

FCC Test Report

Report No.: RF180719D12

FCC ID: P27XW4

Test Model: XW4

Series Model: XW4xxx, SCHX4AEWxxx (the 1st x should be blank or "-"; the rest x could be 0 to 9, A to Z, a to z, blank or "-", for marking purpose)

Received Date: Jul. 19, 2018

Test Date: Aug. 2 ~ Sep. 4, 2018

Issued Date: Sep. 4, 2018

Applicant: Sercomm Corp.

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

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**FCC Registration /
Designation Number:** 418586 / TW1078



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Table of Contents

Release Control Record	4
1 Certificate of Conformity	5
2 Summary of Test Results	6
2.1 Measurement Uncertainty.....	6
2.2 Modification Record	6
3 General Information	7
3.1 General Description of EUT	7
3.2 Description of Test Modes	9
3.2.1 Test Mode Applicability and Tested Channel Detail	11
3.3 Duty Cycle of Test Signal	13
3.4 Description of Support Units	14
3.4.1 Configuration of System under Test	14
3.5 General Description of Applied Standard	15
4 Test Types and Results	16
4.1 Radiated Emission and Bandedge Measurement	16
4.1.1 Limits of Radiated Emission and Bandedge Measurement	16
4.1.2 Test Instruments	17
4.1.3 Test Procedure.....	18
4.1.4 Deviation from Test Standard.....	18
4.1.5 Test Setup	19
4.1.6 EUT Operating Condition	20
4.1.7 Test Results	21
4.2 Conducted Emission Measurement	62
4.2.1 Limits of Conducted Emission Measurement	62
4.2.2 Test Instruments	62
4.2.3 Test Procedure.....	63
4.2.4 Deviation from Test Standard.....	63
4.2.5 Test Setup	63
4.2.6 EUT Operating Condition	63
4.2.7 Test Results	64
4.3 Transmit Power Measurement.....	66
4.3.1 Limits of Transmit Power Measurement	66
4.3.2 Test Setup	67
4.3.3 Test Instruments	67
4.3.4 Test Procedure.....	67
4.3.5 Deviation from Test Standard.....	68
4.3.6 EUT Operating Condition	68
4.3.7 Test Result	69
4.4 Occupied Bandwidth Measurement	76
4.4.1 Test Setup	76
4.4.2 Test Instruments	76
4.4.3 Test Procedure.....	76
4.4.4 Test Results	77
4.5 Peak Power Spectral Density Measurement.....	80
4.5.1 Limits of Peak Power Spectral Density Measurement.....	80
4.5.2 Test Setup	80
4.5.3 Test Instruments	80
4.5.4 Test Procedure.....	80
4.5.5 Deviation from Test Standard.....	80
4.5.6 EUT Operating Condition	80
4.5.7 Test Results	81
4.6 Frequency Stability Measurement	88
4.6.1 Limits of Frequency Stability Measurement	88

4.6.2	Test Setup.....	88
4.6.3	Test Instruments	88
4.6.4	Test Procedure.....	88
4.6.5	Deviation from Test Standard.....	88
4.6.6	EUT Operating Condition	88
4.6.7	Test Results	89
4.7	6dB Bandwidth Measurement.....	90
4.7.1	Limits of 6dB Bandwidth Measurement.....	90
4.7.2	Test Setup.....	90
4.7.3	Test Instruments	90
4.7.4	Test Procedure.....	90
4.7.5	Deviation from Test Standard.....	90
4.7.6	EUT Operating Condition	90
4.7.7	Test Results	91
5	Pictures of Test Arrangements.....	93
	Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)	94
	Appendix – Information on the Testing Laboratories	97

Release Control Record

Issue No.	Description	Date Issued
RF180719D12	Original release.	Sep. 4, 2018

1 Certificate of Conformity

Product: WiFi Adapter

Brand: Sercomm ; Xfinity

Test Model: XW4

Series Model: XW4xxx, SCHX4AEWxxx (the 1st x should be blank or "-"; the rest x could be 0 to 9, A to Z, a to z, blank or "-", for marking purpose)

Sample Status: Engineering sample

Applicant: Sercomm Corp.

Test Date: Aug. 2 ~ Sep. 4, 2018

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

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

Prepared by :

Annie Chang

Date: Sep. 4, 2018

Annie Chang / Senior Specialist

Approved by :

Rex Lai

Date: Sep. 4, 2018

Rex Lai / Associate Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -0.57dB at 0.57316MHz.
15.407(b)(1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -1.02dB at 11650.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

*For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	2.38 dB
	30MHz ~ 1000MHz	5.54 dB
Radiated Emissions above 1 GHz	Above 1GHz	5.48 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	WiFi Adapter
Brand	Sercomm ; Xfinity
Test Model	XW4
Series Model	XW4xxx, SCHX4AEWxxx (the 1st x should be blank or "-"; the rest x could be 0 to 9, A to Z, a to z, blank or "-", for marking purpose)
Model Difference	For marking purpose
Status of EUT	Engineering sample
Power Supply Rating	AC I/P: 120V, 50-60 Hz DC O/P: 12V, 1A
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only.
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.6Mbps
Operating Frequency	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz 4 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 2 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5260 ~ 5320MHz: 4 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 2 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5500 ~ 5700MHz 8 for 802.11a, 802.11n (20MHz) 3 for 802.11n (40MHz) 1 for 802.11ac (80MHz) 5745 ~ 5825MHz 5 for 802.11a, 802.11n (20MHz) 802.11ac (20MHz) 2 for 802.11n (40MHz) 802.11ac (40MHz) 1 for 802.11ac (80MHz)
Output Power	5180 ~ 5240MHz: 243.015mW 5260 ~ 5320MHz: 245.504mW 5500 ~ 5700MHz: 247.195mW 5745 ~ 5825MHz: 285.122mW
Antenna Type	Ant.1: Dipole antenna with 3.89dBi gain Ant.2: Dipole antenna with 3.52dBi gain
Antenna Connector	N/A
Accessory Device	Refer to user's manual
Data Cable Supplied	N/A

Note:

1. The EUT is a WiFi Adapter.
2. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

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

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

3. The directional gain table:

Frequency Band (MHz)	Max. Gain (dBi)
5180-5240	6.72
5260-5320	6.72
5500-5700	6.72
5745-5825	6.72

Note:

- (i) If transmit signals are *correlated*, then

Directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$ dBi [Note the “20”s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

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

Channel	Frequency
42	5210MHz

FOR 5260 ~ 5320MHz

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

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

Channel	Frequency
58	5290MHz

FOR 5500 ~ 5700MHz

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

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

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

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

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

Channel	Frequency
106	5530MHz

FOR 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

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

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz **RE<1G**: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **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	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
-	802.11n (20MHz)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
-	802.11n (40MHz)		54 to 62	54, 62	OFDM	BPSK	13.5
-	802.11ac (80MHz)		58	58	OFDM	BPSK	29.3
-	802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	BPSK	6
-	802.11n (20MHz)		100 to 140	100, 116, 132, 140	OFDM	BPSK	6.5
-	802.11n (40MHz)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
-	802.11ac (80MHz)		106	106	OFDM	BPSK	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	13.5
-	802.11ac (80MHz)		155	155	OFDM	BPSK	29.3

Radiated Emission Test (Below 1GHz):

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

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

Power Line Conducted Emission Test:

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

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

Antenna Port Conducted Measurement:

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

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

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE _≥ 1G	24deg. C, 67%RH	120Vac, 60Hz	Jamea Wei
RE _{<} 1G	24deg. C, 67%RH	120Vac, 60Hz	Jamea Wei
PLC	25deg. C, 75%RH	120Vac, 60Hz	Startlaly Wu
APCM	25deg. C, 76%RH	120Vac, 60Hz	Sason Lee

3.3 Duty Cycle of Test Signal

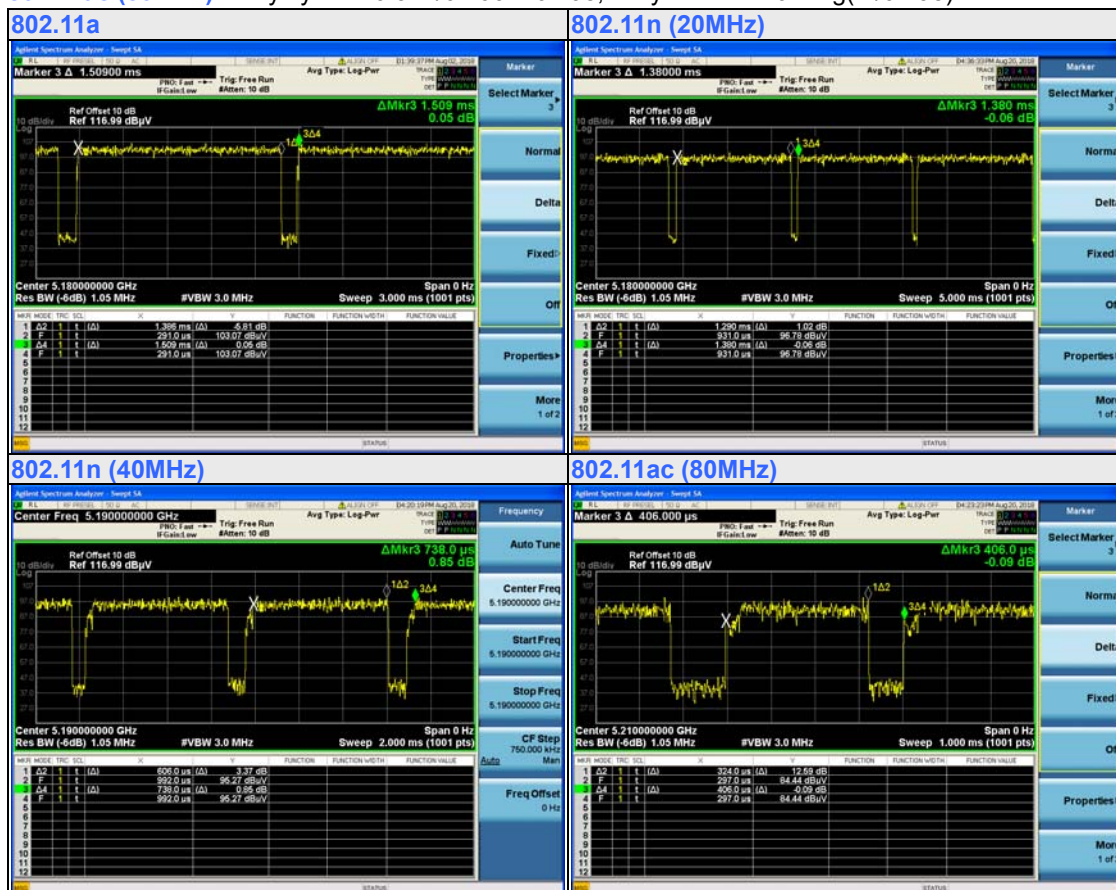
Duty cycle of test signal is < 98 %, duty factor is required

802.11a: Duty cycle = $1.386/1.509 = 0.918$, Duty factor = $10 * \log(1/0.918) = 0.37$

802.11n (20MHz): Duty cycle = $1.29/1.38 = 0.935$, Duty factor = $10 * \log(1/0.935) = 0.29$

802.11n (40MHz): Duty cycle = $0.606/0.738 = 0.821$, Duty factor = $10 * \log(1/0.821) = 0.86$

802.11ac (80MHz): Duty cycle = $0.324/0.406 = 0.798$, Duty factor = $10 * \log(1/0.798) =$



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook PC	DELL	E6530	9331GV1	FCC DoC Approved	Provided by Lab
B.	Security camera	Sercomm ; Xfinity	xCAM2	N/A	N/A	Supplied by client

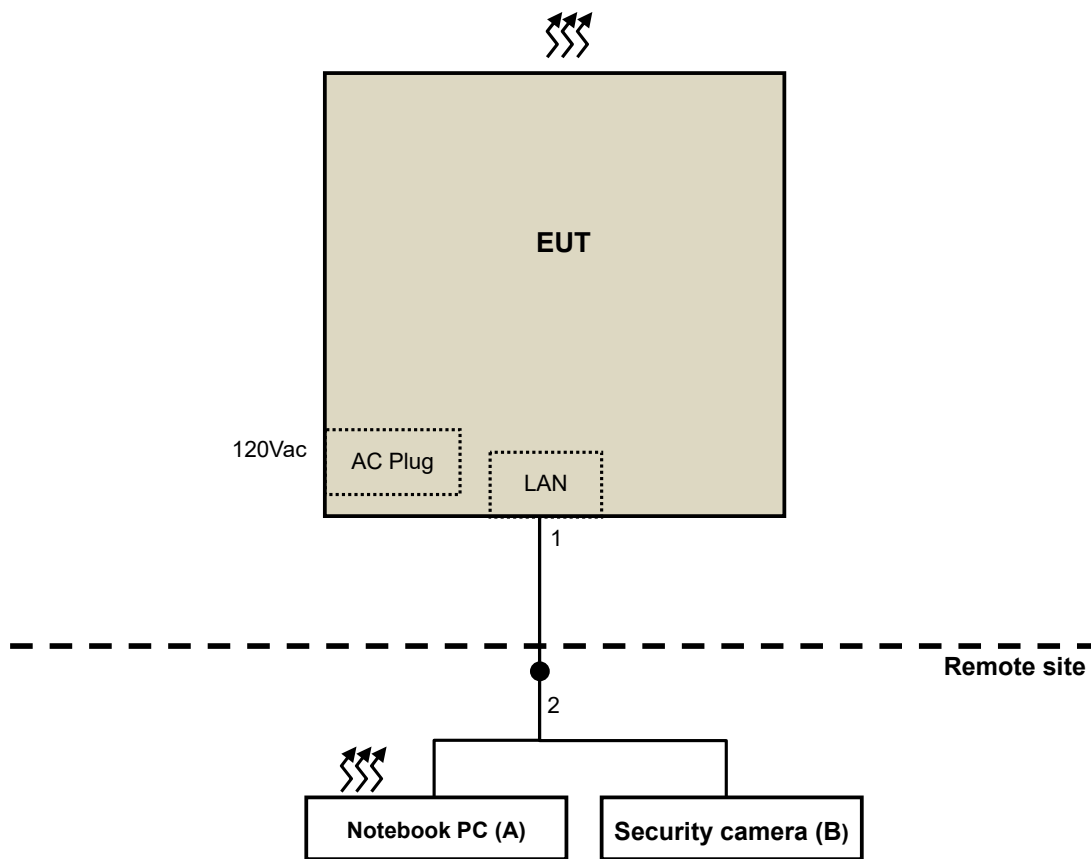
Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items A ~ B acted as communication partners to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN cable	1	10	N	0	Provided by Lab
2.	Y cable	1	0.1	N	0	Supplied by client

Note: The core(s) is(are) originally attached to the cable(s).

