

FCC Test Report

Report No.: RFBFBE-WTW-P21070660-1

FCC ID: I88C3000Z

Test Model: VMG4927-B50A

Series Model: C3000Z, EMG6726-B10A

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Release Control Record

Issue No.	Description	Date Issued
RFBFBE-WTW-P21070660-1	Original release.	2021/10/8

1 Certificate of Conformity

Product: Dual-Band Wireless AC/N VDSL2 Bonding Gateway;
WiFi-N VDSL2 4-port Combo WAN CPE;
Dual-Band Wireless AC/N Gigabit Ethernet Gateway

Brand: ZYXEL

Test Model: VMG4927-B50A

Series Model: C3000Z, EMG6726-B10A

Sample Status: Engineering sample

Applicant: Zyxel Communications Corporation

Test Date: 2021/8/20 ~ 2021/8/24

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

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

Prepared by : Phoenix Huang , **Date:** 2021/10/8
Phoenix Huang / Specialist

Approved by : Clark Lin , **Date:** 2021/10/8
Clark Lin / 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)(8)	AC Power Conducted Emissions	Pass	Refer to Note 1 below
15.407(b) (1/2/3/4(i/ii)/8)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1 dB at 5350.00 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Refer to Note 1 below
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Refer to Note 1 below
15.407(e)	6dB bandwidth	Pass	Refer to Note 1 below
15.407(g)	Frequency Stability	Pass	Refer to Note 1 below
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(MHF) not a standard connector.

Note:

- Only Radiated Emission and Max Average Transmit Power test items were performed for this addendum. The others testing data refer to original test report.
- For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.
- For U-NII-1, U-NII-2A, U-NII-2C band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex B. Test Procedures refer to report 4.1.3.
- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.4 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Dual-Band Wireless AC/N VDSL2 Bonding Gateway; WiFi-N VDSL2 4-port Combo WAN CPE; Dual-Band Wireless AC/N Gigabit Ethernet Gateway
Brand	ZYXEL
Test Model	VMG4927-B50A
Series Model	C3000Z, EMG6726-B10A
Status of EUT	Engineering sample
RF Chip Model No.	2.4GHz: BCM43602 5GHz: BCM4366E
Version of Firmware	V5.13(ABLY.6)b3
Power Supply Rating	12 Vdc from power adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode
Modulation Technology	OFDM
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 600 Mbps 802.11ac: up to 1733.3 Mbps
Operating Frequency	5.18 ~ 5.24 GHz, 5.26 ~ 5.32 GHz, 5.50 ~ 5.72 GHz, 5.745 ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20): 25 802.11n (HT40), 802.11ac (VHT40): 12 802.11ac (VHT80): 6
Output Power	CDD Mode: 5.18 ~ 5.24 GHz: 686.264 mW 5.26 ~ 5.32 GHz: 167.795 mW 5.5 ~ 5.72 GHz: 227.301 mW 5.745 ~ 5.825 GHz: 869.167 mW Beamforming Mode: 5.18 ~ 5.24 GHz: 326.683 mW 5.26 ~ 5.32 GHz: 83.035 mW 5.5 ~ 5.72 GHz: 82.288 mW 5.745 ~ 5.825 GHz: 339.917 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	- Adapter x 1 - RJ-45 Cable x 1 (Unshielded, 1.8 m) - RJ-11 Cable x 1 (Unshielded, 3.6 m)

Note:

- This report is prepared for FCC class II permissive change. The difference compared with the original design is as the following:
 - ◆ Add 2nd source for 2.4GHz/5GHz FEM (pin-for-pin compatible, same function, no change in radio parameters) (Refer to Note 5).
 - ◆ Add 2.4GHz/5GHz antennas (Refer to Note 6).
 - ◆ Change 2.4GHz all antenna location and 5GHz (JC0) antenna location.
 - ◆ The EUT has below model names and product, which are identical to each other in all aspects except for the following.

Product	Model	Interface						Remark
		WAN	LAN	DSL	USB	Wi-Fi 2.4G 3x3	Wi-Fi 5G 4x4	
WiFi-N VDSL2 4-port Combo WAN CPE	C3000Z	x1	x4	x1	x1(2.0)	V	V	-
Dual-Band Wireless AC/N VDSL2 Bonding Gateway	VMG4927-B50A	x1	x4	x1	x1(2.0)	V	V	1. Different housing 2. Different FW GUI login screen
Dual-Band Wireless AC/N Gigabit Ethernet Gateway	EMG6726-B10A	x1	x4	NA	x1(2.0)	V	V	1. Different housing 2. Different FW GUI login screen 3. Different main chip (Main chip: BCM63138UKFSBG & BCM63139UKFSBG, Different DSL function) 4. Layout and schematic will be the same as VMG4927-B50A.

From the above models, model: VMG4927-B50A were selected as representative model for the test and its data was recorded in this report.

- According to above conditions, only Radiated Emission and Max Average Transmit Power test items need to be performed. And all data was verified to meet the requirements.
- Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4 GHz)	WLAN (5 GHz)

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

- The EUT must be supplied from a power adapter as following table:

No.	Brand	Model	Spec.	Remark
1	UMEC	UP0251M-12PA	Input: 100-240 Vac, 50/60 Hz, 0.6 A Output: 12 Vdc, 2 A DC output cable (Unshielded, 1.8 m)	
2	MNC	MAUS-120200	Input: 100-240 Vac, 50/60 Hz, 0.7 A Output: 12 Vdc, 2 A DC output cable (Unshielded, 1.8 m)	
3	DVE	DSA-24PFS-12 FUS 120200	Input: 100-240 Vac, 50/60 Hz, 0.8 A Output: 12 Vdc, 2 A DC output cable (Unshielded, 1.8 m)	
4	Actiontec	CDS024T-W120U	Input: 100-240 Vac, 50/60 Hz, 0.58 A Output: 12 Vdc, 2 A DC output cable (Unshielded, 1.8 m)	For C3000Z only

Note: From the above adapters, the worst Radiated Emissions and AC Power Conducted Emission was found in **Adapter 3**. Therefore only the test data of the mode was recorded in this report.

5. The EUT must be supplied from a FEM as following table:

	Brand	Model
2.4G Main source	RFMD	RFFM4252
2.4G 2nd source	RICHWAVE	RTC7625HE-1
5G Main source	RFMD	RFFM4552
5G 2nd source	RICHWAVE	RTC66529

6. The antennas provided to the EUT, please refer to the following table:

Original

2.4GHz Antenna

Antenna No.	PCB No.	Brand	Model	Antenna Gain (dBi) <Including cable loss>	Frequency Range (GHz)	Antenna Type	Antenna Connector	Cable Length (mm)
1	WJ1	Airgain	65-031-049008B	4.5	2.4~2.4835	Dipole	None	295
2	WJ0	Airgain	65-031-049007B	4.1	2.4~2.4835	Dipole	None	320
3	WJ2	Airgain	65-031-049009B	3.1	2.4~2.4835	Dipole	None	270

5GHz Antenna

Antenna No.	PCB No.	Brand	Model	Antenna Gain (dBi) <Including cable loss>	Frequency Range (GHz)	Antenna Type	Antenna Connector	Cable Length (mm)
1	JC2	Airgain	65-031-049003B	4.4	5.15~5.85	Dipole	i-pex(MHF)	50
2	JC3	Airgain	65-031-049004B	4.8	5.15~5.85	Dipole	i-pex(MHF)	85
3	JC1	Airgain	65-031-049005B	4.4	5.15~5.85	Dipole	i-pex(MHF)	50
4	JC0	Airgain	65-031-049006B	4.4	5.15~5.85	Dipole	i-pex(MHF)	65

Newly

2.4GHz Antenna

Antenna No.	PCB No.	Brand	Model	Antenna Gain (dBi) <Including cable loss>	Frequency Range (GHz)	Antenna Type	Antenna Connector	Cable Length (mm)
1	WJ1	be-comfortable	56-001-000106Z	3.42	2.4~2.4835	Dipole	None	295
2	WJ0	be-comfortable	56-001-000108Z	3.31	2.4~2.4835	Dipole	None	320
3	WJ2	be-comfortable	56-001-000107Z	3.25	2.4~2.4835	Dipole	None	270

5GHz Antenna

Antenna No.	PCB No.	Brand	Model	Antenna Gain (dBi) <Including cable loss>	Frequency Range (GHz)	Antenna Type	Antenna Connector	Cable Length (mm)
1	JC2	be-comfortable	56-001-000109Z	3.83	5.15~5.85	Dipole	i-pex(MHF)	50
2	JC3	be-comfortable	56-001-000111Z	3.73	5.15~5.85	Dipole	i-pex(MHF)	85
3	JC1	be-comfortable	56-001-000109Z	3.74	5.15~5.85	Dipole	i-pex(MHF)	50
4	JC0	be-comfortable	56-001-000110Z	3.66	5.15~5.85	Dipole	i-pex(MHF)	85

Note:

1. For power test item: Max. gain was selected for the final test.
2. For Radiated Emission test item: Newly antenna was selected for the final test.

7. The EUT incorporates a MIMO function.

5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	4TX	4RX
802.11n (HT20)	4TX	4RX
802.11n (HT40)	4TX	4RX
802.11ac (VHT20)	4TX	4RX
802.11ac (VHT40)	4TX	4RX
802.11ac (VHT80)	4TX	4RX

Note:

1. All of modulation mode support beamforming function except 802.11a modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore the manufacturer will control the power for 802.11n mode is the same as the 802.11ac mode or more lower than it and investigated worst case to representative mode in test report. (Final test mode refer to section 3.2.1)

8. The power setting are list as below:

CDD Mode								Beamforming Mode					
802.11a		802.11ac (VHT20)		802.11ac (VHT40)		802.11ac (VHT80)		802.11ac (VHT20)		802.11ac (VHT40)		802.11ac (VHT80)	
Freq. (MHz)	Power Setting	Freq. (MHz)	Power Setting	Freq. (MHz)	Power Setting	Freq. (MHz)	Power Setting	Freq. (MHz)	Power Setting	Freq. (MHz)	Power Setting	Freq. (MHz)	Power Setting
5180	78	5180	78	5190	68	5210	62	5180	78	5190	68	5210	62
5200	78	5200	78	5230	91	5290	62	5200	78	5230	78	5290	53
5240	78	5240	78	5270	68	5530	64	5240	78	5270	56	5530	51
5260	55	5260	55	5310	68	5610	70	5260	55	5310	56	5610	52
5300	55	5300	55	5510	67	5690	70	5300	55	5510	55	5690	52
5320	55	5320	55	5550	67	5775	81	5320	55	5550	55	5775	79
5500	55	5500	55	5670	67			5500	55	5670	55		
5580	55	5580	55	5710	67			5580	55	5710	55		
5700	55	5700	55	5755	94			5700	55	5755	78		
5720	55	5720	55	5795	94			5720	55	5795	78		
5745	92	5745	90					5745	78				
5785	92	5785	91					5785	78				
5825	88	5825	86					5825	78				

9. 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.

10. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210 MHz

FOR 5260 ~ 5320MHz

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290 MHz

FOR 5500 ~ 5720MHz

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

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

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

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

3 channels are provided for 802.11ac (VHT80):

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

FOR 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

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.

CDD 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
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5180-5320, 5500-5700, 5745-5825	38 to 62, 102 to 142, 151 to 159	151	OFDM	BPSK	13.5

Antenna Port Conducted Measurement:

- ☒ 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.

CDD 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
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3
Beamforming Mode (output power only)						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11ac (VHT20)	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11ac (VHT20)	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	29.3
802.11ac (VHT20)	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE $\geq$ 1G	20deg. C, 70%RH	120Vac, 60Hz	Ryan Du
RE<1G	25deg. C, 66%RH	120Vac, 60Hz	Ryan Du
APCM	25deg. C, 60%RH	120Vac, 60Hz	Kevin Ko

3.3 Duty Cycle of Test Signal

If duty cycle of test signal is $\geq 98\%$, duty factor is not required.

If duty cycle of test signal is $< 98\%$, duty factor is required

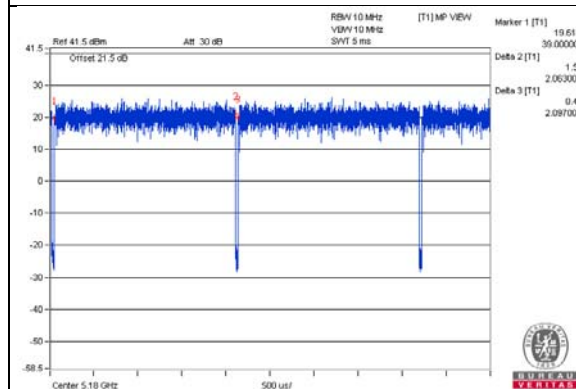
802.11a: Duty cycle = $2.063/2.097 = 0.984$

802.11ac (VHT20): Duty cycle = $1.925/1.958 = 0.983$

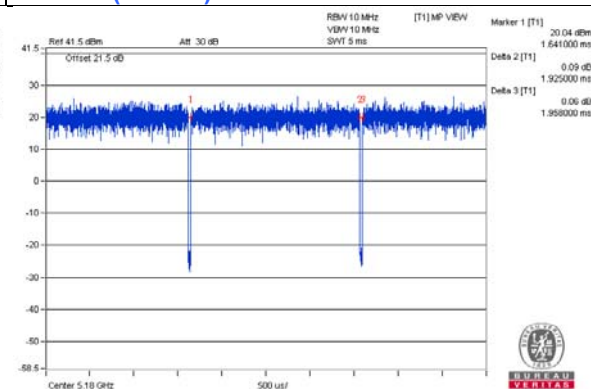
802.11ac (VHT40): Duty cycle = $0.95/0.983 = 0.966$, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.15 \text{ dB}$

802.11ac (VHT80): Duty cycle = $0.46/0.49 = 0.939$, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.27 \text{ dB}$

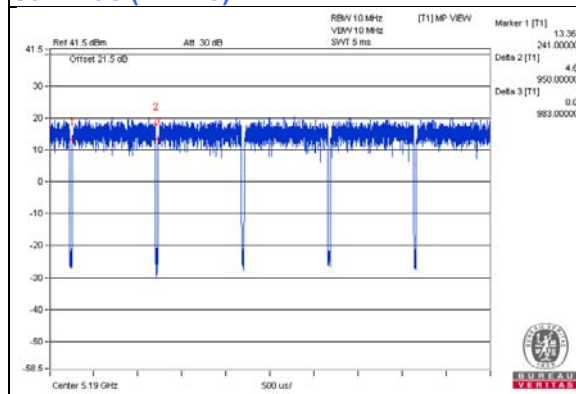
802.11a



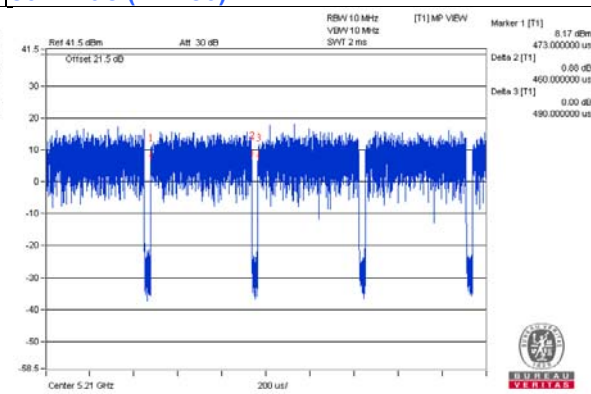
802.11a (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



3.4 Description of Support Units

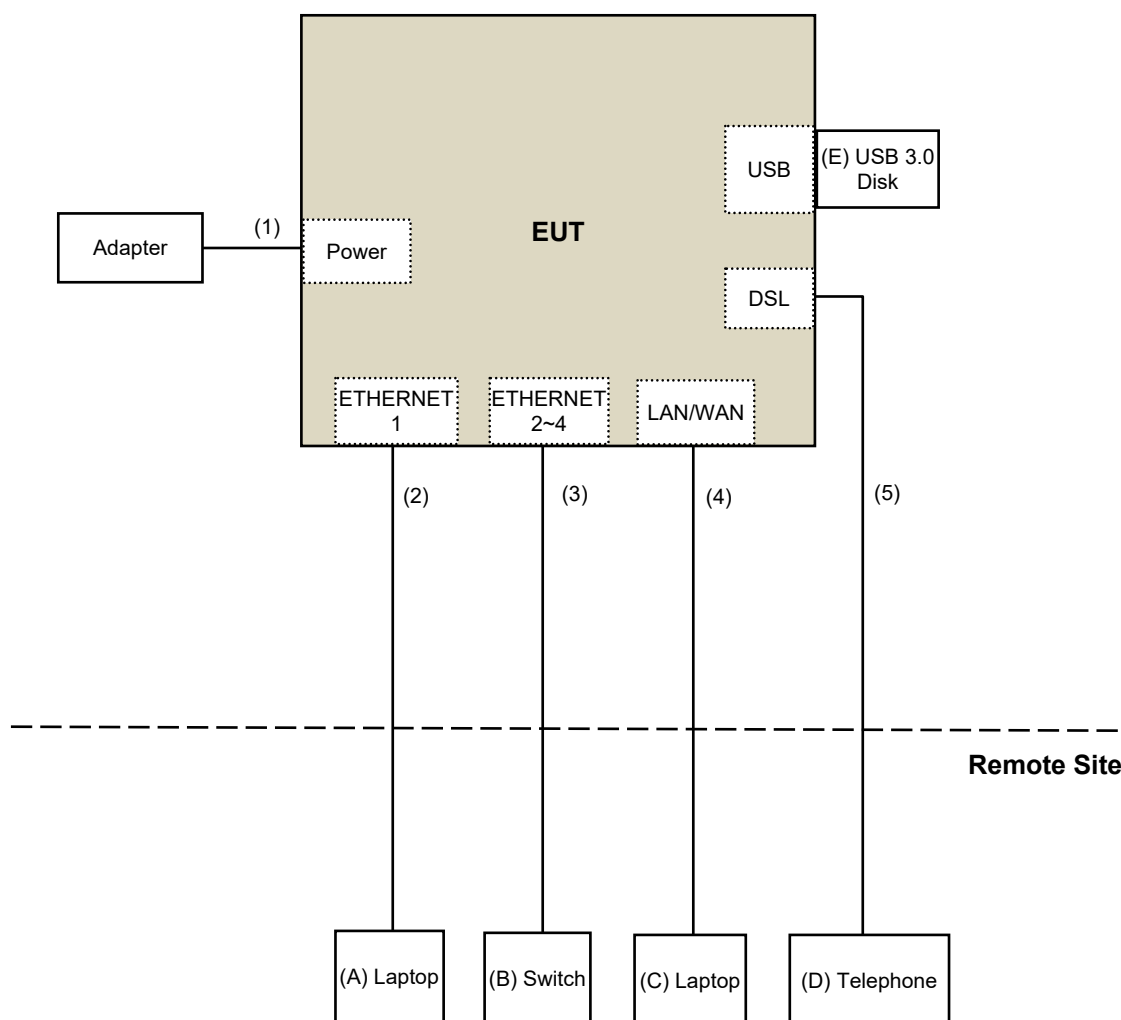
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	Lenovo	81A4	YD02YN76	PD93165NGU	Provided by Lab
B.	Switch	D-Link	DGS-1005D	DR8WC92000523	NA	Provided by Lab
C.	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	NA	Provided by Lab
D.	Telephone	WONDER	WD-303	7C17KA 04011	NA	Provided by Lab
E.	USB 3.0 Disk	SanDisk	BM181225896Z	NA	NA	Provided by Lab

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.8	No	0	Supplied by client
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	3	10	No	0	Provided by Lab
4.	RJ-45 Cable	1	10	No	0	Provided by Lab
5.	RJ-11 Cable	1	10	No	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard and References

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

Test Standard:

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2013

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

References Test Guidance:

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

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}
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}
^{*1} beyond 75 MHz or more above of the band edge. ^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above. ^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

Note:

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

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

4.1.2 Test Instruments

For Radiated Emission test:

Description & Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Test Receiver Agilent	N9038A	MY50010156	2021/7/22	2022/7/21
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Pre_Amplifier EMCI	EMC001340	980142	2021/5/24	2022/5/23
LOOP ANTENNA Electro-Metrics	EM-6879	264	2021/3/5	2022/3/4
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2021/1/7	2022/1/6
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-002	2021/1/7	2022/1/6
Pre_Amplifier Mini-Circuits	ZFL-1000VH2	QA0838008	2020/10/20	2021/10/19
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	2020/11/5	2021/11/4
RF Coaxial Cable COMMATE/PEWC	8D	966-3-1	2021/3/16	2022/3/15
RF Coaxial Cable COMMATE/PEWC	8D	966-3-2	2021/3/16	2022/3/15
RF Coaxial Cable COMMATE/PEWC	8D	966-3-3	2021/3/16	2022/3/15
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	2020/9/24	2021/9/23
Horn Antenna Schwarzbeck	BBHA9120-D	9120D-406	2020/11/22	2021/11/21
Pre_Amplifier EMCI	EMC12630SE	980384	2021/1/11	2022/1/10
RF Coaxial Cable EMCI	EMC104-SM-SM-1500	180504	2021/4/26	2022/4/25
RF Coaxial Cable EMCI	EMC104-SM-SM-2000	180601	2021/6/8	2022/6/7
RF Coaxial Cable EMCI	EMC104-SM-SM-6000	210201	2021/5/13	2022/5/12
Fix tool for Boresight antenna tower LIOW GUU	FBA-01	FBA_SIP01	NA	NA
Spectrum Analyzer Keysight	N9030A	MY54490679	2021/7/9	2022/7/8
Pre_Amplifier EMCI	EMC184045SE	980387	2021/1/11	2022/1/10
SHF-EHF Horn Schwarzbeck	BBHA 9170	BBHA9170519	2020/11/22	2021/11/21
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2021/1/11	2022/1/10
RF cable (40GHz) EMCI	EMC-KM-KM-4000	200214	2021/3/10	2022/3/9

Note: 1. The test was performed in 966 Chamber No. 3.

