FCC TEST REPORT (15.247)

REPORT NO.:	RF120921C21
MODEL NO.:	WM-MB92M
FCC ID:	VZ9120002
RECEIVED:	Sep. 21, 2012
TESTED:	Nov. 29 to Dec. 27, 2012
ISSUED:	Jan. 24, 2014

APPLICANT:	4IPNET, INC.
ADDRESS:	3F-3, No. 369, Fusing N. Rd., Taipei 105, Taiwan,R.O.C.

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
RF120921C21	Original release	Jan. 24, 2014

1. CERTIFICATION

PRODUCT:	802.11a/b/g/n Wireless Module
BRAND NAME:	4ipnet
MODEL NO.:	WM-MB92M
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	4IPNET, INC.
TESTED:	Nov. 29 to Dec. 27, 2012
STANDARDS:	FCC Part 15, Subpart C (Section 15.247) ANSI C63.10-2009

The above equipment (Model: WM-MB92M) 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:** *Jan. 24, 2014*
(Midoli Peng, Specialist)

APPROVED BY : _____ , **DATE:** *Jan. 24, 2014*
(May Chen, Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

For 2.4GHz, 2400 ~ 2483.5MHz Band

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -18.13dB at 0.15391MHz
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.5dB at 2483.5MHz & 2390.0MHz
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 Re-SMA(M) or MMCX plug not a standard connector.

For 5GHz, 5725~5850MHz Band

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.247)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -19.65dB at 0.76719MHz
15.247(d) 15.209	Radiated Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.9dB at 166.75MHz.
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 Re-SMA(M) or MMCX plug not a standard connector.

NOTE: The EUT was operating in 2400 ~ 2483.5MHz, 5.15~5.25GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 2400 ~ 2483.5MHz and 5.725~5.850GHz. For the 5.15~5.25GHz 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	2.98 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

PRODUCT	802.11a/b/g/n Wireless Module
MODEL NO.	WM-MB92M
POWER SUPPLY	DC 3.3V from host equipment
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps
OPERATING FREQUENCY	**For 15.407** 802.11a: 5.18 ~ 5.24GHz
	For 15.247 802.11b & 802.11g: 2.412 ~ 2.462GHz 802.11a: 5.745 ~ 5.825GHz
NUMBER OF CHANNEL	**For 15.407** 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
	For 15.247(2.4GHz) 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40) **For 15.247(5GHz)** 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
MAXIMUM OUTPUT POWER	**For 15.407** 802.11a: 44.771mW 802.11n (HT20): 43.767mW 802.11n (HT40): 48.561mW **For 15.247 (2.4GHz)** 802.11b: 186.209mW 802.11g: 446.684mW 802.11n (HT20): 751.724mW 802.11n (HT40): 409.322mW **For 15.247 (5GHz)** 802.11a: 288.403mW 802.11n (HT20): 538.450mW 802.11n (HT40): 566.070mW

ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	NA

NOTE:

1. There are 2.4GHz and 5GHz WLAN technology used for the EUT.

2. The EUT is 2 * 2 MIMO without 802.11n beam forming function.

MODULATION MODE	Tx/Rx FUNCTION
802.11a	1Tx/1Rx
802.11b	1Tx/1Rx
802.11g	1Tx/1Rx
802.11n (HT20)	2Tx/2Rx
802.11n (HT40)	2Tx/2Rx

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

No.	Brand	Part No.	Antenna Type	Gain (dBi)	Connector Type
1	UNI LINK	MCS-304-01	Dipole	2.4GHz: 2.7 5GHz :4	Re-SMA(M)
2	UNI LINK	UT-700-04	PIFA	2.4GHz: 3.7 5GHz :4.5	MMCX plug
Note: The dipole antenna has two different colors (black and white) and the dipole antenna (white) was chosen for final test.					

4. 2.4GHz and 5GHz technology cannot transmit at same time.

5. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.

6. 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		

Operated in 5725 ~ 5850MHz band:

5 channels are provided for 802.11a, 802.11n (HT20):

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

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY
151	5755 MHz
159	5795 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO					DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	OB	
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 **Z-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)
For 2.4 GHz 802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT20)	149 to 165	149	OFDM	BPSK	6.5

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	MODULATIO N TYPE	DATA RATE (Mbps)
For 2.4 GHz 802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT20)	149 to 165	149	OFDM	BPSK	6.5

RADIATED EMISSION TEST (ABOVE 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5

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
For 2.4 GHz 802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5

CONDUCTED OUT-BAND EMISSION MEASUREMENT:

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6
For 2.4 GHz 802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5
For 2.4 GHz 802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5
802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6
For 5 GHz 802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
For 5 GHz 802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER(SYSTEM)	TESTED BY
PLC	20deg. C, 70%RH	120Vac, 60Hz	Timmy Hu
RE<1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
RE≥1G	27deg. C, 69%RH	120Vac, 60Hz	Robert Cheng
APCM	25deg. C, 60%RH	120Vac, 60Hz	James Chan
OB	25deg. C, 60%RH	120Vac, 60Hz	James Chan

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 v01 r02
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

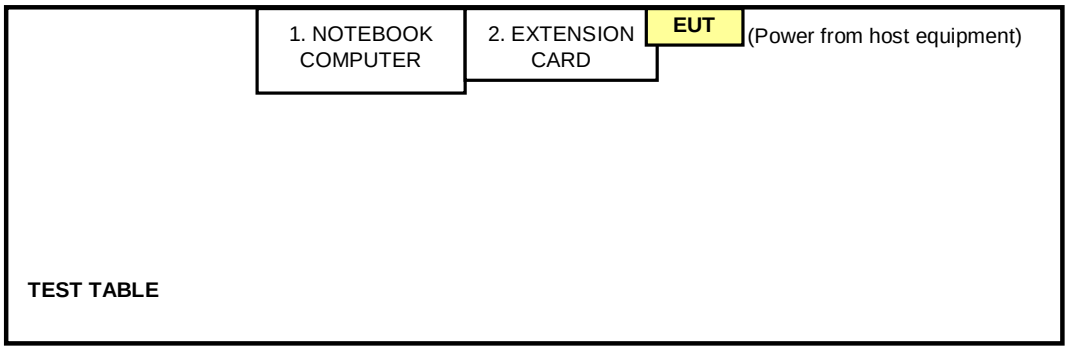
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	Fujitsu	FMVLT70G	NA	FCC DoC
2	EXTENSION CARD	4ipnet	NA	NA	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 (FOR 2.4GHz, 2400 ~ 2483.5MHz Band)

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
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: Dec. 20, 2012

4.1.3 TEST PROCEDURES

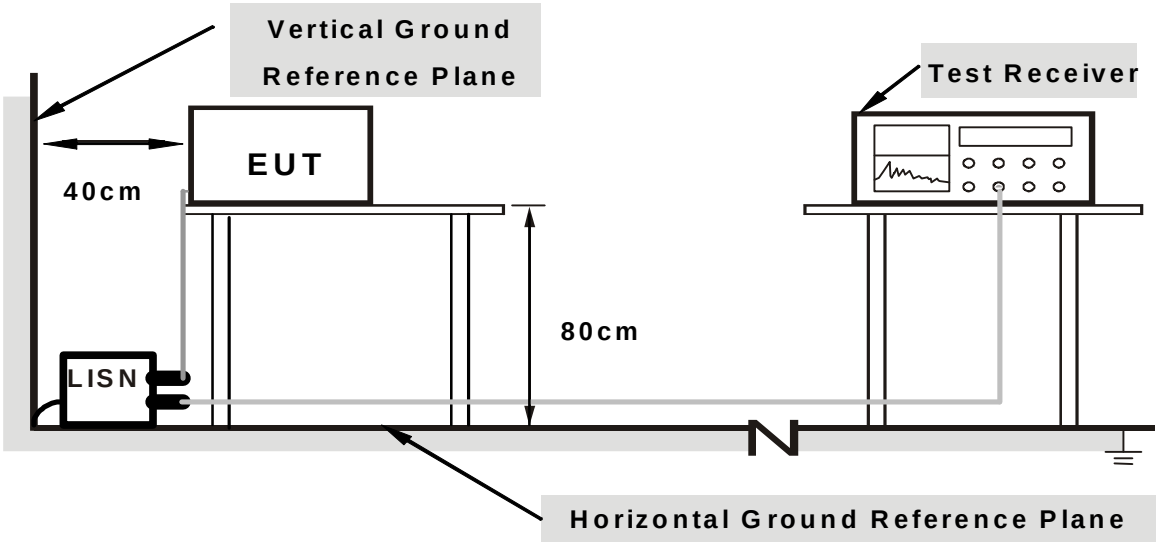
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN.
b. The two LISNs provide 50 ohm/ 50uH of coupling 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 “Art 0.9 Build#7” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

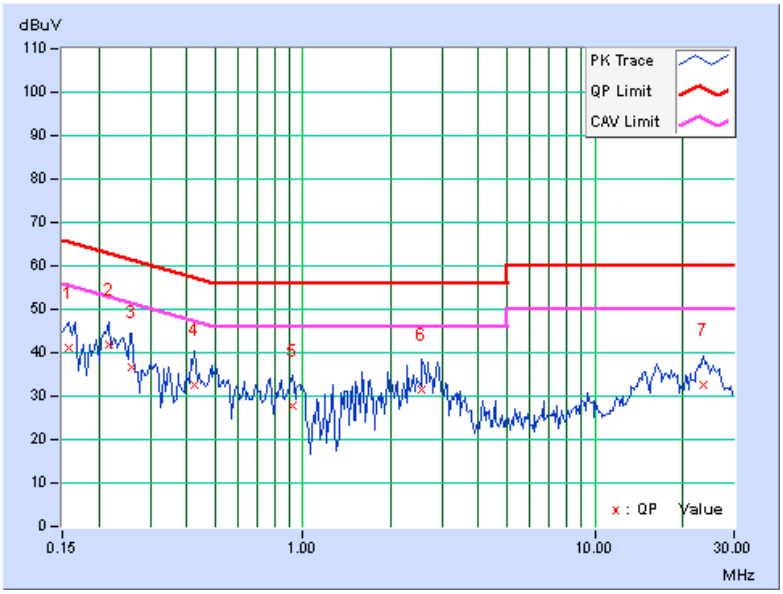
4.1.7 TEST RESULTS

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	0.11	40.97	33.59	41.08	33.70	65.58	55.58	-24.50	-21.88
2	0.21641	0.12	41.79	31.20	41.91	31.32	62.96	52.96	-21.04	-21.63
3	0.25938	0.13	36.57	28.37	36.70	28.50	61.45	51.45	-24.75	-22.95
4	0.42734	0.16	32.38	22.34	32.54	22.50	57.30	47.30	-24.76	-24.80
5	0.92734	0.19	27.51	20.70	27.70	20.89	56.00	46.00	-28.30	-25.11
6	2.55859	0.24	31.29	25.72	31.53	25.96	56.00	46.00	-24.47	-20.04
7	23.42188	1.02	31.63	26.18	32.65	27.20	60.00	50.00	-27.35	-22.80

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.

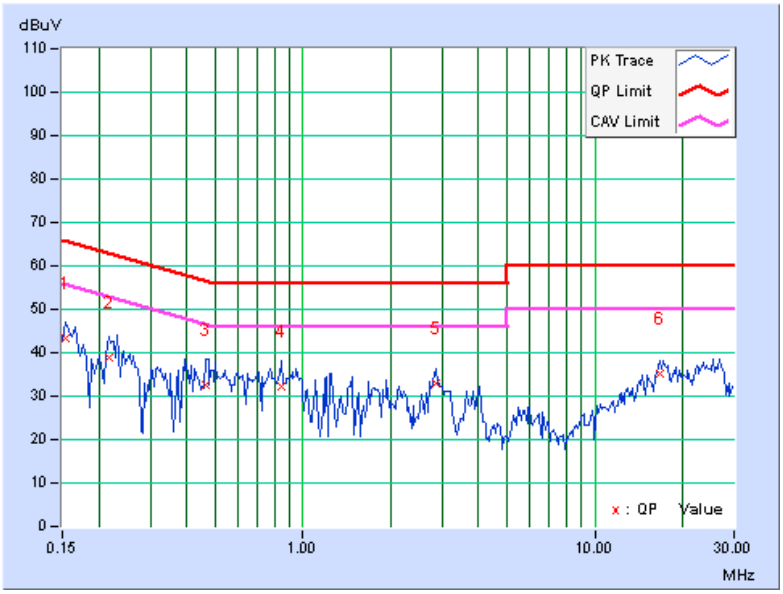


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	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	**0.15391**	**0.09**	**43.21**	**37.57**	**43.30**	**37.66**	**65.79**	**55.79**	**-22.49**	**-18.13**
2	0.21641	0.10	38.83	26.88	38.93	26.98	62.96	52.96	-24.02	-25.97
3	0.46250	0.15	32.36	21.74	32.51	21.89	56.65	46.65	-24.14	-24.76
4	0.84141	0.16	31.96	25.50	32.12	25.66	56.00	46.00	-23.88	-20.34
5	2.85547	0.22	32.62	26.89	32.84	27.11	56.00	46.00	-23.16	-18.89
6	16.74609	0.55	34.67	29.53	35.22	30.08	60.00	50.00	-24.78	-19.92

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-1000VH2B	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. 27, 2012	Nov. 26, 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. 29 to Dec. 19, 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.

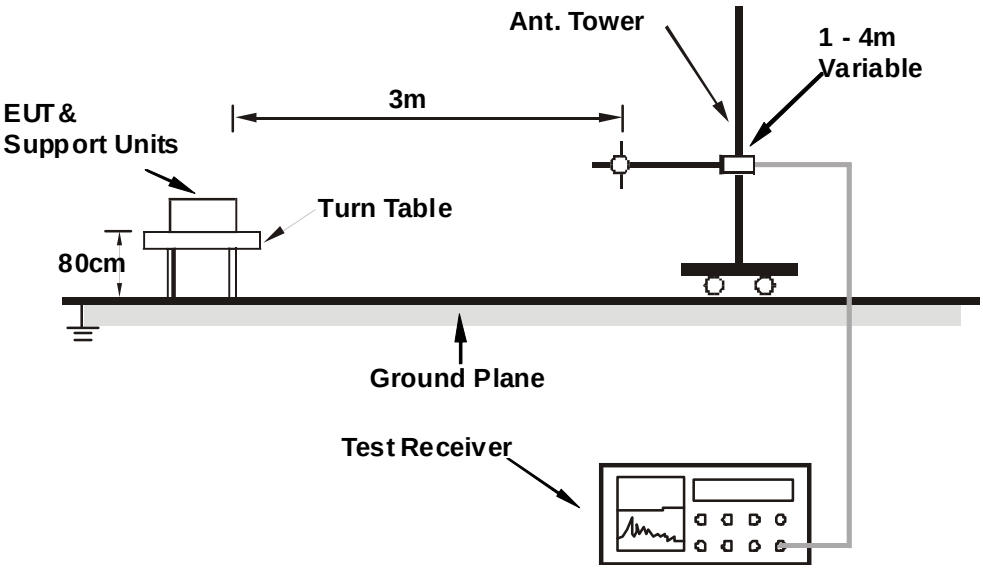
NOTE:

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(MODE 1, PIFA ANTENNA)

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	133.39	36.6 QP	43.5	-7.0	2.00 H	0	23.00	13.55
2	166.67	42.4 QP	43.5	-1.1	1.71 H	343	28.51	13.88
3	266.61	40.7 QP	46.0	-5.3	1.00 H	174	26.72	13.97
4	432.87	34.7 QP	46.0	-11.3	2.00 H	202	16.19	18.50
5	566.81	37.9 QP	46.0	-8.1	1.50 H	297	16.34	21.53
6	833.50	36.0 QP	46.0	-10.0	2.00 H	283	9.82	26.14
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	165.95	38.6 QP	43.5	-4.9	2.00 V	254	24.66	13.93
2	200.05	35.3 QP	43.5	-8.2	1.50 V	289	24.29	11.04
3	298.94	32.7 QP	46.0	-13.4	1.50 V	282	17.38	15.27
4	500.02	34.3 QP	46.0	-11.8	1.00 V	0	14.15	20.10
5	566.93	33.0 QP	46.0	-13.0	1.00 V	360	11.50	21.54
6	657.76	34.8 QP	46.0	-11.2	2.00 V	241	11.72	23.07

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) 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	57.9 PK	74.0	-16.1	1.00 H	91	25.92	31.98
2	2390.00	46.3 AV	54.0	-7.7	1.00 H	91	14.32	31.98
3	*2412.00	101.4 PK			1.00 H	91	69.35	32.05
4	*2412.00	98.8 AV			1.00 H	91	66.75	32.05
5	4824.00	52.7 PK	74.0	-21.3	1.92 H	10	13.12	39.58
6	4824.00	45.7 AV	54.0	-8.3	1.92 H	10	6.12	39.58
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	59.9 PK	74.0	-14.1	1.03 V	112	27.92	31.98
2	2390.00	50.1 AV	54.0	-3.9	1.03 V	112	18.12	31.98
3	*2412.00	103.2 PK			1.04 V	123	71.15	32.05
4	*2412.00	100.6 AV			1.04 V	123	68.55	32.05
5	4824.00	53.1 PK	74.0	-20.9	1.10 V	129	13.52	39.58
6	4824.00	45.9 AV	54.0	-8.1	1.10 V	129	6.32	39.58

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	104.1 PK			1.00 H	90	71.98	32.12
2	*2437.00	102.2 AV			1.00 H	90	70.08	32.12
3	4874.00	52.7 PK	74.0	-21.3	1.78 H	5	13.00	39.70
4	4874.00	45.5 AV	54.0	-8.5	1.78 H	5	5.80	39.70
5	7311.00	60.2 PK	74.0	-13.8	1.31 H	266	12.61	47.59
6	7311.00	52.9 AV	54.0	-1.1	1.31 H	266	5.31	47.59
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	107.0 PK			1.05 V	125	74.88	32.12
2	*2437.00	104.6 AV			1.05 V	125	72.48	32.12
3	4874.00	54.3 PK	74.0	-19.7	1.00 V	263	14.60	39.70
4	4874.00	49.3 AV	54.0	-4.7	1.00 V	263	9.60	39.70
5	7311.00	59.6 PK	74.0	-14.4	1.35 V	78	12.01	47.59
6	7311.00	53.2 AV	54.0	-0.8	1.35 V	78	5.61	47.59

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	101.8 PK			1.00 H	93	69.62	32.18
2	*2462.00	99.3 AV			1.00 H	93	67.12	32.18
3	2483.50	59.3 PK	74.0	-14.7	1.00 H	93	27.06	32.24
4	2483.50	50.6 AV	54.0	-3.4	1.00 H	93	18.36	32.24
5	4924.00	52.5 PK	74.0	-21.5	1.86 H	0	12.66	39.84
6	4924.00	45.3 AV	54.0	-8.7	1.86 H	0	5.46	39.84
7	7386.00	56.3 PK	74.0	-17.7	1.31 H	266	8.78	47.52
8	7386.00	49.9 AV	54.0	-4.1	1.31 H	266	2.38	47.52
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	103.8 PK			1.05 V	123	71.62	32.18
2	*2462.00	101.3 AV			1.05 V	123	69.12	32.18
3	2483.50	60.1 PK	74.0	-13.9	1.05 V	123	27.86	32.24
4	2483.50	52.6 AV	54.0	-1.4	1.05 V	123	20.36	32.24
5	4924.00	52.2 PK	74.0	-21.8	1.44 V	270	12.36	39.84
6	4924.00	45.8 AV	54.0	-8.2	1.44 V	270	5.96	39.84
7	7386.00	57.1 PK	74.0	-16.9	1.37 V	80	9.58	47.52
8	7386.00	50.5 AV	54.0	-3.5	1.37 V	80	2.98	47.52

REMARKS:

