FCC TEST REPORT
(WLAN 15.247)

REPORT NO.:	RF140508E03
MODEL NO.:	D1201
FCC ID:	V7TD1201
RECEIVED:	May 02, 2014
TESTED:	June 14 to 26, 2014
ISSUED:	July 04, 2014

APPLICANT:	SHENZHEN TENDA TECHNOLOGY CO.,LTD.
ADDRESS:	6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
LAB ADDRESS :	No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (1):	No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.

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

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140508E03	Original release	July 04, 2014

1. CERTIFICATION

PRODUCT:	Wireless AC1200 ADSL2+ Dual Band Modem Router
BRAND NAME:	Tenda
MODEL NO.:	D1201
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	SHENZHEN TENDA TECHNOLOGY CO.,LTD.
TESTED:	June 14 to 26, 2014
STANDARDS:	**FCC Part 15, Subpart C (Section 15.247)** ANSI C63.10-2009

The above equipment (Model: D1201) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : _____ , **DATE:** *July 04, 2014*
(Elsie Hsu, Specialist)

APPROVED BY : _____ , **DATE:** *July 04, 2014*
(May Chen, Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -19.80dB at 0.25938MHz
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.2dB at 2390.000MHz
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 Output 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 SMA Straight Plug not a standard connector.

NOTE: 1. The EUT was operating in 2400 ~ 2483.5MHz, 5.18~5.24GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.18~5.24GHz and 5.725~5.850GHz. For the 2400 ~ 2483.5MHz RF parameters was recorded in another test report.

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	2.86 dB
Radiated emissions (30MHz-1GHz)	5.37 dB
Radiated emissions (1GHz -6GHz)	3.65 dB
Radiated emissions (6GHz -18GHz)	3.88 dB
Radiated emissions (18GHz -40GHz)	4.11 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless AC1200 ADSL2+ Dual Band Modem Router
MODEL NO.	D1201
POWER SUPPLY	DC 12V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
MODULATION TECHNOLOGY	DSSS,OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 900Mbps
OPERATING FREQUENCY	**For 15.407** 5.18 ~ 5.24GHz, 5.745 ~ 5.825GHz
	For 15.247 2.412 ~ 2.462GHz
NUMBER OF CHANNEL	**For 15.407** 9 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 4 for 802.11n (HT40), 802.11ac (VHT40) 2 for 802.11ac (VHT80)
	For 15.247 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40)
MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 45.394mW 802.11ac (VHT20): 109.997mW 802.11ac (VHT40): 92.485mW 802.11ac (VHT80): 45.723mW **For 15.247** 802.11b: 67.764mW 802.11g: 168.655mW 802.11n (HT20): 364.591mW 802.11n (HT40): 179.999mW

ANTENNA TYPE	Please see NOTE
DATA CABLE	RJ11 cable (1m) x 1 RJ45 cable (1m) x 1
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	Adapter x 1

NOTE:

1. The EUT is a 2.4GHz & 5GHz WLAN device.

2. The EUT must be supplied with a power adapter as following table:

Brand:	Dongguan Ponon Technology Co., Ltd.
Model No.:	TEA12U-12150
Input power :	100-240V~50/60Hz 0.6A
Output power :	12V, 1.5A DC output cable(unshielded, 1.5m)

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

For 2.4GHz						
Transmitter Circuit	Gain(dBi) Exclude cable loss	Cable Loss(dB) (External only, if any)	Antenna Type	Connecter Type	Frequency range (MHz to MHz)	Cable Length
Chain (0)	5	0.4	dipole	SMA Straight Plug	2400-2500	272mm
Chain (1)	5	0.4	dipole	SMA Straight Plug	2400-2500	90mm
For 5GHz						
Transmitter Circuit	Gain(dBi) Exclude cable loss	Cable Loss(dB)	Antenna Type	Connecter Type	Frequency range (MHz to MHz)	Cable Length
Chain (0)	2.5	0.4	PCB	NA	5150-5850	60mm
Chain (1)	2.5	0.4	PCB	NA	5150-5850	145mm

4. The EUT incorporates a MIMO function without beam forming.

MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11a	6 ~ 54Mbps	1TX	1RX
802.11b	1 ~ 11Mbps	1TX	1RX
802.11g	6 ~ 54Mbps	1TX	1RX
802.11n (HT20)	MCS 0~7	1TX	1RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	1TX	1RX
	MCS 8~15	2TX	2RX
802.11ac (VHT20) (5GHz)	MCS0~8 (256QAM) Nss= 1	1TX	1RX
	MCS0~8 (256QAM) Nss= 2	2TX	2RX
802.11ac (VHT40) (5GHz)	MCS0~9 (256QAM) Nss= 1	1TX	1RX
	MCS0~9 (256QAM) Nss= 2	2TX	2RX
802.11ac (VHT80) (5GHz)	MCS0~9 (256QAM) Nss= 1	1TX	1RX
	MCS0~9 (256QAM) Nss= 2	2TX	2RX

Note: The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.3)

5. Spurious emission of the simultaneous operation (2.4GHz & 5GHz) 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 15.
7. When the EUT operating in 802.11ac, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 9.
8. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

Operated in 2400 ~ 2483.5MHz band:

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		

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO					DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	OB	
-	√	√	√	√	√	-

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. The EUT had been pre-tested on the positioned of each 2 axis. The worst case was found when positioned on **Y-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)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	13

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)
802.11n (HT20)	1 to 11	6	OFDM	BPSK	13

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	13
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	27

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	13
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	27

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	13
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	27

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
PLC	26deg. C, 65%RH	120Vac, 60Hz	Ping Liu
RE<1G	23deg. C, 67%RH	120Vac, 60Hz	Tim Ho
RE³1G	23deg. C, 69%RH	120Vac, 60Hz	Gary Cheng
APCM	25deg. C, 60%RH	120Vac, 60Hz	Chilin Lee
OB	25deg. C, 60%RH	120Vac, 60Hz	Chilin Lee

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 v03r01

662911 D01 Multiple Transmitter Output v02r01

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 DUTY CYCLE OF TEST SIGNAL

If duty cycle of test signal is ≥ 98 %, duty factor is not required.

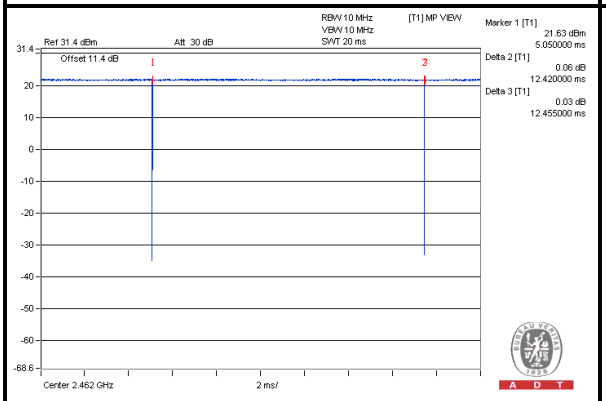
802.11b: Duty cycle = 12.42 ms/12.455 ms = 0.997

802.11g: Duty cycle = 2.062 ms/2.082 ms = 0.99

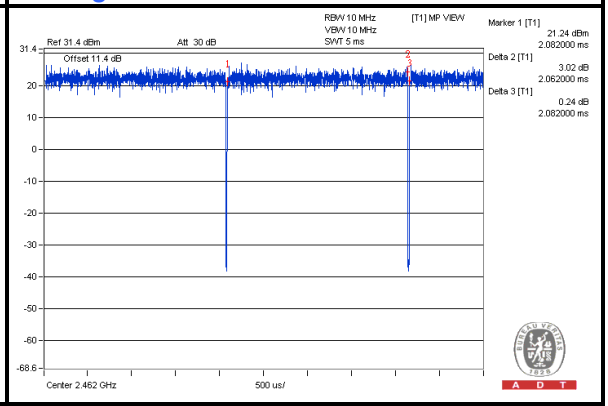
802.11n (HT20): Duty cycle = 0.969 ms/0.988 ms = 0.981

802.11n (HT40): Duty cycle = 0.481 ms/0.502 ms = 0.958

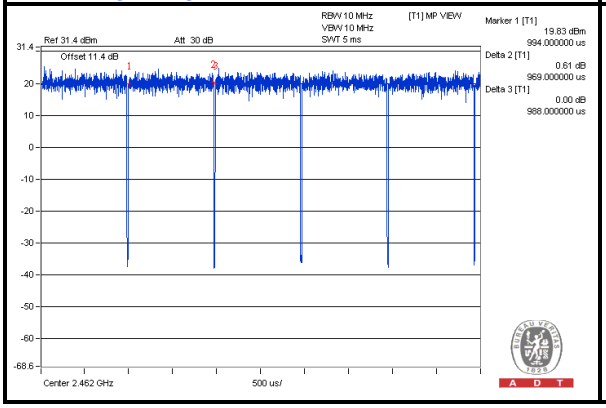
802.11b



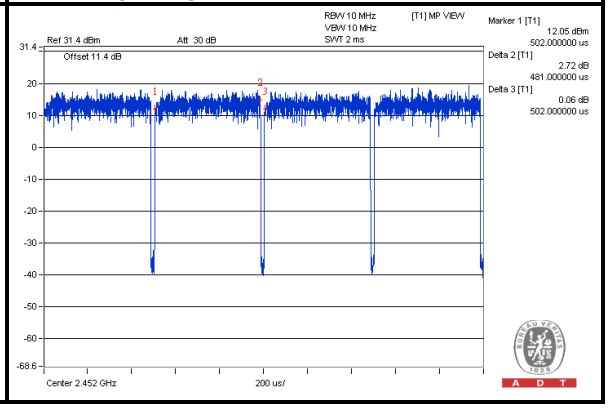
802.11g



802.11n (HT20)



802.11n (HT40)



