

FCC TEST REPORT (15.407)

REPORT NO.: RF140430E05-1 R1

MODEL NO.: 1653

FCC ID: C3K1653

RECEIVED: Apr. 30, 2014

TESTED: June 19 to July 24, 2014

ISSUED: Sep. 02, 2014

APPLICANT: Microsoft Corporation

ADDRESS: One Microsoft Way Redmond WA 98052

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.



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

Table of Contents

RELEASE CONTROL RECORD	4
1. CERTIFICATION	5
2. SUMMARY OF TEST RESULTS	6
2.1 MEASUREMENT UNCERTAINTY	7
3. GENERAL INFORMATION	8
3.1 GENERAL DESCRIPTION OF EUT	8
3.2 DESCRIPTION OF TEST MODES	11
3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL	12
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS	15
3.4 DUTY CYCLE OF TEST SIGNAL	16
3.5 DESCRIPTION OF SUPPORT UNITS.....	18
3.6 CONFIGURATION OF SYSTEM UNDER TEST	19
4. TEST TYPES AND RESULTS	20
4.1 CONDUCTED EMISSION MEASUREMENT	20
4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT	20
4.1.2 TEST INSTRUMENTS.....	20
4.1.3 TEST PROCEDURES	21
4.1.4 DEVIATION FROM TEST STANDARD	21
4.1.5 TEST SETUP	21
4.1.6 EUT OPERATING CONDITIONS	22
4.1.7 TEST RESULTS (ACCESSORY RADIO).....	23
4.1.8 TEST RESULTS (NETWORK RADIO).....	25
4.2 RADIATED EMISSION AND BANDEDGE MEASUREMENT	27
4.2.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	27
4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS.....	28
4.2.3 TEST INSTRUMENTS.....	29
4.2.4 TEST PROCEDURES	30
4.2.5 DEVIATION FROM TEST STANDARD	30
4.2.6 TEST SETUP	31
4.2.7 EUT OPERATING CONDITION	31
4.2.8 TEST RESULTS (ACCESSORY RADIO).....	32
4.2.9 TEST RESULTS (NETWORK RADIO)	45
4.3 TRANSMIT POWER MEASUREMENT	62
4.3.1 LIMITS OF TRANSMIT POWER MEASUREMENT	62
4.3.2 TEST INSTRUMENTS.....	63
4.3.3 TEST PROCEDURE.....	63
4.3.4 DEVIATION FROM TEST STANDARD	64
4.3.5 TEST SETUP	64



A D T

4.3.6	EUT OPERATING CONDITIONS	64
4.3.7	TEST RESULTS (ACCESSORY RADIO).....	65
4.3.8	TEST RESULTS (NETWORK RADIO).....	69
4.4	PEAK POWER SPECTRAL DENSITY MEASUREMENT	72
4.4.1	LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT	72
4.4.2	TEST INSTRUMENTS.....	72
4.4.3	TEST PROCEDURES	73
4.4.4	DEVIATION FROM TEST STANDARD	73
4.4.5	TEST SETUP	73
4.4.6	EUT OPERATING CONDITIONS	73
4.4.7	TEST RESULTS (ACCESSORY RADIO).....	74
4.4.8	TEST RESULTS (NETWORK RADIO).....	76
4.5	FREQUENCY STABILITY.....	80
4.5.1	LIMITS OF FREQUENCY STABILITY MEASUREMENT	80
4.5.2	TEST INSTRUMENTS.....	80
4.5.3	TEST PROCEDURE.....	80
4.5.4	DEVIATION FROM TEST STANDARD	81
4.5.5	TEST SETUP	81
4.5.6	EUT OPERATING CONDITION.....	81
4.5.7	TEST RESULTS (ACCESSORY RADIO).....	82
4.5.8	TEST RESULTS (NETWORK RADIO).....	83
4.6	6DB BANDWIDTH MEASUREMENT	84
4.6.1	LIMITS OF 6DB BANDWIDTH MEASUREMENT	84
4.6.2	TEST INSTRUMENTS.....	84
4.6.3	TEST PROCEDURE.....	84
4.6.4	DEVIATION FROM TEST STANDARD	84
4.6.5	TEST SETUP	85
4.6.6	EUT OPERATING CONDITIONS	85
4.6.7	TEST RESULTS (ACCESSORY RADIO).....	86
4.6.8	TEST RESULTS (ACCESSORY RADIO).....	87
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION.....	89
6.	INFORMATION ON THE TESTING LABORATORIES	90
7.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB.....	91



A D T

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF140430E05-1	Original release	Aug. 06, 2014
RF140430E05-1 R1	Modified section 3.1: note 2 & 3.	Sep. 02, 2014



A D T

1. CERTIFICATION

PRODUCT: 802.11a/b/g/n 2T2R dual-band wireless LAN radio
BRAND NAME: Microsoft
MODEL NO.: 1653
TEST SAMPLE: ENGINEERING SAMPLE
APPLICANT: Microsoft Corporation
TESTED: June 19 to July 24, 2014
STANDARDS: **FCC Part 15, Subpart E (Section 15.407)**
ANSI C63.10-2009

The above equipment (Model: 1653) 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. 02, 2014
(Elsie Hsu, Specialist)

APPROVED BY :  , **DATE:** Sep. 02, 2014
(May Chen, Manager)

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART 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 -18.14dB at 0.17734MHz
15.407 (b)(1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.2dB at 5850.00MHz.
15.407(a/1/2/3)	Transmit Power	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(e)	6dB bandwidth	PASS	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	For Accessory Radio: Antenna connector is i-PEX not a standard connector. For Network Radio: No antenna connector is used.

NOTE: 1. The EUT was operating in 2.400 ~ 2.4835GHz, 5.15~5.25GHz and 5.725~5.850GHz frequencies band. This report was recorded the RF parameters including 5.15~5.25GHz and 5.725~5.850GHz. For the 2.400 ~ 2.4835GHz RF parameters was recorded in another test report.

2.1 MEASUREMENT UNCERTAINTY

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

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

Measurement	Value
Conducted emissions	2.86 dB
Radiated emissions (30MHz-1GHz)	5.43 dB
Radiated emissions (1GHz -6GHz)	3.72 dB
Radiated emissions (6GHz -18GHz)	4.00 dB
Radiated emissions (18GHz -40GHz)	4.11 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11a/b/g/n 2T2R dual-band wireless LAN radio
MODEL NO.	1653
POWER SUPPLY	3.3Vdc (from host equipment)
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS,OFDM
TRANSFER RATE	802.11b: up to 11Mbps 802.11a / g: up to 54Mbps 802.11n: up to 300Mbps
OPERATING FREQUENCY	For 15.407 5.18 ~ 5.24GHz, 5.745 ~ 5.825GHz
	For 15.247 2.412 ~ 2.462GHz
NUMBER OF CHANNEL	Accessory Radio For 15.407 9 for 802.11a, 802.11n (HT20) Network Radio For 15.407 9 for 802.11a, 802.11n (HT20) 7 for 802.11n (HT40)
	Accessory Radio For 15.247 11 for 802.11b, 802.11g, 802.11n (HT20) Network Radio For 15.247 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40)

MAXIMUM OUTPUT POWER	Accessory Radio For 15.407 802.11a: 36.898mW 802.11n (HT20): 36.898mW For 15.247 802.11b: 304.089mW 802.11g: 516.416mW 802.11n (HT20): 588.844mW Network Radio For 15.407 802.11a: 164.522mW 802.11n (HT20): 161..942mW 802.11n (HT40): 168.582mW For 15.247 802.11b: 196.085mW 802.11g: 616.788mW 802.11n (HT20): 629.359mW 802.11n (HT40): 217.651mW
ANTENNA TYPE	Please see NOTE
DATA CABLE	NA
I/O PORTS	Refer to user's manual
ASSOCIATED DEVICES	NA

NOTE:

- Features (WiFi) Accessory Radio (1x1) and Features (WiFi) Network Radio (2x2) coexistence mode:

Condition	Technology	
	Networking Radio(2x2)	Accessory radio(1x1)
1	2.4GHz Band	5GHz U-NII-1 Band
2	2.4GHz Band	5GHz U-NII-3 Band
3	5GHz U-NII-1 Band	2.4GHz Band
4	5GHz U-NII-1 Band	5GHz U-NII-3 Band
5	5GHz U-NII-3 Band	2.4GHz Band
6	5GHz U-NII-3 Band	5GHz U-NII-1 Band
The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

2. The EUT has two different component configuration as following table:

Configuration	Different
Config-1	different vendor
Config-2	
From the above RF layers designs, Config-2 was selected as the representative mode for the test and its data is recorded in this report.	

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

Accessory Radio							
Ant. No.	Brand	Model	Ant. Gain(dBi) <including cable loss>	Frequency range (GHz ~ GHz)	Ant. Type	Connector Type	Cable Length (mm)
1	Microsoft	NA	2.2	2.4~2.5	PCB	i-PEX	295
	Microsoft	NA	3.14	5.15~5.85	PCB	i-PEX	295
Network Radio							
Ant. No.	Transmitter Circuit	Brand	Model	Ant. Gain(dBi) <including cable loss>	Frequency range (GHz ~ GHz)	Ant. Type	Connector Type
1	Chain (0)	Microsoft	NA	4.79	2.4~2.5	PCB	NA
				3.49	5.15~5.85		
2	Chain (1)	Microsoft	NA	1.87	2.4~2.5	PCB	NA
				2.63	5.15~5.85		

4. The EUT incorporates a MIMO function without beamforming.

Accessory Radio			
MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11a	6 ~ 54Mbps	1TX	1RX
802.11b	1 ~ 11Mbps	1TX	1RX
802.11g	6 ~ 54Mbps	1TX	1RX
802.11n (HT20)	MCS 0~7	1TX	1RX
Network Radio			
MODULATION MODE	DATA RATE (MCS)	TX & RX CONFIGURATION	
802.11a	6 ~ 54Mbps	2TX CDD	2RX
802.11b	1 ~ 11Mbps	2TX CDD	2RX
802.11g	6 ~ 54Mbps	2TX CDD	2RX
802.11n (HT20)	MCS 0~7	2TX CDD	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX CDD	2RX
	MCS 8~15	2TX	2RX

5. 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 ~ 5250MHz band:

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

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
38	5190 MHz	46	5230 MHz

Operated in 5725 ~ 5850MHz band:

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

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

2 channels are provided for 802.11n (HT40):

CHANNEL	FREQUENCY
151	5755 MHz
159	5795 MHz

3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	PLC	RE < 1G	RE ³ 1G	APCM	
1	√	√	√	√	Accessory Radio
2	√	√	√	√	Network Radio

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. The EUT's antenna had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-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.

Accessory Radio					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATI ON TYPE	DATA RATE (MBPS)
802.11n (HT20)	149 to 165	149	OFDM	BPSK	6.5
Network Radio					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATI ON TYPE	DATA RATE (MBPS)
802.11n (HT20)	149 to 165	157	OFDM	BPSK	6.5

RADIATED EMISSION TEST (BELOW 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Accessory Radio					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (MBPS)
802.11n (HT20)	149 to 165	149	OFDM	BPSK	6.5
Network Radio					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (MBPS)
802.11n (HT20)	149 to 165	157	OFDM	BPSK	6.5

RADIATED EMISSION TEST (ABOVE 1 GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Accessory Radio					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (MBPS)
802.11a	36 to 48 & 149 to 165	36, 40, 48, 149, 157, 165	OFDM	BPSK	6
802.11n (HT20)	36 to 48 & 149 to 165	36, 40, 48, 149, 157, 165	OFDM	BPSK	6.5
Network Radio					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (MBPS)
802.11a	36 to 48 & 149 to 165	36, 40, 48, 149, 157, 165	OFDM	BPSK	6
802.11n (HT20)	36 to 48 & 149 to 165	36, 40, 48, 149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)	38 to 46 & 151 to 159	38, 46, 151, 159	OFDM	BPSK	13.5

ANTENNA PORT CONDUCTED MEASUREMENT:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

Accessory Radio					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (MBPS)
802.11a	36 to 48 & 149 to 165	36, 40, 48, 149, 157, 165	OFDM	BPSK	6
802.11n (HT20)	36 to 48 & 149 to 165	36, 40, 48, 149, 157, 165	OFDM	BPSK	6.5
Network Radio					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (MBPS)
802.11a	36 to 48 & 149 to 165	36, 40, 48, 149, 157, 165	OFDM	BPSK	6
802.11n (HT20)	36 to 48 & 149 to 165	36, 40, 48, 149, 157, 165	OFDM	BPSK	6.5
802.11n (HT40)	38 to 46 & 151 to 159	38, 46, 151, 159	OFDM	BPSK	13.5

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
PLC	25deg. C, 70%RH	120Vac, 60Hz	Mike Hsieh
RE<1G	24deg. C, 68%RH	120Vac, 60Hz	Tim Ho
RE ³ 1G	25deg. C, 65%RH	120Vac, 60Hz	Andy Ho
	25deg. C, 65%RH	120Vac, 60Hz	Gary Cheng
APCM	25deg. C, 60%RH	120Vac, 60Hz	Chilin Lee

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart E (15.407)

789033 D02 General UNII Test Procedures New Rules v01

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2009

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

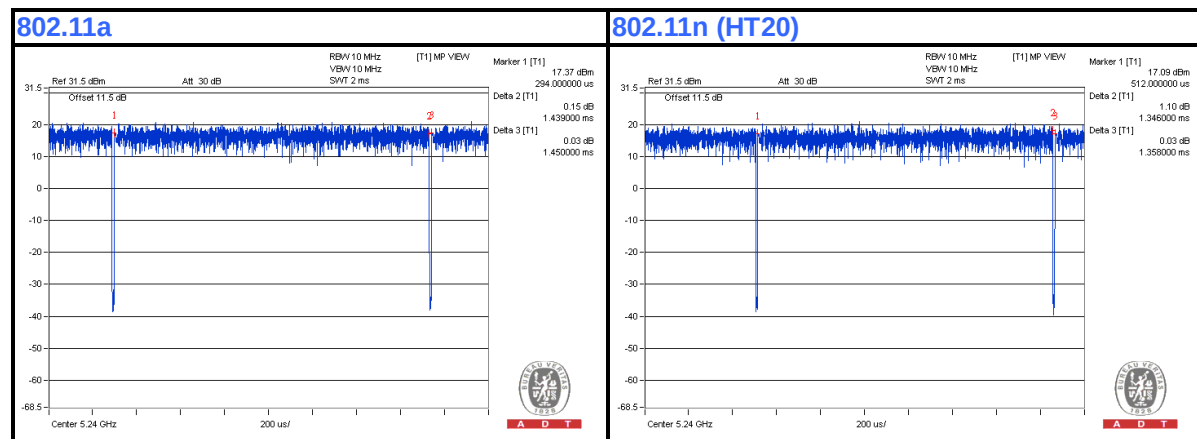
3.4 DUTY CYCLE OF TEST SIGNAL

For Accessory Radio

If duty cycle of test signal is $\geq 98\%$, duty factor is not required.

