

FCC Test Report

Report No.: RF150514C34-1

FCC ID: E2K-APL410BA

Test Model: APL41-0BA

Received Date: May 11, 2015

Test Date: May 11 ~ Jun. 12, 2015

Issued Date: Jun. 16, 2015

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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A D T

Release Control Record

Issue No.	Description	Date Issued
RF150514C34-1	Original release.	Jun. 16, 2015

1 Certificate of Conformity

Product: Wireless Network Security Appliance

Brand: DELL, DELL SONICWALL, SONICWALL

Test Model: APL41-0BA

Sample Status: Engineering sample

Applicant: Dell Inc.

Test Date: May 11 ~ Jun. 12, 2015

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10:2013

The above equipment 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:

Jun. 16, 2015

Pettie Chen / Senior Specialist

Approved by :



Date:

Jun. 16, 2015

Ken Liu / Senior Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (SECTION 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -12.47dB at 0.15000MHz.
15.407(b)(1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.4dB at 5000.00MHz.
15.407(a)(1/2/3)	Max Average 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	Antenna connector is RSMA not a standard connector.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expended Uncertainty (k=2) ($\pm$)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless Network Security Appliance
Brand	DELL, DELL SONICWALL, SONICWALL
Test Model	APL41-0BA
Status of EUT	Engineering sample
Power Supply Rating	12Vdc from adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 450.0Mbps
Operating Frequency	5180 ~ 5240MHz & 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
Output Power	5180 ~ 5240MHz: 130.040mW 5745 ~ 5825MHz: 45.643mW
Antenna Type	Dipole antenna with 4dBi gain
Antenna Connector	RSMA
Accessory Device	Adapter
Data Cable Supplied	1.8m RJ45 non-shielded cable without core

Note:

- The EUT incorporates a MIMO function. Physically, the EUT provides 3 completed transmitters and 3 receivers.

Modulation Mode	TX Function
802.11a	3TX
802.11n (HT20)	3TX
802.11n (HT40)	3TX

- The EUT consumes power from the following adapters.

Adapter 1	
Brand	AMIGO
Model	AMS117-1202000F2
Input Power	100-240Vac~50/60Hz, 0.8A Max
Output Power	12Vdc, 2.0A
Power Line	AC: 1.75m non-shielded power cord without core DC: 1.5m power cable with 1 core attached on adapter

Adapter 2	
Brand	Sunny COMPUTER TECHNOLOGY CO., LTD.
Model	SYS1544-2412-T3
Input Power	100-240Vac~, 1.0A MAX, 50-60Hz
Output Power	+12Vdc, 2.0A
Power Line	AC: 1.75m non-shielded power cord without core DC: 1.85m power cable with 1 core attached on adapter

3. The above EUT information is 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

FOR 5180 ~ 5240MHz

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

FOR 5745 ~ 5825MHz:

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

Channel	Frequency	Channel	Frequency
149	5745MHz	161	5805MHz
153	5765MHz	165	5825MHz
157	5785MHz		

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE $\geq$ 1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter 1
B	-	√	√	-	Power from adapter 2

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Note: 1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

2. "-" means no effect.

Radiated Emission Test (Above 1GHz):

- ☒ 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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
A	802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	15.0
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
A	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	15.0

Radiated Emission Test (Below 1GHz):

- ☒ 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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11a	5180-5320 5745-5825	36 to 64 149 to 165	40	OFDM	BPSK	6.0

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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A, B	802.11a	5180-5320 5745-5825	36 to 64 149 to 165	40	OFDM	BPSK	6.0

Antenna Port Conducted Measurement:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ 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.

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
A	802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	15.0
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
A	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	15.0

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE $\geq$ 1G	18deg. C, 70%RH	120Vac, 60Hz	Nick Hsu
RE<1G	22deg. C, 67%RH	120Vac, 60Hz	Jones Chang
PLC	20deg. C, 70%RH	120Vac, 60Hz	Jones Chang
APCM	25deg. C, 60%RH	120Vac, 60Hz	Antony Lee

3.3 Duty Cycle of Test Signal

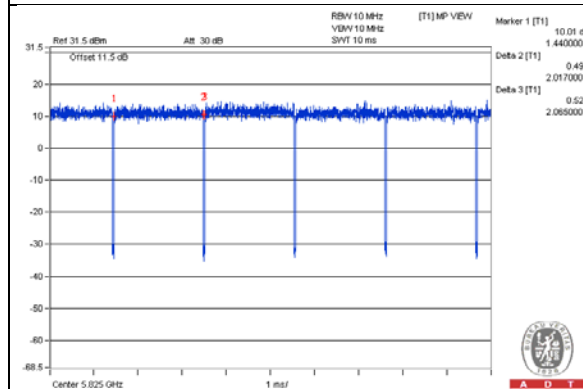
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $2.017/2.065 = 0.977$, Duty factor = $10 * \log(1/0.977) = 0.10$

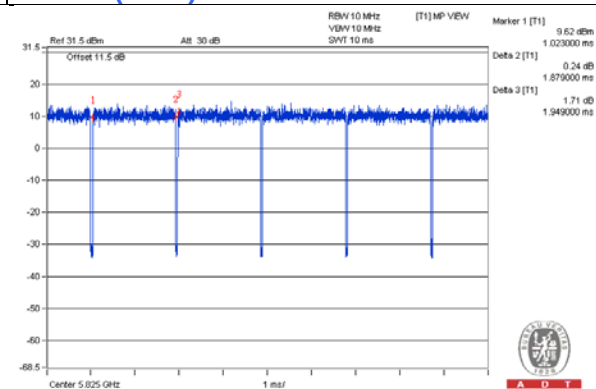
802.11n (HT20): Duty cycle = $1.879/1.949 = 0.964$, Duty factor = $10 * \log(1/0.964) = 0.16$

802.11n (HT40): Duty cycle = $0.917/0.962 = 0.953$, Duty factor = $10 * \log(1/0.953) = 0.21$

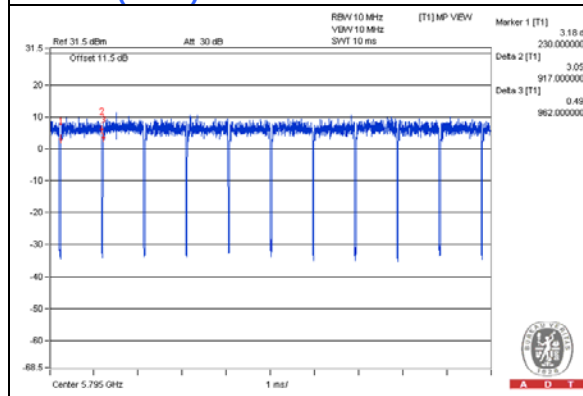
802.11a



802.11n (HT20)



802.11n (HT40)



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved	-
B.	External Hard Disk	WD	WDBACY5000ABL-01	WX51C1245403	NA	-
C.	Load	NA	NA	NA	NA	-

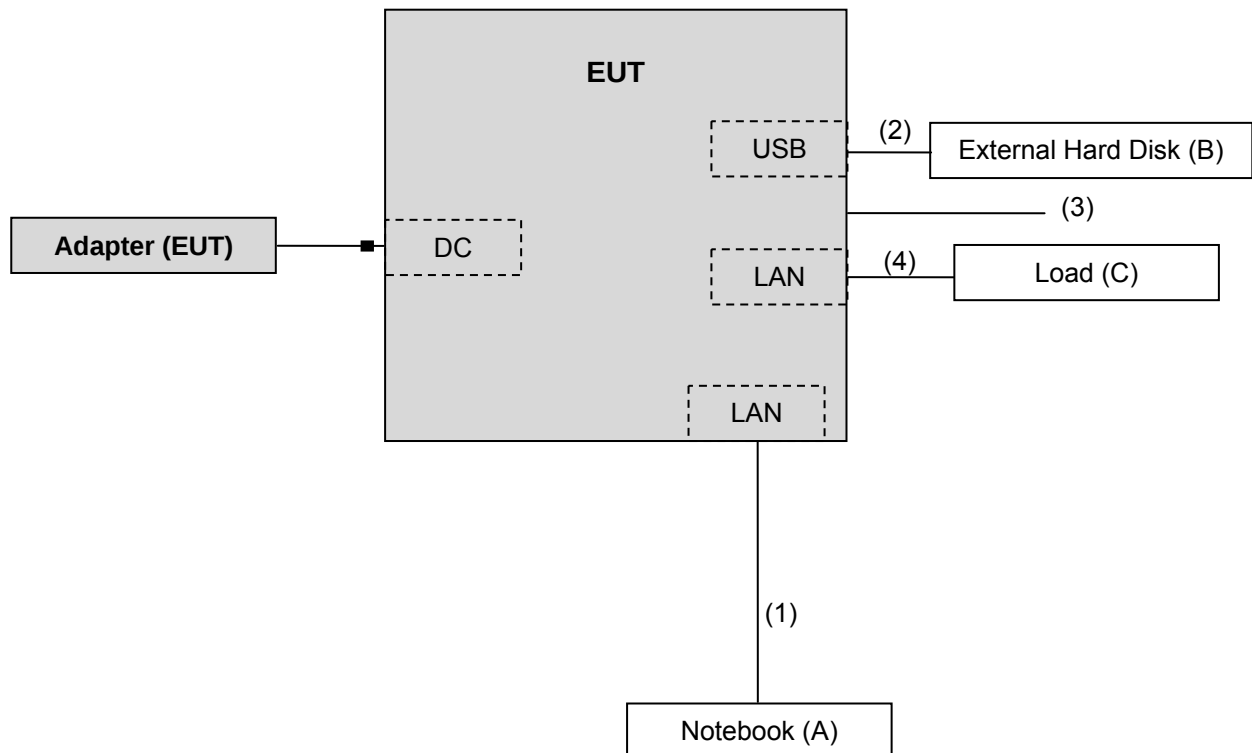
Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as communication partners to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN cable	1	10	N	0	Cat5e
2.	USB cable	1	1.8	Y	0	Cat5e
3.	Console cable	1	1.5	N	0	-
4.	LAN cable	4	1.8	N	0	Cat5e

Note: The core(s) is(are) originally attached to the cable(s).

