

FCC Test Report

Report No.: RFBDYS-WTW-P20110362-1

FCC ID: TVE-3617T01066

Test Model: FAP-234F

Series Model: FortiAP 234Fxxxxxx, FAP-234Fxxxxxx, FORTIAP-234Fxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)

Received Date: Nov. 11, 2020

Test Date: Nov. 17 ~ Dec. 30, 2020

Issued Date: Jan. 27, 2021

Applicant: Fortinet Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
RFBDYS-WTW-P20110362-1	Original release	Jan. 27, 2021

1 Certificate of Conformity

Product: Secured Wireless Access Point

Brand: Fortinet

Test Model: FAP-234F

Series Model: FortiAP 234Fxxxxxx, FAP-234Fxxxxxx, FORTIAP-234Fxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)

Sample Status: Engineering sample

Applicant: Fortinet Inc.

Test Date: Nov. 17 ~ Dec. 30, 2020

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

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

Prepared by : Celine Chou , **Date:** Jan. 27, 2021
Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Jan. 27, 2021
Bruce Chen / Senior Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -3.39dB at 0.48190MHz.
15.407(b)(1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.3dB at 60.93MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is IPEX not a standard connector.

Note:

- 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 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) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.86 dB
	200MHz ~ 1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Secured Wireless Access Point
Brand	Fortinet
Test Model	FAP-234F
Series Model	FortiAP 234Fxxxxxx, FAP-234Fxxxxxx, FORTIAP-234Fxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)
Model Difference	Refer to note
Sample Status	Engineering sample
Power Supply Rating	54Vdc from POE
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDMA
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n (HT20/40): up to MCS7 802.11ac (VHT20/40): up to MCS9 802.11ax: up to MCS11
Operating Frequency	5180 ~ 5240MHz, 5745 ~ 5825MHz
Number of Channel	5G traffic radio (Radio 2): 5180 ~ 5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 4 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 5745 ~ 5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 5 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 Scanning radio (Radio 3): 5180 ~ 5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5745 ~ 5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1

Output Power	5G traffic radio (Radio 2): CDD Mode: 5180 ~ 5240MHz: 106.968mW (Outdoor Access Point) 5180 ~ 5240MHz: 351.823mW (Indoor Access Point) 5745 ~ 5825MHz: 372.044mW Beamforming Mode: 5180 ~ 5240MHz: 53.488mW (Outdoor Access Point) 5180 ~ 5240MHz: 175.924mW (Indoor Access Point) 5745 ~ 5825MHz: 186.035mW Scanning radio (Radio 3): CDD Mode: 5180 ~ 5240MHz: 108.143mW (Outdoor Access Point) 5180 ~ 5240MHz: 108.143mW (Indoor Access Point) 5745 ~ 5825MHz: 102.802mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	POE
Cable Supplied	NA

Note:

1. The following models are provided to this EUT. The model FAP-234F was chosen for final test.

Brand	Model	Description
Fortinet	FAP-234F	Series model for marketing purpose
	FortiAP 234Fxxxxxx, FAP-234Fxxxxxx, FORTIAP-234Fxxxxxx (Where "x" can be used as "A-Z", or "0-9", or "-", or blank for software changes or marketing purposes only)	

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

Radio	Modulation Mode	Beamforming Mode	TX Function
5G traffic radio (Radio 2)	802.11a	Not Support	2TX
	802.11n (HT20)	Not Support	2TX
	802.11n (HT40)	Not Support	2TX
	802.11ac (VHT20)	Support	2TX
	802.11ac (VHT40)	Support	2TX
	802.11ac (VHT80)	Support	2TX
	802.11ax (HE20)	Support	2TX
	802.11ax (HE40)	Support	2TX
	802.11ax (HE80)	Support	2TX
Scanning radio (Radio 3)	802.11a	Not Support	1TX
	802.11n (HT20)	Not Support	1TX
	802.11n (HT40)	Not Support	1TX
	802.11ac (VHT20)	Not Support	1TX
	802.11ac (VHT40)	Not Support	1TX
	802.11ac (VHT80)	Not Support	1TX

* The bandwidth and modulation are similar for HT20/HT40 on 802.11n mode and VHT20/VHT40/VHT80 on 802.11ac mode and HE20/HE40/HE80 on 802.11ax mode. Therefore the investigated worst case is the representative mode in test report. (Final test mode refer section 3.2.1)

* For 802.11n, CDD mode and Beamforming mode are presented in power output test item. For other test items, CDD mode is the worst case for final tests after pretesting.

3. The EUT consumes power from the following POEs.

POE 1	
Brand	SENAO
Model	EPA5006GPR
Input Power	100-240Vac, 50-60Hz, 0.8A
Output Power	54Vdc, 0.6A

POE 2 (Optional)	
Brand	SENAO
Model	EPA5006GP
Input Power	100-240Vac, 50-60Hz, 0.8A
Output Power	54Vdc, 0.6A

4. The following antennas were provided to the EUT.

No.	Type	Connector	Gain (dBi)						Remark
			2400MHz	2450MHz	2500MHz	5150MHz	5500MHz	5850MHz	
1	Patch Array	IPEX	9.47	10.20	10.16	-	-	-	2G traffic radio (Radio 1)
2	Patch Array	IPEX	9.24	10.25	9.73	-	-	-	
3	Patch Array	IPEX	-	-	-	9.75	9.94	10.02	5G traffic radio (Radio 2)
4	Patch Array	IPEX	-	-	-	9.81	10.17	10.02	
5	Dipole	IPEX	4.25	4.99	4.15	-	-	-	BT LE / Zigbee
6	Dipole	IPEX	3.38	3.38	3.84	4.92	4.54	4.80	Scanning radio (Radio 3)

* 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.

