

FCC TEST REPORT (WLAN / DTS)

REPORT NO.: RF121108E08

MODEL NO.: MT7630E

FCC ID: RAS-MT7630E

RECEIVED: Nov. 08, 2012

TESTED: Nov. 30 to Dec. 20, 2012

ISSUED: Dec. 27, 2012

APPLICANT: MediaTek Inc.

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Hsinchu City 30078, Taiwan

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

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R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF121108E08	Original release	Dec. 27, 2012



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1. CERTIFICATION

PRODUCT: 802.11b/g/n 1T1R Combo Card
BRAND NAME: MediaTek
MODEL NO.: MT7630E
TEST SAMPLE: MASS-PRODUCTION
APPLICANT: MediaTek Inc.
TESTED: Nov. 30 to Dec. 20, 2012
STANDARDS: FCC Part 15, Subpart C (Section 15.247)
ANSI C63.10-2009

The above equipment (Model: MT7630E) 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

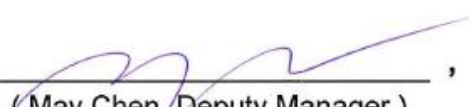
:


(Midoli Peng, Specialist)

DATE: Dec. 27, 2012

APPROVED BY

:


(May Chen, Deputy Manager)

DATE: Dec. 27, 2012

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 2.4GHz(WLAN)

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 -10.28dB at 0.19297MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.3dB at 2390.00MHz
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 I-PEX or Reverse SMA Plug not a standard connector.

For 2.4GHz(BT-LE(GFSK))

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 -11.20dB at 0.19787MHz.
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -7.9dB at 2390.00MHz
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 I-PEX or Reverse SMA Plug not a standard connector.

2.1 MEASUREMENT UNCERTAINTY

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

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

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT(WLAN / DTS)

PRODUCT	802.11b/g/n 1T1R Combo Card
MODEL NO.	MT7630E
POWER SUPPLY	DC 3.3V $\pm$ 10% from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM GFSK(BT <LE> mode) for DTS
MODULATION TECHNOLOGY	DSSS, OFDM, DTS
TRANSFER RATE	802.11b: Up to 11Mbps 802.11g: Up to 54Mbps 802.11n: Up to 150Mbps BT-LE (GFSK): 1Mbps
OPERATING FREQUENCY	2.4GHz: 2.412 ~ 2.462GHz BT-LE(GFSK): 2.402 ~ 2.480GHz
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40) 40 for BT-LE(GFSK)
MAXIMUM OUTPUT POWER	802.11b: 162.181mW 802.11g: 288.403mW 802.11n (HT20): 281.838mW 802.11n (HT40): 162.181mW BT-LE(GFSK): 6.561 mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	NA

NOTE:

- There are Bluetooth technology and WLAN technology used for the EUT. And the report number corresponds with EUT functions are listed as below:

Function	Report No.
WLAN+ BT(LE MODE)	RF121108E08
Bluetooth	RF121108E08-1

2. The antennas provided to the EUT, please refer to the following table:

No.	Brand	Model	Antenna Type	Gain (dBi)	Connector Type
1	ACON	APP6P-700119 (Main & Aux)	PIFA	3.5	I-PEX
2	Joymax	IWX-1451RSXX-9999 (Main & Aux)	Dipole	3.2	Reverse SMA Plug
3	HONGLIN TECHNOLOGY GROUP LIMITED	Main: DQ602347300 Aux: DQ602347300	PIFA	2.30 1.16	I-PEX
4	JESS-LINK PRODUCTS CO., LTD	Main: DQ612A00007 Aux: DQ612A00007	PIFA	0.66 0.97	I-PEX
5	Wistron Neweb Corp.	Main: DQ6K15G1100 (81EAAK15.G11) Aux: DQ6K15G1100 (81EAAK15.G11)	PIFA	0.51 -0.24	I-PEX
6	Yageo Corporation	Main: DQ64313HQ06 / CAN4313HQ0729LLB1 Aux: DQ64313HQ06 / CAN4313HQ0729LLB1	PIFA	0.02 -0.55	I-PEX
7	ADVANCED-CONNECTEK INC.	Main: C-APP6P-700744 Aux: C-APP6P-700745	PIFA	-0.46 -2.41	I-PEX
8	Smart Approach	Main: SE-EIPNA-001 Aux: SE-EIPNA-002	PIFA	-2.29 0.13	I-PEX
9	HONGLIN TECHNOLOGY GROUP LIMITED	Main: DQ602347400 Aux: DQ602347400	PIFA	2.05 1.49	I-PEX
10	JESS-LINK PRODUCTS CO., LTD	Main: DQ612A00006 Aux: DQ612A00006	PIFA	1.99 -0.40	I-PEX
11	Wistron Neweb Corp.	Main: DQ6K15G1300 (81EAAK15.G13) Aux: DQ6K15G1300 (81EAAK15.G13)	PIFA	0.91 0.28	I-PEX
12	Yageo Corporation	Main: DQ64313HQ05 / CAN4313HQ0730LLB1 Aux: DQ64313HQ05 / CAN4313HQ0730LLB1	PIFA	-0.12 -0.94	I-PEX

From above antennas, **antenna 1 and antenna 2** were chosen for final test.

3. The EUT incorporates a SISO function without beam forming.

MODULATION MODE	TX/RX FUNCTION
802.11b	1Tx/1Rx
802.11g	1Tx/1Rx
802.11n (HT20)	1Tx/1Rx
802.11n (HT40)	1Tx/1Rx

4. The EUT has two different types could be chosen and please refer the below table:

Type	Description	Remark
Type 1	with PMU C79: 10uF (0603) ; C81: 10uF (0603) ; L10:4.7uH IND: (25*20*12) ; C57:4.7nF (0201) ; R12:68 ohm (0201); R14:4.7K ohm (0201) ; C55:3.9nF (0201) ; C54:100pF (0201) ; R13: 2K ohm (0201) ; R10: 2K ohm R72: Not Applied	For marketing requirement
Type 2	without PMU Remove: C79 ; C81 ; L10 ; C57 ; R12 ; R14 ; C55 ; C54 ; R13 Change: R10: 0 ohm (0201) ; R72: 0 ohm (0402)	

From the above types, For the Conducted Emissions worse case was found in **Type 2** and the other test items worse case was found in **Type 1**. Therefore only the test data of the mode was recorded in this report.

5. Spurious emission of the simultaneous operation (WiFi & Bluetooth) has been evaluated and no non-compliance was found.
6. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 7.
7. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

Operated in 2400 ~ 2483.5MHz band:

11 channels are provided for 802.11b, 802.11g, 802.11n (HT20):

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

7 channels are provided for 802.11n (HT40):

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

40 channels are provided for Bluetooth LE mode:

CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

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.

NOTE 2: The EUT’s antenna (PIFA) had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

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
BT-LE	0 to 39	39	DTS	GFSK	1

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
BT-LE	0 to 39	39	DTS	GFSK	1

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
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
BT-LE	0 to 39	0, 19, 39	DTS	GFSK	1

ANTENNA PORT CONDUCTED 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
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
BT-LE	0 to 39	0, 19, 39	DTS	GFSK	1

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
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
BT-LE	0 to 39	0, 19, 39	DTS	GFSK	1

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	23deg. C, 70%RH	120Vac, 60Hz	Eagle Chen
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
RE ³ 1G	26deg. C, 72%RH	120Vac, 60Hz	Amos Chuang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Amos Chuang
OB	25deg. C, 60%RH	120Vac, 60Hz	Amos Chuang

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)

558074 D01 DTS Meas Guidance

662911 D01 Multiple Transmitter Output

ANSI C63.10-2009

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

Note: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

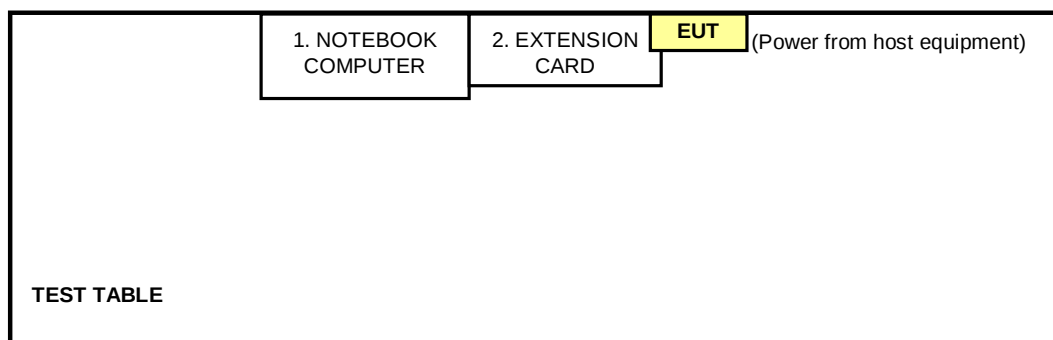
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

For conducted emission test					
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP27L	7YLB32S	FCC DoC
2	EXTENSION CARD	MediaTek	CI37-4043	10082010	NA
For other test items					
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP19L	CN-OHC416-7016 6-5CA-0448	PIW632500516610
2	EXTENSION CARD	MediaTek	CI37-4043	10082010	NA

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

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

3.5 CONFIGURATION OF SYSTEM UNDER TEST



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 12, 2012	Mar.11, 2013
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 06, 2012	Sep. 05, 2013
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100072	June 08,2012	June 07,2013
RF Cable (JYEBAO)	5DFB	COCCAB-001	Aug. 28, 2012	Aug. 27, 2013
50 ohms Terminator	50	EMC-3	Sep. 25, 2012	Sep. 24, 2013
Software ADT	BV ADT_Cond_V7.3.7.3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
- 3 The VCCI Con C Registration No. is C-3611.
- 4 Tested Date: Nov. 30, 2012

4.1.3 TEST PROCEDURES

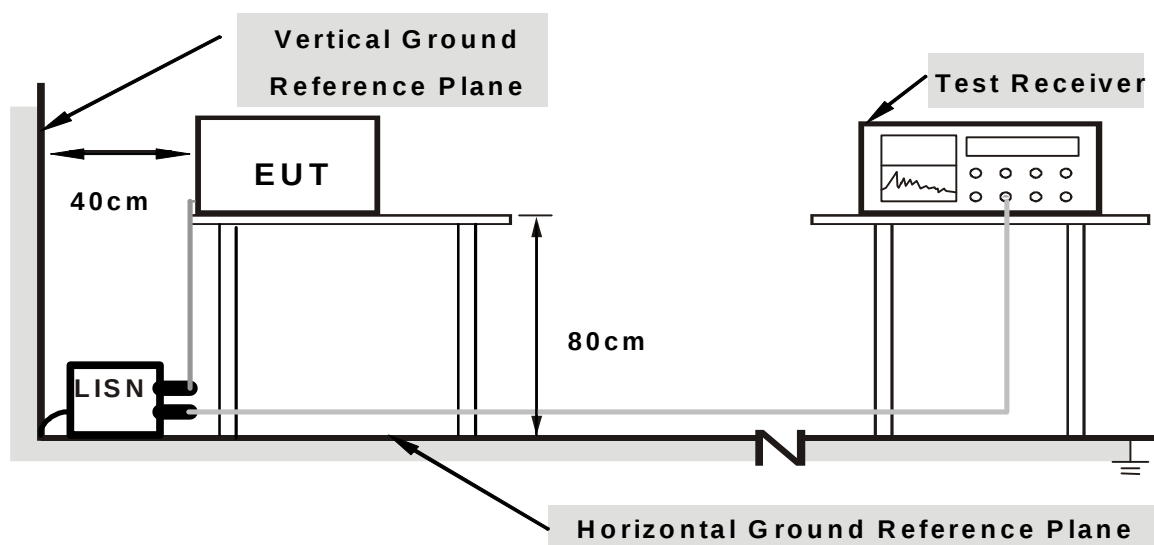
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN.
- b. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- c. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- d. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit – 20dB) were not recorded.

NOTE: The resolution bandwidth of test receiver is 9kHz for Quasi-peak detection (QP) & Average detection (AV).

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.

