FCC Test Report

Report No.: RF180522C01-1 R1

FCC ID: M82-ARK1124

Test Model: ARK-1124

Series Model: ARK-1124YXXXXXXXXXXXXXXX, ARK1124YXXXXXXXXXXXXXXX, EIS-D210WXXXXXXXXXXXXX, EISD210WXXXXXXXXXXXXX
(X=0-9, A-Z, hyphen, or blank, Y= 0-9, A-Z, hyphen, or blank, except “Y” not be “D” and “F”)

Received Date: May 22, 2018

Test Date: Jun. 06 ~ Jun. 27, 2018

Issued Date: Aug. 13, 2018

Applicant: ADVANTECH CO., LTD

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

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Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

FCC Registration/ Designation Number: 788550 / TW0003

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RF180522C01-1	Original release	Jul. 16, 2018
RF180522C01-1 R1	Added WiFi module information	Aug. 13, 2018

1 Certificate of Conformity

Product: Computer

Brand: Advantech

Model: ARK-1124

Series Model: ARK-1124YXXXXXXXXXXXXXXX, ARK1124YXXXXXXXXXXXXXXX, EIS-D210WXXXXXXXXXXXXX, EISD210WXXXXXXXXXXXXX
(X=0-9, A-Z, hyphen, or blank, Y= 0-9, A-Z, hyphen, or blank, except "Y" not be "D" and "F")

Sample Status: Engineering sample

Applicant: ADVANTECH CO., LTD

Test Date: Jun. 06 ~ Jun. 27, 2018

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 RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen , **Date:** Aug. 13, 2018
Pettie Chen / Senior Specialist

Approved by : Bruce Chen , **Date:** Aug. 13, 2018
Bruce Chen / Project Engineer

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 -13.12dB at 0.48626MHz.
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 -3.2dB at 5350.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is SMA Male Reverse not a standard connector.

*For U-NII-3 band compliance with rule part 15.407(b)(4)(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	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.94 dB
Radiated Emissions	30MHz ~ 200MHz	3.86 dB
	200MHz ~ 1000MHz	3.87 dB
	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	Computer
Brand	Advantech
Model	ARK-1124
Series Model	ARK-1124YXXXXXXXXXXXXXXX, ARK1124YXXXXXXXXXXXXXXX, EIS-D210WXXXXXXXXXXXXX, EISD210WXXXXXXXXXXXXX (X=0-9, A-Z, hyphen, or blank, Y= 0-9, A-Z, hyphen, or blank, except “Y” not be “D” and “F”)
Model Difference	Refer to Note
Sample Status	Engineering sample
Power Supply Rating	12Vdc (Adapter)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	5180~5240MHz, 5260~5320MHz, 5500~5720MHz, 5745~5825MHz
Number of Channel	5180~5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5260~5320MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5500~5720MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 12 802.11n (HT40), 802.11ac (VHT40): 6 802.11ac (VHT80): 3 5745~5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1
Output Power	5180~5240MHz: 38.226mW 5260~5320MHz: 102.085mW 5500~5720MHz: 94.540mW 5745~5825MHz: 105.178mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	Adapter
Cable Supplied	NA

Note:

1. All models are listed as below. Model ARK-1124 is the representative for final test.

Brand	Model	Description
Advantech	ARK-1124YXXXXXXXXXXXXXXX	Marketing purpose
	ARK1124YXXXXXXXXXXXXXXX	
	EIS-D210WXXXXXXXXXXXXX	
	EISD210WXXXXXXXXXXXXX	
X= 0-9, A-Z, hyphen, or blank Y= 0-9, A-Z, hyphen, or blank, except “Y” not be “D” and “F”		

2. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	TX Function
802.11a	2TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX
802.11ac (VHT20)	2TX
802.11ac (VHT40)	2TX
802.11ac (VHT80)	2TX

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

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

Brand	Model	Antenna Type	Connecter Type	Frequency Range	Antenna Gain(dBi)
Cortec Technology Inc.	AN2450-5511BRS	Dipole	SMA Male Reverse	2.4~2.5GHz	2.89
				5.15~5.85GHz	3.58

4. The following configurations are set for EUT.

Item	Specification
CPU	Intel E3940 Quad Core SoC
	Intel N3350 Dual Core SoC

* Intel N3350 Dual Core SoC is the worst case for the final tests.

5. The EUT consumes power from the following adapter.

Adapter	
Brand	FSP GROUP INC.
Model	FSP060-DIBAN2
Input Power	100-240V~, 1.5A, 50-60Hz
Output Power	12.0V/ 5.0A MAX
Power cable	1.4m non-shielded cable with one core

6. The following WiFi module was provided to the EUT.

Model	Chipset	Type
QCNFA364A	QCA6174A	IEEE 802.11ac/a/b/g/n 2X2 MIMO WLAN & Bluetooth M.2 module

7. Both of the Bluetooth and WLAN (5GHz) can transmit simultaneously.

3.2 Description of Test Modes

5180~5240MHz:

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

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210 MHz

5260~5320MHz:

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

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290 MHz

5500~5720MHz:

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

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

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

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

3 channels are provided for 802.11ac (VHT80):

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

5745~5825MHz:

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

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775 MHz

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 X-plane.

Radiated Emission Test (Above 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5
	802.11ac (VHT80)		42	42	OFDM	29.3
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5
	802.11ac (VHT80)		58	58	OFDM	29.3
-	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	6.0
	802.11n (HT20)		100 to 144	100, 116, 140, 144	OFDM	6.5
	802.11n (HT40)		102 to 142	102, 110, 134, 142	OFDM	13.5
	802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5
	802.11n (HT40)		151 to 159	151, 159	OFDM	13.5
	802.11ac (VHT80)		155	155	OFDM	29.3

Radiated Emission Test (Below 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	60	OFDM	6.0
		5260-5320	52 to 64		OFDM	6.0
		5500-5720	100 to 144		OFDM	6.0
		5745-5825	149 to 165		OFDM	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	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	60	OFDM	6.0
		5260-5320	52 to 64		OFDM	6.0
		5500-5720	100 to 144		OFDM	6.0
		5745-5825	149 to 165		OFDM	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	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5
	802.11ac (VHT80)		42	42	OFDM	29.3
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5
	802.11ac (VHT80)		58	58	OFDM	29.3
-	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	6.0
	802.11n (HT20)		100 to 144	100, 116, 140, 144	OFDM	6.5
	802.11n (HT40)		102 to 142	102, 110, 134, 142	OFDM	13.5
	802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5
	802.11n (HT40)		151 to 159	151, 159	OFDM	13.5
	802.11ac (VHT80)		155	155	OFDM	29.3

Test Condition:

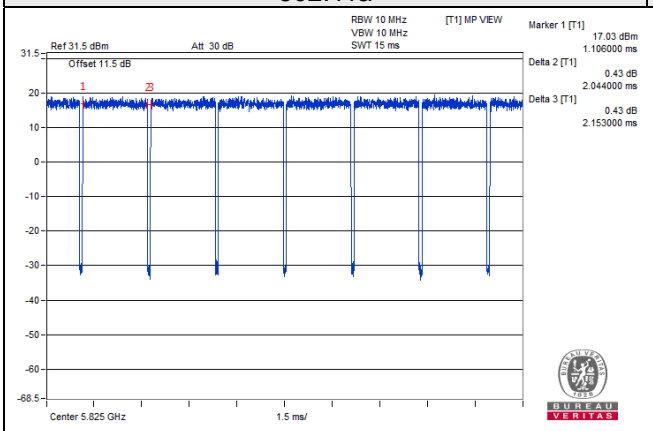
Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	23deg. C, 66%RH	120Vac, 60Hz	Adair Peng
RE<1G	23deg. C, 69%RH	120Vac, 60Hz	Willy Cheng
PLC	23deg. C, 69%RH	120Vac, 60Hz	Willy Cheng
APCM	25deg. C, 60%RH	120Vac, 60Hz	Frank Liu

3.3 Duty Cycle of Test Signal

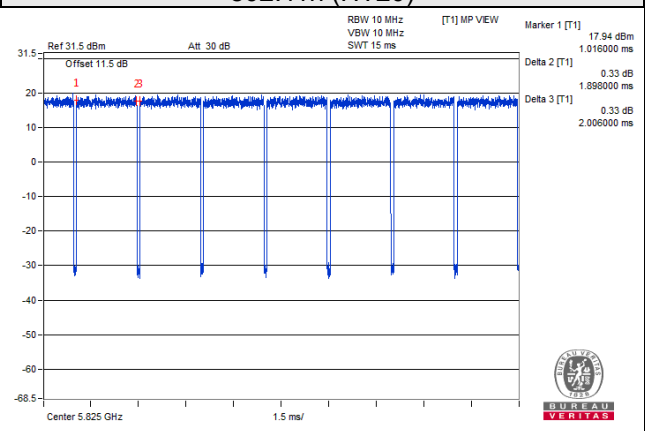
Duty cycle of test signal is ≥ 98%, duty factor is not required.
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 2.044/2.153 = 0.949, Duty factor = 10 * log(1/0.949) = 0.23
802.11n (HT20): Duty cycle = 1.898/2.006 = 0.946, Duty factor = 10 * log(1/0.946) = 0.24
802.11n (HT40): Duty cycle = 0.941/1.083 = 0.869, Duty factor = 10 * log(1/0.869) = 0.61
802.11ac (VHT80): Duty cycle = 0.459/0.553 = 0.83, Duty factor = 10 * log(1/0.83) = 0.81

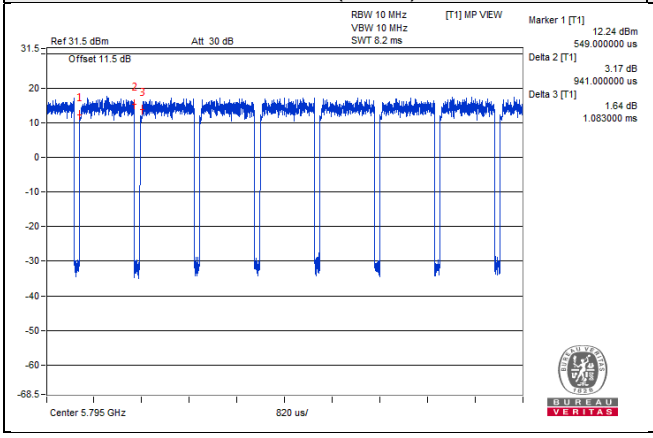
802.11a



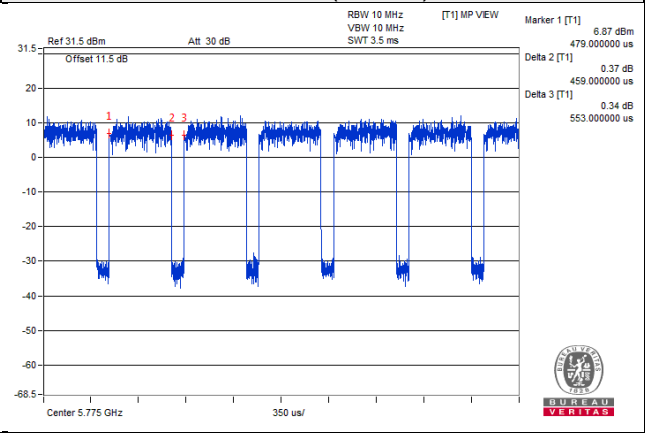
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



3.4 Description of Support Units

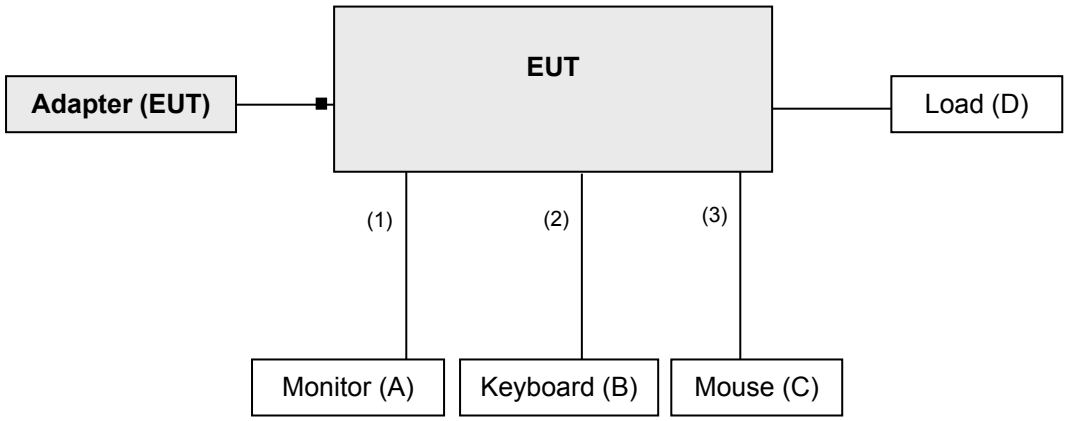
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Monitor	DELL	2001FP	CN-0C0647-466 33-544-06AL	FCC DoC Approved	-
B.	Keyboard	DELL	RT7D50	CN-0J4624-3717 2-44T-000M	FCC DoC Approved	-
C.	Mouse	DELL	MO56U0	516056250	FCC DoC Approved	-
D.	Load	NA	NA	NA	NA	-

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	1	Y	0	-
2.	USB cable	1	1	Y	0	-
3.	USB cable	1	1	Y	0	-
4.	RJ45 cable	2	1.5	N	0	-

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General UNII Test Procedure New Rules v02r01
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10:2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

Limits of unwanted emission out of the restricted bands

Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v02r01			Field Strength at 3m	
			PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK: -27 (dBm/MHz)	PK: 68.2(dBμV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK: -27 (dBm/MHz) *1 PK: 10 (dBm/MHz) *2 PK: 15.6 (dBm/MHz) *3 PK: 27 (dBm/MHz) *4	PK: 68.2(dBμV/m) *1 PK: 105.2 (dBμV/m) *2 PK: 110.8(dBμV/m) *3 PK: 122.2 (dBμV/m) *4
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	

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

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

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

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

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	May 29, 2018	May 28, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Dec. 12, 2017	Dec. 11, 2018
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Dec. 11, 2017	Dec. 10, 2018
HORN Antenna SCHWARZBECK	9120D	209	Dec. 13, 2017	Dec. 12, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 01, 2017	Nov. 30, 2018
Loop Antenna EMCI	EM-6879	269	Aug. 11, 2017	Aug. 10, 2018
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 21, 2017	Aug. 20, 2018
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Apr. 03, 2018	Apr. 02, 2019
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 21, 2017	Aug. 20, 2018
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM-SM-8 000	Cable-CH3-03 (309224+170907)	Sep.11, 2017	Sep. 10, 2018
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
26GHz ~ 40GHz Amplifier Agilent	8449B	3008A1960	Aug. 08, 2017	Aug. 07, 2018
High Speed Peak Power Meter	ML2495A	0824012	Aug. 18, 2017	Aug. 17, 2018
Power Sensor	MA2411B	0738171	Aug. 18, 2017	Aug. 17, 2018

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 3.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
5. The IC Site Registration No. is IC 7450F-3.

