FCC Test Report

Report No.:	RF160805C22-1
FCC ID:	CNFKWBH1
Test Model:	KWBH1
Received Date:	Aug. 11, 2016
Test Date:	Sep. 02 ~ Sep. 10, 2016
Issued Date:	Sep. 13, 2016
Applicant:	GoPro, Inc.
Address:	3000 Clearview Way, San Mateo, CA94402, United States
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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Release Control Record

Issue No.	Description	Date Issued
RF160805C22-1	Original release.	Sep. 13, 2016

1 Certificate of Conformity

Product:	Remote Control
Brand:	GoPro
Test Model:	KWBH1
Sample Status:	Engineering sample
Applicant:	GoPro, Inc.
Test Date:	Sep. 02 ~ Sep. 10, 2016
Standards:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10:2013

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

Prepared by : _____ , **Date:** Sep. 13, 2016

Pettie Chen / Senior Specialist

Approved by : _____ , **Date:** Sep. 13, 2016

Ken Liu / Senior Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (SECTION 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -14.87dB at 0.43924MHz.
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 -1.1dB at 5150.00, 5725.00MHz.
15.407(a) (1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Remote Control
Brand	GoPro
Test Model	KWBH1
Status of EUT	Engineering sample
Power Supply Rating	5.0Vdc from adapter 3.6Vdc from battery
Modulation Type	64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 300Mbps
Operating Frequency	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz & 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 5500 ~ 5700MHz: 11 for 802.11a, 802.11n (HT20) 5 for 802.11n (HT40) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40)
Output Power	5180 ~ 5240MHz: 50.933mW 5260 ~ 5320MHz: 60.674mW 5500 ~ 5700MHz: 49.091mW 5745 ~ 5825MHz: 55.976mW
Antenna Type	Refer to note 3
Antenna Connector	Refer to note 3
Accessory Device	Adapter (Refer to note 4)
Data Cable Supplied	NA

Note:

1. The EUT provides 1 completed transmitter and 1 receiver.

Modulation Mode	TX Function	Remark
802.11a	1TX	Radio 2 (Sidecar)
802.11n (HT20)	1TX	
802.11n (HT40)	1TX	

2. This EUT has two SKU for sale.

Brand	Model	SKU	Difference
GoPro	KWBH1	SKU A	Main test SKU
		SKU B	Antenna circuits and software of the RF portion of SKU B is identical with SKU A. The differences are merely found in the LCM shielding changed to Aluminum material also slightly modify the outline of grounding tab which have no effect on its RF characteristics, they are just for marketing differentiate purpose. So, we chose SKU A as representative to do the final test. And we do the spot check test for SKU B.

3. The EUT with follow antennas gain is listed as table below.

Ant.	Type	Connector	Gain(dBi)					Remark
			2412MHz	2425MHz	2437MHz	2450MHz	2462MHz	
1	Patch	i-pex(MHF)	2.07	3.14	3.38	3.56	3.72	Radio 1
2	Patch	i-pex(MHF)	2.94	3.49	3.53	3.61	3.31	(Hi Power)
Ant.	Type	Connector	Gain(dBi)					Remark
			2412MHz	2425MHz	2437MHz	2450MHz	2462MHz	
3	PCB printed	i-pex(MHF)	2.38	-	2.02	2.20	2.64	Radio 2 (Sidecar)
			5200MHz	5400MHz	5500MHz	5600MHz	5700MHz	
			3.87	3.63	3.26	3.05	3.97	
			5745MHz	5800MHz	5850MHz			
			3.31	3.03	3.30			

4. The EUT consumes power from the following adapter and Battery.

Adapter	
Brand	GoPro
Model	PBM100W-168-R
Input Power	90-240Vac, 50-60Hz, 1.5A
Output Power	Output 1: 16.8Vdc, 5A (For radio control aircraft) Output 2: 5Vdc, 3A (For remote control)
Power Line	0.2m cable with one core

Battery	
Brand	GoPro
Model	601-11232-000
Power Rating	DC 3.6V, 4150 mAh, 15Wh

5. EUT Category: The EUT could be outdoor product & indoor product.

Outdoor Product							
Radio			2.4GHz	5G B1	5G B2	5G B3	5G B4
1	Hi Power WiFi		V	-	-	-	-
2	Sidecar	AP mode (HT20)	-	V	-	-	-
		Client mode (HT20 & HT40)	V	V	V	V	V

Indoor Product							
Radio			2.4GHz	5G B1	5G B2	5G B3	5G B4
1	Hi Power WiFi		V	-	-	-	-
2	Sidecar	AP mode (HT20)	-	V	-	-	V
		Client mode (HT20 & HT40)	V	V	V	V	V

*The power for outdoor & indoor product is the same.

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

FOR 5260 ~ 5320MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

FOR 5500 ~ 5700MHz:

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

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

5 channels are provided for 802.11n (HT40):

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

FOR 5745 ~ 5825MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

Where **RE≥1G:** Radiated Emission above 1GHz & Bandedge Measurement **RE<1G:** Radiated Emission below 1GHz

PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

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

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 (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
-	802.11n (HT40)		54 to 62	54, 62	OFDM	BPSK	13.5
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
-	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5

Radiated Emission Test (Below 1GHz):

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	52	OFDM	BPSK	6.0
	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
	802.11a	5500-5700	100 to 144		OFDM	BPSK	6.0
	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

Power Line Conducted Emission Test:

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	52	OFDM	BPSK	6.0
	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
	802.11a	5500-5700	100 to 144		OFDM	BPSK	6.0
	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

Antenna Port Conducted Measurement:

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

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

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

EUT CONFIGURE MODE	MODE	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (HT40)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
-	802.11n (HT40)		54 to 62	54, 62	OFDM	BPSK	13.5
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
-	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11n (HT40)		151 to 159	151, 159	OFDM	BPSK	13.5

Test Condition:

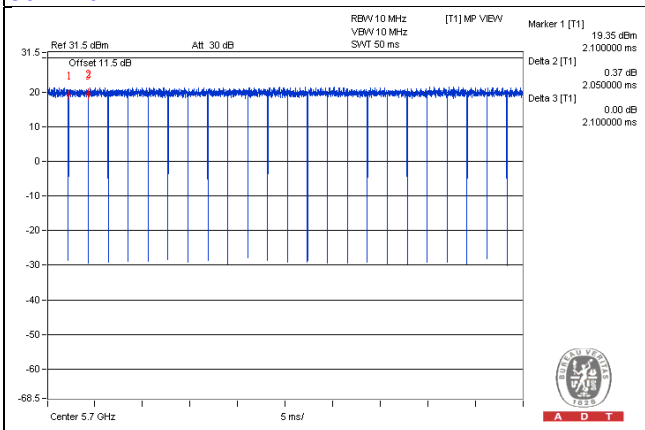
APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 66%RH	120Vac, 60Hz	Matthew Yang
RE<1G	25deg. C, 66%RH	120Vac, 60Hz	Matthew Yang
PLC	25deg. C, 70%RH	120Vac, 60Hz	Matthew Yang
APCM	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui

3.3 Duty Cycle of Test Signal

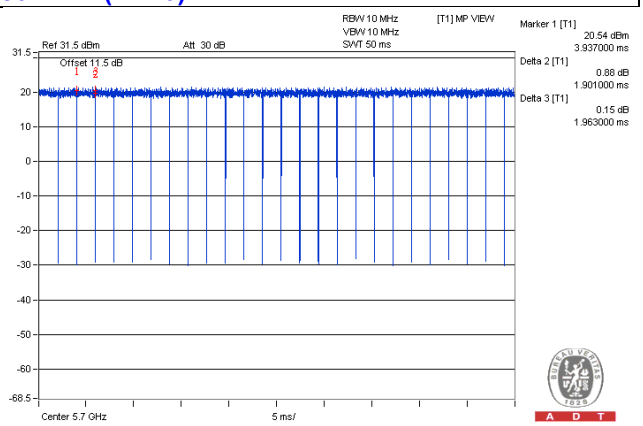
Duty cycle of test signal is < 98%, duty factor is required.

802.11a: Duty cycle = 2.05/2.10 = 0.976, Duty factor = 10 * log(1/0.976) = 0.10
802.11n (HT20): Duty cycle = 1.901/1.963 = 0.969, Duty factor = 10 * log(1/0.969) = 0.14
802.11n (HT40): Duty cycle = 0.912/1.037 = 0.879, Duty factor = 10 * log(1/0.879) = 0.56

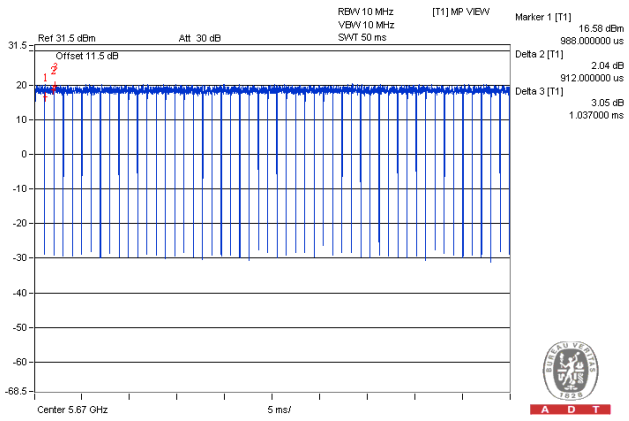
802.11a



802.11n (HT20)



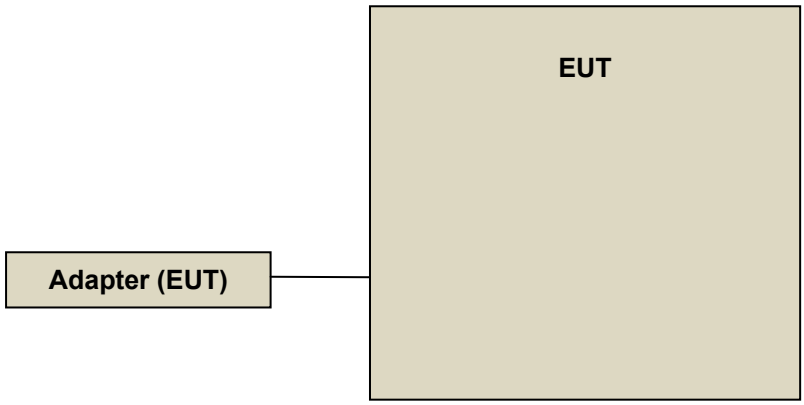
802.11n (HT40)



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedures 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. Other emissions shall be at least 20dB below the highest level of the desired power:

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

NOTE:

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

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Applicable To	Limit	
789033 D02 General UNII Test Procedure New Rules v01r03	FIELD STRENGTH at 3m	
	PK:74 (dBμV/m)	AV:54 (dBμV/m)
Applicable To	EIRP Limit	Equivalent Field Strength at 3m
15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2 (dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)(i)	PK: -27 (dBm/MHz) *1 PK: 10 (dBm/MHz) *2 PK: 15.6 (dBm/MHz) *3 PK: 27 (dBm/MHz) *4	PK: 68.2 (dBμV/m) *1 PK: 105.2 (dBμV/m) *2 PK: 110.8 (dBμV/m) *3 PK: 122.2 (dBμV/m) *4
15.407(b)(4)(ii)	FIELD STRENGTH at 3m / § 15.247(d),	
	PK:74 (dBμV/m)	AV:54 (dBμV/m)

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

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

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

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

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

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 12, 2015	Oct. 11, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 16, 2016	Aug. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Jan. 08, 2016	Jan. 07, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Jan. 18, 2016	Jan. 17, 2017
Preamplifier Agilent	8449B	3008A01960	Aug. 09, 2016	Aug. 08, 2017
Preamplifier Agilent	8447D	2944A10631	Aug. 09, 2016	Aug. 08, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Aug. 09, 2016	Aug. 08, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Aug. 09, 2016	Aug. 08, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2015	Oct. 17, 2016
High Speed Peak Power Meter	ML2495A	0824012	Aug. 11, 2016	Aug. 10, 2017
Power Sensor	MA2411B	0738171	Aug. 11, 2016	Aug. 10, 2017

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 4.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 460141.
5. The IC Site Registration No. is IC7450F-4.