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

802.11g

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	59.6 PK	74.0	-14.4	1.00 H	90	27.62	31.98
2	2390.00	47.5 AV	54.0	-6.5	1.00 H	90	15.52	31.98
3	*2412.00	102.3 PK			1.00 H	90	70.25	32.05
4	*2412.00	92.3 AV			1.00 H	90	60.25	32.05
5	4824.00	48.1 PK	74.0	-25.9	1.51 H	12	8.52	39.58
6	4824.00	36.5 AV	54.0	-17.5	1.51 H	12	-3.08	39.58
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	63.8 PK	74.0	-10.2	1.06 V	121	31.82	31.98
2	2390.00	48.9 AV	54.0	-5.1	1.06 V	121	16.92	31.98
3	*2412.00	104.9 PK			1.06 V	121	72.85	32.05
4	*2412.00	95.2 AV			1.06 V	121	63.15	32.05
5	4824.00	49.2 PK	74.0	-24.8	1.55 V	256	9.62	39.58
6	4824.00	36.3 AV	54.0	-17.7	1.55 V	256	-3.28	39.58

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	109.1 PK			1.00 H	92	76.98	32.12
2	*2437.00	99.8 AV			1.00 H	92	67.68	32.12
3	4874.00	48.3 PK	74.0	-25.7	1.48 H	15	8.60	39.70
4	4874.00	36.3 AV	54.0	-17.7	1.48 H	15	-3.40	39.70
5	7311.00	63.5 PK	74.0	-10.5	1.13 H	246	15.91	47.59
6	7311.00	50.4 AV	54.0	-3.6	1.13 H	246	2.81	47.59
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	112.3 PK			1.06 V	123	80.18	32.12
2	*2437.00	101.8 AV			1.06 V	123	69.68	32.12
3	4874.00	49.6 PK	74.0	-24.4	1.53 V	251	9.90	39.70
4	4874.00	36.5 AV	54.0	-17.5	1.53 V	251	-3.20	39.70
5	7311.00	64.2 PK	74.0	-9.8	1.37 V	78	16.61	47.59
6	7311.00	51.3 AV	54.0	-2.7	1.37 V	78	3.71	47.59

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	104.8 PK			1.02 H	91	72.62	32.18
2	*2462.00	94.5 AV			1.02 H	91	62.32	32.18
3	2483.50	64.6 PK	74.0	-9.4	1.02 H	91	32.36	32.24
4	2483.50	50.6 AV	54.0	-3.4	1.02 H	91	18.36	32.24
5	4924.00	48.5 PK	74.0	-25.5	1.45 H	13	8.66	39.84
6	4924.00	36.6 AV	54.0	-17.4	1.45 H	13	-3.24	39.84
7	7386.00	63.2 PK	74.0	-10.8	1.15 H	244	15.68	47.52
8	7386.00	48.5 AV	54.0	-5.5	1.15 H	244	0.98	47.52
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	105.5 PK			1.06 V	118	73.32	32.18
2	*2462.00	96.5 AV			1.06 V	118	64.32	32.18
3	2483.50	67.2 PK	74.0	-6.8	1.06 V	118	34.96	32.24
4	2483.50	51.5 AV	54.0	-2.5	1.06 V	118	19.26	32.24
5	4924.00	49.3 PK	74.0	-24.7	1.55 V	253	9.46	39.84
6	4924.00	36.1 AV	54.0	-17.9	1.55 V	253	-3.74	39.84
7	7386.00	63.8 PK	74.0	-10.2	1.35 V	83	16.28	47.52
8	7386.00	49.3 AV	54.0	-4.7	1.35 V	83	1.78	47.52

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) 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	60.1 PK	74.0	-13.9	1.12 H	113	28.12	31.98
2	2390.00	47.3 AV	54.0	-6.7	1.12 H	113	15.32	31.98
3	*2412.00	104.6 PK			1.22 H	113	72.55	32.05
4	*2412.00	94.3 AV			1.22 H	113	62.25	32.05
5	4824.00	48.9 PK	74.0	-25.1	1.00 H	155	9.32	39.58
6	4824.00	36.5 AV	54.0	-17.5	1.00 H	155	-3.08	39.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	62.9 PK	74.0	-11.1	1.09 V	87	30.92	31.98
2	2390.00	50.4 AV	54.0	-3.6	1.09 V	87	18.42	31.98
3	*2412.00	105.7 PK			1.09 V	87	73.65	32.05
4	*2412.00	96.3 AV			1.09 V	87	64.25	32.05
5	4824.00	52.1 PK	74.0	-21.9	1.06 V	20	12.52	39.58
6	4824.00	38.3 AV	54.0	-15.7	1.06 V	20	-1.28	39.58

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	112.6 PK			1.19 H	98	80.48	32.12
2	*2437.00	102.1 AV			1.19 H	98	69.98	32.12
3	4874.00	51.3 PK	74.0	-22.7	1.00 H	153	11.60	39.70
4	4874.00	38.6 AV	54.0	-15.4	1.00 H	153	-1.10	39.70
5	7311.00	65.3 PK	74.0	-8.7	1.31 H	260	17.71	47.59
6	7311.00	51.9 AV	54.0	-2.1	1.31 H	260	4.31	47.59
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	113.2 PK			1.09 V	88	81.08	32.12
2	*2437.00	103.1 AV			1.09 V	88	70.98	32.12
3	4874.00	53.1 PK	74.0	-20.9	1.05 V	20	13.40	39.70
4	4874.00	40.5 AV	54.0	-13.5	1.05 V	20	0.80	39.70
5	7311.00	62.8 PK	74.0	-11.2	1.67 V	22	15.21	47.59
6	7311.00	50.8 AV	54.0	-3.2	1.67 V	22	3.21	47.59

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	108.9 PK			1.20 H	109	76.72	32.18
2	*2462.00	98.5 AV			1.20 H	109	66.32	32.18
3	2483.50	67.1 PK	74.0	-6.9	1.20 H	109	34.86	32.24
4	2483.50	51.8 AV	54.0	-2.2	1.20 H	109	19.56	32.24
5	4924.00	49.1 PK	74.0	-24.9	1.00 H	151	9.26	39.84
6	4924.00	36.9 AV	54.0	-17.1	1.00 H	151	-2.94	39.84
7	7386.00	57.6 PK	74.0	-16.4	1.30 H	259	10.08	47.52
8	7386.00	45.9 AV	54.0	-8.1	1.30 H	259	-1.62	47.52
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	108.6 PK			1.09 V	92	76.42	32.18
2	*2462.00	99.9 AV			1.09 V	92	67.72	32.18
3	2483.50	69.2 PK	74.0	-4.8	1.05 V	125	36.96	32.24
4	2483.50	51.4 AV	54.0	-2.6	1.05 V	125	19.16	32.24
5	4924.00	52.2 PK	74.0	-21.8	1.03 V	18	12.36	39.84
6	4924.00	38.6 AV	54.0	-15.4	1.03 V	18	-1.24	39.84
7	7386.00	57.1 PK	74.0	-16.9	1.65 V	25	9.58	47.52
8	7386.00	44.7 AV	54.0	-9.3	1.65 V	25	-2.82	47.52

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	60.2 PK	74.0	-13.8	1.20 H	114	28.22	31.98
2	2390.00	47.5 AV	54.0	-6.5	1.20 H	114	15.52	31.98
3	*2422.00	98.8 PK			1.20 H	114	66.72	32.08
4	*2422.00	89.7 AV			1.20 H	114	57.62	32.08
5	4844.00	48.5 PK	74.0	-25.5	1.00 H	155	8.87	39.63
6	4844.00	35.3 AV	54.0	-18.7	1.00 H	155	-4.33	39.63
7	7266.00	58.2 PK	74.0	-15.8	1.31 H	259	10.60	47.60
8	7266.00	44.9 AV	54.0	-9.1	1.31 H	259	-2.70	47.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	63.3 PK	74.0	-10.7	1.07 V	89	31.32	31.98
2	2390.00	51.8 AV	54.0	-2.2	1.07 V	89	19.82	31.98
3	*2422.00	100.2 PK			1.07 V	89	68.12	32.08
4	*2422.00	91.2 AV			1.07 V	89	59.12	32.08
5	4844.00	50.6 PK	74.0	-23.4	1.05 V	21	10.97	39.63
6	4844.00	36.3 AV	54.0	-17.7	1.05 V	21	-3.33	39.63
7	7266.00	57.3 PK	74.0	-16.7	1.63 V	28	9.70	47.60
8	7266.00	44.3 AV	54.0	-9.7	1.63 V	28	-3.30	47.60

REMARKS:

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

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	64.9 PK	74.0	-9.1	1.21 H	115	32.92	31.98
2	2390.00	49.8 AV	54.0	-4.2	1.21 H	115	17.82	31.98
3	*2437.00	103.6 PK			1.21 H	115	71.48	32.12
4	*2437.00	94.9 AV			1.21 H	115	62.78	32.12
5	2483.50	61.2 PK	74.0	-12.8	1.21 H	115	28.96	32.24
6	2483.50	48.4 AV	54.0	-5.6	1.21 H	115	16.16	32.24
7	4874.00	48.6 PK	74.0	-25.4	1.00 H	152	8.90	39.70
8	4874.00	35.3 AV	54.0	-18.7	1.00 H	152	-4.40	39.70
9	7311.00	57.9 PK	74.0	-16.1	1.31 H	261	10.31	47.59
10	7311.00	46.6 AV	54.0	-7.4	1.31 H	261	-0.99	47.59
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	64.8 PK	74.0	-9.2	1.07 V	92	32.82	31.98
2	2390.00	50.8 AV	54.0	-3.2	1.07 V	92	18.82	31.98
3	*2437.00	105.9 PK			1.07 V	92	73.78	32.12
4	*2437.00	95.4 AV			1.07 V	92	63.28	32.12
5	2483.50	64.6 PK	74.0	-9.4	1.07 V	92	32.36	32.24
6	2483.50	50.6 AV	54.0	-3.4	1.07 V	92	18.36	32.24
7	4874.00	50.6 PK	74.0	-23.4	1.03 V	22	10.90	39.70
8	4874.00	36.5 AV	54.0	-17.5	1.03 V	22	-3.20	39.70
9	7311.00	57.2 PK	74.0	-16.8	1.61 V	25	9.61	47.59
10	7311.00	44.4 AV	54.0	-9.6	1.61 V	25	-3.19	47.59

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	101.6 PK			1.19 H	113	69.44	32.16
2	*2452.00	91.8 AV			1.19 H	113	59.64	32.16
3	2483.50	64.5 PK	74.0	-9.5	1.19 H	113	32.26	32.24
4	2483.50	50.8 AV	54.0	-3.2	1.19 H	113	18.56	32.24
5	4904.00	48.2 PK	74.0	-25.8	1.00 H	151	8.43	39.77
6	4904.00	35.5 AV	54.0	-18.5	1.00 H	151	-4.27	39.77
7	7356.00	57.3 PK	74.0	-16.7	1.31 H	257	9.75	47.55
8	7356.00	45.1 AV	54.0	-8.9	1.31 H	257	-2.45	47.55
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	*2452.00	102.8 PK			1.05 V	89	70.64	32.16
2	*2452.00	92.8 AV			1.05 V	89	60.64	32.16
3	2483.50	69.0 PK	74.0	-5.0	1.05 V	89	36.76	32.24
4	**2483.50**	**53.5 AV**	**54.0**	**-0.5**	**1.05 V**	**89**	**21.26**	**32.24**
5	4904.00	50.8 PK	74.0	-23.2	1.06 V	23	11.03	39.77
6	4904.00	36.5 AV	54.0	-17.5	1.06 V	23	-3.27	39.77
7	7356.00	57.6 PK	74.0	-16.4	1.63 V	26	10.05	47.55
8	7356.00	44.5 AV	54.0	-9.5	1.63 V	26	-3.05	47.55

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.

4.2.8 TEST RESULTS(MODE 2, DIPOLE ANTENNA)

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	165.90	41.6 QP	43.5	-1.9	1.68 H	338	27.66	13.93
2	266.62	42.5 QP	46.0	-3.5	1.00 H	179	28.49	13.97
3	433.11	33.8 QP	46.0	-12.2	2.00 H	190	15.32	18.50
4	567.40	33.2 QP	46.0	-12.8	1.50 H	188	11.62	21.55
5	633.48	36.7 QP	46.0	-9.3	1.00 H	292	13.96	22.73
6	799.27	35.7 QP	46.0	-10.3	1.00 H	149	10.07	25.66
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	166.66	38.3 QP	43.5	-5.2	1.50 V	284	24.44	13.88
2	266.85	36.2 QP	46.0	-9.8	1.50 V	269	22.22	13.98
3	300.00	38.4 QP	46.0	-7.6	1.50 V	103	23.10	15.31
4	401.26	31.8 QP	46.0	-14.2	1.50 V	360	13.98	17.79
5	500.37	33.0 QP	46.0	-13.1	1.00 V	322	12.84	20.11
6	566.93	36.1 QP	46.0	-9.9	1.00 V	204	14.55	21.54

REMARKS:

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

ABOVE 1GHz DATA

802.11b

CHANNEL	TX Channel 1	**DETECTOR FUNCTION**	Peak (PK) 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	2386.00	57.6 PK	74.0	-16.4	1.00 H	309	25.63	31.97
2	2386.00	45.9 AV	54.0	-8.1	1.00 H	309	13.93	31.97
3	*2412.00	97.9 PK			1.08 H	155	65.85	32.05
4	*2412.00	95.5 AV			1.08 H	155	63.45	32.05
5	4824.00	48.6 PK	74.0	-25.4	1.54 H	323	9.02	39.58
6	4824.00	37.4 AV	54.0	-16.6	1.54 H	323	-2.18	39.58
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	2386.00	61.2 PK	74.0	-12.8	1.27 V	205	29.23	31.97
2	2386.00	53.2 AV	54.0	-0.8	1.27 V	205	21.23	31.97
3	*2412.00	105.5 PK			1.27 V	208	73.45	32.05
4	*2412.00	103.4 AV			1.27 V	208	71.35	32.05
5	4824.00	50.6 PK	74.0	-23.4	1.00 V	290	11.02	39.58
6	4824.00	43.4 AV	54.0	-10.6	1.00 V	290	3.82	39.58

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	56.9 PK	74.0	-17.1	1.00 H	307	24.92	31.98
2	2390.00	45.9 AV	54.0	-8.1	1.00 H	307	13.92	31.98
3	*2437.00	102.5 PK			1.11 H	159	70.38	32.12
4	*2437.00	100.1 AV			1.11 H	159	67.98	32.12
5	2483.50	57.4 PK	74.0	-16.6	1.00 H	307	25.16	32.24
6	2483.50	44.4 AV	54.0	-9.6	1.00 H	307	12.16	32.24
7	4874.00	48.7 PK	74.0	-25.3	1.50 H	307	9.00	39.70
8	4874.00	37.3 AV	54.0	-16.7	1.50 H	307	-2.40	39.70
9	7311.00	53.3 PK	74.0	-20.7	1.07 H	50	5.71	47.59
10	7311.00	43.0 AV	54.0	-11.0	1.07 H	50	-4.59	47.59
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	61.0 PK	74.0	-13.0	1.00 V	185	29.02	31.98
2	2390.00	53.0 AV	54.0	-1.0	1.00 V	185	21.02	31.98
3	*2437.00	112.2 PK			1.00 V	185	80.08	32.12
4	*2437.00	109.8 AV			1.00 V	185	77.68	32.12
5	2483.50	59.1 PK	74.0	-14.9	1.00 V	189	26.86	32.24
6	2483.50	51.5 AV	54.0	-2.5	1.00 V	189	19.26	32.24
7	4874.00	51.3 PK	74.0	-22.7	1.00 V	100	11.60	39.70
8	4874.00	45.2 AV	54.0	-8.8	1.00 V	100	5.50	39.70
9	7311.00	62.0 PK	74.0	-12.0	1.00 V	107	14.41	47.59
10	7311.00	53.2 AV	54.0	-0.8	1.00 V	107	5.61	47.59

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	98.8 PK			1.07 H	153	66.62	32.18
2	*2462.00	96.3 AV			1.07 H	153	64.12	32.18
3	2483.50	57.9 PK	74.0	-16.1	1.07 H	153	25.66	32.24
4	2483.50	46.7 AV	54.0	-7.3	1.07 H	153	14.46	32.24
5	4924.00	48.8 PK	74.0	-25.2	1.46 H	313	8.96	39.84
6	4924.00	37.3 AV	54.0	-16.7	1.46 H	313	-2.54	39.84
7	7386.00	53.1 PK	74.0	-20.9	1.07 H	55	5.58	47.52
8	7386.00	42.8 AV	54.0	-11.2	1.07 H	55	-4.72	47.52
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	107.3 PK			1.00 V	196	75.12	32.18
2	*2462.00	105.0 AV			1.00 V	196	72.82	32.18
3	2483.50	60.2 PK	74.0	-13.8	1.00 V	195	27.96	32.24
4	2483.50	53.0 AV	54.0	-1.0	1.00 V	195	20.76	32.24
5	4924.00	52.9 PK	74.0	-21.1	1.00 V	91	13.06	39.84
6	4924.00	47.2 AV	54.0	-6.8	1.00 V	91	7.36	39.84
7	7386.00	52.7 PK	74.0	-21.3	1.00 V	109	5.18	47.52
8	7386.00	41.7 AV	54.0	-12.3	1.00 V	109	-5.82	47.52

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) 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	62.5 PK	74.0	-11.5	1.10 H	153	30.52	31.98
2	2390.00	49.3 AV	54.0	-4.7	1.10 H	153	17.32	31.98
3	*2412.00	102.1 PK			1.10 H	153	70.05	32.05
4	*2412.00	92.2 AV			1.10 H	153	60.15	32.05
5	4824.00	48.0 PK	74.0	-26.0	1.44 H	323	8.42	39.58
6	4824.00	36.8 AV	54.0	-17.2	1.44 H	323	-2.78	39.58
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	69.9 PK	74.0	-4.1	1.00 V	97	37.92	31.98
2	**2390.00**	**53.5 AV**	**54.0**	**-0.5**	**1.00 V**	**97**	**21.52**	**31.98**
3	*2412.00	108.5 PK			1.00 V	94	76.45	32.05
4	*2412.00	98.5 AV			1.00 V	94	66.45	32.05
5	4824.00	53.6 PK	74.0	-20.4	1.00 V	98	14.02	39.58
6	4824.00	38.6 AV	54.0	-15.4	1.00 V	98	-0.98	39.58

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	58.9 PK	74.0	-15.1	1.11 H	151	26.92	31.98
2	2390.00	46.1 AV	54.0	-7.9	1.11 H	151	14.12	31.98
3	*2437.00	106.2 PK			1.11 H	151	74.08	32.12
4	*2437.00	97.3 AV			1.11 H	151	65.18	32.12
5	2483.50	59.3 PK	74.0	-14.7	1.11 H	151	27.06	32.24
6	2483.50	45.3 AV	54.0	-8.7	1.11 H	151	13.06	32.24
7	4874.00	48.8 PK	74.0	-25.2	1.48 H	321	9.10	39.70
8	4874.00	36.6 AV	54.0	-17.4	1.48 H	321	-3.10	39.70
9	7311.00	55.6 PK	74.0	-18.4	1.00 H	56	8.01	47.59
10	7311.00	43.6 AV	54.0	-10.4	1.00 H	56	-3.99	47.59
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	70.3 PK	74.0	-3.7	1.00 V	182	38.32	31.98
2	**2390.00**	**53.5 AV**	**54.0**	**-0.5**	**1.00 V**	**182**	**21.52**	**31.98**
3	*2437.00	115.4 PK			1.00 V	193	83.28	32.12
4	*2437.00	105.2 AV			1.00 V	193	73.08	32.12
5	2483.50	64.2 PK	74.0	-9.8	1.00 V	197	31.96	32.24
6	2483.50	50.9 AV	54.0	-3.1	1.00 V	197	18.66	32.24
7	4874.00	53.2 PK	74.0	-20.8	1.00 V	93	13.50	39.70
8	4874.00	38.6 AV	54.0	-15.4	1.00 V	93	-1.10	39.70
9	7311.00	57.9 PK	74.0	-16.1	1.00 V	108	10.31	47.59
10	7311.00	47.5 AV	54.0	-6.5	1.00 V	108	-0.09	47.59