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General UNII Test Procedure New Rules 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:

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

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m	
		PK:74 (dBuV/m)	AV:54 (dBuV/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(dBuV/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(dBuV/m) ^{*1} PK:105.2 (dBuV/m) ^{*2} PK: 110.8(dBuV/m) ^{*3} PK:122.2 (dBuV/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:

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 21, 2018	Feb. 20, 2019
HP Preamplifier	8449B	3008A01201	Feb. 22, 2018	Feb. 21, 2019
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 21, 2018	Feb. 20, 2019
Agilent TEST RECEIVER	N9038A	MY51210129	Feb. 6, 2018	Feb. 5, 2019
Schwarzbeck Antenna	VULB 9168	139	Nov. 29, 2017	Nov. 28, 2018
Schwarzbeck Antenna	VHBA 9123	480	May 19, 2017	May 18, 2019
Schwarzbeck Horn Antenna	BBHA-9170	212	Dec. 1, 2017	Nov. 30, 2018
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Dec. 1, 2017	Nov. 30, 2018
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	Radiated_V7.6.15.9.5	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF102	Cable-CH6-01	Aug. 13, 2018	Aug. 12, 2019
SUHNER RF cable With 3/4dB PAD	SF102	Cable-CH8-3.6m	Aug. 13, 2018	Aug. 12, 2019
KEYSIGHT MIMO Powermeasurement Test set	U2021XA	U2021XA-001	Jun. 4, 2018	Jun. 3, 2019
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Aug. 3, 2018	Aug. 2, 2019
Loop Antenna EMCI	LPA600	270	Aug. 11, 2017	Aug. 10, 2019
EMCO Horn Antenna	3115	00028257	Nov. 30, 2017	Nov. 29, 2018
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 29, 2017	Sep. 28, 2018
Anritsu Power Sensor	MA2411B	0738404	Apr. 26, 2018	Apr. 25, 2019
Anritsu Power Meter	ML2495A	0842014	Apr. 26, 2018	Apr. 25, 2019
Temperature & Humidity Chamber	MHU-225AU	920409	May 25, 2018	May 24, 2019
DIGITAL POWER METER IDRC	CP-240	240515	Sep. 8, 2017	Sep. 7, 2018
AC Power Source ExTech	CFW-105	E000603	NA	NA

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

4.1.3 Test Procedure

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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 detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

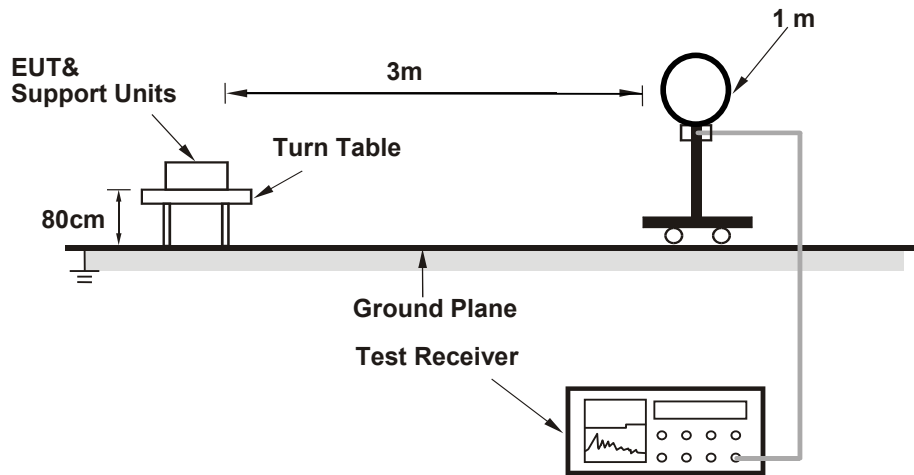
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

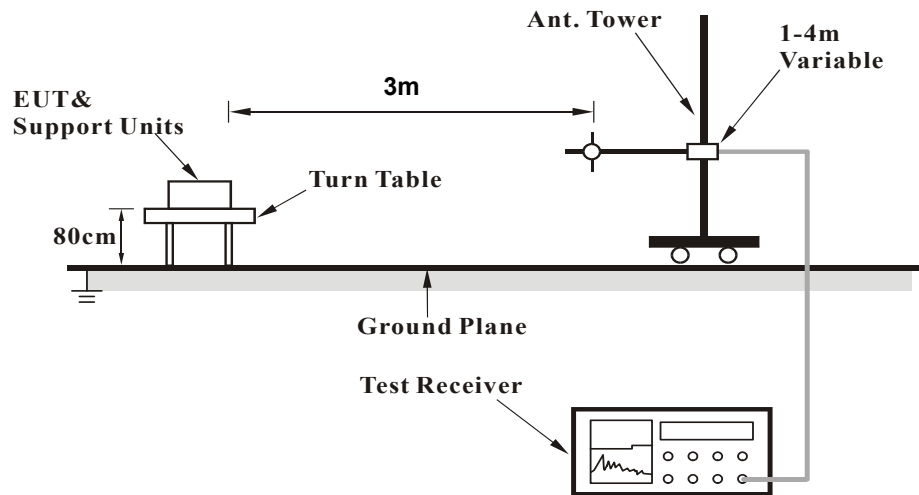
No deviation.

4.1.5 Test Setup

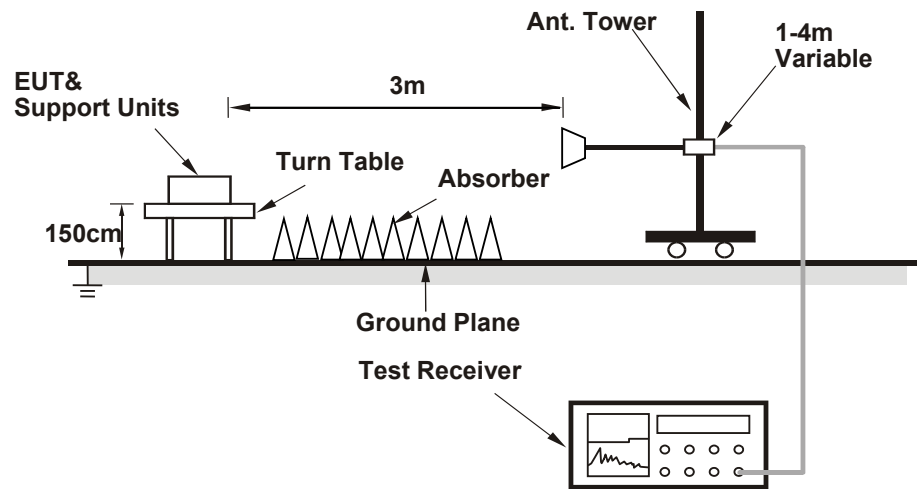
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

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

4.1.7 Test Results

Above 1GHz Data:

802.11a

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.60 PK	74.00	-5.40	2.02 H	91	63.33	5.27
2	5150.00	52.54 AV	54.00	-1.46	2.02 H	91	47.27	5.27
3	*5180.00	110.70 PK			2.02 H	91	105.65	5.05
4	*5180.00	100.33 AV			2.02 H	91	95.28	5.05
5	#10360.00	61.76 PK	68.20	-6.44	1.01 H	305	46.02	15.74
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	54.70 PK	74.00	-19.30	3.61 V	4	49.43	5.27
2	5150.00	44.91 AV	54.00	-9.09	3.61 V	4	39.64	5.27
3	*5180.00	104.53 PK			3.61 V	4	99.48	5.05
4	*5180.00	94.97 AV			3.61 V	4	89.92	5.05
5	#10360.00	58.21 PK	68.20	-9.99	1.13 V	242	42.47	15.74

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	111.28 PK			2.62 H	83	106.38	4.90
2	*5200.00	100.24 AV			2.62 H	83	95.34	4.90
3	#10400.00	66.69 PK	68.20	-1.51	3.68 H	303	50.64	16.05
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	107.66 PK			3.82 V	27	102.76	4.90
2	*5200.00	97.41 AV			3.82 V	27	92.51	4.90
3	#10400.00	62.21 PK	68.20	-5.99	1.55 V	208	46.16	16.05

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	112.36 PK			2.45 H	82	107.71	4.65
2	*5240.00	101.83 AV			2.45 H	82	97.18	4.65
3	5350.00	58.65 PK	74.00	-15.35	2.45 H	82	54.15	4.50
4	5350.00	41.72 AV	54.00	-12.28	2.45 H	82	37.22	4.50
5	#10480.00	66.55 PK	68.20	-1.65	3.75 H	286	49.89	16.66
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	106.08 PK			3.21 V	12	101.43	4.65
2	*5240.00	96.21 AV			3.21 V	12	91.56	4.65
3	5350.00	57.91 PK	74.00	-16.09	3.21 V	12	53.41	4.50
4	5350.00	40.86 AV	54.00	-13.14	3.21 V	12	36.36	4.50
5	#10480.00	64.20 PK	68.20	-4.00	1.58 V	267	47.54	16.66

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.25 PK	74.00	-16.75	1.72 H	90	51.98	5.27
2	5150.00	43.54 AV	54.00	-10.46	1.72 H	90	38.27	5.27
3	*5260.00	110.13 PK			1.72 H	90	105.61	4.52
4	*5260.00	100.60 AV			1.72 H	90	96.08	4.52
5	#10520.00	63.57 PK	68.20	-4.63	3.40 H	279	46.72	16.85
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	55.91 PK	74.00	-18.09	3.34 V	203	50.64	5.27
2	5150.00	42.78 AV	54.00	-11.22	3.34 V	203	37.51	5.27
3	*5260.00	106.23 PK			3.34 V	203	101.71	4.52
4	*5260.00	96.65 AV			3.34 V	203	92.13	4.52
5	#10520.00	66.58 PK	68.20	-1.62	2.43 V	180	49.73	16.85

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	109.80 PK			1.95 H	92	105.48	4.32
2	*5300.00	100.24 AV			1.95 H	92	95.92	4.32
3	10600.00	64.38 PK	74.00	-9.62	3.68 H	281	47.41	16.97
4	10600.00	48.41 AV	54.00	-5.59	3.68 H	281	31.44	16.97
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	105.85 PK			3.15 V	194	101.53	4.32
2	*5300.00	100.71 AV			3.15 V	194	96.39	4.32
3	10600.00	65.03 PK	74.00	-8.97	3.73 V	4	48.06	16.97
4	10600.00	50.56 AV	54.00	-3.44	3.73 V	4	33.59	16.97

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	109.67 PK			1.99 H	83	105.29	4.38
2	*5320.00	100.22 AV			1.99 H	83	95.84	4.38
3	5350.00	68.81 PK	74.00	-5.19	1.99 H	83	64.31	4.50
4	5350.00	51.71 AV	54.00	-2.29	1.99 H	83	47.21	4.50
5	10640.00	63.85 PK	74.00	-10.15	3.54 H	295	47.19	16.66
6	10640.00	48.17 AV	54.00	-5.83	3.54 H	295	31.51	16.66
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	105.99 PK			3.22 V	199	101.61	4.38
2	*5320.00	95.88 AV			3.22 V	199	91.50	4.38
3	5350.00	67.08 PK	74.00	-6.92	3.22 V	199	62.58	4.50
4	5350.00	50.21 AV	54.00	-3.79	3.22 V	199	45.71	4.50
5	10640.00	64.86 PK	74.00	-9.14	3.81 V	17	48.20	16.66
6	10640.00	50.40 AV	54.00	-3.60	3.81 V	17	33.74	16.66

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.96 PK	74.00	-11.04	1.90 H	274	58.31	4.65
2	5460.00	45.63 AV	54.00	-8.37	1.90 H	274	40.98	4.65
3	#5470.00	67.08 PK	68.20	-1.12	1.90 H	274	62.47	4.61
4	*5500.00	108.88 PK			1.90 H	274	104.41	4.47
5	*5500.00	99.85 AV			1.90 H	274	95.38	4.47
6	11000.00	58.71 PK	74.00	-15.29	2.27 H	185	42.29	16.42
7	11000.00	43.95 AV	54.00	-10.05	2.27 H	185	27.53	16.42
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	59.18 PK	74.00	-14.82	3.66 V	20	54.53	4.65
2	5460.00	43.34 AV	54.00	-10.66	3.66 V	20	38.69	4.65
3	#5470.00	62.00 PK	68.20	-6.20	3.66 V	20	57.39	4.61
4	*5500.00	104.36 PK			3.66 V	20	99.89	4.47
5	*5500.00	94.43 AV			3.66 V	20	89.96	4.47
6	11000.00	60.80 PK	74.00	-13.20	1.51 V	87	44.38	16.42
7	11000.00	45.37 AV	54.00	-8.63	1.51 V	87	28.95	16.42

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	111.49 PK			1.89 H	275	106.66	4.83
2	*5580.00	102.25 AV			1.89 H	275	97.42	4.83
3	11160.00	63.35 PK	74.00	-10.65	2.29 H	184	46.31	17.04
4	11160.00	50.11 AV	54.00	-3.89	2.29 H	184	33.07	17.04
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	107.02 PK			3.81 V	339	102.19	4.83
2	*5580.00	97.10 AV			3.81 V	339	92.27	4.83
3	11160.00	67.70 PK	74.00	-6.30	1.70 V	84	50.66	17.04
4	11160.00	52.95 AV	54.00	-1.05	1.70 V	84	35.91	17.04

REMARKS:

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

CHANNEL	TX Channel 132	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	111.32 PK			1.93 H	276	106.24	5.08
2	*5660.00	101.93 AV			1.93 H	276	96.85	5.08
3	11320.00	62.64 PK	74.00	-11.36	2.27 H	179	45.94	16.70
4	11320.00	49.51 AV	54.00	-4.49	2.27 H	179	32.81	16.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	107.16 PK			3.79 V	330	102.08	5.08
2	*5660.00	103.19 AV			3.79 V	330	98.11	5.08
3	11320.00	66.83 PK	74.00	-7.17	1.66 V	91	50.13	16.70
4	11320.00	52.74 AV	54.00	-1.26	1.66 V	91	36.04	16.70

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	107.01 PK			1.88 H	272	101.72	5.29
2	*5700.00	97.08 AV			1.88 H	272	91.79	5.29
3	#5725.00	67.14 PK	68.20	-1.06	1.88 H	272	61.68	5.46
4	11400.00	60.40 PK	74.00	-13.60	2.35 H	186	43.56	16.84
5	11400.00	47.22 AV	54.00	-6.78	2.35 H	186	30.38	16.84
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	102.97 PK			3.83 V	354	97.68	5.29
2	*5700.00	93.14 AV			3.83 V	354	87.85	5.29
3	#5725.00	62.90 PK	68.20	-5.30	3.83 V	354	57.44	5.46
4	11400.00	63.76 PK	74.00	-10.24	1.67 V	87	46.92	16.84
5	11400.00	49.78 AV	54.00	-4.22	1.67 V	87	32.94	16.84

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5633.22	55.81 PK	68.20	-12.39	3.90 H	251	50.82	4.99
2	*5745.00	107.15 PK			3.90 H	251	101.54	5.61
3	*5745.00	97.50 AV			3.90 H	251	91.89	5.61
4	#6005.00	56.48 PK	68.20	-11.72	3.90 H	251	50.08	6.40
5	11490.00	66.06 PK	74.00	-7.94	1.35 H	100	48.80	17.26
6	11490.00	52.81 AV	54.00	-1.19	1.35 H	100	35.55	17.26
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	#5627.45	56.59 PK	68.20	-11.61	3.46 V	98	51.61	4.98
2	*5745.00	101.95 PK			3.46 V	98	96.34	5.61
3	*5745.00	91.90 AV			3.46 V	98	86.29	5.61
4	#5961.86	55.51 PK	68.20	-12.69	3.46 V	98	49.22	6.29
5	11490.00	61.51 PK	74.00	-12.49	1.58 V	241	44.25	17.26
6	11490.00	48.52 AV	54.00	-5.48	1.58 V	241	31.26	17.26

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5636.43	56.42 PK	68.20	-11.78	3.87 H	246	51.42	5.00
2	*5785.00	106.87 PK			3.87 H	246	100.97	5.90
3	*5785.00	96.75 AV			3.87 H	246	90.85	5.90
4	#5956.81	56.38 PK	68.20	-11.82	3.87 H	246	50.11	6.27
5	11570.00	66.55 PK	74.00	-7.45	1.24 H	97	49.19	17.36
6	11570.00	52.75 AV	54.00	-1.25	1.24 H	97	35.39	17.36
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5612.55	55.15 PK	68.20	-13.05	3.63 V	51	50.20	4.95
2	*5785.00	101.54 PK			3.63 V	51	95.64	5.90
3	*5785.00	91.18 AV			3.63 V	51	85.28	5.90
4	#5966.12	55.41 PK	68.20	-12.79	3.63 V	51	49.10	6.31
5	11570.00	62.22 PK	74.00	-11.78	1.39 V	66	44.86	17.36
6	11570.00	48.59 AV	54.00	-5.41	1.39 V	66	31.23	17.36

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5643.08	56.07 PK	68.20	-12.13	3.75 H	253	51.05	5.02
2	*5825.00	107.69 PK			3.75 H	253	101.58	6.11
3	*5825.00	97.77 AV			3.75 H	253	91.66	6.11
4	#5966.24	56.38 PK	68.20	-11.82	3.75 H	253	50.07	6.31
5	11650.00	66.92 PK	74.00	-7.08	1.18 H	96	49.77	17.15
6	11650.00	52.87 AV	54.00	-1.13	1.18 H	96	35.72	17.15
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	#5593.91	55.17 PK	68.20	-13.03	3.42 V	71	50.28	4.89
2	*5825.00	102.00 PK			3.42 V	71	95.89	6.11
3	*5825.00	92.07 AV			3.42 V	71	85.96	6.11
4	#5947.02	55.67 PK	68.20	-12.53	3.42 V	71	49.41	6.26
5	11650.00	61.34 PK	74.00	-12.66	1.79 V	236	44.19	17.15
6	11650.00	49.11 AV	54.00	-4.89	1.79 V	236	31.96	17.15

REMARKS:

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

802.11n (20MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.01 PK	74.00	-4.99	1.66 H	85	63.74	5.27
2	5150.00	52.45 AV	54.00	-1.55	1.66 H	85	47.18	5.27
3	*5180.00	110.25 PK			1.66 H	85	105.20	5.05
4	*5180.00	100.51 AV			1.66 H	85	95.46	5.05
5	#10360.00	63.09 PK	68.20	-5.11	1.56 H	64	47.35	15.74
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.79 PK	74.00	-9.21	2.17 V	229	59.52	5.27
2	5150.00	48.71 AV	54.00	-5.29	2.17 V	229	43.44	5.27
3	*5180.00	105.05 PK			2.17 V	229	100.00	5.05
4	*5180.00	95.28 AV			2.17 V	229	90.23	5.05
5	#10360.00	61.44 PK	68.20	-6.76	2.08 V	78	45.70	15.74

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	111.71 PK			1.65 H	84	106.81	4.90
2	*5200.00	102.19 AV			1.65 H	84	97.29	4.90
3	#10400.00	66.55 PK	68.20	-1.65	1.63 H	64	50.50	16.05
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	106.33 PK			2.20 V	236	101.43	4.90
2	*5200.00	97.16 AV			2.20 V	236	92.26	4.90
3	#10400.00	64.79 PK	68.20	-3.41	2.16 V	89	48.74	16.05

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	112.44 PK			1.79 H	75	107.79	4.65
2	*5240.00	102.35 AV			1.79 H	75	97.70	4.65
3	5350.00	59.92 PK	74.00	-14.08	1.79 H	75	55.42	4.50
4	5350.00	42.64 AV	54.00	-11.36	1.79 H	75	38.14	4.50
5	#10480.00	66.92 PK	68.20	-1.28	1.70 H	66	50.26	16.66
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	106.81 PK			2.14 V	215	102.16	4.65
2	*5240.00	97.11 AV			2.14 V	215	92.46	4.65
3	5350.00	57.66 PK	74.00	-16.34	2.14 V	215	53.16	4.50
4	5350.00	40.66 AV	54.00	-13.34	2.14 V	215	36.16	4.50
5	#10480.00	65.07 PK	68.20	-3.13	2.15 V	88	48.41	16.66

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.11 PK	74.00	-16.89	1.88 H	83	51.84	5.27
2	5150.00	43.43 AV	54.00	-10.57	1.88 H	83	38.16	5.27
3	*5260.00	110.31 PK			1.88 H	83	105.79	4.52
4	*5260.00	100.79 AV			1.88 H	83	96.27	4.52
5	#10520.00	63.70 PK	68.20	-4.50	3.12 H	277	46.85	16.85
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	55.64 PK	74.00	-18.36	3.33 V	202	50.37	5.27
2	5150.00	42.52 AV	54.00	-11.48	3.33 V	202	37.25	5.27
3	*5260.00	106.38 PK			3.33 V	202	101.86	4.52
4	*5260.00	96.51 AV			3.33 V	202	91.99	4.52
5	#10520.00	66.00 PK	68.20	-2.20	2.47 V	173	49.15	16.85

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	110.03 PK			1.88 H	79	105.71	4.32
2	*5300.00	100.50 AV			1.88 H	79	96.18	4.32
3	10600.00	64.19 PK	74.00	-9.81	3.51 H	286	47.22	16.97
4	10600.00	48.27 AV	54.00	-5.73	3.51 H	286	31.30	16.97
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	105.99 PK			3.27 V	198	101.67	4.32
2	*5300.00	95.91 AV			3.27 V	198	91.59	4.32
3	10600.00	65.55 PK	74.00	-8.45	3.65 V	10	48.58	16.97
4	10600.00	49.58 AV	54.00	-4.42	3.65 V	10	32.61	16.97

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	110.67 PK			1.91 H	82	106.29	4.38
2	*5320.00	100.77 AV			1.91 H	82	96.39	4.38
3	5350.00	69.43 PK	74.00	-4.57	1.91 H	82	64.93	4.50
4	5350.00	52.67 AV	54.00	-1.33	1.91 H	82	48.17	4.50
5	10640.00	64.95 PK	74.00	-9.05	3.53 H	277	48.29	16.66
6	10640.00	48.93 AV	54.00	-5.07	3.53 H	277	32.27	16.66
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.51 PK			3.27 V	198	102.13	4.38
2	*5320.00	96.73 AV			3.27 V	198	92.35	4.38
3	5350.00	67.34 PK	74.00	-6.66	3.27 V	198	62.84	4.50
4	5350.00	50.88 AV	54.00	-3.12	3.27 V	198	46.38	4.50
5	10640.00	66.27 PK	74.00	-7.73	3.78 V	5	49.61	16.66
6	10640.00	50.85 AV	54.00	-3.15	3.78 V	5	34.19	16.66

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.14 PK	74.00	-11.86	2.11 H	269	57.49	4.65
2	5460.00	42.97 AV	54.00	-11.03	2.11 H	269	38.32	4.65
3	#5470.00	67.04 PK	68.20	-1.16	2.11 H	269	62.43	4.61
4	*5500.00	106.11 PK			2.11 H	269	101.64	4.47
5	*5500.00	95.80 AV			2.11 H	269	91.33	4.47
6	11000.00	54.55 PK	74.00	-19.45	1.53 H	263	38.13	16.42
7	11000.00	39.17 AV	54.00	-14.83	1.53 H	263	22.75	16.42
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	57.93 PK	74.00	-16.07	3.89 V	10	53.28	4.65
2	5460.00	41.89 AV	54.00	-12.11	3.89 V	10	37.24	4.65
3	#5470.00	58.49 PK	68.20	-9.71	3.89 V	10	53.88	4.61
4	*5500.00	101.15 PK			3.89 V	10	96.68	4.47
5	*5500.00	90.31 AV			3.89 V	10	85.84	4.47
6	11000.00	53.10 PK	74.00	-20.90	1.89 V	201	36.68	16.42
7	11000.00	38.46 AV	54.00	-15.54	1.89 V	201	22.04	16.42

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	109.50 PK			3.74 H	279	104.67	4.83
2	*5580.00	98.49 AV			3.74 H	279	93.66	4.83
3	11160.00	65.19 PK	74.00	-8.81	1.26 H	69	48.15	17.04
4	11160.00	52.80 AV	54.00	-1.20	1.26 H	69	35.76	17.04
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	104.69 PK			3.74 V	16	99.86	4.83
2	*5580.00	94.79 AV			3.74 V	16	89.96	4.83
3	11160.00	59.10 PK	74.00	-14.90	1.57 V	254	42.06	17.04
4	11160.00	44.93 AV	54.00	-9.07	1.57 V	254	27.89	17.04

REMARKS:

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

CHANNEL	TX Channel 132	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	109.88 PK			3.75 H	246	104.80	5.08
2	*5660.00	98.43 AV			3.75 H	246	93.35	5.08
3	11320.00	66.74 PK	74.00	-7.26	1.56 H	107	50.04	16.70
4	11320.00	52.81 AV	54.00	-1.19	1.56 H	107	36.11	16.70
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	104.83 PK			3.66 V	89	99.75	5.08
2	*5660.00	94.70 AV			3.66 V	89	89.62	5.08
3	11320.00	63.85 PK	74.00	-10.15	1.69 V	320	47.15	16.70
4	11320.00	49.93 AV	54.00	-4.07	1.69 V	320	33.23	16.70

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	106.09 PK			3.76 H	255	100.80	5.29
2	*5700.00	95.34 AV			3.76 H	255	90.05	5.29
3	#5725.00	66.49 PK	68.20	-1.71	3.79 H	255	61.03	5.46
4	11400.00	56.47 PK	74.00	-17.53	1.78 H	209	39.63	16.84
5	11400.00	40.53 AV	54.00	-13.47	1.78 H	209	23.69	16.84
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	100.53 PK			3.66 V	52	95.24	5.29
2	*5700.00	90.68 AV			3.66 V	52	85.39	5.29
3	#5725.00	60.75 PK	68.20	-7.45	3.66 V	52	55.29	5.46
4	11400.00	54.48 PK	74.00	-19.52	1.88 V	277	37.64	16.84
5	11400.00	37.86 AV	54.00	-16.14	1.88 V	277	21.02	16.84

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5566.08	56.01 PK	68.20	-12.19	3.88 H	283	51.24	4.77
2	*5745.00	106.17 PK			3.88 H	283	100.56	5.61
3	*5745.00	96.18 AV			3.88 H	283	90.57	5.61
4	#5988.19	55.60 PK	68.20	-12.60	3.88 H	283	49.24	6.36
5	11490.00	65.47 PK	74.00	-8.53	1.16 H	98	48.21	17.26
6	11490.00	52.94 AV	54.00	-1.06	1.16 H	98	35.68	17.26
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5623.04	56.50 PK	68.20	-11.70	3.46 V	83	51.53	4.97
2	*5745.00	101.48 PK			3.46 V	83	95.87	5.61
3	*5745.00	90.97 AV			3.46 V	83	85.36	5.61
4	#5989.15	55.86 PK	68.20	-12.34	3.46 V	83	49.49	6.37
5	11490.00	62.10 PK	74.00	-11.90	2.51 V	46	44.84	17.26
6	11490.00	48.29 AV	54.00	-5.71	2.51 V	46	31.03	17.26

