

FCC Test Report

Report No.: RF170320C02A

FCC ID: ACQ-DSR800

Test Model: DSR800

Received Date: Mar. 20, 2017

Test Date: Mar. 28 ~ Apr. 27, 2017

Issued Date: Jun. 22, 2017

Applicant: ARRIS Group, Inc.

Address: 101 Tournament Drive, Horsham, Pennsylvania, United States, 19044

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

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Release Control Record

Issue No.	Description	Date Issued
RF170320C02A	Original release.	Jun. 22, 2017

1 Certificate of Conformity

Product: Satellite Set-Top Box

Brand: ARRIS Group, Inc.

Test Model: DSR800

Sample Status: Engineering sample

Applicant: ARRIS Group, Inc.

Test Date: Mar. 28 ~ Apr. 27, 2017

Standards: 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 : Sunt Lee , **Date:** Jun. 22, 2017
Sunt Lee / Specialist

Approved by : Ken Liu , **Date:** Jun. 22, 2017
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 -7.21dB at 0.47400MHz.
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 -0.1dB at 5470.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
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 UFL not a standard connector.

*For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB 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	Expanded Uncertainty (k=2) ($\pm$)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.94 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.63 dB
	200MHz ~ 1000MHz	3.64 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	Satellite Set-Top Box
Brand	ARRIS Group, Inc.
Test Model	DSR800
Sample Status	Engineering sample
Power Supply Rating	12Vdc (adapter)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	5260~5320MHz, 5500~5720MHz
Number of Channel	5260~5320MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11n (HT40): 2 802.11ac (VHT80): 1 5500~5720MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 12 802.11n (HT40), 802.11n (HT40): 6 802.11ac (VHT80): 3
Output Power	CDD Mode, 1TX: 5260~5320MHz: 101.625mW 5500~5720MHz: 112.460mW CDD Mode, 2TX: 5260~5320MHz: 117.272mW 5500~5720MHz: 102.642mW Beamforming Mode: 5260~5320MHz: 70.637mW 5500~5720MHz: 64.551mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter, Remote controller
Cable Supplied	2m shielded HDMI cable without core

Note:

1. This report is prepared for FCC class II permissive change. The difference compared with the original report (BV ADT report no.: RF170320C02-1) is adding 5.26GHz to 5.32GHz and 5.50GHz to 5.72GHz by software.
2. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers. The EUT supports diversity parameter. Antenna 1 is the 2.4GHz max. gain for final test and antenna 0 is the 5GHz max. gain for final test.

Modulation Mode	TX Function	Beamforming
802.11b	1TX, 2TX	Not Support
802.11g	1TX, 2TX	Not Support
802.11a	1TX, 2TX	Not Support
802.11n (HT20)	1TX, 2TX	Support
802.11n (HT40)	1TX, 2TX	Support
802.11ac (VHT20)	1TX, 2TX	Support
802.11ac (VHT40)	1TX, 2TX	Support
802.11ac (VHT80)	1TX, 2TX	Support

* The modulation and bandwidth are similar for 802.11n mode for 20MHz/40MHz and 802.11ac mode for 20MHz/40MHz, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

* For 802.11n and 802.11ac, CDD mode and Beamforming mode are presented in power output test item. For other test items, CDD mode is the worst case for final tests after pretesting.

3. The EUT uses following antennas.

Ant. Type	Stamped Metal				
Connector Type	UFL				
Single Antenna Gain (dBi)					
Item	2.4G	5G Band 1	5G Band 2	5G Band 3	5G Band 4
Ant. 0	1.92	4.17	4.77	5.36	5.58
Ant. 1	2.33	3.07	3.07	3.23	3.85

* The 2.4GHz max. gain (antenna 1) is chosen for final tests since it has the maximum gain among all antennas.

* The 5GHz max. gain (antenna 0) is chosen for final tests since it has the maximum gain among all antennas.

4. The EUT uses following adapter.

Brand	LITEON
Model	PB-1300-3AR3
Input Power	100-120Vac, 1.0A, 60Hz
Output Power	12Vdc, 2.5A
Power Line	1.75m non-shielded DC cable without core attached on adapter

5. 2.4GHz and 5GHz technologies can not transmit at same time.

3.2 Description of Test Modes

5260~5320MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40), 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290MHz

5500~5720MHz:

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

6 channels are provided for 802.11n (HT40), 802.11n (HT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

3 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	122	5610 MHz
138	5690 MHz		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE $\geq$ 1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where RE $\geq$ 1G: Radiated Emission above 1GHz & Bandedge Measurement
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.

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	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0	1TX / 2TX
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5 / 7.2	1TX / 2TX
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5 / 15.0	1TX / 2TX
	802.11ac (VHT80)		58	58	OFDM	29.3 / 65.0	1TX / 2TX
-	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	6.0	1TX / 2TX
	802.11n (HT20)		100 to 144	100, 116, 140, 144	OFDM	6.5 / 7.2	1TX / 2TX
	802.11n (HT40)		102 to 142	102, 110, 134, 142	OFDM	13.5 / 15.0	1TX / 2TX
	802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	29.3 / 65.0	1TX / 2TX

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	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11n (HT20)	5260-5320	52 to 64	64	OFDM	7.2	2TX
-	802.11n (HT20)	5500-5720	100 to 140		OFDM	7.2	2TX

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	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11n (HT20)	5260-5320	52 to 64	64	OFDM	7.2	2TX
-	802.11n (HT20)	5500-5720	100 to 140		OFDM	7.2	2TX

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	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0	1TX / 2TX
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5 / 7.2	1TX / 2TX
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5 / 15.0	1TX / 2TX
	802.11ac (VHT80)		58	58	OFDM	29.3 / 65.0	1TX / 2TX
-	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	6.0	1TX / 2TX
	802.11n (HT20)		100 to 144	100, 116, 140, 144	OFDM	6.5 / 7.2	1TX / 2TX
	802.11n (HT40)		102 to 142	102, 110, 134, 142	OFDM	13.5 / 15.0	1TX / 2TX
	802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	29.3 / 65.0	1TX / 2TX

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	20 deg. C, 69% RH 25 deg. C, 69% RH	120Vac, 60Hz	Bayu Chen Bond Tseng Chris Lin Matthew Yang
RE<1G	25 deg. C, 69% RH	120Vac, 60Hz	Matthew Yang
PLC	25 deg. C, 70% RH	120Vac, 60Hz	Matthew Yang
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Antony Lee

3.3 Duty Cycle of Test Signal

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

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

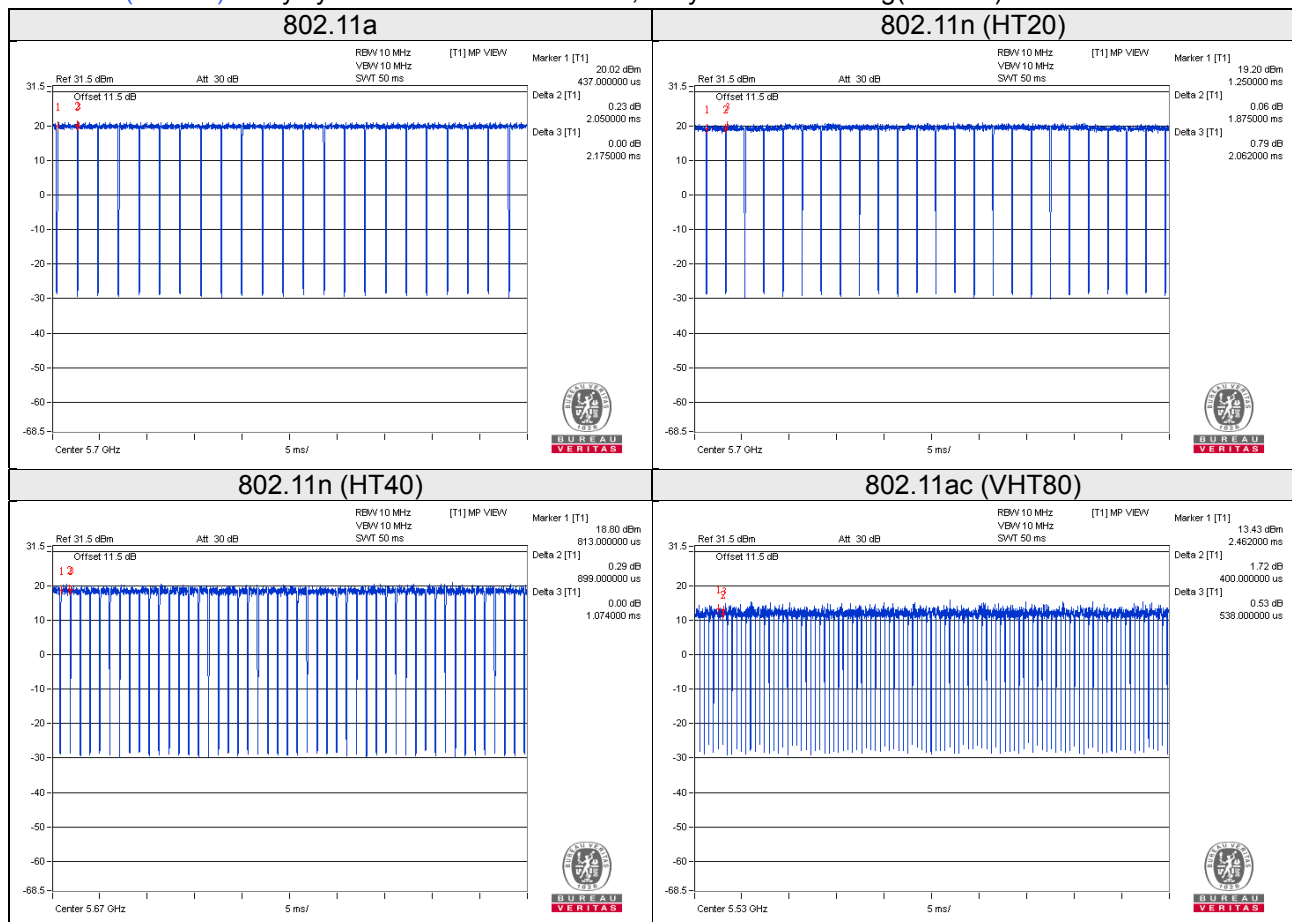
CDD Mode, 1TX

802.11a: Duty cycle = $2.050/2.175 = 0.943$, Duty factor = $10 * \log(1/0.943) = 0.26$

802.11n (HT20): Duty cycle = $1.87/2.06 = 0.908$, Duty factor = $10 * \log(1/0.908) = 0.42$

802.11n (HT40): Duty cycle = $0.899/1.07 = 0.840$, Duty factor = $10 * \log(1/0.840) = 0.76$

802.11ac (VHT80): Duty cycle = $0.400/0.538 = 0.743$, Duty factor = $10 * \log(1/0.743) = 1.29$



CDD Mode, 2TX

802.11a: Duty cycle = $2.037/2.262 = 0.901$, Duty factor = $10 * \log(1/0.901) = 0.46$

802.11n (HT20): Duty cycle = $1.888/2.038 = 0.926$, Duty factor = $10 * \log(1/0.926) = 0.33$

802.11n (HT40): Duty cycle = $0.925/1.100 = 0.841$, Duty factor = $10 * \log(1/0.841) = 0.75$

802.11ac (VHT80): Duty cycle = $0.375/0.487 = 0.770$, Duty factor = $10 * \log(1/0.770) = 1.13$

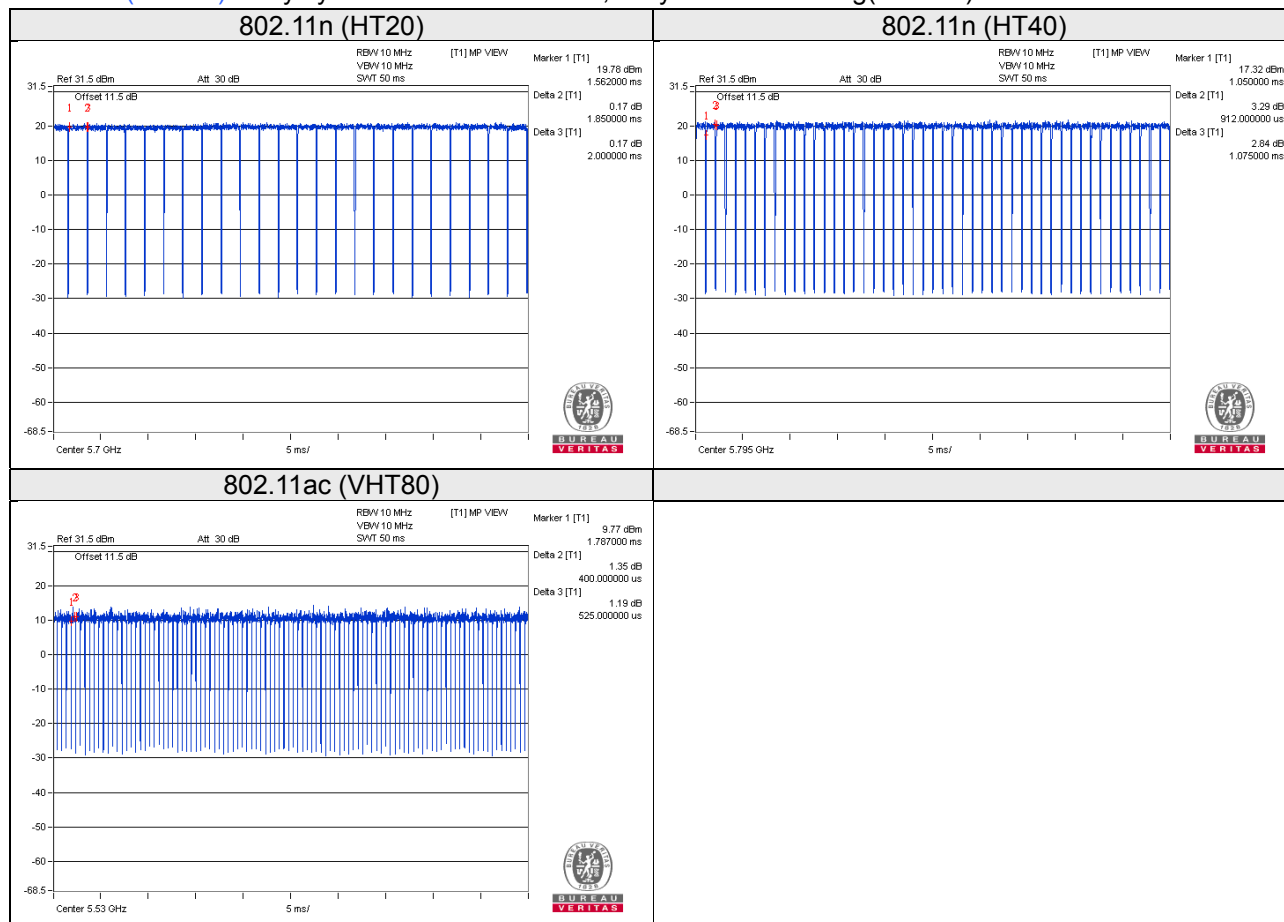


Beamforming Mode

802.11n (HT20): Duty cycle = $1.85/2 = 0.925$, Duty factor = $10 * \log(1/0.925) = 0.34$

802.11n (HT40): Duty cycle = $0.912/1.075 = 0.848$, Duty factor = $10 * \log(1/0.848) = 0.71$

802.11ac (VHT80): Duty cycle = $0.4/0.525 = 0.762$, Duty factor = $10 * \log(1/0.762) = 1.18$



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.

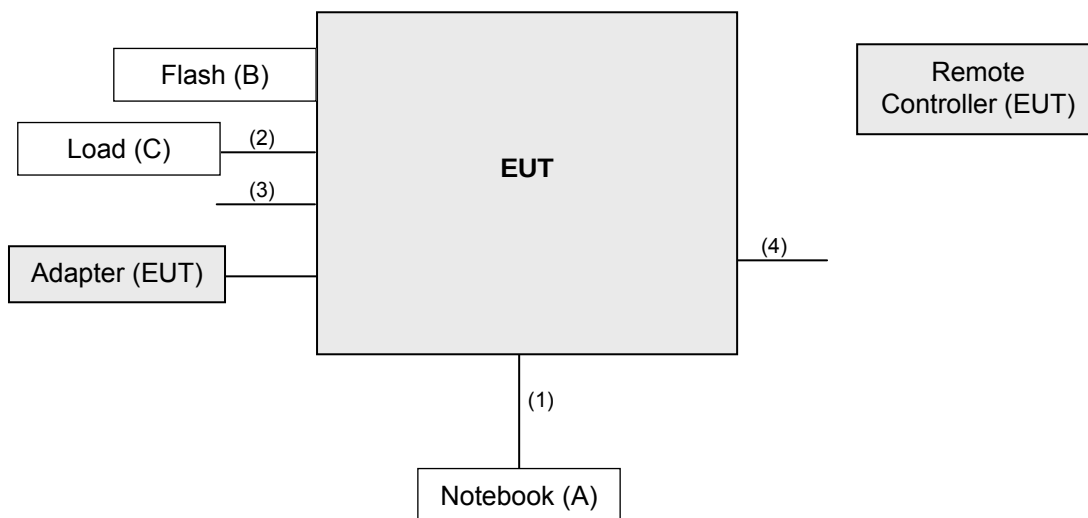
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	6RP2YM1	FCC DoC Approved	-
B.	FLASH	HP	v250W	09	NA	-
C.	Load	NA	NA	NA	NA	-

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45, Cat5e	1	3	N	0	-
2.	HDMI	1	2	Y	0	Accessory of EUT
3.	AV	1	1.8	Y	0	-
4.	Coaxial	1	3	Y	0	-

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedure New Rules v01r04

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 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:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 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 v01r03			Field Strength at 3m	
			PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK: -27 (dBm/MHz)	PK: 68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	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)	Emission limits in section 15.247(d)	
^{*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:

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 24, 2016	Oct. 23, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 16, 2016	Aug. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Dec. 28, 2016	Dec. 27, 2017
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Dec. 15, 2016	Dec. 14, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	8449B	3008A01960	Aug. 09, 2016	Aug. 08, 2017
Preamplifier Agilent	8447D	2944A10631	Aug. 09, 2016	Aug. 08, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Aug. 09, 2016	Aug. 08, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Aug. 09, 2016	Aug. 08, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 17, 2016	Oct. 16, 2017
High Speed Peak Power Meter	ML2495A	0824012	Aug. 11, 2016	Aug. 10, 2017
Power Sensor	MA2411B	0738171	Aug. 11, 2016	Aug. 10, 2017
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 08, 2016	Jun. 07, 2017

- 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 4.
 3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 460141.
 5. The IC Site Registration No. is IC7450F-4.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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. Both X and Y axes of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case 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.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 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:

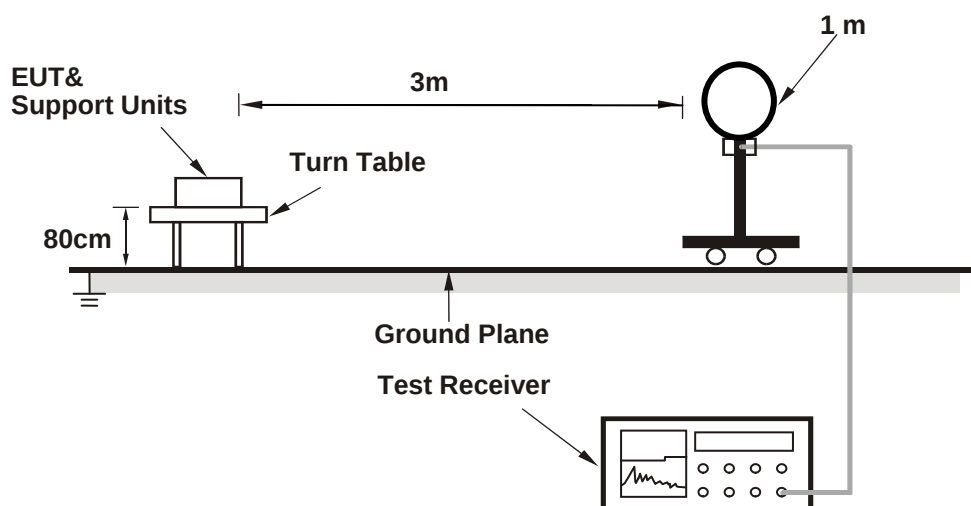
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

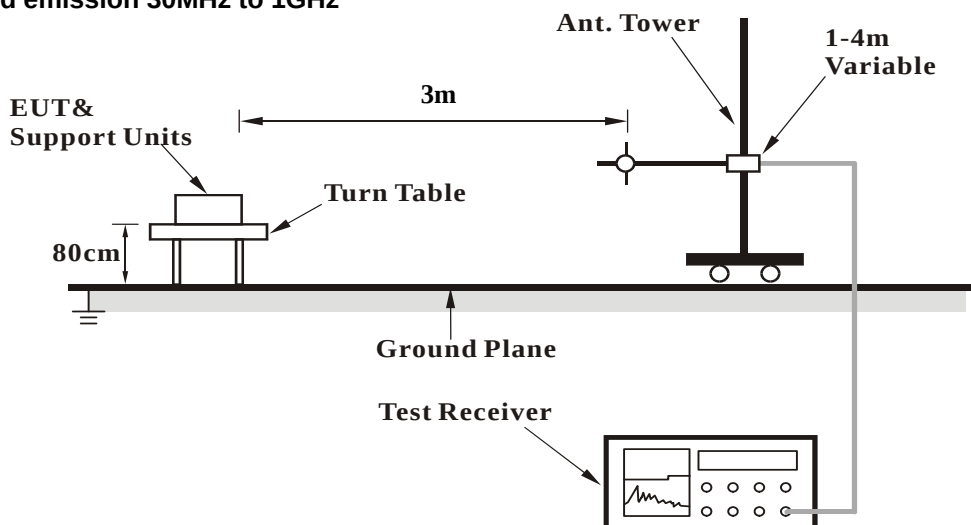
No deviation.

4.1.5 Test Setup

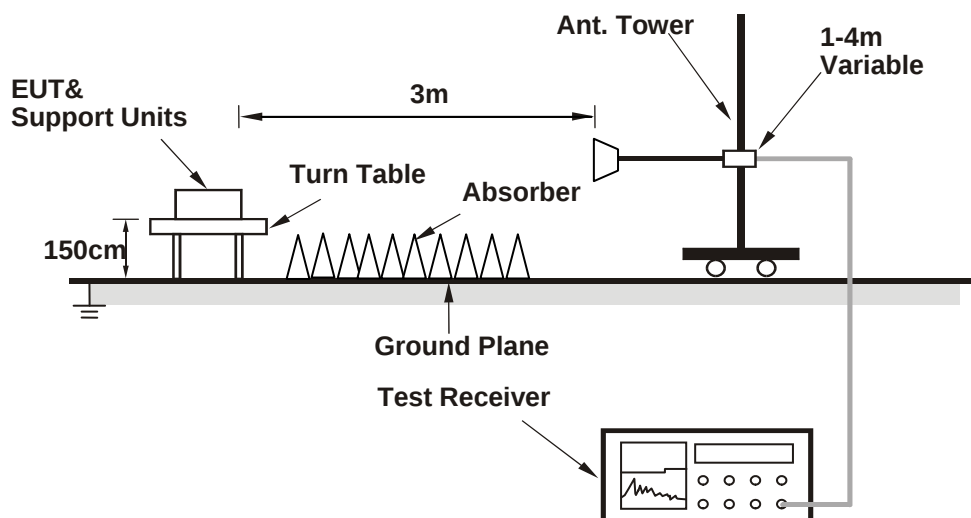
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission 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 a notebook to act as a 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:

1TX

802.11a

CHANNEL	TX Channel 52	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.2 PK	74.0	-18.8	3.93 H	313	53.1	2.1
2	5150.00	42.1 AV	54.0	-11.9	3.93 H	313	40.0	2.1
3	*5260.00	101.1 PK			3.93 H	313	61.4	39.7
4	*5260.00	91.0 AV			3.93 H	313	51.3	39.7
5	#10520.00	57.9 PK	74.0	-16.1	1.35 H	221	43.7	14.2
6	#10520.00	45.6 AV	54.0	-8.4	1.35 H	221	31.4	14.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.0 PK	74.0	-19.0	1.68 V	37	52.9	2.1
2	5150.00	42.1 AV	54.0	-11.9	1.68 V	37	40.0	2.1
3	*5260.00	109.3 PK			1.68 V	37	70.2	39.1
4	*5260.00	100.0 AV			1.68 V	37	60.9	39.1
5	#10520.00	58.9 PK	74.0	-15.1	1.33 V	17	44.7	14.2
6	#10520.00	46.5 AV	54.0	-7.5	1.33 V	17	32.3	14.2

Remarks:

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

CHANNEL	TX Channel 60	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	101.5 PK			3.81 H	326	62.3	39.2
2	*5300.00	91.5 AV			3.81 H	326	52.3	39.2
3	10600.00	58.3 PK	74.0	-15.7	1.14 H	3	43.6	14.7
4	10600.00	46.1 AV	54.0	-7.9	1.14 H	3	31.4	14.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.3 PK			1.68 V	26	70.1	39.2
2	*5300.00	100.1 AV			1.68 V	26	60.9	39.2
3	10600.00	60.4 PK	74.0	-13.6	3.17 V	88	45.7	14.7
4	10600.00	47.2 AV	54.0	-6.8	3.17 V	88	32.5	14.7

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	98.6 PK			3.81 H	336	59.4	39.2
2	*5320.00	88.8 AV			3.81 H	336	49.6	39.2
3	5350.00	55.8 PK	74.0	-18.2	3.81 H	336	53.2	2.6
4	5350.00	43.9 AV	54.0	-10.1	3.81 H	336	41.3	2.6
5	10640.00	58.4 PK	74.0	-15.6	1.84 H	136	43.7	14.7
6	10640.00	46.0 AV	54.0	-8.0	1.84 H	136	31.3	14.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	107.6 PK			1.75 V	345	68.4	39.2
2	*5320.00	97.9 AV			1.75 V	345	58.7	39.2
3	5350.00	59.5 PK	74.0	-14.5	1.75 V	345	56.9	2.6
4	5350.00	45.9 AV	54.0	-8.1	1.75 V	345	43.3	2.6
5	10640.00	59.5 PK	74.0	-14.5	2.37 V	144	44.8	14.7
6	10640.00	47.3 AV	54.0	-6.7	2.37 V	144	32.6	14.7

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	57.9 PK	74.0	-16.1	2.24 H	176	55.2	2.7
2	5460.00	45.1 AV	54.0	-8.9	2.24 H	176	42.4	2.7
3	#5470.00	65.9 PK	74.0	-8.1	2.24 H	176	63.2	2.7
4	#5470.00	47.0 AV	54.0	-7.0	2.24 H	176	44.3	2.7
5	*5500.00	103.4 PK			2.24 H	176	63.9	39.5
6	*5500.00	93.2 AV			2.24 H	176	53.7	39.5
7	11000.00	59.4 PK	74.0	-14.6	1.43 H	112	43.3	16.1
8	11000.00	46.6 AV	54.0	-7.4	1.43 H	112	30.5	16.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.2 PK	74.0	-12.8	1.50 V	41	58.5	2.7
2	5460.00	48.6 AV	54.0	-5.4	1.50 V	41	45.9	2.7
3	#5470.00	68.3 PK	74.0	-5.7	1.50 V	41	65.6	2.7
4	#5470.00	50.1 AV	54.0	-3.9	1.50 V	41	47.4	2.7
5	*5500.00	110.8 PK			1.50 V	41	71.3	39.5
6	*5500.00	101.2 AV			1.50 V	41	61.7	39.5
7	11000.00	60.7 PK	74.0	-13.3	1.86 V	224	44.6	16.1
8	11000.00	47.5 AV	54.0	-6.5	1.86 V	224	31.4	16.1

Remarks:

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

CHANNEL	TX Channel 116	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5580.00	104.3 PK			1.57 H	263	64.6	39.7
2	*5580.00	94.3 AV			1.57 H	263	54.6	39.7
3	11160.00	58.7 PK	74.0	-15.3	1.99 H	213	43.4	15.3
4	11160.00	45.4 AV	54.0	-8.6	1.99 H	213	30.1	15.3
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	*5580.00	112.5 PK			1.49 V	191	72.8	39.7
2	*5580.00	102.3 AV			1.49 V	191	62.6	39.7
3	11160.00	59.5 PK	74.0	-14.5	1.32 V	157	44.2	15.3
4	11160.00	47.0 AV	54.0	-7.0	1.32 V	157	31.7	15.3

Remarks:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	99.5 PK			1.56 H	224	59.6	39.9
2	*5700.00	89.3 AV			1.56 H	224	49.4	39.9
3	#5725.00	57.8 PK	74.0	-16.2	1.56 H	224	54.7	3.1
4	#5725.00	45.5 AV	54.0	-8.5	1.56 H	224	42.4	3.1
5	11400.00	58.9 PK	74.0	-15.1	1.17 H	21	43.6	15.3
6	11400.00	45.9 AV	54.0	-8.1	1.17 H	21	30.6	15.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	107.4 PK			2.12 V	192	67.5	39.9
2	*5700.00	97.5 AV			2.12 V	192	57.6	39.9
3	#5725.00	61.8 PK	74.0	-12.2	2.12 V	192	58.7	3.1
4	#5725.00	48.0 AV	54.0	-6.0	2.12 V	192	44.9	3.1
5	11400.00	60.0 PK	74.0	-14.0	2.41 V	223	44.7	15.3
6	11400.00	46.8 AV	54.0	-7.2	2.41 V	223	31.5	15.3

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	55.3 PK	74.0	-18.7	1.82 H	206	52.6	2.7
2	5460.00	43.0 AV	54.0	-11.0	1.82 H	206	40.3	2.7
3	#5470.00	56.1 PK	74.0	-17.9	1.82 H	206	53.4	2.7
4	#5470.00	43.2 AV	54.0	-10.8	1.82 H	206	40.5	2.7
5	*5720.00	102.5 PK			1.82 H	206	62.6	39.9
6	*5720.00	92.8 AV			1.82 H	206	52.9	39.9
7	#5850.00	56.8 PK	74.0	-17.2	1.82 H	206	53.6	3.2
8	#5850.00	44.1 AV	54.0	-9.9	1.82 H	206	40.9	3.2
9	11440.00	58.7 PK	74.0	-15.3	1.54 H	12	43.7	15.0
10	11440.00	45.8 AV	54.0	-8.2	1.54 H	12	30.8	15.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.7 PK	74.0	-17.3	1.84 V	187	54.0	2.7
2	5460.00	44.1 AV	54.0	-9.9	1.84 V	187	41.4	2.7
3	#5470.00	56.9 PK	74.0	-17.1	1.84 V	187	54.2	2.7
4	#5470.00	43.7 AV	54.0	-10.3	1.84 V	187	41.0	2.7
5	*5720.00	110.0 PK			1.84 V	187	70.1	39.9
6	*5720.00	99.8 AV			1.84 V	187	59.9	39.9
7	#5850.00	57.9 PK	74.0	-16.1	1.84 V	187	54.7	3.2
8	#5850.00	44.6 AV	54.0	-9.4	1.84 V	187	41.4	3.2
9	11440.00	59.6 PK	74.0	-14.4	1.54 V	113	44.6	15.0
10	11440.00	46.6 AV	54.0	-7.4	1.54 V	113	31.6	15.0

Remarks:

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

802.11n (HT20)

CHANNEL	TX Channel 52	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.7 PK	74.0	-19.3	3.96 H	314	52.6	2.1
2	5150.00	42.0 AV	54.0	-12.0	3.96 H	314	39.9	2.1
3	*5260.00	100.1 PK			3.96 H	314	61.0	39.1
4	*5260.00	89.7 AV			3.96 H	314	50.6	39.1
5	#10520.00	57.5 PK	74.0	-16.5	3.33 H	13	43.3	14.2
6	#10520.00	45.4 AV	54.0	-8.6	3.33 H	13	31.2	14.2
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	56.3 PK	74.0	-17.7	1.61 V	21	54.2	2.1
2	5150.00	42.3 AV	54.0	-11.7	1.61 V	21	40.2	2.1
3	*5260.00	110.4 PK			1.61 V	21	71.3	39.1
4	*5260.00	99.9 AV			1.61 V	21	60.8	39.1
5	#10520.00	59.5 PK	74.0	-14.5	2.39 V	213	45.3	14.2
6	#10520.00	46.9 AV	54.0	-7.1	2.39 V	213	32.7	14.2

Remarks:

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

CHANNEL	TX Channel 60	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	99.1 PK			3.69 H	354	59.9	39.2
2	*5300.00	89.4 AV			3.69 H	354	50.2	39.2
3	10600.00	58.4 PK	74.0	-15.6	1.34 H	52	43.7	14.7
4	10600.00	45.9 AV	54.0	-8.1	1.34 H	52	31.2	14.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.9 PK			1.58 V	44	70.7	39.2
2	*5300.00	100.0 AV			1.58 V	44	60.8	39.2
3	10600.00	59.8 PK	74.0	-14.2	1.37 V	59	45.1	14.7
4	10600.00	47.2 AV	54.0	-6.8	1.37 V	59	32.5	14.7

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	98.8 PK			3.54 H	355	59.6	39.2
2	*5320.00	88.0 AV			3.54 H	355	48.8	39.2
3	5350.00	58.2 PK	74.0	-15.8	3.54 H	355	55.6	2.6
4	5350.00	45.8 AV	54.0	-8.2	3.54 H	355	43.2	2.6
5	10640.00	58.9 PK	74.0	-15.1	1.82 H	13	44.2	14.7
6	10640.00	46.1 AV	54.0	-7.9	1.82 H	13	31.4	14.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.1 PK			1.26 V	22	69.9	39.2
2	*5320.00	98.7 AV			1.26 V	22	59.5	39.2
3	5350.00	62.3 PK	74.0	-11.7	1.26 V	22	59.7	2.6
4	5350.00	47.9 AV	54.0	-6.1	1.26 V	22	45.3	2.6
5	10640.00	60.0 PK	74.0	-14.0	3.14 V	124	45.3	14.7
6	10640.00	47.4 AV	54.0	-6.6	3.14 V	124	32.7	14.7

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.3 PK	74.0	-15.7	1.05 H	217	51.6	6.7
2	5460.00	46.2 AV	54.0	-7.8	1.05 H	217	39.5	6.7
3	#5470.00	61.7 PK	74.0	-12.3	1.05 H	216	55.0	6.7
4	#5470.00	47.3 AV	54.0	-6.7	1.05 H	216	40.6	6.7
5	*5500.00	99.7 PK			1.00 H	210	58.8	40.9
6	*5500.00	89.7 AV			1.00 H	210	48.8	40.9
7	11000.00	59.8 PK	74.0	-14.2	1.05 H	69	40.5	19.3
8	11000.00	48.0 AV	54.0	-6.0	1.05 H	69	28.7	19.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.7 PK	74.0	-14.3	1.70 V	35	53.0	6.7
2	5460.00	45.3 AV	54.0	-8.7	1.70 V	35	38.6	6.7
3	#5470.00	66.0 PK	74.0	-8.0	1.71 V	39	59.3	6.7
4	#5470.00	49.3 AV	54.0	-4.7	1.71 V	39	42.6	6.7
5	*5500.00	111.3 PK			1.67 V	30	70.4	40.9
6	*5500.00	100.5 AV			1.67 V	30	59.6	40.9
7	11000.00	58.6 PK	74.0	-15.4	1.32 V	65	39.3	19.3
8	11000.00	45.8 AV	54.0	-8.2	1.32 V	65	26.5	19.3

Remarks:

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

CHANNEL	TX Channel 116	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5580.00	102.0 PK			1.00 H	212	61.0	41.0
2	*5580.00	91.7 AV			1.00 H	212	50.7	41.0
3	11160.00	60.4 PK	74.0	-13.6	1.05 H	24	40.6	19.8
4	11160.00	48.4 AV	54.0	-5.6	1.05 H	24	28.6	19.8
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	*5580.00	113.6 PK			1.64 V	37	72.6	41.0
2	*5580.00	103.2 AV			1.64 V	37	62.2	41.0
3	11160.00	62.4 PK	74.0	-11.6	1.32 V	58	42.6	19.8
4	11160.00	49.4 AV	54.0	-4.6	1.32 V	58	29.6	19.8

Remarks:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	100.0 PK			1.94 H	32	58.5	41.5
2	*5700.00	89.9 AV			1.94 H	32	48.4	41.5
3	#5725.00	59.3 PK	74.0	-14.7	1.98 H	40	52.0	7.3
4	#5725.00	47.8 AV	54.0	-6.2	1.98 H	40	40.5	7.3
5	11400.00	61.6 PK	74.0	-12.4	1.05 H	96	41.2	20.4
6	11400.00	48.8 AV	54.0	-5.2	1.05 H	96	28.4	20.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	110.3 PK			1.26 V	36	68.8	41.5
2	*5700.00	100.3 AV			1.26 V	36	58.8	41.5
3	#5725.00	66.3 PK	74.0	-7.7	1.30 V	40	59.0	7.3
4	#5725.00	50.3 AV	54.0	-3.7	1.30 V	40	43.0	7.3
5	11400.00	61.9 PK	74.0	-12.1	1.25 V	87	41.5	20.4
6	11400.00	50.0 AV	54.0	-4.0	1.25 V	87	29.6	20.4