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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 Procedure New Rules v01

662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 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.

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 10, 2015	Apr. 09, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Aug. 29, 2014	Aug. 28, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Feb. 05, 2015	Feb. 04, 2016
HORN Antenna SCHWARZBECK	9120D	209	Feb. 09, 2015	Feb. 08, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 09, 2015	Feb. 08, 2016
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2014	Oct. 17, 2015
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2014	Aug. 21, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	214378/4	Aug. 22, 2014	Aug. 21, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6 +309224/4	Aug. 22, 2014	Aug. 21, 2015
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
High Speed Peak Power Meter	ML2495A	0824011	Jul. 26, 2014	Jul. 25, 2015
Power Sensor	MA2411B	0738171	Jul. 26, 2014	Jul. 25, 2015
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2014	Oct. 17, 2015
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 09, 2014	Jun. 08, 2015
			Jun. 08, 2015	Jun. 07, 2016

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 HwaYa Chamber 3.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 988962.

5. The IC Site Registration No. is IC 7450F-3.

4.1.3 Test Procedure

- a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) 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:

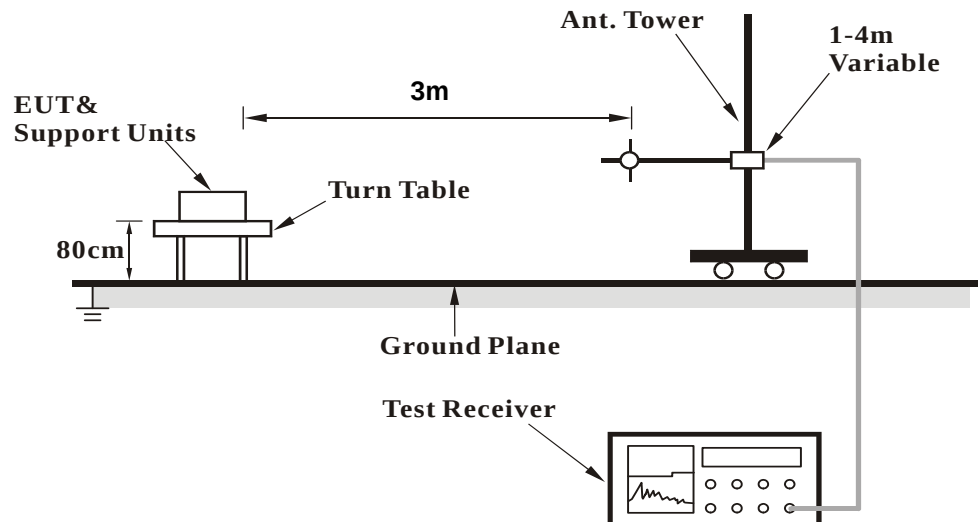
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

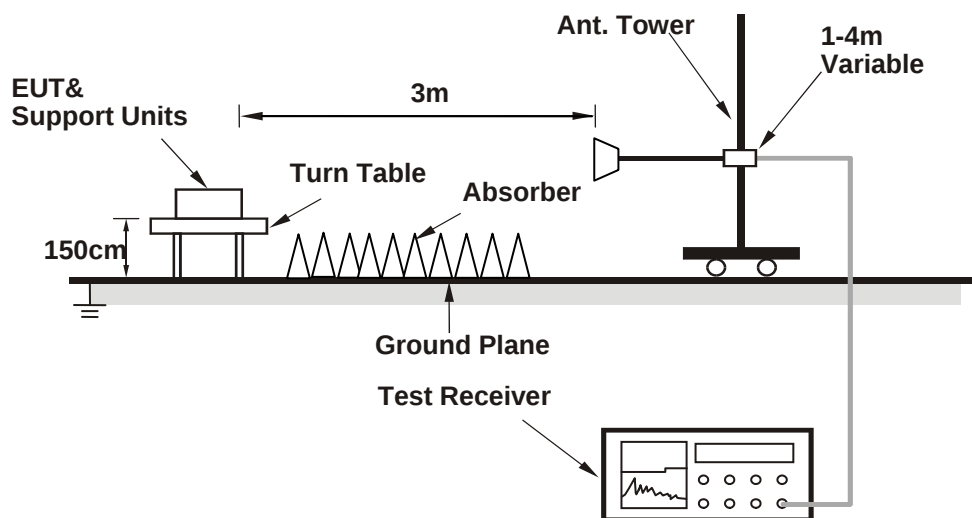
No deviation.

4.1.5 Test Setup

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

- Placed the EUT on the testing table.
- Prepared notebook to act as communication partner and placed it outside of testing area.
- The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The communication partner sent data to EUT by command "PING".
- The necessary accessories enable the system in full functions.

4.1.7 Test Results

ABOVE 1GHz DATA :

Test Mode A

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	5000.00	55.8 PK	74.0	-18.2	1.11 H	89	50.10	5.70
2	5000.00	43.3 AV	54.0	-10.7	1.11 H	89	37.60	5.70
3	5150.00	56.2 PK	74.0	-17.8	1.18 H	115	50.20	6.00
4	5150.00	44.7 AV	54.0	-9.3	1.18 H	115	38.70	6.00
5	*5180.00	105.3 PK			1.00 H	215	65.80	39.50
6	*5180.00	96.7 AV			1.00 H	215	57.20	39.50
7	#10360.00	60.0 PK	74.0	-14.0	1.27 H	53	41.60	18.40
8	#10360.00	46.9 AV	54.0	-7.1	1.27 H	53	28.50	18.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	61.0 PK	74.0	-13.0	1.51 V	44	55.30	5.70
2	5000.00	52.1 AV	54.0	-1.9	1.50 V	44	46.40	5.70
3	5150.00	72.2 PK	74.0	-1.8	1.36 V	141	66.20	6.00
4	5150.00	51.9 AV	54.0	-2.1	1.36 V	141	45.90	6.00
5	*5180.00	116.4 PK			1.37 V	37	76.90	39.50
6	*5180.00	106.1 AV			1.37 V	37	66.60	39.50
7	#10360.00	60.9 PK	74.0	-13.1	1.56 V	120	42.50	18.40
8	#10360.00	47.8 AV	54.0	-6.2	1.56 V	120	29.40	18.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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	5000.00	57.3 PK	74.0	-16.7	1.72 H	205	51.60	5.70
2	5000.00	45.7 AV	54.0	-8.3	1.72 H	205	40.00	5.70
3	*5200.00	106.0 PK			1.74 H	213	66.40	39.60
4	*5200.00	96.4 AV			1.74 H	213	56.80	39.60
5	#10400.00	59.4 PK	74.0	-14.6	1.22 H	138	40.90	18.50
6	#10400.00	46.4 AV	54.0	-7.6	1.22 H	138	27.90	18.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	61.5 PK	74.0	-12.5	1.36 V	240	55.80	5.70
2	5000.00	52.8 AV	54.0	-1.2	1.36 V	240	47.10	5.70
3	*5200.00	117.2 PK			1.00 V	289	77.60	39.60
4	*5200.00	107.9 AV			1.00 V	289	68.30	39.60
5	#10400.00	65.2 PK	74.0	-8.8	1.00 V	4	46.70	18.50
6	#10400.00	52.1 AV	54.0	-1.9	1.00 V	4	33.60	18.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	5000.00	56.7 PK	74.0	-17.3	1.07 H	208	51.00	5.70
2	5000.00	45.7 AV	54.0	-8.3	1.07 H	208	40.00	5.70
3	*5240.00	106.7 PK			1.05 H	212	67.10	39.60
4	*5240.00	96.0 AV			1.05 H	212	56.40	39.60
5	5350.00	57.4 PK	74.0	-16.6	1.00 H	127	51.30	6.10
6	5350.00	43.8 AV	54.0	-10.2	1.00 H	127	37.70	6.10
7	#10480.00	60.1 PK	74.0	-13.9	1.17 H	184	41.10	19.00
8	#10480.00	46.9 AV	54.0	-7.1	1.17 H	184	27.90	19.00
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	5000.00	61.0 PK	74.0	-13.0	1.46 V	358	55.30	5.70
2	5000.00	52.9 AV	54.0	-1.1	1.46 V	358	47.20	5.70
3	*5240.00	117.3 PK			1.43 V	225	77.70	39.60
4	*5240.00	107.8 AV			1.43 V	225	68.20	39.60
5	5350.00	58.3 PK	74.0	-15.7	1.40 V	19	52.20	6.10
6	5350.00	47.1 AV	54.0	-6.9	1.40 V	19	41.00	6.10
7	#10480.00	61.4 PK	74.0	-12.6	1.33 V	63	42.40	19.00
8	#10480.00	48.3 AV	54.0	-5.7	1.33 V	63	29.30	19.00