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5601.92	55.56 PK	68.20	-12.64	3.79 H	275	50.64	4.92
2	*5785.00	106.92 PK			3.79 H	275	101.02	5.90
3	*5785.00	96.78 AV			3.79 H	275	90.88	5.90
4	#6011.59	56.15 PK	68.20	-12.05	3.79 H	275	49.75	6.40
5	11570.00	66.55 PK	74.00	-7.45	1.31 H	99	49.19	17.36
6	11570.00	52.79 AV	54.00	-1.21	1.31 H	99	35.43	17.36
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	#5610.59	55.56 PK	68.20	-12.64	3.44 V	51	50.63	4.93
2	*5785.00	102.24 PK			3.44 V	51	96.34	5.90
3	*5785.00	91.87 AV			3.44 V	51	85.97	5.90
4	#5992.53	55.62 PK	68.20	-12.58	3.44 V	51	49.24	6.38
5	11570.00	61.01 PK	74.00	-12.99	2.18 V	269	43.65	17.36
6	11570.00	48.05 AV	54.00	-5.95	2.18 V	269	30.69	17.36

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5592.51	55.91 PK	68.20	-12.29	3.86 H	295	51.04	4.87
2	*5825.00	106.98 PK			3.86 H	295	100.87	6.11
3	*5825.00	96.80 AV			3.86 H	295	90.69	6.11
4	#6002.18	56.64 PK	68.20	-11.56	3.86 H	295	50.24	6.40
5	11650.00	66.75 PK	74.00	-7.25	1.10 H	97	49.60	17.15
6	11650.00	52.98 AV	54.00	-1.02	1.10 H	97	35.83	17.15
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	#5602.58	54.24 PK	68.20	-13.96	3.63 V	94	49.32	4.92
2	*5825.00	101.52 PK			3.63 V	94	95.41	6.11
3	*5825.00	91.13 AV			3.63 V	94	85.02	6.11
4	#5978.07	55.12 PK	68.20	-13.08	3.63 V	94	48.79	6.33
5	11650.00	57.20 PK	74.00	-16.80	2.36 V	231	40.05	17.15
6	11650.00	47.78 AV	54.00	-6.22	2.36 V	231	30.63	17.15

REMARKS:

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

802.11n (40MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.98 PK	74.00	-3.02	2.28 H	274	65.71	5.27
2	5150.00	52.81 AV	54.00	-1.19	2.28 H	274	47.54	5.27
3	*5190.00	108.25 PK			2.28 H	274	103.27	4.98
4	*5190.00	96.77 AV			2.28 H	274	91.79	4.98
5	#10380.00	53.46 PK	68.20	-14.74	2.71 H	306	37.57	15.89
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.51 PK	74.00	-7.49	1.57 V	215	61.24	5.27
2	5150.00	48.92 AV	54.00	-5.08	1.57 V	215	43.65	5.27
3	*5190.00	103.74 PK			1.57 V	215	98.76	4.98
4	*5190.00	91.94 AV			1.57 V	215	86.96	4.98
5	#10380.00	51.35 PK	68.20	-16.85	1.34 V	226	35.46	15.89

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	109.56 PK			2.59 H	78	104.85	4.71
2	*5230.00	99.59 AV			2.59 H	78	94.88	4.71
3	5350.00	61.34 PK	74.00	-12.66	2.59 H	78	56.84	4.50
4	5350.00	41.97 AV	54.00	-12.03	2.59 H	78	37.47	4.50
5	#10460.00	67.10 PK	68.20	-1.10	2.99 H	273	50.58	16.52
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	104.58 PK			1.97 V	254	99.87	4.71
2	*5230.00	94.34 AV			1.97 V	254	89.63	4.71
3	5350.00	58.76 PK	74.00	-15.24	1.97 V	254	54.26	4.50
4	5350.00	40.14 AV	54.00	-13.86	1.97 V	254	35.64	4.50
5	#10460.00	62.77 PK	68.20	-5.43	1.87 V	21	46.25	16.52

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.93 PK	74.00	-17.07	1.90 H	77	51.66	5.27
2	5150.00	43.47 AV	54.00	-10.53	1.90 H	77	38.20	5.27
3	*5270.00	110.08 PK			1.90 H	77	105.61	4.47
4	*5270.00	100.44 AV			1.90 H	77	95.97	4.47
5	#10540.00	62.14 PK	68.20	-6.06	3.48 H	287	45.26	16.88
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	55.76 PK	74.00	-18.24	3.28 V	199	50.49	5.27
2	5150.00	42.20 AV	54.00	-11.80	3.28 V	199	36.93	5.27
3	*5270.00	106.09 PK			3.28 V	199	101.62	4.47
4	*5270.00	96.35 AV			3.28 V	199	91.88	4.47
5	#10540.00	65.39 PK	68.20	-2.81	2.51 V	180	48.51	16.88

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	104.07 PK			1.90 H	90	99.71	4.36
2	*5310.00	93.55 AV			1.90 H	90	89.19	4.36
3	5350.00	72.33 PK	74.00	-1.67	1.90 H	90	67.83	4.50
4	5350.00	52.65 AV	54.00	-1.35	1.90 H	90	48.15	4.50
5	10620.00	59.20 PK	74.00	-14.80	3.51 H	282	42.38	16.82
6	10620.00	45.76 AV	54.00	-8.24	3.51 H	282	28.94	16.82
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	100.22 PK			3.30 V	205	95.86	4.36
2	*5310.00	89.58 AV			3.30 V	205	85.22	4.36
3	5350.00	69.09 PK	74.00	-4.91	3.30 V	205	64.59	4.50
4	5350.00	50.44 AV	54.00	-3.56	3.30 V	205	45.94	4.50
5	10620.00	61.33 PK	74.00	-12.67	3.77 V	7	44.51	16.82
6	10620.00	46.90 AV	54.00	-7.10	3.77 V	7	30.08	16.82

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.65 PK	74.00	-13.35	3.73 H	249	56.00	4.65
2	5460.00	44.44 AV	54.00	-9.56	3.73 H	249	39.79	4.65
3	#5470.00	66.87 PK	68.20	-1.33	3.73 H	249	62.26	4.61
4	*5510.00	101.63 PK			3.73 H	249	97.12	4.51
5	*5510.00	91.15 AV			3.73 H	249	86.64	4.51
6	11020.00	56.21 PK	74.00	-17.79	2.10 H	23	39.68	16.53
7	11020.00	39.89 AV	54.00	-14.11	2.10 H	23	23.36	16.53
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	55.68 PK	74.00	-18.32	3.62 V	96	51.03	4.65
2	5460.00	39.91 AV	54.00	-14.09	3.62 V	96	35.26	4.65
3	#5470.00	62.05 PK	68.20	-6.15	3.62 V	96	57.44	4.61
4	*5510.00	97.14 PK			3.62 V	96	92.63	4.51
5	*5510.00	86.08 AV			3.62 V	96	81.57	4.51
6	11020.00	54.95 PK	74.00	-19.05	1.52 V	128	38.42	16.53
7	11020.00	39.05 AV	54.00	-14.95	1.52 V	128	22.52	16.53

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	106.79 PK			3.50 H	246	102.09	4.70
2	*5550.00	96.22 AV			3.50 H	246	91.52	4.70
3	11100.00	60.91 PK	74.00	-13.09	1.48 H	277	43.98	16.93
4	11100.00	47.15 AV	54.00	-6.85	1.48 H	277	30.22	16.93
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	102.16 PK			3.63 V	71	97.46	4.70
2	*5550.00	91.06 AV			3.63 V	71	86.36	4.70
3	11100.00	57.08 PK	74.00	-16.92	1.57 V	239	40.15	16.93
4	11100.00	44.79 AV	54.00	-9.21	1.57 V	239	27.86	16.93

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	107.34 PK			3.69 H	247	102.20	5.14
2	*5670.00	97.32 AV			3.69 H	247	92.18	5.14
3	#5725.00	66.78 PK	68.20	-1.42	3.69 H	247	61.32	5.46
4	11340.00	57.02 PK	74.00	-16.98	1.68 H	224	40.29	16.73
5	11340.00	40.36 AV	54.00	-13.64	1.68 H	224	23.63	16.73
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	101.51 PK			3.59 V	63	96.37	5.14
2	*5670.00	91.17 AV	54.00	37.17	3.59 V	63	86.03	5.14
3	#5725.00	61.80 PK	68.20	-6.40	3.59 V	63	56.34	5.46
4	11340.00	56.05 PK	74.00	-17.95	2.41 V	152	39.32	16.73
5	11340.00	39.36 AV	54.00	-14.64	2.41 V	152	22.63	16.73

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5614.80	56.55 PK	68.20	-11.65	3.85 H	269	51.60	4.95
2	*5755.00	106.34 PK			3.85 H	269	100.67	5.67
3	*5755.00	96.19 AV			3.85 H	269	90.52	5.67
4	#5956.92	55.48 PK	68.20	-12.72	3.85 H	269	49.20	6.28
5	11510.00	66.05 PK	74.00	-7.95	1.30 H	97	48.74	17.31
6	11510.00	52.80 AV	54.00	-1.20	1.30 H	97	35.49	17.31
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	#5609.56	55.29 PK	68.20	-12.91	2.58 V	79	50.36	4.93
2	*5755.00	99.96 PK			2.58 V	79	94.29	5.67
3	*5755.00	89.55 AV			2.58 V	79	83.88	5.67
4	#5968.74	55.46 PK	68.20	-12.74	2.58 V	79	49.15	6.31
5	11510.00	61.03 PK	74.00	-12.97	2.19 V	222	43.72	17.31
6	11510.00	47.34 AV	54.00	-6.66	2.19 V	222	30.03	17.31

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5606.24	54.76 PK	68.20	-13.44	3.82 H	269	49.83	4.93
2	*5795.00	106.99 PK			3.82 H	269	101.02	5.97
3	*5795.00	101.33 AV			3.82 H	269	95.36	5.97
4	#5930.88	56.44 PK	68.20	-11.76	3.82 H	269	50.17	6.27
5	11590.00	64.53 PK	74.00	-9.47	1.36 H	100	47.16	17.37
6	11590.00	52.84 AV	54.00	-1.16	1.36 H	100	35.47	17.37
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	#5589.63	56.19 PK	68.20	-12.01	2.61 V	94	51.32	4.87
2	*5795.00	101.75 PK			2.61 V	94	95.78	5.97
3	*5795.00	90.75 AV			2.61 V	94	84.78	5.97
4	#5984.80	56.81 PK	68.20	-11.39	2.61 V	94	50.45	6.36
5	11590.00	60.66 PK	74.00	-13.34	1.89 V	241	43.29	17.37
6	11590.00	47.81 AV	54.00	-6.19	1.89 V	241	30.44	17.37

REMARKS:

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

802.11ac (80MHz)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.64 PK	74.00	-5.36	3.65 H	277	63.37	5.27
2	5150.00	52.54 AV	54.00	-1.46	3.65 H	277	47.27	5.27
3	*5210.00	103.58 PK			3.65 H	277	98.75	4.83
4	*5210.00	93.24 AV			3.65 H	277	88.41	4.83
5	5350.00	62.38 PK	74.00	-11.62	1.00 H	277	57.88	4.50
6	5350.00	42.78 AV	54.00	-11.22	1.00 H	277	38.28	4.50
7	#10420.00	55.57 PK	68.20	-12.63	2.68 H	48	39.36	16.21
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.52 PK	74.00	-8.48	1.89 V	241	60.25	5.27
2	5150.00	49.63 AV	54.00	-4.37	1.89 V	241	44.36	5.27
3	*5210.00	98.37 PK			1.89 V	241	93.54	4.83
4	*5210.00	88.70 AV			1.89 V	241	83.87	4.83
5	5350.00	59.84 PK	74.00	-14.16	1.89 V	241	55.34	4.50
6	5350.00	40.76 AV	54.00	-13.24	1.89 V	241	36.26	4.50
7	#10420.00	53.45 PK	68.20	-14.75	2.05 V	263	37.24	16.21

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	57.08 PK	74.00	-16.92	1.89 H	93	51.81	5.27
2	5150.00	43.75 AV	54.00	-10.25	1.89 H	93	38.48	5.27
3	*5290.00	102.21 PK			1.89 H	93	97.84	4.37
4	*5290.00	92.29 AV			1.89 H	93	87.92	4.37
5	5350.00	68.92 PK	74.00	-5.08	1.89 H	93	64.42	4.50
6	5350.00	52.85 AV	54.00	-1.15	1.89 H	93	48.35	4.50
7	#10580.00	61.65 PK	68.20	-6.55	3.50 H	274	44.71	16.94
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	56.51 PK	74.00	-17.49	3.31 V	196	51.24	5.27
2	5150.00	42.92 AV	54.00	-11.08	3.31 V	196	37.65	5.27
3	*5290.00	97.34 PK			3.31 V	196	92.97	4.37
4	*5290.00	87.51 AV			3.31 V	196	83.14	4.37
5	5350.00	66.69 PK	74.00	-7.31	3.31 V	196	62.19	4.50
6	5350.00	50.54 AV	54.00	-3.46	3.31 V	196	46.04	4.50
7	#10580.00	64.13 PK	68.20	-4.07	3.81 V	13	47.19	16.94

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	65.32 PK	74.00	-8.68	3.68 H	246	60.67	4.65
2	5460.00	49.70 AV	54.00	-4.30	3.68 H	246	45.05	4.65
3	#5470.00	67.15 PK	68.20	-1.05	3.68 H	246	62.54	4.61
4	*5530.00	100.20 PK			3.68 H	246	95.58	4.62
5	*5530.00	90.31 AV			3.68 H	246	85.69	4.62
6	11060.00	56.97 PK	74.00	-17.03	2.64 H	112	40.25	16.72
7	11060.00	40.13 AV	54.00	-13.87	2.64 H	112	23.41	16.72
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	60.67 PK	74.00	-13.33	3.78 V	78	56.02	4.65
2	5460.00	45.91 AV	54.00	-8.09	3.78 V	78	41.26	4.65
3	#5470.00	62.46 PK	68.20	-5.74	3.78 V	78	57.85	4.61
4	*5530.00	95.50 PK			3.78 V	78	90.88	4.62
5	*5530.00	84.64 AV			3.78 V	78	80.02	4.62
6	11060.00	56.05 PK	74.00	-17.95	1.25 V	236	39.33	16.72
7	11060.00	39.56 AV	54.00	-14.44	1.25 V	236	22.84	16.72