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 144	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5470.00	58.7 PK	74.0	-15.3	1.35 H	215	52.0	6.7
2	#5470.00	46.3 AV	54.0	-7.7	1.35 H	215	39.6	6.7
3	*5720.00	99.1 PK			1.30 H	212	57.6	41.5
4	*5720.00	89.1 AV			1.30 H	212	47.6	41.5
5	#5850.00	59.6 PK	74.0	-14.4	1.33 H	219	51.9	7.7
6	#5850.00	47.4 AV	54.0	-6.6	1.33 H	219	39.7	7.7
7	11400.00	61.6 PK	74.0	-12.4	1.45 H	85	41.2	20.4
8	11400.00	49.1 AV	54.0	-4.9	1.45 H	85	28.7	20.4
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	*5720.00	112.3 PK			1.12 V	33	70.8	41.5
2	*5720.00	102.4 AV			1.12 V	33	60.9	41.5
3	#5740.00	60.9 PK	74.0	-13.1	1.15 V	40	53.6	7.3
4	#5740.00	48.9 AV	54.0	-5.1	1.15 V	40	41.6	7.3
5	#5850.00	61.6 PK	74.0	-12.4	1.19 V	46	53.9	7.7
6	#5850.00	49.4 AV	54.0	-4.6	1.19 V	46	41.7	7.7
7	11440.00	61.9 PK	74.0	-12.1	1.24 V	74	41.6	20.3
8	11440.00	49.9 AV	54.0	-4.1	1.24 V	74	29.6	20.3

Remarks:

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

802.11n (HT40)

CHANNEL	TX Channel 54	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.2 PK	74.0	-19.8	3.46 H	187	52.1	2.1
2	5150.00	41.9 AV	54.0	-12.1	3.46 H	187	39.8	2.1
3	*5270.00	98.7 PK			3.46 H	187	59.5	39.2
4	*5270.00	88.9 AV			3.46 H	187	49.7	39.2
5	#10540.00	58.1 PK	74.0	-15.9	1.17 H	332	43.8	14.3
6	#10540.00	44.5 AV	54.0	-9.5	1.17 H	332	30.2	14.3
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	56.6 PK	74.0	-17.4	1.49 V	28	54.5	2.1
2	5150.00	42.7 AV	54.0	-11.3	1.49 V	28	40.6	2.1
3	*5270.00	108.5 PK			1.49 V	28	69.3	39.2
4	*5270.00	97.7 AV			1.49 V	28	58.5	39.2
5	#10540.00	59.1 PK	74.0	-14.9	1.44 V	33	44.8	14.3
6	#10540.00	46.4 AV	54.0	-7.6	1.44 V	33	32.1	14.3

Remarks:

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

CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	95.1 PK			3.71 H	348	55.9	39.2
2	*5310.00	84.8 AV			3.71 H	348	45.6	39.2
3	5350.00	59.4 PK	74.0	-14.6	3.71 H	348	56.8	2.6
4	5350.00	46.2 AV	54.0	-7.8	3.71 H	348	43.6	2.6
5	10620.00	58.4 PK	74.0	-15.6	3.21 H	51	43.7	14.7
6	10620.00	45.9 AV	54.0	-8.1	3.21 H	51	31.2	14.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	103.8 PK			1.44 V	37	64.6	39.2
2	*5310.00	93.9 AV			1.44 V	37	54.7	39.2
3	5350.00	63.6 PK	74.0	-10.4	1.44 V	37	61.0	2.6
4	5350.00	49.4 AV	54.0	-4.6	1.44 V	37	46.8	2.6
5	10620.00	59.3 PK	74.0	-14.7	1.72 V	115	44.6	14.7
6	10620.00	46.9 AV	54.0	-7.1	1.72 V	115	32.2	14.7

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.6 PK	74.0	-14.4	1.41 H	35	52.9	6.7
2	5460.00	47.2 AV	54.0	-6.8	1.41 H	35	40.5	6.7
3	#5470.00	59.3 PK	74.0	-14.7	1.51 H	45	52.6	6.7
4	#5470.00	47.3 AV	54.0	-6.7	1.51 H	45	40.6	6.7
5	*5510.00	95.8 PK			1.48 H	37	54.9	40.9
6	*5510.00	85.9 AV			1.48 H	37	45.0	40.9
7	11020.00	59.9 PK	74.0	-14.1	1.57 H	89	40.6	19.3
8	11020.00	47.7 AV	54.0	-6.3	1.57 H	89	28.4	19.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	66.4 PK	74.0	-7.6	1.10 V	35	59.7	6.7
2	5460.00	50.2 AV	54.0	-3.8	1.10 V	35	43.5	6.7
3	#5470.00	70.3 PK	74.0	-3.7	1.06 V	29	63.6	6.7
4	#5470.00	53.8 AV	54.0	-0.2	1.06 V	29	47.1	6.7
5	*5510.00	106.7 PK			1.06 V	29	65.8	40.9
6	*5510.00	97.8 AV			1.06 V	29	56.9	40.9
7	11020.00	60.8 PK	74.0	-13.2	1.08 V	54	41.5	19.3
8	11020.00	48.9 AV	54.0	-5.1	1.08 V	54	29.6	19.3

Remarks:

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

CHANNEL	TX Channel 110	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5550.00	100.7 PK			1.00 H	78	59.7	41.0
2	*5550.00	89.6 AV			1.00 H	78	48.6	41.0
3	11100.00	60.6 PK	74.0	-13.4	1.32 H	69	40.8	19.8
4	11100.00	48.5 AV	54.0	-5.5	1.32 H	69	28.7	19.8
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	*5550.00	111.6 PK			1.02 V	30	70.6	41.0
2	*5550.00	101.6 AV			1.02 V	30	60.6	41.0
3	11110.00	61.6 PK	74.0	-12.4	1.05 V	64	41.8	19.8
4	11110.00	49.4 AV	54.0	-4.6	1.05 V	64	29.6	19.8

Remarks:

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

CHANNEL	TX Channel 134	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	98.2 PK			1.86 H	34	56.9	41.3
2	*5670.00	88.1 AV			1.86 H	34	46.8	41.3
3	#5725.00	60.3 PK	74.0	-13.7	1.90 H	36	53.0	7.3
4	#5725.00	47.8 AV	54.0	-6.2	1.90 H	36	40.5	7.3
5	11340.00	60.7 PK	74.0	-13.3	1.52 H	87	40.5	20.2
6	11340.00	48.6 AV	54.0	-5.4	1.52 H	87	28.4	20.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	108.6 PK			1.00 V	4	67.3	41.3
2	*5670.00	99.1 AV			1.00 V	4	57.8	41.3
3	#5725.00	66.3 PK	74.0	-7.7	1.05 V	10	59.0	7.3
4	#5725.00	52.0 AV	54.0	-2.0	1.05 V	10	44.7	7.3
5	11340.00	61.7 PK	74.0	-12.3	1.05 V	87	41.5	20.2
6	11340.00	49.8 AV	54.0	-4.2	1.05 V	87	29.6	20.2

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 142	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5470.00	59.3 PK	74.0	-14.7	1.12 H	60	52.6	6.7
2	#5470.00	47.5 AV	54.0	-6.5	1.12 H	60	40.8	6.7
3	*5710.00	98.9 PK			1.00 H	52	57.4	41.5
4	*5710.00	88.5 AV			1.00 H	52	47.0	41.5
5	#5850.00	59.4 PK	74.0	-14.6	1.08 H	57	51.7	7.7
6	#5850.00	48.7 AV	54.0	-5.3	1.08 H	57	41.0	7.7
7	11420.00	61.6 PK	74.0	-12.4	1.26 H	98	41.2	20.4
8	11420.00	49.4 AV	54.0	-4.6	1.26 H	98	29.0	20.4
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	#5470.00	48.2 PK	74.0	-25.8	1.32 V	65	41.5	6.7
2	#5470.00	46.4 AV	54.0	-7.6	1.32 V	65	39.7	6.7
3	*5710.00	111.8 PK			1.29 V	34	70.3	41.5
4	*5710.00	100.9 AV			1.29 V	34	59.4	41.5
5	#5850.00	60.7 PK	74.0	-13.3	1.36 V	42	53.0	7.7
6	#5850.00	48.3 AV	54.0	-5.7	1.36 V	42	40.6	7.7
7	11420.00	62.0 PK	74.0	-12.0	1.32 V	65	41.6	20.4
8	11420.00	50.0 AV	54.0	-4.0	1.32 V	65	29.6	20.4

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 (VHT80)

CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	53.8 PK	74.0	-20.2	3.21 H	12	51.7	2.1
2	5150.00	42.0 AV	54.0	-12.0	3.21 H	12	39.9	2.1
3	*5290.00	92.7 PK			3.21 H	12	53.5	39.2
4	*5290.00	83.0 AV			3.21 H	12	43.8	39.2
5	5350.00	59.0 PK	74.0	-15.0	3.21 H	12	56.4	2.6
6	5350.00	45.7 AV	54.0	-8.3	3.21 H	12	43.1	2.6
7	#10580.00	58.1 PK	74.0	-15.9	1.57 H	132	43.5	14.6
8	#10580.00	44.7 AV	54.0	-9.3	1.57 H	132	30.1	14.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.7 PK	74.0	-18.3	1.09 V	27	53.6	2.1
2	5150.00	42.9 AV	54.0	-11.1	1.09 V	27	40.8	2.1
3	*5290.00	101.7 PK			1.09 V	27	62.5	39.2
4	*5290.00	91.6 AV			1.09 V	27	52.4	39.2
5	5350.00	62.8 PK	74.0	-11.2	1.09 V	27	60.2	2.6
6	5350.00	47.6 AV	54.0	-6.4	1.09 V	27	45.0	2.6
7	#10580.00	59.2 PK	74.0	-14.8	3.17 V	24	44.6	14.6
8	#10580.00	46.4 AV	54.0	-7.6	3.17 V	24	31.8	14.6

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.2 PK	74.0	-13.8	1.10 H	81	53.5	6.7
2	5460.00	46.4 AV	54.0	-7.6	1.10 H	81	39.7	6.7
3	#5470.00	59.7 PK	74.0	-14.3	1.08 H	80	53.0	6.7
4	#5470.00	46.9 AV	54.0	-7.1	1.08 H	80	40.2	6.7
5	*5530.00	91.4 PK			1.00 H	77	50.5	40.9
6	*5530.00	81.3 AV			1.00 H	77	40.4	40.9
7	11060.00	60.2 PK	74.0	-13.8	1.07 H	84	40.6	19.6
8	11060.00	48.0 AV	54.0	-6.0	1.07 H	84	28.4	19.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	67.4 PK	74.0	-6.6	1.28 V	41	60.7	6.7
2	5460.00	52.2 AV	54.0	-1.8	1.28 V	41	45.5	6.7
3	#5470.00	69.3 PK	74.0	-4.7	1.18 V	39	62.6	6.7
4	#5470.00	53.9 AV	54.0	-0.1	1.18 V	39	47.2	6.7
5	*5530.00	104.6 PK			1.11 V	35	63.7	40.9
6	*5530.00	93.8 AV			1.11 V	35	52.9	40.9
7	11060.00	61.1 PK	74.0	-12.9	1.47 V	87	41.5	19.6
8	11060.00	49.2 AV	54.0	-4.8	1.47 V	87	29.6	19.6

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 122	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	#5470.00	59.7 PK	74.0	-14.3	1.05 H	219	53.0	6.7
2	#5470.00	47.5 AV	54.0	-6.5	1.05 H	219	40.8	6.7
3	*5610.00	94.6 PK			1.00 H	211	53.5	41.1
4	*5610.00	84.9 AV			1.00 H	211	43.8	41.1
5	11220.00	60.4 PK	74.0	-13.6	1.06 H	35	40.5	19.9
6	11220.00	48.3 AV	54.0	-5.7	1.06 H	35	28.4	19.9
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	#5470.00	66.6 PK	74.0	-7.4	1.37 V	33	59.9	6.7
2	#5470.00	52.5 AV	54.0	-1.5	1.37 V	33	45.8	6.7
3	*5610.00	107.2 PK			1.37 V	33	66.1	41.1
4	*5610.00	96.3 AV			1.37 V	33	55.2	41.1
5	11220.00	61.8 PK	74.0	-12.2	1.32 V	65	41.9	19.9
6	11220.00	49.5 AV	54.0	-4.5	1.32 V	65	29.6	19.9

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 138	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5470.00	59.7 PK	74.0	-14.3	2.10 H	39	53.0	6.7
2	#5470.00	46.9 AV	54.0	-7.1	2.10 H	39	40.2	6.7
3	*5690.00	96.1 PK			2.03 H	35	54.8	41.3
4	*5690.00	85.8 AV			2.03 H	35	44.5	41.3
5	#5850.00	60.7 PK	74.0	-13.3	2.17 H	43	53.0	7.7
6	#5850.00	48.3 AV	54.0	-5.7	2.17 H	43	40.6	7.7
7	11380.00	60.9 PK	74.0	-13.1	1.32 H	65	40.6	20.3
8	11380.00	48.9 AV	54.0	-5.1	1.32 H	65	28.6	20.3
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	#5470.00	60.7 PK	74.0	-13.3	1.96 V	41	54.0	6.7
2	#5470.00	48.5 AV	54.0	-5.5	1.96 V	41	41.8	6.7
3	*5690.00	106.5 PK			1.92 V	35	65.2	41.3
4	*5690.00	96.1 AV			1.92 V	35	54.8	41.3
5	#5850.00	60.7 PK	74.0	-13.3	1.58 V	42	53.0	7.7
6	#5850.00	49.3 AV	54.0	-4.7	1.58 V	42	41.6	7.7
7	11380.00	61.8 PK	74.0	-12.2	1.04 V	74	41.5	20.3
8	11380.00	49.7 AV	54.0	-4.3	1.04 V	74	29.4	20.3

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.

2TX

802.11a

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.3 PK	74.0	-16.7	1.10 H	90	51.2	6.1
2	5150.00	45.8 AV	54.0	-8.2	1.10 H	90	39.7	6.1
3	*5260.00	112.6 PK			1.02 H	85	72.2	40.4
4	*5260.00	101.8 AV			1.02 H	85	61.4	40.4
5	#10520.00	58.7 PK	74.0	-15.3	1.17 H	84	40.3	18.4
6	#10520.00	47.9 AV	54.0	-6.1	1.17 H	84	29.5	18.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.1 PK	74.0	-14.9	1.10 V	159	53.0	6.1
2	5150.00	46.1 AV	54.0	-7.9	1.10 V	159	40.0	6.1
3	*5260.00	114.1 PK			1.00 V	155	73.7	40.4
4	*5260.00	104.6 AV			1.00 V	155	64.2	40.4
5	#10520.00	61.0 PK	74.0	-13.0	1.52 V	89	42.6	18.4
6	#10520.00	49.0 AV	54.0	-5.0	1.52 V	89	30.6	18.4

Remarks:

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

CHANNEL	TX Channel 60	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	112.3 PK			1.09 H	85	71.8	40.5
2	*5300.00	101.8 AV			1.09 H	85	61.3	40.5
3	10600.00	59.8 PK	74.0	-14.2	1.52 H	71	41.0	18.8
4	10600.00	48.4 AV	54.0	-5.6	1.52 H	71	29.6	18.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	115.0 PK			1.00 V	153	74.5	40.5
2	*5300.00	105.7 AV			1.00 V	153	65.2	40.5
3	10600.00	60.0 PK	74.0	-14.0	1.05 V	47	41.2	18.8
4	10600.00	48.4 AV	54.0	-5.6	1.05 V	47	29.6	18.8

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	110.1 PK			1.07 H	87	69.6	40.5
2	*5320.00	99.7 AV			1.07 H	87	59.2	40.5
3	5350.00	67.0 PK	74.0	-7.0	1.10 H	90	60.5	6.5
4	5350.00	50.6 AV	54.0	-3.4	1.10 H	90	44.1	6.5
5	10640.00	59.2 PK	74.0	-14.8	1.05 H	64	40.2	19.0
6	10640.00	47.4 AV	54.0	-6.6	1.05 H	64	28.4	19.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	112.1 PK			1.00 V	19	71.6	40.5
2	*5320.00	102.8 AV			1.00 V	19	62.3	40.5
3	5350.00	65.5 PK	74.0	-8.5	1.05 V	25	59.0	6.5
4	5350.00	52.2 AV	54.0	-1.8	1.05 V	25	45.7	6.5
5	10620.00	59.8 PK	74.0	-14.2	1.47 V	85	40.9	18.9
6	10620.00	47.4 AV	54.0	-6.6	1.47 V	85	28.5	18.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.6 PK	74.0	-13.4	1.14 H	94	53.9	6.7
2	5460.00	48.2 AV	54.0	-5.8	1.14 H	94	41.5	6.7
3	#5470.00	67.1 PK	74.0	-6.9	1.15 H	90	60.4	6.7
4	#5470.00	51.2 AV	54.0	-2.8	1.15 H	90	44.5	6.7
5	*5500.00	108.9 PK			1.02 H	85	68.0	40.9
6	*5500.00	99.3 AV			1.02 H	85	58.4	40.9
7	11000.00	60.5 PK	74.0	-13.5	1.05 H	87	41.2	19.3
8	11000.00	48.9 AV	54.0	-5.1	1.05 H	87	29.6	19.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	65.5 PK	74.0	-8.5	1.15 V	29	58.8	6.7
2	5460.00	49.8 AV	54.0	-4.2	1.15 V	29	43.1	6.7
3	#5470.00	71.5 PK	74.0	-2.5	1.15 V	29	64.8	6.7
4	#5470.00	53.8 AV	54.0	-0.2	1.15 V	29	47.1	6.7
5	*5500.00	112.4 PK			1.32 V	30	71.5	40.9
6	*5500.00	103.0 AV			1.32 V	30	62.1	40.9
7	11000.00	59.9 PK	74.0	-14.1	1.47 V	85	40.6	19.3
8	11000.00	48.0 AV	54.0	-6.0	1.47 V	85	28.7	19.3

Remarks:

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

CHANNEL	TX Channel 116	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5580.00	112.0 PK			1.24 H	96	71.0	41.0
2	*5580.00	101.7 AV			1.24 H	96	60.7	41.0
3	11160.00	60.4 PK	74.0	-13.6	1.05 H	28	40.6	19.8
4	11160.00	48.4 AV	54.0	-5.6	1.05 H	28	28.6	19.8
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	*5580.00	114.1 PK			1.72 V	36	73.1	41.0
2	*5580.00	104.7 AV			1.72 V	36	63.7	41.0
3	11160.00	61.3 PK	74.0	-12.7	1.08 V	54	41.5	19.8
4	11160.00	49.4 AV	54.0	-4.6	1.08 V	54	29.6	19.8

