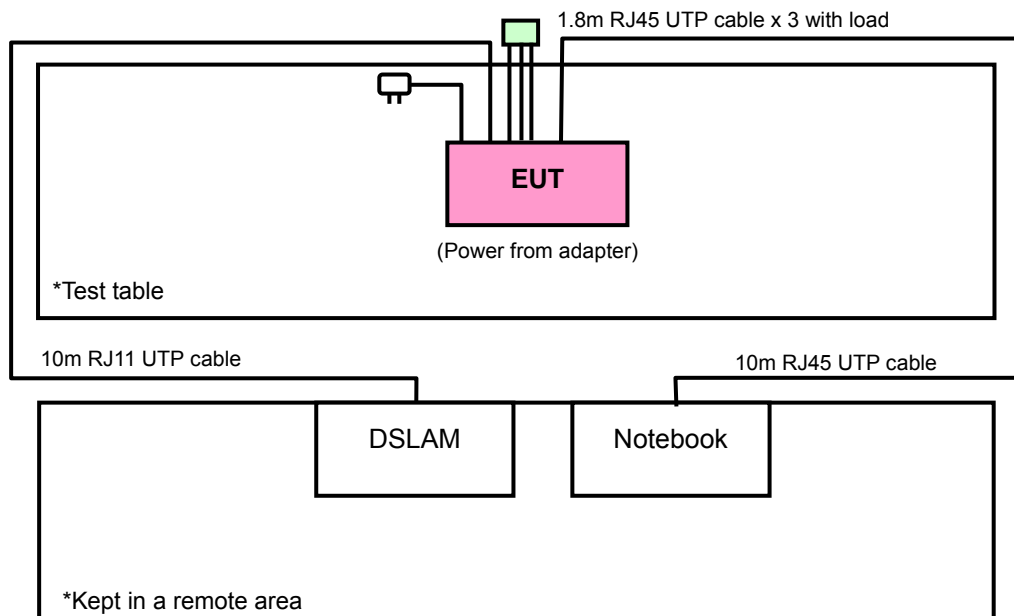
11 channels are provided for 802.11b, 802.11g and 802.11n (20MHz):

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 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

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

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.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2
802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15.0

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, XYZ axis and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (20MHz)	1 to 11	6	OFDM	BPSK	7.2

POWER LINE CONDUCTED EMISSION TEST:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (20MHz)	1 to 11	6	OFDM	BPSK	7.2



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TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE \geq 1G	25deg. C, 68%RH, 1010 hPa	120Vac, 60Hz	Sun Lin
RE $<$ 1G	25deg. C, 68%RH, 1010 hPa	120Vac, 60Hz	Sun Lin
PLC	22deg. C, 62%RH, 1008 hPa	120Vac, 60Hz	Brad Wu

3.3 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 (15.247)

ANSI C63.4-2003

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.

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	DSLAM	Alcatel	7300ASAM	NA	NA
2	NOTEBOOK	HP	n6000	CNU3480WP2	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m RJ11 UTP cable
2	10m RJ45 UTP cable

NOTE:

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

4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

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



4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Aug. 04, 2010	Aug. 03, 2011
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Jul. 09, 2010	Jul. 08, 2011
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 12, 2011	Apr. 11, 2012
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Aug. 02, 2010	Aug. 01, 2011
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 27, 2010	Dec. 26, 2011
Preamplifier Agilent	8449B	3008A01910	Sep. 09, 2010	Sep. 08, 2011
Preamplifier Agilent	8447D	2944A10638	Nov. 03, 2010	Nov. 02, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218190/4 231241/4	May 14, 2010	May 13, 2011
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 20, 2010	Aug. 19, 2011
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.

4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 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.