5. The EUT will install at outdoor area, the highest antenna gain from the horizon above 30 degrees as below, for more detail information please refer to antenna specification and user manual.

Antenna No.	Antenna gain	Antenna install degree
3, 4	0.63 dBi	
6	0.48 dBi	

* Due to device Will restricted installation position as above photo, thus consider to above 30 degrees highest antenna gain are chosen from XY and XZ Plane (antenna specification of 30~150 dug)

* 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.

6. The simultaneous operation mode was determined by client.

No	Mode
1	2G traffic radio (Radio 1) + 5GHz traffic radio (Radio 2) + 5G Scanning radio (Radio 3) + BLE
2	2G traffic radio (Radio 1) + 5GHz traffic radio (Radio 2) + 5G Scanning radio (Radio 3) + Zigbee
3	5GHz traffic radio (Radio 2) + 2G Scanning radio (Radio 3) + BLE
4	5GHz traffic radio (Radio 2) + 2G Scanning radio (Radio 3) + Zigbee

* 5GHz traffic radio (Radio 2) and 5G Scanning radio (Radio 3) cannot transmit in the same band at same time. 2G traffic radio (Radio 1) and 2G Scanning radio (Radio 3) cannot transmit at same time.

* Zigbee and BT technologies cannot transmit at same time.

* Spurious emission of the simultaneous operation has been evaluated and no non-compliance was found.

3.2 Description of Test Modes

For 5180 ~ 5240MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
42	5210MHz

For 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

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

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

Where RE $\geq$ 1G: Radiated Emission above 1GHz & Bandedge Measurement

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
2. Radiated emission test (below 1GHz) and power line conducted emission test items chosen the worst maximum power.

Radiated Emission Test (Above 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	Radio 1
	802.11ax (HE20)		36 to 48	36, 40, 48	OFDMA	MCS0	
	802.11ax (HE40)		38 to 46	38, 46	OFDMA	MCS0	
	802.11ax (HE80)		42	42	OFDMA	MCS0	
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	
	802.11ax (HE20)		149 to 165	149, 157, 165	OFDMA	MCS0	
	802.11ax (HE40)		151 to 159	151, 159	OFDMA	MCS0	
	802.11ax (HE80)		155	155	OFDMA	MCS0	
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	Radio 3
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	6.5	
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	13.5	
	802.11ac (VHT80)		42	42	OFDM	29.3	
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	6.5	
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	13.5	
	802.11ac (VHT80)		155	155	OFDM	29.3	

Radiated Emission Test (Below 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11ax (HE40)	5180-5240	38 to 46	159	OFDMA	MCS0	Radio 1
-	802.11ax (HE40)	5745-5825	151 to 159		OFDMA	MCS0	
-	802.11ac (VHT20)	5180-5240	36 to 48	48	OFDM	6.5	Radio 3
-	802.11ac (VHT20)	5745-5825	149 to 165		OFDM	6.5	

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11ax (HE40)	5180-5240	38 to 46	159	OFDMA	MCS0	Radio 1
-	802.11ax (HE40)	5745-5825	151 to 159		OFDMA	MCS0	
-	802.11ac (VHT20)	5180-5240	36 to 48	48	OFDM	6.5	Radio 3
-	802.11ac (VHT20)	5745-5825	149 to 165		OFDM	6.5	

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	Radio 1
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5	
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5	
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	6.5	
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	13.5	
	802.11ac (VHT80)		42	42	OFDM	29.3	
	802.11ax (HE20)		36 to 48	36, 40, 48	OFDMA	MCS0	
	802.11ax (HE40)		38 to 46	38, 46	OFDMA	MCS0	
	802.11ax (HE80)		42	42	OFDMA	MCS0	
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5	
	802.11n (HT40)		151 to 159	151, 159	OFDM	13.5	
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	6.5	
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	13.5	
	802.11ac (VHT80)		155	155	OFDM	29.3	
	802.11ax (HE20)		149 to 165	149, 157, 165	OFDMA	MCS0	
	802.11ax (HE40)		151 to 159	151, 159	OFDMA	MCS0	
	802.11ax (HE80)		155	155	OFDMA	MCS0	
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	Radio 3
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5	
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5	
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	6.5	
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	13.5	
	802.11ac (VHT80)		42	42	OFDM	29.3	
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5	
	802.11n (HT40)		151 to 159	151, 159	OFDM	13.5	
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	6.5	
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	13.5	
	802.11ac (VHT80)		155	155	OFDM	29.3	

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	23 deg. C, 67% RH	54Vdc	Adair Peng Titan Hsu
RE<1G	23 deg. C, 67% RH	54Vdc	Titan Hsu
PLC	23 deg. C, 67% RH	54Vdc	Adair Peng
APCM	25 deg. C, 60% RH	54Vdc	Chris Lin

