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FCC TEST REPORT (15.247)

REPORT NO.: RF120113E07

MODEL NO.: FXE2000-G

FCC ID: PQRFXE2000-G

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ISSUED: May 15, 2012

APPLICANT: Contec Co., Ltd.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120113E07	Original release	May 15, 2012



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1. CERTIFICATION

PRODUCT: Wireless LAN Adapter
BRAND NAME: CONTEC
MODEL NO.: FXE2000-G
TEST SAMPLE: ENGINEERING SAMPLE
APPLICANT: Contec Co., Ltd.
TESTED: Jan. 19 to Apr. 17, 2012
STANDARDS: **FCC Part 15, Subpart C (Section 15.247)**
ANSI C63.10-2009

The above equipment (Model: FXE2000-G) 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 : Midoli Peng, **DATE:** May 15, 2012
(Midoli Peng, Specialist)

APPROVED BY : May Chen, **DATE:** May 15, 2012
(May Chen, Deputy Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 2.4GHz, 2412~2462MHz Band

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -4.93dB at 26.60938MHz
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.5dB at 2390.00MHz & 4924.00MHz
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is U.FL / R-SMA not a standard connector.

For 5GHz, 5745~5825MHz Band

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	TEST TYPE	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -4.77dB at 26.60938MHz
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -2.7dB at 158.49MHz
15.247(d)	Band Edge Measurement	PASS	Meet the requirement of limit.
15.247(a)(2)	6dB bandwidth	PASS	Meet the requirement of limit.
15.247(b)	Conducted power	PASS	Meet the requirement of limit.
15.247(e)	Power Spectral Density	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is U.FL / R-SMA not a standard connector.

NOTE: The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 2400 ~ 2483.5MHz and 5.725~5.850GHz. For the 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz RF parameters was recorded in another test report. (RF120113E07-1 & RF120113E07-2)

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	2.45 dB
Radiated emissions (30MHz-1GHz)	5.69 dB
Radiated emissions (1GHz -6GHz)	5.12 dB
Radiated emissions (6GHz -18GHz)	5.32 dB
Radiated emissions (18GHz -40GHz)	2.37 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless LAN Adapter
MODEL NO.	FXE2000-G
POWER SUPPLY	DC 5V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n (20MHz, 800ns GI): up to 130Mbps 802.11n (20MHz, 400ns GI): up to 144.444Mbps 802.11n (40MHz, 800ns GI) : up to 270Mbps 802.11n (40MHz, 400ns GI) : up to 300Mbps
OPERATING FREQUENCY	For 15.407 802.11a: 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.5~5.58GHz & 5.66~5.7GHz
	For 15.247 802.11b & 802.11g: 2.412 ~ 2.462GHz 802.11a: 5.745 ~ 5.825GHz
NUMBER OF CHANNEL	For 15.407 16 for 802.11a, 802.11n (20MHz) 7 for 802.11n (40MHz)
	For 15.247(2.4GHz) 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz) For 15.247(5GHz) 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)

MAXIMUM OUTPUT POWER	For 15.407 802.11a: 62.559mW 802.11n (20MHz): 56.170mW 802.11n (40MHz): 57.660mW For 15.247 (2.4GHz) 802.11b: 120.640mW 802.11g: 662.965mW 802.11n (20MHz): 480.912mW 802.11n (40MHz): 209.426mW For 15.247 (5GHz) 802.11a: 336.852mW 802.11n (20MHz): 321.691mW 802.11n (40MHz): 347.652mW
ANTENNA TYPE	Please see note
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	Adapter x 1

NOTE:

1. The EUT must be supplied with a power adapter, please refer to the following table:

Brand	Model No.	Spec.
Sino-American	SA115B-05U	Input: 100-240V, 0.4A, 50-60Hz AC input cable (1.8m, unshielded) Output: 5V, 2A, 10W DC output cable (1.9m, unshielded)

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

MODULATION MODE	TX/RX FUNCTION
802.11b	2Tx/2Rx
802.11g	2Tx/2Rx
802.11a	2Tx/2Rx
802.11n (20MHz)	2Tx/2Rx
802.11n (40MHz)	2Tx/2Rx

3. The antennas combinations were provided to the EUT, please refer to the following table:

Set 1									
Brand	Model	Antenna Type	Peak Gain(dBi) (Exclude cable loss)	Net Gain (dBi) (Include cable loss)	Connector Type	Cable Length (cm)	Cable Loss (dB)	Transmitter Circuit	
FDK	AN1523	chip	2.4GHz: 2	2.4GHz: 0.6	U.FL	16	1.4	Chain (0) & Chain (1)	
			5GHz :1	5GHz :-0.4					
Set 2									
Brand	Model	Antenna Type	Peak Gain(dBi) (Exclude cable loss)	Net Gain (dBi) (Include cable loss)	Connector Type	Cable Length (cm)	Cable Loss (dB)	Total Cable Loss (dB)	Transmitter Circuit
Azure Solutions, Inc.	MR-1700-W	Vehicle	2.4GHz: 4	2.4GHz: 2.1695	Cable 1: R-SMA	Cable 1: 152	Cable 1: 0.9305	1.8305	Chain (0) & Chain (1)
					Cable 2: U.FL	Cable 2: 20	Cable 2: 0.9		
Set 3									
Brand	Model	Antenna Type	Peak Gain(dBi) (Exclude cable loss)	Net Gain (dBi) (Include cable loss)	Connector Type	Cable Length (cm)	Cable Loss (dB)	Total Cable Loss (dB)	Transmitter Circuit
Azure Solutions, Inc.	MR-6000	Vehicle	5GHz :4	5GHz: 0.7978	Cable 1: R-SMA	Cable 1: 152	Cable 1: 1.5022	3.2022	Chain (0) & Chain (1)
					Cable 2: U.FL	Cable 2: 20	Cable 2: 1.7		

When operating Ant Set 2 or Set 3, that should connect cable1 & cable2 together.

- The EUT is 2 * 2 spatial MIMO (2Tx & 2Rx) without beam forming function.
- 2.4GHz and 5GHz technology cannot transmit at same time.
- When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.
- 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

Operated in 2400 ~ 2483.5MHz band:

Eleven channels are provided for 802.11b, 802.11g, 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		

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

Operated in 5725 ~ 5850MHz band:

Five channels are provided for 802.11a, 802.11n (20MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

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

CHANNEL	FREQUENCY
151	5755 MHz
159	5795 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO					DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	OB	
Mode 1	√	√	√	-	-	With antenna set 1
Mode 2	-	√	√	√	√	With antenna set 2
Mode 3	-	√	√	√	√	With antenna set 3

Where **PLC**: Power Line Conducted Emission

RE < 1G: Radiated Emission below 1GHz

RE ³ 1G: Radiated Emission above 1GHz

APCM: Antenna Port Conducted Measurement

OB: Conducted Out-Band Emission Measurement

NOTE: 1. “_” means no effect

2. EUT with antenna set 1: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane** (Below 1GHz) & **Y-plane** (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, 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)
802.11g	1 to 11	6	OFDM	BPSK	6
802.11a	149 to 165	149	OFDM	BPSK	6

RADIATED EMISSION TEST (BELOW 1 GHz):

☒ 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)
802.11g	1 to 11	6	OFDM	BPSK	6
802.11a	149 to 165	149	OFDM	BPSK	6

RADIATED EMISSION TEST (ABOVE 1 GHz):

- ☒ 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
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ 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
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5

CONDUCTED OUT-BAND EMISSION MEASUREMENT:

- ☒ 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
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (40MHz)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (20MHz)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (40MHz)	151 to 159	151, 159	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
PLC	23deg. C, 69%RH	120Vac, 60Hz	Kyle Huang
RE<1G	21deg. C, 69%RH	120Vac, 60Hz	Frank Liu
RE ³ 1G	28deg. C, 75%RH	120Vac, 60Hz	Evan Huang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Rex Huang
OB	25deg. C, 60%RH	120Vac, 60Hz	Rex Huang

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 C63.10-2009

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 A. The test report has been issued separately.



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3.4 DESCRIPTION OF SUPPORT UNITS

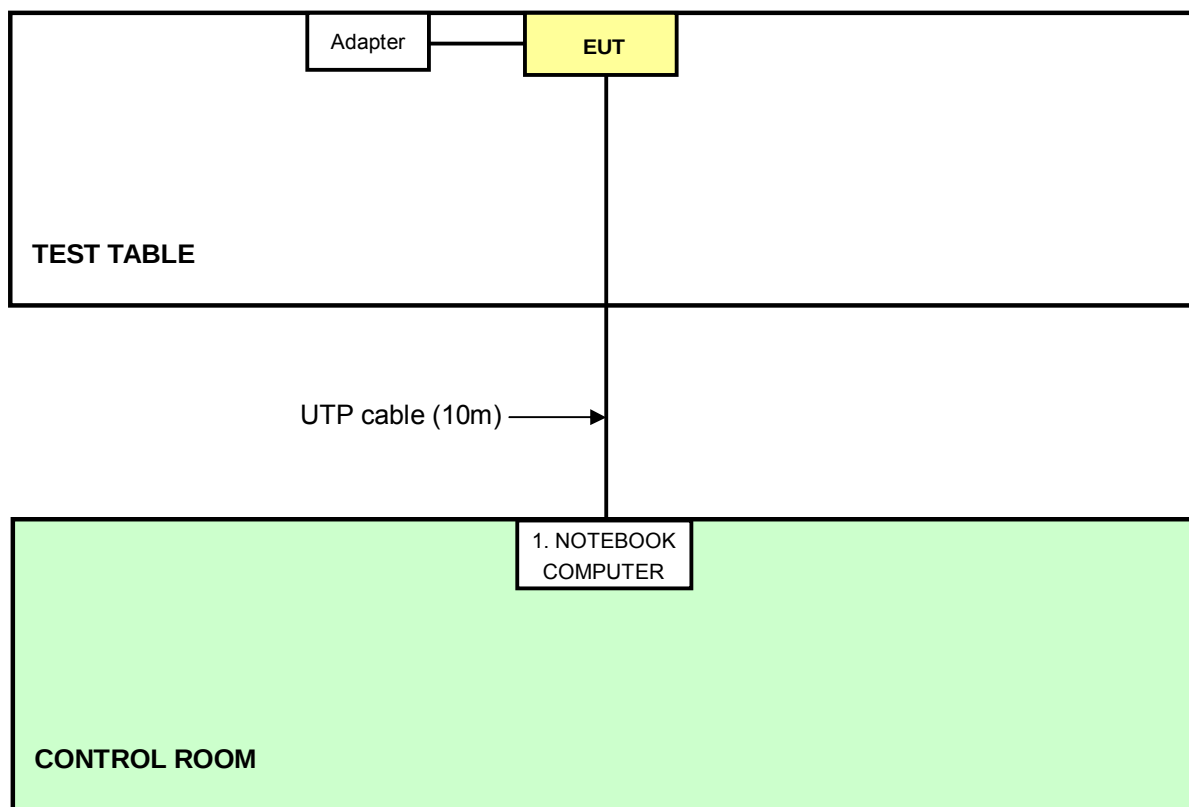
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

For Conducted emission test					
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	ASUS	ASUSM2400N	38NP051951	FCC DoC
For other test items					
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	FSLB32S	FCC DoC

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	UTP cable, 10m

Note: The power cords of the above support units were unshielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4. TEST TYPES AND RESULTS (802.11b & g, 2400 ~ 2483.5MHz Band)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	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 0.50 MHz.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	Mar. 02, 2011	Mar. 01, 2012
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-523	Sep. 20, 2011	Sep. 19, 2012
Line-Impedance Stabilization Network (for Peripheral)	ENV-216	100072	June 10, 2011	June 09, 2012
RF Cable (JYEBAO)	5DFB	CONCAB-003	Aug. 05, 2011	Aug. 04, 2012
50 ohms Terminator	50	3	Nov. 02, 2011	Nov. 01, 2012
Software	BV 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 Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.
4. Tested Date: Jan. 19, 2012

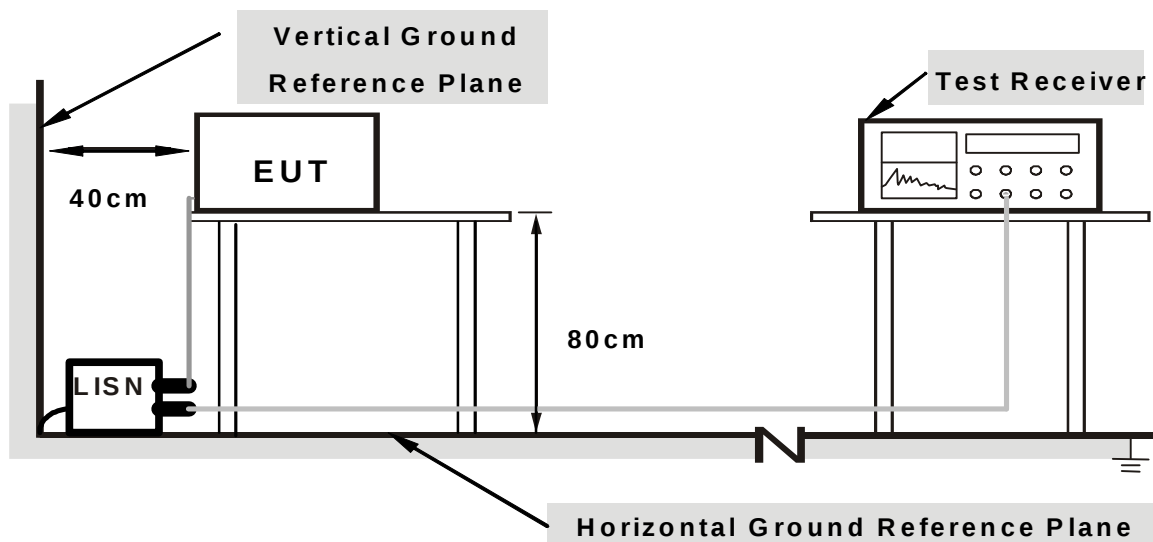
4.1.3 TEST PROCEDURES

- 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) were not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 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 from other units and other metal planes

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.6 EUT OPERATING CONDITIONS

1. Connect the EUT with the support unit 1 (Notebook Computer) which is placed on a testing table.
2. The communication partner run test program “art.exe” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

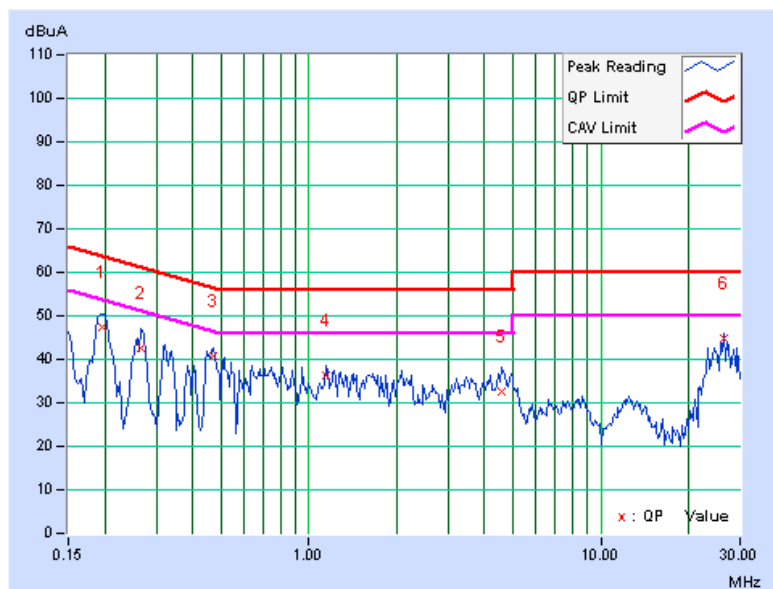
4.1.7 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19687	0.06	47.17	37.46	47.23	37.52	63.74	53.74	-16.51	-16.22
2	0.26719	0.06	42.63	35.12	42.69	35.18	61.20	51.20	-18.51	-16.02
3	0.47031	0.07	40.54	38.08	40.61	38.15	56.51	46.51	-15.90	-8.36
4	1.14453	0.10	36.06	33.20	36.16	33.30	56.00	46.00	-19.84	-12.70
5	4.59375	0.30	32.45	26.45	32.75	26.75	56.00	46.00	-23.25	-19.25
6	26.48828	0.81	43.84	43.69	44.65	44.50	60.00	50.00	-15.35	-5.50

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.