802.11a: Duty cycle = $1.439 \text{ ms} / 1.45 \text{ ms} = 0.992$

802.11n (HT20): Duty cycle = $1.346 \text{ ms} / 1.358 \text{ ms} = 0.991$





A D T

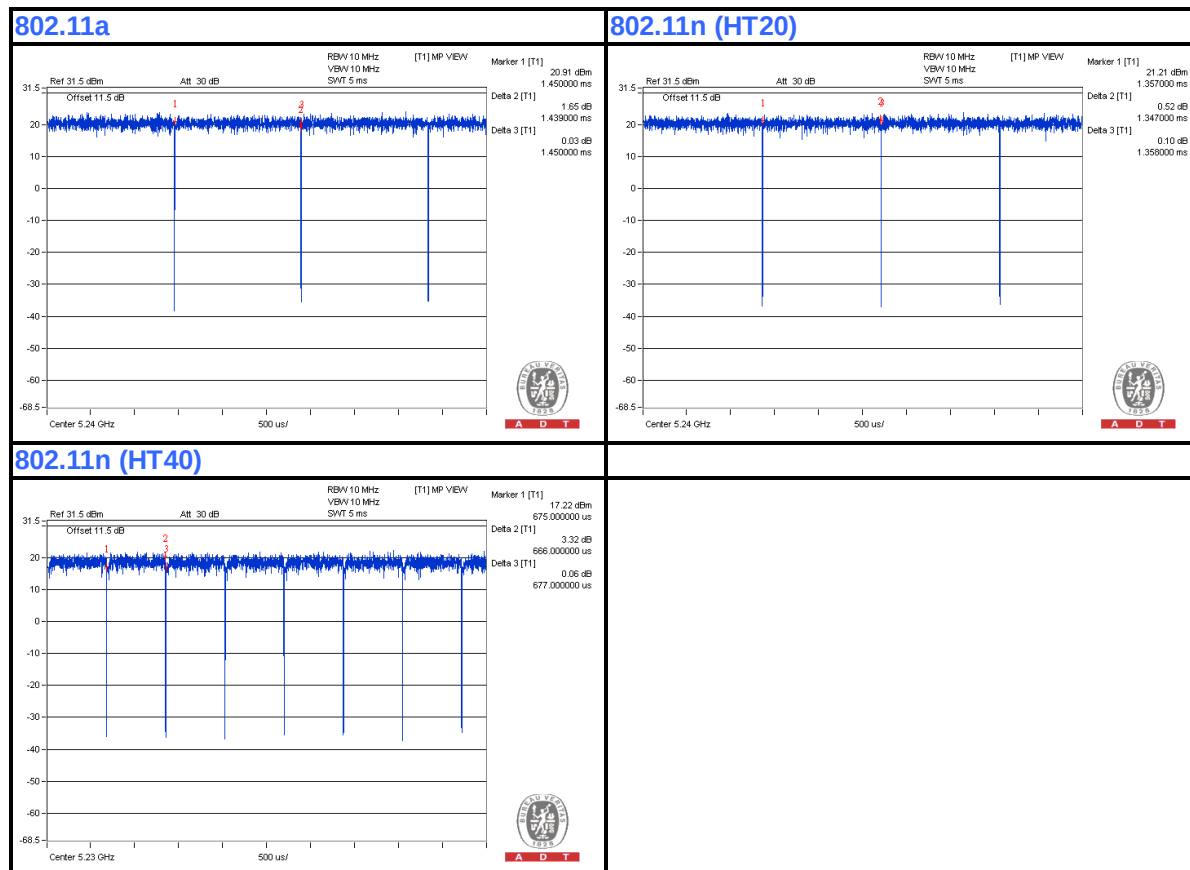
For Network Radio

If duty cycle of test signal is $\geq 98\%$, duty factor is not required.

802.11a: Duty cycle = $1.439 \text{ ms} / 1.45 \text{ ms} = 0.992$

802.11n (HT20): Duty cycle = $1.347 \text{ ms} / 1.358 \text{ ms} = 0.992$

802.11n (HT40): Duty cycle = $0.666 \text{ ms} / 0.677 \text{ ms} = 0.984$





A D T

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.

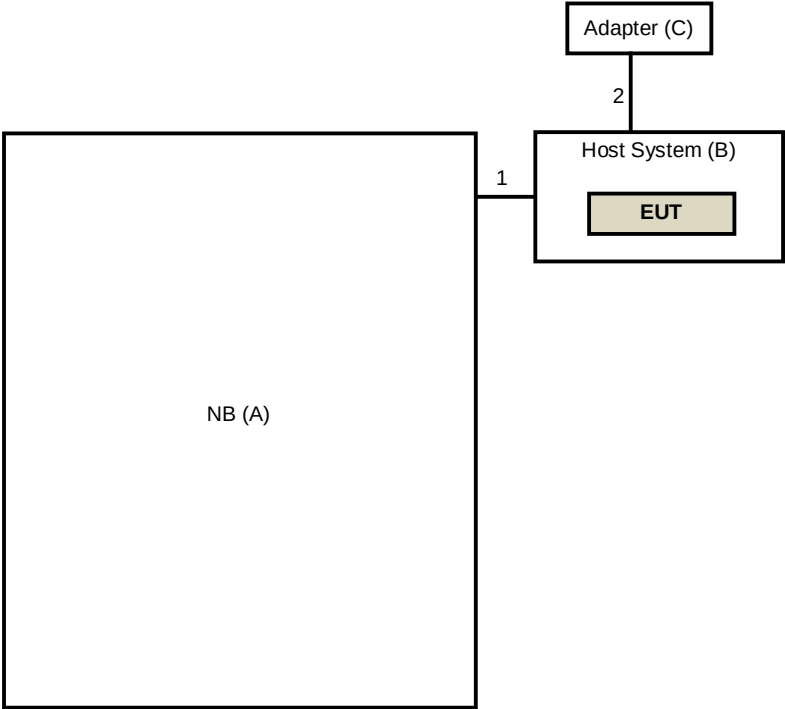
No.	Product	Brand	Model No.	Serial No.	FCC ID	Remark
A	NOTEBOOK	DELL	E6420	B92T3R1	FCC DoC	Provided by Lab
B	Host System	Microsoft	1540	NA	NA	Supplied by client
C	Adapter	Volgen	KTPS10-03300W9	NA	NA	Supplied by Client

NOTE:

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

No.	Cable	Qty.	Length (m)	Shielded (Yes/ No)	Cores (Number)	Remark
1	USB Cable	2	1.8	Yes	0	Provided by Lab
2	DC	1	1.3	No	1	Supplied by Client

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 (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

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

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS 30	100375	Apr. 29, 2014	Apr. 28, 2015
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	NSLK8127	8127-522	Sep. 12, 2013	Sep. 11, 2014
Line-Impedance Stabilization Network (for Peripheral)	ENV216	100071	Nov. 13, 2013	Nov. 12, 2014
RF Cable (JYEBAO)	5DFB	COCCAB-001	Mar. 10, 2014	Mar. 09, 2015
50 ohms Terminator	N/A	EMC-03	Sep. 24, 2013	Sep. 23, 2014
50 ohms Terminator	N/A	EMC-02	Oct. 01, 2013	Sep. 30, 2014
Software ADT	BV ADT_Cond_V7.3.7. 3	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.
4. Tested Date: June 19, 2014

4.1.3 TEST PROCEDURES

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

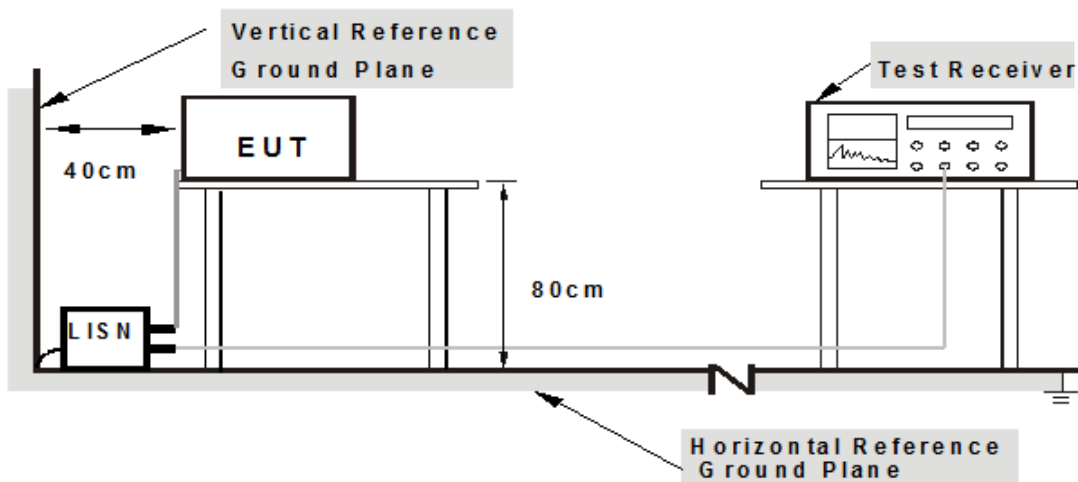
NOTE:

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

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



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

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



A D T

4.1.6 EUT OPERATING CONDITIONS

1. Connect the EUT with the support unit B (Host System) which is placed on a testing table.
2. The support unit A (Notebook Computer) runs test program "MT7662UQA.exe" to enable EUT under transmission/receiving condition continuously at specific channel frequency.

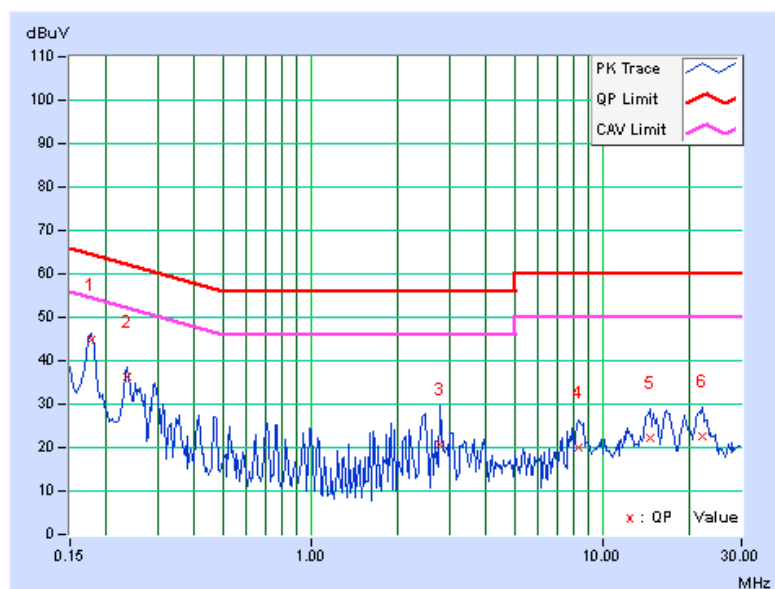
4.1.7 TEST RESULTS (ACCESSORY RADIO)

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

No	Freq. [MHz]	Corr. Factor [dB]	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17734	0.07	44.72	36.40	44.79	36.47	64.61	54.61	-19.82	-18.14
2	0.23594	0.07	36.08	28.45	36.15	28.52	62.24	52.24	-26.08	-23.71
3	2.76563	0.20	20.60	8.99	20.80	9.19	56.00	46.00	-35.20	-36.81
4	8.31641	0.40	19.76	13.62	20.16	14.02	60.00	50.00	-39.84	-35.98
5	14.59375	0.58	21.79	15.83	22.37	16.41	60.00	50.00	-37.63	-33.59
6	22.00391	0.77	21.74	15.73	22.51	16.50	60.00	50.00	-37.49	-33.50

REMARKS:

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

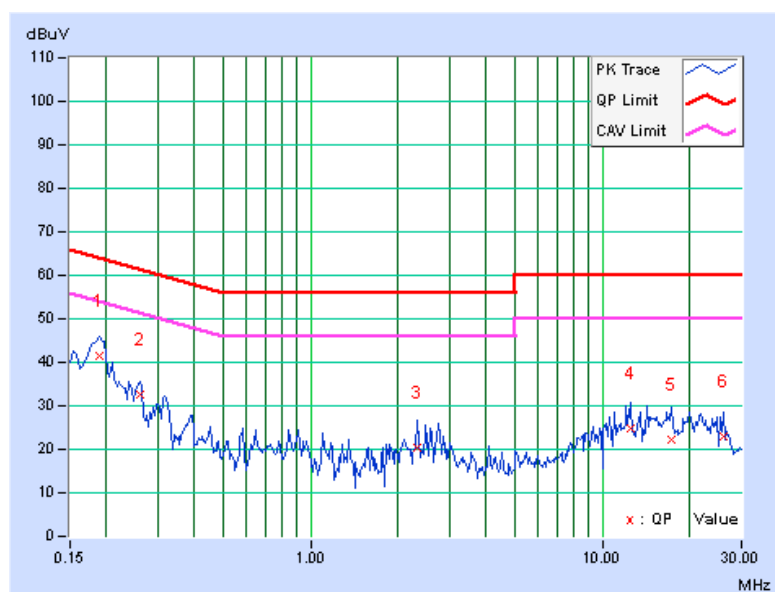


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
-------	-------------	----------------------	-----------------------------------

	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	0.18906	0.07	41.53	32.13	41.60	32.20	64.08	54.08	-22.48	-21.88
2	0.25938	0.08	32.68	21.76	32.76	21.84	61.45	51.45	-28.70	-29.62
3	2.32422	0.19	20.03	10.78	20.22	10.97	56.00	46.00	-35.78	-35.03
4	12.44141	0.52	24.17	16.31	24.69	16.83	60.00	50.00	-35.31	-33.17
5	17.34375	0.64	21.56	14.91	22.20	15.55	60.00	50.00	-37.80	-34.45
6	25.98047	0.87	21.96	12.18	22.83	13.05	60.00	50.00	-37.17	-36.95

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



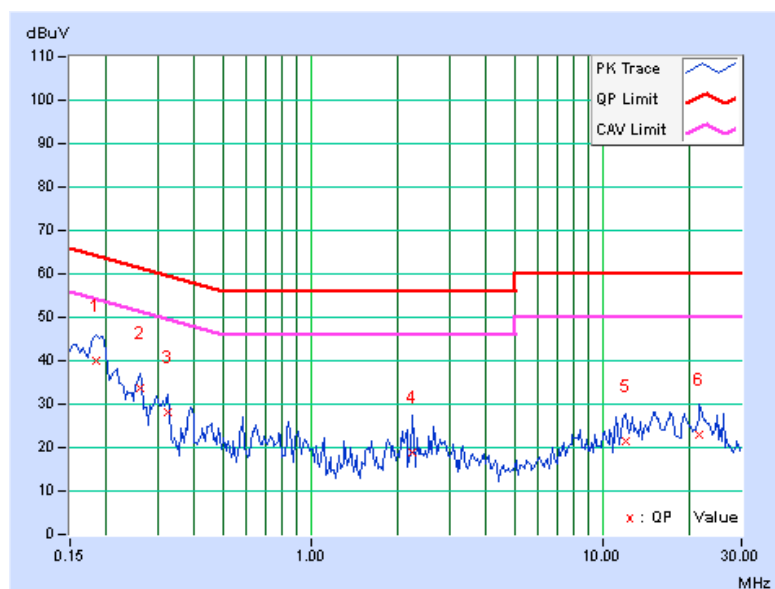
4.1.8 TEST RESULTS (NETWORK RADIO)

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

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18516	0.07	40.05	29.69	40.12	29.76	64.25	54.25	-24.13	-24.49
2	0.25938	0.08	33.69	22.87	33.77	22.95	61.45	51.45	-27.69	-28.51
3	0.32578	0.08	27.89	18.94	27.97	19.02	59.56	49.56	-31.59	-30.54
4	2.22266	0.18	18.87	9.42	19.05	9.60	56.00	46.00	-36.95	-36.40
5	11.97656	0.51	21.05	14.09	21.56	14.60	60.00	50.00	-38.44	-35.40
6	21.59766	0.75	22.12	15.10	22.87	15.85	60.00	50.00	-37.13	-34.15

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

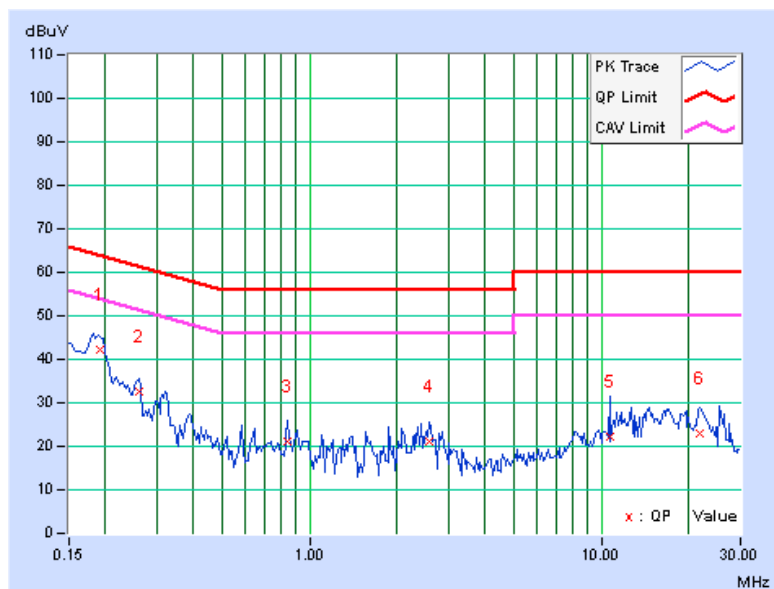


PHASE	Neutral (N)	DETECTOR FUNCTION	Quasi-Peak (QP) / Average (AV)
-------	-------------	----------------------	-----------------------------------

	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	0.19225	0.07	42.26	33.50	42.33	33.57	63.94	53.94	-21.61	-20.37
2	0.25938	0.08	32.66	21.31	32.74	21.39	61.45	51.45	-28.72	-30.07
3	0.84531	0.12	20.86	12.88	20.98	13.00	56.00	46.00	-35.02	-33.00
4	2.58203	0.20	20.91	9.71	21.11	9.91	56.00	46.00	-34.89	-36.09
5	10.66406	0.47	21.62	14.83	22.09	15.30	60.00	50.00	-37.91	-34.70
6	21.71875	0.75	22.18	15.28	22.93	16.03	60.00	50.00	-37.07	-33.97

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 under any condition of modulation.

