

FCC Test Report

Report No.: RF161205D13-1

FCC ID: Q87-WUSB6400M

Test Model: WUSB6400M

Received Date: Dec. 5, 2017

Test Date: Dec. 7, 2016 ~ Jan. 26, 2017

Issued Date: Feb. 10, 2017

Applicant: LINKSYS LLC

Address: 121 Theory Drive, Irvine ,California 92617, USA

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

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



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Release Control Record

Issue No.	Description	Date Issued
RF161205D13-1	Original release.	Feb. 10, 2017

1 Certificate of Conformity

Product: Linksys Dual-Band Wireless-AC USB Adapter

Brand: Linksys

Test Model: WUSB6400M

Sample Status: Engineering sample

Applicant: LINKSYS LLC

Test Date: Dec. 7, 2016 ~ Jan. 26, 2017

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

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by :

Annie Chang

, Date:

Feb. 10, 2017

Annie Chang / Senior Specialist

Approved by :

Rex Lai

, Date:

Feb. 10, 2017

Rex Lai / Assistant Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -12.91dB at 0.18906MHz.
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 -1.0dB at 5150.00, 5350.00, 5470.00, 5725.00 MHz.
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	No antenna connector is used.

*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) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.77 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	2.38 dB
	30MHz ~ 1000MHz	5.54 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	4.77 dB
	6GHz ~ 18GHz	5.48 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Linksys Dual-Band Wireless-AC USB Adapter
Brand	Linksys
Test Model	WUSB6400M
Status of EUT	Engineering sample
Power Supply Rating	5Vdc (host equipment)
Modulation Type	64QAM, 16QAM, QPSK, BPSK 256QAM for OFDM in 11ac mode only.
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 150Mbps 802.11ac: up to 430Mbps
Operating Frequency	5180 ~ 5240MHz, 5260 ~ 5320MHz & 5500 ~ 5700MHz, 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz: 802.11a, 802.11n (20MHz): 4 802.11n (40MHz): 2 802.11ac (80MHz): 1 5260 ~ 5320MHz: 802.11a, 802.11n (20MHz): 4 802.11n (40MHz): 2 802.11ac (80MHz): 1 5500 ~ 5700MHz: 802.11a, 802.11n (20MHz): 8 802.11n (40MHz): 3 802.11ac (80MHz): 1 5745 ~ 5825MHz: 802.11a, 802.11n (20MHz): 5 802.11n (40MHz): 2 802.11ac (80MHz): 1
Output Power	5180 ~ 5240MHz: 46.253mW 5260 ~ 5320MHz: 47.657mW 5500 ~ 5700MHz: 46.369mW 5745 ~ 5825MHz: 48.785mW
Antenna Type	Printed antenna with 5.22dBi gain
Antenna Connector	N/A
Accessory Device	N/A
Data Cable Supplied	N/A
Driver Version	Realtek V0.45

Note:

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

Modulation Mode	TX FUNCTION
802.11a	2TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX
802.11ac (20MHz)	2TX
802.11ac (40MHz)	2TX
802.11ac (80MHz)	2TX

* 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)

2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

FOR 5180~5240MHz:

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

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

Channel	Frequency
42	5210MHz

FOR 5260~5320MHz:

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

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

Channel	Frequency
58	5290MHz

FOR 5500~5700MHz:

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

3 channels are provided for 802.11n (40MHz), 802.11ac (40MHz):

Channel	Frequency	Channel	Frequency
102	5510 MHz	134	5670 MHz
110	5550 MHz		

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

Channel	Frequency
106	5530MHz

FOR 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

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

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

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

Radiated Emission Test (Above 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
-	802.11ac (80MHz)		58	58	OFDM	BPSK	29.3
-	802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6.0
-	802.11n (20MHz)		100 to 140	100, 116, 132, 140	OFDM	BPSK	6.5
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
-	802.11ac (80MHz)		106	106	OFDM	BPSK	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	13.5
-	802.11ac (80MHz)		155	155	OFDM	BPSK	29.3

Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11n (20MHz)	5180-5240	36 to 48	157	OFDM	BPSK	6.5
-		5260-5320	52 to 64		OFDM	BPSK	6.5
-		5500-5700	100 to 140		OFDM	BPSK	6.5
-		5745-5825	149 to 165		OFDM	BPSK	6.5

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11n (20MHz)	5180-5240	36 to 48	157	OFDM	BPSK	6.5
-		5260-5320	52 to 64		OFDM	BPSK	6.5
-		5500-5700	100 to 140		OFDM	BPSK	6.5
-		5745-5825	149 to 165		OFDM	BPSK	6.5

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
-	802.11ac (80MHz)		58	58	OFDM	BPSK	29.3
-	802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6
-	802.11n (20MHz)		100 to 140	100, 116, 132, 140	OFDM	BPSK	6.5
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
-	802.11ac (80MHz)		106	106	OFDM	BPSK	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	13.5
-	802.11ac (80MHz)		155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE $\geq$ 1G	23deg. C, 72%RH	120Vac, 60Hz (System)	Ian Chang
RE<1G	22deg. C, 70%RH	120Vac, 60Hz (System)	Ian Chang
PLC	25deg. C, 75%RH	120Vac, 60Hz (System)	Ian Chang
APCM	25deg. C, 76%RH	120Vac, 60Hz (System)	Aaron You

3.3 Duty Cycle of Test Signal

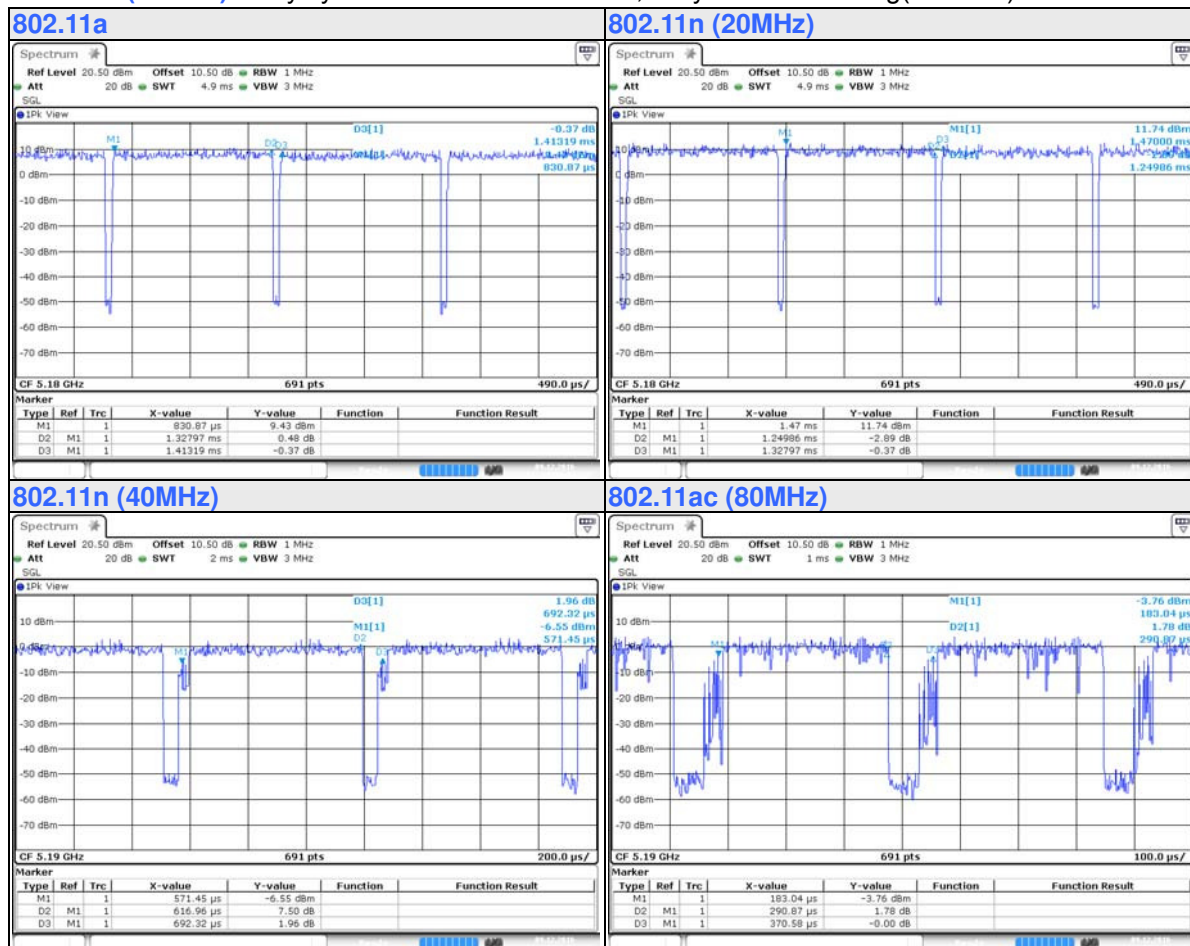
Duty cycle of test signal is < 98 %, duty factor is required

802.11a: Duty cycle = $1.327/1.413 = 0.939$, Duty factor = $10 * \log(1/0.939) = 0.27$

802.11n (20MHz): Duty cycle = $1.249/1.327 = 0.941$, Duty factor = $10 * \log(1/0.941) = 0.26$

802.11n (40MHz): Duty cycle = $0.616/0.692 = 0.890$, Duty factor = $10 * \log(1/0.890) = 0.51$

802.11ac (80MHz): Duty cycle = $0.290/0.370 = 0.784$, Duty factor = $10 * \log(1/0.784) = 1.06$

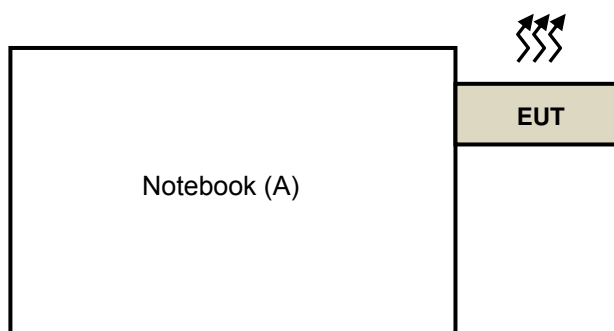


3.4 Description of Support Units

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	BW33YM1	FCC DoC Approved	Provided by Lab

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

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedure New Rules v01r03

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

NOTE: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v01r03			Field Strength at 3m	
			PK:74 (dBµV/m)	AV:54 (dBµV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK:-27 (dBm/MHz)	PK:68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2(dBµV/m) ^{*1} PK:105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK:122.2 (dBµV/m) ^{*4}
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
^{*1} beyond 75 MHz or more above of the band edge.			^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.			^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

Note:

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

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

4.1.2 Test Instruments

For Radiated Emission Test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 26, 2016	Feb. 25, 2017
HP Preamplifier	8449B	3008A01201	Feb. 26, 2016	Feb. 25, 2017
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Mar. 01, 2016	Feb. 28, 2017
Agilent TEST RECEIVER	N9038A	MY51210129	Feb. 02, 2016	Feb. 01, 2017
Schwarzbeck Antenna	VULB 9168	139	Jan. 4, 2016	Jan. 3, 2017
Schwarzbeck Horn Antenna	BBHA-9170	212	Jan. 8, 2016	Jan. 7, 2017
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Jan. 21, 2016	Jan. 20, 2017
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	Radiated_V7.6.15.9.5	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF104	CABLE-CH6	Aug. 15, 2016	Aug. 14, 2017
SUHNER RF cable With 3dB PAD	SF102	Cable-CH8-3.6m	Aug. 15, 2016	Aug. 14, 2017
Loop Antenna EMCI	LPA600	270	Aug. 20, 2015	Aug. 19, 2017
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
Anritsu Power Sensor	MA2411B	0738404	Apr. 28, 2016	Apr. 27, 2017
Anritsu Power Meter	ML2495A	0842014	Apr. 28, 2016	Apr. 27, 2017

- NOTE:**
1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
 2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 3. The test was performed in Chamber No. 6.
 4. The Industry Canada Reference No. IC 7450E-6.
 5. The FCC Site Registration No. is 447212.
 6. Tested Date: Dec. 7 ~ 8, 2016

For Antenna Port Conducted Measurement:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Software	Radiated_V7.6.15.9.5	NA	NA	NA
KEYSIGHT MIMO Powermeasurement Test set	U2021XA	U2021XA-001	May 25, 2016	May 24, 2017
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Jul. 26, 2016	Jul. 25, 2017
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 30, 2016	Sep. 29, 2017
Anritsu Power Sensor	MA2411B	0738404	Apr. 28, 2016	Apr. 27, 2017
Anritsu Power Meter	ML2495A	0842014	Apr. 28, 2016	Apr. 27, 2017
Temperature & Humidity Chamber	MHU-225AU	920409	May 25, 2016	May 24, 2017
DIGITAL POWER METER IDRC	CP-240	240515	Sep. 9, 2016	Sep. 8, 2017
AC Power Source ExTech	CFW-105	E000603	NA	NA

- NOTE:**
1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
 2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 3. The test was performed in Chamber No. 6.
 4. The Industry Canada Reference No. IC 7450E-6.
 5. The FCC Site Registration No. is 447212.
 6. Tested Date: Jan. 26, 2017

4.1.3 Test Procedure

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:

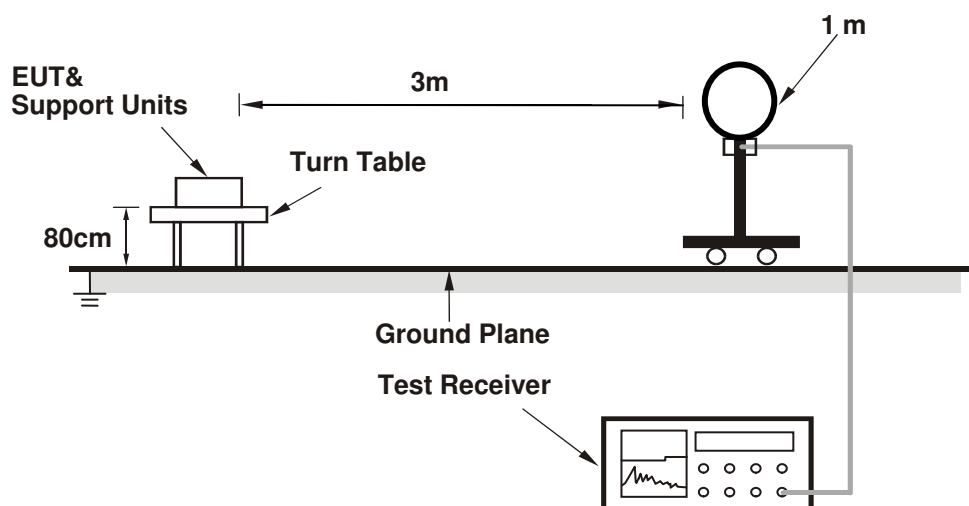
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

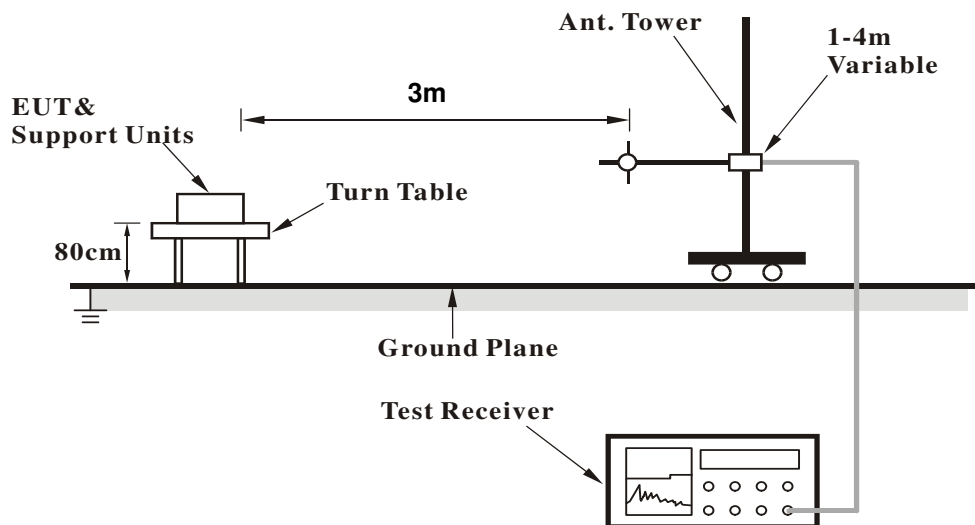
No deviation.

4.1.5 Test Setup

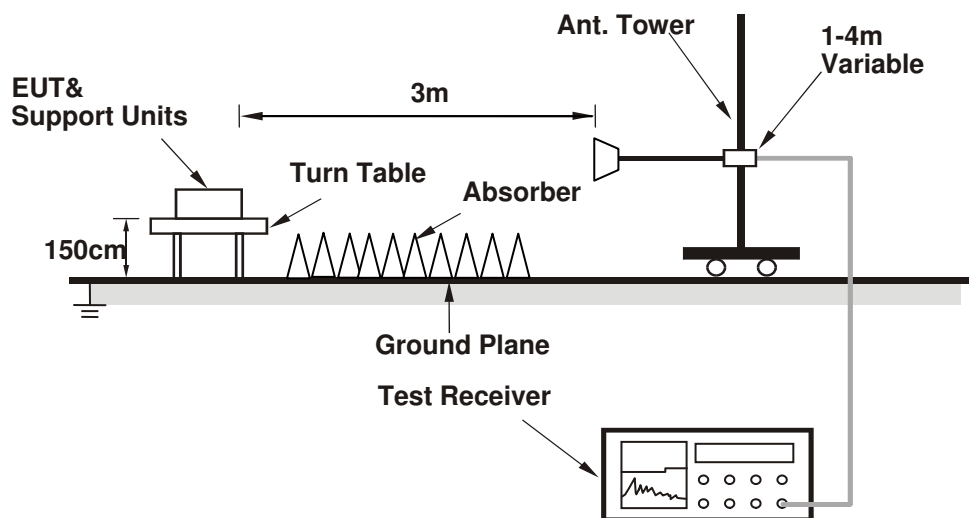
For Radiated emission below 30MHz



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 Condition

- a. Connected the EUT to Notebook.
- b. Set the EUT under transmitting condition.

4.1.7 Test Results

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.2 PK	74.0	-13.8	3.91 H	8	52.6	7.6
2	5150.00	46.3 AV	54.0	-7.7	3.91 H	8	38.7	7.6
3	*5180.00	107.2 PK			3.91 H	8	99.4	7.8
4	*5180.00	93.5 AV			3.91 H	8	85.8	7.8
5	#10360.00	56.9 PK	68.2	-11.3	2.00 H	111	38.7	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	5150.00	72.9 PK	74.0	-1.1	2.25 V	194	65.3	7.6
2	5150.00	49.9 AV	54.0	-4.1	2.25 V	194	42.3	7.6
3	*5180.00	113.3 PK			2.25 V	194	105.6	7.8
4	*5180.00	99.1 AV			2.25 V	194	91.3	7.8
5	#10360.00	58.0 PK	68.2	-10.2	1.77 V	29	39.8	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 40	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	107.1 PK			3.88 H	10	99.2	7.9
2	*5200.00	93.1 AV			3.88 H	10	85.2	7.9
3	#10400.00	57.2 PK	68.2	-11.0	1.96 H	109	38.7	18.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	114.9 PK			2.31 V	191	107.1	7.9
2	*5200.00	100.7 AV			2.31 V	191	92.8	7.9
3	#10400.00	58.0 PK	68.2	-10.2	1.69 V	31	39.6	18.4

REMARKS:

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

CHANNEL	TX Channel 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	107.8 PK			3.90 H	9	99.9	8.0
2	*5240.00	93.7 AV			3.90 H	9	85.7	8.0
3	5350.00	59.6 PK	74.0	-14.4	3.90 H	9	51.3	8.3
4	5350.00	45.7 AV	54.0	-8.3	3.90 H	9	37.4	8.3
5	#10480.00	57.3 PK	68.2	-10.9	2.01 H	100	38.4	18.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	114.6 PK			2.11 V	195	106.6	8.0
2	*5240.00	99.7 AV			2.11 V	195	91.8	8.0
3	5350.00	62.0 PK	74.0	-12.0	2.11 V	195	53.7	8.3
4	5350.00	47.5 AV	54.0	-6.5	2.11 V	195	39.2	8.3
5	#10480.00	58.4 PK	68.2	-9.8	1.74 V	25	39.5	18.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.6 PK	74.0	-14.4	3.70 H	14	52.0	7.6
2	5150.00	45.7 AV	54.0	-8.3	3.70 H	14	38.1	7.6
3	*5260.00	106.8 PK			3.70 H	14	98.8	8.1
4	*5260.00	94.1 AV			3.70 H	14	86.0	8.1
5	#10520.00	57.9 PK	68.2	-10.3	2.03 H	105	38.7	19.2
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	61.2 PK	74.0	-12.8	2.42 V	195	53.6	7.6
2	5150.00	46.8 AV	54.0	-7.2	2.42 V	195	39.2	7.6
3	*5260.00	113.0 PK			2.42 V	195	104.9	8.1
4	*5260.00	99.7 AV			2.42 V	195	91.6	8.1
5	#10520.00	58.3 PK	68.2	-9.9	1.48 V	12	39.2	19.2

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR 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	*5300.00	106.4 PK			3.72 H	11	98.2	8.2
2	*5300.00	93.9 AV			3.72 H	11	85.7	8.2
3	10600.00	58.3 PK	74.0	-15.7	1.99 H	100	38.4	19.9
4	10600.00	45.2 AV	54.0	-8.8	1.99 H	100	25.3	19.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	112.6 PK			2.52 V	195	104.5	8.2
2	*5300.00	98.7 AV			2.52 V	195	90.6	8.2
3	10600.00	58.9 PK	74.0	-15.1	1.63 V	15	39.0	19.9
4	10600.00	45.7 AV	54.0	-8.3	1.63 V	15	25.9	19.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.0 PK			3.71 H	14	97.8	8.2
2	*5320.00	93.4 AV			3.71 H	14	85.2	8.2
3	5350.00	64.5 PK	74.0	-9.5	3.71 H	14	56.2	8.3
4	5350.00	47.8 AV	54.0	-6.2	3.71 H	14	39.5	8.3
5	10640.00	57.9 PK	74.0	-16.1	1.93 H	107	38.0	19.8
6	10640.00	44.9 AV	54.0	-9.1	1.93 H	107	25.0	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	*5320.00	112.7 PK			2.37 V	195	104.5	8.2
2	*5320.00	99.4 AV			2.37 V	195	91.2	8.2
3	5350.00	72.2 PK	74.0	-1.8	2.37 V	195	63.9	8.3
4	5350.00	52.8 AV	54.0	-1.2	2.37 V	195	44.5	8.3
5	10640.00	58.7 PK	74.0	-15.3	1.65 V	13	38.9	19.8
6	10640.00	45.5 AV	54.0	-8.5	1.65 V	13	25.6	19.8

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.5 PK	74.0	-13.5	1.27 H	285	51.6	9.0
2	5460.00	46.6 AV	54.0	-7.4	1.27 H	285	37.6	9.0
3	#5470.00	61.9 PK	68.2	-6.3	1.27 H	285	52.9	9.1
4	*5500.00	102.5 PK			1.27 H	285	93.2	9.3
5	*5500.00	90.2 AV			1.27 H	285	80.9	9.3
6	11000.00	58.5 PK	74.0	-15.5	1.43 H	200	38.2	20.3
7	11000.00	45.4 AV	54.0	-8.6	1.43 H	200	25.1	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	5460.00	63.4 PK	74.0	-10.6	1.82 V	98	54.4	9.0
2	5460.00	48.0 AV	54.0	-6.0	1.82 V	98	39.0	9.0
3	#5470.00	67.1 PK	68.2	-1.1	1.82 V	98	58.0	9.1
4	*5500.00	112.7 PK			1.82 V	98	103.4	9.3
5	*5500.00	99.0 AV			1.82 V	98	89.7	9.3
6	11000.00	60.1 PK	74.0	-13.9	1.27 V	158	39.8	20.3
7	11000.00	46.4 AV	54.0	-7.6	1.27 V	158	26.1	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 116	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	*5580.00	101.7 PK			1.34 H	291	92.1	9.6
2	*5580.00	88.5 AV			1.34 H	291	79.0	9.6
3	11160.00	58.8 PK	74.0	-15.2	1.30 H	185	38.1	20.7
4	11160.00	46.0 AV	54.0	-8.0	1.30 H	185	25.3	20.7
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	*5580.00	111.5 PK			1.00 V	100	101.9	9.6
2	*5580.00	97.3 AV			1.00 V	100	87.7	9.6
3	11160.00	59.7 PK	74.0	-14.4	1.33 V	169	39.0	20.7
4	11160.00	46.7 AV	54.0	-7.3	1.33 V	169	26.0	20.7

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.

CHANNEL	TX Channel 132	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	*5660.00	101.7 PK			1.33 H	270	92.2	9.6
2	*5660.00	88.6 AV			1.33 H	270	79.0	9.6
3	11320.00	58.9 PK	74.0	-15.1	1.41 H	179	38.2	20.7
4	11320.00	46.3 AV	54.0	-7.7	1.41 H	179	25.6	20.7
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	*5660.00	110.7 PK			1.68 V	95	101.1	9.6
2	*5660.00	97.0 AV			1.68 V	95	87.5	9.6
3	11320.00	59.6 PK	74.0	-14.4	1.25 V	171	38.9	20.7
4	11320.00	46.7 AV	54.0	-7.3	1.25 V	171	26.0	20.7

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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	101.4 PK			1.30 H	278	91.9	9.5
2	*5700.00	88.2 AV			1.30 H	278	78.7	9.5
3	#5725.00	62.7 PK	68.2	-5.5	1.30 H	278	53.2	9.5
4	11400.00	58.6 PK	74.0	-15.4	1.49 H	203	38.2	20.4
5	11400.00	45.9 AV	54.0	-8.1	1.49 H	203	25.5	20.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	111.1 PK			1.83 V	103	101.5	9.5
2	*5700.00	99.5 AV			1.83 V	103	90.0	9.5
3	#5725.00	67.2 PK	68.2	-1.0	1.83 V	103	57.7	9.5
4	11400.00	59.4 PK	74.0	-14.6	1.19 V	168	39.0	20.4
5	11400.00	46.6 AV	54.0	-7.4	1.19 V	168	26.1	20.4

REMARKS:

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

CHANNEL	TX Channel 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	#5645.30	64.0 PK	68.2	-4.2	4.00 H	94	54.5	9.6
2	*5745.00	106.9 PK			4.00 H	94	97.6	9.4
3	*5745.00	93.7 AV			4.00 H	94	84.3	9.4
4	#5958.84	63.7 PK	68.2	-4.5	4.00 H	94	54.2	9.5
5	11490.00	59.0 PK	74.0	-15.0	1.58 H	236	38.6	20.3
6	11490.00	44.9 AV	54.0	-9.1	1.58 H	236	24.6	20.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5620.00	63.5 PK	68.2	-4.7	2.23 V	192	53.9	9.6
2	*5745.00	111.3 PK			2.23 V	192	101.9	9.4
3	*5745.00	97.7 AV			2.23 V	192	88.3	9.4
4	#5990.52	63.6 PK	68.2	-4.6	2.23 V	192	53.9	9.7
5	11490.00	60.0 PK	74.0	-14.0	1.68 V	334	39.6	20.3
6	11490.00	46.1 AV	54.0	-7.9	1.68 V	334	25.8	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	#5608.99	63.5 PK	68.2	-4.7	3.98 H	88	53.9	9.6
2	*5785.00	105.3 PK			3.98 H	88	96.0	9.2
3	*5785.00	91.3 AV			3.98 H	88	82.1	9.2
4	#6021.25	64.7 PK	68.2	-3.5	3.98 H	88	54.8	9.9
5	11570.00	59.2 PK	74.0	-14.8	1.83 H	96	38.6	20.7
6	11570.00	44.9 AV	54.0	-9.1	1.83 H	96	24.3	20.7
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	#5616.87	63.1 PK	68.2	-5.1	1.63 V	187	53.5	9.6
2	*5785.00	108.6 PK			1.63 V	187	99.3	9.2
3	*5785.00	96.0 AV			1.63 V	187	86.8	9.2
4	#5940.03	63.3 PK	68.2	-4.9	1.63 V	187	53.8	9.5
5	11570.00	60.3 PK	74.0	-13.7	1.24 V	154	39.7	20.7
6	11570.00	46.5 AV	54.0	-7.5	1.24 V	154	25.9	20.7

REMARKS:

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

CHANNEL	TX Channel 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	#5572.95	63.6 PK	68.2	-4.6	3.99 H	81	54.1	9.5
2	*5825.00	105.8 PK			3.99 H	81	96.6	9.2
3	*5825.00	92.1 AV			3.99 H	81	82.9	9.2
4	#5948.41	63.3 PK	68.2	-4.9	3.99 H	81	53.8	9.5
5	11650.00	59.3 PK	74.0	-14.7	1.24 H	333	38.7	20.6
6	11650.00	45.2 AV	54.0	-8.8	1.24 H	333	24.6	20.6
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	#5564.00	64.4 PK	68.2	-3.8	2.02 V	190	54.9	9.5
2	*5825.00	109.4 PK			2.02 V	190	100.2	9.2
3	*5825.00	98.2 AV			2.02 V	190	89.0	9.2
4	#6014.15	63.9 PK	68.2	-4.3	2.02 V	190	54.1	9.8
5	11650.00	59.8 PK	74.0	-14.2	1.45 V	51	39.2	20.6
6	11650.00	46.1 AV	54.0	-7.9	1.45 V	51	25.5	20.6

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.

