FCC Test Report

Report No.: RF140220D04D

FCC ID: Q87-LAPAC1750

Test Model: LAPAC1750

Received Date: May 4, 2016

Test Date: May 4 ~ 11, 2016

Issued Date: May 19, 2016

Applicant: Linksys LLC

Address: 121 Theory Drive Irvine California 92617 United States

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

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Report Issue History Record

Issue No.	Description	Date Issued
RF140220D04	Original	Apr. 14, 2014
RF140220D04C	Upgraded the standard to section 15.407 under new rule for U-NII-1 and U-NII-3 band.	Apr. 7, 2016
RF140220D04D	Upgraded the standard to section 15.407 under new rule (16-24) for U-NII-1 and U-NII-3 band.	May 19, 2016

Release Control Record

Issue No.	Description	Date Issued
RF140220D04D	Original release	May 19, 2016

1 Certificate of Conformity

Product:	AC1750 Dual Band Access Point
Brand:	Linksys
Test Model:	LAPAC1750
Sample Status:	Engineering Sample
Applicant:	Linksys LLC
Test Date:	May 4 ~ 11, 2016
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:** May 19, 2016

(Celia Chen / Supervisor)

Approved by : _____ , **Date:** May 19, 2016

(Rex Lai / Assistant 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 -15.69dB at 0.16172 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.2dB at 5649.99 MHz
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 I-PEX not a standard connector.

NOTE: This report is prepared for FCC Class II change. (Upgraded the standard to section 15.407 under new rule (16-24) for U-NII-1 and U-NII-3 band)

*For U-NII-3 band compliance with rule part 15.407(b)(i), the OOBE test plots were recorded in Annex A.

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) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.78 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1000MHz	4.00 dB
Radiated Emissions above 1 GHz	1GHz ~ 40GHz	3.36 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	AC1750 Dual Band Access Point
Brand	Linksys
Test Model	LAPAC1750
Status of EUT	Engineering Sample
Driver Version	v1.1.00.005
Power Supply Rating	12Vdc from AC Adapter or 48Vdc from PoE
Modulation Type	64QAM, 16QAM, QPSK, BPSK 256QAM for OFDM in 11ac mode only
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 450Mbps 802.11ac: up to 1299.9Mbps
Operating Frequency	5180 ~ 5240MHz 5745 ~ 5825MHz
Number of Channel	**5180 ~ 5240MHz** 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz) **5745 ~ 5825MHz** 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz) 1 for 802.11ac (80MHz)
Output Power	**5180 ~ 5240MHz:** 579.752mW **5745 ~ 5825MHz:** 800.055mW
Antenna Type	PIFA antenna with 2dBi gain
Antenna Connector	N/A
Accessory Device	Adapter
Data Cable Supplied	N/A

Note:

1. This report is a supplementary report of RF140220D04 and RF140220D04-1. The differences between them are as below information:
   - ✧ Upgraded the standard to section 15.407 under new rule (16-24) for U-NII-1 and U-NII-3 band

2. According to above conditions, all test items of U-NII-1 and U-NII-3 band needs to be performed. And all data was verified to meet the requirements.

3. This report is prepared for FCC class II permissive change.

4. The EUT incorporates a MIMO function. Physically, the EUT provides three completed transmitters and three receivers.

Modulation Mode	TX FUNCTION
802.11a	3TX
802.11n (20MHz)	3TX
802.11n (40MHz)	3TX
802.11ac (20MHz)	3TX
802.11ac (40MHz)	3TX
802.11ac (80MHz)	3TX

* The modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ac mode for HT20 / HT40, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

5. The EUT was power supplied from the following power adapters or PoE:

Item	Brand	Model No.	Plug Type	Rating
Adapter 1	LEI	IU18-2120150-WP	US, EU, UK Plug	AC I/P: 100-240V, 50/60Hz 0.6A DC O/P: 12V 1.5A Non-shielded DC (1.5m)
Adapter 2	LEI	MU18-R120150-A1	US Plug	AC I/P: 100-240V, 50/60Hz 0.6A DC O/P: 12V 1.5A Non-shielded DC (1.5m)
	LEI	MU18-R120150-C5	EU Plug	
	LEI	MU18-R120150-B2	UK Plug	
	LEI	MU18-R120150-A3	AU Plug	
	Four adapters are identical with each other except for their plug type difference			
Adapter 3	DVE	DSA-20CA-12 120150	US, EU, UK Plug	AC I/P: 100-240V, 50/60Hz 0.8A DC O/P: 12V 1.5A Non-shielded DC (1.5m)
Adapter 4	DVE	DSA-18PFG-12 FUS 12015	US Plug	AC I/P:100-240V, 50/60Hz 0.6A DC O/P:12V 1.5A Non-shielded DC (1.5m)
	DVE	DSA-18PFG-12 FEU 120150	EU Plug	
	DVE	DSA-18PFG-12 FUK 120120	UK Plug	
	DVE	DSA-18PFG-12 FAU 120150	AU Plug	
	Four adapters are identical with each other except for their plug type difference			
PoE	-			48Vdc

Select the previous worse case **(Adapter 2)** for final test, therefore, only its test data was recorded in this report.

6. 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 (20MHz):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (40MHz):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (80MHz):

Channel	Frequency
42	5210MHz

FOR 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (20MHz):

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

2 channels are provided for 802.11n (40MHz):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (80MHz):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

Where **RE≥1G:** Radiated Emission above 1GHz **RE<1G:** Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

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

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)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.0
	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	13.0
	802.11ac (80MHz)		155	155	OFDM	BPSK	29.3

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)
-	802.11a	5180-5240	36 to 48	36	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)
-	802.11a	5180-5240	36 to 48	36	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)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.0
	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	13.0
	802.11ac (80MHz)		155	155	OFDM	BPSK	29.3

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 75%RH	120Vac, 60Hz	Dalen Dai
RE<1G	20deg. C, 66%RH	120Vac, 60Hz	Aaron You
PLC	23deg. C, 75%RH	120Vac, 60Hz	Aaron You
APCM	25deg. C, 60%RH	120Vac, 60Hz	Saxon Lee

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is < 98 %, duty factor is required

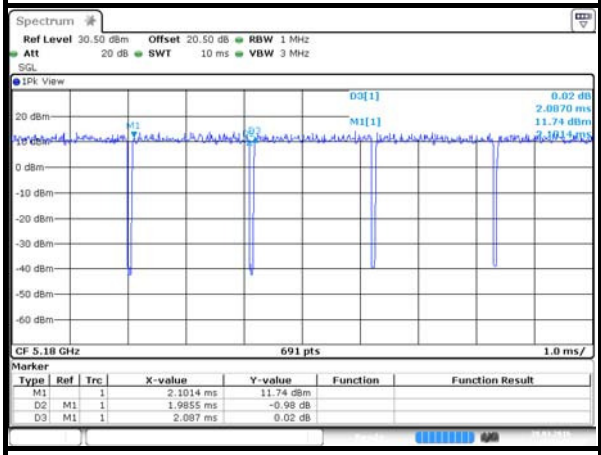
802.11a: Duty cycle = 1.985/2.087 = 0.951, Duty factor = 10 * log(1/0.951) = 0.22

802.11n (20MHz): Duty cycle = 1.826/1.956 = 0.934, Duty factor = 10 * log(1/0.934) = 0.30

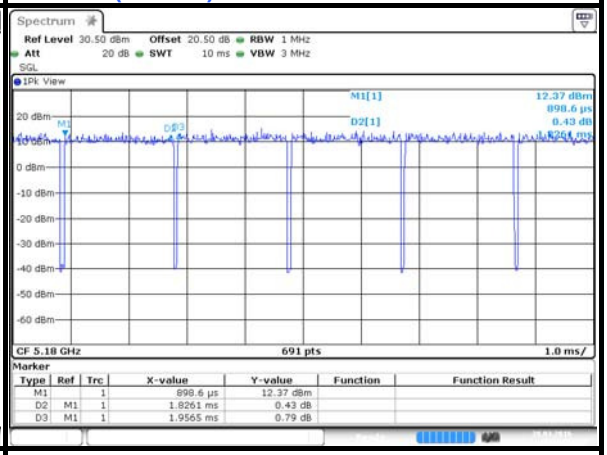
802.11n (40MHz): Duty cycle = 0.876/0.992 = 0.883, Duty factor = 10 * log(1/0.883) = 0.54

802.11ac (80MHz): Duty cycle = 0.43/0.514 = 0.837, Duty factor = 10 * log(1/0.837) = 0.77

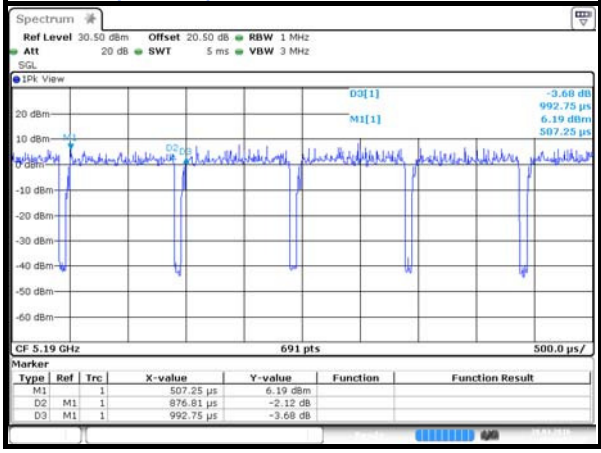
802.11a



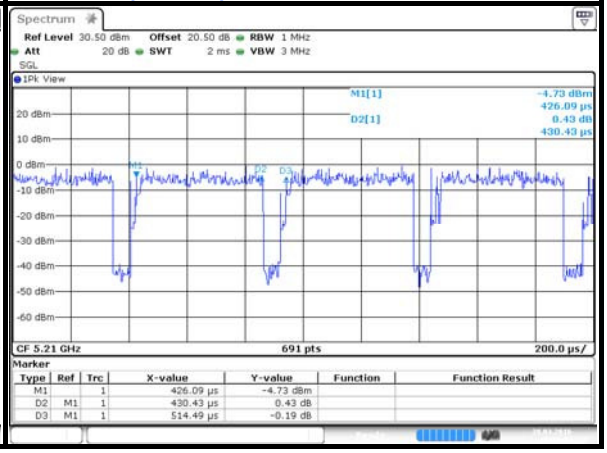
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)



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 PC	DELL	PP27L	8SNZ12S	FCC DoC Approved	Provided by Lab