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

3. Tested Date: 2021/8/20 ~ 2021/8/23

For other test items:

Description & Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Spectrum Analyzer R&S	FSV40	101516	2021/3/8	2022/3/7
Power Meter Anritsu	ML2495A	1529002	2021/6/21	2022/6/20
Pulse Power Sensor Anritsu	MA2411B	1339443	2021/5/31	2022/5/30
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2021/4/13	2022/4/12
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

- Note: 1. The test was performed in Oven room 2.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: 2021/8/24

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:

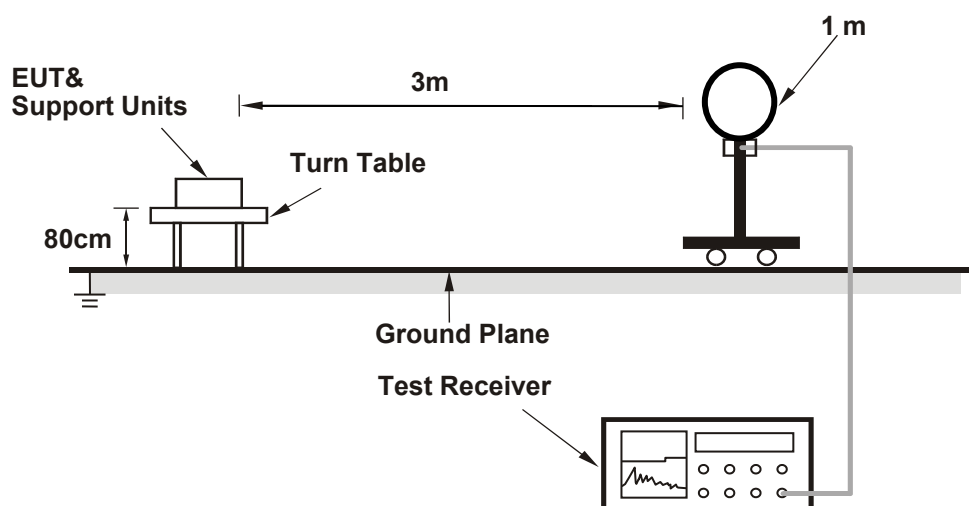
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

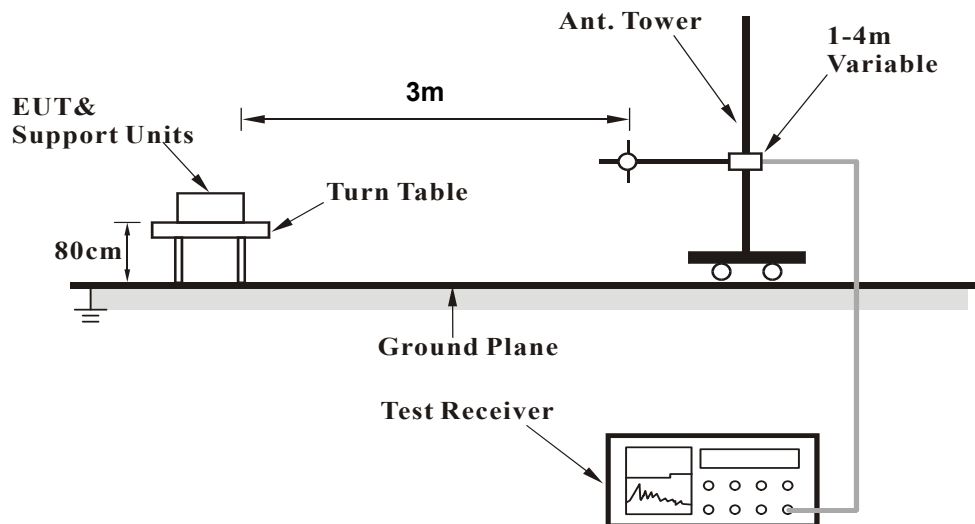
No deviation.

4.1.5 Test Setup

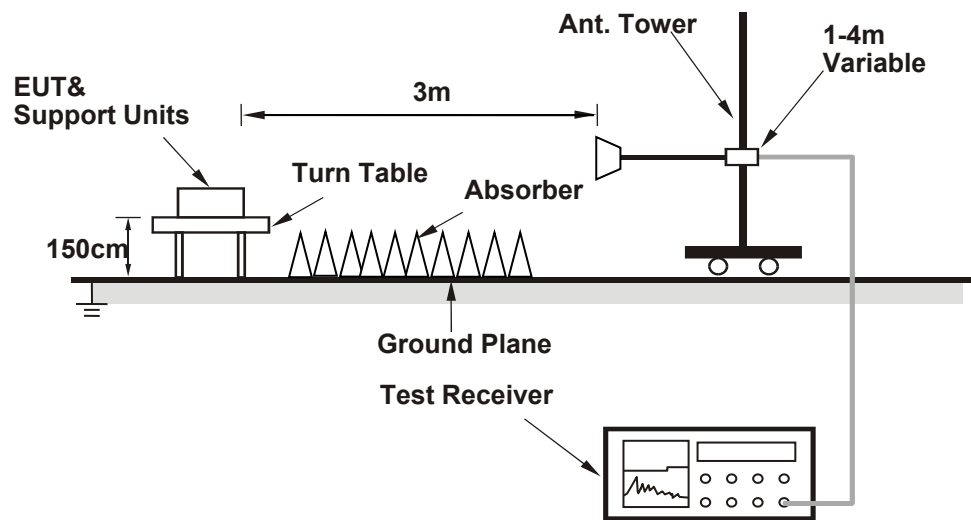
For Radiated emission below 30MHz



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

- Placed the EUT on the testing table.
- Controlling software (accessMTool_3.2.1.0) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

RF Mode	TX 802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5096.70	57.1 PK	74.0	-16.9	1.46 H	339	52.3	4.8
2	5096.70	47.0 AV	54.0	-7.0	1.46 H	339	42.2	4.8
3	*5180.00	115.0 PK			1.46 H	339	110.4	4.6
4	*5180.00	104.9 AV			1.46 H	339	100.3	4.6
5	#10360.00	54.8 PK	68.2	-13.4	1.56 H	82	41.4	13.4
6	15540.00	48.3 PK	74.0	-25.7	1.89 H	180	33.8	14.5
7	15540.00	36.7 AV	54.0	-17.3	1.89 H	180	22.2	14.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	60.5 PK	74.0	-13.5	2.19 V	72	55.8	4.7
2	5150.00	49.8 AV	54.0	-4.2	2.19 V	72	45.1	4.7
3	*5180.00	118.2 PK			2.19 V	72	113.6	4.6
4	*5180.00	108.1 AV			2.19 V	72	103.5	4.6
5	#10360.00	59.1 PK	68.2	-9.1	2.12 V	72	45.7	13.4
6	15540.00	49.1 PK	74.0	-24.9	1.39 V	221	34.6	14.5
7	15540.00	37.0 AV	54.0	-17.0	1.39 V	221	22.5	14.5

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	115.0 PK			1.49 H	325	110.6	4.4
2	*5200.00	105.1 AV			1.49 H	325	100.7	4.4
3	#10400.00	54.6 PK	68.2	-13.6	1.54 H	68	41.0	13.6
4	15600.00	48.4 PK	74.0	-25.6	1.86 H	191	33.9	14.5
5	15600.00	36.9 AV	54.0	-17.1	1.86 H	191	22.4	14.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	118.0 PK			2.22 V	75	113.6	4.4
2	*5200.00	107.9 AV			2.22 V	75	103.5	4.4
3	#10400.00	59.2 PK	68.2	-9.0	2.12 V	95	45.6	13.6
4	15600.00	49.5 PK	74.0	-24.5	1.43 V	217	35.0	14.5
5	15600.00	37.5 AV	54.0	-16.5	1.43 V	217	23.0	14.5

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	53.5 PK	74.0	-20.5	1.23 H	339	48.8	4.7
2	5150.00	43.7 AV	54.0	-10.3	1.23 H	339	39.0	4.7
3	*5240.00	114.5 PK			1.23 H	339	110.1	4.4
4	*5240.00	104.7 AV			1.23 H	339	100.3	4.4
5	#10480.00	54.7 PK	68.2	-13.5	1.57 H	71	41.0	13.7
6	15720.00	48.4 PK	74.0	-25.6	1.87 H	178	34.0	14.4
7	15720.00	36.7 AV	54.0	-17.3	1.87 H	178	22.3	14.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	57.7 PK	74.0	-16.3	1.53 V	75	53.0	4.7
2	5150.00	48.0 AV	54.0	-6.0	1.53 V	75	43.3	4.7
3	*5240.00	118.0 PK			1.53 V	75	113.6	4.4
4	*5240.00	107.6 AV			1.53 V	75	103.2	4.4
5	#10480.00	59.7 PK	68.2	-8.5	2.11 V	88	46.0	13.7
6	15720.00	48.9 PK	74.0	-25.1	1.42 V	229	34.5	14.4
7	15720.00	37.1 AV	54.0	-16.9	1.42 V	229	22.7	14.4

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 52 : 5260 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4967.90	49.4 PK	74.0	-24.6	1.37 H	13	45.4	4.0
2	4967.90	44.3 AV	54.0	-9.7	1.37 H	13	40.3	4.0
3	5002.50	51.3 PK	74.0	-22.7	1.37 H	13	47.0	4.3
4	5002.50	39.1 AV	54.0	-14.9	1.37 H	13	34.8	4.3
5	*5260.00	108.8 PK			1.37 H	13	104.5	4.3
6	*5260.00	98.3 AV			1.37 H	13	94.0	4.3
7	#10520.00	55.4 PK	68.2	-12.8	1.53 H	64	41.6	13.8
8	15780.00	48.5 PK	74.0	-25.5	1.93 H	174	34.2	14.3
9	15780.00	36.6 AV	54.0	-17.4	1.93 H	174	22.3	14.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	54.6 PK	74.0	-19.4	1.41 V	75	49.9	4.7
2	5150.00	43.3 AV	54.0	-10.7	1.41 V	75	38.6	4.7
3	*5260.00	111.8 PK			1.41 V	75	107.5	4.3
4	*5260.00	101.3 AV			1.41 V	75	97.0	4.3
5	#10520.00	59.8 PK	68.2	-8.4	2.10 V	74	46.0	13.8
6	15780.00	48.4 PK	74.0	-25.6	1.46 V	225	34.1	14.3
7	15780.00	36.7 AV	54.0	-17.3	1.46 V	225	22.4	14.3

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 60 : 5300 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	108.8 PK			1.43 H	17	104.5	4.3
2	*5300.00	98.1 AV			1.43 H	17	93.8	4.3
3	10600.00	55.3 PK	74.0	-18.7	1.59 H	82	41.7	13.6
4	10600.00	41.9 AV	54.0	-12.1	1.59 H	82	28.3	13.6
5	15900.00	49.1 PK	74.0	-24.9	1.84 H	176	35.0	14.1
6	15900.00	37.2 AV	54.0	-16.8	1.84 H	176	23.1	14.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	112.0 PK			1.42 V	84	107.7	4.3
2	*5300.00	101.7 AV			1.42 V	84	97.4	4.3
3	10600.00	58.9 PK	74.0	-15.1	2.06 V	97	45.3	13.6
4	10600.00	46.2 AV	54.0	-7.8	2.06 V	97	32.6	13.6
5	15900.00	48.7 PK	74.0	-25.3	1.42 V	225	34.6	14.1
6	15900.00	36.7 AV	54.0	-17.3	1.42 V	225	22.6	14.1

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 64 : 5320 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	109.4 PK			1.42 H	15	105.1	4.3
2	*5320.00	99.0 AV			1.42 H	15	94.7	4.3
3	5396.00	53.4 PK	74.0	-20.6	1.42 H	15	49.1	4.3
4	5396.00	43.9 AV	54.0	-10.1	1.42 H	15	39.6	4.3
5	10640.00	55.3 PK	74.0	-18.7	1.53 H	69	41.6	13.7
6	10640.00	41.9 AV	54.0	-12.1	1.53 H	69	28.2	13.7
7	15960.00	49.1 PK	74.0	-24.9	1.93 H	178	35.0	14.1
8	15960.00	37.1 AV	54.0	-16.9	1.93 H	178	23.0	14.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	110.9 PK			2.07 V	70	106.6	4.3
2	*5320.00	101.3 AV			2.07 V	70	97.0	4.3
3	5397.82	54.7 PK	74.0	-19.3	2.07 V	70	50.4	4.3
4	5397.82	45.7 AV	54.0	-8.3	2.07 V	70	41.4	4.3
5	10640.00	59.7 PK	74.0	-14.3	2.17 V	86	46.0	13.7
6	10640.00	46.7 AV	54.0	-7.3	2.17 V	86	33.0	13.7
7	15960.00	48.6 PK	74.0	-25.4	1.47 V	237	34.5	14.1
8	15960.00	36.9 AV	54.0	-17.1	1.47 V	237	22.8	14.1

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 100 : 5500 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5450.60	55.0 PK	74.0	-19.0	1.51 H	178	50.6	4.4
2	5450.60	42.8 AV	54.0	-11.2	1.51 H	178	38.4	4.4
3	5460.00	53.8 PK	74.0	-20.2	1.51 H	178	49.4	4.4
4	5460.00	43.6 AV	54.0	-10.4	1.51 H	178	39.2	4.4
5	#5469.20	55.1 PK	68.2	-13.1	1.51 H	178	50.6	4.5
6	*5500.00	110.6 PK			1.51 H	178	105.9	4.7
7	*5500.00	99.3 AV			1.51 H	178	94.6	4.7
8	#5736.70	55.2 PK	68.2	-13.0	1.51 H	178	50.3	4.9
9	11000.00	54.5 PK	74.0	-19.5	1.58 H	76	40.2	14.3
10	11000.00	41.3 AV	54.0	-12.7	1.58 H	76	27.0	14.3
11	#16500.00	48.4 PK	68.2	-19.8	1.88 H	189	32.6	15.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5422.24	56.8 PK	74.0	-17.2	1.61 V	89	52.4	4.4
2	5422.24	45.7 AV	54.0	-8.3	1.61 V	89	41.3	4.4
3	#5470.00	54.0 PK	68.2	-14.2	1.61 V	89	49.5	4.5
4	*5500.00	111.5 PK			1.61 V	89	106.8	4.7
5	*5500.00	102.3 AV			1.61 V	89	97.6	4.7
6	#5736.12	58.0 PK	68.2	-10.2	1.61 V	89	53.1	4.9
7	11000.00	59.7 PK	74.0	-14.3	2.14 V	96	45.4	14.3
8	11000.00	46.7 AV	54.0	-7.3	2.14 V	96	32.4	14.3
9	#16500.00	48.6 PK	68.2	-19.6	1.43 V	224	32.8	15.8

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 116 : 5580 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	110.5 PK			1.47 H	178	106.0	4.5
2	*5580.00	99.0 AV			1.47 H	178	94.5	4.5
3	11160.00	55.2 PK	74.0	-18.8	1.61 H	75	41.1	14.1
4	11160.00	42.0 AV	54.0	-12.0	1.61 H	75	27.9	14.1
5	#16740.00	47.8 PK	68.2	-20.4	1.86 H	194	31.0	16.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	111.6 PK			1.66 V	83	107.1	4.5
2	*5580.00	102.3 AV			1.66 V	83	97.8	4.5
3	11160.00	59.8 PK	74.0	-14.2	2.10 V	87	45.7	14.1
4	11160.00	46.6 AV	54.0	-7.4	2.10 V	87	32.5	14.1
5	#16740.00	49.1 PK	68.2	-19.1	1.45 V	231	32.3	16.8

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 140 : 5700 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	110.5 PK			1.49 H	182	105.9	4.6
2	*5700.00	98.9 AV			1.49 H	182	94.3	4.6
3	#5725.00	55.7 PK	68.2	-12.5	1.49 H	182	51.0	4.7
4	11400.00	55.4 PK	74.0	-18.6	1.54 H	78	40.9	14.5
5	11400.00	42.1 AV	54.0	-11.9	1.54 H	78	27.6	14.5
6	#17100.00	49.1 PK	68.2	-19.1	1.92 H	187	31.3	17.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	111.7 PK			1.62 V	80	107.1	4.6
2	*5700.00	102.5 AV			1.62 V	80	97.9	4.6
3	#5725.00	56.3 PK	68.2	-11.9	1.62 V	80	51.6	4.7
4	11400.00	59.9 PK	74.0	-14.1	2.08 V	83	45.4	14.5
5	11400.00	46.6 AV	54.0	-7.4	2.08 V	83	32.1	14.5
6	#17100.00	49.5 PK	68.2	-18.7	1.44 V	243	31.7	17.8

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 144 : 5720 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.7 PK	74.0	-19.3	1.53 H	179	50.3	4.4
2	5460.00	42.5 AV	54.0	-11.5	1.53 H	179	38.1	4.4
3	#5470.00	54.0 PK	68.2	-14.2	1.53 H	179	49.5	4.5
4	*5720.00	110.3 PK			1.53 H	179	105.6	4.7
5	*5720.00	98.6 AV			1.53 H	179	93.9	4.7
6	#5850.00	56.5 PK	68.2	-11.7	1.53 H	179	51.5	5.0
7	11440.00	54.0 PK	74.0	-20.0	1.57 H	76	39.4	14.6
8	11440.00	41.2 AV	54.0	-12.8	1.57 H	76	26.6	14.6
9	#17160.00	48.4 PK	68.2	-19.8	1.90 H	173	30.6	17.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	55.1 PK	74.0	-18.9	1.61 V	87	50.7	4.4
2	5460.00	42.8 AV	54.0	-11.2	1.61 V	87	38.4	4.4
3	#5470.00	54.2 PK	68.2	-14.0	1.61 V	87	49.7	4.5
4	*5720.00	112.1 PK			1.61 V	87	107.4	4.7
5	*5720.00	102.7 AV			1.61 V	87	98.0	4.7
6	#5850.00	56.9 PK	68.2	-11.3	1.61 V	87	51.9	5.0
7	#7160.00	49.1 PK	68.2	-19.1	1.45 V	236	39.5	9.6
8	11440.00	60.0 PK	74.0	-14.0	2.05 V	86	45.4	14.6
9	11440.00	46.9 AV	54.0	-7.1	2.05 V	86	32.3	14.6

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5589.86	56.7 PK	68.2	-11.5	1.41 H	337	52.2	4.5
2	*5745.00	117.7 PK			1.41 H	337	112.7	5.0
3	*5745.00	107.7 AV			1.41 H	337	102.7	5.0
4	#5978.06	58.0 PK	68.2	-10.2	1.41 H	337	52.8	5.2
5	11490.00	54.6 PK	74.0	-19.4	1.54 H	88	40.0	14.6
6	11490.00	41.6 AV	54.0	-12.4	1.54 H	88	27.0	14.6
7	#17235.00	48.5 PK	68.2	-19.7	1.84 H	178	30.5	18.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5587.99	59.0 PK	68.2	-9.2	1.51 V	86	54.5	4.5
2	*5745.00	120.6 PK			1.51 V	86	115.6	5.0
3	*5745.00	112.1 AV			1.51 V	86	107.1	5.0
4	#5992.05	63.5 PK	68.2	-4.7	1.51 V	86	58.3	5.2
5	11490.00	66.1 PK	74.0	-7.9	2.11 V	94	51.5	14.6
6	11490.00	50.6 AV	54.0	-3.4	2.11 V	94	36.0	14.6
7	#17235.00	48.5 PK	68.2	-19.7	1.45 V	226	30.5	18.0

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5551.23	58.1 PK	68.2	-10.1	1.38 H	334	53.6	4.5
2	*5785.00	117.7 PK			1.38 H	334	112.6	5.1
3	*5785.00	108.1 AV			1.38 H	334	103.0	5.1
4	#5952.04	55.5 PK	68.2	-12.7	1.38 H	334	50.3	5.2
5	11570.00	54.6 PK	74.0	-19.4	1.52 H	73	40.0	14.6
6	11570.00	41.5 AV	54.0	-12.5	1.52 H	73	26.9	14.6
7	#17355.00	48.5 PK	68.2	-19.7	1.81 H	182	30.3	18.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5550.48	60.9 PK	68.2	-7.3	1.49 V	89	56.4	4.5
2	*5785.00	120.3 PK			1.49 V	89	115.2	5.1
3	*5785.00	111.9 AV			1.49 V	89	106.8	5.1
4	#6018.90	60.0 PK	68.2	-8.2	1.49 V	89	54.8	5.2
5	11570.00	65.8 PK	74.0	-8.2	2.11 V	91	51.2	14.6
6	11570.00	50.2 AV	54.0	-3.8	2.11 V	91	35.6	14.6
7	#17355.00	48.4 PK	68.2	-19.8	1.44 V	219	30.2	18.2

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5589.76	57.2 PK	68.2	-11.0	1.25 H	340	52.7	4.5
2	*5825.00	116.8 PK			1.25 H	340	111.8	5.0
3	*5825.00	106.9 AV			1.25 H	340	101.9	5.0
4	#5927.36	55.3 PK	68.2	-12.9	1.25 H	340	50.2	5.1
5	11650.00	55.0 PK	74.0	-19.0	1.46 H	60	40.6	14.4
6	11650.00	41.9 AV	54.0	-12.1	1.46 H	60	27.5	14.4
7	#17475.00	48.1 PK	68.2	-20.1	1.76 H	181	29.3	18.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5585.46	57.8 PK	68.2	-10.4	1.41 V	88	53.3	4.5
2	*5825.00	119.9 PK			1.41 V	88	114.9	5.0
3	*5825.00	110.8 AV			1.41 V	88	105.8	5.0
4	#5983.63	57.9 PK	68.2	-10.3	1.41 V	88	52.7	5.2
5	11650.00	65.3 PK	74.0	-8.7	2.15 V	88	50.9	14.4
6	11650.00	49.9 AV	54.0	-4.1	2.15 V	88	35.5	14.4
7	#17475.00	48.4 PK	68.2	-19.8	1.38 V	219	29.6	18.8

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 36 : 5180 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5147.30	57.0 PK	74.0	-17.0	1.43 H	332	52.2	4.8
2	5147.30	46.4 AV	54.0	-7.6	1.43 H	332	41.6	4.8
3	*5180.00	114.1 PK			1.43 H	332	109.5	4.6
4	*5180.00	104.8 AV			1.43 H	332	100.2	4.6
5	#10360.00	54.6 PK	68.2	-13.6	1.49 H	65	41.2	13.4
6	15540.00	48.1 PK	74.0	-25.9	1.77 H	178	33.6	14.5
7	15540.00	36.2 AV	54.0	-17.8	1.77 H	178	21.7	14.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	59.3 PK	74.0	-14.7	1.28 V	90	54.6	4.7
2	5150.00	48.6 AV	54.0	-5.4	1.28 V	90	43.9	4.7
3	*5180.00	115.4 PK			1.28 V	90	110.8	4.6
4	*5180.00	106.3 AV			1.28 V	90	101.7	4.6
5	#10360.00	59.4 PK	68.2	-8.8	2.17 V	95	46.0	13.4
6	15540.00	48.3 PK	74.0	-25.7	1.40 V	223	33.8	14.5
7	15540.00	36.6 AV	54.0	-17.4	1.40 V	223	22.1	14.5

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 40 : 5200 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	113.5 PK			1.47 H	347	109.1	4.4
2	*5200.00	104.4 AV			1.47 H	347	100.0	4.4
3	#10400.00	55.5 PK	68.2	-12.7	1.44 H	63	41.9	13.6
4	15600.00	48.1 PK	74.0	-25.9	1.75 H	165	33.6	14.5
5	15600.00	36.4 AV	54.0	-17.6	1.75 H	165	21.9	14.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	115.7 PK			1.26 V	106	111.3	4.4
2	*5200.00	106.7 AV			1.26 V	106	102.3	4.4
3	#10400.00	60.1 PK	68.2	-8.1	2.14 V	88	46.5	13.6
4	15600.00	48.1 PK	74.0	-25.9	1.47 V	240	33.6	14.5
5	15600.00	36.3 AV	54.0	-17.7	1.47 V	240	21.8	14.5

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 48 : 5240 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4948.80	52.1 PK	74.0	-21.9	1.57 H	339	48.0	4.1
2	4948.80	47.2 AV	54.0	-6.8	1.57 H	339	43.1	4.1
3	5082.55	53.4 PK	74.0	-20.6	1.57 H	339	48.7	4.7
4	5082.55	43.2 AV	54.0	-10.8	1.57 H	339	38.5	4.7
5	*5240.00	114.5 PK			1.57 H	339	110.1	4.4
6	*5240.00	104.4 AV			1.57 H	339	100.0	4.4
7	#5720.00	48.0 PK	68.2	-20.2	1.72 H	174	43.3	4.7
8	#5720.00	35.9 AV	54.0	-18.1	1.72 H	174	31.2	4.7
9	#10480.00	55.4 PK	68.2	-12.8	1.47 H	55	41.7	13.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	54.8 PK	74.0	-19.2	1.53 V	71	50.1	4.7
2	5150.00	44.9 AV	54.0	-9.1	1.53 V	71	40.2	4.7
3	*5240.00	115.2 PK			1.53 V	71	110.8	4.4
4	*5240.00	106.2 AV			1.53 V	71	101.8	4.4
5	#5720.00	48.3 PK	68.2	-19.9	1.45 V	216	43.6	4.7
6	#5720.00	36.4 AV	54.0	-17.6	1.45 V	216	31.7	4.7
7	#10480.00	60.3 PK	68.2	-7.9	2.09 V	84	46.6	13.7