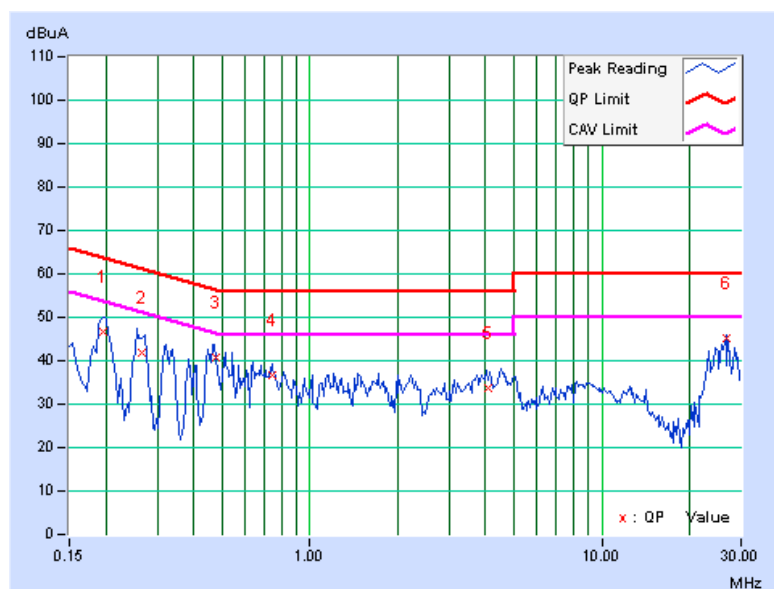


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19687	0.07	46.50	40.20	46.57	40.27	63.74	53.74	-17.17	-13.47
2	0.26472	0.07	41.62	34.82	41.69	34.89	61.28	51.28	-19.59	-16.39
3	0.47478	0.08	40.48	37.39	40.56	37.47	56.43	46.43	-15.87	-8.96
4	0.74375	0.09	36.49	32.32	36.58	32.41	56.00	46.00	-19.42	-13.59
5	4.06878	0.27	33.43	29.42	33.70	29.69	56.00	46.00	-22.30	-16.31
6	26.60938	0.80	44.42	44.27	45.22	45.07	60.00	50.00	-14.78	-4.93

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.



4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.2.1 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.



A D T

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250253	Aug. 29, 2011	Aug. 28, 2012
Agilent Pre-Selector	N9039A	MY46520310	Aug. 29, 2011	Aug. 28, 2012
Agilent Signal Generator	N5181A	MY49060347	July 25, 2011	July 24, 2012
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-04	Nov. 15, 2011	Nov. 14, 2012
Agilent Pre-Amplifier	8449B	3008A02465	Feb. 27, 2012	Feb. 26, 2013
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-361	Apr. 06, 2012	Apr. 05, 2013
AISI Horn_Antenna	AIH.8018	0000220091110	Nov. 23, 2011	Nov. 22, 2012
SCHWARZBECK Horn_Antenna	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
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, 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: Apr. 17, 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 3 meter 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.

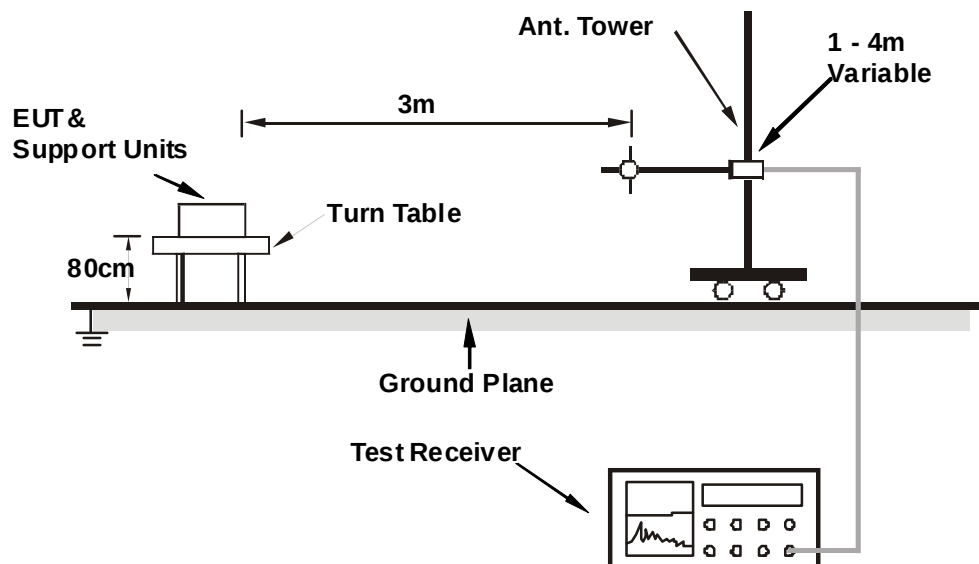
NOTE:

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

4.2.7 TEST RESULTS (MODE 1, WITH ANTENNA SET1)

BELOW 1GHz WORST-CASE DATA

802.11g

CHANNEL	TX Channel 6	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	101.88	30.8 QP	43.5	-12.7	2.00 H	285	20.84	9.98
2	111.59	31.9 QP	43.5	-11.6	2.00 H	260	20.65	11.24
3	164.41	36.5 QP	43.5	-7.1	2.00 H	299	22.39	14.06
4	250.03	34.2 QP	46.0	-11.8	2.00 H	294	20.88	13.30
5	509.97	28.1 QP	46.0	-17.9	2.00 H	247	7.80	20.26
6	1000.00	33.8 QP	54.0	-20.2	2.00 H	281	5.23	28.54
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	55.93	36.7 QP	40.0	-3.4	1.00 V	184	22.92	13.73
2	86.13	36.0 QP	40.0	-4.0	1.50 V	124	27.24	8.80
3	98.45	39.2 QP	43.5	-4.3	1.00 V	297	29.70	9.53
4	250.03	33.1 QP	46.0	-12.9	1.00 V	226	19.77	13.30
5	874.95	33.5 QP	46.0	-12.5	1.00 V	354	6.85	26.66
6	1000.00	39.5 QP	54.0	-14.5	1.00 V	286	10.97	28.54

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.

ABOVE 1GHz DATA

802.11b

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	2385.50	58.7 PK	74.0	-15.3	1.18 H	347	26.53	32.17
2	2385.50	49.8 AV	54.0	-4.2	1.18 H	347	17.63	32.17
3	*2412.00	107.5 PK			1.18 H	346	75.25	32.25
4	*2412.00	104.8 AV			1.18 H	346	72.55	32.25
5	4824.00	56.5 PK	74.0	-17.5	1.11 H	107	14.93	41.57
6	4824.00	52.9 AV	54.0	-1.1	1.11 H	107	11.33	41.57
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	2387.10	56.0 PK	74.0	-18.0	1.00 V	344	23.82	32.18
2	2387.10	44.0 AV	54.0	-10.0	1.00 V	344	11.82	32.18
3	*2412.00	96.0 PK			1.00 V	344	63.75	32.25
4	*2412.00	93.6 AV			1.00 V	344	61.35	32.25
5	4824.00	54.3 PK	74.0	-19.7	1.22 V	258	12.73	41.57
6	4824.00	49.5 AV	54.0	-4.5	1.22 V	258	7.93	41.57

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.

CHANNEL	TX Channel 6	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	*2437.00	105.6 PK			1.14 H	343	73.29	32.31
2	*2437.00	103.1 AV			1.14 H	343	70.79	32.31
3	4874.00	56.4 PK	74.0	-17.6	1.10 H	100	14.74	41.66
4	4874.00	53.4 AV	54.0	-0.6	1.10 H	100	11.74	41.66
5	7311.00	56.4 PK	74.0	-17.6	1.45 H	288	10.26	46.14
6	7311.00	49.0 AV	54.0	-5.0	1.45 H	288	2.86	46.14
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	95.7 PK			1.00 V	347	63.39	32.31
2	*2437.00	92.1 AV			1.00 V	347	59.79	32.31
3	4874.00	54.6 PK	74.0	-19.4	1.19 V	260	12.94	41.66
4	4874.00	49.7 AV	54.0	-4.3	1.19 V	260	8.04	41.66

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.

CHANNEL	TX Channel 11	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	*2462.00	105.3 PK			1.09 H	25	72.93	32.37
2	*2462.00	102.5 AV			1.09 H	25	70.13	32.37
3	2488.00	58.0 PK	74.0	-16.0	1.09 H	25	25.56	32.44
4	2488.00	47.9 AV	54.0	-6.1	1.09 H	25	15.46	32.44
5	4924.00	56.8 PK	74.0	-17.2	1.08 H	90	15.10	41.70
6	4924.00	53.5 AV	54.0	-0.5	1.08 H	90	11.80	41.70
7	7386.00	52.7 PK	74.0	-21.3	1.45 H	288	6.37	46.33
8	7386.00	42.5 AV	54.0	-11.5	1.45 H	288	-3.87	46.33
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	94.9 PK			1.00 V	340	62.53	32.37
2	*2462.00	91.4 AV			1.00 V	340	59.03	32.37
3	2487.90	56.1 PK	74.0	-17.9	1.00 V	340	23.66	32.44
4	2487.90	44.3 AV	54.0	-9.7	1.00 V	340	11.86	32.44
5	4924.00	54.6 PK	74.0	-19.4	1.14 V	265	12.90	41.70
6	4924.00	49.8 AV	54.0	-4.2	1.14 V	265	8.10	41.70
7	7386.00	54.5 PK	74.0	-19.5	1.32 V	247	8.17	46.33
8	7386.00	45.7 AV	54.0	-8.3	1.32 V	247	-0.63	46.33

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.

802.11g

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	2390.00	69.0 PK	74.0	-5.0	1.38 H	304	36.81	32.19
2	2390.00	53.1 AV	54.0	-0.9	1.38 H	304	20.91	32.19
3	*2412.00	110.6 PK			1.35 H	306	78.35	32.25
4	*2412.00	100.5 AV			1.35 H	306	68.25	32.25
5	4824.00	53.2 PK	74.0	-20.8	1.07 H	103	11.63	41.57
6	4824.00	39.9 AV	54.0	-14.1	1.07 H	103	-1.67	41.57
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	2390.00	60.8 PK	74.0	-13.2	1.00 V	264	28.61	32.19
2	2390.00	47.5 AV	54.0	-6.5	1.00 V	264	15.31	32.19
3	*2412.00	102.5 PK			1.00 V	266	70.25	32.25
4	*2412.00	92.7 AV			1.00 V	266	60.45	32.25
5	4824.00	50.5 PK	74.0	-23.5	1.37 V	169	8.93	41.57
6	4824.00	36.9 AV	54.0	-17.1	1.37 V	169	-4.67	41.57

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.

CHANNEL	TX Channel 6	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	2320.13	63.5 PK	74.0	-10.5	1.46 H	302	31.54	31.96
2	2320.13	51.1 AV	54.0	-2.9	1.46 H	302	19.14	31.96
3	*2437.00	112.6 PK			1.39 H	304	80.29	32.31
4	*2437.00	102.8 AV			1.39 H	304	70.49	32.31
5	2483.50	58.2 PK	74.0	-15.8	1.33 H	314	25.77	32.43
6	2483.50	45.8 AV	54.0	-8.2	1.33 H	314	13.37	32.43
7	4874.00	53.3 PK	74.0	-20.7	1.08 H	93	11.64	41.66
8	4874.00	40.0 AV	54.0	-14.0	1.08 H	93	-1.66	41.66
9	7311.00	61.9 PK	74.0	-12.1	1.44 H	298	15.76	46.14
10	7311.00	48.0 AV	54.0	-6.0	1.44 H	298	1.86	46.14
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	103.1 PK			1.31 V	328	70.79	32.31
2	*2437.00	93.8 AV			1.31 V	328	61.49	32.31
3	4874.00	50.7 PK	74.0	-23.3	1.31 V	165	9.04	41.66
4	4874.00	37.2 AV	54.0	-16.8	1.31 V	165	-4.46	41.66
5	7311.00	53.2 PK	74.0	-20.8	1.22 V	252	7.06	46.14
6	7311.00	42.0 AV	54.0	-12.0	1.22 V	252	-4.14	46.14

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.

CHANNEL	TX Channel 11	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	*2462.00	110.5 PK			1.34 H	304	78.13	32.37
2	*2462.00	100.9 AV			1.34 H	304	68.53	32.37
3	2483.50	67.2 PK	74.0	-6.8	1.34 H	302	34.77	32.43
4	2483.50	52.6 AV	54.0	-1.4	1.34 H	302	20.17	32.43
5	4924.00	53.5 PK	74.0	-20.5	1.13 H	90	11.80	41.70
6	4924.00	40.4 AV	54.0	-13.6	1.13 H	90	-1.30	41.70
7	7386.00	61.6 PK	74.0	-12.4	1.46 H	302	15.27	46.33
8	7386.00	47.6 AV	54.0	-6.4	1.46 H	302	1.27	46.33
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	102.6 PK			1.25 V	334	70.23	32.37
2	*2462.00	92.2 AV			1.25 V	334	59.83	32.37
3	2483.50	66.4 PK	74.0	-7.6	1.25 V	334	33.97	32.43
4	2483.50	47.6 AV	54.0	-6.4	1.25 V	334	15.17	32.43
5	4924.00	50.4 PK	74.0	-23.6	1.29 V	178	8.70	41.70
6	4924.00	36.8 AV	54.0	-17.2	1.29 V	178	-4.90	41.70
7	7386.00	53.3 PK	74.0	-20.7	1.18 V	251	6.97	46.33
8	7386.00	42.3 AV	54.0	-11.7	1.18 V	251	-4.03	46.33

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 (20MHz)

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	2390.00	69.1 PK	74.0	-4.9	1.38 H	300	36.91	32.19
2	2390.00	53.2 AV	54.0	-0.8	1.38 H	300	21.01	32.19
3	*2412.00	109.4 PK			1.38 H	303	77.15	32.25
4	*2412.00	99.5 AV			1.38 H	303	67.25	32.25
5	4824.00	53.8 PK	74.0	-20.2	1.16 H	84	12.23	41.57
6	4824.00	40.8 AV	54.0	-13.2	1.16 H	84	-0.77	41.57
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	2390.00	62.7 PK	74.0	-11.3	1.26 V	321	30.51	32.19
2	2390.00	48.1 AV	54.0	-5.9	1.26 V	321	15.91	32.19
3	*2412.00	101.2 PK			1.26 V	321	68.95	32.25
4	*2412.00	90.2 AV			1.26 V	321	57.95	32.25
5	4824.00	48.5 PK	74.0	-25.5	1.25 V	169	6.93	41.57
6	4824.00	35.7 AV	54.0	-18.3	1.25 V	169	-5.87	41.57

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.