802.11n (20MHz)

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	64.2 PK	74.0	-9.8	3.91 H	22	56.6	7.6
2	5150.00	46.8 AV	54.0	-7.2	3.91 H	22	39.2	7.6
3	*5180.00	106.8 PK			3.91 H	22	99.0	7.8
4	*5180.00	90.9 AV			3.91 H	22	83.1	7.8
5	#10360.00	56.3 PK	68.2	-11.9	1.77 H	108	38.1	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	72.3 PK	74.0	-1.7	2.22 V	193	64.7	7.6
2	5150.00	53.0 AV	54.0	-1.0	2.22 V	193	45.4	7.6
3	*5180.00	115.7 PK			2.22 V	193	108.0	7.8
4	*5180.00	99.1 AV			2.22 V	193	91.4	7.8
5	#10360.00	57.3 PK	68.2	-10.9	1.66 V	24	39.1	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 40	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	107.4 PK			3.98 H	21	99.6	7.9
2	*5200.00	91.6 AV			3.98 H	21	83.8	7.9
3	#10400.00	56.9 PK	68.2	-11.3	1.82 H	100	38.5	18.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	116.2 PK			2.11 V	194	108.3	7.9
2	*5200.00	100.4 AV			2.11 V	194	92.6	7.9
3	#10400.00	58.1 PK	68.2	-10.1	1.61 V	27	39.7	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 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	107.3 PK			3.99 H	25	99.3	8.0
2	*5240.00	91.4 AV			3.99 H	25	83.4	8.0
3	5350.00	59.5 PK	74.0	-14.5	3.99 H	25	51.2	8.3
4	5350.00	45.8 AV	54.0	-8.2	3.99 H	25	37.5	8.3
5	#10360.00	56.6 PK	68.2	-11.6	1.85 H	107	38.4	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	*5240.00	116.3 PK			2.33 V	191	108.3	8.0
2	*5240.00	99.4 AV			2.33 V	191	91.4	8.0
3	5350.00	61.0 PK	74.0	-13.0	2.33 V	191	52.7	8.3
4	5350.00	47.1 AV	54.0	-6.9	2.33 V	191	38.8	8.3
5	#10480.00	58.7 PK	68.2	-9.5	1.64 V	22	39.8	18.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.7 PK	74.0	-14.3	3.83 H	6	52.1	7.6
2	5150.00	46.0 AV	54.0	-8.0	3.83 H	6	38.4	7.6
3	*5260.00	110.3 PK			3.83 H	6	102.2	8.1
4	*5260.00	95.6 AV			3.83 H	6	87.5	8.1
5	#10520.00	57.6 PK	68.2	-10.6	1.80 H	129	38.4	19.2
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	60.4 PK	74.0	-13.6	2.44 V	194	52.8	7.6
2	5150.00	46.6 AV	54.0	-7.4	2.44 V	194	39.0	7.6
3	*5260.00	116.7 PK			2.44 V	194	108.6	8.1
4	*5260.00	101.0 AV			2.44 V	194	93.0	8.1
5	#10520.00	58.2 PK	68.2	-10.0	1.57 V	20	39.0	19.2

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR 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	*5300.00	109.3 PK			3.85 H	7	101.1	8.2
2	*5300.00	94.4 AV			3.85 H	7	86.2	8.2
3	10600.00	58.4 PK	74.0	-15.6	1.76 H	135	38.5	19.9
4	10600.00	45.1 AV	54.0	-8.9	1.76 H	135	25.2	19.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	115.5 PK			2.17 V	194	107.4	8.2
2	*5300.00	99.5 AV			2.17 V	194	91.4	8.2
3	10600.00	59.0 PK	74.0	-15.0	1.55 V	23	39.1	19.9
4	10600.00	45.6 AV	54.0	-8.4	1.55 V	23	25.7	19.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	108.2 PK			3.80 H	7	100.0	8.2
2	*5320.00	93.5 AV			3.80 H	7	85.3	8.2
3	5350.00	63.5 PK	74.0	-10.5	3.80 H	7	55.2	8.3
4	5350.00	47.6 AV	54.0	-6.4	3.80 H	7	39.3	8.3
5	10640.00	58.2 PK	74.0	-15.8	1.92 H	140	38.3	19.8
6	10640.00	45.2 AV	54.0	-8.8	1.92 H	140	25.4	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	*5320.00	114.5 PK			2.40 V	194	106.3	8.2
2	*5320.00	98.5 AV			2.40 V	194	90.2	8.2
3	5350.00	70.7 PK	74.0	-3.3	2.40 V	194	62.4	8.3
4	5350.00	53.0 AV	54.0	-1.0	2.40 V	194	44.7	8.3
5	10640.00	58.7 PK	74.0	-15.3	1.61 V	32	38.9	19.8
6	10640.00	45.7 AV	54.0	-8.3	1.61 V	32	25.8	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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.7 PK	74.0	-13.3	3.08 H	72	51.7	9.0
2	5460.00	46.2 AV	54.0	-7.8	3.08 H	72	37.2	9.0
3	#5470.00	60.8 PK	68.2	-7.4	3.08 H	72	51.7	9.1
4	*5500.00	99.9 PK			3.08 H	72	90.6	9.3
5	*5500.00	86.6 AV			3.08 H	72	77.3	9.3
6	11000.00	58.5 PK	74.0	-15.5	1.05 H	188	38.2	20.3
7	11000.00	45.6 AV	54.0	-8.4	1.05 H	188	25.3	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	5460.00	60.6 PK	74.0	-13.4	1.90 V	99	51.6	9.0
2	5460.00	47.1 AV	54.0	-6.9	1.90 V	99	38.1	9.0
3	#5470.00	67.2 PK	68.2	-1.0	1.90 V	99	58.1	9.1
4	*5500.00	111.0 PK			1.90 V	99	101.7	9.3
5	*5500.00	96.7 AV			1.90 V	99	87.4	9.3
6	11000.00	59.2 PK	74.0	-14.8	1.56 V	113	39.0	20.3
7	11000.00	46.3 AV	54.0	-7.7	1.56 V	113	26.1	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 116	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	*5580.00	100.9 PK			3.00 H	69	91.3	9.6
2	*5580.00	87.6 AV			3.00 H	69	78.1	9.6
3	11160.00	59.3 PK	74.0	-14.7	1.00 H	177	38.7	20.7
4	11160.00	46.5 AV	54.0	-7.5	1.00 H	177	25.8	20.7
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	*5580.00	111.0 PK			1.88 V	98	101.5	9.6
2	*5580.00	97.9 AV			1.88 V	98	88.4	9.6
3	11160.00	59.8 PK	74.0	-14.2	1.49 V	111	39.1	20.7
4	11160.00	47.0 AV	54.0	-7.0	1.49 V	111	26.3	20.7

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.

CHANNEL	TX Channel 132	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	*5660.00	100.4 PK			3.21 H	71	90.9	9.6
2	*5660.00	87.5 AV			3.21 H	71	77.9	9.6
3	11320.00	59.2 PK	74.0	-14.8	1.02 H	181	38.5	20.7
4	11320.00	46.1 AV	54.0	-7.9	1.02 H	181	25.4	20.7
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	*5660.00	110.5 PK			1.92 V	96	101.0	9.6
2	*5660.00	97.6 AV			1.92 V	96	88.0	9.6
3	11320.00	59.9 PK	74.0	-14.1	1.32 V	108	39.2	20.7
4	11320.00	47.0 AV	54.0	-7.0	1.32 V	108	26.3	20.7

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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	99.4 PK			3.11 H	185	89.9	9.5
2	*5700.00	86.1 AV			3.11 H	185	76.6	9.5
3	#5725.00	61.8 PK	68.2	-6.4	3.11 H	185	52.3	9.5
4	11400.00	58.6 PK	74.0	-15.4	1.00 H	174	38.2	20.4
5	11400.00	45.5 AV	54.0	-8.5	1.00 H	174	25.1	20.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	109.5 PK			2.00 V	97	99.9	9.5
2	*5700.00	96.3 AV			2.00 V	97	86.8	9.5
3	#5725.00	67.1 PK	68.2	-1.1	2.00 V	97	57.7	9.5
4	11400.00	59.1 PK	74.0	-14.9	1.34 V	100	38.7	20.4
5	11400.00	46.3 AV	54.0	-7.7	1.34 V	100	25.9	20.4

REMARKS:

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

CHANNEL	TX Channel 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	#5627.39	63.6 PK	68.2	-4.6	4.00 H	95	54.0	9.6
2	*5745.00	107.2 PK			4.00 H	95	97.8	9.4
3	*5745.00	91.1 AV			4.00 H	95	81.7	9.4
4	#5959.27	64.0 PK	68.2	-4.2	4.00 H	95	54.5	9.5
5	11490.00	59.0 PK	74.0	-15.0	1.82 H	51	38.7	20.3
6	11490.00	44.9 AV	54.0	-9.1	1.82 H	51	24.6	20.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5597.84	65.3 PK	68.2	-2.9	2.05 V	184	55.7	9.6
2	*5745.00	109.0 PK			2.05 V	184	99.7	9.4
3	*5745.00	94.3 AV			2.05 V	184	84.9	9.4
4	#5985.16	64.0 PK	68.2	-4.2	2.05 V	184	54.4	9.6
5	11490.00	60.0 PK	74.0	-14.0	1.26 V	251	39.7	20.3
6	11490.00	46.0 AV	54.0	-8.0	1.26 V	251	25.7	20.3

REMARKS:

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

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	#5592.74	63.8 PK	68.2	-4.4	4.00 H	100	54.2	9.6
2	*5785.00	109.3 PK			4.00 H	100	100.0	9.2
3	*5785.00	93.9 AV			4.00 H	100	84.7	9.2
4	#6010.67	65.3 PK	68.2	-2.9	4.00 H	100	55.5	9.8
5	11570.00	59.3 PK	74.0	-14.7	1.44 H	14	38.6	20.7
6	11570.00	45.0 AV	54.0	-9.0	1.44 H	14	24.3	20.7
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	#5619.14	63.9 PK	68.2	-4.3	1.88 V	184	54.3	9.6
2	*5785.00	110.5 PK			1.88 V	184	101.3	9.2
3	*5785.00	95.6 AV			1.88 V	184	86.3	9.2
4	#5985.73	64.1 PK	68.2	-4.1	1.88 V	184	54.4	9.6
5	11570.00	60.8 PK	74.0	-13.2	1.80 V	198	40.2	20.7
6	11570.00	47.0 AV	54.0	-7.0	1.80 V	198	26.3	20.7

REMARKS:

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

CHANNEL	TX Channel 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	#5629.12	64.0 PK	68.2	-4.2	3.98 H	86	54.4	9.6
2	*5825.00	108.9 PK			3.98 H	86	99.7	9.2
3	*5825.00	93.0 AV			3.98 H	86	83.8	9.2
4	#5935.24	63.6 PK	68.2	-4.6	3.98 H	86	54.2	9.4
5	11650.00	60.2 PK	74.0	-13.8	1.32 H	182	39.6	20.6
6	11650.00	46.4 AV	54.0	-7.6	1.32 H	182	25.9	20.6
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	#5638.60	65.0 PK	68.2	-3.2	2.37 V	190	55.5	9.6
2	*5825.00	110.5 PK			2.37 V	190	101.3	9.2
3	*5825.00	96.1 AV			2.37 V	190	86.9	9.2
4	#5937.53	64.1 PK	68.2	-4.1	2.37 V	190	54.6	9.4
5	11650.00	61.2 PK	74.0	-12.8	1.75 V	41	40.6	20.6
6	11650.00	46.9 AV	54.0	-7.1	1.75 V	41	26.3	20.6

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.