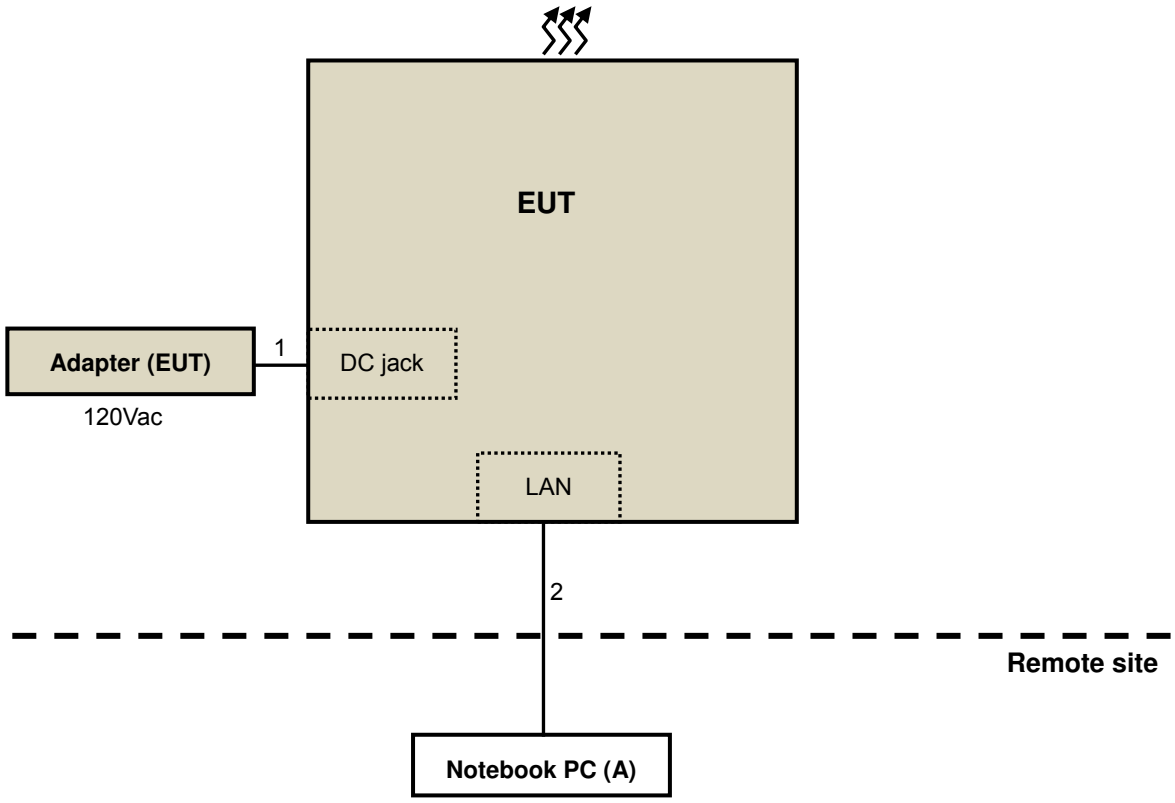
Note:

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.	DC cable	1	1.5	N	0	Supplied by client
2.	LAN cable	1	10	N	0	Provided by Lab

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)
KDB 789033 D02 General UNII Test Procedure New Rules v01r02
KDB 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 v01r02	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)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2(dBμV/m) *1 PK:105.2 (dBμV/m) *2 PK: 110.8(dBμV/m) *3 PK:122.2 (dBμV/m) *4
15.407(b)(4)(ii)	FIELD STRENGTH at 3m / § 15.247(d),	
	PK:74 (dBμV/m)	AV:54 (dBμV/m)

*1 beyond 75 MHz or more above of the band edge.

*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 26, 2016	Feb. 25, 2017
HP Preamplifier	8449B	3008A01201	Feb. 26, 2016	Feb. 25, 2017
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Mar. 01, 2016	Feb. 28, 2017
Agilent TEST RECEIVER	N9038A	MY51210129	Feb. 02, 2016	Feb. 01, 2017
Schwarzbeck Antenna	VULB 9168	139	Jan. 04, 2016	Jan. 03, 2017
Schwarzbeck Antenna	VHBA 9123	480	May 29, 2015	May 28, 2017
Schwarzbeck Horn Antenna	BBHA-9170	212	Jan. 08, 2016	Jan. 07, 2017
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Jan. 21, 2016	Jan. 20, 2017
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	Radiated_V7.6.15.9.4	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF104	CABLE-CH6	Aug. 15, 2015	Aug. 14, 2016
SUHNER RF cable With 3dB PAD	SF102	Cable-CH8-3.6m	Aug. 15, 2015	Aug. 14, 2016
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Jul. 14, 2015	Jul. 13, 2016
EMCO Horn Antenna	3115	00028257	Jan. 19, 2016	Jan. 18, 2017
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 23, 2015	Sep. 22, 2016
Anritsu Power Sensor	MA2411B	0738404	Apr. 28, 2016	Apr. 27, 2017
Anritsu Power Meter	ML2495A	0842014	Apr. 28, 2016	Apr. 27, 2017
Temperature & Humidity Chamber	MHU-225AU	920409	May 25, 2015	May 24, 2016

NOTE: 1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Chamber No. 6.
4. The Industry Canada Reference No. IC 7450E-6.
5. The FCC Site Registration No. is 447212.

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:

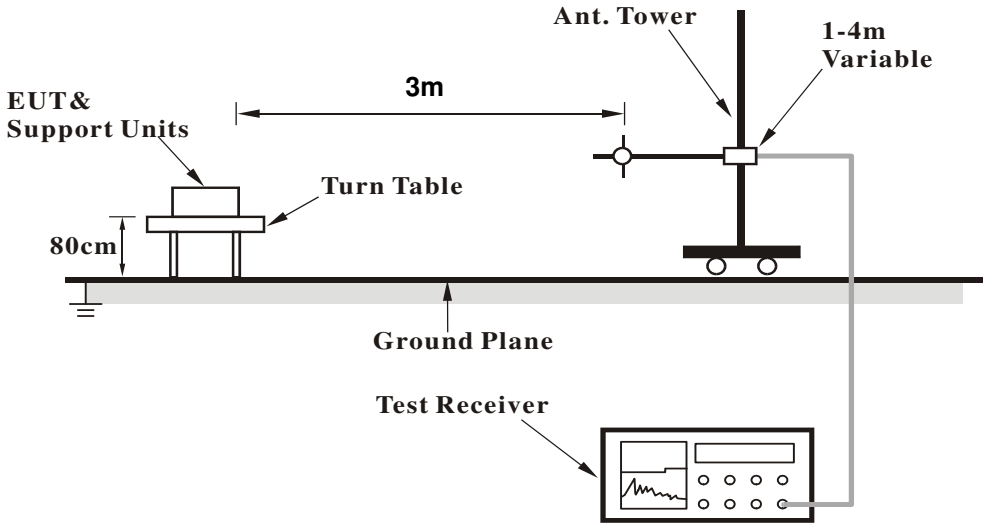
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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/duty cycle)).
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

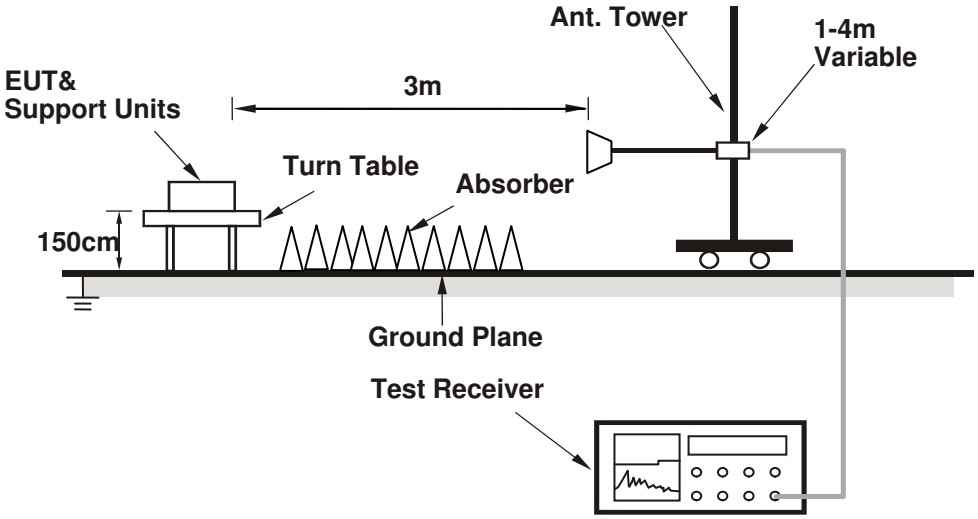
No deviation.

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 Condition

The Notebook connected with EUT via a LAN cable and run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.0 PK	74.0	-7.0	1.00 H	237	58.48	8.53
2	5150.00	52.1 AV	54.0	-1.9	1.00 H	237	43.56	8.53
3	*5180.00	114.1 PK			1.00 H	237	105.42	8.71
4	*5180.00	103.1 AV			1.00 H	237	94.34	8.71
5	#10360.00	59.8 PK	74.0	-14.2	1.00 H	206	39.44	20.33
6	#10360.00	47.5 AV	54.0	-6.5	1.00 H	206	27.14	20.33
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.3 PK	74.0	-3.7	1.00 V	264	61.73	8.53
2	5150.00	53.7 AV	54.0	-0.3	1.00 V	264	45.14	8.53
3	*5180.00	116.4 PK			1.00 V	264	107.71	8.71
4	*5180.00	106.1 AV			1.00 V	264	97.35	8.71
5	#10360.00	61.7 PK	74.0	-12.3	1.00 V	321	41.36	20.33
6	#10360.00	50.8 AV	54.0	-3.2	1.00 V	321	30.51	20.33

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	117.1 PK			1.00 H	237	108.28	8.82
2	*5200.00	106.4 AV			1.00 H	237	97.62	8.82
3	#10400.00	60.6 PK	74.0	-13.4	1.00 H	202	40.11	20.46
4	#10400.00	48.7 AV	54.0	-5.3	1.00 H	202	28.27	20.46
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	119.6 PK			1.00 V	265	110.74	8.82
2	*5200.00	109.2 AV			1.00 V	265	100.33	8.82
3	#10400.00	66.3 PK	74.0	-7.7	1.00 V	319	45.84	20.46
4	#10400.00	53.6 AV	54.0	-0.4	1.00 V	319	33.13	20.46

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	116.8 PK			1.03 H	239	107.82	8.97
2	*5240.00	106.1 AV			1.03 H	239	97.15	8.97
3	5350.00	62.3 PK	74.0	-11.7	1.03 H	239	52.91	9.43
4	5350.00	49.0 AV	54.0	-5.0	1.03 H	239	39.57	9.43
5	#10480.00	60.9 PK	74.0	-13.1	1.00 H	204	40.05	20.89
6	#10480.00	49.1 AV	54.0	-5.0	1.00 H	204	28.16	20.89
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	119.3 PK			1.00 V	266	110.31	8.97
2	*5240.00	108.8 AV			1.00 V	266	99.79	8.97
3	5350.00	65.0 PK	74.0	-9.0	1.00 V	266	55.60	9.43
4	5350.00	50.4 AV	54.0	-3.7	1.00 V	266	40.92	9.43
5	#10480.00	67.4 PK	74.0	-6.6	1.00 V	320	46.54	20.89
6	#10480.00	53.6 AV	54.0	-0.4	1.00 V	320	32.74	20.89

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5649.99	64.4 PK	68.2	-3.8	1.00 H	217	53.91	10.50
2	*5745.00	115.4 PK			1.00 H	217	105.03	10.35
3	*5745.00	104.9 AV			1.00 H	217	94.50	10.35
4	11490.00	61.1 PK	74.0	-12.9	1.07 H	360	38.82	22.26
5	11490.00	49.2 AV	54.0	-4.8	1.07 H	360	26.95	22.26
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	#5649.99	67.7 PK	68.2	-0.5	1.03 V	255	57.24	10.50
2	*5745.00	121.5 PK			1.03 V	255	111.16	10.35
3	*5745.00	110.1 AV			1.03 V	255	99.76	10.35
4	11490.00	63.2 PK	74.0	-10.8	1.00 V	237	40.92	22.26
5	11490.00	51.1 AV	54.0	-2.9	1.00 V	237	28.85	22.26

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	115.1 PK			1.01 H	219	104.83	10.26
2	*5785.00	104.4 AV			1.01 H	219	94.16	10.26
3	11570.00	61.1 PK	74.0	-12.9	1.07 H	191	38.71	22.35
4	11570.00	49.2 AV	54.0	-4.8	1.07 H	191	26.89	22.35
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	121.4 PK			1.03 V	257	111.09	10.26
2	*5785.00	110.9 AV			1.03 V	257	100.63	10.26
3	11570.00	63.0 PK	74.0	-11.0	1.00 V	233	40.67	22.35
4	11570.00	51.3 AV	54.0	-2.7	1.00 V	233	28.92	22.35