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The 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	5000.00	56.5 PK	74.0	-17.5	1.00 H	202	50.80	5.70
2	5000.00	44.2 AV	54.0	-9.8	1.00 H	202	38.50	5.70
3	5150.00	56.7 PK	74.0	-17.3	1.11 H	197	50.70	6.00
4	5150.00	43.9 AV	54.0	-10.1	1.11 H	197	37.90	6.00
5	*5180.00	103.8 PK			1.00 H	219	64.30	39.50
6	*5180.00	94.9 AV			1.00 H	219	55.40	39.50
7	#10360.00	59.7 PK	74.0	-14.3	1.04 H	124	41.30	18.40
8	#10360.00	46.5 AV	54.0	-7.5	1.04 H	124	28.10	18.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	61.7 PK	74.0	-12.3	1.44 V	0	56.00	5.70
2	5000.00	51.9 AV	54.0	-2.1	1.44 V	0	46.20	5.70
3	5150.00	72.7 PK	74.0	-1.3	1.34 V	348	66.70	6.00
4	5150.00	52.5 AV	54.0	-1.5	1.34 V	348	46.50	6.00
5	*5180.00	114.8 PK			1.51 V	227	75.30	39.50
6	*5180.00	104.8 AV			1.51 V	227	65.30	39.50
7	#10360.00	60.6 PK	74.0	-13.4	1.25 V	271	42.20	18.40
8	#10360.00	47.6 AV	54.0	-6.4	1.25 V	271	29.20	18.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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	5000.00	57.0 PK	74.0	-17.0	1.08 H	210	51.30	5.70
2	5000.00	45.9 AV	54.0	-8.1	1.08 H	210	40.20	5.70
3	*5200.00	106.8 PK			1.03 H	215	67.20	39.60
4	*5200.00	96.1 AV			1.03 H	215	56.50	39.60
5	#10400.00	59.5 PK	74.0	-14.5	1.34 H	53	41.00	18.50
6	#10400.00	46.5 AV	54.0	-7.5	1.34 H	53	28.00	18.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	60.4 PK	74.0	-13.6	1.43 V	0	54.70	5.70
2	5000.00	52.7 AV	54.0	-1.3	1.43 V	0	47.00	5.70
3	*5200.00	116.8 PK			1.42 V	304	77.20	39.60
4	*5200.00	106.7 AV			1.42 V	304	67.10	39.60
5	#10400.00	61.0 PK	74.0	-13.0	1.49 V	301	42.50	18.50
6	#10400.00	47.9 AV	54.0	-6.1	1.49 V	301	29.40	18.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	5000.00	56.8 PK	74.0	-17.2	1.07 H	210	51.10	5.70
2	5000.00	45.0 AV	54.0	-9.0	1.07 H	210	39.30	5.70
3	*5240.00	106.6 PK			1.06 H	213	67.00	39.60
4	*5240.00	96.6 AV			1.06 H	213	57.00	39.60
5	5350.00	56.5 PK	74.0	-17.5	1.24 H	184	50.40	6.10
6	5350.00	44.7 AV	54.0	-9.3	1.24 H	184	38.60	6.10
7	#10480.00	59.8 PK	74.0	-14.2	1.17 H	114	40.80	19.00
8	#10480.00	47.0 AV	54.0	-7.0	1.17 H	114	28.00	19.00
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	5000.00	60.3 PK	74.0	-13.7	1.45 V	0	54.60	5.70
2	5000.00	52.6 AV	54.0	-1.4	1.45 V	0	46.90	5.70
3	*5240.00	118.4 PK			1.58 V	37	78.80	39.60
4	*5240.00	108.0 AV			1.58 V	37	68.40	39.60
5	5350.00	57.7 PK	74.0	-16.3	1.38 V	237	51.60	6.10
6	5350.00	46.8 AV	54.0	-7.2	1.38 V	237	40.70	6.10
7	#10480.00	61.0 PK	74.0	-13.0	1.39 V	279	42.00	19.00
8	#10480.00	48.1 AV	54.0	-5.9	1.39 V	279	29.10	19.00

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The 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	5000.00	56.6 PK	74.0	-17.4	1.06 H	87	50.90	5.70
2	5000.00	43.9 AV	54.0	-10.1	1.06 H	87	38.20	5.70
3	5150.00	56.5 PK	74.0	-17.5	1.16 H	192	50.50	6.00
4	5150.00	45.8 AV	54.0	-8.2	1.16 H	192	39.80	6.00
5	*5190.00	98.3 PK			1.13 H	214	58.80	39.50
6	*5190.00	88.5 AV			1.13 H	214	49.00	39.50
7	#10380.00	59.7 PK	74.0	-14.3	1.11 H	82	41.20	18.50
8	#10380.00	48.0 AV	54.0	-6.0	1.11 H	82	29.50	18.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	59.4 PK	74.0	-14.6	1.43 V	129	53.70	5.70
2	5000.00	53.3 AV	54.0	-0.7	1.43 V	129	47.60	5.70
3	5150.00	72.5 PK	74.0	-1.5	1.47 V	358	66.50	6.00
4	5150.00	52.1 AV	54.0	-1.9	1.47 V	358	46.10	6.00
5	*5190.00	109.4 PK			1.32 V	224	69.90	39.50
6	*5190.00	99.1 AV			1.32 V	224	59.60	39.50
7	#10380.00	60.8 PK	74.0	-13.2	1.33 V	266	42.30	18.50
8	#10380.00	47.5 AV	54.0	-6.5	1.33 V	266	29.00	18.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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	5000.00	57.3 PK	74.0	-16.7	1.32 H	208	51.60	5.70
2	5000.00	46.2 AV	54.0	-7.8	1.32 H	208	40.50	5.70
3	*5230.00	102.2 PK			1.00 H	210	62.60	39.60
4	*5230.00	93.0 AV			1.00 H	210	53.40	39.60
5	5350.00	56.6 PK	74.0	-17.4	1.22 H	108	50.50	6.10
6	5350.00	45.2 AV	54.0	-8.8	1.22 H	108	39.10	6.10
7	#10460.00	60.2 PK	74.0	-13.8	1.17 H	61	41.30	18.90
8	#10460.00	48.3 AV	54.0	-5.7	1.17 H	61	29.40	18.90
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	5000.00	60.5 PK	74.0	-13.5	1.42 V	0	54.80	5.70
2	5000.00	52.7 AV	54.0	-1.3	1.42 V	0	47.00	5.70
3	*5230.00	113.6 PK			1.43 V	303	74.00	39.60
4	*5230.00	102.9 AV			1.43 V	303	63.30	39.60
5	5350.00	56.7 PK	74.0	-17.3	1.29 V	55	50.60	6.10
6	5350.00	45.6 AV	54.0	-8.4	1.29 V	55	39.50	6.10
7	#10460.00	60.8 PK	74.0	-13.2	1.33 V	140	41.90	18.90
8	#10460.00	47.7 AV	54.0	-6.3	1.33 V	140	28.80	18.90

REMARKS:

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

802.11a

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	5000.00	56.5 PK	74.0	-17.5	1.43 H	153	50.80	5.70
2	5000.00	45.6 AV	54.0	-8.4	1.43 H	153	39.90	5.70
3	#5714.00	59.0 PK	74.0	-15.0	1.30 H	120	52.20	6.80
4	#5714.00	48.0 AV	54.0	-6.0	1.30 H	120	41.20	6.80
5	#5722.00	66.3 PK	78.2	-11.9	1.34 H	125	59.50	6.80
6	#5725.00	61.6 PK	78.2	-16.6	1.34 H	125	54.80	6.80
7	*5745.00	101.3 PK			1.32 H	127	60.90	40.40
8	*5745.00	91.0 AV			1.32 H	127	50.60	40.40
9	11490.00	60.4 PK	74.0	-13.6	1.00 H	210	42.00	18.40
10	11490.00	47.4 AV	54.0	-6.6	1.00 H	210	29.00	18.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	61.0 PK	74.0	-13.0	1.53 V	42	55.30	5.70
2	5000.00	53.1 AV	54.0	-0.9	1.53 V	42	47.40	5.70
3	#5714.00	71.4 PK	74.0	-2.6	1.52 V	135	64.60	6.80
4	#5714.00	49.0 AV	54.0	-5.0	1.52 V	135	42.20	6.80
5	#5722.00	77.7 PK	78.2	-0.5	1.62 V	219	70.90	6.80
6	#5725.00	69.3 PK	78.2	-8.9	1.62 V	219	62.50	6.80
7	*5745.00	115.9 PK			2.05 V	353	75.50	40.40
8	*5745.00	105.9 AV			2.05 V	353	65.50	40.40
9	11490.00	60.8 PK	74.0	-13.2	1.60 V	106	42.40	18.40
10	11490.00	47.7 AV	54.0	-6.3	1.60 V	106	29.30	18.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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	5000.00	57.3 PK	74.0	-16.7	1.41 H	223	51.60	5.70
2	5000.00	46.0 AV	54.0	-8.0	1.41 H	223	40.30	5.70
3	*5785.00	100.9 PK			1.33 H	124	60.40	40.50
4	*5785.00	90.8 AV			1.33 H	124	50.30	40.50
5	11570.00	60.5 PK	74.0	-13.5	1.10 H	201	42.10	18.40
6	11570.00	47.1 AV	54.0	-6.9	1.10 H	201	28.70	18.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	61.6 PK	74.0	-12.4	1.40 V	43	55.90	5.70
2	5000.00	53.6 AV	54.0	-0.4	1.40 V	43	47.90	5.70
3	*5785.00	116.0 PK			2.03 V	312	75.50	40.50
4	*5785.00	106.3 AV			2.03 V	312	65.80	40.50
5	11570.00	60.4 PK	74.0	-13.6	1.44 V	142	42.00	18.40
6	11570.00	47.5 AV	54.0	-6.5	1.44 V	142	29.10	18.40

REMARKS:

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

CHANNEL	TX Channel 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	5000.00	58.7 PK	74.0	-15.3	1.35 H	200	53.00	5.70
2	5000.00	46.9 AV	54.0	-7.1	1.35 H	200	41.20	5.70
3	*5825.00	102.0 PK			1.47 H	124	61.50	40.50
4	*5825.00	92.2 AV			1.47 H	124	51.70	40.50
5	#5850.00	57.3 PK	78.2	-20.9	1.43 H	129	50.40	6.90
6	#5853.00	60.5 PK	78.2	-17.7	1.43 H	129	53.50	7.00
7	#5861.00	57.6 PK	74.0	-16.4	1.47 H	124	50.60	7.00
8	#5861.00	46.5 AV	54.0	-7.5	1.47 H	124	39.50	7.00
9	11650.00	60.8 PK	74.0	-13.2	1.09 H	23	41.90	18.90
10	11650.00	48.0 AV	54.0	-6.0	1.09 H	23	29.10	18.90

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	5000.00	62.4 PK	74.0	-11.6	1.29 V	43	56.70	5.70
2	5000.00	53.2 AV	54.0	-0.8	1.29 V	43	47.50	5.70
3	*5825.00	114.9 PK			2.00 V	265	74.40	40.50
4	*5825.00	105.1 AV			2.00 V	265	64.60	40.50
5	#5850.00	64.5 PK	78.2	-13.7	1.60 V	130	57.60	6.90
6	#5853.00	65.2 PK	78.2	-13.0	1.60 V	130	58.20	7.00
7	#5861.00	49.7 PK	74.0	-24.3	1.58 V	124	42.70	7.00
8	#5861.00	49.2 AV	54.0	-4.8	1.58 V	124	42.20	7.00
9	11650.00	61.4 PK	74.0	-12.6	1.30 V	354	42.50	18.90
10	11650.00	48.4 AV	54.0	-5.6	1.30 V	354	29.50	18.90

REMARKS:

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

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5714.00	57.9 PK	74.0	-16.1	1.47 H	110	51.10	6.80
2	#5714.00	46.8 AV	54.0	-7.2	1.47 H	110	40.00	6.80
3	#5722.00	65.0 PK	78.2	-13.2	1.38 H	130	58.20	6.80
4	#5725.00	61.1 PK	78.2	-17.1	1.38 H	130	54.30	6.80
5	*5745.00	99.3 PK			1.47 H	109	58.90	40.40
6	*5745.00	89.5 AV			1.47 H	109	49.10	40.40
7	11490.00	60.6 PK	74.0	-13.4	1.15 H	34	42.20	18.40
8	11490.00	47.5 AV	54.0	-6.5	1.15 H	34	29.10	18.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	62.8 PK	74.0	-11.2	1.44 V	359	57.10	5.70
2	5000.00	53.4 AV	54.0	-0.6	1.44 V	359	47.70	5.70
3	#5714.00	69.6 PK	74.0	-4.4	1.45 V	210	62.80	6.80
4	#5714.00	50.3 AV	54.0	-3.7	1.45 V	210	43.50	6.80
5	#5722.00	77.4 PK	78.2	-0.8	1.44 V	37	70.60	6.80
6	#5725.00	67.7 PK	78.2	-10.5	1.44 V	37	60.90	6.80
7	*5745.00	115.7 PK			1.72 V	258	75.30	40.40
8	*5745.00	105.7 AV			1.72 V	258	65.30	40.40
9	11490.00	61.0 PK	74.0	-13.0	1.33 V	264	42.60	18.40
10	11490.00	47.8 AV	54.0	-6.2	1.33 V	264	29.40	18.40

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
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	5000.00	56.1 PK	74.0	-17.9	1.44 H	236	50.40	5.70
2	5000.00	45.2 AV	54.0	-8.8	1.44 H	236	39.50	5.70
3	*5785.00	102.2 PK			1.44 H	127	61.70	40.50
4	*5785.00	92.3 AV			1.44 H	127	51.80	40.50
5	11570.00	60.0 PK	74.0	-14.0	1.19 H	357	41.60	18.40
6	11570.00	47.1 AV	54.0	-6.9	1.19 H	357	28.70	18.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	61.2 PK	74.0	-12.8	1.46 V	0	55.50	5.70
2	5000.00	52.9 AV	54.0	-1.1	1.46 V	0	47.20	5.70
3	*5785.00	114.9 PK			1.98 V	356	74.40	40.50
4	*5785.00	105.4 AV			1.98 V	356	64.90	40.50
5	11570.00	60.6 PK	74.0	-13.4	1.37 V	354	42.20	18.40
6	11570.00	47.4 AV	54.0	-6.6	1.37 V	354	29.00	18.40

REMARKS:

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

CHANNEL	TX Channel 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	5000.00	56.7 PK	74.0	-17.3	1.30 H	128	51.00	5.70
2	5000.00	44.8 AV	54.0	-9.2	1.30 H	128	39.10	5.70
3	*5825.00	101.8 PK			1.38 H	127	61.30	40.50
4	*5825.00	91.6 AV			1.38 H	127	51.10	40.50
5	#5850.00	55.4 PK	78.2	-22.8	1.42 H	163	48.50	6.90
6	#5853.00	58.0 PK	78.2	-20.2	1.42 H	163	51.00	7.00
7	#5861.00	57.3 PK	74.0	-16.7	1.38 H	127	50.30	7.00
8	#5861.00	46.1 AV	54.0	-7.9	1.38 H	127	39.10	7.00
9	11650.00	59.9 PK	74.0	-14.1	1.00 H	55	41.00	18.90
10	11650.00	47.0 AV	54.0	-7.0	1.00 H	55	28.10	18.90

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	5000.00	61.9 PK	74.0	-12.1	1.45 V	359	56.20	5.70
2	5000.00	53.2 AV	54.0	-0.8	1.45 V	359	47.50	5.70
3	*5825.00	114.0 PK			1.96 V	314	73.50	40.50
4	*5825.00	104.3 AV			1.96 V	314	63.80	40.50
5	#5850.00	62.3 PK	78.2	-15.9	1.73 V	279	55.40	6.90
6	#5853.00	66.0 PK	78.2	-12.2	1.73 V	279	59.00	7.00
7	#5861.00	58.1 PK	74.0	-15.9	1.70 V	290	51.10	7.00
8	#5861.00	47.2 AV	54.0	-6.8	1.70 V	290	40.20	7.00
9	11650.00	60.9 PK	74.0	-13.1	1.34 V	301	42.00	18.90
10	11650.00	47.8 AV	54.0	-6.2	1.34 V	301	28.90	18.90

REMARKS:

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

802.11n (HT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	58.2 PK	74.0	-15.8	1.50 H	244	52.50	5.70
2	5000.00	46.5 AV	54.0	-7.5	1.50 H	244	40.80	5.70
3	#5722.00	59.8 PK	78.2	-18.4	1.35 H	112	53.00	6.80
4	#5725.00	60.8 PK	78.2	-17.4	1.35 H	112	54.00	6.80
5	*5755.00	96.1 PK			1.33 H	128	55.60	40.50
6	*5755.00	86.1 AV			1.33 H	128	45.60	40.50
7	11510.00	59.5 PK	74.0	-14.5	1.09 H	322	41.20	18.30
8	11510.00	46.3 AV	54.0	-7.7	1.09 H	322	28.00	18.30
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	5000.00	60.5 PK	74.0	-13.5	1.31 V	42	54.80	5.70
2	5000.00	51.9 AV	54.0	-2.1	1.31 V	42	46.20	5.70
3	#5714.00	69.9 PK	74.0	-4.1	2.02 V	305	63.10	6.80
4	#5714.00	53.0 AV	54.0	-1.0	2.02 V	305	46.20	6.80
5	#5722.00	72.4 PK	78.2	-5.8	1.96 V	283	65.60	6.80
6	#5725.00	62.8 PK	78.2	-15.4	1.96 V	283	56.00	6.80
7	*5755.00	107.9 PK			1.99 V	354	67.40	40.50
8	*5755.00	98.3 AV			1.99 V	354	57.80	40.50
9	11510.00	59.9 PK	74.0	-14.1	1.60 V	129	41.60	18.30
10	11510.00	46.8 AV	54.0	-7.2	1.60 V	129	28.50	18.30

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)
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	5000.00	56.2 PK	74.0	-17.8	1.25 H	160	50.50	5.70
2	5000.00	44.6 AV	54.0	-9.4	1.25 H	160	38.90	5.70
3	*5795.00	118.4 PK			1.31 H	129	77.90	40.50
4	*5795.00	108.4 AV			1.31 H	129	67.90	40.50
5	#5850.00	58.4 PK	78.2	-19.8	1.50 H	159	51.50	6.90
6	#5853.00	60.6 PK	78.2	-17.6	1.50 H	159	53.60	7.00
7	#5861.00	58.6 PK	74.0	-15.4	1.33 H	130	51.60	7.00
8	#5861.00	47.3 AV	54.0	-6.7	1.33 H	130	40.30	7.00
9	11590.00	59.6 PK	74.0	-14.4	1.03 H	49	41.10	18.50
10	11590.00	46.7 AV	54.0	-7.3	1.03 H	49	28.20	18.50

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5000.00	60.2 PK	74.0	-13.8	1.45 V	357	54.50	5.70
2	5000.00	53.0 AV	54.0	-1.0	1.45 V	357	47.30	5.70
3	*5795.00	108.3 PK			1.96 V	313	67.80	40.50
4	*5795.00	98.3 AV			1.96 V	313	57.80	40.50
5	#5850.00	59.5 PK	78.2	-18.7	1.73 V	316	52.60	6.90
6	#5853.00	65.6 PK	78.2	-12.6	1.73 V	316	58.60	7.00
7	#5861.00	59.6 PK	74.0	-14.4	1.63 V	323	52.60	7.00
8	#5861.00	48.1 AV	54.0	-5.9	1.63 V	323	41.10	7.00
9	11590.00	60.2 PK	74.0	-13.8	1.50 V	357	41.70	18.50
10	11590.00	47.3 AV	54.0	-6.7	1.50 V	357	28.80	18.50

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
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.