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 “MT76xxE.exe” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

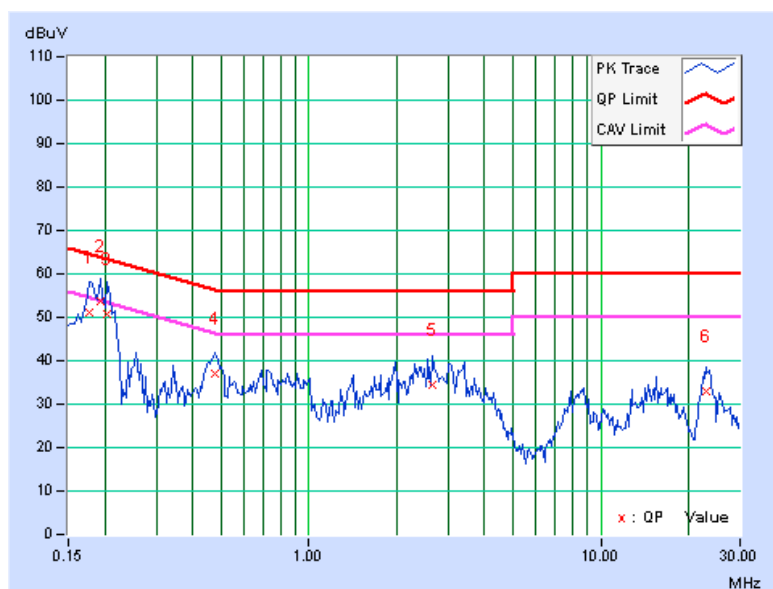
4.1.7 TEST RESULTS(WLAN mode)

PHASE	Line (L)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
-------	----------	----------------------	-----------------------------------

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	0.17734	0.11	51.06	34.93	51.17	35.04	64.61	54.61	-13.44	-19.57
2	0.19297	0.12	53.51	31.22	53.63	31.34	63.91	53.91	-10.28	-22.57
3	0.20469	0.12	50.45	28.16	50.57	28.28	63.42	53.42	-12.85	-25.14
4	0.47422	0.16	36.98	28.68	37.14	28.84	56.44	46.44	-19.30	-17.60
5	2.65234	0.24	34.27	28.44	34.51	28.68	56.00	46.00	-21.49	-17.32
6	22.92188	1.00	31.89	23.09	32.89	24.09	60.00	50.00	-27.11	-25.91

REMARKS:

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

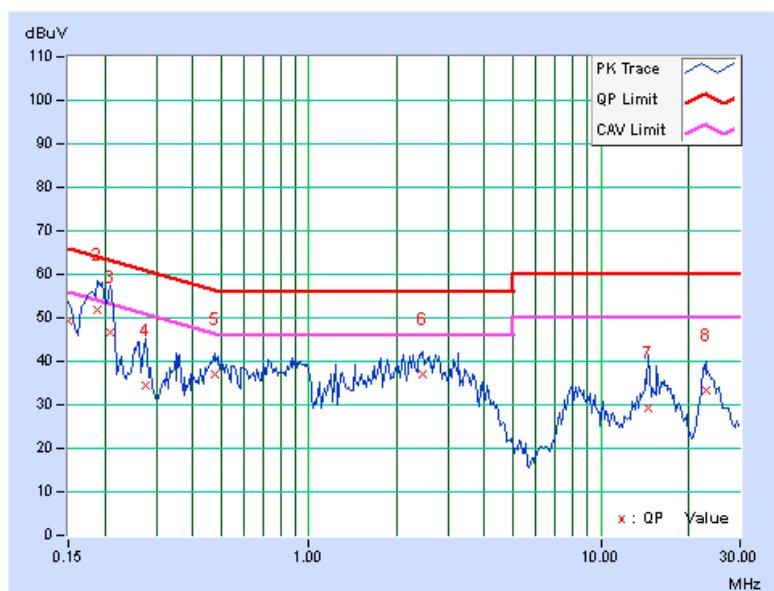


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.09	49.15	33.52	49.24	33.61	66.00	56.00	-16.76	-22.39
2	0.18906	0.10	51.63	30.79	51.73	30.89	64.08	54.08	-12.35	-23.19
3	0.20859	0.10	46.74	25.64	46.84	25.74	63.26	53.26	-16.42	-27.52
4	0.27500	0.12	34.43	21.87	34.55	21.99	60.97	50.97	-26.42	-28.98
5	0.47422	0.15	36.78	27.98	36.93	28.13	56.44	46.44	-19.51	-18.31
6	2.46094	0.22	36.80	30.63	37.02	30.85	56.00	46.00	-18.98	-15.15
7	14.58203	0.51	28.65	22.67	29.16	23.18	60.00	50.00	-30.84	-26.82
8	22.95313	0.67	32.48	23.55	33.15	24.22	60.00	50.00	-26.85	-25.78

REMARKS:

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



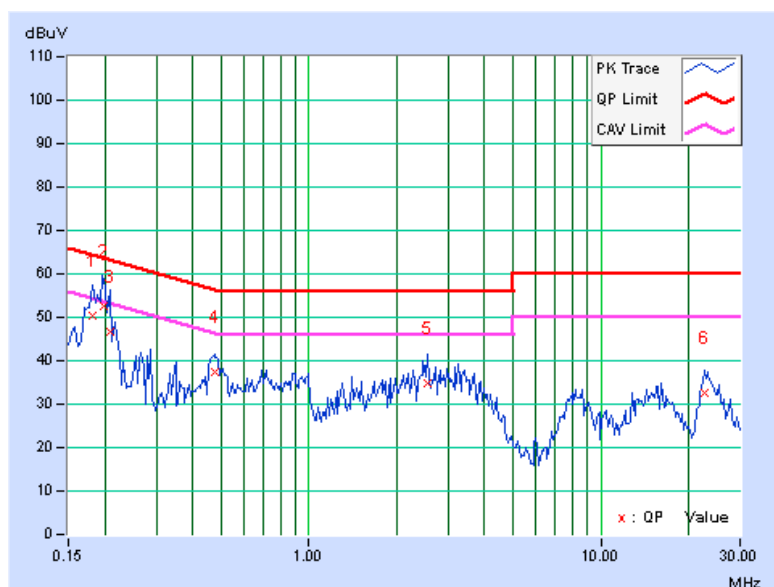
4.1.8 TEST RESULTS(BT<LE> mode)

PHASE	Line (L)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18125	0.11	50.27	33.32	50.38	33.43	64.43	54.43	-14.04	-20.99
2	0.19787	0.12	52.38	31.40	52.50	31.52	63.70	53.70	-11.20	-22.18
3	0.20859	0.12	46.68	25.40	46.80	25.52	63.26	53.26	-16.46	-27.74
4	0.47422	0.16	37.20	27.84	37.36	28.00	56.44	46.44	-19.08	-18.44
5	2.53516	0.24	34.57	28.62	34.81	28.86	56.00	46.00	-21.19	-17.14
6	22.68750	0.99	31.65	23.59	32.64	24.58	60.00	50.00	-27.36	-25.42

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.

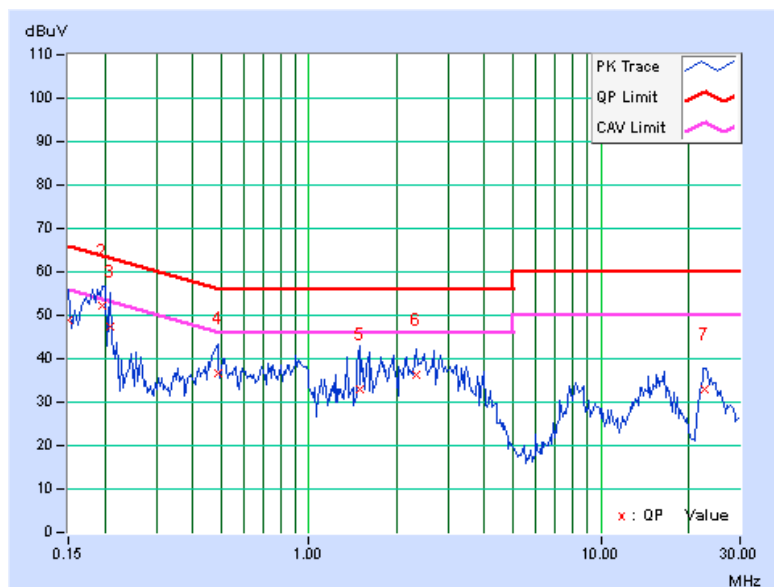


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor [dB]	Q.P. [dB (uV)]	AV. [dB (uV)]	Q.P. [dB (uV)]	AV. [dB (uV)]	Q.P. [dB (uV)]	AV. [dB (uV)]	Q.P. [dB]	AV. [dB]
1	0.15000	0.09	48.97	33.82	49.06	33.91	66.00	56.00	-16.94	-22.09
2	0.19687	0.10	52.19	29.36	52.29	29.46	63.74	53.74	-11.45	-24.28
3	0.20859	0.10	47.28	25.00	47.38	25.10	63.26	53.26	-15.88	-28.16
4	0.48594	0.15	36.53	29.36	36.68	29.51	56.24	46.24	-19.55	-16.72
5	1.49609	0.19	32.70	26.52	32.89	26.71	56.00	46.00	-23.11	-19.29
6	2.34375	0.22	35.97	30.07	36.19	30.29	56.00	46.00	-19.81	-15.71
7	22.71875	0.67	32.46	24.03	33.13	24.70	60.00	50.00	-26.87	-25.30

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.

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY48250253	Sep. 03, 2012	Sep. 02, 2013
Pre-Selector Agilent	N9039A	MY46520310	Sep. 03, 2012	Sep. 02, 2013
Signal Generator Agilent	N5181A	MY49060347	July 24, 2012	July 23, 2013
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-04	Nov. 14, 2012	Nov. 13, 2013
Pre-Amplifier Agilent	8449B	3008A02465	Feb. 27, 2012	Feb. 26, 2013
SPACEK LABS	SLKKa-48-6	9K16	Nov. 14, 2012	Nov. 13, 2013
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Apr. 06, 2012	Apr. 05, 2013
Horn_Antenna AISI	AIH.8018	0000220091110	Nov. 22, 2012	Nov. 21, 2013
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 12, 2012	Oct. 11, 2013
RF Cable	NA	RF104-205 RF104-207 RF104-202	Dec. 27, 2011	Dec. 26, 2012
RF Cable	NA	CHHCAB_001	Oct. 07, 2012	Oct. 06, 2013
Software	ADT_Radiated _V8.7.05	NA	NA	NA
Antenna Tower & Turn Table CT	NA	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
- 3 The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
- 5 The CANADA Site Registration No. is IC 7450H-3.
- 6 Tested Date: Nov. 23 to Dec. 20, 2012

4.2.3 TEST PROCEDURES

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

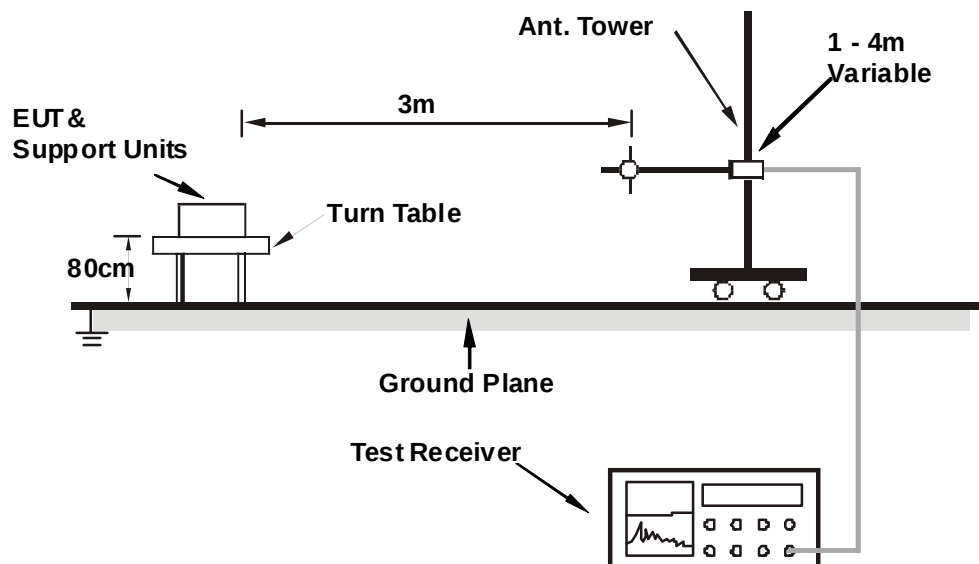
NOTE:

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(WLAN MODE – PIFA ANTENNA)

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	48.59	17.4 QP	40.0	-22.6	1.50 H	360	3.45	13.95
2	168.20	31.6 QP	43.5	-11.9	2.00 H	0	17.80	13.79
3	240.32	29.7 QP	46.0	-16.3	1.50 H	360	16.84	12.86
4	408.01	29.2 QP	46.0	-16.8	1.00 H	165	11.22	17.94
5	499.90	27.7 QP	46.0	-18.3	1.50 H	325	7.60	20.10
6	664.39	29.5 QP	46.0	-16.5	1.00 H	276	6.33	23.17
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	45.99	27.6 QP	40.0	-12.4	1.00 V	217	13.47	14.12
2	168.20	25.3 QP	43.5	-18.2	2.00 V	301	11.50	13.79
3	240.32	22.9 QP	46.0	-23.1	1.50 V	261	10.01	12.86
4	408.01	27.5 QP	46.0	-18.5	1.50 V	280	9.58	17.94
5	499.19	24.8 QP	46.0	-21.2	1.00 V	242	4.69	20.08
6	666.17	26.7 QP	46.0	-19.3	1.50 V	304	3.47	23.20

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

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	2390.00	60.7 PK	74.0	-13.3	1.52 H	290	28.34	32.38
2	2390.00	50.3 AV	54.0	-3.7	1.52 H	290	17.92	32.38
3	*2412.00	108.7 PK			1.50 H	289	76.26	32.44
4	*2412.00	106.7 AV			1.50 H	289	74.26	32.44
5	4824.00	55.3 PK	74.0	-18.7	1.02 H	8	13.36	41.94
6	4824.00	52.6 AV	54.0	-1.4	1.02 H	8	10.66	41.94

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.4 PK	74.0	-15.6	1.00 V	241	26.02	32.38
2	2390.00	45.4 AV	54.0	-8.6	1.00 V	241	13.02	32.38
3	*2412.00	99.5 PK			1.49 V	240	67.06	32.44
4	*2412.00	97.2 AV			1.49 V	240	64.76	32.44
5	4824.00	54.8 PK	74.0	-19.2	1.14 V	251	12.86	41.94
6	4824.00	52.1 AV	54.0	-1.9	1.14 V	251	10.16	41.94

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	108.8 PK			1.53 H	289	76.29	32.51
2	*2437.00	106.8 AV			1.53 H	289	74.29	32.51
3	4874.00	55.9 PK	74.0	-18.1	1.00 H	4	13.91	41.99
4	4874.00	53.4 AV	54.0	-0.6	1.00 H	4	11.41	41.99
5	7311.00	55.9 PK	74.0	-18.1	1.00 H	10	9.37	46.53
6	7311.00	49.8 AV	54.0	-4.2	1.00 H	10	3.27	46.53
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	99.9 PK			1.00 V	222	67.39	32.51
2	*2437.00	97.6 AV			1.00 V	222	65.09	32.51
3	4874.00	55.9 PK	74.0	-18.1	1.16 V	254	13.91	41.99
4	4874.00	53.3 AV	54.0	-0.7	1.16 V	254	11.31	41.99
5	7311.00	56.8 PK	74.0	-17.2	1.86 V	145	10.27	46.53
6	7311.00	50.1 AV	54.0	-3.9	1.86 V	145	3.57	46.53

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	109.1 PK			1.41 H	49	76.53	32.57
2	*2462.00	106.9 AV			1.41 H	49	74.33	32.57
3	2483.50	60.1 PK	74.0	-13.9	1.41 H	49	27.47	32.63
4	2483.50	50.9 AV	54.0	-3.1	1.41 H	49	18.27	32.63
5	4924.00	55.8 PK	74.0	-18.2	1.00 H	8	13.79	42.01
6	4924.00	53.1 AV	54.0	-0.9	1.00 H	8	11.09	42.01
7	7386.00	55.9 PK	74.0	-18.1	1.18 H	283	9.17	46.73
8	7386.00	45.5 AV	54.0	-8.5	1.18 H	283	-1.23	46.73
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	100.6 PK			1.00 V	234	68.03	32.57
2	*2462.00	98.3 AV			1.00 V	234	65.73	32.57
3	2483.50	57.5 PK	74.0	-16.5	1.00 V	222	24.87	32.63
4	2483.50	45.2 AV	54.0	-8.8	1.00 V	222	12.57	32.63
5	4924.00	55.5 PK	74.0	-18.5	1.27 V	252	13.49	42.01
6	4924.00	53.1 AV	54.0	-0.9	1.27 V	252	11.09	42.01
7	7386.00	55.4 PK	74.0	-18.6	1.29 V	198	8.67	46.73
8	7386.00	43.9 AV	54.0	-10.1	1.29 V	198	-2.83	46.73

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	69.4 PK	74.0	-4.6	1.43 H	52	37.02	32.38
2	2390.00	53.5 AV	54.0	-0.5	1.43 H	52	21.12	32.38
3	*2412.00	107.9 PK			1.43 H	52	75.46	32.44
4	*2412.00	98.1 AV			1.43 H	52	65.66	32.44
5	4824.00	51.6 PK	74.0	-22.4	1.04 H	133	9.66	41.94
6	4824.00	39.1 AV	54.0	-14.9	1.04 H	133	-2.84	41.94
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	61.7 PK	74.0	-12.3	1.53 V	249	29.32	32.38
2	2390.00	46.5 AV	54.0	-7.5	1.53 V	249	14.12	32.38
3	*2412.00	98.8 PK			1.49 V	240	66.36	32.44
4	*2412.00	88.8 AV			1.49 V	240	56.36	32.44
5	4824.00	53.9 PK	74.0	-20.1	1.00 V	101	11.96	41.94
6	4824.00	39.5 AV	54.0	-14.5	1.00 V	101	-2.44	41.94

REMARKS:

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



A D T

CHANNEL	TX Channel 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	67.9 PK	74.0	-6.1	1.42 H	50	35.52	32.38
2	2390.00	50.5 AV	54.0	-3.5	1.42 H	50	18.12	32.38
3	*2437.00	114.2 PK			1.42 H	50	81.69	32.51
4	*2437.00	104.5 AV			1.42 H	50	71.99	32.51
5	2483.50	70.9 PK	74.0	-3.1	1.42 H	50	38.27	32.63
6	2483.50	51.5 AV	54.0	-2.5	1.42 H	50	18.87	32.63
7	4874.00	57.8 PK	74.0	-16.2	1.00 H	127	15.81	41.99
8	4874.00	43.7 AV	54.0	-10.3	1.00 H	127	1.71	41.99
9	7311.00	61.8 PK	74.0	-12.2	1.18 H	282	15.27	46.53
10	7311.00	48.8 AV	54.0	-5.2	1.18 H	282	2.27	46.53
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	63.5 PK	74.0	-10.5	1.00 V	264	31.12	32.38
2	2390.00	47.0 AV	54.0	-7.0	1.00 V	264	14.62	32.38
3	*2437.00	107.8 PK			1.00 V	264	75.29	32.51
4	*2437.00	97.7 AV			1.00 V	264	65.19	32.51
5	2483.50	60.7 PK	74.0	-13.3	1.00 V	264	28.07	32.63
6	2483.50	47.5 AV	54.0	-6.5	1.00 V	264	14.87	32.63
7	4874.00	57.9 PK	74.0	-16.1	1.55 V	100	15.91	41.99
8	4874.00	46.1 AV	54.0	-7.9	1.55 V	100	4.11	41.99
9	7311.00	64.6 PK	74.0	-9.4	1.83 V	144	18.07	46.53
10	7311.00	51.8 AV	54.0	-2.2	1.83 V	144	5.27	46.53

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	108.5 PK			1.40 H	48	75.93	32.57
2	*2462.00	98.4 AV			1.40 H	48	65.83	32.57
3	2483.50	69.3 PK	74.0	-4.7	1.40 H	48	36.67	32.63
4	2483.50	52.4 AV	54.0	-1.6	1.40 H	48	19.77	32.63
5	4924.00	51.3 PK	74.0	-22.7	1.00 H	130	9.29	42.01
6	4924.00	38.4 AV	54.0	-15.6	1.00 H	130	-3.61	42.01
7	7386.00	53.9 PK	74.0	-20.1	1.00 H	280	7.17	46.73
8	7386.00	41.4 AV	54.0	-12.6	1.00 H	280	-5.33	46.73
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	100.7 PK			1.49 V	243	68.13	32.57
2	*2462.00	91.1 AV			1.49 V	243	58.53	32.57
3	2483.50	62.2 PK	74.0	-11.8	1.44 V	243	29.57	32.63
4	2483.50	47.1 AV	54.0	-6.9	1.44 V	243	14.47	32.63
5	4924.00	54.2 PK	74.0	-19.8	1.86 V	90	12.19	42.01
6	4924.00	40.8 AV	54.0	-13.2	1.86 V	90	-1.21	42.01
7	7386.00	54.8 PK	74.0	-19.2	1.28 V	198	8.07	46.73
8	7386.00	41.2 AV	54.0	-12.8	1.28 V	198	-5.53	46.73

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 (HT20)

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	67.6 PK	74.0	-6.4	1.49 H	346	35.22	32.38
2	2390.00	53.1 AV	54.0	-0.9	1.49 H	346	20.72	32.38
3	*2412.00	105.2 PK			1.49 H	346	72.76	32.44
4	*2412.00	95.8 AV			1.49 H	346	63.36	32.44
5	4824.00	51.9 PK	74.0	-22.1	1.00 H	103	9.96	41.94
6	4824.00	38.8 AV	54.0	-15.2	1.00 H	103	-3.14	41.94
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	60.5 PK	74.0	-13.5	1.00 V	242	28.12	32.38
2	2390.00	46.1 AV	54.0	-7.9	1.00 V	242	13.72	32.38
3	*2412.00	98.3 PK			1.50 V	242	65.86	32.44
4	*2412.00	88.7 AV			1.50 V	242	56.26	32.44
5	4824.00	52.3 PK	74.0	-21.7	1.00 V	100	10.36	41.94
6	4824.00	39.0 AV	54.0	-15.0	1.00 V	100	-2.94	41.94

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	2390.00	71.1 PK	74.0	-2.9	1.41 H	51	38.72	32.38
2	2390.00	53.3 AV	54.0	-0.7	1.41 H	51	20.92	32.38
3	*2437.00	113.8 PK			1.41 H	51	81.29	32.51
4	*2437.00	103.9 AV			1.41 H	51	71.39	32.51
5	2483.50	66.9 PK	74.0	-7.1	1.41 H	51	34.27	32.63
6	2483.50	51.9 AV	54.0	-2.1	1.41 H	51	19.27	32.63
7	4874.00	60.5 PK	74.0	-13.5	1.00 H	127	18.51	41.99
8	4874.00	46.3 AV	54.0	-7.7	1.00 H	127	4.31	41.99
9	7311.00	67.5 PK	74.0	-6.5	1.02 H	280	20.97	46.53
10	7311.00	53.6 AV	54.0	-0.4	1.02 H	280	7.07	46.53
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	60.7 PK	74.0	-13.3	1.00 V	228	28.32	32.38
2	2390.00	46.6 AV	54.0	-7.4	1.00 V	228	14.22	32.38
3	*2437.00	106.3 PK			1.00 V	223	73.79	32.51
4	*2437.00	96.2 AV			1.00 V	223	63.69	32.51
5	2483.50	59.4 PK	74.0	-14.6	1.00 V	234	26.77	32.63
6	2483.50	45.5 AV	54.0	-8.5	1.00 V	234	12.87	32.63
7	4874.00	63.2 PK	74.0	-10.8	1.26 V	101	21.21	41.99
8	4874.00	48.5 AV	54.0	-5.5	1.26 V	101	6.51	41.99
9	7311.00	66.5 PK	74.0	-7.5	1.25 V	30	19.97	46.53
10	7311.00	52.3 AV	54.0	-1.7	1.25 V	30	5.77	46.53

