FCC TEST REPORT (15.407)

REPORT NO.:	RF130726E06-1
MODEL NO.:	AW-AM691NF
FCC ID:	TLZ-AM691NF
RECEIVED:	July 26, 2013
TESTED:	Aug. 15 to 22, 2013
ISSUED:	Sep. 06, 2013

APPLICANT:	AzureWave Technologies, Inc.
ADDRESS:	8 F., No. 94, Baozhong Rd., Xindian,Taipei, Taiwan 231

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
RF130726E06-1	Original release	Sep. 06, 2013

1. CERTIFICATION

PRODUCT:	IEEE 802.11 a/b/g/n Wireless LAN and Bluetooth Combo LGA Module
BRAND NAME:	AzureWave
MODEL NO.:	AW-AM691NF
TEST SAMPLE:	ENGINEERING SAMPLE
APPLICANT:	AzureWave Technologies, Inc.
TESTED:	Aug. 15 to 22, 2013
STANDARDS:	**FCC Part 15, Subpart E (Section 15.407)**
	ANSI C63.10-2009

The above equipment (Model: AW-AM691NF) 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:** *Sep. 06, 2013*
(Lori Chung, Specialist)

APPROVED BY : _____ , **DATE:** *Sep. 06, 2013*
(May Chen, Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART E (SECTION 15.407)			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
15.407(b)(6)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -12.20dB at 0.15000MHz
15.407(b/1/2/3) (b)(5)	Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -0.3dB at 5350.00MHz.
15.407(a/1/2/3)	Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is I-PEX not a standard connector.

NOTE:

1. The EUT was operating in 2.400 ~ 2.4835GHz, 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.15~5.35GHz, 5.47~5.6GHz & 5.65~5.725GHz. For the 2.400 ~ 2.4835GHz and 5.725~5.850GHz RF parameters was recorded in another test report.
2. The DFS report 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)	5.46 dB
Radiated emissions (1GHz -6GHz)	3.73 dB
Radiated emissions (6GHz -18GHz)	3.90 dB
Radiated emissions (18GHz -40GHz)	4.11 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	IEEE 802.11 a/b/g/n Wireless LAN and Bluetooth Combo LGA Module
MODEL NO.	AW-AM691NF
POWER SUPPLY	DC 3.3V
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** **5GHz:**5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.50 ~ 5.58GHz & 5.66GHz ~ 5.70GHz
	For 15.247 **2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.745 ~ 5.825GHz
NUMBER OF CHANNEL	**For 15.407** 16 for 802.11a, 802.11n (HT20) 7 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: 113.240mW 802.11n (HT20): 182.666mW 802.11n (HT40): 93.077mW **For 15.247 (2.4GHz)** 802.11b: 148.936mW 802.11g: 199.986mW 802.11n (HT20): 389.801mW 802.11n (HT40): 157.000mW **For 15.247 (5GHz)** 802.11a: 158.489mW 802.11n (HT20): 243.478mW 802.11n (HT40): 255.711mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA

I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	NA

NOTE:

1. There are Bluetooth technology and WLAN technology used for the EUT (WLAN and Bluetooth technology cannot transmit at same time).
2. 2.4GHz and 5GHz technology cannot transmit at same time.
3. The antennas provided to the EUT, please refer to the following table:

Ant.	Brand	Model	Antenna Type	Connector	Antenna Gain <include cable lose> (dB)	Antenna Cable Loss (dB)	Cable Length (mm)	Frequency range (MHz to MHz)
1	MAG.LAYERS	MSA-4008-25GC1-A1	PIFA	I-PEX	2.98	0.5	150	2400 ~ 2500
					5.16			4900 ~ 5900
2	INPAQ	WA-C-XT-02-001	PIFA	I-PEX	2.40	1	721	2400 ~ 2500
					2.06			5150 ~ 5850
3	INPAQ	WA-P-LB-02-035	PIFA	I-PEX	2.97	1	440	2400 ~ 2500
					2.77			5150 ~ 5850
4	WHA YU	SSR-31604	PIFA	I-PEX	2.6	0.5	125	2400 ~ 2500
					4.3			4900 ~ 5825
5	Smart Approach Co., Ltd	SE-ECJH0-001	PIFA	I-PEX	-0.56	0.66	206	2400 ~ 2500
					1.25	0.98		5150 ~ 5350
					0.08	1.03		5740 ~ 5725
					0.75	1.06		5725 ~ 5850
6	Smart Approach Co., Ltd	SE-ECJH0-002	PIFA	I-PEX	-0.57	0.14	43	2400 ~ 2500
					-0.64	0.20		5150 ~ 5350
					1.79	0.22		5740 ~ 5725
					1.27	0.22		5725 ~ 5850
7	JiengtaiCorporation	JT1301209Y0311	PIFA	I-PEX	1.82	0.76	208	2400 ~ 2500
					0.45	1.22		5150 ~ 5350
					0.76	1.27		5740 ~ 5725
					0.38	1.32		5725 ~ 5850
8	JiengtaiCorporation	JT1301209Y1511	PIFA	I-PEX	-0.44	0.13	48	2400 ~ 2500
					2.08	0.25		5150 ~ 5350
					2.48	0.26		5740 ~ 5725
					1.66	0.33		5725 ~ 5850
9	Hua Chen Technology Co.,Ltd	0ACCN013008N	PIFA	I-PEX	-1.04	0.12	213	2400 ~ 2500
					-1.67	0.19		5150 ~ 5350
					-0.64	0.20		5740 ~ 5725
					-0.75	0.21		5725 ~ 5850
10	Hua Chen Technology Co.,Ltd	0ACCN013009N	PIFA	I-PEX	-5.82	0.5	49	2400 ~ 2500
					0.54	0.77		5150 ~ 5350
					2.33	0.80		5740 ~ 5725
					2.33	0.82		5725 ~ 5850
From the above antennas, antenna 1 was selected for the test and its data was recorded in this report.								

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

MODULATION MODE	TX/RX FUNCTION
802.11a	1TX(Diversity)/2RX
802.11b	1TX(Diversity)/2RX
802.11g	1TX(Diversity)/2RX
802.11n (HT20) (MCS0~7)	1TX(Diversity)/2RX
802.11n (HT20) (MCS8~15)	2TX/2RX
802.11n (HT40) (MCS0~7)	1TX(Diversity)/2RX
802.11n (HT40) (MCS8~15)	2TX/2RX

5. This equipment is a slave that supports TPC function.
6. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.
7. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 DESCRIPTION OF TEST MODES

Operated in 5150 ~ 5350MHz band:

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	52	5260 MHz
40	5200 MHz	56	5280 MHz
44	5220 MHz	60	5300 MHz
48	5240 MHz	64	5320 MHz

4 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY
38	5190 MHz
46	5230 MHz
54	5270 MHz
62	5310 MHz

Operated in 5470MHz ~ 5600MHz & 5650MHz ~ 5725MHz bands:

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

3 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY
102	5510 MHz
110	5550 MHz
134	5670 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

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

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

RE ³ 1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

NOTE: 1. "-"means no effect.

2. The EUT's antenna had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane** (for below 1GHz) and **Z-plane** (for above 1GHz).

POWER LINE CONDUCTED EMISSION TEST:

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (MBPS)
802.11n (HT20)	36 to 140	52	OFDM	BPSK	13

RADIATED EMISSION TEST (BELOW 1 GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11n (HT20)	36 to 140	52	OFDM	BPSK	13

RADIATED EMISSION TEST (ABOVE 1 GHz):

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	6
802.11n (HT20)	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	13
802.11n (HT40)	38 to 134	38, 46, 54, 62, 102, 110, 134	OFDM	BPSK	27

ANTENNA PORT CONDUCTED MEASUREMENT:

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

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

MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
802.11a	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	6
802.11n (HT20)	36 to 140	36, 40, 48, 52, 60, 64, 100, 116, 132, 140	OFDM	BPSK	13
802.11n (HT40)	38 to 134	38, 46, 54, 62, 102, 110, 134	OFDM	BPSK	27

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	25deg. C,65%RH	120Vac, 60Hz	Barry Lee
RE<1G	24deg. C, 65%RH	120Vac, 60Hz	Andy Ho
RE≥1G	24deg. C, 69%RH	120Vac, 60Hz	Tim Ho
APCM	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 E (15.407)

789033 D01 General UNII Test Procedures v01 r03

662911 D01 Multiple Transmitter Output v01 r02

ANSI C63.10-2009

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

3.4 DUTY CYCLE OF TEST SIGNAL

If duty cycle of test signal is > 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a

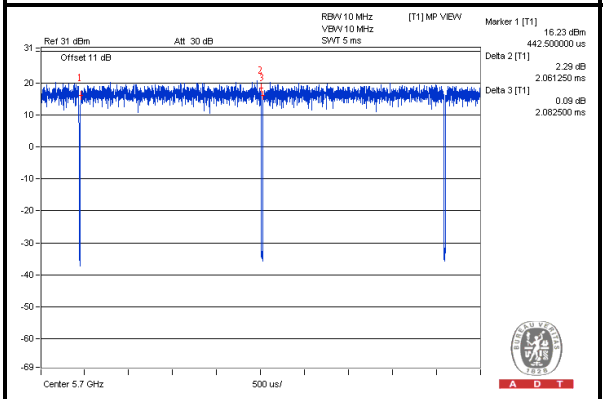
BPSK: Duty cycle = 2.061 ms/2.082 ms = 0.990

QPSK: Duty cycle = 1.043 ms/1.063 ms = 0.981

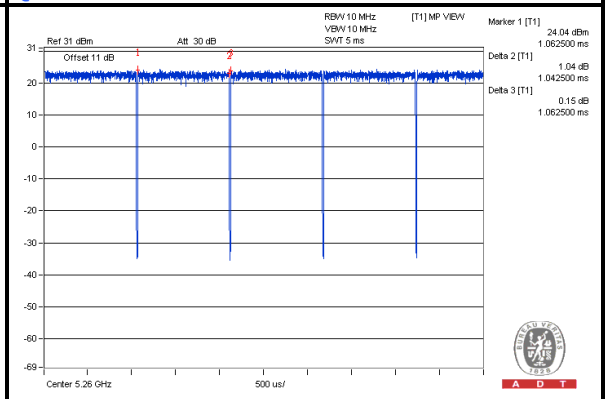
16QAM: Duty cycle = 0.530 ms/0.550 ms = 0.964, Duty factor = 10 * log(1/0.964) = 0.16

64QAM: Duty cycle = 0.274 ms/0.294 ms = 0.932, Duty factor = 10 * log(1/0.932) = 0.31

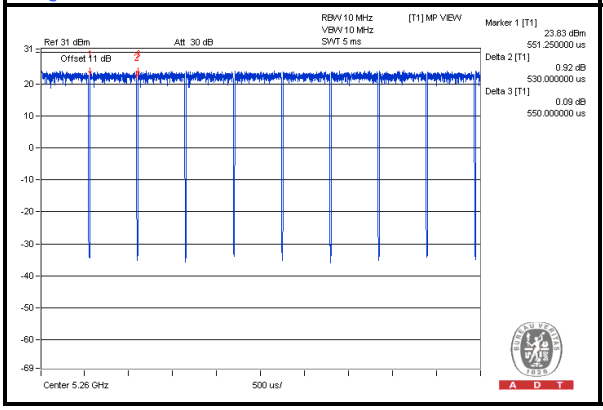
BPSK



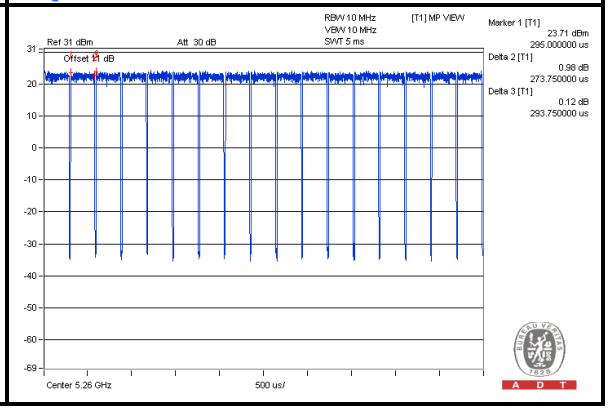
QPSK



16QAM



64QAM



802.11n (HT20)