CHANNEL	TX Channel 6	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	2320.00	63.6 PK	74.0	-10.4	1.47 H	307	31.64	31.96
2	2320.00	51.5 AV	54.0	-2.5	1.47 H	307	19.54	31.96
3	*2437.00	112.2 PK			1.37 H	303	79.89	32.31
4	*2437.00	102.6 AV			1.37 H	303	70.29	32.31
5	2483.50	58.2 PK	74.0	-15.8	1.54 H	299	25.77	32.43
6	2483.50	45.9 AV	54.0	-8.1	1.54 H	299	13.47	32.43
7	4874.00	53.7 PK	74.0	-20.3	1.15 H	85	12.04	41.66
8	4874.00	40.9 AV	54.0	-13.1	1.15 H	85	-0.76	41.66
9	7311.00	61.2 PK	74.0	-12.8	1.42 H	297	15.06	46.14
10	7311.00	47.3 AV	54.0	-6.7	1.42 H	297	1.16	46.14
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	101.3 PK			1.25 V	314	68.99	32.31
2	*2437.00	90.7 AV			1.25 V	314	58.39	32.31
3	4874.00	50.3 PK	74.0	-23.7	1.25 V	169	8.64	41.66
4	4874.00	36.5 AV	54.0	-17.5	1.25 V	169	-5.16	41.66
5	7311.00	53.3 PK	74.0	-20.7	1.12 V	255	7.16	46.14
6	7311.00	42.5 AV	54.0	-11.5	1.12 V	255	-3.64	46.14

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.

CHANNEL	TX Channel 11	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	*2462.00	107.3 PK			1.33 H	303	74.93	32.37
2	*2462.00	98.1 AV			1.33 H	303	65.73	32.37
3	2483.50	67.1 PK	74.0	-6.9	1.31 H	306	34.67	32.43
4	2483.50	52.3 AV	54.0	-1.7	1.31 H	306	19.87	32.43
5	4924.00	53.5 PK	74.0	-20.5	1.10 H	87	11.80	41.70
6	4924.00	40.9 AV	54.0	-13.1	1.10 H	87	-0.80	41.70
7	7386.00	60.6 PK	74.0	-13.4	1.45 H	284	14.27	46.33
8	7386.00	46.9 AV	54.0	-7.1	1.45 H	284	0.57	46.33
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	99.1 PK			1.29 V	308	66.73	32.37
2	*2462.00	89.5 AV			1.29 V	308	57.13	32.37
3	2483.50	63.7 PK	74.0	-10.3	1.29 V	308	31.27	32.43
4	2483.50	46.6 AV	54.0	-7.4	1.29 V	308	14.17	32.43
5	4924.00	49.9 PK	74.0	-24.1	1.28 V	161	8.20	41.70
6	4924.00	36.1 AV	54.0	-17.9	1.28 V	161	-5.60	41.70
7	7386.00	53.9 PK	74.0	-20.1	1.09 V	264	7.57	46.33
8	7386.00	42.8 AV	54.0	-11.2	1.09 V	264	-3.53	46.33

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)

CHANNEL	TX Channel 3	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	2390.00	67.5 PK	74.0	-6.5	1.37 H	303	35.31	32.19
2	2390.00	52.8 AV	54.0	-1.2	1.37 H	303	20.61	32.19
3	*2422.00	101.1 PK			1.38 H	306	68.83	32.27
4	*2422.00	91.5 AV			1.38 H	306	59.23	32.27
5	4844.00	54.0 PK	74.0	-20.0	1.15 H	73	12.39	41.61
6	4844.00	41.2 AV	54.0	-12.8	1.15 H	73	-0.41	41.61
7	7266.00	61.0 PK	74.0	-13.0	1.48 H	278	14.98	46.02
8	7266.00	47.1 AV	54.0	-6.9	1.48 H	278	1.08	46.02
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	64.9 PK	74.0	-9.1	1.25 V	318	32.71	32.19
2	2390.00	47.7 AV	54.0	-6.3	1.25 V	318	15.51	32.19
3	*2422.00	94.7 PK			1.25 V	318	62.43	32.27
4	*2422.00	84.9 AV			1.25 V	318	52.63	32.27
5	4844.00	49.7 PK	74.0	-24.3	1.30 V	172	8.09	41.61
6	4844.00	36.2 AV	54.0	-17.8	1.30 V	172	-5.41	41.61
7	7266.00	54.0 PK	74.0	-20.0	1.07 V	277	7.98	46.02
8	7266.00	42.9 AV	54.0	-11.1	1.07 V	277	-3.12	46.02

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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CHANNEL	TX Channel 6	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	2390.00	65.3 PK	74.0	-8.7	1.38 H	303	33.11	32.19
2	2390.00	52.3 AV	54.0	-1.7	1.38 H	303	20.11	32.19
3	*2437.00	105.3 PK			1.35 H	304	72.99	32.31
4	*2437.00	96.1 AV			1.35 H	304	63.79	32.31
5	2483.50	61.7 PK	74.0	-12.3	1.33 H	303	29.27	32.43
6	2483.50	47.7 AV	54.0	-6.3	1.33 H	303	15.27	32.43
7	4874.00	54.1 PK	74.0	-19.9	1.15 H	68	12.44	41.66
8	4874.00	41.2 AV	54.0	-12.8	1.15 H	68	-0.46	41.66
9	7311.00	61.0 PK	74.0	-13.0	1.54 H	282	14.86	46.14
10	7311.00	47.1 AV	54.0	-6.9	1.54 H	282	0.96	46.14

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	98.7 PK			1.20 V	309	66.39	32.31
2	*2437.00	89.2 AV			1.20 V	309	56.89	32.31
3	4874.00	49.5 PK	74.0	-24.5	1.34 V	171	7.84	41.66
4	4874.00	35.9 AV	54.0	-18.1	1.34 V	171	-5.76	41.66
5	7311.00	54.0 PK	74.0	-20.0	1.02 V	281	7.86	46.14
6	7311.00	42.7 AV	54.0	-11.3	1.02 V	281	-3.44	46.14

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.

CHANNEL	TX Channel 9	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	*2452.00	102.8 PK			1.35 H	305	70.45	32.35
2	*2452.00	93.6 AV			1.35 H	305	61.25	32.35
3	2483.50	67.3 PK	74.0	-6.7	1.34 H	305	34.87	32.43
4	2483.50	53.1 AV	54.0	-0.9	1.34 H	305	20.67	32.43
5	4904.00	54.1 PK	74.0	-19.9	1.13 H	55	12.39	41.71
6	4904.00	41.0 AV	54.0	-13.0	1.13 H	55	-0.71	41.71
7	7356.00	60.6 PK	74.0	-13.4	1.55 H	272	14.34	46.26
8	7356.00	46.9 AV	54.0	-7.1	1.55 H	272	0.64	46.26
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	97.1 PK			1.22 V	312	64.75	32.35
2	*2452.00	86.2 AV			1.22 V	312	53.85	32.35
3	2483.50	65.3 PK	74.0	-8.7	1.22 V	312	32.87	32.43
4	2483.50	47.5 AV	54.0	-6.5	1.22 V	312	15.07	32.43
5	4904.00	49.5 PK	74.0	-24.5	1.29 V	178	7.79	41.71
6	4904.00	36.3 AV	54.0	-17.7	1.29 V	178	-5.41	41.71
7	7356.00	53.4 PK	74.0	-20.6	1.10 V	279	7.14	46.26
8	7356.00	42.5 AV	54.0	-11.5	1.10 V	279	-3.76	46.26

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.

4.2.8 TEST RESULTS (MODE 2, WITH ANTENNA SET2)

BELOW 1GHz WORST-CASE DATA

802.11g

CHANNEL	TX Channel 6	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	85.42	36.1 QP	40.0	-3.9	2.00 H	180	27.27	8.86
2	108.75	38.3 QP	43.5	-5.2	2.00 H	93	27.45	10.87
3	174.36	40.0 QP	43.5	-3.5	2.00 H	310	26.53	13.44
4	340.03	38.0 QP	46.0	-8.0	1.00 H	69	21.79	16.23
5	374.97	30.9 QP	46.0	-15.1	1.00 H	228	13.81	17.08
6	1000.00	38.6 QP	54.0	-15.4	1.50 H	284	10.06	28.54
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	39.47	36.5 QP	40.0	-3.5	1.50 V	191	22.75	13.72
2	71.09	35.6 QP	40.0	-4.4	1.00 V	45	23.60	11.96
3	148.07	37.6 QP	43.5	-5.9	1.00 V	253	23.07	14.50
4	250.03	36.6 QP	46.0	-9.4	1.00 V	129	23.26	13.30
5	680.02	40.7 QP	46.0	-5.3	1.00 V	26	17.32	23.35
6	1000.00	38.0 QP	54.0	-16.0	1.00 V	298	9.50	28.54

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.

ABOVE 1GHz DATA

802.11b

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	2385.50	56.4 PK	74.0	-17.6	1.63 H	65	24.23	32.17
2	2385.50	45.3 AV	54.0	-8.7	1.63 H	65	13.13	32.17
3	*2412.00	100.8 PK			1.63 H	66	68.55	32.25
4	*2412.00	98.4 AV			1.63 H	66	66.15	32.25
5	4824.00	49.8 PK	74.0	-24.2	1.17 H	78	8.23	41.57
6	4824.00	43.2 AV	54.0	-10.8	1.17 H	78	1.63	41.57
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	2387.10	58.2 PK	74.0	-15.8	1.54 V	68	26.02	32.18
2	2387.10	47.0 AV	54.0	-7.0	1.54 V	68	14.82	32.18
3	*2412.00	103.8 PK			1.03 V	274	71.55	32.25
4	*2412.00	101.5 AV			1.03 V	274	69.25	32.25
5	4824.00	51.6 PK	74.0	-22.4	1.14 V	228	10.03	41.57
6	4824.00	46.8 AV	54.0	-7.2	1.14 V	228	5.23	41.57

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.

CHANNEL	TX Channel 6	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	*2437.00	99.6 PK			1.59 H	57	67.29	32.31
2	*2437.00	97.6 AV			1.59 H	57	65.29	32.31
3	4874.00	49.6 PK	74.0	-24.4	1.14 H	83	7.94	41.66
4	4874.00	43.1 AV	54.0	-10.9	1.14 H	83	1.44	41.66
5	7311.00	56.0 PK	74.0	-18.0	1.12 H	28	9.86	46.14
6	7311.00	43.5 AV	54.0	-10.5	1.12 H	28	-2.64	46.14
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	103.3 PK			1.04 V	277	70.99	32.31
2	*2437.00	100.3 AV			1.04 V	277	67.99	32.31
3	4874.00	49.6 PK	74.0	-24.4	1.17 V	144	7.94	41.66
4	4874.00	43.1 AV	54.0	-10.9	1.17 V	144	1.44	41.66
5	7311.00	56.2 PK	74.0	-17.8	1.00 V	192	10.06	46.14
6	7311.00	46.6 AV	54.0	-7.4	1.00 V	192	0.46	46.14

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.

CHANNEL	TX Channel 11	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	*2462.00	98.4 PK			1.54 H	62	66.03	32.37
2	*2462.00	96.3 AV			1.54 H	62	63.93	32.37
3	2483.50	56.7 PK	74.0	-17.3	1.62 H	79	24.27	32.43
4	2483.50	46.3 AV	54.0	-7.7	1.62 H	79	13.87	32.43
5	4924.00	49.7 PK	74.0	-24.3	1.13 H	79	8.00	41.70
6	4924.00	43.3 AV	54.0	-10.7	1.13 H	79	1.60	41.70
7	7386.00	49.7 PK	74.0	-24.3	1.13 H	32	3.37	46.33
8	7386.00	43.3 AV	54.0	-10.7	1.13 H	32	-3.03	46.33
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	102.3 PK			1.05 V	279	69.93	32.37
2	*2462.00	99.7 AV			1.05 V	279	67.33	32.37
3	2483.50	59.4 PK	74.0	-14.6	1.51 V	73	26.97	32.43
4	2483.50	48.6 AV	54.0	-5.4	1.51 V	73	16.17	32.43
5	4924.00	50.5 PK	74.0	-23.5	1.12 V	26	8.80	41.70
6	4924.00	43.8 AV	54.0	-10.2	1.12 V	26	2.10	41.70
7	7386.00	56.6 PK	74.0	-17.4	1.04 V	179	10.27	46.33
8	7386.00	47.0 AV	54.0	-7.0	1.04 V	179	0.67	46.33

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.

802.11g

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	2390.00	59.4 PK	74.0	-14.6	1.54 H	63	27.21	32.19
2	2390.00	48.3 AV	54.0	-5.7	1.54 H	63	16.11	32.19
3	*2412.00	105.6 PK			1.51 H	59	73.35	32.25
4	*2412.00	95.3 AV			1.51 H	59	63.05	32.25
5	4824.00	45.1 PK	74.0	-28.9	1.16 H	83	3.53	41.57
6	4824.00	35.1 AV	54.0	-18.9	1.16 H	83	-6.47	41.57
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	2390.00	71.2 PK	74.0	-2.8	1.63 V	221	39.01	32.19
2	2390.00	53.5 AV	54.0	-0.5	1.63 V	221	21.31	32.19
3	*2412.00	108.9 PK			1.63 V	256	76.65	32.25
4	*2412.00	98.2 AV			1.63 V	256	65.95	32.25
5	4824.00	45.3 PK	74.0	-28.7	1.13 V	36	3.73	41.57
6	4824.00	35.4 AV	54.0	-18.6	1.13 V	36	-6.17	41.57

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.

CHANNEL	TX Channel 6	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	*2437.00	105.7 PK			1.54 H	62	73.39	32.31
2	*2437.00	95.8 AV			1.54 H	62	63.49	32.31
3	4874.00	45.2 PK	74.0	-28.8	1.12 H	73	3.54	41.66
4	4874.00	35.1 AV	54.0	-18.9	1.12 H	73	-6.56	41.66
5	7311.00	51.4 PK	74.0	-22.6	1.12 H	64	5.26	46.14
6	7311.00	41.3 AV	54.0	-12.7	1.12 H	64	-4.84	46.14
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	109.2 PK			1.51 V	69	76.89	32.31
2	*2437.00	98.7 AV			1.51 V	69	66.39	32.31
3	4874.00	45.7 PK	74.0	-28.3	1.16 V	29	4.04	41.66
4	4874.00	35.6 AV	54.0	-18.4	1.16 V	29	-6.06	41.66
5	7311.00	54.2 PK	74.0	-19.8	1.05 V	183	8.06	46.14
6	7311.00	43.3 AV	54.0	-10.7	1.05 V	183	-2.84	46.14

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.