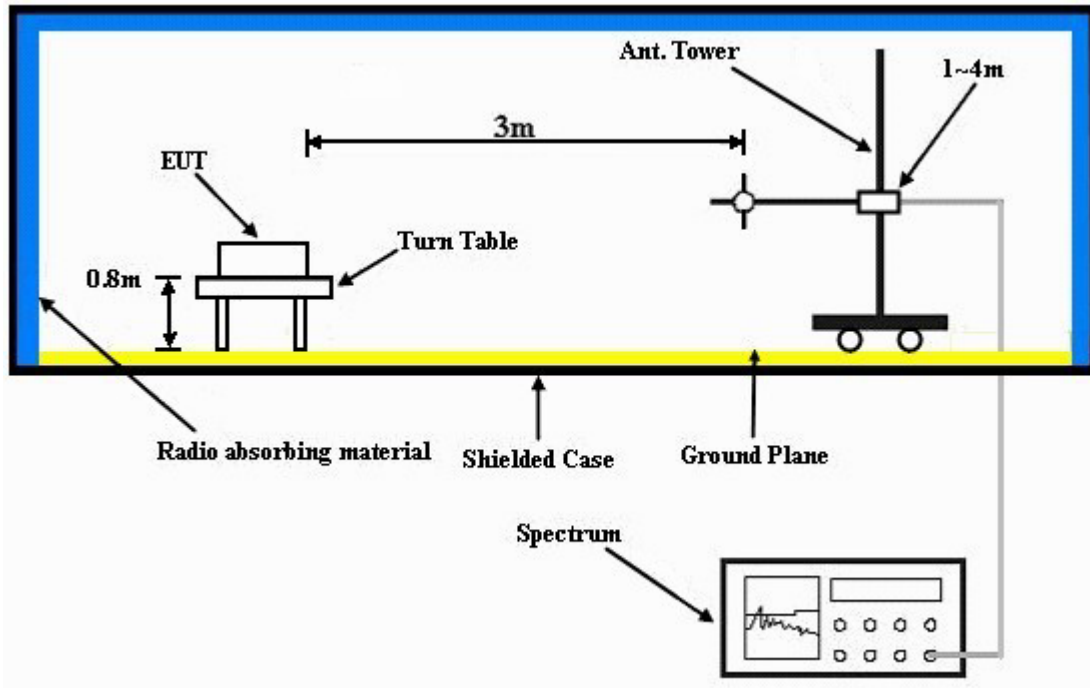
NOTE:

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.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.

4.1.5 TEST SETUP



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

4.1.6 EUT OPERATING CONDITIONS

- a. Placed the EUT on the testing table.
- b. Prepared notebook system and DSLAM outside of testing area to act as communication partner.
- c. The communication partners 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".



4.1.7 TEST RESULTS

802.11b

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	2386.00	55.8 PK	74.0	-18.2	1.28 H	113	25.30	30.50
2	2386.00	44.7 AV	54.0	-9.3	1.28 H	113	14.20	30.50
3	*2412.00	100.5 PK			1.28 H	113	69.90	30.60
4	*2412.00	96.2 AV			1.28 H	113	65.60	30.60
5	4824.00	49.1 PK	74.0	-24.9	1.26 H	306	12.50	36.60
6	4824.00	43.7 AV	54.0	-10.3	1.26 H	306	7.10	36.60
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	58.4 PK	74.0	-15.6	1.44 V	349	27.90	30.50
2	2390.00	46.2 AV	54.0	-7.8	1.44 V	349	15.70	30.50
3	*2412.00	110.4 PK			1.21 V	349	79.80	30.60
4	*2412.00	106.3 AV			1.21 V	349	75.70	30.60
5	4824.00	57.7 PK	74.0	-16.3	1.63 V	167	21.10	36.60
6	4824.00	51.7 AV	54.0	-2.3	1.63 V	167	15.10	36.60

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	*2437.00	100.0 PK			1.22 H	125	69.30	30.70
2	*2437.00	95.8 AV			1.22 H	125	65.10	30.70
3	4874.00	49.8 PK	74.0	-24.2	1.20 H	296	13.10	36.70
4	4874.00	44.0 AV	54.0	-10.0	1.20 H	296	7.30	36.70
5	7311.00	54.8 PK	74.0	-19.2	1.53 H	188	11.50	43.30
6	7311.00	45.7 AV	54.0	-8.3	1.53 H	188	2.40	43.30
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	*2437.00	109.9 PK			1.02 V	205	79.20	30.70
2	*2437.00	105.7 AV			1.02 V	205	75.00	30.70
3	4874.00	56.0 PK	74.0	-18.0	1.06 V	350	19.30	36.70
4	4874.00	51.3 AV	54.0	-2.7	1.06 V	350	14.60	36.70
5	7311.00	58.2 PK	74.0	-15.8	1.90 V	137	14.90	43.30
6	7311.00	51.8 AV	54.0	-2.2	1.90 V	137	8.50	43.30