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

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

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

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

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

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

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

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

Note:

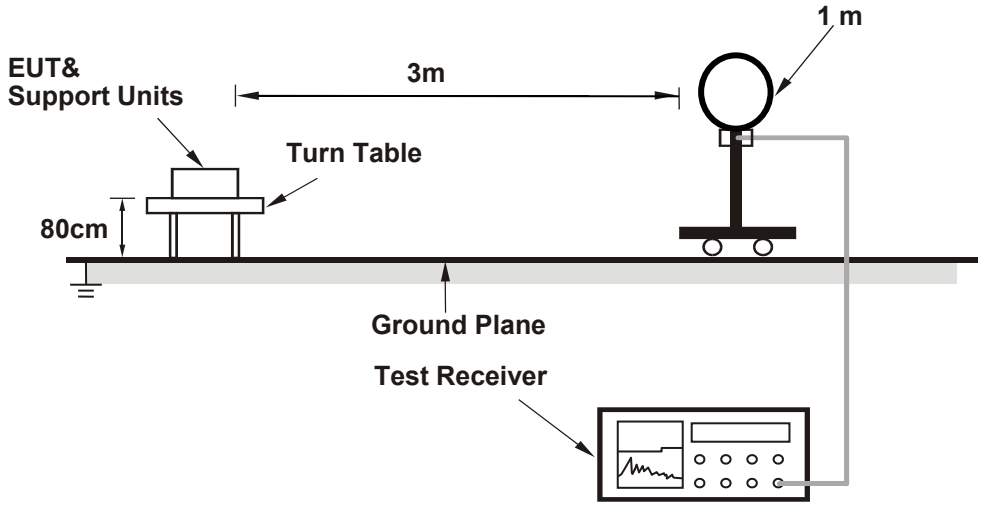
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

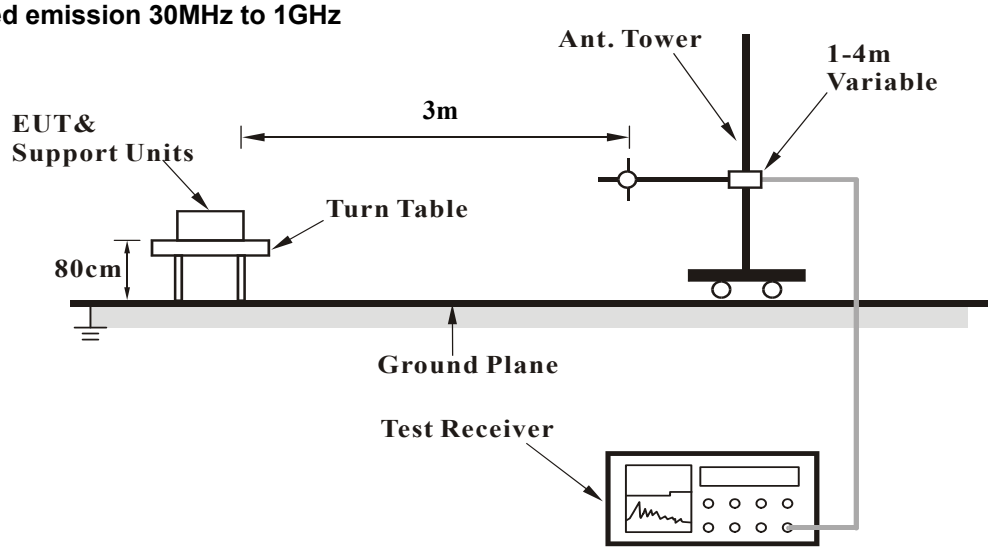
No deviation.

4.1.5 Test Set Up

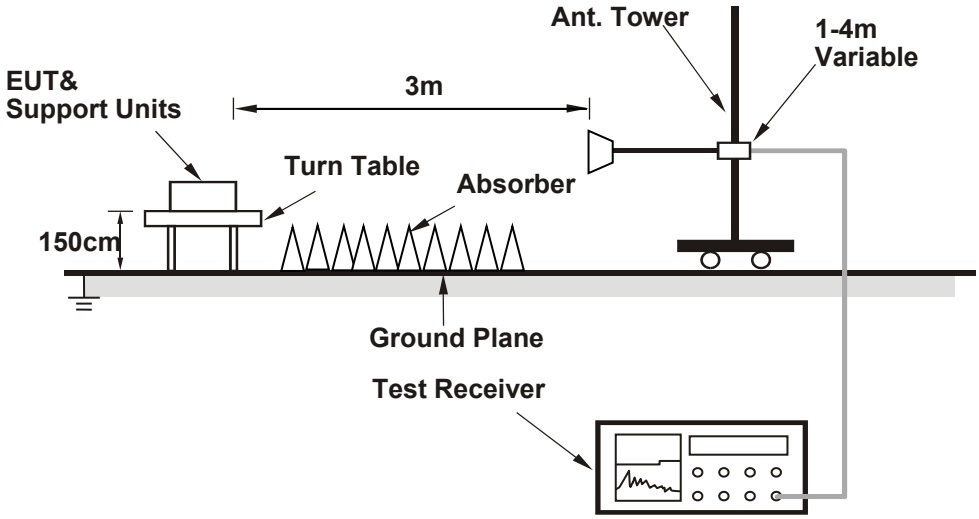
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

a. The EUT ran test program “QCAQMSL-QLIB” to enable all functions.
b. Set the EUT under transmission condition continuously at specific channel frequency.
c. The EUT sent “H” patterns to the monitor and the monitor displayed “H” patterns.

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	55.7 PK	74.0	-18.3	1.00 H	88	51.8	3.9
2	5150.00	42.7 AV	54.0	-11.3	1.00 H	88	38.8	3.9
3	*5180.00	100.3 PK			1.48 H	102	60.7	39.6
4	*5180.00	90.3 AV			1.48 H	102	50.7	39.6
5	#10360.00	58.0 PK	74.0	-16.0	2.93 H	229	42.2	15.8
6	#10360.00	45.2 AV	54.0	-8.8	2.93 H	229	29.4	15.8
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	56.1 PK	74.0	-17.9	1.21 V	48	52.2	3.9
2	5150.00	43.5 AV	54.0	-10.5	1.21 V	48	39.6	3.9
3	*5180.00	110.1 PK			1.05 V	45	70.5	39.6
4	*5180.00	99.8 AV			1.05 V	45	60.2	39.6
5	#10360.00	58.1 PK	74.0	-15.9	2.24 V	194	42.3	15.8
6	#10360.00	45.2 AV	54.0	-8.8	2.24 V	194	29.4	15.8

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 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	102.2 PK			2.69 H	143	62.6	39.6
2	*5200.00	92.1 AV			2.69 H	143	52.5	39.6
3	#10400.00	58.4 PK	74.0	-15.6	2.99 H	231	42.5	15.9
4	#10400.00	44.7 AV	54.0	-9.3	2.99 H	231	28.8	15.9
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	*5200.00	108.6 PK			1.22 V	298	69.0	39.6
2	*5200.00	98.8 AV			1.22 V	298	59.2	39.6
3	#10400.00	58.6 PK	74.0	-15.4	1.98 V	203	42.7	15.9
4	#10400.00	44.9 AV	54.0	-9.1	1.98 V	203	29.0	15.9

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 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	102.0 PK			2.70 H	146	62.6	39.4
2	*5240.00	92.1 AV			2.70 H	146	52.7	39.4
3	5350.00	55.2 PK	74.0	-18.8	2.59 H	155	51.2	4.0
4	5350.00	42.5 AV	54.0	-11.5	2.59 H	155	38.5	4.0
5	#10480.00	58.7 PK	74.0	-15.3	2.89 H	199	42.0	16.7
6	#10480.00	45.0 AV	54.0	-9.0	2.89 H	199	28.3	16.7
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	*5240.00	109.8 PK			2.22 V	223	70.4	39.4
2	*5240.00	99.4 AV			2.22 V	223	60.0	39.4
3	5350.00	55.7 PK	74.0	-18.3	2.31 V	232	51.7	4.0
4	5350.00	42.6 AV	54.0	-11.4	2.31 V	232	38.6	4.0
5	#10480.00	58.8 PK	74.0	-15.2	2.15 V	197	42.1	16.7
6	#10480.00	45.6 AV	54.0	-8.4	2.15 V	197	28.9	16.7

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 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	5150.00	56.0 PK	74.0	-18.0	2.80 H	205	52.1	3.9
2	5150.00	42.8 AV	54.0	-11.2	2.80 H	205	38.9	3.9
3	*5260.00	106.7 PK			2.70 H	194	67.3	39.4
4	*5260.00	96.3 AV			2.70 H	194	56.9	39.4
5	#10520.00	58.8 PK	74.0	-15.2	3.06 H	225	42.0	16.8
6	#10520.00	45.5 AV	54.0	-8.5	3.06 H	225	28.7	16.8
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	56.5 PK	74.0	-17.5	2.69 V	161	52.6	3.9
2	5150.00	42.9 AV	54.0	-11.1	2.69 V	161	39.0	3.9
3	*5260.00	114.4 PK			2.78 V	159	75.0	39.4
4	*5260.00	104.5 AV			2.78 V	159	65.1	39.4
5	#10520.00	59.3 PK	74.0	-14.7	2.44 V	193	42.5	16.8
6	#10520.00	45.7 AV	54.0	-8.3	2.44 V	193	28.9	16.8

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 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	105.7 PK			2.72 H	143	66.3	39.4
2	*5300.00	96.2 AV			2.72 H	143	56.8	39.4
3	10600.00	59.0 PK	74.0	-15.0	2.93 H	229	42.0	17.0
4	10600.00	46.2 AV	54.0	-7.8	2.93 H	229	29.2	17.0
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	*5300.00	114.3 PK			2.65 V	223	74.9	39.4
2	*5300.00	104.4 AV			2.65 V	223	65.0	39.4
3	10600.00	59.1 PK	74.0	-14.9	2.37 V	188	42.1	17.0
4	10600.00	46.3 AV	54.0	-7.7	2.37 V	188	29.3	17.0

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 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	105.7 PK			2.61 H	193	66.2	39.5
2	*5320.00	95.7 AV			2.61 H	193	56.2	39.5
3	5350.00	57.0 PK	74.0	-17.0	2.80 H	180	53.0	4.0
4	5350.00	43.4 AV	54.0	-10.6	2.80 H	180	39.4	4.0
5	10640.00	59.2 PK	74.0	-14.8	2.87 H	203	42.2	17.0
6	10640.00	45.9 AV	54.0	-8.1	2.87 H	203	28.9	17.0
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	114.2 PK			2.64 V	158	74.7	39.5
2	*5320.00	104.1 AV			2.64 V	158	64.6	39.5
3	5350.00	57.9 PK	74.0	-16.1	2.71 V	161	53.9	4.0
4	5350.00	45.2 AV	54.0	-8.8	2.71 V	161	41.2	4.0
5	10640.00	59.3 PK	74.0	-14.7	2.29 V	197	42.3	17.0
6	10640.00	45.8 AV	54.0	-8.2	2.29 V	197	28.8	17.0

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 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	55.9 PK	74.0	-18.1	2.29 H	180	51.5	4.4
2	5460.00	43.4 AV	54.0	-10.6	2.29 H	180	39.0	4.4
3	#5470.00	57.1 PK	74.0	-16.9	2.55 H	189	52.7	4.4
4	#5470.00	44.1 AV	54.0	-9.9	2.55 H	189	39.7	4.4
5	*5500.00	104.9 PK			2.45 H	193	64.8	40.1
6	*5500.00	94.6 AV			2.45 H	193	54.5	40.1
7	11000.00	60.2 PK	74.0	-13.8	2.88 H	236	41.5	18.7
8	11000.00	46.9 AV	54.0	-7.1	2.88 H	236	28.2	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	5460.00	56.3 PK	74.0	-17.7	2.87 V	170	51.9	4.4
2	5460.00	43.7 AV	54.0	-10.3	2.87 V	170	39.3	4.4
3	#5470.00	58.3 PK	74.0	-15.7	2.99 V	163	53.9	4.4
4	#5470.00	44.7 AV	54.0	-9.3	2.99 V	163	40.3	4.4
5	*5500.00	111.7 PK			2.75 V	178	71.6	40.1
6	*5500.00	101.9 AV			2.75 V	178	61.8	40.1
7	11000.00	60.5 PK	74.0	-13.5	2.39 V	216	41.8	18.7
8	11000.00	47.2 AV	54.0	-6.8	2.39 V	216	28.5	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 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	*5580.00	111.6 PK			2.51 H	186	107.2	4.4
2	*5580.00	101.2 AV			2.51 H	186	96.8	4.4
3	11160.00	59.0 PK	74.0	-15.0	2.89 H	251	41.5	17.5
4	11160.00	45.6 AV	54.0	-8.4	2.89 H	251	28.1	17.5
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	*5580.00	114.1 PK			2.40 V	183	74.1	40.0
2	*5580.00	103.8 AV			2.40 V	183	63.8	40.0
3	11160.00	59.1 PK	74.0	-14.9	2.86 V	224	41.6	17.5
4	11160.00	46.0 AV	54.0	-8.0	2.86 V	224	28.5	17.5

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 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	104.4 PK			2.61 H	188	64.4	40.0
2	*5700.00	94.5 AV			2.61 H	188	54.5	40.0
3	#5725.00	56.5 PK	74.0	-17.5	2.54 H	191	52.1	4.4
4	#5725.00	44.9 AV	54.0	-9.1	2.54 H	191	40.5	4.4
5	11400.00	60.1 PK	74.0	-13.9	3.09 H	222	42.7	17.4
6	11400.00	46.8 AV	54.0	-7.2	3.09 H	222	29.4	17.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	111.4 PK			2.75 V	340	71.4	40.0
2	*5700.00	101.3 AV			2.75 V	340	61.3	40.0
3	#5725.00	57.9 PK	74.0	-16.1	2.48 V	345	53.5	4.4
4	#5725.00	45.7 AV	54.0	-8.3	2.48 V	345	41.3	4.4
5	11400.00	60.3 PK	74.0	-13.7	2.19 V	239	42.9	17.4
6	11400.00	47.1 AV	54.0	-6.9	2.19 V	239	29.7	17.4

Remarks:

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

CHANNEL	TX Channel 144	DETECTOR 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	54.6 PK	74.0	-19.4	2.51 H	199	50.2	4.4
2	5460.00	42.5 AV	54.0	-11.5	2.51 H	199	38.1	4.4
3	#5470.00	55.9 PK	74.0	-18.1	2.49 H	190	51.5	4.4
4	#5470.00	43.5 AV	54.0	-10.5	2.49 H	190	39.1	4.4
5	*5720.00	103.2 PK			2.40 H	193	63.2	40.0
6	*5720.00	93.0 AV			2.40 H	193	53.0	40.0
7	#5825.00	57.1 PK	74.0	-16.9	2.60 H	201	52.3	4.8
8	#5825.00	44.3 AV	54.0	-9.7	2.60 H	201	39.5	4.8
9	11440.00	59.5 PK	74.0	-14.5	2.97 H	263	41.9	17.6
10	11440.00	46.4 AV	54.0	-7.6	2.97 H	263	28.8	17.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.2 PK	74.0	-17.8	2.77 V	299	51.8	4.4
2	5460.00	43.6 AV	54.0	-10.4	2.77 V	299	39.2	4.4
3	#5470.00	57.6 PK	74.0	-16.4	2.87 V	274	53.2	4.4
4	#5470.00	44.4 AV	54.0	-9.6	2.87 V	274	40.0	4.4
5	*5720.00	110.2 PK			2.68 V	303	70.2	40.0
6	*5720.00	100.0 AV			2.68 V	303	60.0	40.0
7	#5825.00	58.2 PK	74.0	-15.8	3.07 V	244	53.4	4.8
8	#5825.00	45.1 AV	54.0	-8.9	3.07 V	244	40.3	4.8
9	11440.00	59.8 PK	74.0	-14.2	2.73 V	222	42.2	17.6
10	11440.00	46.8 AV	54.0	-7.2	2.73 V	222	29.2	17.6

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	#5607.20	56.0 PK	68.2	-12.2	1.30 H	234	51.5	4.5
2	*5745.00	105.1 PK			1.30 H	234	65.0	40.1
3	*5745.00	94.7 AV			1.30 H	234	54.6	40.1
4	#5979.20	57.0 PK	68.2	-11.2	1.30 H	234	51.7	5.3
5	11490.00	59.9 PK	74.0	-14.1	2.85 H	163	42.3	17.6
6	11490.00	46.6 AV	54.0	-7.4	2.85 H	163	29.0	17.6
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	#5646.40	58.1 PK	68.2	-10.1	2.73 V	336	53.5	4.6
2	*5745.00	114.1 PK			2.73 V	336	74.0	40.1
3	*5745.00	103.7 AV			2.73 V	336	63.6	40.1
4	#5952.80	59.9 PK	68.2	-8.3	2.73 V	336	54.7	5.2
5	11490.00	60.1 PK	74.0	-13.9	1.83 V	261	42.5	17.6
6	11490.00	46.5 AV	54.0	-7.5	1.83 V	261	28.9	17.6

Remarks:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) 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	#5635.20	55.9 PK	68.2	-12.3	1.30 H	233	51.4	4.5
2	*5785.00	104.3 PK			1.30 H	233	64.0	40.3
3	*5785.00	94.0 AV			1.30 H	233	53.7	40.3
4	#5953.60	57.0 PK	68.2	-11.2	1.30 H	233	51.8	5.2
5	11570.00	61.3 PK	74.0	-12.7	2.63 H	147	43.4	17.9
6	11570.00	47.2 AV	54.0	-6.8	2.63 H	147	29.3	17.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5631.20	57.6 PK	68.2	-10.6	2.46 V	336	53.1	4.5
2	*5785.00	114.3 PK			2.46 V	336	74.0	40.3
3	*5785.00	103.9 AV			2.46 V	336	63.6	40.3
4	#5928.00	59.1 PK	68.2	-9.1	2.46 V	336	53.9	5.2
5	11570.00	60.9 PK	74.0	-13.1	1.88 V	231	43.0	17.9
6	11570.00	47.3 AV	54.0	-6.7	1.88 V	231	29.4	17.9

Remarks:

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

CHANNEL	TX Channel 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	#5603.20	56.2 PK	68.2	-12.0	1.26 H	232	51.7	4.5
2	*5825.00	104.7 PK			1.26 H	232	64.2	40.5
3	*5825.00	94.4 AV			1.26 H	232	53.9	40.5
4	#6000.00	58.2 PK	68.2	-10.0	1.26 H	232	52.9	5.3
5	11650.00	61.2 PK	74.0	-12.8	2.98 H	182	43.7	17.5
6	11650.00	46.7 AV	54.0	-7.3	2.98 H	182	29.2	17.5
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	#5600.80	57.2 PK	68.2	-11.0	2.66 V	330	52.7	4.5
2	*5825.00	114.6 PK			2.66 V	330	74.1	40.5
3	*5825.00	104.2 AV			2.66 V	330	63.7	40.5
4	#5930.40	58.4 PK	68.2	-9.8	2.66 V	330	53.2	5.2
5	11650.00	60.3 PK	74.0	-13.7	1.96 V	278	42.8	17.5
6	11650.00	47.0 AV	54.0	-7.0	1.96 V	278	29.5	17.5

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.