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 52 : 5260 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5260.00	108.7 PK			1.43 H	336	104.4	4.3
2	*5260.00	98.3 AV			1.43 H	336	94.0	4.3
3	5353.00	51.6 PK	74.0	-22.4	1.43 H	336	47.3	4.3
4	5353.00	40.6 AV	54.0	-13.4	1.43 H	336	36.3	4.3
5	#10520.00	55.5 PK	68.2	-12.7	1.49 H	62	41.7	13.8
6	15780.00	47.8 PK	74.0	-26.2	1.71 H	167	33.5	14.3
7	15780.00	36.0 AV	54.0	-18.0	1.71 H	167	21.7	14.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5260.00	109.1 PK			1.65 V	69	104.8	4.3
2	*5260.00	100.4 AV			1.65 V	69	96.1	4.3
3	5350.00	52.2 PK	74.0	-21.8	1.65 V	69	47.9	4.3
4	5350.00	41.2 AV	54.0	-12.8	1.65 V	69	36.9	4.3
5	#10520.00	57.6 PK	68.2	-10.6	2.15 V	102	43.8	13.8
6	15780.00	48.1 PK	74.0	-25.9	1.41 V	210	33.8	14.3
7	15780.00	36.5 AV	54.0	-17.5	1.41 V	210	22.2	14.3

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 60 : 5300 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	108.4 PK			1.42 H	326	104.1	4.3
2	*5300.00	98.2 AV			1.42 H	326	93.9	4.3
3	10600.00	55.5 PK	74.0	-18.5	1.44 H	72	41.9	13.6
4	10600.00	42.3 AV	54.0	-11.7	1.44 H	72	28.7	13.6
5	15900.00	48.4 PK	74.0	-25.6	1.79 H	167	34.3	14.1
6	15900.00	36.3 AV	54.0	-17.7	1.79 H	167	22.2	14.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	108.5 PK			1.62 V	61	104.2	4.3
2	*5300.00	100.1 AV			1.62 V	61	95.8	4.3
3	10600.00	57.3 PK	74.0	-16.7	2.15 V	112	43.7	13.6
4	10600.00	44.6 AV	54.0	-9.4	2.15 V	112	31.0	13.6
5	15900.00	48.5 PK	74.0	-25.5	1.39 V	206	34.4	14.1
6	15900.00	36.9 AV	54.0	-17.1	1.39 V	206	22.8	14.1

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 64 : 5320 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	107.9 PK			1.50 H	338	103.6	4.3
2	*5320.00	98.5 AV			1.50 H	338	94.2	4.3
3	5407.80	52.7 PK	74.0	-21.3	1.50 H	338	48.4	4.3
4	5407.80	42.6 AV	54.0	-11.4	1.50 H	338	38.3	4.3
5	10640.00	54.8 PK	74.0	-19.2	1.50 H	50	41.1	13.7
6	10640.00	41.6 AV	54.0	-12.4	1.50 H	50	27.9	13.7
7	15960.00	47.7 PK	74.0	-26.3	1.77 H	186	33.6	14.1
8	15960.00	36.0 AV	54.0	-18.0	1.77 H	186	21.9	14.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	108.9 PK			1.67 V	87	104.6	4.3
2	*5320.00	100.1 AV			1.67 V	87	95.8	4.3
3	5395.70	53.5 PK	74.0	-20.5	1.67 V	87	49.2	4.3
4	5395.70	43.9 AV	54.0	-10.1	1.67 V	87	39.6	4.3
5	10640.00	57.8 PK	74.0	-16.2	2.16 V	116	44.1	13.7
6	10640.00	45.2 AV	54.0	-8.8	2.16 V	116	31.5	13.7
7	15960.00	48.5 PK	74.0	-25.5	1.46 V	223	34.4	14.1
8	15960.00	37.0 AV	54.0	-17.0	1.46 V	223	22.9	14.1

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 100 : 5500 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5422.00	54.0 PK	74.0	-20.0	1.44 H	334	49.6	4.4
2	5422.00	43.4 AV	54.0	-10.6	1.44 H	334	39.0	4.4
3	#5469.40	53.6 PK	68.2	-14.6	1.44 H	334	49.1	4.5
4	*5500.00	108.9 PK			1.44 H	334	104.2	4.7
5	*5500.00	98.8 AV			1.44 H	334	94.1	4.7
6	#5738.00	56.2 PK	68.2	-12.0	1.44 H	334	51.3	4.9
7	11000.00	55.5 PK	74.0	-18.5	1.40 H	55	41.2	14.3
8	11000.00	42.1 AV	54.0	-11.9	1.40 H	55	27.8	14.3
9	#16500.00	48.1 PK	68.2	-20.1	1.70 H	175	32.3	15.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5425.55	54.5 PK	74.0	-19.5	1.57 V	92	50.1	4.4
2	5425.55	44.8 AV	54.0	-9.2	1.57 V	92	40.4	4.4
3	#5464.55	54.4 PK	68.2	-13.8	1.57 V	92	49.9	4.5
4	*5500.00	111.3 PK			1.57 V	92	106.6	4.7
5	*5500.00	101.4 AV			1.57 V	92	96.7	4.7
6	#5734.29	55.7 PK	68.2	-12.5	1.57 V	92	50.8	4.9
7	11000.00	57.5 PK	74.0	-16.5	2.14 V	97	43.2	14.3
8	11000.00	44.9 AV	54.0	-9.1	2.14 V	97	30.6	14.3
9	#16500.00	48.5 PK	68.2	-19.7	1.46 V	216	32.7	15.8

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 116 : 5580 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	109.3 PK			1.50 H	342	104.8	4.5
2	*5580.00	99.0 AV			1.50 H	342	94.5	4.5
3	11160.00	55.0 PK	74.0	-19.0	1.48 H	45	40.9	14.1
4	11160.00	42.0 AV	54.0	-12.0	1.48 H	45	27.9	14.1
5	#16740.00	47.9 PK	68.2	-20.3	1.73 H	195	31.1	16.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	111.4 PK			1.59 V	103	106.9	4.5
2	*5580.00	101.3 AV			1.59 V	103	96.8	4.5
3	11160.00	58.0 PK	74.0	-16.0	2.15 V	93	43.9	14.1
4	11160.00	45.4 AV	54.0	-8.6	2.15 V	93	31.3	14.1
5	#16740.00	47.7 PK	68.2	-20.5	1.40 V	225	30.9	16.8

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 140 : 5700 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	109.6 PK			1.54 H	352	105.0	4.6
2	*5700.00	99.3 AV			1.54 H	352	94.7	4.6
3	#5725.00	55.7 PK	68.2	-12.5	1.54 H	352	51.0	4.7
4	11400.00	55.8 PK	74.0	-18.2	1.49 H	59	41.3	14.5
5	11400.00	42.4 AV	54.0	-11.6	1.49 H	59	27.9	14.5
6	#17100.00	48.1 PK	68.2	-20.1	1.73 H	191	30.3	17.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	111.6 PK			1.53 V	95	107.0	4.6
2	*5700.00	101.8 AV			1.53 V	95	97.2	4.6
3	#5725.00	56.1 PK	68.2	-12.1	1.53 V	95	51.4	4.7
4	11400.00	57.6 PK	74.0	-16.4	2.15 V	89	43.1	14.5
5	11400.00	44.9 AV	54.0	-9.1	2.15 V	89	30.4	14.5
6	#17100.00	48.6 PK	68.2	-19.6	1.37 V	195	30.8	17.8

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 144 : 5720 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.8 PK	74.0	-19.2	1.53 H	355	50.4	4.4
2	5460.00	42.9 AV	54.0	-11.1	1.53 H	355	38.5	4.4
3	#5470.00	53.7 PK	68.2	-14.5	1.53 H	355	49.2	4.5
4	*5720.00	110.1 PK			1.53 H	355	105.4	4.7
5	*5720.00	99.8 AV			1.53 H	355	95.1	4.7
6	#5850.00	57.1 PK	68.2	-11.1	1.53 H	355	52.1	5.0
7	11440.00	54.8 PK	74.0	-19.2	1.44 H	71	40.2	14.6
8	11440.00	41.7 AV	54.0	-12.3	1.44 H	71	27.1	14.6
9	#17160.00	48.4 PK	68.2	-19.8	1.70 H	182	30.6	17.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	55.2 PK	74.0	-18.8	1.59 V	84	50.8	4.4
2	5460.00	43.1 AV	54.0	-10.9	1.59 V	84	38.7	4.4
3	#5470.00	54.5 PK	68.2	-13.7	1.59 V	84	50.0	4.5
4	*5720.00	111.6 PK			1.59 V	84	106.9	4.7
5	*5720.00	101.6 AV			1.59 V	84	96.9	4.7
6	#5850.00	57.1 PK	68.2	-11.1	1.59 V	84	52.1	5.0
7	11440.00	57.1 PK	74.0	-16.9	2.20 V	98	42.5	14.6
8	11440.00	44.6 AV	54.0	-9.4	2.20 V	98	30.0	14.6
9	#17160.00	48.5 PK	68.2	-19.7	1.46 V	197	30.7	17.8

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 149 : 5745 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5645.07	55.4 PK	68.2	-12.8	1.48 H	332	50.9	4.5
2	*5745.00	117.4 PK			1.48 H	332	112.4	5.0
3	*5745.00	107.4 AV			1.48 H	332	102.4	5.0
4	#5992.72	59.1 PK	68.2	-9.1	1.48 H	332	53.9	5.2
5	11490.00	55.1 PK	74.0	-18.9	1.50 H	62	40.5	14.6
6	11490.00	41.8 AV	54.0	-12.2	1.50 H	62	27.2	14.6
7	#17235.00	47.7 PK	68.2	-20.5	1.78 H	170	29.7	18.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5588.95	58.3 PK	68.2	-9.9	1.59 V	98	53.8	4.5
2	*5745.00	120.3 PK			1.59 V	98	115.3	5.0
3	*5745.00	110.2 AV			1.59 V	98	105.2	5.0
4	#5992.65	61.2 PK	68.2	-7.0	1.59 V	98	56.0	5.2
5	11490.00	58.1 PK	74.0	-15.9	2.11 V	88	43.5	14.6
6	11490.00	45.4 AV	54.0	-8.6	2.11 V	88	30.8	14.6
7	#17235.00	48.3 PK	68.2	-19.9	1.38 V	219	30.3	18.0

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 157 : 5785 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5551.01	58.0 PK	68.2	-10.2	1.29 H	344	53.5	4.5
2	*5785.00	117.0 PK			1.29 H	344	111.9	5.1
3	*5785.00	107.6 AV			1.29 H	344	102.5	5.1
4	#6018.78	57.8 PK	68.2	-10.4	1.29 H	344	52.6	5.2
5	11570.00	55.4 PK	74.0	-18.6	1.43 H	72	40.8	14.6
6	11570.00	42.0 AV	54.0	-12.0	1.43 H	72	27.4	14.6
7	#17355.00	48.4 PK	68.2	-19.8	1.71 H	191	30.2	18.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5552.33	60.6 PK	68.2	-7.6	1.71 V	76	56.1	4.5
2	*5785.00	121.2 PK			1.71 V	76	116.1	5.1
3	*5785.00	111.6 AV			1.71 V	76	106.5	5.1
4	#6018.81	59.6 PK	68.2	-8.6	1.71 V	76	54.4	5.2
5	11570.00	57.5 PK	74.0	-16.5	2.17 V	117	42.9	14.6
6	11570.00	45.0 AV	54.0	-9.0	2.17 V	117	30.4	14.6
7	#17355.00	47.6 PK	68.2	-20.6	1.44 V	207	29.4	18.2

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 165 : 5825 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5577.32	58.0 PK	68.2	-10.2	1.27 H	338	53.5	4.5
2	*5825.00	116.8 PK			1.27 H	338	111.8	5.0
3	*5825.00	106.7 AV			1.27 H	338	101.7	5.0
4	#5930.91	54.9 PK	68.2	-13.3	1.27 H	338	49.8	5.1
5	11650.00	55.0 PK	74.0	-19.0	1.48 H	68	40.6	14.4
6	11650.00	42.1 AV	54.0	-11.9	1.48 H	68	27.7	14.4
7	#17475.00	48.3 PK	68.2	-19.9	1.72 H	173	29.5	18.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5590.58	60.2 PK	68.2	-8.0	1.70 V	78	55.7	4.5
2	*5825.00	120.3 PK			1.70 V	78	115.3	5.0
3	*5825.00	110.3 AV			1.70 V	78	105.3	5.0
4	#5943.59	59.6 PK	68.2	-8.6	1.70 V	78	54.5	5.1
5	11650.00	57.1 PK	74.0	-16.9	2.14 V	105	42.7	14.4
6	11650.00	44.6 AV	54.0	-9.4	2.14 V	105	30.2	14.4
7	#17475.00	47.7 PK	68.2	-20.5	1.40 V	212	28.9	18.8

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 38 : 5190 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5147.80	58.4 PK	74.0	-15.6	1.52 H	339	53.6	4.8
2	5147.80	49.6 AV	54.0	-4.4	1.52 H	339	44.8	4.8
3	*5190.00	110.2 PK			1.52 H	339	105.7	4.5
4	*5190.00	99.5 AV			1.52 H	339	95.0	4.5
5	#5766.70	56.7 PK	68.2	-11.5	1.64 H	137	51.7	5.0
6	#10380.00	54.7 PK	68.2	-13.5	1.49 H	68	41.3	13.4
7	15570.00	47.9 PK	74.0	-26.1	1.80 H	169	33.3	14.6
8	15570.00	35.8 AV	54.0	-18.2	1.80 H	169	21.2	14.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	66.2 PK	74.0	-7.8	1.48 V	92	61.5	4.7
2	5150.00	53.7 AV	54.0	-0.3	1.48 V	92	49.0	4.7
3	*5190.00	111.3 PK			1.48 V	92	106.8	4.5
4	*5190.00	101.8 AV			1.48 V	92	97.3	4.5
5	#5766.70	61.1 PK	68.2	-7.1	1.57 V	87	56.1	5.0
6	#10380.00	57.3 PK	68.2	-10.9	2.16 V	93	43.9	13.4
7	15570.00	48.0 PK	74.0	-26.0	1.36 V	200	33.4	14.6
8	15570.00	36.4 AV	54.0	-17.6	1.36 V	200	21.8	14.6

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 46 : 5230 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5072.20	59.3 PK	74.0	-14.7	1.48 H	332	54.7	4.6
2	5072.20	49.6 AV	54.0	-4.4	1.48 H	332	45.0	4.6
3	*5230.00	114.6 PK			1.48 H	332	110.2	4.4
4	*5230.00	104.6 AV			1.48 H	332	100.2	4.4
5	#10460.00	55.1 PK	68.2	-13.1	1.41 H	70	41.5	13.6
6	15690.00	48.6 PK	74.0	-25.4	1.80 H	178	34.1	14.5
7	15690.00	36.6 AV	54.0	-17.4	1.80 H	178	22.1	14.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5075.47	62.6 PK	74.0	-11.4	1.49 V	85	58.0	4.6
2	5075.47	53.6 AV	54.0	-0.4	1.49 V	85	49.0	4.6
3	*5230.00	118.0 PK			1.49 V	85	113.6	4.4
4	*5230.00	107.6 AV			1.49 V	85	103.2	4.4
5	#10460.00	57.4 PK	68.2	-10.8	2.09 V	95	43.8	13.6
6	15690.00	48.5 PK	74.0	-25.5	1.36 V	195	34.0	14.5
7	15690.00	36.7 AV	54.0	-17.3	1.36 V	195	22.2	14.5

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 54 : 5270 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5117.35	54.4 PK	74.0	-19.6	1.54 H	339	49.6	4.8
2	5117.35	45.0 AV	54.0	-9.0	1.54 H	339	40.2	4.8
3	*5270.00	108.6 PK			1.54 H	339	104.3	4.3
4	*5270.00	99.1 AV			1.54 H	339	94.8	4.3
5	#10540.00	55.1 PK	68.2	-13.1	1.41 H	54	41.4	13.7
6	15810.00	47.6 PK	74.0	-26.4	1.71 H	186	33.4	14.2
7	15810.00	35.8 AV	54.0	-18.2	1.71 H	186	21.6	14.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5122.94	55.4 PK	74.0	-18.6	1.51 V	70	50.6	4.8
2	5122.94	46.3 AV	54.0	-7.7	1.51 V	70	41.5	4.8
3	*5270.00	109.3 PK			1.51 V	70	105.0	4.3
4	*5270.00	100.8 AV			1.51 V	70	96.5	4.3
5	#10540.00	57.6 PK	68.2	-10.6	2.18 V	112	43.9	13.7
6	15810.00	48.0 PK	74.0	-26.0	1.37 V	218	33.8	14.2
7	15810.00	36.1 AV	54.0	-17.9	1.37 V	218	21.9	14.2

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 62 : 5310 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	109.1 PK			1.52 H	349	104.8	4.3
2	*5310.00	98.9 AV			1.52 H	349	94.6	4.3
3	5352.90	60.2 PK	74.0	-13.8	1.52 H	349	55.9	4.3
4	5352.90	48.6 AV	54.0	-5.4	1.52 H	349	44.3	4.3
5	10620.00	54.8 PK	74.0	-19.2	1.43 H	51	41.1	13.7
6	10620.00	41.5 AV	54.0	-12.5	1.43 H	51	27.8	13.7
7	15930.00	48.4 PK	74.0	-25.6	1.80 H	175	34.3	14.1
8	15930.00	36.6 AV	54.0	-17.4	1.80 H	175	22.5	14.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	111.4 PK			1.62 V	91	107.1	4.3
2	*5310.00	101.2 AV			1.62 V	91	96.9	4.3
3	5350.00	66.4 PK	74.0	-7.6	1.62 V	91	62.1	4.3
4	5350.00	53.6 AV	54.0	-0.4	1.62 V	91	49.3	4.3
5	10620.00	57.6 PK	74.0	-16.4	2.17 V	113	43.9	13.7
6	10620.00	45.0 AV	54.0	-9.0	2.17 V	113	31.3	13.7
7	15930.00	47.8 PK	74.0	-26.2	1.38 V	217	33.7	14.1
8	15930.00	36.2 AV	54.0	-17.8	1.38 V	217	22.1	14.1

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 102 : 5510 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5458.20	58.1 PK	74.0	-15.9	1.44 H	332	53.7	4.4
2	5458.20	46.5 AV	54.0	-7.5	1.44 H	332	42.1	4.4
3	#5470.00	65.0 PK	68.2	-3.2	1.44 H	332	60.5	4.5
4	*5510.00	109.1 PK			1.44 H	332	104.4	4.7
5	*5510.00	99.3 AV			1.44 H	332	94.6	4.7
6	11020.00	55.1 PK	74.0	-18.9	1.48 H	65	40.9	14.2
7	11020.00	41.8 AV	54.0	-12.2	1.48 H	65	27.6	14.2
8	#16530.00	47.7 PK	68.2	-20.5	1.70 H	193	31.8	15.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5456.39	59.5 PK	74.0	-14.5	1.15 V	95	55.1	4.4
2	5456.39	47.7 AV	54.0	-6.3	1.15 V	95	43.3	4.4
3	#5470.00	67.7 PK	68.2	-0.5	1.15 V	95	63.2	4.5
4	*5510.00	113.0 PK			1.15 V	95	108.3	4.7
5	*5510.00	103.3 AV			1.15 V	95	98.6	4.7
6	11020.00	57.7 PK	74.0	-16.3	2.11 V	93	43.5	14.2
7	11020.00	45.3 AV	54.0	-8.7	2.11 V	93	31.1	14.2
8	#16530.00	48.4 PK	68.2	-19.8	1.40 V	204	32.5	15.9

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 110 : 5550 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	109.6 PK			1.45 H	347	105.1	4.5
2	*5550.00	99.6 AV			1.45 H	347	95.1	4.5
3	11100.00	54.8 PK	74.0	-19.2	1.44 H	58	40.9	13.9
4	11100.00	41.4 AV	54.0	-12.6	1.44 H	58	27.5	13.9
5	#16650.00	48.0 PK	68.2	-20.2	1.73 H	167	31.6	16.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	113.2 PK			1.18 V	100	108.7	4.5
2	*5550.00	103.4 AV			1.18 V	100	98.9	4.5
3	11100.00	57.7 PK	74.0	-16.3	2.16 V	115	43.8	13.9
4	11100.00	45.0 AV	54.0	-9.0	2.16 V	115	31.1	13.9
5	#16650.00	47.9 PK	68.2	-20.3	1.40 V	224	31.5	16.4

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 134 : 5670 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	109.3 PK			1.46 H	345	104.8	4.5
2	*5670.00	99.4 AV			1.46 H	345	94.9	4.5
3	#5725.00	56.4 PK	68.2	-11.8	1.46 H	345	51.7	4.7
4	11340.00	54.9 PK	74.0	-19.1	1.44 H	44	40.5	14.4
5	11340.00	41.8 AV	54.0	-12.2	1.44 H	44	27.4	14.4
6	#17010.00	48.1 PK	68.2	-20.1	1.72 H	186	30.3	17.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	113.5 PK			1.13 V	85	109.0	4.5
2	*5670.00	103.7 AV			1.13 V	85	99.2	4.5
3	#5725.00	56.8 PK	68.2	-11.4	1.13 V	85	52.1	4.7
4	11340.00	58.1 PK	74.0	-15.9	2.12 V	108	43.7	14.4
5	11340.00	45.3 AV	54.0	-8.7	2.12 V	108	30.9	14.4
6	#17010.00	47.6 PK	68.2	-20.6	1.41 V	223	29.8	17.8

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 142 : 5710 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (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	55.0 PK	74.0	-19.0	1.40 H	352	50.6	4.4
2	5460.00	43.2 AV	54.0	-10.8	1.40 H	352	38.8	4.4
3	#5470.00	54.2 PK	68.2	-14.0	1.40 H	352	49.7	4.5
4	*5710.00	108.6 PK			1.40 H	352	103.9	4.7
5	*5710.00	98.9 AV			1.40 H	352	94.2	4.7
6	#5850.00	57.4 PK	68.2	-10.8	1.40 H	352	52.4	5.0
7	11420.00	55.4 PK	74.0	-18.6	1.47 H	74	40.9	14.5
8	11420.00	42.2 AV	54.0	-11.8	1.47 H	74	27.7	14.5
9	#17130.00	47.7 PK	68.2	-20.5	1.71 H	183	30.0	17.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (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	55.0 PK	74.0	-19.0	1.00 V	0	50.6	4.4
2	5460.00	43.2 AV	54.0	-10.8	1.00 V	0	38.8	4.4
3	#5470.00	54.1 PK	68.2	-14.1	1.08 V	99	49.6	4.5
4	*5710.00	113.5 PK			1.08 V	99	108.8	4.7
5	*5710.00	103.6 AV			1.08 V	99	98.9	4.7
6	#5850.00	57.0 PK	68.2	-11.2	1.08 V	99	52.0	5.0
7	11420.00	57.7 PK	74.0	-16.3	2.10 V	103	43.2	14.5
8	11420.00	44.9 AV	54.0	-9.1	2.10 V	103	30.4	14.5
9	#17130.00	47.6 PK	68.2	-20.6	1.41 V	198	29.9	17.7

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 151 : 5755 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.45	58.1 PK	68.2	-10.1	1.23 H	338	53.6	4.5
2	*5755.00	115.0 PK			1.23 H	338	110.0	5.0
3	*5755.00	105.1 AV			1.23 H	338	100.1	5.0
4	#5926.77	53.8 PK	68.2	-14.4	1.23 H	338	48.7	5.1
5	11510.00	55.4 PK	74.0	-18.6	1.49 H	60	40.8	14.6
6	11510.00	42.4 AV	54.0	-11.6	1.49 H	60	27.8	14.6
7	#17265.00	48.2 PK	68.2	-20.0	1.78 H	180	30.3	17.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.28	67.8 PK	68.2	-0.4	1.50 V	97	63.3	4.5
2	*5755.00	122.7 PK			1.50 V	97	117.7	5.0
3	*5755.00	111.6 AV			1.50 V	97	106.6	5.0
4	#5953.23	63.6 PK	68.2	-4.6	1.50 V	97	58.4	5.2
5	11510.00	57.1 PK	74.0	-16.9	2.18 V	87	42.5	14.6
6	11510.00	44.5 AV	54.0	-9.5	2.18 V	87	29.9	14.6
7	#17265.00	47.5 PK	68.2	-20.7	1.43 V	196	29.6	17.9