3.5 DESCRIPTION OF SUPPORT UNITS

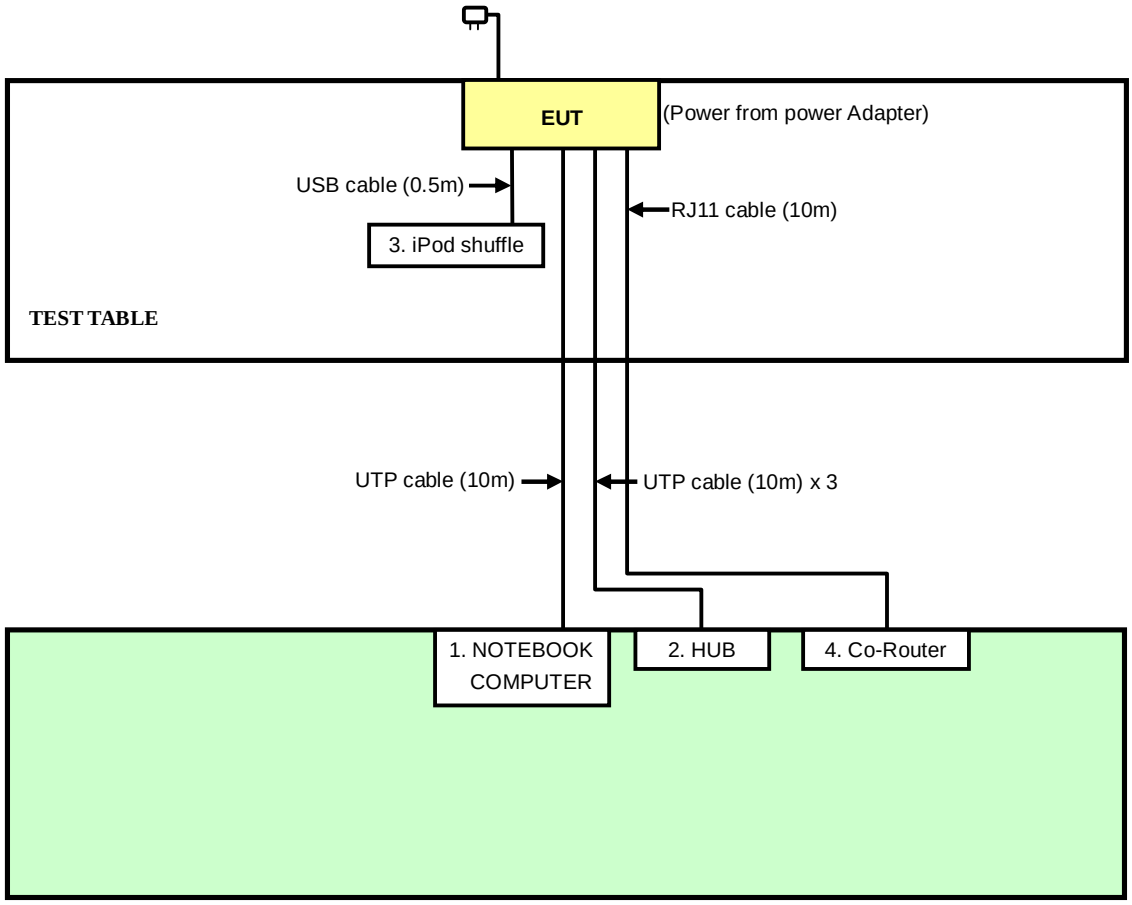
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	Notebook	DELL	PP32LA	FSLB32S	FCC DoC
2	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC
3	iPod shuffle	Apple	MC749TA/A	CC4DMFJUDFDM	NA
4	Co-Router	ZyXEL	IES-1000	S4Z3112558	NA

No.	Signal cable description
1	UTP cable (10m)
2	UTP cable (10m)
3	USB cable (0.5m)
4	RJ11 cable (10m)

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

3.6 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 (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100375	Apr. 29, 2014	Apr. 28, 2015
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 12, 2013	Sep. 11, 2014
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100071	Nov. 13, 2013	Nov. 12, 2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 10 , 2014	Mar. 09, 2015
50 ohms Terminator	N/A	EMC-03	Sep. 24, 2013	Sep. 23, 2014
50 ohms Terminator	N/A	EMC-02	Oct. 01, 2013	Sep. 30, 2014
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: June 20, 2014

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.

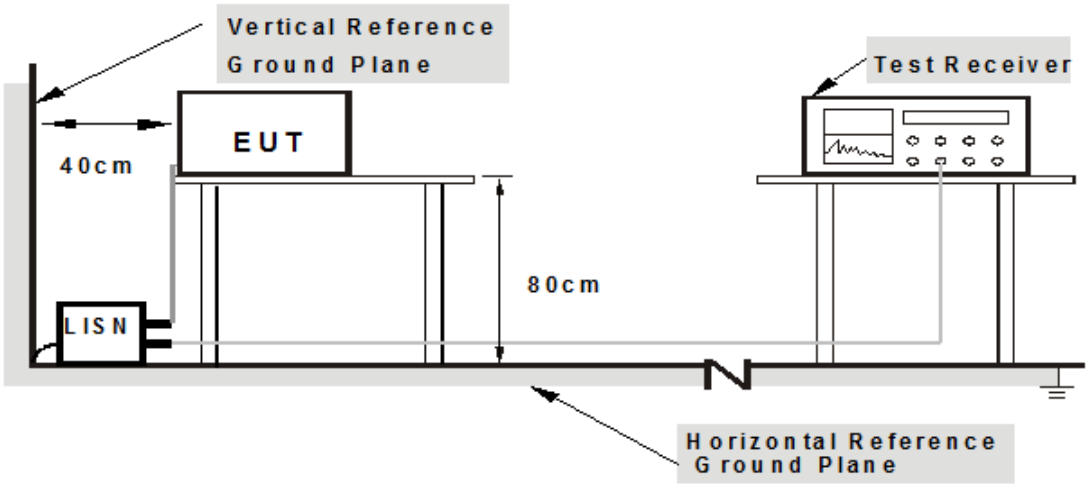
NOTE:

1. 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 Kept in a remote area
2. The communication partner run test program “MP Tool 2.0.1.0.exe” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

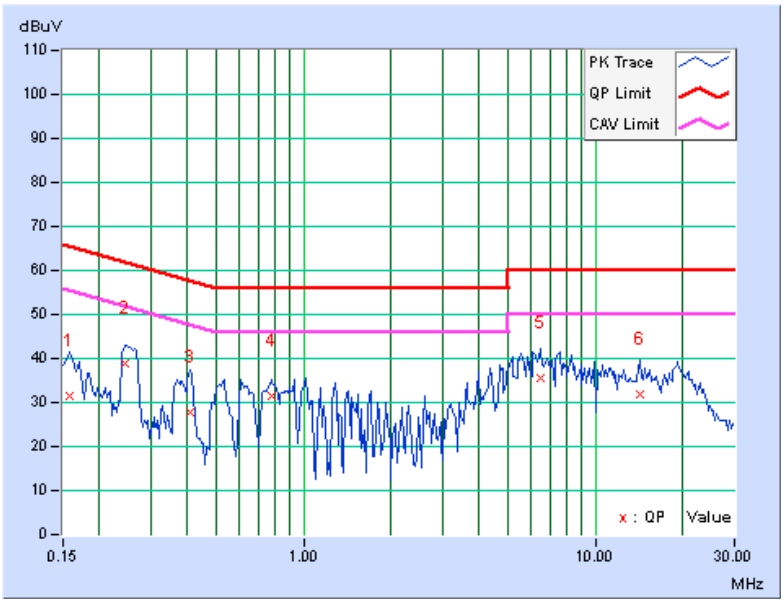
4.1.7 TEST RESULTS

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

	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	0.15781	0.07	31.33	9.24	31.40	9.31	65.58	55.58	-34.18	-46.27
2	0.24375	0.07	38.85	24.16	38.92	24.23	61.97	51.97	-23.04	-27.73
3	0.40781	0.09	27.53	12.74	27.62	12.83	57.69	47.69	-30.07	-34.86
4	0.77500	0.11	31.44	23.17	31.55	23.28	56.00	46.00	-24.45	-22.72
5	6.49609	0.34	35.20	25.90	35.54	26.24	60.00	50.00	-24.46	-23.76
6	14.14844	0.57	31.31	24.71	31.88	25.28	60.00	50.00	-28.12	-24.72

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

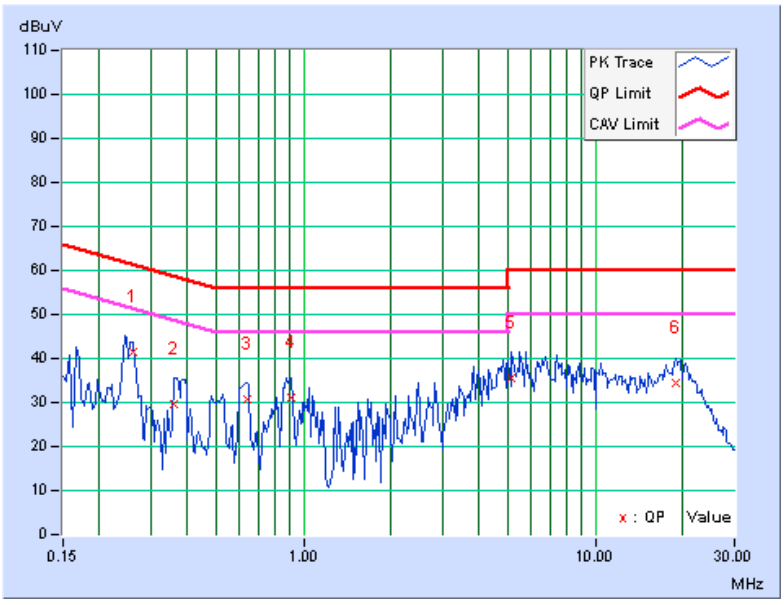


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	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	**0.25938**	**0.08**	**41.48**	**31.58**	**41.56**	**31.66**	**61.45**	**51.45**	**-19.90**	**-19.80**
2	0.36094	0.09	29.50	11.78	29.59	11.87	58.71	48.71	-29.12	-36.84
3	0.64219	0.11	30.80	22.43	30.91	22.54	56.00	46.00	-25.09	-23.46
4	0.90391	0.12	31.11	21.49	31.23	21.61	56.00	46.00	-24.77	-24.39
5	5.15625	0.30	35.44	25.74	35.74	26.04	60.00	50.00	-24.26	-23.96
6	18.79297	0.67	33.65	28.07	34.32	28.74	60.00	50.00	-25.68	-21.26

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

For Below 1GHz:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY51210105	Jan. 21, 2014	Jan. 20, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-03	Nov. 13, 2013	Nov. 12, 2014
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Feb. 26, 2014	Feb. 25, 2015
RF Cable	NA	CHGCAB_001	Oct. 05, 2013	Oct. 04, 2014
Spectrum Analyzer R&S	FSV40	100964	July 15, 2013	July 14, 2014
Horn_Antenna AISI	AIH.8018	0000320091110	Nov. 18, 2013	Nov. 17, 2014
Pre-Amplifier Agilent	8449B	3008A02578	June 25, 2013	June 24, 2014
RF Cable	NA	RF104-201 RF104-203 RF104-204	Dec. 12, 2013	Dec. 11, 2014
Spectrum Analyzer Agilent	E4446A	MY48250253	Aug. 28, 2013	Aug. 27, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 13, 2013	Nov. 12, 2014
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 08, 2013	Oct. 07, 2014
Software	ADT_Radiated_V8.7.07	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. G.
4. The FCC Site Registration No. is 966073.
5 The VCCI Site Registration No. is G-137.
6 The CANADA Site Registration No. is IC 7450H-2.
7 Tested Date: June 14, 2014