4.1.3 Test Procedures

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

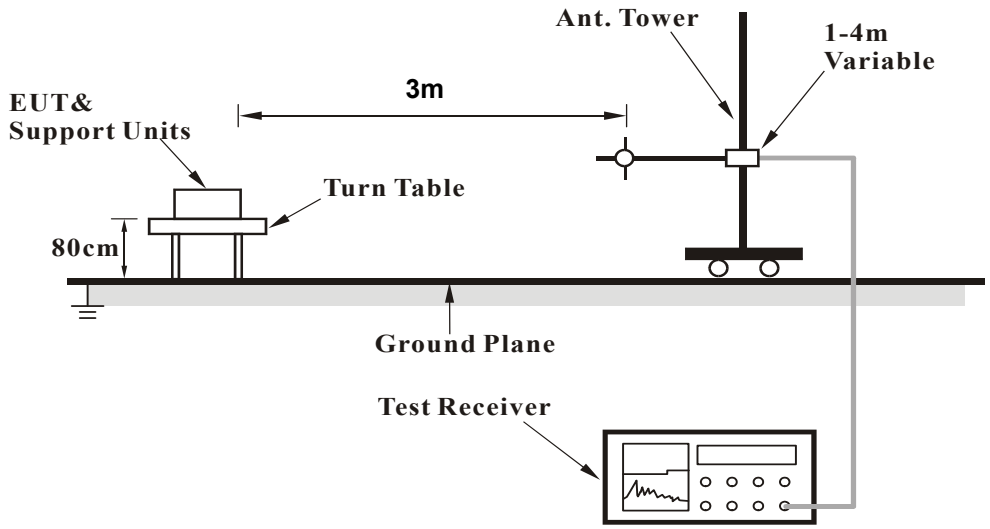
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

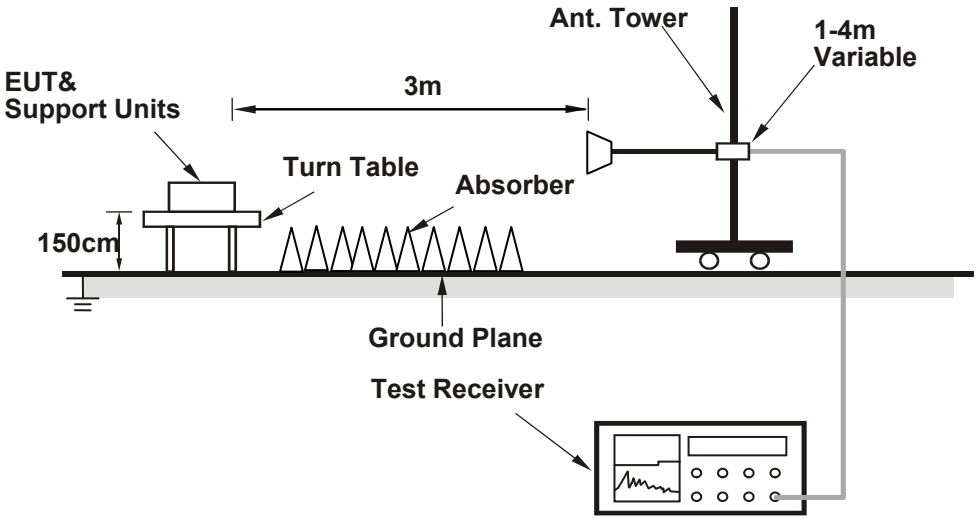
No deviation.

4.1.5 Test Setup

<Frequency Range 30MHz ~ 1GHz>



<Frequency Range above 1GHz>



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

4.1.6 EUT Operating Conditions

Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.5 PK	74.0	-4.5	3.22 H	247	29.4	40.1
2	5150.00	52.7 AV	54.0	-1.3	3.22 H	247	12.6	40.1
3	*5180.00	111.5 PK			3.22 H	247	71.4	40.1
4	*5180.00	101.0 AV			3.22 H	247	60.9	40.1
5	#10360.00	51.2 PK	74.0	-22.8	1.60 H	201	33.5	17.7
6	#10360.00	39.0 AV	54.0	-15.0	1.60 H	201	21.3	17.7
7	15540.00	53.6 PK	74.0	-20.4	1.72 H	251	33.7	19.9
8	15540.00	41.1 AV	54.0	-12.9	1.72 H	251	21.2	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	5150.00	64.8 PK	74.0	-9.2	3.92 V	268	24.7	40.1
2	5150.00	48.6 AV	54.0	-5.4	3.92 V	268	8.5	40.1
3	*5180.00	106.3 PK			2.77 V	326	66.2	40.1
4	*5180.00	95.7 AV			2.77 V	326	55.6	40.1
5	#10360.00	51.4 PK	74.0	-22.6	1.92 V	281	33.7	17.7
6	#10360.00	39.2 AV	54.0	-14.8	1.92 V	281	21.5	17.7
7	15540.00	53.7 PK	74.0	-20.3	1.50 V	275	33.8	19.9
8	15540.00	41.2 AV	54.0	-12.8	1.50 V	275	21.3	19.9

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	111.7 PK			3.40 H	247	71.6	40.1
2	*5200.00	101.0 AV			3.40 H	247	60.9	40.1
3	5356.00	56.4 PK	74.0	-17.6	3.41 H	239	50.2	6.2
4	5356.00	49.0 AV	54.0	-5.0	3.41 H	239	42.8	6.2
5	#10400.00	51.8 PK	74.0	-22.2	1.55 H	198	33.8	18.0
6	#10400.00	39.4 AV	54.0	-14.6	1.55 H	198	21.4	18.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	106.9 PK			2.42 V	300	66.8	40.1
2	*5200.00	96.3 AV			2.42 V	300	56.2	40.1
3	5356.00	55.4 PK	74.0	-18.6	2.42 V	300	49.2	6.2
4	5356.00	47.6 AV	54.0	-6.4	2.42 V	300	41.4	6.2
5	#10400.00	51.0 PK	74.0	-23.0	1.88 V	275	33.0	18.0
6	#10400.00	38.7 AV	54.0	-15.3	1.88 V	275	20.7	18.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	110.6 PK			3.41 H	240	70.4	40.2
2	*5240.00	99.8 AV			3.41 H	240	59.6	40.2
3	#10480.00	51.4 PK	74.0	-22.6	1.45 H	180	33.2	18.2
4	#10480.00	39.5 AV	54.0	-14.5	1.45 H	180	21.3	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	106.9 PK			2.65 V	310	66.7	40.2
2	*5240.00	96.4 AV			2.65 V	310	56.2	40.2
3	#10480.00	51.6 PK	74.0	-22.4	1.80 V	275	33.4	18.2
4	#10480.00	39.4 AV	54.0	-14.6	1.80 V	275	21.2	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 52	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	111.5 PK			3.39 H	239	71.3	40.2
2	*5260.00	100.9 AV			3.39 H	239	60.7	40.2
3	#10520.00	52.6 PK	74.0	-21.4	1.50 H	195	34.3	18.3
4	#10520.00	39.8 AV	54.0	-14.2	1.50 H	195	21.5	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	*5260.00	107.7 PK			2.54 V	300	101.6	6.1
2	*5260.00	96.9 AV			2.54 V	300	90.8	6.1
3	#10520.00	51.8 PK	74.0	-22.2	1.88 V	300	33.5	18.3
4	#10520.00	40.0 AV	54.0	-14.0	1.88 V	300	21.7	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 60	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	110.3 PK			3.57 H	231	70.1	40.2
2	*5300.00	99.7 AV			3.57 H	231	59.5	40.2
3	10600.00	52.6 PK	74.0	-21.4	1.45 H	180	33.9	18.7
4	10600.00	40.0 AV	54.0	-14.0	1.45 H	180	21.3	18.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	105.5 PK			2.49 V	310	65.3	40.2
2	*5300.00	95.0 AV			2.49 V	310	54.8	40.2
3	10600.00	51.0 PK	74.0	-23.0	1.50 V	300	32.3	18.7
4	10600.00	38.6 AV	54.0	-15.4	1.50 V	300	19.9	18.7

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	110.4 PK			3.10 H	248	70.2	40.2
2	*5320.00	99.6 AV			3.10 H	248	59.4	40.2
3	5350.00	65.6 PK	74.0	-8.4	3.10 H	248	59.4	6.2
4	5350.00	50.5 AV	54.0	-3.5	3.10 H	248	44.3	6.2
5	10640.00	52.1 PK	74.0	-21.9	1.60 H	240	33.1	19.0
6	10640.00	39.8 AV	54.0	-14.2	1.60 H	240	20.8	19.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.0 PK			2.45 V	310	65.8	40.2
2	*5320.00	95.4 AV			2.45 V	310	55.2	40.2
3	5350.00	61.7 PK	74.0	-12.3	2.45 V	310	55.5	6.2
4	5350.00	46.7 AV	54.0	-7.3	2.45 V	310	40.5	6.2
5	10640.00	51.2 PK	74.0	-22.8	1.55 V	210	32.2	19.0
6	10640.00	39.2 AV	54.0	-14.8	1.55 V	210	20.2	19.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	68.4 PK	74.0	-5.6	3.33 H	229	62.1	6.3
2	5460.00	51.2 AV	54.0	-2.8	3.33 H	229	44.9	6.3
3	#5470.00	70.5 PK	74.0	-3.5	3.33 H	229	64.2	6.3
4	#5470.00	52.8 AV	54.0	-1.2	3.33 H	229	46.5	6.3
5	*5500.00	110.4 PK			3.34 H	230	70.0	40.4
6	*5500.00	99.7 AV			3.34 H	230	59.3	40.4
7	11000.00	51.9 PK	74.0	-22.1	1.58 H	180	32.4	19.5
8	11000.00	39.6 AV	54.0	-14.4	1.58 H	180	20.1	19.5
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	5460.00	64.9 PK	74.0	-9.1	2.70 V	300	58.6	6.3
2	5460.00	45.8 AV	54.0	-8.2	2.70 V	300	39.5	6.3
3	#5470.00	66.7 PK	74.0	-7.3	2.70 V	300	60.4	6.3
4	#5470.00	47.2 AV	54.0	-6.8	2.70 V	300	40.9	6.3
5	*5500.00	105.8 PK			2.70 V	310	65.4	40.4
6	*5500.00	94.9 AV			2.70 V	310	54.5	40.4
7	11000.00	50.9 PK	74.0	-23.1	1.80 V	280	31.4	19.5
8	11000.00	38.6 AV	54.0	-15.4	1.80 V	280	19.1	19.5

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5407.00	57.0 PK	74.0	-17.0	3.60 H	233	50.8	6.2
2	5407.00	48.6 AV	54.0	-5.4	3.60 H	233	42.4	6.2
3	*5580.00	110.2 PK			3.56 H	224	69.7	40.5
4	*5580.00	99.3 AV			3.56 H	224	58.8	40.5
5	11160.00	51.4 PK	74.0	-22.6	1.44 H	185	31.4	20.0
6	11160.00	39.3 AV	54.0	-14.7	1.44 H	185	19.3	20.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5407.00	52.9 PK	74.0	-21.1	2.50 V	295	46.7	6.2
2	5407.00	44.2 AV	54.0	-9.8	2.50 V	295	38.0	6.2
3	*5580.00	105.4 PK			2.65 V	310	64.9	40.5
4	*5580.00	94.3 AV			2.65 V	310	53.8	40.5
5	11160.00	51.3 PK	74.0	-22.7	1.75 V	265	31.3	20.0
6	11160.00	38.4 AV	54.0	-15.6	1.75 V	265	18.4	20.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	106.6 PK			3.81 H	189	65.7	40.9
2	*5700.00	95.8 AV			3.81 H	189	54.9	40.9
3	#5725.00	67.0 PK	74.0	-7.0	3.65 H	233	60.3	6.7
4	#5725.00	52.5 AV	54.0	-1.5	3.65 H	233	45.8	6.7
5	11400.00	51.6 PK	74.0	-22.4	1.45 H	195	31.0	20.6
6	11400.00	39.5 AV	54.0	-14.5	1.45 H	195	18.9	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	*5700.00	102.2 PK			3.56 V	224	61.3	40.9
2	*5700.00	94.5 AV			3.56 V	224	53.6	40.9
3	#5725.00	63.2 PK	74.0	-10.8	3.50 V	220	56.5	6.7
4	#5725.00	47.9 AV	54.0	-6.1	3.50 V	220	41.2	6.7
5	11400.00	49.6 PK	74.0	-24.4	1.75 V	273	29.0	20.6
6	11400.00	37.9 AV	54.0	-16.1	1.75 V	273	17.3	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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5602.40	58.9 PK	68.2	-9.3	1.18 H	170	52.6	6.3
2	*5745.00	105.2 PK			1.20 H	168	64.3	40.9
3	*5745.00	94.9 AV			1.20 H	168	54.0	40.9
4	#5980.00	59.1 PK	68.2	-9.1	1.18 H	170	51.9	7.2
5	11490.00	62.0 PK	74.0	-12.0	1.00 H	79	41.5	20.5
6	11490.00	48.7 AV	54.0	-5.3	1.00 H	79	28.2	20.5
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	#5614.40	59.1 PK	68.2	-9.1	1.40 V	141	52.7	6.4
2	*5745.00	104.9 PK			1.43 V	138	64.0	40.9
3	*5745.00	94.6 AV			1.43 V	138	53.7	40.9
4	#5972.80	60.1 PK	68.2	-8.1	1.40 V	141	52.9	7.2
5	11490.00	61.5 PK	74.0	-12.5	1.06 V	211	41.0	20.5
6	11490.00	48.5 AV	54.0	-5.5	1.06 V	211	28.0	20.5