4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D02 General UNII Test Procedures New Rules v01	FIELD STRENGTH AT 3m	
	PK:74 (dBμV/m)	AV:54 (dBμV/m)
APPLICABLE TO	EIRP LIMIT	EQUIVALENT FIELD STRENGTH AT 3m
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK:-27 (dBm/MHz) ^{*1} PK:-17 (dBm/MHz) ^{*2}	PK: 68.2(dBμV/m) ^{*1} PK:78.2 (dBμV/m) ^{*2}

NOTE: ^{*1} beyond 10MHz of the band edge ^{*2} within 10 MHz of band edge

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

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



A D T

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY50010156	Jan. 15, 2014	Jan. 14, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-04	Nov. 13, 2013	Nov. 12, 2014
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Feb. 27, 2014	Feb. 26, 2015
RF Cable	NA	CHHCAB_001	Oct. 06, 2013	Oct. 05, 2014
Spectrum Analyzer R&S	FSV40	100964	July 15, 2013	July 14, 2014
Horn_Antenna AISI	AIH.8018	0000220091110	Dec. 06, 2013	Dec. 05, 2014
Pre-Amplifier Agilent	8449B	3008A01923	Oct. 29, 2013	Oct. 28, 2014
RF Cable	NA	RF104-205 RF104-207 RF104-202	Dec. 12, 2013	Dec. 11, 2014
Spectrum Analyzer Agilent	E4446A	MY48250253	Aug. 28, 2013	Aug. 27, 2014
Pre-Amplifier SPACEK LABS	SLKKa-48-6	9K16	Nov. 13, 2013	Nov. 12, 2014
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Oct. 08, 2013	Oct. 07, 2014
Software	ADT_Radiated _V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	NA	NA	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5. The CANADA Site Registration No. is IC 7450H-3.
6. Tested Date: July 11 to 14, 2014

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:

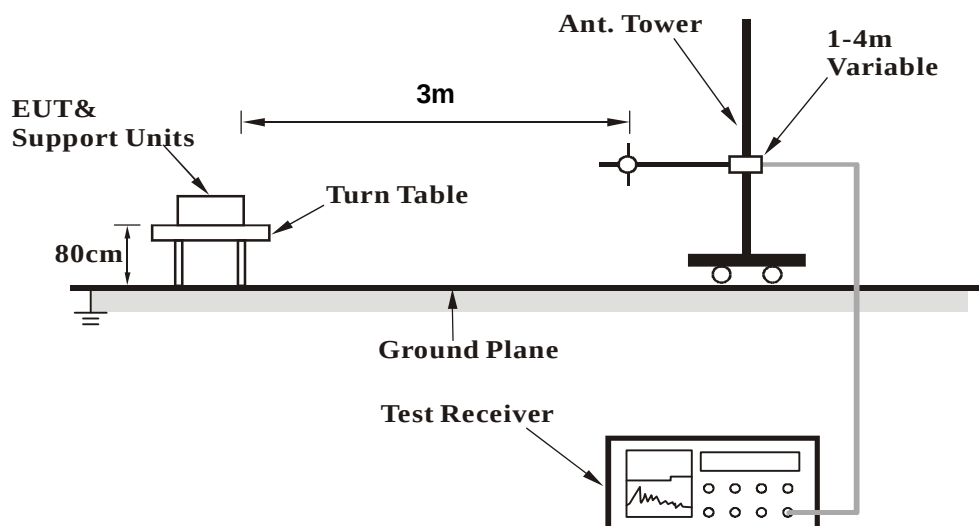
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.2.5 DEVIATION FROM TEST STANDARD

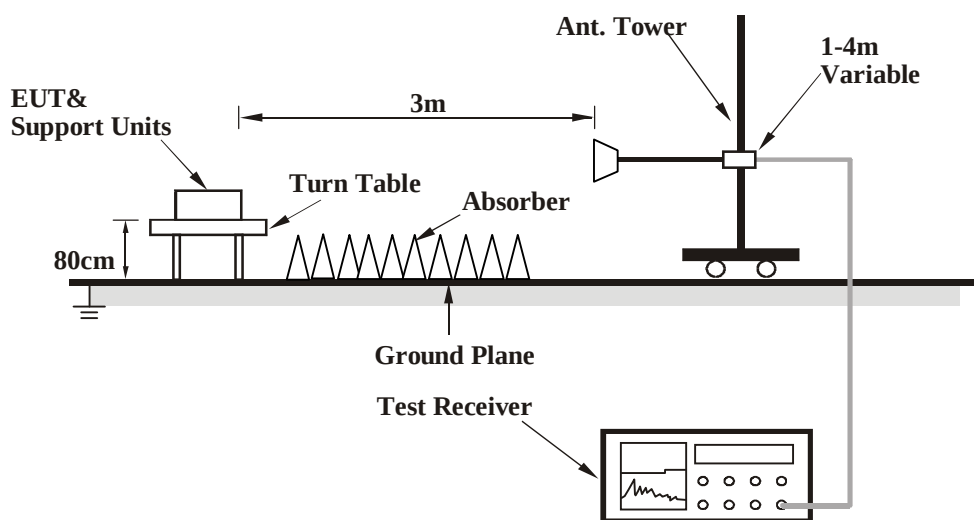
No deviation

4.2.6 TEST SETUP

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

4.2.8 TEST RESULTS (ACCESSORY RADIO)

BELOW 1GHz WORST-CASE DATA

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	84.90	32.8 QP	40.0	-7.2	1.00 H	22	51.20	-18.36
2	113.86	26.6 QP	43.5	-16.9	2.00 H	0	41.87	-15.24
3	211.20	35.6 QP	43.5	-7.9	1.00 H	99	51.41	-15.81
4	345.01	32.5 QP	46.0	-13.5	2.00 H	109	43.11	-10.57
5	447.63	28.1 QP	46.0	-17.9	2.00 H	68	35.91	-7.80
6	732.33	24.8 QP	46.0	-21.2	1.00 H	176	27.25	-2.42
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	33.30	35.5 QP	40.0	-4.6	1.00 V	72	49.60	-14.15
2	80.59	30.3 QP	40.0	-9.7	1.00 V	279	47.95	-17.63
3	201.16	26.2 QP	43.5	-17.4	1.00 V	67	41.94	-15.79
4	345.01	29.8 QP	46.0	-16.3	1.50 V	60	40.32	-10.57
5	444.43	27.9 QP	46.0	-18.1	1.00 V	121	35.71	-7.83
6	940.54	29.6 QP	46.0	-16.4	1.00 V	79	28.26	1.37

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

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	5004.00	55.3 PK	74.0	-18.7	1.25 H	174	15.05	40.25
2	5004.00	44.6 AV	54.0	-9.4	1.25 H	174	4.35	40.25
3	*5180.00	105.0 PK			1.69 H	310	64.36	40.64
4	*5180.00	95.9 AV			1.69 H	310	55.26	40.64
5	#10360.00	55.0 PK	74.0	-19.0	1.00 H	343	8.25	46.75
6	#10360.00	41.9 AV	54.0	-12.1	1.00 H	343	-4.85	46.75
7	15540.00	61.9 PK	74.0	-12.1	1.00 H	171	10.70	51.20
8	15540.00	49.0 AV	54.0	-5.0	1.00 H	171	-2.20	51.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5004.00	54.3 PK	74.0	-19.7	1.00 V	154	14.05	40.25
2	5004.00	43.8 AV	54.0	-10.2	1.00 V	154	3.55	40.25
3	*5180.00	103.3 PK			1.00 V	139	62.66	40.64
4	*5180.00	93.6 AV			1.00 V	139	52.96	40.64
5	#10360.00	55.0 PK	74.0	-19.0	1.00 V	4	8.25	46.75
6	#10360.00	42.0 AV	54.0	-12.0	1.00 V	4	-4.75	46.75
7	15540.00	61.2 PK	74.0	-12.8	1.00 V	360	10.00	51.20
8	15540.00	49.1 AV	54.0	-4.9	1.00 V	360	-2.10	51.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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	55.2 PK	74.0	-18.8	1.67 H	322	14.64	40.56
2	5150.00	44.5 AV	54.0	-9.5	1.67 H	322	3.94	40.56
3	*5200.00	106.0 PK			1.67 H	322	65.32	40.68
4	*5200.00	96.4 AV			1.67 H	322	55.72	40.68
5	#10400.00	55.1 PK	74.0	-18.9	1.05 H	358	8.39	46.71
6	#10400.00	42.1 AV	54.0	-11.9	1.05 H	358	-4.61	46.71
7	15600.00	62.1 PK	74.0	-11.9	1.04 H	184	10.82	51.28
8	15600.00	49.2 AV	54.0	-4.8	1.04 H	184	-2.08	51.28
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	5004.00	54.0 PK	74.0	-20.0	1.00 V	169	13.75	40.25
2	5004.00	43.7 AV	54.0	-10.3	1.00 V	169	3.45	40.25
3	*5200.00	103.8 PK			1.02 V	139	63.12	40.68
4	*5200.00	94.0 AV			1.02 V	139	53.32	40.68
5	#10400.00	55.2 PK	74.0	-18.8	1.02 V	2	8.49	46.71
6	#10400.00	42.1 AV	54.0	-11.9	1.02 V	2	-4.61	46.71
7	15600.00	61.4 PK	74.0	-12.6	1.00 V	358	10.12	51.28
8	15600.00	49.3 AV	54.0	-4.7	1.00 V	358	-1.98	51.28

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.



A D T

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	5004.00	55.6 PK	74.0	-18.4	1.67 H	322	15.35	40.25
2	5004.00	45.2 AV	54.0	-8.8	1.67 H	322	4.95	40.25
3	*5240.00	105.4 PK			1.67 H	322	64.65	40.75
4	*5240.00	95.9 AV			1.67 H	322	55.15	40.75
5	5350.00	52.9 PK	74.0	-21.1	1.67 H	322	11.96	40.94
6	5350.00	39.3 AV	54.0	-14.7	1.67 H	322	-1.64	40.94
7	#10480.00	55.2 PK	74.0	-18.8	1.09 H	354	8.40	46.80
8	#10480.00	42.4 AV	54.0	-11.6	1.09 H	354	-4.40	46.80
9	15720.00	62.6 PK	74.0	-11.4	1.07 H	192	11.26	51.34
10	15720.00	49.7 AV	54.0	-4.3	1.07 H	192	-1.64	51.34
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	5004.00	54.5 PK	74.0	-19.5	1.03 V	150	14.25	40.25
2	5004.00	44.0 AV	54.0	-10.0	1.03 V	150	3.75	40.25
3	*5240.00	103.1 PK			1.00 V	127	62.35	40.75
4	*5240.00	93.4 AV			1.00 V	127	52.65	40.75
5	5350.00	55.2 PK	74.0	-18.8	1.00 V	127	14.26	40.94
6	5350.00	41.3 AV	54.0	-12.7	1.00 V	127	0.36	40.94
7	#10480.00	55.6 PK	74.0	-18.4	1.07 V	13	8.80	46.80
8	#10480.00	42.4 AV	54.0	-11.6	1.07 V	13	-4.40	46.80
9	15720.00	61.6 PK	74.0	-12.4	1.00 V	342	10.26	51.34
10	15720.00	49.7 AV	54.0	-4.3	1.00 V	342	-1.64	51.34

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5698.40	56.3 PK	74.0	-17.7	1.54 H	62	14.85	41.45
2	#5698.40	46.0 AV	54.0	-8.0	1.54 H	62	4.55	41.45
3	#5725.00	75.9 PK	78.2	-2.3	1.54 H	62	34.42	41.48
4	*5745.00	106.4 PK			1.54 H	62	64.90	41.50
5	*5745.00	97.1 AV			1.54 H	62	55.60	41.50
6	11490.00	54.3 PK	74.0	-19.7	1.02 H	123	7.16	47.14
7	11490.00	41.4 AV	54.0	-12.6	1.02 H	123	-5.74	47.14
8	#17235.00	62.4 PK	74.0	-11.6	1.10 H	345	7.54	54.86
9	#17235.00	49.9 AV	54.0	-4.1	1.10 H	345	-4.96	54.86

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	#5698.40	53.1 PK	74.0	-20.9	1.02 V	340	11.65	41.45
2	#5698.40	40.3 AV	54.0	-13.7	1.02 V	340	-1.15	41.45
3	#5725.00	65.4 PK	78.2	-12.8	1.02 V	340	23.92	41.48
4	*5745.00	100.1 PK			1.02 V	340	58.60	41.50
5	*5745.00	91.6 AV			1.02 V	340	50.10	41.50
6	11490.00	54.0 PK	74.0	-20.0	1.21 V	140	6.86	47.14
7	11490.00	41.4 AV	54.0	-12.6	1.21 V	140	-5.74	47.14
8	#17235.00	63.1 PK	74.0	-10.9	1.03 V	111	8.24	54.86
9	#17235.00	50.1 AV	54.0	-3.9	1.03 V	111	-4.76	54.86

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5725.00	53.6 PK	78.2	-24.6	1.56 H	307	12.12	41.48
2	*5785.00	106.8 PK			1.56 H	307	65.25	41.55
3	*5785.00	97.1 AV			1.56 H	307	55.55	41.55
4	#5850.00	53.7 PK	78.2	-24.5	1.56 H	307	12.02	41.68
5	11570.00	54.9 PK	74.0	-19.1	1.00 H	116	7.71	47.19
6	11570.00	41.8 AV	54.0	-12.2	1.00 H	116	-5.39	47.19
7	#17355.00	62.8 PK	74.0	-11.2	1.07 H	331	7.72	55.08
8	#17355.00	50.3 AV	54.0	-3.7	1.07 H	331	-4.78	55.08
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	#5725.00	52.1 PK	78.2	-26.1	1.57 V	329	10.62	41.48
2	*5785.00	100.8 PK			1.57 V	329	59.25	41.55
3	*5785.00	91.8 AV			1.57 V	329	50.25	41.55
4	#5850.00	53.0 PK	78.2	-25.2	1.57 V	329	11.32	41.68
5	11570.00	53.8 PK	74.0	-20.2	1.24 V	130	6.61	47.19
6	11570.00	41.2 AV	54.0	-12.8	1.24 V	130	-5.99	47.19
7	#17355.00	63.3 PK	74.0	-10.7	1.13 V	107	8.22	55.08
8	#17355.00	50.3 AV	54.0	-3.7	1.13 V	107	-4.78	55.08

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	107.5 PK			1.52 H	306	65.88	41.62
2	*5825.00	97.8 AV			1.52 H	306	56.18	41.62
3	#5850.00	66.5 PK	78.2	-11.7	1.52 H	306	24.82	41.68
4	#5860.00	57.0 PK	74.0	-17.0	1.52 H	306	15.29	41.71
5	#5860.00	42.4 AV	54.0	-11.6	1.52 H	306	0.69	41.71
6	11650.00	54.4 PK	74.0	-19.6	1.01 H	103	7.17	47.23
7	11650.00	41.5 AV	54.0	-12.5	1.01 H	103	-5.73	47.23
8	#17475.00	62.0 PK	74.0	-12.0	1.01 H	334	6.69	55.31
9	#17475.00	49.8 AV	54.0	-4.2	1.01 H	334	-5.51	55.31