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	114.9 PK			1.02 H	215	104.65	10.27
2	*5825.00	103.8 AV			1.02 H	215	93.51	10.27
3	#5925.01	63.0 PK	68.2	-5.2	1.02 H	215	52.46	10.50
4	11650.00	60.8 PK	74.0	-13.2	1.08 H	194	38.77	22.06
5	11650.00	48.8 AV	54.0	-5.2	1.08 H	194	26.76	22.06
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	121.2 PK			1.01 V	256	110.94	10.27
2	*5825.00	110.5 AV			1.01 V	256	100.23	10.27
3	#5925.01	67.7 PK	68.2	-0.5	1.01 V	256	57.23	10.50
4	11650.00	62.6 PK	74.0	-11.4	1.00 V	230	40.52	22.06
5	11650.00	50.6 AV	54.0	-3.4	1.00 V	230	28.57	22.06

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 (20MHz)

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.8 PK	74.0	-7.3	1.00 H	239	58.22	8.53
2	5150.00	51.8 AV	54.0	-2.2	1.00 H	239	43.31	8.53
3	*5180.00	114.8 PK			1.00 H	239	106.09	8.71
4	*5180.00	103.9 AV			1.00 H	239	95.17	8.71
5	#10360.00	59.8 PK	74.0	-14.2	1.00 H	211	39.51	20.33
6	#10360.00	47.7 AV	54.0	-6.3	1.00 H	211	27.39	20.33
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.5 PK	74.0	-3.5	1.00 V	266	61.96	8.53
2	5150.00	53.6 AV	54.0	-0.4	1.00 V	266	45.08	8.53
3	*5180.00	116.8 PK			1.00 V	266	108.06	8.71
4	*5180.00	106.6 AV			1.00 V	266	97.85	8.71
5	#10360.00	63.0 PK	74.0	-11.0	1.00 V	327	42.67	20.33
6	#10360.00	50.8 AV	54.0	-3.2	1.00 V	327	30.51	20.33

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	117.3 PK			1.00 H	235	108.49	8.82
2	*5200.00	106.4 AV			1.00 H	235	97.57	8.82
3	#10400.00	60.7 PK	74.0	-13.3	1.05 H	206	40.25	20.46
4	#10400.00	48.6 AV	54.0	-5.4	1.05 H	206	28.16	20.46
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	118.9 PK			1.00 V	263	110.09	8.82
2	*5200.00	108.3 AV			1.00 V	263	99.51	8.82
3	#10400.00	66.3 PK	74.0	-7.7	1.00 V	321	45.82	20.46
4	#10400.00	53.4 AV	54.0	-0.6	1.00 V	321	32.92	20.46

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	116.5 PK			1.00 H	237	107.52	8.97
2	*5240.00	105.9 AV			1.00 H	237	96.89	8.97
3	5350.00	61.5 PK	74.0	-12.5	1.00 H	237	52.04	9.43
4	5350.00	49.0 AV	54.0	-5.0	1.00 H	237	39.60	9.43
5	#10480.00	61.1 PK	74.0	-12.9	1.00 H	208	40.18	20.89
6	#10480.00	49.1 AV	54.0	-4.9	1.00 H	208	28.24	20.89
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	118.9 PK			1.00 V	269	109.92	8.97
2	*5240.00	107.9 AV			1.00 V	269	98.96	8.97
3	5350.00	64.7 PK	74.0	-9.3	1.00 V	269	55.27	9.43
4	5350.00	50.2 AV	54.0	-3.8	1.00 V	269	40.76	9.43
5	#10480.00	66.9 PK	74.0	-7.1	1.00 V	322	46.02	20.89
6	#10480.00	53.5 AV	54.0	-0.5	1.00 V	322	32.65	20.89

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5649.99	64.6 PK	68.2	-3.6	1.00 H	211	54.06	10.50
2	*5745.00	114.6 PK			1.00 H	211	104.26	10.35
3	*5745.00	103.5 AV			1.00 H	211	93.19	10.35
4	11490.00	61.2 PK	74.0	-12.8	1.06 H	193	38.94	22.26
5	11490.00	49.1 AV	54.0	-5.0	1.06 H	193	26.79	22.26
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	#5649.99	67.8 PK	68.2	-0.4	1.03 V	256	57.28	10.50
2	*5745.00	121.2 PK			1.03 V	256	110.85	10.35
3	*5745.00	109.8 AV			1.03 V	256	99.46	10.35
4	11490.00	63.1 PK	74.0	-10.9	1.02 V	236	40.88	22.26
5	11490.00	50.9 AV	54.0	-3.1	1.02 V	236	28.67	22.26

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	115.3 PK			1.00 H	217	105.02	10.26
2	*5785.00	104.1 AV			1.00 H	217	93.84	10.26
3	11570.00	60.8 PK	74.0	-13.2	1.06 H	197	38.46	22.35
4	11570.00	48.9 AV	54.0	-5.1	1.06 H	197	26.53	22.35
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	121.3 PK			1.03 V	257	111.07	10.26
2	*5785.00	110.3 AV			1.03 V	257	100.04	10.26
3	11570.00	62.9 PK	74.0	-11.1	1.01 V	231	40.58	22.35
4	11570.00	51.1 AV	54.0	-3.0	1.01 V	231	28.70	22.35

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5825.00	115.1 PK			1.00 H	214	104.81	10.27
2	*5825.00	104.0 AV			1.00 H	214	93.76	10.27
3	#5925.01	63.5 PK	68.2	-4.7	1.00 H	214	52.98	10.50
4	11650.00	60.6 PK	74.0	-13.4	1.09 H	190	38.54	22.06
5	11650.00	48.5 AV	54.0	-5.6	1.09 H	190	26.39	22.06
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	120.6 PK			1.02 V	259	110.34	10.27
2	*5825.00	109.8 AV			1.02 V	259	99.49	10.27
3	#5925.01	67.6 PK	68.2	-0.7	1.02 V	259	57.05	10.50
4	11650.00	62.9 PK	74.0	-11.1	1.00 V	235	40.81	22.06
5	11650.00	51.0 AV	54.0	-3.0	1.00 V	235	28.92	22.06

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 (40MHz)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.5 PK	74.0	-7.5	1.02 H	238	57.93	8.53
2	5150.00	51.0 AV	54.0	-3.0	1.02 H	238	42.51	8.53
3	*5190.00	110.0 PK			1.02 H	238	101.19	8.77
4	*5190.00	99.4 AV			1.02 H	238	90.65	8.77
5	#10380.00	60.0 PK	74.0	-14.0	1.06 H	207	39.56	20.40
6	#10380.00	47.3 AV	54.0	-6.7	1.06 H	207	26.93	20.40
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	5150.00	70.7 PK	74.0	-3.3	1.00 V	270	62.18	8.53
2	5150.00	53.6 AV	54.0	-0.4	1.00 V	270	45.09	8.53
3	*5190.00	112.7 PK			1.00 V	270	103.94	8.77
4	*5190.00	102.0 AV			1.00 V	270	93.25	8.77
5	#10380.00	60.6 PK	74.0	-13.4	1.00 V	320	40.24	20.40
6	#10380.00	47.8 AV	54.0	-6.2	1.00 V	320	27.41	20.40

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) – 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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	113.5 PK			1.00 H	233	104.58	8.94
2	*5230.00	102.9 AV			1.00 H	233	93.99	8.94
3	5350.00	61.5 PK	74.0	-12.5	1.00 H	233	52.11	9.43
4	5350.00	48.7 AV	54.0	-5.3	1.00 H	233	39.24	9.43
5	#10460.00	60.9 PK	74.0	-13.1	1.00 H	210	40.15	20.79
6	#10460.00	48.1 AV	54.0	-5.9	1.00 H	210	27.29	20.79
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	*5230.00	116.1 PK			1.00 V	265	107.17	8.94
2	*5230.00	105.7 AV			1.00 V	265	96.73	8.94
3	5350.00	63.5 PK	74.0	-10.5	1.00 V	265	54.05	9.43
4	5350.00	50.2 AV	54.0	-3.8	1.00 V	265	40.78	9.43
5	#10460.00	67.6 PK	74.0	-6.4	1.00 V	320	46.77	20.79
6	#10460.00	53.4 AV	54.0	-0.6	1.00 V	320	32.64	20.79

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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5649.99	64.4 PK	68.2	-3.8	1.00 H	216	53.88	10.50
2	*5755.00	113.2 PK			1.00 H	216	102.86	10.34
3	*5755.00	102.3 AV			1.00 H	216	91.95	10.34
4	11510.00	60.8 PK	74.0	-13.2	1.05 H	192	38.54	22.29
5	11510.00	49.0 AV	54.0	-5.0	1.05 H	192	26.73	22.29
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5649.99	67.9 PK	68.2	-0.4	1.03 V	259	57.35	10.50
2	*5755.00	116.2 PK			1.03 V	259	105.85	10.34
3	*5755.00	105.3 AV			1.03 V	259	94.98	10.34
4	11510.00	63.2 PK	74.0	-10.8	1.00 V	233	40.93	22.29
5	11510.00	51.1 AV	54.0	-2.9	1.00 V	233	28.85	22.29

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	114.8 PK			1.00 H	211	104.60	10.24
2	*5795.00	105.0 AV			1.00 H	211	94.72	10.24
3	#5925.01	64.1 PK	68.2	-4.1	1.00 H	211	53.61	10.50
4	11590.00	60.9 PK	74.0	-13.1	1.08 H	195	38.52	22.37
5	11590.00	48.8 AV	54.0	-5.2	1.08 H	195	26.39	22.37
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	117.5 PK			1.02 V	255	107.28	10.24
2	*5795.00	108.6 AV			1.02 V	255	98.34	10.24
3	#5925.01	67.7 PK	68.2	-0.5	1.02 V	255	57.22	10.50
4	11590.00	63.0 PK	74.0	-11.0	1.00 V	230	40.64	22.37
5	11590.00	51.1 AV	54.0	-2.9	1.00 V	230	28.77	22.37

REMARKS:

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

802.11ac (80MHz)

CHANNEL	TX Channel 42	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.0 PK	74.0	-11.0	1.00 H	237	54.46	8.53
2	5150.00	51.5 AV	54.0	-2.5	1.00 H	237	42.93	8.53
3	*5210.00	103.8 PK			1.00 H	237	94.97	8.86
4	*5210.00	92.9 AV			1.00 H	237	83.99	8.86
5	5350.00	61.1 PK	74.0	-12.9	1.00 H	237	51.63	9.43
6	5350.00	48.5 AV	54.0	-5.5	1.00 H	237	39.11	9.43
7	#10420.00	60.3 PK	74.0	-13.7	1.00 H	203	39.75	20.58
8	#10420.00	47.5 AV	54.0	-6.5	1.00 H	203	26.94	20.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.4 PK	74.0	-3.6	1.03 V	266	61.88	8.53
2	5150.00	53.7 AV	54.0	-0.3	1.03 V	266	45.14	8.53
3	*5210.00	107.6 PK			1.03 V	266	98.75	8.86
4	*5210.00	95.2 AV			1.03 V	266	86.32	8.86
5	5350.00	62.7 PK	74.0	-11.3	1.03 V	266	53.28	9.43
6	5350.00	51.3 AV	54.0	-2.7	1.03 V	266	41.84	9.43
7	#10420.00	61.2 PK	74.0	-12.8	1.00 V	322	40.66	20.58
8	#10420.00	48.3 AV	54.0	-5.7	1.00 V	322	27.73	20.58

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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 155	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5649.99	65.8 PK	68.2	-2.4	1.02 H	214	55.28	10.50
2	*5775.00	107.3 PK			1.02 H	214	96.97	10.29
3	*5775.00	96.0 AV			1.02 H	214	85.74	10.29
4	#5925.01	64.0 PK	68.2	-4.2	1.02 H	214	53.54	10.50
5	11550.00	60.7 PK	74.0	-13.3	1.07 H	191	38.37	22.33
6	11550.00	48.6 AV	54.0	-5.4	1.07 H	191	26.29	22.33
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	**#5649.99**	**68.0 PK**	**68.2**	**-0.2**	**1.02 V**	**258**	**57.48**	**10.50**
2	*5775.00	112.9 PK			1.02 V	258	102.61	10.29
3	*5775.00	100.7 AV			1.02 V	258	90.44	10.29
4	#5925.01	66.2 PK	68.2	-2.0	1.02 V	258	55.72	10.50
5	11550.00	63.0 PK	74.0	-11.0	1.01 V	237	40.65	22.33
6	11550.00	51.1 AV	54.0	-2.9	1.01 V	237	28.74	22.33

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.