3.3 Duty Cycle of Test Signal

5G traffic radio (Radio 2)

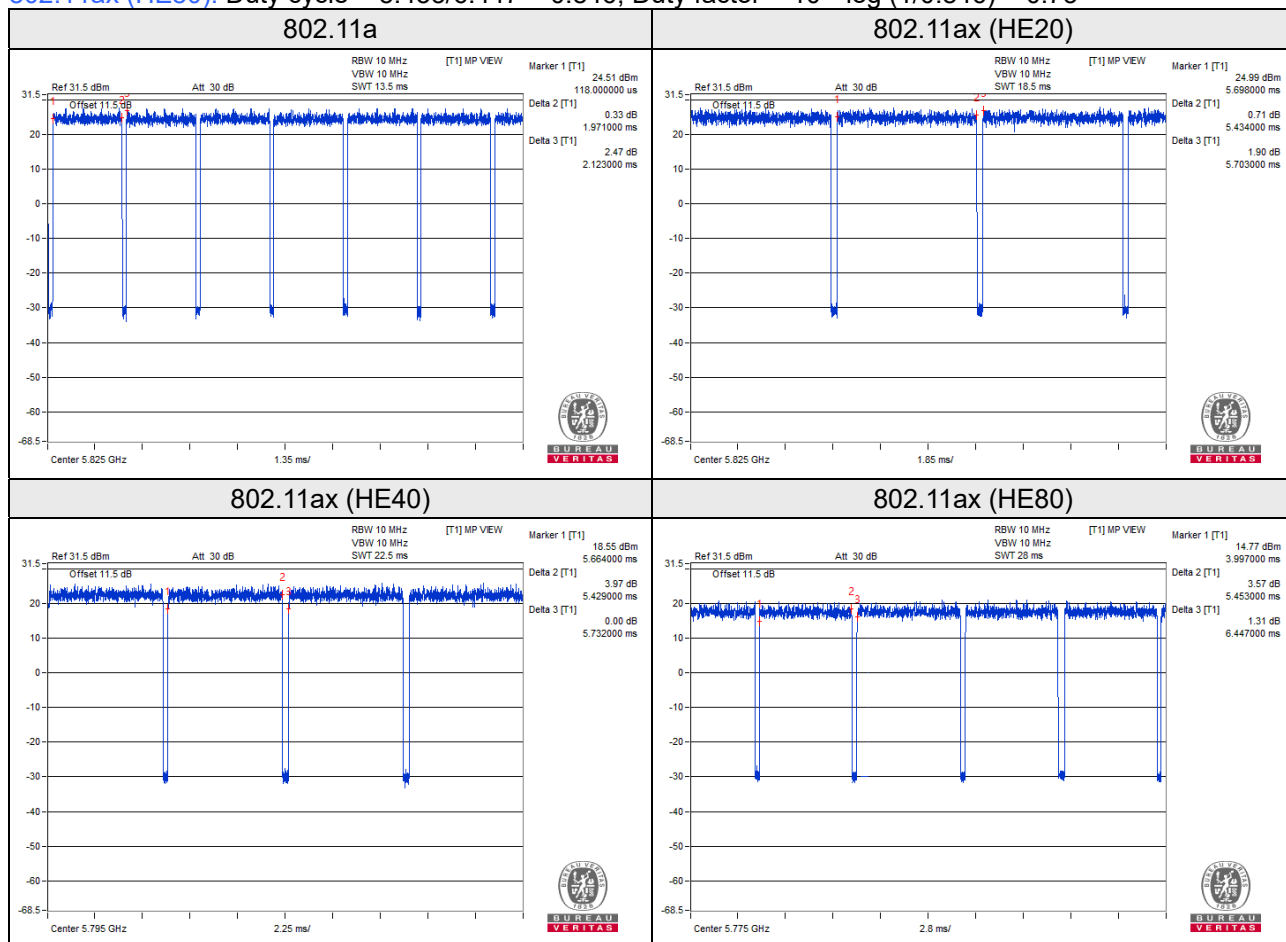
Duty cycle of test signal is < 98%, duty factor is required.

802.11a: Duty cycle = $1.971/2.123 = 0.928$, Duty factor = $10 * \log(1/0.928) = 0.32$

802.11ax (HE20): Duty cycle = $5.434/5.703 = 0.953$, Duty factor = $10 * \log(1/0.953) = 0.21$

802.11ax (HE40): Duty cycle = $5.429/5.732 = 0.947$, Duty factor = $10 * \log(1/0.947) = 0.24$

802.11ax (HE80): Duty cycle = $5.453/6.447 = 0.846$, Duty factor = $10 * \log(1/0.846) = 0.73$



Scanning radio (Radio 3)