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	106.5 PK			1.40 H	50	73.93	32.57
2	*2462.00	97.2 AV			1.40 H	50	64.63	32.57
3	2483.50	70.1 PK	74.0	-3.9	1.40 H	50	37.47	32.63
4	2483.50	52.8 AV	54.0	-1.2	1.40 H	50	20.17	32.63
5	4924.00	50.8 PK	74.0	-23.2	1.02 H	95	8.79	42.01
6	4924.00	37.9 AV	54.0	-16.1	1.02 H	95	-4.11	42.01
7	7386.00	56.0 PK	74.0	-18.0	1.00 H	11	9.27	46.73
8	7386.00	50.0 AV	54.0	-4.0	1.00 H	11	3.27	46.73
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	97.7 PK			1.45 V	246	65.13	32.57
2	*2462.00	88.3 AV			1.45 V	246	55.73	32.57
3	2483.50	59.2 PK	74.0	-14.8	1.00 V	235	26.57	32.63
4	2483.50	45.1 AV	54.0	-8.9	1.00 V	235	12.47	32.63
5	4924.00	51.7 PK	74.0	-22.3	1.00 V	92	9.69	42.01
6	4924.00	38.6 AV	54.0	-15.4	1.00 V	92	-3.41	42.01
7	7386.00	55.5 PK	74.0	-18.5	1.27 V	199	8.77	46.73
8	7386.00	44.0 AV	54.0	-10.0	1.27 V	199	-2.73	46.73

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 (HT40)

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	69.2 PK	74.0	-4.8	1.48 H	342	36.82	32.38
2	2390.00	53.4 AV	54.0	-0.6	1.48 H	342	21.02	32.38
3	*2422.00	101.7 PK			1.48 H	342	69.23	32.47
4	*2422.00	92.4 AV			1.48 H	342	59.93	32.47
5	4844.00	51.1 PK	74.0	-22.9	1.01 H	105	9.14	41.96
6	4844.00	38.1 AV	54.0	-15.9	1.01 H	105	-3.86	41.96
7	7266.00	55.1 PK	74.0	-18.9	1.30 H	202	8.70	46.40
8	7266.00	43.1 AV	54.0	-10.9	1.30 H	202	-3.30	46.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	58.1 PK	74.0	-15.9	1.02 V	241	25.72	32.38
2	2390.00	44.1 AV	54.0	-9.9	1.02 V	241	11.72	32.38
3	*2422.00	90.4 PK			1.75 V	207	57.93	32.47
4	*2422.00	79.5 AV			1.75 V	207	47.03	32.47
5	4844.00	51.3 PK	74.0	-22.7	1.00 V	82	9.34	41.96
6	4844.00	38.4 AV	54.0	-15.6	1.00 V	82	-3.56	41.96
7	7266.00	55.8 PK	74.0	-18.2	1.30 V	212	9.40	46.40
8	7266.00	44.3 AV	54.0	-9.7	1.30 V	212	-2.10	46.40

REMARKS:

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

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	70.0 PK	74.0	-4.0	1.42 H	53	37.62	32.38
2	2390.00	53.4 AV	54.0	-0.6	1.42 H	53	21.02	32.38
3	*2437.00	104.9 PK			1.42 H	53	72.39	32.51
4	*2437.00	95.5 AV			1.42 H	53	62.99	32.51
5	2483.50	68.8 PK	74.0	-5.2	1.42 H	53	36.17	32.63
6	2483.50	52.3 AV	54.0	-1.7	1.42 H	53	19.67	32.63
7	4874.00	51.1 PK	74.0	-22.9	1.14 H	2	9.11	41.99
8	4874.00	38.1 AV	54.0	-15.9	1.14 H	2	-3.89	41.99
9	7311.00	54.3 PK	74.0	-19.7	1.07 H	225	7.77	46.53
10	7311.00	41.1 AV	54.0	-12.9	1.07 H	225	-5.43	46.53
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	55.0 PK	74.0	-19.0	1.24 V	191	22.62	32.38
2	2390.00	43.6 AV	54.0	-10.4	1.24 V	191	11.22	32.38
3	*2437.00	95.9 PK			1.00 V	223	63.39	32.51
4	*2437.00	86.4 AV			1.00 V	223	53.89	32.51
5	2483.50	56.8 PK	74.0	-17.2	1.05 V	226	24.17	32.63
6	2483.50	44.8 AV	54.0	-9.2	1.05 V	226	12.17	32.63
7	4874.00	54.7 PK	74.0	-19.3	1.58 V	91	12.71	41.99
8	4874.00	40.1 AV	54.0	-13.9	1.58 V	91	-1.89	41.99
9	7311.00	53.9 PK	74.0	-20.1	1.30 V	135	7.37	46.53
10	7311.00	41.3 AV	54.0	-12.7	1.30 V	135	-5.23	46.53

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	101.2 PK			1.50 H	356	68.65	32.55
2	*2452.00	91.9 AV			1.50 H	356	59.35	32.55
3	2483.50	67.5 PK	74.0	-6.5	1.50 H	356	34.87	32.63
4	2483.50	53.2 AV	54.0	-0.8	1.50 H	356	20.57	32.63
5	4904.00	50.6 PK	74.0	-23.4	1.07 H	97	8.58	42.02
6	4904.00	37.9 AV	54.0	-16.1	1.07 H	97	-4.12	42.02
7	7356.00	54.7 PK	74.0	-19.3	1.32 H	197	8.05	46.65
8	7356.00	42.9 AV	54.0	-11.1	1.32 H	197	-3.75	46.65
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	90.2 PK			1.72 V	197	57.65	32.55
2	*2452.00	80.1 AV			1.72 V	197	47.55	32.55
3	2483.50	57.4 PK	74.0	-16.6	1.00 V	251	24.77	32.63
4	2483.50	43.5 AV	54.0	-10.5	1.00 V	251	10.87	32.63
5	4904.00	50.7 PK	74.0	-23.3	1.04 V	68	8.68	42.02
6	4904.00	38.0 AV	54.0	-16.0	1.04 V	68	-4.02	42.02
7	7356.00	55.5 PK	74.0	-18.5	1.34 V	224	8.85	46.65
8	7356.00	44.0 AV	54.0	-10.0	1.34 V	224	-2.65	46.65

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(WLAN MODE – DIPOLE ANTENNA)

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	48.31	17.9 QP	40.0	-22.1	1.25 H	222	3.96	13.97
2	168.55	31.9 QP	43.5	-11.6	1.51 H	333	18.17	13.77
3	240.65	31.8 QP	46.0	-14.2	1.22 H	334	18.94	12.88
4	408.24	30.1 QP	46.0	-15.9	1.25 H	165	12.14	17.95
5	499.94	29.1 QP	46.0	-16.9	1.00 H	360	9.02	20.10
6	664.52	29.5 QP	46.0	-16.5	1.24 H	222	6.35	23.17
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	47.27	28.8 QP	40.0	-11.2	1.25 V	222	14.80	14.04
2	168.42	25.4 QP	43.5	-18.1	1.75 V	300	11.66	13.78
3	240.72	23.9 QP	46.0	-22.1	1.43 V	78	11.01	12.88
4	408.33	28.5 QP	46.0	-17.5	2.00 V	145	10.59	17.95
5	499.31	25.8 QP	46.0	-20.2	1.25 V	250	5.71	20.08
6	666.54	27.7 QP	46.0	-18.3	1.50 V	222	4.53	23.20

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

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	2390.00	57.2 PK	74.0	-16.8	1.23 H	246	24.82	32.38
2	2390.00	45.6 AV	54.0	-8.4	1.23 H	246	13.22	32.38
3	*2412.00	99.2 PK			1.23 H	246	66.76	32.44
4	*2412.00	96.8 AV			1.23 H	246	64.36	32.44
5	4824.00	55.6 PK	74.0	-18.4	1.00 H	5	13.66	41.94
6	4824.00	53.5 AV	54.0	-0.5	1.00 H	5	11.56	41.94

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.7 PK	74.0	-14.3	1.00 V	218	27.32	32.38
2	2390.00	52.6 AV	54.0	-1.4	1.00 V	218	20.22	32.38
3	*2412.00	108.1 PK			1.00 V	218	75.66	32.44
4	*2412.00	106.1 AV			1.00 V	218	73.66	32.44
5	4824.00	54.4 PK	74.0	-19.6	1.00 V	10	12.46	41.94
6	4824.00	52.2 AV	54.0	-1.8	1.00 V	10	10.26	41.94

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	100.3 PK			1.23 H	245	67.79	32.51
2	*2437.00	97.8 AV			1.23 H	245	65.29	32.51
3	4874.00	55.4 PK	74.0	-18.6	1.00 H	6	13.41	41.99
4	4874.00	53.1 AV	54.0	-0.9	1.00 H	6	11.11	41.99
5	7311.00	51.9 PK	74.0	-22.1	1.37 H	30	5.37	46.53
6	7311.00	44.5 AV	54.0	-9.5	1.37 H	30	-2.03	46.53
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	108.8 PK			1.00 V	231	76.29	32.51
2	*2437.00	106.9 AV			1.00 V	231	74.39	32.51
3	4874.00	54.6 PK	74.0	-19.4	1.00 V	17	12.61	41.99
4	4874.00	52.3 AV	54.0	-1.7	1.00 V	17	10.31	41.99
5	7311.00	52.3 PK	74.0	-21.7	1.02 V	21	5.77	46.53
6	7311.00	45.1 AV	54.0	-8.9	1.02 V	21	-1.43	46.53

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	99.6 PK			1.24 H	243	67.03	32.57
2	*2462.00	96.5 AV			1.24 H	243	63.93	32.57
3	2483.50	57.3 PK	74.0	-16.7	1.24 H	243	24.67	32.63
4	2483.50	45.8 AV	54.0	-8.2	1.24 H	243	13.17	32.63
5	4924.00	54.9 PK	74.0	-19.1	1.00 H	12	12.89	42.01
6	4924.00	52.6 AV	54.0	-1.4	1.00 H	12	10.59	42.01
7	7386.00	52.4 PK	74.0	-21.6	1.35 H	22	5.67	46.73
8	7386.00	44.9 AV	54.0	-9.1	1.35 H	22	-1.83	46.73
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	107.6 PK			1.00 V	222	75.03	32.57
2	*2462.00	105.6 AV			1.00 V	222	73.03	32.57
3	2483.50	59.1 PK	74.0	-14.9	1.00 V	222	26.47	32.63
4	2483.50	50.5 AV	54.0	-3.5	1.00 V	222	17.87	32.63
5	4924.00	53.8 PK	74.0	-20.2	1.00 V	21	11.79	42.01
6	4924.00	51.9 AV	54.0	-2.1	1.00 V	21	9.89	42.01
7	7386.00	52.6 PK	74.0	-21.4	1.07 V	19	5.87	46.73
8	7386.00	45.4 AV	54.0	-8.6	1.07 V	19	-1.33	46.73

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	60.1 PK	74.0	-13.9	1.00 H	203	27.72	32.38
2	2390.00	45.3 AV	54.0	-8.7	1.00 H	203	12.92	32.38
3	*2412.00	94.6 PK			1.00 H	203	62.16	32.44
4	*2412.00	83.2 AV			1.00 H	203	50.76	32.44
5	4824.00	50.9 PK	74.0	-23.1	1.00 H	207	8.96	41.94
6	4824.00	39.0 AV	54.0	-15.0	1.00 H	207	-2.94	41.94
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	68.3 PK	74.0	-5.7	1.00 V	220	35.92	32.38
2	2390.00	52.8 AV	54.0	-1.2	1.00 V	220	20.42	32.38
3	*2412.00	106.1 PK			1.00 V	220	73.66	32.44
4	*2412.00	96.4 AV			1.00 V	220	63.96	32.44
5	4824.00	49.3 PK	74.0	-24.7	1.00 V	31	7.36	41.94
6	4824.00	37.6 AV	54.0	-16.4	1.00 V	31	-4.34	41.94