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	101.8 PK			1.05 H	155	69.62	32.18
2	*2462.00	91.4 AV			1.05 H	155	59.22	32.18
3	2483.50	61.5 PK	74.0	-12.5	1.05 H	155	29.26	32.24
4	2483.50	47.5 AV	54.0	-6.5	1.05 H	155	15.26	32.24
5	4924.00	47.8 PK	74.0	-26.2	1.50 H	325	7.96	39.84
6	4924.00	36.7 AV	54.0	-17.3	1.50 H	325	-3.14	39.84
7	7386.00	55.8 PK	74.0	-18.2	1.02 H	258	8.28	47.52
8	7386.00	44.1 AV	54.0	-9.9	1.02 H	258	-3.42	47.52
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	110.3 PK			1.00 V	270	78.12	32.18
2	*2462.00	99.9 AV			1.00 V	270	67.72	32.18
3	2483.50	71.9 PK	74.0	-2.1	1.00 V	195	39.66	32.24
4	**2483.50**	**53.5 AV**	**54.0**	**-0.5**	**1.00 V**	**195**	**21.26**	**32.24**
5	4924.00	53.2 PK	74.0	-20.8	1.00 V	95	13.36	39.84
6	4924.00	38.5 AV	54.0	-15.5	1.00 V	95	-1.34	39.84
7	7386.00	56.5 PK	74.0	-17.5	1.00 V	105	8.98	47.52
8	7386.00	46.3 AV	54.0	-7.7	1.00 V	105	-1.22	47.52

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) 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	56.7 PK	74.0	-17.3	1.09 H	139	24.72	31.98
2	2390.00	45.3 AV	54.0	-8.7	1.09 H	139	13.32	31.98
3	*2412.00	100.1 PK			1.09 H	139	68.05	32.05
4	*2412.00	91.2 AV			1.09 H	139	59.15	32.05
5	4824.00	45.8 PK	74.0	-28.2	1.00 H	57	6.22	39.58
6	4824.00	35.1 AV	54.0	-18.9	1.00 H	57	-4.48	39.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	71.0 PK	74.0	-3.0	1.00 V	88	39.02	31.98
2	2390.00	53.4 AV	54.0	-0.6	1.00 V	88	21.42	31.98
3	*2412.00	108.6 PK			1.00 V	100	76.55	32.05
4	*2412.00	98.0 AV			1.00 V	100	65.95	32.05
5	4824.00	46.5 PK	74.0	-27.5	1.00 V	100	6.92	39.58
6	4824.00	36.0 AV	54.0	-18.0	1.00 V	100	-3.58	39.58

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	58.1 PK	74.0	-15.9	1.11 H	151	26.12	31.98
2	2390.00	45.7 AV	54.0	-8.3	1.11 H	151	13.72	31.98
3	*2437.00	106.9 PK			1.11 H	151	74.78	32.12
4	*2437.00	97.6 AV			1.11 H	151	65.48	32.12
5	2483.50	57.9 PK	74.0	-16.1	1.11 H	151	25.66	32.24
6	2483.50	44.9 AV	54.0	-9.1	1.11 H	151	12.66	32.24
7	4874.00	47.7 PK	74.0	-26.3	1.00 H	48	8.00	39.70
8	4874.00	36.5 AV	54.0	-17.5	1.00 H	48	-3.20	39.70
9	7311.00	55.9 PK	74.0	-18.1	1.00 H	258	8.31	47.59
10	7311.00	44.1 AV	54.0	-9.9	1.00 H	258	-3.49	47.59
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	72.5 PK	74.0	-1.5	1.00 V	96	40.52	31.98
2	2390.00	53.2 AV	54.0	-0.8	1.00 V	96	21.22	31.98
3	*2437.00	115.6 PK			1.00 V	94	83.48	32.12
4	*2437.00	105.0 AV			1.00 V	94	72.88	32.12
5	2483.50	64.1 PK	74.0	-9.9	1.00 V	85	31.86	32.24
6	2483.50	50.2 AV	54.0	-3.8	1.00 V	85	17.96	32.24
7	4874.00	53.7 PK	74.0	-20.3	1.00 V	141	14.00	39.70
8	4874.00	41.3 AV	54.0	-12.7	1.00 V	141	1.60	39.70
9	7311.00	62.8 PK	74.0	-11.2	1.00 V	92	15.21	47.59
10	7311.00	49.3 AV	54.0	-4.7	1.00 V	92	1.71	47.59

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	101.3 PK			1.09 H	143	69.12	32.18
2	*2462.00	91.8 AV			1.09 H	143	59.62	32.18
3	2483.50	59.9 PK	74.0	-14.1	1.09 H	143	27.66	32.24
4	2483.50	46.9 AV	54.0	-7.1	1.09 H	143	14.66	32.24
5	4924.00	47.2 PK	74.0	-26.8	1.02 H	27	7.36	39.84
6	4924.00	36.1 AV	54.0	-17.9	1.02 H	27	-3.74	39.84
7	7386.00	56.1 PK	74.0	-17.9	1.00 H	232	8.58	47.52
8	7386.00	44.4 AV	54.0	-9.6	1.00 H	232	-3.12	47.52
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2462.00	109.7 PK			1.00 V	92	77.52	32.18
2	*2462.00	100.0 AV			1.00 V	92	67.82	32.18
3	2483.50	73.1 PK	74.0	-0.9	1.00 V	98	40.86	32.24
4	**2483.50**	**53.5 AV**	**54.0**	**-0.5**	**1.00 V**	**98**	**21.26**	**32.24**
5	4924.00	46.6 PK	74.0	-27.4	1.00 V	133	6.76	39.84
6	4924.00	35.8 AV	54.0	-18.2	1.00 V	133	-4.04	39.84
7	7386.00	55.5 PK	74.0	-18.5	1.00 V	50	7.98	47.52
8	7386.00	44.7 AV	54.0	-9.3	1.00 V	50	-2.82	47.52

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	58.9 PK	74.0	-15.1	1.08 H	141	26.92	31.98
2	2390.00	47.1 AV	54.0	-6.9	1.08 H	141	15.12	31.98
3	*2422.00	95.9 PK			1.08 H	141	63.82	32.08
4	*2422.00	85.9 AV			1.08 H	141	53.82	32.08
5	4844.00	46.9 PK	74.0	-27.1	1.00 H	38	7.27	39.63
6	4844.00	35.8 AV	54.0	-18.2	1.00 H	38	-3.83	39.63
7	7266.00	55.9 PK	74.0	-18.1	1.00 H	255	8.30	47.60
8	7266.00	44.1 AV	54.0	-9.9	1.00 H	255	-3.50	47.60
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2390.00	67.7 PK	74.0	-6.3	1.00 V	89	35.72	31.98
2	**2390.00**	**53.5 AV**	**54.0**	**-0.5**	**1.00 V**	**89**	**21.52**	**31.98**
3	*2422.00	102.4 PK			1.00 V	89	70.32	32.08
4	*2422.00	91.7 AV			1.00 V	89	59.62	32.08
5	4844.00	46.8 PK	74.0	-27.2	1.00 V	125	7.17	39.63
6	4844.00	35.5 AV	54.0	-18.5	1.00 V	125	-4.13	39.63
7	7266.00	55.8 PK	74.0	-18.2	1.00 V	38	8.20	47.60
8	7266.00	44.1 AV	54.0	-9.9	1.00 V	38	-3.50	47.60

REMARKS:

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

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	57.6 PK	74.0	-16.4	1.13 H	150	25.62	31.98
2	2390.00	45.3 AV	54.0	-8.7	1.13 H	150	13.32	31.98
3	*2437.00	99.9 PK			1.13 H	150	67.78	32.12
4	*2437.00	90.7 AV			1.13 H	150	58.58	32.12
5	2483.50	57.1 PK	74.0	-16.9	1.13 H	150	24.86	32.24
6	2483.50	44.9 AV	54.0	-9.1	1.13 H	150	12.66	32.24
7	4874.00	46.8 PK	74.0	-27.2	1.00 H	42	7.10	39.70
8	4874.00	35.9 AV	54.0	-18.1	1.00 H	42	-3.80	39.70
9	7311.00	56.1 PK	74.0	-17.9	1.00 H	253	8.51	47.59
10	7311.00	44.6 AV	54.0	-9.4	1.00 H	253	-2.99	47.59
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	68.1 PK	74.0	-5.9	1.00 V	106	36.12	31.98
2	2390.00	53.0 AV	54.0	-1.0	1.00 V	106	21.02	31.98
3	*2437.00	107.9 PK			1.00 V	273	75.78	32.12
4	*2437.00	96.1 AV			1.00 V	273	63.98	32.12
5	2483.50	65.4 PK	74.0	-8.6	1.00 V	270	33.16	32.24
6	2483.50	52.1 AV	54.0	-1.9	1.00 V	270	19.86	32.24
7	4874.00	47.1 PK	74.0	-26.9	1.00 V	123	7.40	39.70
8	4874.00	36.3 AV	54.0	-17.7	1.00 V	123	-3.40	39.70
9	7311.00	55.3 PK	74.0	-18.7	1.00 V	35	7.71	47.59
10	7311.00	44.5 AV	54.0	-9.5	1.00 V	35	-3.09	47.59

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2452.00	96.3 PK			1.10 H	138	64.14	32.16
2	*2452.00	87.5 AV			1.10 H	138	55.34	32.16
3	2483.50	60.9 PK	74.0	-13.1	1.10 H	138	28.66	32.24
4	2483.50	47.8 AV	54.0	-6.2	1.10 H	138	15.56	32.24
5	4904.00	46.5 PK	74.0	-27.5	1.00 H	43	6.73	39.77
6	4904.00	35.8 AV	54.0	-18.2	1.00 H	43	-3.97	39.77
7	7356.00	55.8 PK	74.0	-18.2	1.00 H	251	8.25	47.55
8	7356.00	44.3 AV	54.0	-9.7	1.00 H	251	-3.25	47.55
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	*2452.00	104.0 PK			1.00 V	92	71.84	32.16
2	*2452.00	92.6 AV			1.00 V	92	60.44	32.16
3	2483.50	68.7 PK	74.0	-5.3	1.05 V	101	36.46	32.24
4	**2483.50**	**53.5 AV**	**54.0**	**-0.5**	**1.05 V**	**101**	**21.26**	**32.24**
5	4904.00	47.2 PK	74.0	-26.8	1.00 V	121	7.43	39.77
6	4904.00	35.4 AV	54.0	-18.6	1.00 V	121	-4.37	39.77
7	7356.00	55.6 PK	74.0	-18.4	1.00 V	31	8.05	47.55
8	7356.00	44.4 AV	54.0	-9.6	1.00 V	31	-3.15	47.55

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.

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 : Dec. 26, 2012

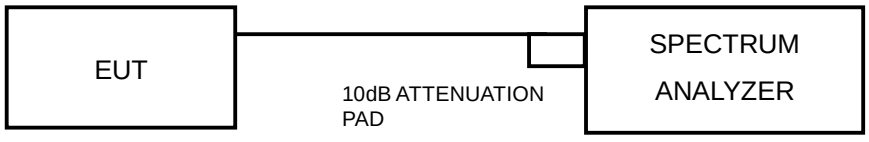
4.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = approximately 1% of the emission bandwidth
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	12.34	0.5	PASS
6	2437	10.65	0.5	PASS
11	2462	11.34	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	16.42	0.5	PASS
11	2462	16.43	0.5	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
1	2412	17.67	17.74	0.5	PASS
6	2437	17.75	17.65	0.5	PASS
11	2462	17.70	17.70	0.5	PASS

802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN(0)	CHAIN(1)		
3	2422	34.60	36.48	0.5	PASS
6	2437	36.46	36.43	0.5	PASS
9	2452	36.46	36.15	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 ≤ 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 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 : Dec. 26, 2012

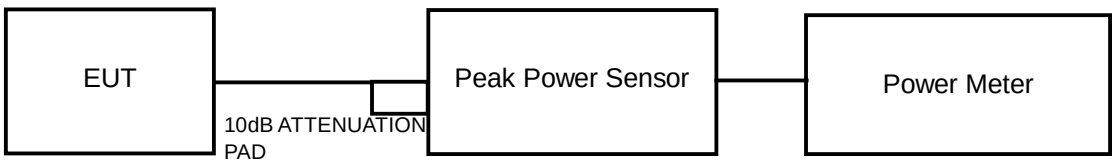
4.4.3 TEST PROCEDURES

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	112.202	20.5	30	PASS
6	2437	186.209	22.7	30	PASS
11	2462	95.499	19.8	30	PASS

802.11g

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
1	2412	257.040	24.1	30	PASS
6	2437	446.684	26.5	30	PASS
11	2462	309.030	24.9	30	PASS

802.11n (HT20)

CHAN.	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
1	2412	21.8	21.6	295.900	24.71	30	PASS
6	2437	25.8	25.7	751.724	28.76	30	PASS
11	2462	22.8	23.8	430.429	26.34	30	PASS

802.11n (HT40)

CHAN.	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
3	2422	18.4	18.7	143.314	21.56	30	PASS
6	2437	22.8	23.4	409.322	26.12	30	PASS
9	2452	19.9	20.4	207.372	23.17	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 : Dec. 26, 2012

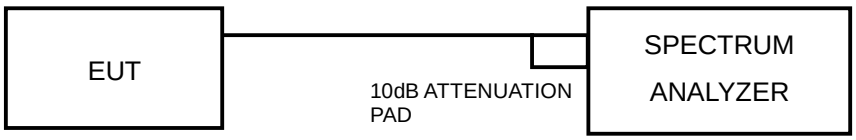
4.5.3 TEST PROCEDURE

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(MODE 1, PIFA ANTENNA)

802.11b

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-7.33	8	PASS
6	2437	-2.33	8	PASS
11	2462	-7.66	8	PASS

802.11g

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-6.55	8	PASS
6	2437	-3.53	8	PASS
11	2462	-7.94	8	PASS

802.11n (HT20)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-11.80	3.01	-8.79	7.29	PASS
	6	2437	-6.50	3.01	-3.49	7.29	PASS
	11	2462	-9.70	3.01	-6.69	7.29	PASS
1	1	2412	-15.73	3.01	-12.72	7.29	PASS
	6	2437	-8.83	3.01	-5.82	7.29	PASS
	11	2462	-10.73	3.01	-7.72	7.29	PASS

NOTE: Directional gain = 3.7dBi + 10log(2) = 6.71dBi > 6dBi , so the power density limit shall be reduced to 8-(6.71-6) = 7.29dBm.

802.11n (HT40)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-12.20	3.01	-9.19	7.29	PASS
	6	2437	-9.25	3.01	-6.24	7.29	PASS
	9	2452	-11.97	3.01	-8.96	7.29	PASS
1	3	2422	-19.45	3.01	-16.44	7.29	PASS
	6	2437	-14.11	3.01	-11.10	7.29	PASS
	9	2452	-16.76	3.01	-13.75	7.29	PASS

NOTE: Directional gain = 3.7dBi + 10log(2) = 6.71dBi > 6dBi , so the power density limit shall be reduced to 8-(6.71-6) = 7.29dBm.

4.5.8 TEST RESULTS(MODE 2, DIPOLE ANTENNA)

802.11b

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-7.33	8	PASS
6	2437	-2.33	8	PASS
11	2462	-7.66	8	PASS

802.11g

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
1	2412	-6.55	8	PASS
6	2437	-3.53	8	PASS
11	2462	-7.94	8	PASS

802.11n (HT20)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	1	2412	-11.80	3.01	-8.79	8	PASS
	6	2437	-6.50	3.01	-3.49	8	PASS
	11	2462	-9.70	3.01	-6.69	8	PASS
1	1	2412	-15.73	3.01	-12.72	8	PASS
	6	2437	-8.83	3.01	-5.82	8	PASS
	11	2462	-10.73	3.01	-7.72	8	PASS

NOTE: Directional gain = 2.7dBi + 10log(2) = 5.71dBi < 6dBi , so the power density limit shall not be reduced.

802.11n (HT40)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	3	2422	-12.20	3.01	-9.19	8	PASS
	6	2437	-9.25	3.01	-6.24	8	PASS
	9	2452	-11.97	3.01	-8.96	8	PASS
1	3	2422	-19.45	3.01	-16.44	8	PASS
	6	2437	-14.11	3.01	-11.10	8	PASS
	9	2452	-16.76	3.01	-13.75	8	PASS

NOTE: Directional gain = 2.7dBi + 10log(2) = 5.71dBi < 6dBi , so the power density limit shall not be reduced.

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 : Dec. 26, 2012

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

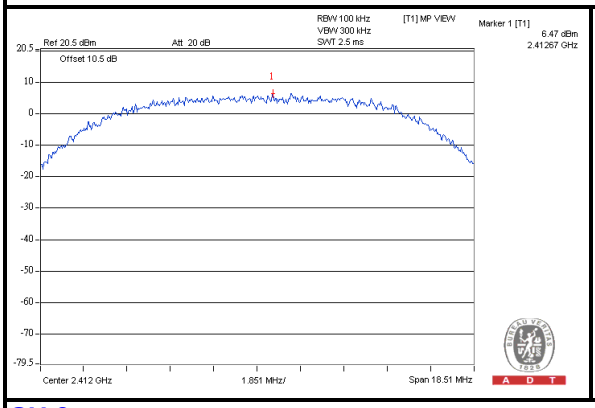
Same as Item 4.3.6

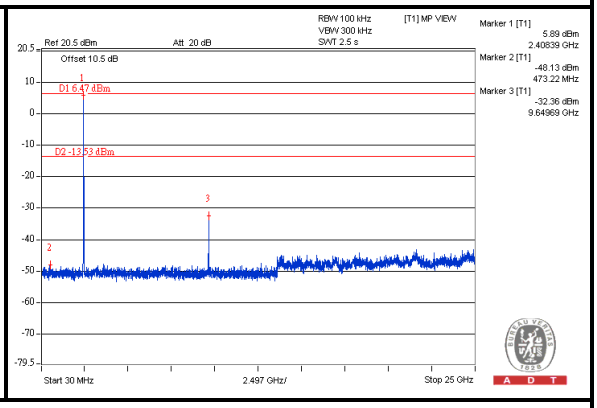
4.6.7 TEST RESULTS

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

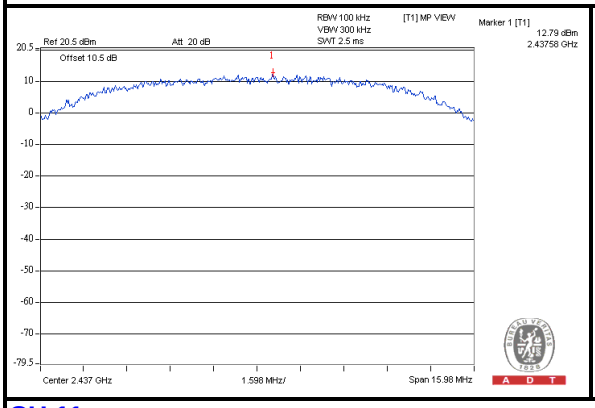
802.11b:

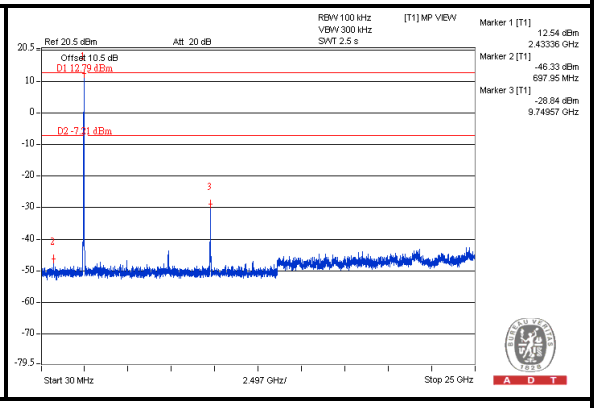
CH 1



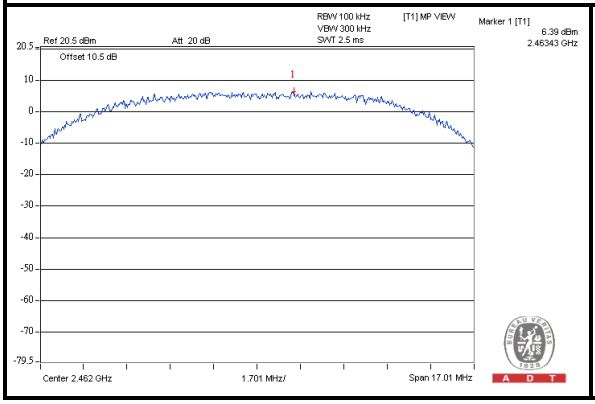


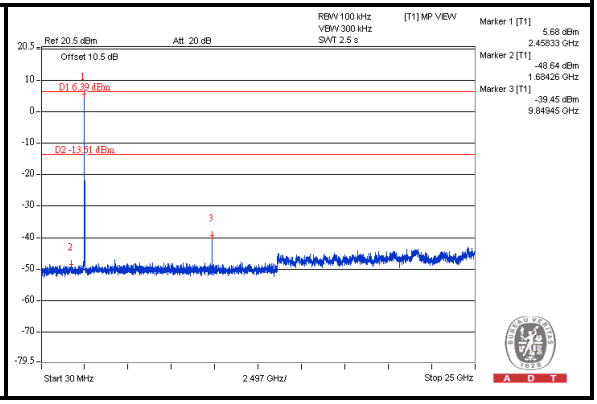
CH 6

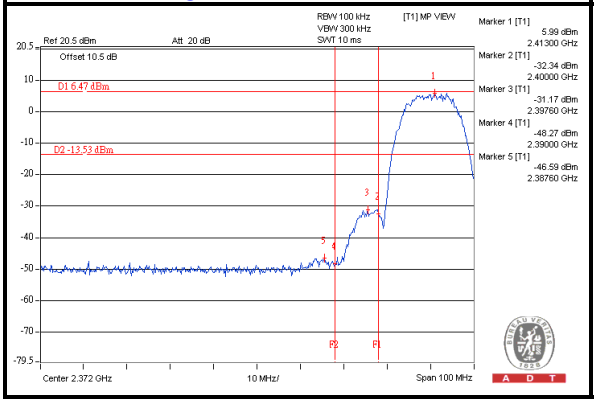
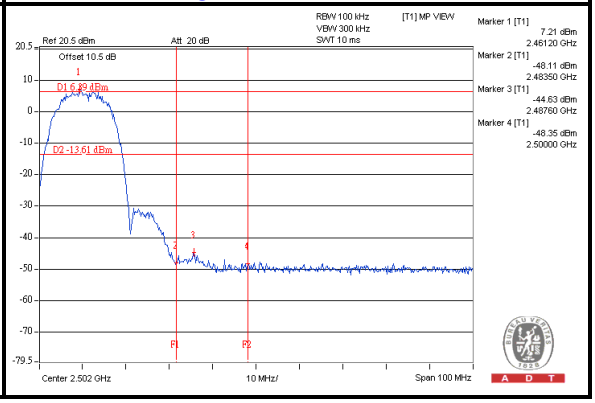




CH 11

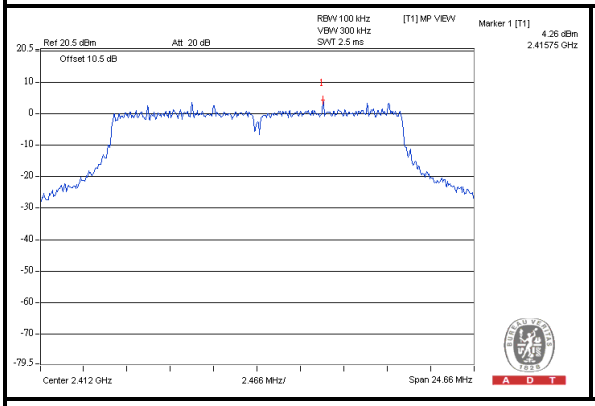


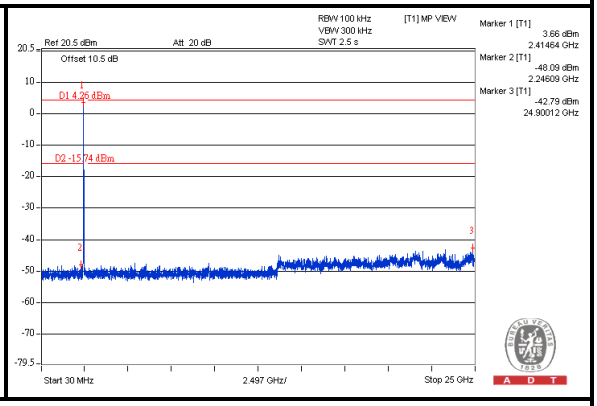


CH 1 Band edge	CH 11 Band edge
	

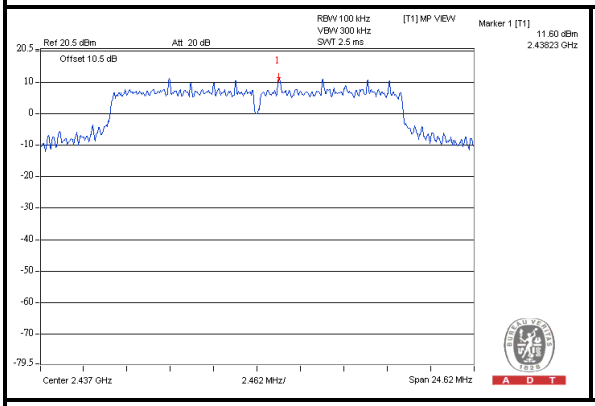
802.11g:

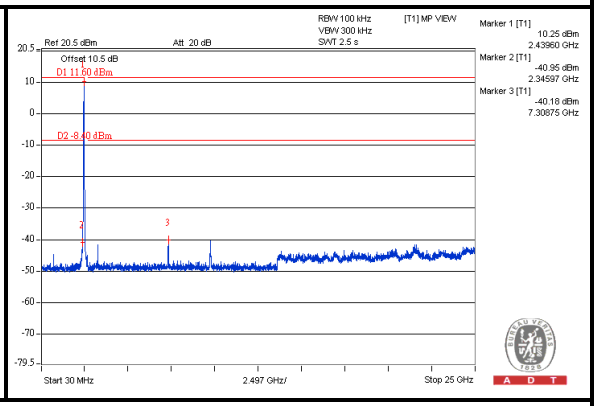
CH 1



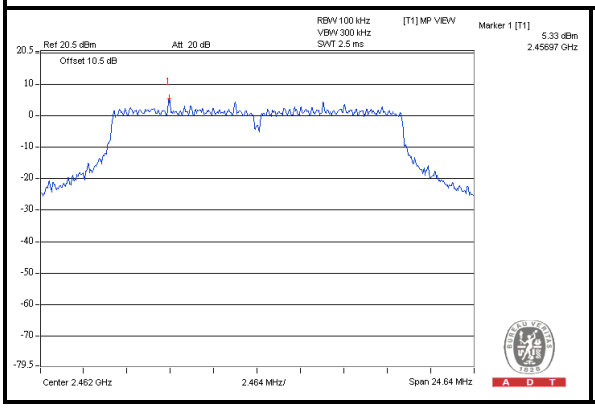


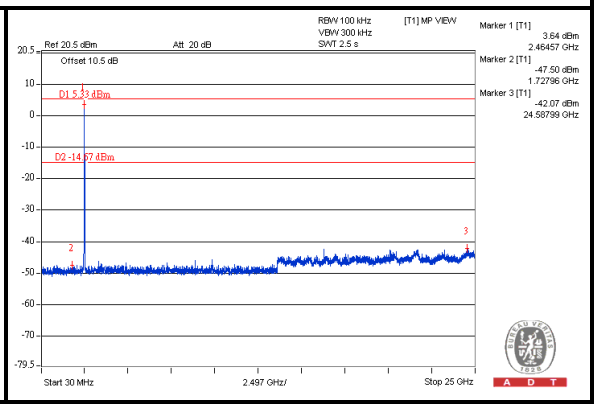
CH 6

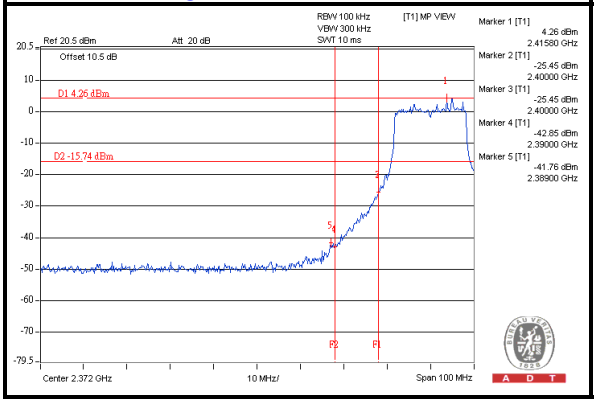
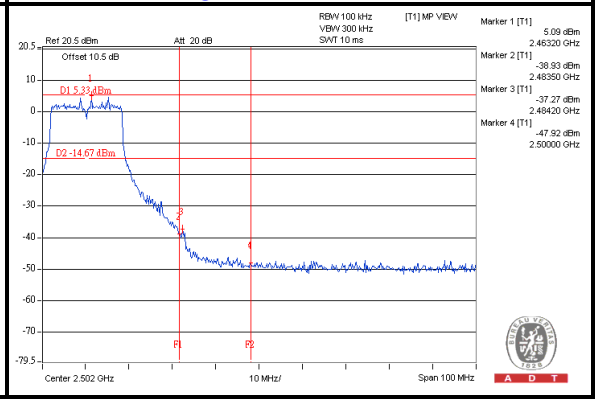




CH 11



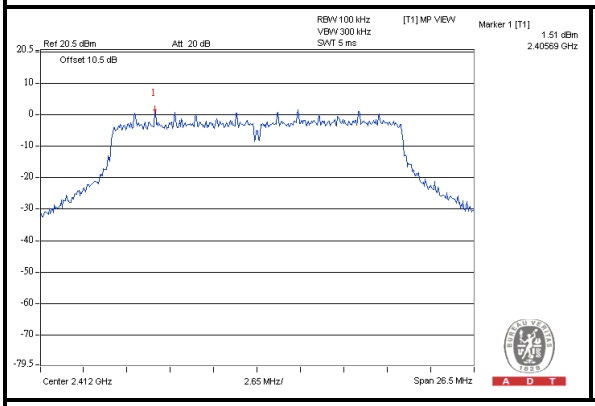


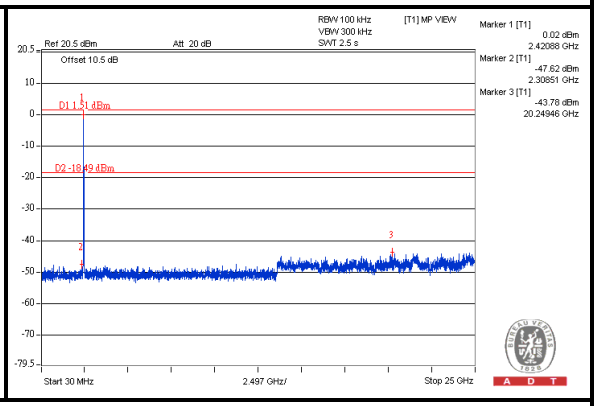
CH 1 Band edge	CH 11 Band edge
	

802.11n (HT20):

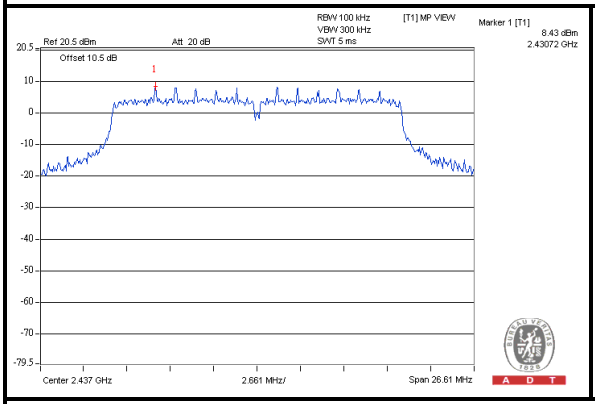
For Chain(0)

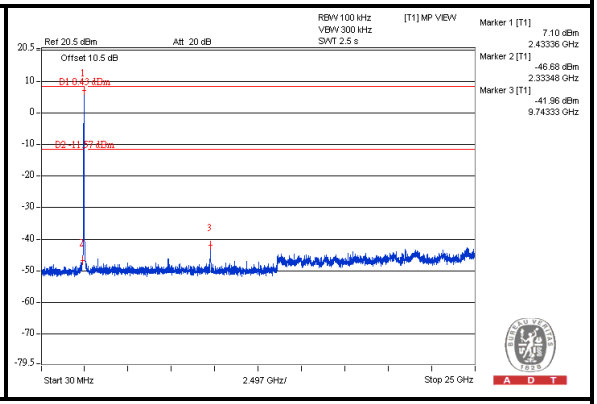
CH 1



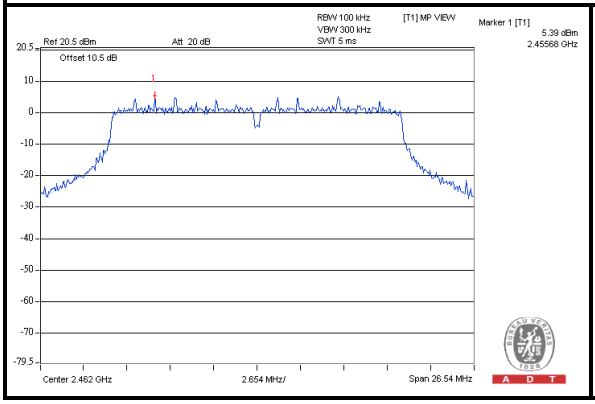


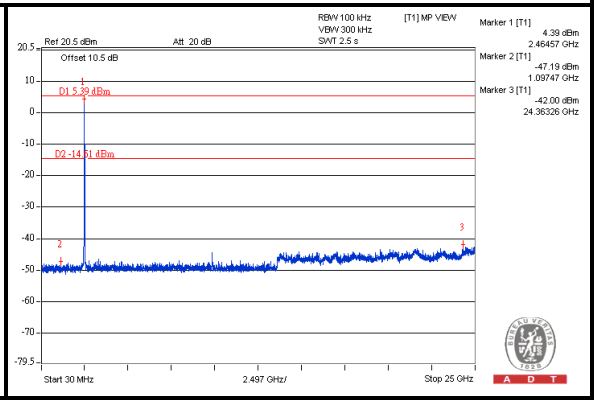
CH 6





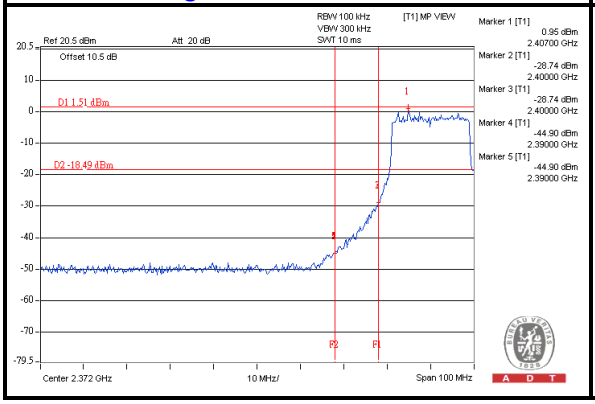
CH 11



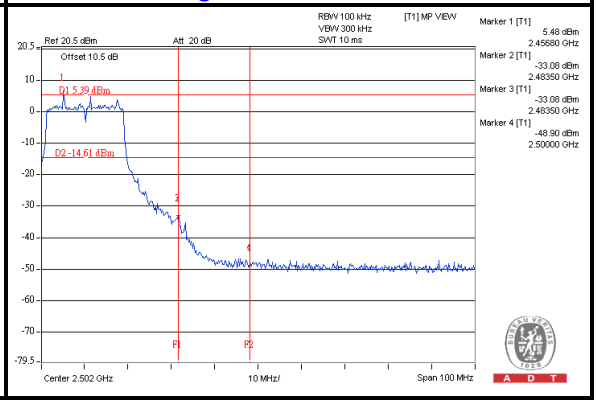


CHAIN (0)

CH 1 Band edge

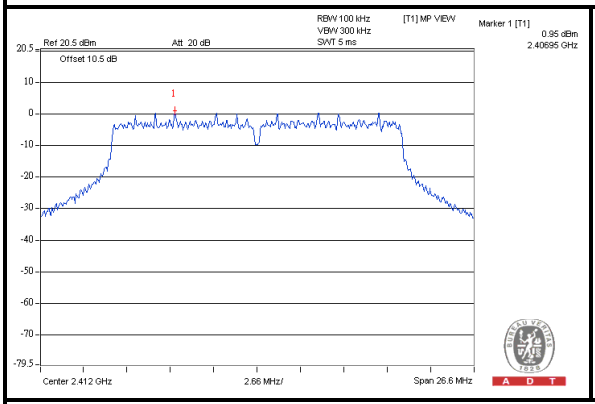


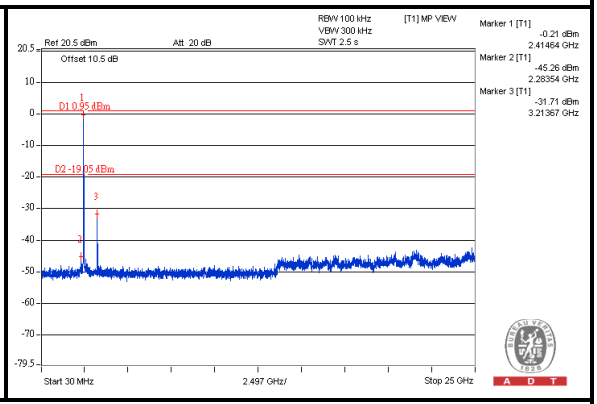
CH 11 Band edge



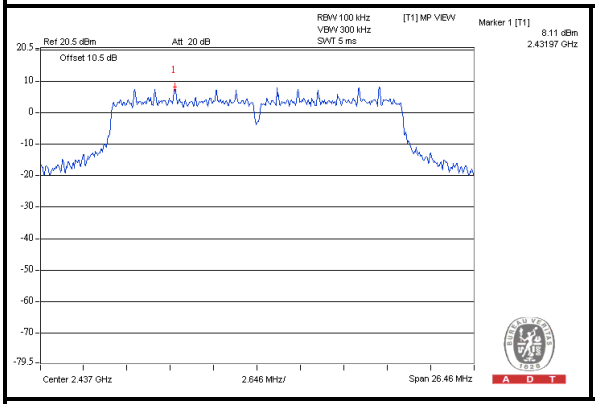
For Chain(1)