802.11n (40MHz)

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	64.0 PK	74.0	-10.0	3.95 H	6	56.4	7.6
2	5150.00	47.1 AV	54.0	-6.9	3.95 H	6	39.5	7.6
3	*5190.00	101.9 PK			3.95 H	6	94.1	7.8
4	*5190.00	83.8 AV			3.95 H	6	76.0	7.8
5	#10380.00	56.4 PK	68.2	-11.8	1.79 H	124	38.1	18.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	73.0 PK	74.0	-1.0	2.16 V	192	65.4	7.6
2	5150.00	52.4 AV	54.0	-1.6	2.16 V	192	44.8	7.6
3	*5190.00	109.7 PK			2.16 V	192	101.9	7.8
4	*5190.00	89.2 AV			2.16 V	192	81.4	7.8
5	#10380.00	57.1 PK	68.2	-11.1	1.69 V	21	38.8	18.3

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 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	*5230.00	103.8 PK			3.97 H	8	95.8	8.0
2	*5230.00	85.0 AV			3.97 H	8	77.0	8.0
3	5350.00	59.7 PK	74.0	-14.3	3.97 H	8	51.4	8.3
4	5350.00	46.4 AV	54.0	-7.6	3.97 H	8	38.1	8.3
5	#10460.00	57.2 PK	68.2	-11.0	1.75 H	121	38.4	18.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	110.8 PK			2.32 V	193	102.9	8.0
2	*5230.00	91.6 AV			2.32 V	193	83.7	8.0
3	5350.00	61.0 PK	74.0	-13.0	2.32 V	193	52.7	8.3
4	5350.00	46.5 AV	54.0	-7.5	2.32 V	193	38.2	8.3
5	#10460.00	57.8 PK	68.2	-10.4	1.73 V	18	39.0	18.8

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.5 PK	74.0	-14.5	3.94 H	8	51.9	7.6
2	5150.00	45.7 AV	54.0	-8.3	3.94 H	8	38.1	7.6
3	*5270.00	104.4 PK			3.94 H	8	96.3	8.1
4	*5270.00	85.7 AV			3.94 H	8	77.7	8.1
5	#10540.00	57.8 PK	68.2	-10.4	1.78 H	132	38.4	19.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	61.3 PK	74.0	-12.7	2.33 V	194	53.7	7.6
2	5150.00	46.2 AV	54.0	-7.8	2.33 V	194	38.6	7.6
3	*5270.00	111.0 PK			2.33 V	194	102.9	8.1
4	*5270.00	91.6 AV			2.33 V	194	83.6	8.1
5	#10540.00	58.3 PK	68.2	-9.9	1.55 V	23	38.9	19.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	103.3 PK			3.95 H	10	95.1	8.2
2	*5310.00	84.6 AV			3.95 H	10	76.4	8.2
3	5350.00	64.1 PK	74.0	-9.9	3.95 H	10	55.8	8.3
4	5350.00	48.1 AV	54.0	-5.9	3.95 H	10	39.8	8.3
5	10620.00	57.8 PK	74.0	-16.2	1.88 H	129	38.0	19.8
6	10620.00	45.5 AV	54.0	-8.5	1.88 H	129	25.6	19.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	109.8 PK			2.31 V	196	101.6	8.2
2	*5310.00	90.4 AV			2.31 V	196	82.3	8.2
3	5350.00	72.8 PK	74.0	-1.2	2.31 V	196	64.5	8.3
4	5350.00	53.0 AV	54.0	-1.0	2.31 V	196	44.7	8.3
5	10620.00	58.2 PK	74.0	-15.8	1.57 V	18	38.3	19.8
6	10620.00	45.6 AV	54.0	-8.4	1.57 V	18	25.8	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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.9 PK	74.0	-14.1	3.28 H	72	50.9	9.0
2	5460.00	46.1 AV	54.0	-7.9	3.28 H	72	37.2	9.0
3	#5470.00	60.7 PK	68.2	-7.5	3.28 H	72	51.6	9.1
4	*5510.00	94.8 PK			3.28 H	72	85.5	9.3
5	*5510.00	79.1 AV			3.28 H	72	69.8	9.3
6	11020.00	58.4 PK	74.0	-15.6	1.03 H	191	38.0	20.4
7	11020.00	45.4 AV	54.0	-8.6	1.03 H	191	25.1	20.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.5 PK	74.0	-12.5	1.90 V	95	52.5	9.0
2	5460.00	46.8 AV	54.0	-7.2	1.90 V	95	37.8	9.0
3	#5470.00	67.1 PK	68.2	-1.1	1.90 V	95	58.1	9.1
4	*5510.00	103.6 PK			1.90 V	95	94.3	9.3
5	*5510.00	87.5 AV			1.90 V	95	78.1	9.3
6	11020.00	58.6 PK	74.0	-15.4	1.38 V	122	38.3	20.4
7	11020.00	45.7 AV	54.0	-8.3	1.38 V	122	25.3	20.4

REMARKS:

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

CHANNEL	TX Channel 110	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	*5550.00	97.4 PK			3.22 H	71	87.9	9.5
2	*5550.00	81.5 AV			3.22 H	71	72.1	9.5
3	11100.00	59.1 PK	74.0	-14.9	1.00 H	187	38.2	20.9
4	11100.00	46.0 AV	54.0	-8.0	1.00 H	187	25.2	20.9
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	*5550.00	105.6 PK			1.97 V	96	96.2	9.5
2	*5550.00	90.8 AV			1.97 V	96	81.4	9.5
3	11100.00	59.7 PK	74.0	-14.3	1.40 V	121	38.8	20.9
4	11100.00	46.8 AV	54.0	-7.2	1.40 V	121	25.9	20.9

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.

CHANNEL	TX Channel 134	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	*5670.00	96.1 PK			3.11 H	68	86.6	9.6
2	*5670.00	80.8 AV			3.11 H	68	71.2	9.6
3	#5725.00	60.7 PK	68.2	-7.5	3.11 H	68	51.2	9.5
4	11340.00	58.9 PK	74.0	-15.1	1.00 H	183	38.3	20.6
5	11340.00	46.1 AV	54.0	-7.9	1.00 H	183	25.4	20.6
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	*5670.00	105.3 PK			1.93 V	98	95.7	9.6
2	*5670.00	90.4 AV			1.93 V	98	80.9	9.6
3	#5725.00	61.9 PK	68.2	-6.3	1.93 V	98	52.4	9.5
4	11340.00	59.7 PK	74.0	-14.3	1.38 V	119	39.0	20.6
5	11340.00	46.5 AV	54.0	-7.5	1.38 V	119	25.9	20.6

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 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	#5573.35	64.1 PK	68.2	-4.1	3.28 H	94	54.6	9.5
2	*5755.00	104.2 PK			3.28 H	94	94.8	9.4
3	*5755.00	87.1 AV			3.28 H	94	77.7	9.4
4	#5926.01	63.8 PK	68.2	-4.4	3.28 H	94	54.4	9.4
5	11510.00	59.6 PK	74.0	-14.4	1.66 H	351	39.3	20.4
6	11510.00	45.8 AV	54.0	-8.2	1.66 H	351	25.4	20.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5617.15	64.8 PK	68.2	-3.4	2.26 V	278	55.2	9.6
2	*5755.00	107.3 PK			2.26 V	278	98.0	9.4
3	*5755.00	89.3 AV			2.26 V	278	80.0	9.4
4	#5976.78	64.5 PK	68.2	-3.7	2.26 V	278	54.9	9.6
5	11510.00	61.0 PK	74.0	-13.0	1.37 V	271	40.6	20.4
6	11510.00	47.1 AV	54.0	-6.9	1.37 V	271	26.7	20.4

REMARKS:

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

CHANNEL	TX Channel 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	#5607.72	64.3 PK	68.2	-3.9	3.36 H	100	54.7	9.6
2	*5795.00	103.4 PK			3.36 H	100	94.2	9.2
3	*5795.00	85.4 AV			3.36 H	100	76.2	9.2
4	#6017.78	64.4 PK	68.2	-3.8	3.36 H	100	54.6	9.8
5	11590.00	60.4 PK	74.0	-13.6	2.05 H	64	39.6	20.8
6	11590.00	46.0 AV	54.0	-8.0	2.05 H	64	25.3	20.8
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	#5591.08	64.2 PK	68.2	-4.0	2.39 V	195	54.6	9.6
2	*5795.00	107.1 PK			2.39 V	195	97.9	9.2
3	*5795.00	89.9 AV			2.39 V	195	80.7	9.2
4	#6015.63	64.4 PK	68.2	-3.8	2.39 V	195	54.6	9.8
5	11590.00	61.3 PK	74.0	-12.7	1.11 V	14	40.5	20.8
6	11590.00	47.1 AV	54.0	-6.9	1.11 V	14	26.4	20.8

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.

802.11ac (80MHz)

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	64.5 PK	74.0	-9.5	3.68 H	7	56.9	7.6
2	5150.00	46.8 AV	54.0	-7.2	3.68 H	7	39.2	7.6
3	*5210.00	101.0 PK			3.68 H	7	93.1	7.9
4	*5210.00	80.5 AV			3.68 H	7	72.6	7.9
5	5350.00	60.0 PK	74.0	-14.0	3.68 H	7	51.7	8.3
6	5350.00	46.4 AV	54.0	-7.6	3.68 H	7	38.1	8.3
7	#10420.00	56.5 PK	68.2	-11.7	1.78 H	102	38.0	18.5
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	5150.00	72.9 PK	74.0	-1.1	2.35 V	190	65.3	7.6
2	5150.00	52.7 AV	54.0	-1.3	2.35 V	190	45.1	7.6
3	*5210.00	107.4 PK			2.35 V	190	99.5	7.9
4	*5210.00	84.6 AV			2.35 V	190	76.7	7.9
5	5350.00	61.7 PK	74.0	-12.3	2.35 V	190	53.4	8.3
6	5350.00	46.7 AV	54.0	-7.3	2.35 V	190	38.4	8.3
7	#10420.00	56.8 PK	68.2	11.4	1.59 V	28	38.3	18.5

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.8 PK	74.0	-15.2	3.73 H	8	51.2	7.6
2	5150.00	45.6 AV	54.0	-8.4	3.73 H	8	38.0	7.6
3	*5290.00	101.1 PK			3.73 H	8	93.0	8.1
4	*5290.00	81.2 AV			3.73 H	8	73.1	8.1
5	5350.00	65.1 PK	74.0	-8.9	3.73 H	8	56.8	8.3
6	5350.00	48.4 AV	54.0	-5.6	3.73 H	8	40.1	8.3
7	#10580.00	57.5 PK	68.2	-10.7	1.92 H	130	37.9	19.7
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	5150.00	60.8 PK	74.0	-13.2	2.43 V	197	53.2	7.6
2	5150.00	46.2 AV	54.0	-7.8	2.43 V	197	38.6	7.6
3	*5290.00	107.2 PK			2.43 V	197	99.1	8.1
4	*5290.00	85.4 AV			2.43 V	197	77.3	8.1
5	5350.00	72.7 PK	74.0	-1.3	2.43 V	197	64.4	8.3
6	5350.00	53.0 AV	54.0	-1.0	2.43 V	197	44.7	8.3
7	#10580.00	58.3 PK	68.2	-9.9	1.59 V	23	38.6	19.7

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.9 PK	74.0	-11.1	2.18 H	69	54.0	9.0
2	5460.00	47.5 AV	54.0	-6.5	2.18 H	69	38.5	9.0
3	#5470.00	64.8 PK	68.2	-3.4	2.18 H	69	55.8	9.1
4	*5530.00	93.4 PK			2.18 H	69	84.0	9.4
5	*5530.00	76.1 AV			2.18 H	69	66.7	9.4
6	11060.00	58.8 PK	74.0	-15.2	1.00 H	197	38.2	20.6
7	11060.00	45.7 AV	54.0	-8.3	1.00 H	197	25.1	20.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	66.5 PK	74.0	-7.5	1.98 V	97	57.5	9.0
2	5460.00	48.7 AV	54.0	-5.3	1.98 V	97	39.7	9.0
3	#5470.00	67.1 PK	68.2	-1.1	1.98 V	97	58.0	9.1
4	*5530.00	101.9 PK			1.98 V	97	92.5	9.4
5	*5530.00	85.0 AV			1.98 V	97	75.6	9.4
6	11060.00	59.4 PK	74.0	-14.6	1.29 V	138	38.8	20.6
7	11060.00	46.4 AV	54.0	-7.6	1.29 V	138	25.8	20.6

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 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	#5598.02	64.1 PK	68.2	-4.1	3.92 H	115	54.5	9.6
2	*5775.00	102.0 PK			3.92 H	115	92.7	9.3
3	*5775.00	82.3 AV			3.92 H	115	73.0	9.3
4	#5998.78	64.0 PK	68.2	-4.2	3.92 H	115	54.3	9.7
5	11550.00	60.2 PK	74.0	-13.8	1.00 H	14	39.6	20.6
6	11550.00	45.7 AV	54.0	-8.3	1.00 H	14	25.2	20.6
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	#5625.26	64.9 PK	68.2	-3.3	2.17 V	276	55.3	9.6
2	*5775.00	105.7 PK			2.17 V	276	96.4	9.3
3	*5775.00	84.5 AV			2.17 V	276	75.2	9.3
4	#6005.31	64.5 PK	68.2	-3.7	2.17 V	276	54.7	9.7
5	11550.00	61.4 PK	74.0	-12.6	1.78 V	306	40.9	20.6
6	11550.00	47.5 AV	54.0	-6.5	1.78 V	306	27.0	20.6

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.

