

FCC Test Report

Report No.: RF170320C02-1

FCC ID: ACQ-DSR800

Test Model: DSR800

Received Date: Mar. 20, 2017

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

Issued Date: May 08, 2017

Applicant: ARRIS Group, Inc.

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

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Release Control Record

Issue No.	Description	Date Issued
RF170320C02-1	Original release.	May 08, 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:** May 08, 2017
Sunt Lee / Specialist

Approved by : *Ken Liu* , **Date:** May 08, 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 -5.46dB at 0.47663MHz.
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 -0.5dB at 5150.00MHz.
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	5180~5240MHz, 5745~5825MHz
Number of Channel	5180~5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11n (HT40): 2 802.11ac (VHT80): 1 5745~5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11n (HT40): 2 802.11ac (VHT80): 1
Output Power	CDD Mode, 1TX: 5180~5240MHz: 91.833mW 5745~5825MHz: 98.628mW CDD Mode, 2TX: 5180~5240MHz: 228.751mW 5745~5825MHz: 187.317mW Beamforming Mode: 5180~5240MHz: 207.042mW 5745~5825MHz: 183.773mW
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. 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, Beamforming mode is the worst case for final tests after pretesting.

2. 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.

3. 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

4. 2.4GHz and 5GHz technologies can not transmit at same time.

3.2 Description of Test Modes

5180~5240MHz:

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

5745~5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

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	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	1TX / 2TX
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5 / 7.2	1TX / 2TX
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5 / 15.0	1TX / 2TX
	802.11ac (VHT80)		42	42	OFDM	29.3 / 65.0	1TX / 2TX
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	1TX / 2TX
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5 / 7.2	1TX / 2TX
	802.11n (HT40)		151 to 159	151, 159	OFDM	13.5 / 15.0	1TX / 2TX
	802.11ac (VHT80)		155	155	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)	5180-5240	36 to 48	40	OFDM	7.2	2TX
		5745-5825	149 to 165		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)	5180-5240	36 to 48	40	OFDM	7.2	2TX
		5745-5825	149 to 165		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	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	1TX / 2TX
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5 / 7.2	1TX / 2TX
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5 / 15.0	1TX / 2TX
	802.11ac (VHT80)		42	42	OFDM	29.3 / 65.0	1TX / 2TX
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	1TX / 2TX
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5 / 7.2	1TX / 2TX
	802.11n (HT40)		151 to 159	151, 159	OFDM	13.5 / 15.0	1TX / 2TX
	802.11ac (VHT80)		155	155	OFDM	29.3 / 65.0	1TX / 2TX

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE \geq 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	Chris Lin
PLC	20 deg. C, 69% RH	120Vac, 60Hz	Bayu Chen
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.

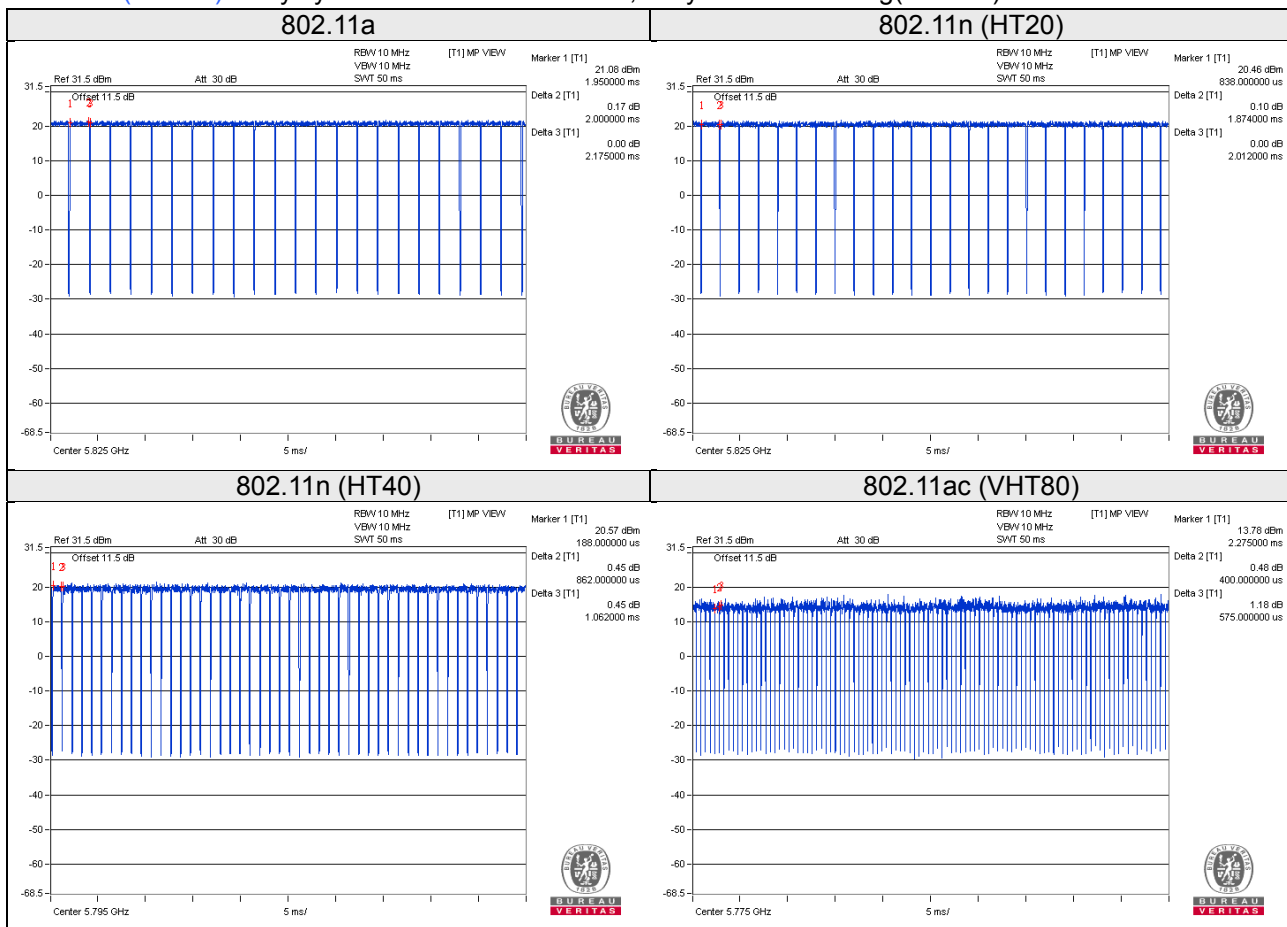
CDD Mode, 1TX

802.11a: Duty cycle = $2.000/2.175 = 0.920$, Duty factor = $10 * \log(1/0.920) = 0.36$

802.11n (HT20): Duty cycle = $1.874/2.012 = 0.931$, Duty factor = $10 * \log(1/0.931) = 0.31$

802.11n (HT40): Duty cycle = $0.862/1.062 = 0.812$, Duty factor = $10 * \log(1/0.812) = 0.91$

802.11ac (VHT80): Duty cycle = $0.400/0.575 = 0.696$, Duty factor = $10 * \log(1/0.696) = 1.58$



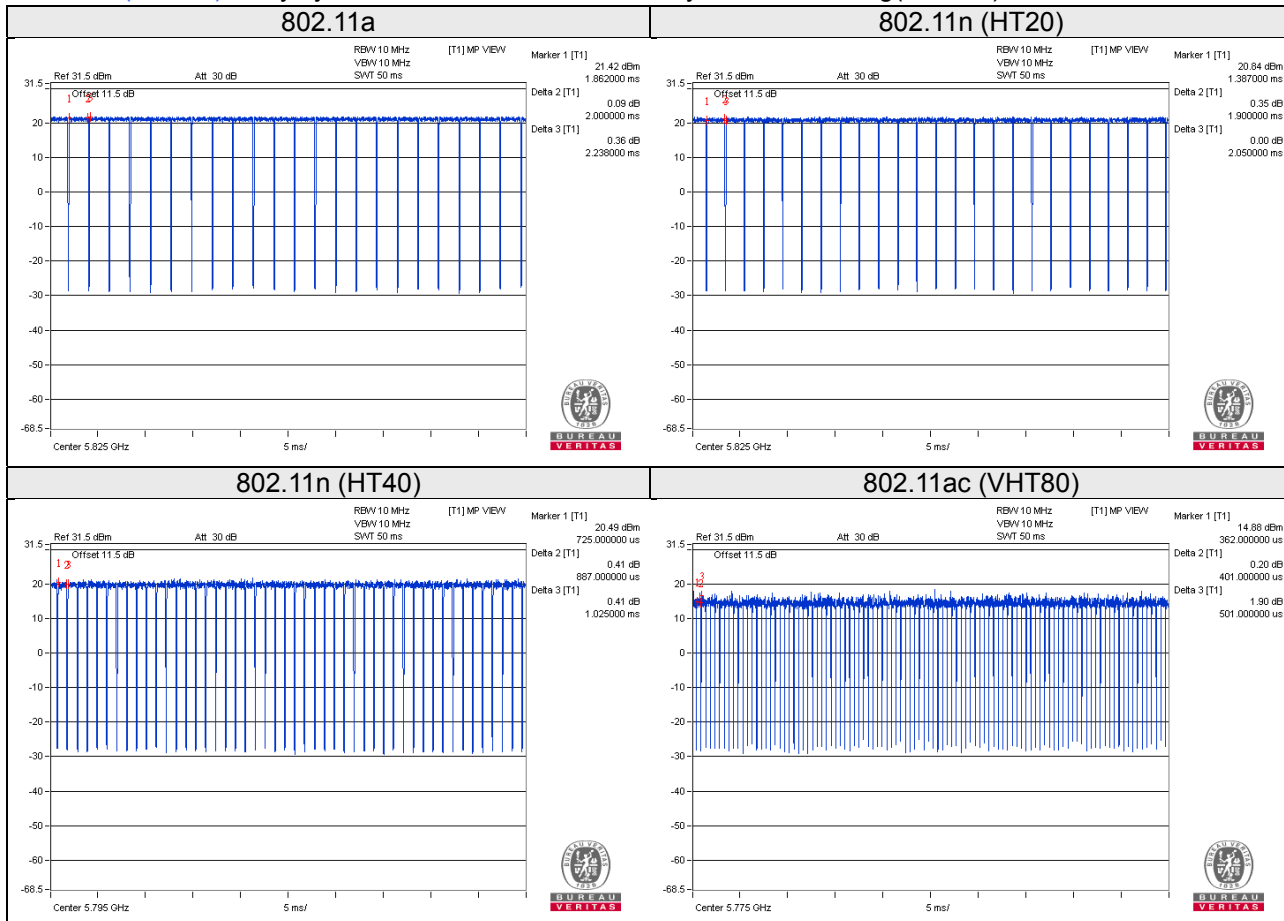
CDD Mode, 2TX

802.11a: Duty cycle = $2.000/2.238 = 0.894$, Duty factor = $10 * \log(1/0.894) = 0.49$

802.11n (HT20): Duty cycle = $1.900/2.050 = 0.927$, Duty factor = $10 * \log(1/0.927) = 0.33$

802.11n (HT40): Duty cycle = $0.887/1.025 = 0.865$, Duty factor = $10 * \log(1/0.865) = 0.63$

802.11ac (VHT80): Duty cycle = $0.401/0.501 = 0.800$, Duty factor = $10 * \log(1/0.800) = 0.97$

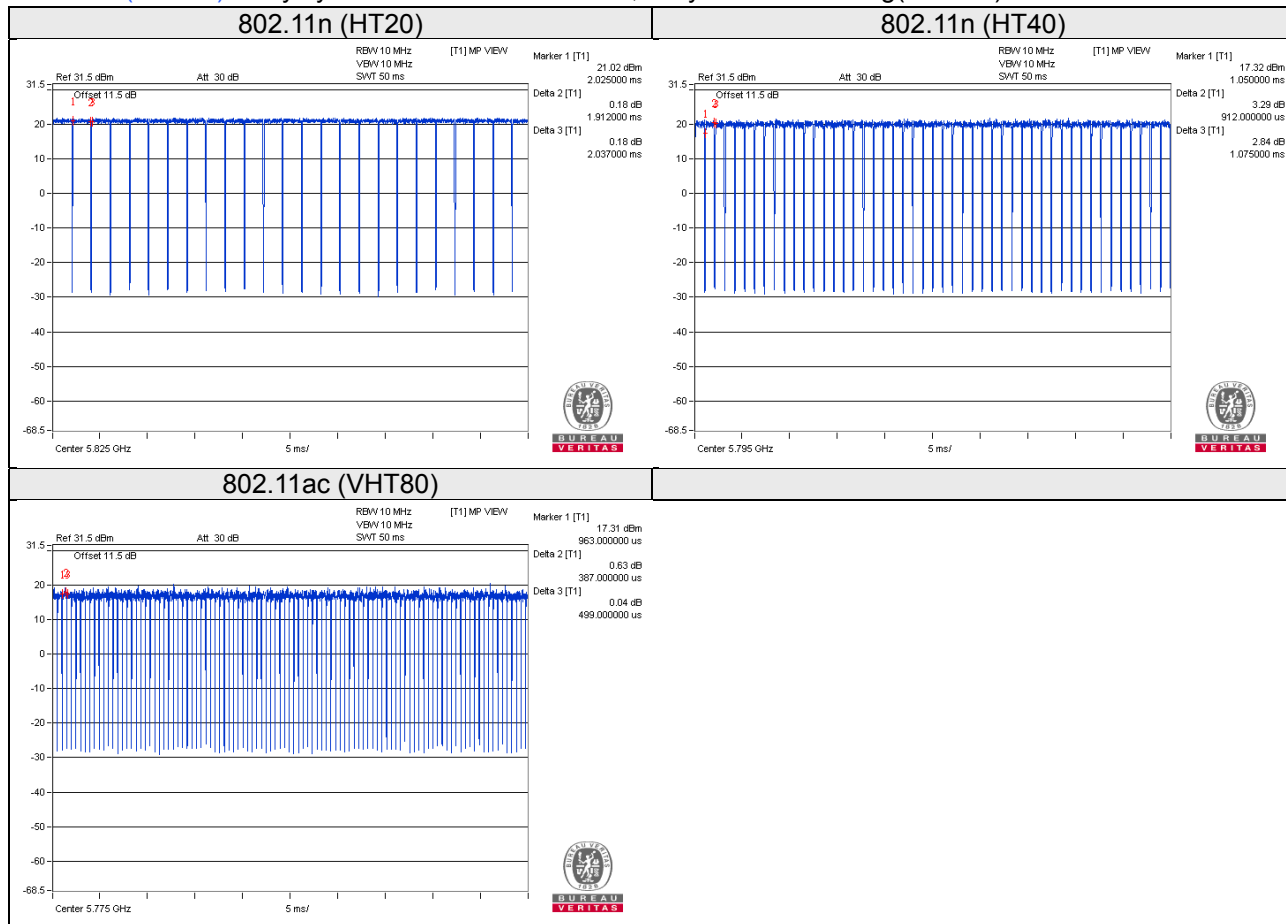


Beamforming Mode

802.11n (HT20): Duty cycle = $1.912/2.037 = 0.939$, Duty factor = $10 * \log(1/0.939) = 0.28$

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 = $0.387/0.499 = 0.776$, Duty factor = $10 * \log(1/0.776) = 1.10$



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.

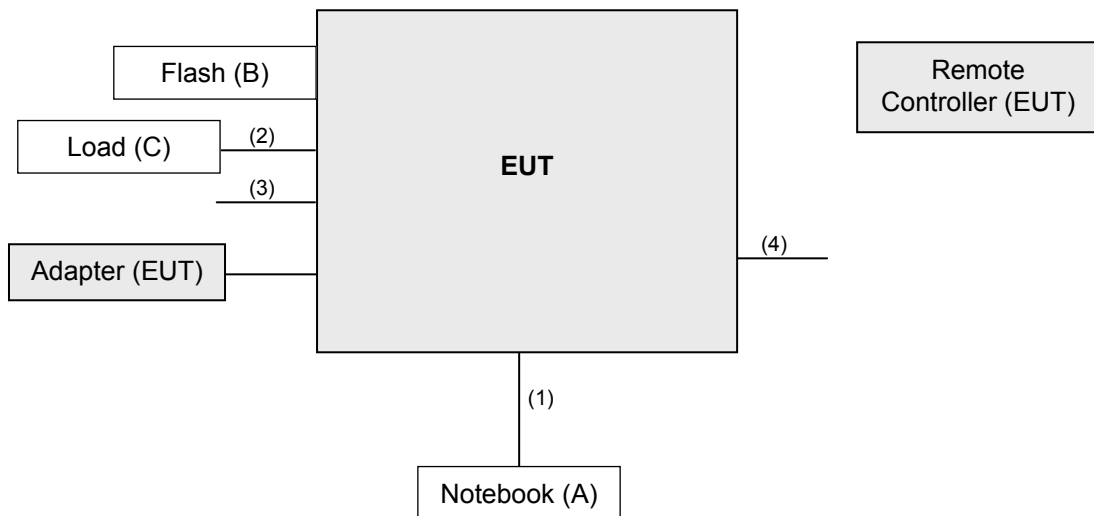
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	6RP2YM1	FCC DoC Approved	-
B.	FLASH	HP	v250W	09	NA	-
C.	Load	NA	NA	NA	NA	-

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 v01r04		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	<input checked="" type="checkbox"/> 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}
	<input type="checkbox"/> 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:

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	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:

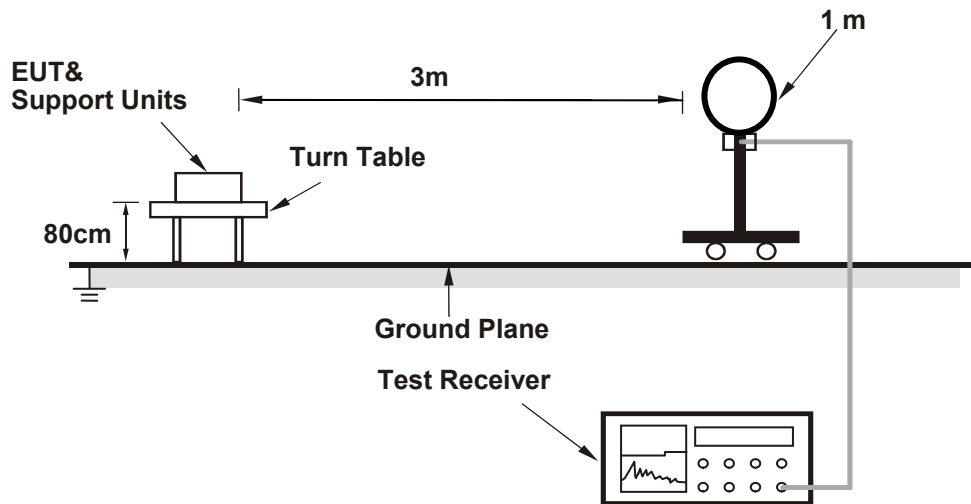
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

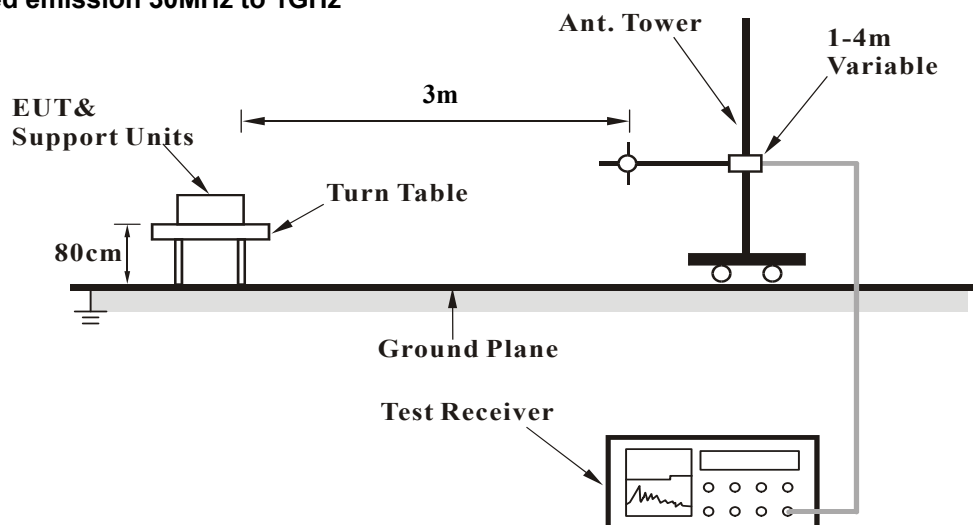
No deviation.