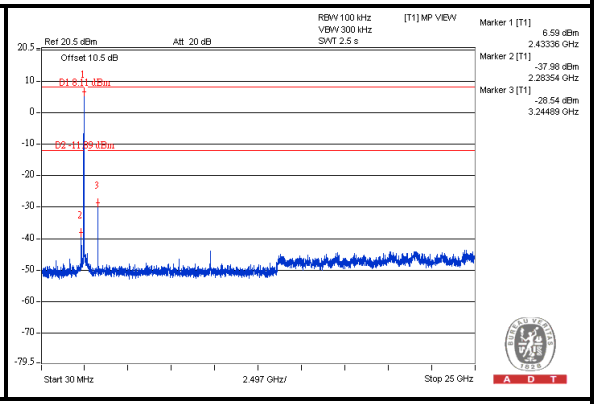
CH 1



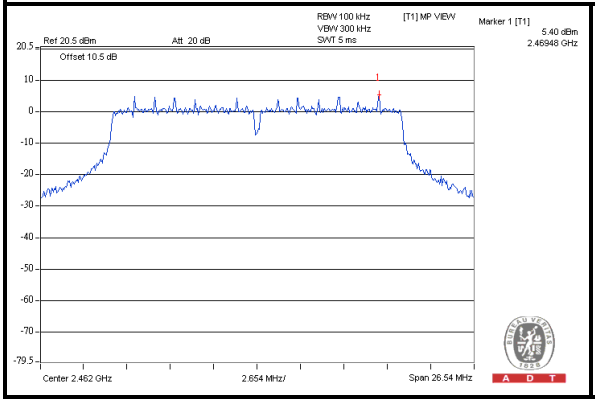


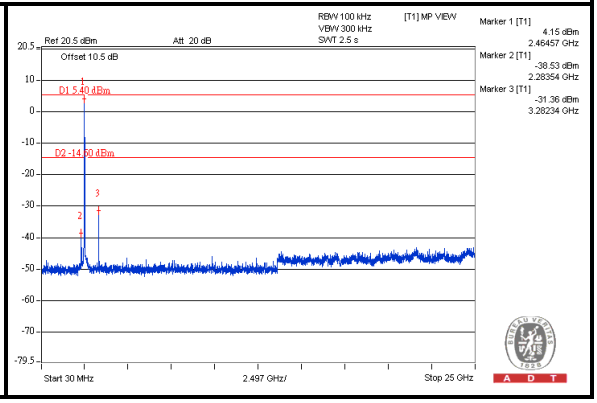
CH 6





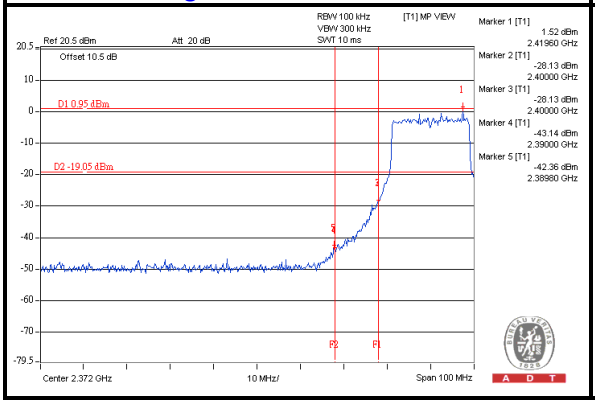
CH 11



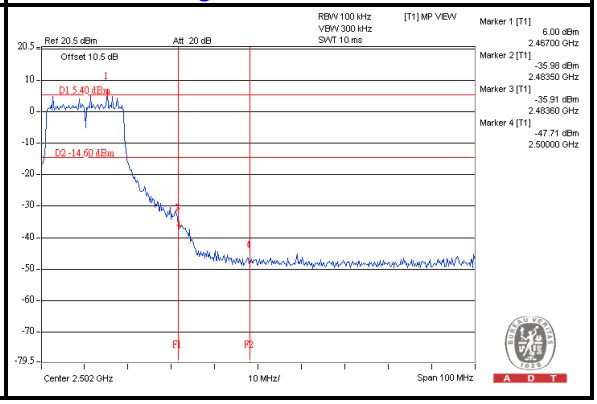


CHAIN (1)

CH 1 Band edge



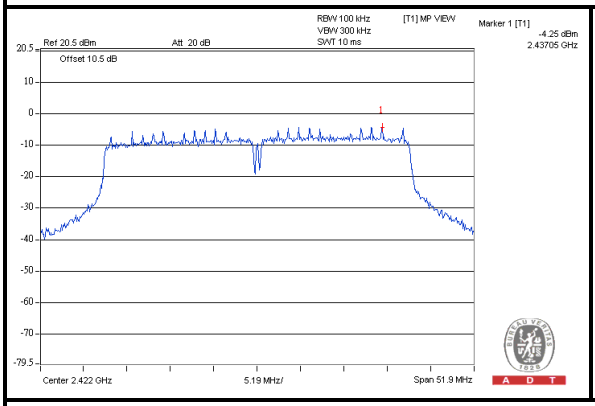
CH 11 Band edge

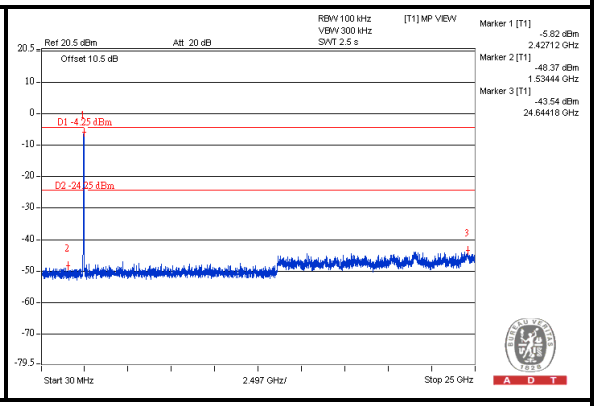


802.11n (HT40):

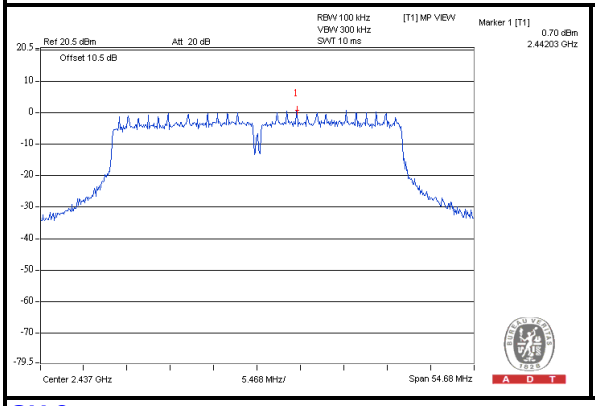
For Chain(0)

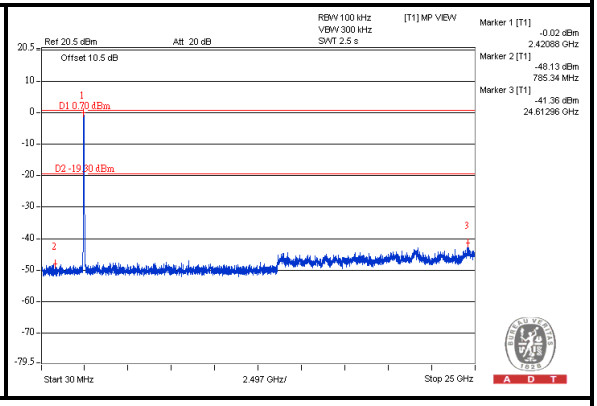
CH 3



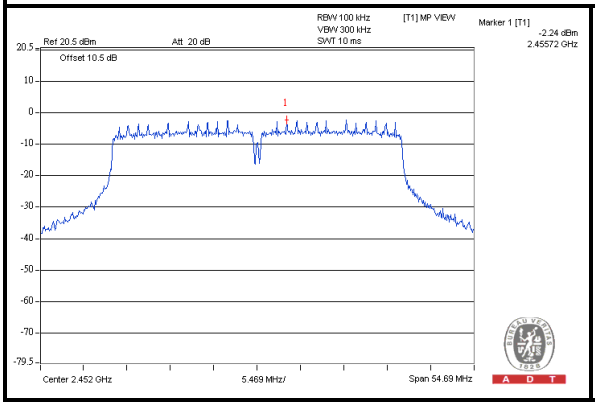


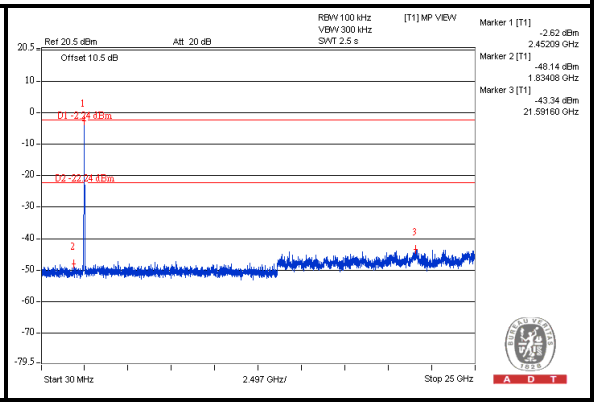
CH 6





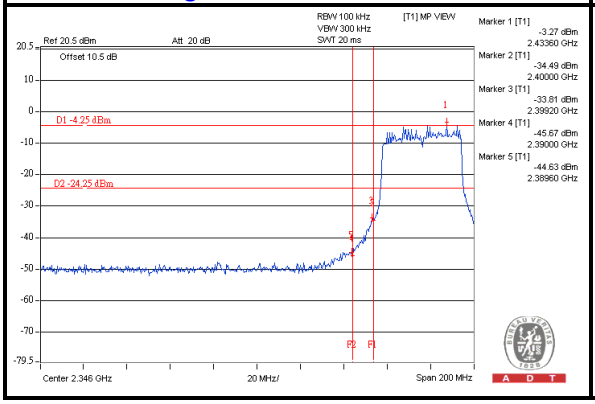
CH 9



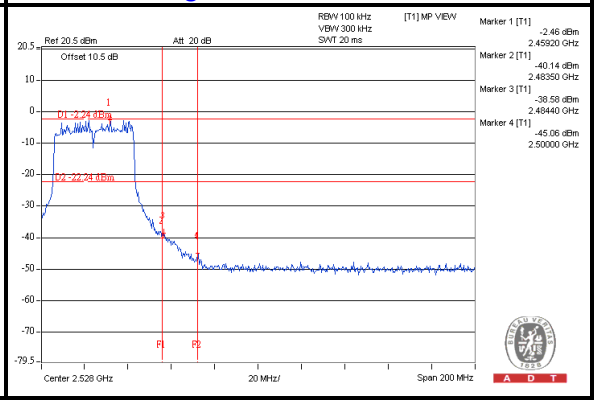


CHAIN (0)

CH 3 Band edge



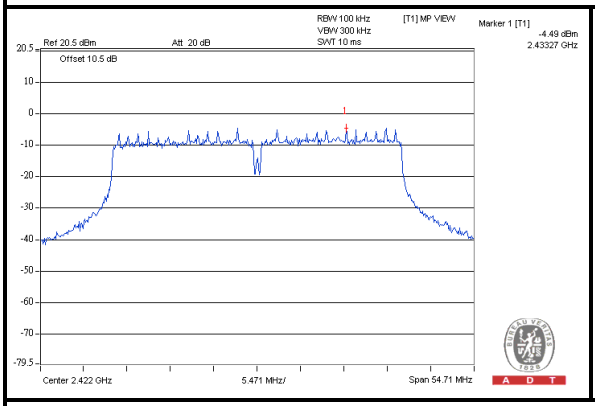
CH 9 Band edge

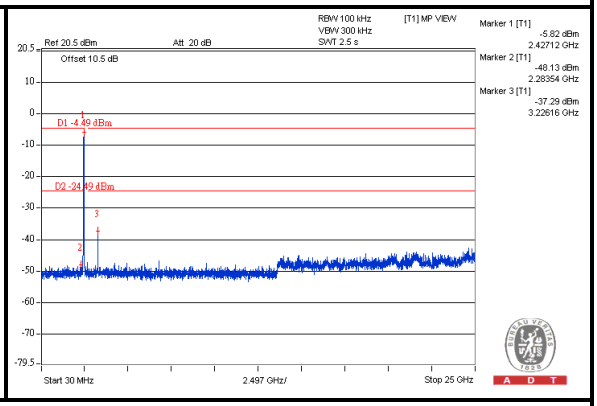


802.11n (HT40):

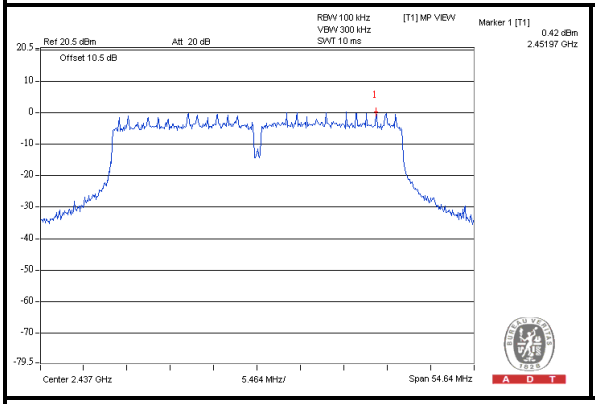
For Chain(1)

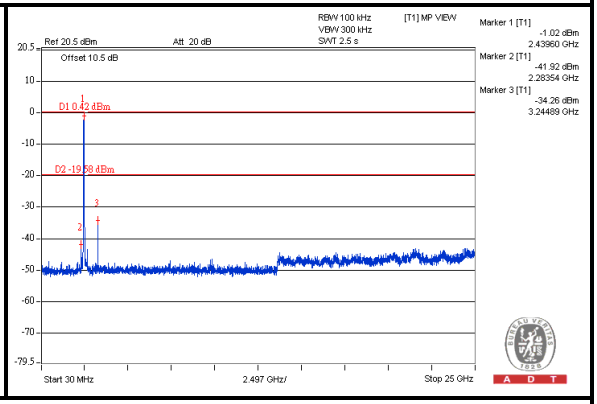
CH 3



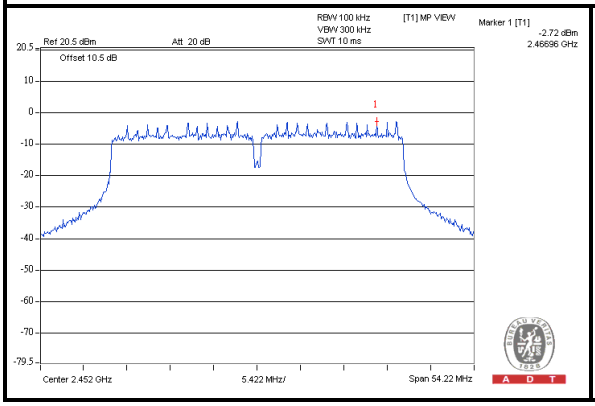


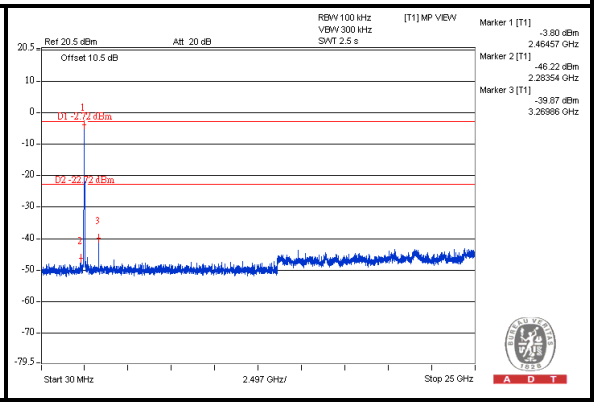
CH 6





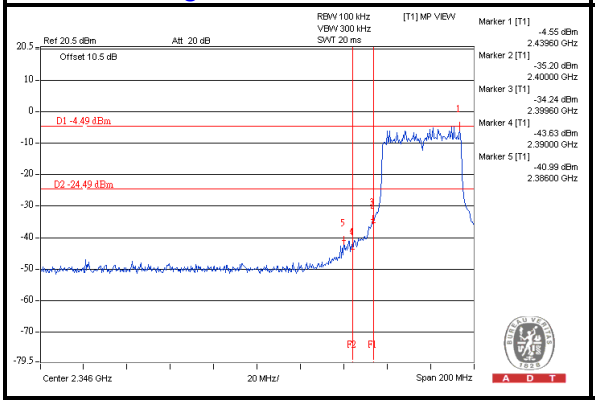
CH 9



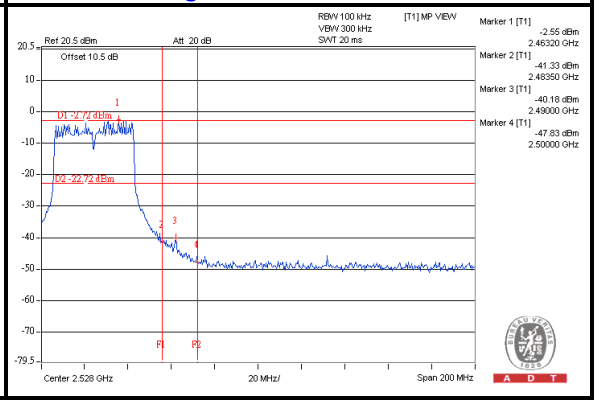


CHAIN (1)

CH 3 Band edge



CH 9 Band edge



5. TEST TYPES AND RESULTS (FOR 5GHz, 5725~5850MHz Band)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 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.

5.1.2 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: Dec. 20, 2012

5.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN.

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.

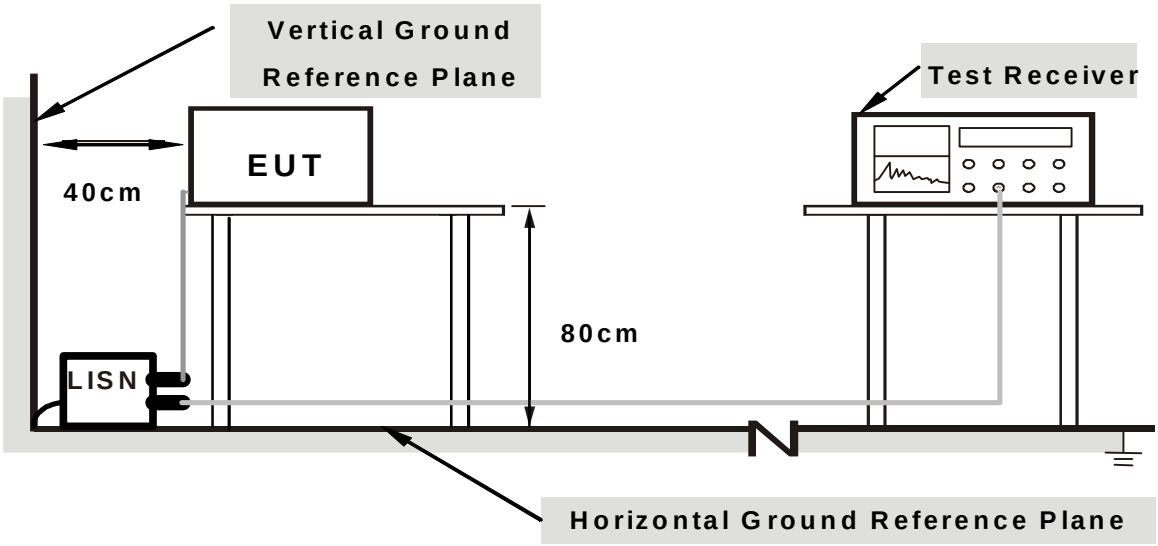
d. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit – 20dB) were not recorded.

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

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 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.