CHANNEL	TX Channel 11	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	*2462.00	105.2 PK			1.51 H	59	72.83	32.37
2	*2462.00	95.0 AV			1.51 H	59	62.63	32.37
3	2483.50	58.3 PK	74.0	-15.7	1.59 H	66	25.87	32.43
4	2483.50	47.6 AV	54.0	-6.4	1.59 H	66	15.17	32.43
5	4924.00	44.6 PK	74.0	-29.4	1.12 H	63	2.90	41.70
6	4924.00	34.3 AV	54.0	-19.7	1.12 H	63	-7.40	41.70
7	7386.00	51.7 PK	74.0	-22.3	1.13 H	59	5.37	46.33
8	7386.00	41.6 AV	54.0	-12.4	1.13 H	59	-4.73	46.33
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	108.6 PK			1.53 V	255	76.23	32.37
2	*2462.00	98.0 AV			1.53 V	255	65.63	32.37
3	2483.50	73.1 PK	74.0	-0.9	1.57 V	256	40.67	32.43
4	2483.50	51.5 AV	54.0	-2.5	1.57 V	256	19.07	32.43
5	4924.00	45.4 PK	74.0	-28.6	1.13 V	32	3.70	41.70
6	4924.00	35.1 AV	54.0	-18.9	1.13 V	32	-6.60	41.70
7	7386.00	54.1 PK	74.0	-19.9	1.01 V	184	7.77	46.33
8	7386.00	43.2 AV	54.0	-10.8	1.01 V	184	-3.13	46.33

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 (20MHz)

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	2390.00	57.6 PK	74.0	-16.4	1.54 H	59	25.41	32.19
2	2390.00	47.3 AV	54.0	-6.7	1.54 H	59	15.11	32.19
3	*2412.00	103.6 PK			1.54 H	62	71.35	32.25
4	*2412.00	93.4 AV			1.54 H	62	61.15	32.25
5	4824.00	43.2 PK	74.0	-30.8	1.13 H	59	1.63	41.57
6	4824.00	33.6 AV	54.0	-20.4	1.13 H	59	-7.97	41.57
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	2390.00	73.1 PK	74.0	-0.9	1.54 V	65	40.91	32.19
2	2390.00	53.2 AV	54.0	-0.8	1.54 V	65	21.01	32.19
3	*2412.00	107.0 PK			1.57 V	58	74.75	32.25
4	*2412.00	96.2 AV			1.57 V	58	63.95	32.25
5	4824.00	45.2 PK	74.0	-28.8	1.14 V	62	3.63	41.57
6	4824.00	34.3 AV	54.0	-19.7	1.14 V	62	-7.27	41.57

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.

CHANNEL	TX Channel 6	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	*2437.00	103.5 PK			1.56 H	59	71.19	32.31
2	*2437.00	93.1 AV			1.56 H	59	60.79	32.31
3	4874.00	42.6 PK	74.0	-31.4	1.14 H	59	0.94	41.66
4	4874.00	32.7 AV	54.0	-21.3	1.14 H	59	-8.96	41.66
5	7311.00	51.3 PK	74.0	-22.7	1.14 H	62	5.16	46.14
6	7311.00	40.6 AV	54.0	-13.4	1.14 H	62	-5.54	46.14
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	107.2 PK			1.54 V	254	74.89	32.31
2	*2437.00	96.0 AV			1.54 V	254	63.69	32.31
3	4874.00	44.9 PK	74.0	-29.1	1.12 V	58	3.24	41.66
4	4874.00	34.1 AV	54.0	-19.9	1.12 V	58	-7.56	41.66
5	7311.00	53.5 PK	74.0	-20.5	1.04 V	179	7.36	46.14
6	7311.00	41.3 AV	54.0	-12.7	1.04 V	179	-4.84	46.14

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.

CHANNEL	TX Channel 11	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	*2462.00	102.9 PK			1.54 H	63	70.53	32.37
2	*2462.00	92.7 AV			1.54 H	63	60.33	32.37
3	2483.50	57.4 PK	74.0	-16.6	1.56 H	62	24.97	32.43
4	2483.50	47.1 AV	54.0	-6.9	1.56 H	62	14.67	32.43
5	4924.00	42.3 PK	74.0	-31.7	1.12 H	62	0.60	41.70
6	4924.00	32.4 AV	54.0	-21.6	1.12 H	62	-9.30	41.70
7	7386.00	51.1 PK	74.0	-22.9	1.16 H	57	4.77	46.33
8	7386.00	40.3 AV	54.0	-13.7	1.16 H	57	-6.03	46.33
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	106.5 PK			1.57 V	86	74.13	32.37
2	*2462.00	95.9 AV			1.57 V	86	63.53	32.37
3	2483.50	69.3 PK	74.0	-4.7	1.57 V	82	36.87	32.43
4	2483.50	48.7 AV	54.0	-5.3	1.57 V	82	16.27	32.43
5	4924.00	44.6 PK	74.0	-29.4	1.13 V	62	2.90	41.70
6	4924.00	33.8 AV	54.0	-20.2	1.13 V	62	-7.90	41.70
7	7386.00	53.4 PK	74.0	-20.6	1.03 V	184	7.07	46.33
8	7386.00	41.1 AV	54.0	-12.9	1.03 V	184	-5.23	46.33

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)

CHANNEL	TX Channel 3	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	2390.00	57.2 PK	74.0	-16.8	1.54 H	59	25.01	32.19
2	2390.00	47.3 AV	54.0	-6.7	1.54 H	59	15.11	32.19
3	*2422.00	96.3 PK			1.55 H	73	64.03	32.27
4	*2422.00	86.4 AV			1.55 H	73	54.13	32.27
5	4844.00	42.1 PK	74.0	-31.9	1.13 H	59	0.49	41.61
6	4844.00	30.2 AV	54.0	-23.8	1.13 H	59	-11.41	41.61
7	7266.00	51.0 PK	74.0	-23.0	1.14 H	63	4.98	46.02
8	7266.00	40.2 AV	54.0	-13.8	1.14 H	63	-5.82	46.02
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	72.9 PK	74.0	-1.1	1.67 V	86	40.71	32.19
2	2390.00	53.1 AV	54.0	-0.9	1.67 V	86	20.91	32.19
3	*2422.00	101.2 PK			1.67 V	86	68.93	32.27
4	*2422.00	89.7 AV			1.67 V	86	57.43	32.27
5	4844.00	40.7 PK	74.0	-33.3	1.14 V	59	-0.91	41.61
6	4844.00	30.4 AV	54.0	-23.6	1.14 V	59	-11.21	41.61
7	7266.00	53.3 PK	74.0	-20.7	1.04 V	181	7.28	46.02
8	7266.00	40.6 AV	54.0	-13.4	1.04 V	181	-5.42	46.02

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.

CHANNEL	TX Channel 6	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	*2437.00	96.1 PK			1.54 H	63	63.79	32.31
2	*2437.00	86.2 AV			1.54 H	63	53.89	32.31
3	4874.00	42.3 PK	74.0	-31.7	1.12 H	63	0.64	41.66
4	4874.00	30.4 AV	54.0	-23.6	1.12 H	63	-11.26	41.66
5	7311.00	51.6 PK	74.0	-22.4	1.13 H	59	5.46	46.14
6	7311.00	40.4 AV	54.0	-13.6	1.13 H	59	-5.74	46.14
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	100.4 PK			1.56 V	86	68.09	32.31
2	*2437.00	89.4 AV			1.56 V	86	57.09	32.31
3	4874.00	40.8 PK	74.0	-33.2	1.13 V	62	-0.86	41.66
4	4874.00	30.3 AV	54.0	-23.7	1.13 V	62	-11.36	41.66
5	7311.00	53.1 PK	74.0	-20.9	1.02 V	169	6.96	46.14
6	7311.00	40.3 AV	54.0	-13.7	1.02 V	169	-5.84	46.14

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.

CHANNEL	TX Channel 9	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	*2452.00	96.4 PK			1.51 H	59	64.05	32.35
2	*2452.00	86.1 AV			1.51 H	59	53.75	32.35
3	2483.50	56.3 PK	74.0	-17.7	1.51 H	49	23.87	32.43
4	2483.50	46.3 AV	54.0	-7.7	1.51 H	49	13.87	32.43
5	4904.00	42.6 PK	74.0	-31.4	1.12 H	55	0.89	41.71
6	4904.00	30.7 AV	54.0	-23.3	1.12 H	55	-11.01	41.71
7	7356.00	51.9 PK	74.0	-22.1	1.12 H	63	5.64	46.26
8	7356.00	40.7 AV	54.0	-13.3	1.12 H	63	-5.56	46.26
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	100.9 PK			1.57 V	85	68.55	32.35
2	*2452.00	90.0 AV			1.57 V	85	57.65	32.35
3	2483.50	66.1 PK	74.0	-7.9	1.58 V	82	33.67	32.43
4	2483.50	48.4 AV	54.0	-5.6	1.58 V	82	15.97	32.43
5	4904.00	40.9 PK	74.0	-33.1	1.12 V	79	-0.81	41.71
6	4904.00	30.4 AV	54.0	-23.6	1.12 V	79	-11.31	41.71
7	7356.00	52.7 PK	74.0	-21.3	1.04 V	166	6.44	46.26
8	7356.00	40.2 AV	54.0	-13.8	1.04 V	166	-6.06	46.26

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.

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100060	May 11, 2011	May 10, 2012

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. Tested date : Apr. 05, 2012

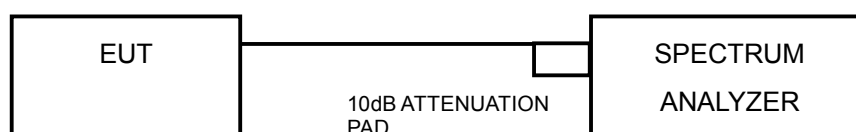
4.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = approximately 1% of the emission bandwidth
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	12.48	12.30	0.5	PASS
6	2437	12.61	12.55	0.5	PASS
11	2462	12.35	12.49	0.5	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	16.52	16.55	0.5	PASS
6	2437	16.51	16.62	0.5	PASS
11	2462	16.57	16.60	0.5	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	17.84	17.90	0.5	PASS
6	2437	17.84	17.86	0.5	PASS
11	2462	17.81	17.86	0.5	PASS



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802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
3	2422	36.52	36.75	0.5	PASS
6	2437	36.54	36.53	0.5	PASS
9	2452	36.62	36.87	0.5	PASS

4.4 CONDUCTED OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 2400–2483.5 MHz band: 1 Watt (30dBm)

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Peak Power Meter	ML2495A	0824006	May 04, 2011	May 03, 2012
Power Sensor	MA2411B	0738172	May 03, 2011	May 02, 2012

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. Tested date : Apr. 17, 2012

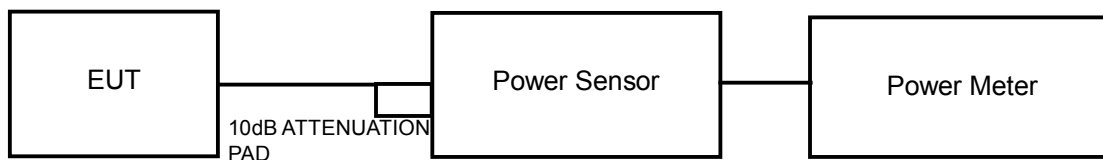
4.4.3 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the peak power level.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
1	2412	17.60	18.00	120.640	20.81	30	PASS
6	2437	16.40	16.10	84.390	19.26	30	PASS
11	2462	15.60	14.20	62.611	17.97	30	PASS

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5.18

The effective legacy gain is 5.18dBi, therefore the limit doesn't reduce.

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
1	2412	23.70	23.90	479.894	26.81	30	PASS
6	2437	25.00	25.40	662.965	28.21	30	PASS
11	2462	24.40	24.20	538.450	27.31	30	PASS

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5.18

The effective legacy gain is 5.18dBi, therefore the limit doesn't reduce.

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
1	2412	23.50	24.10	480.912	26.82	30	PASS
6	2437	23.40	23.10	422.950	26.26	30	PASS
11	2462	23.20	23.30	422.726	26.26	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
3	2422	20.20	20.20	209.426	23.21	30	PASS
6	2437	20.00	19.90	197.724	22.96	30	PASS
9	2452	20.10	20.00	202.329	23.06	30	PASS



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4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100060	May 11, 2011	May 10, 2012

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. Tested date : Apr. 17, 2012

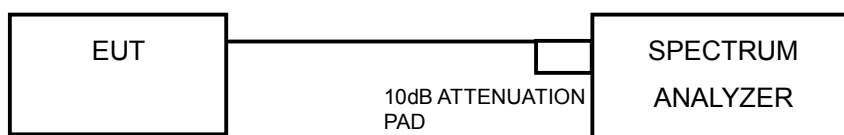
4.5.3 TEST PROCEDURE

1. Set the RBW = 100 kHz, VBW = 300 kHz, Detector = peak.
2. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
3. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(3 \text{ kHz}/100\text{kHz})$

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP





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4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.5.7 TEST RESULTS

802.11b

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	5.64	-9.59	3.01	-6.58	8	PASS
	6	2437	4.49	-10.74	3.01	-7.73	8	PASS
	11	2462	2.58	-12.65	3.01	-9.64	8	PASS
1	1	2412	5.86	-9.37	3.01	-6.36	8	PASS
	6	2437	3.97	-11.26	3.01	-8.25	8	PASS
	11	2462	2.25	-12.98	3.01	-9.97	8	PASS

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5.18

The effective legacy gain is 5.18dBi, therefore the limit doesn't reduce.

802.11g

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	4.50	-10.73	3.01	-7.72	8	PASS
	6	2437	5.30	-9.93	3.01	-6.92	8	PASS
	11	2462	4.83	-10.40	3.01	-7.39	8	PASS
1	1	2412	3.64	-11.59	3.01	-8.58	8	PASS
	6	2437	4.62	-10.61	3.01	-7.60	8	PASS
	11	2462	4.07	-11.16	3.01	-8.15	8	PASS

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=5.18

The effective legacy gain is 5.18dBi, therefore the limit doesn't reduce.