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	99.6 PK			1.26 H	304	68.80	30.80
2	*2462.00	95.4 AV			1.26 H	304	64.60	30.80
3	2488.00	55.5 PK	74.0	-18.5	1.26 H	304	24.60	30.90
4	2488.00	46.1 AV	54.0	-7.9	1.26 H	304	15.20	30.90
5	4924.00	48.2 PK	74.0	-25.8	1.01 H	31	11.40	36.80
6	4924.00	43.6 AV	54.0	-10.4	1.01 H	31	6.80	36.80
7	7386.00	54.6 PK	74.0	-19.4	1.58 H	180	11.20	43.40
8	7386.00	45.8 AV	54.0	-8.2	1.58 H	180	2.40	43.40

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	*2462.00	109.5 PK			1.22 V	202	78.70	30.80
2	*2462.00	105.2 AV			1.22 V	202	74.40	30.80
3	2488.00	61.4 PK	74.0	-12.6	1.22 V	202	30.50	30.90
4	2488.00	49.3 AV	54.0	-4.7	1.22 V	202	18.40	30.90
5	4924.00	54.1 PK	74.0	-19.9	1.08 V	180	17.30	36.80
6	4924.00	51.4 AV	54.0	-2.6	1.08 V	180	14.60	36.80
7	7386.00	57.6 PK	74.0	-16.4	1.54 V	149	14.20	43.40
8	7386.00	51.6 AV	54.0	-2.4	1.54 V	149	8.20	43.40

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



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802.11g

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	2390.00	61.7 PK	74.0	-12.3	1.30 H	114	31.20	30.50
2	2390.00	46.3 AV	54.0	-7.7	1.30 H	114	15.80	30.50
3	*2412.00	102.0 PK			1.30 H	114	71.40	30.60
4	*2412.00	91.9 AV			1.30 H	114	61.30	30.60
5	4824.00	47.9 PK	74.0	-26.1	1.26 H	305	11.30	36.60
6	4824.00	33.0 AV	54.0	-21.0	1.26 H	305	-3.60	36.60

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	69.5 PK	74.0	-4.5	1.00 V	352	39.00	30.50
2	2390.00	52.2 AV	54.0	-1.8	1.00 V	352	21.70	30.50
3	*2412.00	110.8 PK			1.18 V	348	80.20	30.60
4	*2412.00	101.0 AV			1.18 V	348	70.40	30.60
5	4824.00	52.9 PK	74.0	-21.1	1.27 V	31	16.30	36.60
6	4824.00	37.0 AV	54.0	-17.0	1.27 V	31	0.40	36.60

- 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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	*2437.00	103.2 PK			1.01 H	356	72.50	30.70
2	*2437.00	93.6 AV			1.01 H	356	62.90	30.70
3	4874.00	56.0 PK	74.0	-18.0	1.18 H	183	19.30	36.70
4	4874.00	42.2 AV	54.0	-11.8	1.18 H	183	5.50	36.70
5	7311.00	60.1 PK	74.0	-13.9	1.63 H	176	16.80	43.30
6	7311.00	45.9 AV	54.0	-8.1	1.63 H	176	2.60	43.30
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	*2437.00	112.9 PK			1.00 V	202	82.20	30.70
2	*2437.00	103.8 AV			1.00 V	202	73.10	30.70
3	4874.00	61.7 PK	74.0	-12.3	1.14 V	56	25.00	36.70
4	4874.00	47.1 AV	54.0	-6.9	1.14 V	56	10.40	36.70
5	7311.00	67.8 PK	74.0	-6.2	2.17 V	145	24.50	43.30
6	7311.00	52.8 AV	54.0	-1.2	2.17 V	145	9.50	43.30