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	102.6 PK			1.57 V	330	60.98	41.62
2	*5825.00	93.4 AV			1.57 V	330	51.78	41.62
3	#5850.00	61.9 PK	78.2	-16.3	1.57 V	330	20.22	41.68
4	#5860.00	53.1 PK	74.0	-20.9	1.57 V	330	11.39	41.71
5	#5860.00	40.7 AV	54.0	-13.3	1.57 V	330	-1.01	41.71
6	11650.00	53.4 PK	74.0	-20.6	1.26 V	128	6.17	47.23
7	11650.00	40.7 AV	54.0	-13.3	1.26 V	128	-6.53	47.23
8	#17475.00	63.2 PK	74.0	-10.8	1.15 V	114	7.89	55.31
9	#17475.00	50.3 AV	54.0	-3.7	1.15 V	114	-5.01	55.31

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)
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	5004.00	54.9 PK	74.0	-19.1	1.66 H	310	14.65	40.25
2	5004.00	44.3 AV	54.0	-9.7	1.66 H	310	4.05	40.25
3	*5180.00	105.9 PK			1.71 H	327	65.26	40.64
4	*5180.00	96.2 AV			1.71 H	327	55.56	40.64
5	#10360.00	55.0 PK	74.0	-19.0	1.06 H	355	8.25	46.75
6	#10360.00	41.9 AV	54.0	-12.1	1.06 H	355	-4.85	46.75
7	15540.00	62.4 PK	74.0	-11.6	1.12 H	188	11.20	51.20
8	15540.00	49.5 AV	54.0	-4.5	1.12 H	188	-1.70	51.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5004.00	54.5 PK	74.0	-19.5	1.02 V	140	14.25	40.25
2	5004.00	43.8 AV	54.0	-10.2	1.02 V	140	3.55	40.25
3	*5180.00	103.2 PK			1.05 V	141	62.56	40.64
4	*5180.00	93.7 AV			1.05 V	141	53.06	40.64
5	#10360.00	55.6 PK	74.0	-18.4	1.07 V	17	8.85	46.75
6	#10360.00	42.4 AV	54.0	-11.6	1.07 V	17	-4.35	46.75
7	15540.00	61.9 PK	74.0	-12.1	1.12 V	351	10.70	51.20
8	15540.00	49.9 AV	54.0	-4.1	1.12 V	351	-1.30	51.20

REMARKS:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- The other emission levels were very low against the limit.
- Margin value = Emission Level – Limit value
- " * ": Fundamental frequency.
- " # ": 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	55.1 PK	74.0	-18.9	1.70 H	310	14.54	40.56
2	5150.00	44.6 AV	54.0	-9.4	1.70 H	310	4.04	40.56
3	*5200.00	105.3 PK			1.75 H	311	64.62	40.68
4	*5200.00	95.8 AV			1.75 H	311	55.12	40.68
5	#10400.00	54.6 PK	74.0	-19.4	1.06 H	342	7.89	46.71
6	#10400.00	41.6 AV	54.0	-12.4	1.06 H	342	-5.11	46.71
7	15600.00	62.3 PK	74.0	-11.7	1.10 H	186	11.02	51.28
8	15600.00	49.1 AV	54.0	-4.9	1.10 H	186	-2.18	51.28
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	5004.00	54.4 PK	74.0	-19.6	1.02 V	134	14.15	40.25
2	5004.00	43.8 AV	54.0	-10.2	1.02 V	134	3.55	40.25
3	*5200.00	103.2 PK			1.09 V	147	62.52	40.68
4	*5200.00	93.6 AV			1.09 V	147	52.92	40.68
5	#10400.00	56.0 PK	74.0	-18.0	1.10 V	25	9.29	46.71
6	#10400.00	42.8 AV	54.0	-11.2	1.10 V	25	-3.91	46.71
7	15600.00	61.9 PK	74.0	-12.1	1.08 V	355	10.62	51.28
8	15600.00	50.1 AV	54.0	-3.9	1.08 V	355	-1.18	51.28

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	5004.00	55.0 PK	74.0	-19.0	1.70 H	303	14.75	40.25
2	5004.00	45.7 AV	54.0	-8.3	1.70 H	303	5.45	40.25
3	*5240.00	105.6 PK			1.68 H	331	64.85	40.75
4	*5240.00	96.0 AV			1.68 H	331	55.25	40.75
5	5350.00	53.1 PK	74.0	-20.9	1.65 H	336	12.16	40.94
6	5350.00	39.6 AV	54.0	-14.4	1.65 H	336	-1.34	40.94
7	#10480.00	54.3 PK	74.0	-19.7	1.11 H	340	7.50	46.80
8	#10480.00	41.2 AV	54.0	-12.8	1.11 H	340	-5.60	46.80
9	15720.00	62.6 PK	74.0	-11.4	1.14 H	170	11.26	51.34
10	15720.00	49.3 AV	54.0	-4.7	1.14 H	170	-2.04	51.34
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	5004.00	54.7 PK	74.0	-19.3	1.09 V	153	14.45	40.25
2	5004.00	44.4 AV	54.0	-9.6	1.09 V	153	4.15	40.25
3	*5240.00	103.5 PK			1.03 V	155	62.75	40.75
4	*5240.00	94.0 AV			1.03 V	155	53.25	40.75
5	5350.00	55.3 PK	74.0	-18.7	1.01 V	133	14.36	40.94
6	5350.00	41.4 AV	54.0	-12.6	1.01 V	133	0.46	40.94
7	#10480.00	56.3 PK	74.0	-17.7	1.09 V	41	9.50	46.80
8	#10480.00	42.8 AV	54.0	-11.2	1.09 V	41	-4.00	46.80
9	15720.00	62.3 PK	74.0	-11.7	1.12 V	349	10.96	51.34
10	15720.00	50.5 AV	54.0	-3.5	1.12 V	349	-0.84	51.34

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5712.70	55.5 PK	74.0	-18.5	1.56 H	305	14.04	41.46
2	#5712.70	42.4 AV	54.0	-11.6	1.56 H	305	0.94	41.46
3	#5725.00	76.2 PK	78.2	-2.0	1.54 H	306	34.72	41.48
4	*5745.00	106.5 PK			1.54 H	306	65.00	41.50
5	*5745.00	96.8 AV			1.54 H	306	55.30	41.50
6	11490.00	54.0 PK	74.0	-20.0	1.06 H	116	6.86	47.14
7	11490.00	41.2 AV	54.0	-12.8	1.06 H	116	-5.94	47.14
8	#17235.00	61.9 PK	74.0	-12.1	1.00 H	331	7.04	54.86
9	#17235.00	49.7 AV	54.0	-4.3	1.00 H	331	-5.16	54.86

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	#5712.70	53.5 PK	74.0	-20.5	1.56 V	340	12.04	41.46
2	#5712.70	40.6 AV	54.0	-13.4	1.56 V	340	-0.86	41.46
3	#5725.00	65.7 PK	78.2	-12.5	1.60 V	337	24.22	41.48
4	*5745.00	101.6 PK			1.58 V	337	60.10	41.50
5	*5745.00	92.4 AV			1.58 V	337	50.90	41.50
6	11490.00	53.2 PK	74.0	-20.8	1.30 V	132	6.06	47.14
7	11490.00	40.4 AV	54.0	-13.6	1.30 V	132	-6.74	47.14
8	#17235.00	63.8 PK	74.0	-10.2	1.16 V	129	8.94	54.86
9	#17235.00	50.8 AV	54.0	-3.2	1.16 V	129	-4.06	54.86

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5725.00	53.8 PK	78.2	-24.4	1.52 H	306	12.32	41.48
2	*5785.00	105.9 PK			1.52 H	306	64.35	41.55
3	*5785.00	96.4 AV			1.52 H	306	54.85	41.55
4	#5850.00	53.2 PK	78.2	-25.0	1.52 H	306	11.52	41.68
5	11570.00	54.1 PK	74.0	-19.9	1.02 H	109	6.91	47.19
6	11570.00	41.1 AV	54.0	-12.9	1.02 H	109	-6.09	47.19
7	#17355.00	61.9 PK	74.0	-12.1	1.12 H	345	6.82	55.08
8	#17355.00	49.7 AV	54.0	-4.3	1.12 H	345	-5.38	55.08
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	#5725.00	52.3 PK	78.2	-25.9	1.54 V	333	10.82	41.48
2	*5785.00	101.0 PK			1.54 V	333	59.45	41.55
3	*5785.00	92.0 AV			1.54 V	333	50.45	41.55
4	#5850.00	52.5 PK	78.2	-25.7	1.54 V	333	10.82	41.68
5	11570.00	52.6 PK	74.0	-21.4	1.34 V	145	5.41	47.19
6	11570.00	40.1 AV	54.0	-13.9	1.34 V	145	-7.09	47.19
7	#17355.00	63.0 PK	74.0	-11.0	1.10 V	144	7.92	55.08
8	#17355.00	50.3 AV	54.0	-3.7	1.10 V	144	-4.78	55.08

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	107.4 PK			1.52 H	307	65.78	41.62
2	*5825.00	97.4 AV			1.52 H	307	55.78	41.62
3	#5850.00	66.4 PK	78.2	-11.8	1.52 H	307	24.72	41.68
4	11650.00	54.4 PK	74.0	-19.6	1.08 H	121	7.17	47.23
5	11650.00	41.3 AV	54.0	-12.7	1.08 H	121	-5.93	47.23
6	#17475.00	61.9 PK	74.0	-12.1	1.14 H	348	6.59	55.31
7	#17475.00	49.8 AV	54.0	-4.2	1.14 H	348	-5.51	55.31
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	102.4 PK			1.55 V	332	60.78	41.62
2	*5825.00	93.0 AV			1.55 V	332	51.38	41.62
3	#5850.00	61.7 PK	78.2	-16.5	1.55 V	332	20.02	41.68
4	11650.00	52.4 PK	74.0	-21.6	1.29 V	132	5.17	47.23
5	11650.00	39.6 AV	54.0	-14.4	1.29 V	132	-7.63	47.23
6	#17475.00	62.8 PK	74.0	-11.2	1.14 V	149	7.49	55.31
7	#17475.00	50.3 AV	54.0	-3.7	1.14 V	149	-5.01	55.31

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.

4.2.9 TEST RESULTS (NETWORT RADIO)

BELOW 1GHz WORST-CASE DATA

802.11n (20MHz)

CHANNEL	TX Channel 157	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	89.70	31.2 QP	43.5	-12.3	2.00 H	83	49.68	-18.49
2	107.75	28.8 QP	43.5	-14.7	1.50 H	240	44.68	-15.84
3	204.31	34.5 QP	43.5	-9.0	1.00 H	99	50.38	-15.85
4	238.60	32.6 QP	46.0	-13.4	1.00 H	108	46.49	-13.85
5	345.01	32.7 QP	46.0	-13.3	2.00 H	118	43.27	-10.57
6	444.00	30.1 QP	46.0	-15.9	1.50 H	118	37.95	-7.83
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	34.07	33.5 QP	40.0	-6.5	1.00 V	96	47.56	-14.05
2	59.49	27.9 QP	40.0	-12.1	1.00 V	322	41.35	-13.41
3	88.49	27.5 QP	43.5	-16.0	2.00 V	126	45.96	-18.45
4	144.32	21.9 QP	43.5	-21.6	2.00 V	360	34.59	-12.67
5	215.37	18.4 QP	43.5	-25.1	1.00 V	119	34.10	-15.74
6	940.68	26.8 QP	46.0	-19.2	1.00 V	360	25.39	1.37

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

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	73.3 PK	74.0	-0.7	1.18 H	360	32.74	40.56
2	5150.00	49.8 AV	54.0	-4.2	1.18 H	360	9.24	40.56
3	*5180.00	113.0 PK			1.00 H	97	72.36	40.64
4	*5180.00	104.1 AV			1.00 H	97	63.46	40.64
5	#10360.00	52.2 PK	74.0	-21.8	1.15 H	207	5.45	46.75
6	#10360.00	40.0 AV	54.0	-14.0	1.15 H	207	-6.75	46.75
7	15540.00	64.0 PK	74.0	-10.0	1.11 H	72	12.80	51.20
8	15540.00	51.9 AV	54.0	-2.1	1.11 H	72	0.70	51.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.9 PK	74.0	-10.1	1.15 V	246	23.34	40.56
2	5150.00	46.8 AV	54.0	-7.2	1.15 V	246	6.24	40.56
3	*5180.00	108.2 PK			1.15 V	246	67.56	40.64
4	*5180.00	98.1 AV			1.15 V	246	57.46	40.64
5	#10360.00	52.3 PK	74.0	-21.7	1.10 V	156	5.55	46.75
6	#10360.00	40.0 AV	54.0	-14.0	1.10 V	156	-6.75	46.75
7	15540.00	61.1 PK	74.0	-12.9	1.38 V	91	9.90	51.20
8	15540.00	49.7 AV	54.0	-4.3	1.38 V	91	-1.50	51.20

REMARKS:

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



A D T

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	4712.30	54.3 PK	74.0	-19.7	1.00 H	22	13.91	40.39
2	4712.30	43.6 AV	54.0	-10.4	1.00 H	22	3.21	40.39
3	5150.00	57.9 PK	74.0	-16.1	1.00 H	22	17.34	40.56
4	5150.00	44.7 AV	54.0	-9.3	1.00 H	22	4.14	40.56
5	*5200.00	113.5 PK			1.00 H	22	72.82	40.68
6	*5200.00	104.5 AV			1.00 H	22	63.82	40.68
7	#10400.00	51.8 PK	74.0	-22.2	1.17 H	198	5.09	46.71
8	#10400.00	40.0 AV	54.0	-14.0	1.17 H	198	-6.71	46.71
9	15600.00	65.8 PK	74.0	-8.2	1.14 H	81	14.52	51.28
10	15600.00	52.8 AV	54.0	-1.2	1.14 H	81	1.52	51.28

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	4712.30	52.3 PK	74.0	-21.7	1.13 V	246	11.91	40.39
2	4712.30	41.3 AV	54.0	-12.7	1.13 V	246	0.91	40.39
3	5150.00	55.4 PK	74.0	-18.6	1.13 V	246	14.84	40.56
4	5150.00	42.1 AV	54.0	-11.9	1.13 V	246	1.54	40.56
5	*5200.00	109.7 PK			1.13 V	246	69.02	40.68
6	*5200.00	100.0 AV			1.13 V	246	59.32	40.68
7	#10400.00	52.4 PK	74.0	-21.6	1.25 V	160	5.69	46.71
8	#10400.00	40.3 AV	54.0	-13.7	1.25 V	160	-6.41	46.71
9	15600.00	62.3 PK	74.0	-11.7	1.25 V	105	11.02	51.28
10	15600.00	51.0 AV	54.0	-3.0	1.25 V	105	-0.28	51.28

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	54.9 PK	74.0	-19.1	1.00 H	21	14.34	40.56
2	5150.00	41.0 AV	54.0	-13.0	1.00 H	21	0.44	40.56
3	*5240.00	114.6 PK			1.00 H	21	73.85	40.75
4	*5240.00	105.5 AV			1.00 H	21	64.75	40.75
5	5350.00	53.2 PK	74.0	-20.8	1.00 H	21	12.26	40.94
6	5350.00	39.5 AV	54.0	-14.5	1.00 H	21	-1.44	40.94
7	#10480.00	52.4 PK	74.0	-21.6	1.20 H	198	5.60	46.80
8	#10480.00	40.4 AV	54.0	-13.6	1.20 H	198	-6.40	46.80
9	15720.00	64.1 PK	74.0	-9.9	1.15 H	82	12.76	51.34
10	15720.00	52.3 AV	54.0	-1.7	1.15 H	82	0.96	51.34
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	55.2 PK	74.0	-18.8	1.08 V	256	14.64	40.56
2	5150.00	41.4 AV	54.0	-12.6	1.08 V	256	0.84	40.56
3	*5240.00	109.6 PK			1.08 V	256	68.85	40.75
4	*5240.00	100.0 AV			1.08 V	256	59.25	40.75
5	5350.00	55.3 PK	74.0	-18.7	1.08 V	256	14.36	40.94
6	5350.00	41.3 AV	54.0	-12.7	1.08 V	256	0.36	40.94
7	#10480.00	51.8 PK	74.0	-22.2	1.19 V	149	5.00	46.80
8	#10480.00	39.8 AV	54.0	-14.2	1.19 V	149	-7.00	46.80
9	15720.00	62.7 PK	74.0	-11.3	1.26 V	108	11.36	51.34
10	15720.00	51.2 AV	54.0	-2.8	1.26 V	108	-0.14	51.34

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	65.8 PK	74.0	-8.2	1.08 H	343	24.34	41.46
2	#5715.00	46.4 AV	54.0	-7.6	1.08 H	343	4.94	41.46
3	#5725.00	77.6 PK	78.2	-0.6	1.08 H	343	36.12	41.48
4	*5745.00	107.4 PK			1.08 H	343	65.90	41.50
5	*5745.00	98.4 AV			1.08 H	343	56.90	41.50
6	11490.00	52.6 PK	74.0	-21.4	1.27 H	145	5.46	47.14
7	11490.00	40.4 AV	54.0	-13.6	1.27 H	145	-6.74	47.14
8	#17235.00	61.6 PK	74.0	-12.4	1.29 H	111	6.74	54.86
9	#17235.00	50.5 AV	54.0	-3.5	1.29 H	111	-4.36	54.86

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	#5715.00	61.3 PK	74.0	-12.7	1.15 V	247	19.84	41.46
2	#5715.00	44.2 AV	54.0	-9.8	1.15 V	247	2.74	41.46
3	#5725.00	75.6 PK	78.2	-2.6	1.15 V	247	34.12	41.48
4	*5745.00	103.7 PK			1.15 V	247	62.20	41.50
5	*5745.00	94.3 AV			1.15 V	247	52.80	41.50
6	11490.00	53.0 PK	74.0	-21.0	1.12 V	151	5.86	47.14
7	11490.00	40.5 AV	54.0	-13.5	1.12 V	151	-6.64	47.14
8	#17235.00	60.8 PK	74.0	-13.2	1.37 V	73	5.94	54.86
9	#17235.00	49.3 AV	54.0	-4.7	1.37 V	73	-5.56	54.86

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.