For Below 1GHz:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY51210105	Jan. 21, 2014	Jan. 20, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 13, 2013	Nov. 12, 2014
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Feb. 26, 2014	Feb. 25, 2015
RF Cable	NA	CHGCAB_001	Oct. 05, 2013	Oct. 04, 2014
Spectrum Analyzer R&S	FSV40	100964	July 15, 2013	July 14, 2014
Horn_Antenna AISI	AIH.8018	0000320091110	Nov. 18, 2013	Nov. 17, 2014
Pre-Amplifier Agilent	8449B	3008A02578	June 24, 2014	June 23, 2015
RF Cable	NA	RF104-201 RF104-203 RF104-204	Dec. 12, 2013	Dec. 11, 2014
Spectrum Analyzer Agilent	E4446A	MY48250253	Aug. 28, 2013	Aug. 27, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 13, 2013	Nov. 12, 2014
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 08, 2013	Oct. 07, 2014
Software	ADT_Radiated _V8.7.07	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. G.
4. The FCC Site Registration No. is 966073.
5 The VCCI Site Registration No. is G-137.
6 The CANADA Site Registration No. is IC 7450H-2.
7 Tested Date: June 26, 2014

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. 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:

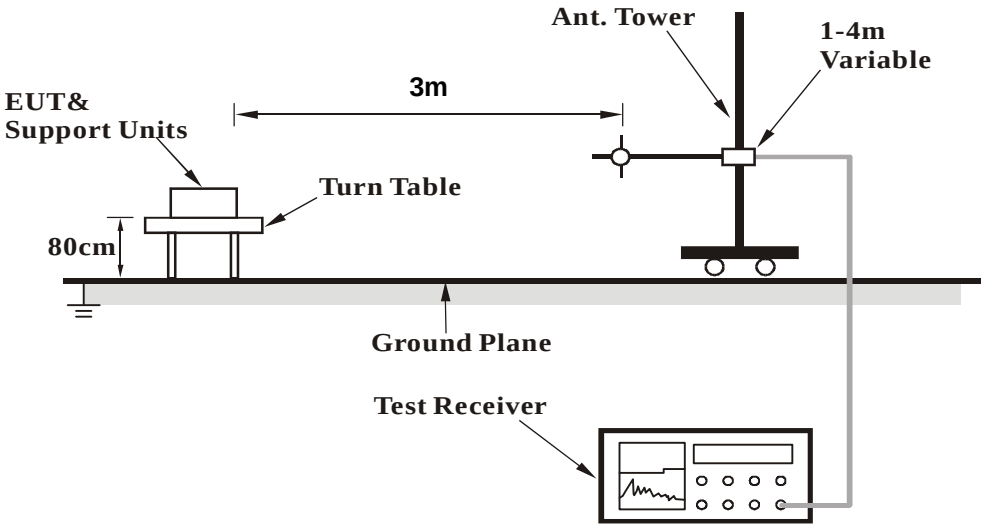
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 DEVIATION FROM TEST STANDARD

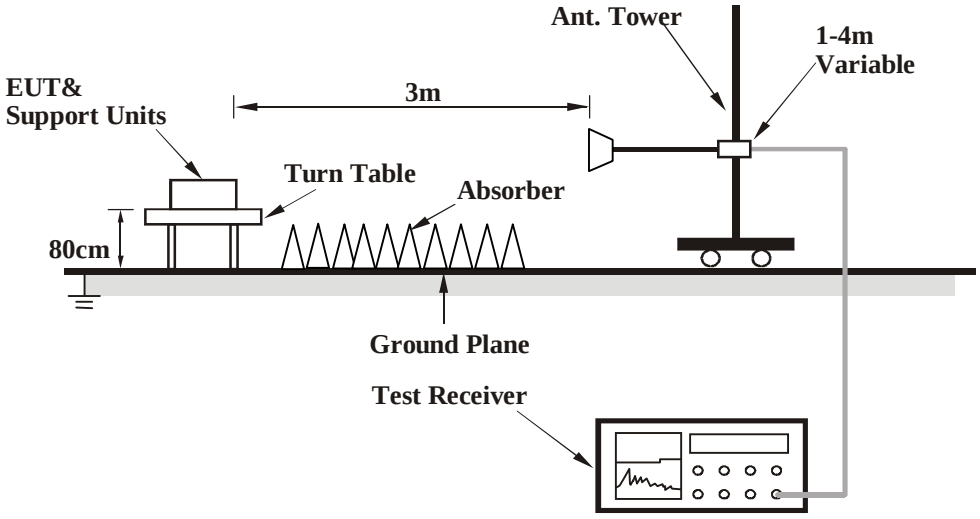
No deviation

4.2.5 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

BELOW 1GHz WORST-CASE DATA

802.11n (HT20)

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	167.16	32.4 QP	43.5	-11.1	1.50 H	281	45.98	-13.57
2	240.01	36.0 QP	46.0	-10.0	1.50 H	360	50.79	-14.77
3	375.03	36.4 QP	46.0	-9.6	1.00 H	3	46.59	-10.23
4	442.10	43.9 QP	46.0	-2.1	1.50 H	113	52.31	-8.37
5	625.00	41.2 QP	46.0	-4.8	1.50 H	331	45.65	-4.41
6	749.98	36.0 QP	46.0	-10.0	1.00 H	327	37.90	-1.94
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	57.78	32.8 QP	40.0	-7.2	1.00 V	156	46.65	-13.81
2	219.44	38.8 QP	46.0	-7.2	1.00 V	180	54.93	-16.13
3	233.85	43.3 QP	46.0	-2.7	1.00 V	171	58.66	-15.38
4	433.08	39.6 QP	46.0	-6.4	1.00 V	320	48.17	-8.57
5	459.86	26.8 QP	46.0	-19.3	1.00 V	0	34.84	-8.09
6	484.88	42.3 QP	46.0	-3.7	1.00 V	167	49.98	-7.64

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) – Pre-Amplifier 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) Average (AV)
FREQUENCY RANGE	1GHz ~ 25GHz		

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	49.8 PK	74.0	-24.2	1.00 H	350	52.27	-2.47
2	2390.00	36.9 AV	54.0	-17.1	1.00 H	350	39.37	-2.47
3	*2412.00	100.7 PK			1.00 H	350	103.07	-2.37
4	*2412.00	98.0 AV			1.00 H	350	100.37	-2.37
5	4824.00	49.9 PK	74.0	-24.1	1.67 H	321	44.19	5.71
6	4824.00	44.8 AV	54.0	-9.2	1.67 H	321	39.09	5.71
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	57.3 PK	74.0	-16.7	1.28 V	320	59.77	-2.47
2	2390.00	44.6 AV	54.0	-9.4	1.28 V	320	47.07	-2.47
3	*2412.00	109.3 PK			1.28 V	320	111.67	-2.37
4	*2412.00	106.9 AV			1.28 V	320	109.27	-2.37
5	4824.00	53.9 PK	74.0	-20.1	1.00 V	360	48.19	5.71
6	4824.00	51.0 AV	54.0	-3.0	1.00 V	360	45.29	5.71

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) – Pre-Amplifier 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	102.4 PK			1.01 H	321	104.65	-2.25
2	*2437.00	99.7 AV			1.01 H	321	101.95	-2.25
3	4874.00	50.3 PK	74.0	-23.7	1.67 H	320	44.40	5.90
4	4874.00	45.3 AV	54.0	-8.7	1.67 H	320	39.40	5.90
5	7311.00	49.6 PK	74.0	-24.4	1.20 H	102	36.43	13.17
6	7311.00	35.4 AV	54.0	-18.6	1.20 H	102	22.23	13.17
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	*2437.00	111.3 PK			1.28 V	317	113.55	-2.25
2	*2437.00	108.8 AV			1.28 V	317	111.05	-2.25
3	4874.00	54.5 PK	74.0	-19.5	1.00 V	360	48.60	5.90
4	4874.00	51.0 AV	54.0	-3.0	1.00 V	360	45.10	5.90
5	7311.00	53.7 PK	74.0	-20.3	1.14 V	10	40.53	13.17
6	7311.00	41.3 AV	54.0	-12.7	1.14 V	10	28.13	13.17

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) – Pre-Amplifier 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	101.3 PK			1.00 H	344	103.44	-2.14
2	*2462.00	98.8 AV			1.00 H	344	100.94	-2.14
3	2483.50	48.2 PK	74.0	-25.8	1.00 H	344	50.23	-2.03
4	2483.50	36.4 AV	54.0	-17.6	1.00 H	344	38.43	-2.03
5	4924.00	50.1 PK	74.0	-23.9	1.67 H	320	43.99	6.11
6	4924.00	45.6 AV	54.0	-8.4	1.67 H	320	39.49	6.11
7	7386.00	50.2 PK	74.0	-23.8	1.20 H	98	37.02	13.18
8	7386.00	36.5 AV	54.0	-17.5	1.20 H	98	23.32	13.18
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	110.5 PK			1.28 V	98	112.64	-2.14
2	*2462.00	108.1 AV			1.28 V	98	110.24	-2.14
3	2483.50	55.7 PK	74.0	-18.3	1.28 V	98	57.73	-2.03
4	2483.50	43.3 AV	54.0	-10.7	1.28 V	98	45.33	-2.03
5	4924.00	54.4 PK	74.0	-19.6	1.00 V	342	48.29	6.11
6	4924.00	51.0 AV	54.0	-3.0	1.00 V	342	44.89	6.11
7	7386.00	54.4 PK	74.0	-19.6	1.15 V	8	41.22	13.18
8	7386.00	42.2 AV	54.0	-11.8	1.15 V	8	29.02	13.18

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) – Pre-Amplifier 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	55.6 PK	74.0	-18.4	1.13 H	178	58.07	-2.47
2	2390.00	39.4 AV	54.0	-14.6	1.13 H	178	41.87	-2.47
3	*2412.00	100.4 PK			1.13 H	178	102.77	-2.37
4	*2412.00	90.6 AV			1.13 H	178	92.97	-2.37
5	4824.00	62.4 PK	74.0	-11.6	1.66 H	317	56.69	5.71
6	4824.00	42.4 AV	54.0	-11.6	1.66 H	317	36.69	5.71
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	73.2 PK	74.0	-0.8	1.23 V	317	75.67	-2.47
2	2390.00	53.7 AV	54.0	-0.3	1.23 V	317	56.17	-2.47
3	*2412.00	116.5 PK			1.23 V	317	118.87	-2.37
4	*2412.00	104.9 AV			1.23 V	317	107.27	-2.37
5	4824.00	66.2 PK	74.0	-7.8	1.04 V	6	60.49	5.71
6	4824.00	44.2 AV	54.0	-9.8	1.04 V	6	38.49	5.71