BELOW 1GHz WORST-CASE DATA

802.11a

CHANNEL	TX Channel 36	**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	32.09	29.6 QP	40.0	-10.4	4.00 H	14	41.04	-11.42
2	144.99	22.0 QP	43.5	-21.5	4.00 H	228	31.71	-9.73
3	275.02	29.3 QP	46.0	-16.8	3.39 H	115	37.43	-8.18
4	425.03	31.2 QP	46.0	-14.8	2.26 H	179	36.25	-5.06
5	816.91	31.9 QP	46.0	-14.1	1.07 H	24	29.82	2.09
6	920.02	36.8 QP	46.0	-9.2	1.00 H	110	32.60	4.17
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	32.38	32.2 QP	40.0	-7.8	1.42 V	59	43.49	-11.33
2	77.24	22.9 QP	40.0	-17.1	1.38 V	215	36.26	-13.32
3	164.83	21.4 QP	43.5	-22.1	1.00 V	174	30.84	-9.45
4	460.05	28.7 QP	46.0	-17.3	1.79 V	64	33.36	-4.65
5	690.04	34.7 QP	46.0	-11.4	2.45 V	174	34.86	-0.21
6	920.02	33.5 QP	46.0	-12.5	2.08 V	119	29.37	4.17

REMARKS:

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

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.	Cal. Date	Cal. Due
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	100290	Dec. 24, 2015	Dec. 23, 2016
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	100104	Dec. 07, 2015	Dec. 06, 2016
LISN With Adapter (for EUT)	AD10	C09Ada-001	Dec. 07, 2015	Dec. 06, 2016
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	847265/023	Oct. 21, 2015	Oct. 20, 2016
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK8129	8129229	May 04, 2016	May 03, 2017
Software	Cond_V7.3.7	NA	NA	NA
RF cable (JYEBAO) With 10dB PAD	5D-FB	Cable-C09.01	Feb. 23, 2016	Feb. 22, 2017
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010789	May 19, 2015	May 18, 2016
ROHDE & SCHWARZ Artificial Mains Network (For TV EUT)	ESH3-Z5	100220	Nov. 13, 2015	Nov. 12, 2016
LISN With Adapter (for TV EUT)	100220	N/A	Nov. 13, 2015	Nov. 12, 2016

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 Shielded Room No. 9.
3. The VCCI Site Registration No. C-1312.

4.2.3 Test Procedures

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

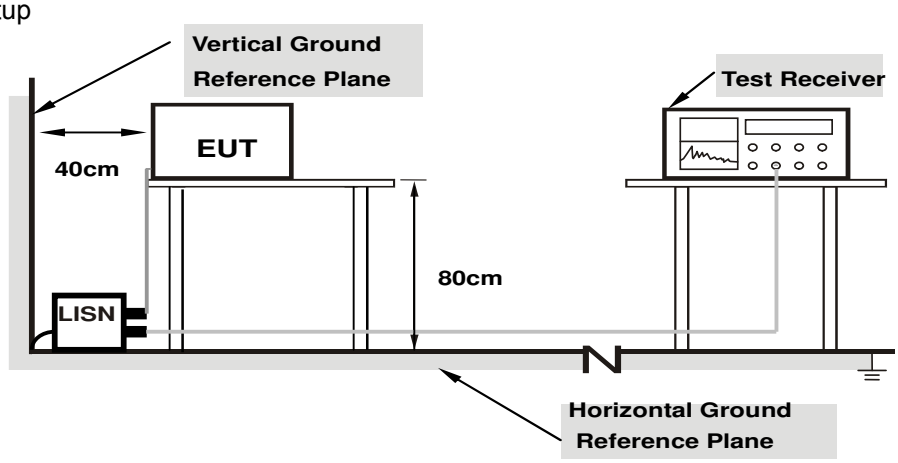
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

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

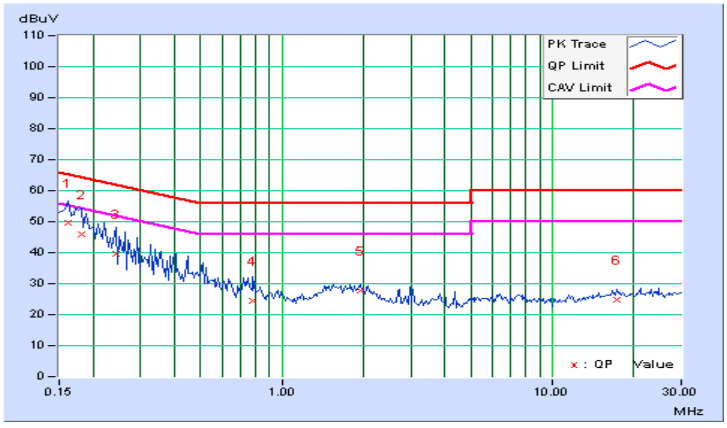
802.11a: CH 36

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

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.16172**	**10.24**	**39.45**	**29.27**	**49.69**	**39.51**	**65.38**	**55.38**	**-15.69**	**-15.87**
2	0.18125	10.25	35.69	17.67	45.94	27.92	64.43	54.43	-18.49	-26.51
3	0.24375	10.27	29.28	17.51	39.55	27.78	61.97	51.97	-22.42	-24.19
4	0.77891	10.35	14.02	7.53	24.37	17.88	56.00	46.00	-31.63	-28.12
5	1.95703	10.51	17.17	10.07	27.68	20.58	56.00	46.00	-28.32	-25.42
6	17.26563	11.29	13.65	8.22	24.94	19.51	60.00	50.00	-35.06	-30.49

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

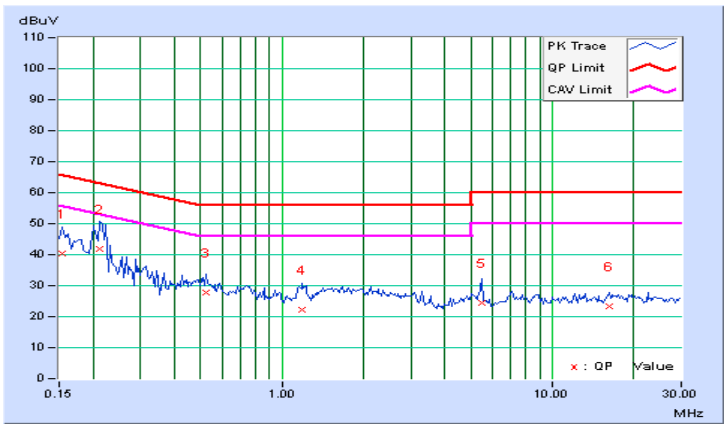


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.20	30.16	11.04	40.36	21.24	65.79	55.79	-25.43	-34.55
2	0.21250	10.21	31.53	17.85	41.74	28.06	63.11	53.11	-21.36	-25.04
3	0.52109	10.27	17.36	11.42	27.63	21.69	56.00	46.00	-28.37	-24.31
4	1.18750	10.38	12.02	8.89	22.40	19.27	56.00	46.00	-33.60	-26.73
5	5.50781	10.69	13.80	7.46	24.49	18.15	60.00	50.00	-35.51	-31.85
6	16.25391	11.06	12.37	8.27	23.43	19.33	60.00	50.00	-36.57	-30.67

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 Measurment

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 ≦ 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

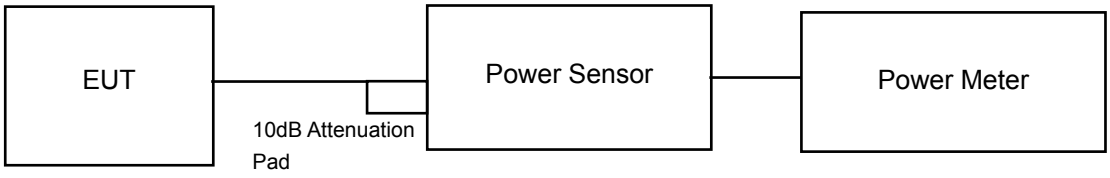
Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

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 $N_{ANT} \geq 5$.

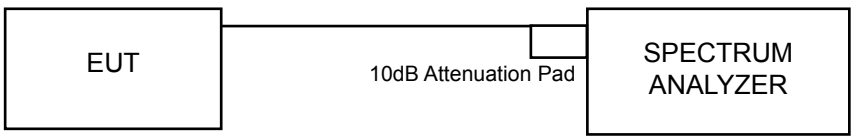
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT



FOR 26dB & OCCUPIED BANDWIDTH



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

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 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%.

For Occupied Bandwidth

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to SAMPLE. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

POWER OUTPUT:

802.11a

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	19.81	19.42	18.93	261.38	24.17	30	PASS
40	5200	22.95	22.49	22.14	538.343	27.31	30	PASS
48	5240	23.12	22.38	21.96	535.134	27.28	30	PASS
149	5745	24.61	23.81	24.14	788.922	28.97	30	PASS
157	5785	24.39	23.57	24.12	760.525	28.81	30	PASS
165	5825	24.03	23.27	23.64	696.460	28.43	30	PASS

802.11n (20MHz)

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	19.56	19.42	18.84	254.423	24.06	30	PASS
40	5200	22.96	22.34	22.17	533.909	27.27	30	PASS
48	5240	23.17	22.40	22.03	540.859	27.33	30	PASS
149	5745	24.59	23.87	24.29	**800.055**	29.03	30	PASS
157	5785	24.62	23.67	24.21	786.176	28.96	30	PASS
165	5825	24.10	23.26	23.67	701.685	28.46	30	PASS

802.11n (40MHz)

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	18.29	17.47	17.68	181.914	22.60	30	PASS
46	5230	23.16	22.52	22.88	**579.752**	27.63	30	PASS
151	5755	22.55	21.36	22.31	486.876	26.87	30	PASS
159	5795	23.20	24.02	22.91	656.712	28.17	30	PASS

802.11ac (80MHz)

CHAN.	FREQ. (MHz)	MAXIMUM CONDUCTED POWER (dBm)			TOTAL POWER (mW)	TOTAL POWER (dBm)	POWER LIMIT (dBm)	PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2				
42	5210	14.78	14.27	14.02	82.026	19.14	30	PASS
155	5775	19.21	18.52	18.98	233.557	23.68	30	PASS

26dB BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
36	5180	22.10	21.88	21.85	PASS
40	5200	34.03	32.56	30.38	PASS
48	5240	34.86	35.34	32.54	PASS

802.11n (20MHz)