4.1.5 Test Setup

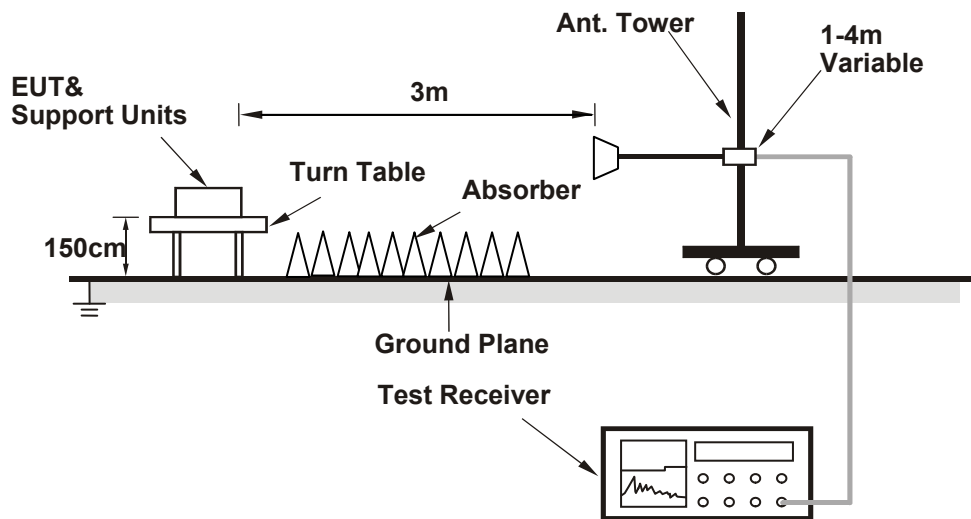
For Radiated emission below 30MHz



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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.5 PK	74.0	-16.5	1.64 H	29	55.4	2.1
2	5150.00	43.5 AV	54.0	-10.5	1.64 H	29	41.4	2.1
3	*5180.00	97.1 PK			1.64 H	29	58.2	38.9
4	*5180.00	87.3 AV			1.64 H	29	48.4	38.9
5	#10360.00	59.6 PK	74.0	-14.4	1.04 H	243	45.2	14.4
6	#10360.00	45.1 AV	54.0	-8.9	1.04 H	243	30.7	14.4

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	66.6 PK	74.0	-7.4	1.15 V	22	64.5	2.1
2	5150.00	49.4 AV	54.0	-4.6	1.15 V	22	47.3	2.1
3	*5180.00	107.9 PK			1.15 V	22	69.0	38.9
4	*5180.00	98.9 AV			1.15 V	22	60.0	38.9
5	#10360.00	59.9 PK	74.0	-14.1	1.73 V	328	45.5	14.4
6	#10360.00	45.9 AV	54.0	-8.1	1.73 V	328	31.5	14.4

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 40	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	*5200.00	101.4 PK			1.57 H	38	62.4	39.0
2	*5200.00	91.8 AV			1.57 H	38	52.8	39.0
3	#10400.00	59.8 PK	74.0	-14.2	1.00 H	251	45.2	14.6
4	#10400.00	46.2 AV	54.0	-7.8	1.00 H	251	31.6	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	*5200.00	110.1 PK			1.03 V	19	71.1	39.0
2	*5200.00	99.9 AV			1.03 V	19	60.9	39.0
3	#10400.00	60.5 PK	74.0	-13.5	1.67 V	314	45.9	14.6
4	#10400.00	46.4 AV	54.0	-7.6	1.67 V	314	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 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	102.5 PK			1.64 H	43	63.5	39.0
2	*5240.00	92.2 AV			1.64 H	43	53.2	39.0
3	5350.00	57.6 PK	74.0	-16.4	1.64 H	43	55.0	2.6
4	5350.00	44.9 AV	54.0	-9.1	1.64 H	43	42.3	2.6
5	#10480.00	59.3 PK	74.0	-14.7	1.04 H	247	45.1	14.2
6	#10480.00	45.6 AV	54.0	-8.4	1.04 H	247	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	*5240.00	110.3 PK			1.02 V	356	71.3	39.0
2	*5240.00	100.4 AV			1.02 V	356	61.4	39.0
3	5350.00	57.4 PK	74.0	-16.6	1.02 V	356	54.8	2.6
4	5350.00	45.2 AV	54.0	-8.8	1.02 V	356	42.6	2.6
5	#10480.00	59.8 PK	74.0	-14.2	1.55 V	324	45.6	14.2
6	#10480.00	46.0 AV	54.0	-8.0	1.55 V	324	31.8	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 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5606.40	56.9 PK	68.2	-11.3	1.60 H	285	54.0	2.9
2	*5745.00	98.3 PK			1.60 H	285	58.4	39.9
3	*5745.00	88.3 AV			1.60 H	285	48.4	39.9
4	#5956.80	56.6 PK	68.2	-11.6	1.60 H	285	53.3	3.3
5	11490.00	57.9 PK	74.0	-16.1	3.34 H	14	43.3	14.6
6	11490.00	44.7 AV	54.0	-9.3	3.34 H	14	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	#5624.00	57.7 PK	68.2	-10.5	1.73 V	40	54.8	2.9
2	*5745.00	109.7 PK			1.73 V	40	69.8	39.9
3	*5745.00	100.4 AV			1.73 V	40	60.5	39.9
4	#5951.20	57.3 PK	68.2	-10.9	1.73 V	40	54.0	3.3
5	11490.00	59.2 PK	74.0	-14.8	1.27 V	221	44.6	14.6
6	11490.00	46.4 AV	54.0	-7.6	1.27 V	221	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 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5612.80	54.6 PK	68.2	-13.6	1.80 H	283	51.7	2.9
2	*5785.00	99.1 PK			1.80 H	283	59.2	39.9
3	*5785.00	89.5 AV			1.80 H	283	49.6	39.9
4	#5990.40	55.6 PK	68.2	-12.6	1.80 H	283	52.3	3.3
5	11570.00	59.1 PK	74.0	-14.9	3.31 H	289	44.6	14.5
6	11570.00	45.2 AV	54.0	-8.8	3.31 H	289	30.7	14.5
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	#5620.80	57.6 PK	68.2	-10.6	1.74 V	40	54.7	2.9
2	*5785.00	109.8 PK			1.74 V	40	69.9	39.9
3	*5785.00	100.3 AV			1.74 V	40	60.4	39.9
4	#5954.40	57.3 PK	68.2	-10.9	1.74 V	40	54.0	3.3
5	11570.00	58.8 PK	74.0	-15.2	2.26 V	27	44.3	14.5
6	11570.00	46.1 AV	54.0	-7.9	2.26 V	27	31.6	14.5

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5623.20	57.6 PK	68.2	-10.6	2.28 H	282	54.7	2.9
2	*5825.00	100.3 PK			2.28 H	282	60.3	40.0
3	*5825.00	90.0 AV			2.28 H	282	50.0	40.0
4	#5951.20	56.7 PK	68.2	-11.5	2.28 H	282	53.4	3.3
5	11650.00	58.3 PK	74.0	-15.7	2.34 H	21	43.6	14.7
6	11650.00	45.4 AV	54.0	-8.6	2.34 H	21	30.7	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	#5633.60	57.5 PK	68.2	-10.7	1.75 V	47	54.6	2.9
2	*5825.00	109.4 PK			1.75 V	47	69.4	40.0
3	*5825.00	100.1 AV			1.75 V	47	60.1	40.0
4	#5945.60	56.9 PK	68.2	-11.3	1.75 V	47	53.7	3.2
5	11650.00	59.4 PK	74.0	-14.6	1.38 V	264	44.7	14.7
6	11650.00	46.3 AV	54.0	-7.7	1.38 V	264	31.6	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.

802.11n (HT20)

CHANNEL	TX Channel 36	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	63.1 PK	74.0	-10.9	1.58 H	24	61.0	2.1
2	5150.00	46.5 AV	54.0	-7.5	1.58 H	24	44.4	2.1
3	*5180.00	101.8 PK			1.58 H	24	62.9	38.9
4	*5180.00	91.0 AV			1.58 H	24	52.1	38.9
5	#10360.00	59.7 PK	74.0	-14.3	1.00 H	257	45.3	14.4
6	#10360.00	46.0 AV	54.0	-8.0	1.00 H	257	31.6	14.4

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	66.8 PK	74.0	-7.2	1.04 V	3	64.7	2.1
2	5150.00	50.4 AV	54.0	-3.6	1.04 V	3	48.3	2.1
3	*5180.00	110.5 PK			1.03 V	3	71.6	38.9
4	*5180.00	99.5 AV			1.03 V	3	60.6	38.9
5	#10360.00	60.2 PK	74.0	-13.8	1.63 V	311	45.8	14.4
6	#10360.00	46.5 AV	54.0	-7.5	1.63 V	311	32.1	14.4

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 40	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	*5200.00	103.1 PK			1.73 H	18	64.1	39.0
2	*5200.00	91.9 AV			1.73 H	18	52.9	39.0
3	#10400.00	59.8 PK	74.0	-14.2	1.04 H	238	45.2	14.6
4	#10400.00	46.3 AV	54.0	-7.7	1.04 H	238	31.7	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	*5200.00	111.2 PK			1.04 V	18	72.2	39.0
2	*5200.00	100.4 AV			1.04 V	18	61.4	39.0
3	#10400.00	60.5 PK	74.0	-13.5	1.67 V	315	45.9	14.6
4	#10400.00	46.9 AV	54.0	-7.1	1.67 V	315	32.3	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 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	103.3 PK			1.85 H	24	64.3	39.0
2	*5240.00	92.2 AV			1.85 H	24	53.2	39.0
3	5350.00	58.5 PK	74.0	-15.5	1.85 H	24	55.9	2.6
4	5350.00	45.3 AV	54.0	-8.7	1.85 H	24	42.7	2.6
5	#10480.00	59.4 PK	74.0	-14.6	1.10 H	240	45.2	14.2
6	#10480.00	45.5 AV	54.0	-8.5	1.10 H	240	31.3	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	*5240.00	111.8 PK			1.09 V	3	72.8	39.0
2	*5240.00	100.7 AV			1.09 V	3	61.7	39.0
3	5350.00	58.6 PK	74.0	-15.4	1.09 V	3	56.0	2.6
4	5350.00	46.0 AV	54.0	-8.0	1.09 V	3	43.4	2.6
5	#10480.00	60.0 PK	74.0	-14.0	1.70 V	304	45.8	14.2
6	#10480.00	46.6 AV	54.0	-7.4	1.70 V	304	32.4	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 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5608.00	57.5 PK	68.2	-10.7	2.39 H	259	54.6	2.9
2	*5745.00	99.4 PK			2.39 H	259	59.5	39.9
3	*5745.00	89.2 AV			2.39 H	259	49.3	39.9
4	#5955.20	57.2 PK	68.2	-11.0	2.39 H	259	53.9	3.3
5	11490.00	58.0 PK	74.0	-16.0	1.74 H	87	43.4	14.6
6	11490.00	45.1 AV	54.0	-8.9	1.74 H	87	30.5	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	#5600.80	57.7 PK	68.2	-10.5	1.74 V	39	54.8	2.9
2	*5745.00	110.5 PK			1.74 V	39	70.6	39.9
3	*5745.00	100.2 AV			1.74 V	39	60.3	39.9
4	#5957.60	57.5 PK	68.2	-10.7	1.74 V	39	54.2	3.3
5	11490.00	59.3 PK	74.0	-14.7	1.26 V	32	44.7	14.6
6	11490.00	46.2 AV	54.0	-7.8	1.26 V	32	31.6	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 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5618.40	56.6 PK	68.2	-11.6	2.45 H	278	53.7	2.9
2	*5785.00	100.5 PK			2.45 H	278	60.6	39.9
3	*5785.00	89.8 AV			2.45 H	278	49.9	39.9
4	#5956.80	57.1 PK	68.2	-11.1	2.45 H	278	53.8	3.3
5	11570.00	57.9 PK	74.0	-16.1	3.32 H	174	43.4	14.5
6	11570.00	45.0 AV	54.0	-9.0	3.32 H	174	30.5	14.5

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	#5621.60	57.1 PK	68.2	-11.1	1.38 V	38	54.2	2.9
2	*5785.00	111.0 PK			1.38 V	38	71.1	39.9
3	*5785.00	99.9 AV			1.38 V	38	60.0	39.9
4	#5941.60	56.3 PK	68.2	-11.9	1.38 V	38	53.1	3.2
5	11570.00	59.0 PK	74.0	-15.0	1.14 V	341	44.5	14.5
6	11570.00	46.2 AV	54.0	-7.8	1.14 V	341	31.7	14.5

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5602.40	57.2 PK	68.2	-11.0	2.44 H	279	54.3	2.9
2	*5825.00	101.3 PK			2.44 H	279	61.3	40.0
3	*5825.00	90.5 AV			2.44 H	279	50.5	40.0
4	#5975.20	57.0 PK	68.2	-11.2	2.44 H	279	53.7	3.3
5	11650.00	58.2 PK	74.0	-15.8	1.82 H	224	43.5	14.7
6	11650.00	45.2 AV	54.0	-8.8	1.82 H	224	30.5	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	#5600.00	57.1 PK	68.2	-11.1	1.59 V	45	54.2	2.9
2	*5825.00	110.5 PK			1.59 V	45	70.5	40.0
3	*5825.00	100.4 AV			1.59 V	45	60.4	40.0
4	#5980.80	56.7 PK	68.2	-11.5	1.59 V	45	53.4	3.3
5	11650.00	59.3 PK	74.0	-14.7	2.36 V	247	44.6	14.7
6	11650.00	46.2 AV	54.0	-7.8	2.36 V	247	31.5	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.