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	55.5 PK	74.0	-18.5	2.53 H	187	51.6	3.9
2	5150.00	42.7 AV	54.0	-11.3	2.53 H	187	38.8	3.9
3	*5180.00	102.6 PK			2.67 H	190	63.0	39.6
4	*5180.00	92.6 AV			2.67 H	190	53.0	39.6
5	#10360.00	57.9 PK	74.0	-16.1	2.36 H	205	42.1	15.8
6	#10360.00	44.4 AV	54.0	-9.6	2.36 H	205	28.6	15.8
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	55.7 PK	74.0	-18.3	2.54 V	216	51.8	3.9
2	5150.00	43.2 AV	54.0	-10.8	2.54 V	216	39.3	3.9
3	*5180.00	110.3 PK			2.14 V	258	70.7	39.6
4	*5180.00	99.5 AV			2.14 V	258	59.9	39.6
5	#10360.00	58.1 PK	74.0	-15.9	2.13 V	187	42.3	15.8
6	#10360.00	44.8 AV	54.0	-9.2	2.13 V	187	29.0	15.8

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 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	102.4 PK			2.72 H	144	62.8	39.6
2	*5200.00	92.4 AV			2.72 H	144	52.8	39.6
3	#10400.00	57.8 PK	74.0	-16.2	2.18 H	192	41.9	15.9
4	#10400.00	44.6 AV	54.0	-9.4	2.18 H	192	28.7	15.9
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	*5200.00	110.9 PK			2.80 V	162	71.3	39.6
2	*5200.00	101.2 AV			2.80 V	162	61.6	39.6
3	#10400.00	58.0 PK	74.0	-16.0	2.29 V	210	42.1	15.9
4	#10400.00	44.9 AV	54.0	-9.1	2.29 V	210	29.0	15.9

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 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	103.5 PK			2.76 H	193	64.1	39.4
2	*5240.00	93.0 AV			2.76 H	193	53.6	39.4
3	5350.00	56.2 PK	74.0	-17.8	2.66 H	188	52.2	4.0
4	5350.00	42.8 AV	54.0	-11.2	2.66 H	188	38.8	4.0
5	#10480.00	58.4 PK	74.0	-15.6	2.65 H	189	41.7	16.7
6	#10480.00	45.3 AV	54.0	-8.7	2.65 H	189	28.6	16.7
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	*5240.00	111.4 PK			2.77 V	170	72.0	39.4
2	*5240.00	100.9 AV			2.77 V	170	61.5	39.4
3	5350.00	56.4 PK	74.0	-17.6	2.62 V	184	52.4	4.0
4	5350.00	42.9 AV	54.0	-11.1	2.62 V	184	38.9	4.0
5	#10480.00	58.6 PK	74.0	-15.4	1.92 V	203	41.9	16.7
6	#10480.00	45.3 AV	54.0	-8.7	1.92 V	203	28.6	16.7

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 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	5150.00	56.0 PK	74.0	-18.0	2.67 H	168	52.1	3.9
2	5150.00	42.9 AV	54.0	-11.1	2.67 H	168	39.0	3.9
3	*5260.00	106.6 PK			2.82 H	143	67.2	39.4
4	*5260.00	96.9 AV			2.82 H	143	57.5	39.4
5	#10520.00	58.7 PK	74.0	-15.3	2.99 H	219	41.9	16.8
6	#10520.00	45.5 AV	54.0	-8.5	2.99 H	219	28.7	16.8
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	57.0 PK	74.0	-17.0	2.68 V	172	53.1	3.9
2	5150.00	42.9 AV	54.0	-11.1	2.68 V	172	39.0	3.9
3	*5260.00	116.1 PK			2.72 V	170	76.7	39.4
4	*5260.00	105.8 AV			2.72 V	170	66.4	39.4
5	#10520.00	59.0 PK	74.0	-15.0	2.40 V	205	42.2	16.8
6	#10520.00	45.7 AV	54.0	-8.3	2.40 V	205	28.9	16.8

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 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	108.1 PK			2.66 H	193	68.7	39.4
2	*5300.00	97.7 AV			2.66 H	193	58.3	39.4
3	10600.00	59.3 PK	74.0	-14.7	2.97 H	199	42.3	17.0
4	10600.00	46.1 AV	54.0	-7.9	2.97 H	199	29.1	17.0
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	*5300.00	114.4 PK			2.40 V	145	75.0	39.4
2	*5300.00	104.7 AV			2.40 V	145	65.3	39.4
3	10600.00	59.6 PK	74.0	-14.4	2.29 V	191	42.6	17.0
4	10600.00	46.5 AV	54.0	-7.5	2.29 V	191	29.5	17.0

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 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	106.1 PK			2.64 H	146	66.6	39.5
2	*5320.00	95.7 AV			2.64 H	146	56.2	39.5
3	5350.00	56.2 PK	74.0	-17.8	1.51 H	161	52.2	4.0
4	5350.00	43.7 AV	54.0	-10.3	1.51 H	161	39.7	4.0
5	10640.00	59.7 PK	74.0	-14.3	2.91 H	218	42.7	17.0
6	10640.00	46.2 AV	54.0	-7.8	2.91 H	218	29.2	17.0
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	114.1 PK			2.64 V	156	74.6	39.5
2	*5320.00	103.6 AV			2.64 V	156	64.1	39.5
3	5350.00	57.8 PK	74.0	-16.2	2.76 V	164	53.8	4.0
4	5350.00	45.5 AV	54.0	-8.5	2.76 V	164	41.5	4.0
5	10640.00	59.8 PK	74.0	-14.2	2.19 V	203	42.8	17.0
6	10640.00	46.4 AV	54.0	-7.6	2.19 V	203	29.4	17.0

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 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	55.5 PK	74.0	-18.5	2.54 H	166	51.1	4.4
2	5460.00	43.8 AV	54.0	-10.2	2.54 H	166	39.4	4.4
3	#5470.00	57.4 PK	74.0	-16.6	2.55 H	176	53.0	4.4
4	#5470.00	43.8 AV	54.0	-10.2	2.55 H	176	39.4	4.4
5	*5500.00	106.2 PK			2.33 H	149	66.1	40.1
6	*5500.00	95.7 AV			2.33 H	149	55.6	40.1
7	11000.00	60.2 PK	74.0	-13.8	2.99 H	254	41.5	18.7
8	11000.00	46.8 AV	54.0	-7.2	2.99 H	254	28.1	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	5460.00	55.7 PK	74.0	-18.3	2.44 V	181	51.3	4.4
2	5460.00	44.1 AV	54.0	-9.9	2.44 V	181	39.7	4.4
3	#5470.00	57.9 PK	74.0	-16.1	2.61 V	177	53.5	4.4
4	#5470.00	45.1 AV	54.0	-8.9	2.61 V	177	40.7	4.4
5	*5500.00	113.9 PK			2.56 V	182	73.8	40.1
6	*5500.00	103.8 AV			2.56 V	182	63.7	40.1
7	11000.00	60.8 PK	74.0	-13.2	1.99 V	236	42.1	18.7
8	11000.00	47.2 AV	54.0	-6.8	1.99 V	236	28.5	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 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	*5580.00	107.1 PK			2.61 H	181	67.1	40.0
2	*5580.00	97.0 AV			2.61 H	181	57.0	40.0
3	11160.00	59.3 PK	74.0	-14.7	3.10 H	255	41.8	17.5
4	11160.00	45.9 AV	54.0	-8.1	3.10 H	255	28.4	17.5
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	*5580.00	114.3 PK			2.51 V	182	74.3	40.0
2	*5580.00	104.3 AV			2.51 V	182	64.3	40.0
3	11160.00	59.7 PK	74.0	-14.3	2.18 V	234	42.2	17.5
4	11160.00	46.1 AV	54.0	-7.9	2.18 V	234	28.6	17.5

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 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	68.2 PK			2.69 H	169	63.8	4.4
2	*5700.00	57.6 AV			2.69 H	169	53.2	4.4
3	#5725.00	57.4 PK	74.0	-16.6	2.58 H	160	53.0	4.4
4	#5725.00	45.6 AV	54.0	-8.4	2.58 H	160	41.2	4.4
5	11400.00	60.0 PK	74.0	-14.0	2.91 H	224	42.6	17.4
6	11400.00	46.7 AV	54.0	-7.3	2.91 H	224	29.3	17.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	111.3 PK			2.48 V	342	71.3	40.0
2	*5700.00	101.2 AV			2.48 V	342	61.2	40.0
3	#5725.00	58.2 PK	74.0	-15.8	2.36 V	338	53.8	4.4
4	#5725.00	46.3 AV	54.0	-7.7	2.36 V	338	41.9	4.4
5	11400.00	60.4 PK	74.0	-13.6	2.39 V	229	43.0	17.4
6	11400.00	47.1 AV	54.0	-6.9	2.39 V	229	29.7	17.4

Remarks:

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

CHANNEL	TX Channel 144	DETECTOR 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	54.8 PK	74.0	-19.2	2.49 H	190	50.4	4.4
2	5460.00	42.9 AV	54.0	-11.1	2.49 H	190	38.5	4.4
3	#5470.00	56.0 PK	74.0	-18.0	2.59 H	197	51.6	4.4
4	#5470.00	43.3 AV	54.0	-10.7	2.59 H	197	38.9	4.4
5	*5720.00	102.6 PK			2.53 H	192	62.6	40.0
6	*5720.00	92.4 AV			2.53 H	192	52.4	40.0
7	#5825.00	56.2 PK	74.0	-17.8	2.61 H	189	51.4	4.8
8	#5825.00	43.3 AV	54.0	-10.7	2.61 H	189	38.5	4.8
9	11440.00	59.8 PK	74.0	-14.2	2.87 H	245	42.2	17.6
10	11440.00	46.6 AV	54.0	-7.4	2.87 H	245	29.0	17.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.3 PK	74.0	-17.7	2.91 V	301	51.9	4.4
2	5460.00	43.4 AV	54.0	-10.6	2.91 V	301	39.0	4.4
3	#5470.00	57.1 PK	74.0	-16.9	2.86 V	317	52.7	4.4
4	#5470.00	44.2 AV	54.0	-9.8	2.86 V	317	39.8	4.4
5	*5720.00	110.3 PK			2.73 V	332	70.3	40.0
6	*5720.00	100.2 AV			2.73 V	332	60.2	40.0
7	#5825.00	57.2 PK	74.0	-16.8	3.06 V	309	52.4	4.8
8	#5825.00	44.4 AV	54.0	-9.6	3.06 V	309	39.6	4.8
9	11440.00	60.2 PK	74.0	-13.8	2.91 V	239	42.6	17.6
10	11440.00	46.9 AV	54.0	-7.1	2.91 V	239	29.3	17.6

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	#5629.60	57.8 PK	68.2	-10.4	1.29 H	233	53.3	4.5
2	*5745.00	102.3 PK			1.29 H	233	62.2	40.1
3	*5745.00	92.1 AV			1.29 H	233	52.0	40.1
4	#5928.80	57.6 PK	68.2	-10.6	1.29 H	233	52.4	5.2
5	11490.00	58.5 PK	74.0	-15.5	2.91 H	229	40.9	17.6
6	11490.00	44.7 AV	54.0	-9.3	2.91 H	229	27.1	17.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5624.80	53.5 PK	68.2	-14.7	2.18 V	217	49.0	4.5
2	*5745.00	112.7 PK			2.18 V	217	72.6	40.1
3	*5745.00	102.7 AV			2.18 V	217	62.6	40.1
4	#5930.40	53.6 PK	68.2	-14.6	2.18 V	217	48.4	5.2
5	11490.00	58.6 PK	74.0	-15.4	2.50 V	188	41.0	17.6
6	11490.00	44.9 AV	54.0	-9.1	2.50 V	188	27.3	17.6

Remarks:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) 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	#5624.00	57.6 PK	68.2	-10.6	1.31 H	238	53.1	4.5
2	*5785.00	103.8 PK			1.31 H	238	63.5	40.3
3	*5785.00	93.7 AV			1.31 H	238	53.4	40.3
4	#5940.00	57.2 PK	68.2	-11.0	1.31 H	238	52.1	5.1
5	11570.00	57.6 PK	74.0	-16.4	3.01 H	233	39.7	17.9
6	11570.00	44.6 AV	54.0	-9.4	3.01 H	233	26.7	17.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5619.20	52.9 PK	68.2	-15.3	2.24 V	218	48.4	4.5
2	*5785.00	113.0 PK			2.24 V	218	72.7	40.3
3	*5785.00	103.1 AV			2.24 V	218	62.8	40.3
4	#5936.00	52.0 PK	68.2	-16.2	2.24 V	218	46.9	5.1
5	11570.00	58.1 PK	74.0	-15.9	2.29 V	177	40.2	17.9
6	11570.00	44.9 AV	54.0	-9.1	2.29 V	177	27.0	17.9

Remarks:

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

CHANNEL	TX Channel 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	#5645.60	56.8 PK	68.2	-11.4	1.28 H	239	52.2	4.6
2	*5825.00	102.5 PK			1.28 H	239	62.0	40.5
3	*5825.00	93.1 AV			1.28 H	239	52.6	40.5
4	#5980.00	56.9 PK	68.2	-11.3	1.28 H	239	51.6	5.3
5	11650.00	58.4 PK	74.0	-15.6	2.87 H	236	40.9	17.5
6	11650.00	44.6 AV	54.0	-9.4	2.87 H	236	27.1	17.5
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	#5604.80	53.3 PK	68.2	-14.9	2.34 V	216	48.8	4.5
2	*5825.00	113.1 PK			2.34 V	216	72.6	40.5
3	*5825.00	103.2 AV			2.34 V	216	62.7	40.5
4	#5973.60	52.7 PK	68.2	-15.5	2.34 V	216	47.4	5.3
5	11650.00	58.5 PK	74.0	-15.5	2.55 V	178	41.0	17.5
6	11650.00	44.8 AV	54.0	-9.2	2.55 V	178	27.3	17.5

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.