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) – Pre-Amplifier 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	51.6 PK	74.0	-22.4	1.13 H	150	54.07	-2.47
2	2390.00	40.2 AV	54.0	-13.8	1.13 H	150	42.67	-2.47
3	*2437.00	103.7 PK			1.13 H	150	105.95	-2.25
4	*2437.00	94.2 AV			1.13 H	150	96.45	-2.25
5	2500.00	52.4 PK	74.0	-21.6	1.13 H	150	54.36	-1.96
6	2500.00	39.8 AV	54.0	-14.2	1.13 H	150	41.76	-1.96
7	4874.00	62.7 PK	74.0	-11.3	1.66 H	326	56.80	5.90
8	4874.00	42.7 AV	54.0	-11.3	1.66 H	326	36.80	5.90
9	7311.00	54.4 PK	74.0	-19.6	1.25 H	108	41.23	13.17
10	7311.00	44.3 AV	54.0	-9.7	1.25 H	108	31.13	13.17
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	2390.00	61.2 PK	74.0	-12.8	1.21 V	316	63.67	-2.47
2	2390.00	48.2 AV	54.0	-5.8	1.21 V	316	50.67	-2.47
3	*2437.00	118.7 PK			1.21 V	316	120.95	-2.25
4	*2437.00	107.2 AV			1.21 V	316	109.45	-2.25
5	2500.00	62.1 PK	74.0	-11.9	1.21 V	316	64.06	-1.96
6	2500.00	49.1 AV	54.0	-4.9	1.21 V	316	51.06	-1.96
7	4874.00	66.7 PK	74.0	-7.3	1.00 V	7	60.80	5.90
8	4874.00	44.9 AV	54.0	-9.1	1.00 V	7	39.00	5.90
9	7311.00	59.8 PK	74.0	-14.2	1.01 V	360	46.63	13.17
10	7311.00	48.0 AV	54.0	-6.0	1.01 V	360	34.83	13.17

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) – Pre-Amplifier 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	100.7 PK			1.10 H	165	102.84	-2.14
2	*2462.00	90.7 AV			1.10 H	165	92.84	-2.14
3	2483.50	55.9 PK	74.0	-18.1	1.18 H	164	57.93	-2.03
4	2483.50	39.7 AV	54.0	-14.3	1.18 H	164	41.73	-2.03
5	4924.00	62.4 PK	74.0	-11.6	1.69 H	329	56.29	6.11
6	4924.00	42.3 AV	54.0	-11.7	1.69 H	329	36.19	6.11
7	7386.00	55.3 PK	74.0	-18.7	1.20 H	100	42.12	13.18
8	7386.00	44.4 AV	54.0	-9.6	1.20 H	100	31.22	13.18
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	115.4 PK			1.23 V	319	117.54	-2.14
2	*2462.00	104.2 AV			1.23 V	319	106.34	-2.14
3	2483.50	73.7 PK	74.0	-0.3	1.23 V	319	75.73	-2.03
4	2483.50	53.0 AV	54.0	-1.0	1.23 V	319	55.03	-2.03
5	4924.00	66.2 PK	74.0	-7.8	1.07 V	5	60.09	6.11
6	4924.00	44.5 AV	54.0	-9.5	1.07 V	5	38.39	6.11
7	7386.00	59.4 PK	74.0	-14.6	1.04 V	347	46.22	13.18
8	7386.00	44.4 AV	54.0	-9.6	1.04 V	347	31.22	13.18

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) – Pre-Amplifier 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	55.4 PK	74.0	-18.6	1.13 H	177	57.87	-2.47
2	2390.00	39.6 AV	54.0	-14.4	1.13 H	177	42.07	-2.47
3	*2412.00	102.6 PK			1.13 H	177	104.97	-2.37
4	*2412.00	92.1 AV			1.13 H	177	94.47	-2.37
5	4824.00	62.7 PK	74.0	-11.3	1.62 H	340	56.99	5.71
6	4824.00	42.4 AV	54.0	-11.6	1.62 H	340	36.69	5.71
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	2390.00	73.6 PK	74.0	-0.4	1.23 V	203	76.07	-2.47
2	**2390.00**	**53.8 AV**	**54.0**	**-0.2**	**1.23 V**	**203**	**56.27**	**-2.47**
3	*2412.00	118.7 PK			1.23 V	203	121.07	-2.37
4	*2412.00	107.2 AV			1.23 V	203	109.57	-2.37
5	4824.00	66.3 PK	74.0	-7.7	1.02 V	18	60.59	5.71
6	4824.00	44.6 AV	54.0	-9.4	1.02 V	18	38.89	5.71

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) – Pre-Amplifier 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	2310.00	53.6 PK	74.0	-20.4	1.13 H	162	56.43	-2.83
2	2310.00	39.2 AV	54.0	-14.8	1.13 H	162	42.03	-2.83
3	*2437.00	107.6 PK			1.13 H	162	109.85	-2.25
4	*2437.00	99.4 AV			1.13 H	162	101.65	-2.25
5	2483.50	53.2 PK	74.0	-20.8	1.13 H	162	55.23	-2.03
6	2483.50	39.6 AV	54.0	-14.4	1.13 H	162	41.63	-2.03
7	4874.00	68.3 PK	74.0	-5.7	1.62 H	333	62.40	5.90
8	4874.00	45.4 AV	54.0	-8.6	1.62 H	333	39.50	5.90
9	7311.00	61.4 PK	74.0	-12.6	1.20 H	112	48.23	13.17
10	7311.00	49.4 AV	54.0	-4.6	1.20 H	112	36.23	13.17
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	2310.00	69.5 PK	74.0	-4.5	1.22 V	204	72.33	-2.83
2	2310.00	53.0 AV	54.0	-1.0	1.22 V	204	55.83	-2.83
3	*2437.00	122.9 PK			1.22 V	204	125.15	-2.25
4	*2437.00	112.6 AV			1.22 V	204	114.85	-2.25
5	2483.50	69.2 PK	74.0	-4.8	1.22 V	204	71.23	-2.03
6	2483.50	53.1 AV	54.0	-0.9	1.22 V	204	55.13	-2.03
7	4874.00	70.4 PK	74.0	-3.6	1.00 V	11	64.50	5.90
8	4874.00	47.6 AV	54.0	-6.4	1.00 V	11	41.70	5.90
9	7311.00	65.4 PK	74.0	-8.6	1.00 V	360	52.23	13.17
10	7311.00	51.2 AV	54.0	-2.8	1.00 V	360	38.03	13.17

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 11	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	102.6 PK			1.08 H	174	104.74	-2.14
2	*2462.00	91.9 AV			1.08 H	174	94.04	-2.14
3	2483.50	55.7 PK	74.0	-18.3	1.17 H	164	57.73	-2.03
4	2483.50	39.9 AV	54.0	-14.1	1.17 H	164	41.93	-2.03
5	4924.00	65.3 PK	74.0	-8.7	1.68 H	335	59.19	6.11
6	4924.00	43.7 AV	54.0	-10.3	1.68 H	335	37.59	6.11
7	7386.00	58.7 PK	74.0	-15.3	1.14 H	107	45.52	13.18
8	7386.00	47.2 AV	54.0	-6.8	1.14 H	107	34.02	13.18
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	116.8 PK			1.20 V	203	118.94	-2.14
2	*2462.00	106.4 AV			1.20 V	203	108.54	-2.14
3	2483.50	71.2 PK	74.0	-2.8	1.20 V	203	73.23	-2.03
4	2483.50	53.6 AV	54.0	-0.4	1.20 V	203	55.63	-2.03
5	4924.00	65.7 PK	74.0	-8.3	1.06 V	20	59.59	6.11
6	4924.00	44.1 AV	54.0	-9.9	1.06 V	20	37.99	6.11
7	7386.00	61.6 PK	74.0	-12.4	1.00 V	360	48.42	13.18
8	7386.00	49.3 AV	54.0	-4.7	1.00 V	360	36.12	13.18

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) – Pre-Amplifier 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	56.7 PK	74.0	-17.3	1.00 H	164	59.17	-2.47
2	2390.00	39.6 AV	54.0	-14.4	1.00 H	164	42.07	-2.47
3	*2422.00	102.5 PK			1.00 H	164	104.82	-2.32
4	*2422.00	91.5 AV			1.00 H	164	93.82	-2.32
5	4844.00	60.6 PK	74.0	-13.4	1.72 H	310	54.82	5.78
6	4844.00	40.2 AV	54.0	-13.8	1.72 H	310	34.42	5.78
7	7266.00	55.6 PK	74.0	-18.4	1.16 H	105	42.40	13.20
8	7266.00	44.4 AV	54.0	-9.6	1.16 H	105	31.20	13.20
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	69.8 PK	74.0	-4.2	1.22 V	202	72.27	-2.47
2	2390.00	53.7 AV	54.0	-0.3	1.22 V	202	56.17	-2.47
3	*2422.00	111.9 PK			1.22 V	202	114.22	-2.32
4	*2422.00	100.8 AV			1.22 V	202	103.12	-2.32
5	4844.00	63.5 PK	74.0	-10.5	1.07 V	34	57.72	5.78
6	4844.00	41.4 AV	54.0	-12.6	1.07 V	34	35.62	5.78
7	7266.00	60.6 PK	74.0	-13.4	1.00 V	360	47.40	13.20
8	7266.00	46.3 AV	54.0	-7.7	1.00 V	360	33.10	13.20

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) – Pre-Amplifier 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	54.3 PK	74.0	-19.7	1.02 H	173	56.77	-2.47
2	2390.00	40.3 AV	54.0	-13.7	1.02 H	173	42.77	-2.47
3	*2437.00	102.4 PK			1.02 H	173	104.65	-2.25
4	*2437.00	91.5 AV			1.02 H	173	93.75	-2.25
5	2483.50	55.1 PK	74.0	-18.9	1.02 H	173	57.13	-2.03
6	2483.50	38.2 AV	54.0	-15.8	1.02 H	173	40.23	-2.03
7	4874.00	64.5 PK	74.0	-9.5	1.74 H	334	58.60	5.90
8	4874.00	42.8 AV	54.0	-11.2	1.74 H	334	36.90	5.90
9	7311.00	58.6 PK	74.0	-15.4	1.16 H	105	45.43	13.17
10	7311.00	47.1 AV	54.0	-6.9	1.16 H	105	33.93	13.17
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	2390.00	69.1 PK	74.0	-4.9	1.22 V	208	71.57	-2.47
2	2390.00	53.5 AV	54.0	-0.5	1.22 V	208	55.97	-2.47
3	*2437.00	116.7 PK			1.22 V	208	118.95	-2.25
4	*2437.00	105.4 AV			1.22 V	208	107.65	-2.25
5	2483.50	70.3 PK	74.0	-3.7	1.22 V	208	72.33	-2.03
6	2483.50	51.9 AV	54.0	-2.1	1.22 V	208	53.93	-2.03
7	4874.00	65.6 PK	74.0	-8.4	1.04 V	9	59.70	5.90
8	4874.00	44.0 AV	54.0	-10.0	1.04 V	9	38.10	5.90
9	7311.00	61.6 PK	74.0	-12.4	1.00 V	360	48.43	13.17
10	7311.00	49.3 AV	54.0	-4.7	1.00 V	360	36.13	13.17