BELOW 1GHz WORST-CASE DATA

Test Mode A

802.11a

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	375.98	34.2 QP	46.0	-11.8	1.00 H	118	45.20	-11.00
2	500.42	32.9 QP	46.0	-13.1	1.49 H	160	41.30	-8.40
3	624.85	36.5 QP	46.0	-9.5	1.49 H	183	42.10	-5.60
4	751.23	34.1 QP	46.0	-11.9	1.00 H	45	37.30	-3.20
5	875.67	36.9 QP	46.0	-9.1	1.49 H	146	38.00	-1.10
6	1000.10	38.1 QP	54.0	-15.9	1.49 H	193	37.30	0.80
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.62	37.5 QP	40.0	-2.5	1.50 V	66	52.50	-15.00
2	49.34	38.0 QP	40.0	-2.0	1.50 V	19	52.40	-14.40
3	375.98	30.9 QP	46.0	-15.1	1.00 V	211	41.90	-11.00
4	500.42	35.8 QP	46.0	-10.2	1.00 V	153	44.20	-8.40
5	624.85	33.7 QP	46.0	-12.3	1.00 V	7	39.30	-5.60
6	875.67	32.2 QP	46.0	-13.8	1.00 V	199	33.30	-1.10

REMARKS:

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

Test Mode B

802.11a

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	94.06	35.9 QP	43.5	-7.6	1.99 H	99	55.50	-19.60
2	375.98	33.5 QP	46.0	-12.5	1.00 H	118	44.50	-11.00
3	500.42	32.6 QP	46.0	-13.4	1.99 H	21	41.00	-8.40
4	624.85	37.4 QP	46.0	-8.6	1.50 H	193	43.00	-5.60
5	751.23	35.6 QP	46.0	-10.4	1.00 H	29	38.80	-3.20
6	875.67	37.8 QP	46.0	-8.2	1.50 H	163	38.90	-1.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	39.22	34.6 QP	40.0	-5.4	1.00 V	57	49.70	-15.10
2	49.16	37.0 QP	40.0	-3.0	1.00 V	16	51.40	-14.40
3	92.12	37.3 QP	43.5	-6.2	1.00 V	98	57.30	-20.00
4	220.44	34.6 QP	46.0	-11.4	1.00 V	241	50.90	-16.30
5	374.04	35.6 QP	46.0	-10.4	1.49 V	163	46.60	-11.00
6	500.42	35.9 QP	46.0	-10.1	1.00 V	96	44.30	-8.40

REMARKS:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	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 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 11, 2014	Nov. 10, 2015
RF signal cable Woken	5D-FB	Cable-HYC01-01	Dec. 26, 2014	Dec. 25, 2015
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 02, 2015	Mar. 01, 2016
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 21, 2014	Jul. 20, 2015
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

Notes: 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 HwaYa Shielded Room 1.

3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedure

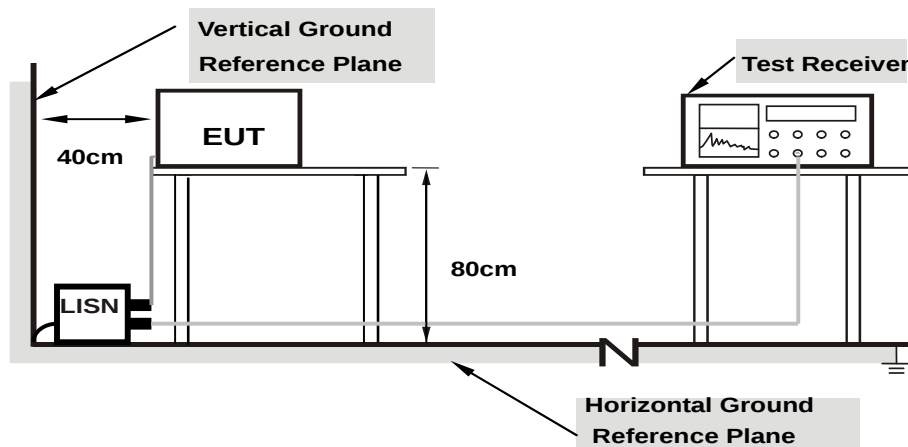
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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 levels under (Limit - 20dB) was not recorded.

NOTE: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Test Mode A

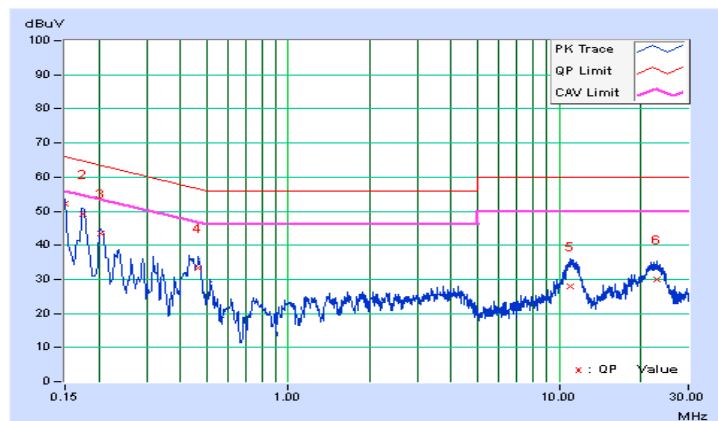
802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	----------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.05	52.11	42.57	52.16	42.62	66.00	56.00	-13.84	-13.38
2	0.17374	0.05	49.23	41.29	49.28	41.34	64.78	54.78	-15.49	-13.43
3	0.20474	0.06	43.38	36.23	43.44	36.29	63.42	53.42	-19.98	-17.13
4	0.46669	0.06	33.15	27.58	33.21	27.64	56.57	46.57	-23.36	-18.93
5	10.98461	0.49	27.45	22.11	27.94	22.60	60.00	50.00	-32.06	-27.40
6	22.99613	0.98	29.05	23.78	30.03	24.76	60.00	50.00	-29.97	-25.24

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.

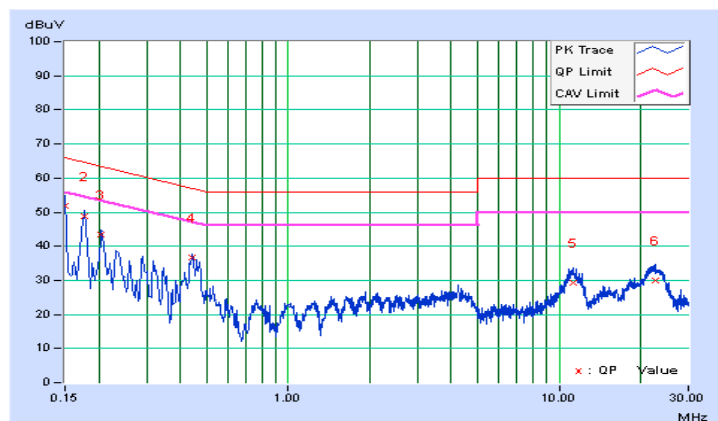


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.05	51.93	42.40	51.98	42.45	66.00	56.00	-14.02	-13.55
2	0.17737	0.05	48.82	40.84	48.87	40.89	64.61	54.61	-15.74	-13.72
3	0.20474	0.05	43.37	36.59	43.42	36.64	63.42	53.42	-20.00	-16.78
4	0.44325	0.06	36.49	31.38	36.55	31.44	57.00	47.00	-20.45	-15.56
5	11.25831	0.46	28.88	23.52	29.34	23.98	60.00	50.00	-30.66	-26.02
6	22.58949	0.77	29.29	24.21	30.06	24.98	60.00	50.00	-29.94	-25.02

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.



Test Mode B

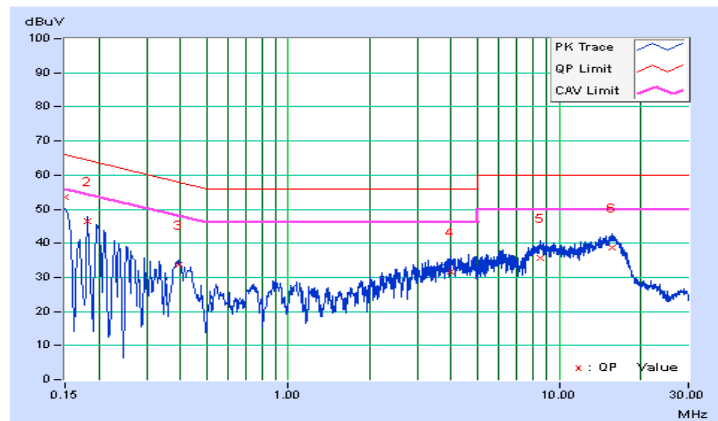
802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	----------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	0.05	53.48	39.25	53.53	39.30	66.00	56.00	-12.47	-16.70
2	0.18128	0.06	46.44	30.44	46.50	30.50	64.43	54.43	-17.93	-23.93
3	0.39635	0.06	33.61	27.20	33.67	27.26	57.93	47.93	-24.26	-20.67
4	3.98962	0.19	31.51	24.28	31.70	24.47	56.00	46.00	-24.30	-21.53
5	8.56041	0.39	35.24	29.08	35.63	29.47	60.00	50.00	-24.37	-20.53
6	15.69225	0.71	37.95	32.29	38.66	33.00	60.00	50.00	-21.34	-17.00

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.