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 159 : 5795 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.97	56.6 PK	68.2	-11.6	1.26 H	334	52.1	4.5
2	*5795.00	114.5 PK			1.26 H	334	109.4	5.1
3	*5795.00	104.7 AV			1.26 H	334	99.6	5.1
4	#5953.32	56.0 PK	68.2	-12.2	1.26 H	334	50.8	5.2
5	11590.00	54.5 PK	74.0	-19.5	1.44 H	74	39.9	14.6
6	11590.00	41.7 AV	54.0	-12.3	1.44 H	74	27.1	14.6
7	#17385.00	48.4 PK	68.2	-19.8	1.70 H	193	30.1	18.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5619.99	60.9 PK	68.2	-7.3	1.54 V	96	56.4	4.5
2	*5795.00	121.5 PK			1.54 V	96	116.4	5.1
3	*5795.00	110.4 AV			1.54 V	96	105.3	5.1
4	#5929.81	67.7 PK	68.2	-0.5	1.54 V	96	62.6	5.1
5	11590.00	58.1 PK	74.0	-15.9	2.17 V	108	43.5	14.6
6	11590.00	45.3 AV	54.0	-8.7	2.17 V	108	30.7	14.6
7	#17385.00	48.4 PK	68.2	-19.8	1.38 V	205	30.1	18.3

Remarks:

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 42 : 5210 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5147.80	59.6 PK	74.0	-14.4	1.41 H	328	54.8	4.8
2	5147.80	48.3 AV	54.0	-5.7	1.41 H	328	43.5	4.8
3	*5210.00	107.0 PK			1.41 H	328	102.6	4.4
4	*5210.00	95.8 AV			1.41 H	328	91.4	4.4
5	#10420.00	54.9 PK	68.2	-13.3	1.42 H	52	41.4	13.5
6	15630.00	48.6 PK	74.0	-25.4	1.81 H	178	34.0	14.6
7	15630.00	36.7 AV	54.0	-17.3	1.81 H	178	22.1	14.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5145.48	64.1 PK	74.0	-9.9	1.55 V	89	59.3	4.8
2	5145.48	53.8 AV	54.0	-0.2	1.55 V	89	49.0	4.8
3	*5210.00	109.6 PK			1.55 V	89	105.2	4.4
4	*5210.00	98.9 AV			1.55 V	89	94.5	4.4
5	#10420.00	57.0 PK	68.2	-11.2	2.11 V	92	43.5	13.5
6	15630.00	48.4 PK	74.0	-25.6	1.45 V	210	33.8	14.6
7	15630.00	36.7 AV	54.0	-17.3	1.45 V	210	22.1	14.6

Remarks:

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 58 : 5290 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5290.00	105.3 PK			1.52 H	336	101.0	4.3
2	*5290.00	94.5 AV			1.52 H	336	90.2	4.3
3	5352.90	57.4 PK	74.0	-16.6	1.52 H	336	53.1	4.3
4	5352.90	49.1 AV	54.0	-4.9	1.52 H	336	44.8	4.3
5	#10580.00	54.8 PK	68.2	-13.4	1.49 H	71	41.1	13.7
6	15870.00	47.9 PK	74.0	-26.1	1.78 H	196	33.7	14.2
7	15870.00	36.0 AV	54.0	-18.0	1.78 H	196	21.8	14.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5290.00	108.2 PK			1.65 V	90	103.9	4.3
2	*5290.00	97.7 AV			1.65 V	90	93.4	4.3
3	5350.00	67.2 PK	74.0	-6.8	1.65 V	90	62.9	4.3
4	5350.00	53.9 AV	54.0	-0.1	1.65 V	90	49.6	4.3
5	#10580.00	57.5 PK	68.2	-10.7	2.15 V	99	43.8	13.7
6	15870.00	47.7 PK	74.0	-26.3	1.42 V	200	33.5	14.2
7	15870.00	36.0 AV	54.0	-18.0	1.42 V	200	21.8	14.2

Remarks:

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 106 : 5530 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5457.80	61.1 PK	74.0	-12.9	1.34 H	337	56.7	4.4
2	5457.80	49.6 AV	54.0	-4.4	1.34 H	337	45.2	4.4
3	#5467.80	62.8 PK	68.2	-5.4	1.34 H	337	58.3	4.5
4	*5530.00	105.6 PK			1.34 H	337	101.0	4.6
5	*5530.00	95.6 AV			1.34 H	337	91.0	4.6
6	11060.00	55.4 PK	74.0	-18.6	1.45 H	59	41.3	14.1
7	11060.00	42.0 AV	54.0	-12.0	1.45 H	59	27.9	14.1
8	#16590.00	48.7 PK	68.2	-19.5	1.81 H	191	32.6	16.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	66.7 PK	74.0	-7.3	1.60 V	91	62.3	4.4
2	5460.00	53.7 AV	54.0	-0.3	1.60 V	91	49.3	4.4
3	#5461.65	67.9 PK	68.2	-0.3	1.60 V	91	63.5	4.4
4	*5530.00	109.9 PK			1.60 V	91	105.3	4.6
5	*5530.00	100.0 AV			1.60 V	91	95.4	4.6
6	11060.00	57.5 PK	74.0	-16.5	2.11 V	112	43.4	14.1
7	11060.00	45.1 AV	54.0	-8.9	2.11 V	112	31.0	14.1
8	#16590.00	48.1 PK	68.2	-20.1	1.38 V	207	32.0	16.1

Remarks:

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 122 : 5610 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	106.5 PK			1.29 H	333	102.0	4.5
2	*5610.00	96.5 AV			1.29 H	333	92.0	4.5
3	#5725.00	56.8 PK	68.2	-11.4	1.29 H	333	52.1	4.7
4	11220.00	54.7 PK	74.0	-19.3	1.45 H	66	40.3	14.4
5	11220.00	41.6 AV	54.0	-12.4	1.45 H	66	27.2	14.4
6	#16830.00	48.4 PK	68.2	-19.8	1.77 H	187	31.1	17.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	111.1 PK			1.64 V	83	106.6	4.5
2	*5610.00	102.2 AV			1.64 V	83	97.7	4.5
3	#5725.00	57.2 PK	68.2	-11.0	1.64 V	83	52.5	4.7
4	11220.00	57.4 PK	74.0	-16.6	2.16 V	114	43.0	14.4
5	11220.00	44.9 AV	54.0	-9.1	2.16 V	114	30.5	14.4
6	#16830.00	48.0 PK	68.2	-20.2	1.43 V	205	30.7	17.3

Remarks:

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 138 : 5690 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.4 PK	74.0	-19.6	1.31 H	324	50.0	4.4
2	5460.00	42.7 AV	54.0	-11.3	1.31 H	324	38.3	4.4
3	#5470.00	54.4 PK	68.2	-13.8	1.31 H	324	49.9	4.5
4	*5690.00	106.3 PK			1.31 H	324	101.8	4.5
5	*5690.00	96.1 AV			1.31 H	324	91.6	4.5
6	#5850.00	56.5 PK	68.2	-11.7	1.31 H	324	51.5	5.0
7	11380.00	54.7 PK	74.0	-19.3	1.46 H	52	40.2	14.5
8	11380.00	41.4 AV	54.0	-12.6	1.46 H	52	26.9	14.5
9	#17070.00	48.8 PK	68.2	-19.4	1.79 H	192	30.9	17.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.6 PK	74.0	-19.4	1.64 V	91	50.2	4.4
2	5460.00	42.9 AV	54.0	-11.1	1.64 V	91	38.5	4.4
3	#5470.00	54.7 PK	68.2	-13.5	1.64 V	91	50.2	4.5
4	*5690.00	111.1 PK			1.64 V	91	106.6	4.5
5	*5690.00	102.0 AV			1.64 V	91	97.5	4.5
6	#5850.00	57.1 PK	68.2	-11.1	1.64 V	91	52.1	5.0
7	11380.00	57.2 PK	74.0	-16.8	2.15 V	98	42.7	14.5
8	11380.00	44.8 AV	54.0	-9.2	2.15 V	98	30.3	14.5
9	#17070.00	47.9 PK	68.2	-20.3	1.42 V	226	30.0	17.9

Remarks:

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 155 : 5775 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.20	56.1 PK	68.2	-12.1	1.33 H	338	51.6	4.5
2	*5775.00	108.9 PK			1.33 H	338	103.8	5.1
3	*5775.00	98.5 AV			1.33 H	338	93.4	5.1
4	#5928.53	53.2 PK	68.2	-15.0	1.33 H	338	48.1	5.1
5	11550.00	54.8 PK	74.0	-19.2	1.42 H	60	40.2	14.6
6	11550.00	42.0 AV	54.0	-12.0	1.42 H	60	27.4	14.6
7	#17325.00	47.8 PK	68.2	-20.4	1.80 H	175	29.7	18.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5648.25	58.3 PK	68.2	-9.9	1.61 V	97	53.8	4.5
2	*5775.00	113.9 PK			1.61 V	97	108.8	5.1
3	*5775.00	103.8 AV			1.61 V	97	98.7	5.1
4	#5928.16	57.7 PK	68.2	-10.5	1.61 V	97	52.6	5.1
5	11550.00	57.6 PK	74.0	-16.4	2.18 V	87	43.0	14.6
6	11550.00	44.9 AV	54.0	-9.1	2.18 V	87	30.3	14.6
7	#17325.00	48.5 PK	68.2	-19.7	1.46 V	223	30.4	18.1

Remarks:

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

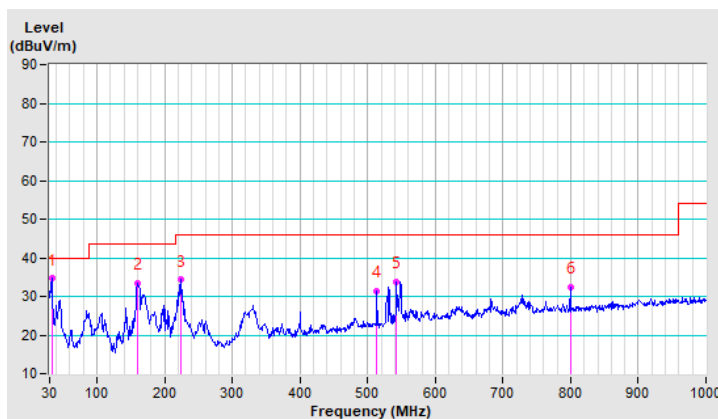
Below 1GHz Data:

RF Mode	TX 802.11ac (VHT40)	Channel	CH 151 : 5755 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.35	34.6 QP	40.0	-5.4	3.00 H	360	43.9	-9.3
2	160.15	33.5 QP	43.5	-10.0	2.00 H	92	41.3	-7.8
3	224.53	34.3 QP	46.0	-11.7	1.00 H	73	44.9	-10.6
4	513.64	31.3 QP	46.0	-14.7	1.50 H	62	32.0	-0.7
5	542.69	33.7 QP	46.0	-12.3	1.50 H	321	34.0	-0.3
6	799.21	32.5 QP	46.0	-13.5	1.50 H	85	27.6	4.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
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.

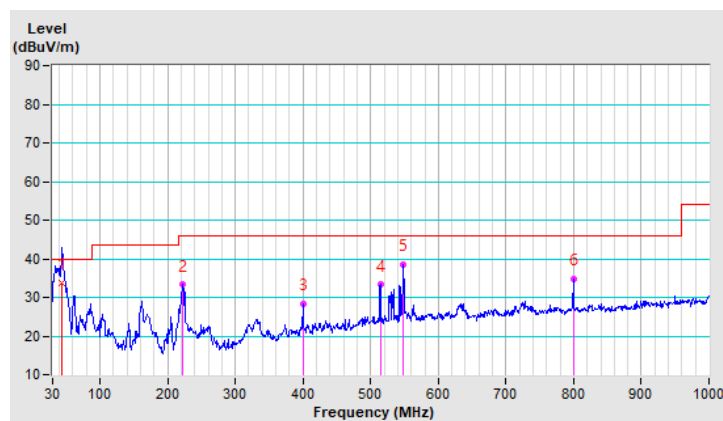


RF Mode	TX 802.11ac (VHT40)	Channel	CH 151 : 5755 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	43.82	33.7 QP	40.0	-6.3	1.50 V	46	42.0	-8.3
2	222.62	33.3 QP	46.0	-12.7	1.00 V	33	43.8	-10.5
3	399.59	28.3 QP	46.0	-17.7	1.00 V	354	32.1	-3.8
4	514.25	33.3 QP	46.0	-12.7	2.50 V	360	34.0	-0.7
5	548.66	38.4 QP	46.0	-7.6	2.00 V	0	38.6	-0.2
6	799.21	34.8 QP	46.0	-11.2	1.00 V	359	29.9	4.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
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 Transmit Power Measurement

4.2.1 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 $N_{ANT} \leq 4$;

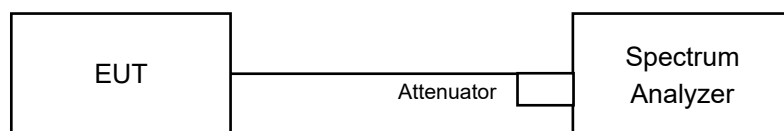
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

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

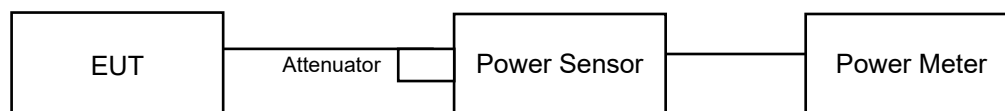
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.2.2 Test Setup

For channel straddling 5725MHz:



For other channels:



4.2.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.2.4 Test Procedure

For channel straddling 5725MHz:

For 802.11a, 802.11ac (VHT20)

Follow FCC KDB 789033 UNII test procedure:

Method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep ≥ 2 Span / RBW.
5. Sweep time = auto.
6. Set trigger to free run (duty cycle ≥ 98 percent)
7. Detector = RMS.
8. Trace average at least 100 traces in power averaging mode
9. Compute power by integrating the spectrum across the 26 dB EBW of the signal.

For 802.11ac (VHT40), 802.11ac (VHT80)

Follow FCC KDB 789033 UNII test procedure:

Method SA-2

1. Set span to encompass the emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep ≥ 2 Span / RBW.
5. Sweep time = auto.
6. Detector = RMS.
7. Trace average at least 100 traces in power averaging mode
8. Compute power by integrating the spectrum across the 26 dB EBW of the signal.
9. Duty factor need added to measured value (duty cycle < 98 percent).

For other channels:

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

4.2.5 Deviation from Test Standard

No deviation.

4.2.6 EUT Operating Condition

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

4.2.7 Test Results

CDD Mode

Power Output:

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	18.81	18.97	18.95	19.24	317.388	25.02	30	Pass
40	5200	18.94	18.88	19.17	18.75	313.204	24.96	30	Pass
48	5240	18.64	19.03	19.09	18.91	311.997	24.94	30	Pass
52	5260	13.19	13.48	13.06	12.77	82.283	19.15	24	Pass
60	5300	12.88	13.29	12.86	12.64	78.424	18.94	24	Pass
64	5320	13.02	13.24	12.94	12.73	79.56	19.01	24	Pass
100	5500	13.03	13.45	12.99	12.57	80.2	19.04	24	Pass
116	5580	12.98	13.51	13.06	12.67	81.023	19.09	24	Pass
140	5700	13.08	13.47	13.12	12.52	80.933	19.08	24	Pass
*144 (U-NII-2C Band)	5720	9.36	9.01	9.30	9.50	34.015	15.32	22.99	Pass
*144 (U-NII-3 Band)	5720	3.20	3.10	3.39	3.11	8.36	9.22	30	Pass
149	5745	22.42	22.57	22.18	22.31	690.712	28.39	30	Pass
157	5785	22.33	22.56	22.27	22.47	696.562	28.43	30	Pass
165	5825	21.26	21.46	21.27	21.18	538.806	27.31	30	Pass

Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.65	24.35 > 24
60	5300	21.66	24.35 > 24
64	5320	21.73	24.37 > 24
100	5500	21.69	24.36 > 24
116	5580	21.72	24.36 > 24
140	5700	21.67	24.35 > 24
144 (U-NII-2C Band)	5720	15.84	22.99 < 24

Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	18.78	18.96	18.98	18.89	310.728	24.92	30	Pass
40	5200	18.83	18.91	18.93	18.79	308.033	24.89	30	Pass
48	5240	18.77	18.86	18.96	18.82	307.161	24.87	30	Pass
52	5260	12.99	13.49	13.02	12.72	80.994	19.08	24	Pass
60	5300	13.05	13.45	13.11	12.84	82.01	19.14	24	Pass
64	5320	13.11	13.39	13.14	12.86	82.218	19.15	24	Pass
100	5500	12.98	13.44	12.83	12.48	78.829	18.97	24	Pass
116	5580	13.06	13.37	12.98	12.52	79.683	19.01	24	Pass
140	5700	13.11	13.42	13.04	12.59	80.735	19.07	24	Pass
*144 (U-NII-2C Band)	5720	9.61	9.56	9.00	8.88	33.848	15.30	23	Pass
*144 (U-NII-3 Band)	5720	3.87	3.75	3.12	3.17	8.935	9.51	30	Pass
149	5745	22.22	22.28	22.38	22.42	683.333	28.35	30	Pass
157	5785	22.73	22.58	22.78	22.41	732.485	28.65	30	Pass
165	5825	21.38	21.26	21.27	20.94	529.197	27.24	30	Pass

Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.92	24.4 > 24
60	5300	21.8	24.38 > 24
64	5320	21.86	24.39 > 24
100	5500	21.91	24.4 > 24
116	5580	21.88	24.4 > 24
140	5700	21.95	24.41 > 24
144 (U-NII-2C Band)	5720	15.86	23 < 24

Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	16.54	16.96	16.51	16.94	188.943	22.76	30	Pass
46	5230	22.45	22.42	22.13	22.37	686.264	28.36	30	Pass
54	5270	16.28	16.22	16.01	16.39	167.795	22.25	24	Pass
62	5310	16.31	16.14	16.06	16.31	166.992	22.23	24	Pass
102	5510	16.23	16.27	15.92	16.34	166.477	22.21	24	Pass
110	5550	16.12	16.25	15.96	16.36	165.793	22.20	24	Pass
134	5670	16.05	16.18	15.94	16.22	162.911	22.12	24	Pass
*142 (U-NII-2C Band)	5710	12.66	12.67	13.10	13.19	80.922	19.08	24	Pass
*142 (U-NII-3 Band)	5710	2.17	2.24	2.74	2.95	7.424	8.71	30	Pass
151	5755	23.24	22.86	23.62	23.71	869.167	29.39	30	Pass
159	5795	23.29	22.93	23.42	23.53	854.85	29.32	30	Pass

Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	41.36	27.16 > 24
62	5310	41.44	27.17 > 24
102	5510	41.36	27.16 > 24
110	5550	41.32	27.16 > 24
134	5670	41.48	27.17 > 24
142 (U-NII-2C Band)	5710	35.78	26.53 > 24

Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	15.72	15.33	15.09	15.74	141.227	21.50	30	Pass
58	5290	15.33	15.38	15.22	15.67	138.797	21.42	24	Pass
106	5530	16.34	16.31	16.05	16.38	169.532	22.29	24	Pass
122	5610	17.64	17.15	17.39	17.96	227.301	23.57	24	Pass
*138 (U-NII-2C Band)	5690	14.29	14.09	14.67	13.97	113.73	20.56	24	Pass
*138 (U-NII-3 Band)	5690	0.52	-0.03	0.67	0.00	4.5673	6.60	30	Pass
155	5775	19.44	19.49	19.68	20.08	371.578	25.70	30	Pass

Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	82.49	30.16 > 24
106	5530	82.57	30.16 > 24
122	5610	82.79	30.17 > 24
138 (U-NII-2C Band)	5690	76.07	29.81 > 24

Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	18.78	18.96	18.98	18.89	310.728	24.92	25.48	Pass
40	5200	18.83	18.91	18.93	18.79	308.033	24.89	25.48	Pass
48	5240	18.77	18.86	18.96	18.82	307.161	24.87	25.48	Pass
52	5260	12.99	13.49	13.02	12.72	80.994	19.08	19.48	Pass
60	5300	13.05	13.45	13.11	12.84	82.01	19.14	19.48	Pass
64	5320	13.11	13.39	13.14	12.86	82.218	19.15	19.48	Pass
100	5500	12.98	13.44	12.83	12.48	78.829	18.97	19.48	Pass
116	5580	13.06	13.37	12.98	12.52	79.683	19.01	19.48	Pass
140	5700	13.11	13.42	13.04	12.59	80.735	19.07	19.48	Pass
*144 (U-NII-2C Band)	5720	9.61	9.56	9.00	8.88	33.848	15.30	18.48	Pass
*144 (U-NII-3 Band)	5720	3.87	3.75	3.12	3.17	8.935	9.51	25.48	Pass
149	5745	19.11	19.14	19.24	19.28	332.174	25.21	25.48	Pass
157	5785	19.14	19.21	19.08	19.35	332.412	25.22	25.48	Pass
165	5825	18.98	19.11	19.07	19.12	322.92	25.09	25.48	Pass

Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

- For U-NII-2A, U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.52 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.52-6)".
- For U-NII-1, U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.52 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to 30-(10.52-6) = 25.48 dBm.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.92	24.4 > 24
60	5300	21.8	24.38 > 24
64	5320	21.86	24.39 > 24
100	5500	21.91	24.4 > 24
116	5580	21.88	24.4 > 24
140	5700	21.95	24.41 > 24
144 (U-NII-2C Band)	5720	15.86	23 < 24

Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	16.54	16.96	16.51	16.94	188.943	22.76	25.48	Pass
46	5230	19.17	19.14	18.99	19.18	326.683	25.14	25.48	Pass
54	5270	13.23	13.20	12.95	13.30	83.035	19.19	19.48	Pass
62	5310	13.22	13.12	12.96	13.31	82.7	19.18	19.48	Pass
102	5510	13.17	13.20	12.87	13.28	82.288	19.15	19.48	Pass
110	5550	12.98	13.18	12.88	13.26	81.25	19.10	19.48	Pass
134	5670	13.03	13.16	12.91	13.20	81.229	19.10	19.48	Pass
*142 (U-NII-2C Band)	5710	9.74	9.87	10.17	10.03	40.968	16.12	19.48	Pass
*142 (U-NII-3 Band)	5710	-0.34	-0.55	-0.40	-0.84	3.6649	5.64	25.48	Pass
151	5755	19.12	19.22	19.26	19.56	339.917	25.31	25.48	Pass
159	5795	19.08	19.14	18.99	19.26	326.528	25.14	25.48	Pass

Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.

1. For U-NII-2A, U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.52 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.52-6)".
2. For U-NII-1, U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.52 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to 30-(10.52-6) = 25.48 dBm.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	41.36	27.16 > 24
62	5310	41.44	27.17 > 24
102	5510	41.36	27.16 > 24
110	5550	41.32	27.16 > 24
134	5670	41.48	27.17 > 24
142 (U-NII-2C Band)	5710	35.78	26.53 > 24

Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	15.72	15.33	15.09	15.74	141.227	21.50	25.48	Pass
58	5290	13.08	13.11	12.91	13.32	81.81	19.13	19.48	Pass
106	5530	13.06	13.03	12.78	13.12	79.8	19.02	19.48	Pass
122	5610	13.12	12.56	12.85	13.38	79.594	19.01	19.48	Pass
*138 (U-NII-2C Band)	5690	9.91	10.33	10.41	10.31	45.08	16.54	19.48	Pass
*138 (U-NII-3 Band)	5690	-3.94	-3.45	-3.82	-3.37	1.8438	2.66	25.48	Pass
155	5775	19.11	19.16	19.26	19.11	329.688	25.18	25.48	Pass

Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.