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5622.01	62.39 PK	68.20	-5.81	3.94 H	258	57.43	4.96
2	*5775.00	105.51 PK			3.94 H	258	99.68	5.83
3	*5775.00	95.10 AV			3.94 H	258	89.27	5.83
4	#5927.53	60.79 PK	68.20	-7.41	3.94 H	258	54.52	6.27
5	11550.00	65.52 PK	74.00	-8.48	1.19 H	97	48.18	17.34
6	11550.00	52.80 AV	54.00	-1.20	1.19 H	97	35.46	17.34
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	#5604.62	57.76 PK	68.20	-10.44	2.63 V	85	52.84	4.92
2	*5775.00	99.51 PK			2.63 V	85	93.68	5.83
3	*5775.00	89.42 AV			2.63 V	85	83.59	5.83
4	#5924.64	59.53 PK	68.20	-8.67	2.63 V	85	53.25	6.28
5	11550.00	60.52 PK	74.00	-13.48	1.58 V	254	43.18	17.34
6	11550.00	48.00 AV	54.00	-6.00	1.58 V	254	30.66	17.34

REMARKS:

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

Below 1GHz Data:

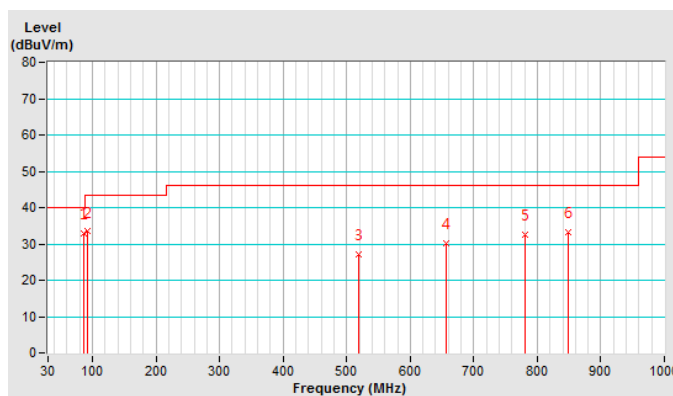
802.11n (20MHz)

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	86.02	32.83 QP	40.00	-7.17	2.04 H	228	45.32	-12.49
2	92.42	33.41 QP	43.50	-10.09	2.27 H	251	45.84	-12.43
3	519.66	27.07 QP	46.00	-18.93	2.33 H	59	27.99	-0.92
4	656.96	30.12 QP	46.00	-15.88	2.56 H	260	28.24	1.88
5	781.41	32.57 QP	46.00	-13.43	1.82 H	149	28.61	3.96
6	848.10	33.15 QP	46.00	-12.85	1.98 H	130	28.33	4.82

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. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz :the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

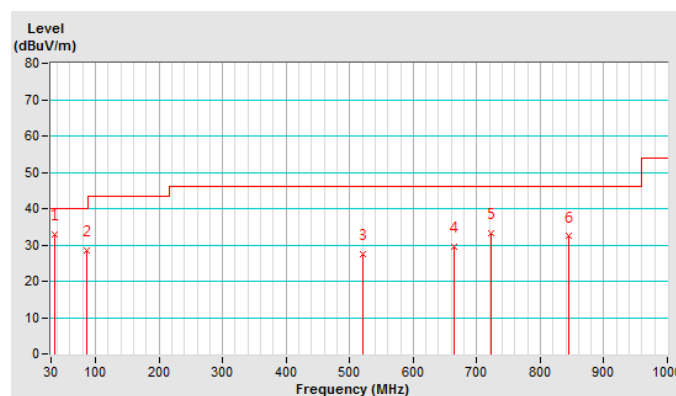


CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	36.11	32.97 QP	40.00	-7.03	1.02 V	108	41.43	-8.46
2	85.44	28.63 QP	40.00	-11.37	1.11 V	249	41.05	-12.42
3	520.19	27.59 QP	46.00	-18.41	2.03 V	141	28.50	-0.91
4	663.75	29.53 QP	46.00	-16.47	1.89 V	127	27.59	1.94
5	723.36	33.25 QP	46.00	-12.75	2.24 V	217	30.41	2.84
6	844.99	32.45 QP	46.00	-13.55	1.46 V	10	27.74	4.71

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. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz :the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ TEST RECEIVER	ESR3	102413	Feb. 8, 2018	Feb. 7, 2019
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	100104	Dec. 6, 2017	Dec. 5, 2018
LISN With Adapter (for EUT)	AD10	C09Ada-001	Dec. 6, 2017	Dec. 5, 2018
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	847265/023	Nov. 3, 2017	Nov. 2, 2018
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK8129	8129229	May 3, 2018	May 2, 2019
Software	Cond_V7.3.7.4	NA	NA	NA
RF cable (JYEBAO) With 10dB PAD	5D-FB	Cable-C09.01	Feb. 21, 2018	Feb. 20, 2019
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010789	May 8, 2018	May 7, 2019

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

2. The test was performed in Shielded Room No. 9.

3. The VCCI Site Registration No. C-1312.

4.2.3 Test Procedure

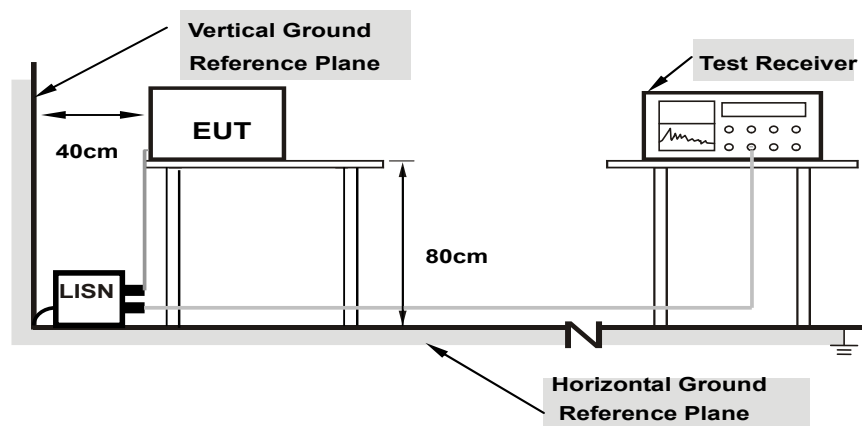
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

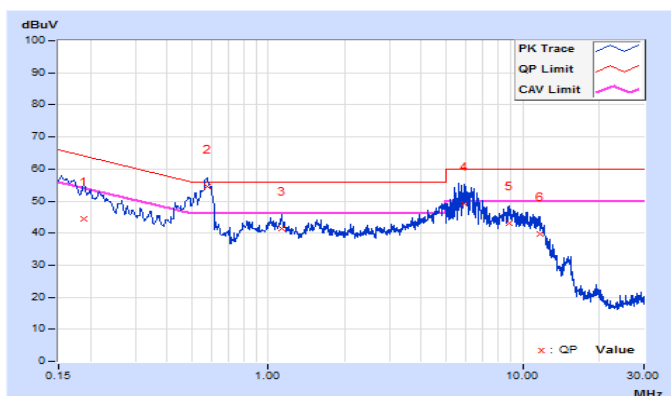
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18903	10.17	34.38	14.38	44.55	24.55	64.08	54.08	-19.53	-29.53
2	0.57316	10.26	44.31	35.17	54.57	45.43	56.00	46.00	-1.43	-0.57
3	1.12560	10.36	30.99	20.81	41.35	31.17	56.00	46.00	-14.65	-14.83
4	5.86411	10.71	38.51	25.01	49.22	35.72	60.00	50.00	-10.78	-14.28
5	8.90210	10.85	32.24	24.06	43.09	34.91	60.00	50.00	-16.91	-15.09
6	11.67046	10.98	28.90	19.61	39.88	30.59	60.00	50.00	-20.12	-19.41

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.

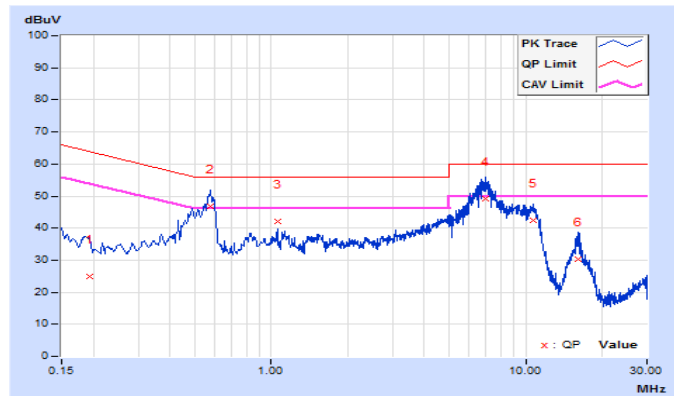


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19254	10.17	14.89	4.78	25.06	14.95	63.93	53.93	-38.87	-38.98
2	0.57820	10.26	36.41	25.22	46.67	35.48	56.00	46.00	-9.33	-10.52
3	1.05913	10.38	31.55	12.30	41.93	22.68	56.00	46.00	-14.07	-23.32
4	6.95500	10.78	38.40	24.09	49.18	34.87	60.00	50.00	-10.82	-15.13
5	10.74379	10.91	31.36	22.01	42.27	32.92	60.00	50.00	-17.73	-17.08
6	16.12786	11.09	19.35	11.37	30.44	22.46	60.00	50.00	-29.56	-27.54

REMARKS:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

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

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

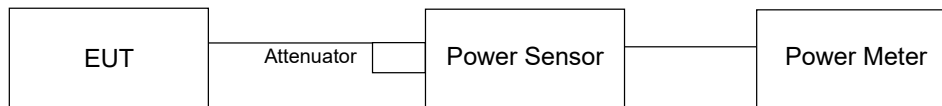
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

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

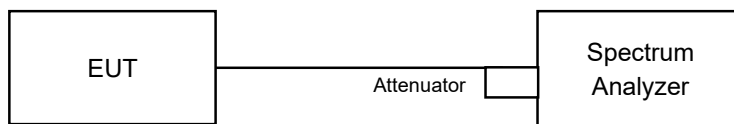
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

For Power Output Measurement



For 26dB Occupied Bandwidth



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

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

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

For 802.11ac (80MHz)

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

For 26dB Occupied Bandwidth

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

Power Output:

802.11a

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
36	5180	20.93	20.72	241.912	23.84	24	Pass
40	5200	20.92	20.70	241.085	23.82	24	Pass
48	5240	20.94	20.75	243.015	23.86	24	Pass
52	5260	20.84	20.94	245.504	23.90	24	Pass
60	5300	20.81	20.92	244.099	23.88	24	Pass
64	5320	20.82	20.94	244.946	23.89	24	Pass
100	5500	20.30	20.32	214.799	23.32	24	Pass
116	5580	20.89	20.95	247.195	23.93	24	Pass
132	5660	20.86	20.93	245.779	23.91	24	Pass
140	5700	19.24	19.25	168.086	22.26	24	Pass
149	5745	21.19	21.28	265.798	24.25	30	Pass
157	5785	20.02	20.11	203.027	23.08	30	Pass
165	5825	20.02	20.11	203.027	23.08	30	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(38.17) = 26.82\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(38.98) = 26.91\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(39.14) = 26.93\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(29.62) = 25.72\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(39.33) = 26.95\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(39.24) = 26.94\text{ dBm} > 24\text{dBm}$.
7. $11\text{dBm} + 10\log(24.94) = 24.97\text{ dBm} > 24\text{dBm}$.

Chain 1

1. $11\text{dBm} + 10\log(38.32) = 26.83\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(38.99) = 26.91\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(39.29) = 26.94\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(29.56) = 25.71\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(39.47) = 26.96\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(39.22) = 26.94\text{ dBm} > 24\text{dBm}$.
7. $11\text{dBm} + 10\log(26.71) = 25.27\text{ dBm} > 24\text{dBm}$.

802.11n (20MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
36	5180	20.61	21.03	241.845	23.84	24	Pass
40	5200	20.65	20.94	240.310	23.81	24	Pass
48	5240	20.74	20.91	241.887	23.84	24	Pass
52	5260	20.83	20.92	244.655	23.89	24	Pass
60	5300	20.84	20.88	243.801	23.87	24	Pass
64	5320	20.80	20.89	242.97	23.86	24	Pass
100	5500	20.08	20.09	203.953	23.10	24	Pass
116	5580	20.85	20.92	245.214	23.90	24	Pass
132	5660	20.83	20.93	244.94	23.89	24	Pass
140	5700	19.97	20.03	200.005	23.01	24	Pass
149	5745	21.11	21.17	260.04	24.15	30	Pass
157	5785	21.53	21.55	285.122	24.55	30	Pass
165	5825	21.35	21.46	276.417	24.42	30	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(39.39) = 26.95\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(39.70) = 26.99\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(42.41) = 27.27\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(27.76) = 25.43\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(43.79) = 27.41\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(44.00) = 27.43\text{ dBm} > 24\text{dBm}$.
7. $11\text{dBm} + 10\log(28.18) = 25.50\text{ dBm} > 24\text{dBm}$.

Chain 1

1. $11\text{dBm} + 10\log(39.15) = 26.93\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(42.35) = 27.27\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(41.91) = 27.22\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(27.69) = 25.42\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(44.29) = 27.46\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(44.08) = 27.44\text{ dBm} > 24\text{dBm}$.
7. $11\text{dBm} + 10\log(28.89) = 25.61\text{ dBm} > 24\text{dBm}$.

802.11n (40MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
38	5190	19.67	19.72	186.439	22.71	24	Pass
46	5230	20.68	20.88	239.412	23.79	24	Pass
54	5270	20.82	20.87	242.961	23.86	24	Pass
62	5310	20.18	20.29	211.137	23.25	24	Pass
102	5510	19.31	19.35	171.409	22.34	24	Pass
110	5550	20.88	20.89	245.206	23.90	24	Pass
134	5670	20.90	20.94	247.192	23.93	24	Pass
151	5755	20.91	21.05	250.66	23.99	30	Pass
159	5795	20.88	20.99	248.065	23.95	30	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(89.71) = 30.53\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(50.29) = 28.01\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(43.18) = 27.35\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(90.64) = 30.57\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(90.04) = 30.54\text{ dBm} > 24\text{dBm}$.