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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 9	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 25GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	102.4 PK			1.01 H	151	104.58	-2.18
2	*2452.00	91.8 AV			1.01 H	151	93.98	-2.18
3	2483.50	56.4 PK	74.0	-17.6	1.00 H	152	58.43	-2.03
4	2483.50	39.1 AV	54.0	-14.9	1.00 H	152	41.13	-2.03
5	4904.00	60.8 PK	74.0	-13.2	1.75 H	299	54.78	6.02
6	4904.00	40.4 AV	54.0	-13.6	1.75 H	299	34.38	6.02
7	7356.00	55.3 PK	74.0	-18.7	1.12 H	90	42.12	13.18
8	7356.00	43.9 AV	54.0	-10.1	1.12 H	90	30.72	13.18
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	112.5 PK			1.23 V	204	114.68	-2.18
2	*2452.00	101.5 AV			1.23 V	204	103.68	-2.18
3	2483.50	67.9 PK	74.0	-6.1	1.23 V	204	69.93	-2.03
4	2483.50	53.5 AV	54.0	-0.5	1.23 V	204	55.53	-2.03
5	4904.00	64.3 PK	74.0	-9.7	1.11 V	20	58.28	6.02
6	4904.00	42.4 AV	54.0	-11.6	1.11 V	20	36.38	6.02
7	7356.00	60.3 PK	74.0	-13.7	1.00 V	360	47.12	13.18
8	7356.00	48.4 AV	54.0	-5.6	1.00 V	360	35.22	13.18

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) – Pre-Amplifier 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
SPECTRUM ANALYZER R&S	FSV 40	100964	July 15, 2013	July 14, 2014

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 : June 20, 2014

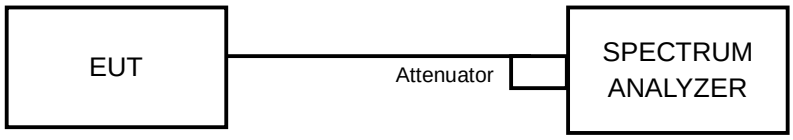
4.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 100kHz.
2. Set the video bandwidth (VBW) ≥ 3 x 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	8.57	0.5	PASS
6	2437	8.12	0.5	PASS
11	2462	8.11	0.5	PASS

802.11g

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
1	2412	16.44	0.5	PASS
6	2437	16.46	0.5	PASS
11	2462	16.48	0.5	PASS

802.11n (HT20)

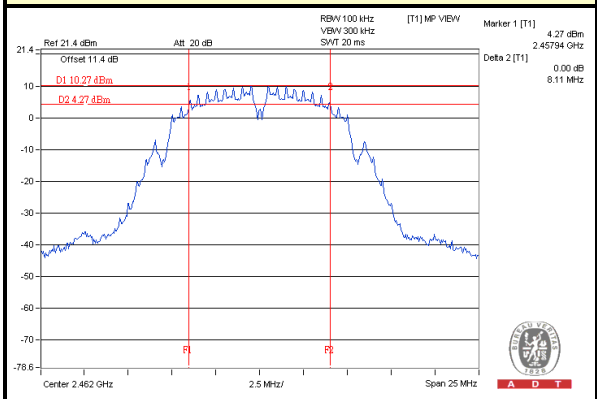
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
1	2412	17.64	17.67	0.5	PASS
6	2437	17.64	17.66	0.5	PASS
11	2462	17.62	17.68	0.5	PASS

802.11n (HT40)

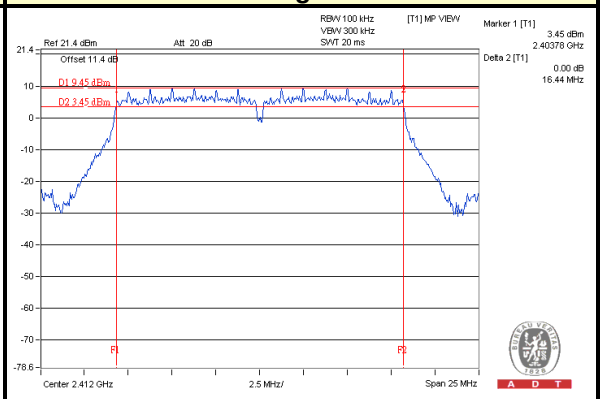
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
3	2422	35.49	35.54	0.5	PASS
6	2437	35.73	35.23	0.5	PASS
9	2452	35.51	36.22	0.5	PASS

SPECTRUM PLOT OF WORST VALUE

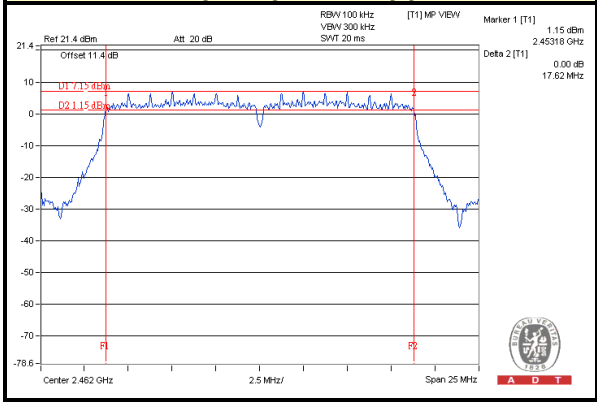
802.11b / CH11



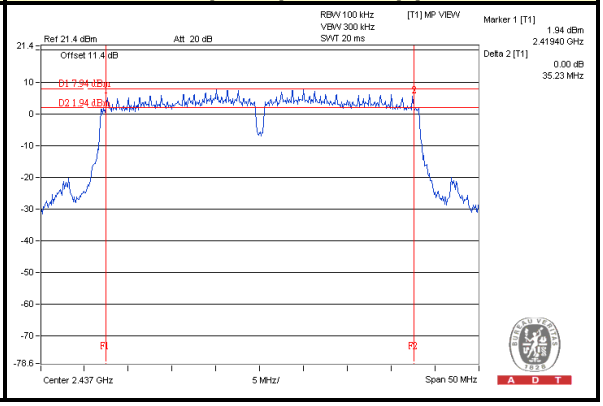
802.11g / CH1



802.11n (HT20) / Chain (0) : CH11



802.11n (HT40) / Chain (1) : CH6



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 bands: 1 Watt (30dBm)

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

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 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 ≥ 5.

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

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power meter Anritsu	ML2495A	1014008	Apr. 30, 2014	Apr. 29, 2015
Power sensor Anritsu	MA2411B	0917122	Apr. 30, 2014	Apr. 29, 2015

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 : June 20, 2014

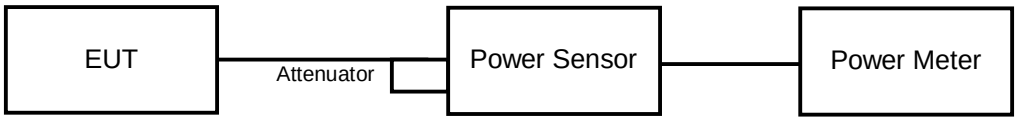
4.4.3 TEST PROCEDURES

The average power sensor was used on the output port of the EUT. A power meter was used to read the response of the average 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)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	47.973	16.81	30	PASS
6	2437	67.764	18.31	30	PASS
11	2462	59.02	17.71	30	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	106.414	20.27	30	PASS
6	2437	168.655	22.27	30	PASS
11	2462	98.175	19.92	30	PASS

802.11n (HT20)

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	17.04	18.41	119.925	20.79	30	PASS
6	2437	22.14	23.03	364.591	25.62	30	PASS
11	2462	17.66	19.01	137.961	21.40	30	PASS

802.11n (HT40)

CHANNEL	FREQUENCY (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	12.41	15.76	55.088	17.41	30	PASS
6	2437	18.07	20.64	179.999	22.55	30	PASS
9	2452	14.16	16.69	72.728	18.62	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
SPECTRUM ANALYZER R&S	FSV 40	100964	July 15, 2013	July 14, 2014

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 : June 20, 2014

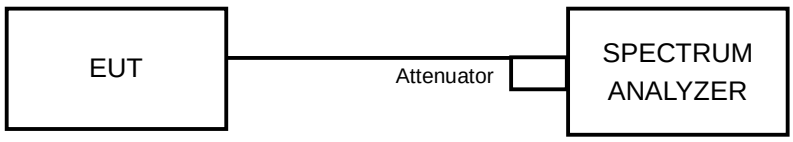
4.5.3 TEST PROCEDURE

1. Set the RBW = 10 kHz, VBW =30 kHz, Detector = power averaging (RMS).
2. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW
3. Sweep time = auto couple,
4. Employ trace averaging (RMS) mode over a minimum of 100 traces.
5. 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)	LIMIT (dBm)	PASS /FAIL
1	2412	-12.95	8	PASS
6	2437	-9.15	8	PASS
11	2462	-9.38	8	PASS