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802.11n (20MHz)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	2.57	-12.66	3.01	-9.65	8	PASS
	6	2437	2.42	-12.81	3.01	-9.80	8	PASS
	11	2462	2.18	-13.05	3.01	-10.04	8	PASS
1	1	2412	2.20	-13.03	3.01	-10.02	8	PASS
	6	2437	2.08	-13.15	3.01	-10.14	8	PASS
	11	2462	1.93	-13.30	3.01	-10.29	8	PASS

802.11n (40MHz)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-3.82	-19.05	3.01	-16.04	8	PASS
	6	2437	-4.48	-19.71	3.01	-16.70	8	PASS
	9	2452	-4.51	-19.74	3.01	-16.73	8	PASS
1	3	2422	-4.18	-19.41	3.01	-16.40	8	PASS
	6	2437	-4.18	-19.41	3.01	-16.40	8	PASS
	9	2452	-4.23	-19.46	3.01	-16.45	8	PASS



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4.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

Below -20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100060	May 11, 2011	May 10, 2012

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. Tested date : Apr. 17, 2012

4.6.3 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW $\geq$ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

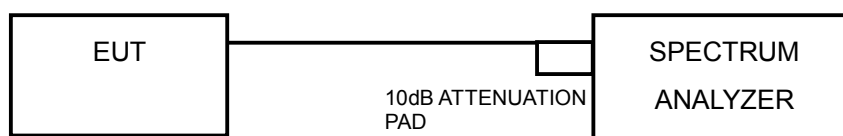
MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Set span to encompass the spectrum to be examined
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.7 TEST RESULTS

The conducted emission test is performed on each TX port of operating mode without summing or adding $10\log(N)$ since the limit is relative emission limit. Only worst data of each operating mode is presented.

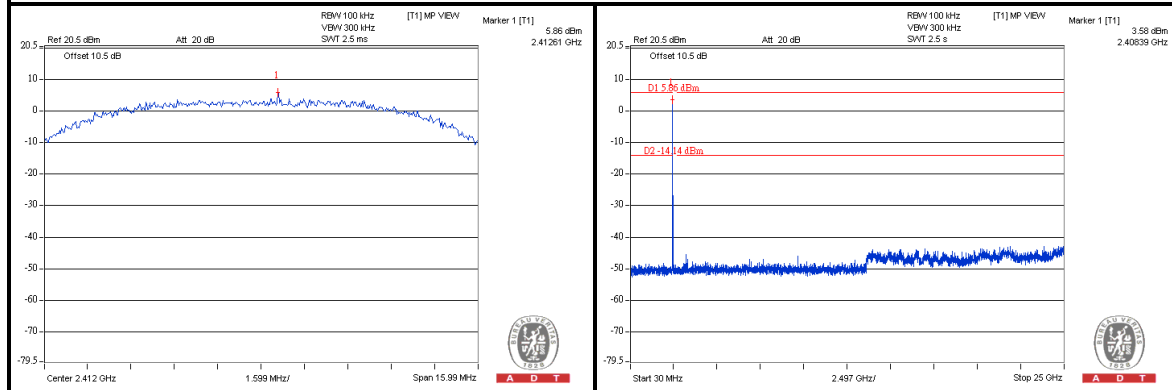
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



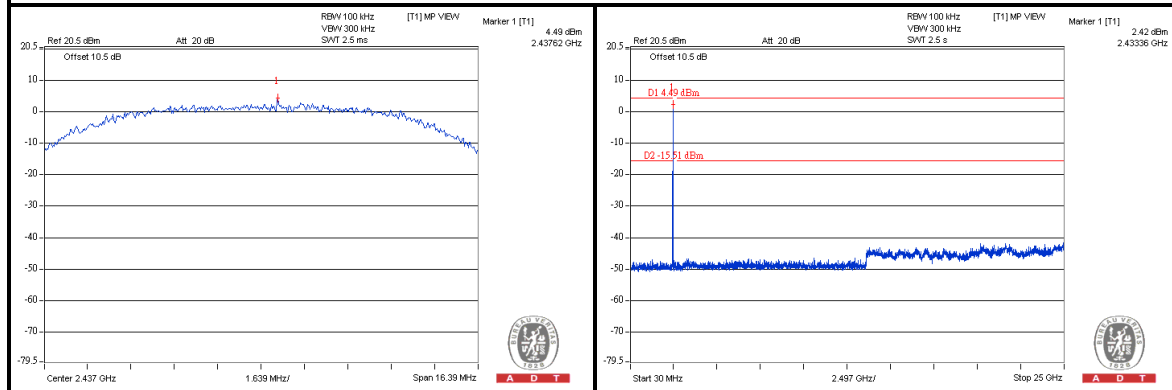
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802.11b

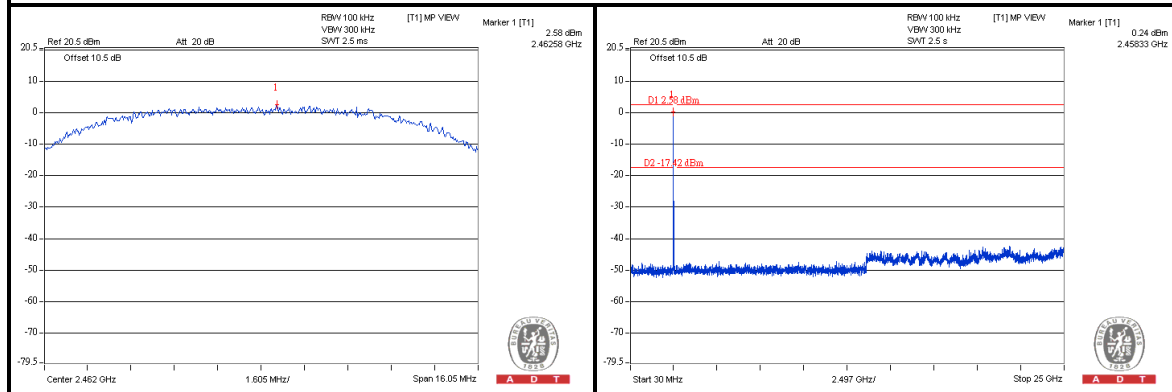
CH 1



CH 6



CH 11

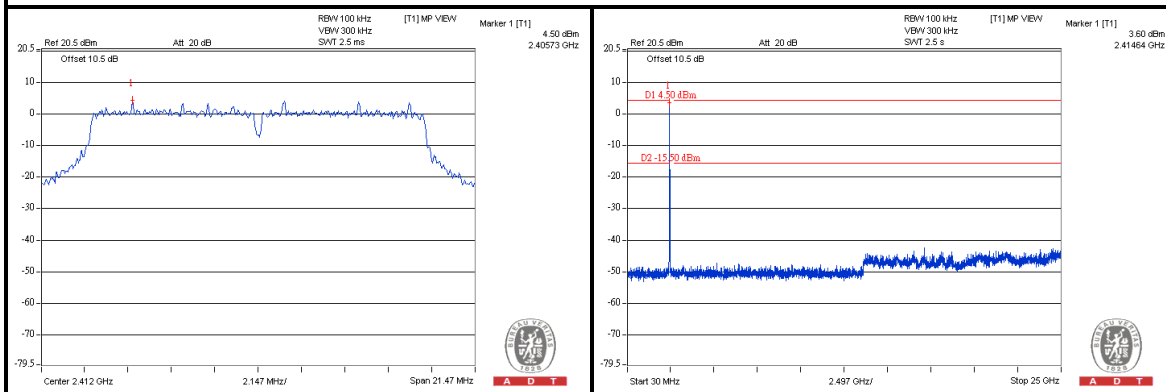




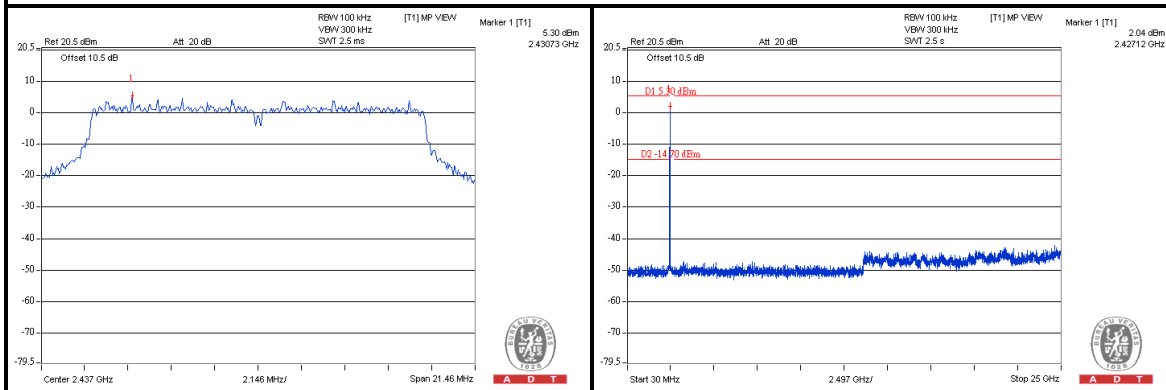
A D T

802.11g

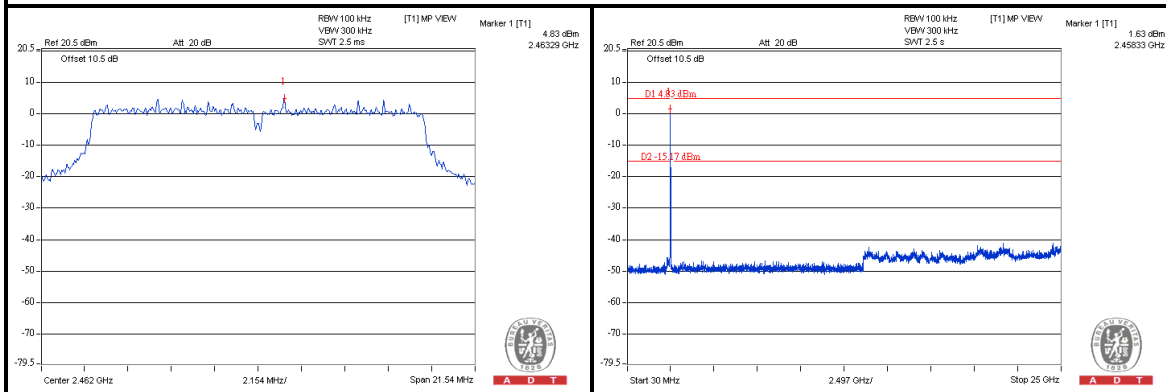
CH 1



CH 6



CH 11

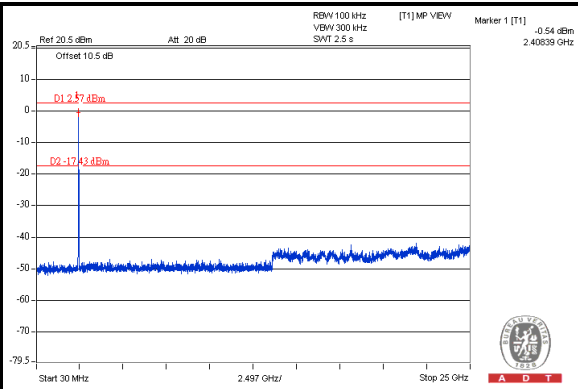
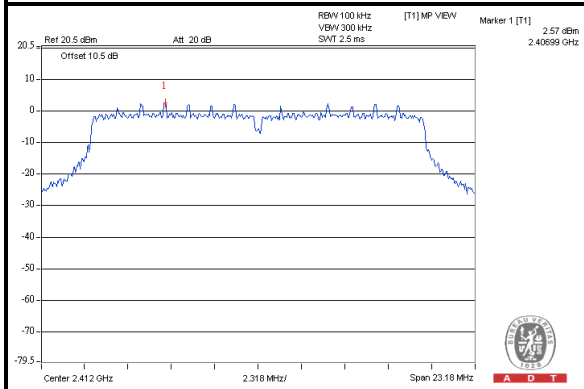




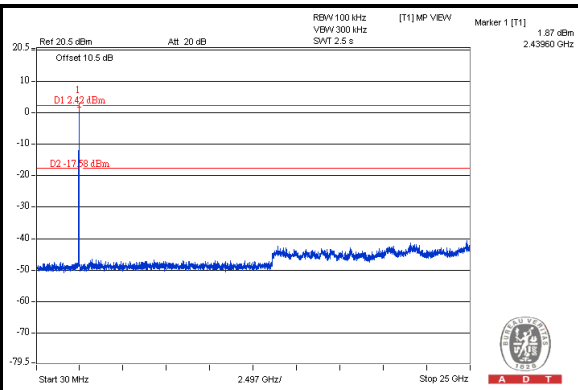
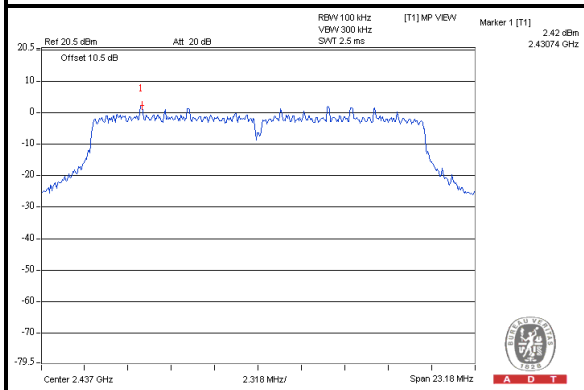
A D T

802.11n (20MHz)

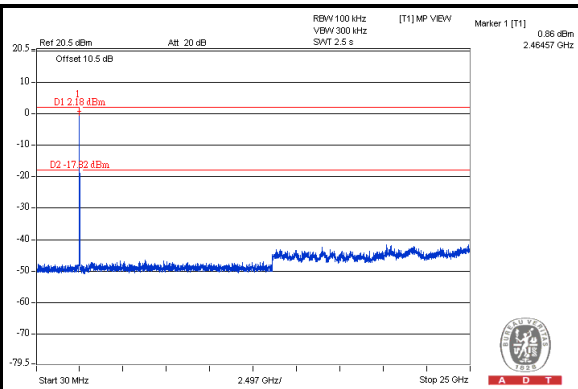
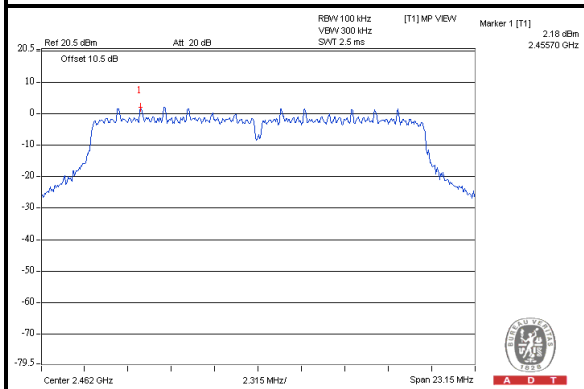
CH 1