- 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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	100.1 PK			1.28 H	158	69.30	30.80
2	*2462.00	89.4 AV			1.28 H	158	58.60	30.80
3	2483.50	60.2 PK	74.0	-13.8	1.28 H	158	29.30	30.90
4	2483.50	45.0 AV	54.0	-9.0	1.28 H	158	14.10	30.90
5	4924.00	46.2 PK	74.0	-27.8	1.22 H	322	9.40	36.80
6	4924.00	32.2 AV	54.0	-21.8	1.22 H	322	-4.60	36.80
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	108.2 PK			1.20 V	178	77.40	30.80
2	*2462.00	98.8 AV			1.20 V	178	68.00	30.80
3	2483.50	66.1 PK	74.0	-7.9	1.20 V	178	35.20	30.90
4	2483.50	52.4 AV	54.0	-1.6	1.20 V	178	21.50	30.90
5	4924.00	53.6 PK	74.0	-20.4	1.25 V	53	16.80	36.80
6	4924.00	37.7 AV	54.0	-16.3	1.25 V	53	0.90	36.80

- 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

802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	2390.00	59.4 PK	74.0	-14.6	1.03 H	356	28.90	30.50
2	2390.00	48.0 AV	54.0	-6.0	1.03 H	356	17.50	30.50
3	*2412.00	97.1 PK			1.03 H	356	66.50	30.60
4	*2412.00	87.6 AV			1.03 H	356	57.00	30.60
5	4824.00	50.3 PK	74.0	-23.7	1.02 H	172	13.70	36.60
6	4824.00	35.7 AV	54.0	-18.3	1.02 H	172	-0.90	36.60
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	66.3 PK	74.0	-7.7	1.16 V	352	35.80	30.50
2	2390.00	52.6 AV	54.0	-1.4	1.16 V	352	22.10	30.50
3	*2412.00	110.8 PK			1.16 V	352	80.20	30.60
4	*2412.00	101.4 AV			1.16 V	352	70.80	30.60
5	4824.00	53.6 PK	74.0	-20.4	1.00 V	202	17.00	36.60
6	4824.00	38.4 AV	54.0	-15.6	1.00 V	202	1.80	36.60

- 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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	*2437.00	100.2 PK			1.05 H	322	69.50	30.70
2	*2437.00	89.8 AV			1.05 H	322	59.10	30.70
3	4874.00	53.5 PK	74.0	-20.5	1.25 H	177	16.80	36.70
4	4874.00	38.9 AV	54.0	-15.1	1.25 H	177	2.20	36.70
5	7311.00	52.7 PK	74.0	-21.3	1.37 H	102	9.40	43.30
6	7311.00	37.8 AV	54.0	-16.2	1.37 H	102	-5.50	43.30
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	*2437.00	112.7 PK			1.17 V	352	82.00	30.70
2	*2437.00	103.2 AV			1.17 V	352	72.50	30.70
3	4874.00	60.6 PK	74.0	-13.4	1.00 V	203	23.90	36.70
4	4874.00	46.5 AV	54.0	-7.5	1.00 V	203	9.80	36.70
5	7311.00	65.7 PK	74.0	-8.3	1.33 V	167	22.40	43.30
6	7311.00	52.4 AV	54.0	-1.6	1.33 V	167	9.10	43.30

- 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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 11	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	95.2 PK			1.07 H	322	64.40	30.80
2	*2462.00	85.5 AV			1.07 H	322	54.70	30.80
3	2483.50	58.5 PK	74.0	-15.5	1.07 H	322	27.60	30.90
4	2483.50	47.2 AV	54.0	-6.8	1.07 H	322	16.30	30.90
5	4924.00	50.0 PK	74.0	-24.0	1.22 H	168	13.20	36.80
6	4924.00	35.3 AV	54.0	-18.7	1.22 H	168	-1.50	36.80
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	108.9 PK			1.77 V	182	78.10	30.80
2	*2462.00	99.2 AV			1.77 V	182	68.40	30.80
3	2483.50	66.3 PK	74.0	-7.7	1.77 V	182	35.40	30.90
4	2483.50	52.2 AV	54.0	-1.8	1.77 V	182	21.30	30.90
5	4924.00	49.2 PK	74.0	-24.8	1.02 V	285	12.40	36.80
6	4924.00	35.4 AV	54.0	-18.6	1.02 V	285	-1.40	36.80

- 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.