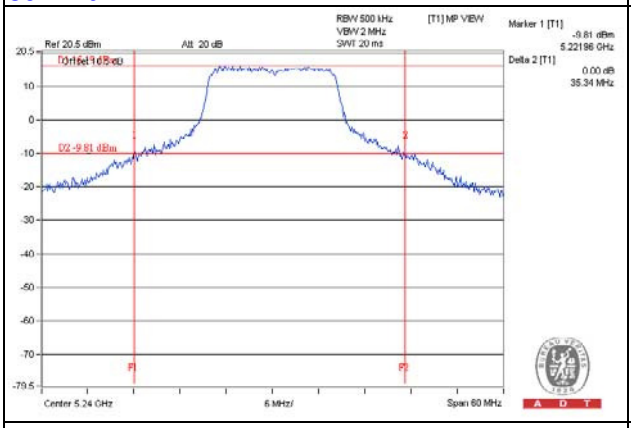
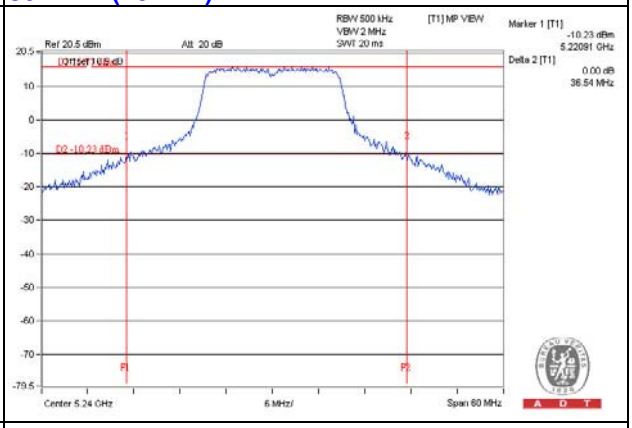
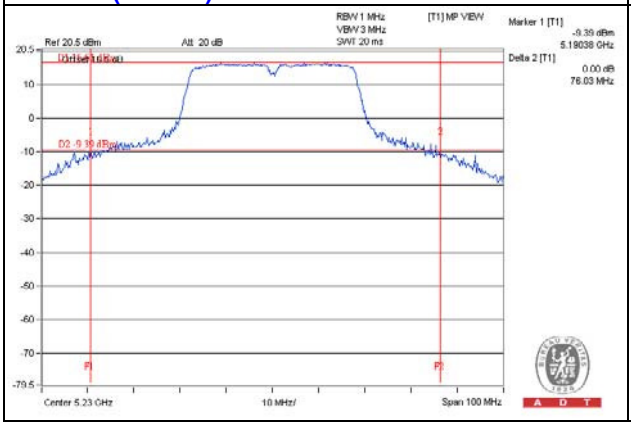
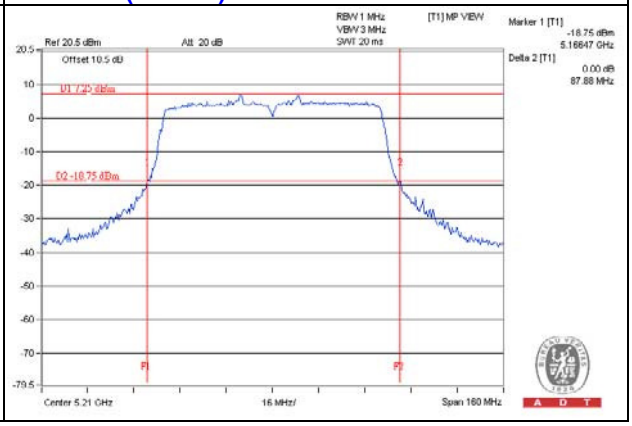
CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
36	5180	22.90	23.07	23.30	PASS
40	5200	30.31	33.05	32.24	PASS
48	5240	35.58	36.54	33.79	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
38	5190	44.50	44.50	44.46	PASS
46	5230	71.47	76.03	74.09	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26dBc BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
42	5210	86.49	87.88	87.44	PASS

SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
	
802.11n (40MHz)	**802.11ac (80MHz)**
	

OCCUPIED BANDWIDTH:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
36	5180	16.80	16.80	16.80	PASS
40	5200	17.16	17.16	17.28	PASS
48	5240	17.52	17.52	17.28	PASS
149	5745	32.26	32.30	32.00	PASS
157	5785	33.50	31.70	32.10	PASS
165	5825	31.80	29.40	29.60	PASS

802.11n (20MHz)

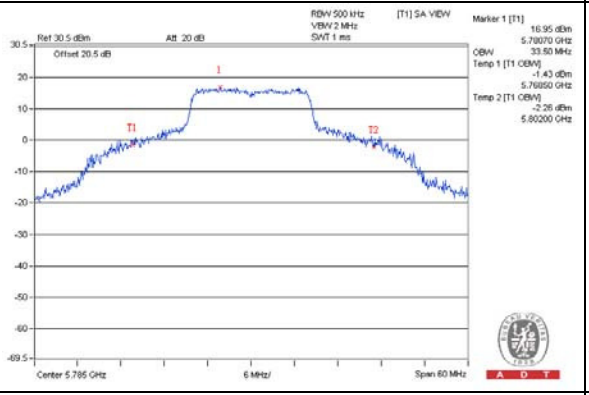
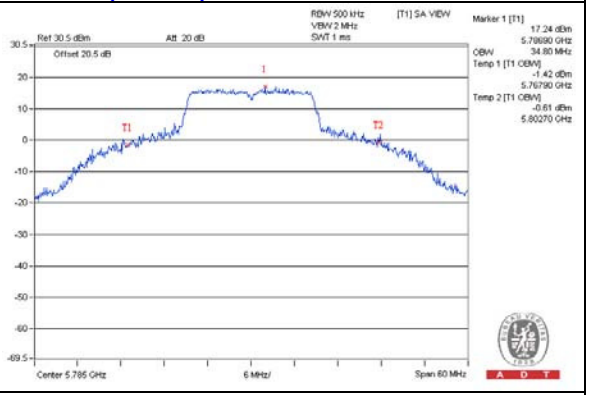
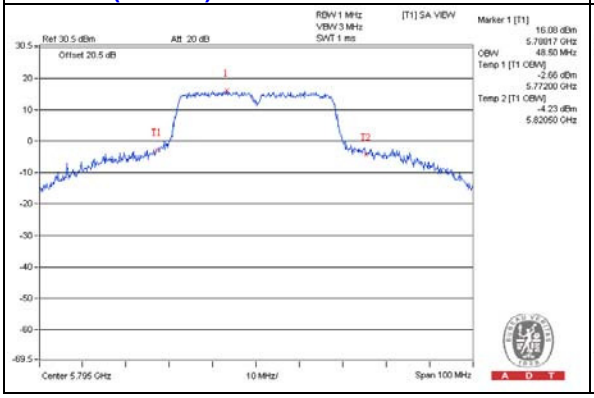
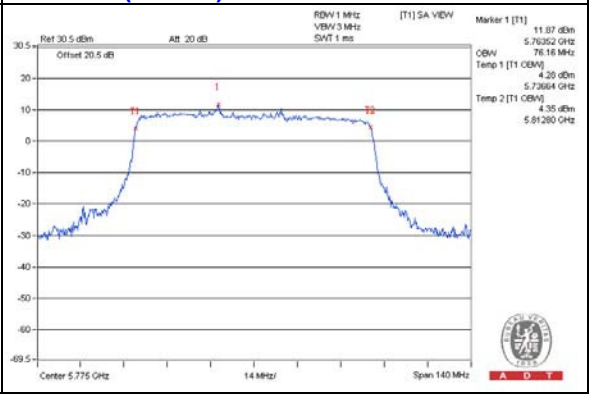
CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
36	5180	18.00	17.88	18.00	PASS
40	5200	18.24	18.24	18.24	PASS
48	5240	18.60	18.48	18.48	PASS
149	5745	33.22	33.70	33.50	PASS
157	5785	34.80	32.80	33.80	PASS
165	5825	32.90	31.30	31.60	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
38	5190	36.80	36.80	36.80	PASS
46	5230	37.60	37.60	38.00	PASS
151	5755	37.68	37.33	37.83	PASS
159	5795	48.50	48.17	47.97	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	OCCUPIED BANDWIDTH (MHz)			PASS / FAIL
		CHAIN 0	CHAIN 1	CHAIN 2	
42	5210	75.84	76.08	75.84	PASS
155	5775	75.88	75.88	76.16	PASS

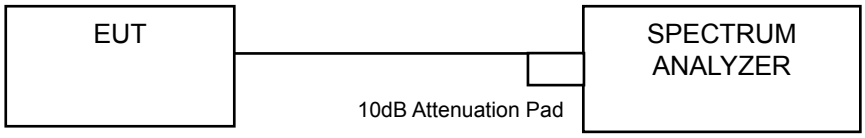
SPECTRUM PLOT OF WORST VALUE	
802.11a	**802.11n (20MHz)**
	
802.11n (40MHz)	**802.11ac (80MHz)**
	

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 = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Sweep time = auto, trigger set to “free run”.
4) Trace average at least 100 traces in power averaging mode.
5) Record the max value and 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 ≥ 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)

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	6.59	6.63	6.32	11.28	0.22	11.50	16.23	Pass
40	5200	9.14	9.15	9.12	13.91	0.22	14.13	16.23	Pass
48	5240	9.31	9.33	9.32	14.09	0.22	14.31	16.23	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. Directional gain = 2dBi + 10log(3) = 6.77dBi > 6dBi , so the power density limit shall be reduced to 17-(6.77-6) =16.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

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	6.18	5.89	5.48	10.63	0.30	10.93	16.23	Pass
40	5200	8.70	8.72	8.72	13.48	0.30	13.78	16.23	Pass
48	5240	9.07	9.04	9.05	13.82	0.30	14.12	16.23	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. Directional gain = 2dBi + 10log(3) = 6.77dBi > 6dBi , so the power density limit shall be reduced to 17-(6.77-6) =16.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

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	0.79	0.77	0.80	5.56	0.54	6.10	16.23	Pass
46	5230	5.84	5.88	5.89	10.64	0.54	11.18	16.23	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. Directional gain = 2dBi + 10log(3) = 6.77dBi > 6dBi , so the power density limit shall be reduced to 17-(6.77-6) =16.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (80MHz)

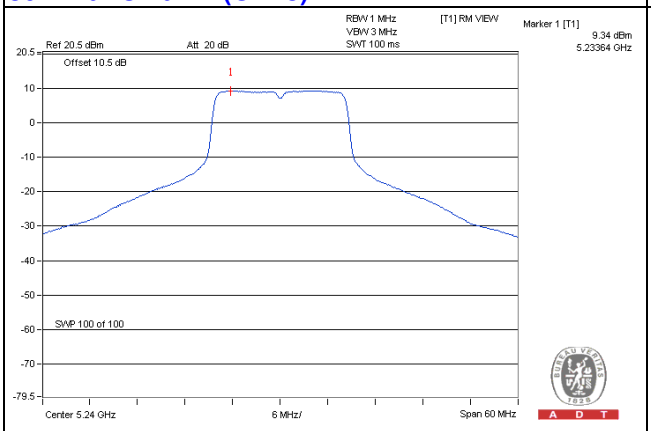
Chan.	Freq. (MHz)	PSD (dBm)			TotaL PSD W/O Duty Factor (dBm)	Duty Factor	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2					
42	5210	-5.87	-5.90	-5.83	-1.09	0.77	-0.32	16.23	Pass

NOTE:

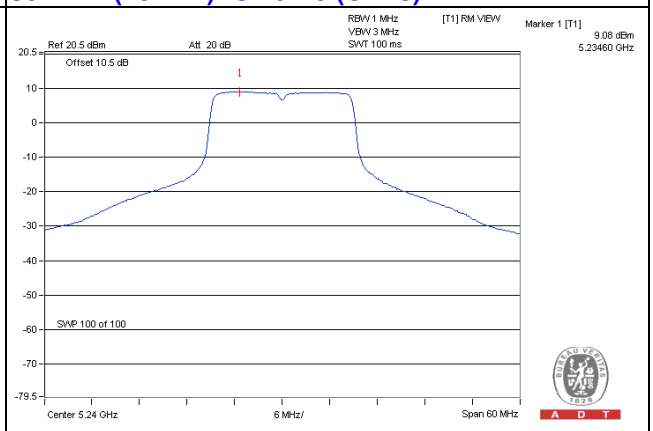
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 2dBi + 10log(3) = 6.77dBi > 6dBi , so the power density limit shall be reduced to 17-(6.77-6) =16.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

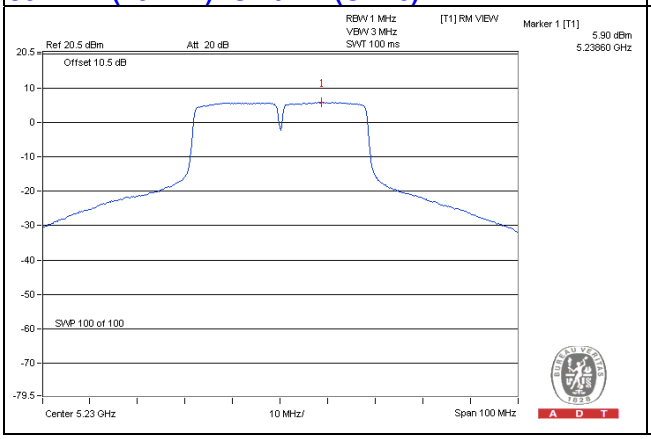
802.11a: Chian 1 (CH48)



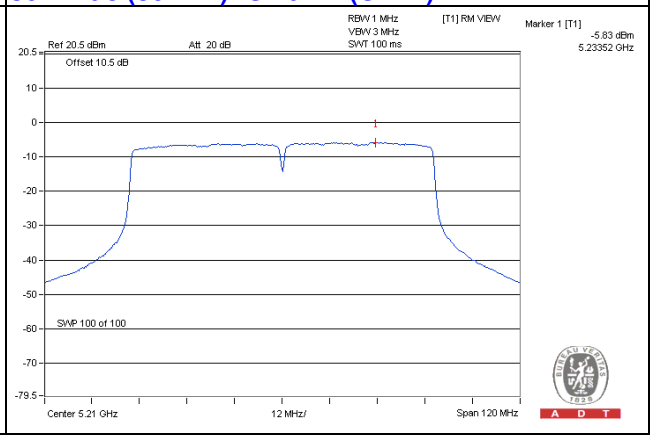
802.11n (20MHz): Chian 0 (CH48)



802.11n (40MHz): Chian 2 (CH46)



802.11ac (80MHz): Chian 2 (CH42)



For U-NII-3 Band

802.11a

TX chain	Channel	Freq. (MHz)	PSD (dBm/500kHz)	10 log (N=3) dB	DUTY FACTOR	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	PASS /FAIL
0	149	5745	18.34	4.77	0.22	23.33	29.23	PASS
	157	5785	17.97	4.77	0.22	22.96	29.23	PASS
	165	5825	17.57	4.77	0.22	22.56	29.23	PASS
1	149	5745	18.22	4.77	0.22	23.21	29.23	PASS
	157	5785	17.39	4.77	0.22	22.38	29.23	PASS
	165	5825	16.92	4.77	0.22	21.91	29.23	PASS
2	149	5745	19.30	4.77	0.22	24.29	29.23	PASS
	157	5785	19.23	4.77	0.22	24.22	29.23	PASS
	165	5825	18.10	4.77	0.22	23.09	29.23	PASS

NOTE:

1. Directional gain = 2dBi + 10log(3) = 6.77dBi > 6dBi , so the power density limit shall be reduced to 30-(6.77-6) = 29.23dBm.
2. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/500kHz)	10 log (N=3) dB	DUTY FACTOR	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	PASS /FAIL
0	149	5745	17.51	4.77	0.30	22.58	29.23	PASS
	157	5785	17.89	4.77	0.30	22.96	29.23	PASS
	165	5825	16.91	4.77	0.30	21.98	29.23	PASS
1	149	5745	17.52	4.77	0.30	22.59	29.23	PASS
	157	5785	16.79	4.77	0.30	21.86	29.23	PASS
	165	5825	16.60	4.77	0.30	21.67	29.23	PASS
2	149	5745	17.89	4.77	0.30	22.96	29.23	PASS
	157	5785	18.02	4.77	0.30	23.09	29.23	PASS
	165	5825	17.22	4.77	0.30	22.29	29.23	PASS

NOTE:

1. Directional gain = 2dBi + 10log(3) = 6.77dBi > 6dBi , so the power density limit shall be reduced to 30-(6.77-6) = 29.23dBm.
2. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

TX chain	Channel	Freq. (MHz)	PSD (dBm/500kHz)	10 log (N=3) dB	DUTY FACTOR	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	PASS /FAIL
0	151	5755	12.23	4.77	0.54	17.54	29.23	PASS
	159	5795	13.21	4.77	0.54	18.52	29.23	PASS
1	151	5755	11.73	4.77	0.54	17.04	29.23	PASS
	159	5795	13.34	4.77	0.54	18.65	29.23	PASS
2	151	5755	13.29	4.77	0.54	18.60	29.23	PASS
	159	5795	13.51	4.77	0.54	18.82	29.23	PASS

NOTE:

1. Directional gain = 2dBi + 10log(3) = 6.77dBi > 6dBi , so the power density limit shall be reduced to 30-(6.77-6) = 29.23dBm.
2. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (80MHz)

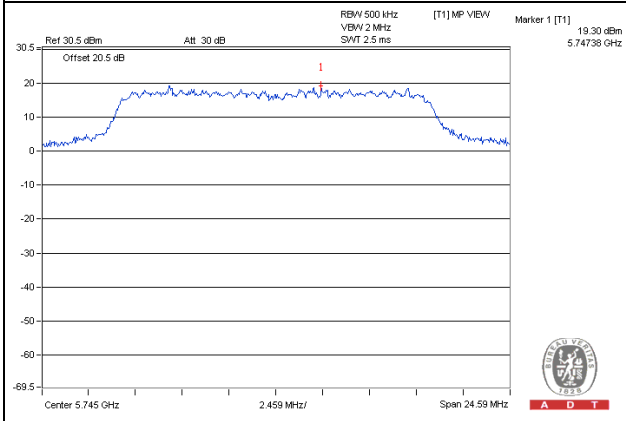
TX chain	Channel	Freq. (MHz)	PSD (dBm/500kHz)	10 log (N=3) dB	DUTY FACTOR	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	PASS /FAIL
0	155	5775	8.08	4.77	0.77	13.62	29.23	PASS
1	155	5775	8.12	4.77	0.77	13.66	29.23	PASS
2	155	5775	8.13	4.77	0.77	13.67	29.23	PASS

NOTE:

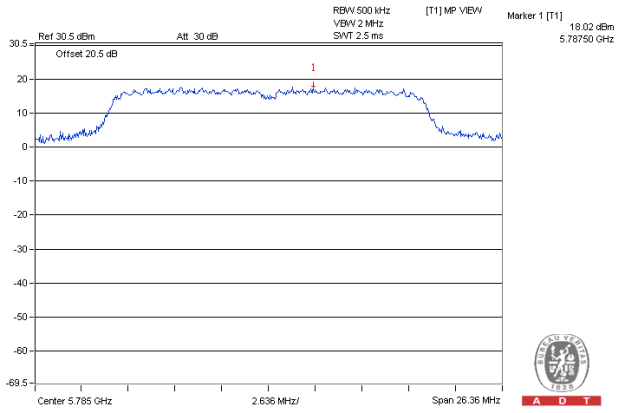
1. Directional gain = 2dBi + 10log(3) = 6.77dBi > 6dBi , so the power density limit shall be reduced to 30-(6.77-6) = 29.23dBm.
2. Refer to section 3.3 for duty cycle spectrum plot.

SPECTRUM PLOT OF WORST VALUE

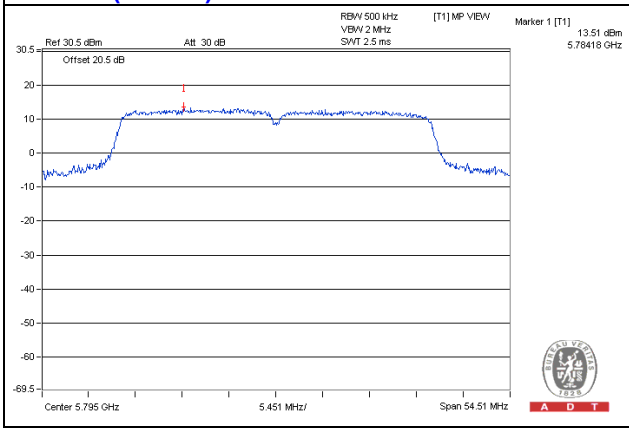
802.11a



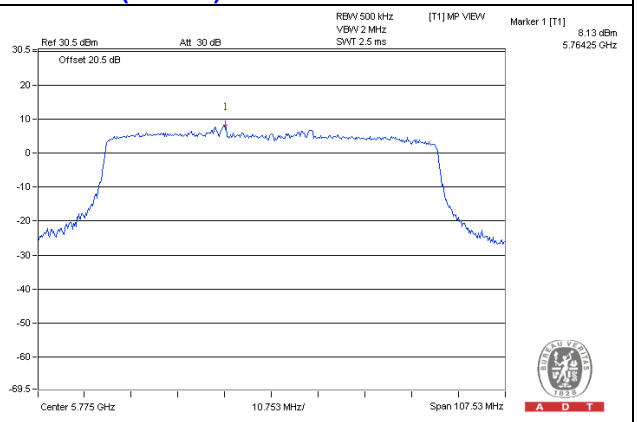
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)