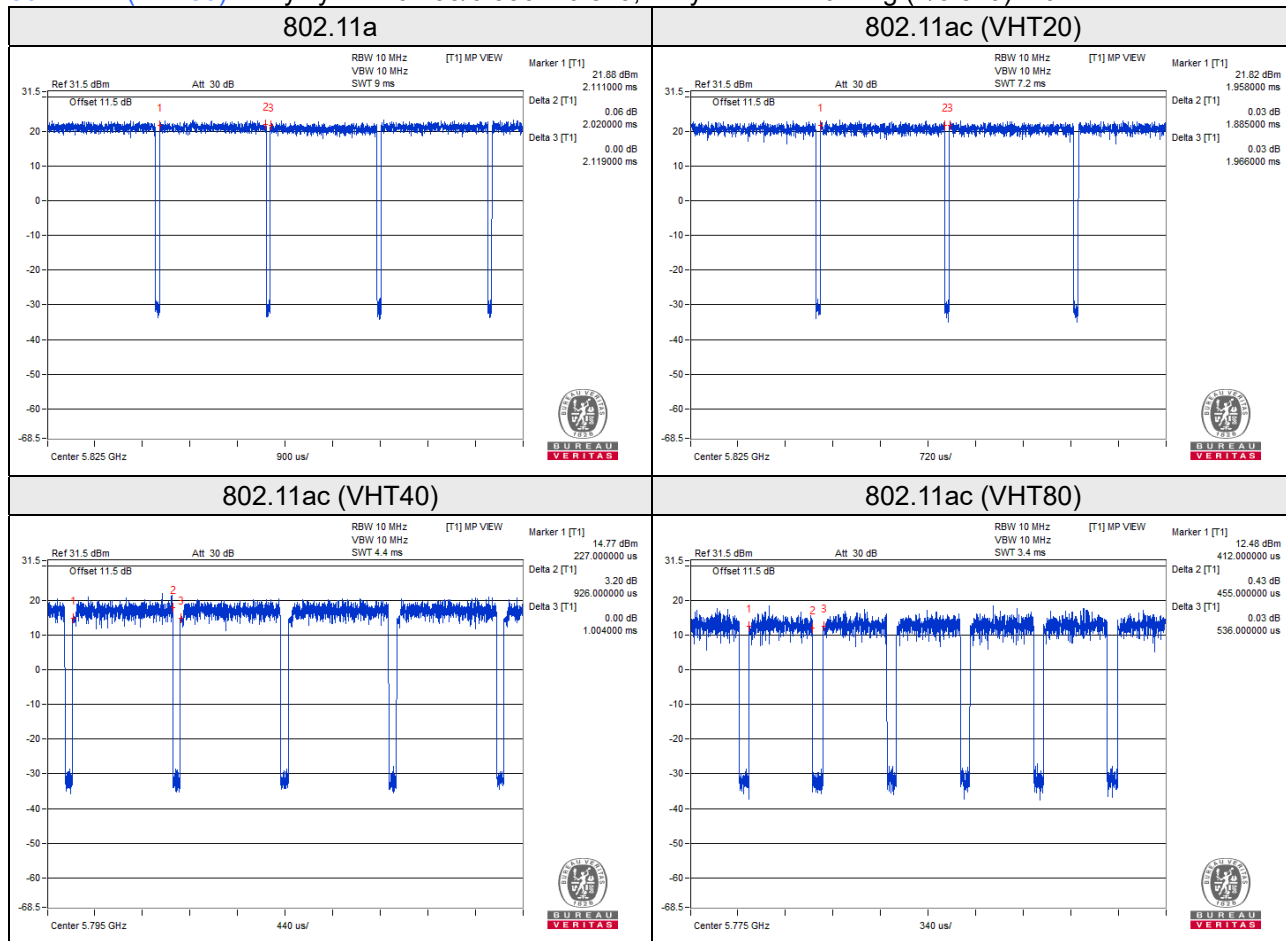
Duty cycle of test signal is < 98%, duty factor is required.

802.11a: Duty cycle = $2.020/2.119 = 0.953$, Duty factor = $10 * \log(1/0.953) = 0.21$

802.11ac (VHT20): Duty cycle = $1.885/1.966 = 0.959$, Duty factor = $10 * \log(1/0.959) = 0.18$

802.11ac (VHT40): Duty cycle = $0.926/1.004 = 0.922$, Duty factor = $10 * \log(1/0.922) = 0.35$

802.11ac (VHT80): Duty cycle = $0.455/0.536 = 0.849$, Duty factor = $10 * \log(1/0.849) = 0.71$