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	57.2 PK	74.0	-16.8	2.64 H	183	53.3	3.9
2	5150.00	42.9 AV	54.0	-11.1	2.64 H	183	39.0	3.9
3	*5190.00	98.9 PK			2.78 H	192	59.3	39.6
4	*5190.00	89.3 AV			2.78 H	192	49.7	39.6
5	#10380.00	58.4 PK	74.0	-15.6	2.41 H	205	42.5	15.9
6	#10380.00	44.6 AV	54.0	-9.4	2.41 H	205	28.7	15.9
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	*5190.00	107.8 PK			2.84 V	165	68.2	39.6
2	*5190.00	98.1 AV			2.84 V	165	58.5	39.6
3	5350.00	57.6 PK	74.0	-16.4	2.70 V	179	53.6	4.0
4	5350.00	43.0 AV	54.0	-11.0	2.70 V	179	39.0	4.0
5	#10380.00	58.6 PK	74.0	-15.4	1.95 V	187	42.7	15.9
6	#10380.00	44.9 AV	54.0	-9.1	1.95 V	187	29.0	15.9

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 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	98.6 PK			2.66 H	191	59.2	39.4
2	*5230.00	89.0 AV			2.66 H	191	49.6	39.4
3	5350.00	56.1 PK	74.0	-17.9	2.68 H	169	52.1	4.0
4	5350.00	42.9 AV	54.0	-11.1	2.68 H	169	38.9	4.0
5	#10460.00	58.3 PK	74.0	-15.7	2.52 H	199	41.9	16.4
6	#10460.00	45.1 AV	54.0	-8.9	2.52 H	199	28.7	16.4
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	*5230.00	106.3 PK			2.48 V	224	66.9	39.4
2	*5230.00	96.7 AV			2.48 V	224	57.3	39.4
3	5350.00	57.6 PK	74.0	-16.4	2.57 V	207	53.6	4.0
4	5350.00	43.0 AV	54.0	-11.0	2.57 V	207	39.0	4.0
5	#10460.00	58.4 PK	74.0	-15.6	2.02 V	199	42.0	16.4
6	#10460.00	45.3 AV	54.0	-8.7	2.02 V	199	28.9	16.4

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 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	5150.00	56.1 PK	74.0	-17.9	2.52 H	143	52.2	3.9
2	5150.00	42.6 AV	54.0	-11.4	2.52 H	143	38.7	3.9
3	*5270.00	102.3 PK			2.45 H	150	62.9	39.4
4	*5270.00	93.4 AV			2.45 H	150	54.0	39.4
5	#10540.00	58.9 PK	74.0	-15.1	2.97 H	241	42.0	16.9
6	#10540.00	46.0 AV	54.0	-8.0	2.97 H	241	29.1	16.9
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	57.9 PK	74.0	-16.1	2.86 V	168	54.0	3.9
2	5150.00	43.0 AV	54.0	-11.0	2.86 V	168	39.1	3.9
3	*5270.00	111.4 PK			2.60 V	183	72.0	39.4
4	*5270.00	102.4 AV			2.60 V	183	63.0	39.4
5	#10540.00	59.0 PK	74.0	-15.0	2.22 V	199	42.1	16.9
6	#10540.00	46.2 AV	54.0	-7.8	2.22 V	199	29.3	16.9

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 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	101.4 PK			2.53 H	153	62.0	39.4
2	*5310.00	92.0 AV			2.53 H	153	52.6	39.4
3	5350.00	60.8 PK	74.0	-13.2	2.63 H	141	56.8	4.0
4	5350.00	44.6 AV	54.0	-9.4	2.63 H	141	40.6	4.0
5	10620.00	59.1 PK	74.0	-14.9	2.98 H	221	42.0	17.1
6	10620.00	45.9 AV	54.0	-8.1	2.98 H	221	28.8	17.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	109.2 PK			2.40 V	214	69.8	39.4
2	*5310.00	99.6 AV			2.40 V	214	60.2	39.4
3	5350.00	69.4 PK	74.0	-4.6	2.42 V	187	65.4	4.0
4	**5350.00**	**50.8 AV**	**54.0**	**-3.2**	**2.42 V**	**187**	**46.8**	**4.0**
5	10620.00	59.4 PK	74.0	-14.6	2.29 V	205	42.3	17.1
6	10620.00	46.2 AV	54.0	-7.8	2.29 V	205	29.1	17.1

Remarks:

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

CHANNEL	TX Channel 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	56.0 PK	74.0	-18.0	2.70 H	159	51.6	4.4
2	5460.00	43.9 AV	54.0	-10.1	2.70 H	159	39.5	4.4
3	#5470.00	61.0 PK	74.0	-13.0	2.76 H	162	56.6	4.4
4	#5470.00	45.6 AV	54.0	-8.4	2.76 H	162	41.2	4.4
5	*5510.00	102.0 PK			2.61 H	147	61.9	40.1
6	*5510.00	92.4 AV			2.61 H	147	52.3	40.1
7	11020.00	60.2 PK	74.0	-13.8	3.15 H	261	41.8	18.4
8	11020.00	46.9 AV	54.0	-7.1	3.15 H	261	28.5	18.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	64.0 PK	74.0	-10.0	2.29 V	231	59.6	4.4
2	5460.00	46.1 AV	54.0	-7.9	2.29 V	231	41.7	4.4
3	#5470.00	69.6 PK	74.0	-4.4	2.43 V	220	65.2	4.4
4	#5470.00	50.5 AV	54.0	-3.5	2.43 V	220	46.1	4.4
5	*5510.00	109.4 PK			2.40 V	215	69.3	40.1
6	*5510.00	99.7 AV			2.40 V	215	59.6	40.1
7	11020.00	60.5 PK	74.0	-13.5	2.18 V	197	42.1	18.4
8	11020.00	47.1 AV	54.0	-6.9	2.18 V	197	28.7	18.4

Remarks:

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

CHANNEL	TX Channel 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	*5550.00	104.5 PK			2.69 H	181	64.5	40.0
2	*5550.00	94.5 AV			2.69 H	181	54.5	40.0
3	11100.00	59.0 PK	74.0	-15.0	2.99 H	221	41.5	17.5
4	11100.00	46.2 AV	54.0	-7.8	2.99 H	221	28.7	17.5
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	*5550.00	111.8 PK			2.58 V	179	71.8	40.0
2	*5550.00	102.0 AV			2.58 V	179	62.0	40.0
3	11100.00	59.5 PK	74.0	-14.5	2.32 V	213	42.0	17.5
4	11100.00	46.6 AV	54.0	-7.4	2.32 V	213	29.1	17.5

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 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	103.9 PK			2.69 H	203	63.8	40.1
2	*5670.00	93.8 AV			2.69 H	203	53.7	40.1
3	#5725.00	58.0 PK	74.0	-16.0	2.74 H	187	53.6	4.4
4	#5725.00	44.1 AV	54.0	-9.9	2.74 H	187	39.7	4.4
5	11340.00	60.6 PK	74.0	-13.4	2.96 H	244	42.8	17.8
6	11340.00	46.8 AV	54.0	-7.2	2.96 H	244	29.0	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	*5670.00	111.6 PK			2.43 V	178	71.5	40.1
2	*5670.00	101.7 AV			2.43 V	178	61.6	40.1
3	#5725.00	66.2 PK	74.0	-7.8	2.61 V	185	61.8	4.4
4	#5725.00	46.2 AV	54.0	-7.8	2.61 V	185	41.8	4.4
5	11340.00	60.8 PK	74.0	-13.2	2.44 V	216	43.0	17.8
6	11340.00	47.1 AV	54.0	-6.9	2.44 V	216	29.3	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 142	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	55.4 PK	74.0	-18.6	2.49 H	191	51.0	4.4
2	5460.00	42.6 AV	54.0	-11.4	2.49 H	191	38.2	4.4
3	#5470.00	56.6 PK	74.0	-17.4	2.51 H	190	52.2	4.4
4	#5470.00	43.2 AV	54.0	-10.8	2.51 H	190	38.8	4.4
5	*5710.00	99.5 PK			2.42 H	193	59.5	40.0
6	*5710.00	89.8 AV			2.42 H	193	49.8	40.0
7	#5825.00	56.3 PK	74.0	-17.7	2.56 H	199	51.5	4.8
8	#5825.00	43.2 AV	54.0	-10.8	2.56 H	199	38.4	4.8
9	11420.00	60.2 PK	74.0	-13.8	2.91 H	254	42.7	17.5
10	11420.00	47.0 AV	54.0	-7.0	2.91 H	254	29.5	17.5
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	56.5 PK	74.0	-17.5	2.55 V	333	52.1	4.4
2	5460.00	43.4 AV	54.0	-10.6	2.55 V	333	39.0	4.4
3	#5470.00	57.6 PK	74.0	-16.4	2.66 V	351	53.2	4.4
4	#5470.00	44.3 AV	54.0	-9.7	2.66 V	351	39.9	4.4
5	*5710.00	107.5 PK			2.72 V	342	67.5	40.0
6	*5710.00	97.6 AV			2.72 V	342	57.6	40.0
7	#5825.00	57.3 PK	74.0	-16.7	2.51 V	322	52.5	4.8
8	#5825.00	44.3 AV	54.0	-9.7	2.51 V	322	39.5	4.8
9	11420.00	60.5 PK	74.0	-13.5	2.61 V	251	43.0	17.5
10	11420.00	47.4 AV	54.0	-6.6	2.61 V	251	29.9	17.5

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	#5609.60	56.5 PK	68.2	-11.7	1.25 H	240	52.0	4.5
2	*5755.00	97.1 PK			1.25 H	240	57.0	40.1
3	*5755.00	87.8 AV			1.25 H	240	47.7	40.1
4	#5933.60	56.6 PK	68.2	-11.6	1.25 H	240	51.4	5.2
5	11510.00	57.8 PK	74.0	-16.2	2.99 H	222	40.2	17.6
6	11510.00	44.4 AV	54.0	-9.6	2.99 H	222	26.8	17.6
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	#5604.80	52.0 PK	68.2	-16.2	2.26 V	359	47.5	4.5
2	*5755.00	106.6 PK			2.66 V	359	66.5	40.1
3	*5755.00	97.3 AV			2.66 V	359	57.2	40.1
4	#5968.80	51.2 PK	68.2	-17.0	2.26 V	359	45.9	5.3
5	11510.00	58.1 PK	74.0	-15.9	2.60 V	188	40.5	17.6
6	11510.00	44.6 AV	54.0	-9.4	2.60 V	188	27.0	17.6

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 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	57.5 PK	68.2	-10.7	2.76 H	196	53.0	4.5
2	*5795.00	100.9 PK			2.76 H	196	60.6	40.3
3	*5795.00	91.8 AV			2.76 H	196	51.5	40.3
4	#5938.40	57.1 PK	68.2	-11.1	2.76 H	196	52.0	5.1
5	11590.00	58.6 PK	74.0	-15.4	2.87 H	238	40.7	17.9
6	11590.00	45.4 AV	54.0	-8.6	2.87 H	238	27.5	17.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5609.60	52.3 PK	68.2	-15.9	2.66 V	355	47.8	4.5
2	*5795.00	111.1 PK			2.66 V	355	70.8	40.3
3	*5795.00	100.6 AV			2.66 V	355	60.3	40.3
4	#5966.40	52.3 PK	68.2	-15.9	2.66 V	355	47.1	5.2
5	11590.00	58.9 PK	74.0	-15.1	2.53 V	191	41.0	17.9
6	11590.00	45.7 AV	54.0	-8.3	2.53 V	191	27.8	17.9

Remarks:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.7 PK	74.0	-16.3	2.54 H	201	53.8	3.9
2	5150.00	44.4 AV	54.0	-9.6	2.54 H	201	40.5	3.9
3	*5210.00	96.3 PK			2.74 H	193	56.8	39.5
4	*5210.00	85.5 AV			2.74 H	193	46.0	39.5
5	5350.00	56.5 PK	74.0	-17.5	2.69 H	195	52.5	4.0
6	5350.00	43.4 AV	54.0	-10.6	2.69 H	195	39.4	4.0
7	#10420.00	58.3 PK	74.0	-15.7	2.61 H	189	42.3	16.0
8	#10420.00	45.1 AV	54.0	-8.9	2.61 H	189	29.1	16.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.5 PK	74.0	-10.5	2.86 V	169	59.6	3.9
2	5150.00	49.9 AV	54.0	-4.1	2.86 V	169	46.0	3.9
3	*5210.00	105.2 PK			2.81 V	165	65.7	39.5
4	*5210.00	94.4 AV			2.81 V	165	54.9	39.5
5	5350.00	57.3 PK	74.0	-16.7	3.04 V	172	53.3	4.0
6	5350.00	44.0 AV	54.0	-10.0	3.04 V	172	40.0	4.0
7	#10420.00	58.6 PK	74.0	-15.4	2.23 V	188	42.6	16.0
8	#10420.00	45.4 AV	54.0	-8.6	2.23 V	188	29.4	16.0

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 58	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	56.1 PK	74.0	-17.9	2.63 H	209	52.2	3.9
2	5150.00	42.8 AV	54.0	-11.2	2.63 H	209	38.9	3.9
3	*5290.00	95.3 PK			2.55 H	192	55.9	39.4
4	*5290.00	84.3 AV			2.55 H	192	44.9	39.4
5	5350.00	57.6 PK	74.0	-16.4	2.38 H	199	53.6	4.0
6	5350.00	44.5 AV	54.0	-9.5	2.38 H	199	40.5	4.0
7	#10580.00	58.8 PK	74.0	-15.2	2.99 H	251	41.7	17.1
8	#10580.00	45.9 AV	54.0	-8.1	2.99 H	251	28.8	17.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.4 PK	74.0	-17.6	2.68 V	199	52.5	3.9
2	5150.00	43.8 AV	54.0	-10.2	2.68 V	199	39.9	3.9
3	*5290.00	103.3 PK			2.52 V	181	63.9	39.4
4	*5290.00	92.6 AV			2.52 V	181	53.2	39.4
5	5350.00	61.5 PK	74.0	-12.5	2.57 V	191	57.5	4.0
6	5350.00	47.8 AV	54.0	-6.2	2.57 V	191	43.8	4.0
7	#10580.00	59.1 PK	74.0	-14.9	2.19 V	241	42.0	17.1
8	#10580.00	46.0 AV	54.0	-8.0	2.19 V	241	28.9	17.1

Remarks:

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

CHANNEL	TX Channel 106	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	57.4 PK	74.0	-16.6	1.91 H	199	53.0	4.4
2	5460.00	44.7 AV	54.0	-9.3	1.91 H	199	40.3	4.4
3	#5470.00	59.0 PK	74.0	-15.0	1.78 H	187	54.6	4.4
4	#5470.00	45.4 AV	54.0	-8.6	1.78 H	187	41.0	4.4
5	*5530.00	96.3 PK			1.52 H	191	56.2	40.1
6	*5530.00	85.6 AV			1.52 H	191	45.5	40.1
7	#5725.00	57.4 PK	74.0	-16.6	1.85 H	180	53.0	4.4
8	#5725.00	43.8 AV	54.0	-10.2	1.85 H	180	39.4	4.4
9	11060.00	61.1 PK	74.0	-12.9	2.97 H	233	43.2	17.9
10	11060.00	47.3 AV	54.0	-6.7	2.97 H	233	29.4	17.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.8 PK	74.0	-12.2	2.61 V	169	57.4	4.4
2	5460.00	48.0 AV	54.0	-6.0	2.61 V	169	43.6	4.4
3	#5470.00	62.9 PK	74.0	-11.1	2.78 V	180	58.5	4.4
4	#5470.00	49.2 AV	54.0	-4.8	2.78 V	180	44.8	4.4
5	*5530.00	103.9 PK			2.69 V	169	63.8	40.1
6	*5530.00	93.4 AV			2.69 V	169	53.3	40.1
7	#5725.00	56.6 PK	74.0	-17.4	2.90 V	193	52.2	4.4
8	#5725.00	43.7 AV	54.0	-10.3	2.90 V	193	39.3	4.4
9	11060.00	60.0 PK	74.0	-14.0	2.29 V	199	42.1	17.9
10	11060.00	47.1 AV	54.0	-6.9	2.29 V	199	29.2	17.9

Remarks:

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

CHANNEL	TX Channel 122	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	54.7 PK	74.0	-19.3	2.55 H	190	50.3	4.4
2	5460.00	43.1 AV	54.0	-10.9	2.55 H	190	38.7	4.4
3	#5470.00	57.6 PK	74.0	-16.4	2.60 H	201	53.2	4.4
4	#5470.00	43.9 AV	54.0	-10.1	2.60 H	201	39.5	4.4
5	*5610.00	100.1 PK			2.52 H	192	60.0	40.1
6	*5610.00	89.3 AV			2.52 H	192	49.2	40.1
7	#5725.00	57.4 PK	74.0	-16.6	2.61 H	190	53.0	4.4
8	#5725.00	44.6 AV	54.0	-9.4	2.61 H	190	40.2	4.4
9	11220.00	60.2 PK	74.0	-13.8	2.91 H	220	42.5	17.7
10	11220.00	46.5 AV	54.0	-7.5	2.91 H	220	28.8	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	5460.00	57.6 PK	74.0	-16.4	2.59 V	344	53.2	4.4
2	5460.00	44.9 AV	54.0	-9.1	2.59 V	344	40.5	4.4
3	#5470.00	59.8 PK	74.0	-14.2	2.61 V	333	55.4	4.4
4	#5470.00	46.9 AV	54.0	-7.1	2.61 V	333	42.5	4.4
5	*5610.00	107.7 PK			2.55 V	342	67.6	40.1
6	*5610.00	97.0 AV			2.55 V	342	56.9	40.1
7	#5725.00	59.1 PK	74.0	-14.9	2.81 V	338	54.7	4.4
8	#5725.00	46.7 AV	54.0	-7.3	2.81 V	338	42.3	4.4
9	11220.00	60.6 PK	74.0	-13.4	3.04 V	261	42.9	17.7
10	11220.00	46.7 AV	54.0	-7.3	3.04 V	261	29.0	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 138	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	55.4 PK	74.0	-18.6	2.59 H	199	51.0	4.4
2	5460.00	42.5 AV	54.0	-11.5	2.59 H	199	38.1	4.4
3	#5470.00	56.5 PK	74.0	-17.5	2.55 H	191	52.1	4.4
4	#5470.00	43.1 AV	54.0	-10.9	2.55 H	191	38.7	4.4
5	*5690.00	95.6 PK			2.43 H	193	55.6	40.0
6	*5690.00	84.4 AV			2.43 H	193	44.4	40.0
7	#5825.00	56.3 PK	74.0	-17.7	2.50 H	202	51.5	4.8
8	#5825.00	44.9 AV	54.0	-9.1	2.50 H	202	40.1	4.8
9	11380.00	60.5 PK	74.0	-13.5	2.78 H	229	43.0	17.5
10	11380.00	47.0 AV	54.0	-7.0	2.78 H	229	29.5	17.5
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	56.8 PK	74.0	-17.2	2.59 V	177	52.4	4.4
2	5460.00	43.6 AV	54.0	-10.4	2.59 V	177	39.2	4.4
3	#5470.00	58.2 PK	74.0	-15.8	2.65 V	171	53.8	4.4
4	#5470.00	44.4 AV	54.0	-9.6	2.65 V	171	40.0	4.4
5	*5690.00	102.5 PK			2.55 V	180	62.5	40.0
6	*5690.00	91.5 AV			2.55 V	180	51.5	40.0
7	#5825.00	57.2 PK	74.0	-16.8	1.81 V	163	52.4	4.8
8	#5825.00	46.9 AV	54.0	-7.1	1.81 V	163	42.1	4.8
9	11380.00	61.0 PK	74.0	-13.0	2.87 V	229	43.5	17.5
10	11380.00	47.3 AV	54.0	-6.7	2.87 V	229	29.8	17.5

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5640.00	57.4 PK	68.2	-10.8	2.19 H	192	52.9	4.5
2	#5650.00	56.0 PK	68.2	-12.2	2.10 H	200	51.4	4.6
3	*5775.00	96.4 PK			2.19 H	192	56.2	40.2
4	*5775.00	85.4 AV			2.19 H	192	45.2	40.2
5	#5925.00	56.7 PK	68.2	-11.5	2.21 H	199	51.5	5.2
6	#5950.40	57.3 PK	68.2	-10.9	2.19 H	192	52.1	5.2
7	11550.00	58.0 PK	74.0	-16.0	2.87 H	221	40.2	17.8
8	11550.00	45.5 AV	54.0	-8.5	2.87 H	221	27.7	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	#5630.40	54.2 PK	68.2	-14.0	2.58 V	358	49.7	4.5
2	#5650.00	57.8 PK	68.2	-10.4	2.68 V	354	53.2	4.6
3	*5775.00	104.3 PK			2.58 V	358	64.1	40.2
4	*5775.00	93.7 AV			2.58 V	358	53.5	40.2
5	#5925.00	57.7 PK	68.2	-10.5	2.59 V	359	52.5	5.2
6	#5962.40	52.1 PK	68.2	-16.1	2.58 V	358	46.9	5.2
7	11550.00	58.4 PK	74.0	-15.6	2.29 V	178	40.6	17.8
8	11550.00	45.9 AV	54.0	-8.1	2.29 V	178	28.1	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.

Below 1GHz Worst-Case Data: 802.11a

CHANNEL	TX Channel 60	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	88.23	34.3 QP	43.5	-9.2	2.00 H	93	48.9	-14.6
2	269.05	36.1 QP	46.0	-9.9	1.00 H	16	44.3	-8.2
3	325.43	37.6 QP	46.0	-8.4	1.00 H	98	44.1	-6.5
4	358.48	39.7 QP	46.0	-6.3	1.00 H	202	45.8	-6.1
5	424.59	40.3 QP	46.0	-5.7	1.00 H	104	44.8	-4.5
6	716.53	39.7 QP	46.0	-6.3	2.00 H	345	38.2	1.5
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	31.84	36.3 QP	40.0	-3.7	1.51 V	191	47.3	-11.0
2	88.23	30.0 QP	43.5	-13.5	1.01 V	101	44.6	-14.6
3	164.06	33.9 QP	43.5	-9.6	1.01 V	176	42.8	-8.9
4	325.43	33.6 QP	46.0	-12.4	1.51 V	154	40.1	-6.5
5	467.36	37.3 QP	46.0	-8.7	1.01 V	186	40.9	-3.6
6	720.12	39.7 QP	46.0	-6.3	2.00 V	164	38.0	1.7

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 23, 2017	Nov. 22, 2018
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Sep. 05, 2017	Sep. 04, 2018
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 26, 2018	Feb. 25, 2019
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 15, 2017	Aug. 14, 2018
Software ADT	BV ADT_Cond_ V7.3.7.4	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.

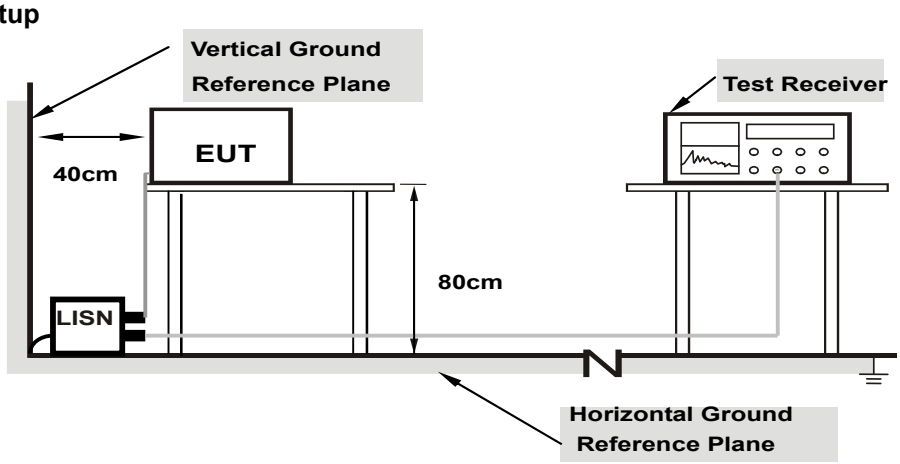
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

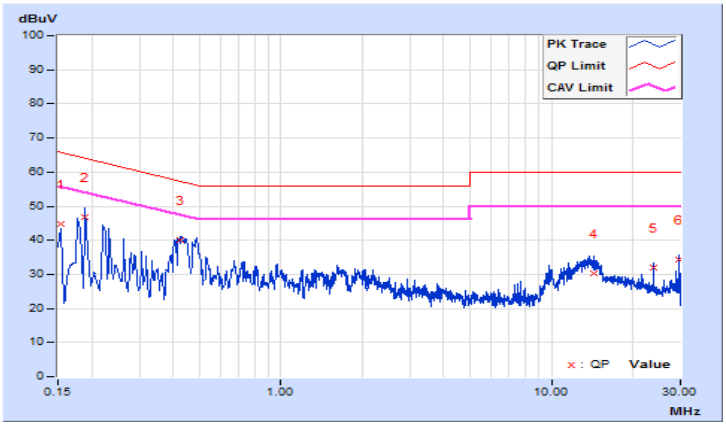
4.2.7 Test Results

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

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.10	34.78	15.64	44.88	25.74	65.79	55.79	-20.91	-30.05
2	0.18903	10.10	36.84	16.58	46.94	26.68	64.08	54.08	-17.14	-27.40
3	0.42782	10.12	29.96	20.09	40.08	30.21	57.29	47.29	-17.21	-17.08
4	14.28856	10.87	19.40	13.94	30.27	24.81	60.00	50.00	-29.73	-25.19
5	23.83287	11.28	20.81	19.63	32.09	30.91	60.00	50.00	-27.91	-19.09
6	29.78780	11.39	22.79	22.14	34.18	33.53	60.00	50.00	-25.82	-16.47

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.

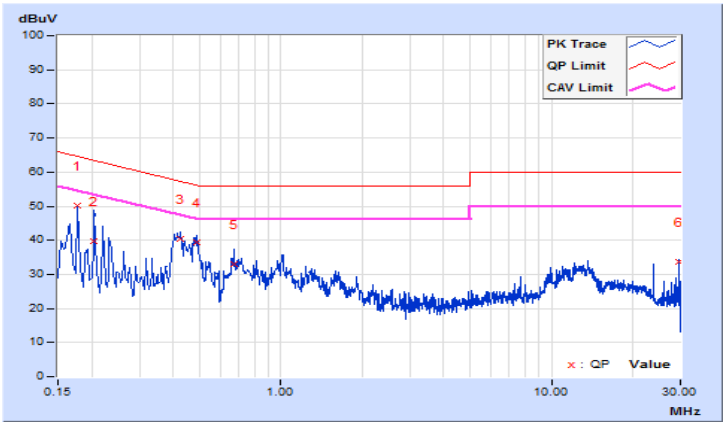


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17744	10.10	40.12	25.58	50.22	35.68	64.60	54.60	-14.38	-18.92
2	0.20474	10.10	29.48	10.55	39.58	20.65	63.42	53.42	-23.84	-32.77
3	0.42761	10.12	30.22	21.48	40.34	31.60	57.30	47.30	-16.96	-15.70
4	**0.48626**	**10.12**	**29.43**	**22.99**	**39.55**	**33.11**	**56.23**	**46.23**	**-16.68**	**-13.12**
5	0.67003	10.12	22.87	15.77	32.99	25.89	56.00	46.00	-23.01	-20.11
6	29.78780	11.07	22.50	22.28	33.57	33.35	60.00	50.00	-26.43	-16.65

REMARKS:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

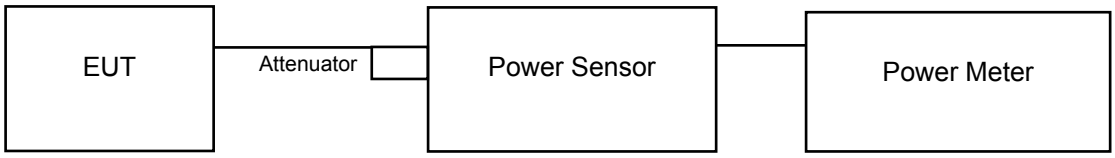
Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

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

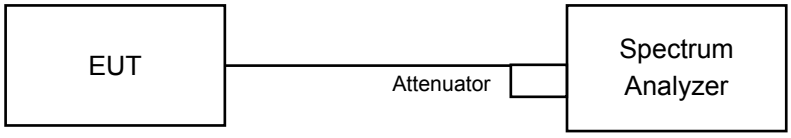
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

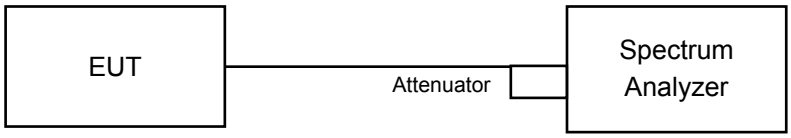
For Power Output
802.11a, 802.11n (HT20), 802.11n (HT40)



802.11ac (VHT80)



For 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 and set the detector to AVERAGE. Duty factor is not added to measured value.

For 802.11ac (VHT80)
1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
2) Set sweep trigger to “free run”.
3) Set RBW = 1 MHz.
4) Set VBW ≥ 3 MHz
5) Number of points in sweep ≥ 2 Span / RBW.
6) Sweep time ≤ (number of points in sweep) * T
7) Using emission bandwidth to determine the frequency span for integration the channel bandwidth.
8) Detector = RMS.
9) Trace mode = max hold.
10) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

For 26dB Bandwidth
a. Set RBW = approximately 1% of the emission bandwidth.
b. Set the VBW > RBW.
c. Detector = Peak.
d. Trace mode = max hold.
e. 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 from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Power Output:

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	12.01	13.03	35.976	15.56	24.00	Pass
40	5200	11.64	12.77	33.511	15.25	24.00	Pass
48	5240	11.94	12.98	35.492	15.50	24.00	Pass
52	5260	16.10	16.81	88.711	19.48	23.89	Pass
60	5300	16.23	16.71	88.857	19.49	23.96	Pass
64	5320	14.50	14.96	59.517	17.75	23.90	Pass
100	5500	14.63	14.02	54.275	17.35	23.92	Pass
116	5580	16.69	16.77	94.200	19.74	23.94	Pass
140	5700	13.94	14.02	50.009	16.99	23.88	Pass
144	5720 For U-NII-2C	10.47	8.12	18.569	12.69	22.71	Pass
144	5720 For U-NII-3	3.67	2.10	4.161	6.19	30.00	Pass
149	5745	15.66	16.05	77.085	18.87	30.00	Pass
157	5785	16.22	16.71	88.760	19.48	30.00	Pass
165	5825	16.21	16.92	90.987	19.59	30.00	Pass

Note:

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

Chain 0

1. 11dBm + 10log(19.48) = 23.89 dBm < 24dBm
2. 11dBm + 10log(19.81) = 23.96 dBm < 24dBm
3. 11dBm + 10log(19.53) = 23.90 dBm < 24dBm
4. 11dBm + 10log(19.85) = 23.98 dBm < 24dBm
5. 11dBm + 10log(19.69) = 23.94 dBm < 24dBm
6. 11dBm + 10log(19.79) = 23.96 dBm < 24dBm
7. 11dBm + 10log(5725.00 - 5710.00) = 22.76 dBm < 24dBm.

Chain 1

1. 11dBm + 10log(20.21) = 24.06 dBm > 24dBm
2. 11dBm + 10log(21.34) = 24.29 dBm > 24dBm
3. 11dBm + 10log(19.99) = 24.01 dBm > 24dBm
4. 11dBm + 10log(19.63) = 23.92 dBm < 24dBm
5. 11dBm + 10log(19.78) = 23.96 dBm < 24dBm
6. 11dBm + 10log(19.45) = 23.88 dBm < 24dBm
7. 11dBm + 10log(5725.00 - 5710.16) = 22.71 dBm < 24dBm.