A D T

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	57.9 PK	74.0	-16.1	1.06 H	347	16.44	41.46
2	#5715.00	43.7 AV	54.0	-10.3	1.06 H	347	2.24	41.46
3	#5725.00	66.2 PK	78.2	-12.0	1.06 H	347	24.72	41.48
4	*5785.00	113.3 PK			1.06 H	347	71.75	41.55
5	*5785.00	103.6 AV			1.06 H	347	62.05	41.55
6	#5850.00	77.9 PK	78.2	-0.3	1.06 H	347	36.22	41.68
7	#5860.00	58.7 PK	74.0	-15.3	1.06 H	347	16.99	41.71
8	#5860.00	41.7 AV	54.0	-12.3	1.06 H	347	-0.01	41.71
9	11570.00	52.1 PK	74.0	-21.9	1.21 H	169	4.91	47.19
10	11570.00	40.1 AV	54.0	-13.9	1.21 H	169	-7.09	47.19
11	#17355.00	61.8 PK	74.0	-12.2	1.22 H	104	6.72	55.08
12	#17355.00	50.5 AV	54.0	-3.5	1.22 H	104	-4.58	55.08
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	#5715.00	55.4 PK	74.0	-18.6	1.13 V	246	13.94	41.46
2	#5715.00	41.3 AV	54.0	-12.7	1.13 V	246	-0.16	41.46
3	#5725.00	64.3 PK	78.2	-13.9	1.13 V	246	22.82	41.48
4	*5785.00	109.7 PK			1.13 V	246	68.15	41.55
5	*5785.00	100.0 AV			1.13 V	246	58.45	41.55
6	#5850.00	75.4 PK	78.2	-2.8	1.13 V	246	33.72	41.68
7	#5860.00	56.4 PK	74.0	-17.6	1.13 V	246	14.69	41.71
8	#5860.00	40.6 AV	54.0	-13.4	1.13 V	246	-1.11	41.71
9	11570.00	52.4 PK	74.0	-21.6	1.25 V	160	5.21	47.19
10	11570.00	40.3 AV	54.0	-13.7	1.25 V	160	-6.89	47.19
11	#17355.00	62.3 PK	74.0	-11.7	1.25 V	105	7.22	55.08
12	#17355.00	51.0 AV	54.0	-3.0	1.25 V	105	-4.08	55.08

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	106.6 PK			1.06 H	340	64.98	41.62
2	*5825.00	97.1 AV			1.06 H	340	55.48	41.62
3	#5850.00	77.3 PK	78.2	-0.9	1.06 H	340	35.62	41.68
4	#5860.00	65.4 PK	74.0	-8.6	1.06 H	340	23.69	41.71
5	#5860.00	46.1 AV	54.0	-7.9	1.06 H	340	4.39	41.71
6	11650.00	52.3 PK	74.0	-21.7	1.27 H	147	5.07	47.23
7	11650.00	40.4 AV	54.0	-13.6	1.27 H	147	-6.83	47.23
8	#17475.00	62.5 PK	74.0	-11.5	1.26 H	102	7.19	55.31
9	#17475.00	50.9 AV	54.0	-3.1	1.26 H	102	-4.41	55.31
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	103.7 PK			1.13 V	254	62.08	41.62
2	*5825.00	94.4 AV			1.13 V	254	52.78	41.62
3	#5850.00	75.8 PK	78.2	-2.4	1.13 V	254	34.12	41.68
4	#5860.00	61.7 PK	74.0	-12.3	1.13 V	254	19.99	41.71
5	#5860.00	44.5 AV	54.0	-9.5	1.13 V	254	2.79	41.71
6	11650.00	51.7 PK	74.0	-22.3	1.07 V	117	4.47	47.23
7	11650.00	39.8 AV	54.0	-14.2	1.07 V	117	-7.43	47.23
8	#17475.00	60.6 PK	74.0	-13.4	1.29 V	106	5.29	55.31
9	#17475.00	49.2 AV	54.0	-4.8	1.29 V	106	-6.11	55.31

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)
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	73.6 PK	74.0	-0.4	1.08 H	335	33.04	40.56
2	5150.00	51.8 AV	54.0	-2.2	1.08 H	335	11.24	40.56
3	*5180.00	113.4 PK			1.08 H	335	72.76	40.64
4	*5180.00	104.4 AV			1.08 H	335	63.76	40.64
5	#10360.00	51.9 PK	74.0	-22.1	1.18 H	198	5.15	46.75
6	#10360.00	40.2 AV	54.0	-13.8	1.18 H	198	-6.55	46.75
7	15540.00	63.6 PK	74.0	-10.4	1.12 H	79	12.40	51.20
8	15540.00	51.9 AV	54.0	-2.1	1.12 H	79	0.70	51.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.7 PK	74.0	-10.3	1.10 V	237	23.14	40.56
2	5150.00	46.5 AV	54.0	-7.5	1.10 V	237	5.94	40.56
3	*5180.00	108.2 PK			1.10 V	237	67.56	40.64
4	*5180.00	98.3 AV			1.10 V	237	57.66	40.64
5	#10360.00	52.3 PK	74.0	-21.7	1.15 V	149	5.55	46.75
6	#10360.00	40.2 AV	54.0	-13.8	1.15 V	149	-6.55	46.75
7	15540.00	60.9 PK	74.0	-13.1	1.35 V	99	9.70	51.20
8	15540.00	49.7 AV	54.0	-4.3	1.35 V	99	-1.50	51.20

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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	66.0 PK	74.0	-8.0	1.05 H	69	25.44	40.56
2	5150.00	48.9 AV	54.0	-5.1	1.05 H	69	8.34	40.56
3	*5200.00	115.1 PK			1.05 H	69	74.42	40.68
4	*5200.00	106.1 AV			1.05 H	69	65.42	40.68
5	#10400.00	51.9 PK	74.0	-22.1	1.24 H	205	5.19	46.71
6	#10400.00	40.4 AV	54.0	-13.6	1.24 H	205	-6.31	46.71
7	15600.00	63.9 PK	74.0	-10.1	1.14 H	82	12.62	51.28
8	15600.00	52.5 AV	54.0	-1.5	1.14 H	82	1.22	51.28
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	*5200.00	110.2 PK			1.10 V	254	69.52	40.68
2	*5200.00	100.4 AV			1.10 V	254	59.72	40.68
3	#10400.00	52.1 PK	74.0	-21.9	1.19 V	151	5.39	46.71
4	#10400.00	39.9 AV	54.0	-14.1	1.19 V	151	-6.81	46.71
5	15600.00	62.0 PK	74.0	-12.0	1.29 V	91	10.72	51.28
6	15600.00	50.6 AV	54.0	-3.4	1.29 V	91	-0.68	51.28

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	*5240.00	115.0 PK			1.03 H	67	74.25	40.75
2	*5240.00	105.7 AV			1.03 H	67	64.95	40.75
3	5350.00	53.2 PK	74.0	-20.8	1.03 H	67	12.26	40.94
4	5350.00	41.0 AV	54.0	-13.0	1.03 H	67	0.06	40.94
5	#10480.00	52.0 PK	74.0	-22.0	1.22 H	194	5.20	46.80
6	#10480.00	40.2 AV	54.0	-13.8	1.22 H	194	-6.60	46.80
7	15720.00	64.5 PK	74.0	-9.5	1.16 H	80	13.16	51.34
8	15720.00	52.5 AV	54.0	-1.5	1.16 H	80	1.16	51.34
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	*5240.00	109.9 PK			1.08 V	241	69.15	40.75
2	*5240.00	100.3 AV			1.08 V	241	59.55	40.75
3	5350.00	63.6 PK	74.0	-10.4	1.08 V	241	22.66	40.94
4	5350.00	46.6 AV	54.0	-7.4	1.08 V	241	5.66	40.94
5	#10480.00	52.5 PK	74.0	-21.5	1.20 V	161	5.70	46.80
6	#10480.00	40.2 AV	54.0	-13.8	1.20 V	161	-6.60	46.80
7	15720.00	61.7 PK	74.0	-12.3	1.32 V	94	10.36	51.34
8	15720.00	50.2 AV	54.0	-3.8	1.32 V	94	-1.14	51.34

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	66.2 PK	74.0	-7.8	1.04 H	343	24.74	41.46
2	#5715.00	46.9 AV	54.0	-7.1	1.04 H	343	5.44	41.46
3	#5725.00	77.6 PK	78.2	-0.6	1.04 H	343	36.12	41.48
4	*5745.00	107.5 PK			1.04 H	343	66.00	41.50
5	*5745.00	98.3 AV			1.04 H	343	56.80	41.50
6	11490.00	53.0 PK	74.0	-21.0	1.26 H	154	5.86	47.14
7	11490.00	40.7 AV	54.0	-13.3	1.26 H	154	-6.44	47.14
8	#17235.00	61.6 PK	74.0	-12.4	1.26 H	105	6.74	54.86
9	#17235.00	50.5 AV	54.0	-3.5	1.26 H	105	-4.36	54.86

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	#5715.00	61.7 PK	74.0	-12.3	1.15 V	255	20.24	41.46
2	#5715.00	44.8 AV	54.0	-9.2	1.15 V	255	3.34	41.46
3	#5725.00	75.9 PK	78.2	-2.3	1.15 V	255	34.42	41.48
4	*5745.00	103.6 PK			1.15 V	255	62.10	41.50
5	*5745.00	94.5 AV			1.15 V	255	53.00	41.50
6	11490.00	51.8 PK	74.0	-22.2	1.26 V	169	4.66	47.14
7	11490.00	39.6 AV	54.0	-14.4	1.26 V	169	-7.54	47.14
8	#17235.00	62.0 PK	74.0	-12.0	1.21 V	121	7.14	54.86
9	#17235.00	50.7 AV	54.0	-3.3	1.21 V	121	-4.16	54.86

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	57.6 PK	74.0	-16.4	1.06 H	347	16.14	41.46
2	#5715.00	43.2 AV	54.0	-10.8	1.06 H	347	1.74	41.46
3	#5725.00	66.3 PK	78.2	-11.9	1.06 H	347	24.82	41.48
4	*5785.00	113.2 PK			1.06 H	347	71.65	41.55
5	*5785.00	103.2 AV			1.06 H	347	61.65	41.55
6	#5850.00	77.7 PK	78.2	-0.5	1.06 H	347	36.02	41.68
7	#5860.00	59.1 PK	74.0	-14.9	1.06 H	347	17.39	41.71
8	#5860.00	41.5 AV	54.0	-12.5	1.06 H	347	-0.21	41.71
9	11570.00	53.0 PK	74.0	-21.0	1.30 H	145	5.81	47.19
10	11570.00	40.7 AV	54.0	-13.3	1.30 H	145	-6.49	47.19
11	#17355.00	62.6 PK	74.0	-11.4	1.22 H	111	7.52	55.08
12	#17355.00	51.2 AV	54.0	-2.8	1.22 H	111	-3.88	55.08
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	#5715.00	55.4 PK	74.0	-18.6	1.18 V	255	13.94	41.46
2	#5715.00	41.2 AV	54.0	-12.8	1.18 V	255	-0.26	41.46
3	#5725.00	64.4 PK	78.2	-13.8	1.08 V	255	22.92	41.48
4	*5785.00	109.9 PK			1.16 V	240	68.35	41.55
5	*5785.00	99.9 AV			1.16 V	240	58.35	41.55
6	#5850.00	76.0 PK	78.2	-2.2	1.19 V	232	34.32	41.68
7	#5860.00	56.3 PK	74.0	-17.7	1.07 V	257	14.59	41.71
8	#5860.00	40.3 AV	54.0	-13.7	1.07 V	257	-1.41	41.71
9	11570.00	52.3 PK	74.0	-21.7	1.27 V	160	5.11	47.19
10	11570.00	40.0 AV	54.0	-14.0	1.27 V	160	-7.19	47.19
11	#17355.00	62.6 PK	74.0	-11.4	1.24 V	108	7.52	55.08
12	#17355.00	51.1 AV	54.0	-2.9	1.24 V	108	-3.98	55.08

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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 165	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	106.9 PK			1.07 H	327	65.28	41.62
2	*5825.00	97.6 AV			1.07 H	327	55.98	41.62
3	#5850.00	77.9 PK	78.2	-0.3	1.07 H	327	36.22	41.68
4	#5860.00	65.4 PK	74.0	-8.6	1.07 H	327	23.69	41.71
5	#5860.00	45.8 AV	54.0	-8.2	1.07 H	327	4.09	41.71
6	11650.00	52.6 PK	74.0	-21.4	1.26 H	146	5.37	47.23
7	11650.00	40.5 AV	54.0	-13.5	1.26 H	146	-6.73	47.23
8	#17475.00	62.2 PK	74.0	-11.8	1.24 H	99	6.89	55.31
9	#17475.00	50.8 AV	54.0	-3.2	1.24 H	99	-4.51	55.31
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	104.1 PK			1.16 V	254	62.48	41.62
2	*5825.00	94.7 AV			1.16 V	254	53.08	41.62
3	#5850.00	75.6 PK	78.2	-2.6	1.16 V	254	33.92	41.68
4	#5860.00	61.7 PK	74.0	-12.3	1.16 V	254	19.99	41.71
5	#5860.00	44.2 AV	54.0	-9.8	1.16 V	254	2.49	41.71
6	11650.00	52.0 PK	74.0	-22.0	1.24 V	164	4.77	47.23
7	11650.00	39.8 AV	54.0	-14.2	1.24 V	164	-7.43	47.23
8	#17475.00	62.1 PK	74.0	-11.9	1.28 V	111	6.79	55.31
9	#17475.00	50.8 AV	54.0	-3.2	1.28 V	111	-4.51	55.31

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)
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	69.8 PK	74.0	-4.2	1.28 H	347	29.24	40.56
2	5150.00	53.6 AV	54.0	-0.4	1.28 H	347	13.04	40.56
3	*5190.00	106.5 PK			1.28 H	347	65.84	40.66
4	*5190.00	96.5 AV			1.28 H	347	55.84	40.66
5	#10380.00	52.2 PK	74.0	-21.8	1.18 H	200	5.47	46.73
6	#10380.00	40.2 AV	54.0	-13.8	1.18 H	200	-6.53	46.73
7	15570.00	61.8 PK	74.0	-12.2	1.16 H	72	10.56	51.24
8	15570.00	50.1 AV	54.0	-3.9	1.16 H	72	-1.14	51.24
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	62.9 PK	74.0	-11.1	1.04 V	237	22.34	40.56
2	5150.00	46.2 AV	54.0	-7.8	1.04 V	237	5.64	40.56
3	*5190.00	100.4 PK			1.04 V	237	59.74	40.66
4	*5190.00	90.1 AV			1.04 V	237	49.44	40.66
5	#10380.00	52.6 PK	74.0	-21.4	1.25 V	151	5.87	46.73
6	#10380.00	40.5 AV	54.0	-13.5	1.25 V	151	-6.23	46.73
7	15570.00	61.6 PK	74.0	-12.4	1.30 V	110	10.36	51.24
8	15570.00	49.9 AV	54.0	-4.1	1.30 V	110	-1.34	51.24