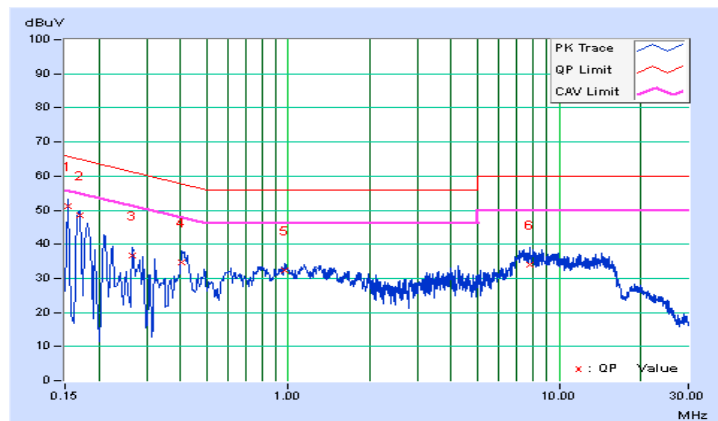


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	0.05	51.17	35.49	51.22	35.54	65.79	55.79	-14.57	-20.25
2	0.16955	0.05	48.40	32.06	48.45	32.11	64.98	54.98	-16.53	-22.87
3	0.26730	0.05	36.57	24.89	36.62	24.94	61.20	51.20	-24.58	-26.26
4	0.40415	0.06	34.68	24.07	34.74	24.13	57.77	47.77	-23.03	-23.64
5	0.97597	0.08	32.09	25.64	32.17	25.72	56.00	46.00	-23.83	-20.28
6	7.79014	0.34	33.65	27.09	33.99	27.43	60.00	50.00	-26.01	-22.57

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.



4.3 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)

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

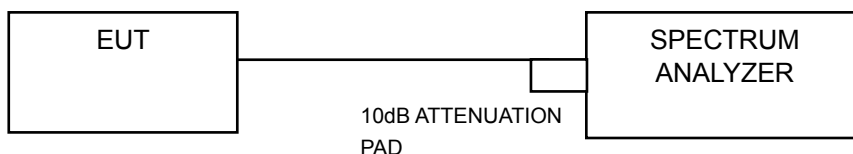
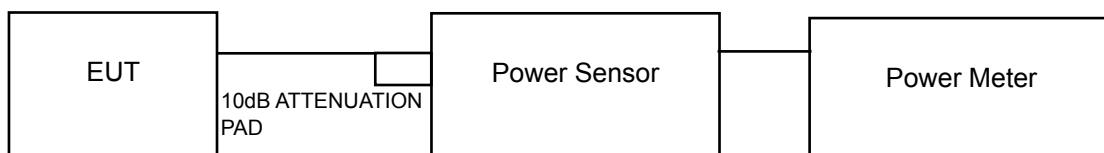
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR AVERAGE POWER MEASUREMENT

For 802.11a, 802.11n (HT20), 802.11n (HT40)

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.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

POWER OUTPUT:

802.11a

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
36	5180	14.56	14.50	14.99	88.310	19.46	30.00	Pass
40	5200	15.71	16.62	16.71	130.040	21.14	30.00	Pass
48	5240	14.88	16.49	16.54	120.409	20.81	30.00	Pass
149	5745	11.28	12.12	12.02	45.643	16.59	30.00	Pass
157	5785	10.84	12.11	11.43	42.289	16.26	30.00	Pass
165	5825	9.71	11.54	11.61	38.098	15.81	30.00	Pass

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
36	5180	14.08	13.48	14.59	76.644	18.84	30.00	Pass
40	5200	15.22	16.04	16.54	118.527	20.74	30.00	Pass
48	5240	14.18	16.00	16.03	106.080	20.26	30.00	Pass
149	5745	10.17	10.85	11.56	36.883	15.67	30.00	Pass
157	5785	10.38	12.03	11.53	41.096	16.14	30.00	Pass
165	5825	9.54	11.50	11.07	35.914	15.55	30.00	Pass

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2				
38	5190	10.76	11.11	11.87	40.206	16.04	30.00	Pass
46	5230	14.64	16.51	15.94	113.142	20.54	30.00	Pass
151	5755	8.06	8.55	8.85	21.232	13.27	30.00	Pass
159	5795	8.31	9.62	9.82	25.532	14.07	30.00	Pass

26dB BANDWIDTH:

802.11a

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
36	5180	27.89	25.99	28.35	PASS
40	5200	33.38	32.61	34.29	PASS
48	5240	34.44	34.32	37.42	PASS

802.11n (HT20)

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
36	5180	26.06	25.64	25.25	PASS
40	5200	33.22	33.89	35.94	PASS
48	5240	34.88	29.83	35.24	PASS

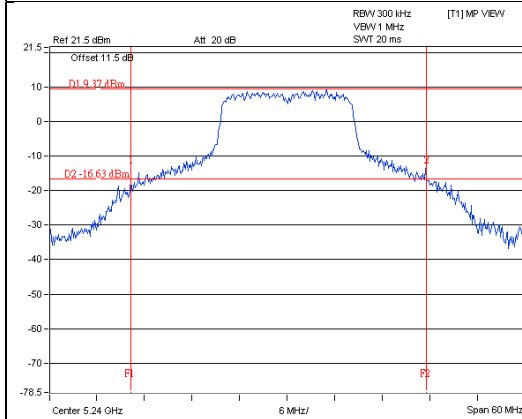
802.11n (HT40)

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
38	5190	50.44	50.65	48.20	PASS
46	5230	88.89	85.44	80.55	PASS

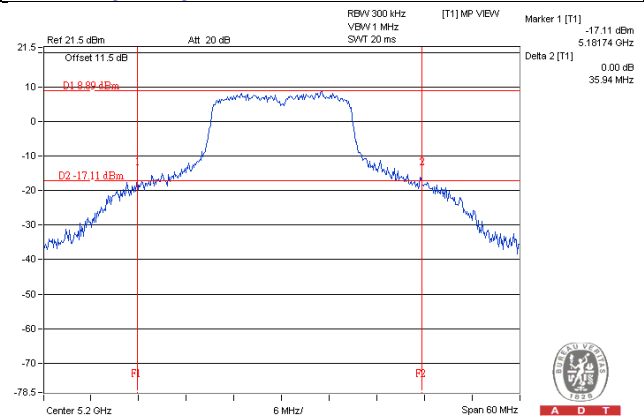
SPECTRUM PLOT OF WORST VALUE

802.11a

802.11n (HT20)

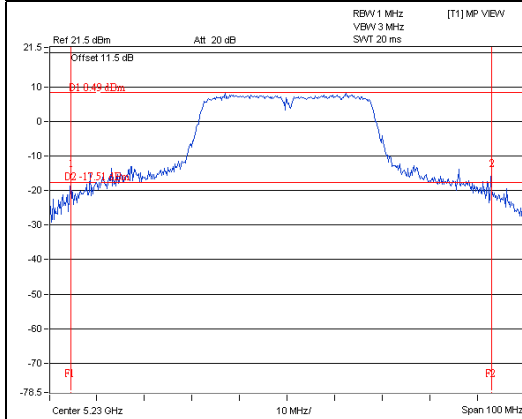


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802.11n (HT40)



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OCCUPIED BANDWIDTH:

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
36	5180	16.92	16.92	16.92	PASS
40	5200	17.40	17.16	17.88	PASS
48	5240	17.28	17.16	18.36	PASS
149	5745	16.68	16.68	16.80	PASS
157	5785	16.68	16.68	16.80	PASS
165	5825	16.80	16.68	16.80	PASS

802.11n (HT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
36	5180	18.00	17.88	17.88	PASS
40	5200	18.00	18.12	18.24	PASS
48	5240	18.36	18.00	18.24	PASS
149	5745	17.76	16.68	17.88	PASS
157	5785	17.88	16.80	18.00	PASS
165	5825	17.88	16.56	17.76	PASS

802.11n (HT40)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			Pass / Fail
		Chain 0	Chain 1	Chain 2	
38	5190	36.96	37.08	36.72	PASS
46	5230	37.32	36.96	37.08	PASS
151	5755	36.96	36.72	36.72	PASS
159	5795	36.96	36.72	36.72	PASS

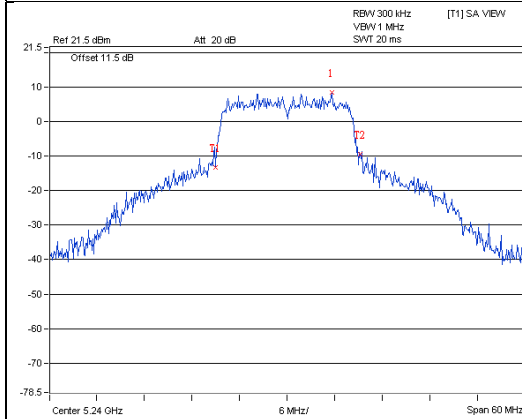


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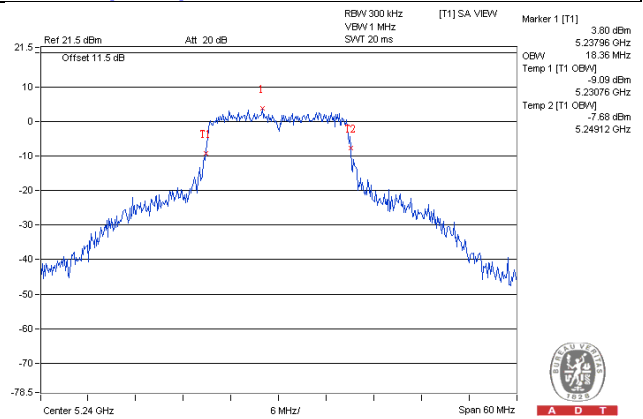
SPECTRUM PLOT OF WORST VALUE

802.11a

802.11n (HT20)

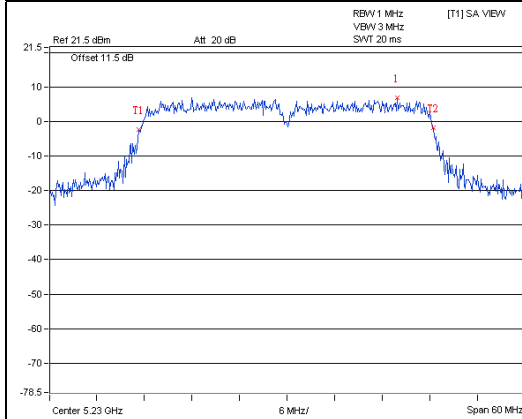


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A D T

802.11n (HT40)



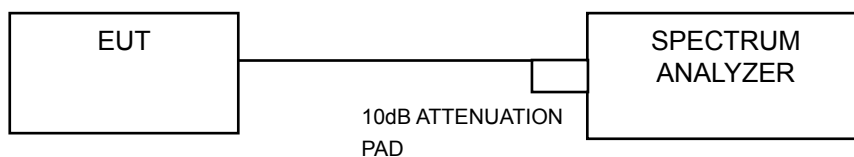
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4.4 Peak Power Spectral Density Measurement

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 Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedure

For U-NII-1 band:

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1MHz, Set VBW $\geq$ 3MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value and add 10 log (1/duty cycle)

For U-NII-3 band:

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 500 kHz, Set VBW $\geq$ 3 RBW, Detector = RMS
- 3) Sweep time = auto, trigger set to "free run".
- 4) Trace average at least 100 traces in power averaging mode.
- 5) Record the max value and add 10 log (1/duty cycle)
- 6) 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 = $10\log(500\text{kHz}/300\text{kHz})$

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Condition

Same as Item 4.3.6.