802.11n (HT40)

CHANNEL	TX Channel 38	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	64.1 PK	74.0	-9.9	1.53 H	9	62.0	2.1
2	5150.00	48.7 AV	54.0	-5.3	1.53 H	9	46.6	2.1
3	*5190.00	98.2 PK			1.53 H	9	59.2	39.0
4	*5190.00	87.2 AV			1.53 H	9	48.2	39.0
5	#10380.00	59.6 PK	74.0	-14.4	1.02 H	260	45.0	14.6
6	#10380.00	46.0 AV	54.0	-8.0	1.02 H	260	31.4	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	68.3 PK	74.0	-5.7	1.03 V	0	66.2	2.1
2	5150.00	52.2 AV	54.0	-1.8	1.03 V	0	50.1	2.1
3	*5190.00	104.9 PK			1.03 V	0	65.9	39.0
4	*5190.00	94.2 AV			1.03 V	0	55.2	39.0
5	#10380.00	60.2 PK	74.0	-13.8	1.65 V	313	45.6	14.6
6	#10380.00	46.6 AV	54.0	-7.4	1.65 V	313	32.0	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 46	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.1 PK	74.0	-13.9	1.58 H	0	58.0	2.1
2	5150.00	45.6 AV	54.0	-8.4	1.58 H	0	43.5	2.1
3	*5230.00	101.5 PK			1.58 H	0	62.5	39.0
4	*5230.00	90.7 AV			1.58 H	0	51.7	39.0
5	5350.00	58.0 PK	74.0	-16.0	1.58 H	0	55.4	2.6
6	5350.00	44.7 AV	54.0	-9.3	1.58 H	0	42.1	2.6
7	#10460.00	59.2 PK	74.0	-14.8	1.07 H	243	45.0	14.2
8	#10460.00	45.4 AV	54.0	-8.6	1.07 H	243	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	59.8 PK	74.0	-14.2	1.07 V	0	57.7	2.1
2	5150.00	47.5 AV	54.0	-6.5	1.07 V	0	45.4	2.1
3	*5230.00	109.6 PK			1.07 V	0	70.6	39.0
4	*5230.00	98.4 AV			1.07 V	0	59.4	39.0
5	5350.00	58.0 PK	74.0	-16.0	1.07 V	0	55.4	2.6
6	5350.00	45.2 AV	54.0	-8.8	1.07 V	0	42.6	2.6
7	#10460.00	59.9 PK	74.0	-14.1	1.72 V	326	45.7	14.2
8	#10460.00	46.3 AV	54.0	-7.7	1.72 V	326	32.1	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 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5609.60	57.3 PK	68.2	-10.9	2.50 H	287	54.4	2.9
2	*5755.00	97.4 PK			2.50 H	287	57.5	39.9
3	*5755.00	86.8 AV			2.50 H	287	46.9	39.9
4	#5959.20	58.6 PK	68.2	-9.6	2.50 H	287	55.3	3.3
5	11510.00	60.4 PK	74.0	-13.6	1.03 H	21	45.9	14.5
6	11510.00	46.6 AV	54.0	-7.4	1.03 H	21	32.1	14.5

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	#5642.40	60.3 PK	68.2	-7.9	1.06 V	40	57.4	2.9
2	*5755.00	108.4 PK			1.06 V	40	68.5	39.9
3	*5755.00	98.1 AV			1.06 V	40	58.2	39.9
4	#5947.20	57.0 PK	68.2	-11.2	1.06 V	40	53.8	3.2
5	11510.00	61.0 PK	74.0	-13.0	1.80 V	357	46.5	14.5
6	11510.00	46.9 AV	54.0	-7.1	1.80 V	357	32.4	14.5

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5618.40	57.2 PK	68.2	-11.0	2.56 H	280	54.3	2.9
2	*5795.00	99.0 PK			2.56 H	280	59.1	39.9
3	*5795.00	88.2 AV			2.56 H	280	48.3	39.9
4	#5968.80	57.0 PK	68.2	-11.2	2.56 H	280	53.7	3.3
5	11590.00	60.1 PK	74.0	-13.9	1.00 H	13	45.7	14.4
6	11590.00	46.4 AV	54.0	-7.6	1.00 H	13	32.0	14.4

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	#5628.80	58.4 PK	68.2	-9.8	1.04 V	42	55.5	2.9
2	*5795.00	109.1 PK			1.04 V	42	69.2	39.9
3	*5795.00	98.3 AV			1.04 V	42	58.4	39.9
4	#5964.80	57.5 PK	68.2	-10.7	1.04 V	42	54.2	3.3
5	11590.00	60.7 PK	74.0	-13.3	1.63 V	348	46.3	14.4
6	11590.00	46.8 AV	54.0	-7.2	1.63 V	348	32.4	14.4

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	62.1 PK	74.0	-11.9	1.48 H	23	60.0	2.1
2	5150.00	47.6 AV	54.0	-6.4	1.48 H	23	45.5	2.1
3	*5210.00	96.2 PK			1.48 H	23	57.2	39.0
4	*5210.00	84.7 AV			1.48 H	23	45.7	39.0
5	5350.00	56.2 PK	74.0	-17.8	1.48 H	23	53.6	2.6
6	5350.00	43.3 AV	54.0	-10.7	1.48 H	23	40.7	2.6
7	#10420.00	59.0 PK	74.0	-15.0	1.00 H	238	44.6	14.4
8	#10420.00	45.8 AV	54.0	-8.2	1.00 H	238	31.4	14.4

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	65.4 PK	74.0	-8.6	1.05 V	0	63.3	2.1
2	5150.00	50.9 AV	54.0	-3.1	1.05 V	0	48.8	2.1
3	*5210.00	101.5 PK			1.05 V	0	62.5	39.0
4	*5210.00	91.7 AV			1.05 V	0	52.7	39.0
5	5350.00	56.4 PK	74.0	-17.6	1.05 V	0	53.8	2.6
6	5350.00	43.5 AV	54.0	-10.5	1.05 V	0	40.9	2.6
7	#10420.00	59.8 PK	74.0	-14.2	1.83 V	331	45.4	14.4
8	#10420.00	46.2 AV	54.0	-7.8	1.83 V	331	31.8	14.4

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 155	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	#5640.80	57.3 PK	68.2	-10.9	1.70 H	285	54.4	2.9
2	*5775.00	93.0 PK			1.70 H	285	53.1	39.9
3	*5775.00	81.1 AV			1.70 H	285	41.2	39.9
4	#5960.00	56.9 PK	68.2	-11.3	1.70 H	285	53.6	3.3
5	11550.00	60.1 PK	74.0	-13.9	1.00 H	31	45.6	14.5
6	11550.00	46.3 AV	54.0	-7.7	1.00 H	31	31.8	14.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5649.60	61.1 PK	68.2	-7.1	1.02 V	3	58.2	2.9
2	*5775.00	103.5 PK			1.02 V	3	63.6	39.9
3	*5775.00	92.7 AV			1.02 V	3	52.8	39.9
4	#5952.80	57.5 PK	68.2	-10.7	1.02 V	3	54.2	3.3
5	11550.00	60.7 PK	74.0	-13.3	1.77 V	345	46.2	14.5
6	11550.00	46.8 AV	54.0	-7.2	1.77 V	345	32.3	14.5

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.0 PK	74.0	-9.0	1.33 H	110	58.9	6.1
2	5150.00	50.8 AV	54.0	-3.2	1.33 H	110	44.7	6.1
3	*5180.00	109.0 PK			1.12 H	81	68.8	40.2
4	*5180.00	99.3 AV			1.12 H	81	59.1	40.2
5	#10360.00	59.7 PK	74.0	-14.3	1.50 H	208	41.8	17.9
6	#10360.00	46.3 AV	54.0	-7.7	1.50 H	208	28.4	17.9
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	5150.00	68.6 PK	74.0	-5.4	1.10 V	48	62.5	6.1
2	5150.00	52.4 AV	54.0	-1.6	1.10 V	48	46.3	6.1
3	*5180.00	112.4 PK			3.02 V	215	72.2	40.2
4	*5180.00	102.8 AV			3.02 V	215	62.6	40.2
5	#10360.00	60.2 PK	74.0	-13.8	1.22 V	79	42.3	17.9
6	#10360.00	47.0 AV	54.0	-7.0	1.22 V	79	29.1	17.9

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 40	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	*5200.00	111.5 PK			1.19 H	78	71.3	40.2
2	*5200.00	101.7 AV			1.19 H	78	61.5	40.2
3	#10400.00	60.2 PK	74.0	-13.8	1.47 H	202	42.0	18.2
4	#10400.00	46.9 AV	54.0	-7.1	1.47 H	202	28.7	18.2

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	*5200.00	114.5 PK			2.98 V	219	74.3	40.2
2	*5200.00	104.5 AV			2.98 V	219	64.3	40.2
3	#10400.00	60.7 PK	74.0	-13.3	1.27 V	73	42.5	18.2
4	#10400.00	47.5 AV	54.0	-6.5	1.27 V	73	29.3	18.2

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	112.8 PK			1.26 H	80	72.4	40.4
2	*5240.00	102.6 AV			1.26 H	80	62.2	40.4
3	5350.00	58.3 PK	74.0	-15.7	1.31 H	101	51.8	6.5
4	5350.00	46.3 AV	54.0	-7.7	1.31 H	101	39.8	6.5
5	#10480.00	60.1 PK	74.0	-13.9	1.44 H	223	41.7	18.4
6	#10480.00	47.3 AV	54.0	-6.7	1.44 H	223	28.9	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	*5240.00	115.0 PK			3.12 V	221	74.6	40.4
2	*5240.00	105.4 AV			3.12 V	221	65.0	40.4
3	5350.00	59.6 PK	74.0	-14.4	1.24 V	56	53.1	6.5
4	5350.00	47.4 AV	54.0	-6.6	1.24 V	56	40.9	6.5
5	#10480.00	61.0 PK	74.0	-13.0	1.25 V	68	42.6	18.4
6	#10480.00	47.9 AV	54.0	-6.1	1.25 V	68	29.5	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 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5624.80	59.3 PK	68.2	-8.9	1.09 H	96	52.3	7.0
2	*5745.00	112.4 PK			1.09 H	96	70.8	41.6
3	*5745.00	102.0 AV			1.09 H	96	60.4	41.6
4	#5964.00	61.1 PK	68.2	-7.1	1.09 H	96	53.2	7.9
5	11490.00	61.1 PK	74.0	-12.9	1.52 H	22	40.8	20.3
6	11490.00	49.0 AV	54.0	-5.0	1.52 H	22	28.7	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	#5612.80	60.2 PK	68.2	-8.0	1.18 V	153	53.3	6.9
2	*5745.00	114.0 PK			1.18 V	153	72.4	41.6
3	*5745.00	104.6 AV			1.18 V	153	63.0	41.6
4	#5947.20	60.9 PK	68.2	-7.3	1.18 V	153	53.1	7.8
5	11490.00	62.7 PK	74.0	-11.3	1.00 V	268	42.4	20.3
6	11490.00	49.8 AV	54.0	-4.2	1.00 V	268	29.5	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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5634.40	59.1 PK	68.2	-9.1	1.11 H	99	52.1	7.0
2	*5785.00	111.7 PK			1.11 H	99	70.1	41.6
3	*5785.00	101.4 AV			1.11 H	99	59.8	41.6
4	#5963.20	59.3 PK	68.2	-8.9	1.11 H	99	51.4	7.9
5	11570.00	61.0 PK	74.0	-13.0	1.57 H	29	40.9	20.1
6	11570.00	48.6 AV	54.0	-5.4	1.57 H	29	28.5	20.1

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	#5645.60	59.5 PK	68.2	-8.7	1.21 V	153	52.4	7.1
2	*5785.00	113.8 PK			1.21 V	153	72.2	41.6
3	*5785.00	104.5 AV			1.21 V	153	62.9	41.6
4	#5972.00	60.4 PK	68.2	-7.8	1.21 V	153	52.5	7.9
5	11570.00	62.3 PK	74.0	-11.7	1.00 V	261	42.2	20.1
6	11570.00	49.4 AV	54.0	-4.6	1.00 V	261	29.3	20.1

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5613.60	59.7 PK	68.2	-8.5	1.16 H	96	52.8	6.9
2	*5825.00	110.8 PK			1.16 H	96	69.0	41.8
3	*5825.00	100.5 AV			1.16 H	96	58.7	41.8
4	#5962.40	60.0 PK	68.2	-8.2	1.16 H	96	52.1	7.9
5	11650.00	60.4 PK	74.0	-13.6	1.60 H	11	40.6	19.8
6	11650.00	48.2 AV	54.0	-5.8	1.60 H	11	28.4	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	#5634.40	59.8 PK	68.2	-8.4	1.25 V	154	52.8	7.0
2	*5825.00	112.9 PK			1.25 V	154	71.1	41.8
3	*5825.00	103.4 AV			1.25 V	154	61.6	41.8
4	#5958.40	59.7 PK	68.2	-8.5	1.25 V	154	51.8	7.9
5	11650.00	61.8 PK	74.0	-12.2	1.00 V	256	42.0	19.8
6	11650.00	49.0 AV	54.0	-5.0	1.00 V	256	29.2	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.

802.11n (HT20)

CHANNEL	TX Channel 36	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	69.3 PK	74.0	-4.7	1.40 H	128	63.2	6.1
2	5150.00	51.3 AV	54.0	-2.7	1.40 H	128	45.2	6.1
3	*5180.00	109.4 PK			1.28 H	82	69.2	40.2
4	*5180.00	98.5 AV			1.28 H	82	58.3	40.2
5	#10360.00	59.6 PK	74.0	-14.4	1.55 H	200	41.7	17.9
6	#10360.00	46.4 AV	54.0	-7.6	1.55 H	200	28.5	17.9
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	5150.00	69.7 PK	74.0	-4.3	1.12 V	25	63.6	6.1
2	5150.00	52.9 AV	54.0	-1.1	1.12 V	25	46.8	6.1
3	*5180.00	111.2 PK			2.99 V	215	71.0	40.2
4	*5180.00	101.6 AV			2.99 V	215	61.4	40.2
5	#10360.00	60.1 PK	74.0	-13.9	1.18 V	104	42.2	17.9
6	#10360.00	47.1 AV	54.0	-6.9	1.18 V	104	29.2	17.9

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 40	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	*5200.00	111.1 PK			1.20 H	77	70.9	40.2
2	*5200.00	100.4 AV			1.20 H	77	60.2	40.2
3	#10400.00	60.1 PK	74.0	-13.9	1.42 H	197	41.9	18.2
4	#10400.00	47.1 AV	54.0	-6.9	1.42 H	197	28.9	18.2

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	*5200.00	113.8 PK			2.98 V	221	73.6	40.2
2	*5200.00	104.0 AV			2.98 V	221	63.8	40.2
3	#10400.00	60.8 PK	74.0	-13.2	1.20 V	109	42.6	18.2
4	#10400.00	48.2 AV	54.0	-5.8	1.20 V	109	30.0	18.2

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 48	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	*5240.00	112.6 PK			1.26 H	83	72.2	40.4
2	*5240.00	101.4 AV			1.26 H	83	61.0	40.4
3	5350.00	58.5 PK	74.0	-15.5	1.35 H	146	52.0	6.5
4	5350.00	46.7 AV	54.0	-7.3	1.35 H	146	40.2	6.5
5	#10480.00	60.1 PK	74.0	-13.9	1.59 H	193	41.7	18.4
6	#10480.00	47.2 AV	54.0	-6.8	1.59 H	193	28.8	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	*5240.00	113.9 PK			2.94 V	213	73.5	40.4
2	*5240.00	103.9 AV			2.94 V	213	63.5	40.4
3	5350.00	59.3 PK	74.0	-14.7	1.16 V	60	52.8	6.5
4	5350.00	47.5 AV	54.0	-6.5	1.16 V	60	41.0	6.5
5	#10480.00	60.8 PK	74.0	-13.2	1.28 V	114	42.4	18.4
6	#10480.00	47.7 AV	54.0	-6.3	1.28 V	114	29.3	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 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.80	60.2 PK	68.2	-8.0	1.30 H	111	53.1	7.1
2	*5745.00	112.2 PK			1.30 H	111	70.6	41.6
3	*5745.00	100.7 AV			1.30 H	111	59.1	41.6
4	#5962.40	61.0 PK	68.2	-7.2	1.30 H	111	53.1	7.9
5	11490.00	60.5 PK	74.0	-13.5	1.72 H	43	40.2	20.3
6	11490.00	48.4 AV	54.0	-5.6	1.72 H	43	28.1	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	#5624.00	58.9 PK	68.2	-9.3	1.13 V	155	51.9	7.0
2	*5745.00	113.6 PK			1.13 V	155	72.0	41.6
3	*5745.00	104.0 AV			1.13 V	155	62.4	41.6
4	#5966.40	60.0 PK	68.2	-8.2	1.13 V	155	52.1	7.9
5	11490.00	61.9 PK	74.0	-12.1	1.00 V	312	41.6	20.3
6	11490.00	49.2 AV	54.0	-4.8	1.00 V	312	28.9	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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5630.40	60.2 PK	68.2	-8.0	1.34 H	95	53.2	7.0
2	*5785.00	111.6 PK			1.34 H	95	70.0	41.6
3	*5785.00	100.4 AV			1.34 H	95	58.8	41.6
4	#5964.00	60.3 PK	68.2	-7.9	1.34 H	95	52.4	7.9
5	11570.00	60.2 PK	74.0	-13.8	1.77 H	48	40.1	20.1
6	11570.00	48.1 AV	54.0	-5.9	1.77 H	48	28.0	20.1

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	#5612.80	58.2 PK	68.2	-10.0	1.04 V	154	51.3	6.9
2	*5785.00	113.4 PK			1.04 V	154	71.8	41.6
3	*5785.00	103.7 AV			1.04 V	154	62.1	41.6
4	#5958.40	61.1 PK	68.2	-7.1	1.04 V	154	53.2	7.9
5	11570.00	61.7 PK	74.0	-12.3	1.00 V	302	41.6	20.1
6	11570.00	48.3 AV	54.0	-5.7	1.00 V	302	28.2	20.1

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5620.00	60.3 PK	68.2	-7.9	1.31 H	100	53.4	6.9
2	*5825.00	111.4 PK			1.31 H	100	69.6	41.8
3	*5825.00	100.0 AV			1.31 H	100	58.2	41.8
4	#5940.00	60.5 PK	68.2	-7.7	1.31 H	100	52.7	7.8
5	11650.00	60.1 PK	74.0	-13.9	1.69 H	37	40.3	19.8
6	11650.00	47.7 AV	54.0	-6.3	1.69 H	37	27.9	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	#5612.00	58.9 PK	68.2	-9.3	1.01 V	153	52.0	6.9
2	*5825.00	112.9 PK			1.01 V	153	71.1	41.8
3	*5825.00	103.3 AV			1.01 V	153	61.5	41.8
4	#5962.40	60.0 PK	68.2	-8.2	1.01 V	153	52.1	7.9
5	11650.00	61.1 PK	74.0	-12.9	1.00 V	297	41.3	19.8
6	11650.00	48.3 AV	54.0	-5.7	1.00 V	297	28.5	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.

802.11n (HT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.1 PK	74.0	-6.9	1.34 H	125	61.0	6.1
2	5150.00	51.9 AV	54.0	-2.1	1.34 H	125	45.8	6.1
3	*5190.00	104.4 PK			1.12 H	83	64.2	40.2
4	*5190.00	94.1 AV			1.12 H	83	53.9	40.2
5	#10380.00	59.4 PK	74.0	-14.6	1.49 H	244	41.4	18.0
6	#10380.00	46.3 AV	54.0	-7.7	1.49 H	244	28.3	18.0
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	5150.00	68.2 PK	74.0	-5.8	1.30 V	48	62.1	6.1
2	5150.00	53.5 AV	54.0	-0.5	1.30 V	48	47.4	6.1
3	*5190.00	107.1 PK			3.08 V	222	66.9	40.2
4	*5190.00	97.6 AV			3.08 V	222	57.4	40.2
5	#10380.00	59.8 PK	74.0	-14.2	1.14 V	138	41.8	18.0
6	#10380.00	46.8 AV	54.0	-7.2	1.14 V	138	28.8	18.0

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.