Remarks:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	109.9 PK			1.39 H	97	68.4	41.5
2	*5700.00	99.3 AV			1.39 H	97	57.8	41.5
3	#5725.00	66.3 PK	74.0	-7.7	1.48 H	105	59.0	7.3
4	#5725.00	49.9 AV	54.0	-4.1	1.48 H	105	42.6	7.3
5	11400.00	60.9 PK	74.0	-13.1	1.05 H	74	40.5	20.4
6	11400.00	48.5 AV	54.0	-5.5	1.05 H	74	28.1	20.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	111.4 PK			1.53 V	33	69.9	41.5
2	*5700.00	102.3 AV			1.53 V	33	60.8	41.5
3	#5725.00	67.7 PK	74.0	-6.3	1.69 V	40	60.4	7.3
4	#5725.00	52.1 AV	54.0	-1.9	1.69 V	40	44.8	7.3
5	11400.00	61.9 PK	74.0	-12.1	1.05 V	87	41.5	20.4
6	11400.00	50.0 AV	54.0	-4.0	1.05 V	87	29.6	20.4

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 144	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5470.00	59.4 PK	74.0	-14.6	1.39 H	100	52.7	6.7
2	#5470.00	48.2 AV	54.0	-5.8	1.39 H	100	41.5	6.7
3	*5720.00	111.9 PK			1.24 H	95	70.4	41.5
4	*5720.00	101.7 AV			1.24 H	95	60.2	41.5
5	#5850.00	60.0 PK	74.0	-14.0	1.30 H	100	52.3	7.7
6	#5850.00	49.5 AV	54.0	-4.5	1.30 H	100	41.8	7.7
7	11440.00	60.8 PK	74.0	-13.2	1.02 H	65	40.5	20.3
8	11440.00	49.3 AV	54.0	-4.7	1.02 H	65	29.0	20.3
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	#5470.00	60.7 PK	74.0	-13.3	1.15 V	46	54.0	6.7
2	#5470.00	49.3 AV	54.0	-4.7	1.15 V	46	42.6	6.7
3	*5720.00	114.1 PK			1.01 V	31	72.6	41.5
4	*5720.00	104.3 AV			1.01 V	31	62.8	41.5
5	#5850.00	62.3 PK	74.0	-11.7	1.18 V	56	54.6	7.7
6	#5850.00	50.9 AV	54.0	-3.1	1.18 V	56	43.2	7.7
7	11440.00	60.8 PK	74.0	-13.2	1.20 V	63	40.5	20.3
8	11440.00	49.0 AV	54.0	-5.0	1.20 V	63	28.7	20.3

Remarks:

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

802.11n (HT20)

CHANNEL	TX Channel 52	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.6 PK	74.0	-16.4	1.05 H	90	51.5	6.1
2	5150.00	45.7 AV	54.0	-8.3	1.05 H	90	39.6	6.1
3	*5260.00	112.5 PK			1.00 H	83	72.1	40.4
4	*5260.00	101.5 AV			1.00 H	83	61.1	40.4
5	#10520.00	58.9 PK	74.0	-15.1	1.08 H	5	40.5	18.4
6	#10520.00	47.1 AV	54.0	-6.9	1.08 H	5	28.7	18.4
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	58.7 PK	74.0	-15.3	1.05 V	160	52.6	6.1
2	5150.00	47.0 AV	54.0	-7.0	1.05 V	160	40.9	6.1
3	*5260.00	114.9 PK			1.00 V	154	74.5	40.4
4	*5260.00	104.5 AV			1.00 V	154	64.1	40.4
5	#10520.00	59.9 PK	74.0	-14.1	1.05 V	87	41.5	18.4
6	#10520.00	48.0 AV	54.0	-6.0	1.05 V	87	29.6	18.4

Remarks:

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

CHANNEL	TX Channel 60	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	112.8 PK			1.15 H	93	72.3	40.5
2	*5300.00	101.2 AV			1.15 H	93	60.7	40.5
3	10600.00	59.8 PK	74.0	-14.2	1.60 H	80	41.0	18.8
4	10600.00	48.4 AV	54.0	-5.6	1.60 H	80	29.6	18.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	114.9 PK			1.10 V	160	74.4	40.5
2	*5300.00	104.7 AV			1.10 V	160	64.2	40.5
3	10600.00	60.0 PK	74.0	-14.0	1.25 V	50	41.2	18.8
4	10600.00	48.4 AV	54.0	-5.6	1.25 V	50	29.6	18.8

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	110.8 PK			1.10 H	90	70.3	40.5
2	*5320.00	99.3 AV			1.10 H	90	58.8	40.5
3	5350.00	67.2 PK	74.0	-6.8	1.15 H	95	60.7	6.5
4	5350.00	50.8 AV	54.0	-3.2	1.15 H	95	44.3	6.5
5	10640.00	59.2 PK	74.0	-14.8	1.32 H	70	40.2	19.0
6	10640.00	47.4 AV	54.0	-6.6	1.32 H	70	28.4	19.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	112.9 PK			1.05 V	25	72.4	40.5
2	*5320.00	102.2 AV			1.05 V	25	61.7	40.5
3	5350.00	65.8 PK	74.0	-8.2	1.17 V	36	59.3	6.5
4	5350.00	52.6 AV	54.0	-1.4	1.17 V	36	46.1	6.5
5	10620.00	59.7 PK	74.0	-14.3	1.58 V	90	40.8	18.9
6	10620.00	47.8 AV	54.0	-6.2	1.58 V	90	28.9	18.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.3 PK	74.0	-13.7	1.38 H	86	53.6	6.7
2	5460.00	47.3 AV	54.0	-6.7	1.38 H	86	40.6	6.7
3	#5470.00	64.5 PK	74.0	-9.5	1.47 H	90	57.8	6.7
4	#5470.00	49.6 AV	54.0	-4.4	1.47 H	90	42.9	6.7
5	*5500.00	110.5 PK			1.34 H	81	69.6	40.9
6	*5500.00	98.4 AV			1.34 H	81	57.5	40.9
7	11000.00	59.8 PK	74.0	-14.2	1.23 H	65	40.5	19.3
8	11000.00	47.7 AV	54.0	-6.3	1.23 H	65	28.4	19.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.6 PK	74.0	-11.4	1.48 V	41	55.9	6.7
2	5460.00	49.5 AV	54.0	-4.5	1.48 V	41	42.8	6.7
3	#5470.00	70.5 PK	74.0	-3.5	1.50 V	45	63.8	6.7
4	#5470.00	53.0 AV	54.0	-1.0	1.50 V	45	46.3	6.7
5	*5500.00	112.3 PK			1.43 V	37	71.4	40.9
6	*5500.00	102.5 AV			1.43 V	37	61.6	40.9
7	11000.00	60.9 PK	74.0	-13.1	1.05 V	87	41.6	19.3
8	11000.00	48.9 AV	54.0	-5.1	1.05 V	87	29.6	19.3

Remarks:

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

CHANNEL	TX Channel 116	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5580.00	112.6 PK			1.41 H	95	71.6	41.0
2	*5580.00	101.1 AV			1.41 H	95	60.1	41.0
3	11160.00	60.4 PK	74.0	-13.6	1.05 H	87	40.6	19.8
4	11160.00	48.5 AV	54.0	-5.5	1.05 H	87	28.7	19.8
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	*5580.00	114.2 PK			1.44 V	36	73.2	41.0
2	*5580.00	104.3 AV			1.44 V	36	63.3	41.0
3	11160.00	61.7 PK	74.0	-12.3	1.05 V	87	41.9	19.8
4	11160.00	49.4 AV	54.0	-4.6	1.05 V	87	29.6	19.8

Remarks:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	110.3 PK			1.37 H	96	68.8	41.5
2	*5700.00	98.5 AV			1.37 H	96	57.0	41.5
3	#5725.00	60.3 PK	74.0	-13.7	1.45 H	100	53.0	7.3
4	#5725.00	50.3 AV	54.0	-3.7	1.45 H	100	43.0	7.3
5	11400.00	60.9 PK	74.0	-13.1	1.05 H	64	40.5	20.4
6	11400.00	48.8 AV	54.0	-5.2	1.05 H	64	28.4	20.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	110.6 PK			1.03 V	34	69.1	41.5
2	*5700.00	100.9 AV			1.03 V	34	59.4	41.5
3	#5725.00	70.9 PK	74.0	-3.1	1.14 V	45	63.6	7.3
4	#5725.00	53.2 AV	54.0	-0.8	1.14 V	45	45.9	7.3
5	11400.00	61.6 PK	74.0	-12.4	1.05 V	21	41.2	20.4
6	11400.00	50.0 AV	54.0	-4.0	1.05 V	21	29.6	20.4

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 144	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5470.00	60.3 PK	74.0	-13.7	1.59 H	100	53.6	6.7
2	#5470.00	46.9 AV	54.0	-7.1	1.59 H	100	40.2	6.7
3	*5720.00	112.2 PK			1.48 H	95	70.7	41.5
4	*5720.00	101.1 AV			1.48 H	95	59.6	41.5
5	#5850.00	60.7 PK	74.0	-13.3	1.57 H	105	53.0	7.7
6	#5850.00	48.2 AV	54.0	-5.8	1.57 H	105	40.5	7.7
7	11440.00	60.8 PK	74.0	-13.2	1.05 H	63	40.5	20.3
8	11440.00	48.7 AV	54.0	-5.3	1.05 H	63	28.4	20.3
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	#5470.00	60.3 PK	74.0	-13.7	1.10 V	45	53.6	6.7
2	#5470.00	48.3 AV	54.0	-5.7	1.10 V	45	41.6	6.7
3	*5720.00	113.2 PK			1.01 V	37	71.7	41.5
4	*5720.00	103.8 AV			1.01 V	37	62.3	41.5
5	#5850.00	61.4 PK	74.0	-12.6	1.11 V	49	53.7	7.7
6	#5850.00	49.6 AV	54.0	-4.4	1.11 V	49	41.9	7.7
7	11440.00	61.8 PK	74.0	-12.2	1.36 V	98	41.5	20.3
8	11440.00	49.9 AV	54.0	-4.1	1.36 V	98	29.6	20.3

Remarks:

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

802.11n (HT40)

CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.7 PK	74.0	-15.3	1.25 H	90	52.6	6.1
2	5150.00	47.4 AV	54.0	-6.6	1.25 H	90	41.3	6.1
3	*5270.00	109.4 PK			1.14 H	86	69.0	40.4
4	*5270.00	99.0 AV			1.14 H	86	58.6	40.4
5	#10540.00	59.2 PK	74.0	-14.8	1.65 H	87	40.6	18.6
6	#10540.00	47.3 AV	54.0	-6.7	1.65 H	87	28.7	18.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.1 PK	74.0	-14.9	1.05 V	30	53.0	6.1
2	5150.00	47.0 AV	54.0	-7.0	1.05 V	30	40.9	6.1
3	*5270.00	111.8 PK			1.00 V	24	71.4	40.4
4	*5270.00	102.3 AV			1.00 V	24	61.9	40.4
5	#10540.00	60.5 PK	74.0	-13.5	1.32 V	65	41.9	18.6
6	#10540.00	48.1 AV	54.0	-5.9	1.32 V	65	29.5	18.6

Remarks:

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

CHANNEL	TX Channel 62	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	105.4 PK			1.00 H	75	64.9	40.5
2	*5310.00	95.1 AV			1.00 H	75	54.6	40.5
3	5350.00	65.5 PK	74.0	-8.5	1.71 H	78	59.0	6.5
4	5350.00	51.4 AV	54.0	-2.6	1.71 H	78	44.9	6.5
5	10620.00	59.5 PK	74.0	-14.5	1.05 H	98	40.6	18.9
6	10620.00	47.6 AV	54.0	-6.4	1.05 H	98	28.7	18.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	107.7 PK			1.00 V	21	67.2	40.5
2	*5310.00	98.1 AV			1.00 V	21	57.6	40.5
3	5350.00	66.6 PK	74.0	-7.4	1.00 V	355	60.1	6.5
4	5350.00	52.6 AV	54.0	-1.4	1.00 V	355	46.1	6.5
5	10620.00	60.4 PK	74.0	-13.6	1.33 V	25	41.5	18.9
6	10620.00	48.5 AV	54.0	-5.5	1.33 V	25	29.6	18.9

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.5 PK	74.0	-10.5	N/A H	N/A	56.8	6.7
2	5460.00	48.5 AV	54.0	-5.5	N/A H	N/A	41.8	6.7
3	#5470.00	58.7 PK	74.0	-15.3	1.50 H	100	52.0	6.7
4	#5470.00	51.5 AV	54.0	-2.5	1.50 H	100	44.8	6.7
5	*5510.00	104.8 PK			1.42 H	91	63.9	40.9
6	*5510.00	93.5 AV			1.42 H	91	52.6	40.9
7	11020.00	59.8 PK	74.0	-14.2	1.32 H	64	40.5	19.3
8	11020.00	47.7 AV	54.0	-6.3	1.32 H	64	28.4	19.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	64.1 PK	74.0	-9.9	1.49 V	185	57.4	6.7
2	5460.00	48.3 AV	54.0	-5.7	1.49 V	185	41.6	6.7
3	#5470.00	70.0 PK	74.0	-4.0	1.46 V	179	63.3	6.7
4	#5470.00	53.7 AV	54.0	-0.3	1.46 V	179	47.0	6.7
5	*5510.00	106.8 PK			1.19 V	33	65.9	40.9
6	*5510.00	97.2 AV			1.19 V	33	56.3	40.9
7	11020.00	60.8 PK	74.0	-13.2	1.05 V	128	41.5	19.3
8	11020.00	48.9 AV	54.0	-5.1	1.05 V	128	29.6	19.3

Remarks:

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

CHANNEL	TX Channel 110	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	*5550.00	109.6 PK			1.37 H	99	68.6	41.0
2	*5550.00	98.6 AV			1.37 H	99	57.6	41.0
3	11100.00	60.8 PK	74.0	-13.2	1.05 H	147	41.0	19.8
4	11100.00	48.4 AV	54.0	-5.6	1.05 H	147	28.6	19.8
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	*5550.00	111.5 PK			1.25 V	31	70.5	41.0
2	*5550.00	101.2 AV			1.25 V	31	60.2	41.0
3	11100.00	61.3 PK	74.0	-12.7	1.17 V	16	41.5	19.8
4	11100.00	49.4 AV	54.0	-4.6	1.17 V	16	29.6	19.8

Remarks:

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

CHANNEL	TX Channel 134	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5470.00	59.7 PK	74.0	-14.3	1.50 H	119	53.0	6.7
2	#5470.00	47.2 AV	54.0	-6.8	1.50 H	119	40.5	6.7
3	*5670.00	107.4 PK			1.42 H	105	66.1	41.3
4	*5670.00	96.2 AV			1.42 H	105	54.9	41.3
5	11340.00	60.7 PK	74.0	-13.3	1.06 H	58	40.5	20.2
6	11340.00	48.8 AV	54.0	-5.2	1.06 H	58	28.6	20.2
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	#5470.00	60.3 PK	74.0	-13.7	1.11 V	45	53.6	6.7
2	#5470.00	47.5 AV	54.0	-6.5	1.11 V	45	40.8	6.7
3	*5670.00	109.7 PK			1.01 V	38	68.4	41.3
4	*5670.00	99.8 AV			1.01 V	38	58.5	41.3
5	11340.00	61.7 PK	74.0	-12.3	1.52 V	87	41.5	20.2
6	11340.00	49.8 AV	54.0	-4.2	1.52 V	87	29.6	20.2

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 142	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5470.00	60.3 PK	74.0	-13.7	1.45 H	93	53.6	6.7
2	#5470.00	47.2 AV	54.0	-6.8	1.45 H	93	40.5	6.7
3	*5710.00	108.5 PK			1.36 H	88	67.0	41.5
4	*5710.00	98.0 AV			1.36 H	88	56.5	41.5
5	#5850.00	61.1 PK	74.0	-12.9	1.44 H	96	53.4	7.7
6	#5850.00	48.3 AV	54.0	-5.7	1.44 H	96	40.6	7.7
7	11420.00	60.9 PK	74.0	-13.1	1.32 H	65	40.5	20.4
8	11420.00	49.0 AV	54.0	-5.0	1.32 H	65	28.6	20.4
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	#5470.00	62.7 PK	74.0	-11.3	1.45 V	49	56.0	6.7
2	#5470.00	48.7 AV	54.0	-5.3	1.45 V	49	42.0	6.7
3	*5710.00	111.1 PK			1.38 V	37	69.6	41.5
4	*5710.00	101.3 AV			1.38 V	37	59.8	41.5
5	#5850.00	63.4 PK	74.0	-10.6	1.48 V	45	55.7	7.7
6	#5850.00	49.4 AV	54.0	-4.6	1.48 V	45	41.7	7.7
7	11420.00	61.9 PK	74.0	-12.1	1.22 V	54	41.5	20.4
8	11420.00	49.7 AV	54.0	-4.3	1.22 V	54	29.3	20.4

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 (VHT80)

CHANNEL	TX Channel 58	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	*5290.00	102.3 PK			1.40 H	7	61.9	40.4
2	*5290.00	91.3 AV			1.40 H	7	50.9	40.4
3	5350.00	57.1 PK	74.0	-16.9	1.45 H	10	50.6	6.5
4	5350.00	50.4 AV	54.0	-3.6	1.45 H	10	43.9	6.5
5	#10580.00	58.8 PK	74.0	-15.2	1.25 H	85	40.1	18.7
6	#10580.00	47.4 AV	54.0	-6.6	1.25 H	85	28.7	18.7
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	*5290.00	104.4 PK			1.00 V	157	64.0	40.4
2	*5290.00	94.3 AV			1.00 V	157	53.9	40.4
3	5350.00	66.4 PK	74.0	-7.6	1.39 V	26	59.9	6.5
4	5350.00	52.7 AV	54.0	-1.3	1.39 V	26	46.2	6.5
5	#10580.00	60.2 PK	74.0	-13.8	1.32 V	65	41.5	18.7
6	#10580.00	48.3 AV	54.0	-5.7	1.32 V	65	29.6	18.7