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	2390.00	60.3 PK	74.0	-13.7	1.00 H	205	27.92	32.38
2	2390.00	48.5 AV	54.0	-5.5	1.00 H	205	16.12	32.38
3	*2437.00	101.3 PK			1.00 H	205	68.79	32.51
4	*2437.00	90.2 AV			1.00 H	205	57.69	32.51
5	2483.50	62.8 PK	74.0	-11.2	1.00 H	205	30.17	32.63
6	2483.50	49.6 AV	54.0	-4.4	1.00 H	205	16.97	32.63
7	4874.00	51.1 PK	74.0	-22.9	1.00 H	33	9.11	41.99
8	4874.00	38.5 AV	54.0	-15.5	1.00 H	33	-3.49	41.99
9	7311.00	58.6 PK	74.0	-15.4	1.00 H	61	12.07	46.53
10	7311.00	46.3 AV	54.0	-7.7	1.00 H	61	-0.23	46.53
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.6 PK	74.0	-7.4	1.00 V	221	34.22	32.38
2	2390.00	51.3 AV	54.0	-2.7	1.00 V	221	18.92	32.38
3	*2437.00	113.2 PK			1.00 V	221	80.69	32.51
4	*2437.00	103.5 AV			1.00 V	221	70.99	32.51
5	2483.50	67.3 PK	74.0	-6.7	1.00 V	221	34.67	32.63
6	2483.50	53.2 AV	54.0	-0.8	1.00 V	221	20.57	32.63
7	4874.00	50.6 PK	74.0	-23.4	1.00 V	33	8.61	41.99
8	4874.00	39.9 AV	54.0	-14.1	1.00 V	33	-2.09	41.99
9	7311.00	60.7 PK	74.0	-13.3	1.08 V	14	14.17	46.53
10	7311.00	49.3 AV	54.0	-4.7	1.08 V	14	2.77	46.53

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	93.8 PK			1.00 H	204	61.23	32.57
2	*2462.00	83.6 AV			1.00 H	204	51.03	32.57
3	2483.50	59.8 PK	74.0	-14.2	1.00 H	204	27.17	32.63
4	2483.50	44.9 AV	54.0	-9.1	1.00 H	204	12.27	32.63
5	4924.00	50.6 PK	74.0	-23.4	1.00 H	253	8.59	42.01
6	4924.00	38.8 AV	54.0	-15.2	1.00 H	253	-3.21	42.01
7	7386.00	53.3 PK	74.0	-20.7	1.05 H	88	6.57	46.73
8	7386.00	42.6 AV	54.0	-11.4	1.05 H	88	-4.13	46.73
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	107.5 PK			1.00 V	223	74.93	32.57
2	*2462.00	97.3 AV			1.00 V	223	64.73	32.57
3	2483.50	69.6 PK	74.0	-4.4	1.00 V	223	36.97	32.63
4	2483.50	52.8 AV	54.0	-1.2	1.00 V	223	20.17	32.63
5	4924.00	49.9 PK	74.0	-24.1	1.00 V	29	7.89	42.01
6	4924.00	37.3 AV	54.0	-16.7	1.00 V	29	-4.71	42.01
7	7386.00	53.8 PK	74.0	-20.2	1.08 V	20	7.07	46.73
8	7386.00	46.5 AV	54.0	-7.5	1.08 V	20	-0.23	46.73

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 (HT20)

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	59.0 PK	74.0	-15.0	1.00 H	223	26.62	32.38
2	2390.00	44.6 AV	54.0	-9.4	1.00 H	223	12.22	32.38
3	*2412.00	93.3 PK			1.00 H	206	60.86	32.44
4	*2412.00	83.3 AV			1.00 H	206	50.86	32.44
5	4824.00	50.8 PK	74.0	-23.2	1.00 H	254	8.86	41.94
6	4824.00	38.6 AV	54.0	-15.4	1.00 H	254	-3.34	41.94
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	72.6 PK	74.0	-1.4	1.00 V	80	40.22	32.38
2	2390.00	53.5 AV	54.0	-0.5	1.00 V	80	21.12	32.38
3	*2412.00	105.6 PK			1.00 V	80	73.16	32.44
4	*2412.00	96.1 AV			1.00 V	80	63.66	32.44
5	4824.00	49.4 PK	74.0	-24.6	1.00 V	23	7.46	41.94
6	4824.00	38.2 AV	54.0	-15.8	1.00 V	23	-3.74	41.94

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	2390.00	60.2 PK	74.0	-13.8	1.00 H	207	27.82	32.38
2	2390.00	46.8 AV	54.0	-7.2	1.00 H	207	14.42	32.38
3	*2437.00	100.2 PK			1.00 H	207	67.69	32.51
4	*2437.00	90.3 AV			1.00 H	207	57.79	32.51
5	2483.50	65.2 PK	74.0	-8.8	1.00 H	207	32.57	32.63
6	2483.50	49.5 AV	54.0	-4.5	1.00 H	207	16.87	32.63
7	4874.00	50.4 PK	74.0	-23.6	1.00 H	58	8.41	41.99
8	4874.00	38.0 AV	54.0	-16.0	1.00 H	58	-3.99	41.99
9	7311.00	58.9 PK	74.0	-15.1	1.05 H	85	12.37	46.53
10	7311.00	46.1 AV	54.0	-7.9	1.05 H	85	-0.43	46.53
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	69.7 PK	74.0	-4.3	1.00 V	222	37.32	32.38
2	2390.00	51.9 AV	54.0	-2.1	1.00 V	222	19.52	32.38
3	*2437.00	112.5 PK			1.00 V	222	79.99	32.51
4	*2437.00	103.2 AV			1.00 V	222	70.69	32.51
5	2483.50	71.3 PK	74.0	-2.7	1.00 V	222	38.67	32.63
6	2483.50	53.4 AV	54.0	-0.6	1.00 V	222	20.77	32.63
7	4874.00	49.1 PK	74.0	-24.9	1.00 V	35	7.11	41.99
8	4874.00	38.1 AV	54.0	-15.9	1.00 V	35	-3.89	41.99
9	7311.00	61.4 PK	74.0	-12.6	1.09 V	13	14.87	46.53
10	7311.00	49.1 AV	54.0	-4.9	1.09 V	13	2.57	46.53

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	93.8 PK			1.00 H	244	61.23	32.57
2	*2462.00	83.8 AV			1.00 H	244	51.23	32.57
3	2483.50	57.1 PK	74.0	-16.9	1.00 H	254	24.47	32.63
4	2483.50	44.9 AV	54.0	-9.1	1.00 H	254	12.27	32.63
5	4924.00	50.9 PK	74.0	-23.1	1.00 H	201	8.89	42.01
6	4924.00	38.7 AV	54.0	-15.3	1.00 H	201	-3.31	42.01
7	7386.00	55.1 PK	74.0	-18.9	1.00 H	217	8.37	46.73
8	7386.00	42.8 AV	54.0	-11.2	1.00 H	217	-3.93	46.73
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	105.9 PK			1.00 V	206	73.33	32.57
2	*2462.00	96.5 AV			1.00 V	206	63.93	32.57
3	2483.50	69.6 PK	74.0	-4.4	1.00 V	206	36.97	32.63
4	2483.50	52.8 AV	54.0	-1.2	1.00 V	206	20.17	32.63
5	4924.00	49.1 PK	74.0	-24.9	1.02 V	31	7.09	42.01
6	4924.00	38.2 AV	54.0	-15.8	1.02 V	31	-3.81	42.01
7	7386.00	58.6 PK	74.0	-15.4	1.08 V	15	11.87	46.73
8	7386.00	46.3 AV	54.0	-7.7	1.08 V	15	-0.43	46.73

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 (HT40)

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	58.4 PK	74.0	-15.6	1.00 H	85	26.02	32.38
2	2390.00	47.4 AV	54.0	-6.6	1.00 H	85	15.02	32.38
3	*2422.00	91.4 PK			1.00 H	78	58.93	32.47
4	*2422.00	81.1 AV			1.00 H	78	48.63	32.47
5	4844.00	50.7 PK	74.0	-23.3	1.00 H	212	8.74	41.96
6	4844.00	38.2 AV	54.0	-15.8	1.00 H	212	-3.76	41.96
7	7266.00	54.7 PK	74.0	-19.3	1.00 H	138	8.30	46.40
8	7266.00	42.5 AV	54.0	-11.5	1.00 H	138	-3.90	46.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	66.9 PK	74.0	-7.1	1.00 V	79	34.52	32.38
2	2390.00	53.7 AV	54.0	-0.3	1.00 V	79	21.32	32.38
3	*2422.00	101.9 PK			1.00 V	79	69.43	32.47
4	*2422.00	92.4 AV			1.00 V	79	59.93	32.47
5	4844.00	50.6 PK	74.0	-23.4	1.01 V	31	8.64	41.96
6	4844.00	39.2 AV	54.0	-14.8	1.01 V	31	-2.76	41.96
7	7266.00	55.2 PK	74.0	-18.8	1.08 V	18	8.80	46.40
8	7266.00	43.6 AV	54.0	-10.4	1.08 V	18	-2.80	46.40

REMARKS:

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



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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	59.3 PK	74.0	-14.7	1.00 H	79	26.92	32.38
2	2390.00	48.8 AV	54.0	-5.2	1.00 H	79	16.42	32.38
3	*2437.00	94.2 PK			1.00 H	79	61.69	32.51
4	*2437.00	83.6 AV			1.00 H	79	51.09	32.51
5	2483.50	58.3 PK	74.0	-15.7	1.00 H	79	25.67	32.63
6	2483.50	48.3 AV	54.0	-5.7	1.00 H	79	15.67	32.63
7	4874.00	50.9 PK	74.0	-23.1	1.01 H	210	8.91	41.99
8	4874.00	38.1 AV	54.0	-15.9	1.01 H	210	-3.89	41.99
9	7311.00	60.3 PK	74.0	-13.7	1.01 H	148	13.77	46.53
10	7311.00	46.5 AV	54.0	-7.5	1.01 H	148	-0.03	46.53
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	67.3 PK	74.0	-6.7	1.00 V	219	34.92	32.38
2	2390.00	53.5 AV	54.0	-0.5	1.00 V	219	21.12	32.38
3	*2437.00	103.9 PK			1.00 V	219	71.39	32.51
4	*2437.00	94.6 AV			1.00 V	219	62.09	32.51
5	2483.50	67.9 PK	74.0	-6.1	1.00 V	219	35.27	32.63
6	2483.50	53.1 AV	54.0	-0.9	1.00 V	219	20.47	32.63
7	4874.00	50.8 PK	74.0	-23.2	1.01 V	33	8.81	41.99
8	4874.00	39.3 AV	54.0	-14.7	1.01 V	33	-2.69	41.99
9	7311.00	55.3 PK	74.0	-18.7	1.08 V	20	8.77	46.53
10	7311.00	43.8 AV	54.0	-10.2	1.08 V	20	-2.73	46.53

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	92.3 PK			1.00 H	73	59.75	32.55
2	*2452.00	82.3 AV			1.00 H	73	49.75	32.55
3	2483.50	59.4 PK	74.0	-14.6	1.00 H	86	26.77	32.63
4	2483.50	48.5 AV	54.0	-5.5	1.00 H	86	15.87	32.63
5	4904.00	50.4 PK	74.0	-23.6	1.00 H	54	8.38	42.02
6	4904.00	38.2 AV	54.0	-15.8	1.00 H	54	-3.82	42.02
7	7356.00	54.7 PK	74.0	-19.3	1.00 H	70	8.05	46.65
8	7356.00	42.2 AV	54.0	-11.8	1.00 H	70	-4.45	46.65
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	102.6 PK			1.00 V	74	70.05	32.55
2	*2452.00	93.1 AV			1.00 V	74	60.55	32.55
3	2483.50	70.5 PK	74.0	-3.5	1.00 V	74	37.87	32.63
4	2483.50	53.5 AV	54.0	-0.5	1.00 V	74	20.87	32.63
5	4904.00	51.0 PK	74.0	-23.0	1.03 V	33	8.98	42.02
6	4904.00	39.6 AV	54.0	-14.4	1.03 V	33	-2.42	42.02
7	7356.00	55.7 PK	74.0	-18.3	1.07 V	15	9.05	46.65
8	7356.00	43.4 AV	54.0	-10.6	1.07 V	15	-3.25	46.65

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.