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	69.9 PK	74.0	-4.1	1.06 H	69	29.34	40.56
2	5150.00	53.5 AV	54.0	-0.5	1.06 H	69	12.94	40.56
3	*5230.00	115.9 PK			1.06 H	69	75.16	40.74
4	*5230.00	105.9 AV			1.06 H	69	65.16	40.74
5	#10460.00	52.4 PK	74.0	-21.6	1.18 H	196	5.63	46.77
6	#10460.00	40.5 AV	54.0	-13.5	1.18 H	196	-6.27	46.77
7	15690.00	61.1 PK	74.0	-12.9	1.18 H	84	9.80	51.30
8	15690.00	50.1 AV	54.0	-3.9	1.18 H	84	-1.20	51.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.3 PK	74.0	-10.7	1.06 V	254	22.74	40.56
2	5150.00	45.9 AV	54.0	-8.1	1.06 V	254	5.34	40.56
3	*5230.00	110.4 PK			1.06 V	254	69.66	40.74
4	*5230.00	100.6 AV			1.06 V	254	59.86	40.74
5	#10460.00	52.7 PK	74.0	-21.3	1.27 V	150	5.93	46.77
6	#10460.00	40.6 AV	54.0	-13.4	1.27 V	150	-6.17	46.77
7	15690.00	61.9 PK	74.0	-12.1	1.30 V	103	10.60	51.30
8	15690.00	50.4 AV	54.0	-3.6	1.30 V	103	-0.90	51.30

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	71.4 PK	74.0	-2.6	1.04 H	156	29.94	41.46
2	#5715.00	53.1 AV	54.0	-0.9	1.04 H	156	11.64	41.46
3	#5725.00	74.3 PK	78.2	-3.9	1.04 H	156	32.82	41.48
4	*5755.00	104.8 PK			1.04 H	156	63.29	41.51
5	*5755.00	94.9 AV			1.04 H	156	53.39	41.51
6	11510.00	51.6 PK	74.0	-22.4	1.23 H	157	4.45	47.15
7	11510.00	39.8 AV	54.0	-14.2	1.23 H	157	-7.35	47.15
8	#17265.00	62.7 PK	74.0	-11.3	1.24 H	109	7.76	54.94
9	#17265.00	51.4 AV	54.0	-2.6	1.24 H	109	-3.54	54.94

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5715.00	61.8 PK	74.0	-12.2	1.19 V	247	20.34	41.46
2	#5715.00	45.1 AV	54.0	-8.9	1.19 V	247	3.64	41.46
3	#5725.00	73.8 PK	78.2	-4.4	1.19 V	247	32.32	41.48
4	*5755.00	100.8 PK			1.19 V	247	59.29	41.51
5	*5755.00	91.2 AV			1.19 V	247	49.69	41.51
6	11510.00	52.6 PK	74.0	-21.4	1.33 V	154	5.45	47.15
7	11510.00	40.2 AV	54.0	-13.8	1.33 V	154	-6.95	47.15
8	#17265.00	62.8 PK	74.0	-11.2	1.24 V	97	7.86	54.94
9	#17265.00	51.1 AV	54.0	-2.9	1.24 V	97	-3.84	54.94

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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 159	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	105.0 PK			1.09 H	157	63.44	41.56
2	*5795.00	95.1 AV			1.09 H	157	53.54	41.56
3	#5850.00	78.0 PK	78.2	-0.2	1.09 H	157	36.32	41.68
4	#5860.00	65.6 PK	74.0	-8.4	1.09 H	157	23.89	41.71
5	#5860.00	46.2 AV	54.0	-7.8	1.09 H	157	4.49	41.71
6	11590.00	52.5 PK	74.0	-21.5	1.29 H	158	5.29	47.21
7	11590.00	40.3 AV	54.0	-13.7	1.29 H	158	-6.91	47.21
8	#17385.00	62.4 PK	74.0	-11.6	1.19 H	120	7.29	55.11
9	#17385.00	51.4 AV	54.0	-2.6	1.19 H	120	-3.71	55.11

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	101.5 PK			1.11 V	268	59.94	41.56
2	*5795.00	91.7 AV			1.11 V	268	50.14	41.56
3	#5850.00	75.5 PK	78.2	-2.7	1.11 V	268	33.82	41.68
4	#5860.00	61.5 PK	74.0	-12.5	1.11 V	268	19.79	41.71
5	#5860.00	44.0 AV	54.0	-10.0	1.11 V	268	2.29	41.71
6	11590.00	52.6 PK	74.0	-21.4	1.25 V	168	5.39	47.21
7	11590.00	40.4 AV	54.0	-13.6	1.25 V	168	-6.81	47.21
8	#17385.00	62.7 PK	74.0	-11.3	1.25 V	118	7.59	55.11
9	#17385.00	51.5 AV	54.0	-2.5	1.25 V	118	-3.61	55.11

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

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	---		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	---		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	---		1 Watt (30 dBm)

Note: Where B is the 26dB emission bandwidth in MHz.

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

Array Gain = 0 dB (i.e., no array gain) for $NANT \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;

Array Gain = $5 \log(NANT/NSS)$ dB or 3 dB, whichever is less for 20-MHz channel widths with $NANT \geq 5$.

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

4.3.2 TEST INSTRUMENTS

FOR POWER OUTPUT MEASUREMENT

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

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : July 24, 2014

FOR 26dB OCCUPIED BANDWIDTH

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 2015

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : July 24, 2014

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

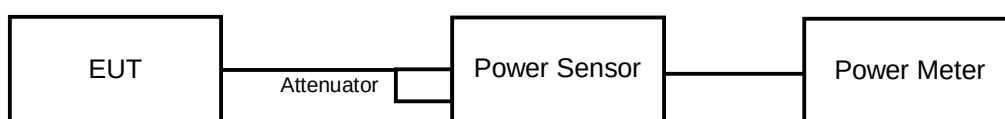
1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement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

4.3.4 DEVIATION FROM TEST STANDARD

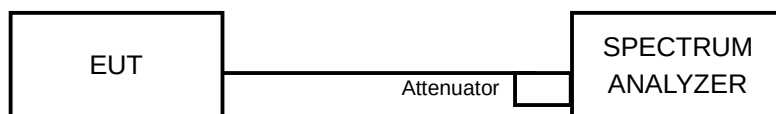
No deviation

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.



A D T

4.3.7 TEST RESULTS (ACCESSORY RADIO)

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	33.037	15.19	24	PASS
40	5200	34.041	15.32	24	PASS
48	5240	31.623	15.00	24	PASS
149	5745	36.898	15.67	30	PASS
157	5785	34.754	15.41	30	PASS
165	5825	36.644	15.64	30	PASS

26dB OCCUPIED BANDWIDTH:

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
36	5180	20.25
40	5200	20.31
48	5240	20.23

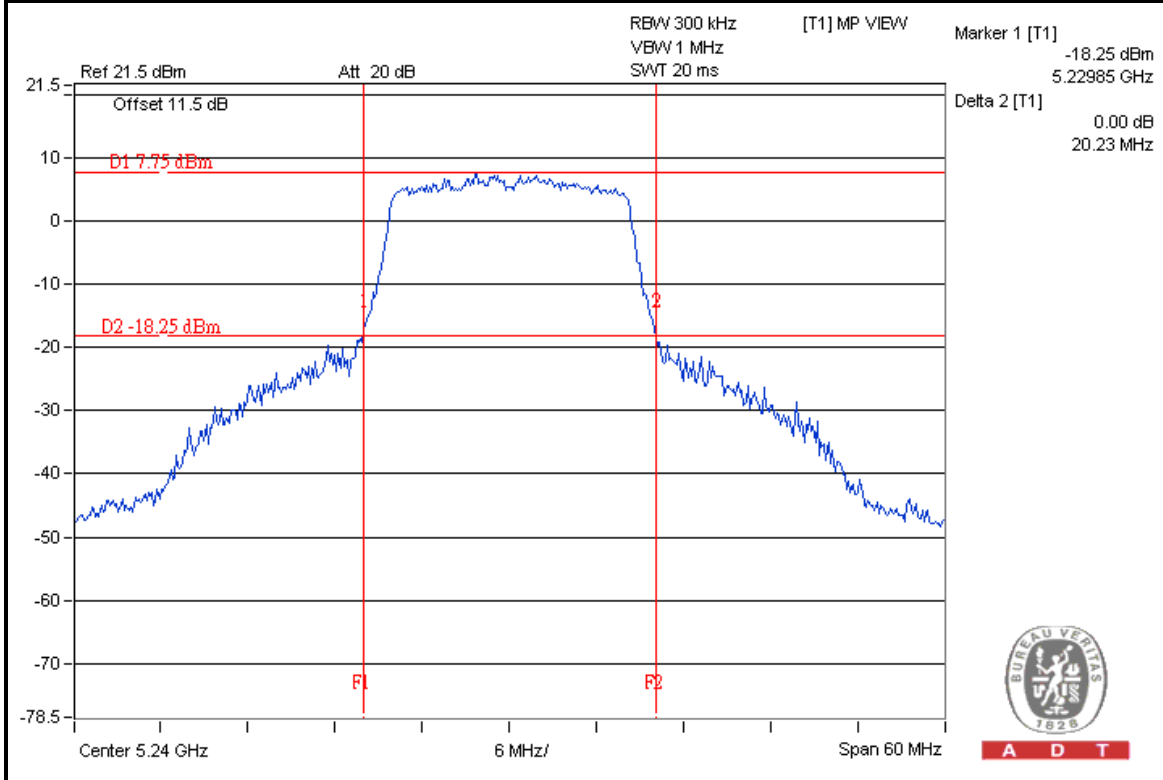
Note: For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.



A D T

SPECTRUM PLOT OF WORST VALUE

802.11a : CH48



A D T



A D T

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (mW)	AVERAGE POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	32.885	15.17	24	PASS
40	5200	33.729	15.28	24	PASS
48	5240	33.497	15.25	24	PASS
149	5745	36.898	15.67	30	PASS
157	5785	31.769	15.02	30	PASS
165	5825	34.514	15.38	30	PASS

26dB OCCUPIED BANDWIDTH:

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)
36	5180	20.90
40	5200	21.76
48	5240	21.84

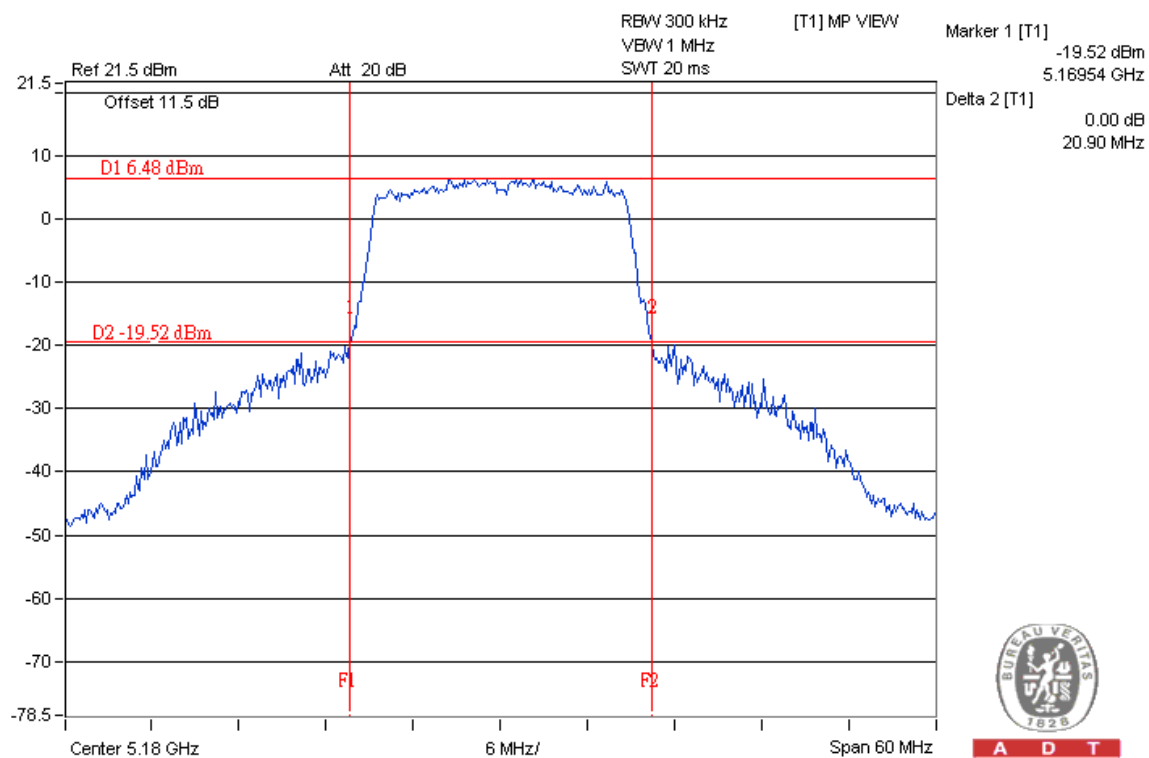
Note: For U-NII-2A Band output power limitation is determined based on 26dBc bandwidth.



A D T

SPECTRUM PLOT OF WORST VALUE

802.11n (HT20) : CH36



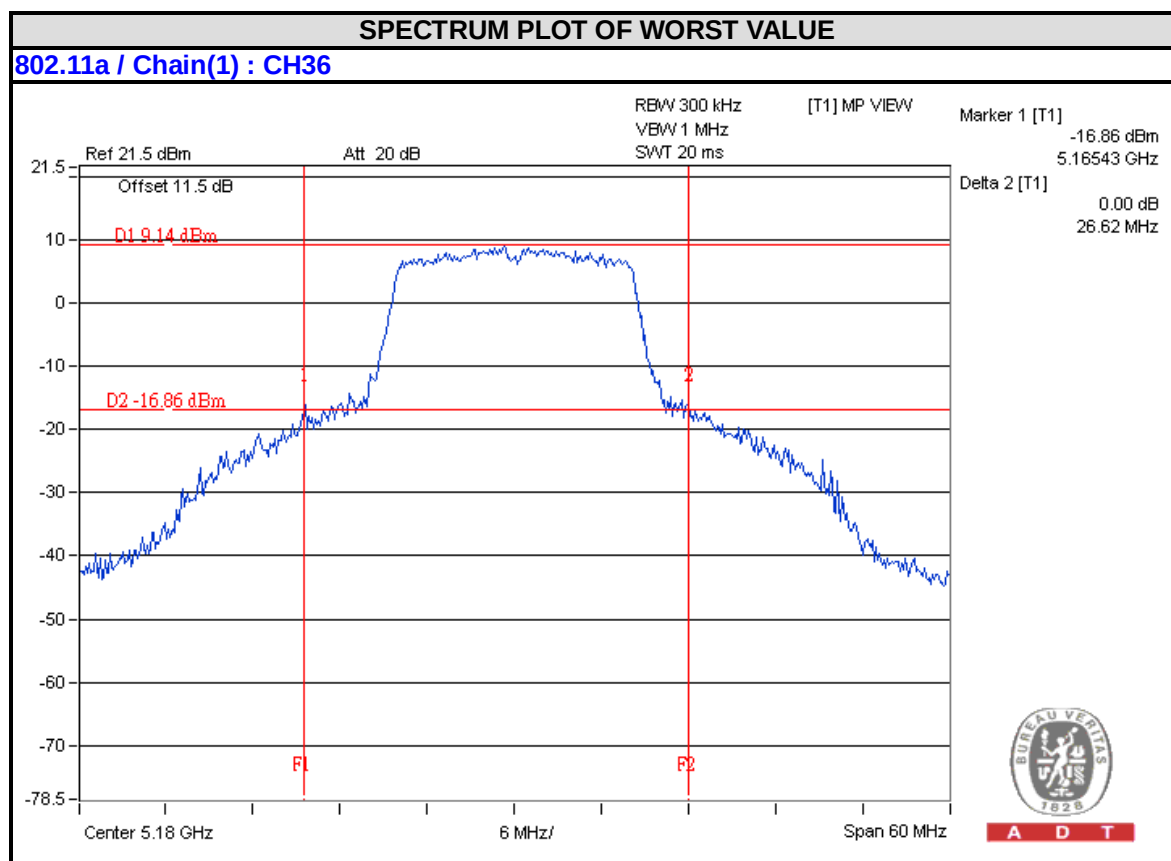
4.3.8 TEST RESULTS (NETWORK RADIO)