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5620.00	58.2 PK	68.2	-10.0	1.40 H	165	51.8	6.4
2	*5785.00	107.3 PK			1.43 H	170	66.3	41.0
3	*5785.00	96.3 AV			1.43 H	170	55.3	41.0
4	#5976.80	59.6 PK	68.2	-8.6	1.40 H	165	52.4	7.2
5	11570.00	61.9 PK	74.0	-12.1	1.00 H	80	41.6	20.3
6	11570.00	48.9 AV	54.0	-5.1	1.00 H	80	28.6	20.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5623.20	58.1 PK	68.2	-10.1	1.63 V	140	51.6	6.5
2	*5785.00	107.1 PK			1.60 V	139	66.1	41.0
3	*5785.00	96.0 AV			1.60 V	139	55.0	41.0
4	#5971.20	58.4 PK	68.2	-9.8	1.63 V	140	51.2	7.2
5	11570.00	61.6 PK	74.0	-12.4	1.10 V	312	41.3	20.3
6	11570.00	48.6 AV	54.0	-5.4	1.10 V	312	28.3	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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5626.40	58.4 PK	68.2	-9.8	1.20 H	166	51.9	6.5
2	*5825.00	106.6 PK			1.22 H	169	65.4	41.2
3	*5825.00	95.2 AV			1.22 H	169	54.0	41.2
4	#5960.80	58.8 PK	68.2	-9.4	1.20 H	166	51.6	7.2
5	11650.00	61.4 PK	74.0	-12.6	1.00 H	71	41.5	19.9
6	11650.00	48.3 AV	54.0	-5.7	1.00 H	71	28.4	19.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5632.80	58.6 PK	68.2	-9.6	1.41 V	135	52.1	6.5
2	*5825.00	106.2 PK			1.42 V	139	65.0	41.2
3	*5825.00	94.9 AV			1.42 V	139	53.7	41.2
4	#5926.40	58.5 PK	68.2	-9.7	1.41 V	135	51.4	7.1
5	11650.00	61.0 PK	74.0	-13.0	1.09 V	299	41.1	19.9
6	11650.00	48.0 AV	54.0	-6.0	1.09 V	299	28.1	19.9

REMARKS:

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

802.11n (HT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.7 PK	74.0	-4.3	3.25 H	248	29.6	40.1
2	5150.00	52.5 AV	54.0	-1.5	3.25 H	248	12.4	40.1
3	*5180.00	110.7 PK			3.25 H	248	70.6	40.1
4	*5180.00	100.0 AV			3.25 H	248	59.9	40.1
5	#10360.00	51.8 PK	74.0	-22.2	1.56 H	198	34.1	17.7
6	#10360.00	39.4 AV	54.0	-14.6	1.56 H	198	21.7	17.7
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	65.2 PK	74.0	-8.8	3.25 V	240	59.2	6.0
2	5150.00	47.6 AV	54.0	-6.4	3.25 V	240	41.6	6.0
3	*5180.00	105.8 PK			3.25 V	248	65.7	40.1
4	*5180.00	95.6 AV			3.25 V	248	55.5	40.1
5	#10360.00	51.2 PK	74.0	-22.8	3.00 V	340	33.5	17.7
6	#10360.00	38.9 AV	54.0	-15.1	3.00 V	340	21.2	17.7

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	112.1 PK			3.22 H	247	72.0	40.1
2	*5200.00	101.2 AV			3.22 H	247	61.1	40.1
3	5356.00	56.8 PK	74.0	-17.2	3.36 H	228	50.6	6.2
4	5356.00	49.4 AV	54.0	-4.6	3.36 H	228	43.2	6.2
5	#10400.00	52.6 PK	74.0	-21.4	1.75 H	210	34.6	18.0
6	#10400.00	40.2 AV	54.0	-13.8	1.75 H	210	22.2	18.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	107.2 PK			3.00 V	289	67.1	40.1
2	*5200.00	96.5 AV			3.00 V	289	56.4	40.1
3	5356.00	52.1 PK	74.0	-21.9	3.00 V	295	45.9	6.2
4	5356.00	44.6 AV	54.0	-9.4	3.00 V	295	38.4	6.2
5	#10400.00	51.6 PK	74.0	-22.4	2.00 V	265	33.6	18.0
6	#10400.00	39.2 AV	54.0	-14.8	2.00 V	265	21.2	18.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	110.7 PK			3.18 H	249	70.5	40.2
2	*5240.00	99.8 AV			3.18 H	249	59.6	40.2
3	5356.00	57.4 PK	74.0	-16.6	3.31 H	224	51.2	6.2
4	5356.00	50.0 AV	54.0	-4.0	3.31 H	224	43.8	6.2
5	#10480.00	51.6 PK	74.0	-22.4	1.75 H	199	33.4	18.2
6	#10480.00	39.7 AV	54.0	-14.3	1.75 H	199	21.5	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	105.6 PK			2.77 V	310	99.5	6.1
2	*5240.00	95.1 AV			2.77 V	310	89.0	6.1
3	5356.00	52.6 PK	74.0	-21.4	2.70 V	300	46.4	6.2
4	5356.00	45.9 AV	54.0	-8.1	2.70 V	300	39.7	6.2
5	#10480.00	51.5 PK	74.0	-22.5	2.10 V	296	33.3	18.2
6	#10480.00	39.0 AV	54.0	-15.0	2.10 V	296	20.8	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 52	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5260.00	112.0 PK			3.15 H	248	71.8	40.2
2	*5260.00	101.1 AV			3.15 H	248	60.9	40.2
3	5356.00	53.1 PK	74.0	-20.9	2.80 H	220	46.9	6.2
4	5356.00	45.9 AV	54.0	-8.1	2.80 H	220	39.7	6.2
5	#10520.00	51.3 PK	74.0	-22.7	2.05 H	296	33.0	18.3
6	#10520.00	39.2 AV	54.0	-14.8	2.05 H	296	20.9	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	*5260.00	107.1 PK			2.75 V	335	66.9	40.2
2	*5260.00	96.1 AV			2.75 V	335	55.9	40.2
3	5356.00	53.1 PK	74.0	-20.9	2.75 V	300	46.9	6.2
4	5356.00	46.5 AV	54.0	-7.5	2.75 V	300	40.3	6.2
5	#10520.00	51.6 PK	74.0	-22.4	1.88 V	264	33.3	18.3
6	#10520.00	39.1 AV	54.0	-14.9	1.88 V	264	20.8	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 60	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	110.0 PK			3.15 H	244	69.8	40.2
2	*5300.00	99.2 AV			3.15 H	244	59.0	40.2
3	10600.00	51.5 PK	74.0	-22.5	1.62 H	198	32.8	18.7
4	10600.00	39.4 AV	54.0	-14.6	1.62 H	198	20.7	18.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	104.9 PK			2.86 V	310	64.7	40.2
2	*5300.00	94.5 AV			2.86 V	310	54.3	40.2
3	10600.00	50.9 PK	74.0	-23.1	2.00 V	269	32.2	18.7
4	10600.00	38.4 AV	54.0	-15.6	2.00 V	269	19.7	18.7

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.9 PK			3.13 H	247	69.7	40.2
2	*5320.00	99.0 AV			3.13 H	247	58.8	40.2
3	5350.00	66.1 PK	74.0	-7.9	3.13 H	247	59.9	6.2
4	5350.00	50.2 AV	54.0	-3.8	3.13 H	247	44.0	6.2
5	10640.00	51.0 PK	74.0	-23.0	1.74 H	190	32.0	19.0
6	10640.00	38.8 AV	54.0	-15.2	1.74 H	190	19.8	19.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	104.6 PK			2.68 V	310	98.5	6.1
2	*5320.00	94.2 AV			2.68 V	310	88.1	6.1
3	5350.00	62.4 PK	74.0	-11.6	2.68 V	310	56.2	6.2
4	5350.00	45.9 AV	54.0	-8.1	2.68 V	310	39.7	6.2
5	10640.00	50.8 PK	74.0	-23.2	2.05 V	266	31.8	19.0
6	10640.00	38.4 AV	54.0	-15.6	2.05 V	266	19.4	19.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	66.9 PK	74.0	-7.1	3.34 H	229	60.6	6.3
2	5460.00	50.8 AV	54.0	-3.2	3.34 H	229	44.5	6.3
3	#5470.00	68.0 PK	74.0	-6.0	3.34 H	229	61.7	6.3
4	#5470.00	52.1 AV	54.0	-1.9	3.34 H	229	45.8	6.3
5	*5500.00	110.1 PK			3.34 H	229	69.7	40.4
6	*5500.00	99.2 AV			3.34 H	229	58.8	40.4
7	11000.00	51.6 PK	74.0	-22.4	1.65 H	200	32.1	19.5
8	11000.00	39.4 AV	54.0	-14.6	1.65 H	200	19.9	19.5
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	#5470.00	64.1 PK	74.0	-9.9	2.86 V	320	57.8	6.3
2	#5470.00	47.5 AV	54.0	-6.5	2.86 V	320	41.2	6.3
3	*5500.00	105.4 PK			2.86 V	320	99.1	6.3
4	*5500.00	95.0 AV			2.86 V	320	88.7	6.3
5	11000.00	50.8 PK	74.0	-23.2	2.10 V	269	31.3	19.5
6	11000.00	38.7 AV	54.0	-15.3	2.10 V	269	19.2	19.5

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5408.00	57.6 PK	74.0	-16.4	3.71 H	220	51.4	6.2
2	5408.00	49.1 AV	54.0	-4.9	3.71 H	220	42.9	6.2
3	*5580.00	110.0 PK			3.74 H	230	69.5	40.5
4	*5580.00	98.8 AV			3.74 H	230	58.3	40.5
5	11160.00	52.1 PK	74.0	-21.9	1.74 H	195	32.1	20.0
6	11160.00	40.3 AV	54.0	-13.7	1.74 H	195	20.3	20.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5408.00	53.3 PK	74.0	-20.7	2.70 V	300	47.1	6.2
2	5408.00	45.0 AV	54.0	-9.0	2.70 V	300	38.8	6.2
3	*5580.00	104.8 PK			2.78 V	320	64.3	40.5
4	*5580.00	94.1 AV			2.78 V	320	53.6	40.5
5	11160.00	51.6 PK	74.0	-22.4	1.75 V	260	31.6	20.0
6	11160.00	39.2 AV	54.0	-14.8	1.75 V	260	19.2	20.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	105.7 PK			3.75 H	240	64.8	40.9
2	*5700.00	95.0 AV			3.75 H	240	54.1	40.9
3	#5725.00	68.0 PK	74.0	-6.0	3.75 H	240	61.3	6.7
4	**#5725.00**	**52.9 AV**	**54.0**	**-1.1**	**3.75 H**	**240**	**46.2**	**6.7**
5	11400.00	50.4 PK	74.0	-23.6	1.56 H	199	29.8	20.6
6	11400.00	38.3 AV	54.0	-15.7	1.56 H	199	17.7	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	*5700.00	100.8 PK			2.47 V	320	59.9	40.9
2	*5700.00	90.1 AV			2.47 V	320	49.2	40.9
3	#5725.00	64.3 PK	74.0	-9.7	2.47 V	320	57.6	6.7
4	#5725.00	48.1 AV	54.0	-5.9	2.47 V	320	41.4	6.7
5	11400.00	50.7 PK	74.0	-23.3	1.99 V	248	30.1	20.6
6	11400.00	38.2 AV	54.0	-15.8	1.99 V	248	17.6	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 149	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5616.00	58.7 PK	68.2	-9.5	1.50 H	173	52.3	6.4
2	*5745.00	105.3 PK			1.48 H	171	64.4	40.9
3	*5745.00	94.6 AV			1.48 H	171	53.7	40.9
4	#5975.20	58.8 PK	68.2	-9.4	1.50 H	173	51.6	7.2
5	11490.00	62.3 PK	74.0	-11.7	1.00 H	90	41.8	20.5
6	11490.00	49.2 AV	54.0	-4.8	1.00 H	90	28.7	20.5
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	#5622.40	60.5 PK	68.2	-7.7	1.52 V	144	54.1	6.4
2	*5745.00	105.1 PK			1.56 V	138	64.2	40.9
3	*5745.00	94.3 AV			1.56 V	138	53.4	40.9
4	#5980.00	60.2 PK	68.2	-8.0	1.52 V	144	53.0	7.2
5	11490.00	62.0 PK	74.0	-12.0	1.12 V	206	41.5	20.5
6	11490.00	48.9 AV	54.0	-5.1	1.12 V	206	28.4	20.5