3.4 Description of Support Units

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

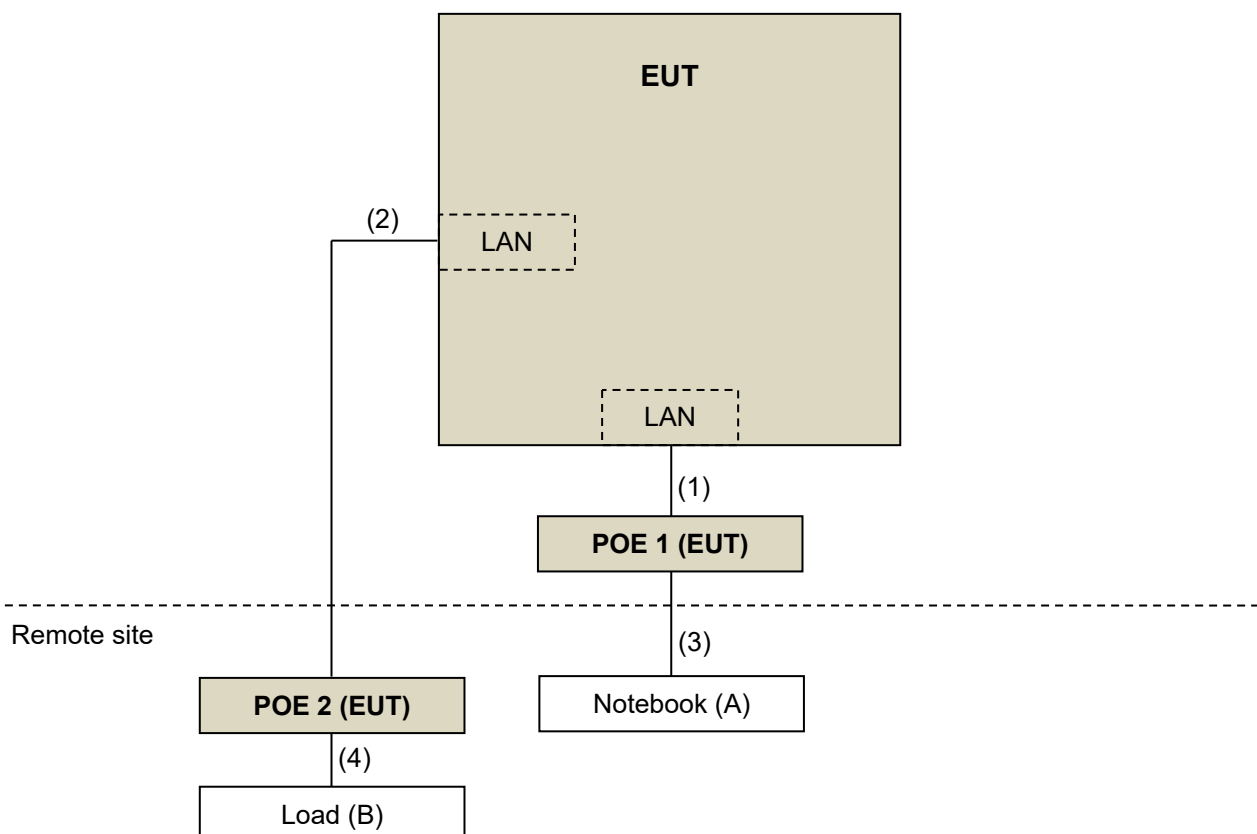
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved	-
B.	Load	NA	NA	NA	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN	1	1.5	N	0	RJ45, Cat5e
2.	LAN	1	1.5	N	0	RJ45, Cat5e
3.	LAN	1	7	N	0	RJ45, Cat5e
4.	LAN	1	1.5	N	0	RJ45, Cat5e

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards 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:

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

Limits of unwanted emission out of the restricted bands

Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v02r01			Field Strength at 3m	
			PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK: -27 (dBm/MHz)	PK: 68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2(dBµV/m) ^{*1} PK: 105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK: 122.2 (dBµV/m) ^{*4}
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
^{*1} beyond 75 MHz or more above of the band edge.			^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.			^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102579	Jul. 07, 2020	Jul. 06, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jun. 09, 2020	Jun. 08, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 04, 2020	Nov. 03, 2021
HORN Antenna SCHWARZBECK	9120D	209	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 06, 2020	Jul. 05, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 16, 2020	Aug. 15, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Mar. 23, 2020	Mar. 22, 2021
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH3-01	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM-S M-8000	Cable-CH3-03 (309224+170907)	Aug. 16, 2020	Aug. 15, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Sep. 04, 2020	Sep. 03, 2021
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY5519 0004/MY55190007/MY 55210005	Jul. 13, 2020	Jul. 12, 2021

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- 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.
- The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

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

For Radiated emission above 30MHz

- 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- 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.
- The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

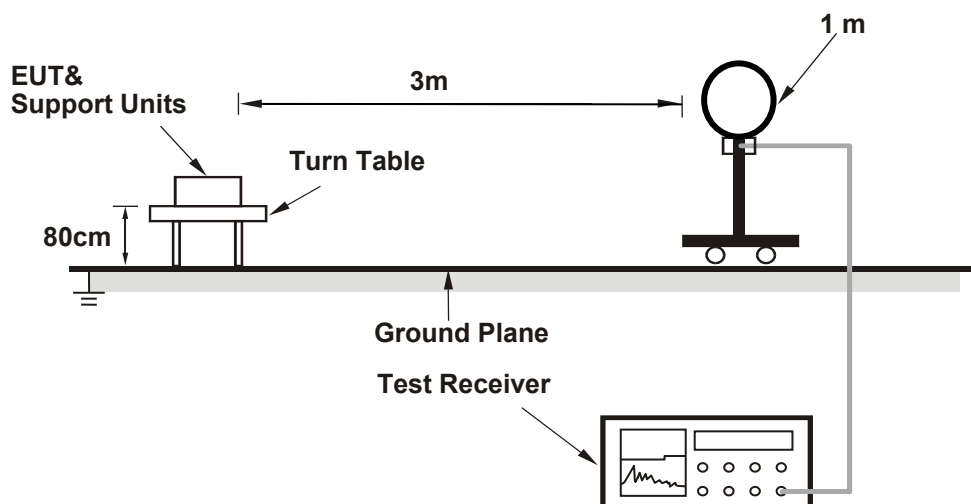
- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- 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.
5G traffic radio (Radio 2)
 (802.11a: RBW = 1MHz, VBW = 1kHz; 802.11ax (HE20): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE40): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE80): RBW = 1MHz, VBW = 1kHz)
Scanning radio (Radio 3)
 (802.11a: RBW = 1MHz, VBW = 1kHz; 802.11ac (VHT20): RBW = 1MHz, VBW = 1kHz; 802.11ac (VHT40): RBW = 1MHz, VBW = 3kHz; 802.11ac (VHT80): RBW = 1MHz, VBW = 3kHz)
- All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