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	12.34	13.23	38.178	15.82	24.00	Pass
40	5200	11.92	12.97	35.375	15.49	24.00	Pass
48	5240	12.18	13.15	37.174	15.70	24.00	Pass
52	5260	16.66	17.31	100.172	20.01	24.00	Pass
60	5300	16.65	17.47	**102.085**	20.09	24.00	Pass
64	5320	14.22	14.76	56.347	17.51	24.00	Pass
100	5500	15.50	14.83	65.890	18.19	24.00	Pass
116	5580	16.73	16.68	93.657	19.72	24.00	Pass
140	5700	13.81	13.86	48.366	16.85	24.00	Pass
144	5720 For U-NII-2C	9.39	8.50	16.666	12.22	22.86	Pass
144	5720 For U-NII-3	1.91	0.51	2.829	4.52	30.00	Pass
149	5745	15.54	15.82	74.004	18.69	30.00	Pass
157	5785	16.69	17.57	103.814	20.16	30.00	Pass
165	5825	16.58	17.45	101.089	20.05	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log(20.56) = 24.13 dBm > 24dBm
2. 11dBm + 10log(21.24) = 24.27 dBm > 24dBm
3. 11dBm + 10log(20.34) = 24.08 dBm > 24dBm
4. 11dBm + 10log(20.10) = 24.03 dBm > 24dBm
5. 11dBm + 10log(20.47) = 24.11 dBm > 24dBm
6. 11dBm + 10log(20.66) = 24.15 dBm > 24dBm
7. 11dBm + 10log(5725.00 - 5709.65) = 22.86 dBm < 24dBm.
Chain 1
1. 11dBm + 10log(21.60) = 24.34 dBm > 24dBm
2. 11dBm + 10log(23.64) = 24.74 dBm > 24dBm
3. 11dBm + 10log(20.92) = 24.21 dBm > 24dBm
4. 11dBm + 10log(20.76) = 24.17 dBm > 24dBm
5. 11dBm + 10log(20.45) = 24.11 dBm > 24dBm
6. 11dBm + 10log(22.29) = 24.48 dBm > 24dBm
7. 11dBm + 10log(5725.00 - 5709.41) = 22.93 dBm < 24dBm.

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	12.09	12.91	35.724	15.53	24.00	Pass
46	5230	12.01	12.89	35.339	15.48	24.00	Pass
54	5270	15.98	16.71	86.509	19.37	24.00	Pass
62	5310	14.21	14.82	56.702	17.54	24.00	Pass
102	5510	14.97	14.25	58.012	17.64	24.00	Pass
110	5550	16.92	16.22	91.083	19.59	24.00	Pass
134	5670	16.22	16.56	87.169	19.40	24.00	Pass
142	5710 For U-NII-2C	7.82	5.95	11.496	10.61	24.00	Pass
142	5710 For U-NII-3	-5.13	-6.12	0.634	-1.98	30.00	Pass
151	5755	13.54	14.16	48.656	16.87	30.00	Pass
159	5795	17.02	17.39	**105.178**	20.22	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log(41.96) = 27.23 dBm > 24dBm
2. 11dBm + 10log(41.76) = 27.21 dBm > 24dBm
3. 11dBm + 10log(41.87) = 27.22 dBm > 24dBm
4. 11dBm + 10log(42.00) = 27.23 dBm > 24dBm
5. 11dBm + 10log(46.61) = 27.68 dBm > 24dBm
6. 11dBm + 10log(5725.00 - 5688.97) = 26.57 dBm > 24dBm.

Chain 1
1. 11dBm + 10log(42.13) = 27.25 dBm > 24dBm
2. 11dBm + 10log(41.40) = 27.17 dBm > 24dBm
3. 11dBm + 10log(42.01) = 27.23 dBm > 24dBm
4. 11dBm + 10log(41.67) = 27.20 dBm > 24dBm
5. 11dBm + 10log(48.13) = 27.82 dBm > 24dBm
6. 11dBm + 10log(5725.00 - 5689.08) = 26.55 dBm > 24dBm.

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	12.34	13.24	**38.226**	15.82	24.00	Pass
58	5290	11.32	11.55	27.841	14.45	24.00	Pass
106	5530	16.66	16.83	**94.540**	19.76	24.00	Pass
122	5610	11.22	12.26	30.070	14.78	24.00	Pass
138	5690 For U-NII-2C	4.10	3.05	5.528	7.43	24.00	Pass
138	5690 For U-NII-3	-12.55	-12.80	0.1302	-8.85	30.00	Pass
155	5775	13.78	14.13	49.760	16.97	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log(83.30) = 30.21 dBm > 24dBm
2. 11dBm + 10log(84.00) = 30.24 dBm > 24dBm
3. 11dBm + 10log(83.14) = 30.20 dBm > 24dBm
4. 11dBm + 10log(5725.00 - 5648.19) = 29.85 dBm > 24dBm.
Chain 1
1. 11dBm + 10log(82.97) = 30.19 dBm > 24dBm
2. 11dBm + 10log(83.14) = 30.20 dBm > 24dBm
3. 11dBm + 10log(84.30) = 30.26 dBm > 24dBm
4. 11dBm + 10log(5725.00 - 5648.26) = 29.85 dBm > 24dBm.

26dB Bandwidth:

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	19.68	19.72
40	5200	19.79	19.52
48	5240	19.74	19.22
52	5260	19.48	20.21
60	5300	19.81	21.34
64	5320	19.53	19.99
100	5500	19.85	19.63
116	5580	19.69	19.78
140	5700	19.79	19.45
144	5720 For U-NII-2C	15.00	14.84

802.11n (HT20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	20.29	20.20
40	5200	20.23	20.19
48	5240	20.68	20.41
52	5260	20.56	21.60
60	5300	21.24	23.64
64	5320	20.34	20.92
100	5500	20.10	20.76
116	5580	20.47	20.45
140	5700	20.66	22.29
144	5720 For U-NII-2C	15.35	15.59

802.11n (HT40)

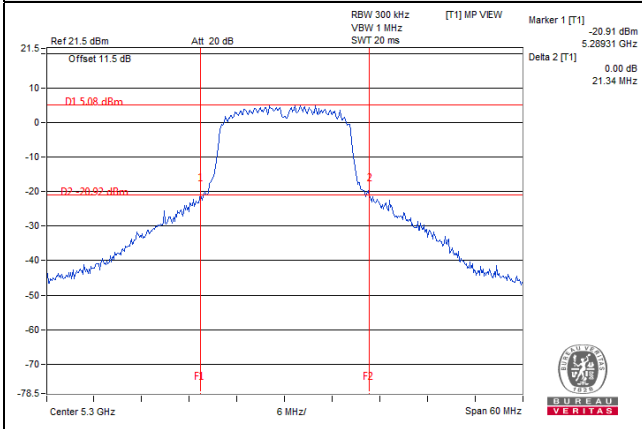
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	41.64	42.70
46	5230	41.94	41.87
54	5270	41.96	42.13
62	5310	41.76	41.40
102	5510	41.87	42.01
110	5550	42.00	41.67
134	5670	46.61	48.13
142	5710 For U-NII-2C	36.03	35.92

802.11ac (VHT80)

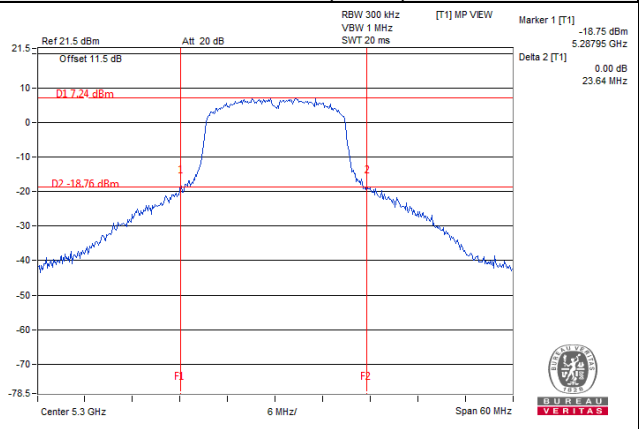
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	83.72	83.24
58	5290	83.30	82.97
106	5530	84.00	83.14
122	5610	83.14	84.30
138	5690 For U-NII-2C	76.81	76.74

Spectrum Plot of Worst Value

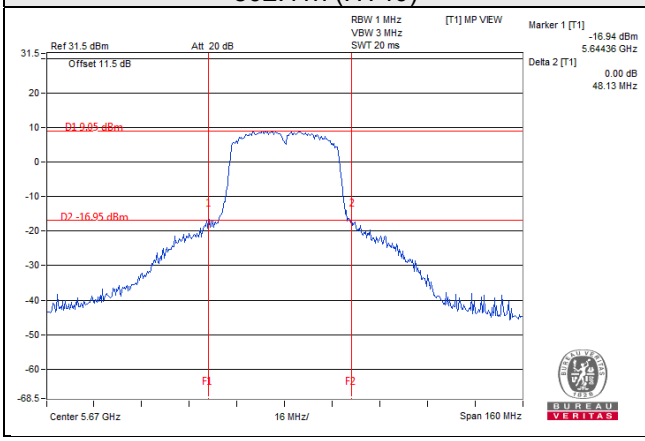
802.11a



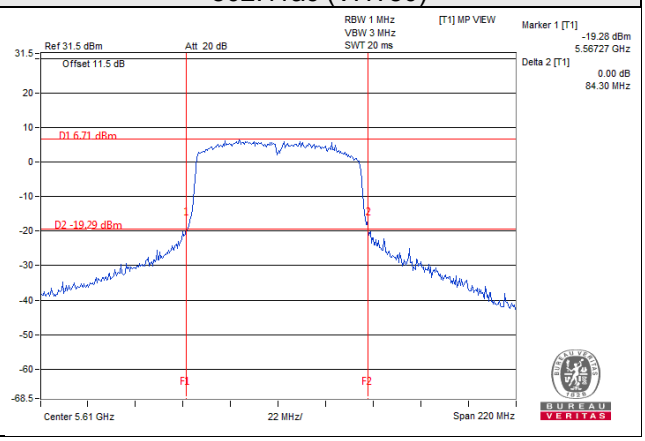
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



EUT Maximum Conducted Power

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	88.857	19.49
5470~5725	94.200	19.74

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	102.085	20.09
5470~5725	93.657	19.72

802.11n (HT40)

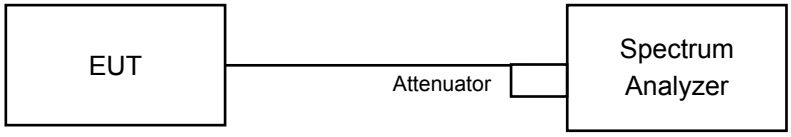
Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	86.509	19.37
5470~5725	91.083	19.59

802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	27.841	14.45
5470~5725	94.540	19.76

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Result

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.32	16.44
40	5200	16.32	16.32
48	5240	16.32	16.32
52	5260	16.32	16.32
60	5300	16.32	16.44
64	5320	16.32	16.44
100	5500	16.32	16.32
116	5580	16.44	16.32
140	5700	16.32	16.44
144	5720 For U-NII-2C	13.16	13.16
144	5720 For U-NII-3	3.16	3.16
149	5745	16.44	16.44
157	5785	16.44	16.44
165	5825	16.56	16.56

802.11n (HT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.52	17.52
40	5200	17.40	17.40
48	5240	17.52	17.52
52	5260	17.40	17.52
60	5300	17.52	17.64
64	5320	17.52	17.40
100	5500	17.52	17.52
116	5580	17.52	17.52
140	5700	17.52	17.52
144	5720 For U-NII-2C	13.76	13.76
144	5720 For U-NII-3	3.76	3.76
149	5745	17.64	17.64
157	5785	17.76	17.76
165	5825	17.64	17.64

802.11n (HT40)

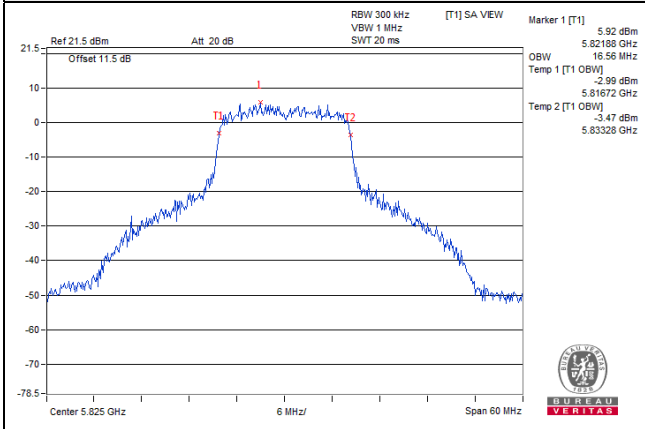
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.12	36.12
46	5230	36.00	36.12
54	5270	36.12	36.12
62	5310	36.12	36.12
102	5510	36.00	36.12
110	5550	36.12	36.12
134	5670	36.36	36.24
142	5710 For U-NII-2C	33.00	33.00
142	5710 For U-NII-3	3.00	3.00
151	5755	36.00	36.00
159	5795	36.36	36.36

802.11ac (VHT80)

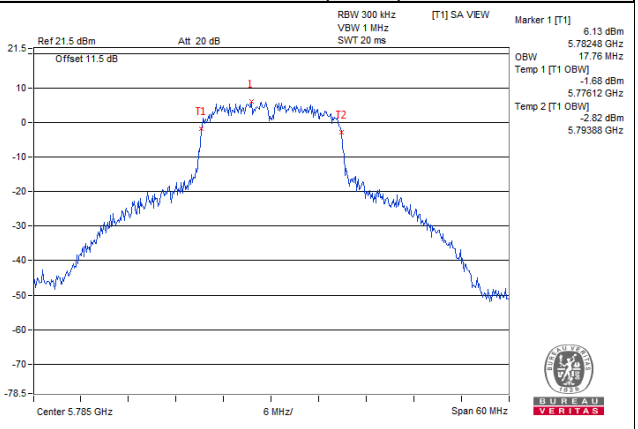
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.12	75.12
58	5290	75.36	75.12
106	5530	75.12	75.12
122	5610	75.12	74.88
138	5690 For U-NII-2C	72.68	72.68
138	5690 For U-NII-3	2.44	2.44
155	5775	74.88	75.12

Spectrum Plot of Worst Value

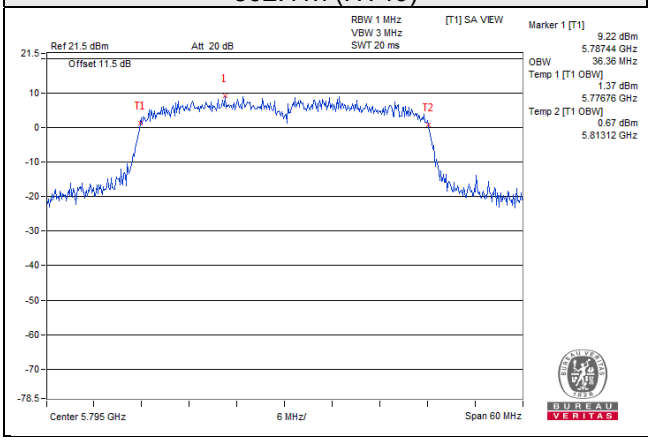
802.11a



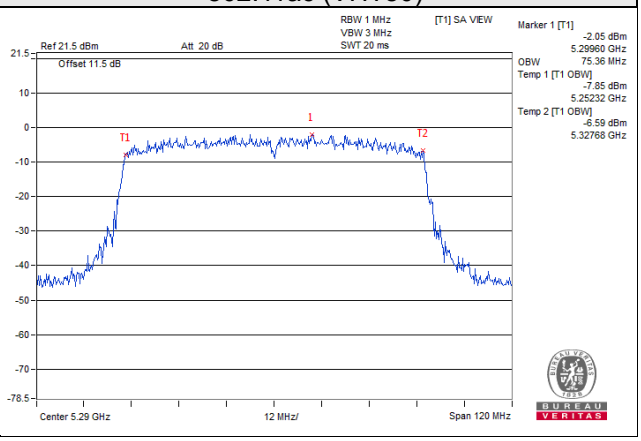
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

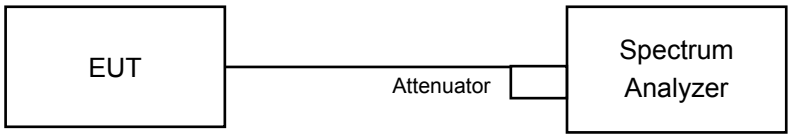


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

For U-NII-1, U-NII-2A, U-NII-2C band:
Duty cycle of test signal is ≥ 98%
Using method SA-1
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Record the max value

Duty cycle of test signal is < 98%
Using method SA-2
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Record the max value and add 10 log (1/duty cycle)

For U-NII-3 band:
Duty cycle of test signal is ≥ 98%
Using method SA-1
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS.
3) Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4) Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured 1) power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz / 300 kHz).
5) Sweep time = auto, trigger set to “free run”.
6) Trace average at least 100 traces in power averaging mode.
7) Record the max value.