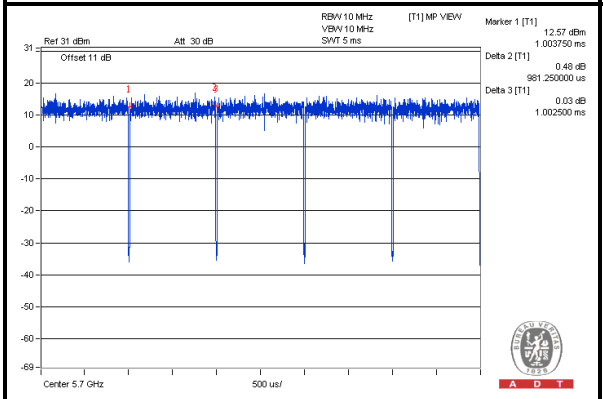
BPSK: Duty cycle = 0.981 ms/1.002 ms = 0.979, Duty factor = 10 * log(1/0.979) = 0.09

QPSK: Duty cycle = 0.976 ms/0.998 ms = 0.978, Duty factor = 10 * log(1/0.978) = 0.09

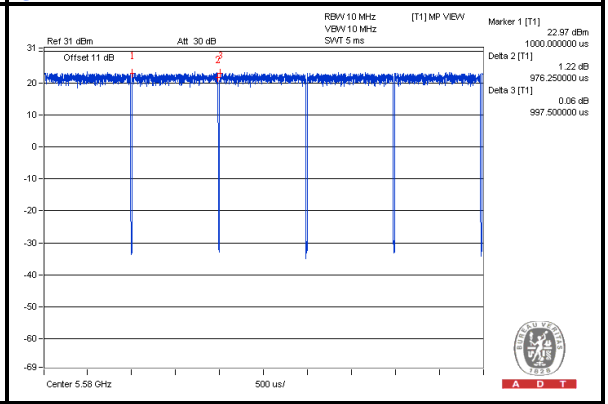
16QAM: Duty cycle = 0.508 ms/0.528 ms = 0.962, Duty factor = 10 * log(1/0.962) = 0.17

64QAM: Duty cycle = 0.271 ms/0.291 ms = 0.931, Duty factor = 10 * log(1/0.931) = 0.31

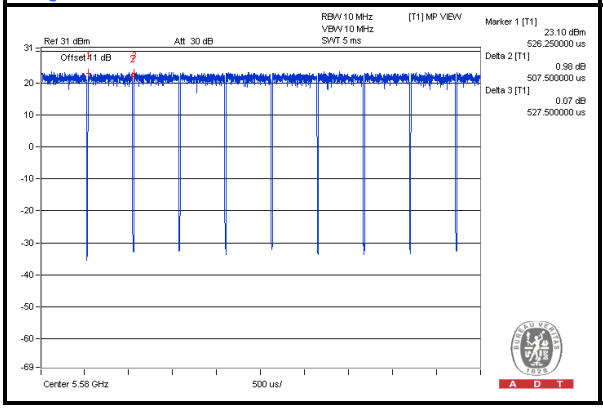
BPSK



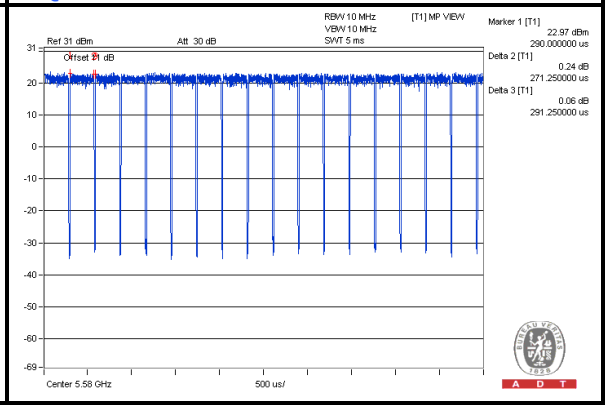
QPSK



16QAM



64QAM



802.11n (HT40)

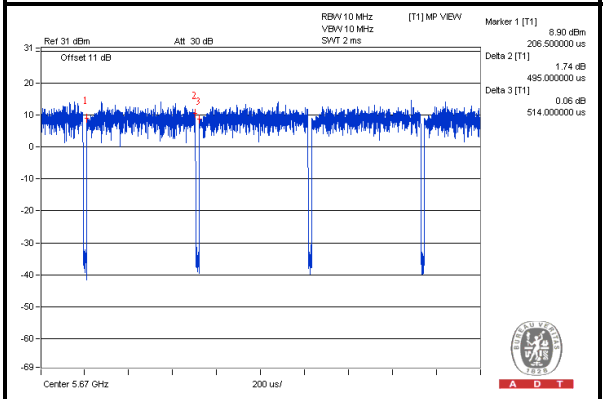
BPSK: Duty cycle = 0.495 ms/0.514 ms = 0.963, Duty factor = 10 * log(1/0.963) = 0.16

QPSK: Duty cycle = 0.491 ms/0.510 ms = 0.963, Duty factor = 10 * log(1/0.963) = 0.16

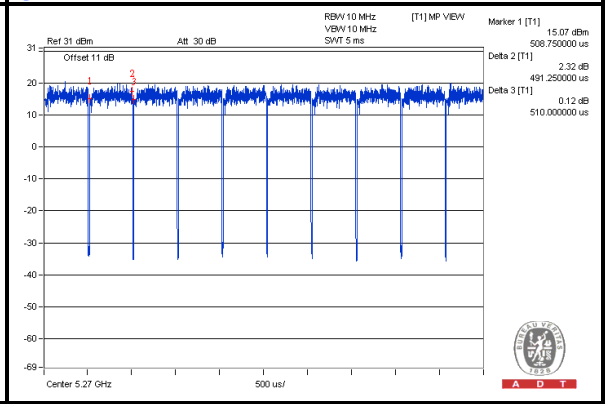
16QAM: Duty cycle = 0.264 ms/0.281 ms = 0.940, Duty factor = 10 * log(1/0.940) = 0.27

64QAM: Duty cycle = 0.151 ms/0.170 ms = 0.888, Duty factor = 10 * log(1/0.888) = 0.51

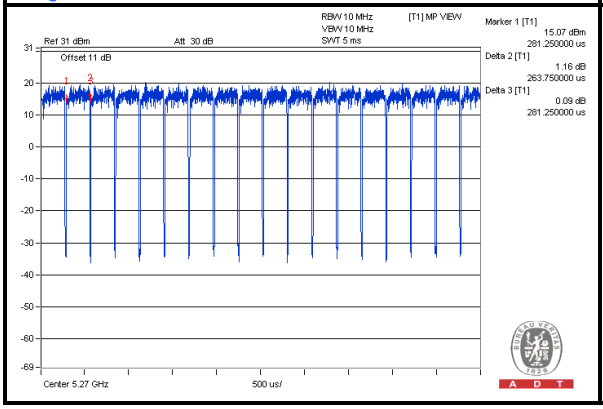
BPSK



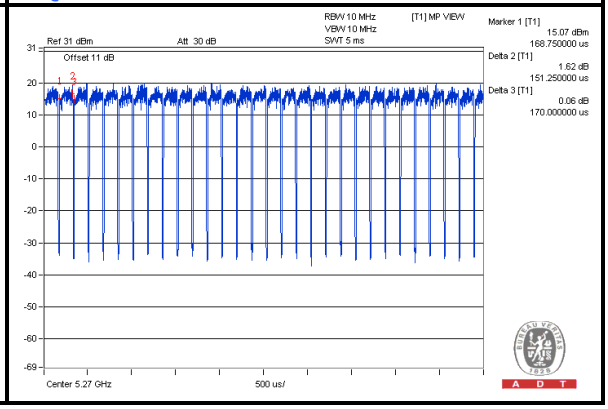
QPSK



16QAM



64QAM



3.5 DESCRIPTION OF SUPPORT UNITS

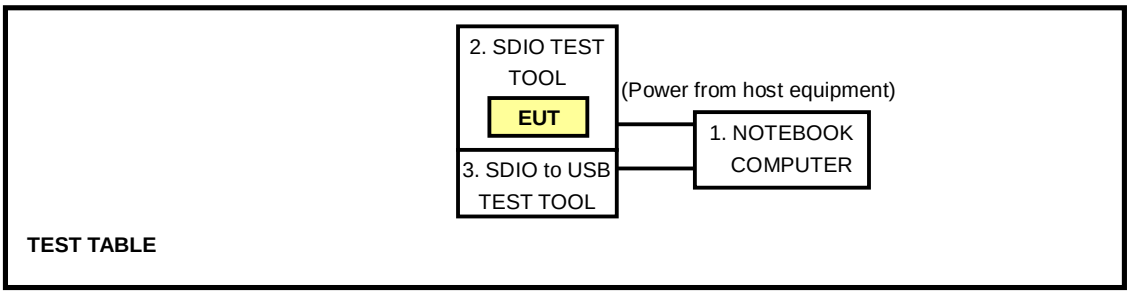
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	ASUS	NA	NA	NA
2	SDIO TEST TOOL	AzureWave	NA	NA	NA
3	SDIO to USB TEST TOOL	AzureWave	NA	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB cable, 1.8m
2	NA
3	NA

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

3.6 CONFIGURATION OF SYSTEM UNDER TEST



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100375	Mar. 08, 2013	Mar. 07, 2014
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 07,2013	June 06,2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 11, 2013	Mar. 10, 2014
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: Aug. 22, 2013

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 level under (Limit – 20dB) was not recorded.

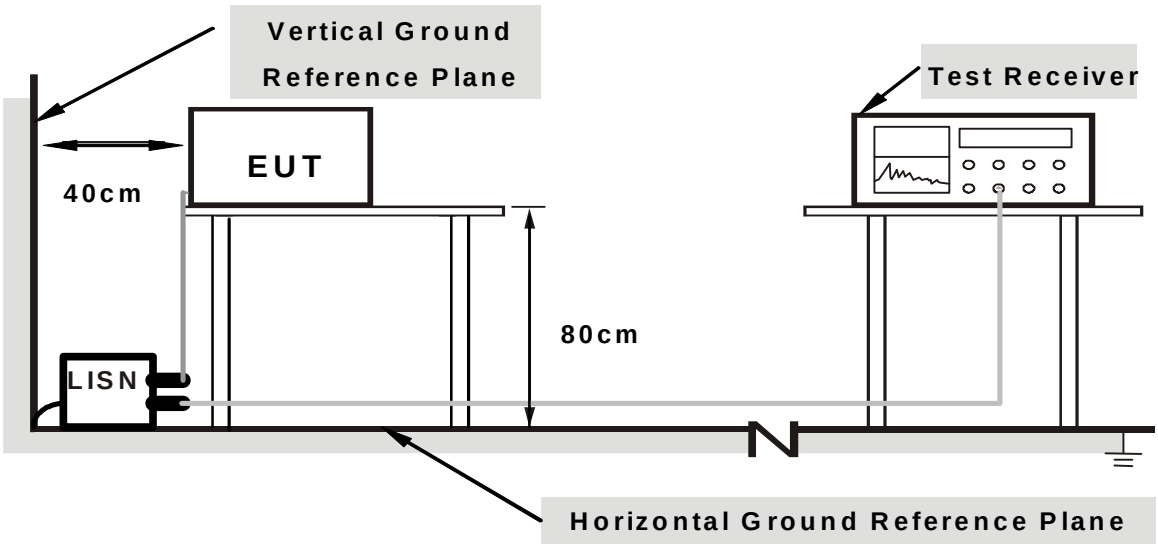
NOTE:

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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