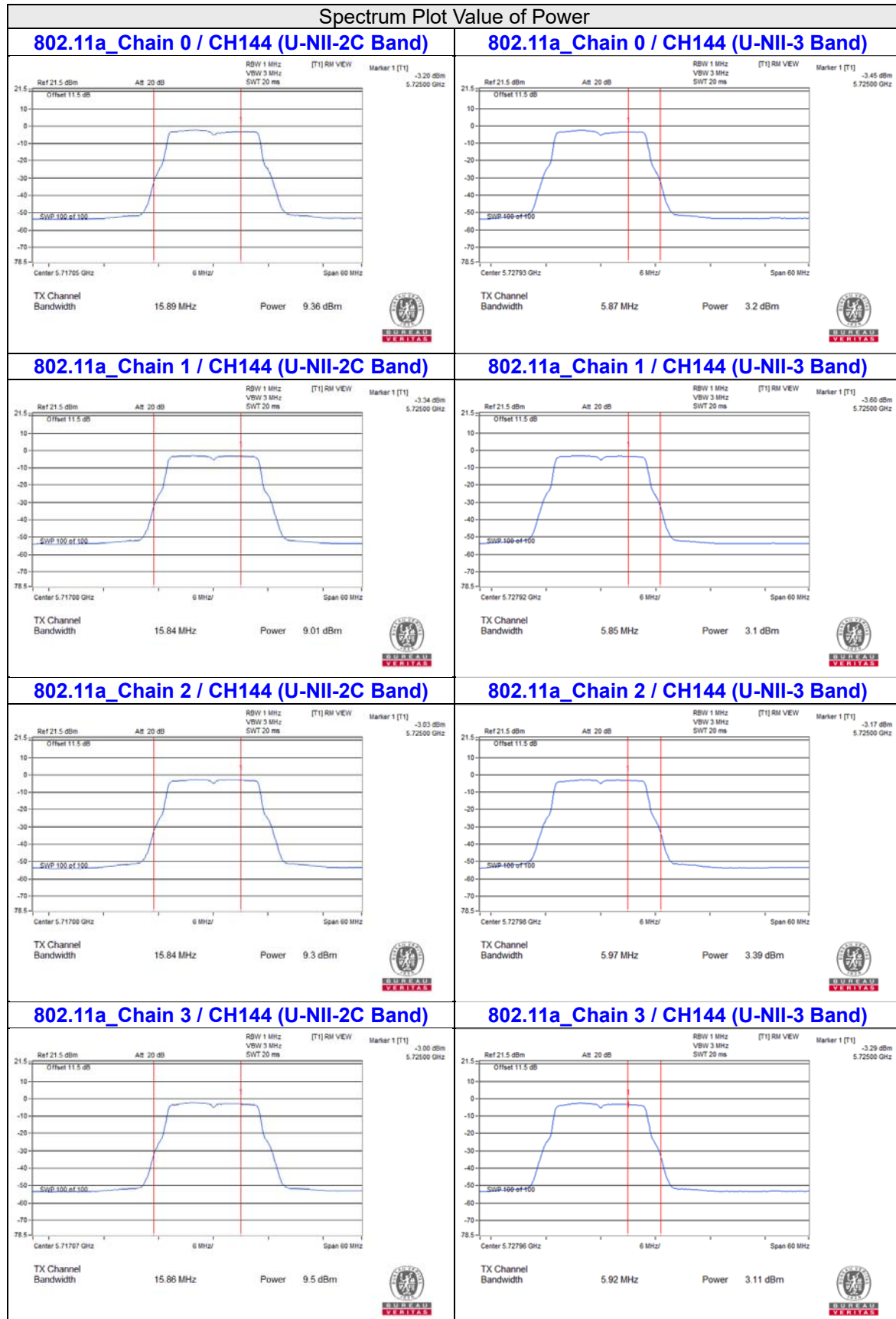
1. For U-NII-2A, U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.52 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(10.52-6)".
2. For U-NII-1, U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.52 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to $30 - (10.52 - 6) = 25.48 \text{ dBm}$.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	82.49	30.16 > 24
106	5530	82.57	30.16 > 24
122	5610	82.79	30.17 > 24
138 (U-NII-2C Band)	5690	76.07	29.81 > 24

Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

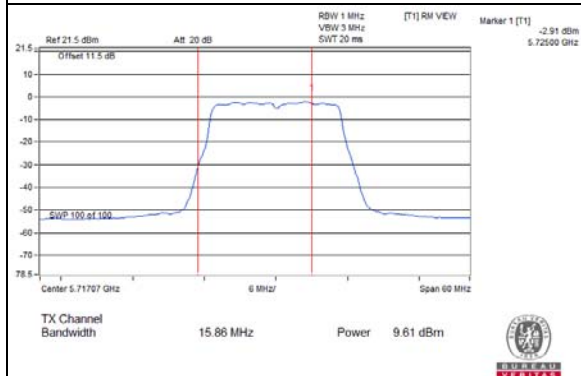
For channel straddling 5725MHz of Power

CDD Mode

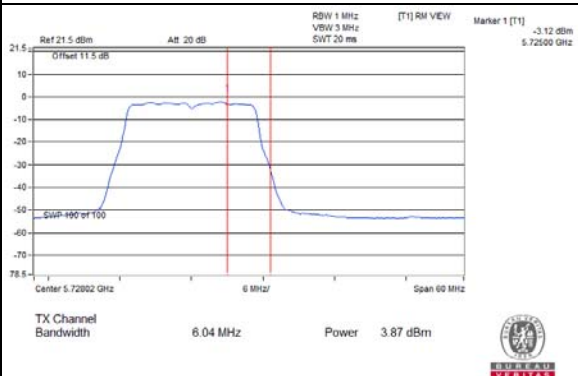


Spectrum Plot Value of Power

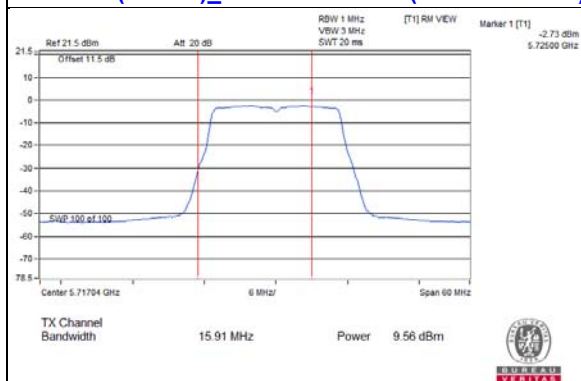
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)



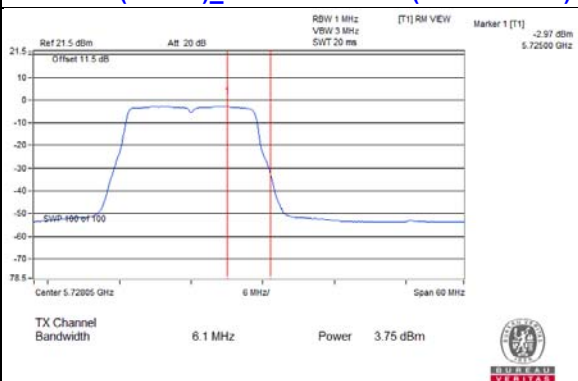
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)



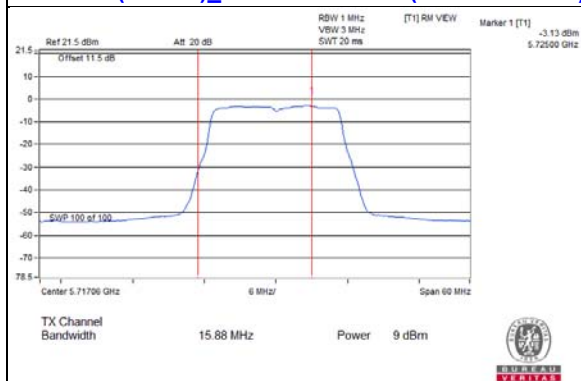
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)



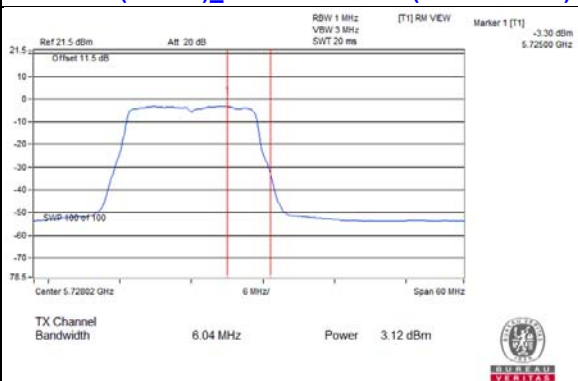
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)



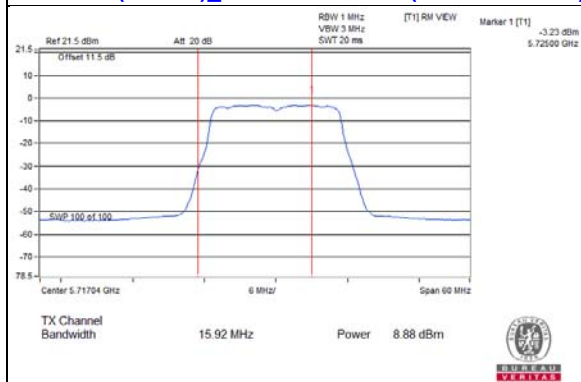
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-2C Band)



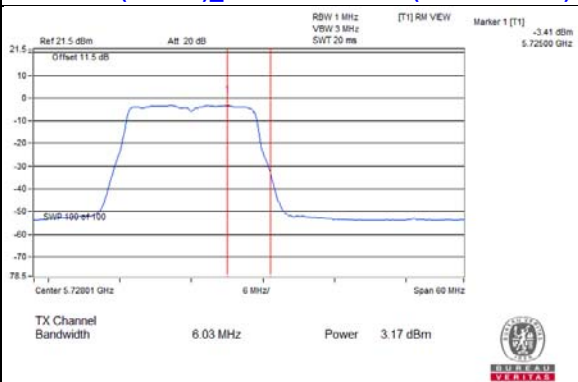
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-3 Band)



802.11ac (VHT20)_Chain 3 / CH144 (U-NII-2C Band)

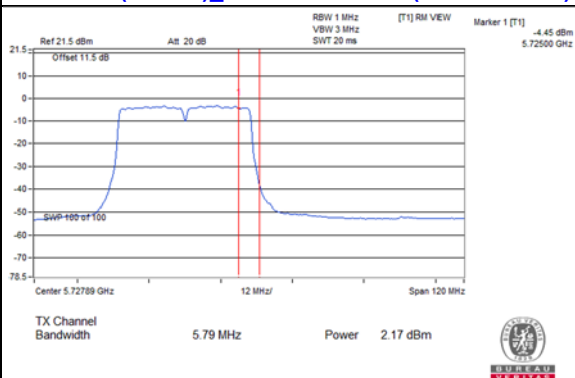
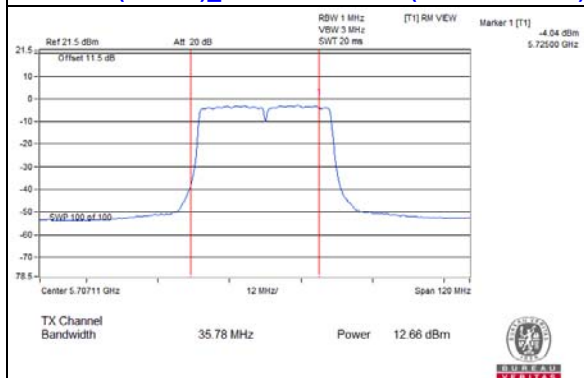


802.11ac (VHT20)_Chain 3 / CH144 (U-NII-3 Band)

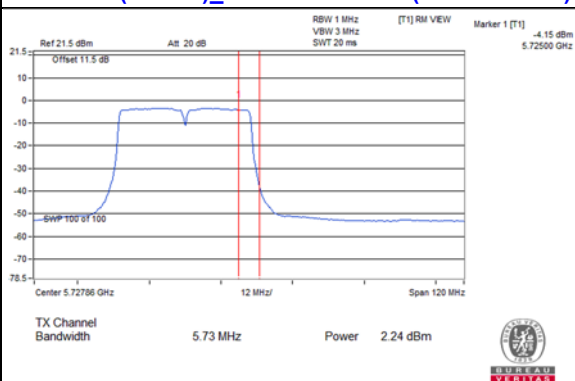
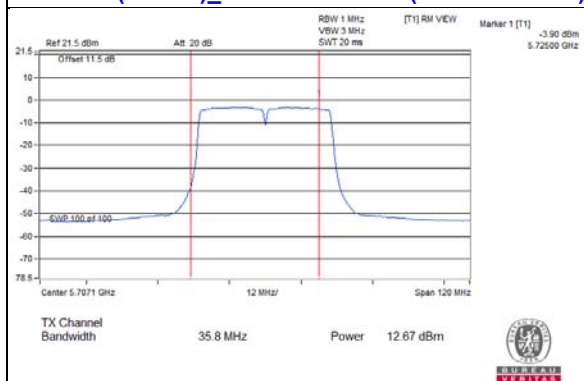


Spectrum Plot Value of Power

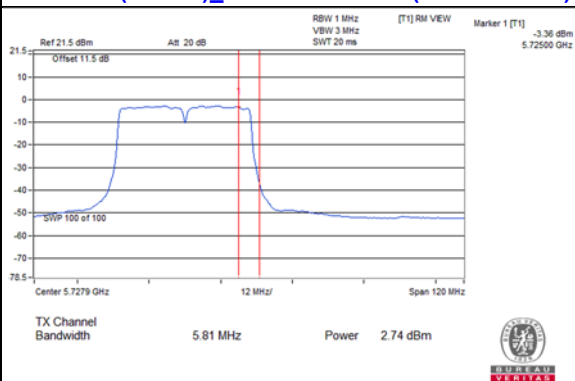
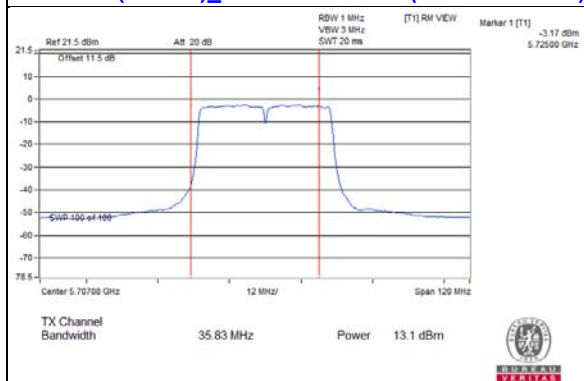
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)



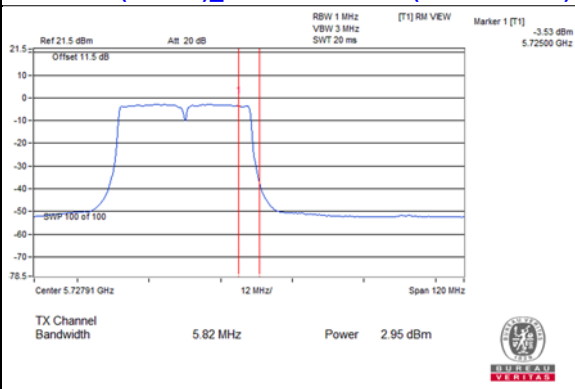
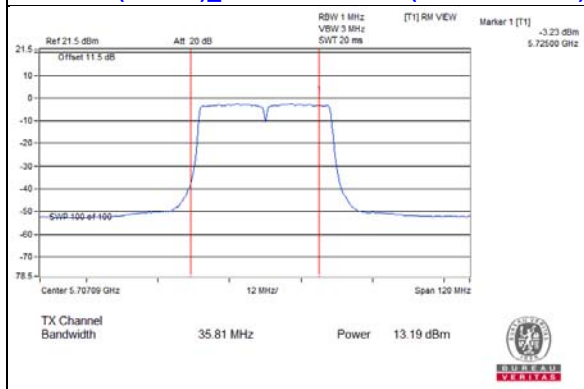
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 2 / CH142 (U-NII-3 Band)

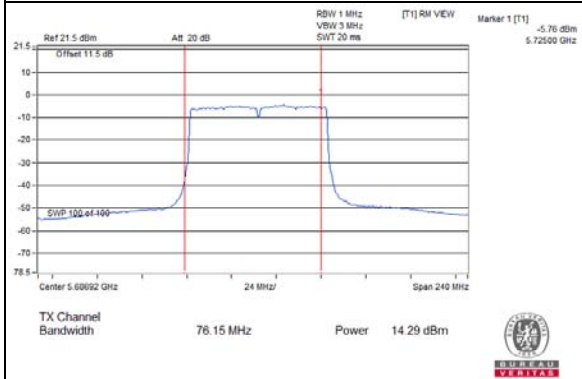


802.11ac (VHT40)_Chain 3 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 3 / CH142 (U-NII-3 Band)

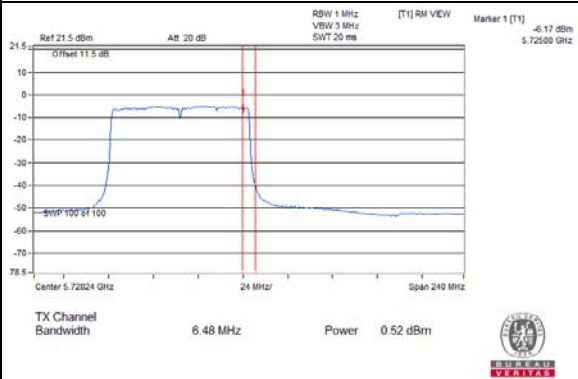


Spectrum Plot Value of Power

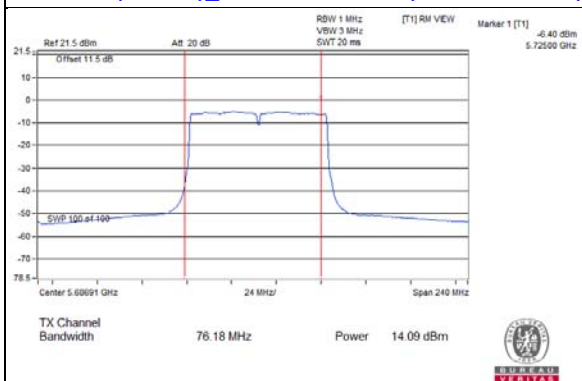
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)



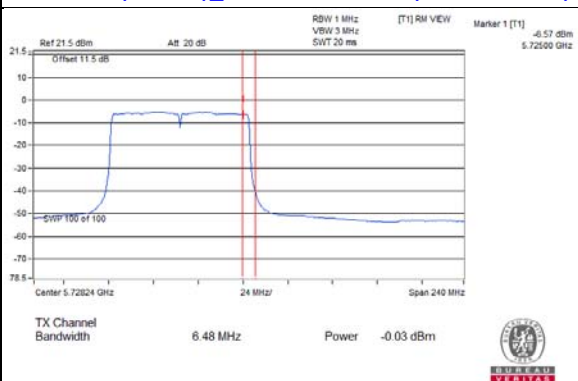
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)



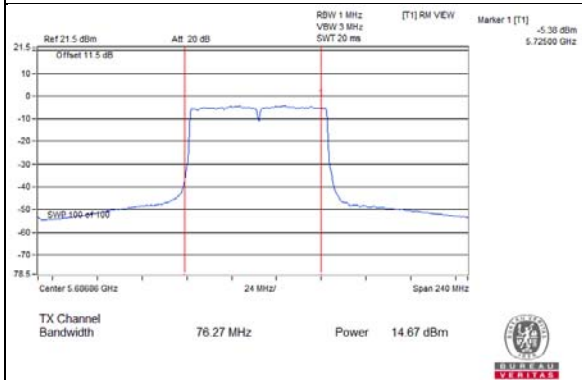
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)



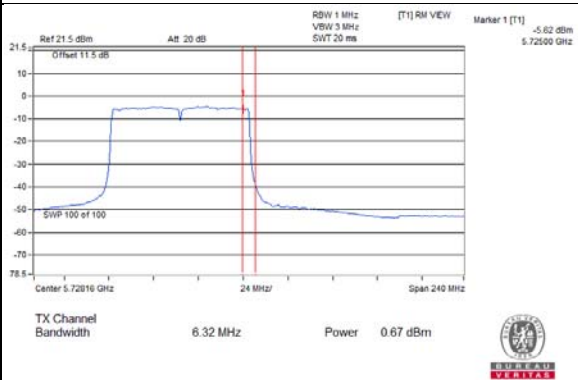
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)



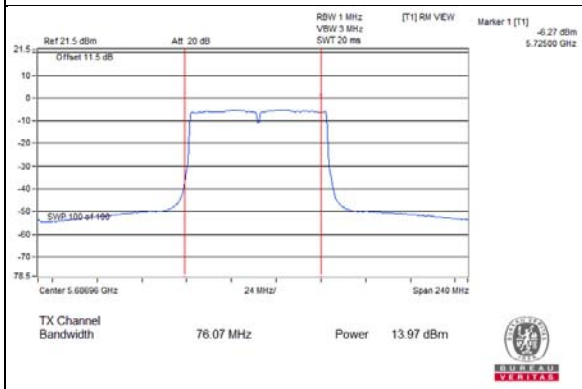
802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band)



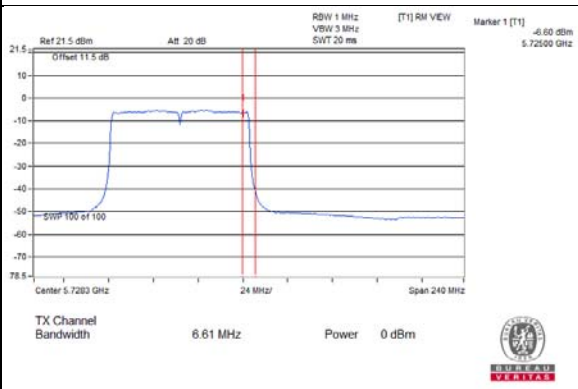
802.11ac (VHT80)_Chain 2 / CH138 (U-NII-3 Band)



802.11ac (VHT80)_Chain 3 / CH138 (U-NII-2C Band)



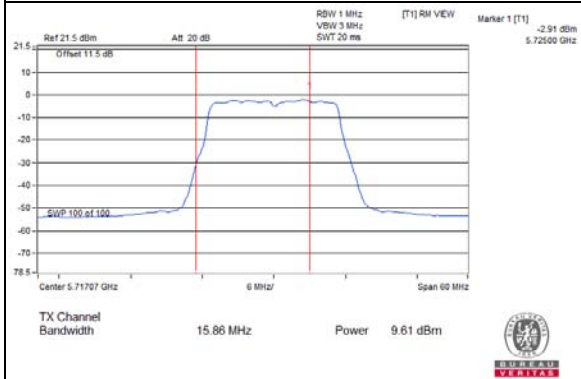
802.11ac (VHT80)_Chain 3 / CH138 (U-NII-3 Band)