802.11n (40MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	2390.00	55.8 PK	74.0	-18.2	1.36 H	196	25.30	30.50
2	2390.00	49.1 AV	54.0	-4.9	1.36 H	196	18.60	30.50
3	*2422.00	93.8 PK			1.36 H	196	63.20	30.60
4	*2422.00	83.8 AV			1.36 H	196	53.20	30.60
5	4844.00	40.0 PK	74.0	-34.0	1.25 H	325	3.40	36.60
6	4844.00	29.5 AV	54.0	-24.5	1.25 H	325	-7.10	36.60

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	59.1 PK	74.0	-14.9	1.21 V	351	28.60	30.50
2	2390.00	52.2 AV	54.0	-1.8	1.21 V	351	21.70	30.50
3	*2422.00	106.0 PK			1.21 V	352	75.40	30.60
4	*2422.00	95.6 AV			1.21 V	352	65.00	30.60
5	4844.00	43.5 PK	74.0	-30.5	1.27 V	27	6.90	36.60
6	4844.00	33.4 AV	54.0	-20.6	1.27 V	27	-3.20	36.60

- 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.



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EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	*2437.00	93.1 PK			1.37 H	150	62.40	30.70
2	*2437.00	83.0 AV			1.37 H	150	52.30	30.70
3	2483.50	54.5 PK	74.0	-19.5	1.37 H	150	23.60	30.90
4	2483.50	48.2 AV	54.0	-5.8	1.37 H	150	17.30	30.90
5	4874.00	39.7 PK	74.0	-34.3	1.22 H	317	3.00	36.70
6	4874.00	29.2 AV	54.0	-24.8	1.22 H	317	-7.50	36.70

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	*2437.00	105.8 PK			1.20 V	178	75.10	30.70
2	*2437.00	95.0 AV			1.20 V	178	64.30	30.70
3	2483.50	66.7 PK	74.0	-7.3	1.18 V	177	35.80	30.90
4	2483.50	53.0 AV	54.0	-1.0	1.18 V	177	22.10	30.90
5	4874.00	47.5 PK	74.0	-26.5	1.61 V	165	10.80	36.70
6	4874.00	34.5 AV	54.0	-19.5	1.61 V	165	-2.20	36.70

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



A D T

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 7	FREQUENCY RANGE	1 ~ 25GHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1010 hPa	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	*2452.00	91.5 PK			1.28 H	178	60.70	30.80
2	*2452.00	91.4 AV			1.28 H	178	60.60	30.80
3	2483.50	54.5 PK	74.0	-19.5	1.28 H	185	23.60	30.90
4	2483.50	48.2 AV	54.0	-5.8	1.28 H	185	17.30	30.90
5	4904.00	39.2 PK	74.0	-34.8	1.52 H	258	2.40	36.80
6	4904.00	29.2 AV	54.0	-24.8	1.52 H	258	-7.60	36.80
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	*2452.00	104.2 PK			1.15 V	357	73.40	30.80
2	*2452.00	93.7 AV			1.15 V	357	62.90	30.80
3	2483.50	65.9 PK	74.0	-8.1	1.15 V	355	35.00	30.90
4	2483.50	51.0 AV	54.0	-3.0	1.15 V	355	20.10	30.90
5	4904.00	42.8 PK	74.0	-31.2	1.18 V	35	6.00	36.80
6	4904.00	33.0 AV	54.0	-21.0	1.18 V	35	-3.80	36.80

- 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

BELOW 1GHz WORST-CASE DATA : 802.11n (20MHz)