4.1.6 EUT OPERATING CONDITIONS

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

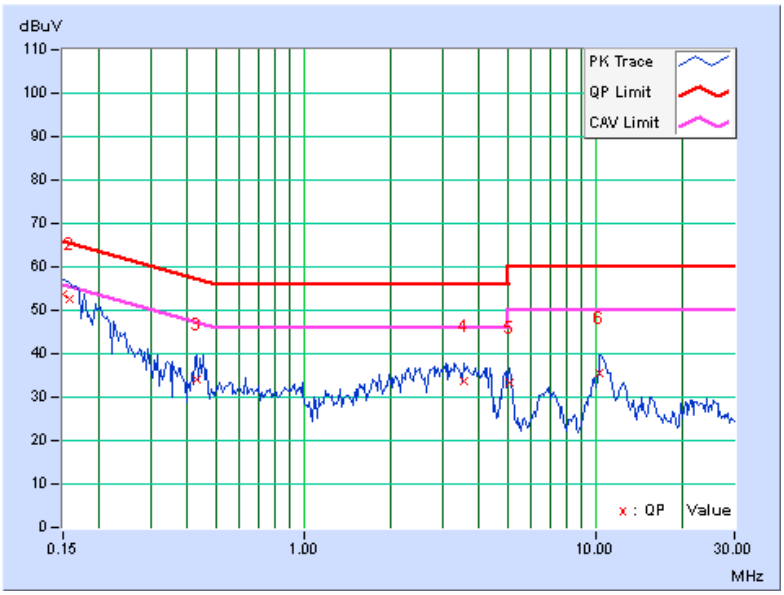
4.1.7 TEST RESULTS

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	**0.15000**	**0.12**	**53.68**	**33.27**	**53.80**	**33.39**	**66.00**	**56.00**	**-12.20**	**-22.61**
2	0.15781	0.12	52.53	35.49	52.65	35.61	65.58	55.58	-12.93	-19.97
3	0.43125	0.18	33.82	23.39	34.00	23.57	57.23	47.23	-23.23	-23.66
4	3.54297	0.34	33.50	29.03	33.84	29.37	56.00	46.00	-22.16	-16.63
5	5.08203	0.41	32.91	27.46	33.32	27.87	60.00	50.00	-26.68	-22.13
6	10.37109	0.68	35.03	29.25	35.71	29.93	60.00	50.00	-24.29	-20.07

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

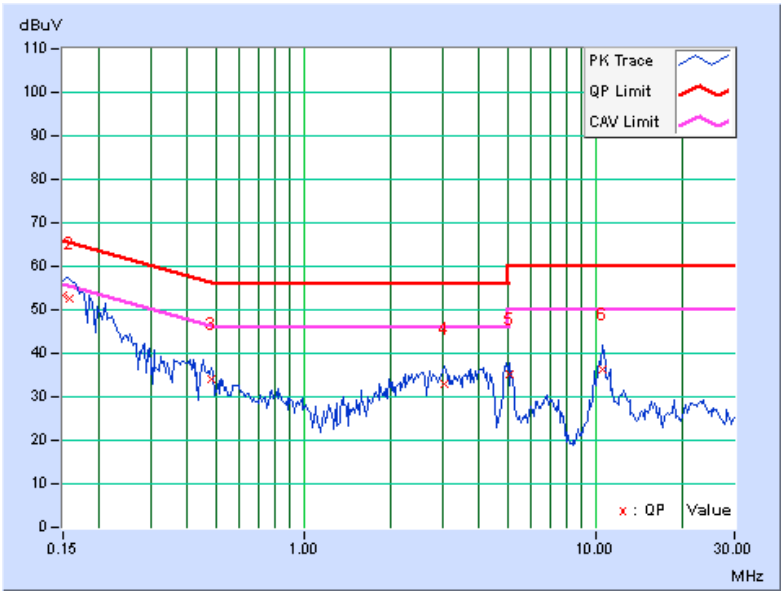


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)

	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	0.15000	0.10	53.39	32.32	53.49	32.42	66.00	56.00	-12.51	-23.58
2	0.15781	0.10	52.63	35.77	52.73	35.87	65.58	55.58	-12.85	-19.71
3	0.48203	0.17	34.04	25.51	34.21	25.68	56.30	46.30	-22.09	-20.62
4	3.05078	0.30	32.48	27.29	32.78	27.59	56.00	46.00	-23.22	-18.41
5	5.06641	0.36	34.74	28.40	35.10	28.76	60.00	50.00	-24.90	-21.24
6	10.55859	0.53	35.77	29.17	36.30	29.70	60.00	50.00	-23.70	-20.30

REMARKS:

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



4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

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.

4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
√	FIELD STRENGTH AT 3m (dBµV/m)	
	PK	AV
	74	54
	EIRP LIMIT (dBm)	EQUIVALENT FIELD STRENGTH AT 3m (dBµV/m)
	PK	PK
	-27	68.3

NOTE:

1. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3}$$ µV/m, where P is the eirp (Watts).

4.2.3 TEST INSTRUMENTS

For below 1GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY48250253	Sep. 03, 2012	Sep. 02, 2013
MXE EMI Receiver Agilent	N9038A	MY50010156	Jan. 16, 2013	Jan. 15, 2014
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-04	Nov. 14, 2012	Nov. 13, 2013
Pre-Amplifier Agilent	8449B	3008A01923	Oct. 30, 2012	Oct. 29, 2013
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 14, 2012	Nov. 13, 2013
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Mar. 25, 2013	Mar. 24, 2014
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. 26, 2012	Dec. 25, 2013
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: Aug. 22, 2013

For above 1GHz test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer Agilent	E4446A	MY48250253	Sep. 03, 2012	Sep. 02, 2013
MXE EMI Receiver Agilent	N9038A	MY51210105	Jan. 29, 2013	Jan. 28, 2014
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-03	Nov. 14, 2012	Nov. 13, 2013
Pre-Amplifier Agilent	8449B	3008A02578	June 25, 2013	June 24, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 14, 2012	Nov. 13, 2013
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Mar. 19, 2013	Mar. 18, 2014
Horn_Antenna AISI	AIH.8018	0000320091110	Nov. 19, 2012	Nov. 18, 2013
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 12, 2012	Oct. 11, 2013
RF Cable	NA	RF104-201 RF104-203 RF104-204	Dec. 25, 2012	Dec. 24, 2013
RF Cable	NA	CHGCAB_001	Oct. 06, 2012	Oct. 05, 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. G.
4. The FCC Site Registration No. is 966073.
5 The VCCI Site Registration No. is G-137.
6 The CANADA Site Registration No. is IC 7450H-2.
7 Tested Date: Aug. 20, 2013

4.2.4 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

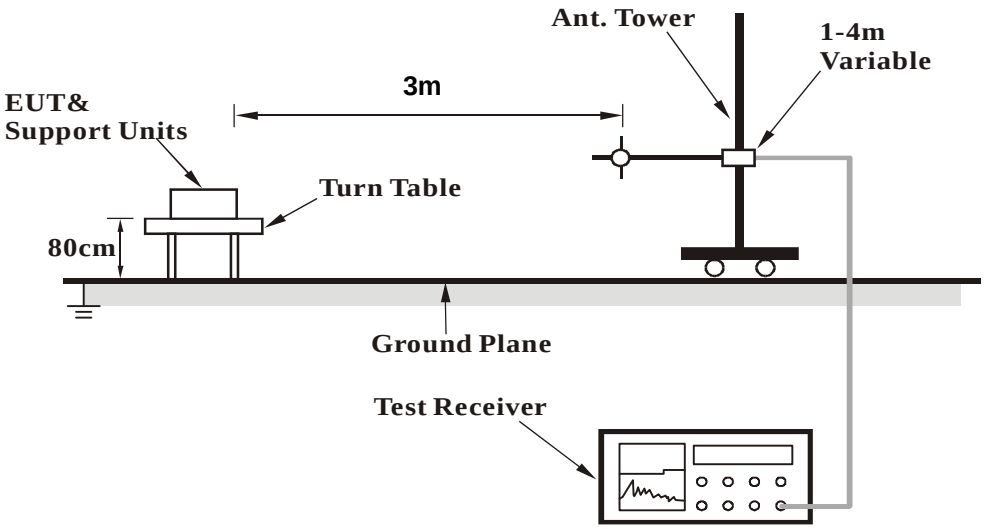
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 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.

4.2.5 DEVIATION FROM TEST STANDARD

No deviation

4.2.6 TEST SETUP



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

4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

4.2.8 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

802.11n (HT20)

CHANNEL	TX Channel 52	**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	60.17	28.9 QP	40.0	-11.1	2.00 H	337	42.80	-13.91
2	273.03	41.9 QP	46.0	-4.1	1.00 H	81	55.12	-13.20
3	432.02	43.8 QP	46.0	-2.2	2.00 H	252	52.53	-8.70
4	640.28	38.1 QP	46.0	-8.0	1.50 H	176	42.53	-4.48
5	711.42	36.8 QP	46.0	-9.2	1.00 H	67	40.80	-3.96
6	864.01	38.5 QP	46.0	-7.5	1.00 H	69	39.51	-0.99
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	32.09	31.4 QP	40.0	-8.6	1.50 V	360	46.44	-15.01
2	144.02	40.3 QP	43.5	-3.2	2.00 V	340	53.30	-13.03
3	335.99	40.1 QP	46.0	-5.9	2.00 V	0	51.24	-11.15
4	432.02	40.9 QP	46.0	-5.1	2.00 V	33	49.57	-8.70
5	711.42	36.8 QP	46.0	-9.2	1.00 V	0	40.76	-3.96
6	815.99	41.7 QP	46.0	-4.3	2.00 V	25	43.37	-1.64

REMARKS:

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

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 36	**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	5150.00	70.6 PK	74.0	-3.4	1.00 H	145	62.00	8.60
2	5150.00	49.1 AV	54.0	-4.9	1.00 H	145	40.50	8.60
3	*5180.00	108.5 PK			1.00 H	145	99.74	8.76
4	*5180.00	97.6 AV			1.00 H	145	88.84	8.76
5	#10360.00	51.8 PK	74.0	-22.2	1.03 H	200	36.26	15.54
6	#10360.00	39.8 AV	54.0	-14.2	1.03 H	200	24.26	15.54
7	15540.00	62.1 PK	74.0	-11.9	1.02 H	91	39.73	22.37
8	15540.00	49.2 AV	54.0	-4.8	1.02 H	91	26.83	22.37
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	5150.00	70.1 PK	74.0	-3.9	1.01 V	87	61.50	8.60
2	5150.00	51.8 AV	54.0	-2.2	1.01 V	87	43.20	8.60
3	*5180.00	110.5 PK			1.01 V	87	101.74	8.76
4	*5180.00	99.8 AV			1.01 V	87	91.04	8.76
5	#10360.00	53.9 PK	74.0	-20.1	1.03 V	315	38.36	15.54
6	#10360.00	40.6 AV	54.0	-13.4	1.03 V	315	25.06	15.54
7	15540.00	60.5 PK	74.0	-13.5	1.18 V	234	38.13	22.37
8	15540.00	48.7 AV	54.0	-5.3	1.18 V	234	26.33	22.37

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 40	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	5150.00	68.3 PK	74.0	-5.7	1.00 H	150	59.70	8.60
2	5150.00	50.4 AV	54.0	-3.6	1.00 H	150	41.80	8.60
3	*5200.00	108.7 PK			1.00 H	150	99.83	8.87
4	*5200.00	99.3 AV			1.00 H	150	90.43	8.87
5	#10400.00	52.0 PK	74.0	-22.0	1.03 H	216	36.82	15.18
6	#10400.00	39.9 AV	54.0	-14.1	1.03 H	216	24.72	15.18
7	15600.00	62.0 PK	74.0	-12.0	1.05 H	78	39.88	22.12
8	15600.00	49.3 AV	54.0	-4.7	1.05 H	78	27.18	22.12
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	5150.00	71.1 PK	74.0	-2.9	1.00 V	86	62.50	8.60
2	5150.00	53.4 AV	54.0	-0.6	1.00 V	86	44.80	8.60
3	*5200.00	112.0 PK			1.00 V	86	103.13	8.87
4	*5200.00	102.5 AV			1.00 V	86	93.63	8.87
5	#10400.00	54.1 PK	74.0	-19.9	1.03 V	303	38.92	15.18
6	#10400.00	41.0 AV	54.0	-13.0	1.03 V	303	25.82	15.18
7	15600.00	60.2 PK	74.0	-13.8	1.18 V	227	38.08	22.12
8	15600.00	48.4 AV	54.0	-5.6	1.18 V	227	26.28	22.12