CH 6

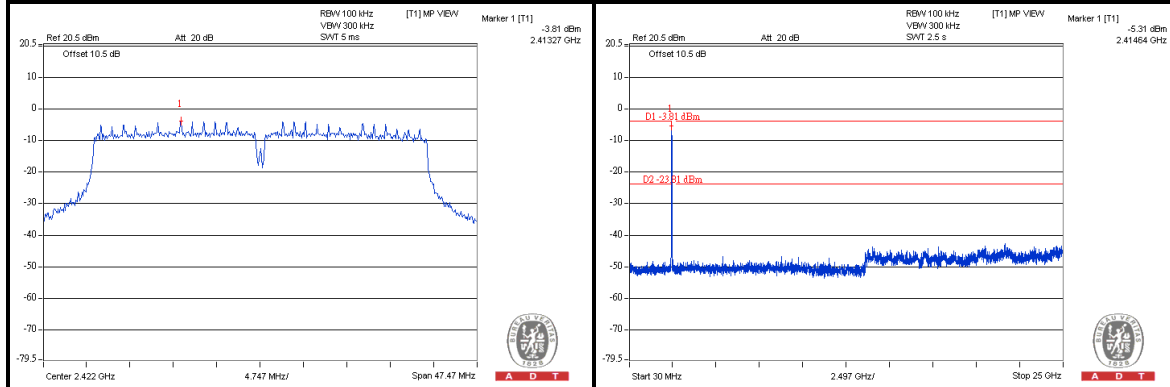


CH 11

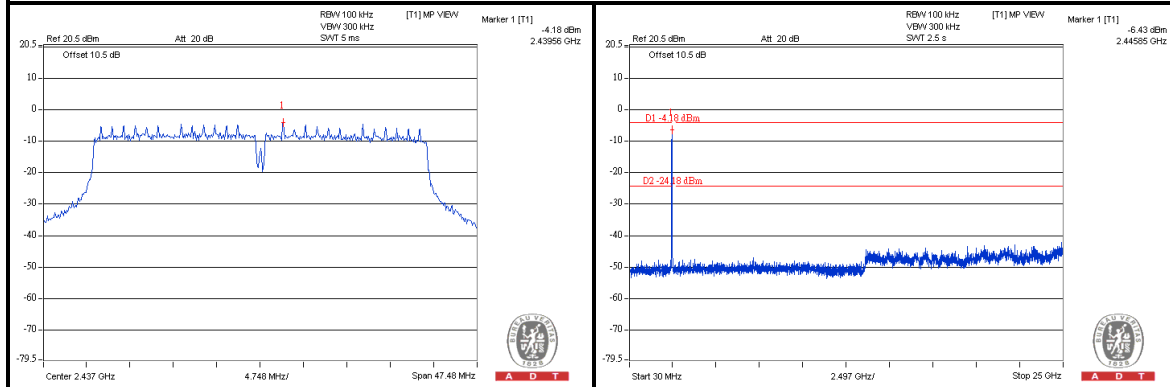


802.11n (40MHz)

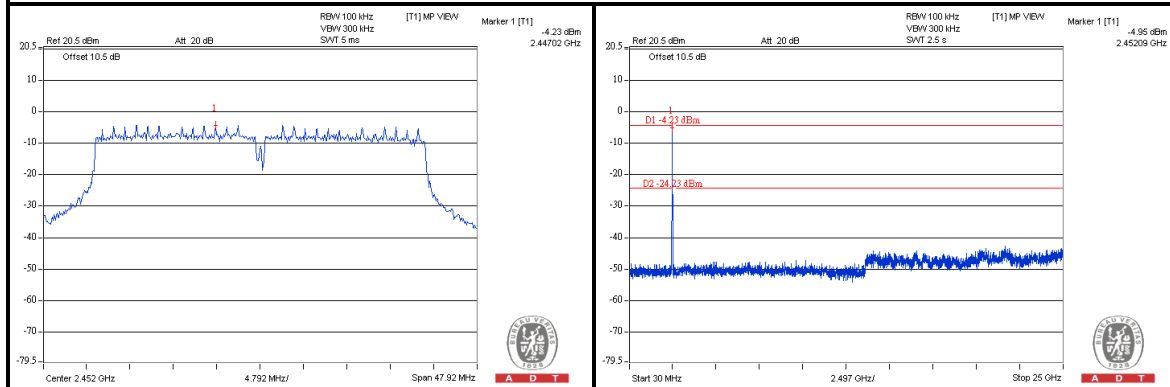
CH 3



CH 6



CH 9



5. TEST TYPES AND RESULTS (802.11a, 5725~5850MHz Band)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 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 0.50 MHz.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	Mar. 02, 2011	Mar. 01, 2012
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-523	Sep. 20, 2011	Sep. 19, 2012
Line-Impedance Stabilization Network (for Peripheral)	ENV-216	100072	June 10, 2011	June 09, 2012
RF Cable (JYEBAO)	5DFB	CONCAB-003	Aug. 05, 2011	Aug. 04, 2012
50 ohms Terminator	50	3	Nov. 02, 2011	Nov. 01, 2012
Software	BV 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 Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.
4. Tested Date: Jan. 19, 2012

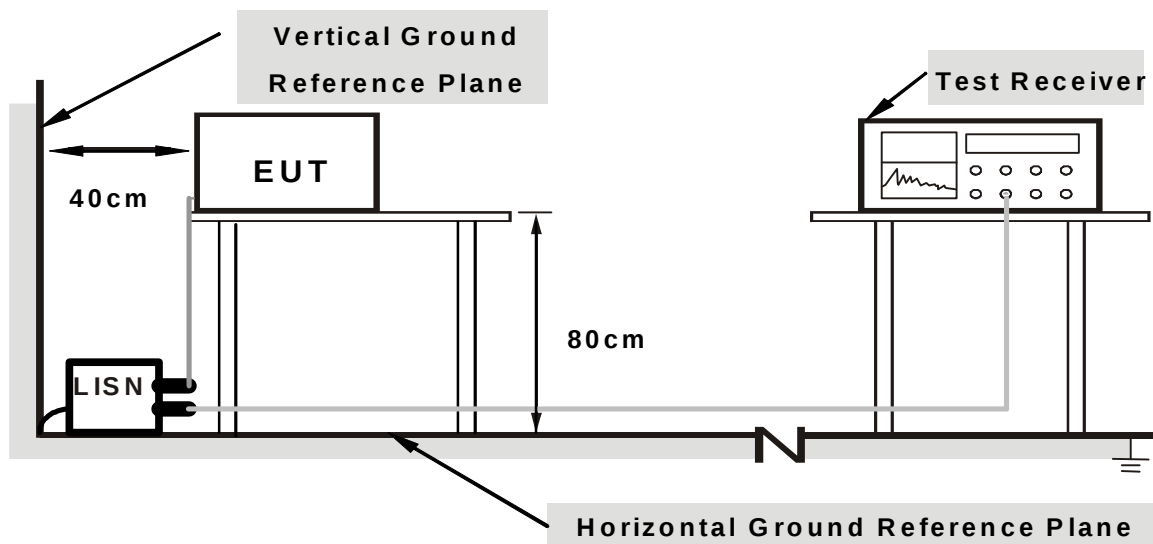
5.1.3 TEST PROCEDURES

- 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) were not recorded.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 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 from other units and other metal planes

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

5.1.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

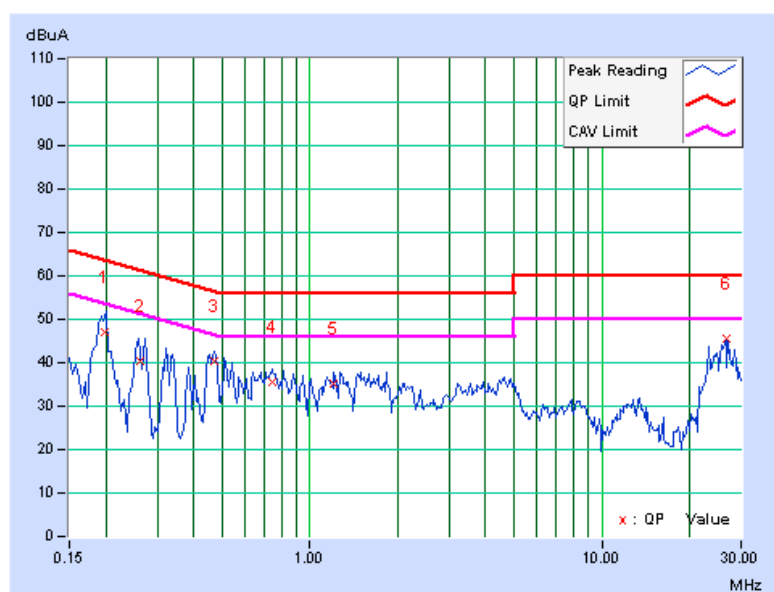
5.1.7 TEST RESULTS

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19803	0.06	46.89	37.24	46.95	37.30	63.69	53.69	-16.74	-16.39
2	0.26397	0.06	40.32	33.43	40.38	33.49	61.31	51.31	-20.92	-17.81
3	0.47031	0.07	40.44	37.98	40.51	38.05	56.51	46.51	-16.00	-8.46
4	0.74375	0.08	35.61	32.42	35.69	32.50	56.00	46.00	-20.31	-13.50
5	1.20703	0.11	35.07	32.79	35.18	32.90	56.00	46.00	-20.82	-13.10
6	26.60938	0.82	44.62	44.41	45.44	45.23	60.00	50.00	-14.56	-4.77

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.

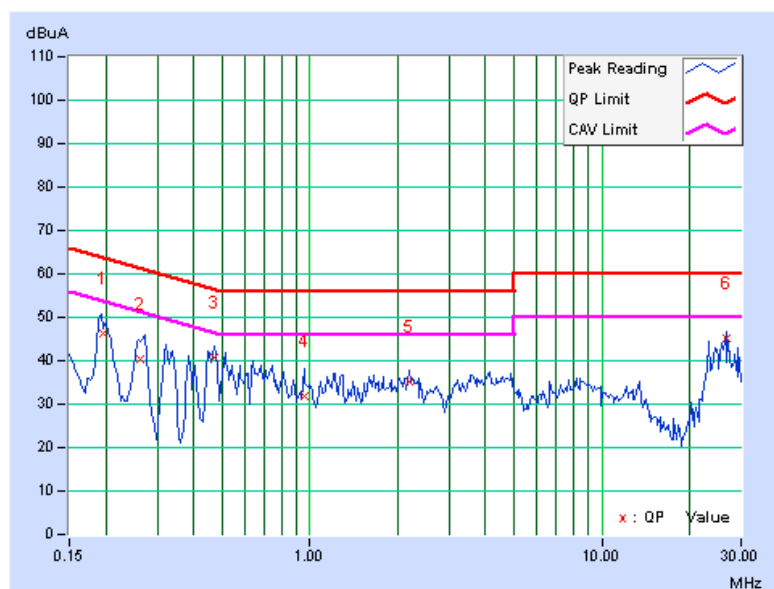


PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19659	0.07	46.14	39.77	46.21	39.84	63.75	53.75	-17.54	-13.91
2	0.26372	0.07	40.14	34.36	40.21	34.43	61.31	51.31	-21.10	-16.88
3	0.47031	0.08	40.81	38.26	40.89	38.34	56.51	46.51	-15.62	-8.17
4	0.95469	0.09	31.66	27.10	31.75	27.19	56.00	46.00	-24.25	-18.81
5	2.18750	0.18	35.01	31.24	35.19	31.42	56.00	46.00	-20.81	-14.58
6	26.60938	0.80	44.44	44.29	45.24	45.09	60.00	50.00	-14.76	-4.91

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.



5.2 RADIATED AND BANDEDGE EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED AND BANDEDGE EMISSION 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.



A D T

5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250253	Aug. 29, 2011	Aug. 28, 2012
Agilent Pre-Selector	N9039A	MY46520310	Aug. 29, 2011	Aug. 28, 2012
Agilent Signal Generator	N5181A	MY49060347	July 25, 2011	July 24, 2012
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-04	Nov. 15, 2011	Nov. 14, 2012
Agilent Pre-Amplifier	8449B	3008A02465	Feb. 27, 2012	Feb. 26, 2013
SPACEK LABS	SLKKa-48-6	9K16	Nov. 15, 2011	Nov. 14, 2012
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-361	Apr. 06, 2012	Apr. 05, 2013
AISI Horn_Antenna	AIH.8018	0000220091110	Nov. 23, 2011	Nov. 22, 2012
SCHWARZBECK Horn_Antenna	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
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, 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: Apr. 17, 2012

5.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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.

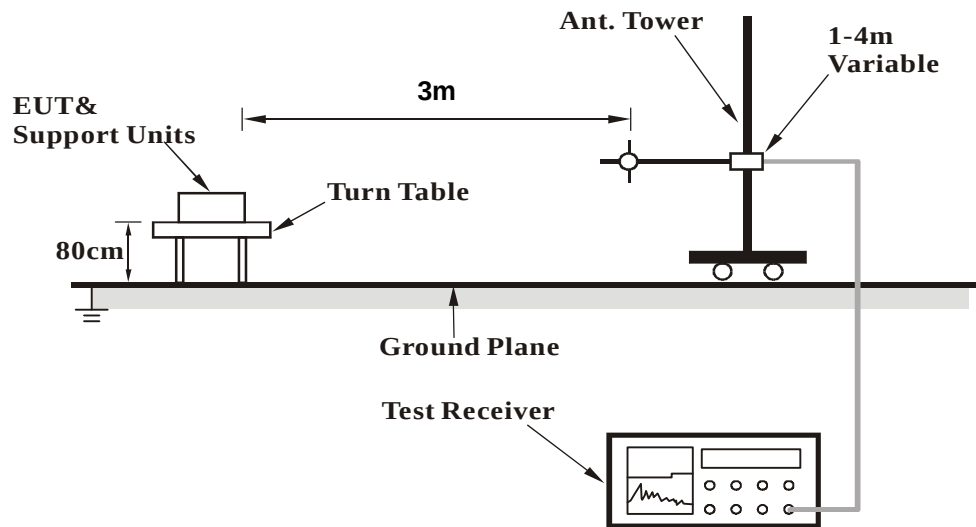
NOTE:

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.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

5.2.6 EUT OPERATING CONDITIONS

Same as the 4.2.6

5.2.7 TEST RESULTS (MODE 1, WITH ANTENNA SET1)

BELOW 1GHz WORST-CASE DATA

802.11a

CHANNEL	TX Channel 149	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	101.88	30.5 QP	43.5	-13.0	1.07 H	148	20.56	9.98
2	111.59	31.2 QP	43.5	-12.3	1.23 H	144	19.99	11.24
3	164.41	36.1 QP	43.5	-7.4	1.17 H	354	22.06	14.06
4	250.03	34.7 QP	46.0	-11.3	1.54 H	213	21.37	13.30
5	509.97	28.4 QP	46.0	-17.6	1.87 H	243	8.17	20.26
6	1000.00	33.4 QP	54.0	-20.6	2.00 H	112	4.87	28.54
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	55.93	36.1 QP	40.0	-3.9	1.00 V	167	22.40	13.73
2	86.13	36.8 QP	40.0	-3.2	1.50 V	155	28.04	8.80
3	98.45	39.6 QP	43.5	-4.0	1.00 V	244	30.02	9.53
4	250.03	33.5 QP	46.0	-12.5	1.00 V	243	20.16	13.30
5	874.95	33.1 QP	46.0	-12.9	1.00 V	358	6.46	26.66
6	1000.00	39.4 QP	54.0	-14.6	1.00 V	244	10.89	28.54

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.