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.6 PK	74.0	-12.4	1.17 H	88	54.9	6.7
2	5460.00	50.5 AV	54.0	-3.5	1.17 H	88	43.8	6.7
3	#5470.00	64.6 PK	74.0	-9.4	1.18 H	86	57.9	6.7
4	#5470.00	51.7 AV	54.0	-2.3	1.18 H	86	45.0	6.7
5	*5530.00	99.7 PK			1.02 H	75	58.8	40.9
6	*5530.00	89.0 AV			1.02 H	75	48.1	40.9
7	11060.00	60.2 PK	74.0	-13.8	1.05 H	96	40.6	19.6
8	11060.00	48.0 AV	54.0	-6.0	1.05 H	96	28.4	19.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	65.7 PK	74.0	-8.3	1.12 V	31	59.0	6.7
2	5460.00	51.8 AV	54.0	-2.2	1.12 V	31	45.1	6.7
3	#5470.00	68.0 PK	74.0	-6.0	1.12 V	31	61.3	6.7
4	#5470.00	53.3 AV	54.0	-0.7	1.12 V	31	46.6	6.7
5	*5530.00	102.8 PK			1.57 V	31	61.9	40.9
6	*5530.00	93.0 AV			1.57 V	31	52.1	40.9
7	11060.00	61.2 PK	74.0	-12.8	1.47 V	85	41.6	19.6
8	11060.00	49.3 AV	54.0	-4.7	1.47 V	85	29.7	19.6

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 122	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	#5470.00	60.3 PK	74.0	-13.7	1.55 H	100	53.6	6.7
2	#5470.00	48.2 AV	54.0	-5.8	1.55 H	100	41.5	6.7
3	*5610.00	106.0 PK			1.42 H	94	64.9	41.1
4	*5610.00	94.8 AV			1.42 H	94	53.7	41.1
5	11220.00	60.5 PK	74.0	-13.5	1.08 H	54	40.6	19.9
6	11220.00	48.5 AV	54.0	-5.5	1.08 H	54	28.6	19.9
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	#5470.00	62.1 PK	74.0	-11.9	1.29 V	56	55.4	6.7
2	#5470.00	49.9 AV	54.0	-4.1	1.29 V	56	43.2	6.7
3	*5610.00	107.2 PK			1.13 V	35	66.1	41.1
4	*5610.00	97.3 AV			1.13 V	35	56.2	41.1
5	11220.00	61.1 PK	74.0	-12.9	1.05 V	96	41.2	19.9
6	11220.00	49.5 AV	54.0	-4.5	1.05 V	96	29.6	19.9

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 138	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5470.00	59.6 PK	74.0	-14.4	1.35 H	100	52.9	6.7
2	#5470.00	47.3 AV	54.0	-6.7	1.35 H	100	40.6	6.7
3	*5690.00	105.6 PK			1.27 H	93	64.3	41.3
4	*5690.00	94.1 AV			1.27 H	93	52.8	41.3
5	#5850.00	60.6 PK	74.0	-13.4	1.39 H	91	52.9	7.7
6	#5850.00	47.8 AV	54.0	-6.2	1.39 H	91	40.1	7.7
7	11380.00	60.9 PK	74.0	-13.1	1.28 H	54	40.6	20.3
8	11380.00	48.7 AV	54.0	-5.3	1.28 H	54	28.4	20.3
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	#5470.00	59.3 PK	74.0	-14.7	1.63 V	85	52.6	6.7
2	#5470.00	48.7 AV	54.0	-5.3	1.63 V	85	42.0	6.7
3	*5690.00	107.0 PK			1.28 V	34	65.7	41.3
4	*5690.00	97.3 AV			1.28 V	34	56.0	41.3
5	#5850.00	60.5 PK	74.0	-13.5	1.33 V	65	52.8	7.7
6	#5850.00	48.3 AV	54.0	-5.7	1.33 V	65	40.6	7.7
7	11380.00	61.9 PK	74.0	-12.1	1.52 V	100	41.6	20.3
8	11380.00	49.9 AV	54.0	-4.1	1.52 V	100	29.6	20.3

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: 802.11n (HT20)

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 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	39.60	28.6 QP	40.0	-11.4	1.25 H	7	43.6	-15.0
2	154.09	26.6 QP	43.5	-16.9	2.00 H	10	40.2	-13.6
3	233.64	27.8 QP	46.0	-18.2	1.50 H	203	43.2	-15.4
4	621.72	31.8 QP	46.0	-14.2	1.25 H	149	37.4	-5.6
5	689.64	33.4 QP	46.0	-12.6	1.00 H	203	38.0	-4.6
6	938.01	39.1 QP	46.0	-6.9	1.25 H	235	39.3	-0.2
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	76.47	30.1 QP	40.0	-9.9	1.25 V	31	47.3	-17.2
2	103.64	26.7 QP	43.5	-16.8	1.00 V	136	44.6	-17.9
3	526.64	27.0 QP	46.0	-19.0	1.00 V	138	35.0	-8.0
4	621.72	30.6 QP	46.0	-15.4	1.00 V	293	36.2	-5.6
5	722.62	32.7 QP	46.0	-13.3	2.00 V	13	36.7	-4.0
6	938.01	38.7 QP	46.0	-7.3	1.25 V	14	38.9	-0.2

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
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 21, 2016	Nov. 20, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 10, 2017	Mar. 09, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 28, 2016	Jul. 27, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 1.

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

4.2.3 Test Procedures

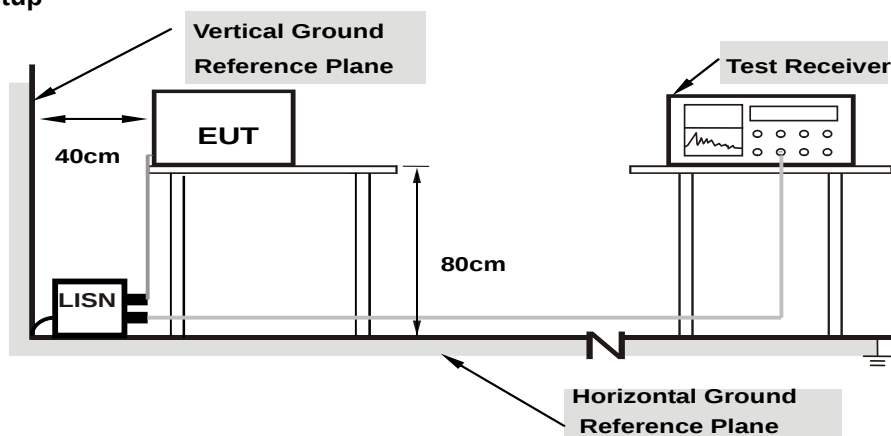
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission 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

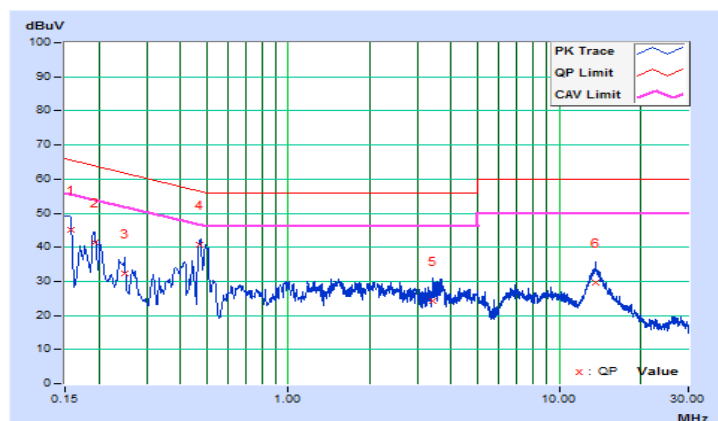
Worst-case data: 802.11n (HT20)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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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	0.15800	10.41	34.71	20.04	45.12	30.45	65.57	55.57	-20.45	-25.12
2	0.19265	10.43	30.86	17.85	41.29	28.28	63.92	53.92	-22.63	-25.64
3	0.25006	10.45	21.92	12.42	32.37	22.87	61.76	51.76	-29.39	-28.89
4	0.47309	10.50	30.29	26.19	40.79	36.69	56.46	46.46	-15.67	-9.77
5	3.40600	10.62	13.68	3.35	24.30	13.97	56.00	46.00	-31.70	-32.03
6	13.67000	11.09	18.63	14.08	29.72	25.17	60.00	50.00	-30.28	-24.83

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.

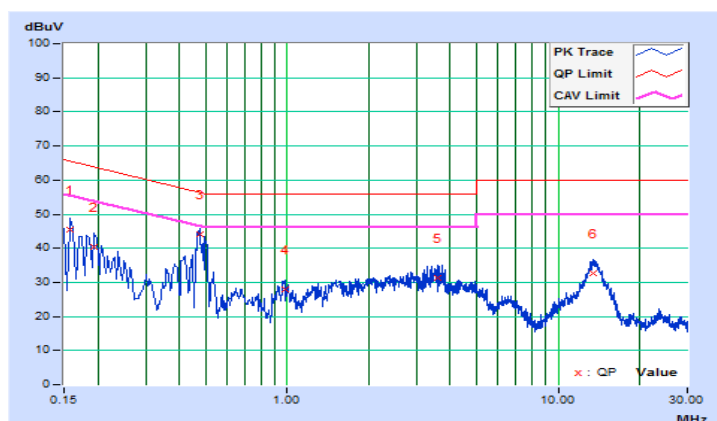


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15811	10.16	35.26	20.82	45.42	30.98	65.56	55.56	-20.14	-24.58
2	0.19418	10.19	30.17	18.79	40.36	28.98	63.86	53.86	-23.50	-24.88
3	0.47400	10.23	33.97	29.00	44.20	39.23	56.44	46.44	-12.24	-7.21
4	0.97800	10.24	17.67	9.13	27.91	19.37	56.00	46.00	-28.09	-26.63
5	3.57400	10.40	20.76	11.24	31.16	21.64	56.00	46.00	-24.84	-24.36
6	13.39000	10.78	21.74	16.98	32.52	27.76	60.00	50.00	-27.48	-22.24

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.



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} ;

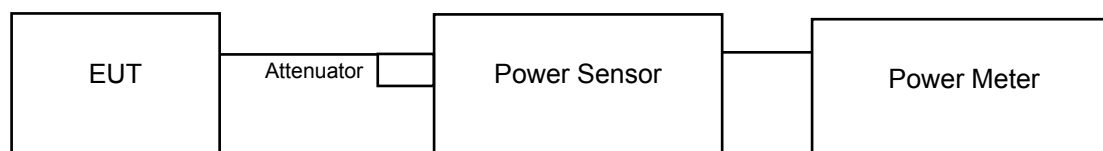
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

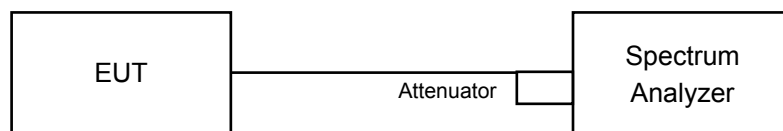
4.3.2 Test Setup

For Power Output

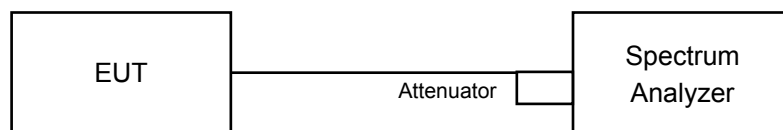
802.11a, 802.11n (HT20), 802.11n (HT40)



802.11ac (VHT80)



For 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

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.

For 802.11ac (VHT80)

- 1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- 2) Set sweep trigger to "free run".
- 3) Set RBW = 1 MHz.
- 4) Set VBW $\geq$ 3 MHz.
- 5) Number of points in sweep $\geq$ 2 Span / RBW.
- 6) Sweep time $\leq$ (number of points in sweep) * T
- 7) Using emission bandwidth to determine the frequency span for integration the channel bandwidth.
- 8) Detector = RMS.
- 9) Trace mode = max hold.
- 10) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.
- 11) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

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%.

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:

CDD Mode, 1TX

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
52	5260	83.560	19.22	24	Pass
60	5300	84.528	19.27	24	Pass
64	5320	57.943	17.63	24	Pass
100	5500	60.814	17.84	24	Pass
116	5580	84.723	19.28	24	Pass
140	5700	53.211	17.26	24	Pass
144	5720 For U-NII-2C	34.080	15.32	22.98	Pass
144	5720 For U-NII-3	5.327	7.26	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. $11\text{dBm} + 10\log (22.85) = 24.59 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (22.81) = 24.58 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (21.77) = 24.38 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (21.71) = 24.37 \text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log (22.83) = 24.59 \text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log (21.89) = 24.40 \text{ dBm} > 24\text{dBm}$
7. $11\text{dBm} + 10\log (5725.00 - 5709.20) = 22.98 \text{ dBm} < 24\text{dBm}$

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
52	5260	86.298	19.36	24	Pass
60	5300	84.528	19.27	24	Pass
64	5320	61.235	17.87	24	Pass
100	5500	62.087	17.93	24	Pass
116	5580	82.035	19.14	24	Pass
140	5700	51.642	17.13	24	Pass
144	5720 For U-NII-2C	33.567	15.26	23.05	Pass
144	5720 For U-NII-3	10.837	10.35	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. $11\text{dBm} + 10\log (21.95) = 24.41 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (21.98) = 24.42 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (21.96) = 24.42 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (21.87) = 24.40 \text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log (21.93) = 24.41 \text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log (21.86) = 24.40 \text{ dBm} > 24\text{dBm}$
7. $11\text{dBm} + 10\log (5725.00 - 5708.96) = 23.05 \text{ dBm} < 24\text{dBm}$

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
54	5270	101.625	20.07	24	Pass
62	5310	38.905	15.90	24	Pass
102	5510	35.892	15.55	24	Pass
110	5550	112.460	20.51	24	Pass
134	5670	74.131	18.70	24	Pass
142	5710 For U-NII-2C	35.540	15.51	24	Pass
142	5710 For U-NII-3	3.587	5.55	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. $11\text{dBm} + 10\log (72.88) = 29.63 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (41.20) = 27.15 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (41.29) = 27.16 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (100.91) = 31.04 \text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log (66.21) = 29.21 \text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log (5725.00 - 5660.10) = 29.12 \text{ dBm} > 24\text{dBm}$

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
58	5290	41.976	16.23	24	Pass
106	5530	36.308	15.60	24	Pass
122	5610	85.901	19.34	24	Pass
138	5690 For U-NII-2C	53.335	17.27	24	Pass
138	5690 For U-NII-3	2.280	3.58	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. $11\text{dBm} + 10\log (82.34) = 30.16 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (82.51) = 30.17 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (155.57) = 32.92 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (5725.00 - 5597.90) = 32.04 \text{ dBm} > 24\text{dBm}$

CDD Mode, 2TX

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	17.75	17.46	115.285	20.62	24	Pass
60	5300	17.67	17.61	116.156	20.65	24	Pass
64	5320	17.80	17.56	117.272	20.69	24	Pass
100	5500	16.70	16.70	93.548	19.71	24	Pass
116	5580	16.97	16.43	93.728	19.72	24	Pass
140	5700	17.26	16.94	102.642	20.11	24	Pass
144	5720 For U-NII-2C	13.02	13.60	47.674	16.78	24	Pass
144	5720 For U-NII-3	6.82	6.04	9.796	9.91	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log (31.27) = 25.95 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (30.07) = 25.78 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (21.56) = 24.34 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (21.66) = 24.36 \text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log (37.71) = 26.76 \text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log (21.88) = 24.40 \text{ dBm} > 24\text{dBm}$
7. $11\text{dBm} + 10\log (5725.00 - 5700.76) = 24.85 \text{ dBm} > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log (31.60) = 26.00 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (33.94) = 26.31 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (21.76) = 24.38 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (21.91) = 24.41 \text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log (31.66) = 26.01 \text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log (21.91) = 24.41 \text{ dBm} > 24\text{dBm}$
7. $11\text{dBm} + 10\log (5725.00 - 5702.92) = 24.44 \text{ dBm} > 24\text{dBm}$

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	17.82	17.09	111.702	20.48	24	Pass
60	5300	17.55	17.28	110.341	20.43	24	Pass
64	5320	17.71	17.52	115.514	20.63	24	Pass
100	5500	16.65	16.66	92.583	19.67	24	Pass
116	5580	16.99	16.80	97.866	19.91	24	Pass
140	5700	16.92	16.78	96.847	19.86	24	Pass
144	5720 For U-NII-2C	14.40	11.77	45.975	16.63	23.85	Pass
144	5720 For U-NII-3	5.97	7.52	10.370	10.16	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log (31.71) = 26.01 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (32.12) = 26.07 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (21.89) = 24.40 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (21.83) = 24.39 \text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log (40.48) = 27.07 \text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log (22.20) = 24.46 \text{ dBm} > 24\text{dBm}$
7. $11\text{dBm} + 10\log (5725.00 - 5700.65) = 24.86 \text{ dBm} > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log (32.81) = 26.16 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (26.23) = 25.19 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (22.18) = 24.46 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (22.02) = 24.43 \text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log (36.31) = 26.60 \text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log (22.19) = 24.46 \text{ dBm} > 24\text{dBm}$
7. $11\text{dBm} + 10\log (5725.00 - 5705.71) = 23.85 \text{ dBm} < 24\text{dBm}$

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	17.69	17.41	113.830	20.56	24	Pass
62	5310	16.85	16.43	92.371	19.66	24	Pass
102	5510	15.46	15.27	68.807	18.38	24	Pass
110	5550	17.42	16.73	102.306	20.10	24	Pass
134	5670	16.95	17.03	100.011	20.00	24	Pass
142	5710 For U-NII-2C	11.13	11.47	32.105	15.07	24	Pass
142	5710 For U-NII-3	3.20	3.38	5.074	7.05	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log (95.68) = 30.81 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (41.14) = 27.14 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (41.25) = 27.15 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (98.67) = 30.94 \text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log (50.91) = 28.07 \text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log (5725.00 - 5660.05) = 29.13 \text{ dBm} > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log (101.33) = 31.06 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (41.56) = 27.19 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (41.56) = 27.19 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (98.79) = 30.95 \text{ dBm} > 24\text{dBm}$
5. $11\text{dBm} + 10\log (41.44) = 27.17 \text{ dBm} > 24\text{dBm}$
6. $11\text{dBm} + 10\log (5725.00 - 5660.55) = 29.09 \text{ dBm} > 24\text{dBm}$

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	15.92	15.95	78.439	18.95	24	Pass
106	5530	14.46	14.50	56.109	17.49	24	Pass
122	5610	17.01	16.87	98.875	19.95	24	Pass
138	5690 For U-NII-2C	13.28	13.73	58.294	17.66	24	Pass
138	5690 For U-NII-3	-0.34	-0.96	2.242	3.51	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

Chain 0

1. $11\text{dBm} + 10\log (82.52) = 30.17 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (82.78) = 30.18 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (200.87) = 34.03 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (5725.00 - 5595.97) = 32.11 \text{ dBm} > 24\text{dBm}$

Chain 1

1. $11\text{dBm} + 10\log (82.52) = 30.17 \text{ dBm} > 24\text{dBm}$
2. $11\text{dBm} + 10\log (82.76) = 30.18 \text{ dBm} > 24\text{dBm}$
3. $11\text{dBm} + 10\log (184.98) = 33.67 \text{ dBm} > 24\text{dBm}$
4. $11\text{dBm} + 10\log (5725.00 - 5595.79) = 32.11 \text{ dBm} > 24\text{dBm}$

Beamforming Mode

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	15.52	15.01	67.341	18.28	23.03	Pass
60	5300	15.45	15.17	67.960	18.32	23.03	Pass
64	5320	15.78	15.02	69.613	18.43	23.03	Pass
100	5500	15.22	14.81	63.535	18.03	23.63	Pass
116	5580	14.11	14.09	51.408	17.11	23.63	Pass
140	5700	14.81	14.93	61.386	17.88	23.63	Pass
144	5720 For U-NII-2C	11.13	9.71	24.136	13.83	23.63	Pass
144	5720 For U-NII-3	5.66	6.55	8.865	9.48	28.23	Pass

Note:

- 5260~5320MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N] = 6.97\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $24-(6.97-6) = 23.03\text{dBm}$.
- 5500~5720MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N] = 7.37\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $24-(7.37-6) = 23.63\text{dBm}$.