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 48	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	5150.00	62.0 PK	74.0	-12.0	1.00 H	134	53.40	8.60
2	5150.00	43.6 AV	54.0	-10.4	1.00 H	134	35.00	8.60
3	*5240.00	111.6 PK			1.00 H	134	102.59	9.01
4	*5240.00	101.3 AV			1.00 H	134	92.29	9.01
5	5350.00	55.4 PK	74.0	-18.6	1.00 H	134	46.09	9.31
6	5350.00	39.7 AV	54.0	-14.3	1.00 H	134	30.39	9.31
7	#10480.00	52.2 PK	74.0	-21.8	1.00 H	214	36.40	15.80
8	#10480.00	40.1 AV	54.0	-13.9	1.00 H	214	24.30	15.80
9	15720.00	61.6 PK	74.0	-12.4	1.02 H	95	39.80	21.80
10	15720.00	48.9 AV	54.0	-5.1	1.02 H	95	27.10	21.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.6 PK	74.0	-8.4	1.00 V	87	57.00	8.60
2	5150.00	47.0 AV	54.0	-7.0	1.00 V	87	38.40	8.60
3	*5240.00	114.6 PK			1.00 V	87	105.59	9.01
4	*5240.00	104.2 AV			1.00 V	87	95.19	9.01
5	5350.00	58.6 PK	74.0	-15.4	1.00 V	87	49.29	9.31
6	5350.00	43.1 AV	54.0	-10.9	1.00 V	87	33.79	9.31
7	#10480.00	54.3 PK	74.0	-19.7	1.07 V	317	38.50	15.80
8	#10480.00	40.9 AV	54.0	-13.1	1.07 V	317	25.10	15.80
9	15720.00	60.8 PK	74.0	-13.2	1.18 V	231	39.00	21.80
10	15720.00	48.8 AV	54.0	-5.2	1.18 V	231	27.00	21.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 52	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	5150.00	57.4 PK	74.0	-16.6	1.04 H	119	48.80	8.60
2	5150.00	40.8 AV	54.0	-13.2	1.04 H	119	32.20	8.60
3	*5260.00	112.8 PK			1.04 H	119	103.73	9.07
4	*5260.00	101.9 AV			1.04 H	119	92.83	9.07
5	5350.00	65.0 PK	74.0	-9.0	1.04 H	119	55.69	9.31
6	5350.00	44.5 AV	54.0	-9.5	1.04 H	119	35.19	9.31
7	#10520.00	52.4 PK	74.0	-21.6	1.03 H	212	36.42	15.98
8	#10520.00	40.1 AV	54.0	-13.9	1.03 H	212	24.12	15.98
9	15780.00	62.7 PK	74.0	-11.3	1.02 H	78	40.71	21.99
10	15780.00	49.5 AV	54.0	-4.5	1.02 H	78	27.51	21.99
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	5150.00	59.9 PK	74.0	-14.1	1.00 V	87	51.30	8.60
2	5150.00	43.5 AV	54.0	-10.5	1.00 V	87	34.90	8.60
3	*5260.00	115.4 PK			1.00 V	87	106.33	9.07
4	*5260.00	104.8 AV			1.00 V	87	95.73	9.07
5	5350.00	67.9 PK	74.0	-6.1	1.00 V	87	58.59	9.31
6	5350.00	47.5 AV	54.0	-6.5	1.00 V	87	38.19	9.31
7	#10520.00	53.8 PK	74.0	-20.2	1.08 V	325	37.82	15.98
8	#10520.00	40.8 AV	54.0	-13.2	1.08 V	325	24.82	15.98
9	15780.00	60.7 PK	74.0	-13.3	1.22 V	243	38.71	21.99
10	15780.00	49.1 AV	54.0	-4.9	1.22 V	243	27.11	21.99

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 60	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	*5300.00	108.8 PK			1.09 H	115	99.59	9.21
2	*5300.00	98.5 AV			1.09 H	115	89.29	9.21
3	5350.00	67.8 PK	74.0	-6.2	1.09 H	115	58.49	9.31
4	5350.00	48.8 AV	54.0	-5.2	1.09 H	115	39.49	9.31
5	10600.00	52.8 PK	74.0	-21.2	1.01 H	224	36.68	16.12
6	10600.00	40.4 AV	54.0	-13.6	1.01 H	224	24.28	16.12
7	15900.00	62.7 PK	74.0	-11.3	1.07 H	80	40.60	22.10
8	15900.00	49.7 AV	54.0	-4.3	1.07 H	80	27.60	22.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	111.6 PK			1.10 V	87	102.39	9.21
2	*5300.00	101.1 AV			1.10 V	87	91.89	9.21
3	5350.00	70.7 PK	74.0	-3.3	1.10 V	87	61.39	9.31
4	5350.00	51.6 AV	54.0	-2.4	1.10 V	87	42.29	9.31
5	10600.00	54.2 PK	74.0	-19.8	1.03 V	306	38.08	16.12
6	10600.00	40.9 AV	54.0	-13.1	1.03 V	306	24.78	16.12
7	15900.00	60.3 PK	74.0	-13.7	1.21 V	249	38.20	22.10
8	15900.00	48.7 AV	54.0	-5.3	1.21 V	249	26.60	22.10

REMARKS:

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

CHANNEL	TX Channel 64	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	*5320.00	107.6 PK			1.12 H	125	98.35	9.25
2	*5320.00	97.3 AV			1.12 H	125	88.05	9.25
3	5350.00	70.1 PK	74.0	-3.9	1.12 H	125	60.79	9.31
4	5350.00	50.7 AV	54.0	-3.3	1.12 H	125	41.39	9.31
5	10640.00	52.3 PK	74.0	-21.7	1.08 H	219	36.04	16.26
6	10640.00	39.9 AV	54.0	-14.1	1.08 H	219	23.64	16.26
7	15960.00	62.5 PK	74.0	-11.5	1.00 H	74	40.52	21.98
8	15960.00	49.4 AV	54.0	-4.6	1.00 H	74	27.42	21.98
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	*5320.00	110.5 PK			1.09 V	81	101.25	9.25
2	*5320.00	100.5 AV			1.09 V	81	91.25	9.25
3	5350.00	73.1 PK	74.0	-0.9	1.09 V	81	63.79	9.31
4	5350.00	53.5 AV	54.0	-0.5	1.09 V	81	44.19	9.31
5	10640.00	54.3 PK	74.0	-19.7	1.09 V	324	38.04	16.26
6	10640.00	41.1 AV	54.0	-12.9	1.09 V	324	24.84	16.26
7	15960.00	60.5 PK	74.0	-13.5	1.20 V	242	38.52	21.98
8	15960.00	48.4 AV	54.0	-5.6	1.20 V	242	26.42	21.98

REMARKS:

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

CHANNEL	TX Channel 100	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	5460.00	64.1 PK	74.0	-9.9	1.08 H	136	54.45	9.65
2	5460.00	45.5 AV	54.0	-8.5	1.08 H	136	35.85	9.65
3	#5470.00	68.2 PK	74.0	-5.8	1.08 H	136	58.51	9.69
4	#5470.00	49.1 AV	54.0	-4.9	1.08 H	136	39.41	9.69
5	*5500.00	106.0 PK			1.08 H	136	96.19	9.81
6	*5500.00	95.6 AV			1.08 H	136	85.79	9.81
7	11000.00	52.3 PK	74.0	-21.7	1.07 H	213	34.70	17.60
8	11000.00	40.2 AV	54.0	-13.8	1.07 H	213	22.60	17.60
9	#16500.00	62.0 PK	74.0	-12.0	1.03 H	61	37.86	24.14
10	#16500.00	48.9 AV	54.0	-5.1	1.03 H	61	24.76	24.14
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	5460.00	66.9 PK	74.0	-7.1	1.17 V	83	57.25	9.65
2	5460.00	48.4 AV	54.0	-5.6	1.17 V	83	38.75	9.65
3	#5470.00	71.3 PK	74.0	-2.7	1.17 V	83	61.61	9.69
4	#5470.00	52.0 AV	54.0	-2.0	1.17 V	83	42.31	9.69
5	*5500.00	109.4 PK			1.17 V	83	99.59	9.81
6	*5500.00	99.0 AV			1.17 V	83	89.19	9.81
7	11000.00	53.4 PK	74.0	-20.6	1.08 V	319	35.80	17.60
8	11000.00	40.1 AV	54.0	-13.9	1.08 V	319	22.50	17.60
9	#16500.00	60.1 PK	74.0	-13.9	1.13 V	234	35.96	24.14
10	#16500.00	48.6 AV	54.0	-5.4	1.13 V	234	24.46	24.14

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 116	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	5460.00	52.9 PK	74.0	-21.1	1.11 H	150	43.25	9.65
2	5460.00	39.5 AV	54.0	-14.5	1.11 H	150	29.85	9.65
3	#5470.00	52.8 PK	74.0	-21.2	1.11 H	150	43.11	9.69
4	#5470.00	40.4 AV	54.0	-13.6	1.11 H	150	30.71	9.69
5	*5580.00	110.2 PK			1.11 H	150	100.16	10.04
6	*5580.00	99.3 AV			1.11 H	150	89.26	10.04
7	#5725.00	53.7 PK	74.0	-20.3	1.11 H	150	43.32	10.38
8	#5725.00	39.4 AV	54.0	-14.6	1.11 H	150	29.02	10.38
9	11160.00	51.7 PK	74.0	-22.3	1.00 H	190	34.67	17.03
10	11160.00	39.4 AV	54.0	-14.6	1.00 H	190	22.37	17.03
11	#16740.00	61.4 PK	74.0	-12.6	1.00 H	84	36.90	24.50
12	#16740.00	48.7 AV	54.0	-5.3	1.00 H	84	24.20	24.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.2 PK	74.0	-17.8	1.15 V	84	46.55	9.65
2	5460.00	42.6 AV	54.0	-11.4	1.15 V	84	32.95	9.65
3	#5470.00	55.5 PK	74.0	-18.5	1.15 V	84	45.81	9.69
4	#5470.00	43.0 AV	54.0	-11.0	1.15 V	84	33.31	9.69
5	*5580.00	113.0 PK			1.15 V	84	102.96	10.04
6	*5580.00	102.0 AV			1.15 V	84	91.96	10.04
7	#5725.00	56.8 PK	74.0	-17.2	1.15 V	84	46.42	10.38
8	#5725.00	42.7 AV	54.0	-11.3	1.15 V	84	32.32	10.38
9	11160.00	54.5 PK	74.0	-19.5	1.07 V	305	37.47	17.03
10	11160.00	40.9 AV	54.0	-13.1	1.07 V	305	23.87	17.03
11	#16740.00	65.5 PK	74.0	-8.5	1.27 V	230	41.00	24.50
12	#16740.00	52.9 AV	54.0	-1.1	1.27 V	230	28.40	24.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 132	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	5460.00	53.4 PK	74.0	-20.6	1.14 H	155	43.75	9.65
2	5460.00	39.7 AV	54.0	-14.3	1.14 H	155	30.05	9.65
3	#5470.00	52.3 PK	74.0	-21.7	1.14 H	155	42.61	9.69
4	#5470.00	39.9 AV	54.0	-14.1	1.14 H	155	30.21	9.69
5	*5660.00	110.0 PK			1.14 H	155	99.76	10.24
6	*5660.00	99.3 AV			1.14 H	155	89.06	10.24
7	#5725.00	65.4 PK	74.0	-8.6	1.14 H	155	55.02	10.38
8	#5725.00	47.3 AV	54.0	-6.7	1.14 H	155	36.92	10.38
9	11320.00	52.6 PK	74.0	-21.4	1.04 H	207	34.97	17.63
10	11320.00	40.3 AV	54.0	-13.7	1.04 H	207	22.67	17.63
11	#16980.00	62.3 PK	74.0	-11.7	1.08 H	74	36.86	25.44
12	#16980.00	49.4 AV	54.0	-4.6	1.08 H	74	23.96	25.44
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.0 PK	74.0	-18.0	1.19 V	84	46.35	9.65
2	5460.00	42.5 AV	54.0	-11.5	1.19 V	84	32.85	9.65
3	#5470.00	55.2 PK	74.0	-18.8	1.19 V	84	45.51	9.69
4	#5470.00	42.7 AV	54.0	-11.3	1.19 V	84	33.01	9.69
5	*5660.00	112.4 PK			1.19 V	84	102.16	10.24
6	*5660.00	101.8 AV			1.19 V	84	91.56	10.24
7	#5725.00	68.8 PK	74.0	-5.2	1.19 V	84	58.42	10.38
8	#5725.00	50.4 AV	54.0	-3.6	1.19 V	84	40.02	10.38
9	11320.00	54.6 PK	74.0	-19.4	1.10 V	304	36.97	17.63
10	11320.00	41.2 AV	54.0	-12.8	1.10 V	304	23.57	17.63
11	#16980.00	64.9 PK	74.0	-9.1	1.32 V	268	39.46	25.44
12	#16980.00	51.7 AV	54.0	-2.3	1.32 V	268	26.26	25.44