Chain 1

1. $11\text{dBm} + 10\log(89.34) = 30.51\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(46.08) = 27.64\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(42.81) = 27.32\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(90.59) = 30.57\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(89.68) = 30.53\text{ dBm} > 24\text{dBm}$.

802.11ac (80MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
42	5210	18.86	18.93	155.076	21.91	24	Pass
58	5290	19.95	19.98	198.396	22.98	24	Pass
106	5530	18.80	18.82	152.066	21.82	24	Pass
155	5775	20.92	20.98	248.909	23.96	30	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(90.20) = 30.55\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(91.83) = 30.63\text{ dBm} > 24\text{dBm}$.

Chain 1

1. $11\text{dBm} + 10\log(89.51) = 30.52\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(88.98) = 30.49\text{ dBm} > 24\text{dBm}$.

26dB Bandwidth:

802.11a

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	29.75	29.75
40	5200	29.47	29.92
48	5240	28.66	28.29
52	5260	38.17	38.32
60	5300	38.98	38.99
64	5320	39.14	39.29
100	5500	29.62	29.56
116	5580	39.33	39.47
132	5660	39.24	39.22
140	5700	24.94	26.71

802.11n (20MHz)

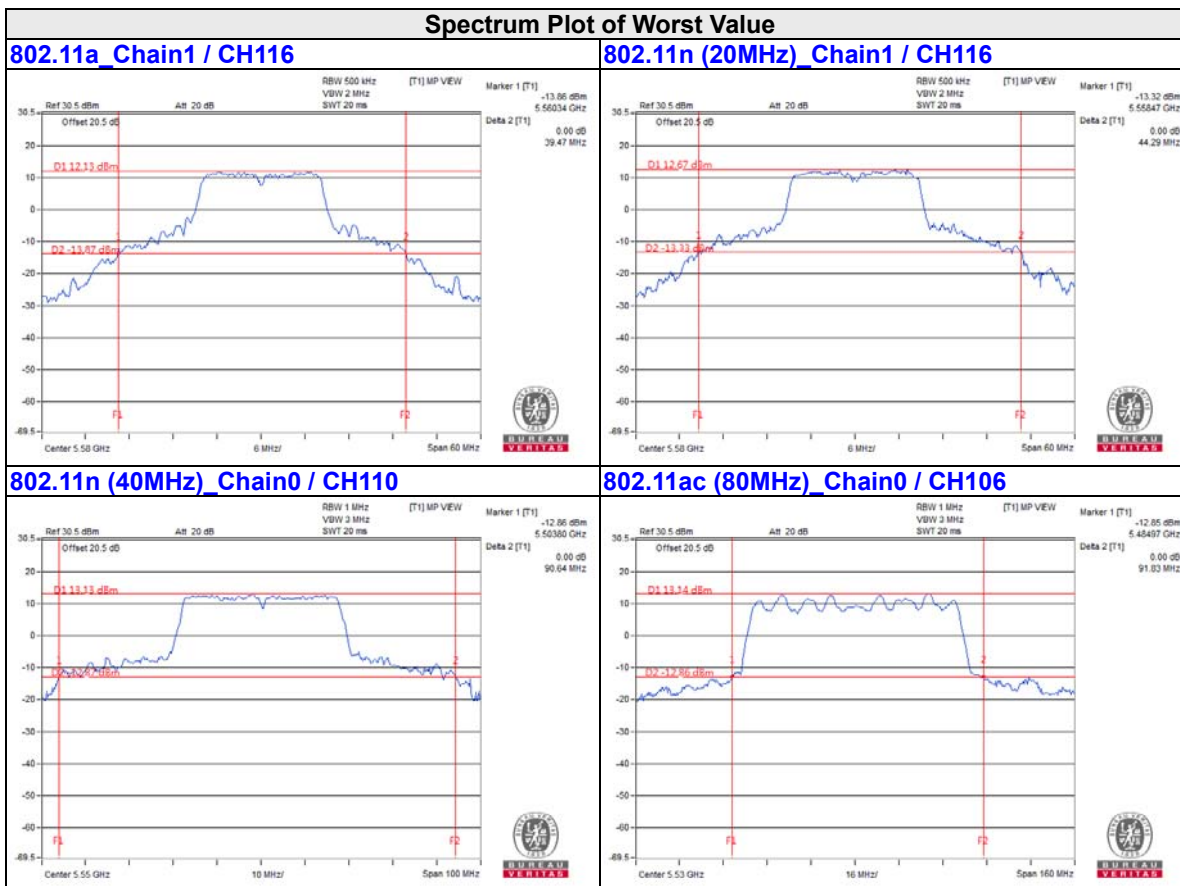
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	29.91	27.09
40	5200	25.79	26.89
48	5240	25.05	26.23
52	5260	39.39	39.15
60	5300	39.70	42.35
64	5320	42.41	41.91
100	5500	27.76	27.69
116	5580	43.79	44.29
132	5660	44.00	44.08
140	5700	28.18	28.89

802.11n (40MHz)

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	49.56	43.77
46	5230	49.84	49.95
54	5270	89.71	89.34
62	5310	50.29	46.08
102	5510	43.18	42.81
110	5550	90.64	90.59
134	5670	90.04	89.68

802.11ac (80MHz)

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	91.02	85.89
58	5290	90.20	89.51
106	5530	91.83	88.98



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Results

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.52	17.28
40	5200	17.04	17.28
48	5240	17.04	17.04
52	5260	18.24	18.24
60	5300	19.44	19.44
64	5320	19.92	19.80
100	5500	17.16	17.28
116	5580	17.56	17.83
132	5660	17.48	17.31
140	5700	16.92	16.92
149	5745	19.83	19.70
157	5785	17.50	17.40
165	5825	17.60	17.50

802.11n (20MHz)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.00	18.00
40	5200	18.00	17.88
48	5240	18.00	17.88
52	5260	18.60	18.48
60	5300	19.08	19.20
64	5320	19.32	19.44
100	5500	17.88	17.88
116	5580	18.00	18.17
132	5660	18.17	18.09
140	5700	18.12	18.00
149	5745	18.43	18.50
157	5785	18.50	18.30
165	5825	18.50	18.20

802.11n (40MHz)

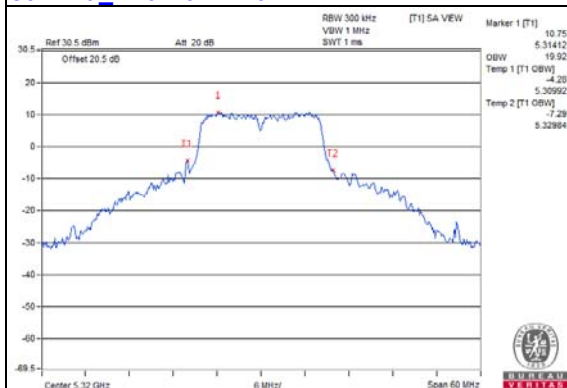
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.67	36.80
46	5230	36.60	36.80
54	5270	39.20	38.40
62	5310	36.80	36.80
102	5510	36.80	36.80
110	5550	36.96	36.96
134	5670	39.60	38.40
151	5755	37.68	37.50
159	5795	39.66	37.50

802.11ac (80MHz)

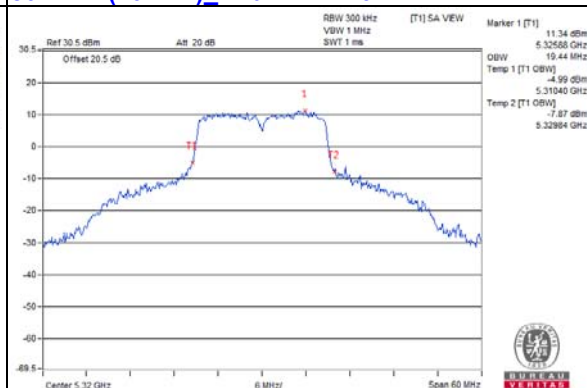
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.82	76.32
58	5290	76.32	76.08
106	5530	76.18	76.08
155	5775	77.10	77.28

Spectrum Plot of Worst Value

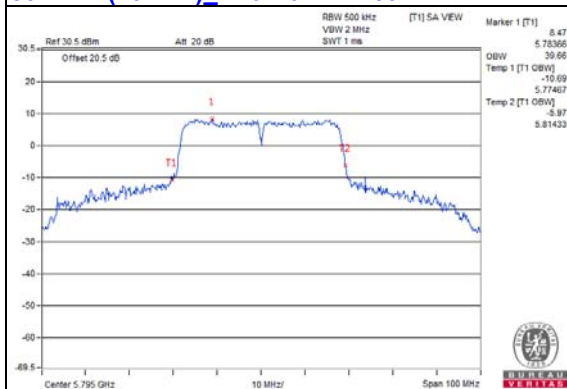
802.11a_Chain0 / CH64



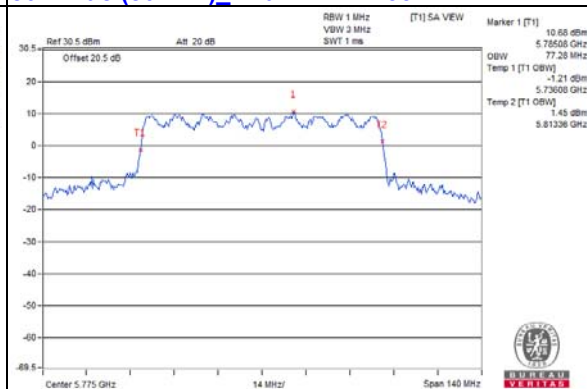
802.11n (20MHz)_Chain1 / CH64



802.11n (40MHz)_Chain0 / CH159



802.11ac (80MHz)_Chain1 / CH155



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	
	√	Client device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

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

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 kHz, Set VBW ≥ 1 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:

Using method SA-2

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

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

802.11a

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	6.23	5.38	0.37	9.21	10.28	Pass
40	5200	4.96	5.23	0.37	8.48	10.28	Pass
48	5240	4.62	4.15	0.37	7.77	10.28	Pass
52	5260	6.88	6.69	0.37	10.17	10.28	Pass
60	5300	6.79	6.92	0.37	10.24	10.28	Pass
64	5320	6.90	6.83	0.37	10.24	10.28	Pass
100	5500	4.72	4.56	0.37	8.02	10.28	Pass
116	5582	6.26	6.20	0.37	9.61	10.28	Pass
132	5660	6.08	6.12	0.37	9.48	10.28	Pass
140	5700	3.20	3.21	0.37	6.58	10.28	Pass

- Note:**
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 2. Directional gain = 6.72dBi > 6dBi, so the power density limit shall be reduced to $11 - (6.72 - 6) = 10.28\text{dBm}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (20MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	4.84	4.34	0.29	7.90	10.28	Pass
40	5200	4.08	4.41	0.29	7.55	10.28	Pass
48	5240	3.95	3.70	0.29	7.13	10.28	Pass
52	5260	6.86	6.61	0.29	10.04	10.28	Pass
60	5300	6.79	6.79	0.29	10.09	10.28	Pass
64	5320	6.86	6.89	0.29	10.18	10.28	Pass
100	5500	3.95	3.58	0.29	7.07	10.28	Pass
116	5582	6.26	7.09	0.29	10.00	10.28	Pass
132	5660	6.13	6.86	0.29	9.81	10.28	Pass
140	5700	4.35	3.97	0.29	7.47	10.28	Pass

- Note:**
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 2. Directional gain = 6.72dBi > 6dBi, so the power density limit shall be reduced to $11 - (6.72 - 6) = 10.28\text{dBm}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	1.28	1.01	0.86	5.01	10.28	Pass
46	5230	0.62	0.82	0.86	4.59	10.28	Pass
54	5270	3.74	3.63	0.86	7.55	10.28	Pass
62	5310	1.31	1.56	0.86	5.30	10.28	Pass
102	5510	0.01	-0.25	0.86	3.75	10.28	Pass
110	5550	2.87	2.95	0.86	6.78	10.28	Pass
134	5670	2.60	2.36	0.86	6.35	10.28	Pass

- Note:**
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 2. Directional gain = 6.72dBi > 6dBi, so the power density limit shall be reduced to $11-(6.72-6) = 10.28\text{dBm}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

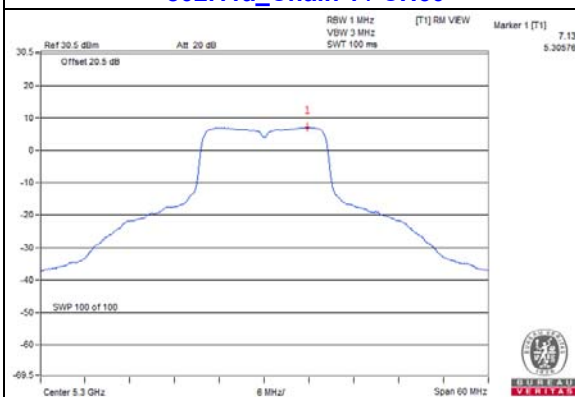
802.11ac (80MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-0.30	-1.05	0.98	3.33	10.28	Pass
58	5290	-0.50	-0.73	0.98	3.38	10.28	Pass
106	5530	-1.24	-1.98	0.98	2.40	10.28	Pass

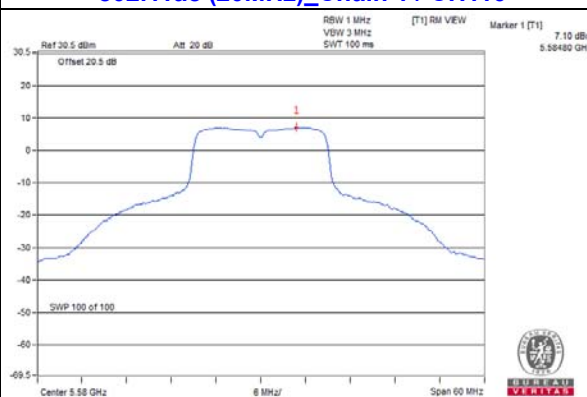
- Note:**
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 2. Directional gain = 6.72dBi > 6dBi, so the power density limit shall be reduced to $11-(6.72-6) = 10.28\text{dBm}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