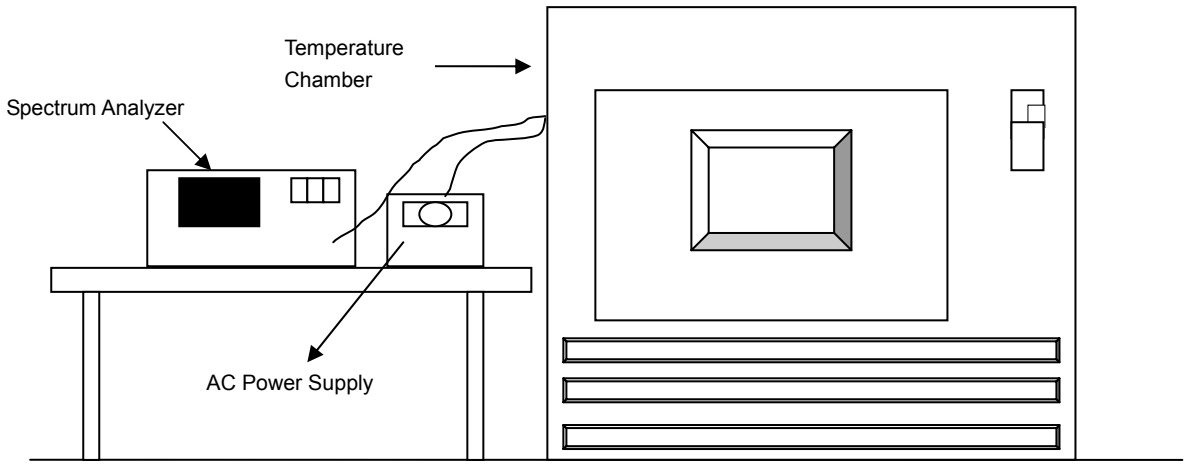


4.5 Frequency Stability Measurement

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

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

FREQUEMCY STABILITY VERSUS TEMP.									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency(MHz)	Frequency Drift (ppm)	Measured Frequency(MHz)	Frequency Drift (ppm)	Measured Frequency(MHz)	Frequency Drift (ppm)	Measured Frequency(MHz)	Frequency Drift (ppm)
50	120	5180.043254	8.3501069	5180.043113	8.3229730	5180.043343	8.3674665	5180.043357	8.3700772
40	120	5180.043474	8.3925831	5180.043613	8.4194981	5180.043781	8.4519573	5180.043403	8.3789575
30	120	5180.042796	8.2617388	5180.042674	8.2382239	5180.042610	8.2259023	5180.042692	8.2416988
20	120	5180.043188	8.3373614	5180.043316	8.3621622	5180.043260	8.3513194	5180.043398	8.3779923
10	120	5180.04332	8.3629788	5180.043428	8.3837838	5180.043486	8.3949600	5180.043286	8.3563707
0	120	5180.042552	8.2145982	5180.042586	8.2212355	5180.042313	8.1685830	5180.042436	8.1922780
-10	120	5180.043086	8.3178382	5180.043367	8.3720077	5180.043039	8.3087704	5180.043136	8.3274131
-20	120	5180.043322	8.3633205	5180.043678	8.4320463	5180.042783	8.2592664	5180.043378	8.3741313

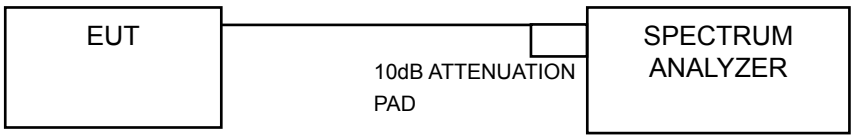
FREQUEMCY STABILITY VERSUS VOLTAGE									
OPERATING FREQUENCY: 5180MHz									
TEMP. (℃)	POWER SUPPLY (Vac)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency(MHz)	Frequency Drift (ppm)	Measured Frequency(MHz)	Frequency Drift (ppm)	Measured Frequency(MHz)	Frequency Drift (ppm)	Measured Frequency(MHz)	Frequency Drift (ppm)
20	138	5180.042579	8.2199236	5180.042655	8.2345560	5180.042575	8.2191152	5180.042425	8.1901544
	120	5180.043188	8.3373614	5180.043316	8.3621622	5180.043260	8.3513194	5180.043398	8.3779923
	102	5180.043319	8.3627066	5180.043014	8.3038610	5180.042731	8.2492822	5180.043046	8.3100386

4.6 6dB Bandwidth Measurment

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

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. 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	16.38	16.38	16.40	0.5	Pass
157	5785	16.38	16.39	16.37	0.5	Pass
165	5825	16.39	16.40	16.40	0.5	Pass

802.11n (20MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
149	5745	17.59	17.60	17.60	0.5	Pass
157	5785	17.64	17.60	17.57	0.5	Pass
165	5825	17.61	17.62	17.60	0.5	Pass

802.11n (40MHz)

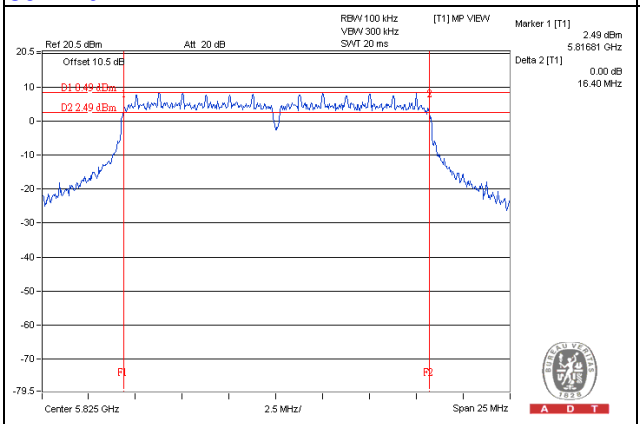
Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
151	5755	35.89	35.99	36.36	0.5	Pass
159	5795	36.43	36.41	36.34	0.5	Pass

802.11ac (80MHz)

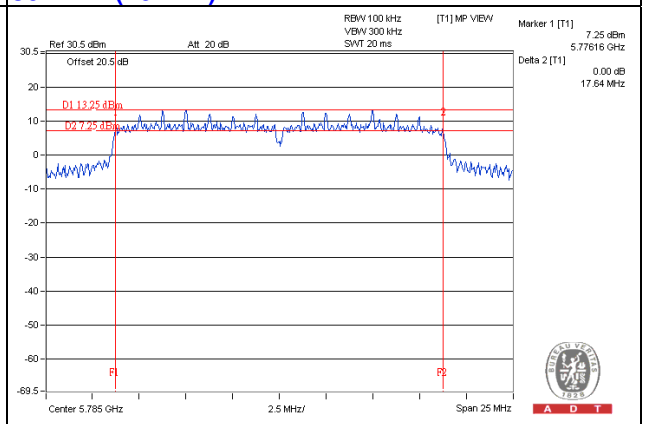
Channel	Frequency (MHz)	6dB Bandwidth (MHz)			Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2		
155	5775	74.71	70.65	71.69	0.5	Pass

SPECTRUM PLOT OF WORST VALUE

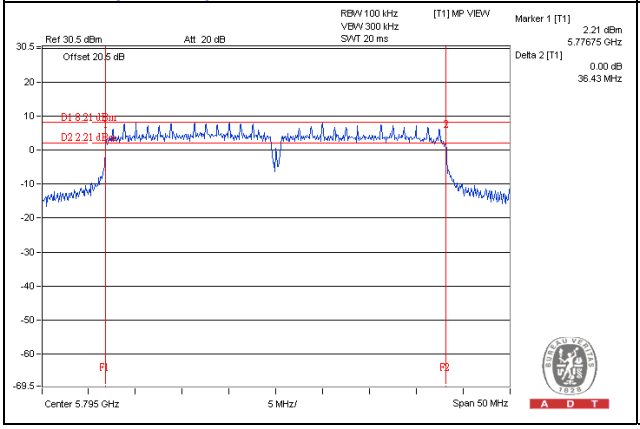
802.11a



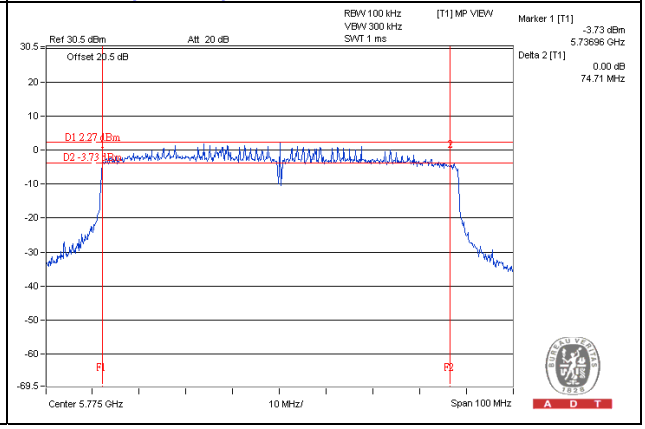
802.11n (20MHz)



802.11n (40MHz)



802.11ac (80MHz)

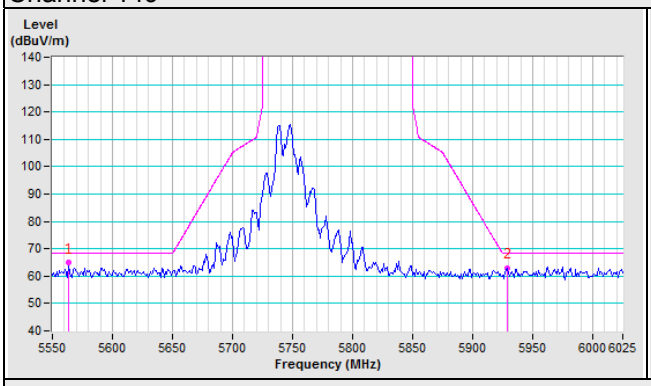
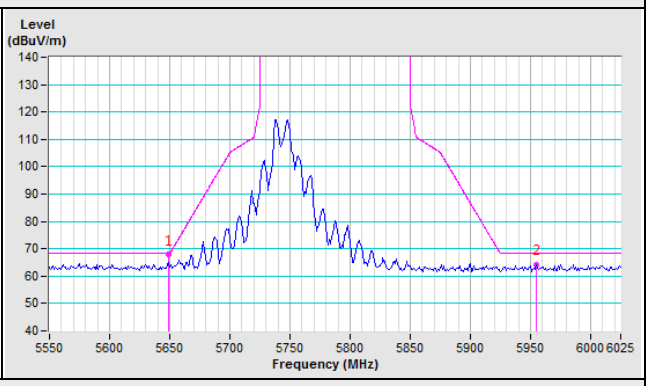
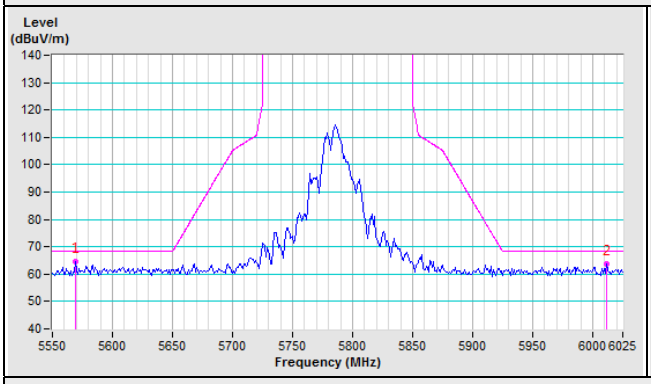
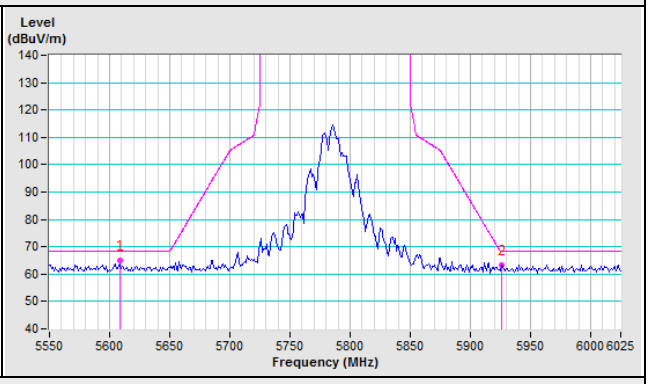
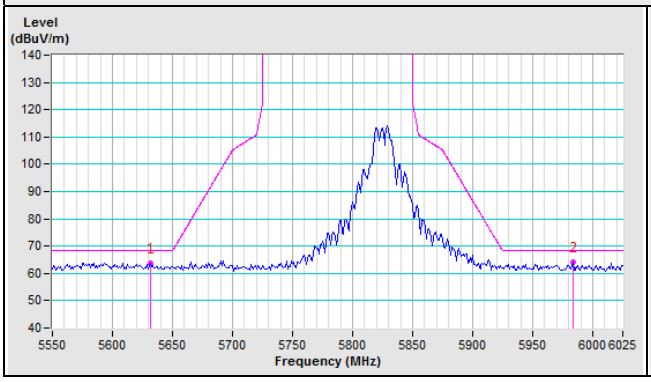
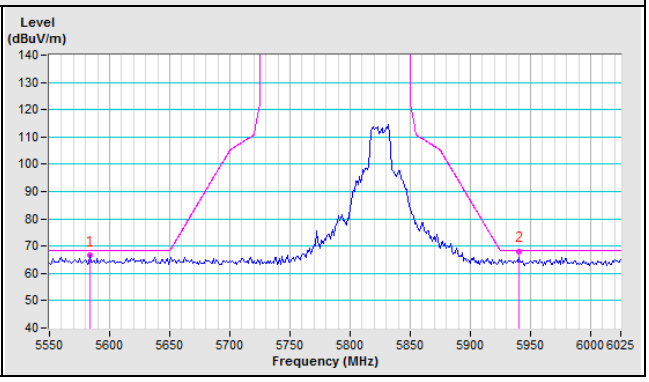