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	3830.00	55.3 PK	74.0	-18.7	1.27 H	295	19.85	35.45
2	3830.00	44.4 AV	54.0	-9.6	1.27 H	295	8.95	35.45
3	*5745.00	110.2 PK			1.40 H	81	68.86	41.34
4	*5745.00	100.3 AV			1.40 H	81	58.96	41.34
5	7660.00	53.7 PK	74.0	-20.3	1.76 H	130	9.14	44.56
6	7660.00	41.7 AV	54.0	-12.3	1.76 H	130	-2.86	44.56
7	11490.00	59.8 PK	74.0	-14.2	1.01 H	252	12.38	47.42
8	11490.00	46.6 AV	54.0	-7.4	1.01 H	252	-0.82	47.42
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	3830.00	53.7 PK	74.0	-20.3	1.18 V	276	18.25	35.45
2	3830.00	42.1 AV	54.0	-11.9	1.18 V	276	6.65	35.45
3	*5745.00	100.4 PK			1.00 V	160	59.06	41.34
4	*5745.00	89.8 AV			1.00 V	160	48.46	41.34
5	7660.00	53.4 PK	74.0	-20.6	1.10 V	342	8.84	44.56
6	7660.00	41.5 AV	54.0	-12.5	1.10 V	342	-3.06	44.56
7	11490.00	59.5 PK	74.0	-14.5	1.00 V	240	12.08	47.42
8	11490.00	46.7 AV	54.0	-7.3	1.00 V	240	-0.72	47.42

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.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5785.00	109.5 PK			1.35 H	85	68.10	41.40
2	*5785.00	99.8 AV			1.35 H	85	58.40	41.40
3	11570.00	59.7 PK	74.0	-14.3	1.07 H	252	12.21	47.49
4	11570.00	46.2 AV	54.0	-7.8	1.07 H	252	-1.29	47.49
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	*5785.00	100.7 PK			1.03 V	175	59.30	41.40
2	*5785.00	90.2 AV			1.03 V	175	48.80	41.40
3	11570.00	61.6 PK	74.0	-12.4	1.00 V	237	14.11	47.49
4	11570.00	48.4 AV	54.0	-5.6	1.00 V	237	0.91	47.49

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.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5825.00	109.5 PK			1.40 H	87	68.05	41.45
2	*5825.00	99.7 AV			1.40 H	87	58.25	41.45
3	11650.00	60.4 PK	74.0	-13.6	1.11 H	254	12.84	47.56
4	11650.00	46.7 AV	54.0	-7.3	1.11 H	254	-0.86	47.56
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	*5825.00	100.5 PK			1.02 V	178	59.05	41.45
2	*5825.00	89.9 AV			1.02 V	178	48.45	41.45
3	11650.00	61.4 PK	74.0	-12.6	1.00 V	233	13.84	47.56
4	11650.00	48.6 AV	54.0	-5.4	1.00 V	233	1.04	47.56

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.

802.11n (20MHz)

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5745.00	109.4 PK			1.39 H	94	68.06	41.34
2	*5745.00	99.7 AV			1.39 H	94	58.36	41.34
3	11490.00	60.2 PK	74.0	-13.8	1.13 H	239	12.78	47.42
4	11490.00	46.6 AV	54.0	-7.4	1.13 H	239	-0.82	47.42
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	*5745.00	100.1 PK			1.05 V	170	58.76	41.34
2	*5745.00	89.8 AV			1.05 V	170	48.46	41.34
3	11490.00	62.0 PK	74.0	-12.0	1.05 V	243	14.58	47.42
4	11490.00	49.1 AV	54.0	-4.9	1.05 V	243	1.68	47.42

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.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5785.00	108.8 PK			1.44 H	90	67.40	41.40
2	*5785.00	99.4 AV			1.44 H	90	58.00	41.40
3	11570.00	60.7 PK	74.0	-13.3	1.14 H	234	13.21	47.49
4	11570.00	47.1 AV	54.0	-6.9	1.14 H	234	-0.39	47.49
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	*5785.00	100.2 PK			1.02 V	169	58.80	41.40
2	*5785.00	89.6 AV			1.02 V	169	48.20	41.40
3	11570.00	61.5 PK	74.0	-12.5	1.03 V	231	14.01	47.49
4	11570.00	48.7 AV	54.0	-5.3	1.03 V	231	1.21	47.49

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.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5825.00	109.0 PK			1.39 H	94	67.55	41.45
2	*5825.00	99.5 AV			1.39 H	94	58.05	41.45
3	11650.00	60.5 PK	74.0	-13.5	1.17 H	246	12.94	47.56
4	11650.00	46.8 AV	54.0	-7.2	1.17 H	246	-0.76	47.56
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	*5825.00	99.5 PK			1.06 V	158	58.05	41.45
2	*5825.00	89.2 AV			1.06 V	158	47.75	41.45
3	11650.00	61.2 PK	74.0	-12.8	1.00 V	233	13.64	47.56
4	11650.00	48.6 AV	54.0	-5.4	1.00 V	233	1.04	47.56

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.

802.11n (40MHz)

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5755.00	106.4 PK			1.39 H	80	65.04	41.36
2	*5755.00	97.5 AV			1.39 H	80	56.14	41.36
3	11510.00	60.0 PK	74.0	-14.0	1.15 H	261	12.56	47.44
4	11510.00	46.6 AV	54.0	-7.4	1.15 H	261	-0.84	47.44
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	*5755.00	97.0 PK			1.01 V	162	55.64	41.36
2	*5755.00	87.6 AV			1.01 V	162	46.24	41.36
3	11510.00	58.8 PK	74.0	-15.2	1.05 V	235	11.36	47.44
4	11510.00	46.4 AV	54.0	-7.6	1.05 V	235	-1.04	47.44

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.

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5795.00	105.8 PK			1.41 H	83	64.39	41.41
2	*5795.00	97.1 AV			1.41 H	83	55.69	41.41
3	11590.00	60.1 PK	74.0	-13.9	1.16 H	262	12.60	47.50
4	11590.00	46.6 AV	54.0	-7.4	1.16 H	262	-0.90	47.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	97.1 PK			1.02 V	178	55.69	41.41
2	*5795.00	87.6 AV			1.02 V	178	46.19	41.41
3	11590.00	58.8 PK	74.0	-15.2	1.01 V	230	11.30	47.50
4	11590.00	46.7 AV	54.0	-7.3	1.01 V	230	-0.80	47.50

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.

5.2.8 TEST RESULTS (MODE 3, WITH ANTENNA SET3)

BELOW 1GHz WORST-CASE DATA

802.11a

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	86.13	35.1 QP	40.0	-4.9	2.00 H	133	26.32	8.80
2	104.72	37.6 QP	43.5	-5.9	2.00 H	26	27.21	10.35
3	158.49	40.8 QP	43.5	-2.7	2.00 H	343	26.47	14.37
4	340.03	38.4 QP	46.0	-7.6	1.00 H	359	22.20	16.23
5	680.02	41.2 QP	46.0	-4.8	1.00 H	137	17.89	23.35
6	1000.00	36.1 QP	54.0	-17.9	1.00 H	244	7.60	28.54
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	113.01	37.3 QP	43.5	-6.2	1.00 V	12	25.91	11.43
2	148.07	36.5 QP	43.5	-7.0	1.00 V	67	21.96	14.50
3	172.34	36.5 QP	43.5	-7.0	1.50 V	46	22.92	13.57
4	250.03	37.6 QP	46.0	-8.4	1.50 V	13	24.32	13.30
5	339.91	37.8 QP	46.0	-8.2	1.00 V	285	21.61	16.23
6	680.02	40.1 QP	46.0	-5.9	1.50 V	66	16.78	23.35

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.

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5745.00	106.1 PK			1.00 H	265	63.15	42.95
2	*5745.00	95.4 AV			1.00 H	265	52.45	42.95
3	11490.00	55.5 PK	74.0	-18.5	1.45 H	170	6.25	49.25
4	11490.00	45.3 AV	54.0	-8.7	1.45 H	170	-3.95	49.25
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	*5745.00	116.4 PK			1.00 V	248	73.45	42.95
2	*5745.00	104.6 AV			1.00 V	248	61.65	42.95
3	11490.00	56.6 PK	74.0	-17.4	1.00 V	166	7.35	49.25
4	11490.00	45.6 AV	54.0	-8.4	1.00 V	166	-3.65	49.25

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.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5785.00	105.7 PK			1.01 H	275	62.70	43.00
2	*5785.00	95.2 AV			1.01 H	275	52.20	43.00
3	11570.00	54.8 PK	74.0	-19.2	1.46 H	144	5.51	49.29
4	11570.00	44.9 AV	54.0	-9.1	1.46 H	144	-4.39	49.29
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	*5785.00	116.6 PK			1.00 V	258	73.60	43.00
2	*5785.00	104.9 AV			1.00 V	258	61.90	43.00
3	11570.00	57.3 PK	74.0	-16.7	1.00 V	179	8.01	49.29
4	11570.00	45.7 AV	54.0	-8.3	1.00 V	179	-3.59	49.29

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.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5825.00	105.7 PK			1.00 H	275	62.60	43.10
2	*5825.00	95.3 AV			1.00 H	275	52.20	43.10
3	11650.00	55.3 PK	74.0	-18.7	1.43 H	174	5.73	49.57
4	11650.00	45.2 AV	54.0	-8.8	1.43 H	174	-4.37	49.57
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	*5825.00	115.9 PK			1.00 V	258	72.80	43.10
2	*5825.00	104.5 AV			1.00 V	258	61.40	43.10
3	11650.00	56.9 PK	74.0	-17.1	1.00 V	204	7.33	49.57
4	11650.00	45.7 AV	54.0	-8.3	1.00 V	204	-3.87	49.57

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.

802.11n (20MHz)

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5745.00	105.4 PK			1.03 H	261	62.45	42.95
2	*5745.00	95.0 AV			1.03 H	261	52.05	42.95
3	11490.00	55.6 PK	74.0	-18.4	1.44 H	170	6.35	49.25
4	11490.00	45.5 AV	54.0	-8.5	1.44 H	170	-3.75	49.25
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	*5745.00	116.2 PK			1.00 V	240	73.25	42.95
2	*5745.00	104.7 AV			1.00 V	240	61.75	42.95
3	11490.00	57.0 PK	74.0	-17.0	1.00 V	163	7.75	49.25
4	11490.00	45.9 AV	54.0	-8.1	1.00 V	163	-3.35	49.25

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.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5785.00	105.3 PK			1.03 H	253	62.30	43.00
2	*5785.00	95.0 AV			1.03 H	253	52.00	43.00
3	11570.00	56.3 PK	74.0	-17.7	1.38 H	180	7.01	49.29
4	11570.00	46.0 AV	54.0	-8.0	1.38 H	180	-3.29	49.29
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	*5785.00	116.3 PK			1.00 V	244	73.30	43.00
2	*5785.00	104.6 AV			1.00 V	244	61.60	43.00
3	11570.00	56.3 PK	74.0	-17.7	1.00 V	147	7.01	49.29
4	11570.00	45.4 AV	54.0	-8.6	1.00 V	147	-3.89	49.29

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.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5825.00	105.0 PK			1.01 H	253	61.90	43.10
2	*5825.00	94.7 AV			1.01 H	253	51.60	43.10
3	11650.00	56.5 PK	74.0	-17.5	1.37 H	189	6.93	49.57
4	11650.00	46.3 AV	54.0	-7.7	1.37 H	189	-3.27	49.57
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	*5825.00	116.2 PK			1.00 V	242	73.10	43.10
2	*5825.00	104.4 AV			1.00 V	242	61.30	43.10
3	11650.00	55.7 PK	74.0	-18.3	1.02 V	150	6.13	49.57
4	11650.00	44.9 AV	54.0	-9.1	1.02 V	150	-4.67	49.57

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.

802.11n (40MHz)

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5755.00	105.3 PK			1.05 H	257	62.33	42.97
2	*5755.00	94.8 AV			1.05 H	257	51.83	42.97
3	11510.00	56.3 PK	74.0	-17.7	1.42 H	199	7.05	49.25
4	11510.00	46.3 AV	54.0	-7.7	1.42 H	199	-2.95	49.25
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	*5755.00	116.3 PK			1.03 V	226	73.33	42.97
2	*5755.00	104.4 AV			1.03 V	226	61.43	42.97
3	11510.00	55.5 PK	74.0	-18.5	1.05 V	150	6.25	49.25
4	11510.00	44.7 AV	54.0	-9.3	1.05 V	150	-4.55	49.25

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.

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		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	*5795.00	105.1 PK			1.09 H	263	62.09	43.01
2	*5795.00	94.7 AV			1.09 H	263	51.69	43.01
3	11590.00	56.0 PK	74.0	-18.0	1.42 H	183	6.70	49.30
4	11590.00	46.1 AV	54.0	-7.9	1.42 H	183	-3.20	49.30
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	*5795.00	116.9 PK			1.04 V	216	73.89	43.01
2	*5795.00	104.8 AV			1.04 V	216	61.79	43.01
3	11590.00	55.6 PK	74.0	-18.4	1.09 V	163	6.30	49.30
4	11590.00	44.7 AV	54.0	-9.3	1.09 V	163	-4.60	49.30

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.
6. The limit value is defined as per 15.247.



A D T

5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100060	May 11, 2011	May 10, 2012

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. Tested date : Apr. 17, 2012

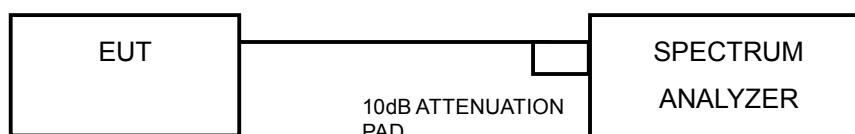
5.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = approximately 1% of the emission bandwidth
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP





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5.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

5.3.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
149	5745	16.62	16.61	0.5	PASS
157	5785	16.62	16.64	0.5	PASS
165	5825	16.64	16.59	0.5	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
149	5745	17.82	17.87	0.5	PASS
157	5785	17.91	17.90	0.5	PASS
165	5825	17.85	17.88	0.5	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
151	5755	36.96	36.63	0.5	PASS
159	5795	36.85	37.17	0.5	PASS

5.4 CONDUCTED OUTPUT POWER

5.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 5725 –5850 MHz band: 1 Watt (30dBm)

5.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Peak Power Meter	ML2495A	0824006	May 04, 2011	May 03, 2012
Power Sensor	MA2411B	0738172	May 03, 2011	May 02, 2012

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. Tested date : Apr. 17, 2012

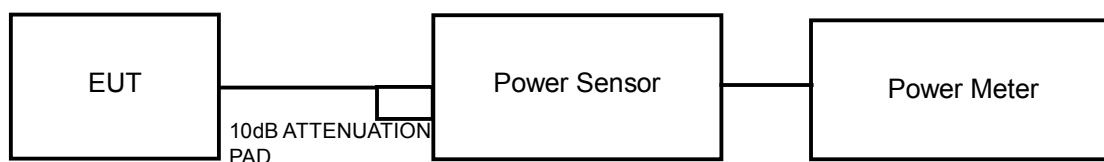
5.4.3 TEST PROCEDURES

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the peak power level.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP



5.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

5.4.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
149	5745	22.60	21.90	336.852	25.27	30	PASS
157	5785	22.10	21.50	303.435	24.82	30	PASS
165	5825	21.60	21.50	285.798	24.56	30	PASS

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=3.81

The effective legacy gain is 3.81dBi, therefore the limit doesn't reduce.