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 140	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	*5700.00	104.4 PK			1.16 H	144	94.06	10.34
2	*5700.00	94.0 AV			1.16 H	144	83.66	10.34
3	#5725.00	68.2 PK	74.0	-5.8	1.16 H	144	57.82	10.38
4	#5725.00	49.6 AV	54.0	-4.4	1.16 H	144	39.22	10.38
5	11400.00	52.6 PK	74.0	-21.4	1.01 H	218	35.08	17.52
6	11400.00	40.3 AV	54.0	-13.7	1.01 H	218	22.78	17.52
7	#17100.00	62.2 PK	74.0	-11.8	1.02 H	64	36.91	25.29
8	#17100.00	49.1 AV	54.0	-4.9	1.02 H	64	23.81	25.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	107.4 PK			1.12 V	83	97.06	10.34
2	*5700.00	97.3 AV			1.12 V	83	86.96	10.34
3	#5725.00	71.1 PK	74.0	-2.9	1.12 V	83	60.72	10.38
4	#5725.00	52.5 AV	54.0	-1.5	1.12 V	83	42.12	10.38
5	11400.00	53.1 PK	74.0	-20.9	1.05 V	332	35.58	17.52
6	11400.00	40.1 AV	54.0	-13.9	1.05 V	332	22.58	17.52
7	#17100.00	60.1 PK	74.0	-13.9	1.13 V	224	34.81	25.29
8	#17100.00	48.6 AV	54.0	-5.4	1.13 V	224	23.31	25.29

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11n (HT20)

CHANNEL	TX Channel 36	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	5150.00	68.8 PK	74.0	-5.2	1.14 H	158	60.20	8.60
2	5150.00	48.8 AV	54.0	-5.2	1.14 H	158	40.20	8.60
3	*5180.00	108.4 PK			1.14 H	158	99.64	8.76
4	*5180.00	96.9 AV			1.14 H	158	88.14	8.76
5	#10360.00	52.6 PK	74.0	-21.4	1.00 H	200	37.06	15.54
6	#10360.00	40.5 AV	54.0	-13.5	1.00 H	200	24.96	15.54
7	15540.00	61.9 PK	74.0	-12.1	1.11 H	67	39.53	22.37
8	15540.00	49.1 AV	54.0	-4.9	1.11 H	67	26.73	22.37
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	5150.00	71.4 PK	74.0	-2.6	1.12 V	88	62.80	8.60
2	5150.00	51.4 AV	54.0	-2.6	1.12 V	88	42.80	8.60
3	*5180.00	111.8 PK			1.12 V	88	103.04	8.76
4	*5180.00	100.2 AV			1.12 V	88	91.44	8.76
5	#10360.00	53.7 PK	74.0	-20.3	1.05 V	334	38.16	15.54
6	#10360.00	40.5 AV	54.0	-13.5	1.05 V	334	24.96	15.54
7	15540.00	60.4 PK	74.0	-13.6	1.11 V	229	38.03	22.37
8	15540.00	48.7 AV	54.0	-5.3	1.11 V	229	26.33	22.37

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 40	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	5150.00	64.1 PK	74.0	-9.9	1.11 H	152	55.50	8.60
2	5150.00	47.8 AV	54.0	-6.2	1.11 H	152	39.20	8.60
3	*5200.00	110.6 PK			1.11 H	152	101.73	8.87
4	*5200.00	99.6 AV			1.11 H	152	90.73	8.87
5	#10400.00	52.6 PK	74.0	-21.4	1.03 H	210	37.42	15.18
6	#10400.00	40.4 AV	54.0	-13.6	1.03 H	210	25.22	15.18
7	15600.00	62.1 PK	74.0	-11.9	1.03 H	63	39.98	22.12
8	15600.00	49.3 AV	54.0	-4.7	1.03 H	63	27.18	22.12
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	5150.00	67.4 PK	74.0	-6.6	1.13 V	86	58.80	8.60
2	5150.00	51.0 AV	54.0	-3.0	1.13 V	86	42.40	8.60
3	*5200.00	113.6 PK			1.13 V	86	104.73	8.87
4	*5200.00	102.4 AV			1.13 V	86	93.53	8.87
5	#10400.00	53.3 PK	74.0	-20.7	1.05 V	334	38.12	15.18
6	#10400.00	40.3 AV	54.0	-13.7	1.05 V	334	25.12	15.18
7	15600.00	60.5 PK	74.0	-13.5	1.15 V	235	38.38	22.12
8	15600.00	48.9 AV	54.0	-5.1	1.15 V	235	26.78	22.12

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 48	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	5150.00	62.0 PK	74.0	-12.0	1.06 H	138	53.40	8.60
2	5150.00	42.9 AV	54.0	-11.1	1.06 H	138	34.30	8.60
3	*5240.00	113.8 PK			1.06 H	138	104.79	9.01
4	*5240.00	102.5 AV			1.06 H	138	93.49	9.01
5	5350.00	59.1 PK	74.0	-14.9	1.06 H	138	49.79	9.31
6	5350.00	40.1 AV	54.0	-13.9	1.06 H	138	30.79	9.31
7	#10480.00	53.0 PK	74.0	-21.0	1.03 H	207	37.20	15.80
8	#10480.00	40.4 AV	54.0	-13.6	1.03 H	207	24.60	15.80
9	15720.00	63.0 PK	74.0	-11.0	1.02 H	89	41.20	21.80
10	15720.00	49.8 AV	54.0	-4.2	1.02 H	89	28.00	21.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.9 PK	74.0	-9.1	1.12 V	86	56.30	8.60
2	5150.00	45.8 AV	54.0	-8.2	1.12 V	86	37.20	8.60
3	*5240.00	116.8 PK			1.12 V	86	107.79	9.01
4	*5240.00	105.5 AV			1.12 V	86	96.49	9.01
5	5350.00	62.7 PK	74.0	-11.3	1.12 V	86	53.39	9.31
6	5350.00	43.4 AV	54.0	-10.6	1.12 V	86	34.09	9.31
7	#10480.00	53.6 PK	74.0	-20.4	1.08 V	304	37.80	15.80
8	#10480.00	40.1 AV	54.0	-13.9	1.08 V	304	24.30	15.80
9	15720.00	60.6 PK	74.0	-13.4	1.13 V	225	38.80	21.80
10	15720.00	49.0 AV	54.0	-5.0	1.13 V	225	27.20	21.80

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 52	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	5150.00	62.8 PK	74.0	-11.2	1.10 H	152	54.20	8.60
2	5150.00	43.4 AV	54.0	-10.6	1.10 H	152	34.80	8.60
3	*5260.00	113.8 PK			1.10 H	152	104.73	9.07
4	*5260.00	102.4 AV			1.10 H	152	93.33	9.07
5	5350.00	59.9 PK	74.0	-14.1	1.10 H	152	50.59	9.31
6	5350.00	40.3 AV	54.0	-13.7	1.10 H	152	30.99	9.31
7	#10520.00	52.6 PK	74.0	-21.4	1.01 H	207	36.62	15.98
8	#10520.00	40.1 AV	54.0	-13.9	1.01 H	207	24.12	15.98
9	15780.00	62.2 PK	74.0	-11.8	1.02 H	90	40.21	21.99
10	15780.00	49.2 AV	54.0	-4.8	1.02 H	90	27.21	21.99
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	5150.00	65.6 PK	74.0	-8.4	1.09 V	75	57.00	8.60
2	5150.00	46.3 AV	54.0	-7.7	1.09 V	75	37.70	8.60
3	*5260.00	117.2 PK			1.09 V	75	108.13	9.07
4	*5260.00	105.8 AV			1.09 V	75	96.73	9.07
5	5350.00	62.9 PK	74.0	-11.1	1.09 V	75	53.59	9.31
6	5350.00	43.5 AV	54.0	-10.5	1.09 V	75	34.19	9.31
7	#10520.00	53.7 PK	74.0	-20.3	1.12 V	315	37.72	15.98
8	#10520.00	40.1 AV	54.0	-13.9	1.12 V	315	24.12	15.98
9	15780.00	60.2 PK	74.0	-13.8	1.12 V	222	38.21	21.99
10	15780.00	48.7 AV	54.0	-5.3	1.12 V	222	26.71	21.99

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 60	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	5150.00	54.9 PK	74.0	-19.1	1.15 H	149	46.30	8.60
2	5150.00	39.4 AV	54.0	-14.6	1.15 H	149	30.80	8.60
3	*5300.00	111.6 PK			1.15 H	149	102.39	9.21
4	*5300.00	100.0 AV			1.15 H	149	90.79	9.21
5	5350.00	65.5 PK	74.0	-8.5	1.15 H	149	56.19	9.31
6	5350.00	48.9 AV	54.0	-5.1	1.15 H	149	39.59	9.31
7	10600.00	52.7 PK	74.0	-21.3	1.01 H	212	36.58	16.12
8	10600.00	40.4 AV	54.0	-13.6	1.01 H	212	24.28	16.12
9	15900.00	62.3 PK	74.0	-11.7	1.03 H	79	40.20	22.10
10	15900.00	49.3 AV	54.0	-4.7	1.03 H	79	27.20	22.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.7 PK	74.0	-16.3	1.10 V	87	49.10	8.60
2	5150.00	42.5 AV	54.0	-11.5	1.10 V	87	33.90	8.60
3	*5300.00	114.8 PK			1.10 V	87	105.59	9.21
4	*5300.00	103.2 AV			1.10 V	87	93.99	9.21
5	5350.00	68.2 PK	74.0	-5.8	1.10 V	87	58.89	9.31
6	5350.00	51.6 AV	54.0	-2.4	1.10 V	87	42.29	9.31
7	10600.00	53.3 PK	74.0	-20.7	1.13 V	333	37.18	16.12
8	10600.00	39.7 AV	54.0	-14.3	1.13 V	333	23.58	16.12
9	15900.00	60.4 PK	74.0	-13.6	1.17 V	221	38.30	22.10
10	15900.00	49.0 AV	54.0	-5.0	1.17 V	221	26.90	22.10

REMARKS:

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

CHANNEL	TX Channel 64	**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	*5320.00	109.6 PK			1.19 H	159	100.35	9.25
2	*5320.00	99.0 AV			1.19 H	159	89.75	9.25
3	5350.00	69.7 PK	74.0	-4.3	1.19 H	159	60.39	9.31
4	5350.00	50.9 AV	54.0	-3.1	1.19 H	159	41.59	9.31
5	10640.00	53.0 PK	74.0	-21.0	1.05 H	202	36.74	16.26
6	10640.00	40.4 AV	54.0	-13.6	1.05 H	202	24.14	16.26
7	15960.00	61.8 PK	74.0	-12.2	1.13 H	90	39.82	21.98
8	15960.00	49.0 AV	54.0	-5.0	1.13 H	90	27.02	21.98
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	*5320.00	112.6 PK			1.09 V	86	103.35	9.25
2	*5320.00	101.7 AV			1.09 V	86	92.45	9.25
3	5350.00	72.3 PK	74.0	-1.7	1.09 V	86	62.99	9.31
4	**5350.00**	**53.7 AV**	**54.0**	**-0.3**	**1.09 V**	**86**	**44.39**	**9.31**
5	10640.00	53.8 PK	74.0	-20.2	1.06 V	306	37.54	16.26
6	10640.00	40.3 AV	54.0	-13.7	1.06 V	306	24.04	16.26
7	15960.00	60.6 PK	74.0	-13.4	1.10 V	235	38.62	21.98
8	15960.00	49.0 AV	54.0	-5.0	1.10 V	235	27.02	21.98

REMARKS:

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

CHANNEL	TX Channel 100	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	5460.00	66.0 PK	74.0	-8.0	1.13 H	167	56.35	9.65
2	5460.00	46.0 AV	54.0	-8.0	1.13 H	167	36.35	9.65
3	#5470.00	67.6 PK	74.0	-6.4	1.13 H	167	57.91	9.69
4	#5470.00	48.7 AV	54.0	-5.3	1.13 H	167	39.01	9.69
5	*5500.00	107.4 PK			1.13 H	167	97.59	9.81
6	*5500.00	96.8 AV			1.13 H	167	86.99	9.81
7	11000.00	52.7 PK	74.0	-21.3	1.02 H	199	35.10	17.60
8	11000.00	40.2 AV	54.0	-13.8	1.02 H	199	22.60	17.60
9	#16500.00	62.8 PK	74.0	-11.2	1.12 H	71	38.66	24.14
10	#16500.00	49.7 AV	54.0	-4.3	1.12 H	71	25.56	24.14
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	5460.00	69.5 PK	74.0	-4.5	1.05 V	86	59.85	9.65
2	5460.00	49.2 AV	54.0	-4.8	1.05 V	86	39.55	9.65
3	#5470.00	70.9 PK	74.0	-3.1	1.05 V	86	61.21	9.69
4	#5470.00	51.8 AV	54.0	-2.2	1.05 V	86	42.11	9.69
5	*5500.00	111.0 PK			1.05 V	86	101.19	9.81
6	*5500.00	100.2 AV			1.05 V	86	90.39	9.81
7	11000.00	53.7 PK	74.0	-20.3	1.13 V	320	36.10	17.60
8	11000.00	40.5 AV	54.0	-13.5	1.13 V	320	22.90	17.60
9	#16500.00	60.0 PK	74.0	-14.0	1.17 V	221	35.86	24.14
10	#16500.00	48.8 AV	54.0	-5.2	1.17 V	221	24.66	24.14

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 116	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	5460.00	63.8 PK	74.0	-10.2	1.15 H	152	54.15	9.65
2	5460.00	42.3 AV	54.0	-11.7	1.15 H	152	32.65	9.65
3	#5470.00	64.6 PK	74.0	-9.4	1.15 H	152	54.91	9.69
4	#5470.00	42.8 AV	54.0	-11.2	1.15 H	152	33.11	9.69
5	*5580.00	114.9 PK			1.15 H	152	104.86	10.04
6	*5580.00	103.1 AV			1.15 H	152	93.06	10.04
7	#5725.00	54.0 PK	74.0	-20.0	1.15 H	152	43.62	10.38
8	#5725.00	40.5 AV	54.0	-13.5	1.15 H	152	30.12	10.38
9	11160.00	52.5 PK	74.0	-21.5	1.00 H	193	35.47	17.03
10	11160.00	39.7 AV	54.0	-14.3	1.00 H	193	22.67	17.03
11	#16740.00	60.9 PK	74.0	-13.1	1.21 H	82	36.40	24.50
12	#16740.00	48.6 AV	54.0	-5.4	1.21 H	82	24.10	24.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	66.8 PK	74.0	-7.2	1.04 V	87	57.15	9.65
2	5460.00	45.2 AV	54.0	-8.8	1.04 V	87	35.55	9.65
3	#5470.00	67.1 PK	74.0	-6.9	1.04 V	87	57.41	9.69
4	#5470.00	45.5 AV	54.0	-8.5	1.04 V	87	35.81	9.69
5	*5580.00	117.1 PK			1.04 V	87	107.06	10.04
6	*5580.00	105.6 AV			1.04 V	87	95.56	10.04
7	#5725.00	56.7 PK	74.0	-17.3	1.04 V	87	46.32	10.38
8	#5725.00	43.0 AV	54.0	-11.0	1.04 V	87	32.62	10.38
9	11160.00	53.7 PK	74.0	-20.3	1.04 V	293	36.67	17.03
10	11160.00	40.4 AV	54.0	-13.6	1.04 V	293	23.37	17.03
11	#16740.00	65.9 PK	74.0	-8.1	1.35 V	277	41.40	24.50
12	#16740.00	53.2 AV	54.0	-0.8	1.35 V	277	28.70	24.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 132	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	5460.00	56.2 PK	74.0	-17.8	1.15 H	148	46.55	9.65
2	5460.00	41.8 AV	54.0	-12.2	1.15 H	148	32.15	9.65
3	#5470.00	56.4 PK	74.0	-17.6	1.15 H	148	46.71	9.69
4	#5470.00	41.6 AV	54.0	-12.4	1.15 H	148	31.91	9.69
5	*5660.00	112.3 PK			1.15 H	148	102.06	10.24
6	*5660.00	101.6 AV			1.15 H	148	91.36	10.24
7	#5725.00	67.5 PK	74.0	-6.5	1.15 H	148	57.12	10.38
8	#5725.00	49.7 AV	54.0	-4.3	1.15 H	148	39.32	10.38
9	11320.00	52.7 PK	74.0	-21.3	1.03 H	197	35.07	17.63
10	11320.00	40.6 AV	54.0	-13.4	1.03 H	197	22.97	17.63
11	#16980.00	62.3 PK	74.0	-11.7	1.10 H	77	36.86	25.44
12	#16980.00	49.1 AV	54.0	-4.9	1.10 H	77	23.66	25.44
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.1 PK	74.0	-14.9	1.02 V	85	49.45	9.65
2	5460.00	44.5 AV	54.0	-9.5	1.02 V	85	34.85	9.65
3	#5470.00	59.5 PK	74.0	-14.5	1.02 V	85	49.81	9.69
4	#5470.00	44.5 AV	54.0	-9.5	1.02 V	85	34.81	9.69
5	*5660.00	115.4 PK			1.02 V	85	105.16	10.24
6	*5660.00	104.5 AV			1.02 V	85	94.26	10.24
7	#5725.00	71.0 PK	74.0	-3.0	1.02 V	85	60.62	10.38
8	#5725.00	53.2 AV	54.0	-0.8	1.02 V	85	42.82	10.38
9	11320.00	53.6 PK	74.0	-20.4	1.03 V	306	35.97	17.63
10	11320.00	40.2 AV	54.0	-13.8	1.03 V	306	22.57	17.63
11	#16980.00	59.8 PK	74.0	-14.2	1.10 V	247	34.36	25.44
12	#16980.00	48.4 AV	54.0	-5.6	1.10 V	247	22.96	25.44

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 140	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	*5700.00	107.2 PK			1.12 H	145	96.86	10.34
2	*5700.00	95.5 AV			1.12 H	145	85.16	10.34
3	#5725.00	66.9 PK	74.0	-7.1	1.12 H	145	56.52	10.38
4	#5725.00	47.3 AV	54.0	-6.7	1.12 H	145	36.92	10.38
5	11400.00	52.1 PK	74.0	-21.9	1.06 H	193	34.58	17.52
6	11400.00	39.9 AV	54.0	-14.1	1.06 H	193	22.38	17.52
7	#17100.00	62.1 PK	74.0	-11.9	1.03 H	86	36.81	25.29
8	#17100.00	49.0 AV	54.0	-5.0	1.03 H	86	23.71	25.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	109.9 PK			1.00 V	85	99.56	10.34
2	*5700.00	98.3 AV			1.00 V	85	87.96	10.34
3	#5725.00	70.2 PK	74.0	-3.8	1.00 V	85	59.82	10.38
4	#5725.00	50.8 AV	54.0	-3.2	1.00 V	85	40.42	10.38
5	11400.00	53.5 PK	74.0	-20.5	1.03 V	309	35.98	17.52
6	11400.00	40.3 AV	54.0	-13.7	1.03 V	309	22.78	17.52
7	#17100.00	59.6 PK	74.0	-14.4	1.15 V	246	34.31	25.29
8	#17100.00	48.2 AV	54.0	-5.8	1.15 V	246	22.91	25.29

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11n (HT40)

CHANNEL	TX Channel 38	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	5150.00	68.3 PK	74.0	-5.7	1.12 H	157	59.70	8.60
2	5150.00	49.6 AV	54.0	-4.4	1.12 H	157	41.00	8.60
3	*5190.00	103.6 PK			1.12 H	157	94.78	8.82
4	*5190.00	92.0 AV			1.12 H	157	83.18	8.82
5	#10380.00	52.3 PK	74.0	-21.7	1.00 H	204	36.93	15.37
6	#10380.00	40.0 AV	54.0	-14.0	1.00 H	204	24.63	15.37
7	15570.00	62.1 PK	74.0	-11.9	1.13 H	89	39.86	22.24
8	15570.00	49.5 AV	54.0	-4.5	1.13 H	89	27.26	22.24
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	5150.00	71.5 PK	74.0	-2.5	1.00 V	87	62.90	8.60
2	5150.00	52.7 AV	54.0	-1.3	1.00 V	87	44.10	8.60
3	*5190.00	106.7 PK			1.00 V	87	97.88	8.82
4	*5190.00	95.1 AV			1.00 V	87	86.28	8.82
5	#10380.00	53.2 PK	74.0	-20.8	1.11 V	313	37.83	15.37
6	#10380.00	39.9 AV	54.0	-14.1	1.11 V	313	24.53	15.37
7	15570.00	60.2 PK	74.0	-13.8	1.09 V	221	37.96	22.24
8	15570.00	48.5 AV	54.0	-5.5	1.09 V	221	26.26	22.24

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 46	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	5150.00	66.6 PK	74.0	-7.4	1.16 H	169	58.00	8.60
2	5150.00	49.3 AV	54.0	-4.7	1.16 H	169	40.70	8.60
3	*5230.00	107.4 PK			1.16 H	169	98.43	8.97
4	*5230.00	96.2 AV			1.16 H	169	87.23	8.97
5	5350.00	59.6 PK	74.0	-14.4	1.16 H	169	50.29	9.31
6	5350.00	42.3 AV	54.0	-11.7	1.16 H	169	32.99	9.31
7	#10460.00	52.7 PK	74.0	-21.3	1.09 H	209	37.06	15.64
8	#10460.00	40.2 AV	54.0	-13.8	1.09 H	209	24.56	15.64
9	15690.00	62.1 PK	74.0	-11.9	1.08 H	81	40.32	21.78
10	15690.00	49.1 AV	54.0	-4.9	1.08 H	81	27.32	21.78
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	5150.00	69.7 PK	74.0	-4.3	1.00 V	87	61.10	8.60
2	5150.00	52.2 AV	54.0	-1.8	1.00 V	87	43.60	8.60
3	*5230.00	110.7 PK			1.00 V	87	101.73	8.97
4	*5230.00	99.5 AV			1.00 V	87	90.53	8.97
5	5350.00	62.5 PK	74.0	-11.5	1.00 V	87	53.19	9.31
6	5350.00	45.0 AV	54.0	-9.0	1.00 V	87	35.69	9.31
7	#10460.00	52.9 PK	74.0	-21.1	1.08 V	324	37.26	15.64
8	#10460.00	39.8 AV	54.0	-14.2	1.08 V	324	24.16	15.64
9	15690.00	60.8 PK	74.0	-13.2	1.07 V	228	39.02	21.78
10	15690.00	49.0 AV	54.0	-5.0	1.07 V	228	27.22	21.78