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5640.00	58.1 PK	68.2	-10.1	1.17 H	173	51.6	6.5
2	*5785.00	106.8 PK			1.18 H	172	65.8	41.0
3	*5785.00	95.6 AV			1.18 H	172	54.6	41.0
4	#5938.40	58.3 PK	68.2	-9.9	1.17 H	173	51.2	7.1
5	11570.00	62.0 PK	74.0	-12.0	1.00 H	67	41.7	20.3
6	11570.00	48.7 AV	54.0	-5.3	1.00 H	67	28.4	20.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5624.00	58.4 PK	68.2	-9.8	1.62 V	141	51.9	6.5
2	*5785.00	106.5 PK			1.61 V	139	65.5	41.0
3	*5785.00	95.5 AV			1.61 V	139	54.5	41.0
4	#5936.00	59.3 PK	68.2	-8.9	1.62 V	141	52.2	7.1
5	11570.00	61.6 PK	74.0	-12.4	1.10 V	340	41.3	20.3
6	11570.00	48.5 AV	54.0	-5.5	1.10 V	340	28.2	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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5637.60	59.6 PK	68.2	-8.6	1.21 H	180	53.1	6.5
2	*5825.00	107.2 PK			1.23 H	177	66.0	41.2
3	*5825.00	96.2 AV			1.23 H	177	55.0	41.2
4	#5967.20	58.7 PK	68.2	-9.5	1.21 H	180	51.5	7.2
5	11650.00	62.0 PK	74.0	-12.0	1.00 H	93	42.1	19.9
6	11650.00	48.7 AV	54.0	-5.3	1.00 H	93	28.8	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	#5623.20	59.9 PK	68.2	-8.3	1.50 V	143	53.4	6.5
2	*5825.00	106.8 PK			1.54 V	140	65.6	41.2
3	*5825.00	96.0 AV			1.54 V	140	54.8	41.2
4	#5971.20	60.2 PK	68.2	-8.0	1.50 V	143	53.0	7.2
5	11650.00	61.8 PK	74.0	-12.2	1.05 V	266	41.9	19.9
6	11650.00	48.5 AV	54.0	-5.5	1.05 V	266	28.6	19.9

REMARKS:

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

802.11n (HT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.2 PK	74.0	-8.8	3.22 H	247	59.2	6.0
2	**5150.00**	**52.9 AV**	**54.0**	**-1.1**	**3.22 H**	**247**	**46.9**	**6.0**
3	*5190.00	106.0 PK			3.22 H	247	65.9	40.1
4	*5190.00	96.7 AV			3.22 H	247	56.6	40.1
5	5356.00	58.2 PK	74.0	-15.8	3.30 H	220	52.0	6.2
6	5356.00	51.2 AV	54.0	-2.8	3.30 H	220	45.0	6.2
7	#10380.00	51.5 PK	74.0	-22.5	1.50 H	195	33.7	17.8
8	#10380.00	39.5 AV	54.0	-14.5	1.50 H	195	21.7	17.8
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	5150.00	61.4 PK	74.0	-12.6	2.68 V	315	55.4	6.0
2	5150.00	47.9 AV	54.0	-6.1	2.68 V	315	41.9	6.0
3	*5190.00	101.6 PK			2.68 V	315	61.5	40.1
4	*5190.00	91.8 AV			2.68 V	315	51.7	40.1
5	5356.00	54.2 PK	74.0	-19.8	2.50 V	310	48.0	6.2
6	5356.00	46.5 AV	54.0	-7.5	2.50 V	310	40.3	6.2
7	#10380.00	51.1 PK	74.0	-22.9	2.10 V	265	33.3	17.8
8	#10380.00	39.0 AV	54.0	-15.0	2.10 V	265	21.2	17.8

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	109.0 PK			3.22 H	248	68.8	40.2
2	*5230.00	99.5 AV			3.22 H	248	59.3	40.2
3	5350.00	57.6 PK	74.0	-16.4	3.33 H	224	51.4	6.2
4	5350.00	50.3 AV	54.0	-3.7	3.33 H	224	44.1	6.2
5	#10460.00	51.6 PK	74.0	-22.4	1.65 H	195	33.6	18.0
6	#10460.00	39.5 AV	54.0	-14.5	1.65 H	195	21.5	18.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	104.2 PK			2.85 V	310	64.0	40.2
2	*5230.00	94.8 AV			2.85 V	310	54.6	40.2
3	5350.00	53.0 PK	74.0	-21.0	2.85 V	300	46.8	6.2
4	5350.00	45.5 AV	54.0	-8.5	2.85 V	300	39.3	6.2
5	#10460.00	51.1 PK	74.0	-22.9	2.00 V	289	33.1	18.0
6	#10460.00	38.9 AV	54.0	-15.1	2.00 V	289	20.9	18.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5270.00	108.9 PK			3.18 H	243	68.7	40.2
2	*5270.00	99.5 AV			3.18 H	243	59.3	40.2
3	5356.00	57.0 PK	74.0	-17.0	3.34 H	232	50.8	6.2
4	5356.00	49.8 AV	54.0	-4.2	3.34 H	232	43.6	6.2
5	#10540.00	51.3 PK	74.0	-22.7	1.98 H	267	32.9	18.4
6	#10540.00	39.1 AV	54.0	-14.9	1.98 H	267	20.7	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	*5270.00	104.1 PK			2.85 V	290	98.0	6.1
2	*5270.00	94.7 AV			2.85 V	290	88.6	6.1
3	5356.00	52.1 PK	74.0	-21.9	2.70 V	285	45.9	6.2
4	5356.00	45.1 AV	54.0	-8.9	2.70 V	285	38.9	6.2
5	#10540.00	51.2 PK	74.0	-22.8	2.10 V	269	32.8	18.4
6	#10540.00	39.0 AV	54.0	-15.0	2.10 V	269	20.6	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 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	103.9 PK			3.58 H	230	63.7	40.2
2	*5310.00	95.0 AV			3.58 H	230	54.8	40.2
3	5350.00	62.3 PK	74.0	-11.7	3.58 H	230	56.1	6.2
4	5350.00	52.4 AV	54.0	-1.6	3.58 H	230	46.2	6.2
5	10620.00	51.3 PK	74.0	-22.7	1.68 H	190	32.5	18.8
6	10620.00	39.4 AV	54.0	-14.6	1.68 H	190	20.6	18.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	99.1 PK			2.84 V	310	93.0	6.1
2	*5310.00	90.2 AV			2.84 V	310	84.1	6.1
3	5350.00	57.4 PK	74.0	-16.6	2.84 V	310	51.2	6.2
4	5350.00	47.8 AV	54.0	-6.2	2.84 V	310	41.6	6.2
5	10620.00	50.4 PK	74.0	-23.6	3.50 V	200	31.6	18.8
6	10620.00	38.1 AV	54.0	-15.9	3.50 V	200	19.3	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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	63.1 PK	74.0	-10.9	4.00 H	239	56.8	6.3
2	5460.00	50.9 AV	54.0	-3.1	4.00 H	239	44.6	6.3
3	#5470.00	64.5 PK	74.0	-9.5	4.00 H	239	58.2	6.3
4	#5470.00	52.5 AV	54.0	-1.5	4.00 H	239	46.2	6.3
5	*5510.00	103.5 PK			4.00 H	239	63.1	40.4
6	*5510.00	94.3 AV			4.00 H	239	53.9	40.4
7	11020.00	52.1 PK	74.0	-21.9	1.57 H	195	32.6	19.5
8	11020.00	39.7 AV	54.0	-14.3	1.57 H	195	20.2	19.5
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	#5470.00	60.7 PK	74.0	-13.3	2.40 V	300	54.4	6.3
2	#5470.00	48.4 AV	54.0	-5.6	2.40 V	300	42.1	6.3
3	*5510.00	98.7 PK			2.48 V	310	58.3	40.4
4	*5510.00	89.6 AV			2.48 V	310	49.2	40.4
5	11020.00	50.4 PK	74.0	-23.6	2.00 V	247	30.9	19.5
6	11020.00	37.8 AV	54.0	-16.2	2.00 V	247	18.3	19.5

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5408.00	57.5 PK	74.0	-16.5	3.76 H	229	51.3	6.2
2	5408.00	49.1 AV	54.0	-4.9	3.76 H	229	42.9	6.2
3	*5550.00	108.2 PK			4.00 H	230	67.7	40.5
4	*5550.00	99.0 AV			4.00 H	230	58.5	40.5
5	11100.00	51.7 PK	74.0	-22.3	1.78 H	199	31.7	20.0
6	11100.00	39.6 AV	54.0	-14.4	1.78 H	199	19.6	20.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5408.00	53.2 PK	74.0	-20.8	3.00 V	310	47.0	6.2
2	5408.00	45.6 AV	54.0	-8.4	3.00 V	310	39.4	6.2
3	*5550.00	103.4 PK			3.00 V	330	62.9	40.5
4	*5550.00	94.1 AV			3.00 V	330	53.6	40.5
5	11100.00	51.1 PK	74.0	-22.9	1.87 V	248	31.1	20.0
6	11100.00	38.9 AV	54.0	-15.1	1.87 V	248	18.9	20.0

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	105.5 PK			4.00 H	229	64.8	40.7
2	*5670.00	96.3 AV			4.00 H	229	55.6	40.7
3	#5725.00	63.0 PK	74.0	-11.0	4.00 H	229	56.3	6.7
4	#5725.00	51.4 AV	54.0	-2.6	4.00 H	229	44.7	6.7
5	11340.00	50.9 PK	74.0	-23.1	1.45 H	190	30.4	20.5
6	11340.00	38.8 AV	54.0	-15.2	1.45 H	190	18.3	20.5
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	*5670.00	101.8 PK			2.85 V	310	95.3	6.5
2	*5670.00	92.2 AV			2.85 V	310	85.7	6.5
3	#5725.00	58.9 PK	74.0	-15.1	2.85 V	300	52.2	6.7
4	#5725.00	46.9 AV	54.0	-7.1	2.85 V	300	40.2	6.7
5	11340.00	50.6 PK	74.0	-23.4	2.00 V	268	30.1	20.5
6	11340.00	38.0 AV	54.0	-16.0	2.00 V	268	17.5	20.5

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5617.60	60.2 PK	68.2	-8.0	1.21 H	166	53.8	6.4
2	*5755.00	101.0 PK			1.25 H	171	60.0	41.0
3	*5755.00	91.8 AV			1.25 H	171	50.8	41.0
4	#5935.20	61.1 PK	68.2	-7.1	1.21 H	166	54.0	7.1
5	11510.00	62.2 PK	74.0	-11.8	1.00 H	59	41.8	20.4
6	11510.00	48.9 AV	54.0	-5.1	1.00 H	59	28.5	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	#5641.60	61.6 PK	68.2	-6.6	1.55 V	150	55.1	6.5
2	*5755.00	100.5 PK			1.59 V	153	59.5	41.0
3	*5755.00	91.4 AV			1.59 V	153	50.4	41.0
4	#5930.40	62.1 PK	68.2	-6.1	1.55 V	150	55.0	7.1
5	11510.00	61.8 PK	74.0	-12.2	1.11 V	274	41.4	20.4
6	11510.00	48.4 AV	54.0	-5.6	1.11 V	274	28.0	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) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5608.00	59.5 PK	68.2	-8.7	1.33 H	170	53.2	6.3
2	*5795.00	105.4 PK			1.36 H	172	64.3	41.1
3	*5795.00	96.1 AV			1.36 H	172	55.0	41.1
4	#5980.80	60.0 PK	68.2	-8.2	1.33 H	170	52.8	7.2
5	11590.00	62.2 PK	74.0	-11.8	1.00 H	45	42.0	20.2
6	11590.00	48.7 AV	54.0	-5.3	1.00 H	45	28.5	20.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5637.60	60.3 PK	68.2	-7.9	1.55 V	135	53.8	6.5
2	*5795.00	105.0 PK			1.58 V	137	63.9	41.1
3	*5795.00	95.9 AV			1.58 V	137	54.8	41.1
4	#5980.80	59.8 PK	68.2	-8.4	1.55 V	135	52.6	7.2
5	11590.00	61.9 PK	74.0	-12.1	1.17 V	222	41.7	20.2
6	11590.00	48.5 AV	54.0	-5.5	1.17 V	222	28.3	20.2

REMARKS:

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

Below 1GHz worst-case data:

802.11a

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	109.46	24.9 QP	43.5	-18.6	2.00 H	172	42.1	-17.2
2	254.99	37.9 QP	46.0	-8.1	1.00 H	96	52.0	-14.1
3	377.23	34.8 QP	46.0	-11.2	1.50 H	33	45.6	-10.8
4	516.94	32.8 QP	46.0	-13.2	1.50 H	212	40.9	-8.1
5	775.01	33.8 QP	46.0	-12.2	1.00 H	10	36.5	-2.7
6	908.90	28.4 QP	46.0	-17.6	1.24 H	286	28.7	-0.3
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	97.81	24.5 QP	43.5	-19.0	1.00 V	59	43.3	-18.8
2	241.40	27.9 QP	46.0	-18.1	1.24 V	162	42.4	-14.5
3	439.32	34.8 QP	46.0	-11.2	1.24 V	222	44.3	-9.5
4	666.35	31.7 QP	46.0	-14.3	2.00 V	260	36.8	-5.1
5	775.01	27.9 QP	46.0	-18.1	1.00 V	57	30.6	-2.7
6	980.70	31.0 QP	54.0	-23.0	1.50 V	9	30.4	0.6

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)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 16, 2015	Nov. 15, 2016
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 26, 2015	Dec. 25, 2016
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 26, 2016	Feb. 25, 2017
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 28, 2016	Jul. 27, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 1.
3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedures

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

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

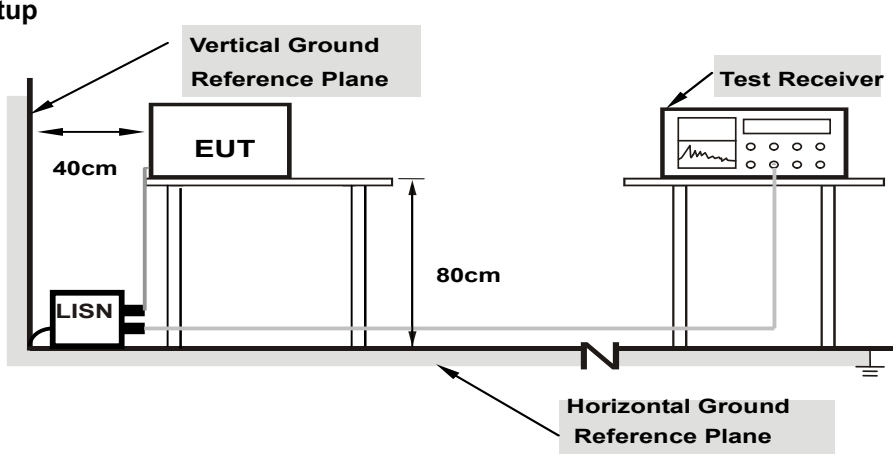
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

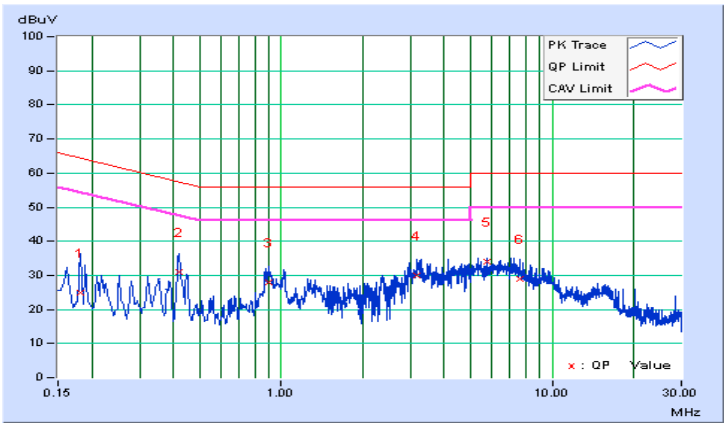
4.2.7 Test Results

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18075	10.08	14.98	4.20	25.06	14.28	64.45	54.45	-39.39	-40.17
2	0.41979	10.17	20.93	8.60	31.10	18.77	57.45	47.45	-26.35	-28.68
3	0.89705	10.27	17.79	14.13	28.06	24.40	56.00	46.00	-27.94	-21.60
4	3.18025	10.43	19.65	13.64	30.08	24.07	56.00	46.00	-25.92	-21.93
5	5.74521	10.56	23.49	19.39	34.05	29.95	60.00	50.00	-25.95	-20.05
6	7.57900	10.65	18.20	14.26	28.85	24.91	60.00	50.00	-31.15	-25.09

REMARKS:

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

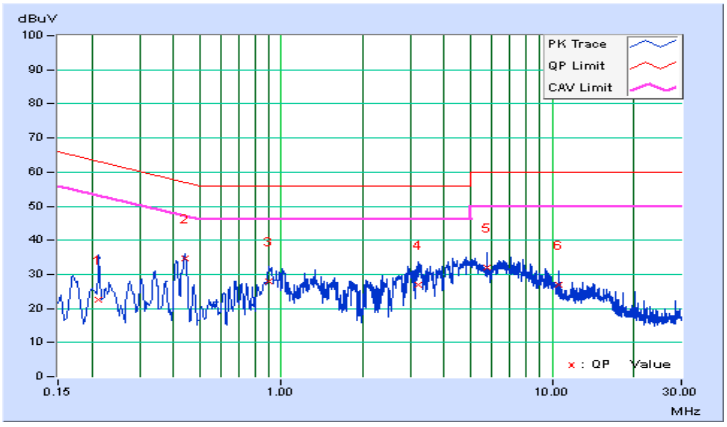


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.21256	10.09	12.42	3.38	22.51	13.47	63.10	53.10	-40.59	-39.63
2	**0.43924**	**10.24**	**24.51**	**21.97**	**34.75**	**32.21**	**57.08**	**47.08**	**-22.33**	**-14.87**
3	0.89681	10.28	17.75	14.09	28.03	24.37	56.00	46.00	-27.97	-21.63
4	3.20762	10.51	16.56	11.23	27.07	21.74	56.00	46.00	-28.93	-24.26
5	5.74912	10.67	21.42	18.19	32.09	28.86	60.00	50.00	-27.91	-21.14
6	10.62489	10.89	15.89	14.12	26.78	25.01	60.00	50.00	-33.22	-24.99

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

For Ourdoor (AP mode)

Operation Band	EUT Category		LIMIT
U-NII-1	√	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
		Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

For Client mode

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

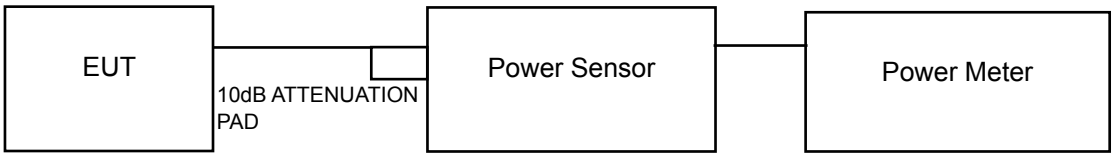
Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

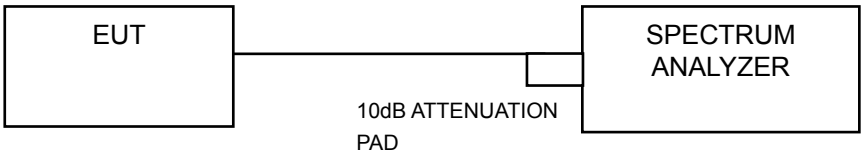
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

For Power Output Measurement



For 26dB and 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 (HT20), 802.11n (HT40)

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

FOR 26dB BANDWIDTH

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

FOR OCCUPIED BANDWIDTH

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

4.3.5 Deviation fromTest Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

POWER OUTPUT:

For U-NII-1 Band (For Ourdoor (AP mode))

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
36	5180	41.783	16.21	3.87	20.08	21.00	Pass
40	5200	50.003	16.99	3.87	20.86	21.00	Pass
48	5240	43.053	16.34	3.87	20.21	21.00	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
36	5180	38.637	15.87	3.87	19.74	21.00	Pass
40	5200	49.659	16.96	3.87	20.83	21.00	Pass
48	5240	44.463	16.48	3.87	20.35	21.00	Pass

For U-NII-1 Band (For Client mode)

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Limit (dBm)	Pass / Fail
36	5180	41.783	16.21	24.00	Pass
40	5200	50.003	16.99	24.00	Pass
48	5240	43.053	16.34	24.00	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Limit (dBm)	Pass / Fail
36	5180	38.637	15.87	24.00	Pass
40	5200	49.659	16.96	24.00	Pass
48	5240	44.463	16.48	24.00	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Limit (dBm)	Pass / Fail
38	5190	19.999	13.01	24.00	Pass
46	5230	**50.933**	17.07	24.00	Pass

For U-NII-2A, U-NII-2C, U-NII-3 Band

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
52	5260	**60.674**	17.83	24.00	Pass
60	5300	46.026	16.63	24.00	Pass
64	5320	40.551	16.08	24.00	Pass
100	5500	30.620	14.86	24.00	Pass
116	5580	48.195	16.83	24.00	Pass
140	5700	34.277	15.35	24.00	Pass
149	5745	29.992	14.77	30.00	Pass
157	5785	53.456	17.28	30.00	Pass
165	5825	54.200	17.34	30.00	Pass

NOTE:

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

1. 11dBm + 10log(41.61) = 27.19 dBm > 24dBm.
2. 11dBm + 10log(42.90) = 27.32 dBm > 24dBm.
3. 11dBm + 10log(43.70) = 27.40 dBm > 24dBm.
4. 11dBm + 10log(33.02) = 26.19 dBm > 24dBm.
5. 11dBm + 10log(35.43) = 26.49 dBm > 24dBm.
6. 11dBm + 10log(28.47) = 25.54 dBm > 24dBm.

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
52	5260	60.395	17.81	24.00	Pass
60	5300	46.881	16.71	24.00	Pass
64	5320	41.210	16.15	24.00	Pass
100	5500	28.973	14.62	24.00	Pass
116	5580	46.452	16.67	24.00	Pass
140	5700	34.834	15.42	24.00	Pass
149	5745	32.584	15.13	30.00	Pass
157	5785	51.642	17.13	30.00	Pass
165	5825	52.845	17.23	30.00	Pass

NOTE:

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

1. 11dBm + 10log(46.17) = 27.64 dBm > 24dBm.
2. 11dBm + 10log(46.02) = 27.63 dBm > 24dBm.
3. 11dBm + 10log(45.35) = 27.57 dBm > 24dBm.
4. 11dBm + 10log(32.73) = 26.15 dBm > 24dBm.
5. 11dBm + 10log(38.06) = 26.80 dBm > 24dBm.
6. 11dBm + 10log(29.37) = 25.68 dBm > 24dBm.

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
54	5270	59.156	17.72	24.00	Pass
62	5310	19.861	12.98	24.00	Pass
102	5510	13.996	11.46	24.00	Pass
110	5550	43.451	16.38	24.00	Pass
134	5670	**49.091**	16.91	24.00	Pass
151	5755	17.906	12.53	30.00	Pass
159	5795	**55.976**	17.48	30.00	Pass

NOTE:

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

1. 11dBm + 10log(77.43) = 29.89 dBm > 24dBm.
2. 11dBm + 10log(49.19) = 27.92 dBm > 24dBm.
3. 11dBm + 10log(43.21) = 27.36 dBm > 24dBm.
4. 11dBm + 10log(59.89) = 28.77 dBm > 24dBm.
5. 11dBm + 10log(63.89) = 29.05 dBm > 24dBm.

26dB BANDWIDTH:

802.11a

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)
36	5180	33.16
40	5200	35.46
48	5240	35.42
52	5260	41.61
60	5300	42.90
64	5320	43.70
100	5500	33.02
116	5580	35.43
140	5700	28.47

802.11n (HT20)

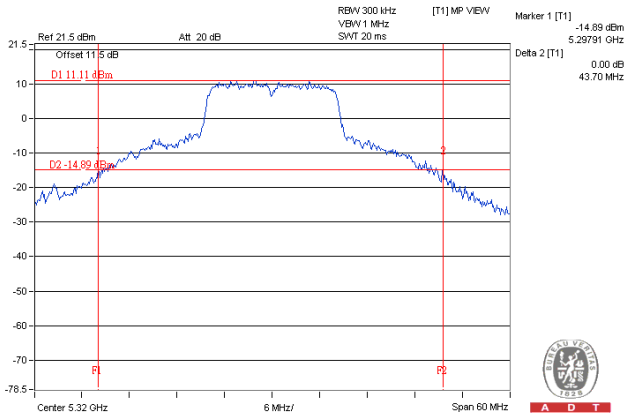
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)
36	5180	31.17
40	5200	35.35
48	5240	34.86
52	5260	46.17
60	5300	46.02
64	5320	45.35
100	5500	32.73
116	5580	38.06
140	5700	29.37

802.11n (HT40)

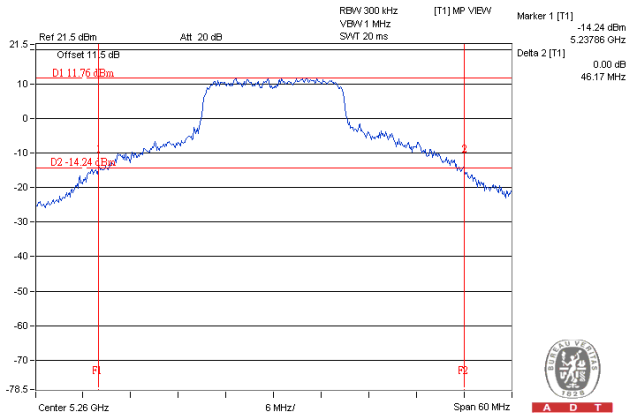
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)
38	5190	42.83
46	5230	50.02
54	5270	77.43
62	5310	49.19
102	5510	43.21
110	5550	59.89
134	5670	63.89