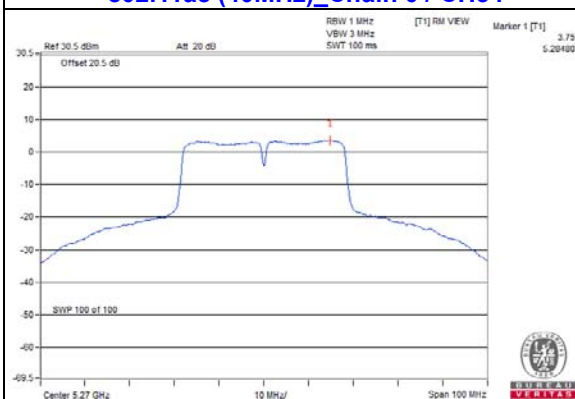
802.11a_Chain 1 / CH60



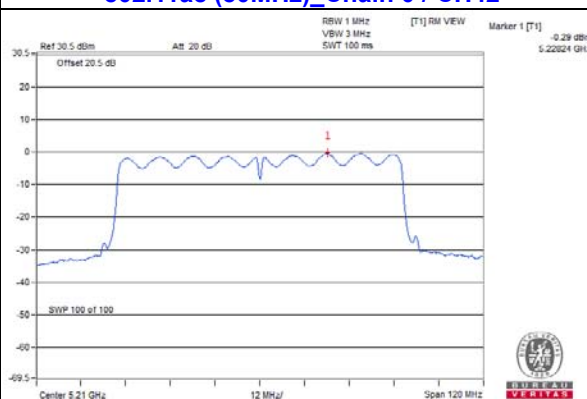
802.11ac (20MHz)_Chain 1 / CH116



802.11ac (40MHz)_Chain 0 / CH54



802.11ac (80MHz)_Chain 0 / CH42



For U-NII-3:

802.11a

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	-2.51	3.01	0.37	0.87	29.28	Pass
	157	5785	-3.86	3.01	0.37	-0.48	29.28	Pass
	165	5825	-4.12	3.01	0.37	-0.74	29.28	Pass
1	149	5745	-2.54	3.01	0.37	0.84	29.28	Pass
	157	5785	-3.98	3.01	0.37	-0.60	29.28	Pass
	165	5825	-4.19	3.01	0.37	-0.81	29.28	Pass

Note: 1. Directional gain = 6.72dBi > 6dBi, so the power density limit shall be reduced to $30-(6.72-6) = 29.28\text{dBm}$.

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

802.11n (20MHz)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	-3.56	3.01	0.29	-0.26	29.28	Pass
	157	5785	-3.88	3.01	0.29	-0.58	29.28	Pass
	165	5825	-4.20	3.01	0.29	-0.90	29.28	Pass
1	149	5745	-3.41	3.01	0.29	-0.11	29.28	Pass
	157	5785	-4.03	3.01	0.29	-0.73	29.28	Pass
	165	5825	-4.41	3.01	0.29	-1.11	29.28	Pass

Note: 1. Directional gain = 6.72dBi > 6dBi, so the power density limit shall be reduced to $30-(6.72-6) = 29.28\text{dBm}$.

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

802.11n (40MHz)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	151	5755	-6.74	3.01	0.86	-2.87	29.28	Pass
	159	5795	-7.16	3.01	0.86	-3.29	29.28	Pass
1	151	5755	-7.12	3.01	0.86	-3.25	29.28	Pass
	159	5795	-7.41	3.01	0.86	-3.54	29.28	Pass

Note: 1. Directional gain = 6.72dBi > 6dBi, so the power density limit shall be reduced to $30-(6.72-6) = 29.28\text{dBm}$.

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

802.11ac (80MHz)

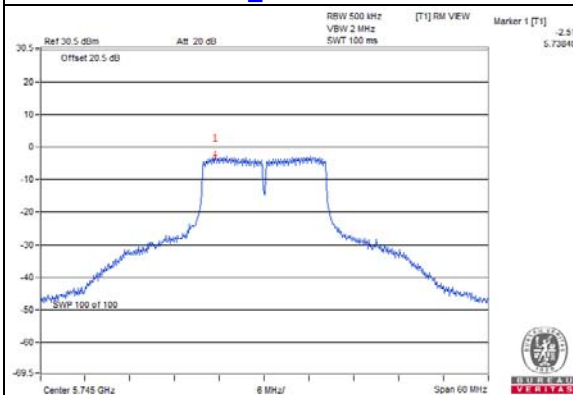
TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	155	5775	-8.88	3.01	0.98	-4.89	29.28	Pass
1	155	5775	-8.88	3.01	0.98	-4.89	29.28	Pass

Note: 1. Directional gain = 6.72dBi > 6dBi, so the power density limit shall be reduced to $30-(6.72-6) = 29.28\text{dBm}$.

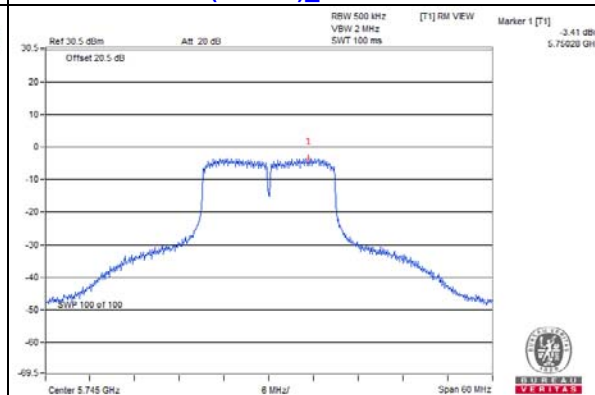
2. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

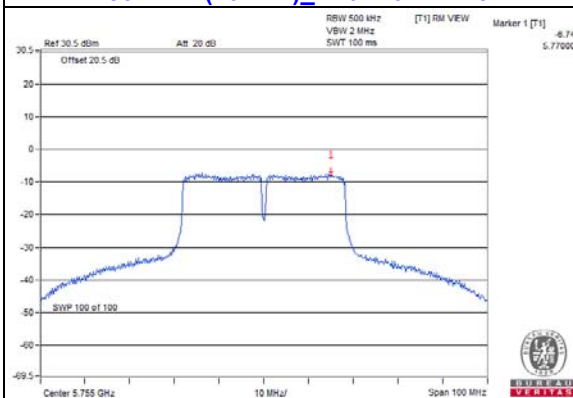
802.11a_Chain 0 / CH149



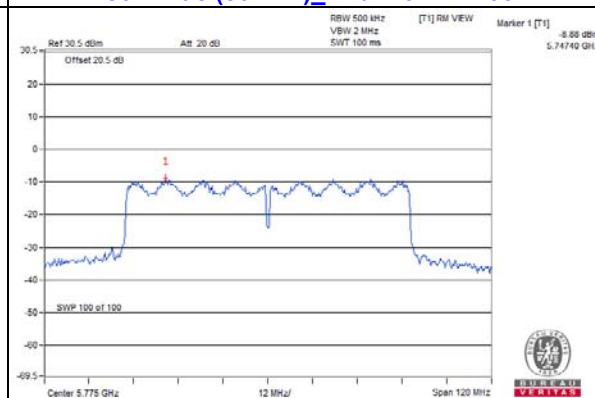
802.11n (20MHz)_Chain 1 / CH149



802.11n (40MHz)_Chain 0 / CH151



802.11ac (80MHz)_Chain 0 / CH155

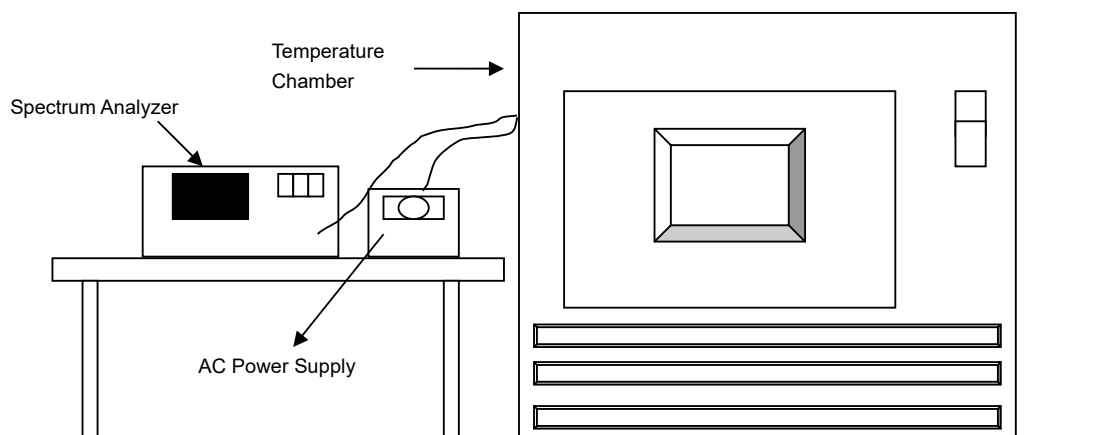


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
- Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	120	5180.0110	Pass	5180.0093	Pass	5180.0069	Pass	5180.0103	Pass
40	120	5179.9831	Pass	5179.9861	Pass	5179.9870	Pass	5179.9867	Pass
30	120	5179.985	Pass	5179.9836	Pass	5179.9825	Pass	5179.9826	Pass
20	120	5180.0198	Pass	5180.0174	Pass	5180.0195	Pass	5180.0170	Pass
10	120	5180.0085	Pass	5180.0111	Pass	5180.0072	Pass	5180.0069	Pass
0	120	5179.9939	Pass	5179.9928	Pass	5179.9946	Pass	5179.9950	Pass
-10	120	5180.0069	Pass	5180.0054	Pass	5180.0064	Pass	5180.0052	Pass
-20	120	5180.0049	Pass	5180.0022	Pass	5180.0035	Pass	5180.0024	Pass
-30	120	5179.9890	Pass	5179.9892	Pass	5179.9894	Pass	5179.9908	Pass

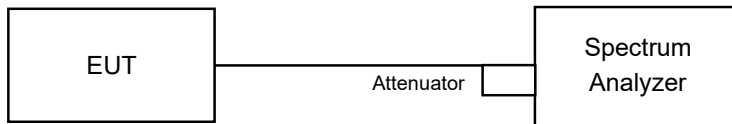
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5180.0204	Pass	5180.0182	Pass	5180.0205	Pass	5180.0165	Pass
	120	5180.0198	Pass	5180.0174	Pass	5180.0195	Pass	5180.0170	Pass
	102	5180.0204	Pass	5180.0167	Pass	5180.0204	Pass	5180.0173	Pass

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.36	16.36	0.5	PASS
157	5785	16.36	16.37	0.5	PASS
165	5825	16.36	16.37	0.5	PASS

802.11n (20MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.72	16.99	0.5	PASS
157	5785	16.97	16.72	0.5	PASS
165	5825	16.72	16.98	0.5	PASS

802.11n (40MHz)

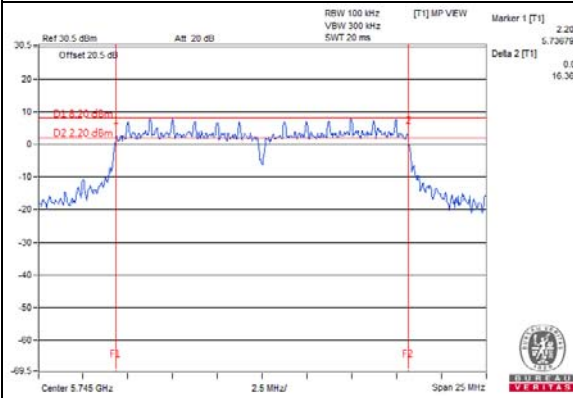
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	35.77	35.82	0.5	PASS
159	5795	35.85	35.80	0.5	PASS

802.11ac (80MHz)

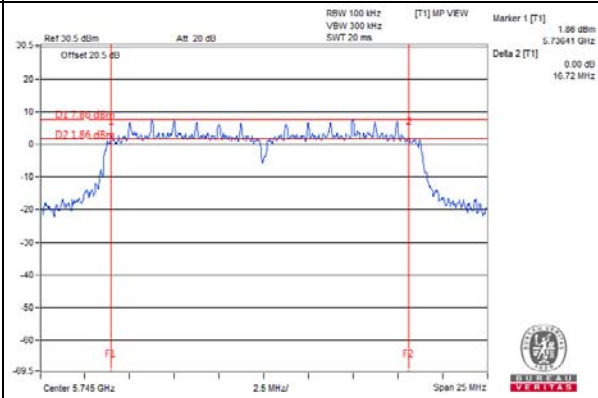
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	75.42	75.49	0.5	PASS