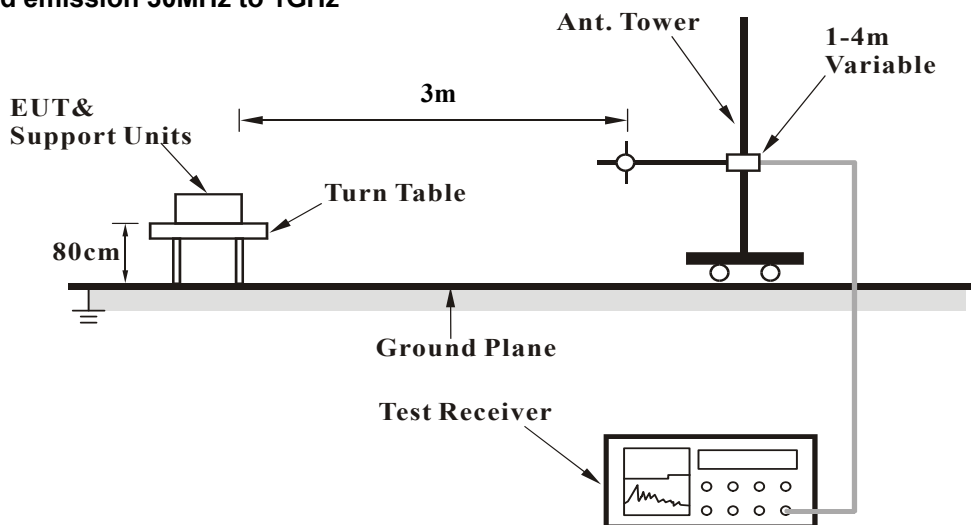
No deviation.

4.1.5 Test Setup

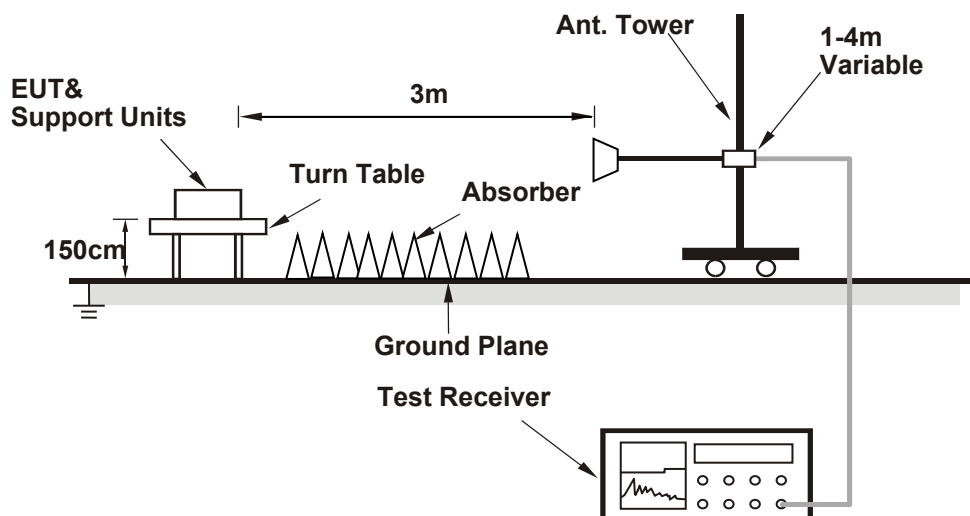
For Radiated emission below 30MHz



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 Conditions

- Placed the EUT on the testing table.
- Prepared a notebook to act as a communication partner and placed it outside of testing area.
- The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The communication partner sent data to EUT by command "PING".

4.1.7 Test Results

Above 1GHz data:

5G traffic radio (Radio 2)

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	5150.00	66.5 PK	74.0	-7.5	1.94 H	344	60.0	6.5
2	5150.00	52.8 AV	54.0	-1.2	1.94 H	344	46.3	6.5
3	*5180.00	124.7 PK			1.83 H	344	82.6	42.1
4	*5180.00	114.3 AV			1.83 H	344	72.2	42.1
5	#10360.00	58.8 PK	68.2	-9.4	2.23 H	50	42.2	16.6
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	65.2 PK	74.0	-8.8	1.91 V	347	58.7	6.5
2	5150.00	50.0 AV	54.0	-4.0	1.91 V	347	43.5	6.5
3	*5180.00	122.8 PK			1.78 V	347	80.7	42.1
4	*5180.00	111.8 AV			1.78 V	347	69.7	42.1
5	#10360.00	59.6 PK	68.2	-8.6	1.62 V	312	43.0	16.6