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.8 PK	74.0	-10.2	1.27 H	100	57.7	6.1
2	5150.00	50.1 AV	54.0	-3.9	1.27 H	100	44.0	6.1
3	*5230.00	109.9 PK			1.14 H	82	69.5	40.4
4	*5230.00	98.7 AV			1.14 H	82	58.3	40.4
5	#10460.00	60.1 PK	74.0	-13.9	1.52 H	250	41.9	18.2
6	#10460.00	46.8 AV	54.0	-7.2	1.52 H	250	28.6	18.2

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	65.3 PK	74.0	-8.7	1.22 V	49	59.2	6.1
2	5150.00	52.8 AV	54.0	-1.2	1.22 V	49	46.7	6.1
3	*5230.00	111.4 PK			2.98 V	216	71.0	40.4
4	*5230.00	101.3 AV			2.98 V	216	60.9	40.4
5	#10460.00	60.6 PK	74.0	-13.4	1.08 V	98	42.4	18.2
6	#10460.00	47.2 AV	54.0	-6.8	1.08 V	98	29.0	18.2

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.00	60.0 PK	68.2	-8.2	1.36 H	94	52.9	7.1
2	*5755.00	109.2 PK			1.36 H	94	67.6	41.6
3	*5755.00	98.1 AV			1.36 H	94	56.5	41.6
4	#5955.20	59.8 PK	68.2	-8.4	1.36 H	94	51.9	7.9
5	11510.00	60.6 PK	74.0	-13.4	1.61 H	125	40.4	20.2
6	11510.00	47.9 AV	54.0	-6.1	1.61 H	125	27.7	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	#5644.00	61.9 PK	68.2	-6.3	1.00 V	51	54.8	7.1
2	*5755.00	111.2 PK			1.00 V	51	69.6	41.6
3	*5755.00	101.5 AV			1.00 V	51	59.9	41.6
4	#5960.80	60.2 PK	68.2	-8.0	1.00 V	51	52.3	7.9
5	11510.00	61.6 PK	74.0	-12.4	1.00 V	280	41.4	20.2
6	11510.00	48.2 AV	54.0	-5.8	1.00 V	280	28.0	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 159	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5638.40	58.8 PK	68.2	-9.4	1.45 H	97	51.8	7.0
2	*5795.00	108.4 PK			1.45 H	97	66.7	41.7
3	*5795.00	97.6 AV			1.45 H	97	55.9	41.7
4	#5956.00	59.2 PK	68.2	-9.0	1.45 H	97	51.3	7.9
5	11590.00	60.4 PK	74.0	-13.6	1.59 H	129	40.3	20.1
6	11590.00	47.9 AV	54.0	-6.1	1.59 H	129	27.8	20.1

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	#5640.00	59.3 PK	68.2	-8.9	1.02 V	154	52.3	7.0
2	*5795.00	110.6 PK			1.02 V	154	68.9	41.7
3	*5795.00	100.8 AV			1.02 V	154	59.1	41.7
4	#5965.60	59.2 PK	68.2	-9.0	1.02 V	154	51.3	7.9
5	11590.00	61.2 PK	74.0	-12.8	1.00 V	278	41.1	20.1
6	11590.00	48.2 AV	54.0	-5.8	1.00 V	278	28.1	20.1

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.

802.11ac (VHT80)

CHANNEL	TX Channel 42	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	63.8 PK	74.0	-10.2	1.38 H	162	57.7	6.1
2	5150.00	50.9 AV	54.0	-3.1	1.38 H	162	44.8	6.1
3	*5210.00	100.0 PK			1.30 H	82	59.7	40.3
4	*5210.00	89.4 AV			1.30 H	82	49.1	40.3
5	5350.00	57.4 PK	74.0	-16.6	1.24 H	51	50.9	6.5
6	5350.00	45.1 AV	54.0	-8.9	1.24 H	51	38.6	6.5
7	#10420.00	59.3 PK	74.0	-14.7	1.61 H	200	41.2	18.1
8	#10420.00	46.2 AV	54.0	-7.8	1.61 H	200	28.1	18.1
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	5150.00	65.7 PK	74.0	-8.3	1.20 V	50	59.6	6.1
2	5150.00	52.8 AV	54.0	-1.2	1.20 V	50	46.7	6.1
3	*5210.00	102.6 PK			3.08 V	215	62.3	40.3
4	*5210.00	92.7 AV			3.08 V	215	52.4	40.3
5	5350.00	57.9 PK	74.0	-16.1	2.50 V	188	51.4	6.5
6	5350.00	45.3 AV	54.0	-8.7	2.50 V	188	38.8	6.5
7	#10420.00	59.8 PK	74.0	-14.2	1.25 V	66	41.7	18.1
8	#10420.00	46.7 AV	54.0	-7.3	1.25 V	66	28.6	18.1

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 155	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	#5644.00	63.8 PK	68.2	-4.4	1.37 H	94	56.7	7.1
2	*5775.00	105.0 PK			1.37 H	94	63.4	41.6
3	*5775.00	94.0 AV			1.37 H	94	52.4	41.6
4	#5939.20	61.1 PK	68.2	-7.1	1.37 H	94	53.3	7.8
5	11550.00	60.4 PK	74.0	-13.6	1.65 H	136	40.2	20.2
6	11550.00	48.1 AV	54.0	-5.9	1.65 H	136	27.9	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	#5645.60	66.5 PK	68.2	-1.7	1.11 V	154	59.4	7.1
2	*5775.00	105.8 PK			1.11 V	154	64.2	41.6
3	*5775.00	96.1 AV			1.11 V	154	54.5	41.6
4	#5946.40	60.2 PK	68.2	-8.0	1.11 V	154	52.4	7.8
5	11550.00	61.4 PK	74.0	-12.6	1.00 V	273	41.2	20.2
6	11550.00	48.4 AV	54.0	-5.6	1.00 V	273	28.2	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.

Below 1GHz Worst-Case Data: 802.11n (HT20)

CHANNEL	TX Channel 40	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	84.23	31.4 QP	40.0	-8.6	2.00 H	201	50.4	-19.0
2	223.94	27.3 QP	46.0	-18.7	1.26 H	240	43.4	-16.1
3	485.89	25.8 QP	46.0	-20.2	2.00 H	175	34.7	-8.9
4	648.89	40.1 QP	46.0	-5.9	1.26 H	163	45.4	-5.3
5	689.64	33.4 QP	46.0	-12.6	1.26 H	170	37.9	-4.5
6	938.01	39.1 QP	46.0	-6.9	1.26 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	30.00	35.2 QP	40.0	-4.8	1.25 V	90	50.9	-15.7
2	76.47	30.1 QP	40.0	-9.9	1.25 V	31	47.4	-17.3
3	485.89	25.7 QP	46.0	-20.3	1.25 V	122	34.6	-8.9
4	648.89	40.7 QP	46.0	-5.3	1.00 V	83	46.0	-5.3
5	722.62	32.7 QP	46.0	-13.3	2.00 V	13	36.6	-3.9
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

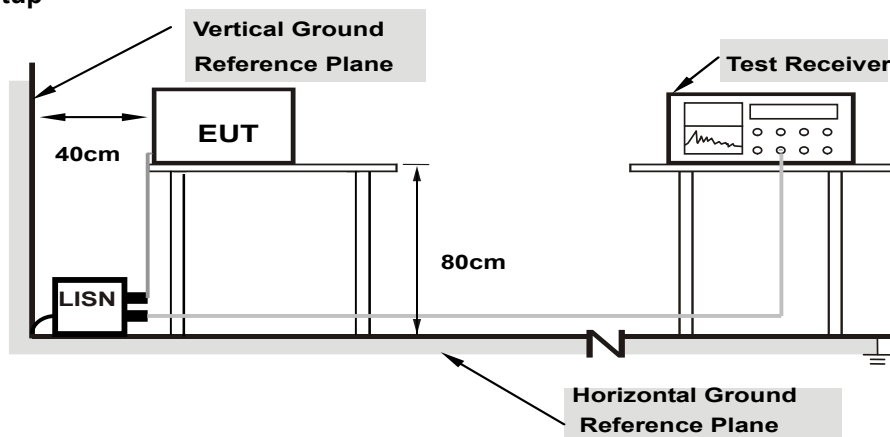
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

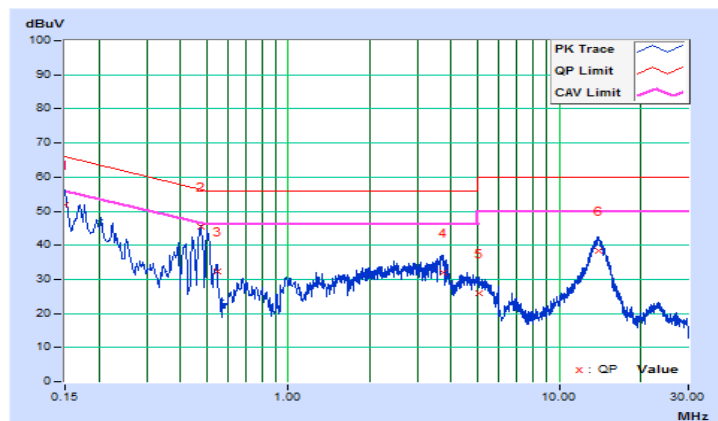
Worst-case data: 802.11n (HT20)

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	0.15000	10.40	41.62	31.66	52.02	42.06	66.00	56.00	-13.98	-13.94
2	0.47663	10.50	34.98	30.44	45.48	40.94	56.40	46.40	-10.92	-5.46
3	0.54491	10.50	21.91	11.65	32.41	22.15	56.00	46.00	-23.59	-23.85
4	3.75502	10.64	21.31	10.67	31.95	21.31	56.00	46.00	-24.05	-24.69
5	5.09224	10.70	15.20	9.40	25.90	20.10	60.00	50.00	-34.10	-29.90
6	14.06960	11.11	27.30	22.21	38.41	33.32	60.00	50.00	-21.59	-16.68

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.

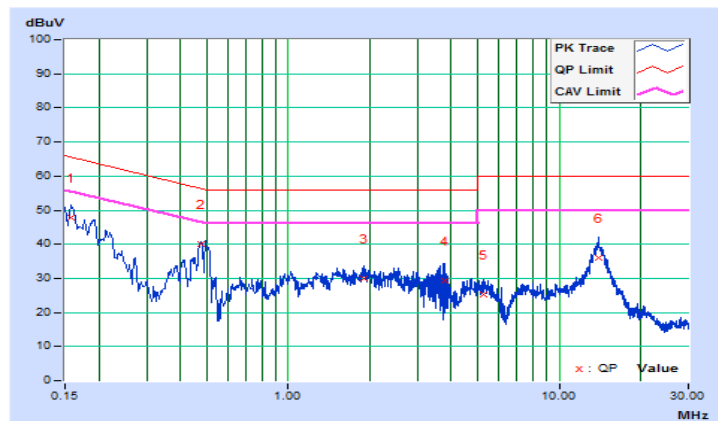


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15802	10.16	37.62	29.03	47.78	39.19	65.57
2	0.47789	10.23	29.98	24.54	40.21	34.77	56.38	46.38	-16.17	-11.61
3	1.90559	10.30	19.76	11.75	30.06	22.05	56.00	46.00	-25.94	-23.95
4	3.76284	10.41	18.72	7.15	29.13	17.56	56.00	46.00	-26.87	-28.44
5	5.27992	10.47	14.88	8.84	25.35	19.31	60.00	50.00	-34.65	-30.69
6	13.91711	10.80	25.24	20.13	36.04	30.93	60.00	50.00	-23.96	-19.07

REMARKS:

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



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} ;

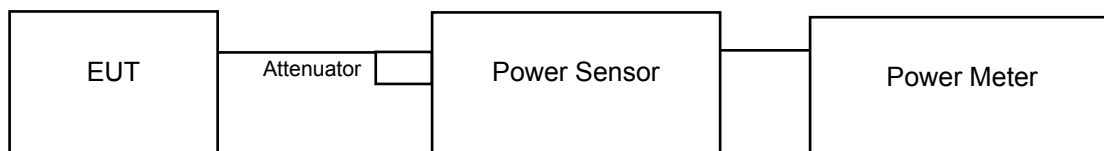
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

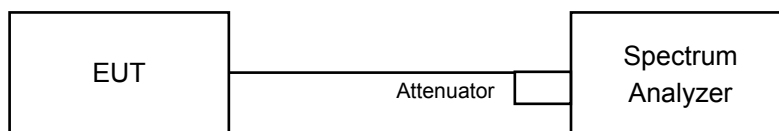
4.3.2 Test Setup

For Power Output

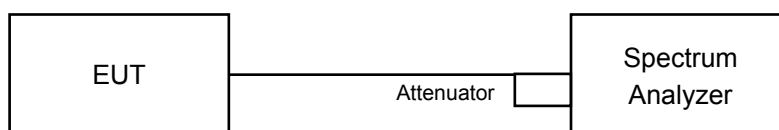
802.11a, 802.11n (HT20), 802.11n (HT40)



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
36	5180	70.469	18.48	24	Pass
40	5200	86.896	19.39	24	Pass
48	5240	88.105	19.45	24	Pass
149	5745	81.658	19.12	30	Pass
157	5785	79.799	19.02	30	Pass
165	5825	79.983	19.03	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	69.663	18.43	24	Pass
40	5200	84.918	19.29	24	Pass
48	5240	83.946	19.24	24	Pass
149	5745	79.616	19.01	30	Pass
157	5785	78.705	18.96	30	Pass
165	5825	78.343	18.94	30	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	40.179	16.04	24	Pass
46	5230	91.833	19.63	24	Pass
151	5755	98.628	19.94	30	Pass
159	5795	97.949	19.91	30	Pass

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	35.975	15.56	24	Pass
155	5775	50.816	17.06	30	Pass

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				
36	5180	17.82	17.67	119.013	20.76	24	Pass
40	5200	20.03	19.96	199.776	23.01	24	Pass
48	5240	20.11	19.85	199.170	22.99	24	Pass
149	5745	19.75	19.63	186.239	22.70	30	Pass
157	5785	19.65	19.50	181.382	22.59	30	Pass
165	5825	19.04	19.56	170.533	22.32	30	Pass

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				
36	5180	17.64	17.61	115.753	20.64	24	Pass
40	5200	20.13	19.84	199.422	23.00	24	Pass
48	5240	20.04	19.93	199.326	23.00	24	Pass
149	5745	19.71	19.60	184.742	22.67	30	Pass
157	5785	19.23	19.56	174.118	22.41	30	Pass
165	5825	19.34	19.67	178.584	22.52	30	Pass

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				
38	5190	15.38	15.57	70.572	18.49	24	Pass
46	5230	20.75	20.41	228.751	23.59	24	Pass
151	5755	19.78	19.65	187.317	22.73	30	Pass
159	5795	18.88	19.02	157.067	21.96	30	Pass

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				
42	5210	14.48	14.67	57.363	17.59	24	Pass
155	5775	17.54	17.61	114.431	20.59	30	Pass

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				
36	5180	17.24	16.90	101.944	20.08	23.35	Pass
40	5200	20.01	19.18	183.025	22.63	23.35	Pass
48	5240	19.92	19.06	178.713	22.52	23.35	Pass
149	5745	19.32	19.42	173.005	22.38	28.23	Pass
157	5785	19.05	19.06	160.891	22.07	28.23	Pass
165	5825	19.23	19.35	169.852	22.30	28.23	Pass

Note:

1. 5180~5240MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 6.65dBi > 6dBi, so the limit shall be reduced to 24-(6.65-6) = 23.35dBm.
2. 5745~5825MHz 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.

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				
38	5190	13.43	13.24	43.115	16.35	23.35	Pass
46	5230	20.55	19.71	207.042	23.16	23.35	Pass
151	5755	19.74	19.02	173.988	22.41	28.23	Pass
159	5795	19.95	19.29	183.773	22.64	28.23	Pass

Note:

1. 5180~5240MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 6.65dBi > 6dBi, so the limit shall be reduced to 24-(6.65-6) = 23.35dBm.
2. 5745~5825MHz 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.

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				
42	5210	14.23	13.93	51.202	17.09	23.35	Pass
155	5775	17.16	16.58	97.499	19.89	28.23	Pass

Note:

1. 5180~5240MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 6.65dBi > 6dBi, so the limit shall be reduced to 24-(6.65-6) = 23.35dBm.
2. 5745~5825MHz 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.