Spectrum Plot of Worst Value

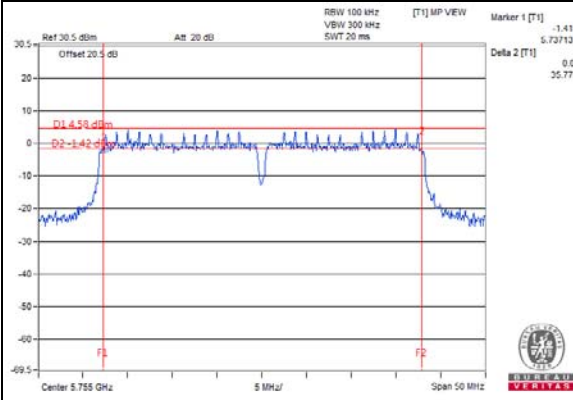
802.11a_Chain 0 / CH149



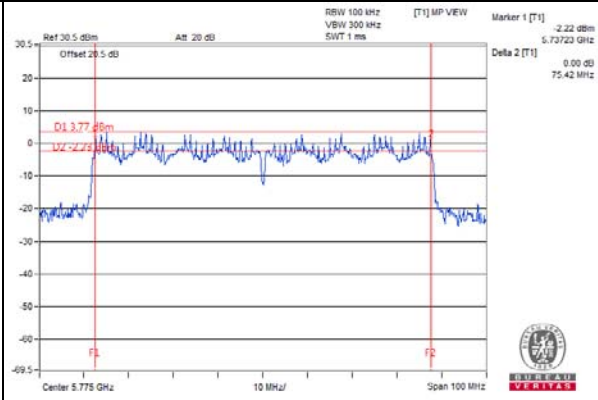
802.11ac (20MHz)_Chain 0 / CH149



802.11ac (40MHz)_Chain 0 / CH151



802.11ac (80MHz)_Chain 0 / CH155



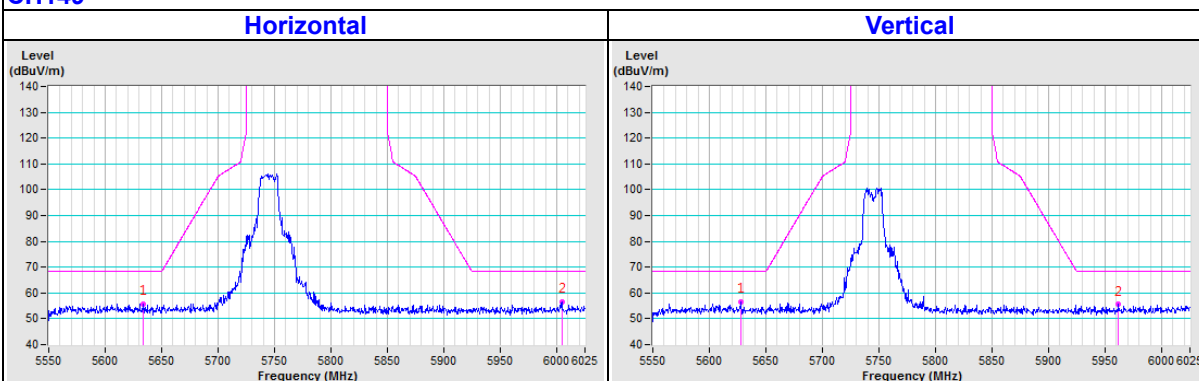
5 Pictures of Test Arrangements

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

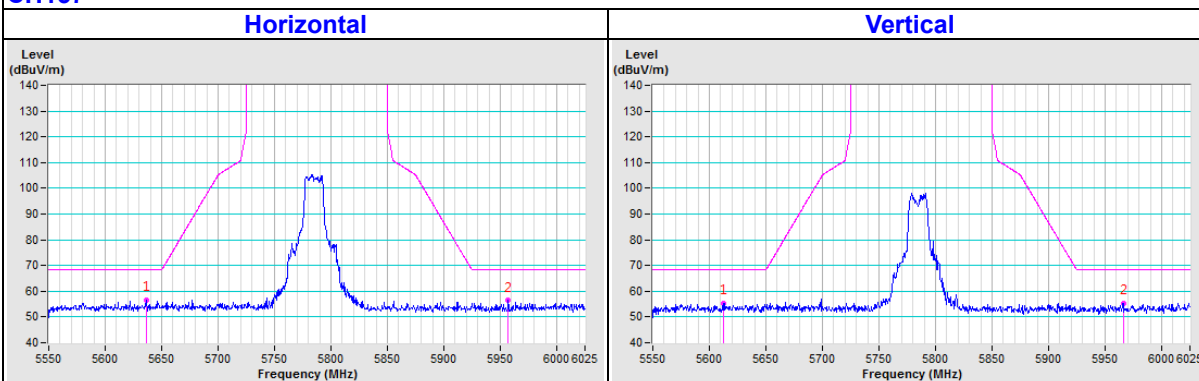
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

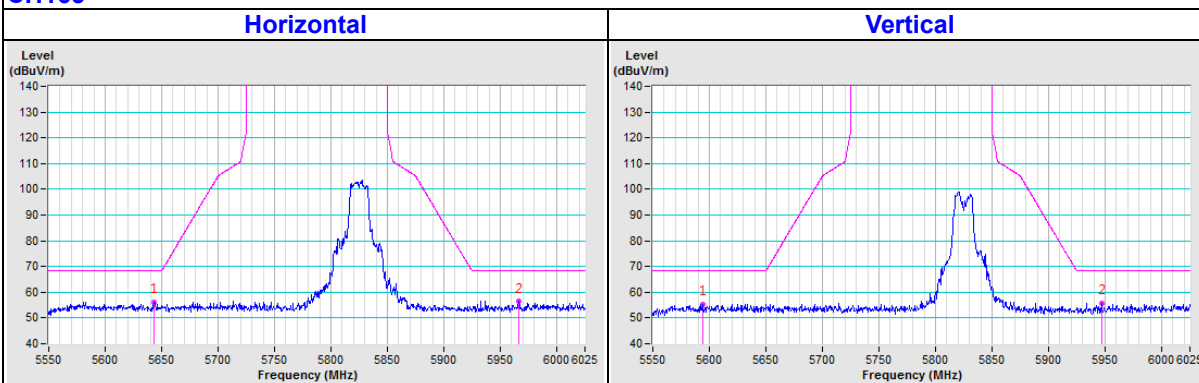
CH149



CH157

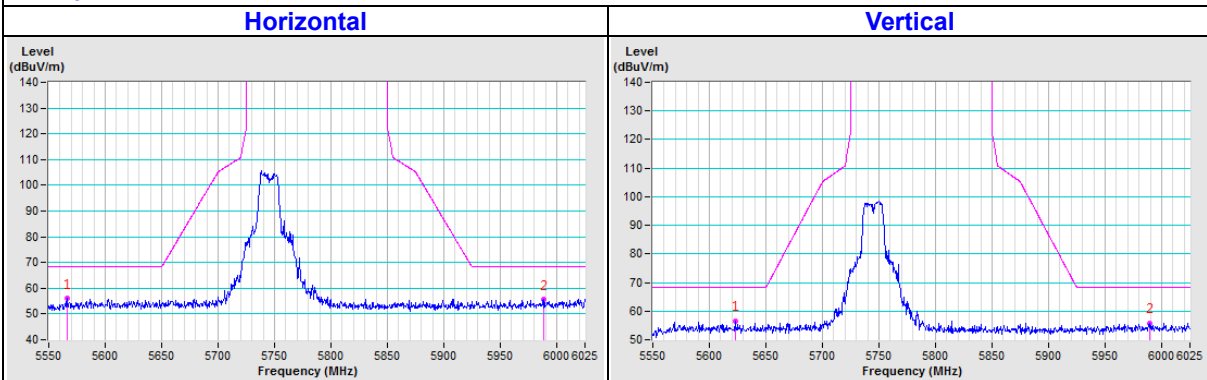


CH165

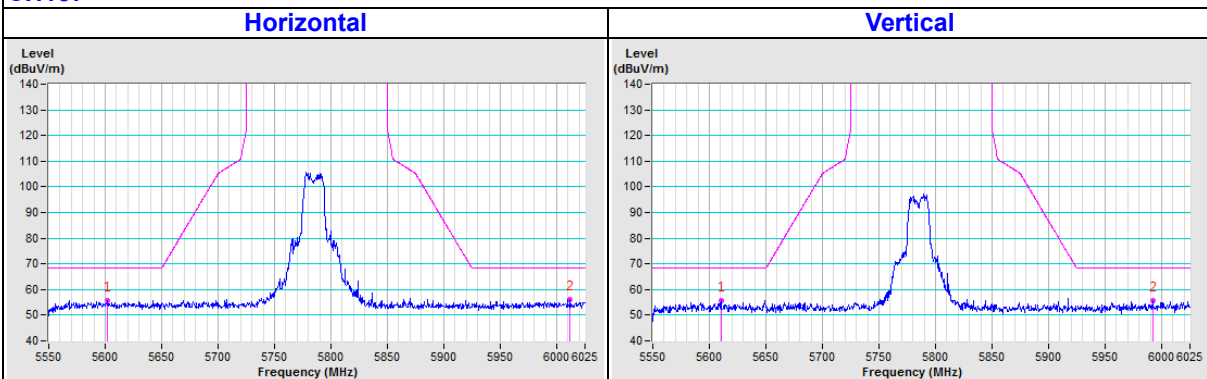


802.11n (20MHz)

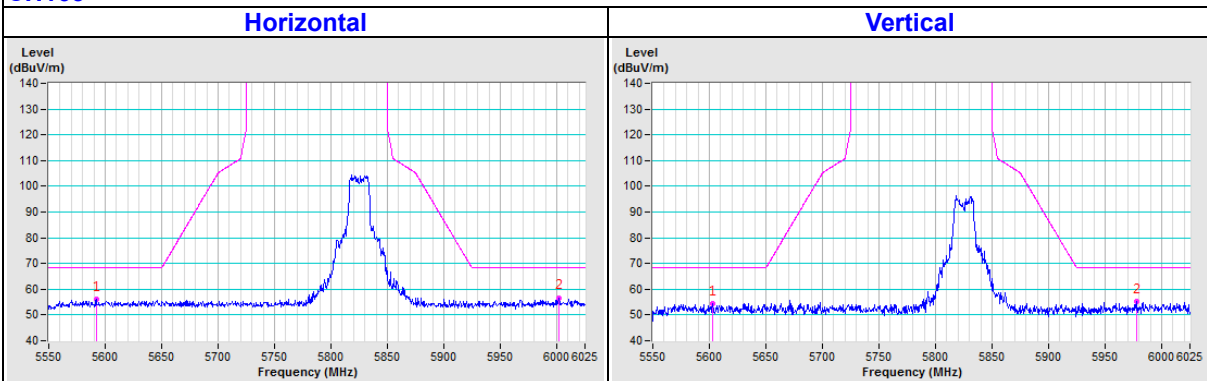
CH149



CH157

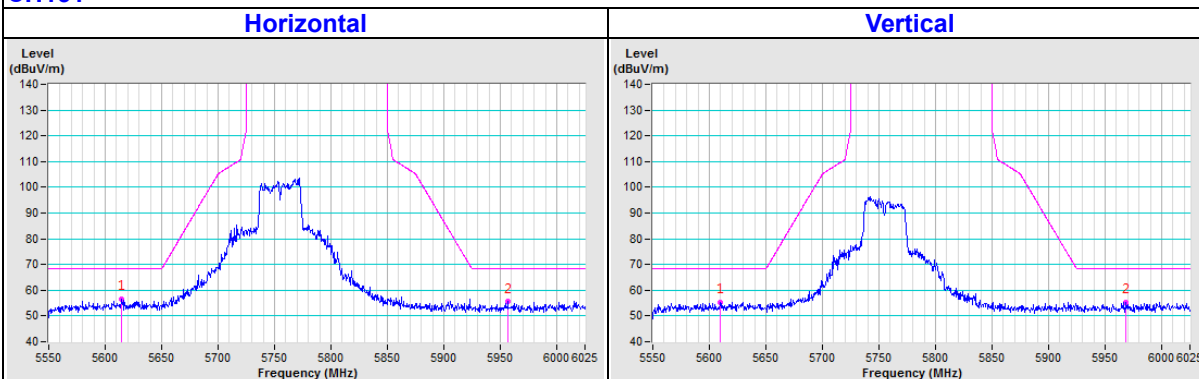


CH165

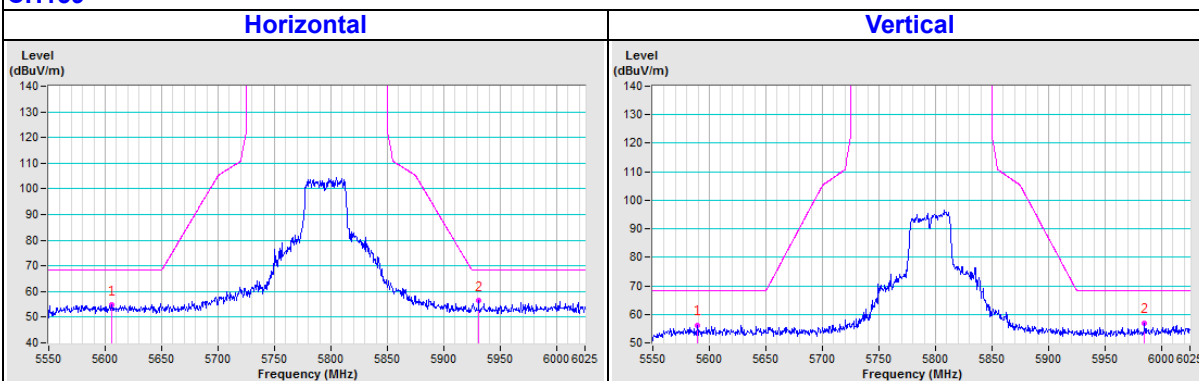


802.11n (40MHz)

CH151

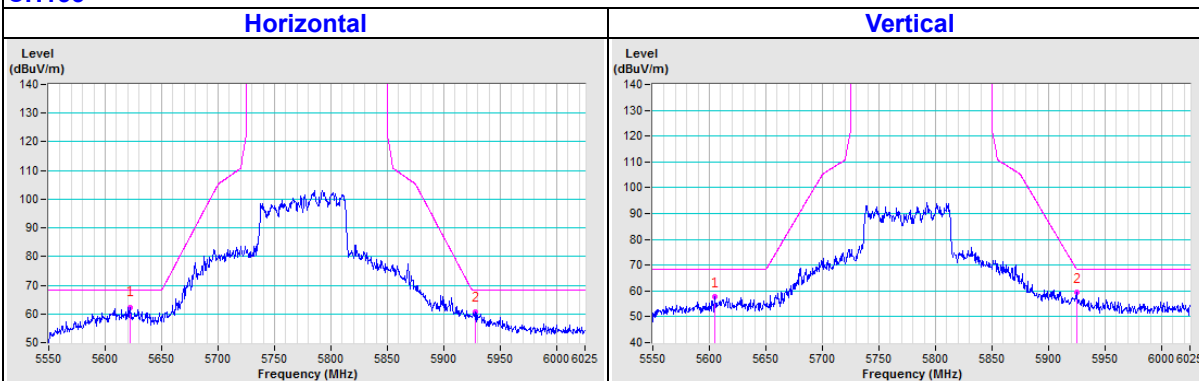


CH159



802.11ac (80MHz)

CH155



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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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Fax: 886-2-26051924

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Hwa Ya EMC/RF/Safety Lab

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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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