Below 1GHz Data: 802.11n (20MHz)

CHANNEL	TX Channel 157	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	62.40	17.6 QP	40.0	-22.4	4.00 H	113	27.9	-10.3
2	166.58	29.1 QP	43.5	-14.4	4.00 H	227	38.6	-9.5
3	273.23	28.9 QP	46.0	-17.1	3.71 H	235	37.2	-8.3
4	528.00	32.0 QP	46.0	-14.0	2.03 H	335	34.9	-2.9
5	738.10	36.4 QP	46.0	-9.6	1.15 H	102	35.7	0.8
6	912.12	35.6 QP	46.0	-10.4	1.00 H	48	31.8	3.8
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	47.95	19.5 QP	40.0	-20.5	1.21 V	197	29.2	-9.7
2	166.53	22.0 QP	43.5	-21.5	1.00 V	143	31.5	-9.5
3	199.94	24.4 QP	43.5	-19.1	1.00 V	116	36.2	-11.8
4	283.36	28.8 QP	46.0	-17.2	1.00 V	170	36.8	-8.0
5	391.18	26.0 QP	46.0	-20.0	1.69 V	214	31.6	-5.6
6	943.25	32.6 QP	46.0	-13.4	2.11 V	219	28.5	4.2

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
ROHDE & SCHWARZ TEST RECEIVER	ESCS 30	838251/021	Oct. 24, 2016	Oct. 23, 2017
ROHDE & SCHWARZ Artificial Mains Network (For EUT)	ENV216	101195	Apr. 25, 2016	Apr. 24, 2017
LISN With Adapter (for EUT)	AD10	C03Ada-002	Apr. 25, 2016	Apr. 24, 2017
EMCO L.I.S.N. (For peripherals)	3825/2	9504-2359	Jul. 25, 2016	Jul. 24, 2017
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK8129	8129229	May 04, 2016	May 03, 2017
Software	Cond_V7.3.7.4	NA	NA	NA
RF cable (JYEBAO) With 10dB PAD	5D-FB	Cable-C03.01	Sep. 22, 2016	Sep. 21, 2017
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-300	Jan. 20, 2016	Jan. 19, 2017
LYNICS Terminator (For EMCO LISN)	0900510	E1-01-301	Jan. 20, 2016	Jan. 19, 2017
ROHDE & SCHWARZ Artificial Mains Network (For TV EUT)	ESH3-Z5	100220	Nov. 08, 2016	Nov. 07, 2017
LISN With Adapter (for TV EUT)	100220	N/A	Nov. 08, 2016	Nov. 07, 2017

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

2. The test was performed in Shielded Room No. 3.

3. The VCCI Site Registration No. C-274.

4. Tested Date: Dec. 9, 2016

4.2.3 Test Procedure

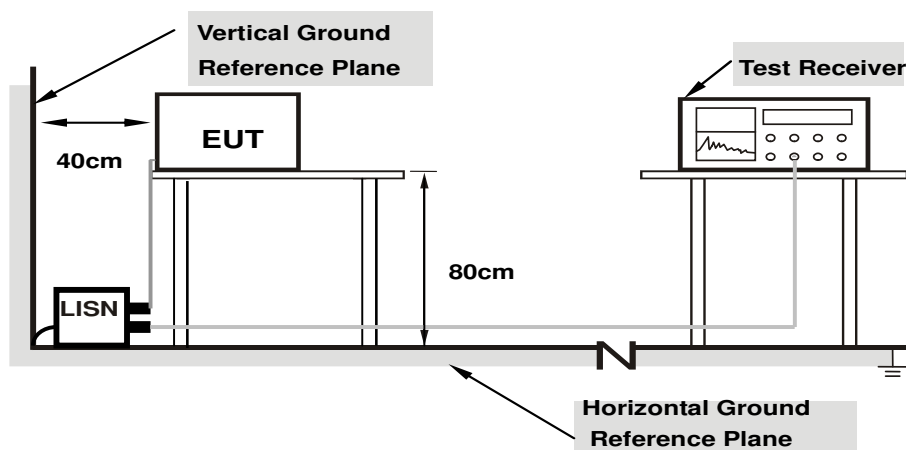
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

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 Condition

Same as 4.1.6.

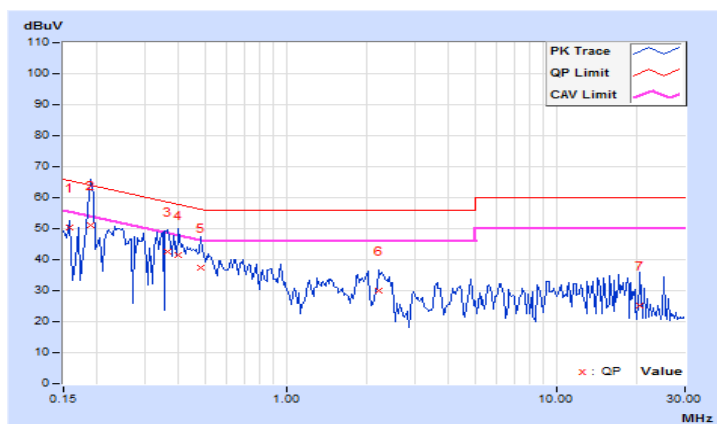
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.74	40.76	15.33	50.50	25.07	65.58	55.58	-15.08	-30.51
2	0.18906	9.75	41.42	25.30	51.17	35.05	64.08	54.08	-12.91	-19.03
3	0.36484	9.75	33.01	15.73	42.76	25.48	58.62	48.62	-15.86	-23.14
4	0.40000	9.75	31.71	16.51	41.46	26.26	57.85	47.85	-16.39	-21.59
5	0.48203	9.75	27.49	8.19	37.24	17.94	56.30	46.30	-19.06	-28.36
6	2.19922	9.81	20.16	11.93	29.97	21.74	56.00	46.00	-26.03	-24.26
7	20.48047	10.03	15.28	0.09	25.31	10.12	60.00	50.00	-34.69	-39.88

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.

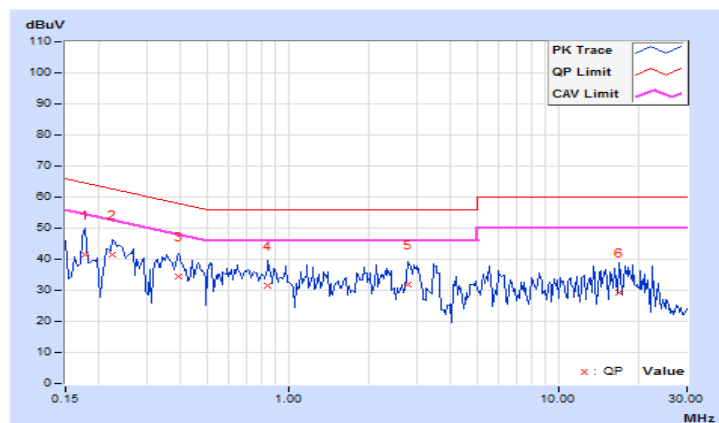


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17734	9.70	31.87	11.62	41.57	21.32	64.61	54.61	-23.04	-33.29
2	0.22422	9.70	31.65	17.33	41.35	27.03	62.66	52.66	-21.31	-25.63
3	0.39219	9.72	24.73	15.23	34.45	24.95	58.02	48.02	-23.57	-23.07
4	0.84531	9.71	21.91	16.05	31.62	25.76	56.00	46.00	-24.38	-20.24
5	2.76172	9.75	22.05	14.37	31.80	24.12	56.00	46.00	-24.20	-21.88
6	16.92578	9.99	19.39	11.87	29.38	21.86	60.00	50.00	-30.62	-28.14

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 $N_{ANT} \leq 4$;

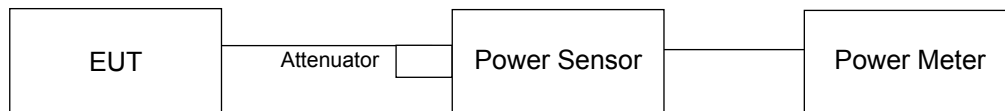
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

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

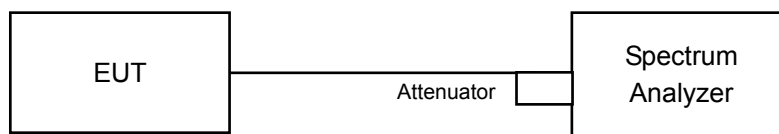
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

For 802.11a, 802.11n (20MHz), 802.11n (40MHz)

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 (80MHz)

- 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.

FOR 26dB OCCUPIED BANDWIDTH

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

Power Output:

802.11a

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
36	5180	13.49	13.71	45.832	16.61	24	Pass
40	5200	13.55	13.75	46.360	16.66	24	Pass
48	5240	13.51	13.74	46.098	16.64	24	Pass
52	5260	13.56	13.75	46.413	16.67	24	Pass
60	5300	13.48	13.71	45.780	16.61	24	Pass
64	5320	13.44	13.68	45.415	16.57	24	Pass
100	5500	13.31	13.60	44.338	16.47	24	Pass
116	5580	13.26	13.59	44.040	16.44	24	Pass
132	5660	13.34	13.54	44.171	16.45	24	Pass
140	5700	13.29	13.56	44.029	16.44	24	Pass
149	5745	13.98	13.69	48.391	16.85	30	Pass
157	5785	13.96	13.63	47.956	16.81	30	Pass
165	5825	13.94	13.54	47.368	16.75	30	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(20.57) = 24.13\text{ dBm} > 24\text{dBm}.$
2. $11\text{dBm} + 10\log(20.68) = 24.16\text{ dBm} > 24\text{dBm}.$
3. $11\text{dBm} + 10\log(20.57) = 24.13\text{ dBm} > 24\text{dBm}.$
4. $11\text{dBm} + 10\log(20.72) = 24.16\text{ dBm} > 24\text{dBm}.$
5. $11\text{dBm} + 10\log(20.63) = 24.14\text{ dBm} > 24\text{dBm}.$
6. $11\text{dBm} + 10\log(20.70) = 24.16\text{ dBm} > 24\text{dBm}.$
7. $11\text{dBm} + 10\log(20.67) = 24.15\text{ dBm} > 24\text{dBm}.$

Chain 1

1. $11\text{dBm} + 10\log(20.62) = 24.14\text{ dBm} > 24\text{dBm}.$
2. $11\text{dBm} + 10\log(20.66) = 24.15\text{ dBm} > 24\text{dBm}.$
3. $11\text{dBm} + 10\log(20.66) = 24.15\text{ dBm} > 24\text{dBm}.$
4. $11\text{dBm} + 10\log(20.74) = 24.17\text{ dBm} > 24\text{dBm}.$
5. $11\text{dBm} + 10\log(20.73) = 24.17\text{ dBm} > 24\text{dBm}.$
6. $11\text{dBm} + 10\log(20.68) = 24.16\text{ dBm} > 24\text{dBm}.$
7. $11\text{dBm} + 10\log(20.72) = 24.16\text{ dBm} > 24\text{dBm}.$

802.11n (20MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
36	5180	13.54	13.74	46.253	16.65	24	Pass
40	5200	13.49	13.67	45.617	16.59	24	Pass
48	5240	13.48	13.77	46.107	16.64	24	Pass
52	5260	13.68	13.76	47.103	16.73	24	Pass
60	5300	13.68	13.86	47.657	16.78	24	Pass
64	5320	13.57	13.82	46.850	16.71	24	Pass
100	5500	13.34	13.59	44.433	16.48	24	Pass
116	5580	13.52	13.78	46.369	16.66	24	Pass
132	5660	13.32	13.65	44.652	16.50	24	Pass
140	5700	13.35	13.59	44.483	16.48	24	Pass
149	5745	13.97	13.62	47.960	16.81	30	Pass
157	5785	14.02	13.72	48.785	16.88	30	Pass
165	5825	13.96	13.65	48.063	16.82	30	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(21.15) = 24.25\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(21.22) = 24.27\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(21.14) = 24.25\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(21.02) = 24.23\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(21.15) = 24.25\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(21.22) = 24.27\text{ dBm} > 24\text{dBm}$.
7. $11\text{dBm} + 10\log(21.18) = 24.26\text{ dBm} > 24\text{dBm}$.

Chain 1

1. $11\text{dBm} + 10\log(21.17) = 24.26\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(21.17) = 24.26\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(21.16) = 24.26\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(21.21) = 24.27\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(21.20) = 24.26\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(21.17) = 24.26\text{ dBm} > 24\text{dBm}$.
7. $11\text{dBm} + 10\log(21.16) = 24.26\text{ dBm} > 24\text{dBm}$.

802.11n (40MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
38	5190	13.01	13.28	41.280	16.16	24	Pass
46	5230	12.99	13.31	41.336	16.16	24	Pass
54	5270	13.02	13.30	41.425	16.17	24	Pass
62	5310	13.09	13.27	41.602	16.19	24	Pass
102	5510	13.05	13.10	40.601	16.09	24	Pass
110	5550	13.01	13.06	40.229	16.05	24	Pass
134	5670	13.06	13.09	40.600	16.09	24	Pass
151	5755	13.49	13.20	43.229	16.36	30	Pass
159	5795	13.51	13.17	43.188	16.35	30	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(43.01) = 27.34\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(43.03) = 27.34\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(42.76) = 27.31\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(42.67) = 27.30\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(42.86) = 27.32\text{ dBm} > 24\text{dBm}$.

Chain 1

1. $11\text{dBm} + 10\log(42.94) = 27.33\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(42.95) = 27.33\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(42.87) = 27.32\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(42.77) = 27.31\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(42.80) = 27.31\text{ dBm} > 24\text{dBm}$.

802.11ac (80MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
42	5210	13.04	13.07	40.414	16.07	24	Pass
58	5290	13.04	13.09	40.507	16.08	24	Pass
106	5530	13.08	13.09	40.694	16.10	24	Pass
155	5775	13.48	13.19	43.129	16.35	30	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(82.47) = 30.16\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(82.38) = 30.16\text{ dBm} > 24\text{dBm}$.

Chain 1

1. $11\text{dBm} + 10\log(82.44) = 30.16\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(82.44) = 30.16\text{ dBm} > 24\text{dBm}$.