26dB Bandwidth:

1TX

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
36	5180	21.70
40	5200	22.85
48	5240	23.12

802.11n (HT20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
36	5180	21.83
40	5200	21.92
48	5240	22.10

802.11n (HT40)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
38	5190	41.24
46	5230	73.40

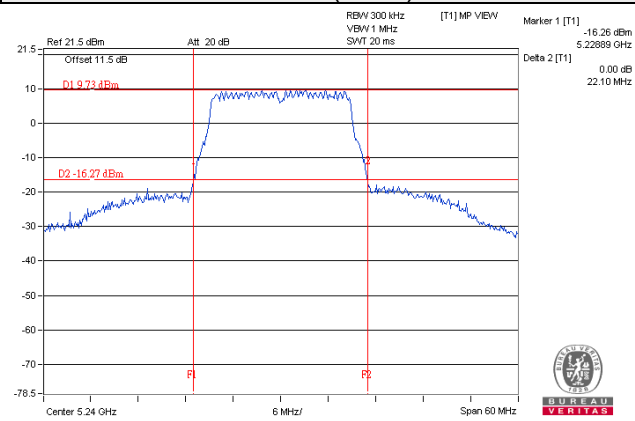
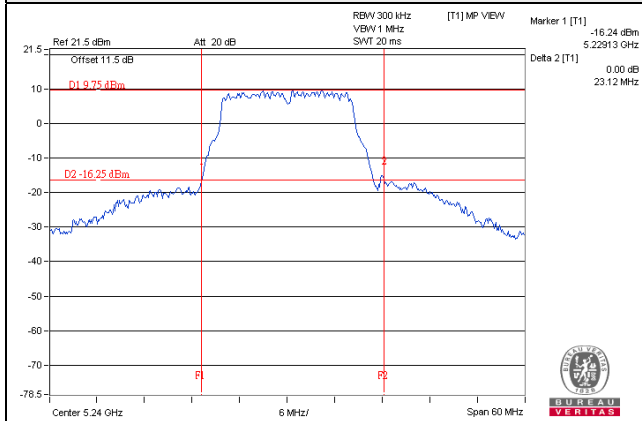
802.11ac (VHT80)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)
42	5210	82.59

Spectrum Plot of Worst Value

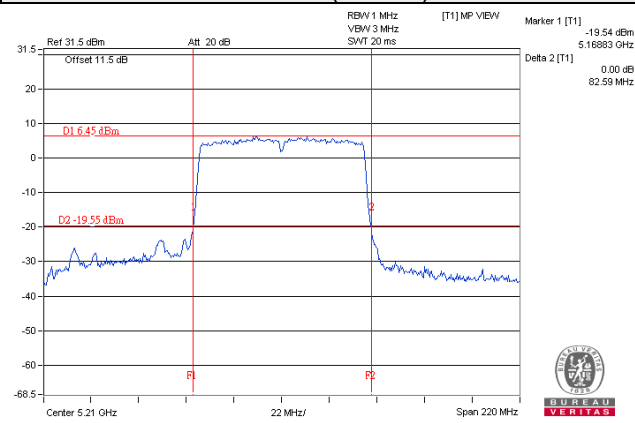
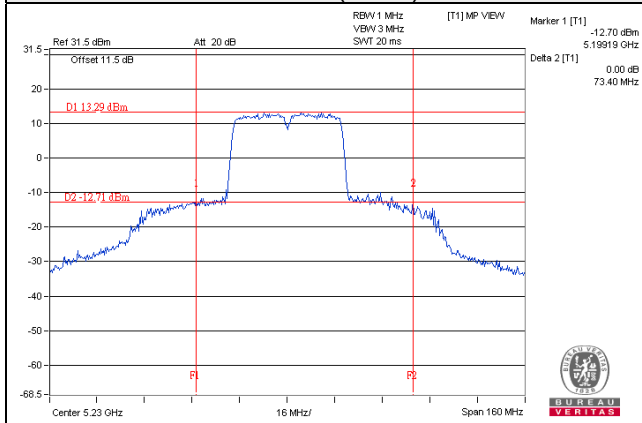
802.11a

802.11n (HT20)



802.11n (HT40)

802.11ac (VHT80)



2TX

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	21.75	21.85
40	5200	32.27	34.04
48	5240	34.80	33.95

802.11n (HT20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	21.94	22.10
40	5200	35.41	30.84
48	5240	37.59	30.68

802.11n (HT40)

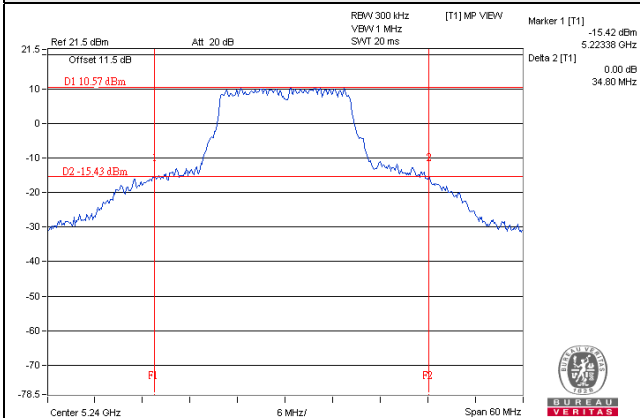
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	41.13	41.53
46	5230	88.39	97.73

802.11ac (VHT80)

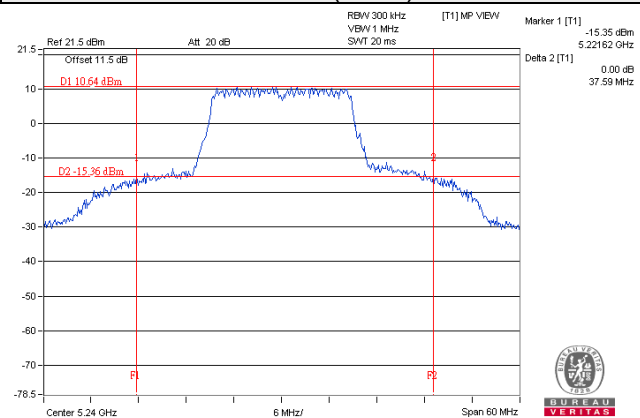
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	82.20	82.46

Spectrum Plot of Worst Value

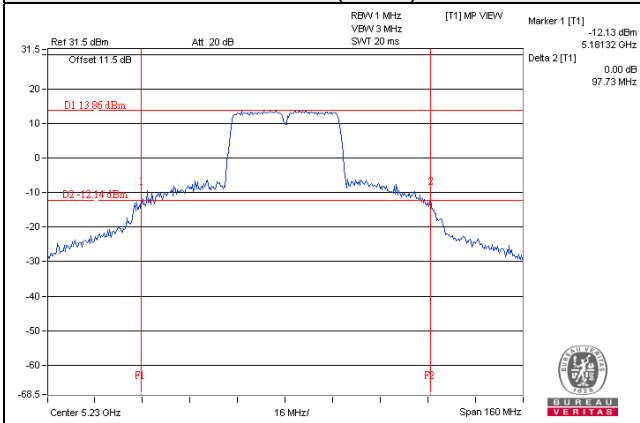
802.11a



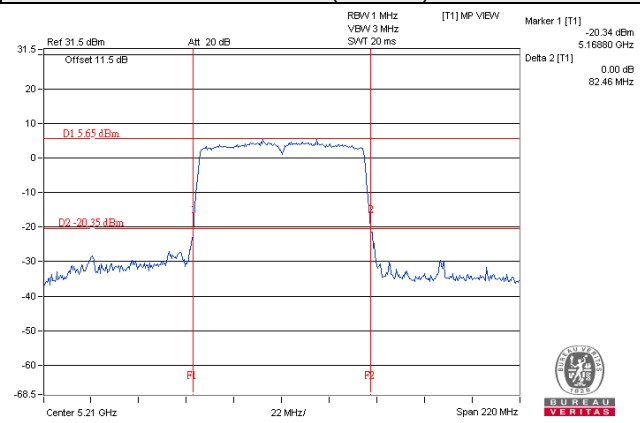
802.11n (HT20)



802.11n (HT40)

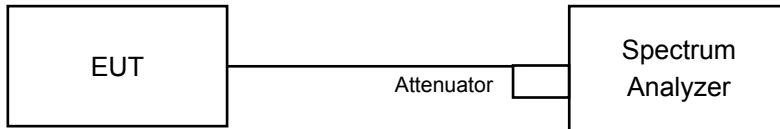


802.11ac (VHT80)



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)
36	5180	17.04
40	5200	17.28
48	5240	17.40
149	5745	17.52
157	5785	17.40
165	5825	17.52

802.11n (HT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	18.00
40	5200	18.24
48	5240	18.24
149	5745	18.24
157	5785	18.24
165	5825	18.24

802.11n (HT40)

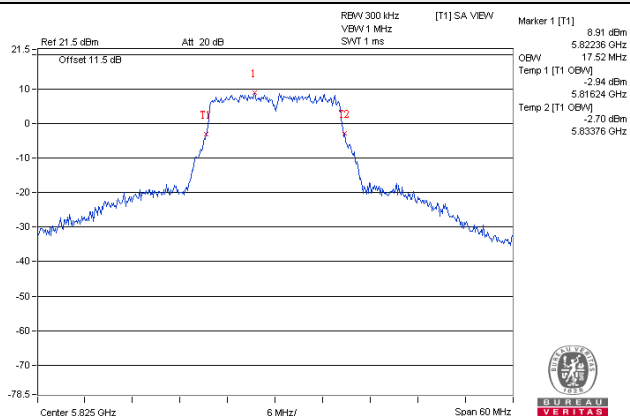
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.72
46	5230	36.96
151	5755	37.08
159	5795	37.08

802.11ac (VHT80)

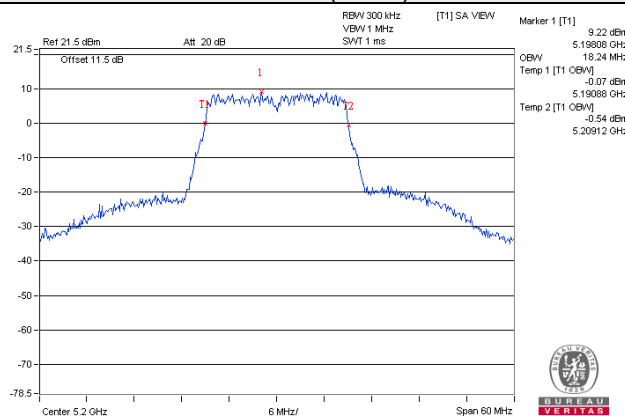
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
42	5210	75.84
155	5775	76.08

Spectrum Plot of Worst Value

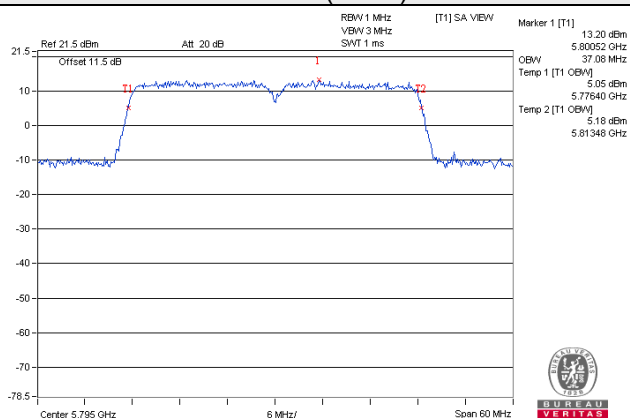
802.11a



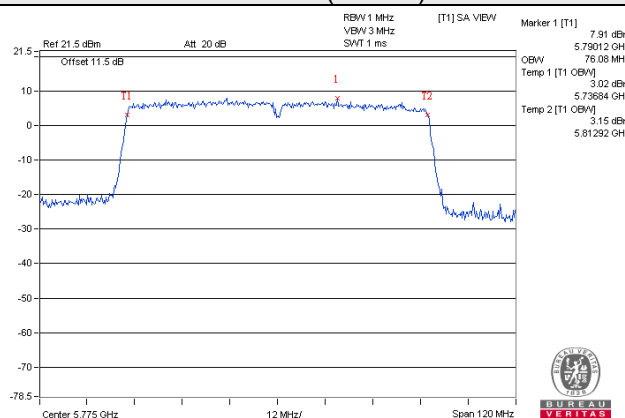
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



2TX

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.04	17.16
40	5200	18.12	17.88
48	5240	18.48	17.88
149	5745	18.36	18.00
157	5785	18.12	18.24
165	5825	18.36	18.12

802.11n (HT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.12	18.24
40	5200	18.48	18.48
48	5240	18.84	18.60
149	5745	18.72	18.84
157	5785	18.72	18.84
165	5825	18.84	18.84

802.11n (HT40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.72	36.72
46	5230	37.20	37.32
151	5755	37.68	37.80
159	5795	37.32	37.44

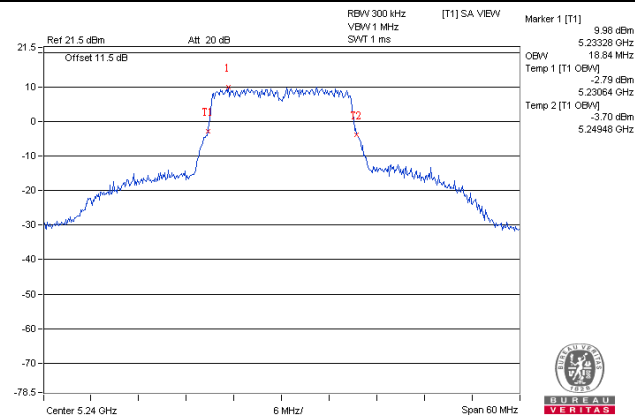
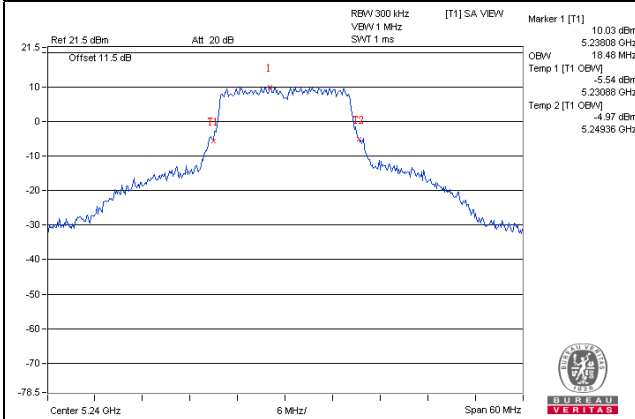
802.11ac (VHT80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.84	75.84
155	5775	76.08	76.08

Spectrum Plot of Worst Value

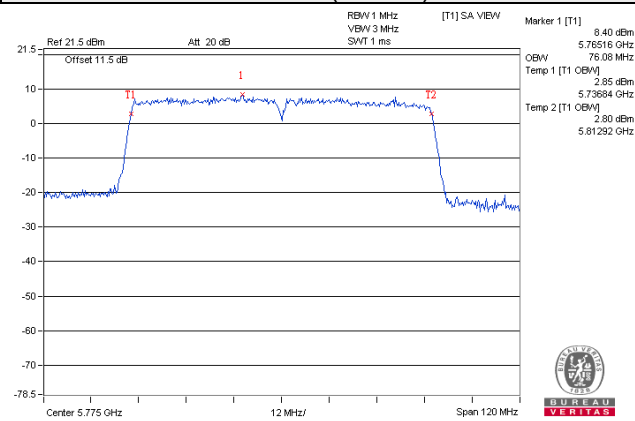
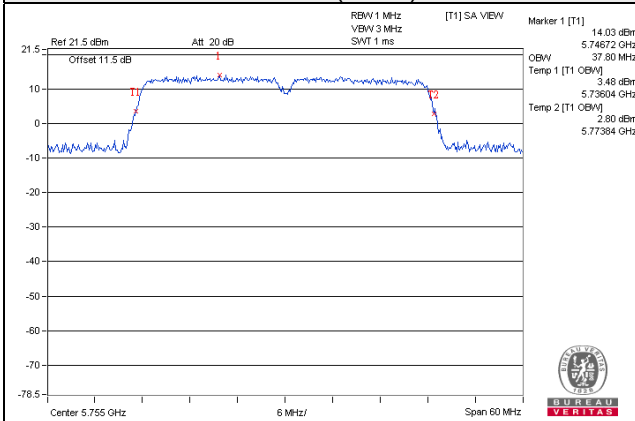
802.11a

802.11n (HT20)



802.11n (HT40)

802.11ac (VHT80)

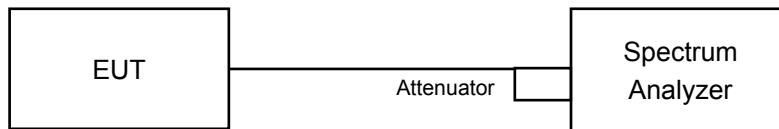


4.5 Peak Power Spectral Density Measurement

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-1 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 power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500 \text{ kHz} / 300 \text{ kHz})$.
- 5) Sweep time = auto, trigger set to "free run".
- 6) Trace average at least 100 traces in power averaging mode.
- 7) Record the max value.