802.11g

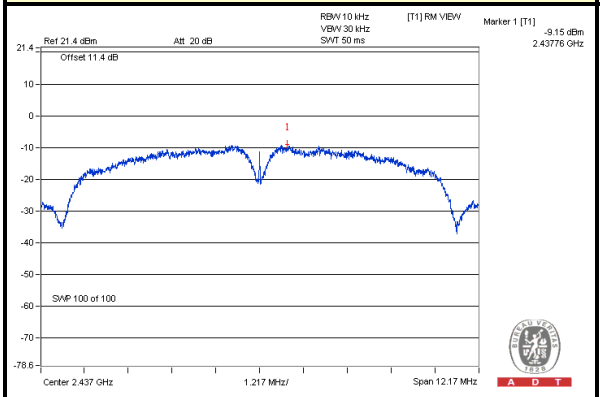
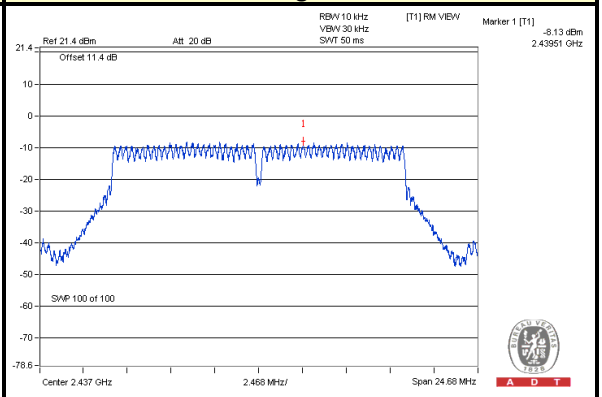
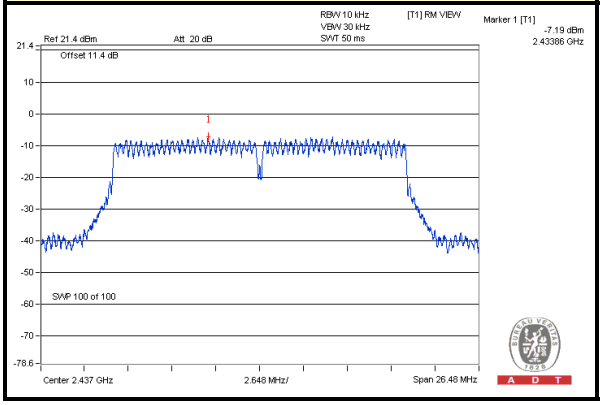
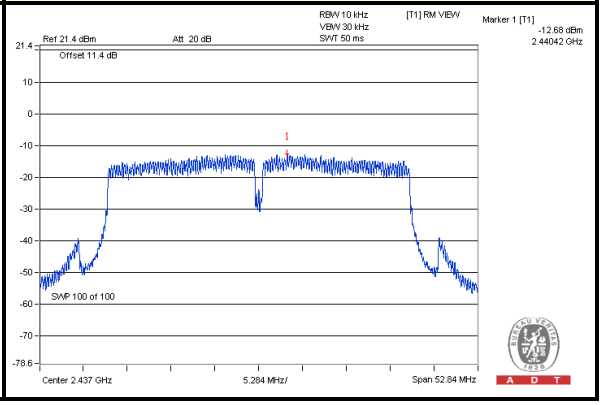
CHANNEL	FREQUENCY (MHz)	PSD (dBm)	LIMIT (dBm)	PASS /FAIL
1	2412	-10.06	8	PASS
6	2437	-8.13	8	PASS
11	2462	-10.61	8	PASS

802.11n (HT20)

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	Total PSD (dBm)	Limit (dBm)	PASS /FAIL
0	1	2412	-13.60	3.01	-10.59	8	PASS
	6	2437	-8.01	3.01	-5.00	8	PASS
	11	2462	-12.64	3.01	-9.63	8	PASS
1	1	2412	-13.14	3.01	-10.13	8	PASS
	6	2437	-7.19	3.01	-4.18	8	PASS
	11	2462	-11.11	3.01	-8.10	8	PASS

802.11n (HT40)

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm)	10 log (N=2) dB	TOTAL PSD (dBm)	LIMIT (dBm)	PASS /FAIL
0	3	2422	-20.96	3.01	-17.76	8	PASS
	6	2437	-15.42	3.01	-12.22	8	PASS
	9	2452	-19.05	3.01	-15.85	8	PASS
1	3	2422	-18.32	3.01	-15.12	8	PASS
	6	2437	-12.68	3.01	-9.48	8	PASS
	9	2452	-16.24	3.01	-13.04	8	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11b / CH6	**802.11g / CH6**
	
802.11n (HT20) / Chain(1) : CH6	**802.11n (HT40) / Chain(1) : CH6**
	

4.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

Below 30dB 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
SPECTRUM ANALYZER R&S	FSV 40	100964	July 15, 2013	July 14, 2014

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 : June 20, 2014

4.6.3 TEST PROCEDURE

Measurement Procedure - Reference Level

1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 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.

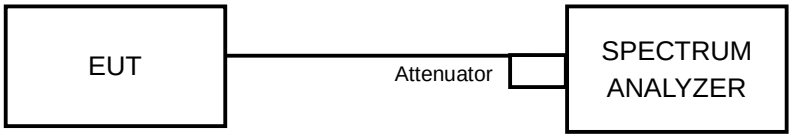
Measurement Procedure –Unwanted Emission Level

1. Set RBW = 100 kHz.
2. Set VBW ≥ 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

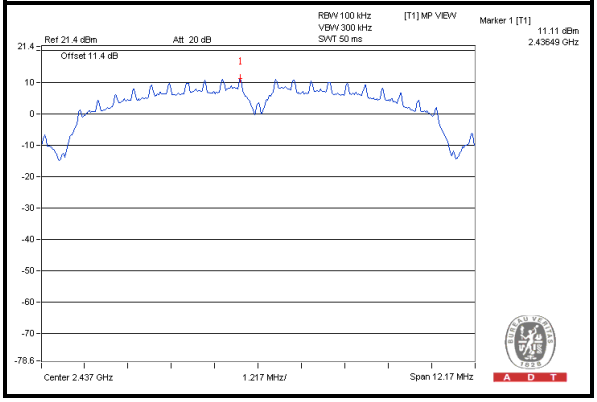
Same as Item 4.3.6

4.6.7 TEST RESULTS

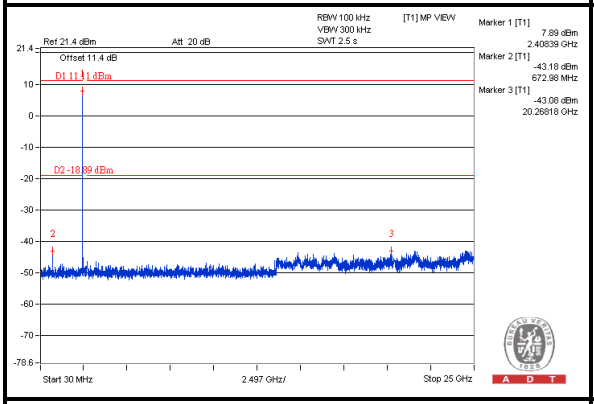
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 30dB offset below D1. It shows compliance with the requirement.