26dB Bandwidth:
802.11a

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	20.57	20.62
60	5300	20.68	20.66
64	5320	20.57	20.66
100	5500	20.72	20.74
116	5580	20.63	20.73
132	5660	20.70	20.68
140	5700	20.67	20.72

802.11n (20MHz)

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	21.15	21.17
60	5300	21.22	21.17
64	5320	21.14	21.16
100	5500	21.02	21.21
116	5580	21.15	21.20
132	5660	21.22	21.17
140	5700	21.18	21.16

802.11n (40MHz)

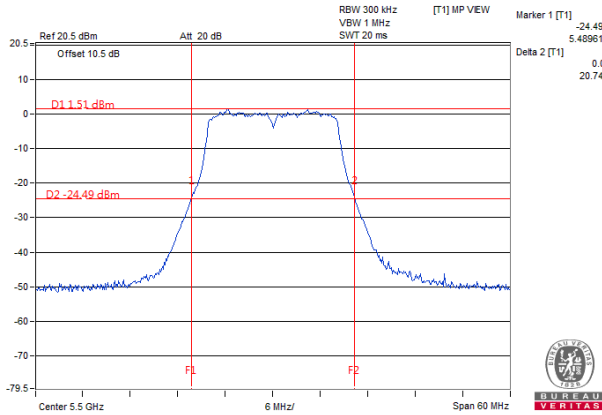
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	43.01	42.94
62	5310	43.03	42.95
102	5510	42.76	42.87
110	5550	42.67	42.77
134	5670	42.86	42.80

802.11ac (80MHz)

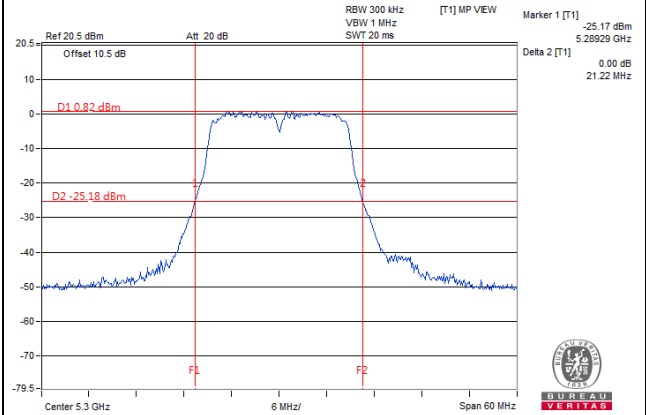
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	82.47	82.44
106	5530	82.38	82.44

Spectrum Plot of Worst Value

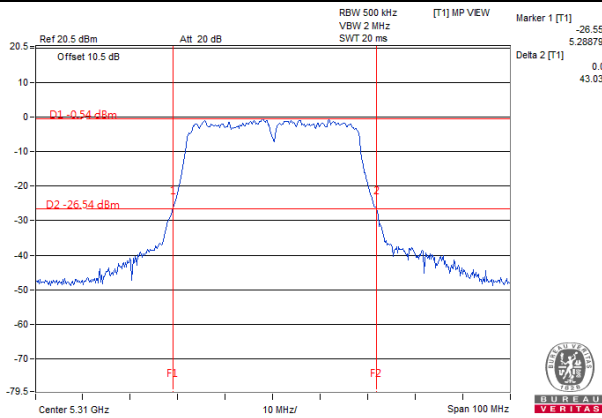
802.11a_Chain1 / CH100



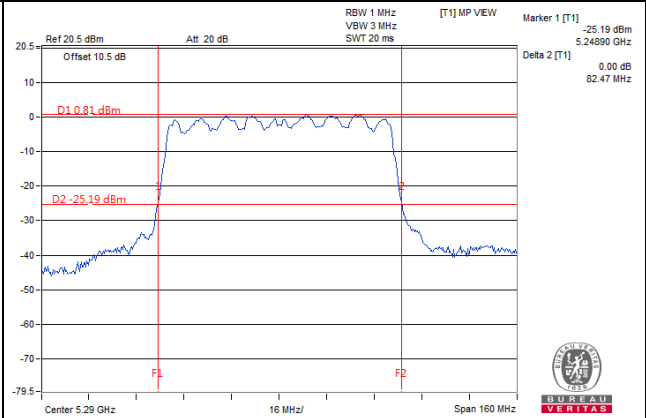
802.11n (20MHz)_Chain 0 / CH60



802.11n (40MHz)_Chain 0 / CH62



802.11ac (80MHz)_Chain 0 / CH58



EUT MAXIMUM CONDUCTED POWER

802.11a

Frequency Band (MHz)	MAX. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	46.413	16.67
5470~5725	44.338	16.47

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

802.11n (20MHz)

Frequency Band (MHz)	MAX. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	47.657	16.78
5470~5725	46.369	16.66

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

802.11n (40MHz)

Frequency Band (MHz)	MAX. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	41.602	16.19
5470~5725	40.601	16.09

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

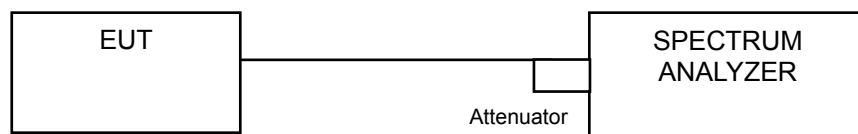
802.11ac (80MHz)

Frequency Band (MHz)	MAX. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	40.507	16.08
5470~5725	40.694	16.10

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

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Results

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
36	5180	16.56	16.56
40	5200	16.56	16.56
48	5240	16.56	16.56
52	5260	16.56	16.56
60	5300	16.56	16.68
64	5320	16.56	16.56
100	5500	16.56	16.56
116	5580	16.56	16.56
132	5660	16.68	16.56
140	5700	16.68	16.56
149	5745	17.56	17.60
157	5785	16.60	16.60
165	5825	16.60	16.60

802.11n (20MHz)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
36	5180	17.64	17.64
40	5200	17.64	17.64
48	5240	17.52	17.64
52	5260	17.64	17.64
60	5300	17.64	17.64
64	5320	17.52	17.64
100	5500	17.64	17.64
116	5580	17.64	17.64
132	5660	17.64	17.64
140	5700	17.64	17.64
149	5745	17.56	17.60
157	5785	17.60	17.60
165	5825	17.60	17.60

802.11n (40MHz)

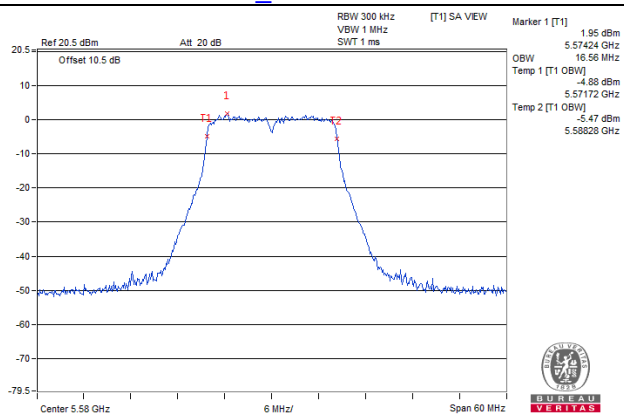
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
38	5190	36.40	36.40
46	5230	36.40	36.40
54	5270	36.40	36.40
62	5310	36.40	36.40
102	5510	36.40	36.40
110	5550	36.40	36.40
134	5670	36.40	36.40
151	5755	36.37	36.33
159	5795	36.33	36.33

802.11ac (80MHz)

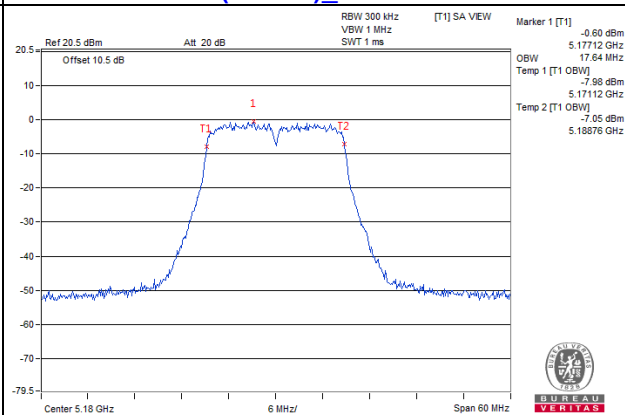
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
42	5210	75.36	75.36
58	5290	75.36	75.36
106	5530	75.36	75.36
155	5775	75.27	75.60

Spectrum Plot of Worst Value

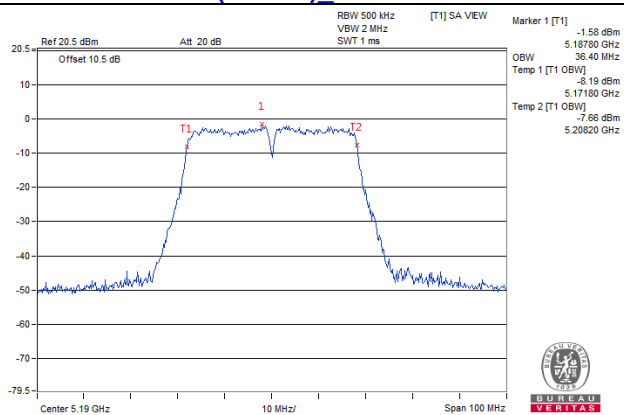
802.11a_Chain 0 / CH116



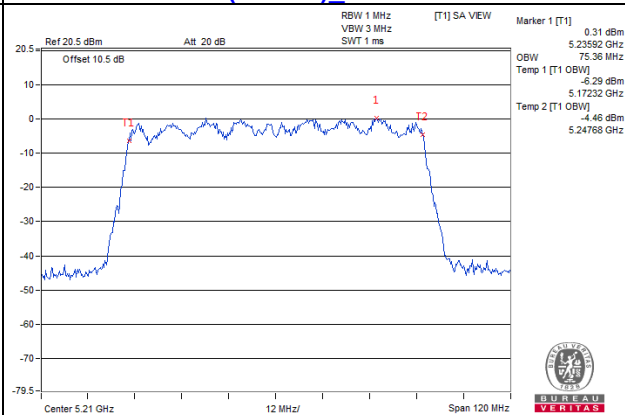
802.11n (20MHz)_Chain 0 / CH36



802.11n (40MHz)_Chain 0 / CH38



802.11ac (80MHz)_Chain 0 / CH42

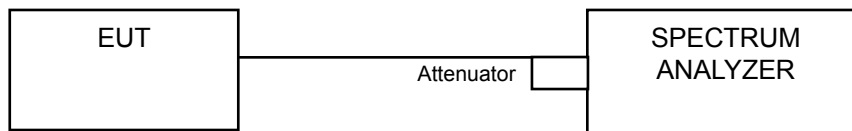


4.5 Peak Power Spectral Density Measurement

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 Procedure

For U-NII-1, U-NII-2A, U-NII-2C band:

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

For U-NII-3 band:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For U-NII-1, U-NII-2A, U-NII-2C:
802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	-4.96	-4.58	0.27	-1.48	8.77	Pass
40	5200	-4.27	-4.08	0.27	-0.89	8.77	Pass
48	5240	-4.08	-3.83	0.27	-0.67	8.77	Pass
52	5260	-3.39	-3.77	0.27	-0.29	8.77	Pass
60	5300	-2.85	-2.91	0.27	0.40	8.77	Pass
64	5320	-4.04	-4.34	0.27	-0.90	8.77	Pass
100	5500	-3.26	-3.51	0.27	-0.10	8.77	Pass
116	5580	-3.04	-2.76	0.27	0.39	8.77	Pass
132	5660	-3.42	-3.54	0.27	-0.20	8.77	Pass
140	5700	-3.01	-3.28	0.27	0.14	8.77	Pass

Note: 1.Method a) of power density measurement of KDB 662911 is using for calculating total power density.
Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2.Direction gain = $5.22\text{dBi} + 10\log(2) = 8.23\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(8.23-6) = 8.77\text{dBm}$.
3.Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	-4.51	-4.68	0.26	-1.32	8.77	Pass
40	5200	-4.84	-4.63	0.26	-1.46	8.77	Pass
48	5240	-4.03	-4.28	0.26	-0.88	8.77	Pass
52	5260	-3.76	-3.43	0.26	-0.32	8.77	Pass
60	5300	-3.81	-3.39	0.26	-0.32	8.77	Pass
64	5320	-4.28	-4.57	0.26	-1.15	8.77	Pass
100	5500	-3.18	-3.18	0.26	0.09	8.77	Pass
116	5580	-3.77	-4.08	0.26	-0.65	8.77	Pass
132	5660	-3.15	-2.96	0.26	0.22	8.77	Pass
140	5700	-3.41	-3.11	0.26	0.02	8.77	Pass

- Note:** 1.Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- 2.Direction gain = $5.22\text{dBi} + 10\log(2) = 8.23\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(8.23-6) = 8.77\text{dBm}$.
- 3.Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	-7.96	-7.57	0.51	-4.24	8.77	Pass
46	5230	-7.33	-7.62	0.51	-3.96	8.77	Pass
54	5270	-7.61	-7.77	0.51	-4.17	8.77	Pass
62	5310	-7.43	-7.54	0.51	-3.97	8.77	Pass
102	5510	-6.99	-6.80	0.51	-3.38	8.77	Pass
118	5590	-7.24	-7.01	0.51	-3.61	8.77	Pass
134	5670	-7.03	-6.96	0.51	-3.48	8.77	Pass

- Note:** 1.Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- 2.Direction gain = $5.22\text{dBi} + 10\log(2) = 8.23\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11-(8.23-6) = 8.77\text{dBm}$.
- 3.Refer to section 3.3 for duty cycle spectrum plot.