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6	FREQUENCY RANGE	Below 1000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	25deg. C, 68%RH 1015 hPa	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	166.29	38.0 QP	43.5	-5.5	1.43 H	246	24.10	13.90
2	212.02	34.7 QP	43.5	-8.8	1.55 H	265	23.50	11.20
3	249.60	36.6 QP	46.0	-9.4	1.00 H	289	23.90	12.70
4	331.26	41.5 QP	46.0	-4.5	1.25 H	292	26.20	15.30
5	374.04	41.3 QP	46.0	-4.7	1.25 H	94	25.00	16.30
6	666.67	41.5 QP	46.0	-4.5	1.12 H	339	19.40	22.10
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	50.53	35.7 QP	40.0	-4.3	1.02 V	157	22.00	13.70
2	123.23	37.1 QP	43.5	-6.4	1.00 V	10	25.80	11.30
3	166.00	37.5 QP	43.5	-6.0	1.00 V	283	23.60	13.90
4	212.66	39.8 QP	43.5	-3.7	1.50 V	163	28.50	11.30
5	500.42	38.9 QP	46.0	-7.1	1.00 V	10	19.60	19.30
6	669.57	37.0 QP	46.0	-9.0	2.00 V	25	14.90	22.10

- 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.

4.2 CONDUCTED EMISSION MEASUREMENT

4.2.1 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.
 3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Nov. 30, 2010	Nov. 29, 2011
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 30, 2010	Dec. 29, 2011
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Jun. 28, 2010	Jun. 27, 2011
V-LISN SCHWARZBECK	NNBL 8226-2	8226-142	Jul. 12, 2010	Jul. 11, 2011
LISN ROHDE & SCHWARZ	ENV216	100072	Jun. 11, 2010	Jun. 10, 2011
Software ADT	ADT_Cond_ V7.3.7	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 Shielded Room 1.
 3. The VCCI Site Registration No. is C-2040.

4.2.3 TEST PROCEDURES

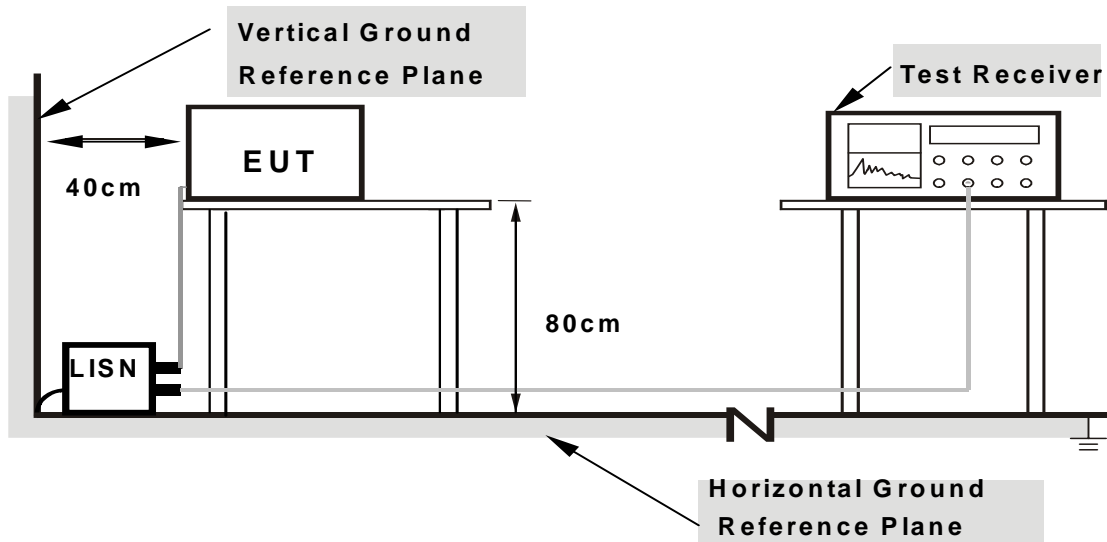
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling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

NOTE: 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



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).

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6.