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 54	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	5150.00	57.5 PK	74.0	-16.5	1.19 H	157	48.90	8.60
2	5150.00	41.8 AV	54.0	-12.2	1.19 H	157	33.20	8.60
3	*5270.00	107.8 PK			1.19 H	157	98.69	9.11
4	*5270.00	96.2 AV			1.19 H	157	87.09	9.11
5	5350.00	65.4 PK	74.0	-8.6	1.19 H	157	56.09	9.31
6	5350.00	47.4 AV	54.0	-6.6	1.19 H	157	38.09	9.31
7	#10540.00	52.9 PK	74.0	-21.1	1.09 H	208	36.88	16.02
8	#10540.00	40.6 AV	54.0	-13.4	1.09 H	208	24.58	16.02
9	15810.00	62.0 PK	74.0	-12.0	1.06 H	81	39.95	22.05
10	15810.00	49.1 AV	54.0	-4.9	1.06 H	81	27.05	22.05
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	5150.00	60.9 PK	74.0	-13.1	1.00 V	86	52.30	8.60
2	5150.00	45.3 AV	54.0	-8.7	1.00 V	86	36.70	8.60
3	*5270.00	111.2 PK			1.00 V	86	102.09	9.11
4	*5270.00	99.5 AV			1.00 V	86	90.39	9.11
5	5350.00	68.9 PK	74.0	-5.1	1.00 V	86	59.59	9.31
6	5350.00	50.8 AV	54.0	-3.2	1.00 V	86	41.49	9.31
7	#10540.00	53.6 PK	74.0	-20.4	1.05 V	311	37.58	16.02
8	#10540.00	40.3 AV	54.0	-13.7	1.05 V	311	24.28	16.02
9	15810.00	60.2 PK	74.0	-13.8	1.08 V	241	38.15	22.05
10	15810.00	48.9 AV	54.0	-5.1	1.08 V	241	26.85	22.05

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 62	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	*5310.00	105.0 PK			1.19 H	162	95.77	9.23
2	*5310.00	93.5 AV			1.19 H	162	84.27	9.23
3	5350.00	69.4 PK	74.0	-4.6	1.19 H	162	60.09	9.31
4	5350.00	50.2 AV	54.0	-3.8	1.19 H	162	40.89	9.31
5	10620.00	52.7 PK	74.0	-21.3	1.09 H	207	36.52	16.18
6	10620.00	40.6 AV	54.0	-13.4	1.09 H	207	24.42	16.18
7	15930.00	62.2 PK	74.0	-11.8	1.05 H	80	40.15	22.05
8	15930.00	49.2 AV	54.0	-4.8	1.05 H	80	27.15	22.05
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	*5310.00	107.9 PK			1.00 V	85	98.67	9.23
2	*5310.00	96.2 AV			1.00 V	85	86.97	9.23
3	5350.00	72.4 PK	74.0	-1.6	1.00 V	85	63.09	9.31
4	5350.00	53.1 AV	54.0	-0.9	1.00 V	85	43.79	9.31
5	10620.00	53.6 PK	74.0	-20.4	1.07 V	326	37.42	16.18
6	10620.00	40.5 AV	54.0	-13.5	1.07 V	326	24.32	16.18
7	15930.00	60.1 PK	74.0	-13.9	1.19 V	235	38.05	22.05
8	15930.00	48.8 AV	54.0	-5.2	1.19 V	235	26.75	22.05

REMARKS:

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

CHANNEL	TX Channel 102	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	5460.00	67.3 PK	74.0	-6.7	1.14 H	154	57.65	9.65
2	5460.00	49.6 AV	54.0	-4.4	1.14 H	154	39.95	9.65
3	#5470.00	66.2 PK	74.0	-7.8	1.14 H	154	56.51	9.69
4	#5470.00	50.5 AV	54.0	-3.5	1.14 H	154	40.81	9.69
5	*5510.00	102.8 PK			1.14 H	154	92.96	9.84
6	*5510.00	91.0 AV			1.14 H	154	81.16	9.84
7	11020.00	52.5 PK	74.0	-21.5	1.00 H	191	35.01	17.49
8	11020.00	40.3 AV	54.0	-13.7	1.00 H	191	22.81	17.49
9	#16530.00	61.7 PK	74.0	-12.3	1.03 H	67	37.28	24.42
10	#16530.00	49.0 AV	54.0	-5.0	1.03 H	67	24.58	24.42
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	70.1 PK	74.0	-3.9	1.05 V	85	60.45	9.65
2	5460.00	52.6 AV	54.0	-1.4	1.05 V	85	42.95	9.65
3	#5470.00	69.1 PK	74.0	-4.9	1.05 V	85	59.41	9.69
4	#5470.00	53.1 AV	54.0	-0.9	1.05 V	85	43.41	9.69
5	*5510.00	105.9 PK			1.05 V	85	96.06	9.84
6	*5510.00	94.0 AV			1.05 V	85	84.16	9.84
7	11020.00	53.3 PK	74.0	-20.7	1.14 V	307	35.81	17.49
8	11020.00	39.8 AV	54.0	-14.2	1.14 V	307	22.31	17.49
9	#16530.00	60.8 PK	74.0	-13.2	1.11 V	233	36.38	24.42
10	#16530.00	49.1 AV	54.0	-4.9	1.11 V	233	24.68	24.42

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 110	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	5460.00	62.6 PK	74.0	-11.4	1.10 H	162	52.95	9.65
2	5460.00	45.6 AV	54.0	-8.4	1.10 H	162	35.95	9.65
3	#5470.00	66.6 PK	74.0	-7.4	1.10 H	162	56.91	9.69
4	#5470.00	48.4 AV	54.0	-5.6	1.10 H	162	38.71	9.69
5	*5550.00	106.3 PK			1.10 H	162	96.35	9.95
6	*5550.00	94.6 AV			1.10 H	162	84.65	9.95
7	#5725.00	53.0 PK	74.0	-21.0	1.10 H	162	42.62	10.38
8	#5725.00	40.1 AV	54.0	-13.9	1.10 H	162	29.72	10.38
9	11100.00	52.8 PK	74.0	-21.2	1.05 H	211	35.72	17.08
10	11100.00	40.6 AV	54.0	-13.4	1.05 H	211	23.52	17.08
11	#16650.00	62.7 PK	74.0	-11.3	1.06 H	61	37.94	24.76
12	#16650.00	49.8 AV	54.0	-4.2	1.06 H	61	25.04	24.76
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	5460.00	65.6 PK	74.0	-8.4	1.04 V	86	55.95	9.65
2	5460.00	48.7 AV	54.0	-5.3	1.04 V	86	39.05	9.65
3	#5470.00	69.9 PK	74.0	-4.1	1.04 V	86	60.21	9.69
4	#5470.00	51.5 AV	54.0	-2.5	1.04 V	86	41.81	9.69
5	*5550.00	109.4 PK			1.04 V	86	99.45	9.95
6	*5550.00	98.0 AV			1.04 V	86	88.05	9.95
7	#5725.00	55.7 PK	74.0	-18.3	1.04 V	86	45.32	10.38
8	#5725.00	42.7 AV	54.0	-11.3	1.04 V	86	32.32	10.38
9	11100.00	53.5 PK	74.0	-20.5	1.10 V	328	36.42	17.08
10	11100.00	40.4 AV	54.0	-13.6	1.10 V	328	23.32	17.08
11	#16650.00	59.8 PK	74.0	-14.2	1.18 V	232	35.04	24.76
12	#16650.00	48.2 AV	54.0	-5.8	1.18 V	232	23.44	24.76

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

CHANNEL	TX Channel 134	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	*5670.00	105.1 PK			1.14 H	167	94.84	10.26
2	*5670.00	93.5 AV			1.14 H	167	83.24	10.26
3	#5725.00	67.1 PK	74.0	-6.9	1.14 H	167	56.72	10.38
4	#5725.00	48.6 AV	54.0	-5.4	1.14 H	167	38.22	10.38
5	11340.00	52.7 PK	74.0	-21.3	1.07 H	201	35.09	17.61
6	11340.00	40.3 AV	54.0	-13.7	1.07 H	201	22.69	17.61
7	#17010.00	62.9 PK	74.0	-11.1	1.03 H	61	37.38	25.52
8	#17010.00	49.8 AV	54.0	-4.2	1.03 H	61	24.28	25.52
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	*5670.00	108.1 PK			1.01 V	86	97.84	10.26
2	*5670.00	96.4 AV			1.01 V	86	86.14	10.26
3	#5725.00	70.5 PK	74.0	-3.5	1.01 V	86	60.12	10.38
4	#5725.00	51.9 AV	54.0	-2.1	1.01 V	86	41.52	10.38
5	11340.00	53.6 PK	74.0	-20.4	1.03 V	315	35.99	17.61
6	11340.00	40.2 AV	54.0	-13.8	1.03 V	315	22.59	17.61
7	#17010.00	60.5 PK	74.0	-13.5	1.18 V	234	34.98	25.52
8	#17010.00	49.1 AV	54.0	-4.9	1.18 V	234	23.58	25.52

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

4.3 TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT

Frequency Band	Limit
5.15 – 5.25GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.25 – 5.35GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.47 – 5.725GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.725 – 5.825GHz	The lesser of 1W (30dBm) or 17dBm + 10logB

NOTE: Where B is the 26dB bandwidth in MHz.

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.

4.3.2 TEST INSTRUMENTS

FOR POWER OUTPUT MEASUREMENT

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Power Meter	ML2495A	1014008	Apr. 23, 2013	Apr. 22, 2014
Power Sensor	MA2411B	0917122	Apr. 23, 2013	Apr. 22, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Aug. 15, 2013

FOR 26dB OCCUPIED BANDWIDTH

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 : Aug. 15, 2013

4.3.3 TEST PROCEDURE

FOR POWER OUTPUT MEASUREMENT

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

FOR 26dB OCCUPIED BANDWIDTH

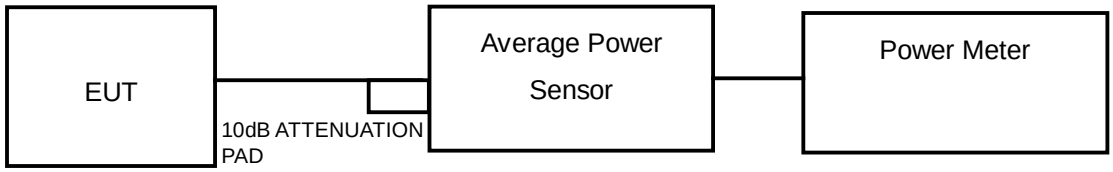
1) Set RBW = approximately 1% of the emission bandwidth.
2) Set the VBW > RBW.
3) Detector = Peak.
4) Trace mode = max hold.
5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.3.4 DEVIATION FROM TEST STANDARD

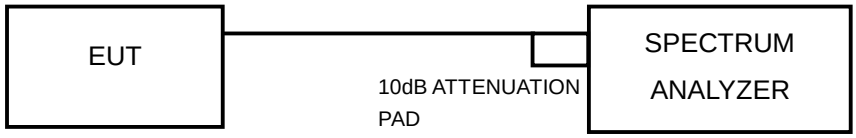
No deviation

4.3.5 TEST SETUP

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.3.7 TEST RESULTS

POWER OUTPUT:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	40.644	16.09	17	PASS
40	5200	41.210	16.15	17	PASS
48	5240	41.210	16.15	17	PASS
52	5260	113.240	20.54	24	PASS
60	5300	65.313	18.15	24	PASS
64	5320	49.659	16.96	24	PASS
100	5500	32.137	15.07	24	PASS
116	5580	79.983	19.03	24	PASS
132	5660	71.121	18.52	24	PASS
140	5700	26.669	14.26	24	PASS

26dB OCCUPIED BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
36	5180	31.18
40	5200	29.74
48	5240	27.88
52	5260	45.06
60	5300	37.28
64	5320	27.97
100	5500	22.02
116	5580	42.13
132	5660	39.17
140	5700	22.48

Note: For FCC output power limitation is determined based on 26dB bandwidth.

Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
36	5180	31.18	18.93 > 17
40	5200	29.74	18.73 > 17
48	5240	27.88	18.45 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
52	5260	45.06	27.53 > 24
60	5300	37.28	26.71 > 24
64	5320	27.97	25.46 > 24
100	5500	22.02	24.42 > 24
116	5580	42.13	27.24 > 24
132	5660	39.17	26.92 > 24
140	5700	22.48	24.51 > 24

POWER OUTPUT:

802.11n (HT20)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	13.05	13.54	42.778	16.31	17	PASS
40	5200	13.11	13.45	42.595	16.29	17	PASS
48	5240	13.14	13.50	42.993	16.33	17	PASS
52	5260	19.50	19.71	182.666	22.62	24	PASS
60	5300	17.10	18.04	114.966	20.61	24	PASS
64	5320	15.30	15.65	70.612	18.49	24	PASS
100	5500	13.40	13.17	42.627	16.30	24	PASS
116	5580	19.21	19.51	172.699	22.37	24	PASS
132	5660	17.45	17.53	112.214	20.50	24	PASS
140	5700	11.50	11.48	28.185	14.50	24	PASS

26dB OCCUPIED BANDWIDTH:

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	20.55	21.77
40	5200	20.47	20.99
48	5240	20.82	21.99
52	5260	39.74	46.30
60	5300	35.61	36.90
64	5320	22.71	47.11
100	5500	24.75	21.27
116	5580	44.91	44.68
132	5660	39.96	37.37
140	5700	21.52	20.21

Note: For FCC output power limitation is determined based on 26dB bandwidth.

Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
36	5180	20.55	17.12 > 17
40	5200	20.47	17.11 > 17
48	5240	20.82	17.18 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
52	5260	39.74	26.99 > 24
60	5300	35.61	26.51 > 24
64	5320	22.71	24.56 > 24
100	5500	21.27	24.27 > 24
116	5580	44.68	27.5 > 24
132	5660	37.37	26.72 > 24
140	5700	20.21	24.05 > 24

POWER OUTPUT:

802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	12.14	12.51	34.192	15.34	17	PASS
46	5230	13.05	13.35	41.811	16.21	17	PASS
54	5270	16.51	16.84	93.077	19.69	24	PASS
62	5310	13.06	13.38	42.007	16.23	24	PASS
102	5510	10.71	10.92	24.135	13.83	24	PASS
110	5550	14.44	14.78	57.858	17.62	24	PASS
134	5670	12.88	13.18	40.206	16.04	24	PASS

26dB OCCUPIED BANDWIDTH:

802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
38	5190	46.05	51.89
46	5230	46.82	62.44
54	5270	81.44	96.04
62	5310	46.39	51.73
102	5510	45.65	45.89
110	5550	92.27	77.34
134	5670	61.45	74.66

Note: For FCC output power limitation is determined based on 26dB bandwidth.

Power Limit = 4dBm + 10logB < Band 1>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
38	5190	46.05	20.63 > 17
46	5230	46.82	20.7 > 17
Power Limit = 11dBm + 10logB < Band 2~3>			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Limit (dBm)
54	5270	81.44	30.1 > 24
62	5310	46.39	27.66 > 24
102	5510	45.65	27.59 > 24
110	5550	77.34	29.88 > 24
134	5670	61.45	28.88 > 24

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Frequency Band	Limit
5.15 ~ 5.25GHz	4dBm
5.25 ~ 5.35GHz	11dBm
5.47 – 5.725GHz	11dBm
5.725 ~ 5.825GHz	17dBm

4.4.2 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 : Aug. 15, 2013

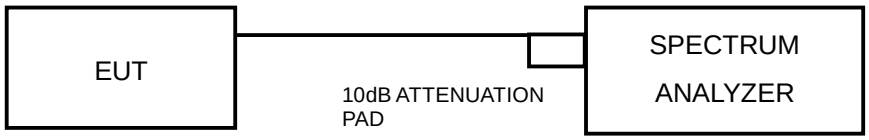
4.4.3 TEST PROCEDURES

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value and for duty cycle of test signal is < 98% add 10 log (1/duty cycle)

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

Same as 4.3.6

4.4.7 TEST RESULTS

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	2.92	4	PASS
40	5200	2.86	4	PASS
48	5240	2.70	4	PASS
52	5260	7.45	11	PASS
60	5300	4.70	11	PASS
64	5320	3.50	11	PASS
100	5500	1.99	11	PASS
116	5580	6.10	11	PASS
132	5660	4.72	11	PASS
140	5700	1.22	11	PASS

802.11n (HT20)

CHAN.	CHAN. FREQ. (MHz)	PSD W/O DUTY FACTOR (dBm)		DUTY FACTOR (dB)	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	-0.22	0.47	0.09	3.24	4	PASS
40	5200	-0.04	0.44	0.09	3.31	4	PASS
48	5240	-0.20	0.22	0.09	3.12	4	PASS
52	5260	5.26	6.83	0.09	9.22	11	PASS
60	5300	3.03	4.52	0.09	6.94	11	PASS
64	5320	1.46	6.88	0.09	8.07	11	PASS
100	5500	-0.91	0.10	0.09	2.72	11	PASS
116	5580	3.87	5.94	0.09	8.13	11	PASS
132	5660	1.90	3.75	0.09	6.02	11	PASS
140	5700	-3.40	-1.72	0.09	0.62	11	PASS

NOTE:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Refer to section 3.4 for duty cycle spectrum plot.

802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	PSD W/O DUTY FACTOR (dBm)		DUTY FACTOR (dB)	TOTAL PSD WITH DUTY FACTOR (dBm)	MAX. LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	-4.75	-3.98	0.16	-1.18	4	PASS
46	5230	-3.73	-3.41	0.16	-0.40	4	PASS
54	5270	-1.05	-0.17	0.16	2.58	11	PASS
62	5310	-3.98	-3.66	0.16	-0.65	11	PASS
102	5510	-6.84	-5.53	0.16	-2.97	11	PASS
110	5550	-3.11	-1.69	0.16	0.83	11	PASS
134	5670	-5.13	-3.45	0.16	-1.04	11	PASS

NOTE:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Refer to section 3.4 for duty cycle spectrum plot.

4.5 PEAK POWER EXCURSION MEASUREMENT

4.5.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Shall not exceed 13 dB

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 : Aug. 15, 2013

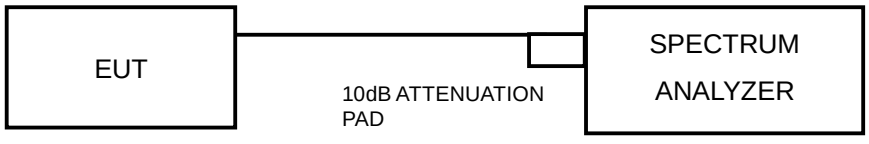
4.5.3 TEST PROCEDURE

1. Set RBW = 1 MHz, VBW ≥ 3 MHz, Detector = peak.
2. Trace mode = max-hold. Allow the sweeps to continue until the trace stabilizes.
3. Use the peak search function to find the peak of the spectrum.
4. Measure the PPSD.
5. Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.5.7 TEST RESULTS

MODULATION MODE	MODULATION TYPE	CHAN. FREQ. (MHz)	PEAK VALUE (dBm)	PPSD WITHOUT DUTY FACTOR (dBm)	PPSD WITH DUTY FACTOR (dBm)	PEAK EXCURSION (dB)	LIMIT (dB)	PASS /FAIL
802.11a	BPSK	5260	17.12	7.45	7.45	9.67	13	PASS
	QPSK		17.43	7.97	7.97	9.46	13	PASS
	16QAM		18.09	7.84	8	10.09	13	PASS
	64QAM		17.65	7.72	8.03	9.62	13	PASS
802.11n (HT20)	BPSK	5580	16.43	6.03	6.12	10.31	13	PASS
	QPSK		16.84	7.24	7.34	9.5	13	PASS
	16QAM		17.34	6.93	7.1	10.24	13	PASS
	64QAM		16.98	6.88	7.19	9.79	13	PASS
802.11n (HT40)	BPSK	5270	10.2	-0.01	0.15	10.05	13	PASS
	QPSK		10.94	1.26	1.42	9.52	13	PASS
	16QAM		11.89	1.33	1.6	10.29	13	PASS
	64QAM		11.93	1.28	1.79	10.14	13	PASS

4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency of the carrier signal shall be maintained within band of operation

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
Temperature & Humidity Chamber GIANTFORCE	GTH-150-40-SP-AR	MAA0812-008	Jan. 17, 2013	Jan. 16, 2014

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : Aug. 15, 2013

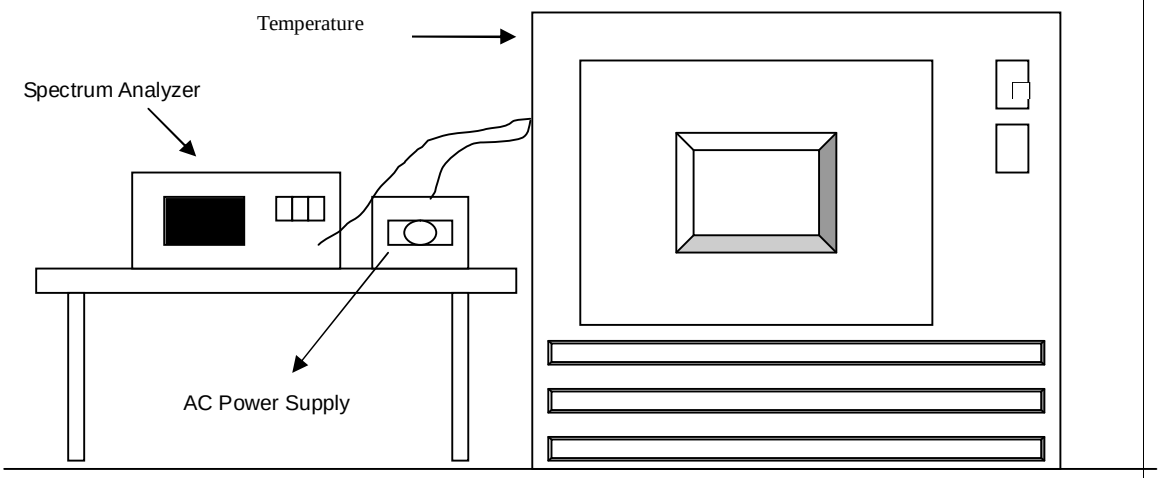
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 TEST RESULTS

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
50	120	5319.989	-0.00021	5319.9876	-0.00023	5319.989	-0.00021	5319.9838	-0.00030
40	120	5319.9777	-0.00042	5319.9724	-0.00052	5319.9765	-0.00044	5319.977	-0.00043
30	120	5320.0257	0.00048	5320.0233	0.00044	5320.0204	0.00038	5320.0196	0.00037
20	120	5319.9878	-0.00023	5319.9966	-0.00006	5319.9938	-0.00012	5319.9882	-0.00022
10	120	5320.0296	0.00056	5320.0254	0.00048	5320.0268	0.00050	5320.0217	0.00041
0	120	5319.9815	-0.00035	5319.9814	-0.00035	5319.9781	-0.00041	5319.9787	-0.00040
-10	120	5320.0084	0.00016	5320.0067	0.00013	5320.0038	0.00007	5320.0005	0.00001
-20	120	5319.9932	-0.00013	5319.9949	-0.00010	5319.995	-0.00009	5319.9942	-0.00011
-30	120	5319.9783	-0.00041	5319.9811	-0.00036	5319.9886	-0.00021	5319.9784	-0.00041

FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5320MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
20	138	5319.9868	-0.00025	5319.9969	-0.00006	5319.9936	-0.00012	5319.9886	-0.00021
	120	5319.9878	-0.00023	5319.9966	-0.00006	5319.9938	-0.00012	5319.9882	-0.00022
	102	5319.9876	-0.00023	5319.997	-0.00006	5319.9947	-0.00010	5319.9891	-0.00020

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6. INFORMATION ON THE TESTING LABORATORIES

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

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

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

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

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

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

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

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

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

--- END ---