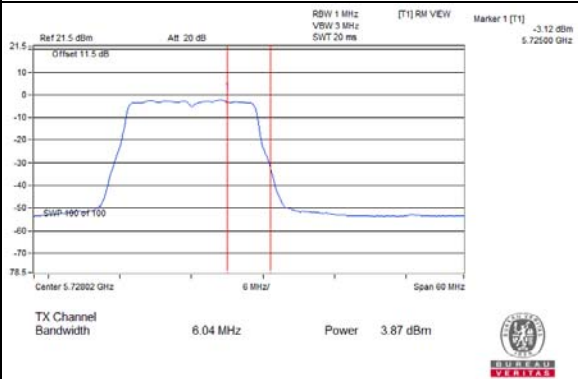
Beamforming Mode

Spectrum Plot Value of Power

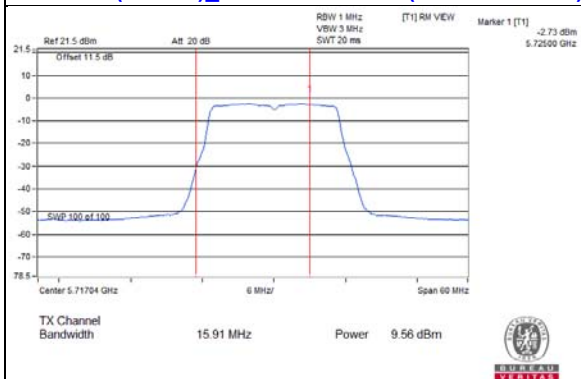
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)



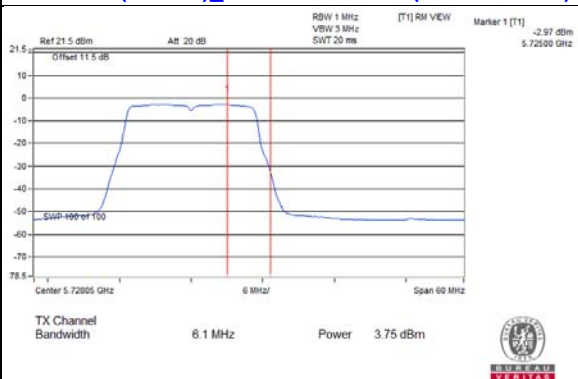
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)



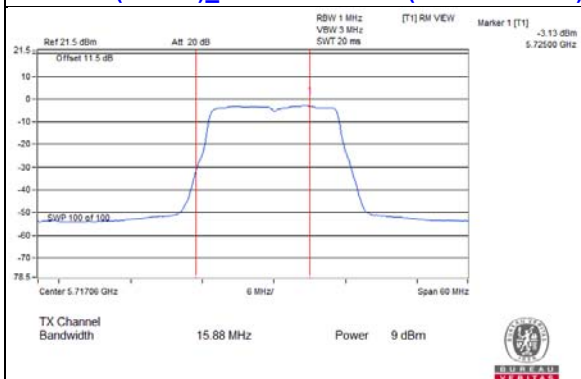
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)



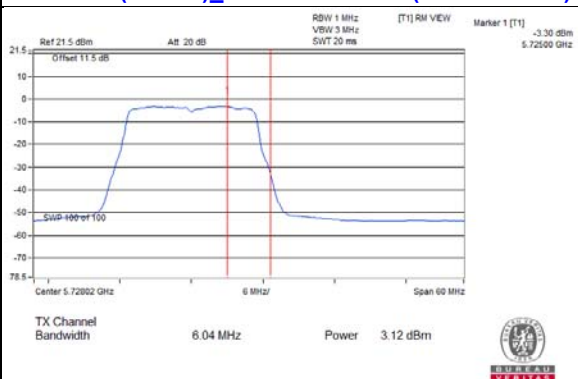
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)



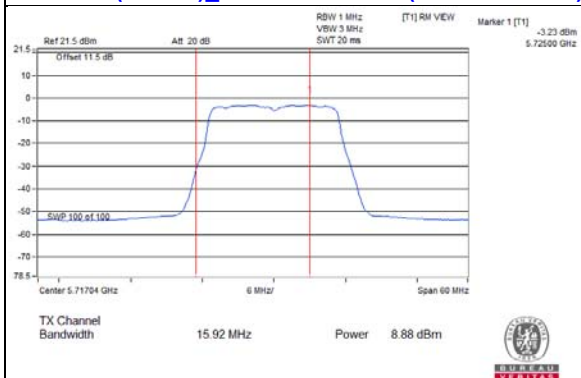
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-2C Band)



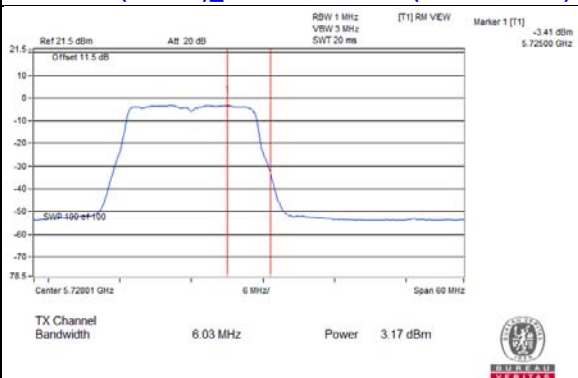
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-3 Band)



802.11ac (VHT20)_Chain 3 / CH144 (U-NII-2C Band)

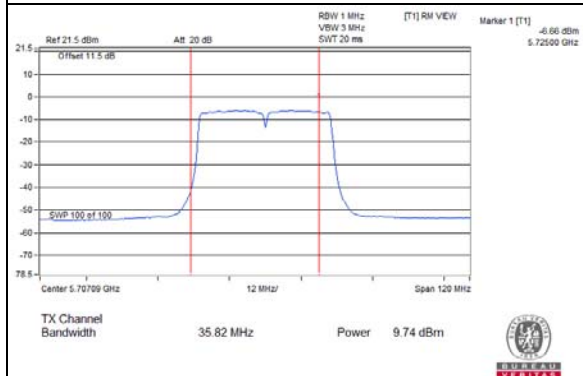


802.11ac (VHT20)_Chain 3 / CH144 (U-NII-3 Band)

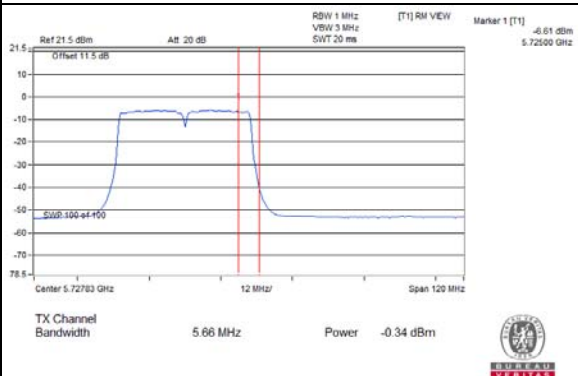


Spectrum Plot Value of Power

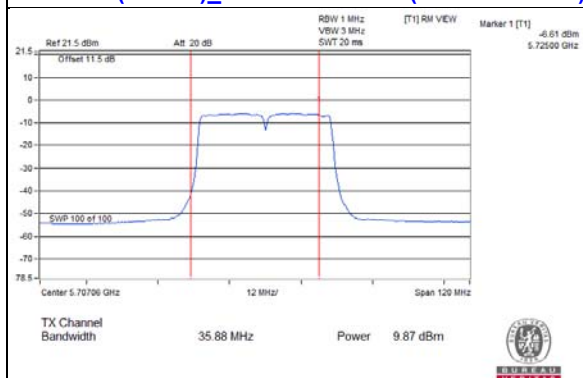
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)



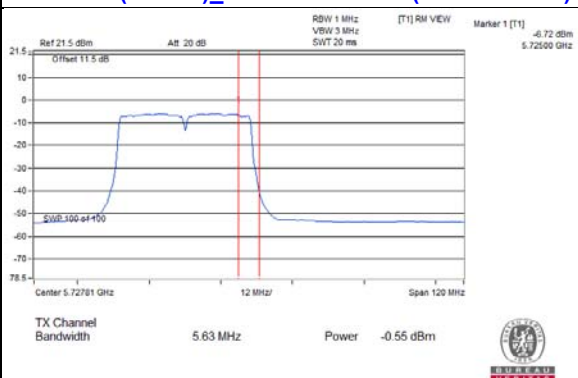
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)



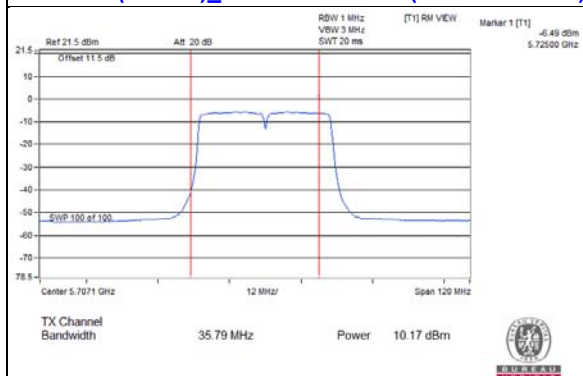
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)



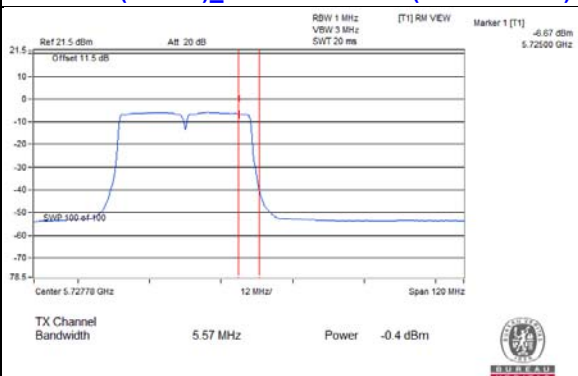
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



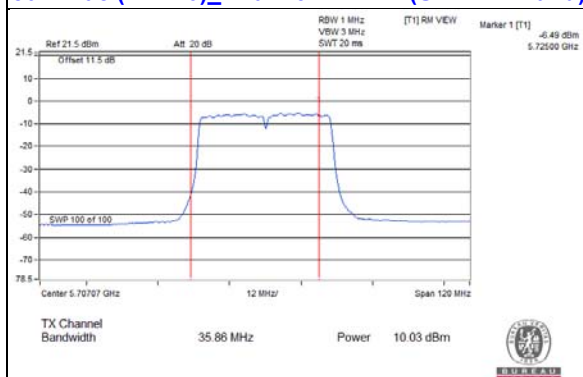
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band)



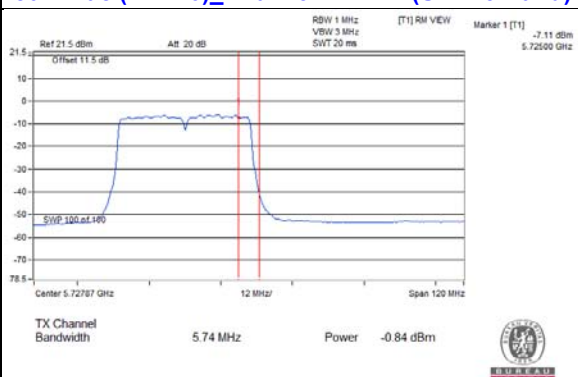
802.11ac (VHT40)_Chain 2 / CH142 (U-NII-3 Band)



802.11ac (VHT40)_Chain 3 / CH142 (U-NII-2C Band)



802.11ac (VHT40)_Chain 3 / CH142 (U-NII-3 Band)





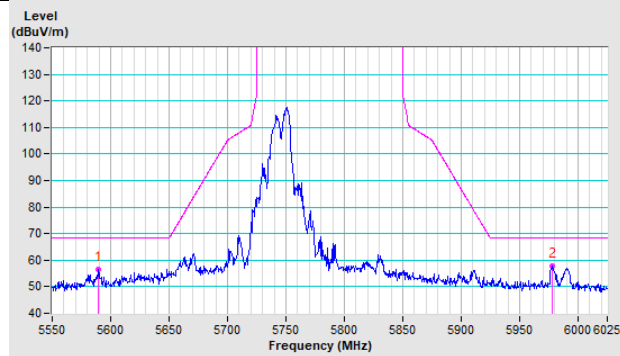
5 Pictures of Test Arrangements

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

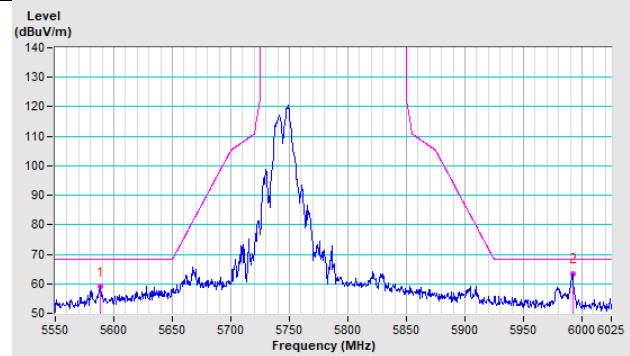
Annex A - Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a CH 149 : 5745 MHz

Horizontal

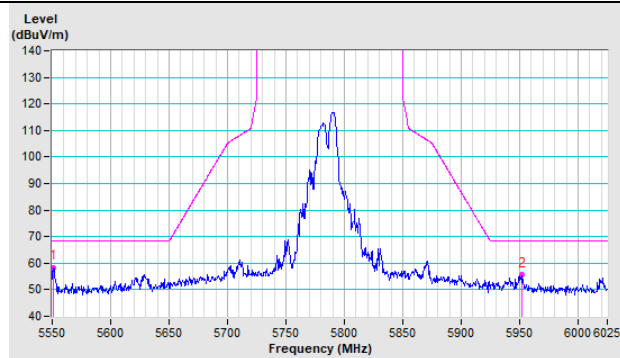


Vertical

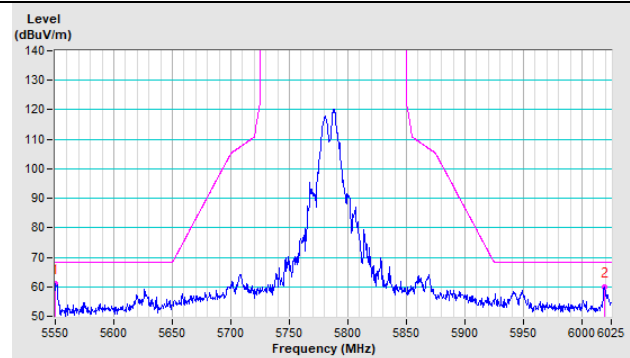


802.11a CH 157 : 5785 MHz

Horizontal

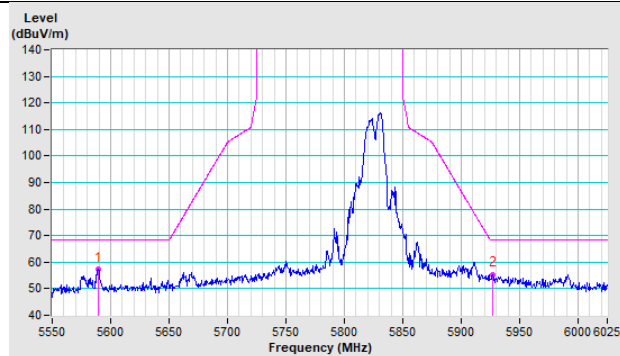


Vertical

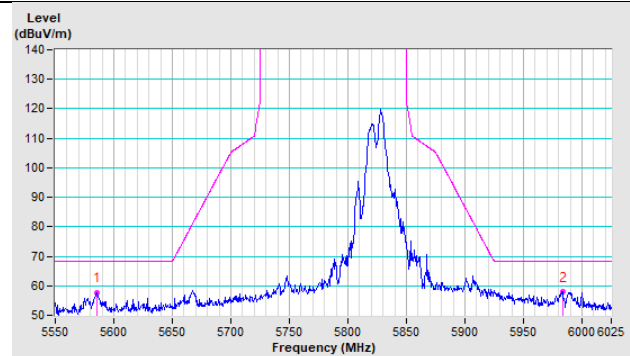


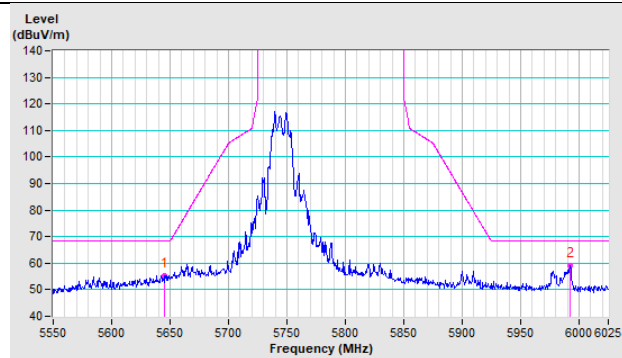
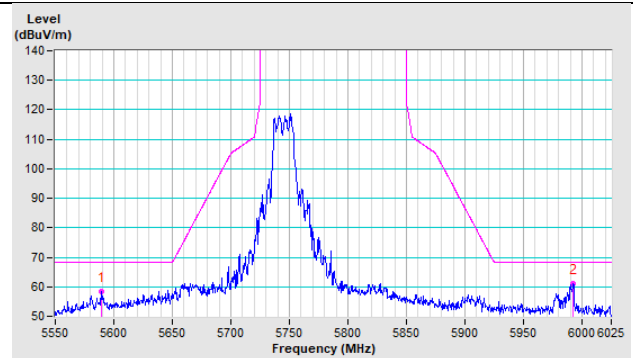
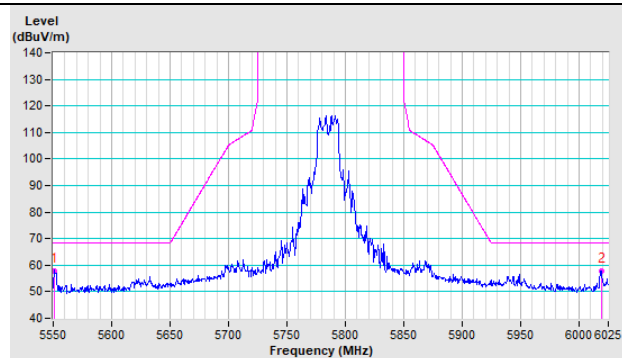
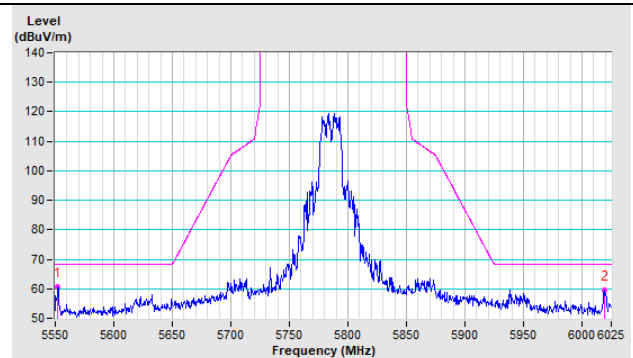
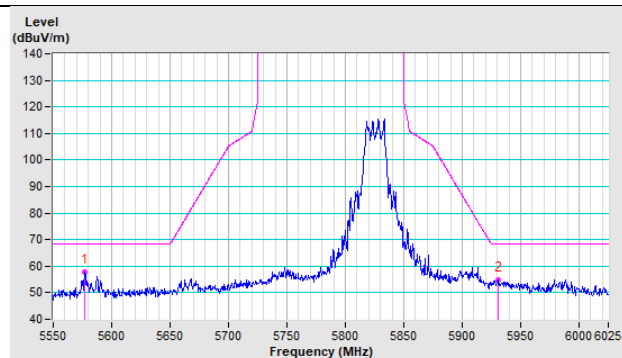
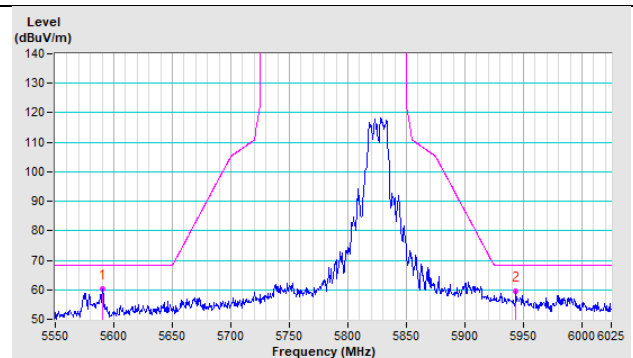
802.11a CH 165 : 5825 MHz

Horizontal



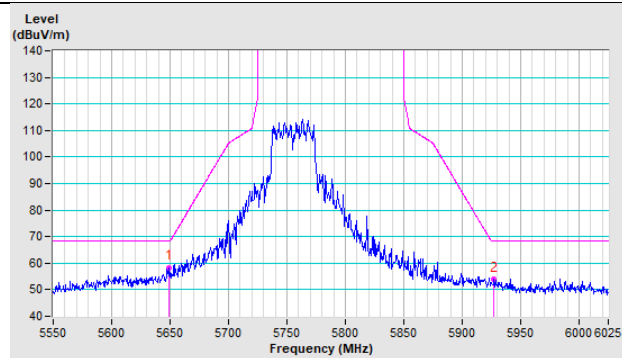
Vertical



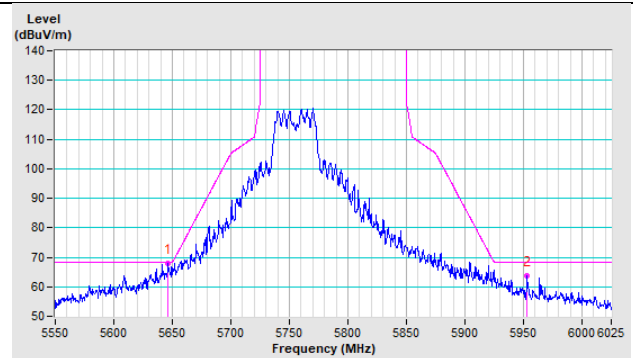
802.11ac (VHT20) CH 149 : 5745 MHz
Horizontal