4.2.9 TEST RESULTS (BT <LE> MODE – PIFA ANTENNA)

BELOW 1GHz WORST-CASE DATA

BT_LE-GFSK

CHANNEL	TX Channel 39	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	49.14	18.5 QP	40.0	-21.6	1.50 H	0	4.53	13.92
2	168.49	32.0 QP	43.5	-11.5	1.75 H	360	18.19	13.77
3	240.89	30.1 QP	46.0	-15.9	1.50 H	125	17.23	12.89
4	408.69	30.2 QP	46.0	-15.8	1.25 H	175	12.22	17.96
5	500.87	28.3 QP	46.0	-17.7	1.50 H	360	8.21	20.12
6	665.68	30.3 QP	46.0	-15.7	1.00 H	188	7.07	23.19
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	46.57	28.9 QP	40.0	-11.1	1.00 V	220	14.78	14.09
2	168.45	26.3 QP	43.5	-17.2	2.00 V	300	12.54	13.78
3	241.44	23.3 QP	46.0	-22.8	1.25 V	150	10.34	12.91
4	408.37	28.2 QP	46.0	-17.8	1.50 V	275	10.21	17.95
5	499.45	25.8 QP	46.0	-20.2	1.25 V	225	5.71	20.09
6	667.43	27.8 QP	46.0	-18.2	1.25 V	300	4.54	23.22

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

BT_LE-GFSK

CHANNEL	TX Channel 0	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	60.9 PK	74.0	-13.1	1.00 H	336	28.52	32.38
2	2390.00	46.1 AV	54.0	-7.9	1.00 H	336	13.72	32.38
3	*2402.00	104.8 PK			1.00 H	131	72.38	32.42
4	*2402.00	103.3 AV			1.00 H	131	70.88	32.42
5	4804.00	51.3 PK	74.0	-22.7	1.19 H	58	9.39	41.91
6	4804.00	44.1 AV	54.0	-9.9	1.19 H	58	2.19	41.91

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	57.8 PK	74.0	-16.2	2.00 V	202	25.42	32.38
2	2390.00	44.5 AV	54.0	-9.5	2.00 V	202	12.12	32.38
3	*2402.00	95.1 PK			1.00 V	32	62.68	32.42
4	*2402.00	93.7 AV			1.00 V	32	61.28	32.42
5	4804.00	52.6 PK	74.0	-21.4	1.38 V	77	10.69	41.91
6	4804.00	43.4 AV	54.0	-10.6	1.38 V	77	1.49	41.91

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 19	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	*2440.00	105.7 PK			1.49 H	135	73.19	32.51
2	*2440.00	104.4 AV			1.49 H	135	71.89	32.51
3	4880.00	51.7 PK	74.0	-22.3	1.47 H	138	9.70	42.00
4	4880.00	41.2 AV	54.0	-12.8	1.47 H	138	-0.80	42.00
5	7320.00	55.8 PK	74.0	-18.2	1.54 H	64	9.25	46.55
6	7320.00	44.1 AV	54.0	-9.9	1.54 H	64	-2.45	46.55
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	*2440.00	98.6 PK			1.00 V	353	66.09	32.51
2	*2440.00	97.2 AV			1.00 V	353	64.69	32.51
3	4880.00	50.1 PK	74.0	-23.9	1.19 V	287	8.10	42.00
4	4880.00	40.8 AV	54.0	-13.2	1.19 V	287	-1.20	42.00
5	7320.00	54.5 PK	74.0	-19.5	1.72 V	126	7.95	46.55
6	7320.00	43.6 AV	54.0	-10.4	1.72 V	126	-2.95	46.55

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 39	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	*2480.00	102.5 PK			1.00 H	182	69.88	32.62
2	*2480.00	101.3 AV			1.00 H	182	68.68	32.62
3	2483.50	60.1 PK	74.0	-13.9	1.46 H	321	27.47	32.63
4	2483.50	46.0 AV	54.0	-8.0	1.46 H	321	13.37	32.63
5	4960.00	53.6 PK	74.0	-20.4	1.56 H	107	11.61	41.99
6	4960.00	45.4 AV	54.0	-8.6	1.56 H	107	3.41	41.99
7	7440.00	56.7 PK	74.0	-17.3	1.52 H	55	9.89	46.81
8	7440.00	45.5 AV	54.0	-8.5	1.52 H	55	-1.31	46.81
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	*2480.00	99.4 PK			3.53 V	100	66.78	32.62
2	*2480.00	98.1 AV			3.53 V	100	65.48	32.62
3	2483.50	59.2 PK	74.0	-14.8	1.72 V	273	26.57	32.63
4	2483.50	45.1 AV	54.0	-8.9	1.72 V	273	12.47	32.63
5	4960.00	53.0 PK	74.0	-21.0	1.62 V	292	11.01	41.99
6	4960.00	44.1 AV	54.0	-9.9	1.62 V	292	2.11	41.99
7	7440.00	56.4 PK	74.0	-17.6	1.24 V	83	9.59	46.81
8	7440.00	44.5 AV	54.0	-9.5	1.24 V	83	-2.31	46.81

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.

4.2.10 TEST RESULTS (BT <LE> MODE – DIPOLE ANTENNA)

BELOW 1GHz WORST-CASE DATA

BT_LE-GFSK

CHANNEL	TX Channel 39	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	49.72	18.9 QP	40.0	-21.1	1.25 H	337	5.06	13.88
2	168.91	32.9 QP	43.5	-10.7	1.50 H	287	19.10	13.75
3	240.83	31.4 QP	46.0	-14.6	1.25 H	175	18.48	12.89
4	408.08	30.4 QP	46.0	-15.6	1.50 H	150	12.45	17.94
5	500.30	29.2 QP	46.0	-16.8	1.50 H	8	9.05	20.11
6	665.46	30.6 QP	46.0	-15.4	1.25 H	143	7.44	23.19
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	47.41	28.9 QP	40.0	-11.1	1.50 V	228	14.89	14.03
2	168.73	25.7 QP	43.5	-17.9	1.50 V	325	11.89	13.76
3	240.85	24.8 QP	46.0	-21.2	1.50 V	100	11.95	12.89
4	408.83	29.3 QP	46.0	-16.7	1.50 V	222	11.30	17.96
5	499.78	25.5 QP	46.0	-20.6	1.25 V	225	5.36	20.09
6	665.98	27.3 QP	46.0	-18.7	1.50 V	250	4.07	23.20

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

ABOVE 1GHz DATA

BT_LE-GFSK

CHANNEL	TX Channel 0	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	1.00 H	241	25.22	32.38
2	2390.00	44.5 AV	54.0	-9.5	1.00 H	241	12.12	32.38
3	*2402.00	96.6 PK			1.00 H	241	64.18	32.42
4	*2402.00	95.3 AV			1.00 H	241	62.88	32.42
5	4804.00	51.0 PK	74.0	-23.0	1.50 H	0	9.09	41.91
6	4804.00	40.1 AV	54.0	-13.9	1.50 H	0	-1.81	41.91

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	60.1 PK	74.0	-13.9	1.01 V	180	27.72	32.38
2	2390.00	44.7 AV	54.0	-9.3	1.01 V	180	12.32	32.38
3	*2402.00	106.7 PK			1.02 V	82	74.28	32.42
4	*2402.00	105.0 AV			1.02 V	82	72.58	32.42
5	4804.00	52.3 PK	74.0	-21.7	1.29 V	300	10.39	41.91
6	4804.00	42.2 AV	54.0	-11.8	1.29 V	300	0.29	41.91

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 19	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	*2440.00	96.7 PK			1.00 H	240	64.19	32.51
2	*2440.00	95.2 AV			1.00 H	240	62.69	32.51
3	4880.00	52.0 PK	74.0	-22.0	1.47 H	135	10.00	42.00
4	4880.00	42.7 AV	54.0	-11.3	1.47 H	135	0.70	42.00
5	7320.00	53.8 PK	74.0	-20.2	1.55 H	70	7.25	46.55
6	7320.00	43.8 AV	54.0	-10.2	1.55 H	70	-2.75	46.55
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	*2440.00	107.3 PK			1.00 V	81	74.79	32.51
2	*2440.00	106.2 AV			1.00 V	81	73.69	32.51
3	4880.00	52.8 PK	74.0	-21.2	1.00 V	313	10.80	42.00
4	4880.00	43.9 AV	54.0	-10.1	1.00 V	313	1.90	42.00
5	7320.00	57.1 PK	74.0	-16.9	1.00 V	81	10.55	46.55
6	7320.00	43.7 AV	54.0	-10.3	1.00 V	81	-2.85	46.55

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 39	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	*2480.00	96.8 PK			1.00 H	243	64.18	32.62
2	*2480.00	95.0 AV			1.00 H	243	62.38	32.62
3	2483.50	57.4 PK	74.0	-16.6	1.08 H	244	24.77	32.63
4	2483.50	44.4 AV	54.0	-9.6	1.08 H	244	11.77	32.63
5	4960.00	53.5 PK	74.0	-20.5	1.17 H	131	11.51	41.99
6	4960.00	44.4 AV	54.0	-9.6	1.17 H	131	2.41	41.99
7	7440.00	56.6 PK	74.0	-17.4	1.50 H	42	9.79	46.81
8	7440.00	43.2 AV	54.0	-10.8	1.50 H	42	-3.61	46.81
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	*2480.00	106.6 PK			1.00 V	82	73.98	32.62
2	*2480.00	105.3 AV			1.00 V	82	72.68	32.62
3	2483.50	58.4 PK	74.0	-15.6	1.00 V	82	25.77	32.63
4	2483.50	45.5 AV	54.0	-8.5	1.00 V	82	12.87	32.63
5	4960.00	53.5 PK	74.0	-20.5	1.00 V	314	11.51	41.99
6	4960.00	45.2 AV	54.0	-8.8	1.00 V	314	3.21	41.99
7	7440.00	57.1 PK	74.0	-16.9	1.61 V	131	10.29	46.81
8	7440.00	44.1 AV	54.0	-9.9	1.61 V	131	-2.71	46.81

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	FSP40	100037	Nov. 01, 2012	Oct. 31, 2013

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 : Nov. 22, 2012

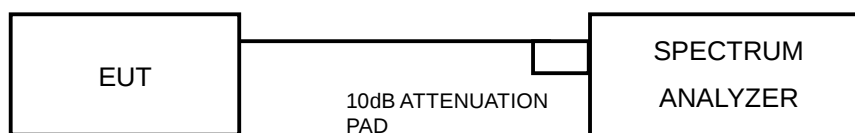
4.3.3 TEST PROCEDURE

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
1	2412	8.70	0.5	PASS
6	2437	8.39	0.5	PASS
11	2462	8.40	0.5	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.40	0.5	PASS
6	2437	16.40	0.5	PASS
11	2462	16.34	0.5	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	17.07	0.5	PASS
6	2437	16.34	0.5	PASS
11	2462	16.67	0.5	PASS

802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
3	2422	35.33	0.5	PASS
6	2437	35.61	0.5	PASS
9	2452	35.31	0.5	PASS



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BT_LE-GFSK

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
0	2402	0.71	0.5	PASS
19	2440	0.58	0.5	PASS
39	2480	0.67	0.5	PASS

4.4 CONDUCTED OUTPUT POWER MEASUREMENT

4.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

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

Per KDB 662911 D01 Multiple Transmitter Output v01r02 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $NANT \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = $5 \log(NANT/NSS)$ dB or 3 dB, whichever is less for 20-MHz channel widths with $NANT \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(NANT/NSS)$ dB.

4.4.2 INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power Meter	ML2495A	0824006	May 10, 2012	May 09, 2013
Power Sensor	MA2411B	0738172	May 10, 2012	May 09, 2013

- 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 : Nov. 22, 2012

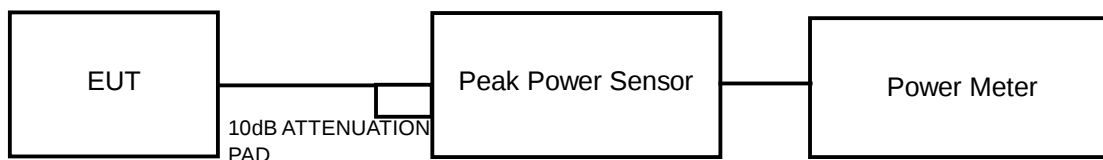
4.4.3 TEST PROCEDURES

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	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	144.544	21.60	30	PASS
6	2437	162.181	22.10	30	PASS
11	2462	151.356	21.80	30	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	144.544	21.60	30	PASS
6	2437	288.403	24.60	30	PASS
11	2462	169.824	22.30	30	PASS

802.11n (HT20)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	147.911	21.70	30	PASS
6	2437	281.838	24.50	30	PASS
11	2462	138.038	21.40	30	PASS

802.11n (HT40)

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
3	2422	97.724	19.90	30	PASS
6	2437	162.181	22.10	30	PASS
9	2452	117.490	20.70	30	PASS



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BT_LE-GFSK

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
0	2402	5.358	7.29	30	PASS
19	2440	6.109	7.86	30	PASS
39	2480	6.561	8.17	30	PASS

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	FSP40	100037	Nov. 01, 2012	Oct. 31, 2013

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 : Nov. 22, 2012

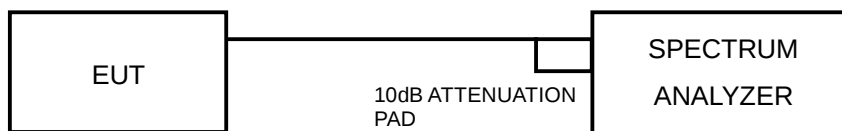
4.5.3 TEST PROCEDURE

1. Set the RBW = 3 kHz, VBW = 10 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 amplitude level.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

4.5.7 TEST RESULTS

802.11b

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-4.69	8	PASS
6	2437	-4.14	8	PASS
11	2462	-5.00	8	PASS

802.11g

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-12.02	8	PASS
6	2437	-7.43	8	PASS
11	2462	-12.83	8	PASS

802.11n (HT20)

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-12.72	8	PASS
6	2437	-4.90	8	PASS
11	2462	-11.75	8	PASS

802.11n (HT40)

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
3	2422	-17.54	8	PASS
6	2437	-14.58	8	PASS
9	2452	-17.54	8	PASS

BT_LE-GFSK

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	2402	-3.73	8	PASS
19	2440	-0.79	8	PASS
39	2480	-1.67	8	PASS

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	FSP40	100037	Nov. 01, 2012	Oct. 31, 2013

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 : Nov. 22, 2012

4.6.3 TEST PROCEDURE

Measurement Procedure - Reference Level

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.