Duty cycle of test signal is < 98%
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3) Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4) Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz / 300 kHz)
5) Sweep time = auto, trigger set to “free run”.
6) Trace average at least 100 traces in power averaging mode.
7) Record the max value and add 10 log (1/duty cycle)

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

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

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	-1.19	-0.87	0.23	2.21	10.41	Pass
40	5200	-1.73	-1.06	0.23	1.85	10.41	Pass
48	5240	-2.11	-0.98	0.23	1.73	10.41	Pass
52	5260	1.73	3.04	0.23	5.67	10.41	Pass
60	5300	2.49	3.54	0.23	6.28	10.41	Pass
64	5320	0.88	2.09	0.23	4.76	10.41	Pass
100	5500	-0.28	1.00	0.23	3.64	10.41	Pass
116	5580	2.41	3.60	0.23	6.28	10.41	Pass
140	5700	0.16	1.70	0.23	4.23	10.41	Pass
144	5720 For U-NII-2C	0.31	-1.28	0.23	2.82	10.41	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 3.58dBi+10log(2)=6.59dBi > 6dBi, so the power density limit shall be reduced to 11-(6.59-6) = 10.41dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	-1.40	-0.35	0.24	2.41	10.41	Pass
40	5200	-1.99	-0.66	0.24	1.98	10.41	Pass
48	5240	-1.99	-0.80	0.24	1.90	10.41	Pass
52	5260	2.27	3.50	0.24	6.18	10.41	Pass
60	5300	3.48	3.88	0.24	6.94	10.41	Pass
64	5320	0.71	1.81	0.24	4.55	10.41	Pass
100	5500	0.81	1.97	0.24	4.68	10.41	Pass
116	5580	1.82	2.93	0.24	5.66	10.41	Pass
140	5700	-0.21	1.00	0.24	3.69	10.41	Pass
144	5720 For U-NII-2C	-0.55	-2.16	0.24	1.97	10.41	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 3.58dBi+10log(2)=6.59dBi > 6dBi, so the power density limit shall be reduced to 11-(6.59-6) = 10.41dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	-5.28	-4.27	0.61	-1.12	10.41	Pass
46	5230	-7.26	-5.89	0.61	-2.90	10.41	Pass
54	5270	-1.65	-0.54	0.61	2.56	10.41	Pass
62	5310	-3.65	-1.96	0.61	0.90	10.41	Pass
102	5510	-3.26	-1.94	0.61	1.07	10.41	Pass
110	5550	-1.54	-0.26	0.61	2.77	10.41	Pass
134	5670	-0.76	0.35	0.61	3.45	10.41	Pass
142	5710 For U-NII-2C	-4.23	-5.38	0.61	-1.15	10.41	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 3.58dBi+10log(2)=6.59dBi > 6dBi, so the power density limit shall be reduced to 11-(6.59-6) = 10.41dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

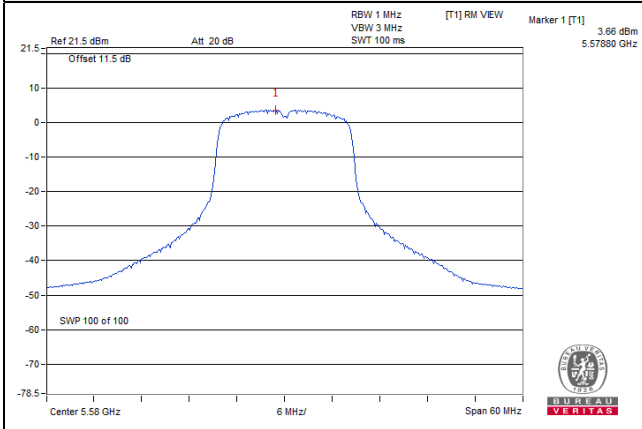
Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-8.80	-7.34	0.81	-4.19	10.41	Pass
58	5290	-9.72	-8.48	0.81	-5.24	10.41	Pass
106	5530	-9.49	-7.86	0.81	-4.78	10.41	Pass
122	5610	-5.01	-3.83	0.81	-0.56	10.41	Pass
138	5690 For U-NII-2C	-8.71	-10.16	0.81	-5.56	10.41	Pass

Note:

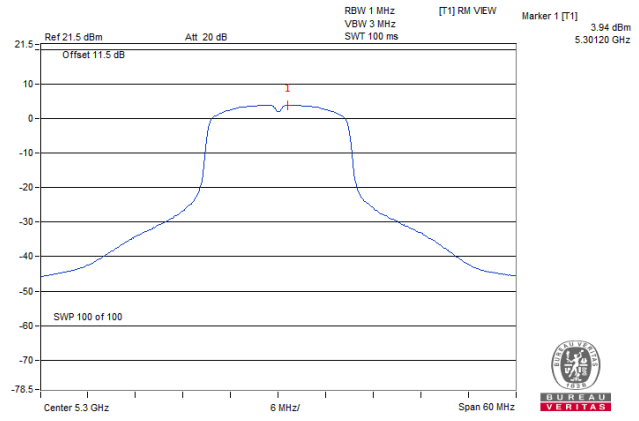
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 3.58dBi+10log(2)=6.59dBi > 6dBi, so the power density limit shall be reduced to 11-(6.59-6) = 10.41dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

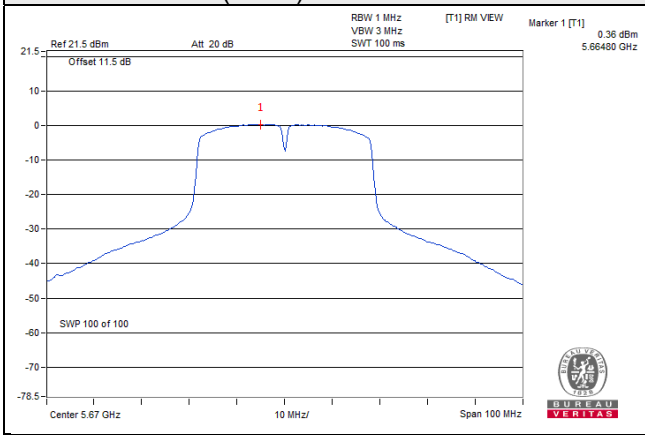
802.11a / Chain 1 / CH 116



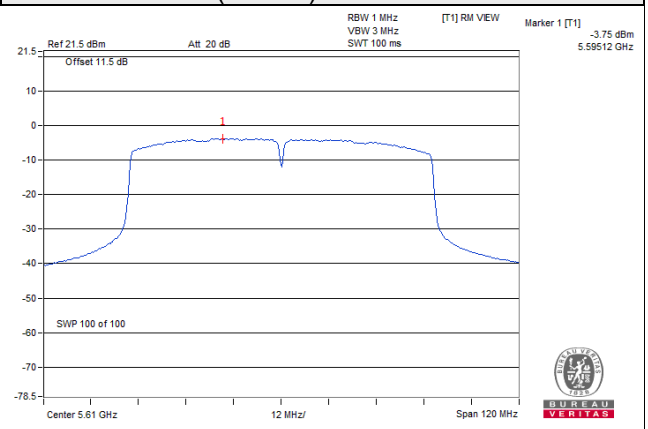
802.11n (HT20) / Chain 1 / CH 60



802.11n (HT40) / Chain 1 / CH 134



802.11ac (VHT80) / Chain 0 / CH 122



For U-NII-3 band:

802.11a

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	144	5720 (For U-NII-3)	-8.57	-6.35	3.01	0.23	-3.11	29.41	Pass
	149	5745	-6.71	-4.49	3.01	0.23	-1.25	29.41	Pass
	157	5785	-6.09	-3.87	3.01	0.23	-0.63	29.41	Pass
	165	5825	-6.59	-4.37	3.01	0.23	-1.13	29.41	Pass
1	144	5720 (For U-NII-3)	-9.69	-7.47	3.01	0.23	-4.23	29.41	Pass
	149	5745	-6.80	-4.58	3.01	0.23	-1.34	29.41	Pass
	157	5785	-7.06	-4.84	3.01	0.23	-1.60	29.41	Pass
	165	5825	-6.45	-4.23	3.01	0.23	-0.99	29.41	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 3.58dBi+10log(2)=6.59dBi>6dBi, so the power density limit shall be reduced to 30-(6.59-6) = 29.41dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	144	5720 (For U-NII-3)	-9.54	-7.32	3.01	0.24	-4.07	29.41	Pass
	149	5745	-6.91	-4.69	3.01	0.24	-1.44	29.41	Pass
	157	5785	-5.77	-3.55	3.01	0.24	-0.30	29.41	Pass
	165	5825	-6.06	-3.84	3.01	0.24	-0.59	29.41	Pass
1	144	5720 (For U-NII-3)	-10.57	-8.35	3.01	0.24	-5.10	29.41	Pass
	149	5745	-6.74	-4.52	3.01	0.24	-1.27	29.41	Pass
	157	5785	-5.97	-3.75	3.01	0.24	-0.50	29.41	Pass
	165	5825	-6.36	-4.14	3.01	0.24	-0.89	29.41	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 3.58dBi+10log(2)=6.59dBi>6dBi, so the power density limit shall be reduced to 30-(6.59-6) = 29.41dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	142	5710 (For U-NII-3)	-15.06	-12.84	3.01	0.61	-9.22	29.41	Pass
	151	5755	-12.37	-10.15	3.01	0.61	-6.53	29.41	Pass
	159	5795	-9.40	-7.18	3.01	0.61	-3.56	29.41	Pass
1	142	5710 (For U-NII-3)	-16.25	-14.03	3.01	0.61	-10.41	29.41	Pass
	151	5755	-12.19	-9.97	3.01	0.61	-6.35	29.41	Pass
	159	5795	-9.35	-7.13	3.01	0.61	-3.51	29.41	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 3.58dBi+10log(2)=6.59dBi>6dBi, so the power density limit shall be reduced to 30-(6.59-6) = 29.41dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

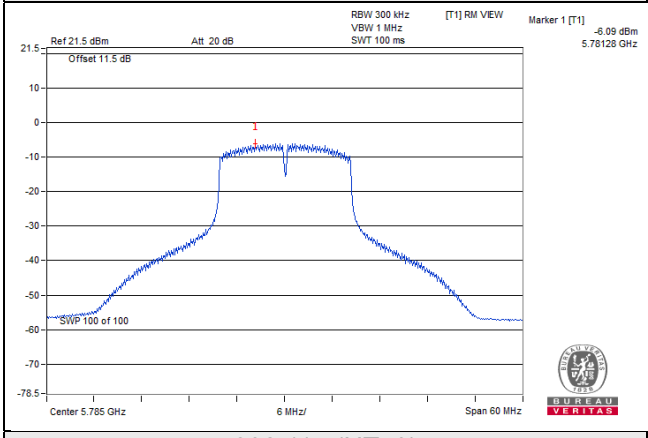
TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	138	5690 (For U-NII-3)	-21.20	-18.98	3.01	0.81	-15.16	29.41	Pass
	155	5775	-15.74	-13.52	3.01	0.81	-9.70	29.41	Pass
1	138	5690 (For U-NII-3)	-22.32	-20.10	3.01	0.81	-16.28	29.41	Pass
	155	5775	-15.68	-13.46	3.01	0.81	-9.64	29.41	Pass

Note:

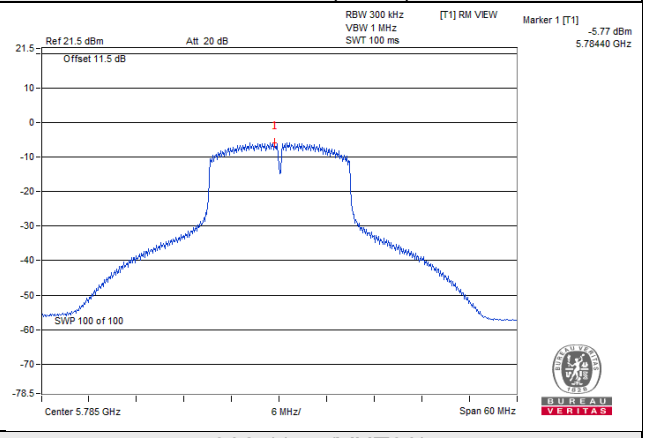
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 3.58dBi+10log(2)=6.59dBi>6dBi, so the power density limit shall be reduced to 30-(6.59-6) = 29.41dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

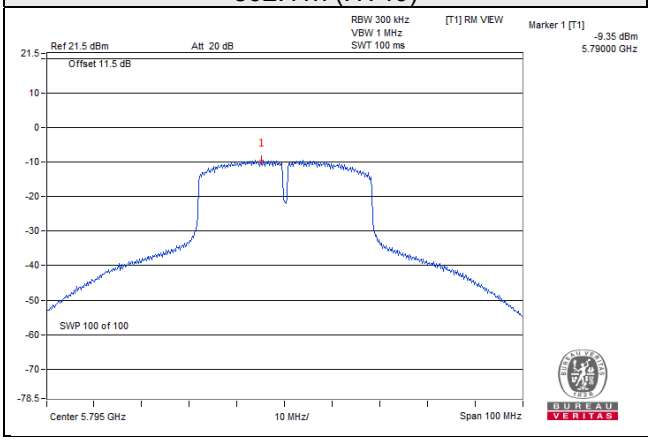
802.11a



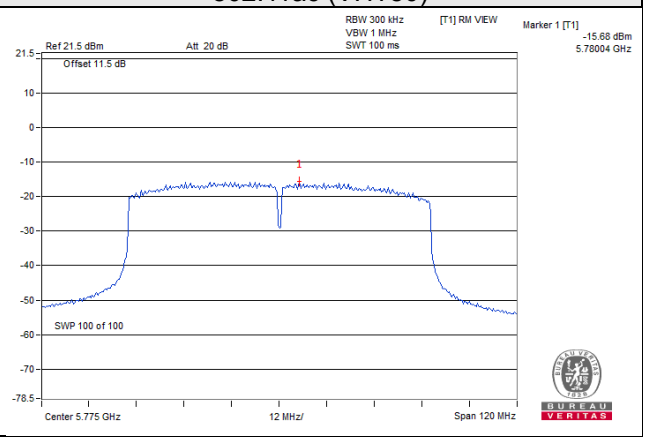
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

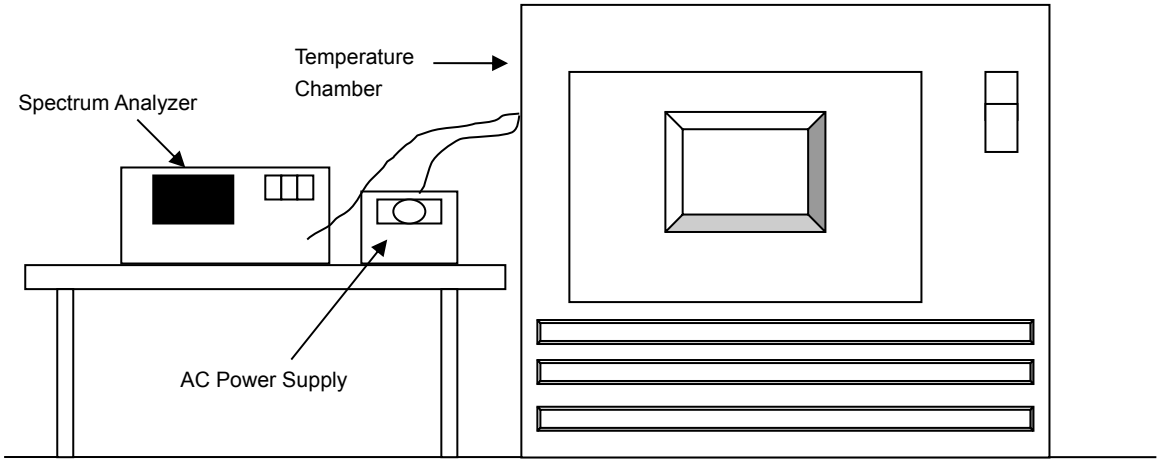


4.6 Frequency Stability

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

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.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
50	120	5179.9897	PASS	5179.9910	PASS	5179.9910	PASS	5179.9876	PASS
40	120	5179.9816	PASS	5179.9791	PASS	5179.9786	PASS	5179.9828	PASS
30	120	5179.9877	PASS	5179.9878	PASS	5179.9859	PASS	5179.9866	PASS
20	120	5180.0003	PASS	5179.9989	PASS	5179.9986	PASS	5179.9997	PASS
10	120	5180.0022	PASS	5179.9992	PASS	5179.9994	PASS	5180.0024	PASS
0	120	5179.9796	PASS	5179.9803	PASS	5179.9828	PASS	5179.9821	PASS
-10	120	5179.9897	PASS	5179.9886	PASS	5179.9873	PASS	5179.9901	PASS
-20	120	5179.9824	PASS	5179.9822	PASS	5179.9818	PASS	5179.9831	PASS
-30	120	5180.0052	PASS	5180.0039	PASS	5180.0044	PASS	5180.0016	PASS