Spectrum Plot of Worst Value

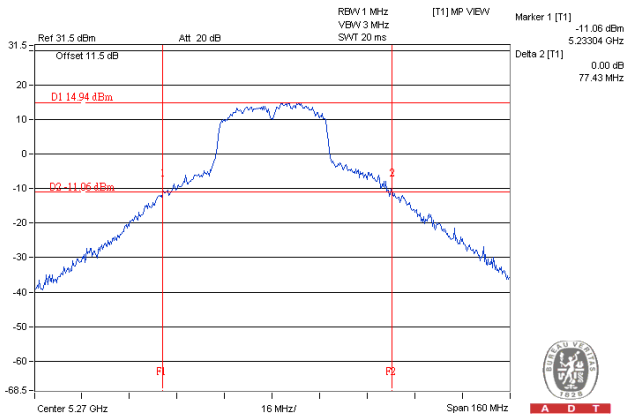
802.11a



802.11n (HT20)



802.11n (HT40)



OCCUPIED BANDWIDTH:

802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
36	5180	17.40
40	5200	17.40
48	5240	17.64
52	5260	26.52 (Note)
60	5300	26.52
64	5320	26.28
100	5500	17.16
116	5580	17.64
140	5700	16.92
149	5745	16.68
157	5785	18.36
165	5825	18.72

Note: Refer to next page for spectral power density plot

802.11n (HT20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
36	5180	18.00
40	5200	18.24
48	5240	18.24
52	5260	27.00 (Note)
60	5300	26.64
64	5320	26.28
100	5500	18.12
116	5580	18.48
140	5700	17.88
149	5745	17.88
157	5785	18.72
165	5825	18.84

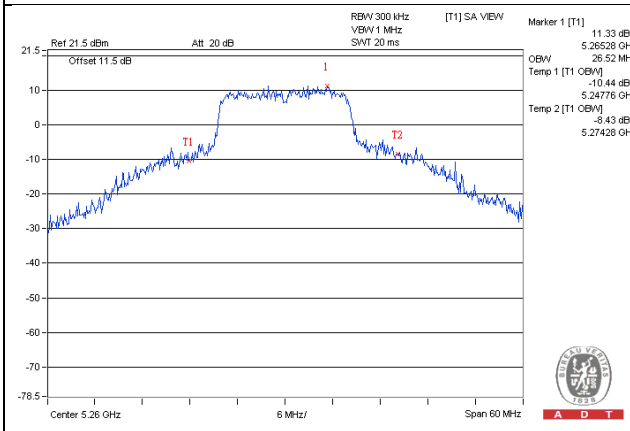
Note: Refer to next page for spectral power density plot

802.11n (HT40)

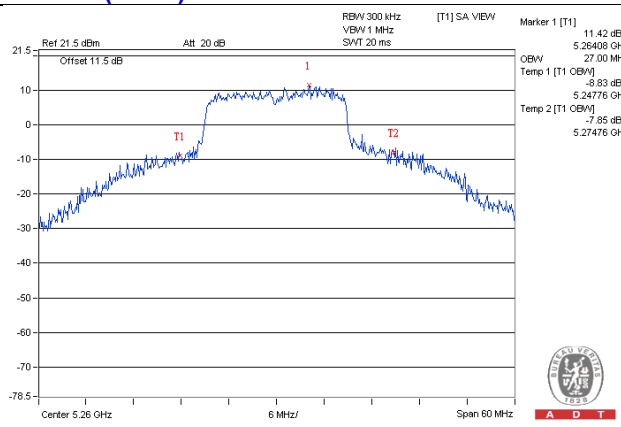
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
38	5190	35.88
46	5230	36.24
54	5270	40.08
62	5310	36.24
102	5510	36.00
110	5550	36.48
134	5670	36.60
151	5755	36.00
159	5795	36.72

Spectrum Plot of Worst Value

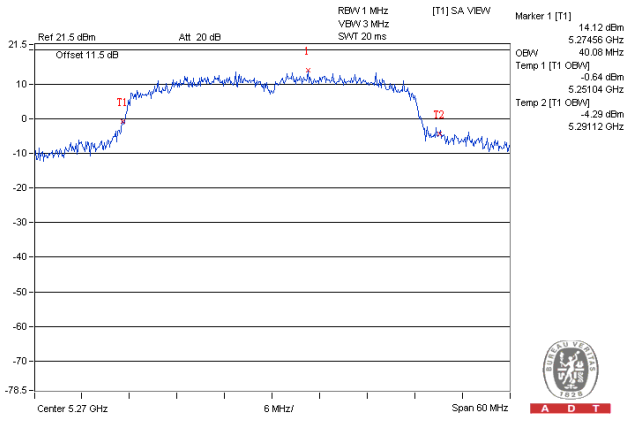
802.11a



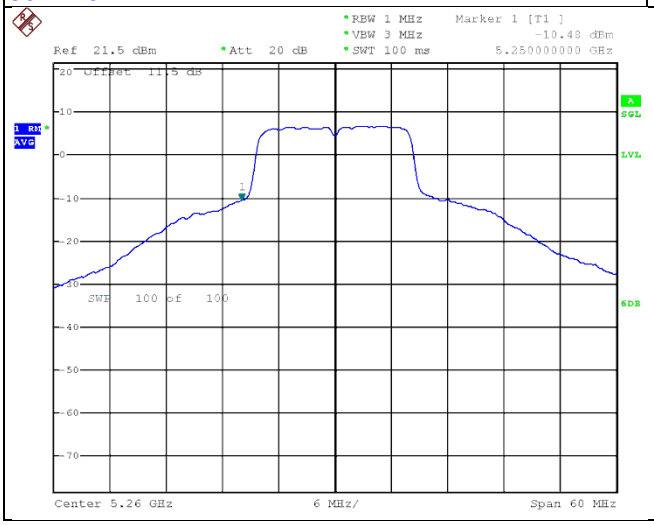
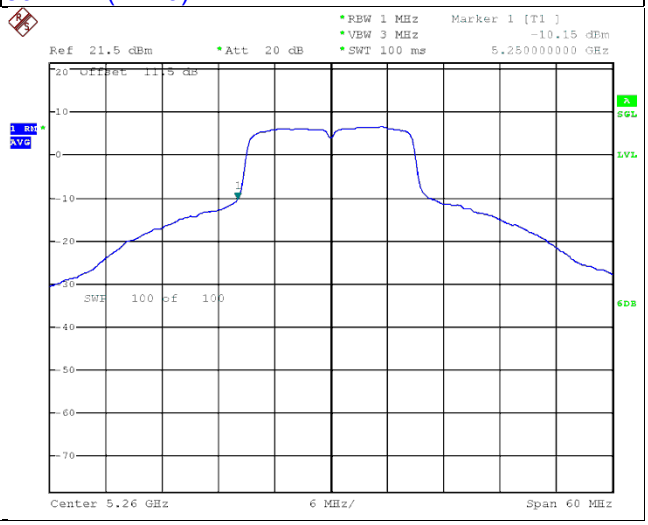
802.11n (HT20)



802.11n (HT40)



The spectral power density for operation within the band 5150-5250 MHz.

802.11a	802.11n (HT20)
	

EUT MAXIMUM CONDUCTED POWER

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	60.674	17.83
5470~5725	48.195	16.83

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	60.395	17.81
5470~5725	46.452	16.67

802.11n (HT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	59.156	17.72
5470~5725	49.091	16.91

4.4 Peak Power Spectral Density Measurement

4.4.1 Limits of Peak Power Spectral Density Measurement

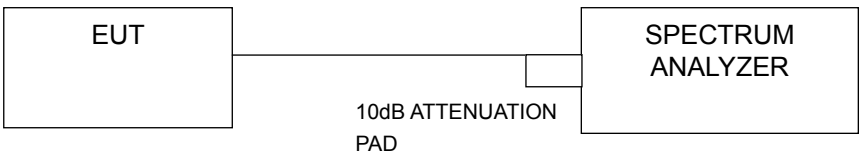
For Ourdoor (AP mode)

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

For Client mode

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedures

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

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

For U-NII-3 band:

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

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

Same as Item 4.3.6.

4.4.7 Test Results

For U-NII-1 Band (For Ourdoor (AP mode))

802.11a

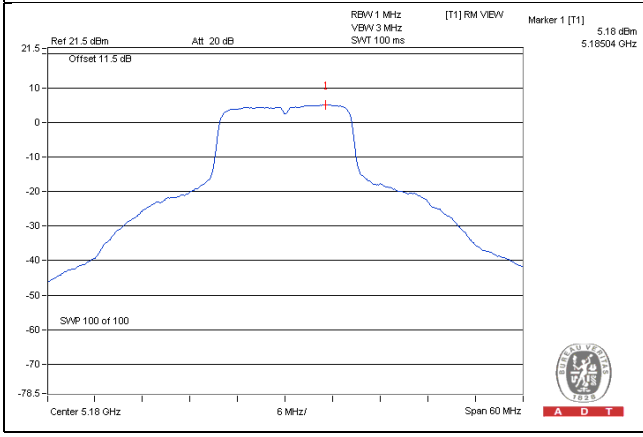
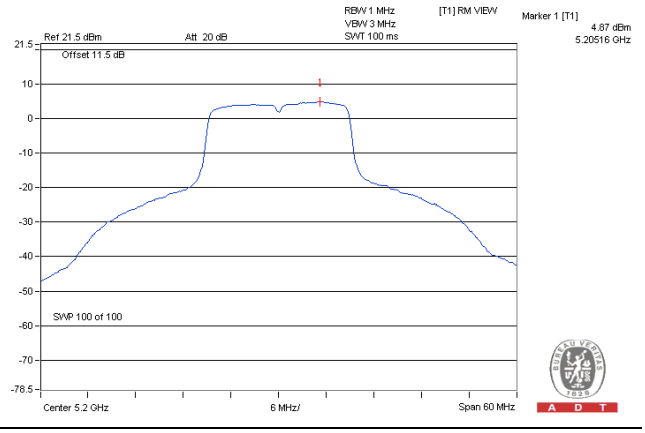
Chan.	Freq. (MHz)	PSD w/o duty factor (dBm)	Duty factor	PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
36	5180	5.18	0.10	5.29	17.00	Pass
40	5200	5.12	0.10	5.23	17.00	Pass
48	5240	5.09	0.10	5.20	17.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Chan.	Freq. (MHz)	PSD w/o duty factor (dBm)	Duty factor	PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
36	5180	4.02	0.14	4.16	17.00	Pass
40	5200	4.87	0.14	5.01	17.00	Pass
48	5240	4.75	0.14	4.89	17.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a	**802.11n (HT20)**
	

For U-NII-1 Band (For Client mode))

802.11a

Chan.	Freq. (MHz)	PSD w/o duty factor (dBm)	Duty factor	PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
36	5180	5.18	0.10	5.29	11.00	Pass
40	5200	5.12	0.10	5.23	11.00	Pass
48	5240	5.09	0.10	5.20	11.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

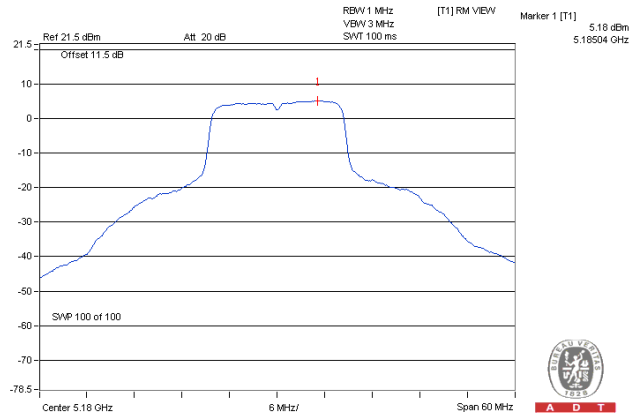
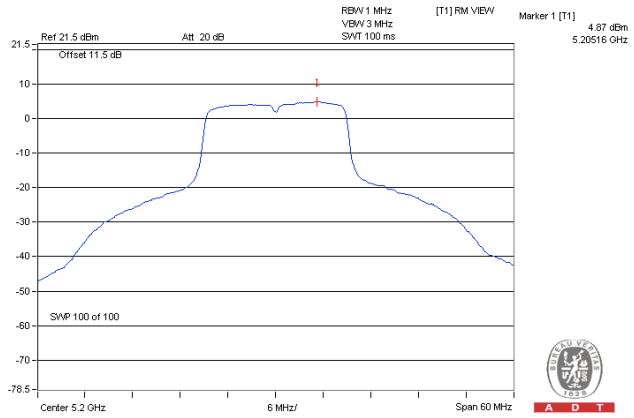
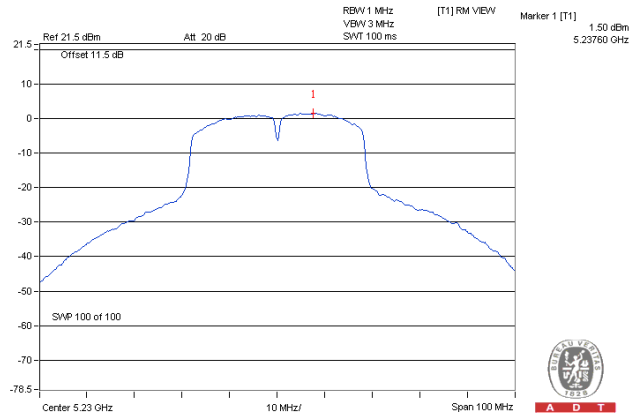
Chan.	Freq. (MHz)	PSD w/o duty factor (dBm)	Duty factor	PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
36	5180	4.02	0.14	4.16	11.00	Pass
40	5200	4.87	0.14	5.01	11.00	Pass
48	5240	4.75	0.14	4.89	11.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD w/o duty factor (dBm)	Duty factor	PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
38	5190	-2.66	0.56	-2.10	11.00	Pass
46	5230	1.50	0.56	2.06	11.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a	**802.11n (HT20)**
	