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 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	127.0 PK			1.91 H	346	84.9	42.1
2	*5200.00	116.7 AV			1.91 H	346	74.6	42.1
3	#10400.00	59.0 PK	68.2	-9.2	2.26 H	58	42.1	16.9
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	*5200.00	123.6 PK			1.65 V	345	81.5	42.1
2	*5200.00	113.7 AV			1.65 V	345	71.6	42.1
3	#10400.00	59.1 PK	68.2	-9.1	1.62 V	314	42.2	16.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	*5240.00	126.0 PK			1.91 H	344	84.1	41.9
2	*5240.00	115.7 AV			1.91 H	344	73.8	41.9
3	5350.00	60.5 PK	74.0	-13.5	1.82 H	329	54.2	6.3
4	5350.00	49.6 AV	54.0	-4.4	1.82 H	329	43.3	6.3
5	#10480.00	60.0 PK	68.2	-8.2	2.35 H	77	42.5	17.5
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	*5240.00	123.5 PK			1.66 V	346	81.6	41.9
2	*5240.00	113.0 AV			1.66 V	346	71.1	41.9
3	5350.00	59.9 PK	74.0	-14.1	1.67 V	329	53.6	6.3
4	5350.00	48.7 AV	54.0	-5.3	1.67 V	329	42.4	6.3
5	#10480.00	59.4 PK	68.2	-8.8	1.55 V	321	41.9	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	#5642.31	59.8 PK	68.2	-8.4	1.70 H	358	53.6	6.2
2	*5745.00	126.2 PK			1.70 H	358	84.2	42.0
3	*5745.00	115.3 AV			1.70 H	358	73.3	42.0
4	#5928.85	59.7 PK	68.2	-8.5	1.70 H	358	52.7	7.0
5	11490.00	61.5 PK	74.0	-12.5	2.26 H	66	43.5	18.0
6	11490.00	47.6 AV	54.0	-6.4	2.26 H	66	29.6	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	#5645.51	58.7 PK	68.2	-9.5	1.75 V	345	52.5	6.2
2	*5745.00	124.3 PK			1.75 V	345	82.3	42.0
3	*5745.00	113.1 AV			1.75 V	345	71.1	42.0
4	#5951.92	58.9 PK	68.2	-9.3	1.75 V	345	51.9	7.0
5	11490.00	62.5 PK	74.0	-11.5	1.76 V	10	44.5	18.0
6	11490.00	48.9 AV	54.0	-5.1	1.76 V	10	30.9	18.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	#5636.54	58.8 PK	68.2	-9.4	1.65 H	356	52.6	6.2
2	*5785.00	126.3 PK			1.65 H	356	84.4	41.9
3	*5785.00	115.0 AV			1.65 H	356	73.1	41.9
4	#5936.54	58.9 PK	68.2	-9.3	1.65 H	356	51.9	7.0
5	11570.00	61.9 PK	74.0	-12.1	2.43 H	54	44.3	17.6
6	11570.00	48.2 AV	54.0	-5.8	2.43 H	54	30.6	17.6
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	#5623.72	58.2 PK	68.2	-10.0	1.74 V	348	52.1	6.1
2	*5785.00	123.4 PK			1.74 V	348	81.5	41.9
3	*5785.00	112.9 AV			1.74 V	348	71.0	41.9
4	#5952.56	59.5 PK	68.2	-8.7	1.74 V	348	52.5	7.0
5	11570.00	60.7 PK	74.0	-13.3	1.77 V	12	43.1	17.6
6	11570.00	47.4 AV	54.0	-6.6	1.77 V	12	29.8	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	#5635.90	60.1 PK	68.2	-8.1	1.79 H	346	53.9	6.2
2	*5825.00	127.0 PK			1.79 H	346	84.8	42.2
3	*5825.00	115.7 AV			1.79 H	346	73.5	42.2
4	#5925.64	62.0 PK	68.2	-6.2	1.79 H	346	55.0	7.0
5	11650.00	62.1 PK	74.0	-11.9	2.47 H	53	44.4	17.7
6	11650.00	48.5 AV	54.0	-5.5	2.47 H	53	30.8	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	#5634.62	59.3 PK	68.2	-8.9	1.73 V	348	53.1	6.2
2	*5825.00	124.5 PK			1.73 V	348	82.3	42.2
3	*5825.00	114.0 AV			1.73 V	348	71.8	42.2
4	#5989.74	59.6 PK	68.2	-8.6	1.73 V	348	52.7	6.9
5	11650.00	61.3 PK	74.0	-12.7	1.47 V	13	43.6	17.7
6	11650.00	47.7 AV	54.0	-6.3	1.47 V	13	30.0	17.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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 802.11ax (HE20)	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	5150.00	66.7 PK	74.0	-7.3	1.83 H	347	60.2	6.5
2	5150.00	52.3 AV	54.0	-1.7	1.83 H	347	45.8	6.5
3	*5180.00	127.9 PK			1.86 H	344	85.8	42.1
4	*5180.00	114.5 AV			1.86 H	344	72.4	42.1
5	#10360.00	59.0 PK	68.2	-9.2	2.52 H	56	42.4	16.6
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	65.2 PK	74.0	-8.8	1.75 V	322	58.7	6.5
2	5150.00	51.4 AV	54.0	-2.6	1.75 V	322	44.9	6.5
3	*5180.00	124.6 PK			1.71 V	345	82.5	42.1
4	*5180.00	110.5 AV			1.71 V	345	68.4	42.1
5	#10360.00	58.4 PK	68.2	-9.8	1.62 V	312	41.8	16.6