4.4.7 Test Results

For U-NII-1 Band

802.11a

Chan.	Freq. (MHz)	PSD (dBm)			Total PSD w/o Duty Factor (dBm)	Duty Factor	Total PSD with Duty Factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2					
36	5180	-0.63	0.65	1.98	5.57	0.10	5.67	14.23	Pass
40	5200	0.76	1.95	3.70	7.08	0.10	7.18	14.23	Pass
48	5240	0.21	2.77	3.42	7.11	0.10	7.21	14.23	Pass

NOTE: 1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. For U-NII-1 Band:

Directional gain = $4\text{dBi} + 10\log(3) = 8.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $17-(8.77-6) = 14.23\text{dBm}$.

3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Chan.	Freq. (MHz)	PSD (dBm)			Total PSD w/o Duty Factor (dBm)	Duty Factor	Total PSD with Duty Factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2					
36	5180	-1.45	-0.24	0.94	4.63	0.16	4.79	14.23	Pass
40	5200	0.14	1.66	3.03	6.54	0.16	6.70	14.23	Pass
48	5240	-0.41	2.35	2.89	6.60	0.16	6.76	14.23	Pass

NOTE: 1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. For U-NII-1 Band:

Directional gain = $4\text{dBi} + 10\log(3) = 8.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $17-(8.77-6) = 14.23\text{dBm}$.

3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD (dBm)			Total PSD w/o Duty Factor (dBm)	Duty Factor	Total PSD with Duty Factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2					
38	5190	-7.84	-6.54	-4.82	-1.45	0.21	-1.24	14.23	Pass
46	5230	-3.26	-1.07	-0.02	3.52	0.21	3.73	14.23	Pass

NOTE: 1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

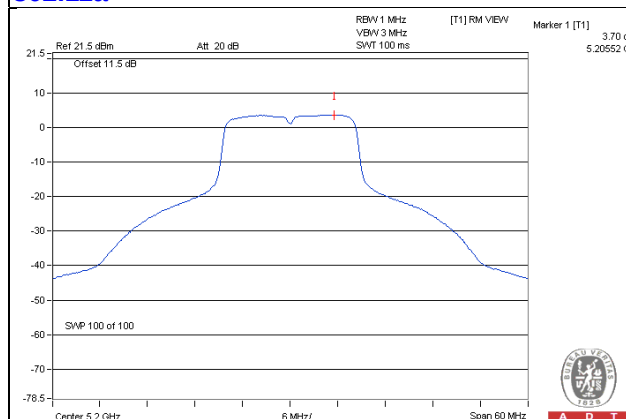
2. For U-NII-1 Band:

Directional gain = $4\text{dBi} + 10\log(3) = 8.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $17-(8.77-6) = 14.23\text{dBm}$.

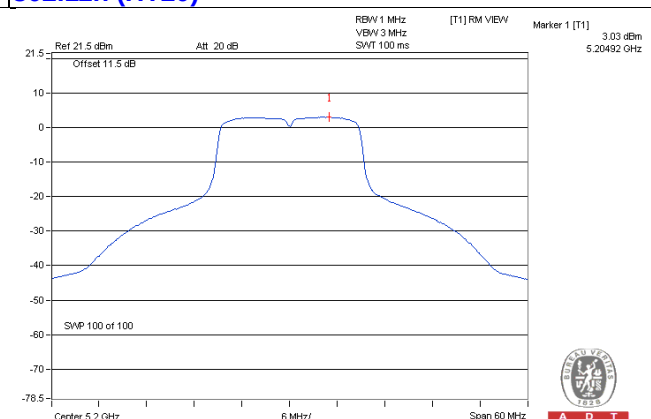
3. Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

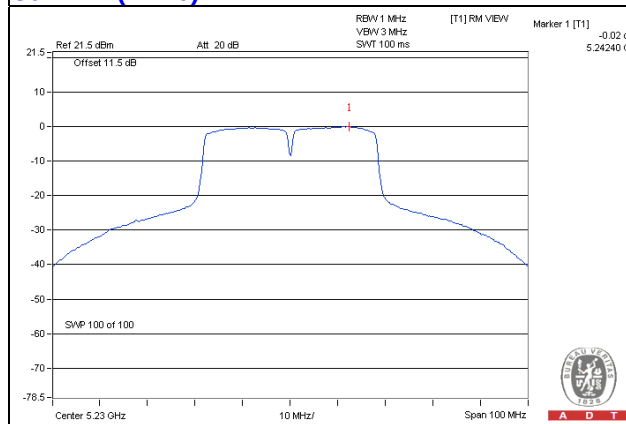
802.11a



802.11n (HT20)



802.11n (HT40)



For U-NII-3 Band

802.11a

TX chain	Chan.	Freq. (MHz)	PSD (dBm /300kHz)	PSD (dBm /500kHz)	10 log (N=3) dB	Duty Factor	Total PSD (dBm /500kHz)	Limit (dBm /500kHz)	Pass /Fail
0	149	5745	-10.31	-8.09	4.77	0.10	-3.22	27.23	Pass
	157	5785	-11.54	-9.32	4.77	0.10	-4.45	27.23	Pass
	165	5825	-12.96	-10.74	4.77	0.10	-5.87	27.23	Pass
1	149	5745	-10.72	-8.50	4.77	0.10	-3.63	27.23	Pass
	157	5785	-11.16	-8.94	4.77	0.10	-4.07	27.23	Pass
	165	5825	-11.45	-9.23	4.77	0.10	-4.36	27.23	Pass
2	149	5745	-8.95	-6.73	4.77	0.10	-1.86	27.23	Pass
	157	5785	-9.84	-7.62	4.77	0.10	-2.75	27.23	Pass
	165	5825	-10.43	-8.21	4.77	0.10	-3.34	27.23	Pass

NOTE: 1. Directional gain = 4dBi + 10log(3) = 8.77dBi > 6dBi , so the power density limit shall be reduced to 30-(8.77-6) = 27.23dBm.

2. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

TX chain	Chan.	Freq. (MHz)	PSD (dBm /300kHz)	PSD (dBm /500kHz)	10 log (N=3) dB	Duty Factor	Total PSD (dBm /500kHz)	Limit (dBm /500kHz)	Pass /Fail
0	149	5745	-11.53	-9.31	4.77	0.16	-4.38	27.23	Pass
	157	5785	-11.70	-9.48	4.77	0.16	-4.55	27.23	Pass
	165	5825	-13.58	-11.36	4.77	0.16	-6.43	27.23	Pass
1	149	5745	-11.35	-9.13	4.77	0.16	-4.20	27.23	Pass
	157	5785	-10.81	-8.59	4.77	0.16	-3.66	27.23	Pass
	165	5825	-11.52	-9.30	4.77	0.16	-4.37	27.23	Pass
2	149	5745	-9.74	-7.52	4.77	0.16	-2.59	27.23	Pass
	157	5785	-9.85	-7.63	4.77	0.16	-2.70	27.23	Pass
	165	5825	-11.08	-8.86	4.77	0.16	-3.93	27.23	Pass

NOTE: 1. Directional gain = 4dBi + 10log(3) = 8.77dBi > 6dBi , so the power density limit shall be reduced to 30-(8.77-6) = 27.23dBm.

2. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

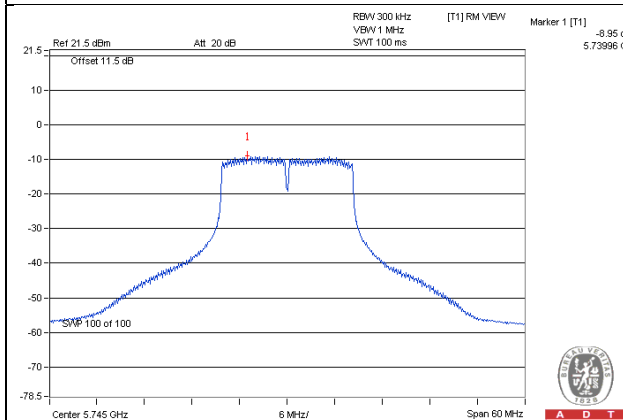
TX chain	Chan.	Freq. (MHz)	PSD (dBm /300kHz)	PSD (dBm /500kHz)	10 log (N=3) dB	Duty Factor	Total PSD (dBm /500kHz)	Limit (dBm /500kHz)	Pass /Fail
0	151	5755	-17.23	-15.01	4.77	0.21	-10.03	27.23	Pass
	159	5795	-17.41	-15.19	4.77	0.21	-10.21	27.23	Pass
1	151	5755	-17.52	-15.30	4.77	0.21	-10.32	27.23	Pass
	159	5795	-16.32	-14.10	4.77	0.21	-9.12	27.23	Pass
2	151	5755	-15.64	-13.42	4.77	0.21	-8.44	27.23	Pass
	159	5795	-14.97	-12.75	4.77	0.21	-7.77	27.23	Pass

NOTE: 1. Directional gain = $4\text{dBi} + 10\log(3) = 8.77\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (8.77 - 6) = 27.23\text{dBm}$.