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 $BWCF = 10\log(500 \text{ kHz} / 300 \text{ kHz})$
- 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-1 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
36	5180	3.75	0.36	4.11	11	Pass
40	5200	4.53	0.36	4.89	11	Pass
48	5240	4.62	0.36	4.98	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
36	5180	3.20	0.31	3.51	11	Pass
40	5200	4.05	0.31	4.36	11	Pass
48	5240	4.23	0.31	4.54	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
38	5190	-2.02	0.91	-1.11	11	Pass
46	5230	1.53	0.91	2.44	11	Pass

Note:

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

802.11ac (VHT80)

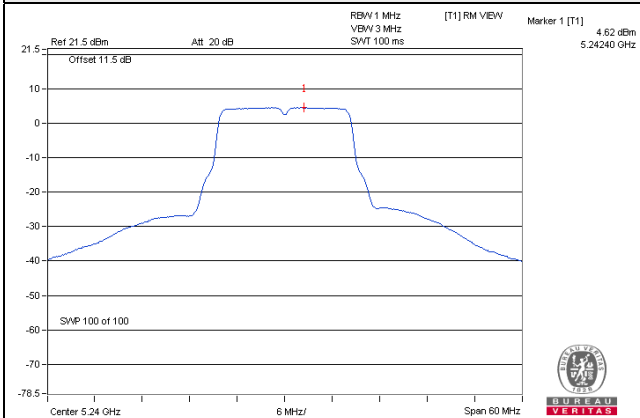
Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
42	5210	-5.12	1.58	-3.54	11	Pass

Note:

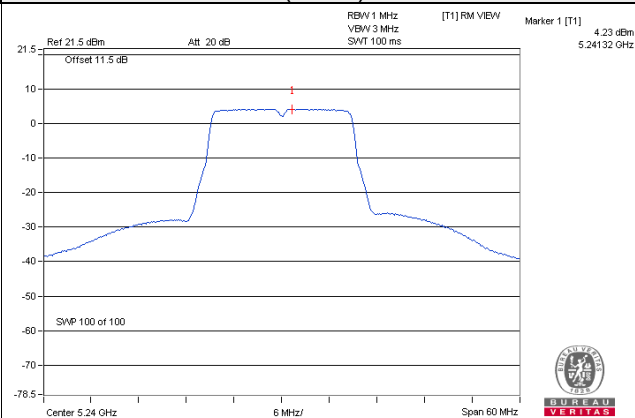
1. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

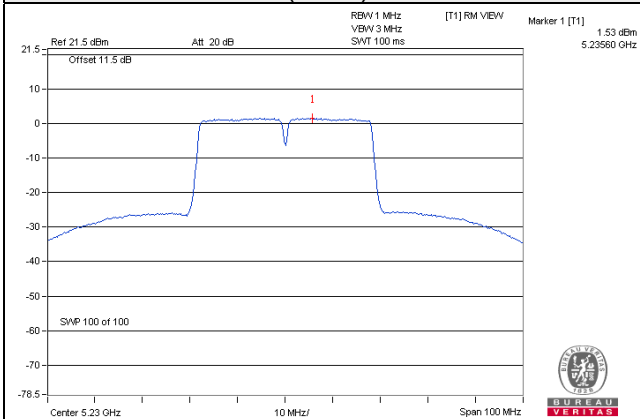
802.11a / CH 48



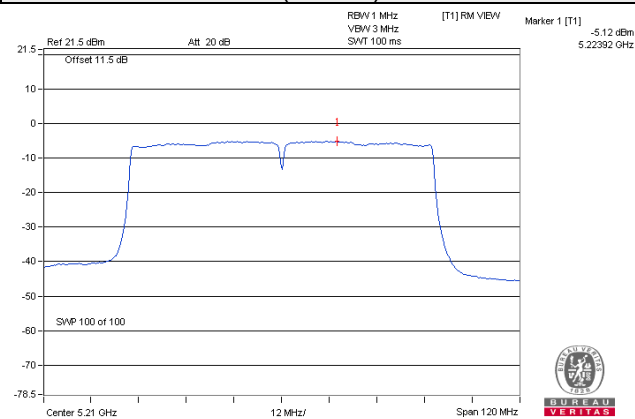
802.11n (HT20) / CH 48



802.11n (HT40) / CH 46



802.11ac (VHT80) / CH 42



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				
36	5180	3.25	3.53	0.49	6.89	10.35	Pass
40	5200	5.47	5.93	0.49	9.20	10.35	Pass
48	5240	5.55	5.93	0.49	9.24	10.35	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.
- 5180~5240MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 6.65dBi > 6dBi, so the limit shall be reduced to 11-(6.65-6) = 10.35dBm.
- 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				
36	5180	2.63	2.93	0.33	6.13	10.35	Pass
40	5200	4.85	5.53	0.33	8.55	10.35	Pass
48	5240	5.04	5.66	0.33	8.71	10.35	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.
- 5180~5240MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 6.65dBi > 6dBi, so the limit shall be reduced to 11-(6.65-6) = 10.35dBm.
- 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				
38	5190	-2.57	-2.51	0.63	1.10	10.35	Pass
46	5230	2.27	2.75	0.63	6.16	10.35	Pass

Note:

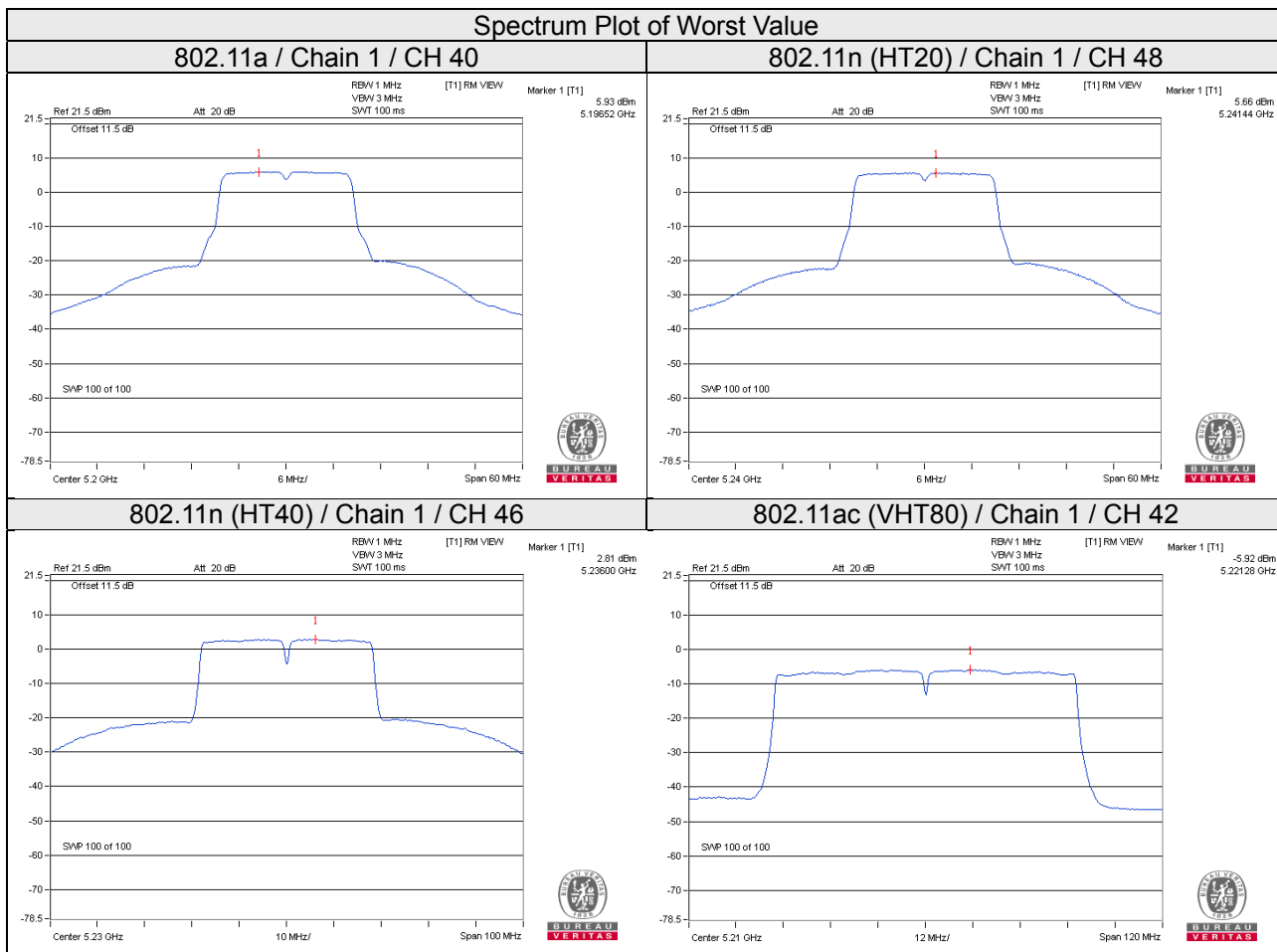
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- 5180~5240MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 6.65dBi > 6dBi, so the limit shall be reduced to 11-(6.65-6) = 10.35dBm.
- 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				
42	5210	-6.27	-5.92	0.97	-2.11	10.35	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.
- 5180~5240MHz directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$ = 6.65dBi > 6dBi, so the limit shall be reduced to 11-(6.65-6) = 10.35dBm.
- Refer to section 3.3 for duty cycle spectrum plot.



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)				
149	5745	-3.54	-1.32	0.36	-0.96	30	Pass
157	5785	-3.78	-1.56	0.36	-1.20	30	Pass
165	5825	-3.80	-1.58	0.36	-1.22	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)				
149	5745	-3.97	-1.75	0.31	-1.44	30	Pass
157	5785	-4.15	-1.93	0.31	-1.62	30	Pass
165	5825	-4.25	-2.03	0.31	-1.72	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)				
151	5755	-6.68	-4.46	0.91	-3.55	30	Pass
159	5795	-6.76	-4.54	0.91	-3.63	30	Pass

Note:

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

802.11ac (VHT80)

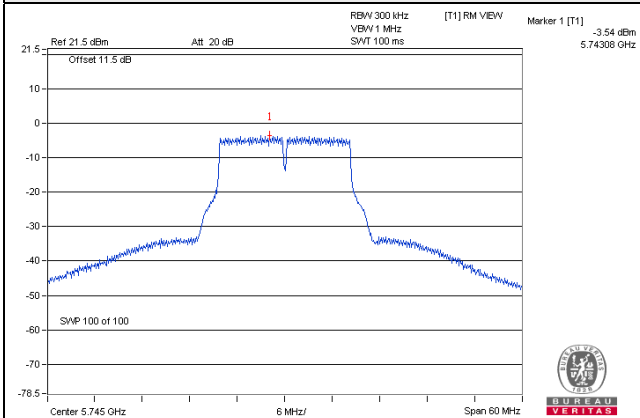
Chan.	Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
155	5775	-11.47	-9.25	1.58	-7.67	30	Pass

Note:

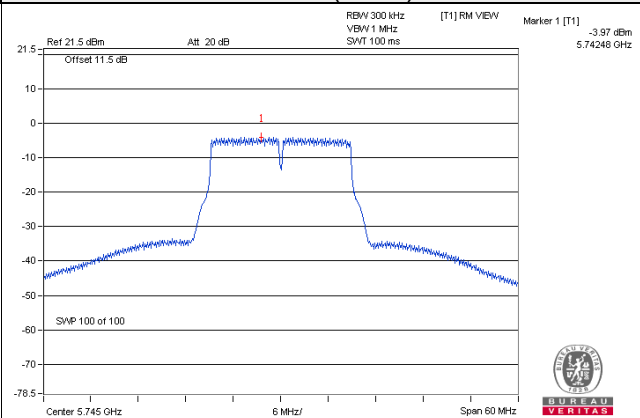
1. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

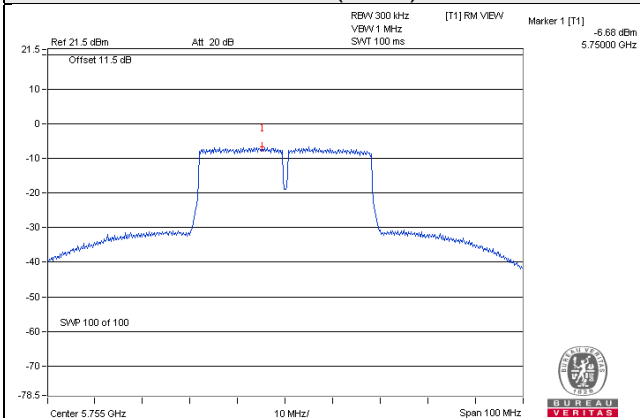
802.11a



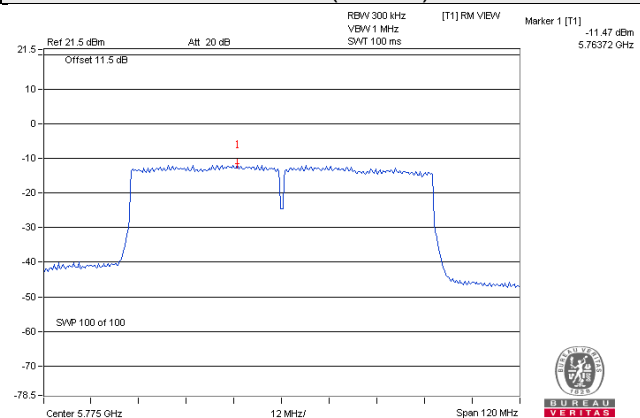
802.11n (HT20)



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	149	5745	-2.82	-0.60	3.01	0.49	2.90	28.23	Pass
	157	5785	-2.91	-0.69	3.01	0.49	2.81	28.23	Pass
	165	5825	-2.96	-0.74	3.01	0.49	2.76	28.23	Pass
1	149	5745	-2.48	-0.26	3.01	0.49	3.24	28.23	Pass
	157	5785	-2.69	-0.47	3.01	0.49	3.03	28.23	Pass
	165	5825	-2.64	-0.42	3.01	0.49	3.08	28.23	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.
- 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 $30-(7.77-6) = 28.23\text{dBm}$.
- 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	149	5745	-3.31	-1.09	3.01	0.33	2.25	28.23	Pass
	157	5785	-3.24	-1.02	3.01	0.33	2.32	28.23	Pass
	165	5825	-3.47	-1.25	3.01	0.33	2.09	28.23	Pass
1	149	5745	-3.22	-1.00	3.01	0.33	2.34	28.23	Pass
	157	5785	-3.12	-0.90	3.01	0.33	2.44	28.23	Pass
	165	5825	-3.08	-0.86	3.01	0.33	2.48	28.23	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.
- 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 $30-(7.77-6) = 28.23\text{dBm}$.
- 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	151	5755	-6.06	-3.84	3.01	0.63	-0.20	28.23	Pass
	159	5795	-6.38	-4.16	3.01	0.63	-0.52	28.23	Pass
1	151	5755	-5.46	-3.24	3.01	0.63	0.40	28.23	Pass
	159	5795	-6.19	-3.97	3.01	0.63	-0.33	28.23	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.
- 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 $30-(7.77-6) = 28.23\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

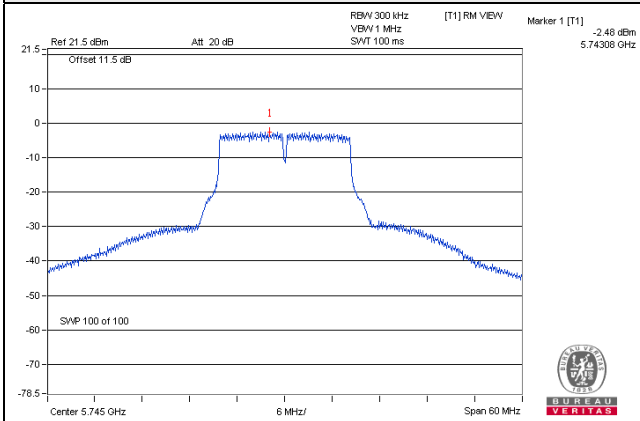
TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	155	5775	-11.33	-9.11	3.01	0.97	-5.13	28.23	Pass
1	155	5775	-11.12	-8.90	3.01	0.97	-4.92	28.23	Pass

Note:

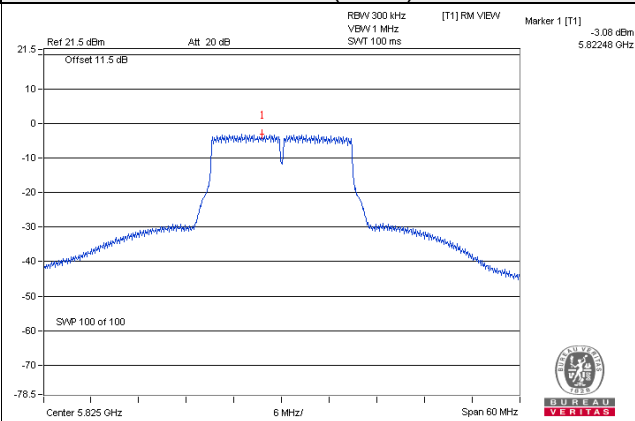
- Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/N]$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

Spectrum Plot of Worst Value

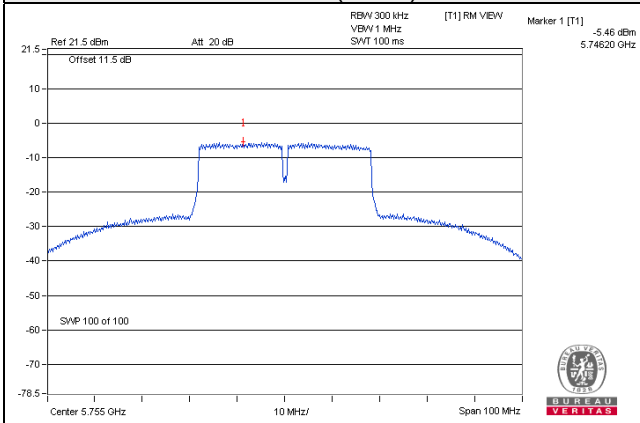
802.11a



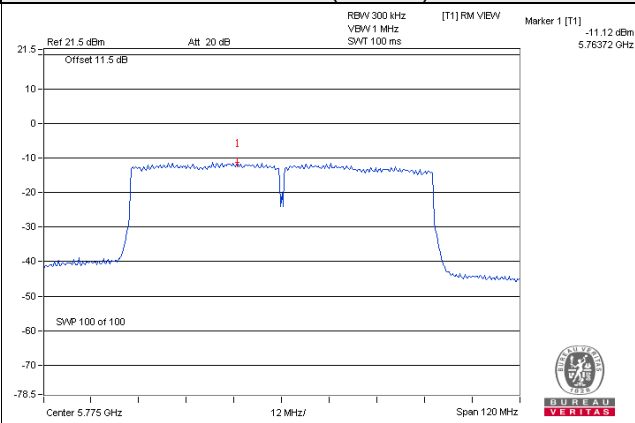
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

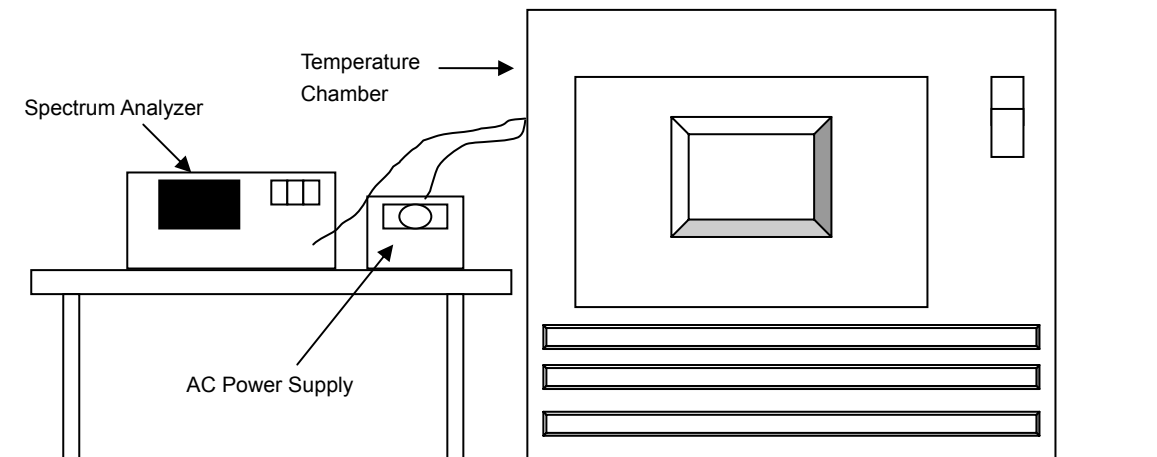


4.6 Frequency Stability

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: 5180MHz									
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	5180.0009	0.00002	5180.001	0.00002	5180.0018	0.00003	5179.9996	-0.00001
40	120	5179.9861	-0.00027	5179.9861	-0.00027	5179.9871	-0.00025	5179.9862	-0.00027
30	120	5180.0045	0.00009	5180.0072	0.00014	5180.0076	0.00015	5180.0078	0.00015
20	120	5179.9974	-0.00005	5179.9973	-0.00005	5179.9992	-0.00002	5180.0011	0.00002
10	120	5179.9814	-0.00036	5179.9807	-0.00037	5179.9816	-0.00036	5179.9807	-0.00037
0	120	5179.9756	-0.00047	5179.9734	-0.00051	5179.9727	-0.00053	5179.9759	-0.00047
-10	120	5179.9893	-0.00021	5179.9902	-0.00019	5179.9878	-0.00024	5179.9898	-0.00020
-20	120	5180.0168	0.00032	5180.0164	0.00032	5180.0175	0.00034	5180.0166	0.00032
-30	120	5179.9754	-0.00047	5179.9738	-0.00051	5179.9772	-0.00044	5179.9746	-0.00049