For U-NII-2A, U-NII-2C Band:

Chain 0

- $11\text{dBm} + 10\log(31.71) = 26.01 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(32.12) = 26.07 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(21.89) = 24.40 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(21.83) = 24.39 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(40.48) = 27.07 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(22.20) = 24.46 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(5725.00 - 5700.65) = 24.86 \text{ dBm} > 24\text{dBm}$

Chain 1

- $11\text{dBm} + 10\log(32.81) = 26.16 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(26.23) = 25.19 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(22.18) = 24.46 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(22.02) = 24.43 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(36.31) = 26.60 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(22.19) = 24.46 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(5725.00 - 5705.71) = 23.85 \text{ dBm} > 24\text{dBm}$

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	15.46	14.98	66.633	18.24	23.03	Pass
62	5310	15.46	15.50	70.637	18.49	23.03	Pass
102	5510	13.07	12.96	40.047	16.03	23.63	Pass
110	5550	15.42	14.73	64.551	18.10	23.63	Pass
134	5670	14.87	15.04	62.605	17.97	23.63	Pass
142	5710 For U-NII-2C	8.98	7.43	15.850	12.00	23.63	Pass
142	5710 For U-NII-3	-0.84	-1.63	1.782	2.51	28.23	Pass

Note:

- 5260~5320MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 6.97dBi > 6dBi, so the limit shall be reduced to 24-(6.97-6) = 23.03dBm.
- 5500~5720MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 7.37dBi > 6dBi, so the limit shall be reduced to 24-(7.37-6) = 23.63dBm.

For U-NII-2A, U-NII-2C Band:

Chain 0

- 11dBm + 10log (95.68) = 30.81 dBm > 24dBm
- 11dBm + 10log (41.14) = 27.14 dBm > 24dBm
- 11dBm + 10log (41.25) = 27.15 dBm > 24dBm
- 11dBm + 10log (98.67) = 30.94 dBm > 24dBm
- 11dBm + 10log (50.91) = 28.07 dBm > 24dBm
- 11dBm + 10log (5725.00 - 5660.05) = 29.13 dBm > 24dBm

Chain 1

- 11dBm + 10log (101.33) = 31.06 dBm > 24dBm
- 11dBm + 10log (41.56) = 27.19 dBm > 24dBm
- 11dBm + 10log (41.56) = 27.19 dBm > 24dBm
- 11dBm + 10log (98.79) = 30.95 dBm > 24dBm
- 11dBm + 10log (41.44) = 27.17 dBm > 24dBm
- 11dBm + 10log (5725.00 - 5660.55) = 29.09 dBm > 24dBm

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	15.23	15.50	68.824	18.38	23.03	Pass
106	5530	13.64	13.36	44.798	16.51	23.63	Pass
122	5610	14.90	15.11	63.337	18.02	23.63	Pass
138	5690 For U-NII-2C	10.27	10.55	28.860	14.60	23.63	Pass
138	5690 For U-NII-3	-2.05	-2.02	1.643	2.16	28.23	Pass

Note:

- 5260~5320MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N] = 6.97\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $24-(6.97-6) = 23.03\text{dBm}$.
- 5500~5720MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N] = 7.37\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $24-(7.37-6) = 23.63\text{dBm}$.

For U-NII-2A, U-NII-2C Band:

Chain 0

- $11\text{dBm} + 10\log(82.52) = 30.17 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(82.78) = 30.18 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(200.87) = 34.03 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(5725.00 - 5595.97) = 32.11 \text{ dBm} > 24\text{dBm}$

Chain 1

- $11\text{dBm} + 10\log(82.52) = 30.17 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(82.76) = 30.18 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(184.98) = 33.67 \text{ dBm} > 24\text{dBm}$
- $11\text{dBm} + 10\log(5725.00 - 5595.79) = 32.11 \text{ dBm} > 24\text{dBm}$

26dB Bandwidth:

1TX

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
52	5260	22.85
60	5300	22.81
64	5320	21.77
100	5500	21.71
116	5580	22.83
140	5700	21.89
144	5720 For U-NII-2C	15.80
144	5720 For U-NII-3	6.93

802.11n (HT20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
52	5260	21.95
60	5300	21.98
64	5320	21.96
100	5500	21.87
116	5580	21.93
140	5700	21.86
144	5720 For U-NII-2C	16.04
144	5720 For U-NII-3	6.10

802.11n (HT40)

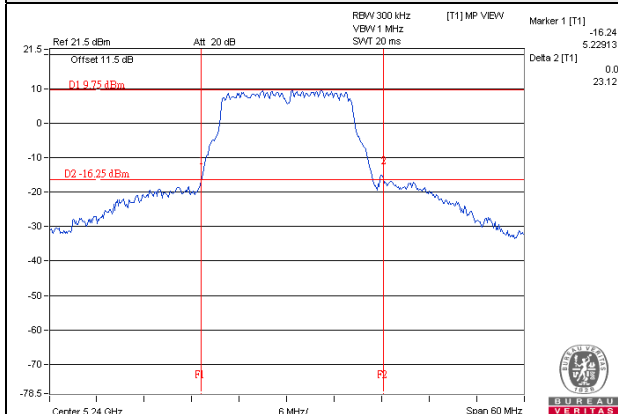
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
54	5270	72.88
62	5310	41.20
102	5510	41.29
110	5550	100.91
134	5670	66.21
142	5710 For U-NII-2C	64.90
142	5710 For U-NII-3	35.00

802.11ac (VHT80)

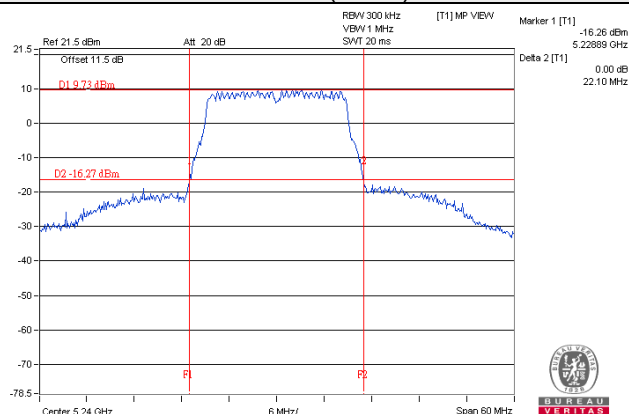
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
58	5290	82.34
106	5530	82.51
122	5610	155.57
138	5690 For U-NII-2C	127.10
138	5690 For U-NII-3	46.65

Spectrum Plot of Worst Value

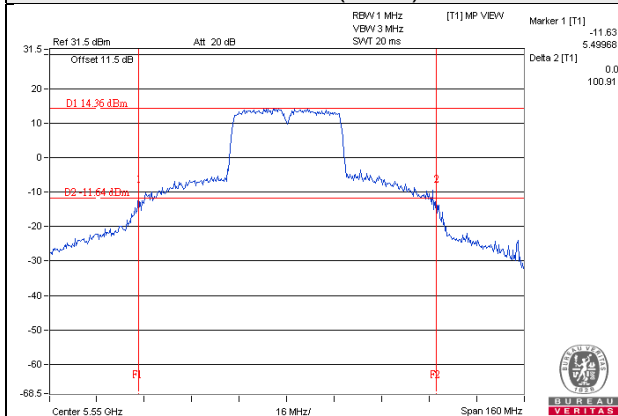
802.11a



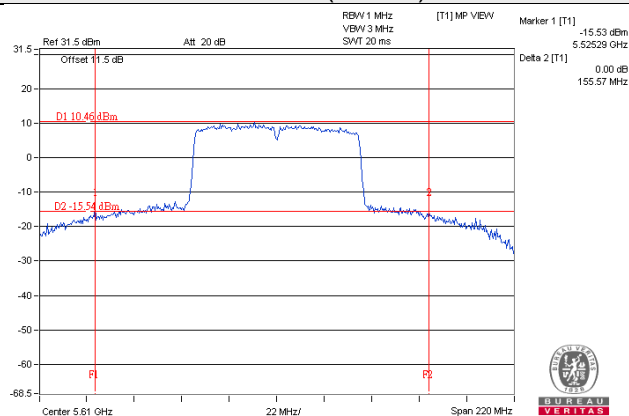
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



2TX

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	31.27	31.60
60	5300	30.07	33.94
64	5320	21.56	21.76
100	5500	21.66	21.91
116	5580	37.71	31.66
140	5700	21.88	21.91
144	5720 For U-NII-2C	24.24	22.08
144	5720 For U-NII-3	13.33	12.73

802.11n (HT20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	31.71	32.81
60	5300	32.12	26.23
64	5320	21.89	22.18
100	5500	21.83	22.02
116	5580	40.48	36.31
140	5700	22.20	22.19
144	5720 For U-NII-2C	24.35	19.29
144	5720 For U-NII-3	13.36	14.88

802.11n (HT40)

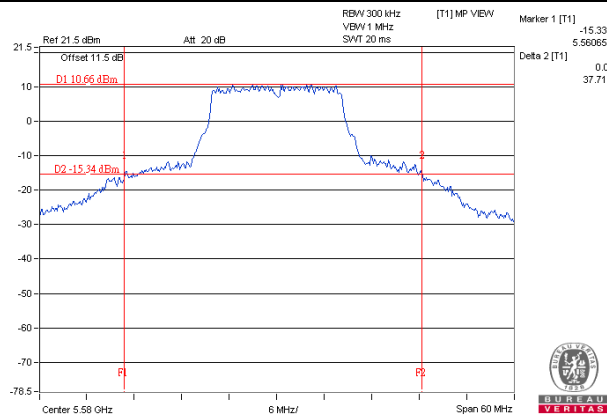
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	95.68	101.33
62	5310	41.14	41.56
102	5510	41.25	41.56
110	5550	98.67	98.79
134	5670	50.91	41.44
142	5710 For U-NII-2C	64.95	64.45
142	5710 For U-NII-3	33.83	34.26

802.11ac (VHT80)

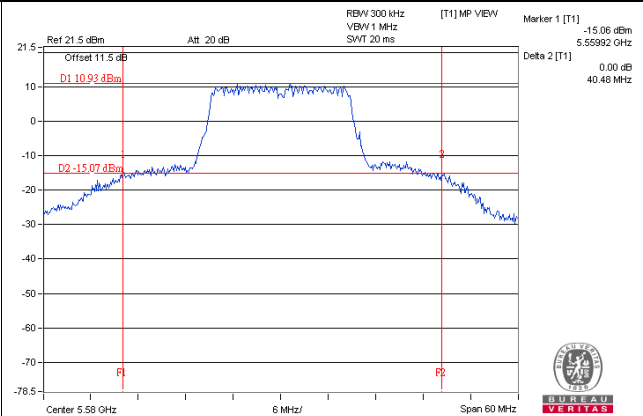
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	82.52	82.52
106	5530	82.78	82.76
122	5610	200.87	184.98
138	5690 For U-NII-2C	129.03	129.21
138	5690 For U-NII-3	57.79	54.33

Spectrum Plot of Worst Value

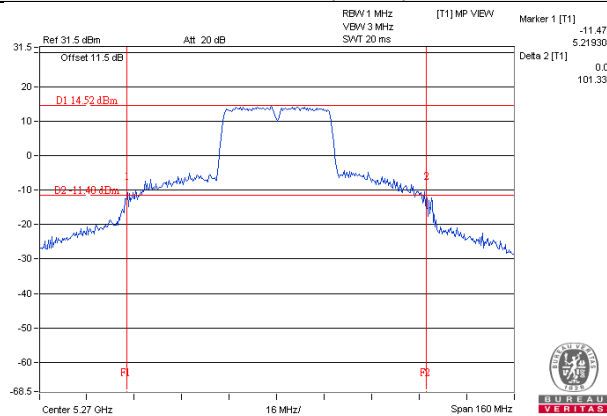
802.11a



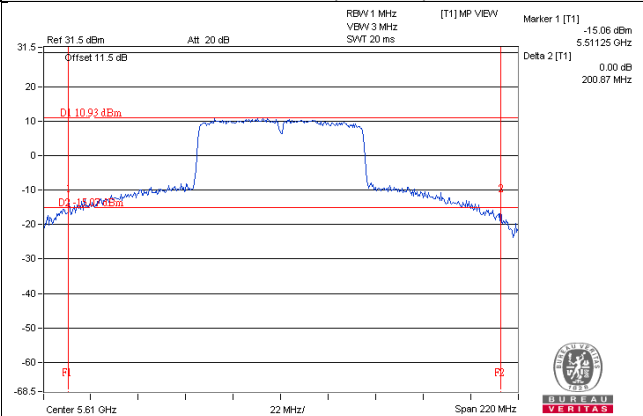
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



EUT Maximum Conducted Power

CDD Mode, 1TX

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	84.528	19.27
5470~5725	84.723	19.28

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	86.298	19.36
5470~5725	82.035	19.14

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11n (HT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	101.625	20.07
5470~5725	112.460	20.51

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	41.976	16.23
5470~5725	85.901	19.34

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

CDD Mode, 2TX

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	117.272	20.69
5470~5725	102.642	20.11

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	115.514	20.63
5470~5725	97.866	19.91

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11n (HT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	113.830	20.56
5470~5725	102.306	20.10

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	78.439	18.95
5470~5725	98.875	19.95

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

Beamforming Mode

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	69.613	18.43
5470~5725	63.535	18.03

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

802.11n (HT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	70.637	18.49
5470~5725	64.551	18.10

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

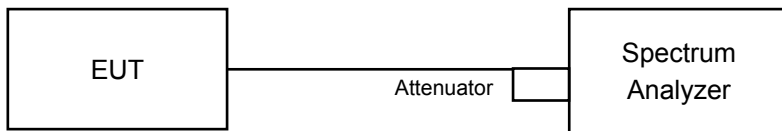
802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	68.824	18.38
5470~5725	63.337	18.02

Note: Manufacturer provides Transmit Power Control description to meet this requirement.

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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 sampling. 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.

4.4.4 Test Result

1TX

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
52	5260	17.40
60	5300	17.40
64	5320	17.04
100	5500	17.04
116	5580	17.52
140	5700	17.16
144	5720 For U-NII-2C	13.40
144	5720 For U-NII-3	3.40

802.11n (HT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
52	5260	18.12
60	5300	18.12
64	5320	18.00
100	5500	18.12
116	5580	18.24
140	5700	18.12
144	5720 For U-NII-2C	14.00
144	5720 For U-NII-3	3.88

802.11n (HT40)

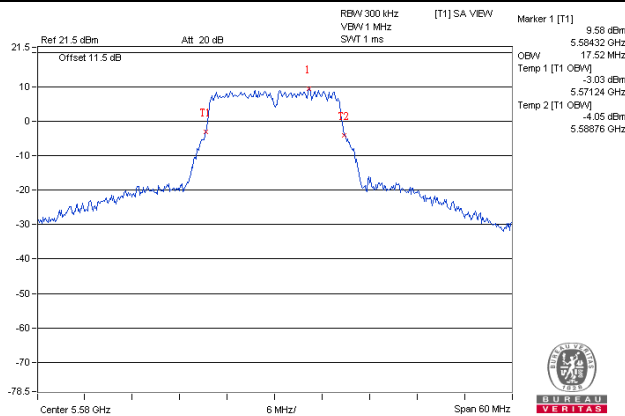
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
54	5270	36.96
62	5310	36.72
102	5510	36.72
110	5550	37.56
134	5670	36.84
142	5710 For U-NII-2C	33.84
142	5710 For U-NII-3	3.72

802.11ac (VHT80)

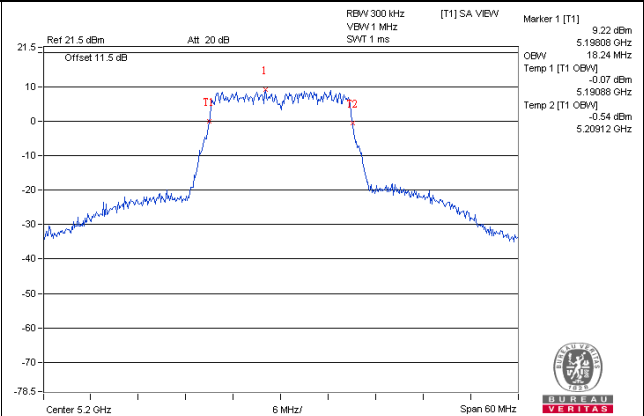
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
58	5290	75.84
106	5530	76.08
122	5610	76.08
138	5690 For U-NII-2C	73.40
138	5690 For U-NII-3	3.16

Spectrum Plot of Worst Value

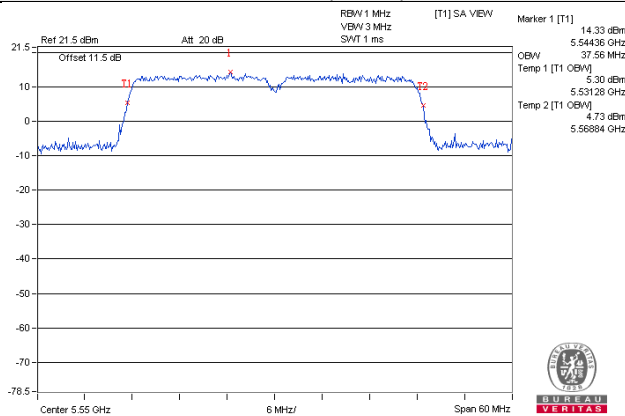
802.11a



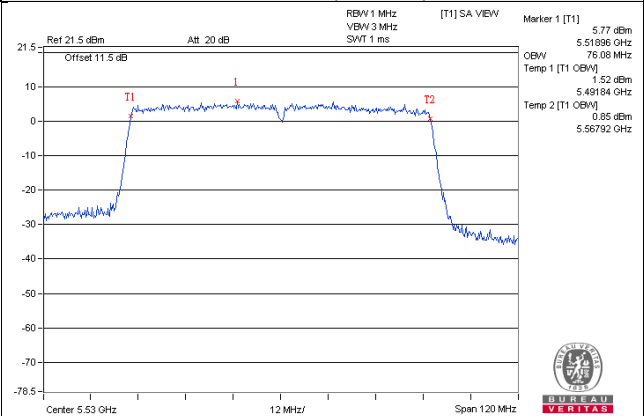
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