802.11a

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	17.78	17.12	111.502	20.47	24	PASS
40	5200	19.21	18.75	158.357	22.00	24	PASS
48	5240	19.28	19.02	164.522	22.16	24	PASS
149	5745	13.77	13.52	46.314	16.66	30	PASS
157	5785	17.35	16.87	102.966	20.13	30	PASS
165	5825	13.67	13.76	47.049	16.73	30	PASS

26dB OCCUPIED BANDWIDTH:

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	27.45	26.62
40	5200	35.33	30.95
48	5240	31.54	33.44

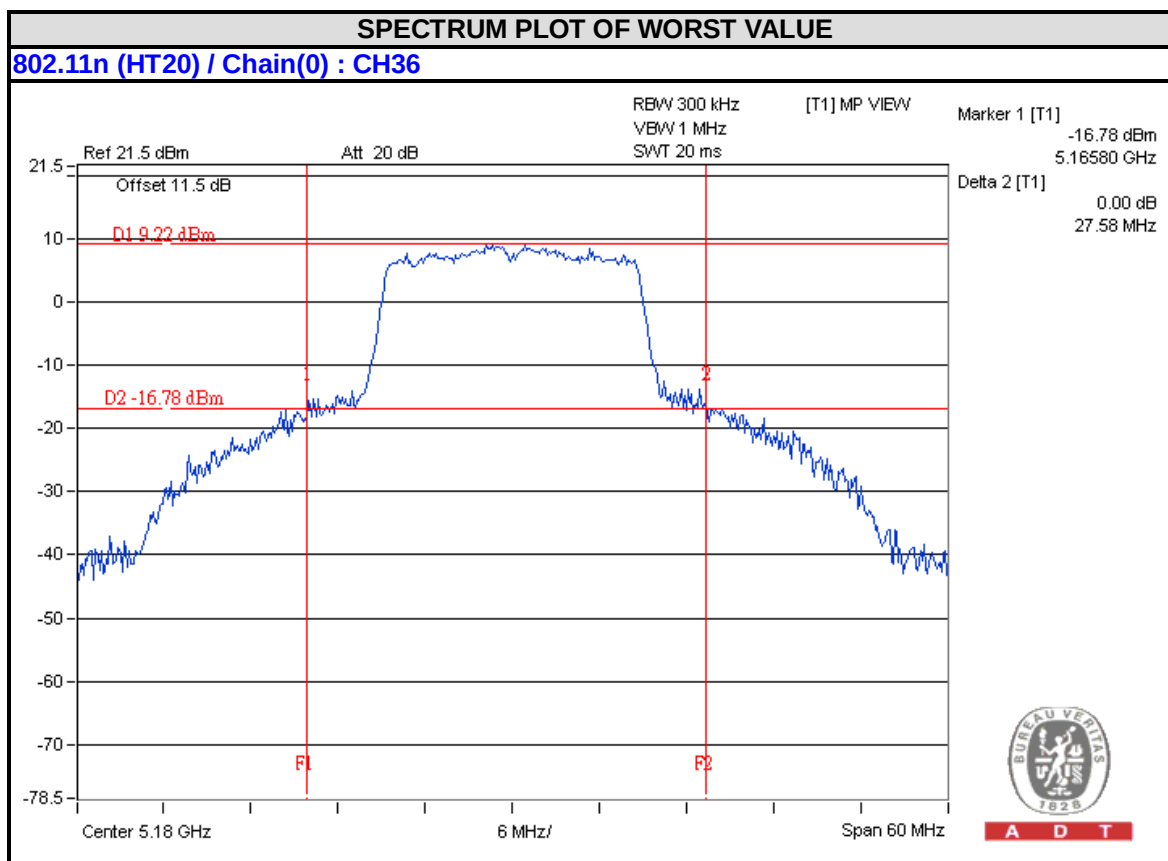


802.11n (HT20)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
36	5180	18.42	18.23	136.029	21.34	24	PASS
40	5200	19.26	18.83	160.717	22.06	24	PASS
48	5240	19.41	18.73	161.942	22.09	24	PASS
149	5745	13.58	13.42	44.782	16.51	30	PASS
157	5785	18.10	17.40	119.519	20.77	30	PASS
165	5825	13.56	13.87	47.077	16.73	30	PASS

26dB OCCUPIED BANDWIDTH:

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
36	5180	27.58	30.67
40	5200	31.43	31.58
48	5240	35.70	33.38

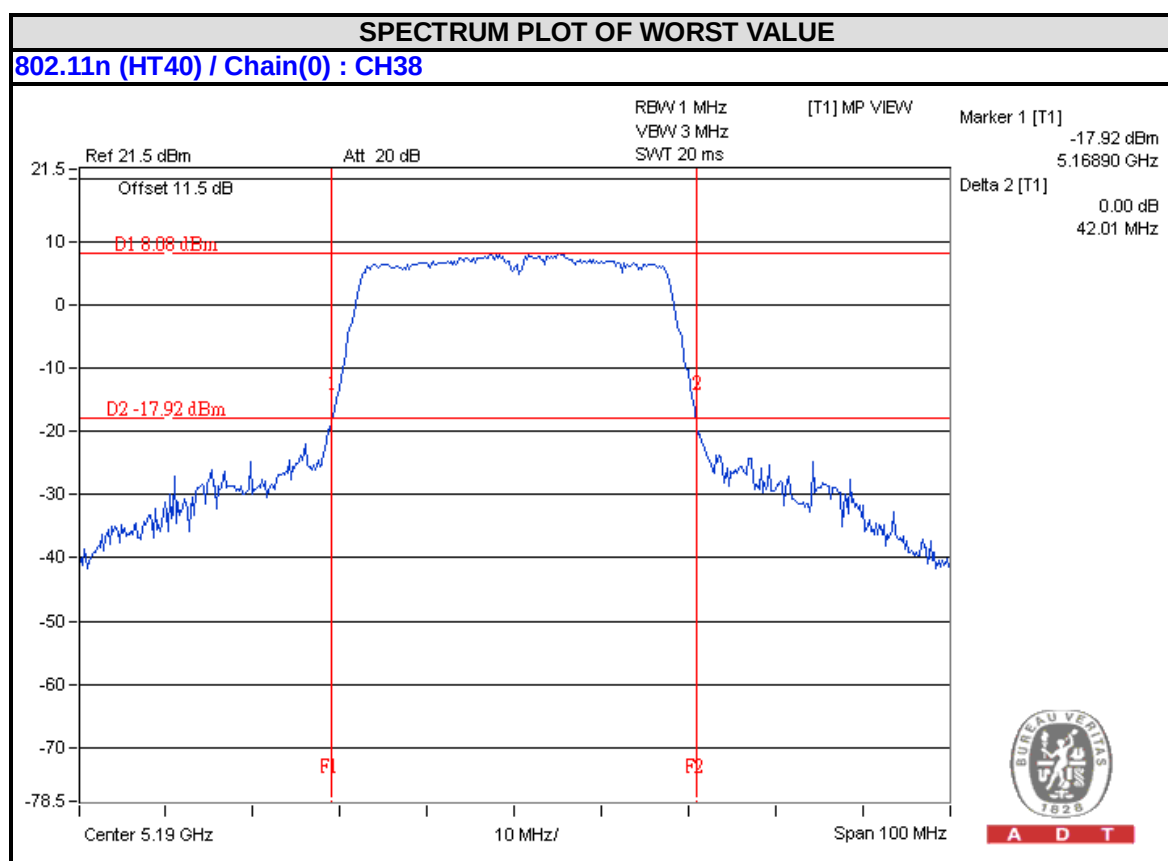


802.11n (HT40)

CHAN.	CHAN. FREQ. (MHz)	AVERAGE POWER (dBm)		TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1				
38	5190	13.23	13.53	43.58	16.39	24	PASS
46	5230	20.55	17.41	168.582	22.27	24	PASS
151	5755	13.20	12.82	40.036	16.02	30	PASS
159	5795	13.05	12.95	39.908	16.01	30	PASS

26dB OCCUPIED BANDWIDTH:

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)	
		CHAIN 0	CHAIN 1
38	5190	42.01	42.30
46	5230	79.91	72.44





A D T

4.4 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.4.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11dBm/ MHz
U-NII-2A	---		11dBm/ MHz
U-NII-2C	---		11dBm/ MHz
U-NII-3	---		30dBm/ 500kHz

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 2015

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : July 24, 2014

4.4.3 TEST PROCEDURES

For U-NII-1:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW $\geq$ 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

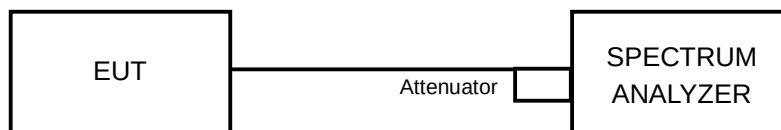
For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW $\geq$ 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500 \text{ kHz}/300\text{kHz})$
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value

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



A D T

4.4.7 TEST RESULTS (ACCESSORY RADIO)

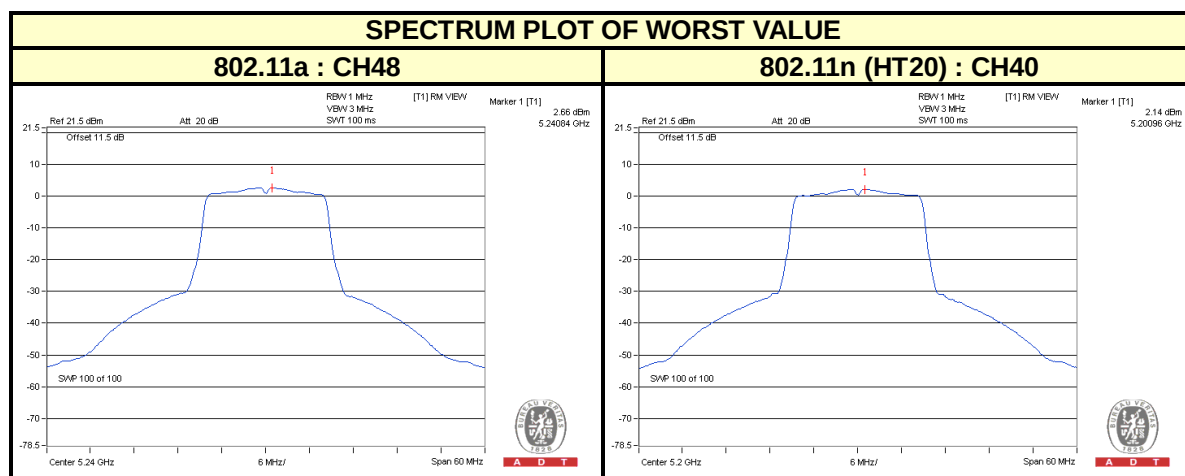
For U-NII-1:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	2.34	11	PASS
40	5200	2.50	11	PASS
48	5240	2.66	11	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	1.86	11	PASS
40	5200	2.14	11	PASS
48	5240	2.05	11	PASS





A D T

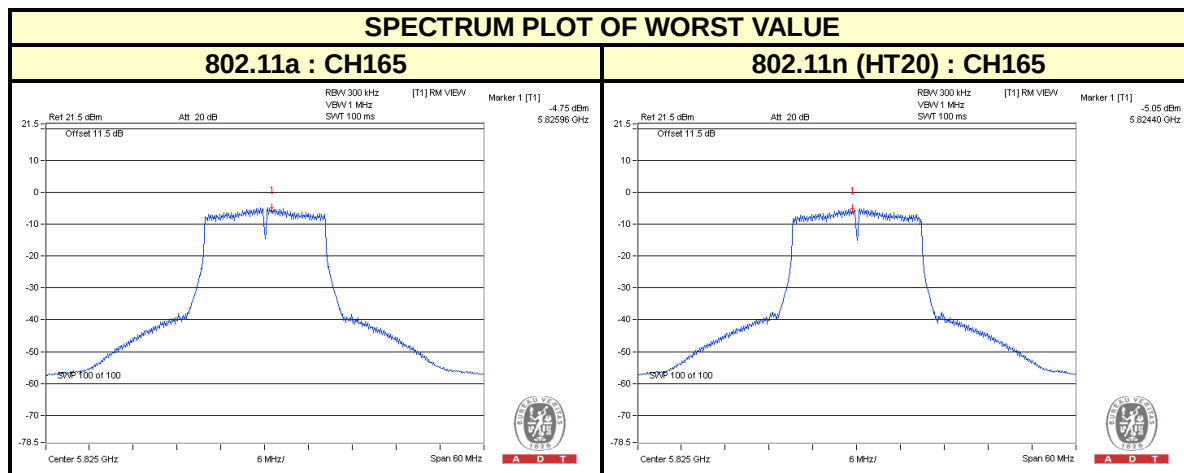
For U-NII-3:

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	-5.63	-3.41	30	PASS
157	5785	-5.10	-2.88	30	PASS
165	5825	-4.75	-2.53	30	PASS

802.11n (HT20)

CHANNEL	FREQUENCY (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	-5.46	-3.24	30	PASS
157	5785	-5.46	-3.24	30	PASS
165	5825	-5.05	-2.83	30	PASS



4.4.8 TEST RESULTS (NETWORK RADIO)

For U-NII-1:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS/FAIL
		CHAIN 0	CHAIN 1			
36	5180	4.75	4.32	7.55	10.92	PASS
40	5200	6.03	5.94	9.00	10.92	PASS
48	5240	5.82	6.25	9.05	10.92	PASS

- NOTE:** 1. Method a) 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. **5150~5250MHz:** Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.08\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(6.08-6) = 10.92\text{dBm}$.

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS/FAIL
		CHAIN 0	CHAIN 1			
36	5180	4.37	4.57	7.48	10.92	PASS
40	5200	5.64	4.86	8.28	10.92	PASS
48	5240	5.77	5.22	8.51	10.92	PASS

- NOTE:** 1. Method a) 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. **5150~5250MHz:** Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.08\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(6.08-6) = 10.92\text{dBm}$.

802.11n (HT40)

CHANNEL	CHANNEL FREQUENCY (MHz)	PSD (dBm)		TOTAL POWER DENSITY (dBm)	MAX. LIMIT (dBm)	PASS/FAIL
		CHAIN 0	CHAIN 1			
38	5190	-3.19	-2.74	0.05	10.92	PASS
46	5230	3.52	1.61	5.68	10.92	PASS

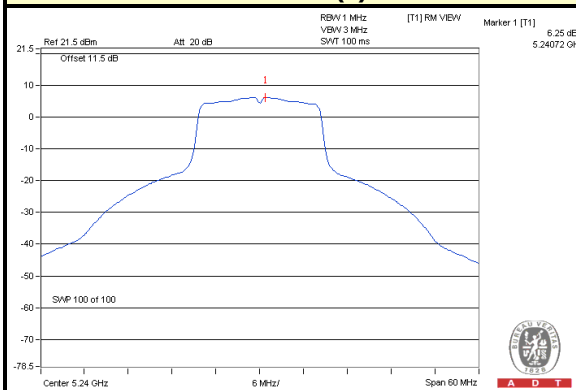
- NOTE:** 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. **5150~5250MHz:** Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.08\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(6.08-6) = 10.92\text{dBm}$.