5.1.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

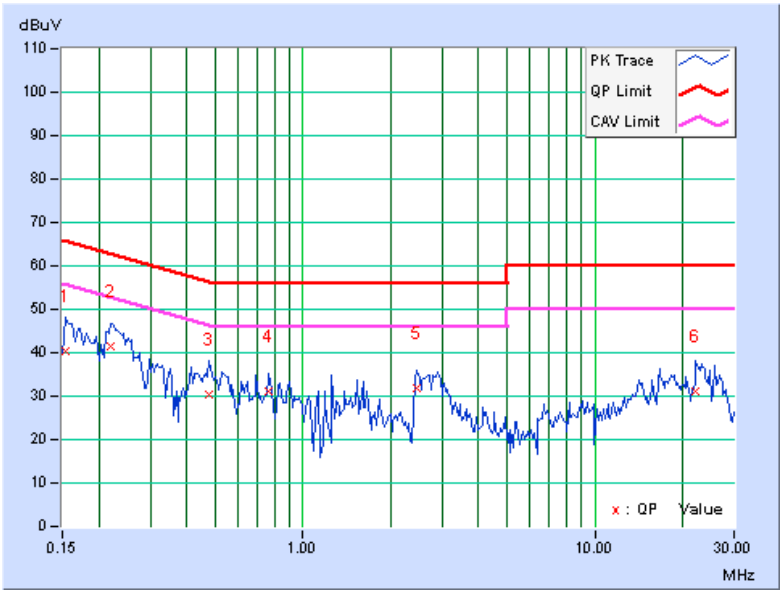
5.1.7 TEST RESULTS

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	0.15391	0.11	40.22	31.37	40.33	31.48	65.79	55.79	-25.46	-24.31
2	0.22031	0.12	41.44	32.53	41.56	32.65	62.81	52.81	-21.24	-20.15
3	0.47813	0.16	30.08	22.48	30.24	22.64	56.37	46.37	-26.13	-23.73
4	**0.76719**	**0.18**	**30.89**	**26.17**	**31.07**	**26.35**	**56.00**	**46.00**	**-24.93**	**-19.65**
5	2.45703	0.24	31.56	25.38	31.80	25.62	56.00	46.00	-24.20	-20.38
6	22.16406	0.98	29.95	24.63	30.93	25.61	60.00	50.00	-29.07	-24.39

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.

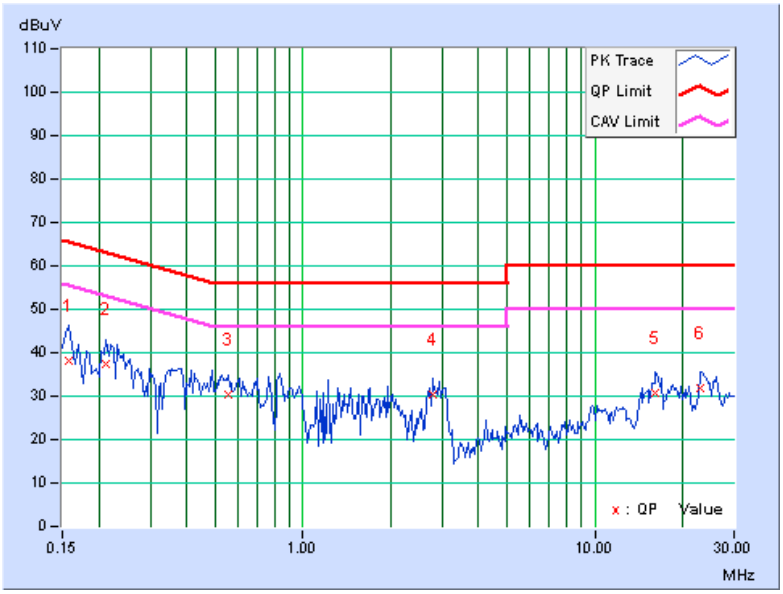


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	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	0.15781	0.09	38.14	27.89	38.23	27.98	65.58	55.58	-27.35	-27.60
2	0.21250	0.10	37.25	23.97	37.35	24.07	63.11	53.11	-25.75	-29.03
3	0.55625	0.16	30.32	21.04	30.48	21.20	56.00	46.00	-25.52	-24.80
4	2.77734	0.22	30.16	23.41	30.38	23.63	56.00	46.00	-25.62	-22.37
5	16.11328	0.54	30.10	25.15	30.64	25.69	60.00	50.00	-29.36	-24.31
6	22.83984	0.67	31.11	25.32	31.78	25.99	60.00	50.00	-28.22	-24.01

REMARKS:

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



5.2 RADIATED AND BANDEDGE EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED AND BANDEDGE EMISSION MEASUREMENT

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

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

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

5.2.2 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. 27, 2012	Nov. 26, 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. 29 to Dec. 19, 2012

5.2.3 TEST PROCEDURES

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

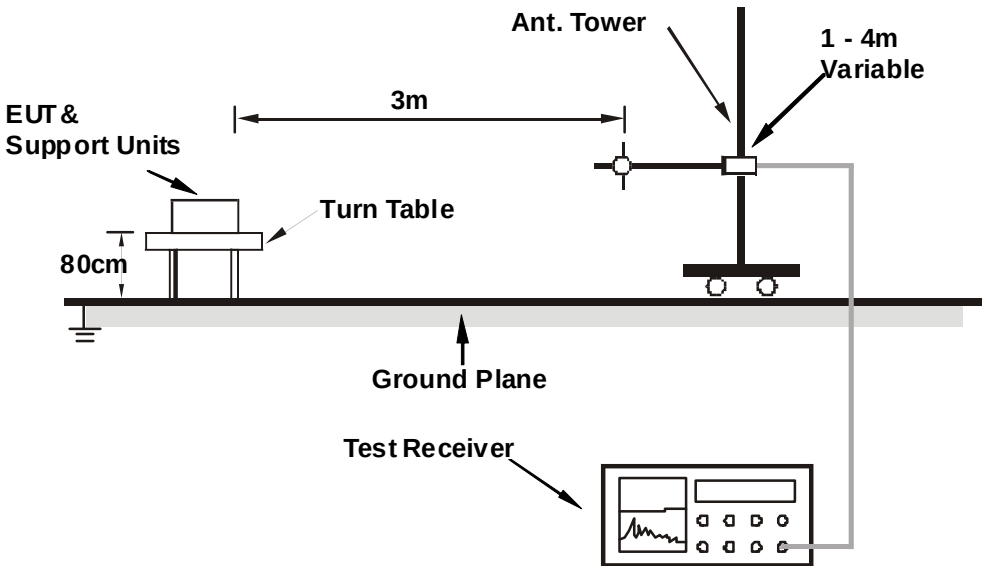
NOTE:

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.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



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

5.2.6 EUT OPERATING CONDITIONS

Same as the 4.1.6

5.2.7 TEST RESULTS(MODE 1, PIFA ANTENNA)

BELOW 1GHz WORST-CASE DATA

802.11n (HT20)

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	133.62	36.8 QP	43.5	-6.7	1.75 H	5	23.21	13.57
2	**166.75**	**42.6 QP**	**43.5**	**-0.9**	**1.77 H**	**346**	**28.68**	**13.88**
3	266.94	40.8 QP	46.0	-5.2	1.25 H	175	26.78	13.98
4	433.28	34.8 QP	46.0	-11.2	2.00 H	250	16.26	18.51
5	566.96	37.9 QP	46.0	-8.1	1.25 H	300	16.39	21.54
6	833.86	36.4 QP	46.0	-9.6	2.50 H	294	10.28	26.14
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	166.07	38.6 QP	43.5	-4.9	1.51 V	233	24.70	13.92
2	200.17	35.7 QP	43.5	-7.8	1.50 V	300	24.63	11.05
3	299.07	33.7 QP	46.0	-12.3	1.50 V	280	18.46	15.27
4	500.35	34.3 QP	46.0	-11.7	1.00 V	20	14.22	20.11
5	567.06	33.3 QP	46.0	-12.7	1.00 V	250	11.73	21.54
6	657.99	35.0 QP	46.0	-11.0	1.50 V	200	11.96	23.08

REMARKS:

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

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	*5745.00	114.5 PK			1.29 H	304	72.13	42.37
2	*5745.00	103.7 AV			1.29 H	304	61.33	42.37
3	11490.00	57.3 PK	74.0	-16.7	1.00 H	65	8.54	48.76
4	11490.00	45.6 AV	54.0	-8.4	1.00 H	65	-3.16	48.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	*5745.00	115.5 PK			1.27 V	165	73.13	42.37
2	*5745.00	105.1 AV			1.27 V	165	62.73	42.37
3	11490.00	61.5 PK	74.0	-12.5	1.00 V	62	12.74	48.76
4	11490.00	47.8 AV	54.0	-6.2	1.00 V	62	-0.96	48.76

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	114.8 PK			1.28 H	305	72.36	42.44
2	*5785.00	103.6 AV			1.28 H	305	61.16	42.44
3	11570.00	57.1 PK	74.0	-16.9	1.00 H	72	8.39	48.71
4	11570.00	45.3 AV	54.0	-8.7	1.00 H	72	-3.41	48.71
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	*5785.00	115.8 PK			1.28 V	163	73.36	42.44
2	*5785.00	105.7 AV			1.28 V	163	63.26	42.44
3	11570.00	61.2 PK	74.0	-12.8	1.00 V	60	12.49	48.71
4	11570.00	47.5 AV	54.0	-6.5	1.00 V	60	-1.21	48.71

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	114.7 PK			1.07 H	301	72.13	42.57
2	*5825.00	103.4 AV			1.07 H	301	60.83	42.57
3	11650.00	57.5 PK	74.0	-16.5	1.00 H	69	8.58	48.92
4	11650.00	45.5 AV	54.0	-8.5	1.00 H	69	-3.42	48.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	115.7 PK			1.25 V	166	73.13	42.57
2	*5825.00	105.6 AV			1.25 V	166	63.03	42.57
3	11650.00	61.3 PK	74.0	-12.7	1.00 V	58	12.38	48.92
4	11650.00	47.6 AV	54.0	-6.4	1.00 V	58	-1.32	48.92

REMARKS:

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

802.11n (HT20)

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	*5745.00	117.8 PK			1.38 H	248	75.43	42.37
2	*5745.00	106.5 AV			1.38 H	248	64.13	42.37
3	11490.00	57.1 PK	74.0	-16.9	1.00 H	155	8.34	48.76
4	11490.00	45.3 AV	54.0	-8.7	1.00 H	155	-3.46	48.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	*5745.00	119.5 PK			1.07 V	216	77.13	42.37
2	*5745.00	108.2 AV			1.07 V	216	65.83	42.37
3	11490.00	63.3 PK	74.0	-10.7	1.00 V	254	14.54	48.76
4	11490.00	48.5 AV	54.0	-5.5	1.00 V	254	-0.26	48.76

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	117.3 PK			1.35 H	245	74.86	42.44
2	*5785.00	106.3 AV			1.35 H	245	63.86	42.44
3	11570.00	57.3 PK	74.0	-16.7	1.00 H	151	8.59	48.71
4	11570.00	45.1 AV	54.0	-8.9	1.00 H	151	-3.61	48.71
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	*5785.00	119.6 PK			1.06 V	215	77.16	42.44
2	*5785.00	108.3 AV			1.06 V	215	65.86	42.44
3	11570.00	63.6 PK	74.0	-10.4	1.00 V	251	14.89	48.71
4	11570.00	48.6 AV	54.0	-5.4	1.00 V	251	-0.11	48.71

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	117.5 PK			1.34 H	243	74.93	42.57
2	*5825.00	106.4 AV			1.34 H	243	63.83	42.57
3	11650.00	57.2 PK	74.0	-16.8	1.00 H	153	8.28	48.92
4	11650.00	45.3 AV	54.0	-8.7	1.00 H	153	-3.62	48.92
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	119.5 PK			1.05 V	213	76.93	42.57
2	*5825.00	108.1 AV			1.05 V	213	65.53	42.57
3	11650.00	63.5 PK	74.0	-10.5	1.00 V	255	14.58	48.92
4	11650.00	48.9 AV	54.0	-5.1	1.00 V	255	-0.02	48.92

REMARKS:

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

802.11n (HT40)

CHANNEL	TX Channel 151	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	*5755.00	114.4 PK			1.34 H	245	72.01	42.39
2	*5755.00	101.3 AV			1.34 H	245	58.91	42.39
3	11510.00	57.6 PK	74.0	-16.4	1.00 H	151	8.86	48.74
4	11510.00	45.4 AV	54.0	-8.6	1.00 H	151	-3.34	48.74
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	*5755.00	115.1 PK			1.08 V	215	72.71	42.39
2	*5755.00	103.1 AV			1.08 V	215	60.71	42.39
3	11510.00	63.4 PK	74.0	-10.6	1.00 V	251	14.66	48.74
4	11510.00	45.9 AV	54.0	-8.1	1.00 V	251	-2.84	48.74

REMARKS:

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

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	114.6 PK			1.35 H	243	72.15	42.45
2	*5795.00	101.5 AV			1.35 H	243	59.05	42.45
3	11590.00	57.1 PK	74.0	-16.9	1.00 H	153	8.40	48.70
4	11590.00	45.6 AV	54.0	-8.4	1.00 H	153	-3.10	48.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	115.0 PK			1.08 V	215	72.55	42.45
2	*5795.00	102.9 AV			1.08 V	215	60.45	42.45
3	11590.00	63.5 PK	74.0	-10.5	1.00 V	254	14.80	48.70
4	11590.00	45.7 AV	54.0	-8.3	1.00 V	254	-3.00	48.70

REMARKS:

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

5.2.8 TEST RESULTS(MODE 2, DIPOLE ANTENNA)

BELOW 1GHz WORST-CASE DATA

802.11n (HT20)

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	Below 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	165.95	41.6 QP	43.5	-1.9	1.75 H	342	27.71	13.92
2	266.95	42.8 QP	46.0	-3.2	1.25 H	180	28.81	13.98
3	433.44	34.1 QP	46.0	-12.0	2.00 H	201	15.54	18.51
4	567.63	33.6 QP	46.0	-12.4	1.55 H	200	12.07	21.55
5	633.62	36.8 QP	46.0	-9.3	1.25 H	300	14.02	22.73
6	799.59	36.0 QP	46.0	-10.1	1.30 H	169	10.28	25.67
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	167.12	38.7 QP	43.5	-4.8	1.25 V	250	24.80	13.86
2	267.09	36.9 QP	46.0	-9.2	1.50 V	300	22.86	13.99
3	300.43	38.8 QP	46.0	-7.2	1.75 V	125	23.44	15.32
4	401.56	32.1 QP	46.0	-13.9	1.25 V	10	14.28	17.80
5	500.82	35.0 QP	46.0	-11.0	1.00 V	333	14.89	20.12
6	566.98	40.3 QP	46.0	-5.7	1.25 V	175	18.80	21.54

REMARKS:

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

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	3830.00	56.1 PK	74.0	-17.9	1.05 H	207	20.17	35.93
2	3830.00	44.3 AV	54.0	-9.7	1.05 H	207	8.37	35.93
3	*5745.00	104.5 PK			1.00 H	172	62.13	42.37
4	*5745.00	94.7 AV			1.00 H	172	52.33	42.37
5	11490.00	57.2 PK	74.0	-16.8	1.00 H	155	8.44	48.76
6	11490.00	45.2 AV	54.0	-8.8	1.00 H	155	-3.56	48.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	3830.00	56.1 PK	74.0	-17.9	1.01 V	80	20.17	35.93
2	3830.00	46.2 AV	54.0	-7.8	1.01 V	80	10.27	35.93
3	*5745.00	112.5 PK			1.11 V	241	70.13	42.37
4	*5745.00	103.5 AV			1.11 V	241	61.13	42.37
5	11490.00	59.6 PK	74.0	-14.4	1.00 V	241	10.84	48.76
6	11490.00	47.3 AV	54.0	-6.7	1.00 V	241	-1.46	48.76

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	3856.67	56.0 PK	74.0	-18.0	1.05 H	206	20.01	35.99
2	3856.67	44.7 AV	54.0	-9.3	1.05 H	206	8.71	35.99
3	*5785.00	104.2 PK			1.03 H	175	61.76	42.44
4	*5785.00	94.6 AV			1.03 H	175	52.16	42.44
5	11570.00	57.3 PK	74.0	-16.7	1.00 H	151	8.59	48.71
6	11570.00	45.5 AV	54.0	-8.5	1.00 H	151	-3.21	48.71
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	3856.67	56.4 PK	74.0	-17.6	1.05 V	78	20.41	35.99
2	3856.67	46.5 AV	54.0	-7.5	1.05 V	78	10.51	35.99
3	*5785.00	112.9 PK			1.11 V	243	70.46	42.44
4	*5785.00	103.8 AV			1.11 V	243	61.36	42.44
5	11570.00	59.2 PK	74.0	-14.8	1.00 V	245	10.49	48.71
6	11570.00	47.5 AV	54.0	-6.5	1.00 V	245	-1.21	48.71

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	3883.33	56.3 PK	74.0	-17.7	1.03 H	201	20.25	36.05
2	3883.33	44.6 AV	54.0	-9.4	1.03 H	201	8.55	36.05
3	*5825.00	104.3 PK			1.00 H	171	61.73	42.57
4	*5825.00	94.5 AV			1.00 H	171	51.93	42.57
5	11650.00	57.1 PK	74.0	-16.9	1.00 H	153	8.18	48.92
6	11650.00	45.1 AV	54.0	-8.9	1.00 H	153	-3.82	48.92
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	3883.33	56.6 PK	74.0	-17.4	1.01 V	72	20.55	36.05
2	3883.33	47.1 AV	54.0	-6.9	1.01 V	72	11.05	36.05
3	*5825.00	112.7 PK			1.10 V	240	70.13	42.57
4	*5825.00	103.6 AV			1.10 V	240	61.03	42.57
5	11650.00	59.3 PK	74.0	-14.7	1.00 V	251	10.38	48.92
6	11650.00	47.3 AV	54.0	-6.7	1.00 V	251	-1.62	48.92

REMARKS:

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

802.11n (HT20)

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	3830.00	56.1 PK	74.0	-17.9	1.05 H	200	20.17	35.93
2	3830.00	44.5 AV	54.0	-9.5	1.05 H	200	8.57	35.93
3	*5745.00	107.2 PK			1.01 H	171	64.83	42.37
4	*5745.00	98.5 AV			1.01 H	171	56.13	42.37
5	11490.00	57.2 PK	74.0	-16.8	1.00 H	161	8.44	48.76
6	11490.00	45.3 AV	54.0	-8.7	1.00 H	161	-3.46	48.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	3830.00	56.1 PK	74.0	-17.9	1.05 V	67	20.17	35.93
2	3830.00	46.9 AV	54.0	-7.1	1.05 V	67	10.97	35.93
3	*5745.00	116.5 PK			1.10 V	245	74.13	42.37
4	*5745.00	107.3 AV			1.10 V	245	64.93	42.37
5	11490.00	59.1 PK	74.0	-14.9	1.00 V	283	10.34	48.76
6	11490.00	47.1 AV	54.0	-6.9	1.00 V	283	-1.66	48.76

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	3856.00	56.3 PK	74.0	-17.7	1.02 H	198	20.31	35.99
2	3856.00	44.1 AV	54.0	-9.9	1.02 H	198	8.11	35.99
3	*5785.00	107.1 PK			1.05 H	172	64.66	42.44
4	*5785.00	98.3 AV			1.05 H	172	55.86	42.44
5	11570.00	57.5 PK	74.0	-16.5	1.00 H	163	8.79	48.71
6	11570.00	45.5 AV	54.0	-8.5	1.00 H	163	-3.21	48.71
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	3856.00	56.3 PK	74.0	-17.7	1.05 V	68	20.31	35.99
2	3856.00	46.5 AV	54.0	-7.5	1.05 V	68	10.51	35.99
3	*5785.00	116.8 PK			1.12 V	241	74.36	42.44
4	*5785.00	107.1 AV			1.12 V	241	64.66	42.44
5	11570.00	61.3 PK	74.0	-12.7	1.00 V	281	12.59	48.71
6	11570.00	47.6 AV	54.0	-6.4	1.00 V	281	-1.11	48.71