802.11b

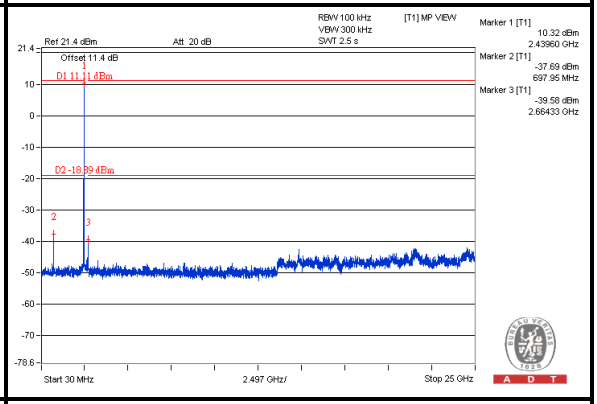
Maximum REF



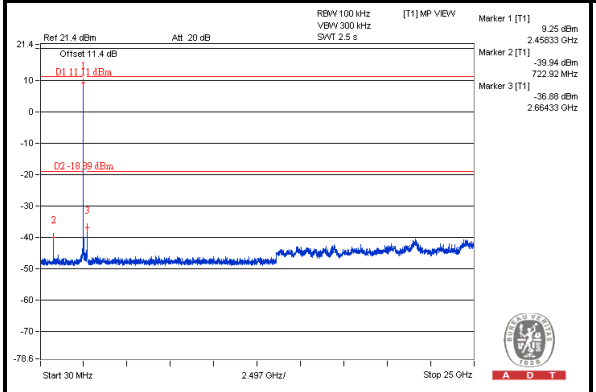
CH 1



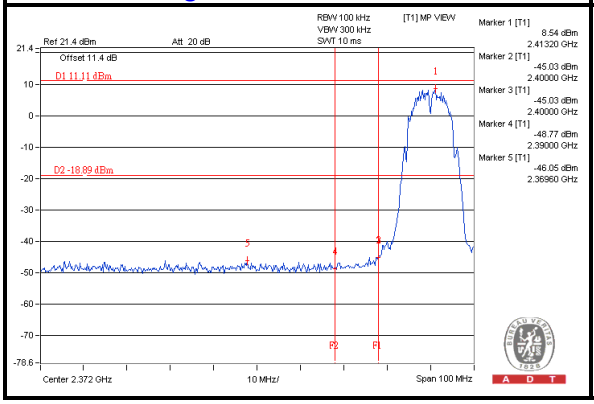
CH 6



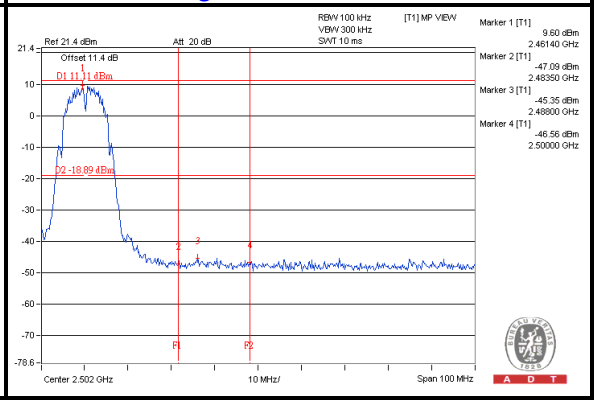
CH 11



CH 1 Band edge

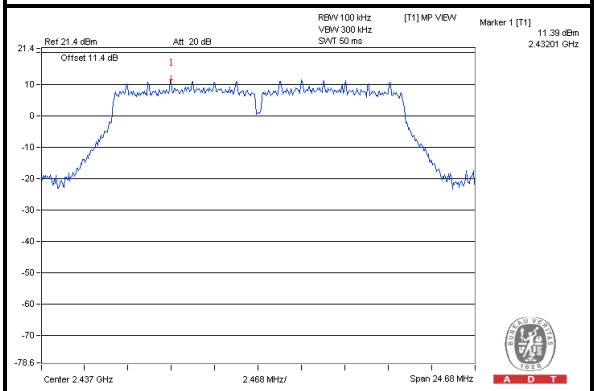


CH 11 Band edge

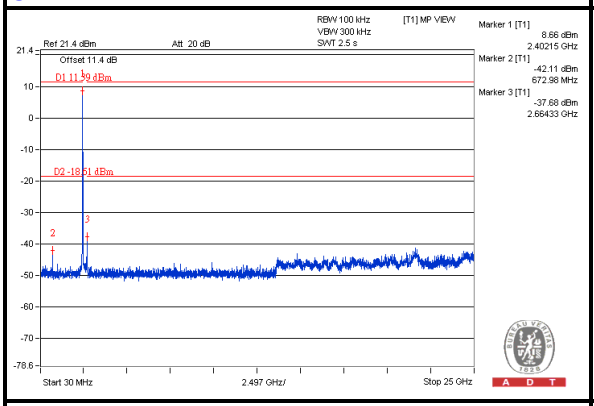


802.11g

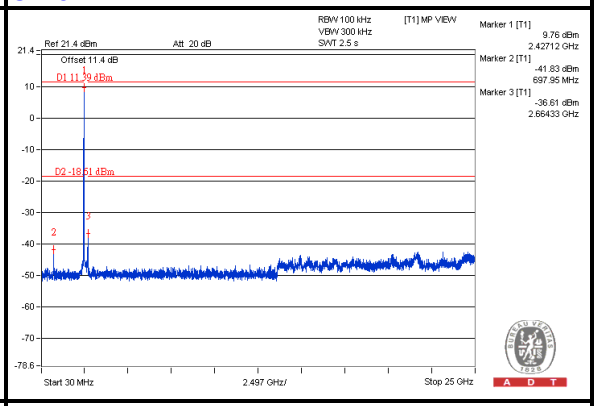
Maximum REF



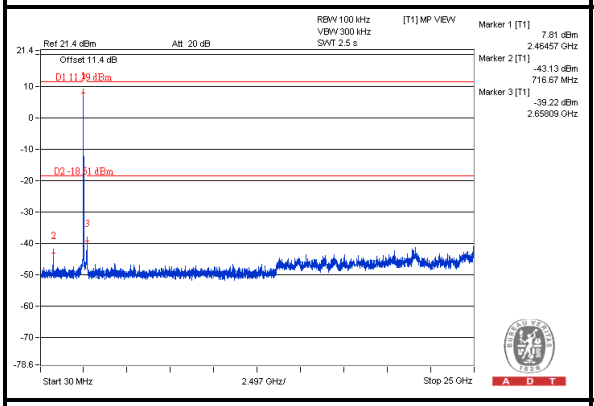
CH 1



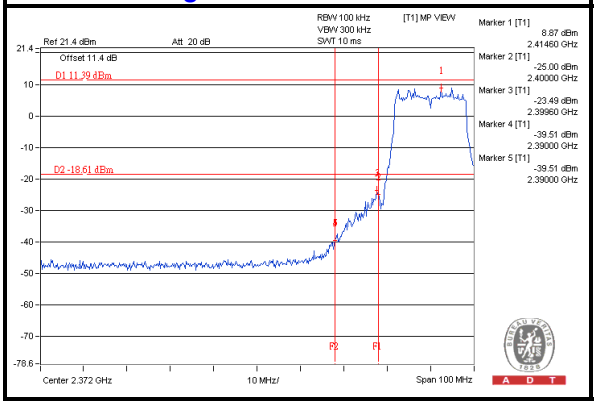
CH 6



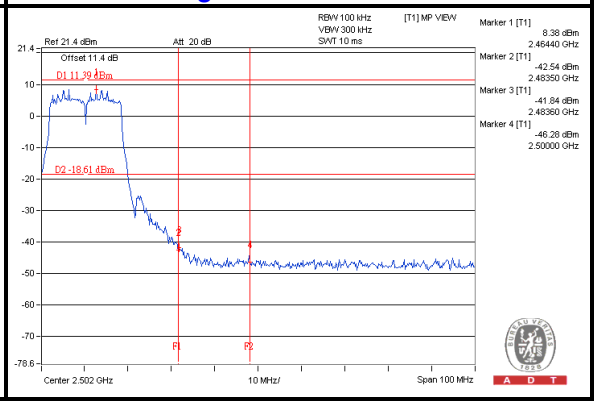
CH 11



CH 1 Band edge

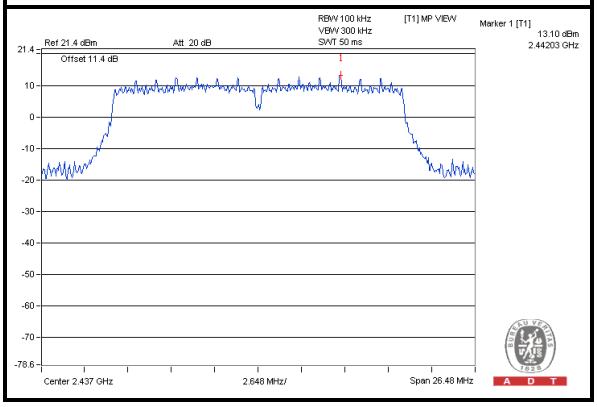


CH 11 Band edge



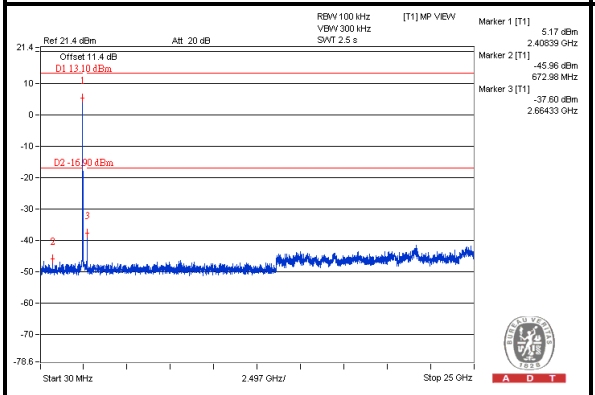
802.11n (HT20)

Maximum REF

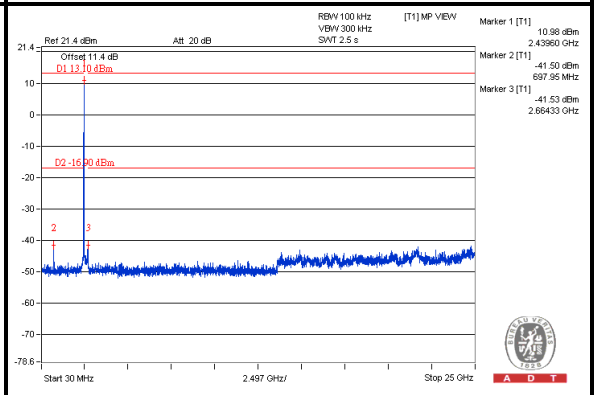


Chain(0)

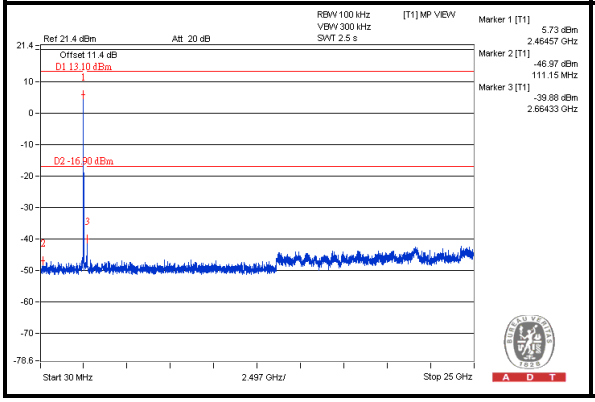
CH 1



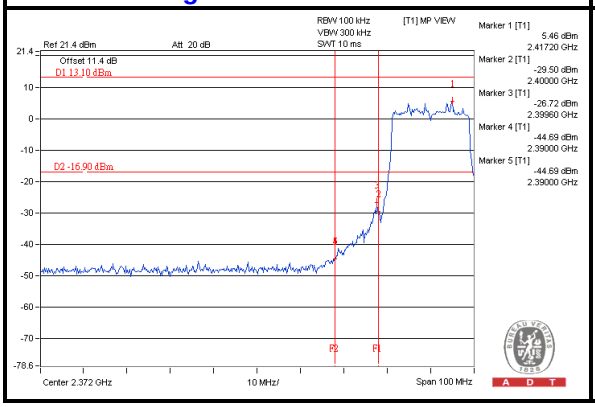
CH 6



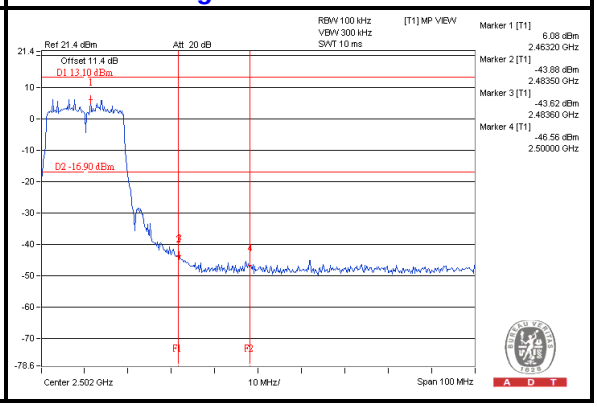
CH 11



CH 1 Band edge

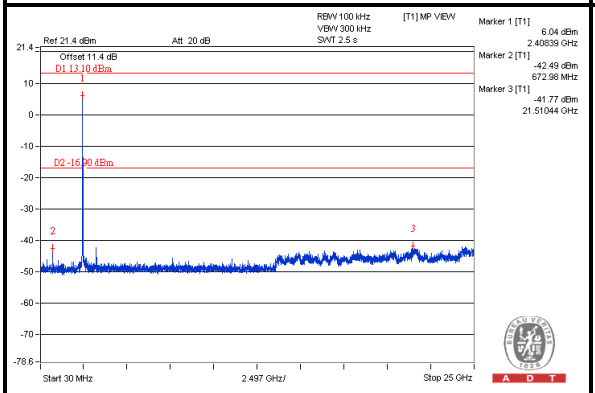


CH 11 Band edge

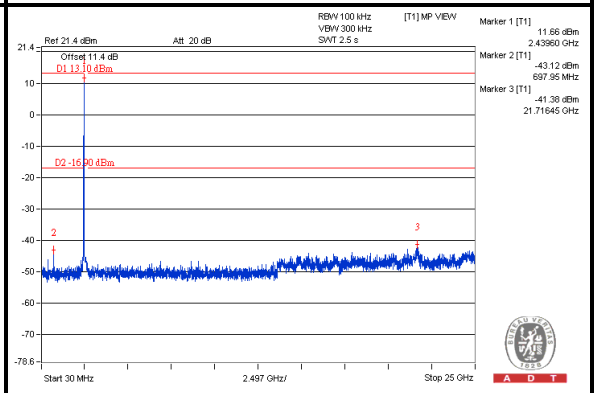


Chain(1)