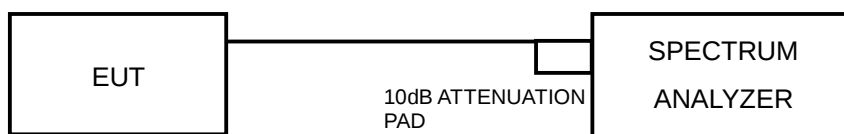
Measurement Procedure –Unwanted Emission Level

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

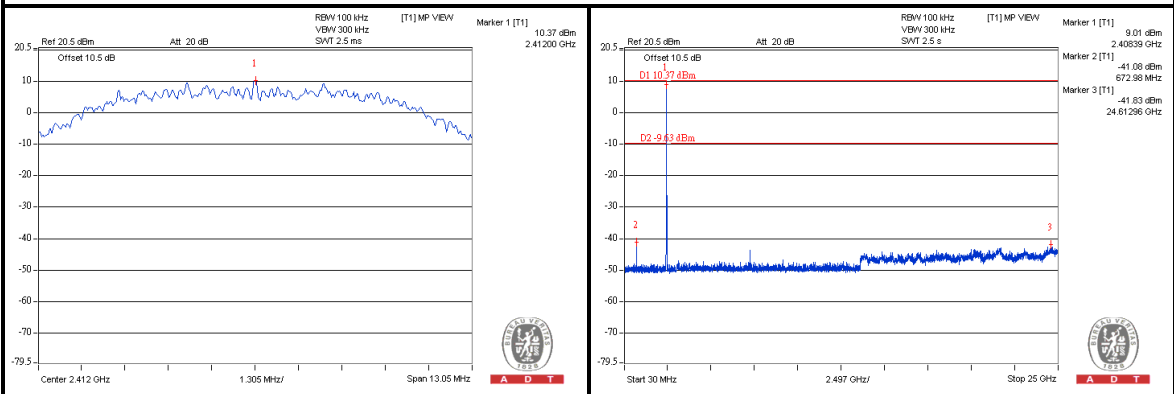
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement



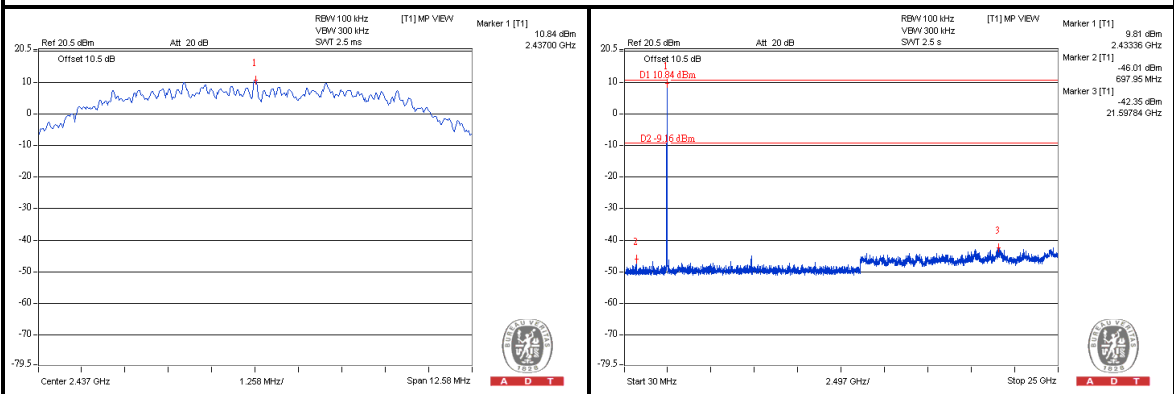
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802.11b:

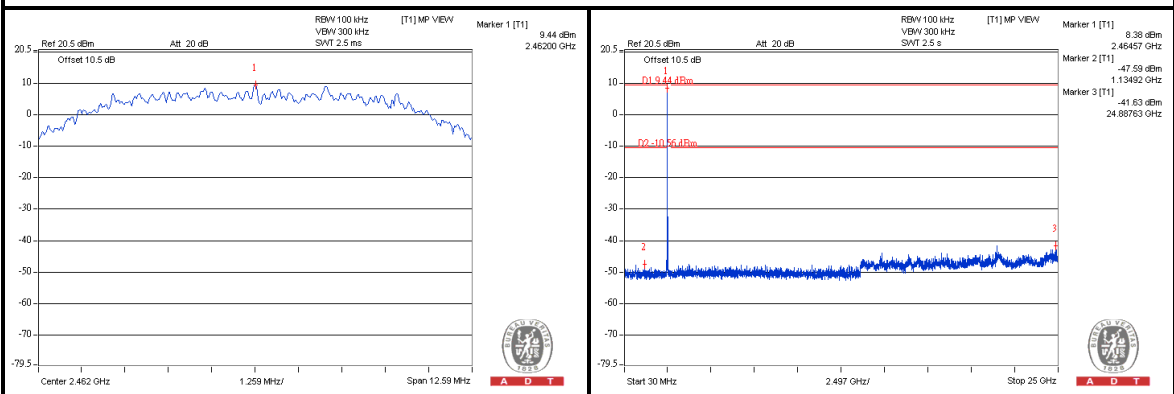
CH 1



CH 6



CH 11

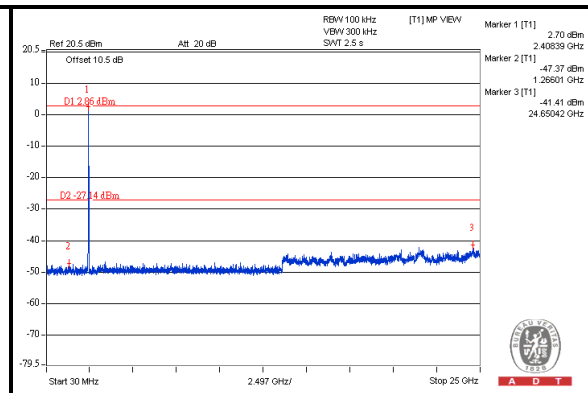
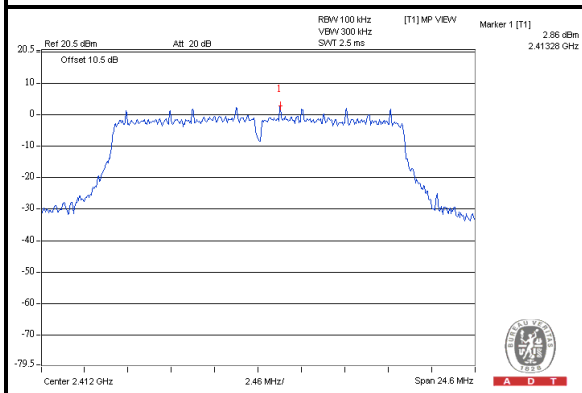




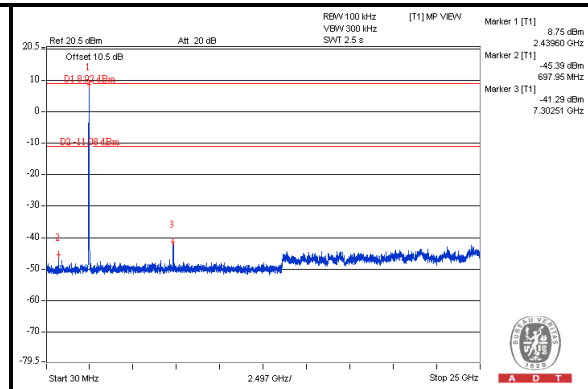
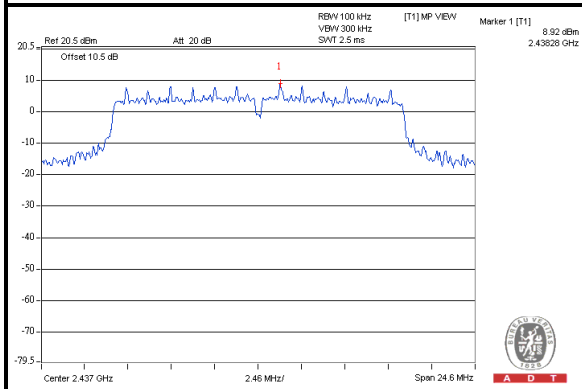
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802.11g:

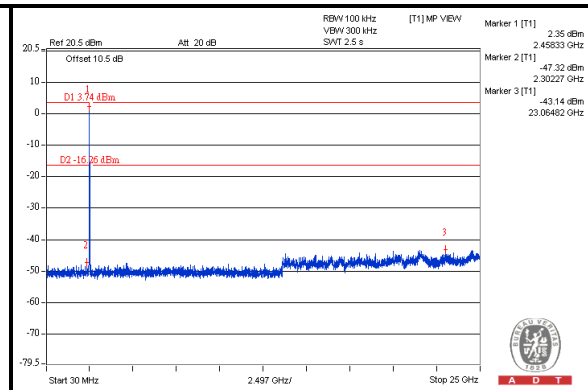
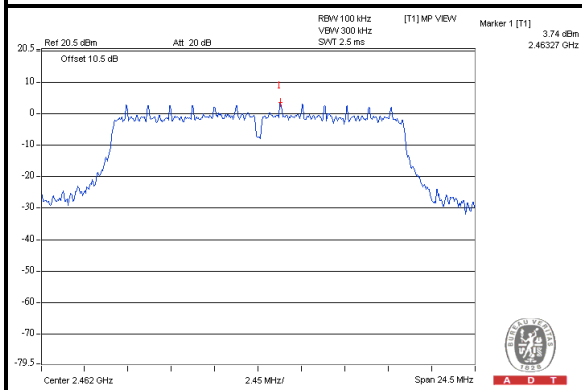
CH 1