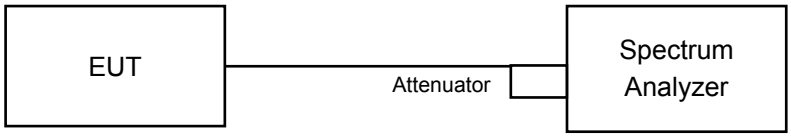
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5180.0003	PASS	5179.9979	PASS	5179.9990	PASS	5179.9988	PASS
	120	5180.0003	PASS	5179.9989	PASS	5179.9986	PASS	5179.9997	PASS
	102	5179.9995	PASS	5179.9979	PASS	5179.9994	PASS	5180.0004	PASS

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

Measurement Procedure REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (For U-NII-3)	5720	2.62	2.63	0.5	Pass
149	5745	15.19	15.20	0.5	Pass
157	5785	15.20	15.20	0.5	Pass
165	5825	15.20	15.16	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (For U-NII-3)	5720	2.64	2.63	0.5	Pass
149	5745	15.19	15.21	0.5	Pass
157	5785	15.35	15.21	0.5	Pass
165	5825	15.18	15.16	0.5	Pass

802.11n (HT40)

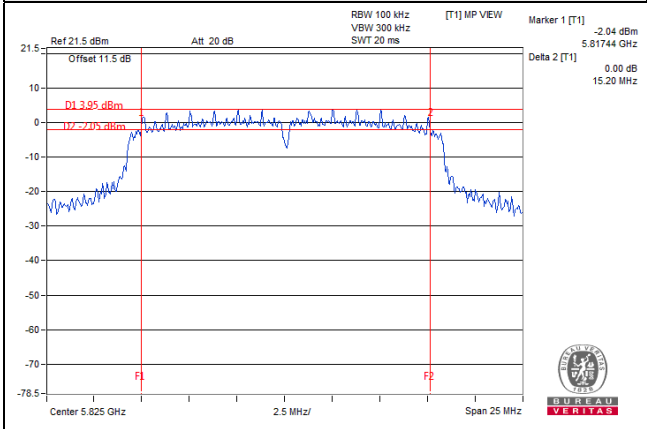
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
142 (For U-NII-3)	5710	2.62	2.64	0.5	Pass
151	5755	35.22	35.20	0.5	Pass
159	5795	35.16	35.17	0.5	Pass

802.11ac (VHT80)

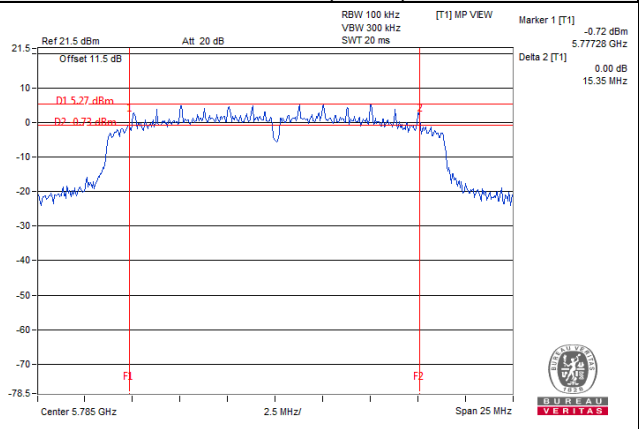
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
138 (For U-NII-3)	5690	2.65	2.66	0.5	Pass
155	5775	75.36	75.49	0.5	Pass

Spectrum Plot of Worst Value

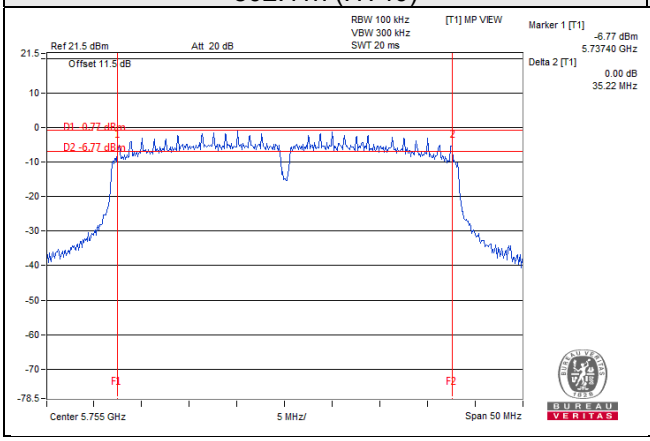
802.11a



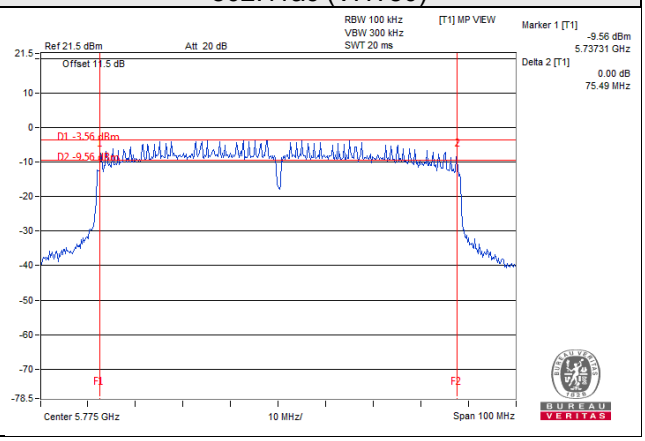
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

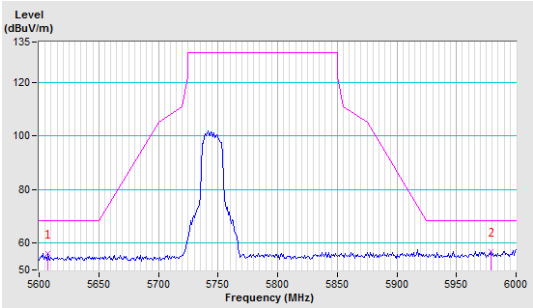
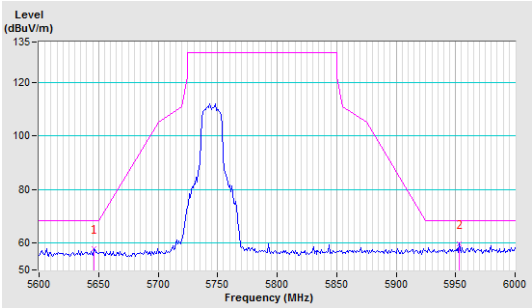
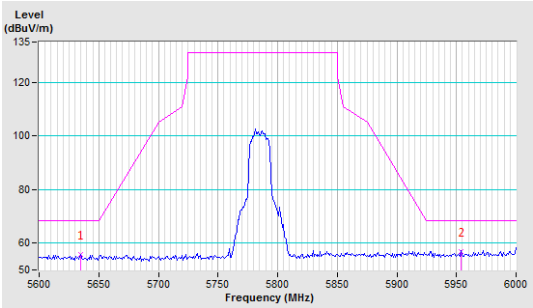
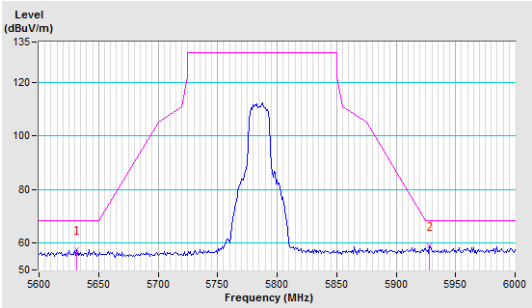
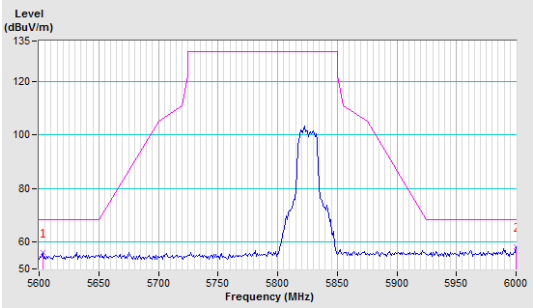
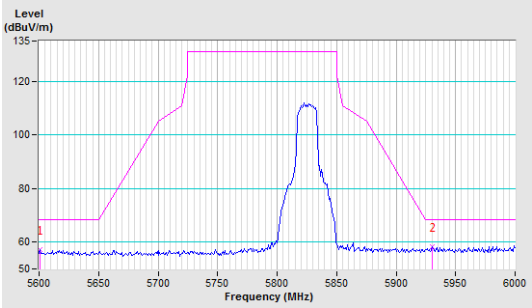


5 Pictures of Test Arrangements

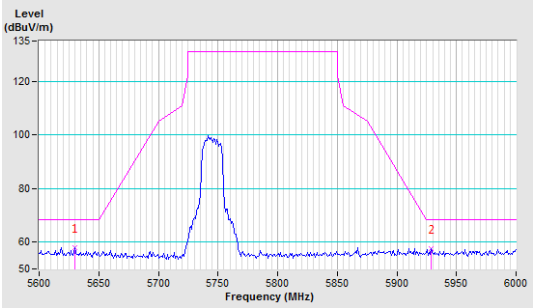
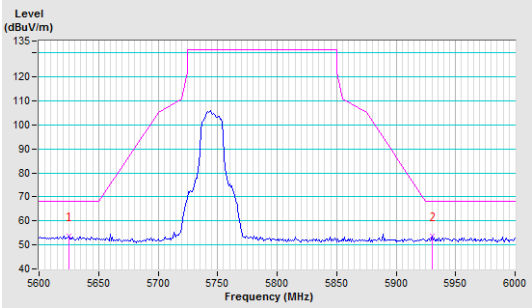
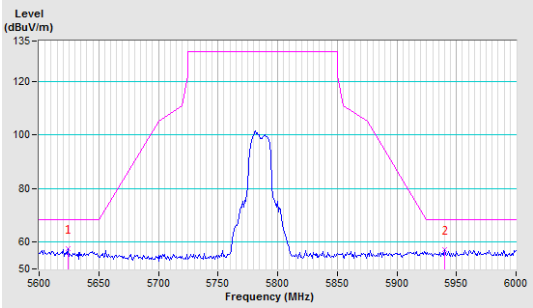
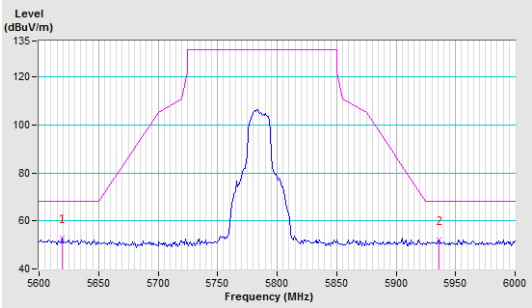
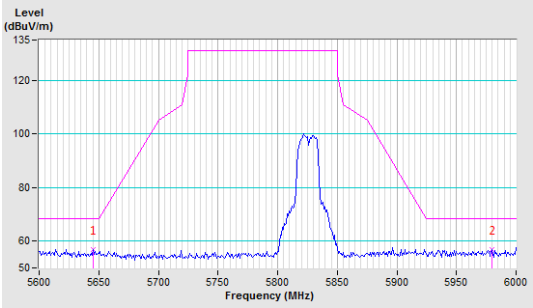
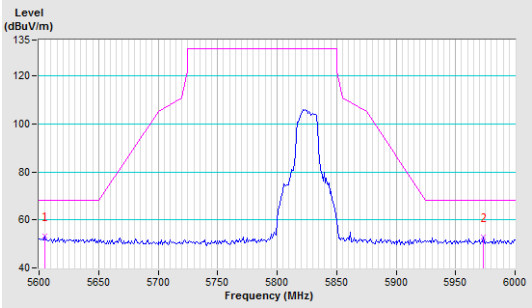
Please refer to the attached file (Test Setup Photo).

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

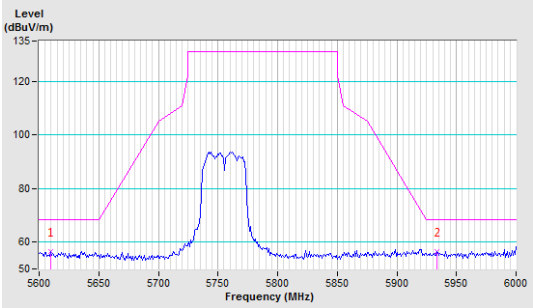
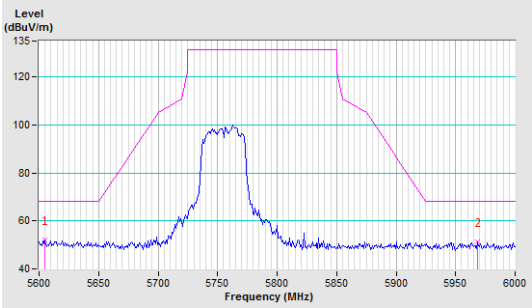
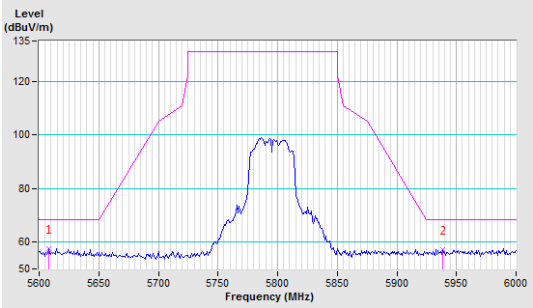
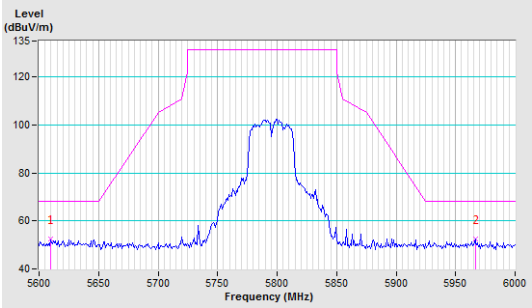
802.11a

CH149	
Horizontal	Vertical
	
CH157	
Horizontal	Vertical
	
CH165	
Horizontal	Vertical
	

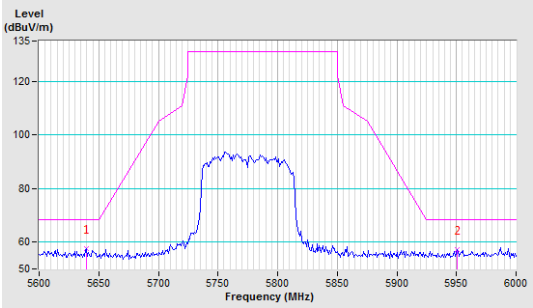
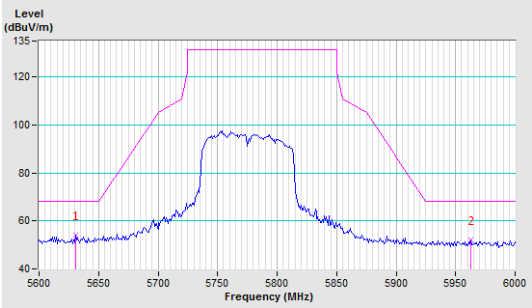
802.11n (HT20)

CH149	
Horizontal	Vertical
	
CH157	
Horizontal	Vertical
	
CH165	
Horizontal	Vertical
	

802.11n (HT40)

CH151	
Horizontal	Vertical
	
CH159	
Horizontal	Vertical
	

802.11ac (VHT80)

CH155	
Horizontal	Vertical
	

Appendix – Information on the Testing Laboratories

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

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

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

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