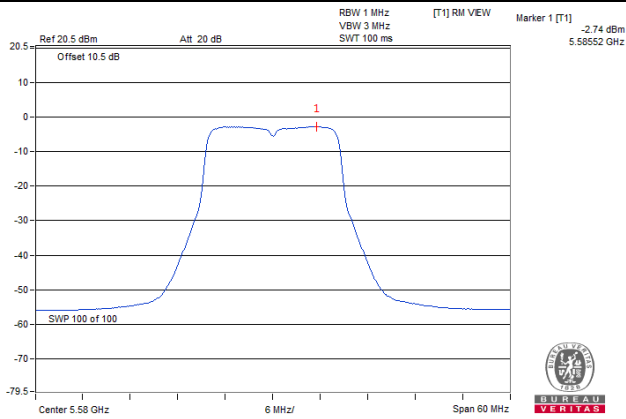
802.11ac (80MHz)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-10.13	-9.60	1.06	-5.79	8.77	Pass
58	5290	-9.43	-9.01	1.06	-5.15	8.77	Pass
106	5530	-8.84	-8.96	1.06	-4.83	8.77	Pass

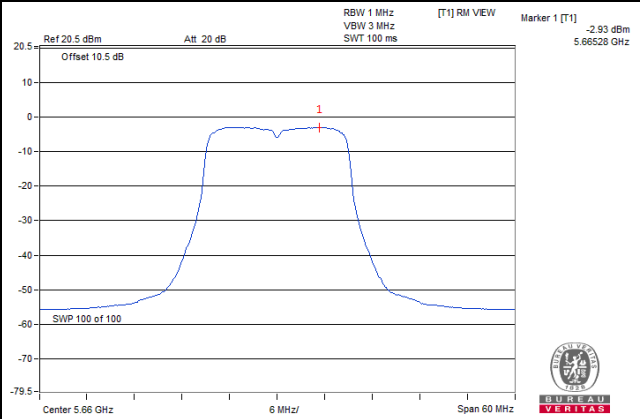
Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 2. Directional gain = $5.22\text{dBi} + 10\log(2) = 8.23\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (8.23 - 6) = 8.77\text{dBm}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

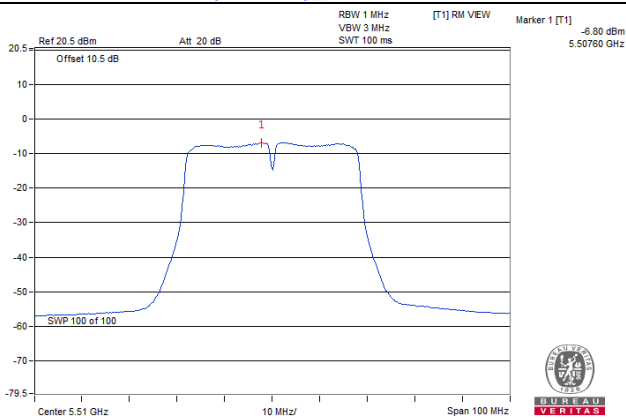
802.11a_Chain 1 / CH116



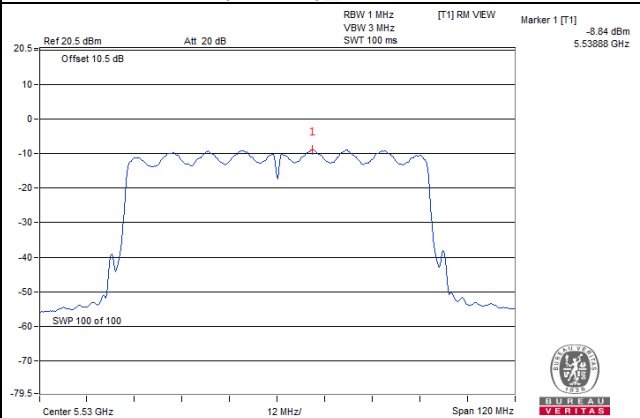
802.11n (20MHz)_Chain 1 / CH132



802.11n (40MHz)_Chain 1 / CH102



802.11ac (80MHz)_Chain 0 / CH106



For U-NII-3:

802.11a

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	3.52	3.01	0.27	6.80	27.77	Pass
	157	5785	4.87	3.01	0.27	8.15	27.77	Pass
	165	5825	4.00	3.01	0.27	7.28	27.77	Pass
1	149	5745	3.76	3.01	0.27	7.04	27.77	Pass
	157	5785	4.69	3.01	0.27	7.97	27.77	Pass
	165	5825	4.36	3.01	0.27	7.64	27.77	Pass

Note: 1. Directional gain = $5.22\text{dBi} + 10\log(2) = 8.23\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (8.23 - 6) = 27.77\text{dBm}$.

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

802.11n (20MHz)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	2.51	3.01	0.26	5.78	27.77	Pass
	157	5785	2.83	3.01	0.26	6.10	27.77	Pass
	165	5825	3.83	3.01	0.26	7.10	27.77	Pass
1	149	5745	3.07	3.01	0.26	6.34	27.77	Pass
	157	5785	3.29	3.01	0.26	6.56	27.77	Pass
	165	5825	4.09	3.01	0.26	7.36	27.77	Pass

Note: 1. Directional gain = $5.22\text{dBi} + 10\log(2) = 8.23\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (8.23 - 6) = 27.77\text{dBm}$.

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

802.11n (40MHz)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	151	5755	0.38	3.01	0.51	3.90	27.77	Pass
	159	5795	0.43	3.01	0.51	3.95	27.77	Pass
1	151	5755	0.80	3.01	0.51	4.32	27.77	Pass
	159	5795	0.80	3.01	0.51	4.32	27.77	Pass

Note: 1. Directional gain = $5.22\text{dBi} + 10\log(2) = 8.23\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (8.23 - 6) = 27.77\text{dBm}$.
2. Refer to section 3.3 for duty cycle spectrum plot.

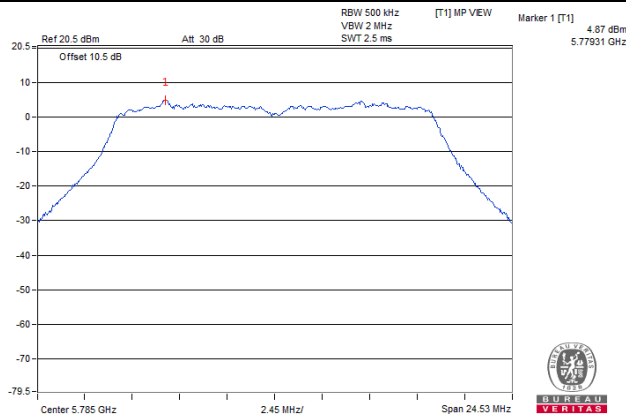
802.11ac (80MHz)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	155	5775	-1.32	3.01	1.06	2.75	27.77	Pass
1	155	5775	-0.94	3.01	1.06	3.13	27.77	Pass

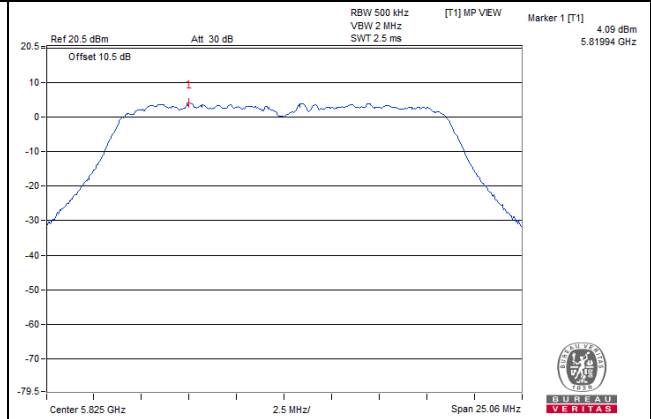
Note: 1. Directional gain = $5.22\text{dBi} + 10\log(2) = 8.23\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (8.23 - 6) = 27.77\text{dBm}$.
2. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

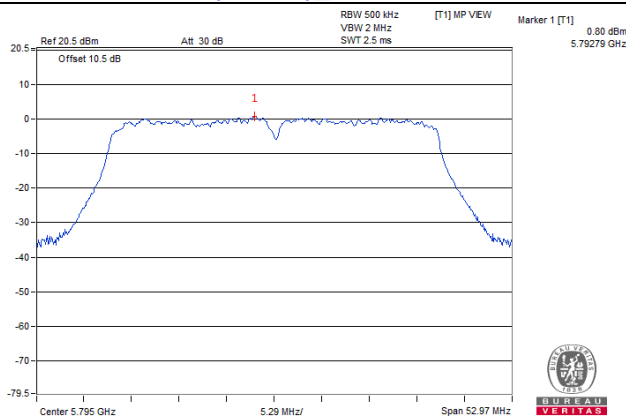
802.11a_Chain 0 / CH157



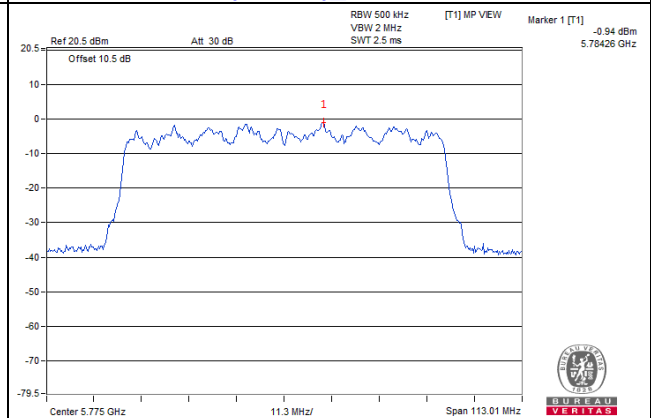
802.11n (20MHz)_Chain 1 / CH165



802.11n (40MHz)_Chain 1 / CH151



802.11ac (80MHz)_Chain 1 / CH155

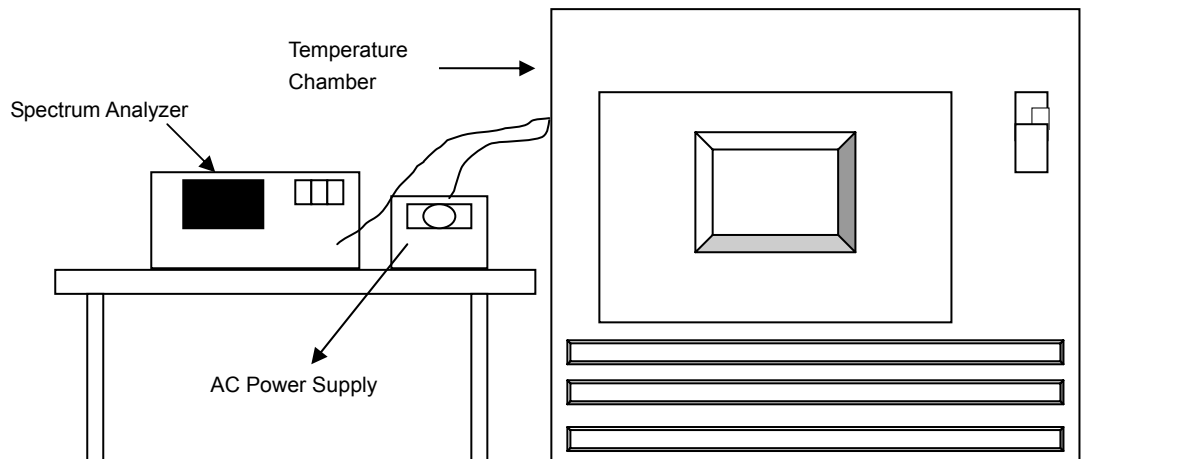


4.6 Frequency Stability Measurement

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: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
40	120	5180.04345	Pass	5180.043703	Pass	5180.043829	Pass	5180.043632	Pass
30	120	5180.04208	Pass	5180.041873	Pass	5180.042061	Pass	5180.042285	Pass
20	120	5180.043256	Pass	5180.043315	Pass	5180.043121	Pass	5180.043169	Pass
10	120	5180.043221	Pass	5180.04333	Pass	5180.043289	Pass	5180.043078	Pass
0	120	5180.042541	Pass	5180.042745	Pass	5180.042734	Pass	5180.042579	Pass

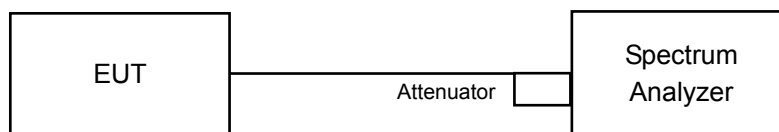
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5180.042597	Pass	5180.042389	Pass	5180.042340	Pass	5180.042597	Pass
	120	5180.043256	Pass	5180.043315	Pass	5180.043121	Pass	5180.043256	Pass
	102	5180.043113	Pass	5180.043203	Pass	5180.042966	Pass	5180.043113	Pass

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

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.70	16.70	0.5	PASS
157	5785	16.35	16.35	0.5	PASS
165	5825	16.10	16.10	0.5	PASS

802.11n (20MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.68	16.67	0.5	PASS
157	5785	16.67	16.68	0.5	PASS
165	5825	16.30	16.71	0.5	PASS

802.11n (40MHz)

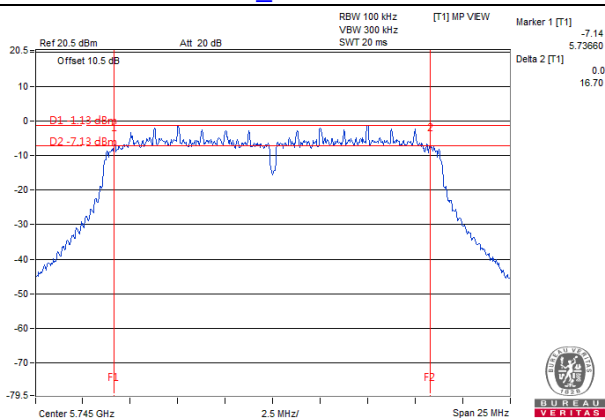
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	35.30	35.29	0.5	PASS
159	5795	35.28	35.31	0.5	PASS

802.11ac (80MHz)

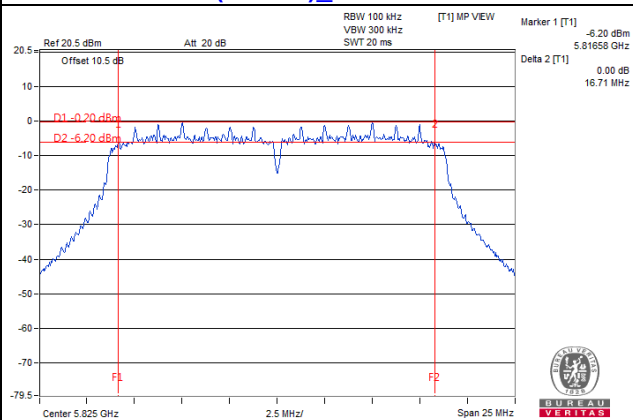
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	75.29	75.34	0.5	PASS