802.11n (HT40)	
	

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

802.11a

Chan.	Freq. (MHz)	PSD w/o duty factor (dBm)	Duty factor	PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
52	5260	7.04	0.10	7.15	11.00	Pass
60	5300	5.81	0.10	5.92	11.00	Pass
64	5320	5.36	0.10	5.47	11.00	Pass
100	5500	2.90	0.10	3.01	11.00	Pass
116	5580	4.67	0.10	4.78	11.00	Pass
140	5700	3.55	0.10	3.66	11.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

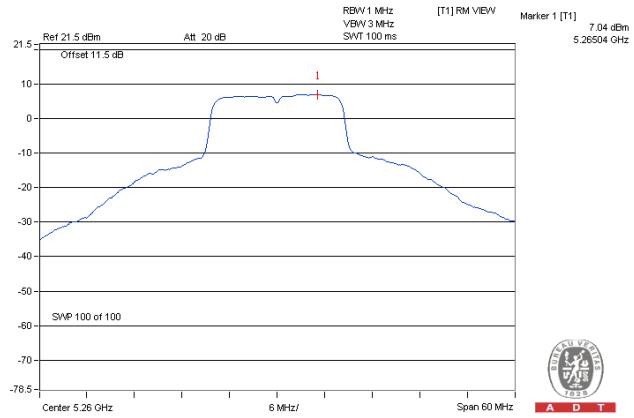
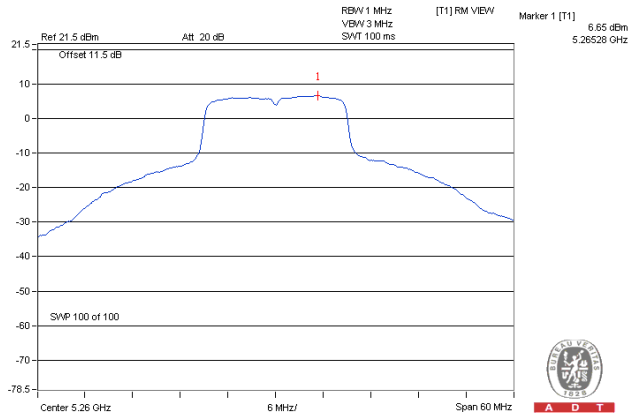
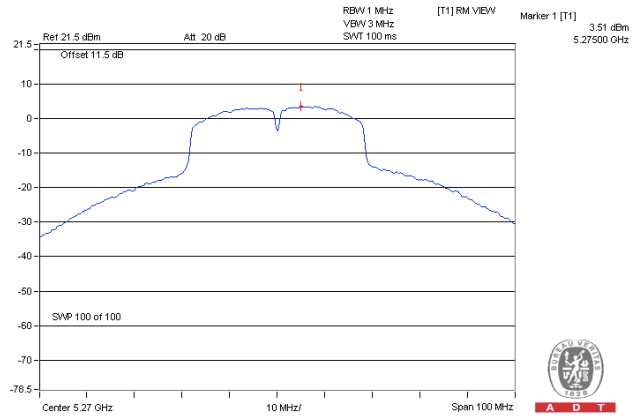
Chan.	Freq. (MHz)	PSD w/o duty factor (dBm)	Duty factor	PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
52	5260	6.65	0.14	6.79	11.00	Pass
60	5300	5.29	0.14	5.43	11.00	Pass
64	5320	4.70	0.14	4.84	11.00	Pass
100	5500	2.10	0.14	2.24	11.00	Pass
116	5580	4.35	0.14	4.49	11.00	Pass
140	5700	3.17	0.14	3.31	11.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD w/o duty factor (dBm)	Duty factor	PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
54	5270	3.51	0.56	4.07	11.00	Pass
62	5310	-1.22	0.56	-0.66	11.00	Pass
102	5510	-4.29	0.56	-3.73	11.00	Pass
110	5550	1.50	0.56	2.06	11.00	Pass
134	5670	2.25	0.56	2.81	11.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a	**802.11n (HT20)**
	
802.11n (HT40)	
	

For U-NII-3 Band

802.11a

Chan.	Freq. (MHz)	PSD (dBm/300k Hz)	PSD (dBm/500k Hz)	Duty factor	Total PSD (dBm/500k Hz)	Limit (dBm/500k Hz)	Pass / Fail
149	5745	-4.88	-2.66	0.10	-2.56	30.00	Pass
157	5785	-1.98	0.24	0.10	0.34	30.00	Pass
165	5825	-1.99	0.23	0.10	0.33	30.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

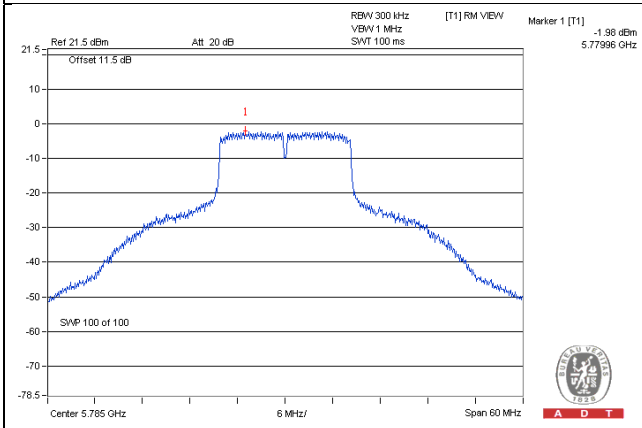
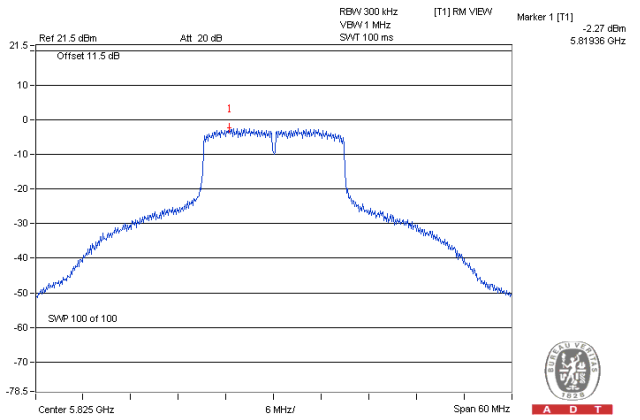
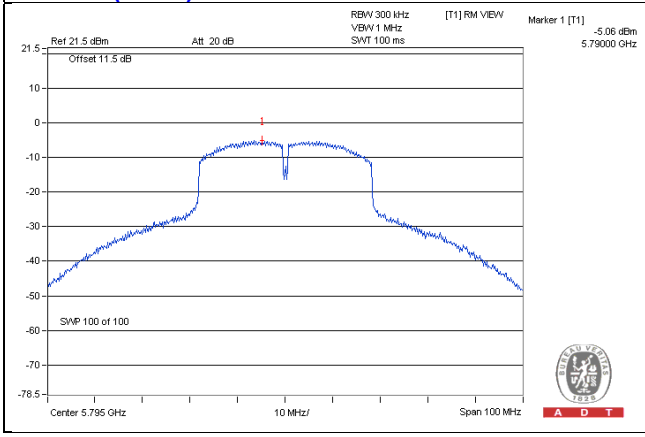
Chan.	Freq. (MHz)	PSD (dBm/300k Hz)	PSD (dBm/500k Hz)	Duty factor	Total PSD (dBm/500k Hz)	Limit (dBm/500k Hz)	Pass / Fail
149	5745	-5.75	-3.53	0.14	-3.39	30.00	Pass
157	5785	-2.42	-0.20	0.14	-0.06	30.00	Pass
165	5825	-2.27	-0.05	0.14	0.09	30.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD (dBm/300k Hz)	PSD (dBm/500k Hz)	Duty factor	Total PSD (dBm/500k Hz)	Limit (dBm/500k Hz)	Pass / Fail
151	5755	-10.10	-7.88	0.56	-7.32	30.00	Pass
159	5795	-5.06	-2.84	0.56	-2.28	30.00	Pass

NOTE: Refer to section 3.3 for duty cycle spectrum plot.

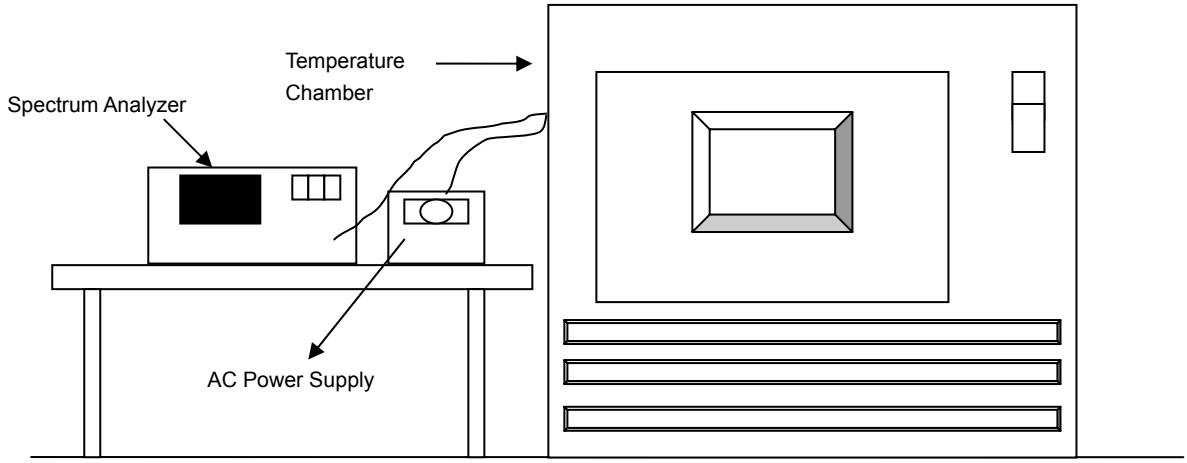
Spectrum Plot of Worst Value	
802.11a	**802.11n (HT20)**
	
802.11n (HT40)	
	

4.5 Frequency Stability

4.5.1 Limits of Frequency Stability Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.

e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.

f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	120	5179.9971	-0.00006	5179.9997	-0.00001	5179.9996	-0.00001	5180.0011	0.00002
40	120	5179.9854	-0.00028	5179.9868	-0.00025	5179.9847	-0.00030	5179.9894	-0.00020
30	120	5179.9926	-0.00014	5179.9960	-0.00008	5179.9956	-0.00008	5179.9943	-0.00011
20	120	5179.9809	-0.00037	5179.9779	-0.00043	5179.9794	-0.00040	5179.9787	-0.00041
10	120	5179.9925	-0.00014	5179.9902	-0.00019	5179.9920	-0.00015	5179.9897	-0.00020
0	120	5180.0120	0.00023	5180.0107	0.00021	5180.0138	0.00027	5180.0123	0.00024
-10	120	5180.0251	0.00048	5180.0248	0.00048	5180.0222	0.00043	5180.0261	0.00050
-20	120	5179.9866	-0.00026	5179.9842	-0.00031	5179.9874	-0.00024	5179.9868	-0.00025
-30	120	5179.9934	-0.00013	5179.9969	-0.00006	5179.9968	-0.00006	5179.9957	-0.00008

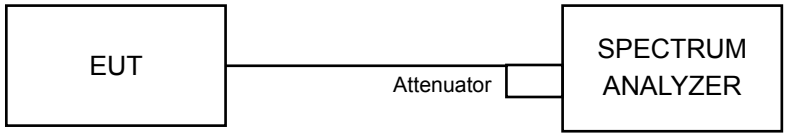
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5179.9818	-0.00035	5179.9781	-0.00042	5179.9791	-0.00040	5179.9793	-0.00040
	120	5179.9809	-0.00037	5179.9779	-0.00043	5179.9794	-0.00040	5179.9787	-0.00041
	102	5179.9804	-0.00038	5179.9772	-0.00044	5179.9792	-0.00040	5179.9797	-0.00039

4.6 6dB Bandwidth Measurment

4.6.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

MEASUREMENT PROCEDURE REF

a. Set resolution bandwidth (RBW) = 100kHz

b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.

c. Trace mode = max hold.

d. Sweep = auto couple.

e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	15.69	0.5	Pass
157	5785	15.58	0.5	Pass
165	5825	15.59	0.5	Pass

802.11n (HT20)