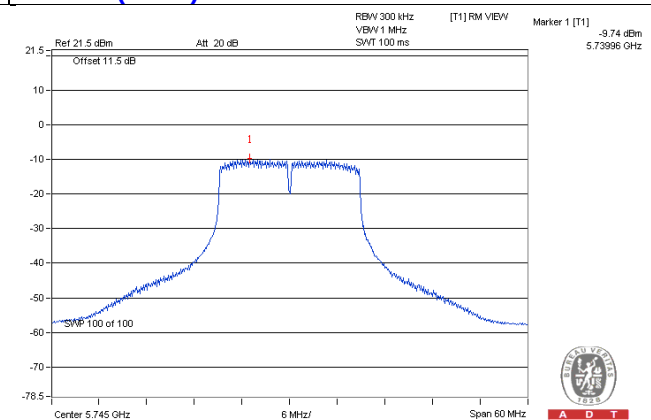
2. Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

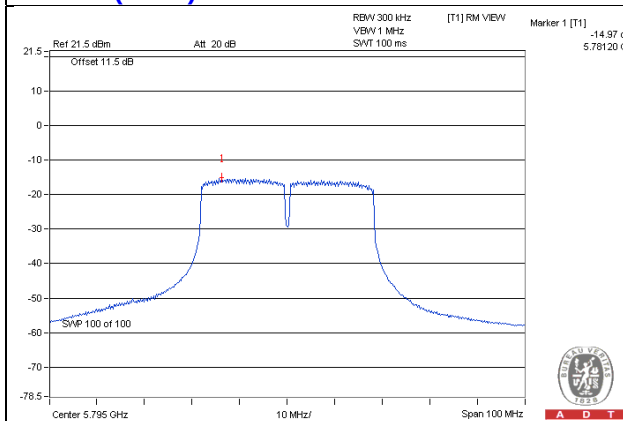
802.11a



802.11n (HT20)



802.11n (HT40)

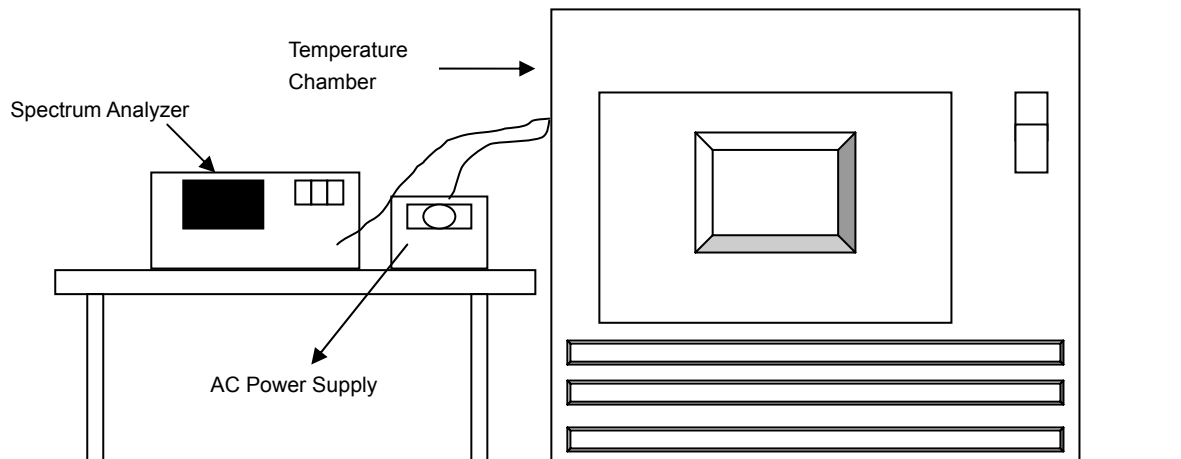


4.5 Frequency Stability

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 Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- 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.
- Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- 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.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 Test Results

FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5240MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	120	5240.0240	0.00046	5240.0202	0.00039	5240.0206	0.00039	5240.0244	0.00047
40	120	5240.0109	0.00021	5240.0138	0.00026	5240.0107	0.00020	5240.0128	0.00024
30	120	5240.0052	0.00010	5240.0024	0.00005	5240.0048	0.00009	5240.0063	0.00012
20	120	5239.9888	-0.00021	5239.9886	-0.00022	5239.9931	-0.00013	5239.9909	-0.00017
10	120	5239.9792	-0.00040	5239.9801	-0.00038	5239.9799	-0.00038	5239.9769	-0.00044
0	120	5239.9747	-0.00048	5239.9749	-0.00048	5239.9770	-0.00044	5239.9783	-0.00041
-10	120	5240.0199	0.00038	5240.0200	0.00038	5240.0210	0.00040	5240.0204	0.00039
-20	120	5240.0096	0.00018	5240.0100	0.00019	5240.0110	0.00021	5240.0087	0.00017
-30	120	5240.0162	0.00031	5240.0187	0.00036	5240.0187	0.00036	5240.0154	0.00029

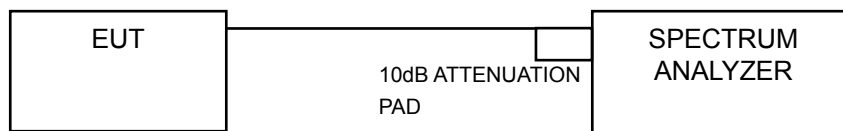
FREQUENCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5240MHz									
TEMP. (°C)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5239.9894	-0.00020	5239.9895	-0.00020	5239.9922	-0.00015	5239.9900	-0.00019
	120	5239.9888	-0.00021	5239.9886	-0.00022	5239.9931	-0.00013	5239.9909	-0.00017
	102	5239.9890	-0.00021	5239.9881	-0.00023	5239.9931	-0.00013	5239.9906	-0.00018

4.6 6dB Bandwidth Measurement

4.6.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
149	5745	16.37	16.40	16.38	0.5	PASS
157	5785	16.37	16.42	16.38	0.5	PASS
165	5825	16.37	16.34	16.38	0.5	PASS

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
149	5745	17.12	16.38	16.97	0.5	PASS
157	5785	17.40	16.39	16.97	0.5	PASS
165	5825	17.21	16.36	17.30	0.5	PASS

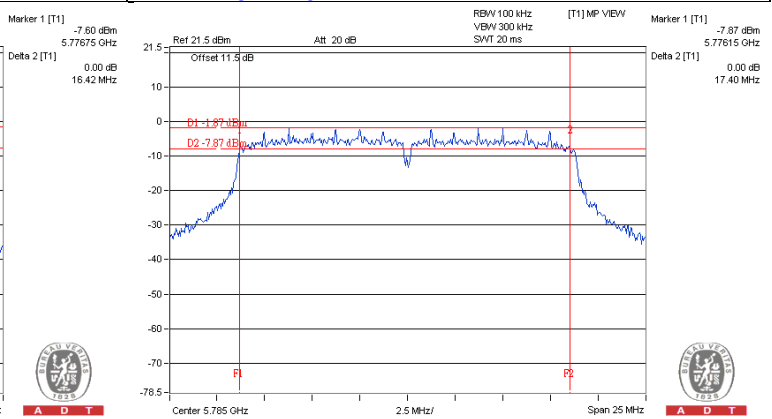
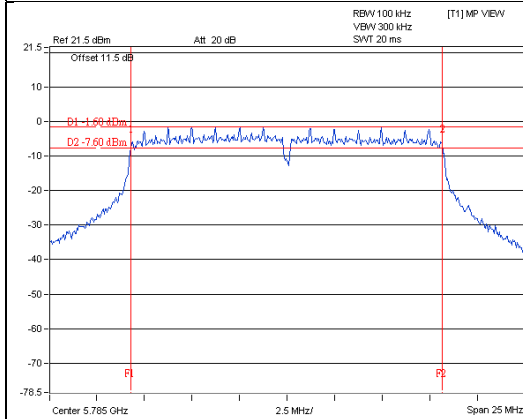
802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
151	5755	35.88	36.07	35.77	0.5	PASS
159	5795	35.81	35.47	35.57	0.5	PASS

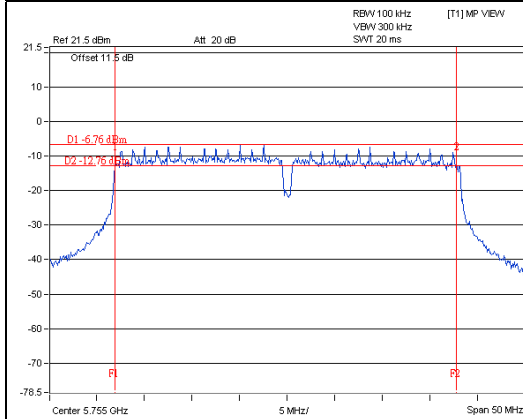
SPECTRUM PLOT OF WORST VALUE

802.11a

802.11n (HT20)



802.11n (HT40)



5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

Linko EMC/RF Lab

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Fax: 886-2-26051924

Hsin Chu EMC/RF Lab/Telecom Lab

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety

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.

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