Spectrum Plot of Worst Value

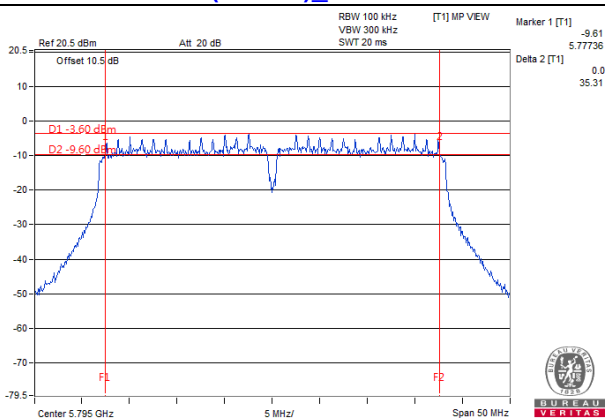
802.11a_Chain 0 / CH149



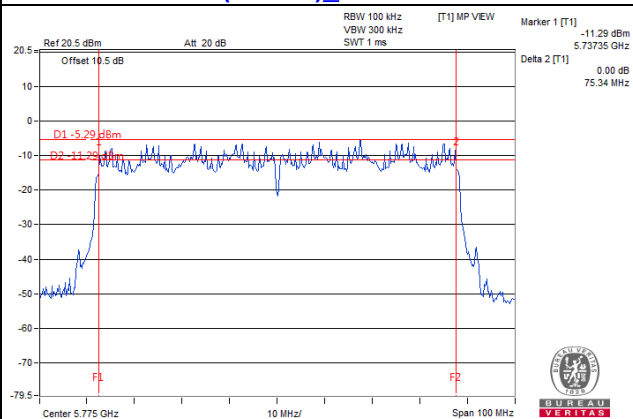
802.11n (20MHz)_Chain 1 / CH165



802.11n (40MHz)_Chain 1 / CH159



802.11ac (80MHz)_Chain 1 / CH155

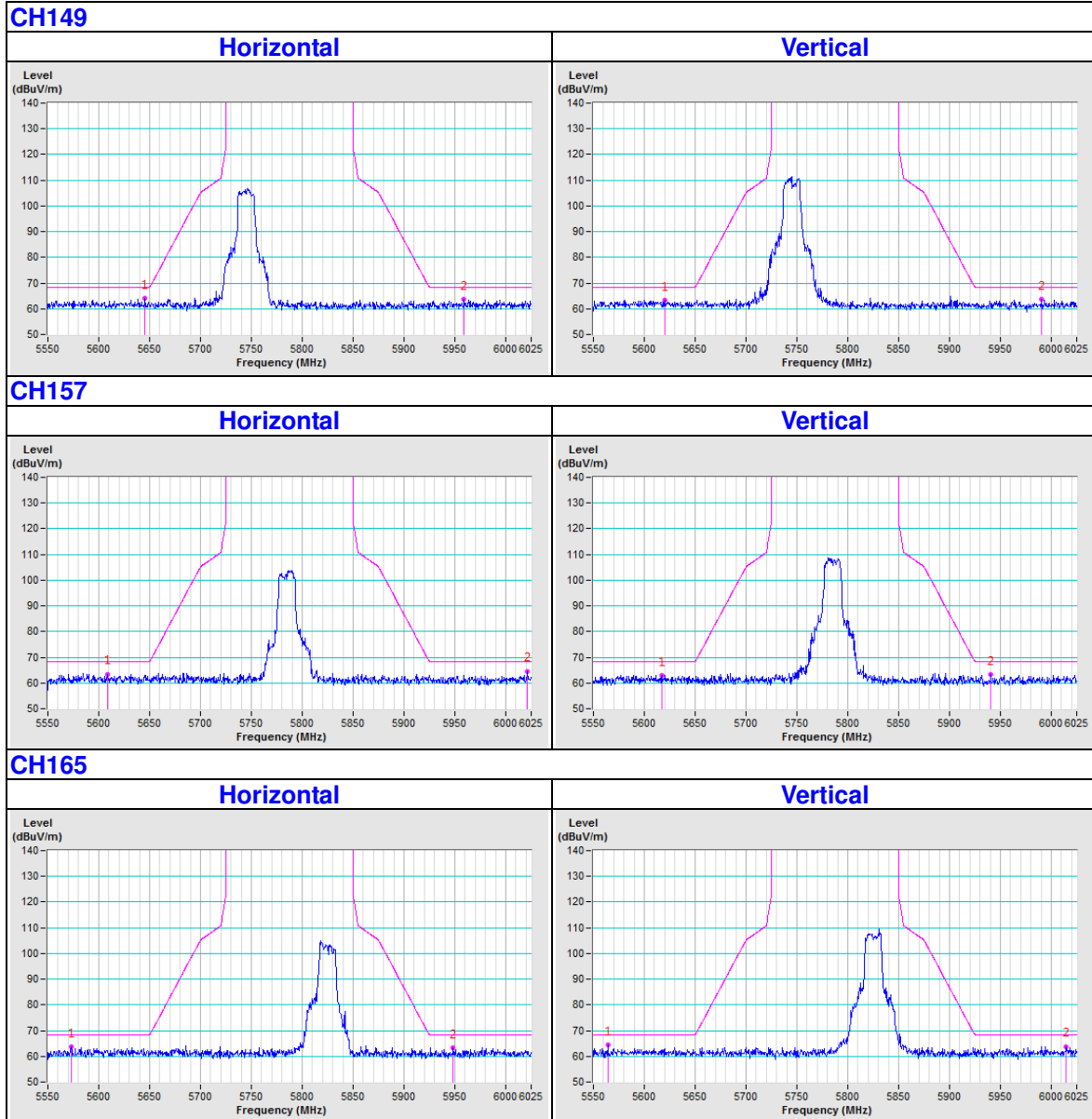


5 Pictures of Test Arrangements

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

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

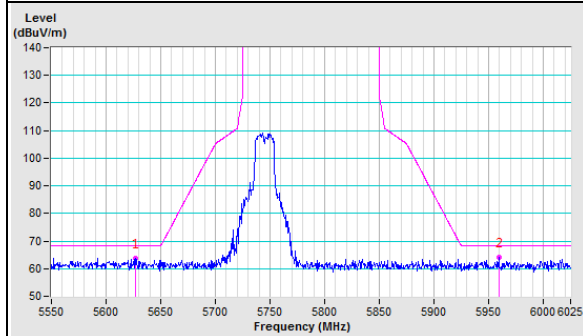
802.11a



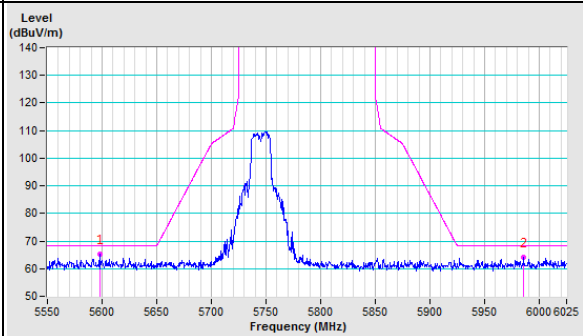
802.11n (20MHz)

CH149

Horizontal

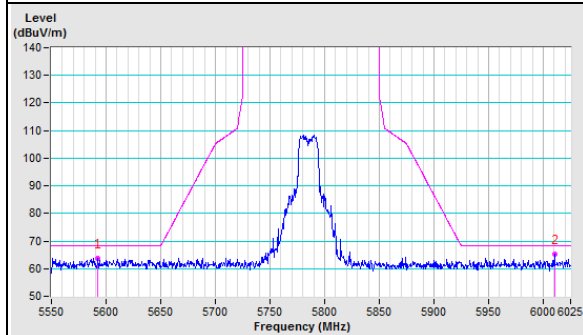


Vertical

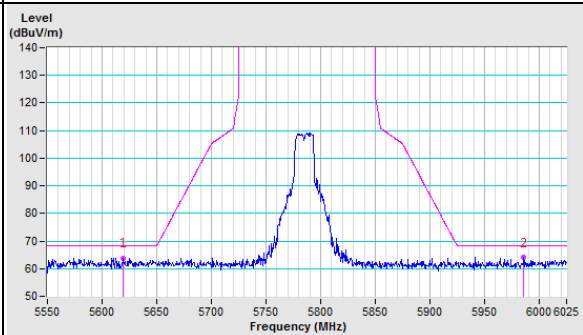


CH157

Horizontal

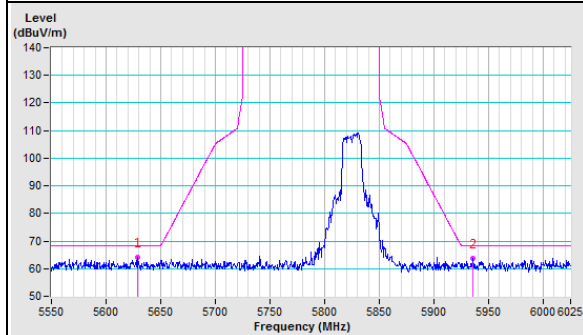


Vertical

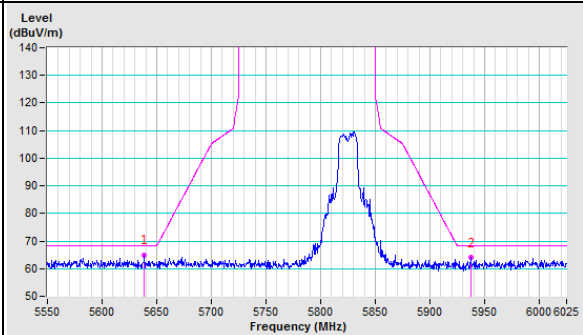


CH165

Horizontal



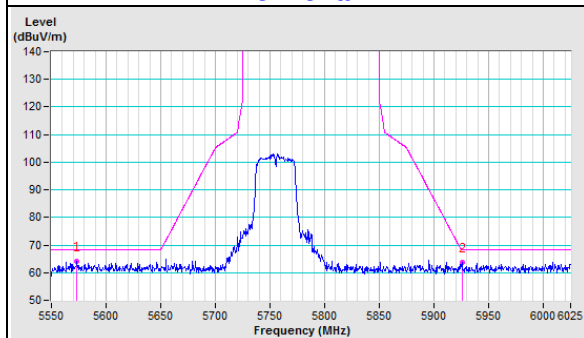
Vertical



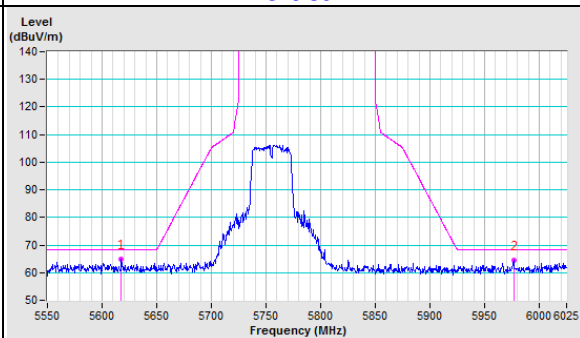
802.11n (40MHz)

CH151

Horizontal

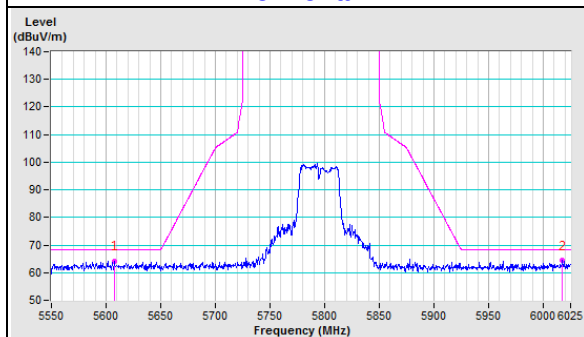


Vertical

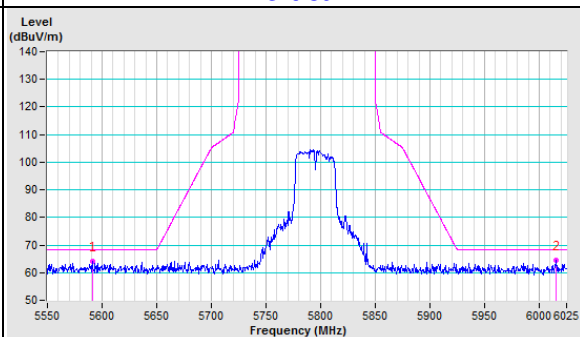


CH159

Horizontal



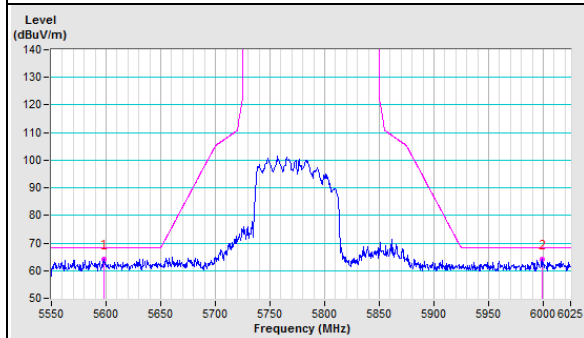
Vertical



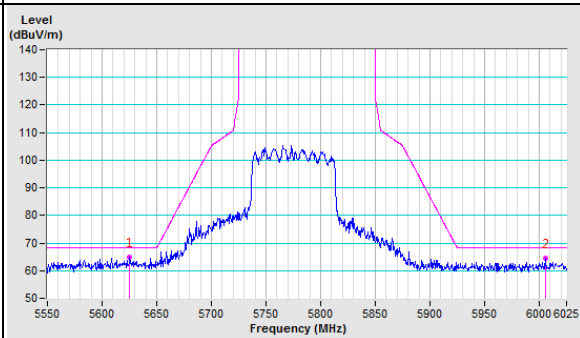
802.11ac (80MHz)

CH155

Horizontal



Vertical



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

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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