Vertical

802.11ac (VHT20) CH 157 : 5785 MHz
Horizontal

Vertical

802.11ac (VHT20) CH 165 : 5825 MHz
Horizontal

Vertical


802.11ac (VHT40) CH 151 : 5755 MHz

Horizontal

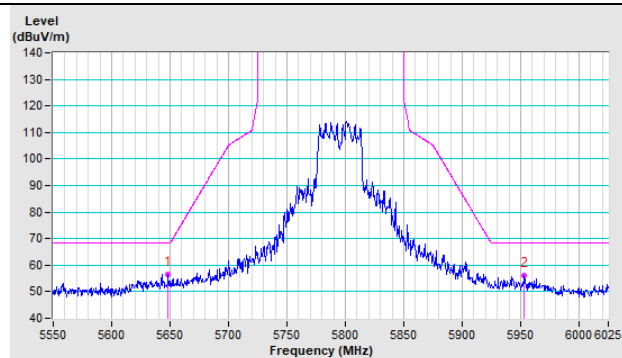


Vertical

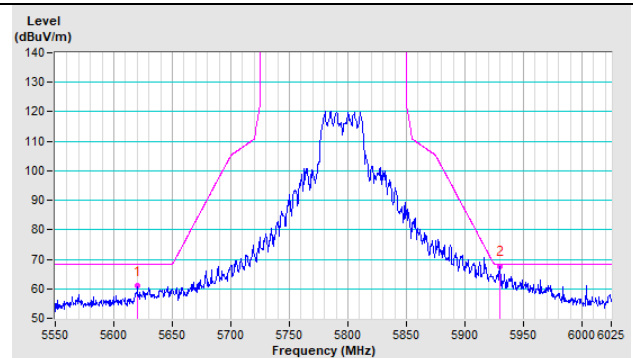


802.11ac (VHT40) CH 159 : 5795 MHz

Horizontal

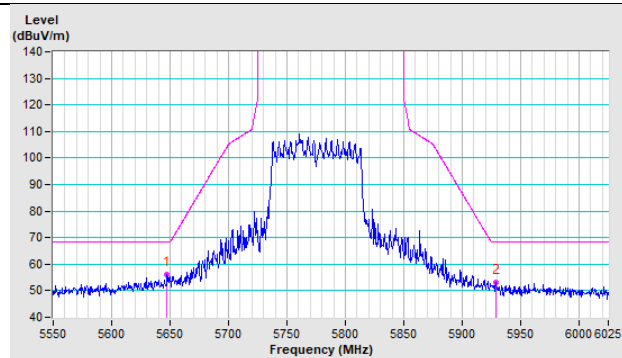


Vertical

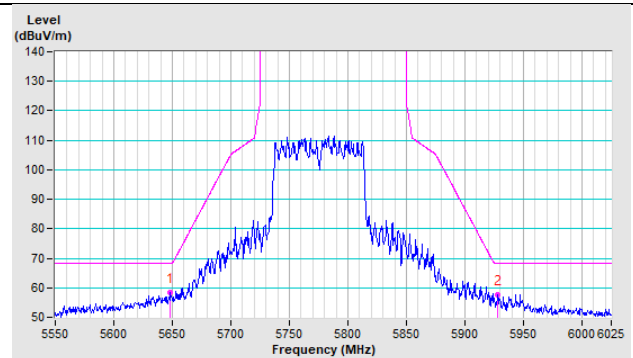


802.11ac (VHT80) CH 155 : 5775 MHz

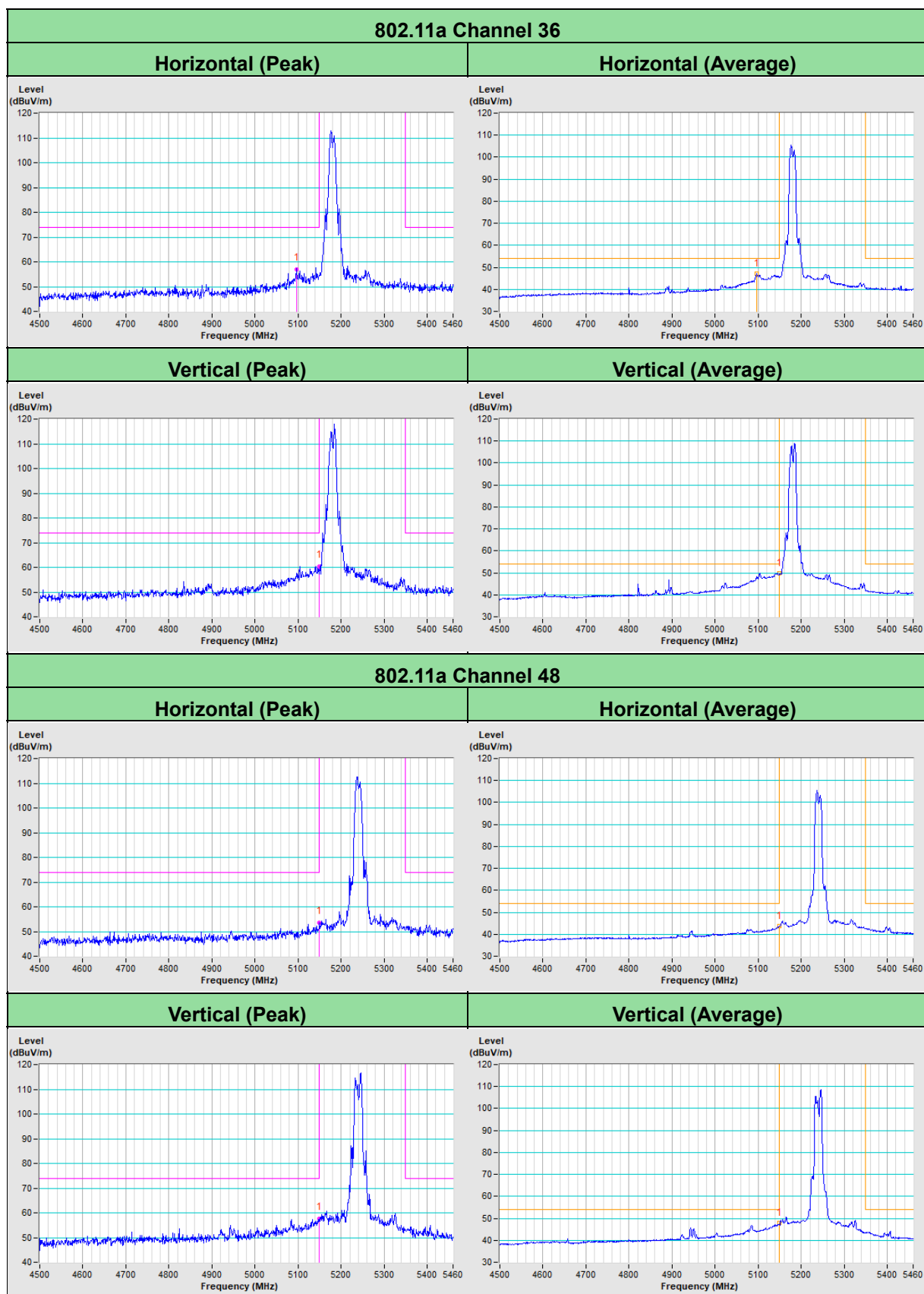
Horizontal

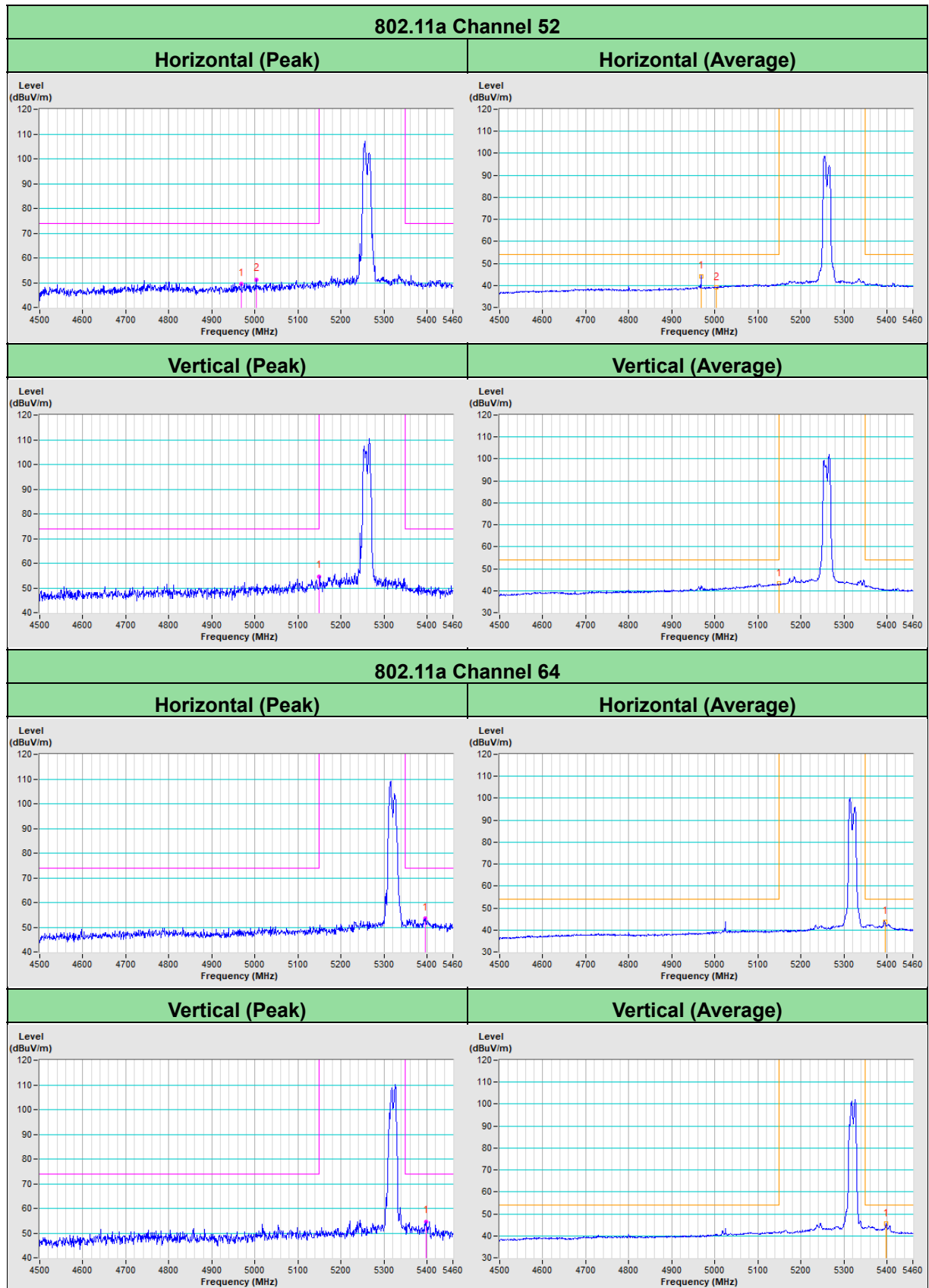


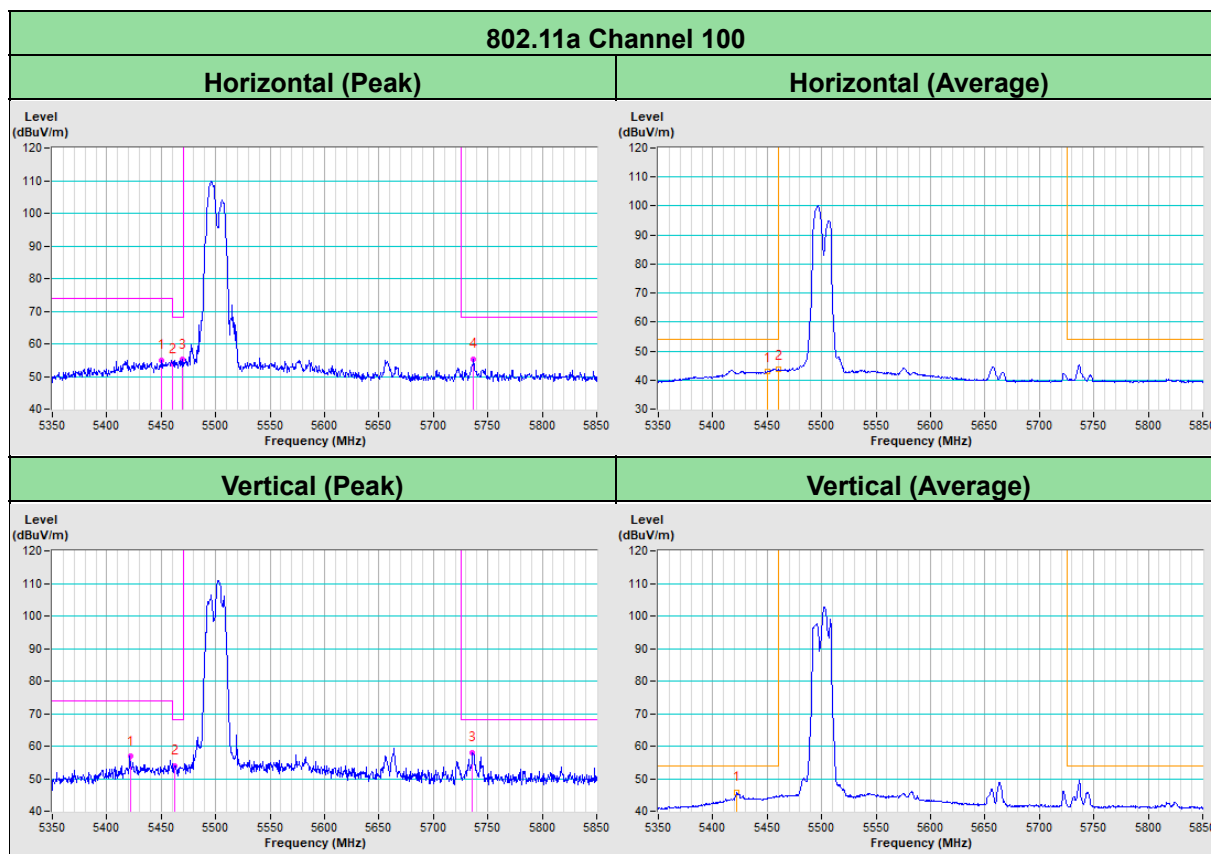
Vertical



Annex B - Band-Edge Measurement (For U-NII-1, U-NII-2A, U-NII-2C band)

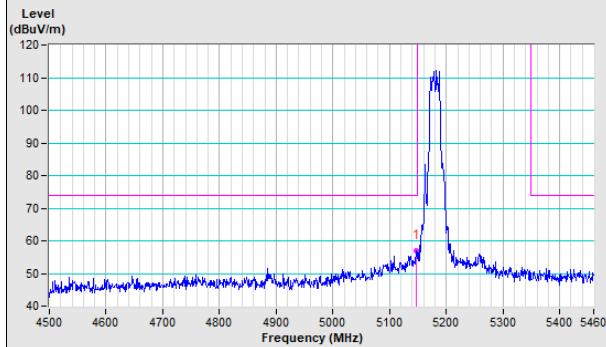




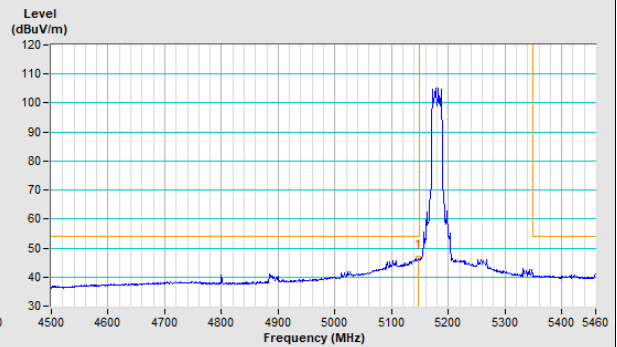


802.11ac (VHT20) Channel 36

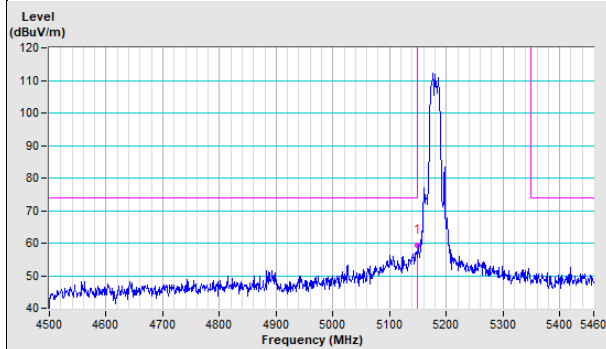
Horizontal (Peak)



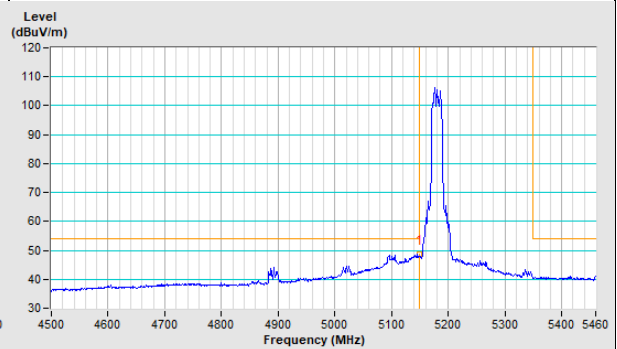
Horizontal (Average)



Vertical (Peak)

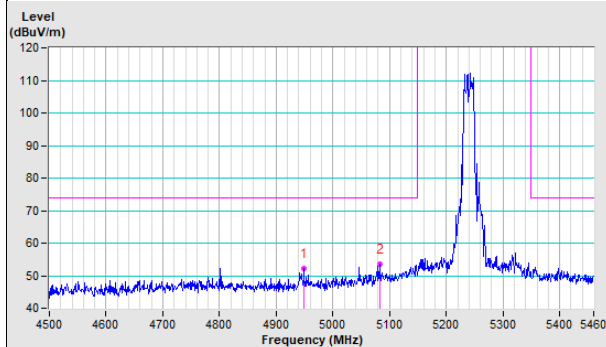


Vertical (Average)

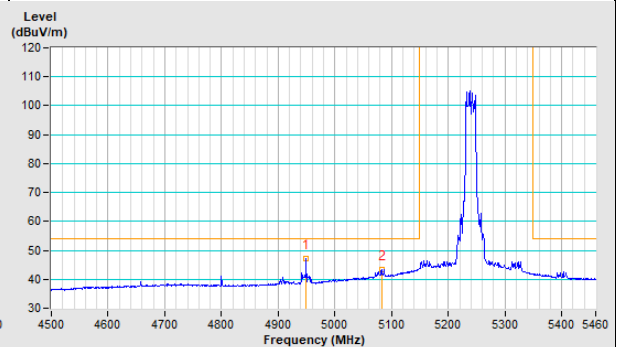


802.11ac (VHT20) Channel 48

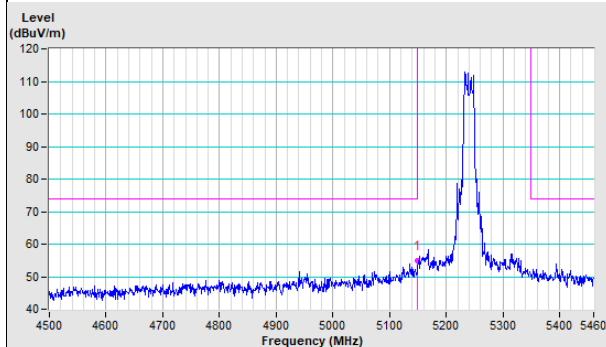
Horizontal (Peak)



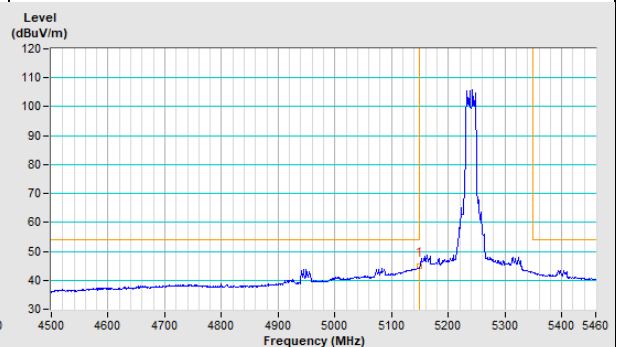
Horizontal (Average)



Vertical (Peak)

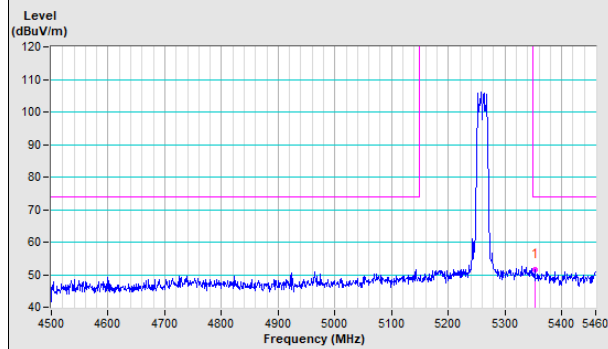


Vertical (Average)

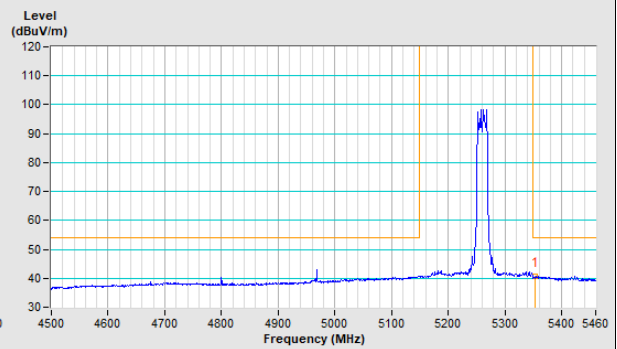


802.11ac (VHT20) Channel 52

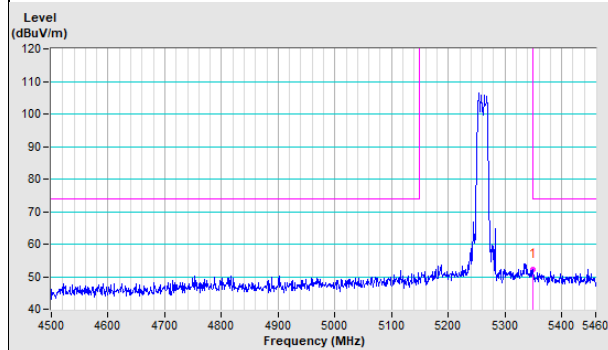
Horizontal (Peak)



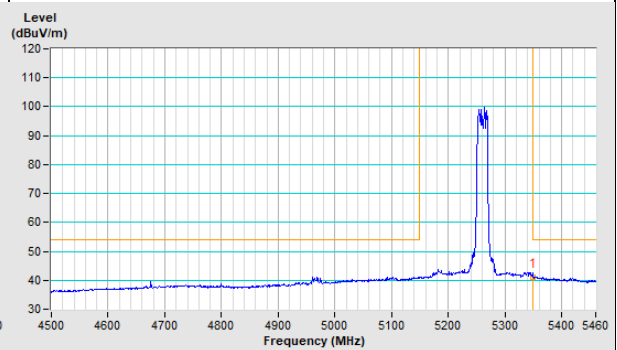
Horizontal (Average)



Vertical (Peak)

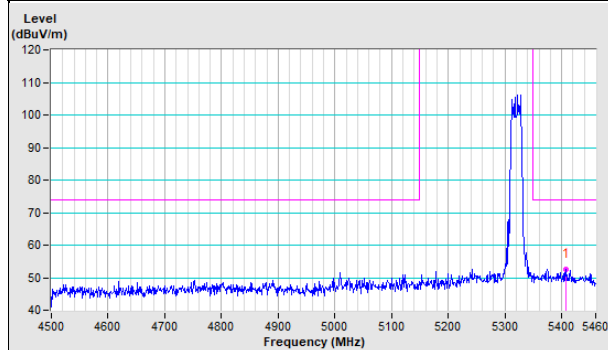


Vertical (Average)

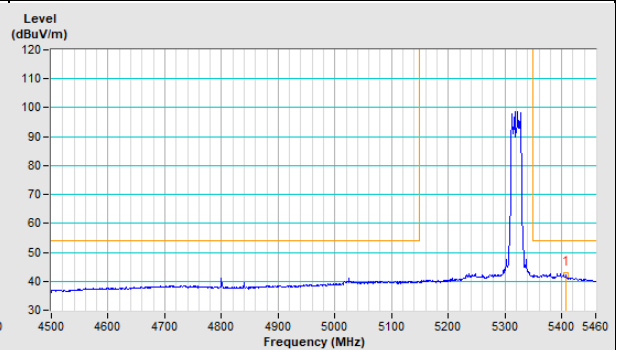


802.11ac (VHT20) Channel 64

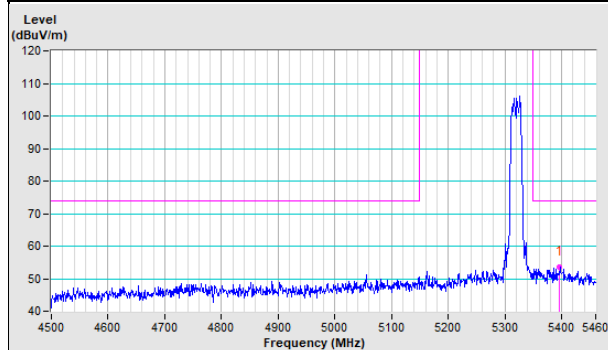
Horizontal (Peak)



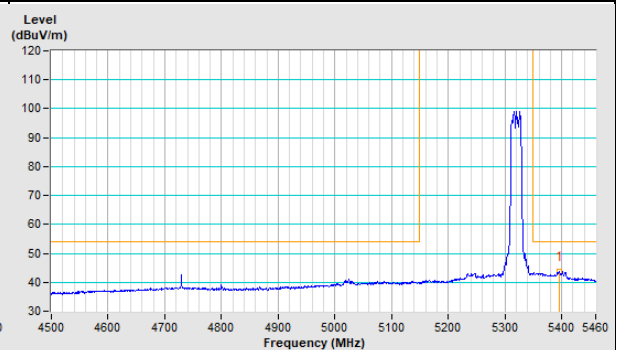
Horizontal (Average)