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
149	5745	22.40	21.70	321.691	25.07	30	PASS
157	5785	22.30	21.80	321.180	25.07	30	PASS
165	5825	21.70	21.60	292.455	24.66	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN(0)	CHAIN(1)				
151	5755	22.50	22.30	347.652	25.41	30	PASS
159	5795	21.90	22.00	313.371	24.96	30	PASS

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100060	May 11, 2011	May 10, 2012

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. Tested date : Apr. 17, 2012

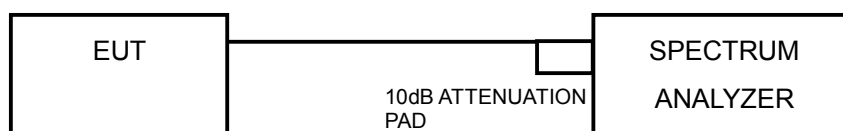
5.5.3 TEST PROCEDURE

1. Set the RBW = 100 kHz, VBW = 300 kHz, Detector = peak.
2. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.
3. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(3\text{ kHz}/100\text{ kHz})$

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

5.5.7 TEST RESULTS

802.11a

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	1.30	-13.93	3.01	-10.92	8	PASS
	157	5785	0.69	-14.54	3.01	-11.53	8	PASS
	165	5825	0.08	-15.15	3.01	-12.14	8	PASS
1	149	5745	-0.48	-15.71	3.01	-12.70	8	PASS
	157	5785	-0.43	-15.66	3.01	-12.65	8	PASS
	165	5825	0.19	-15.04	3.01	-12.03	8	PASS

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)

Effective Legacy Gain (dBi)=3.81

The effective legacy gain is 3.81dBi, therefore the limit doesn't reduce.

802.11n (20MHz)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	0.76	-14.47	3.01	-11.46	8	PASS
	157	5785	0.86	-14.37	3.01	-11.36	8	PASS
	165	5825	0.34	-14.89	3.01	-11.88	8	PASS
1	149	5745	-0.70	-15.93	3.01	-12.92	8	PASS
	157	5785	-0.60	-15.83	3.01	-12.82	8	PASS
	165	5825	0.14	-15.09	3.01	-12.08	8	PASS

802.11n (40MHz)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/100kHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5755	-2.49	-17.72	3.01	-14.71	8	PASS
	159	5795	-2.48	-17.71	3.01	-14.70	8	PASS
1	151	5755	-3.29	-18.52	3.01	-15.51	8	PASS
	159	5795	-3.59	-18.82	3.01	-15.81	8	PASS



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5.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

5.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

5.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	100060	May 11, 2011	May 10, 2012

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. Tested date : Apr. 17, 2012

5.6.3 TEST PROCEDURE

MEASUREMENT PROCEDURE REF

1. Set the RBW = 100 kHz.
2. Set the VBW $\geq$ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

MEASUREMENT PROCEDURE OOB

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Set span to encompass the spectrum to be examined.
4. Detector = peak.
5. Trace Mode = max hold.
6. Sweep = auto couple.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

5.6.6 TEST RESULTS

The conducted emission test is performed on each TX port of operating mode without summing or adding $10\log(N)$ since the limit is relative emission limit. Only worst data of each operating mode is presented.

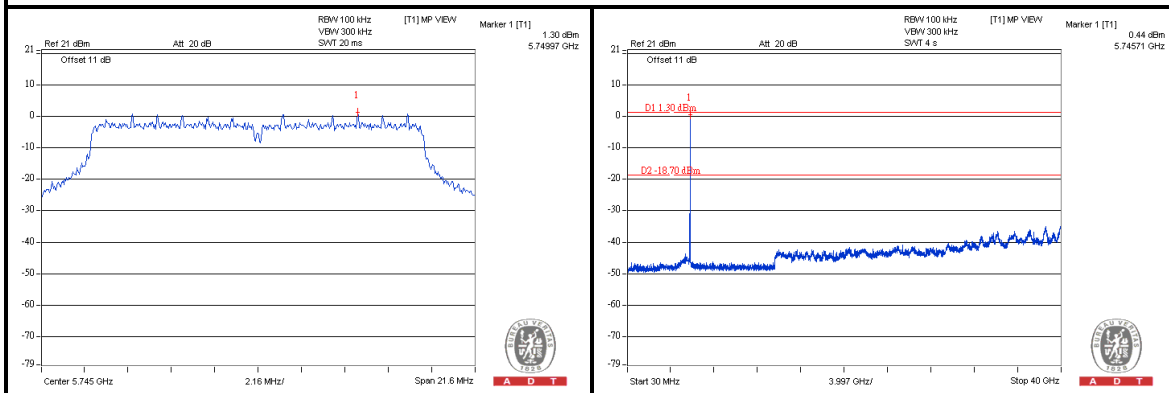
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.



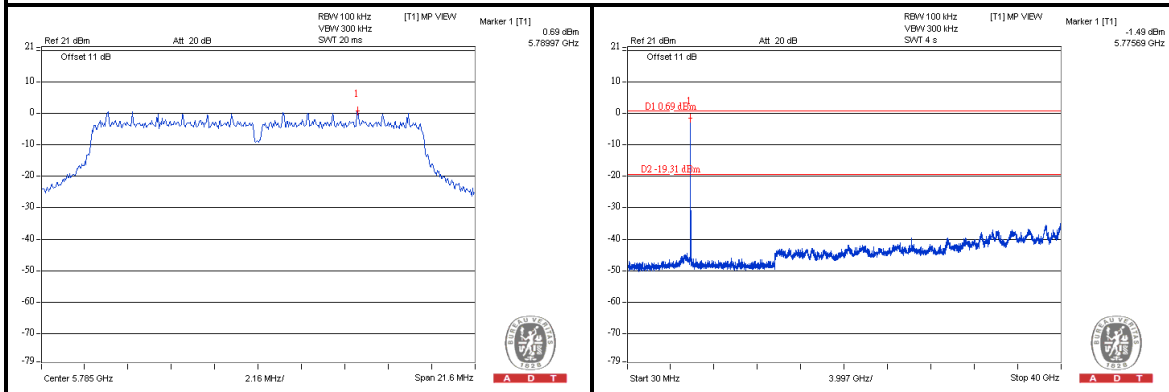
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802.11a

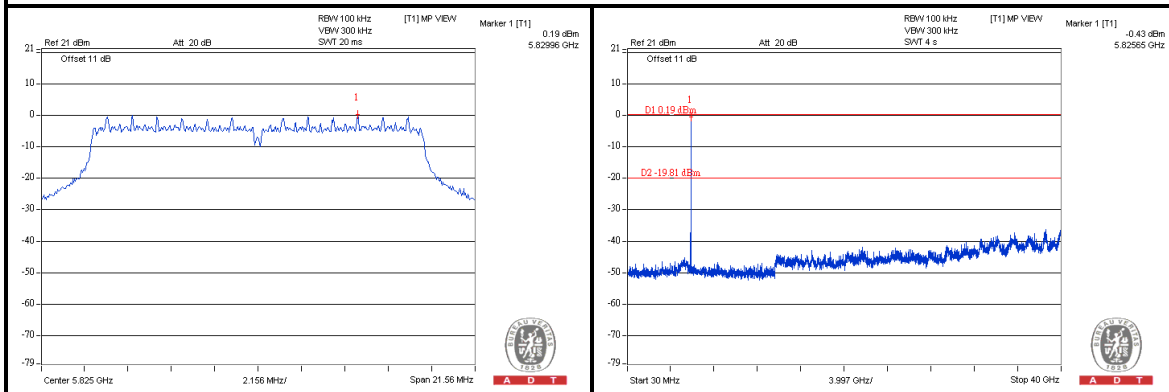
CH 149



CH 157



CH 165

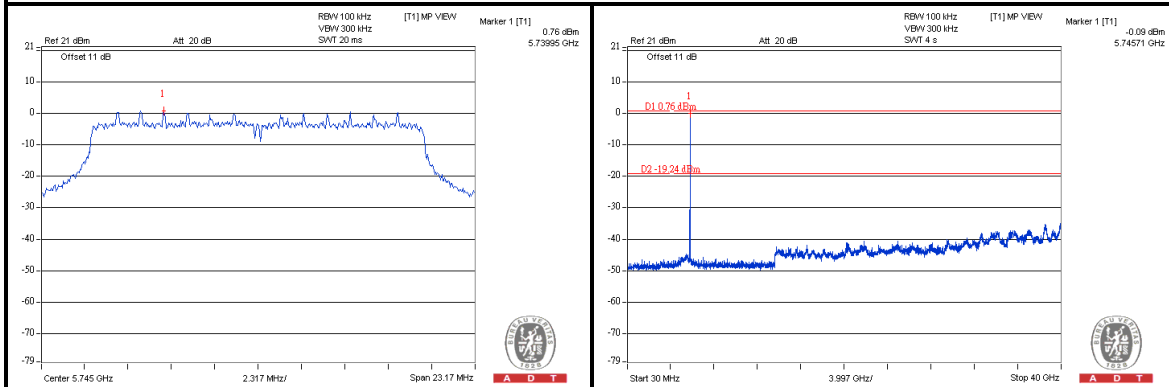




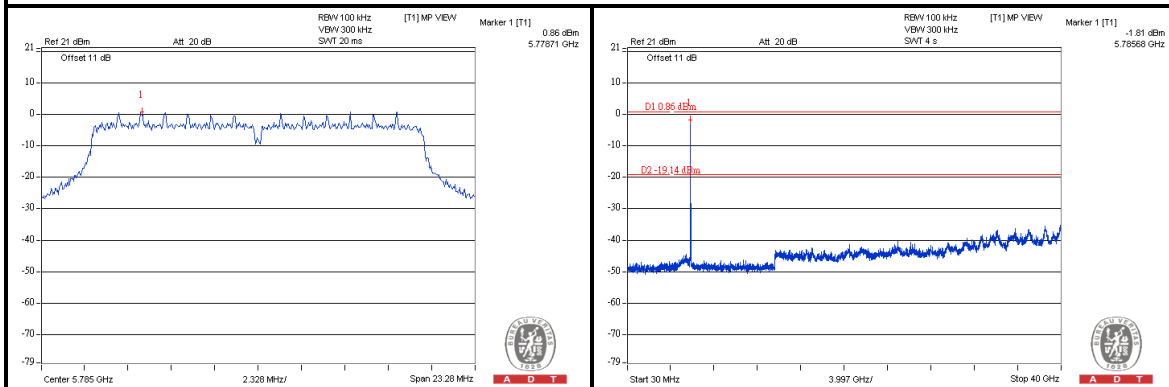
A D T

802.11n (20MHz)

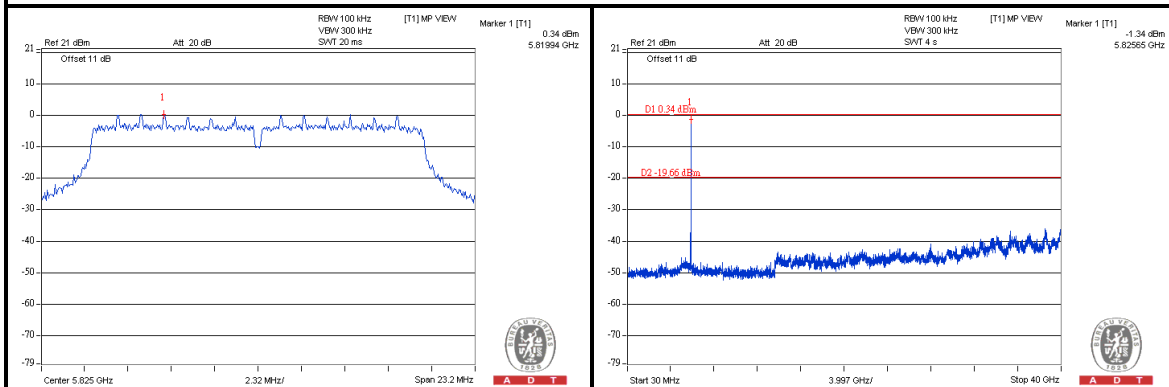
CH 149



CH 157

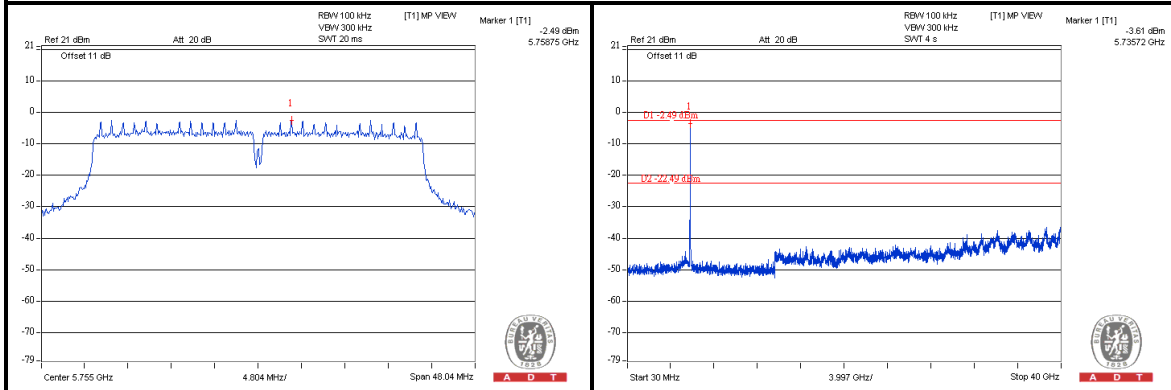


CH 165

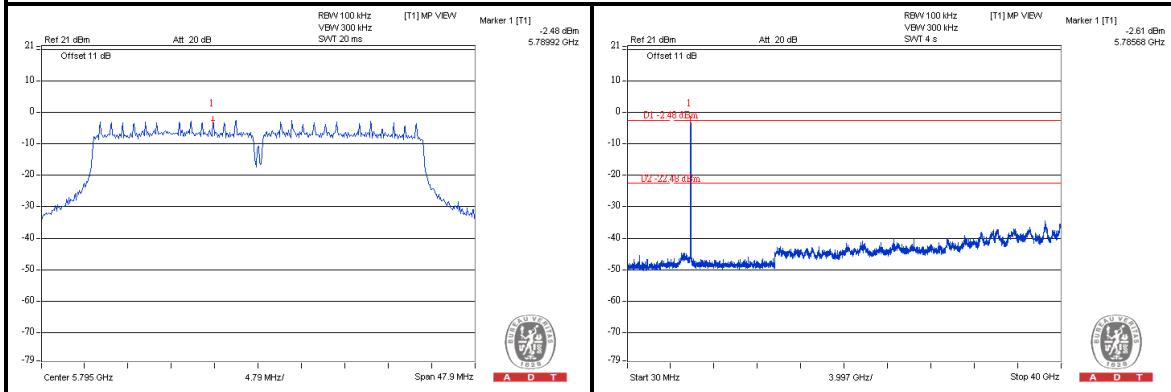


802.11n (40MHz)

CH 151



CH 159





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6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

7. 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

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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.



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8. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

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

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