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).
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. " * ": Fundamental frequency.
6. The limit value is defined as per 15.247.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	3883.00	56.2 PK	74.0	-17.8	1.03 H	197	20.15	36.05
2	3883.00	44.4 AV	54.0	-9.6	1.03 H	197	8.35	36.05
3	*5825.00	107.3 PK			1.03 H	171	64.73	42.57
4	*5825.00	98.1 AV			1.03 H	171	55.53	42.57
5	11650.00	57.3 PK	74.0	-16.7	1.00 H	166	8.38	48.92
6	11650.00	45.1 AV	54.0	-8.9	1.00 H	166	-3.82	48.92
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	3883.00	57.6 PK	74.0	-16.4	1.04 V	104	21.55	36.05
2	3883.00	48.2 AV	54.0	-5.8	1.04 V	104	12.15	36.05
3	*5825.00	116.6 PK			1.10 V	243	74.03	42.57
4	*5825.00	107.4 AV			1.10 V	243	64.83	42.57
5	11650.00	59.5 PK	74.0	-14.5	1.00 V	289	10.58	48.92
6	11650.00	47.3 AV	54.0	-6.7	1.00 V	289	-1.62	48.92

REMARKS:

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

802.11n (HT40)

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	3836.67	56.2 PK	74.0	-17.8	1.03 H	192	20.26	35.94
2	3836.67	44.1 AV	54.0	-9.9	1.03 H	192	8.16	35.94
3	*5755.00	101.8 PK			1.00 H	178	59.41	42.39
4	*5755.00	93.5 AV			1.00 H	178	51.11	42.39
5	11510.00	57.1 PK	74.0	-16.9	1.00 H	163	8.36	48.74
6	11510.00	45.3 AV	54.0	-8.7	1.00 H	163	-3.44	48.74
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	3836.67	58.1 PK	74.0	-15.9	1.05 V	105	22.16	35.94
2	3836.67	48.5 AV	54.0	-5.5	1.05 V	105	12.56	35.94
3	*5755.00	111.7 PK			1.10 V	242	69.31	42.39
4	*5755.00	102.7 AV			1.10 V	242	60.31	42.39
5	11510.00	57.8 PK	74.0	-16.2	1.00 V	281	9.06	48.74
6	11510.00	45.5 AV	54.0	-8.5	1.00 V	281	-3.24	48.74

REMARKS:

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

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	3863.33	56.1 PK	74.0	-17.9	1.02 H	191	20.09	36.01
2	3863.33	44.3 AV	54.0	-9.7	1.02 H	191	8.29	36.01
3	*5795.00	102.5 PK			1.00 H	175	60.05	42.45
4	*5795.00	93.9 AV			1.00 H	175	51.45	42.45
5	11590.00	57.3 PK	74.0	-16.7	1.00 H	161	8.60	48.70
6	11590.00	45.6 AV	54.0	-8.4	1.00 H	161	-3.10	48.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	3863.33	57.8 PK	74.0	-16.2	1.03 V	108	21.79	36.01
2	3863.33	48.1 AV	54.0	-5.9	1.03 V	108	12.09	36.01
3	*5795.00	111.9 PK			1.13 V	245	69.45	42.45
4	*5795.00	102.5 AV			1.13 V	245	60.05	42.45
5	11590.00	58.1 PK	74.0	-15.9	1.00 V	283	9.40	48.70
6	11590.00	45.3 AV	54.0	-8.7	1.00 V	283	-3.40	48.70

REMARKS:

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

5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	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 : Dec. 26, 2012

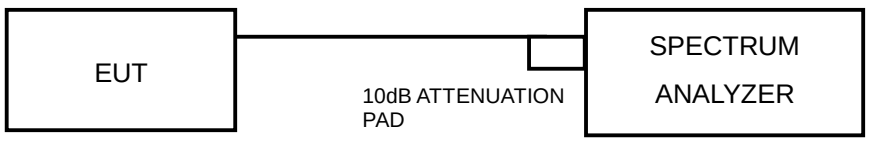
5.3.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = approximately 1% of the emission bandwidth
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

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

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

5.3.7 TEST RESULTS

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.38	0.5	PASS
157	5785	16.39	0.5	PASS
165	5825	16.39	0.5	PASS

802.11n (HT20)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	17.63	17.72	0.5	PASS
157	5785	17.62	17.68	0.5	PASS
165	5825	17.59	17.70	0.5	PASS

802.11n (HT40)

CHANNEL	FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
151	5755	36.39	36.14	0.5	PASS
159	5795	36.38	36.34	0.5	PASS

5.4 CONDUCTED OUTPUT POWER MEASUREMENT

5.4.1 LIMITS OF CONDUCTED OUTPUT POWER MEASUREMENT

For systems using digital modulation in the 5725 –5850 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 ≤ 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.

5.4.2 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 : Dec. 26, 2012

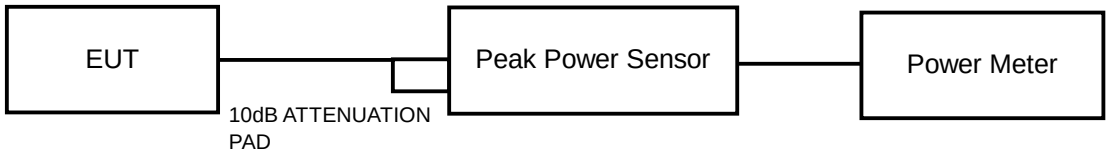
5.4.3 TEST PROCEDURES

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

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP



5.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

5.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PEAK POWER (mW)	PEAK POWER (dBm)	LIMIT (dBm)	PASS/FAIL
149	5745	281.838	24.5	30	PASS
157	5785	288.403	24.6	30	PASS
165	5825	281.838	24.5	30	PASS

802.11n (HT20)

CHAN.	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
149	5745	24.2	24.4	538.450	27.31	30	PASS
157	5785	24.1	24.3	526.193	27.21	30	PASS
165	5825	24.1	24.4	532.463	27.26	30	PASS

802.11n (HT40)

CHAN.	FREQUENCY (MHz)	PEAK POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
151	5755	24.1	24.8	559.035	27.47	30	PASS
159	5795	24.1	24.9	566.070	27.53	30	PASS

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	FSP 40	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 : Dec. 26, 2012

5.5.3 TEST PROCEDURE

a. Set the RBW = 3 kHz, VBW =10 kHz, Detector = peak.

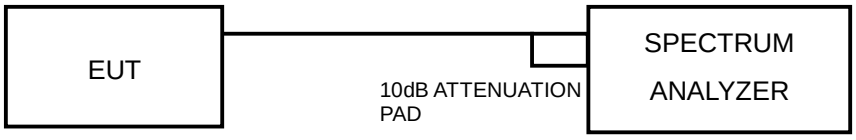
b. Sweep time = auto couple, Trace mode = max hold, allow trace to fully stabilize.

c. Use the peak marker function to determine the maximum amplitude level.

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 4.3.6

5.5.7 TEST RESULTS(MODE 1, PIFA ANTENNA)

802.11a

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	-6.68	8	PASS
157	5785	-5.41	8	PASS
165	5825	-6.69	8	PASS

802.11n (HT20)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	0.53	3.01	3.54	6.49	PASS
	157	5785	0.08	3.01	3.09	6.49	PASS
	165	5825	-0.60	3.01	2.41	6.49	PASS
1	149	5745	-4.98	3.01	-1.97	6.49	PASS
	157	5785	-4.08	3.01	-1.07	6.49	PASS
	165	5825	-5.06	3.01	-2.05	6.49	PASS

NOTE: Directional gain = 4.5dBi + 10log(2) = 7.51dBi > 6dBi , so the power density limit shall be reduced to 8-(7.51-6) = 6.49dBm.

802.11n (HT40)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5755	-0.33	3.01	2.68	6.49	PASS
	159	5795	-2.02	3.01	0.99	6.49	PASS
1	151	5755	-9.01	3.01	-6.00	6.49	PASS
	159	5795	-8.49	3.01	-5.48	6.49	PASS

NOTE: Directional gain = 4.5dBi + 10log(2) = 7.51dBi > 6dBi , so the power density limit shall be reduced to 8-(7.51-6) = 6.49dBm.

5.5.8 TEST RESULTS(MODE 2, DIPOLE ANTENNA)

802.11a

Channel	FREQUENCY (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
149	5745	-6.68	8	PASS
157	5785	-5.41	8	PASS
165	5825	-6.69	8	PASS

802.11n (HT20)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	149	5745	0.53	3.01	3.54	6.99	PASS
	157	5785	0.08	3.01	3.09	6.99	PASS
	165	5825	-0.60	3.01	2.41	6.99	PASS
1	149	5745	-4.98	3.01	-1.97	6.99	PASS
	157	5785	-4.08	3.01	-1.07	6.99	PASS
	165	5825	-5.06	3.01	-2.05	6.99	PASS

NOTE: Directional gain = 4.0dBi + 10log(2) = 7.01dBi > 6dBi , so the power density limit shall be reduced to 8-(7.01-6) = 6.99dBm.

802.11n (HT40)

TX chain	Channel	FREQ. (MHz)	PSD (dBm/3kHz)	10 log (N=2) dB	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	PASS /FAIL
0	151	5755	-0.33	3.01	2.68	6.99	PASS
	159	5795	-2.02	3.01	0.99	6.99	PASS
1	151	5755	-9.01	3.01	-6.00	6.99	PASS
	159	5795	-8.49	3.01	-5.48	6.99	PASS

NOTE: Directional gain = 4.0dBi + 10log(2) = 7.01dBi > 6dBi , so the power density limit shall be reduced to 8-(7.01-6) = 6.99dBm.

5.6 CONDUCTED OUT-BAND EMISSION MEASUREMENT

5.6.1 LIMITS OF CONDUCTED OUT-BAND EMISSION MEASUREMENT

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

5.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S Spectrum Analyzer	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 : Dec. 26, 2012

5.6.3 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.

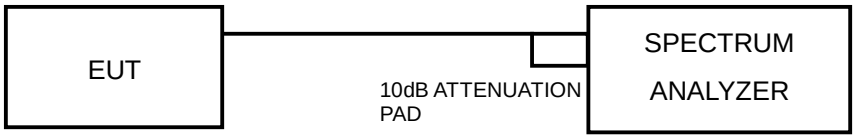
Measurement Procedure –Unwanted Emission Level

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.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 TEST SETUP



5.6.6 EUT OPERATING CONDITION

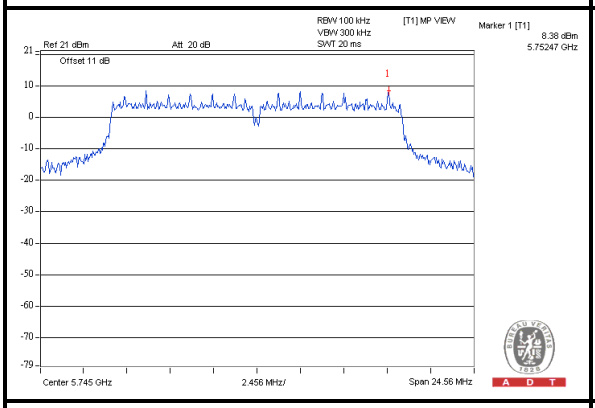
Same as Item 4.3.6

5.6.7 TEST RESULTS

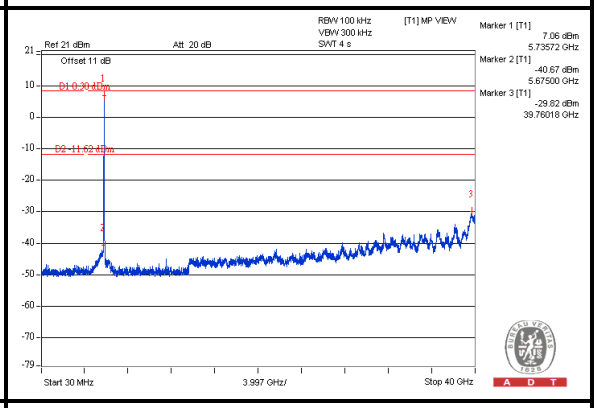
The spectrum plots are attached on the following pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement.

802.11a

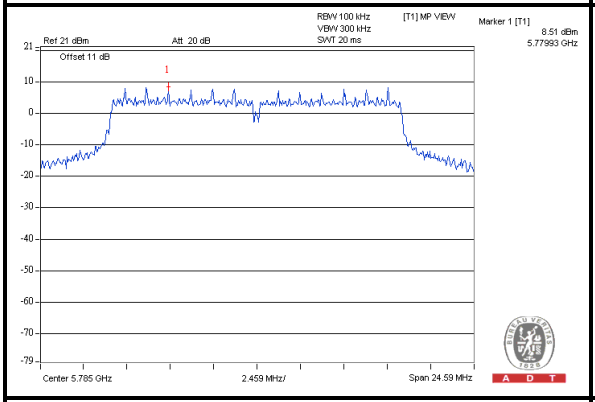
CH 149



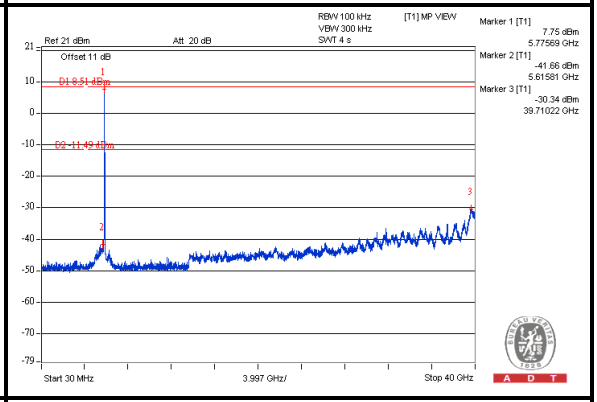
CH 149



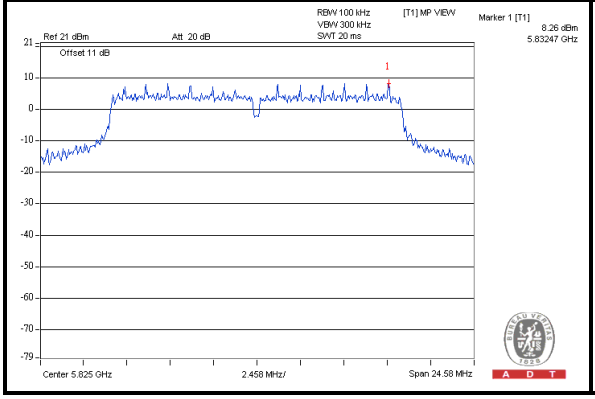
CH 157



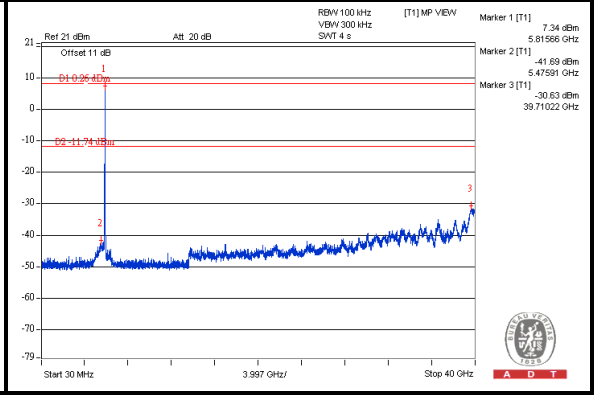
CH 157

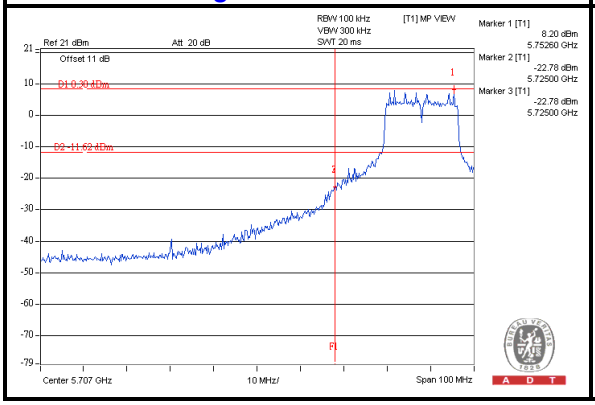
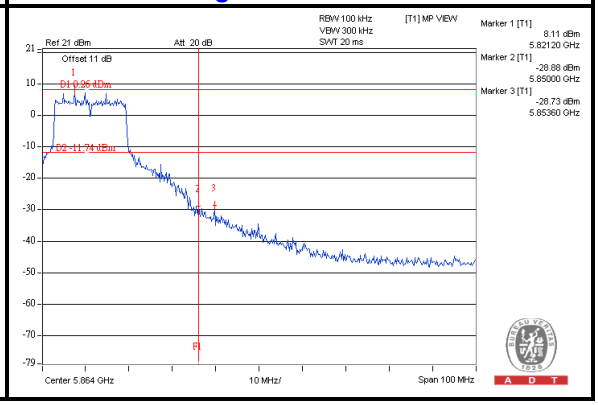


CH 165



CH 165

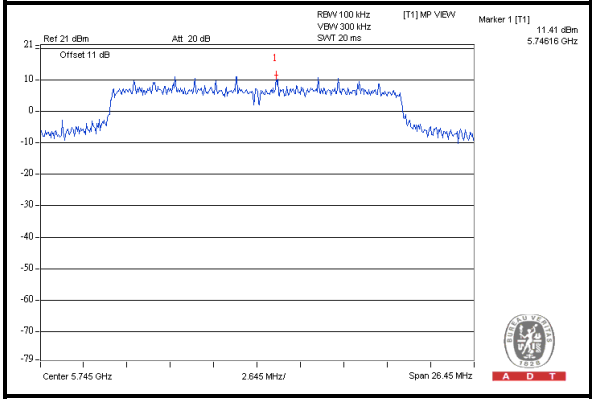


CH 149 Band edge	CH 165 Band edge
	

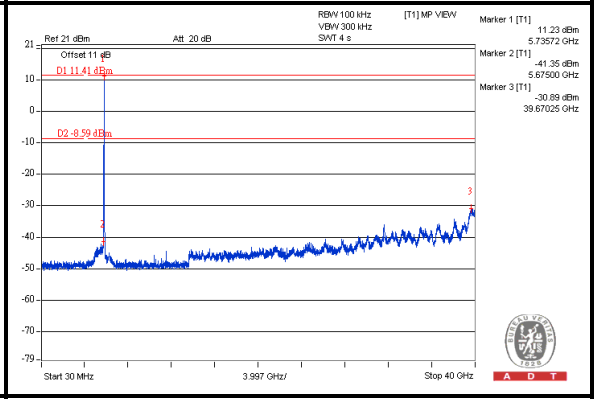
802.11n (HT20)

For Chain(0)