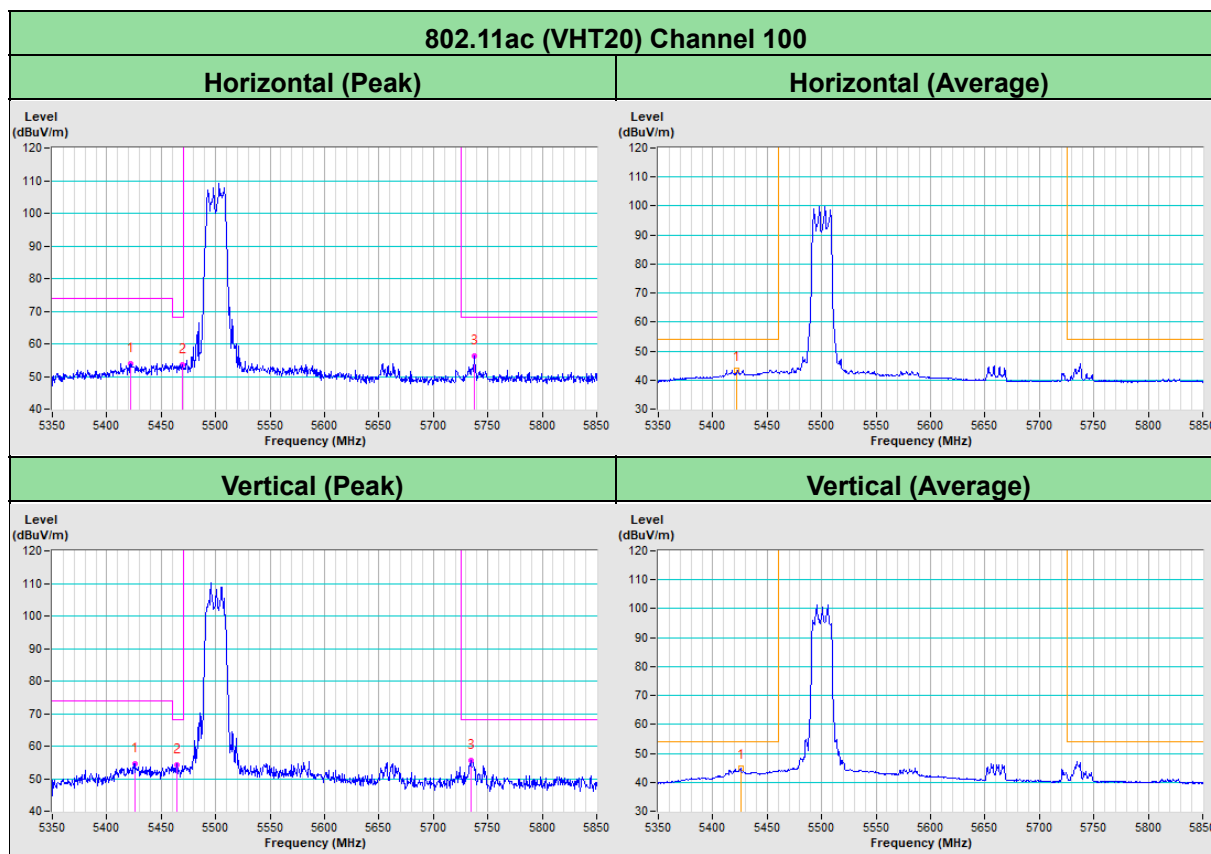


Vertical (Peak)



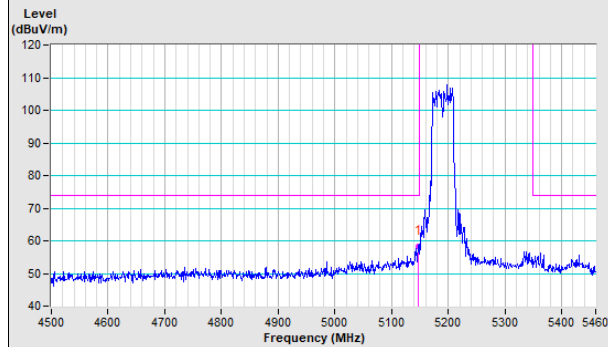
Vertical (Average)



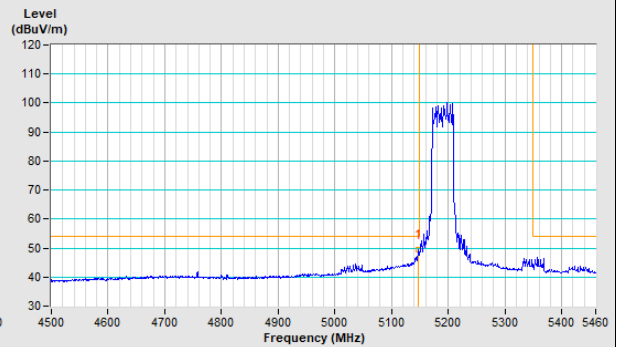


802.11ac (VHT40) Channel 38

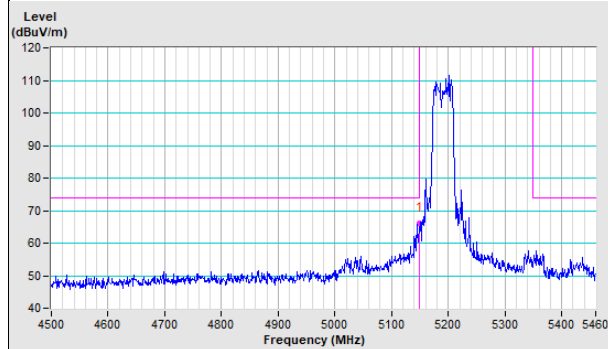
Horizontal (Peak)



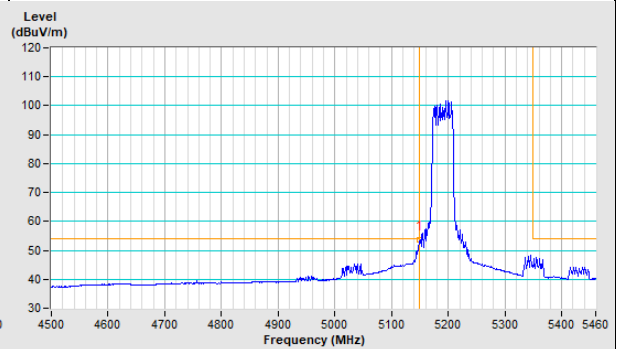
Horizontal (Average)



Vertical (Peak)

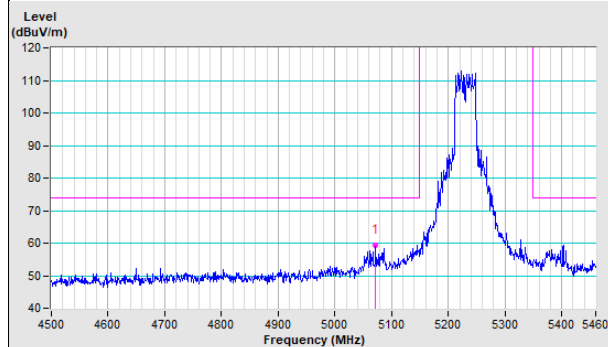


Vertical (Average)

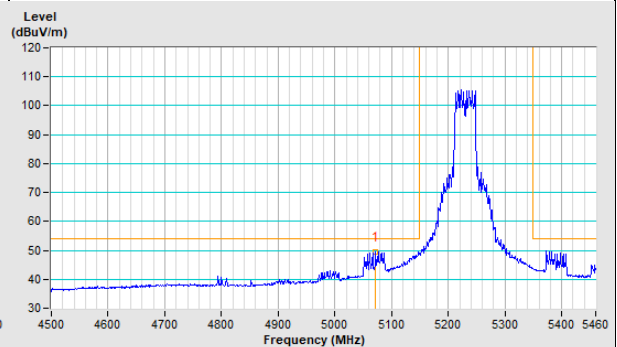


802.11ac (VHT40) Channel 46

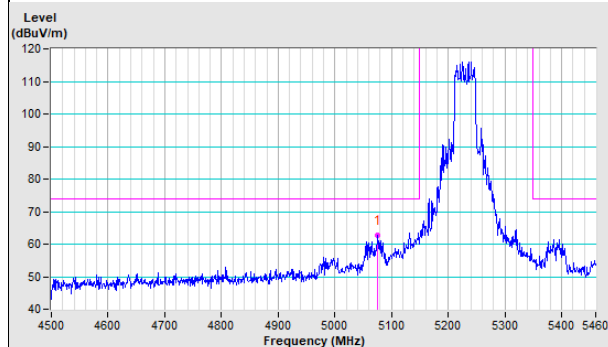
Horizontal (Peak)



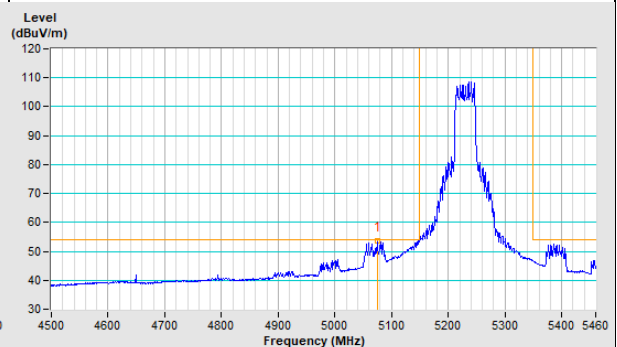
Horizontal (Average)

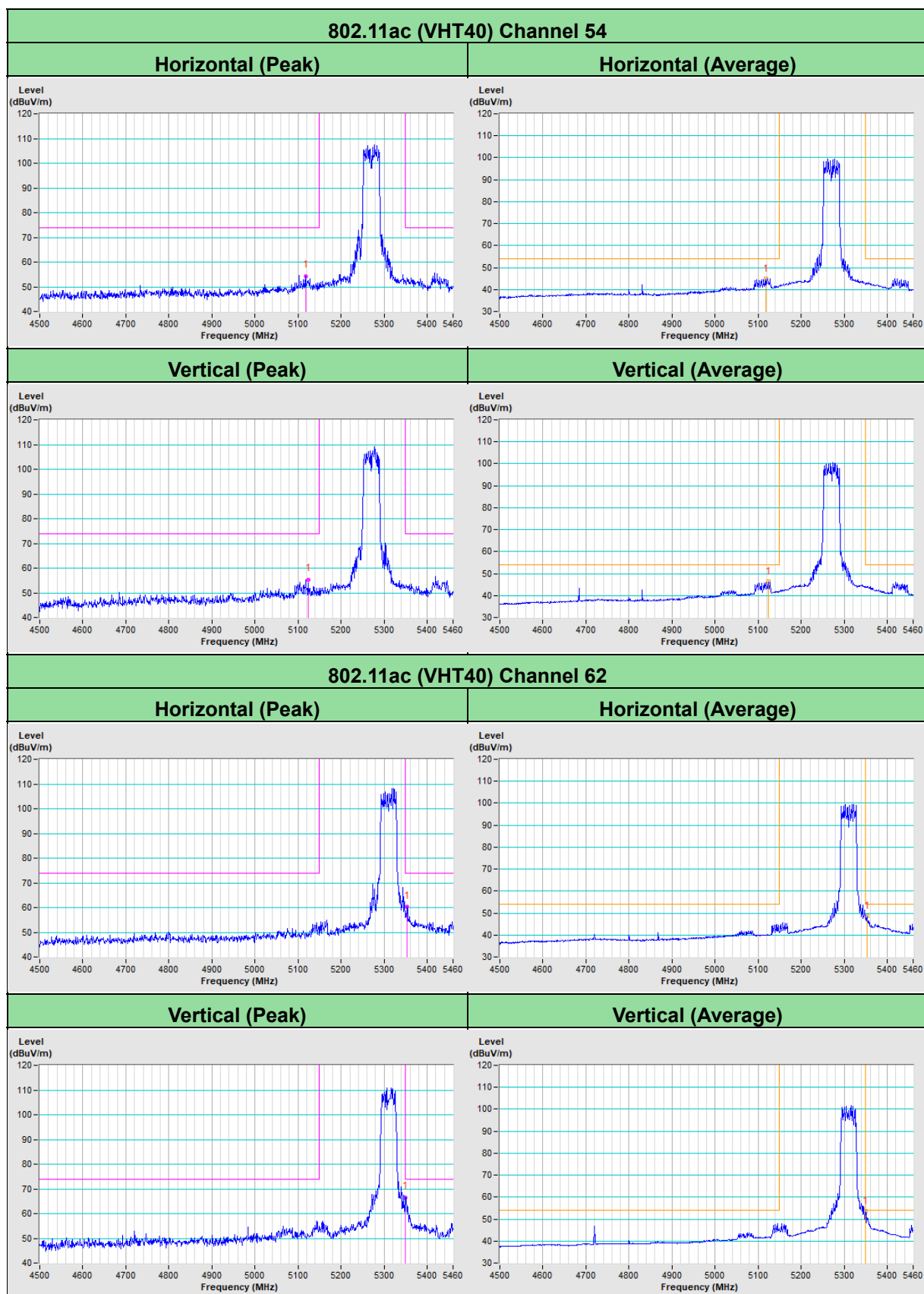


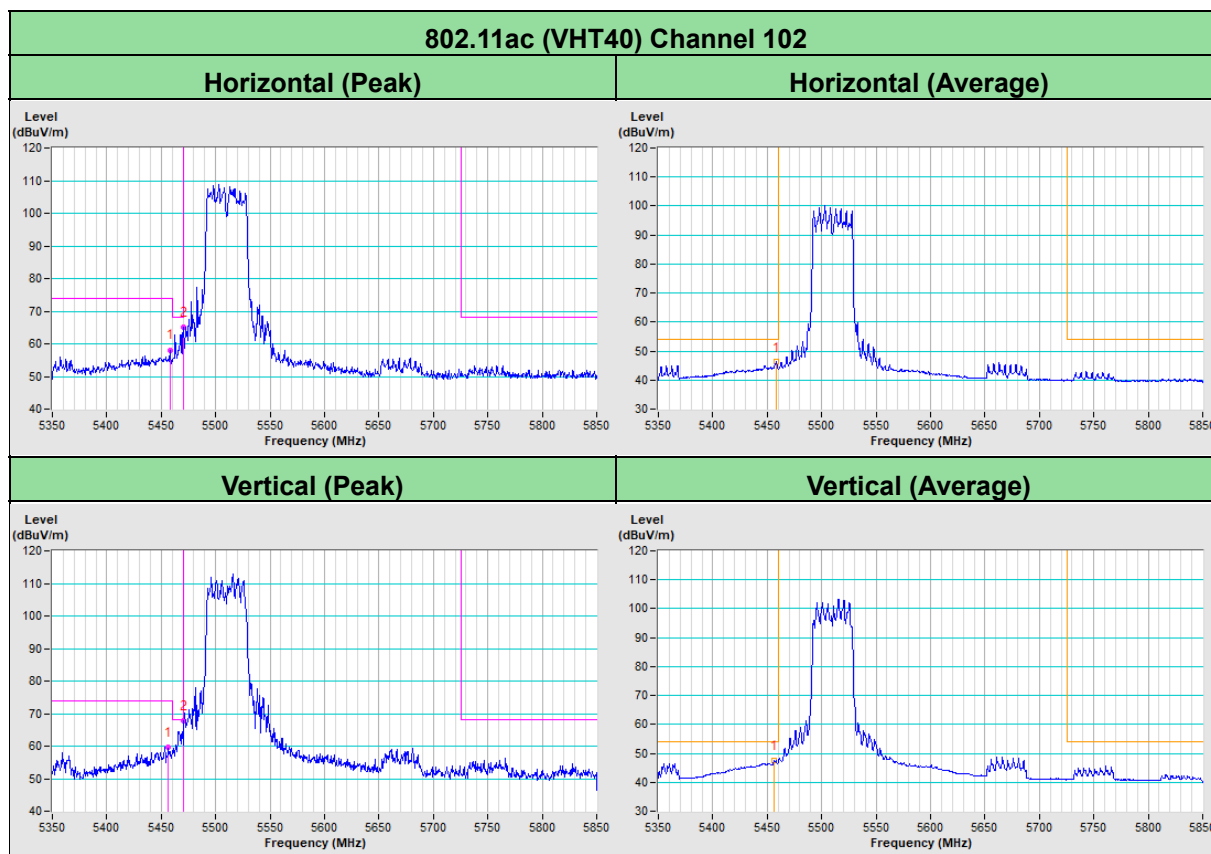
Vertical (Peak)

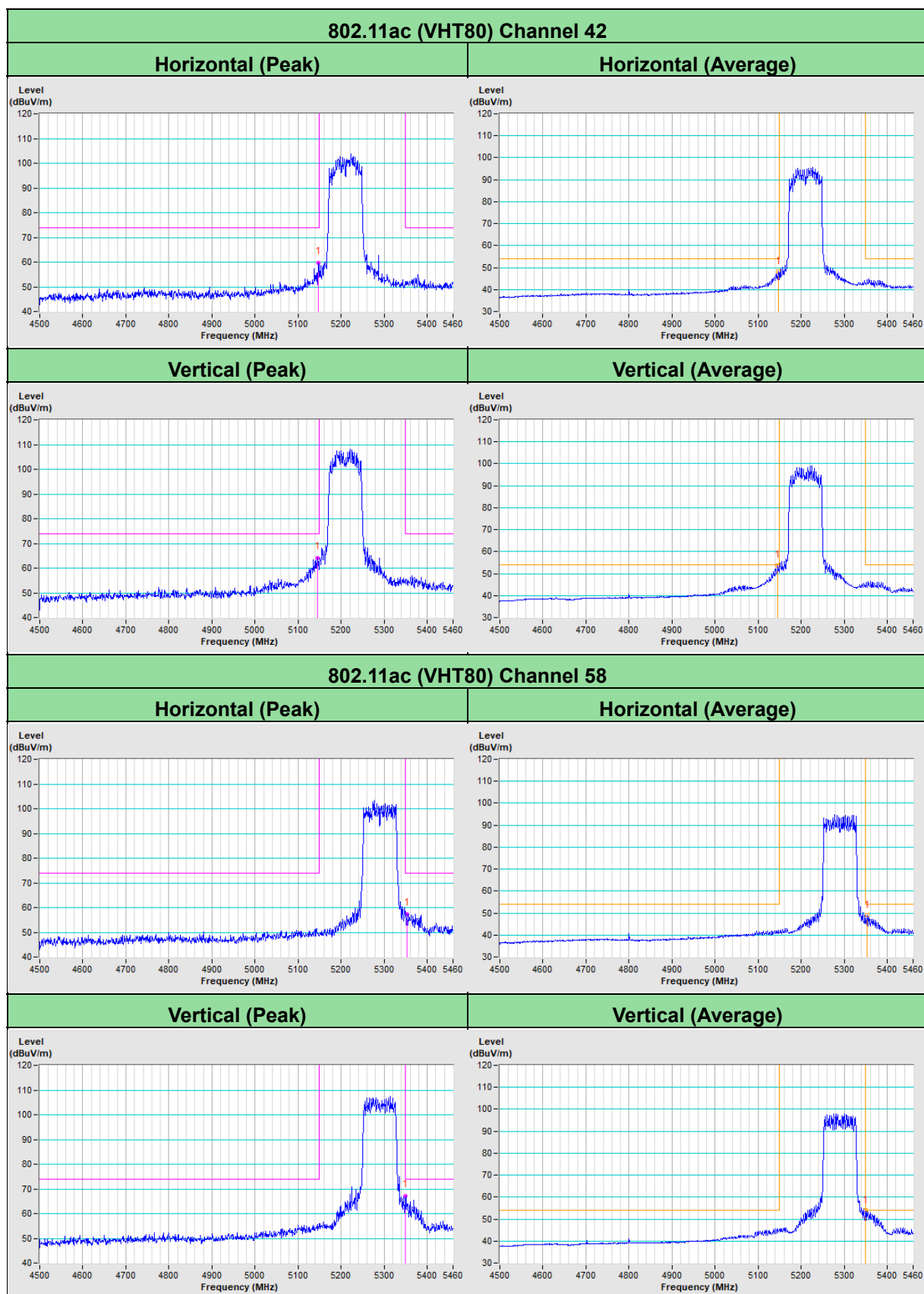


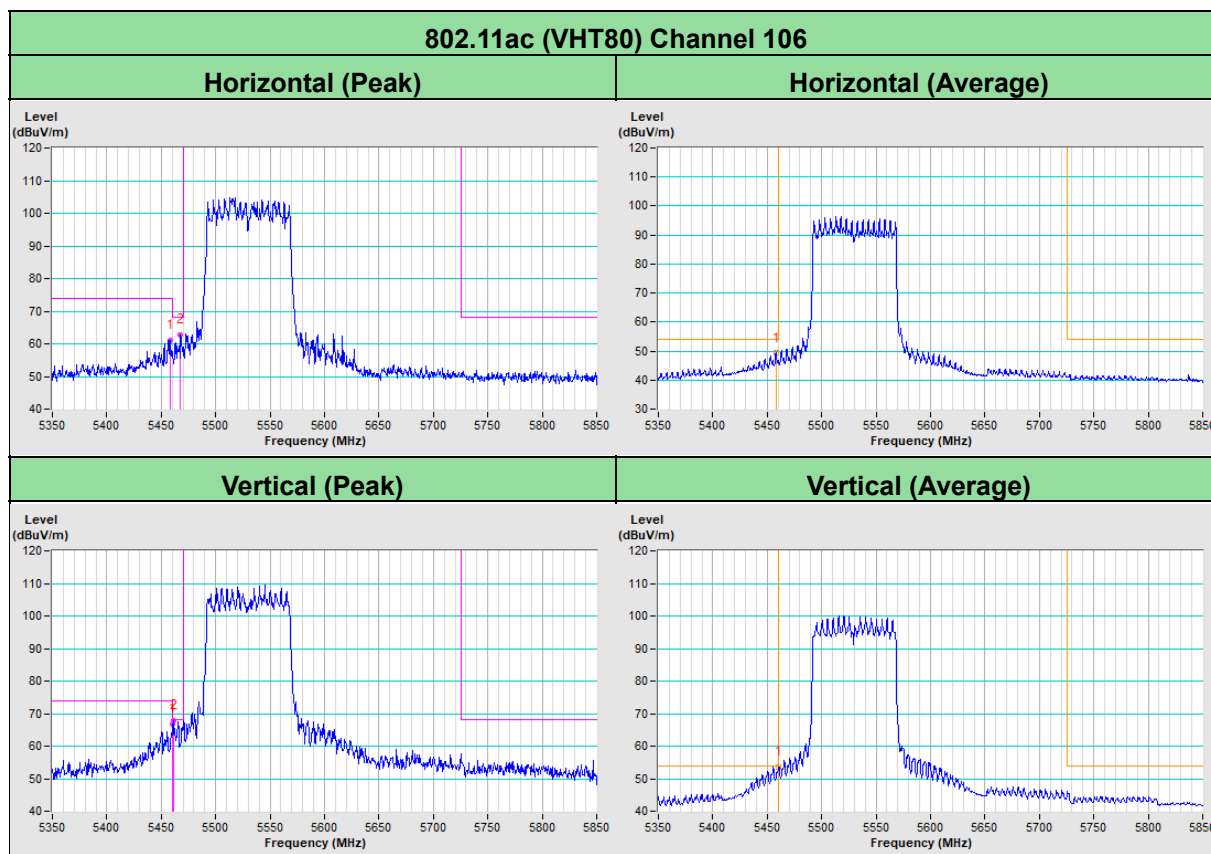
Vertical (Average)











Appendix – Information of 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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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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