CH 6

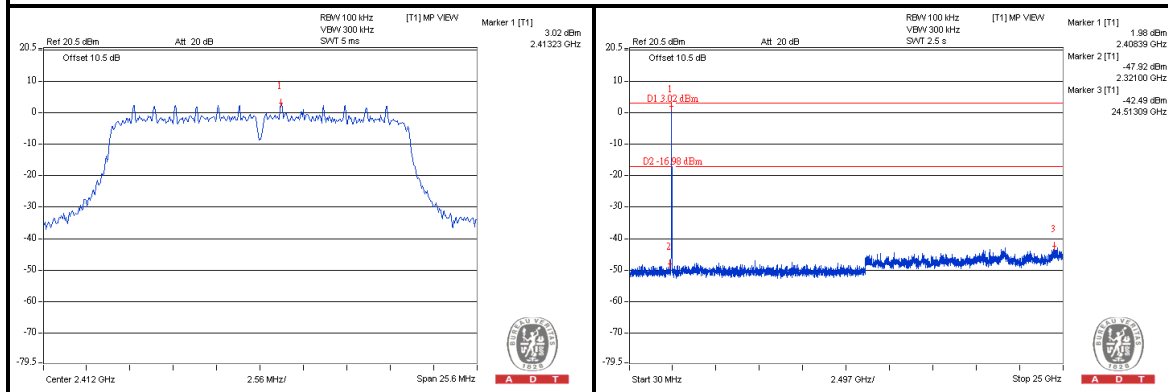


CH 11

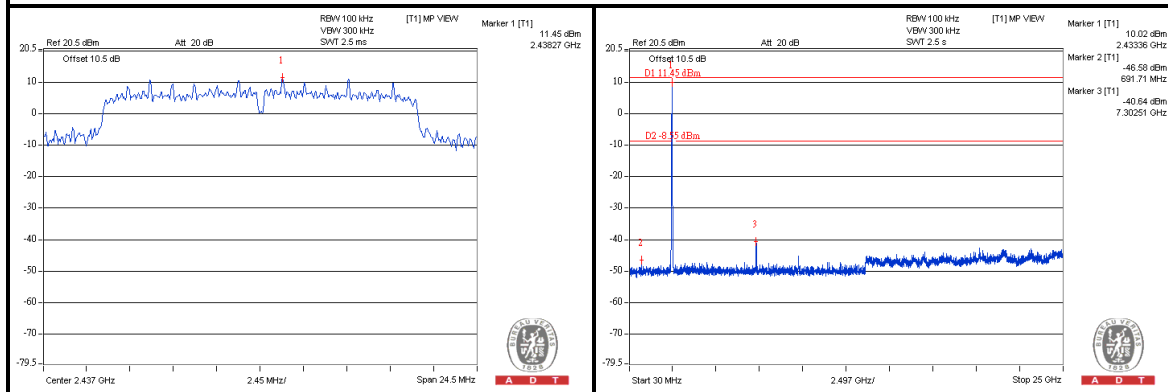


802.11n (HT20):

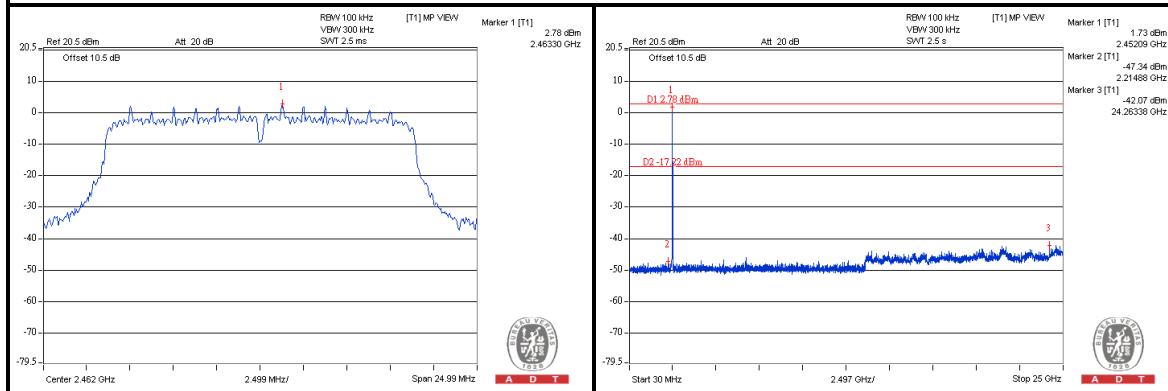
CH 1



CH 6



CH 11

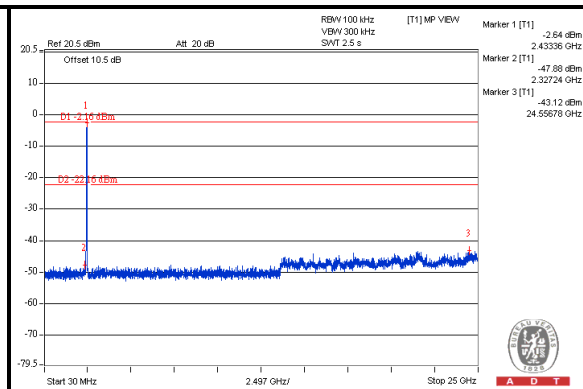
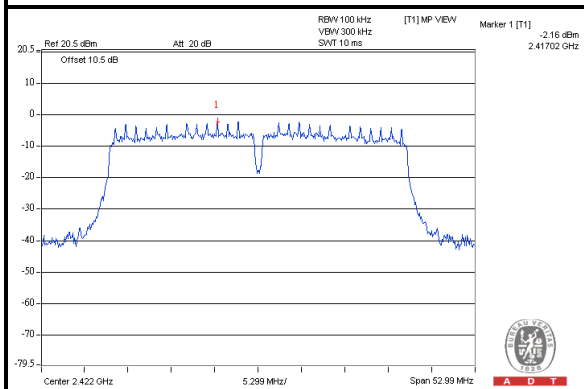




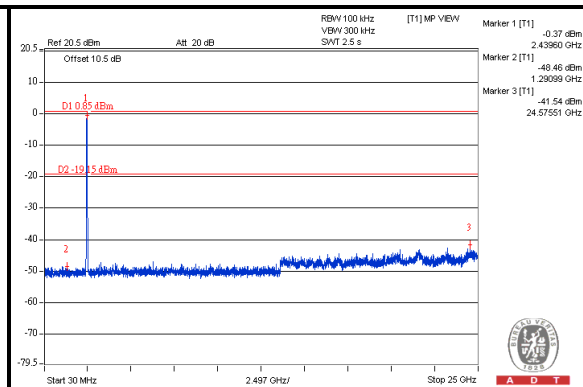
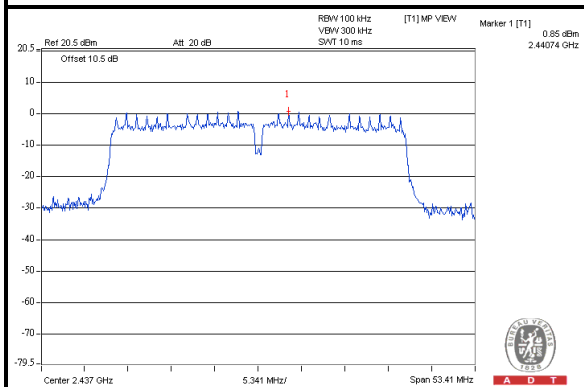
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802.11n (HT40):

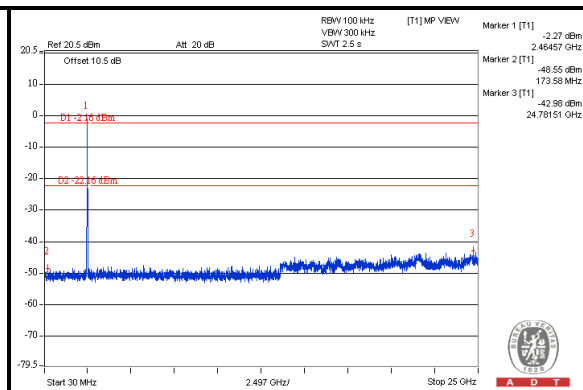
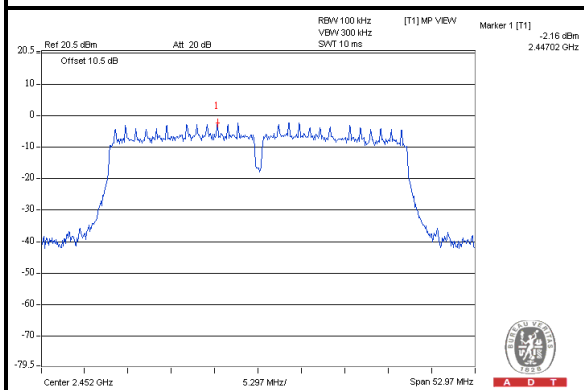
CH 3



CH 6



CH 9

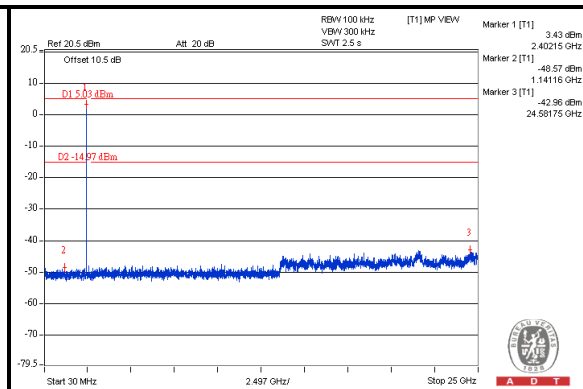
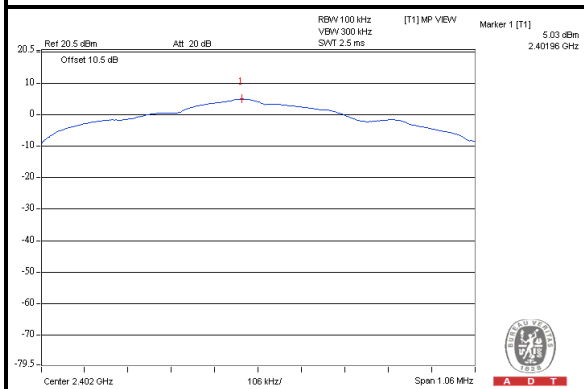




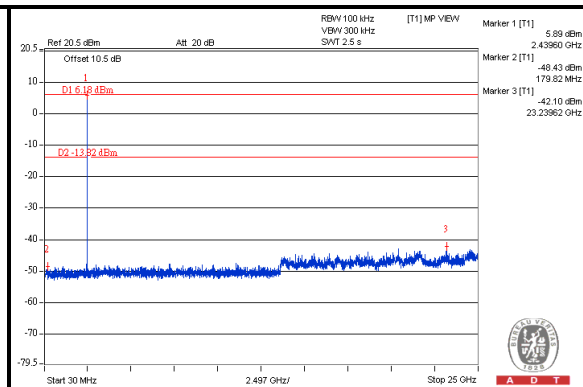
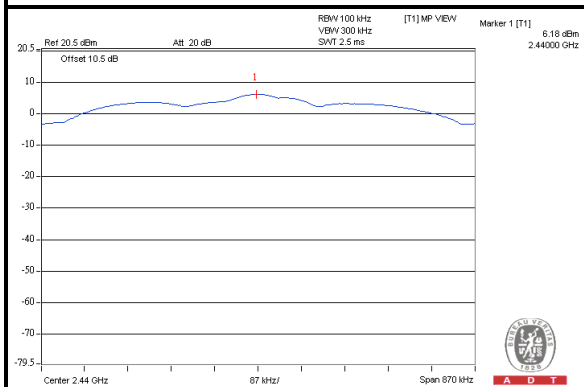
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BT_LE-GFSK:

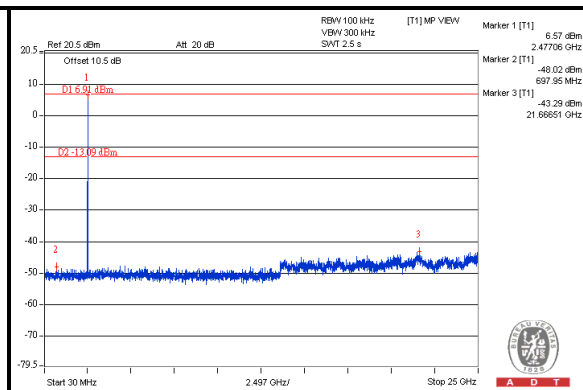
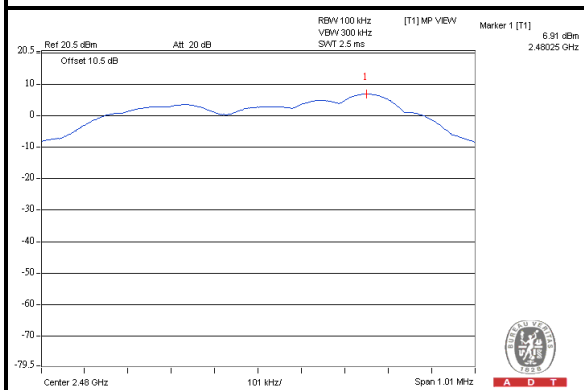
CH 0



CH 19



CH 39



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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

Linko EMC/RF Lab:

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Fax: 886-2-26052943

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Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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



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7. 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.

--- END ---