5 Pictures of Test Arrangements

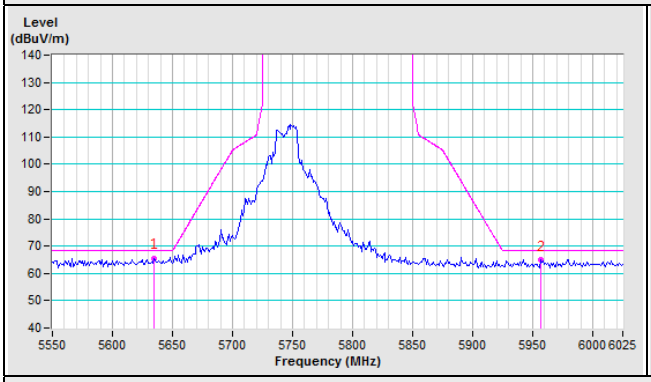
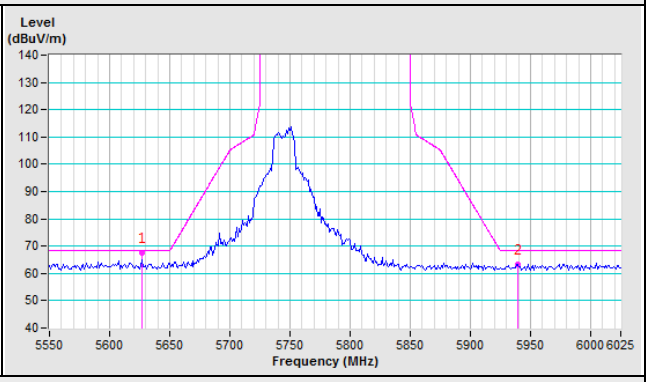
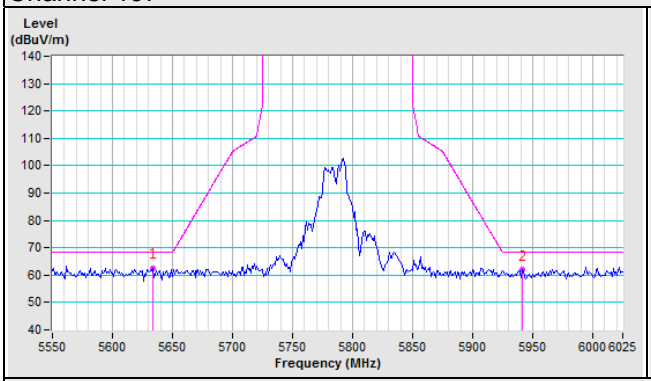
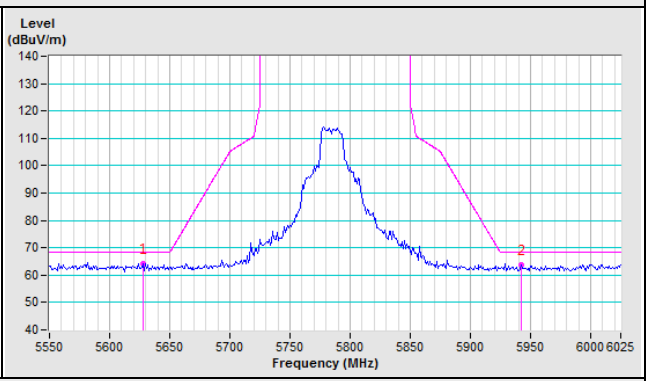
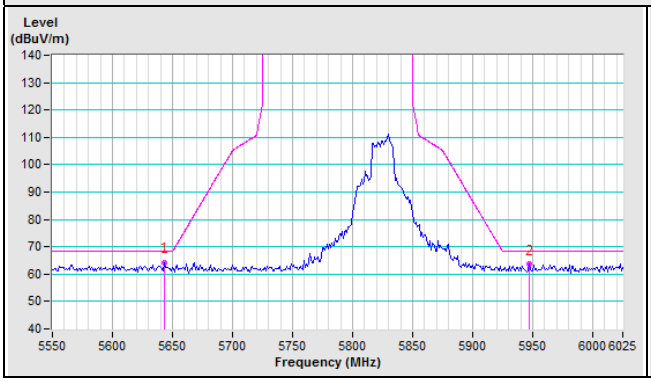
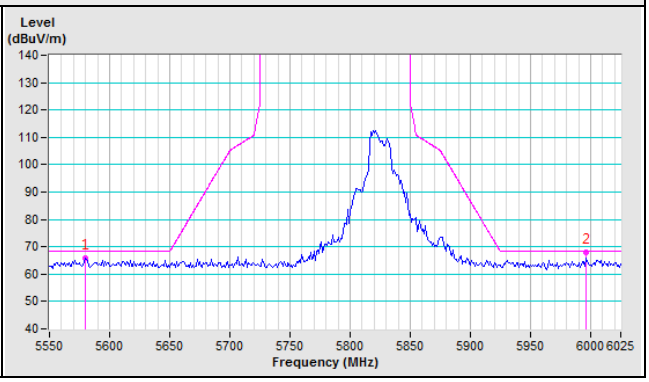
Please refer to the attached file (Test Setup Photo).

Annex A- Radiated Out of Band Emisison (OOBE) Measurement (For U-NII-3 band)

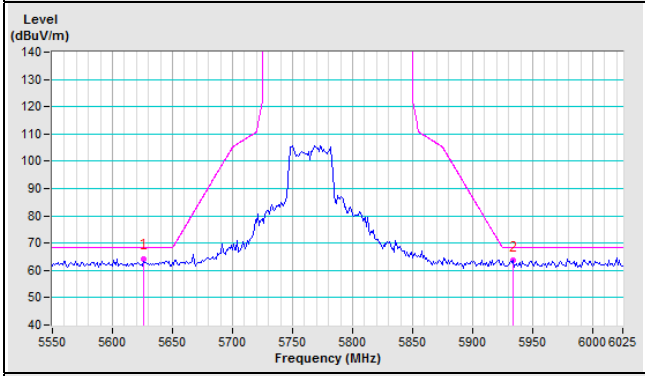
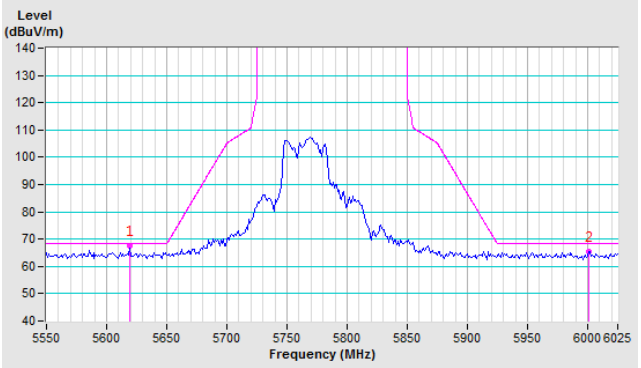
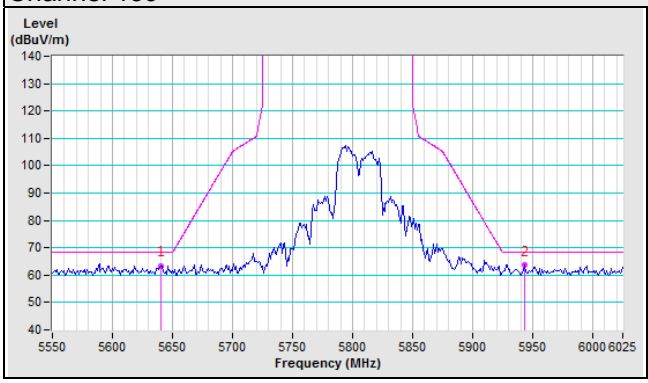
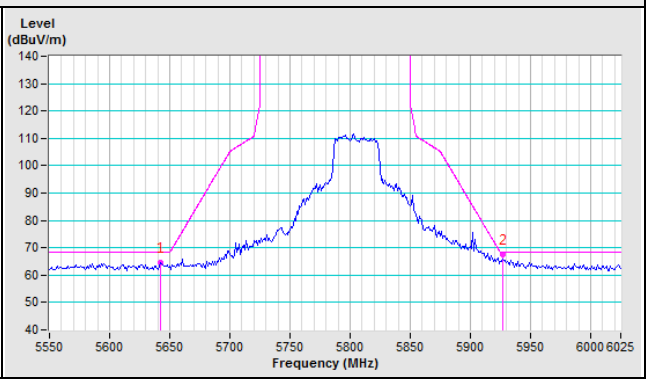
802.11a

Test Plots	
Horizontal	**Vertical**
Channel 149	
	
Channel 157	
	
Channel 165	
	

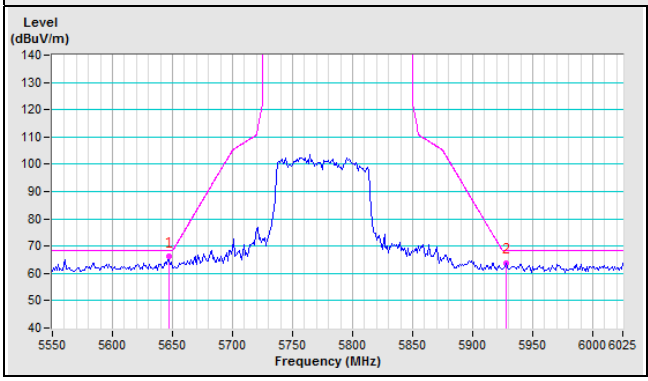
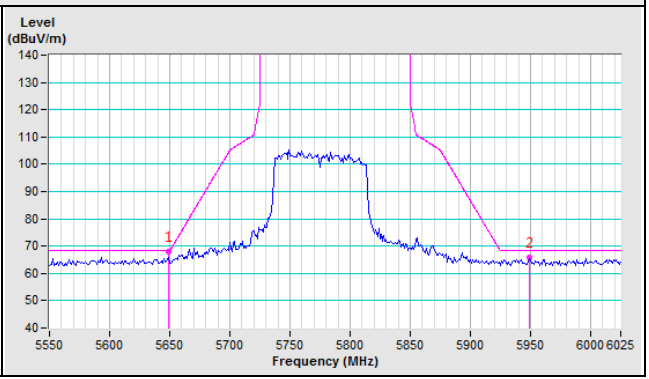
802.11n (20MHz)

Test Plots	
Horizontal	**Vertical**
Channel 149	
	
Channel 157	
	
Channel 165	
	

802.11n (40MHz)

Test Plots	
Horizontal	**Vertical**
Channel 151	
	
Channel 159	
	

802.11ac (80MHz)

Test Plots	
Horizontal	**Vertical**
Channel 155	
	

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:

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Fax: 886-3-3270892

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

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

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