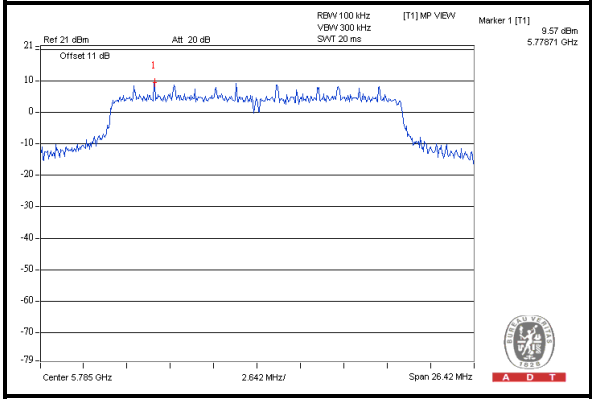
CH 149



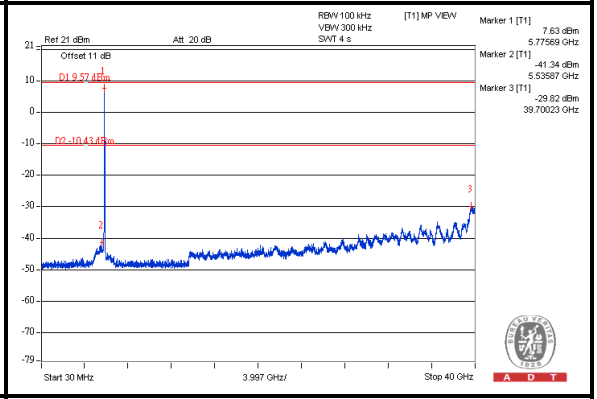
CH 149



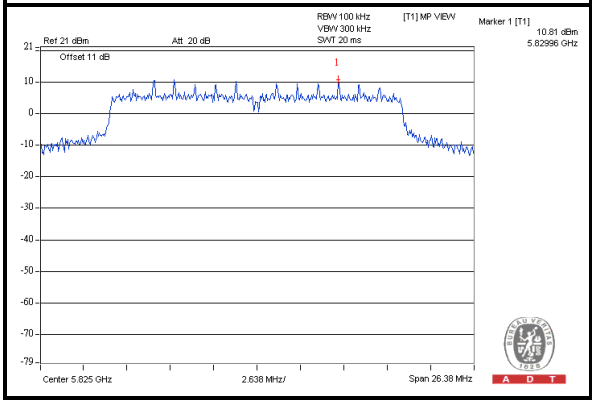
CH 157



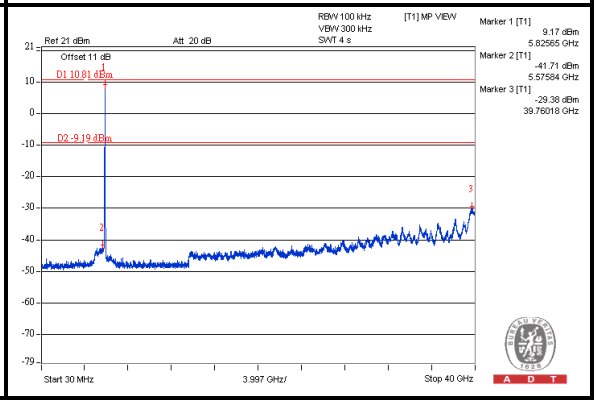
CH 157



CH 165

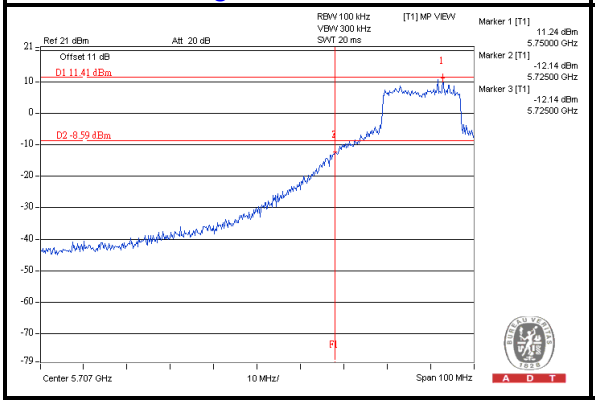


CH 165

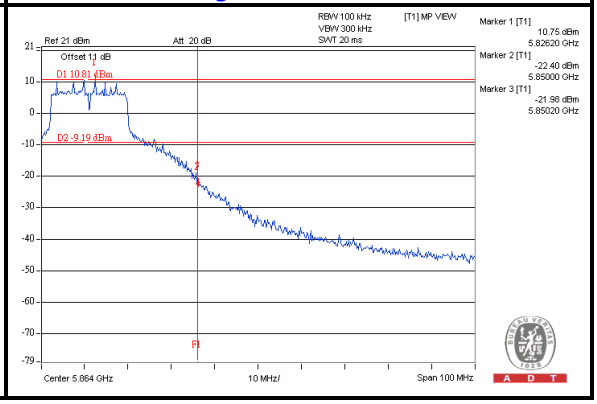


CHAIN (0)

CH 149 Band edge

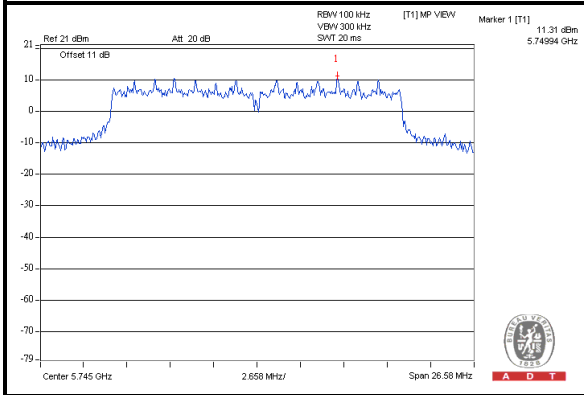


CH 165 Band edge

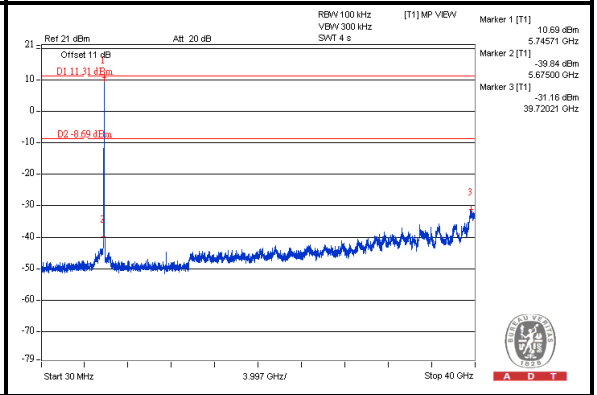


For Chain(1)

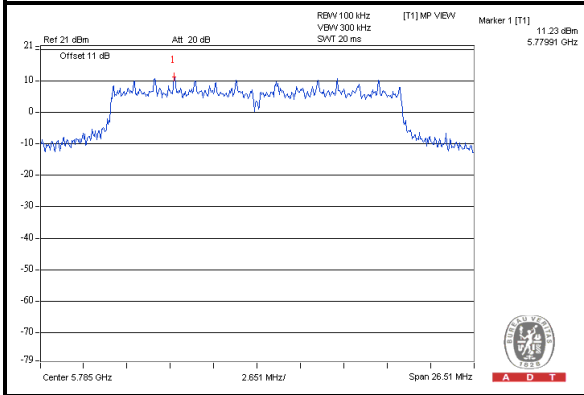
CH 149



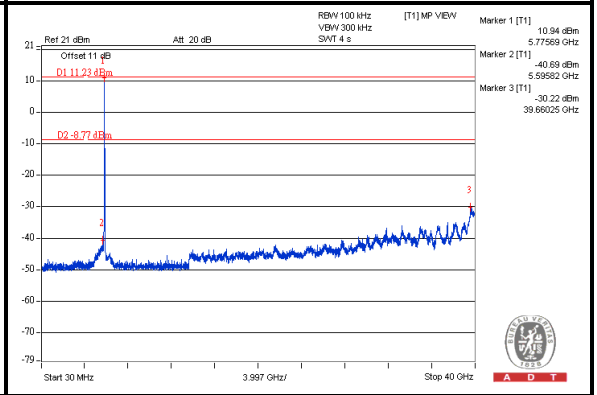
CH 149



CH 157



CH 157



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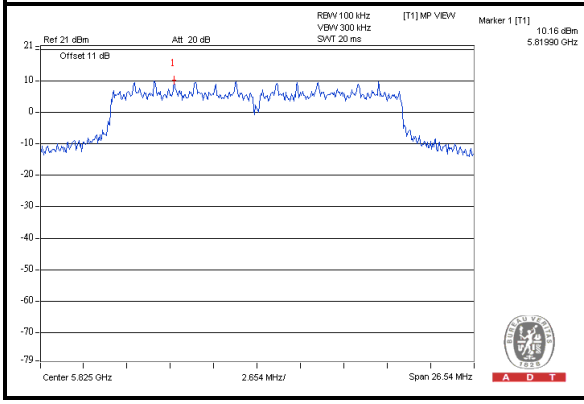
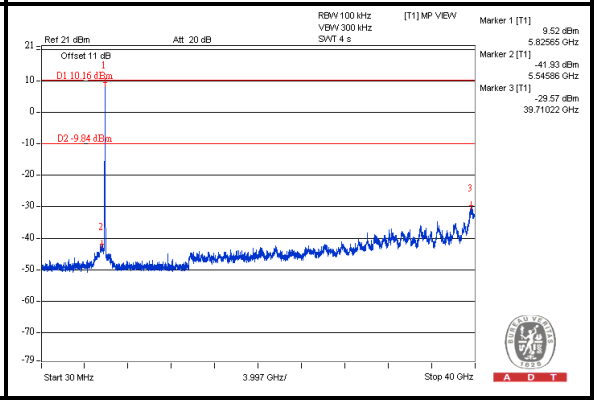
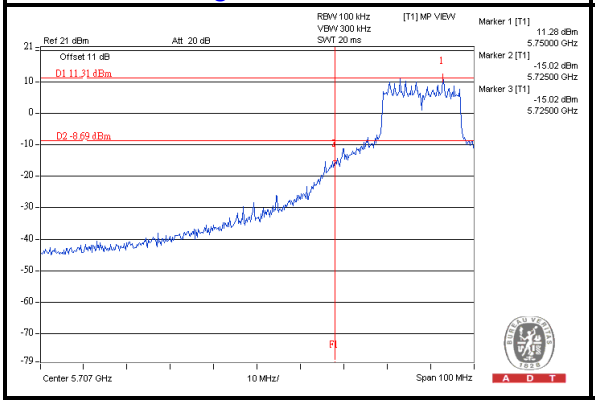


CH 165

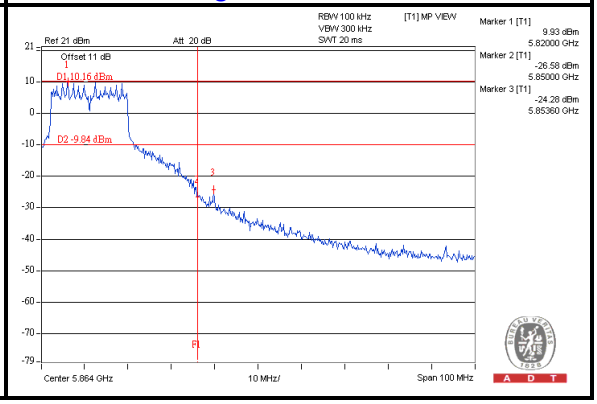


CHAIN (1)

CH 149 Band edge



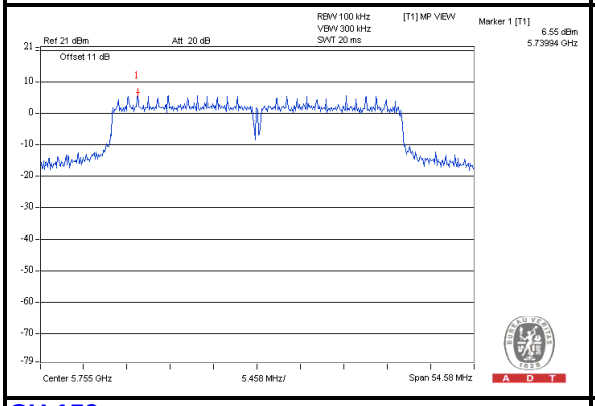
CH 165 Band edge



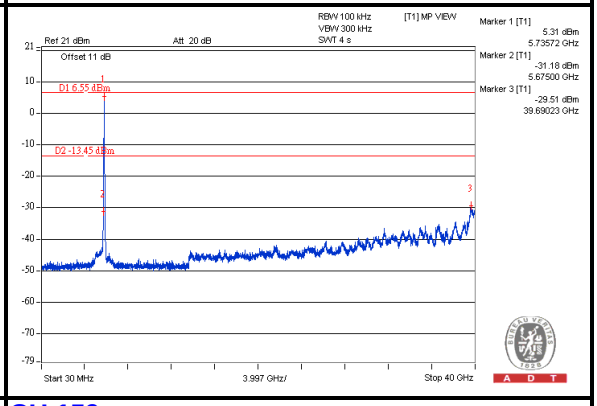
802.11n (HT40)

For Chain(0)

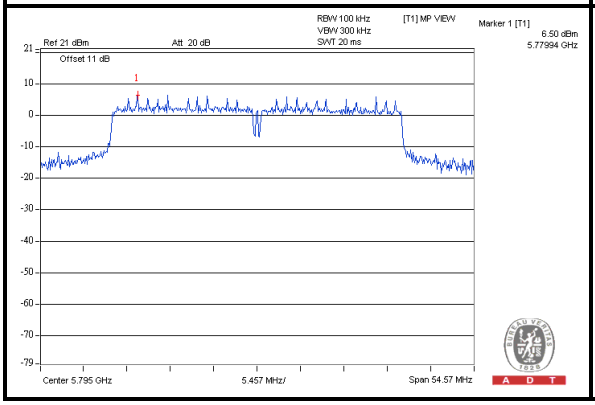
CH 151



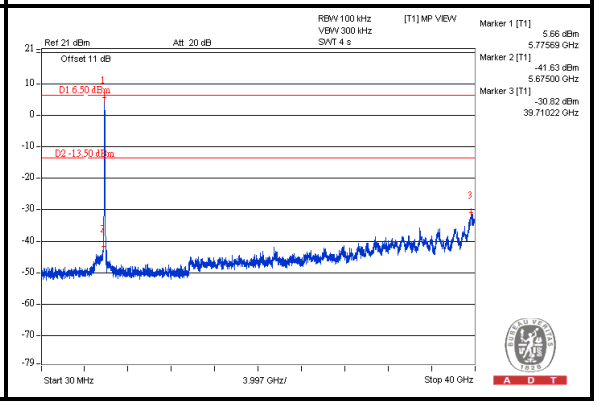
CH 151



CH 159

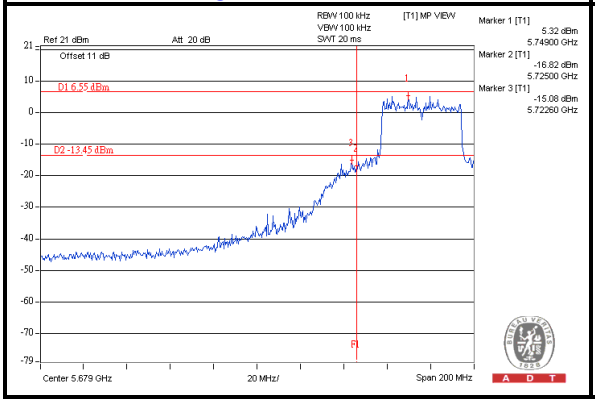


CH 159

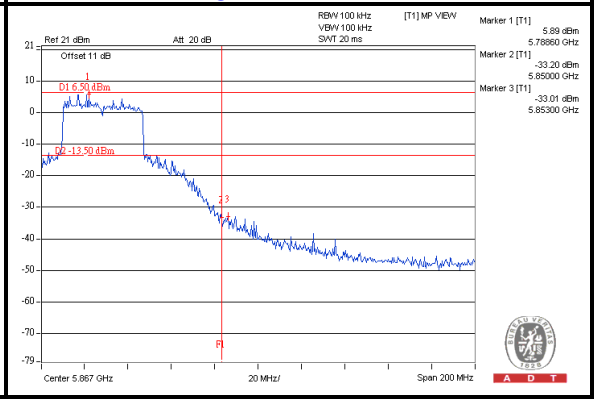


CHAIN (0)

CH 151 Band edge

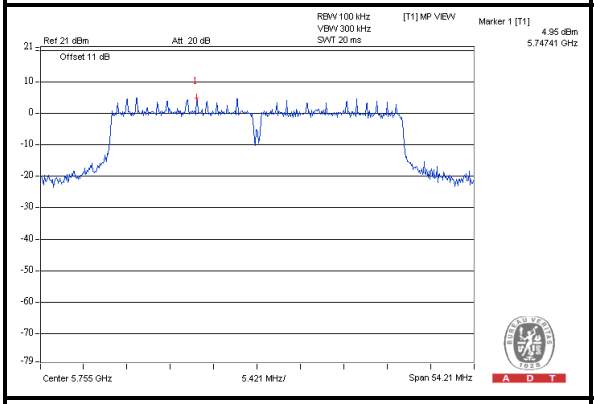


CH 159 Band edge



For Chain(1)

CH 151



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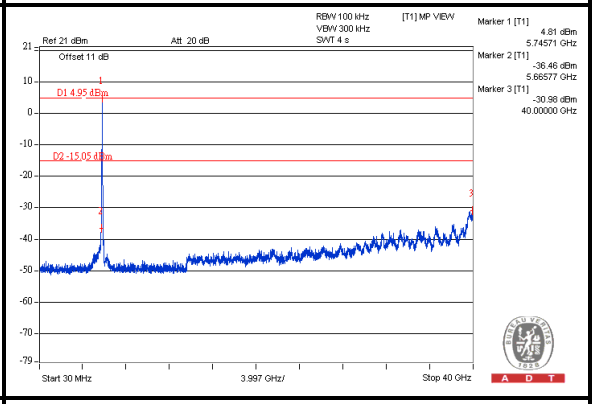

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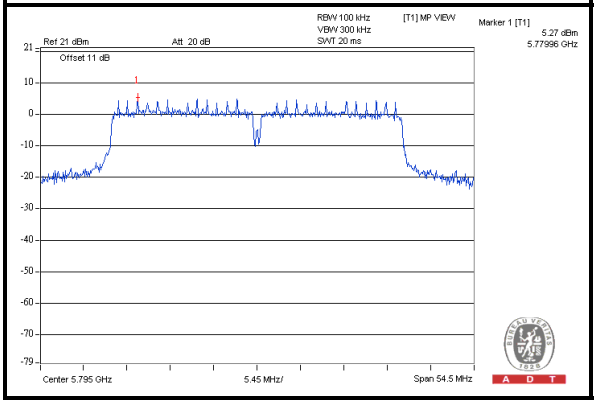
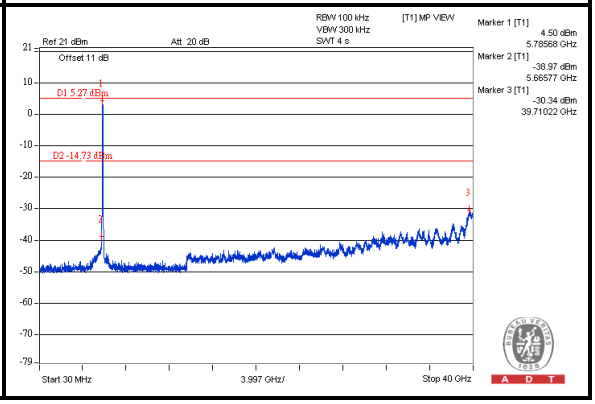
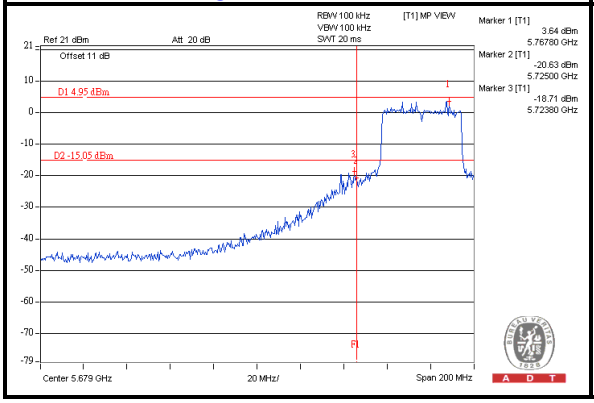


CH 159

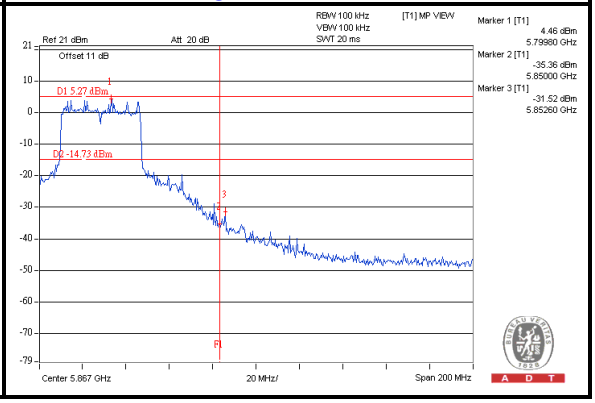


CHAIN (1)

CH 151 Band edge



CH 159 Band edge



6. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

7. INFORMATION ON THE TESTING LABORATORIES

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

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:
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Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
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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.

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

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

--- END ---