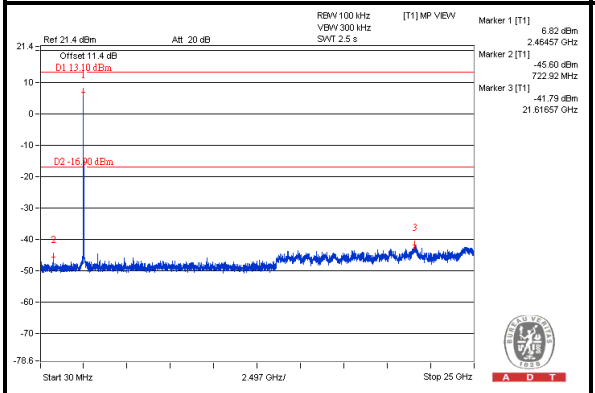
CH 1



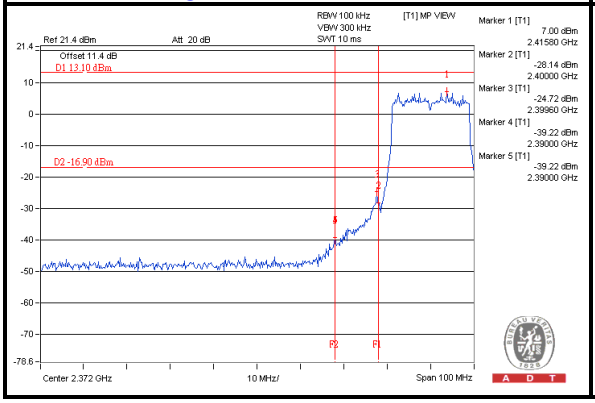
CH 6



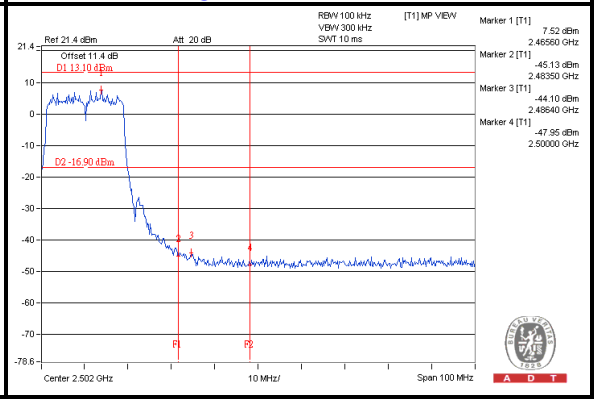
CH 11



CH 1 Band edge

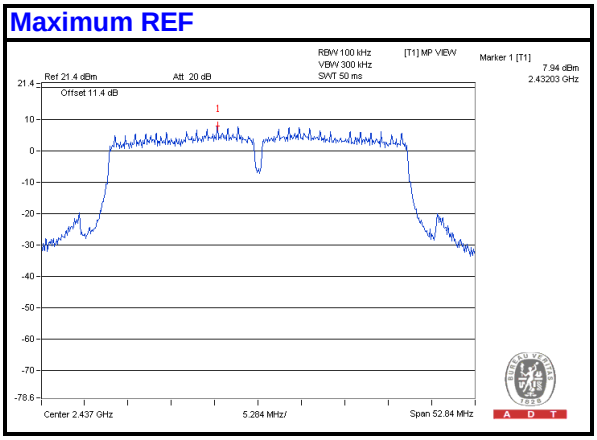


CH 11 Band edge



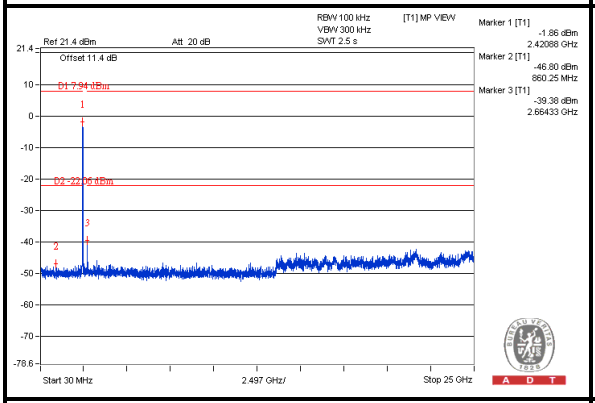
802.11n (HT40)

Maximum REF

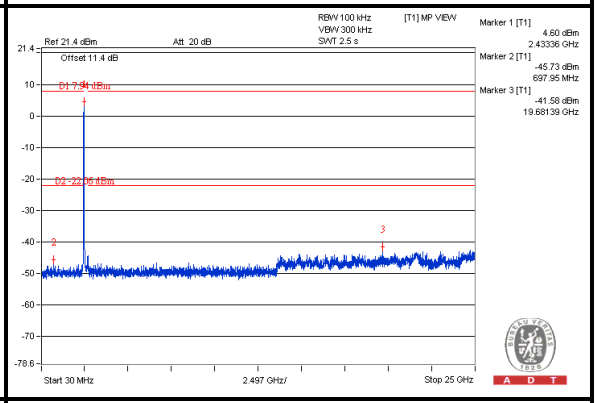


Chain(0)

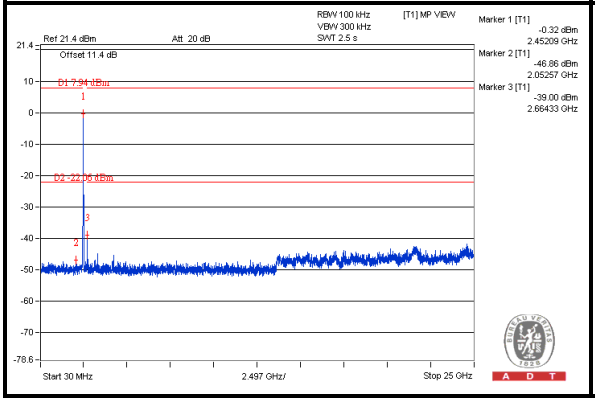
CH 3

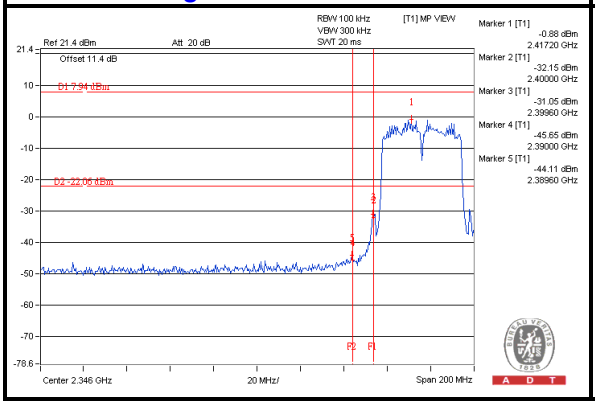
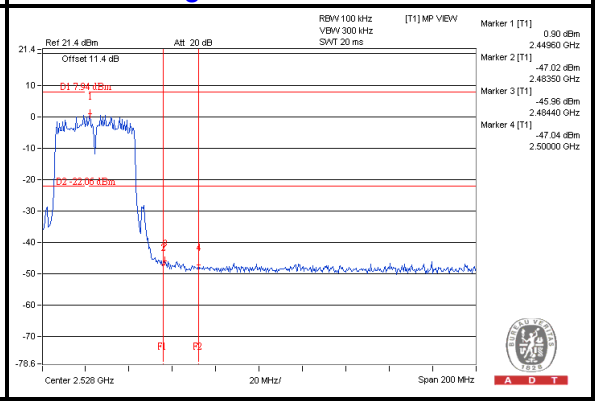


CH 6



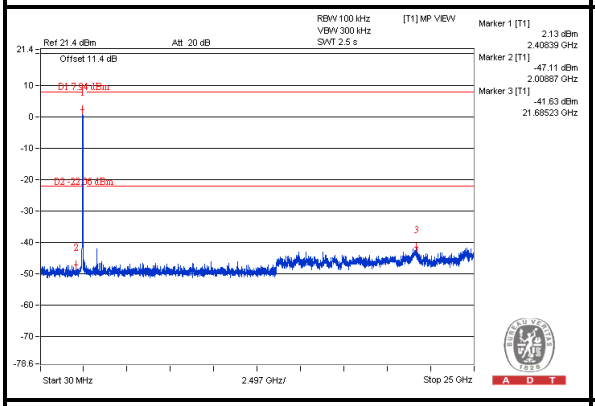
CH 9



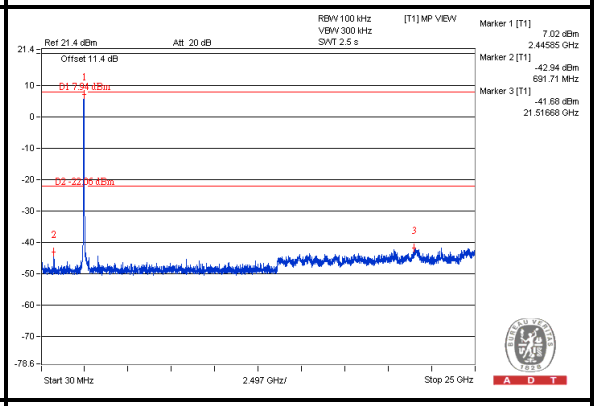
CH 3 Band edge	CH 9 Band edge
	

Chain(1)

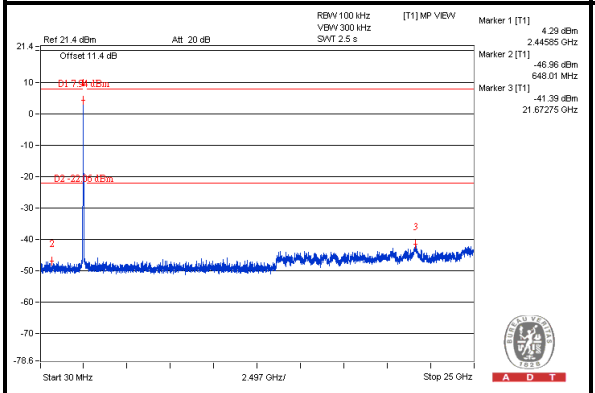
CH 3



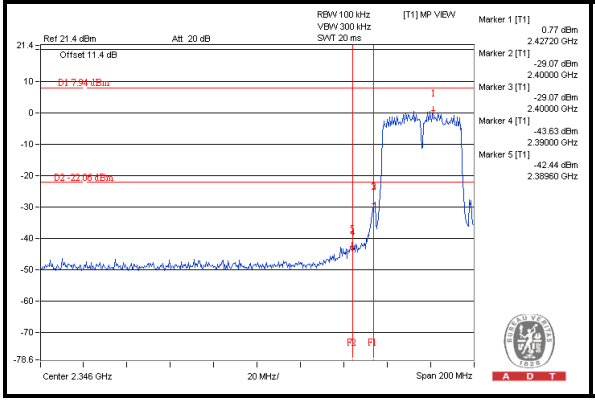
CH 6



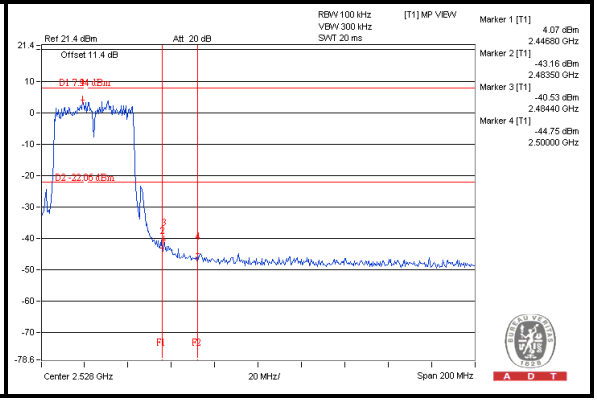
CH 9



CH 3 Band edge



CH 9 Band edge



5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

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

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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

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

--- END ---