2TX

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	17.88	17.76
60	5300	17.76	17.88
64	5320	17.04	17.16
100	5500	17.16	17.16
116	5580	19.08	18.00
140	5700	17.04	17.16
144	5720 For U-NII-2C	14.12	13.76
144	5720 For U-NII-3	4.24	3.52

802.11n (HT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	18.48	18.72
60	5300	18.48	18.48
64	5320	18.12	18.24
100	5500	18.12	18.12
116	5580	19.20	18.72
140	5700	18.12	18.24
144	5720 For U-NII-2C	14.48	14.12
144	5720 For U-NII-3	4.36	4.12

802.11n (HT40)

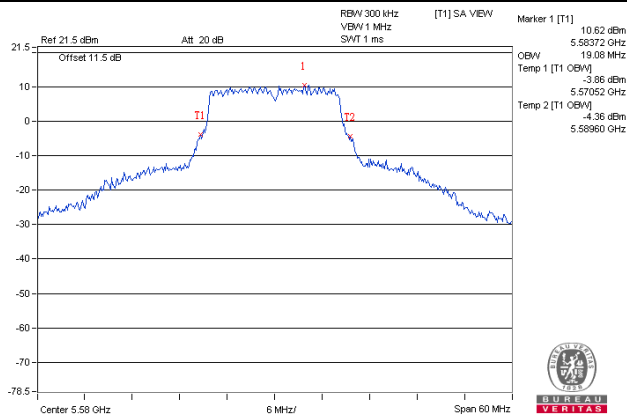
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	37.32	37.56
62	5310	36.72	36.72
102	5510	36.72	36.72
110	5550	39.00	37.56
134	5670	36.84	36.84
142	5710 For U-NII-2C	33.96	33.72
142	5710 For U-NII-3	3.84	3.60

802.11ac (VHT80)

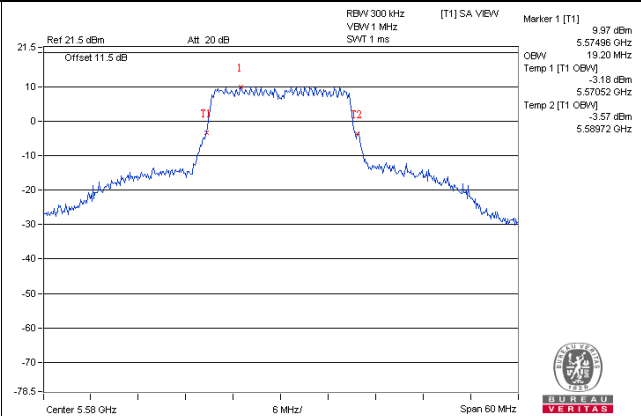
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	75.84	75.84
106	5530	76.08	75.84
122	5610	77.04	76.80
138	5690 For U-NII-2C	73.40	73.40
138	5690 For U-NII-3	3.16	3.16

Spectrum Plot of Worst Value

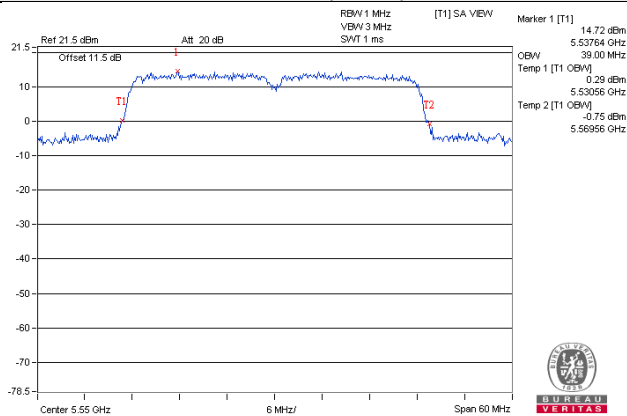
802.11a



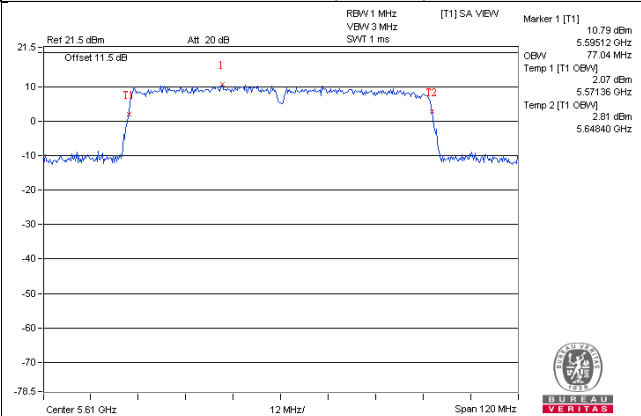
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

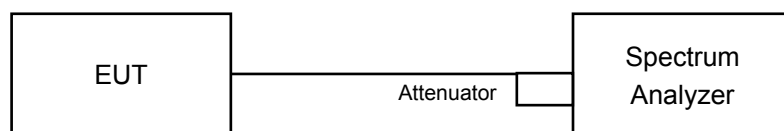


4.5 Peak Power Spectral Density Measurement

4.5.1 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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

For U-NII-2A, U-NII-2C band:

Duty cycle of test signal is $\geq 98\%$

Using method SA-1

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1MHz, Set VBW ≥ 3 MHz, 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

Duty cycle of test signal is $< 98\%$

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1MHz, Set VBW ≥ 3 MHz, 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 $10 \log (1/\text{duty cycle})$

For U-NII-3 band:

Duty cycle of test signal is $\geq 98\%$

Using method SA-1

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

Duty cycle of test signal is $< 98\%$

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

For U-NII-2A, U-NII-2C band:

1TX

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
52	5260	4.31	0.26	4.56	11	Pass
60	5300	4.39	0.26	4.64	11	Pass
64	5320	2.66	0.26	2.91	11	Pass
100	5500	2.99	0.26	3.24	11	Pass
116	5580	4.57	0.26	4.82	11	Pass
140	5700	2.82	0.26	3.07	11	Pass
144	5720 For U-NII-2C	3.75	0.26	4.97	11	Pass

Note:

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

802.11n (HT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
52	5260	3.99	0.42	4.41	11	Pass
60	5300	4.02	0.42	4.44	11	Pass
64	5320	2.75	0.42	3.17	11	Pass
100	5500	2.71	0.42	3.13	11	Pass
116	5580	4.28	0.42	4.70	11	Pass
140	5700	2.23	0.42	2.65	11	Pass
144	5720 For U-NII-2C	4.22	0.42	4.64	11	Pass

Note:

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

802.11n (HT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
54	5270	1.73	0.76	2.49	11	Pass
62	5310	-2.37	0.76	-1.61	11	Pass
102	5510	-2.64	0.76	-1.88	11	Pass
110	5550	2.67	0.76	3.43	11	Pass
134	5670	0.83	0.76	1.59	11	Pass
142	5710 For U-NII-2C	2.69	0.76	3.45	11	Pass

Note:

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

802.11ac (VHT80)

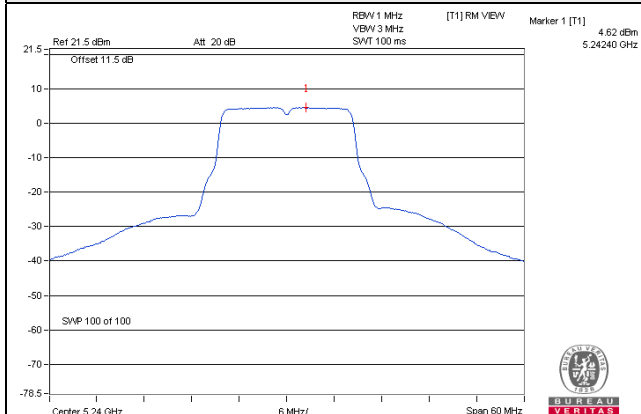
Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
58	5290	-4.63	1.29	-3.34	11	Pass
106	5530	-5.38	1.29	-4.09	11	Pass
122	5610	-1.41	1.29	-0.12	11	Pass
138	5690 For U-NII-2C	-0.49	1.29	0.80	11	Pass

Note:

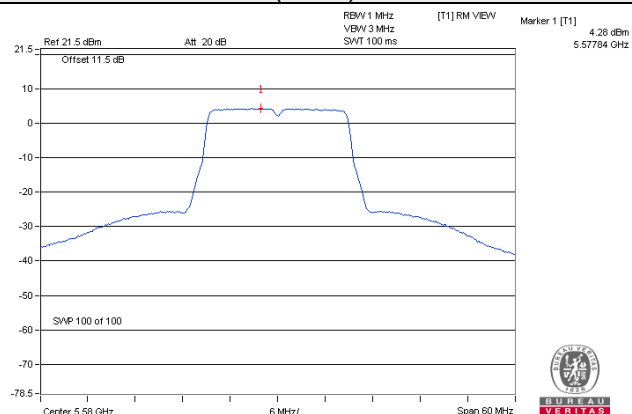
1. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

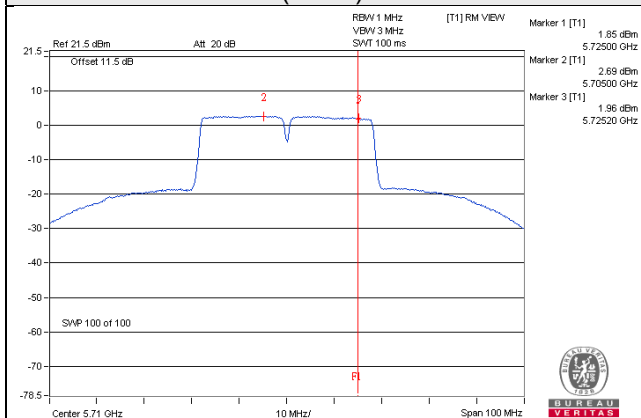
802.11a / CH 48



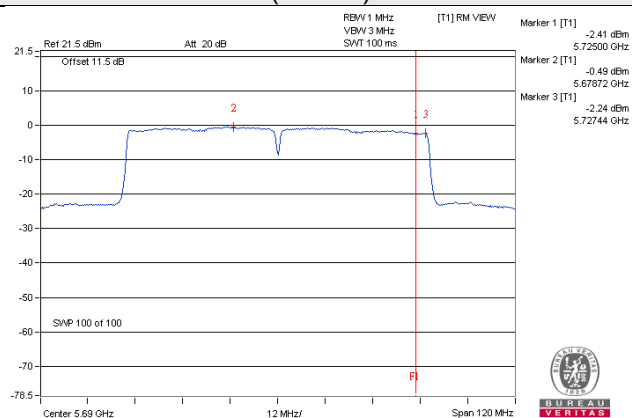
802.11n (HT20) / CH 116



802.11n (HT40) / CH 142



802.11ac (VHT80) / CH 138



2TX

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
52	5260	5.21	5.87	0.46	9.02	10.03	Pass
60	5300	5.50	5.80	0.46	9.12	10.03	Pass
64	5320	3.25	3.60	0.46	6.89	10.03	Pass
100	5500	3.00	3.44	0.46	6.69	9.63	Pass
116	5580	5.78	5.34	0.46	9.03	9.63	Pass
140	5700	2.74	2.84	0.46	6.25	9.63	Pass
144	5720 For U-NII-2C	5.65	5.59	0.46	9.08	9.63	Pass

Note:

- 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.
- 5260~5320MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 6.97dBi > 6dBi, so the limit shall be reduced to 11-(6.97-6) = 10.03dBm.
5500~5720MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 7.37dBi > 6dBi, so the limit shall be reduced to 11-(7.37-6) = 9.63dBm.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
52	5260	4.65	5.46	0.33	8.42	10.03	Pass
60	5300	4.75	5.56	0.33	8.52	10.03	Pass
64	5320	2.57	3.23	0.33	6.26	10.03	Pass
100	5500	2.42	2.98	0.33	6.05	9.63	Pass
116	5580	5.11	5.29	0.33	8.55	9.63	Pass
140	5700	2.21	2.52	0.33	5.71	9.63	Pass
144	5720 For U-NII-2C	5.17	5.33	0.33	8.59	9.63	Pass

Note:

- 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.
- 5260~5320MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 6.97dBi > 6dBi, so the limit shall be reduced to 11-(6.97-6) = 10.03dBm.
5500~5720MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 7.37dBi > 6dBi, so the limit shall be reduced to 11-(7.37-6) = 9.63dBm.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
54	5270	2.59	3.40	0.75	6.78	10.03	Pass
62	5310	-1.57	-1.10	0.75	2.43	10.03	Pass
102	5510	-2.73	-2.48	0.75	1.16	9.63	Pass
110	5550	3.05	2.95	0.75	6.76	9.63	Pass
134	5670	0.19	0.54	0.75	4.13	9.63	Pass
142	5710 For U-NII-2C	2.67	2.62	0.75	6.41	9.63	Pass

Note:

- 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.
- 5260~5320MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N] = 6.97\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11-(6.97-6) = 10.03\text{dBm}$.
5500~5720MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N] = 7.37\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11-(7.37-6) = 9.63\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

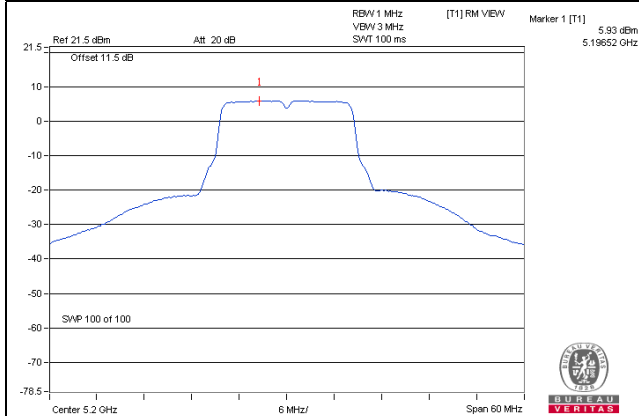
Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
58	5290	-4.88	-4.17	1.13	-0.36	10.03	Pass
106	5530	-6.42	-6.06	1.13	-2.09	9.63	Pass
122	5610	-0.25	-0.24	1.13	3.90	9.63	Pass
138	5690 For U-NII-2C	-0.47	-0.12	1.13	3.85	9.63	Pass

Note:

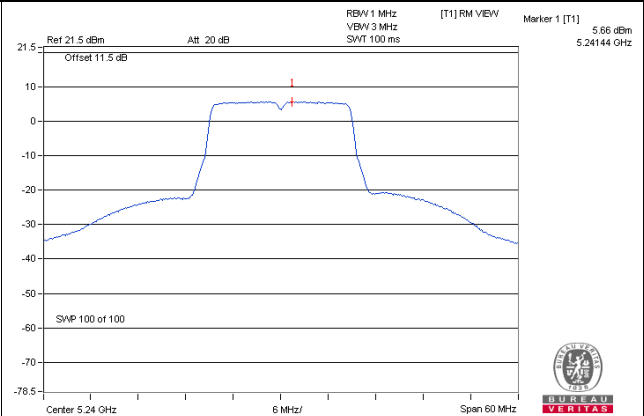
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- 5260~5320MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N] = 6.97\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11-(6.97-6) = 10.03\text{dBm}$.
5500~5720MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N] = 7.37\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $11-(7.37-6) = 9.63\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

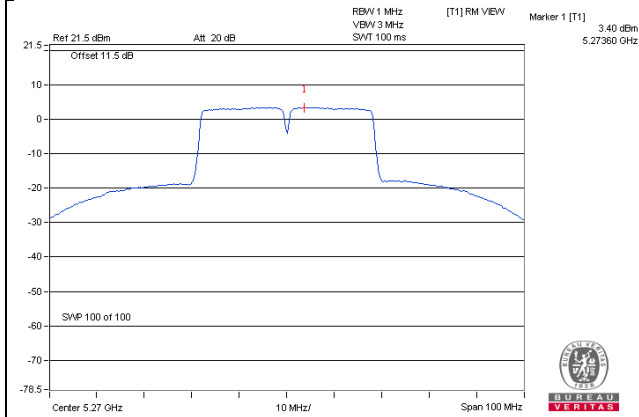
802.11a / Chain 1 / CH 40



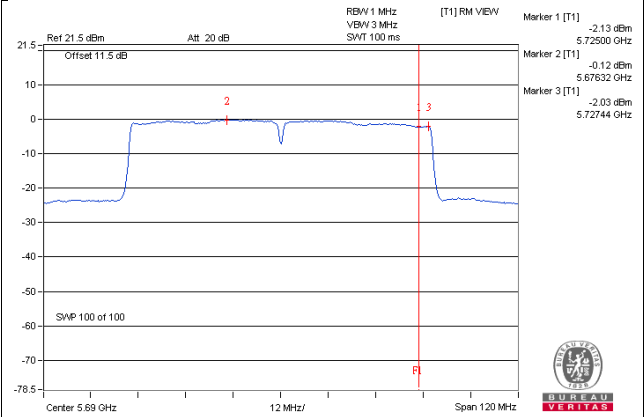
802.11n (HT20) / Chain 1 / CH 48



802.11n (HT40) / Chain 1 / CH 54



802.11ac (VHT80) / Chain 1 / CH 138



For U-NII-3 band:

1TX

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
144	5720 For U-NII-3	-3.83	-1.61	0.26	-1.35	30	Pass

Note:

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

802.11n (HT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
144	5720 For U-NII-3	-4.40	-2.18	0.42	-1.76	30	Pass

Note:

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

802.11n (HT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
142	5710 For U-NII-3	-6.39	-4.17	0.76	-3.41	30	Pass

Note:

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

802.11ac (VHT80)

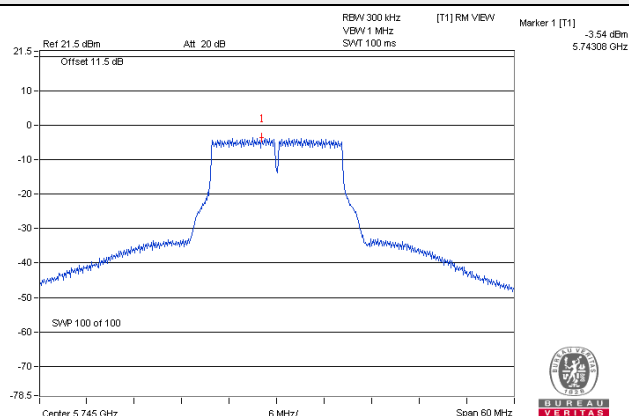
Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
138	5690 For U-NII-3	-11.12	-8.90	1.29	-7.61	30	Pass