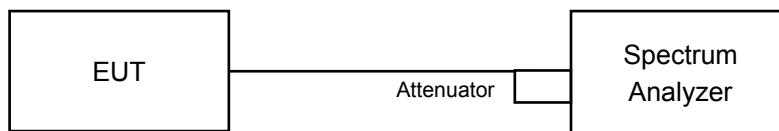
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5179.9973	-0.00005	5179.9966	-0.00007	5179.9999	0.00000	5180.0014	0.00003
	120	5179.9974	-0.00005	5179.9973	-0.00005	5179.9992	-0.00002	5180.0011	0.00002
	102	5179.9977	-0.00004	5179.9965	-0.00007	5179.9983	-0.00003	5180.0019	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
149	5745	16.42	0.5	Pass
157	5785	16.42	0.5	Pass
165	5825	16.42	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.65	0.5	Pass
157	5785	17.65	0.5	Pass
165	5825	17.68	0.5	Pass

802.11n (HT40)

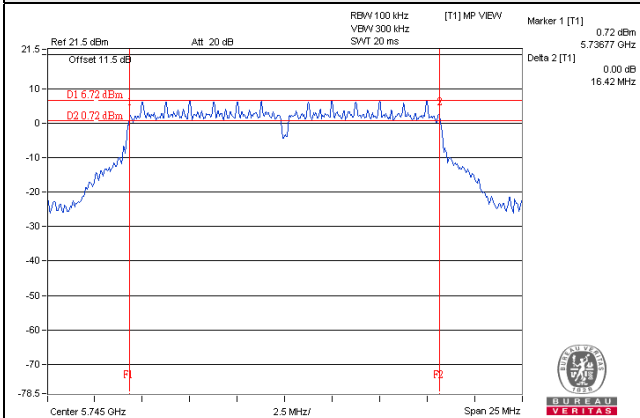
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	36.49	0.5	Pass
159	5795	36.48	0.5	Pass

802.11ac (VHT80)

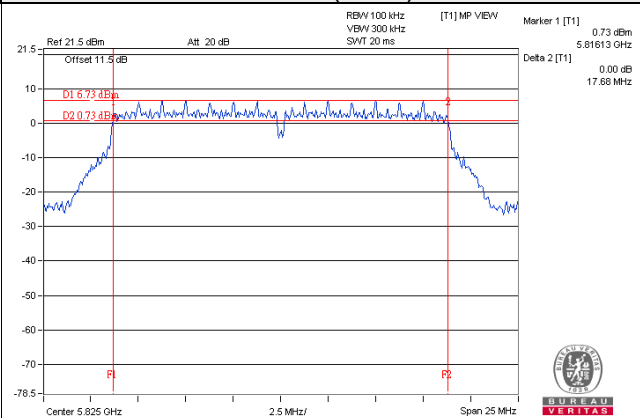
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
155	5775	76.45	0.5	Pass

Spectrum Plot of Worst Value

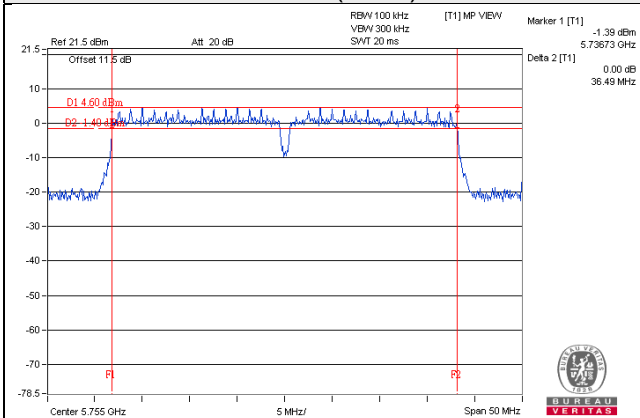
802.11a



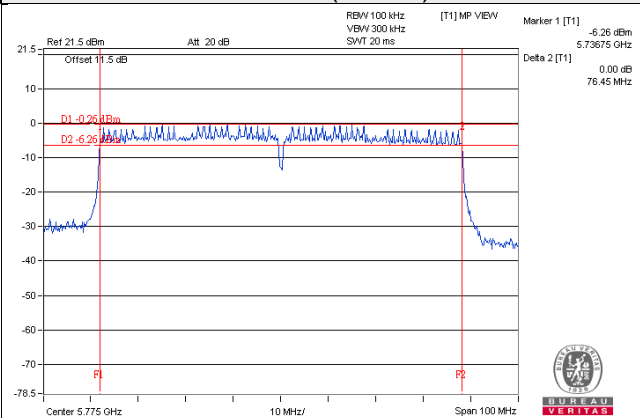
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



2TX

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.42	16.41	0.5	Pass
157	5785	16.42	16.40	0.5	Pass
165	5825	16.42	16.40	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	17.67	17.65	0.5	Pass
157	5785	17.67	17.65	0.5	Pass
165	5825	17.66	17.64	0.5	Pass

802.11n (HT40)

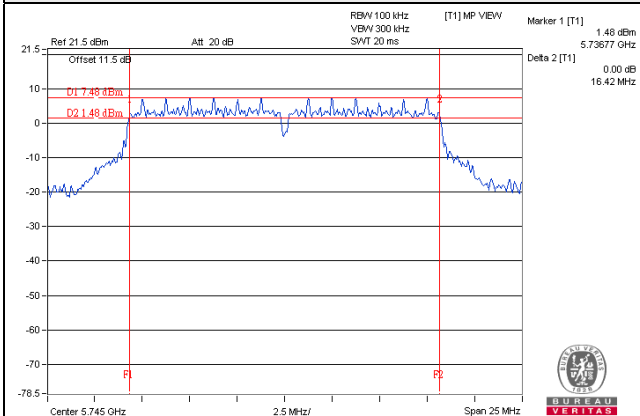
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	36.50	36.46	0.5	Pass
159	5795	36.48	36.44	0.5	Pass

802.11ac (VHT80)

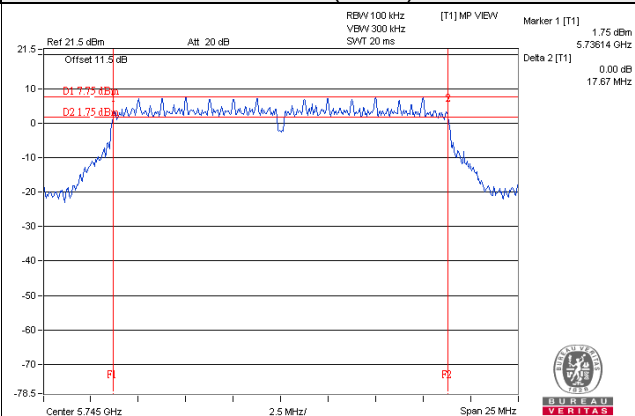
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	76.03	75.97	0.5	Pass

Spectrum Plot of Worst Value

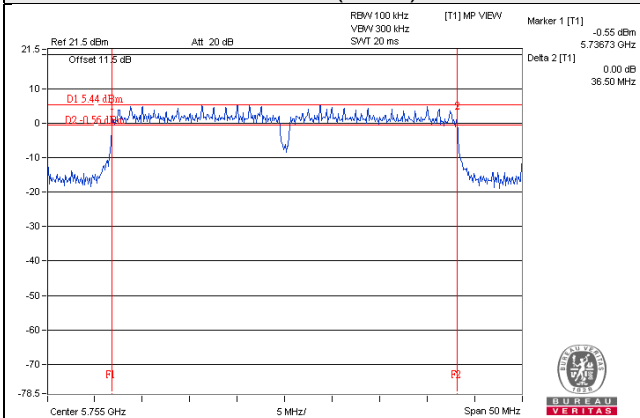
802.11a



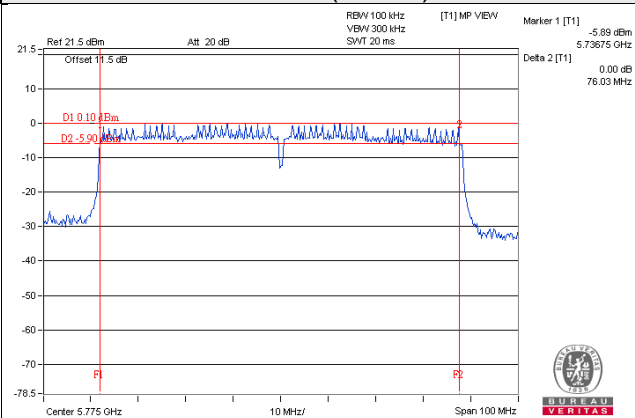
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



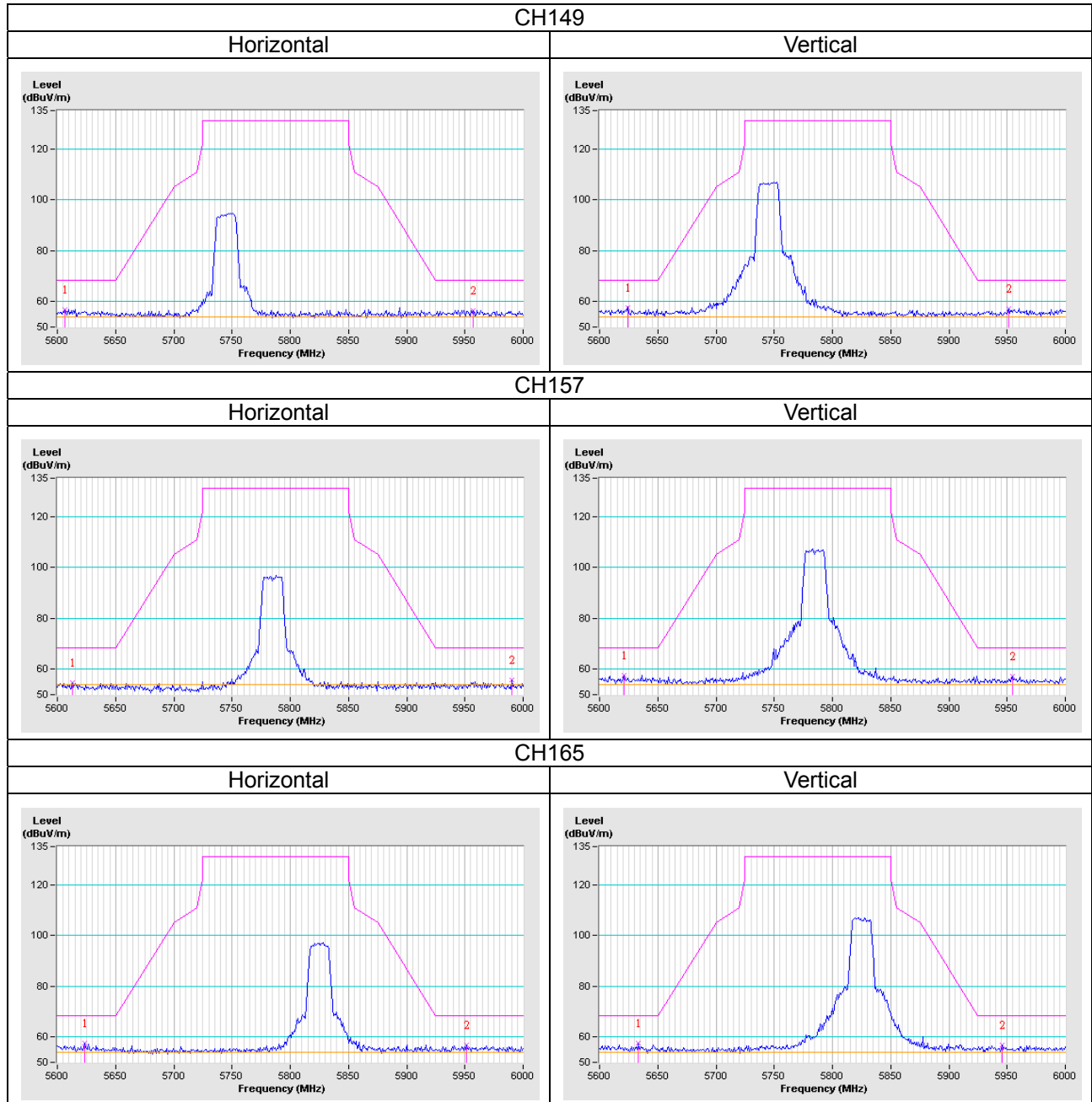
5 Pictures of Test Arrangements

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

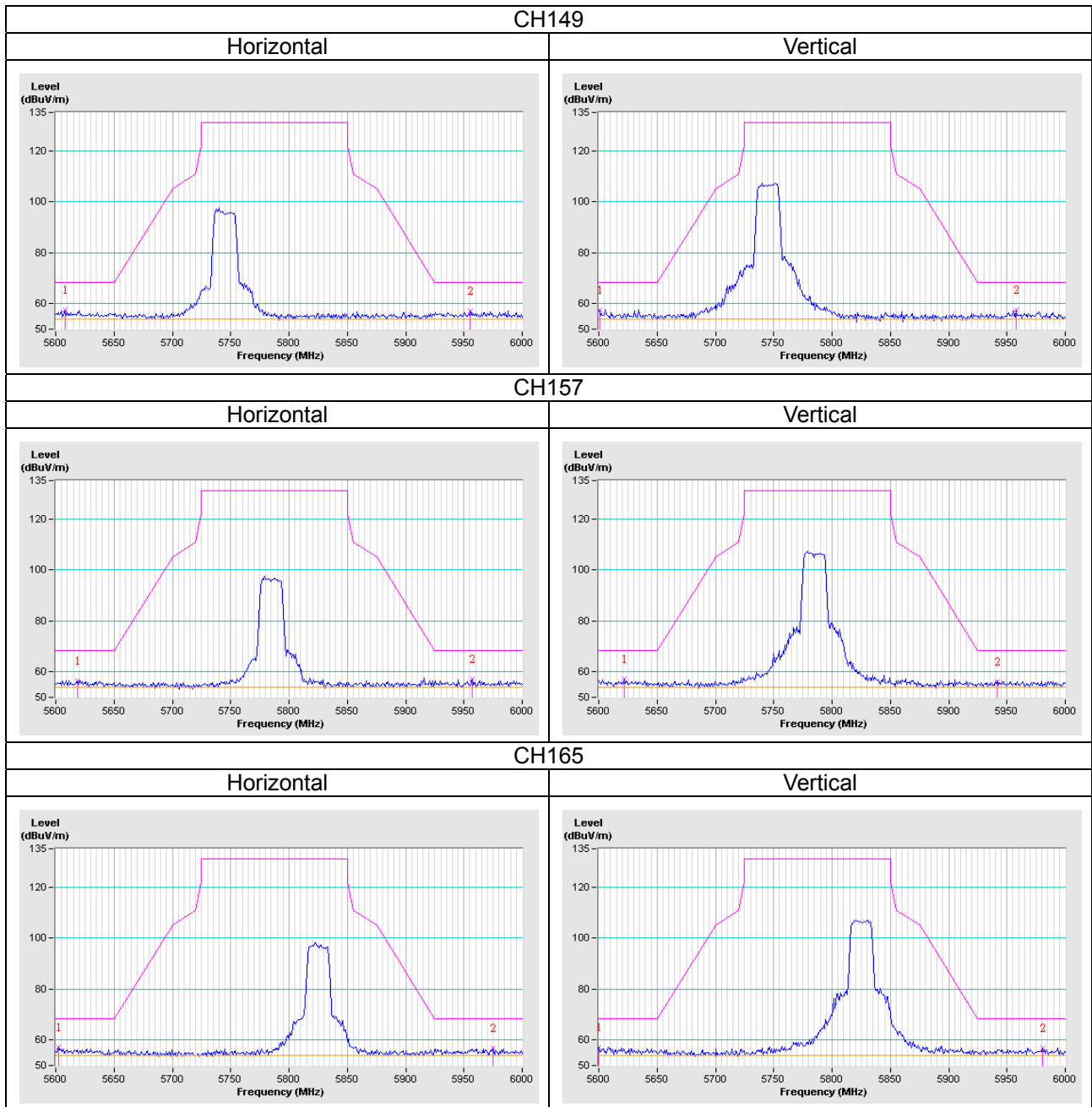
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