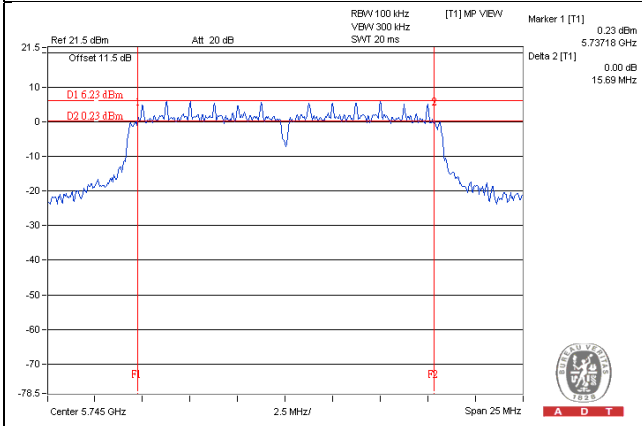
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.24	0.5	Pass
157	5785	16.61	0.5	Pass
165	5825	16.61	0.5	Pass

802.11n (HT40)

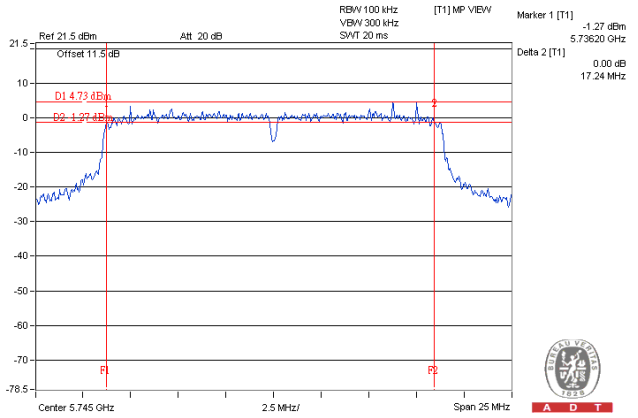
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.06	0.5	Pass
159	5795	32.66	0.5	Pass

Spectrum Plot of Worst Value

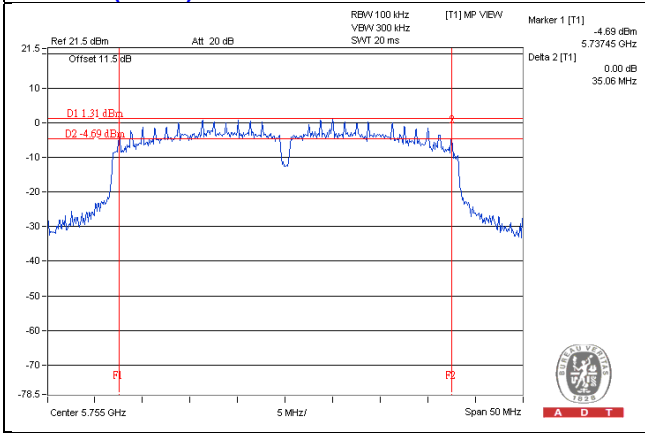
802.11a



802.11n (HT20)



802.11n (HT40)



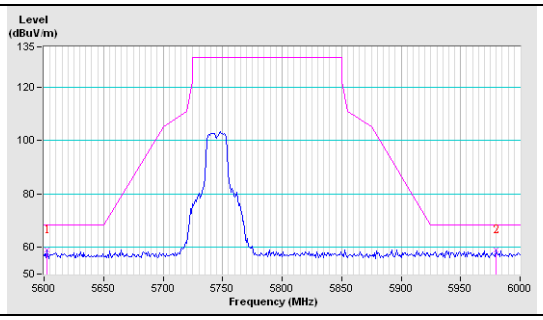
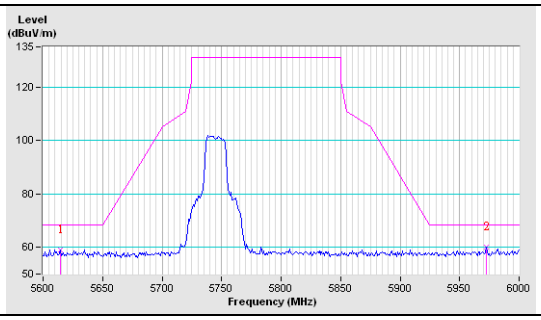
5 Pictures of Test Arrangements

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

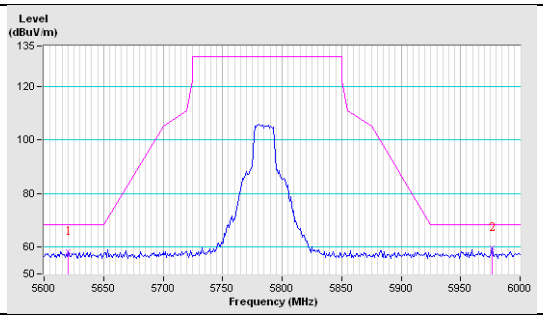
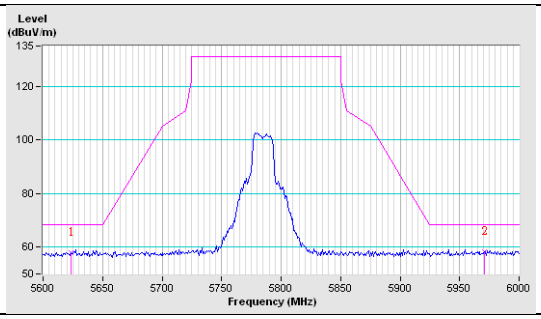
Annex A- Radiated Out of Band Emisison (OOBE) Measurement (For U-NII-3 band)

802.11a

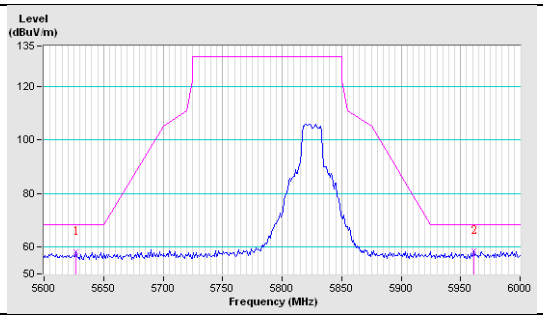
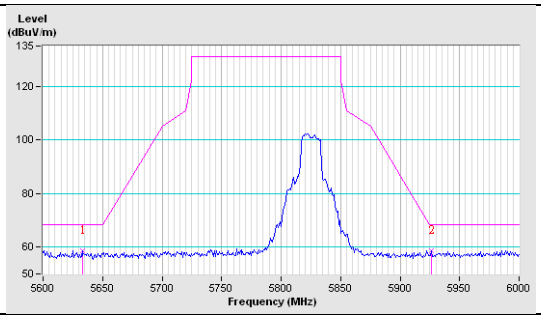
CH149

Horizontal	Vertical
	

CH157

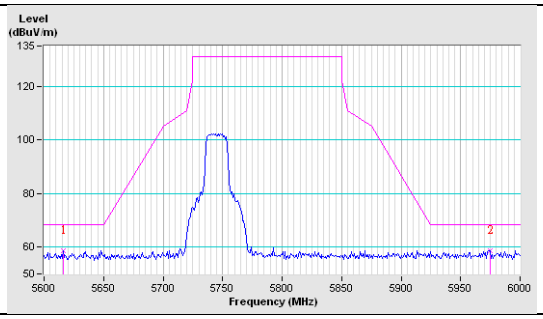
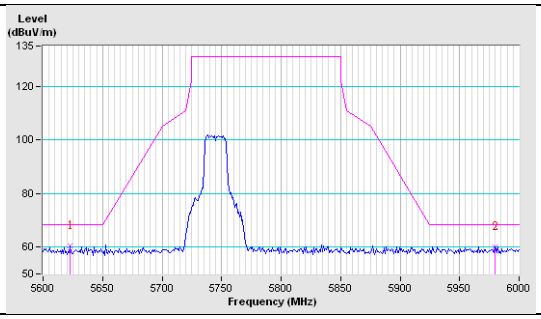
Horizontal	Vertical
	

CH165

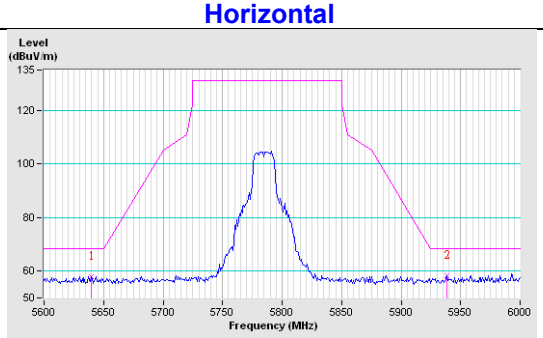
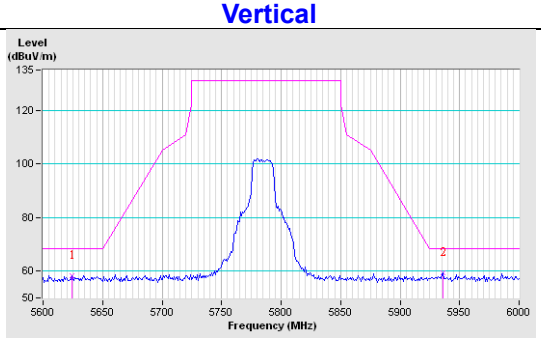
Horizontal	Vertical
	

802.11n (HT20)

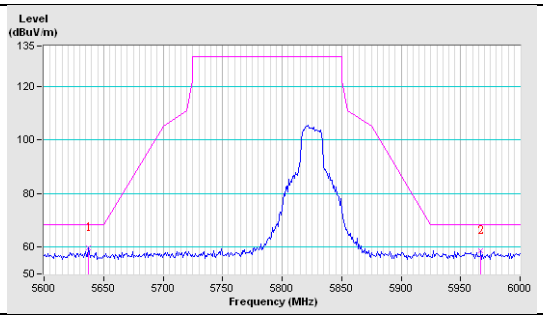
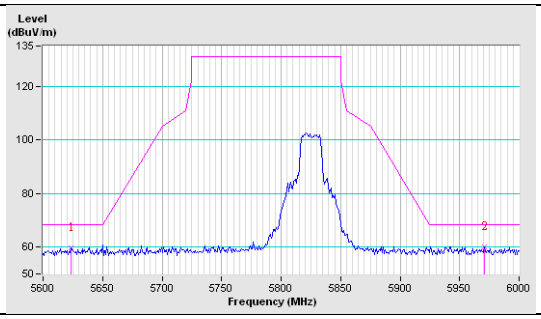
CH149

Horizontal	Vertical
	

CH157

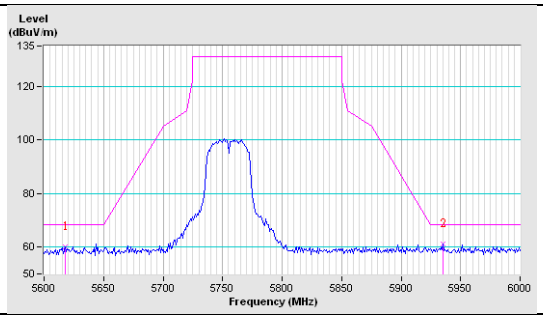
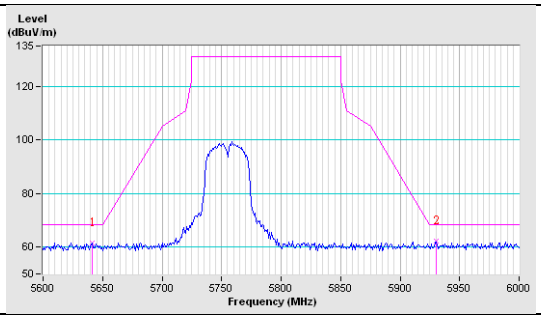
Horizontal	Vertical
	

CH165

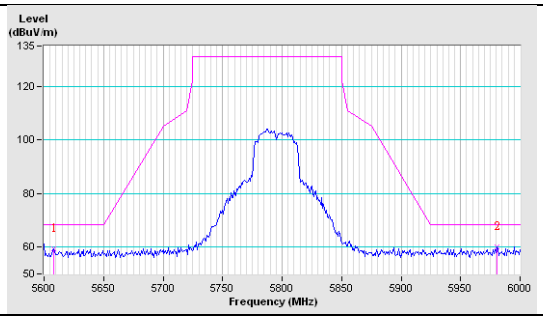
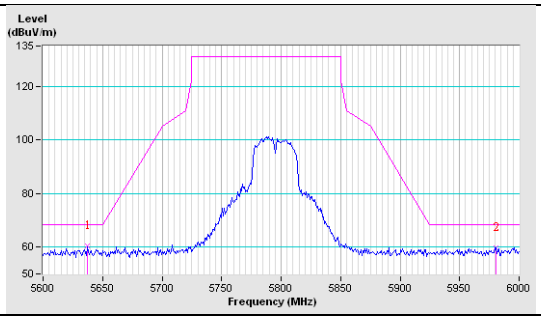
Horizontal	Vertical
	

802.11n (HT40)

CH151

Horizontal	Vertical
	

CH159

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:

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Web Site: www.bureauveritas-adt.com

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

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