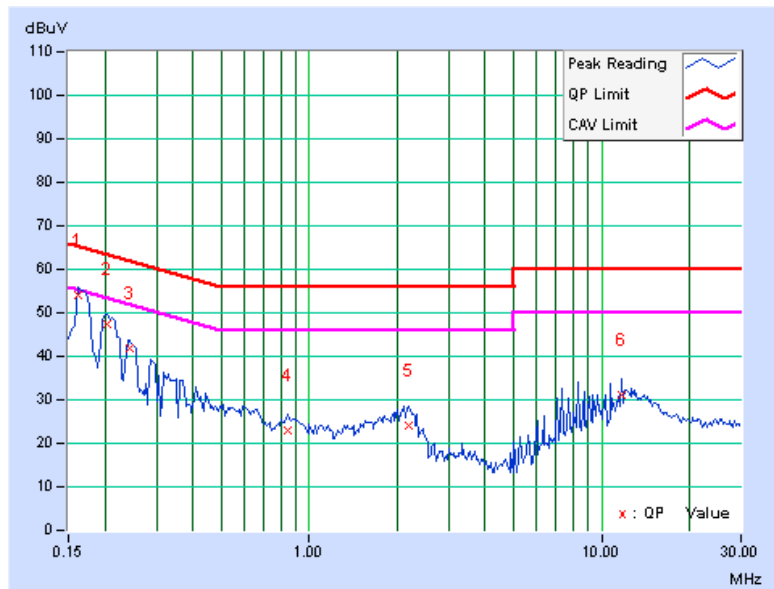
4.2.7 TEST RESULTS

CONDUCTED WORST-CASE DATA : 802.11n (20MHz)

PHASE	Line 1	6dB BANDWIDTH	9kHz
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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	0.14	53.91	-	54.05	-	65.38	55.38	-11.32	-
2	0.205	0.14	47.37	-	47.51	-	63.42	53.42	-15.91	-
3	0.244	0.14	41.53	-	41.67	-	61.97	51.97	-20.30	-
4	0.845	0.18	22.71	-	22.89	-	56.00	46.00	-33.11	-
5	2.199	0.23	23.75	-	23.98	-	56.00	46.00	-32.02	-
6	11.699	0.91	30.38	-	31.29	-	60.00	50.00	-28.71	-

- 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.



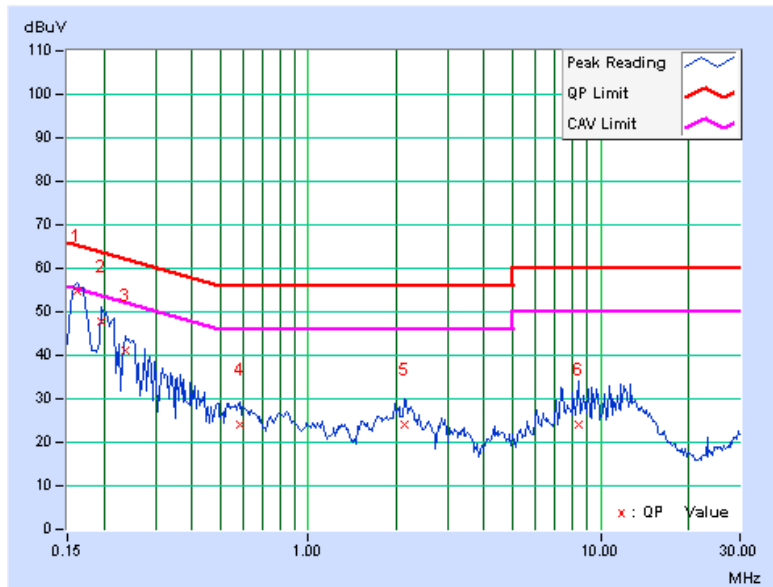


A D T

PHASE	Line 2	6dB BANDWIDTH	9kHz
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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	0.162	0.13	54.74	-	54.87	-	65.38	55.38	-10.51	-
2	0.197	0.13	47.53	-	47.66	-	63.74	53.74	-16.08	-
3	0.236	0.13	40.95	-	41.08	-	62.24	52.24	-21.16	-
4	0.584	0.15	23.99	-	24.14	-	56.00	46.00	-31.86	-
5	2.125	0.22	23.68	-	23.90	-	56.00	46.00	-32.10	-
6	8.371	0.61	23.30	-	23.91	-	60.00	50.00	-36.09	-

- 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.





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 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

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 are made to the EUT by the lab during the test.

---END---