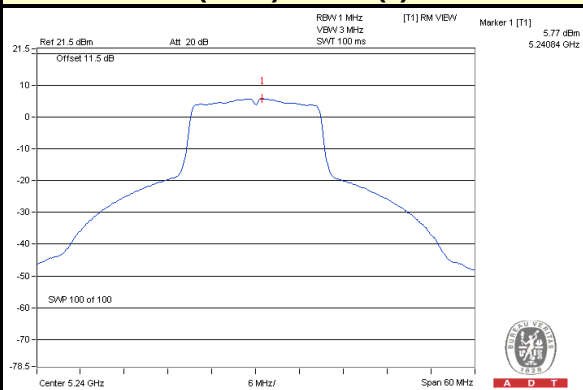
A D T

SPECTRUM PLOT OF WORST VALUE

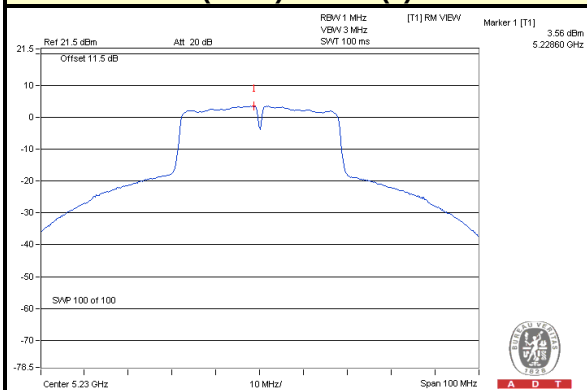
802.11a / Chain(1) : CH48



802.11n (HT20) / Chain(0) : CH48



802.11n (HT40) / Chain(0) : CH46



For U-NII-3:

802.11a

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	TOTAL PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
0	149	5745	-7.04	-4.82	3.01	-1.81	29.92	PASS
	157	5785	-3.52	-1.30	3.01	1.71	29.92	PASS
	165	5825	-7.17	-4.95	3.01	-1.94	29.92	PASS
1	149	5745	-7.18	-4.96	3.01	-1.95	29.92	PASS
	157	5785	-4.18	-1.96	3.01	1.05	29.92	PASS
	165	5825	-7.00	-4.78	3.01	-1.77	29.92	PASS

NOTE: 1. **5725~5850MHz:** Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.08\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30-(6.08-6) = 29.92\text{dBm}$.

802.11n (HT20)

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	TOTAL PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
0	149	5745	-7.55	-5.33	3.01	-2.32	29.92	PASS
	157	5785	-3.45	-1.23	3.01	1.78	29.92	PASS
	165	5825	-7.53	-5.31	3.01	-2.30	29.92	PASS
1	149	5745	-7.02	-4.80	3.01	-1.79	29.92	PASS
	157	5785	-3.28	-1.06	3.01	1.95	29.92	PASS
	165	5825	-7.04	-4.82	3.01	-1.81	29.92	PASS

NOTE: 1. **5725~5850MHz:** Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.08\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30-(6.08-6) = 29.92\text{dBm}$.

802.11n (HT40)

TX CHAIN	CHANNEL	FREQUENCY (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	TOTAL PSD (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
0	151	5755	-10.82	-8.60	3.01	-5.59	29.92	PASS
	159	5795	-11.15	-8.93	3.01	-5.92	29.92	PASS
1	151	5755	-11.56	-9.34	3.01	-6.33	29.92	PASS
	159	5795	-11.18	-8.96	3.01	-5.95	29.92	PASS

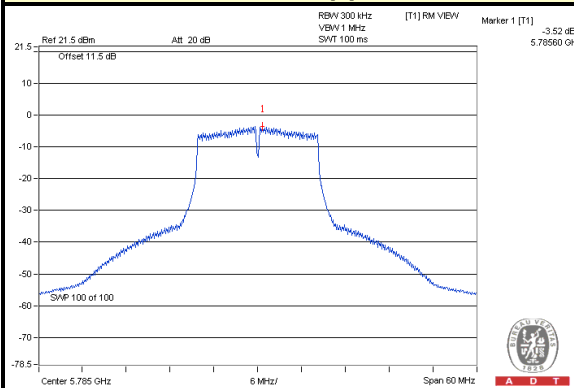
NOTE: 1. **5725~5850MHz:** Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.08\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30-(6.08-6) = 29.92\text{dBm}$.



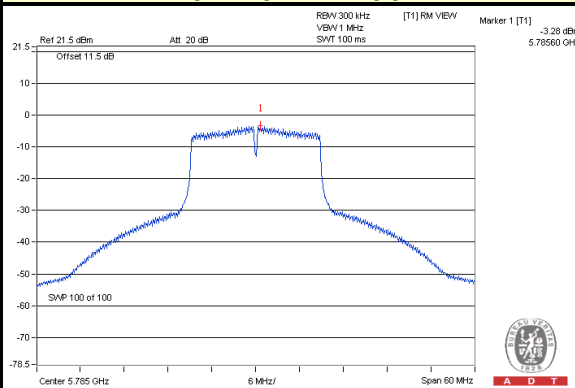
A D T

SPECTRUM PLOT OF WORST VALUE

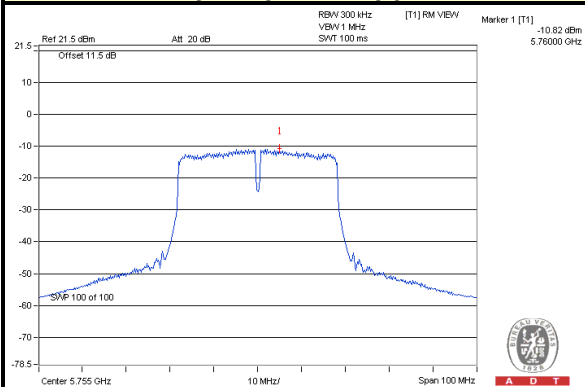
802.11a / Chain(0) : CH157



802.11n (HT20) / Chain(1) : CH157



802.11n (HT40) / Chain(0) : CH151





A D T

4.5 FREQUENCY STABILITY

4.5.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 2015
Temperature Humidity Chamber & GIANTFORCE	GTH-150-40-SP-AR	MAA0812-008	Jan. 13, 2014	Jan. 12, 2015

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : July 24, 2014

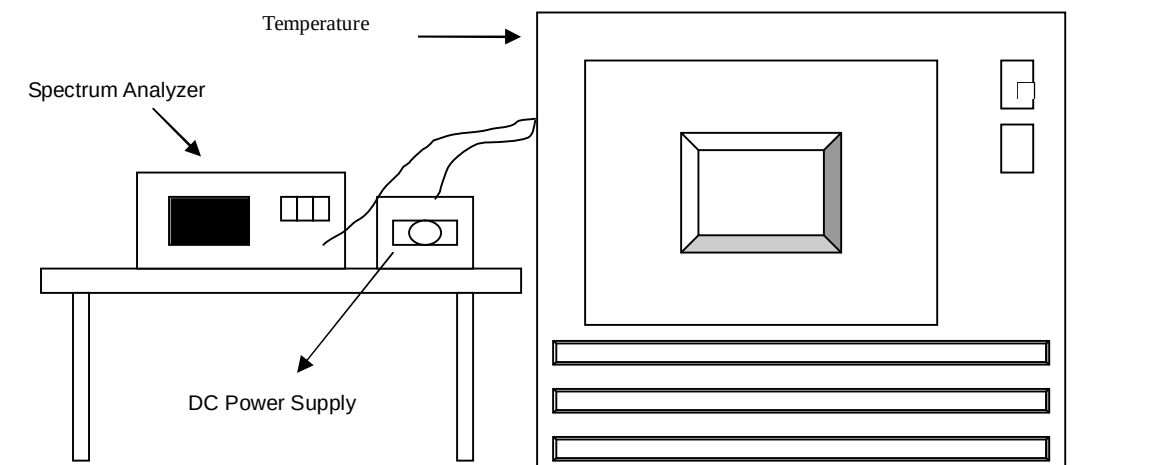
4.5.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC 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.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITION

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

4.5.7 TEST RESULTS (ACCESSORY RADIO)

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5240MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	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	3.3	5239.9927	-0.00014	5239.9925	-0.00014	5239.9929	-0.00014	5239.9906	-0.00018
40	3.3	5239.9905	-0.00018	5239.9882	-0.00023	5239.9894	-0.00020	5239.992	-0.00015
30	3.3	5239.9764	-0.00045	5239.9766	-0.00045	5239.9781	-0.00042	5239.9788	-0.00040
20	3.3	5240.0086	0.00016	5240.0057	0.00011	5240.0043	0.00008	5240.0045	0.00009
10	3.3	5240.022	0.00042	5240.0242	0.00046	5240.0255	0.00049	5240.0223	0.00043
0	3.3	5240.0006	0.00001	5240.0017	0.00003	5240	0.00000	5239.9997	-0.00001
-10	3.3	5239.9754	-0.00047	5239.9736	-0.00050	5239.9728	-0.00052	5239.9737	-0.00050
-20	3.3	5240.027	0.00052	5240.0266	0.00051	5240.0263	0.00050	5240.023	0.00044
-30	3.3	5239.9782	-0.00042	5239.9799	-0.00038	5239.9826	-0.00033	5239.9806	-0.00037

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5240MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	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	3.63	5240.0096	0.00018	5240.0058	0.00011	5240.0052	0.00010	5240.0036	0.00007
	3.3	5240.0086	0.00016	5240.0057	0.00011	5240.0043	0.00008	5240.0045	0.00009
	2.97	5240.0089	0.00017	5240.0047	0.00009	5240.004	0.00008	5240.0049	0.00009

4.5.8 TEST RESULTS (NETWORK RADIO)

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5240MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	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	3.3	5240.0082	0.00016	5240.0102	0.00019	5240.0096	0.00018	5240.0091	0.00017
40	3.3	5240.0138	0.00026	5240.0098	0.00019	5240.0098	0.00019	5240.0137	0.00026
30	3.3	5240.0061	0.00012	5240.0048	0.00009	5240.0034	0.00006	5240.004	0.00008
20	3.3	5240.0121	0.00023	5240.011	0.00021	5240.0111	0.00021	5240.0124	0.00024
10	3.3	5239.9991	-0.00002	5239.9999	0.00000	5239.9954	-0.00009	5239.998	-0.00004
0	3.3	5239.9792	-0.00040	5239.9825	-0.00033	5239.9839	-0.00031	5239.9824	-0.00034
-10	3.3	5239.9762	-0.00045	5239.9737	-0.00050	5239.978	-0.00042	5239.9757	-0.00046
-20	3.3	5239.9768	-0.00044	5239.9772	-0.00044	5239.9763	-0.00045	5239.9802	-0.00038
-30	3.3	5240.0012	0.00002	5240.0018	0.00003	5239.9977	-0.00004	5239.9995	-0.00001

FREQUENCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5240MHz									
TEMP. (°C)	POWER SUPPLY (Vdc)	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	3.63	5240.0119	0.00023	5240.0107	0.00020	5240.0104	0.00020	5240.0132	0.00025
	3.3	5240.0121	0.00023	5240.011	0.00021	5240.0111	0.00021	5240.0124	0.00024
	2.97	5240.0118	0.00023	5240.0108	0.00021	5240.0108	0.00021	5240.0133	0.00025



A D T

4.6 6dB BANDWIDTH MEASUREMENT

4.6.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
SPECTRUM ANALYZER R&S	FSV 40	100964	July 05, 2014	July 04, 2015

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date : July 24, 2014

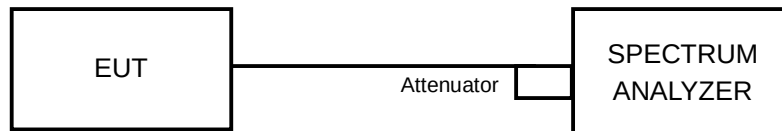
4.6.3 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 100kHz.
2. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
3. Trace mode = max hold.
4. Sweep = auto couple.
5. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITIONS

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

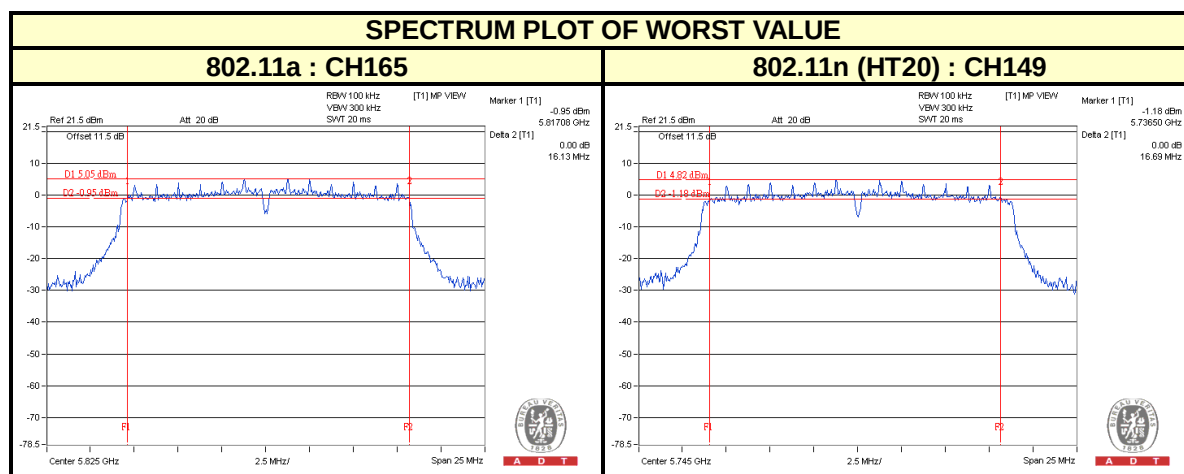
4.6.7 TEST RESULTS (ACCESSORY RADIO)

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.33	0.5	PASS
157	5785	16.32	0.5	PASS
165	5825	16.13	0.5	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS / FAIL
149	5745	16.69	0.5	PASS
157	5785	16.71	0.5	PASS
165	5825	16.73	0.5	PASS



4.6.8 TEST RESULTS (ACCESSORY RADIO)

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	16.34	16.34	0.5	PASS
157	5785	16.10	16.35	0.5	PASS
165	5825	16.34	16.35	0.5	PASS

802.11n (HT20)

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
149	5745	16.91	17.10	0.5	PASS
157	5785	16.69	16.72	0.5	PASS
165	5825	17.07	17.11	0.5	PASS

802.11n (HT40)

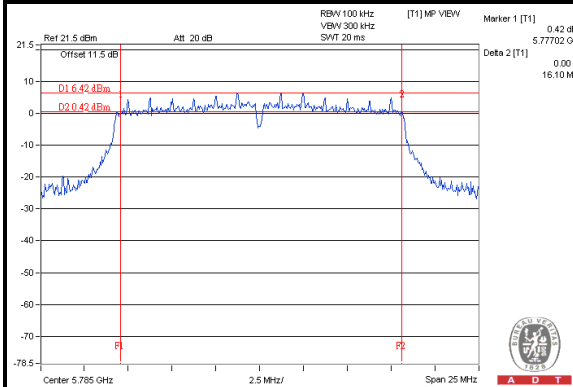
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS / FAIL
		CHAIN 0	CHAIN 1		
151	5755	35.33	35.32	0.5	PASS
159	5795	35.24	35.35	0.5	PASS



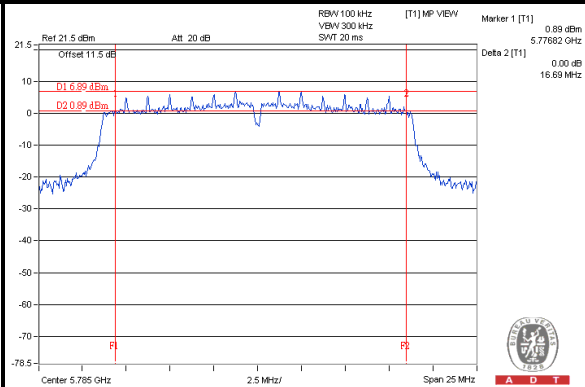
A D T

SPECTRUM PLOT OF WORST VALUE

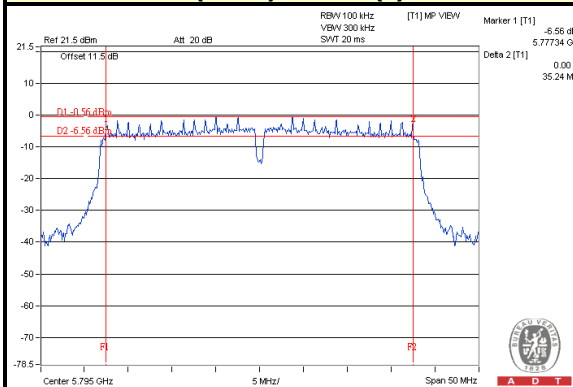
802.11a / Chain(0) : CH157



802.11n (HT20) / Chain(0) : CH157



802.11n (HT40) / Chain(0) : CH159



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.



A D T

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 ---