1TX

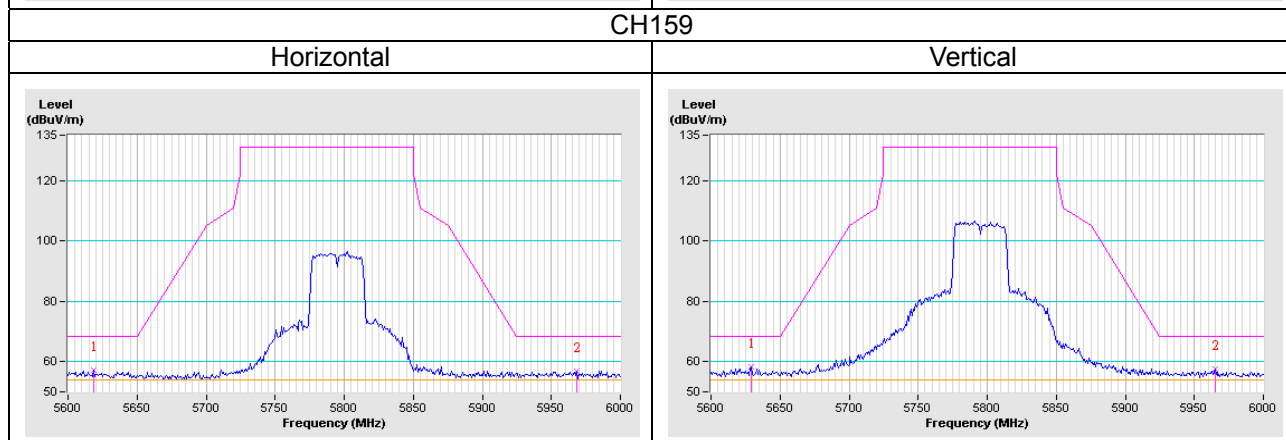
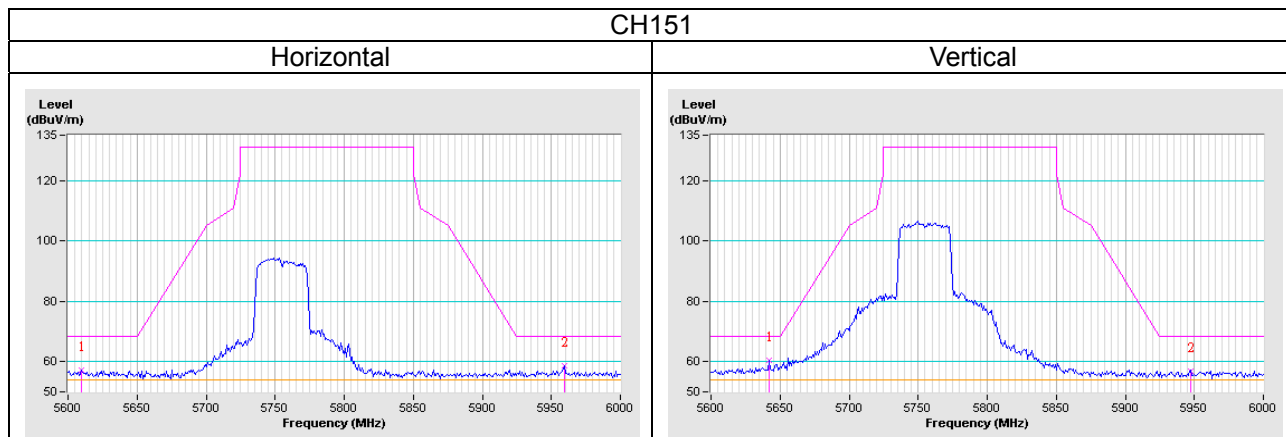
802.11a



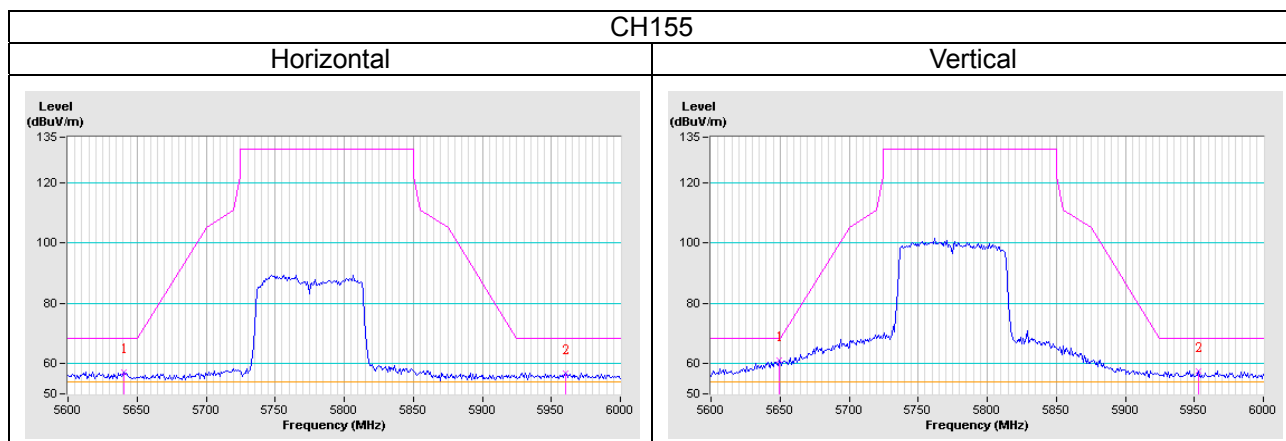
802.11n (HT20)



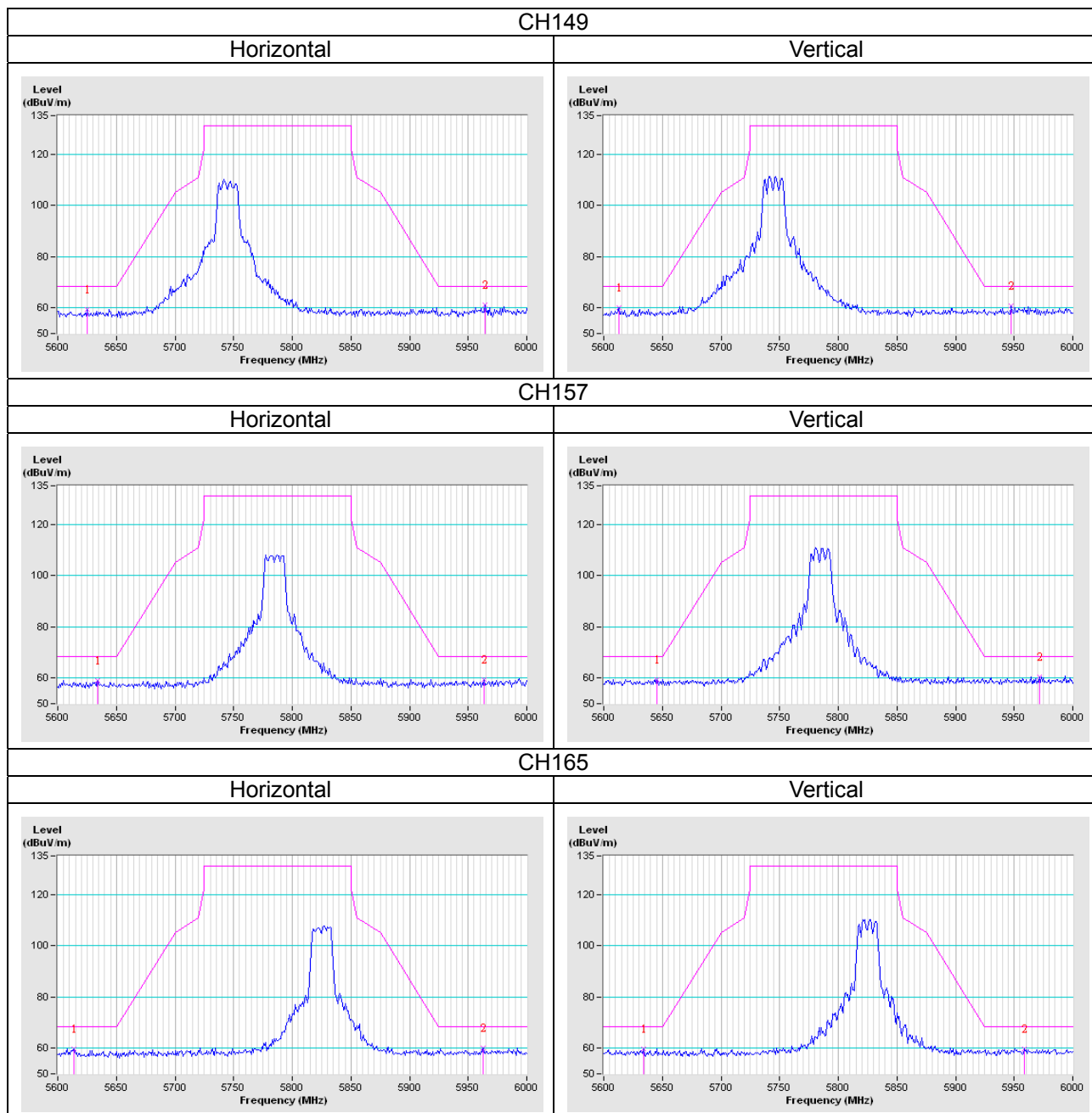
802.11n (HT40)



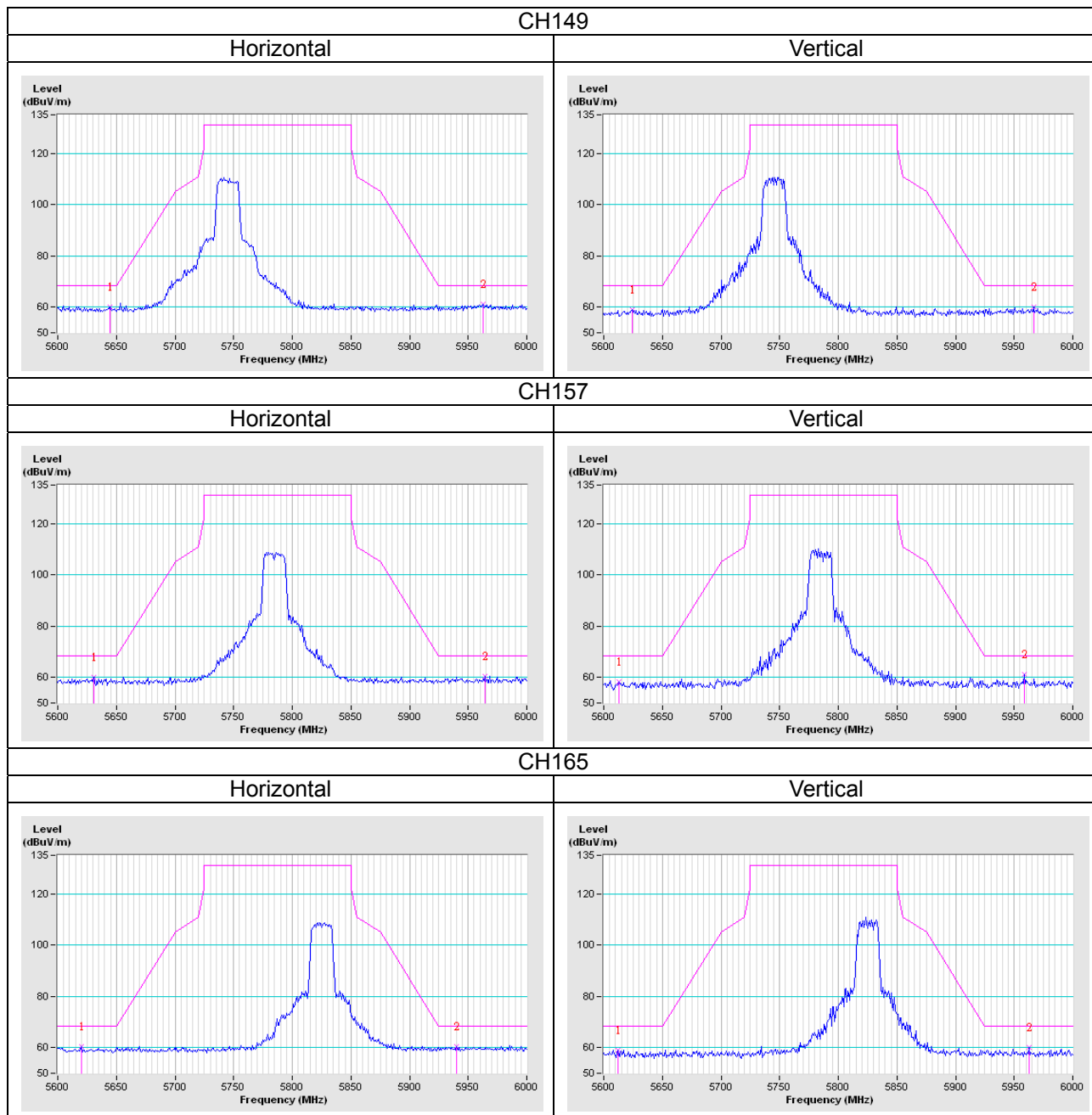
802.11ac (VHT80)



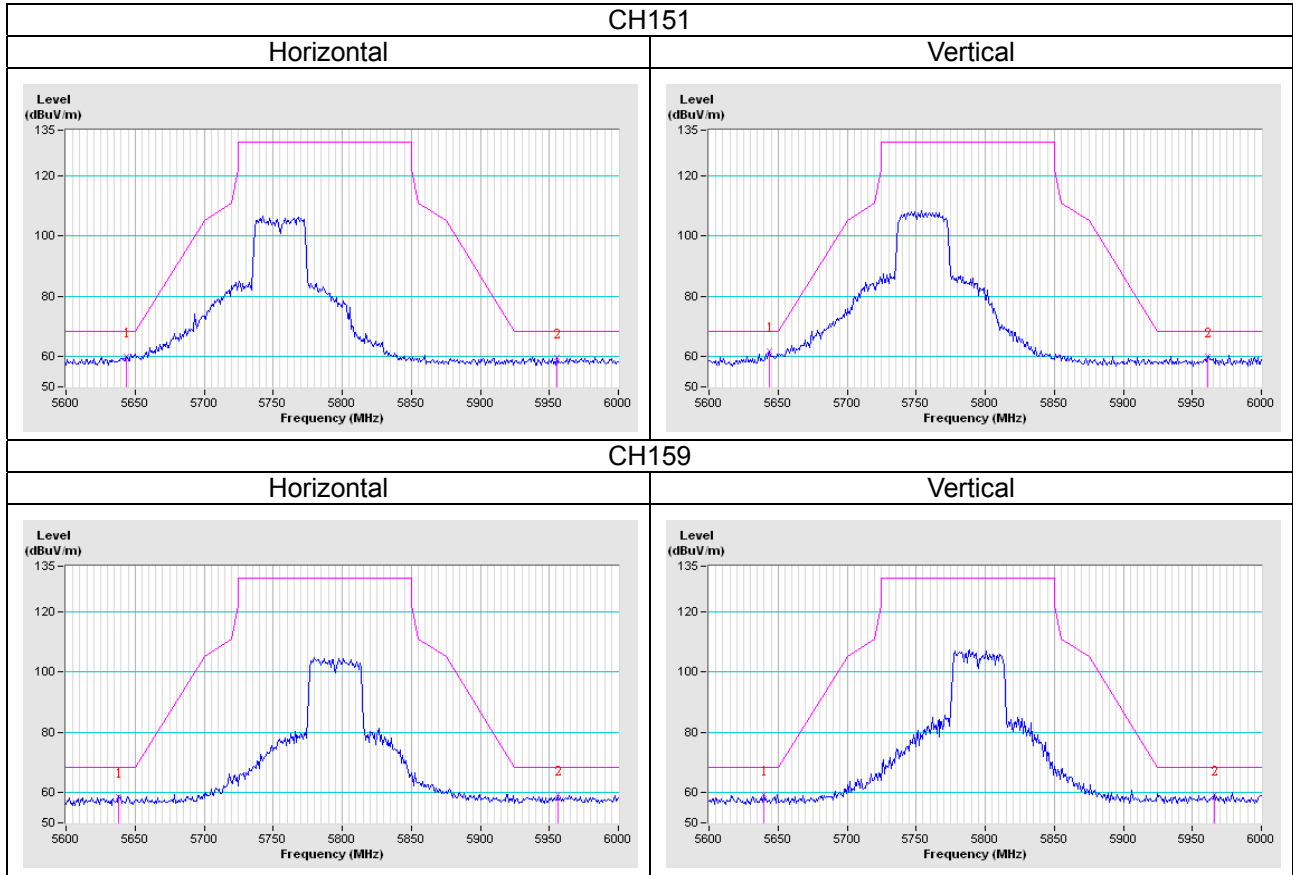
2TX
802.11a



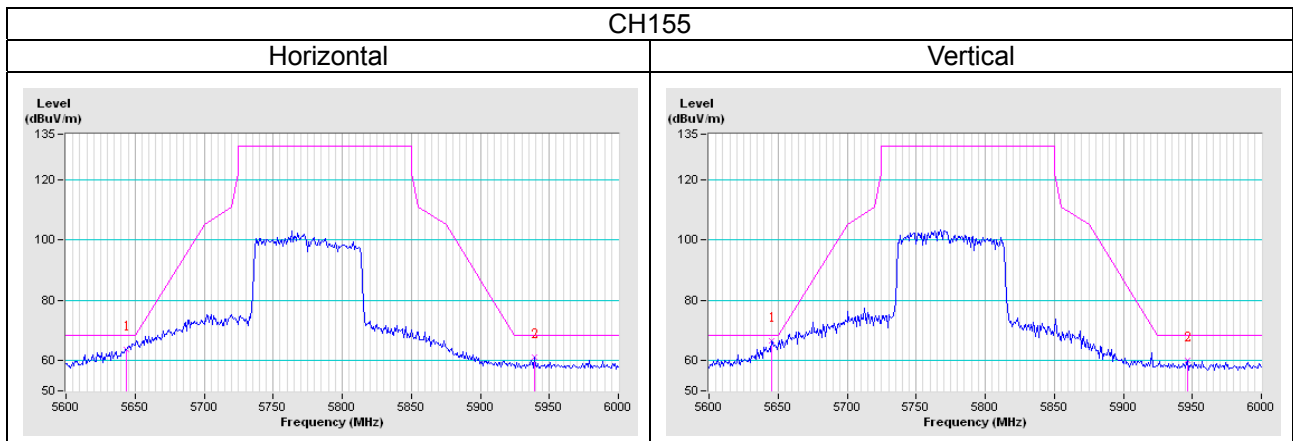
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



Appendix – Information on the Testing Laboratories

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

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

Linko EMC/RF Lab

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Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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