Note:

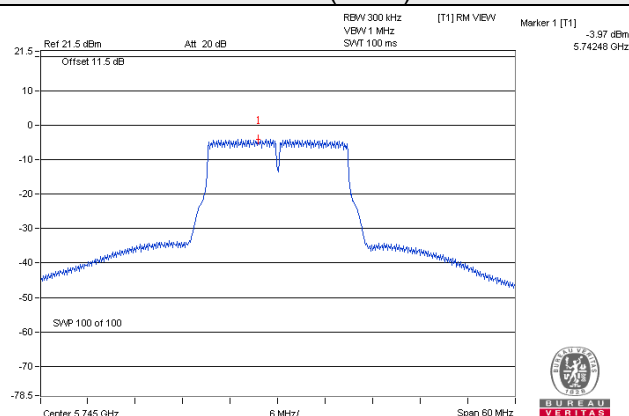
1. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

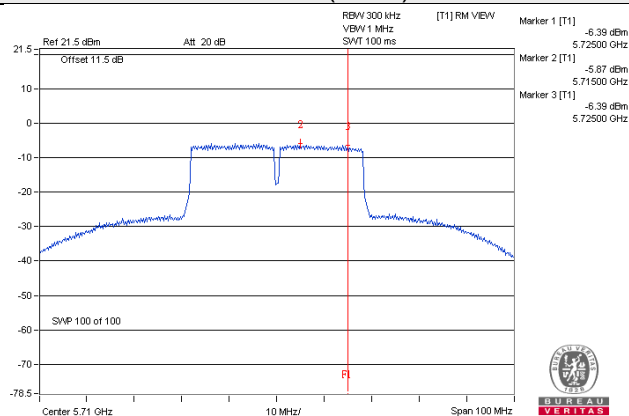
802.11a



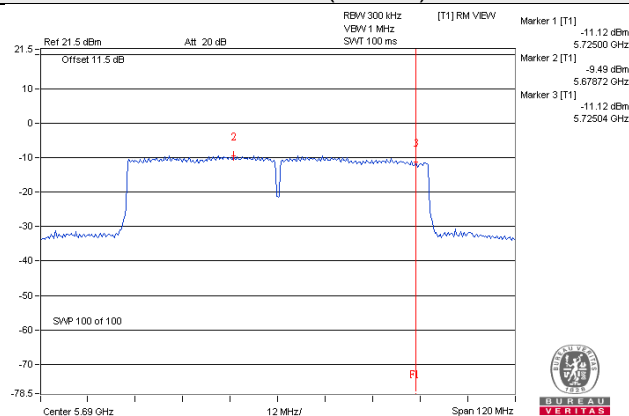
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



2TX

802.11a

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	144	5720 For U-NII-3	-2.71	-0.49	3.01	0.46	2.98	28.23	Pass
1	144	5720 For U-NII-3	-2.84	-0.62	3.01	0.46	2.85	28.23	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 = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 7.77dBi > 6dBi, so the limit shall be reduced to $30-(7.77-6) = 28.23\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	144	5720 For U-NII-3	-3.50	-1.28	3.01	0.33	2.06	28.23	Pass
1	144	5720 For U-NII-3	-3.36	-1.14	3.01	0.33	2.20	28.23	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 = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 7.77dBi > 6dBi, so the limit shall be reduced to $30-(7.77-6) = 28.23\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	142	5710 For U-NII-3	-6.62	-4.40	3.01	0.75	-0.64	28.23	Pass
1	142	5710 For U-NII-3	-6.72	-4.50	3.01	0.75	-0.74	28.23	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 = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 7.77dBi > 6dBi, so the limit shall be reduced to 30-(7.77-6) = 28.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

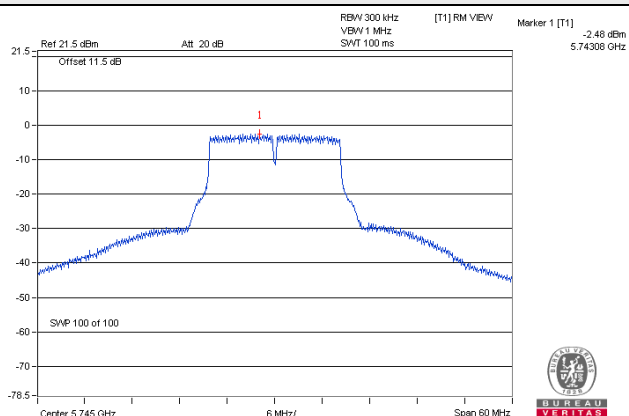
TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	138	5690 For U-NII-3	-11.03	-8.81	3.01	1.13	-4.67	28.23	Pass
1	138	5690 For U-NII-3	-10.54	-8.32	3.01	1.13	-4.18	28.23	Pass

Note:

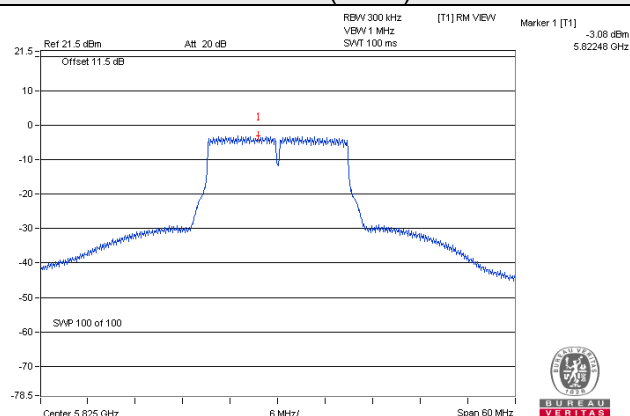
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 7.77dBi > 6dBi, so the limit shall be reduced to 30-(7.77-6) = 28.23dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

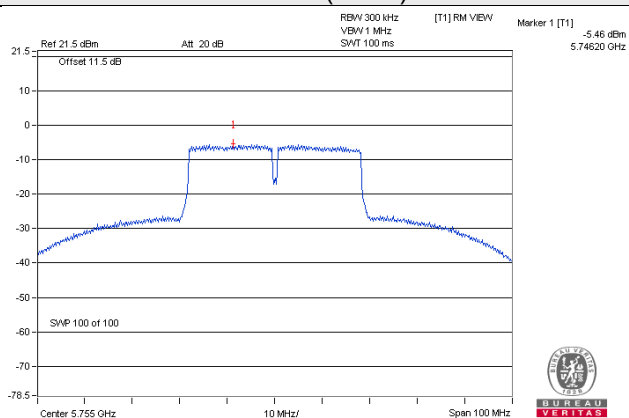
802.11a



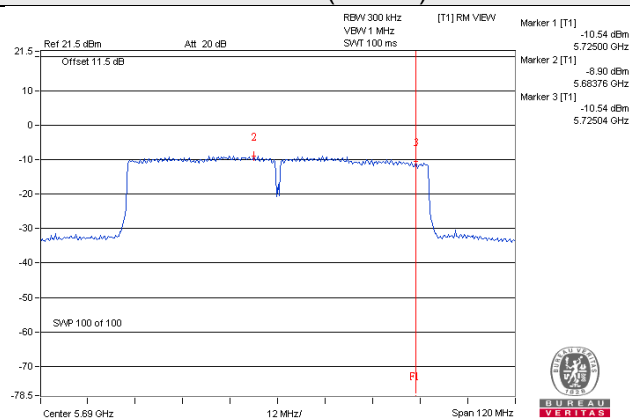
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

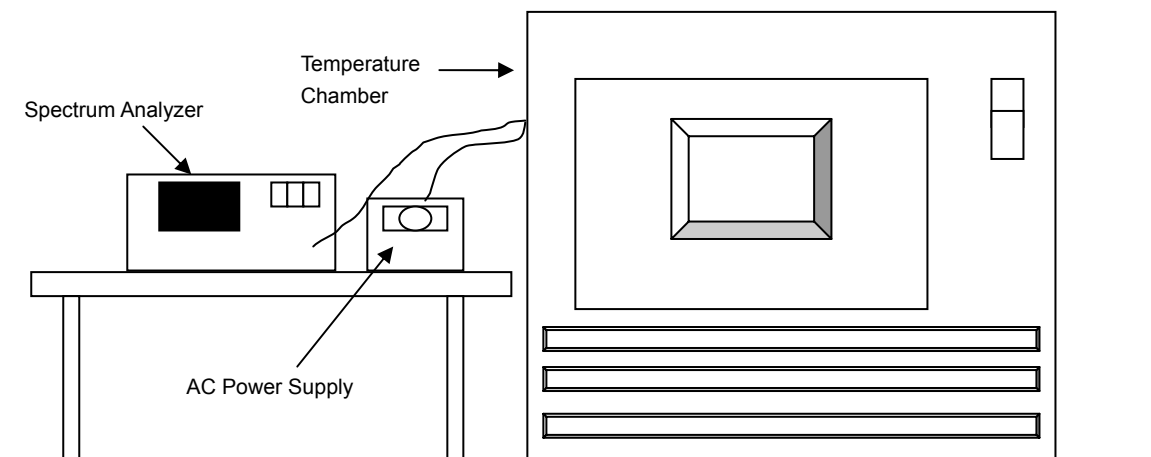


4.6 Frequency Stability

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5260MHz									
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	5259.9763	-0.00045	5259.9739	-0.00050	5259.9764	-0.00045	5259.9763	-0.00045
40	120	5260.0004	0.00001	5260	0.00000	5260.0042	0.00008	5260.0036	0.00007
30	120	5259.9912	-0.00017	5259.9941	-0.00011	5259.9936	-0.00012	5259.9929	-0.00013
20	120	5259.9966	-0.00006	5259.9992	-0.00002	5259.9951	-0.00009	5259.9987	-0.00002
10	120	5259.9916	-0.00016	5259.9901	-0.00019	5259.9926	-0.00014	5259.9891	-0.00021
0	120	5260.0143	0.00027	5260.0113	0.00021	5260.0148	0.00028	5260.0155	0.00029
-10	120	5259.9884	-0.00022	5259.9934	-0.00013	5259.9887	-0.00021	5259.9891	-0.00021
-20	120	5259.9867	-0.00025	5259.986	-0.00027	5259.9848	-0.00029	5259.9848	-0.00029
-30	120	5260.0249	0.00047	5260.0229	0.00044	5260.0217	0.00041	5260.0246	0.00047

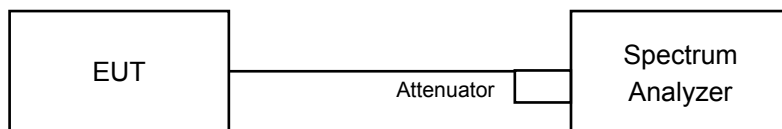
Frequency Stability Versus Voltage									
Operating Frequency: 5260MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5259.9963	-0.00007	5259.9991	-0.00002	5259.9944	-0.00011	5259.9993	-0.00001
	120	5259.9966	-0.00006	5259.9992	-0.00002	5259.9951	-0.00009	5259.9987	-0.00002
	102	5259.9972	-0.00005	5259.9988	-0.00002	5259.9949	-0.00010	5259.9977	-0.00004

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

1TX

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
144	5720 For U-NII-3	3.19	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
144	5720 For U-NII-3	3.82	0.5	Pass

802.11n (HT40)

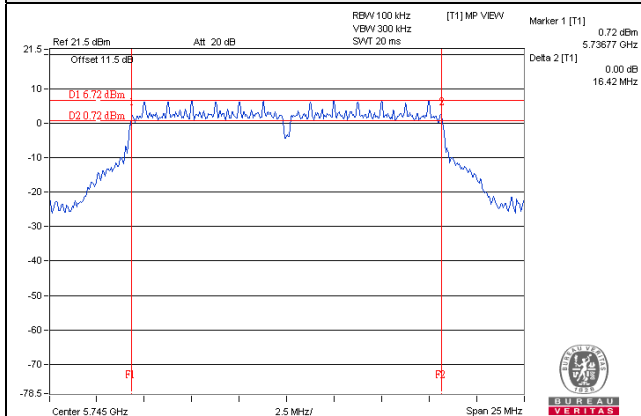
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
142	5710 For U-NII-3	3.25	0.5	Pass

802.11ac (VHT80)

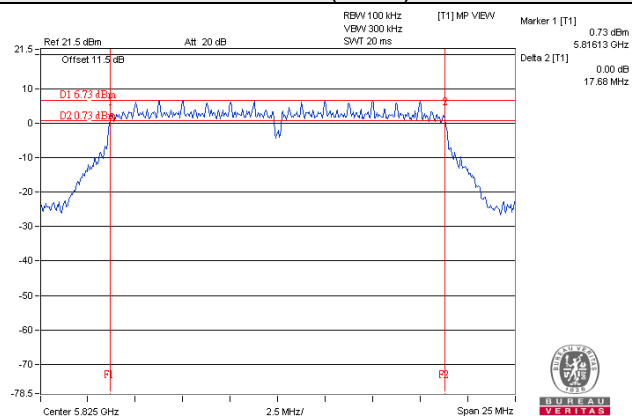
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
138	5690 For U-NII-3	2.74	0.5	Pass

Spectrum Plot of Worst Value

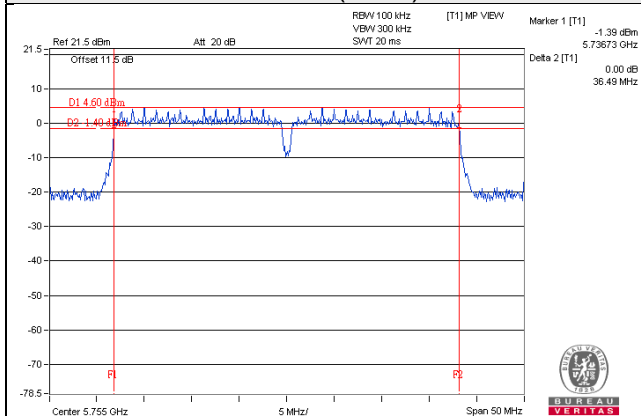
802.11a



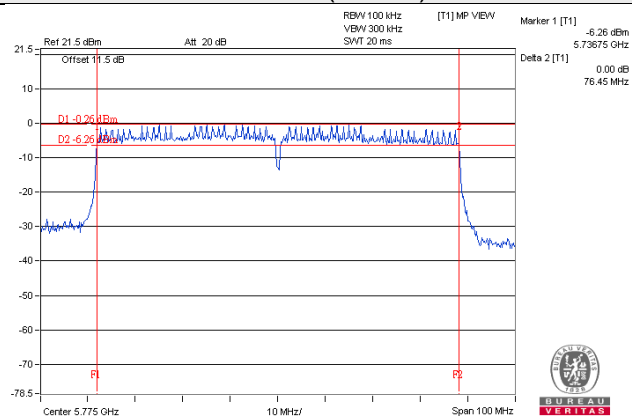
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



2TX

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144	5720 For U-NII-3	3.18	3.17	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144	5720 For U-NII-3	3.80	3.81	0.5	Pass

802.11n (HT40)

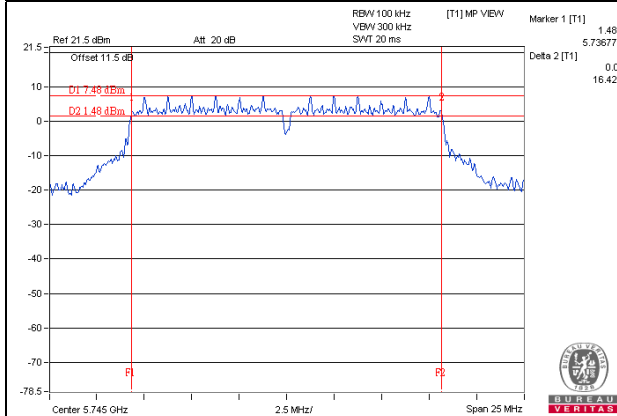
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
142	5710 For U-NII-3	3.23	3.19	0.5	Pass

802.11ac (VHT80)

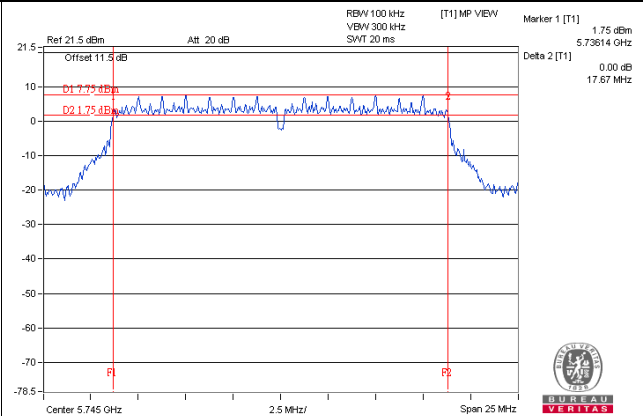
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
138	5690 For U-NII-3	2.75	2.75	0.5	Pass

Spectrum Plot of Worst Value

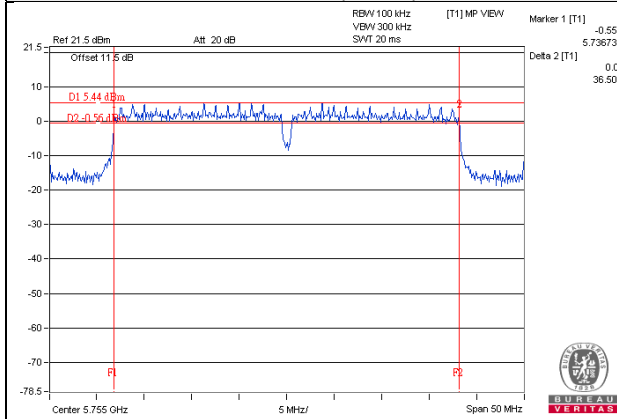
802.11a



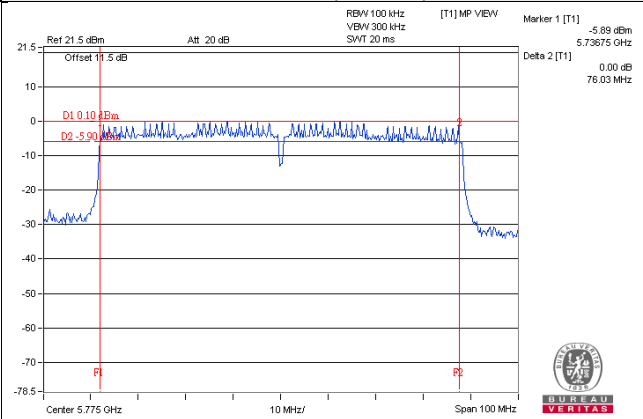
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



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:

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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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