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 802.11ax (HE20)	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	129.1 PK			1.70 H	345	87.0	42.1
2	*5200.00	115.7 AV			1.70 H	345	73.6	42.1
3	#10400.00	58.6 PK	68.2	-9.6	2.36 H	43	41.7	16.9
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	*5200.00	126.5 PK			1.76 V	347	84.4	42.1
2	*5200.00	112.8 AV			1.76 V	347	70.7	42.1
3	#10400.00	58.7 PK	68.2	-9.5	1.64 V	296	41.8	16.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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 802.11ax (HE20)	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	*5240.00	128.4 PK			1.91 H	344	86.5	41.9
2	*5240.00	114.5 AV			1.91 H	344	72.6	41.9
3	5350.00	60.3 PK	74.0	-13.7	1.97 H	342	54.0	6.3
4	5350.00	49.9 AV	54.0	-4.1	1.97 H	342	43.6	6.3
5	#10480.00	59.3 PK	68.2	-8.9	2.22 H	34	41.8	17.5
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	*5240.00	125.7 PK			1.66 V	348	83.8	41.9
2	*5240.00	112.0 AV			1.66 V	348	70.1	41.9
3	5350.00	58.9 PK	74.0	-15.1	1.72 V	336	52.6	6.3
4	5350.00	47.7 AV	54.0	-6.3	1.72 V	336	41.4	6.3
5	#10480.00	59.4 PK	68.2	-8.8	1.52 V	303	41.9	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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 802.11ax (HE20)	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	#5642.31	59.7 PK	68.2	-8.5	1.71 H	356	53.5	6.2
2	*5745.00	129.3 PK			1.71 H	356	87.3	42.0
3	*5745.00	114.8 AV			1.71 H	356	72.8	42.0
4	#5961.54	59.6 PK	68.2	-8.6	1.71 H	356	52.6	7.0
5	11490.00	61.3 PK	74.0	-12.7	2.78 H	57	43.3	18.0
6	11490.00	48.5 AV	54.0	-5.5	2.78 H	57	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	#5641.67	59.1 PK	68.2	-9.1	1.59 V	348	52.9	6.2
2	*5745.00	126.3 PK			1.59 V	348	84.3	42.0
3	*5745.00	112.7 AV			1.59 V	348	70.7	42.0
4	#5993.59	59.0 PK	68.2	-9.2	1.59 V	348	52.1	6.9
5	11490.00	61.0 PK	74.0	-13.0	1.62 V	10	43.0	18.0
6	11490.00	47.6 AV	54.0	-6.4	1.62 V	10	29.6	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 802.11ax (HE20)	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	#5600.64	59.3 PK	68.2	-8.9	1.67 H	355	53.2	6.1
2	*5785.00	128.3 PK			1.67 H	355	86.4	41.9
3	*5785.00	114.8 AV			1.67 H	355	72.9	41.9
4	#5928.21	59.5 PK	68.2	-8.7	1.67 H	355	52.5	7.0
5	11570.00	61.6 PK	74.0	-12.4	2.62 H	43	44.0	17.6
6	11570.00	48.1 AV	54.0	-5.9	2.62 H	43	30.5	17.6
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	#5630.77	57.8 PK	68.2	-10.4	1.78 V	347	51.6	6.2
2	*5785.00	127.1 PK			1.78 V	347	85.2	41.9
3	*5785.00	113.1 AV			1.78 V	347	71.2	41.9
4	#5976.28	58.4 PK	68.2	-9.8	1.78 V	347	51.5	6.9
5	11570.00	60.7 PK	74.0	-13.3	1.63 V	10	43.1	17.6
6	11570.00	47.0 AV	54.0	-7.0	1.63 V	10	29.4	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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 802.11ax (HE20)	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	#5625.00	59.2 PK	68.2	-9.0	1.79 H	357	53.1	6.1
2	*5825.00	130.0 PK			1.79 H	357	87.8	42.2
3	*5825.00	115.8 AV			1.79 H	357	73.6	42.2
4	#5926.28	61.4 PK	68.2	-6.8	1.79 H	357	54.4	7.0
5	11650.00	61.8 PK	74.0	-12.2	2.56 H	51	44.1	17.7
6	11650.00	48.1 AV	54.0	-5.9	2.56 H	51	30.4	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	#5635.90	60.2 PK	68.2	-8.0	1.76 V	349	54.0	6.2
2	*5825.00	128.2 PK			1.76 V	349	86.0	42.2
3	*5825.00	113.9 AV			1.76 V	349	71.7	42.2
4	#5966.03	61.1 PK	68.2	-7.1	1.76 V	349	54.1	7.0
5	11650.00	60.8 PK	74.0	-13.2	1.63 V	15	43.1	17.7
6	11650.00	47.8 AV	54.0	-6.2	1.63 V	15	30.1	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 802.11ax (HE40)	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	5150.00	65.7 PK	74.0	-8.3	1.83 H	345	59.2	6.5
2	5150.00	52.4 AV	54.0	-1.6	1.83 H	345	45.9	6.5
3	*5190.00	123.5 PK			1.75 H	342	81.4	42.1
4	*5190.00	109.8 AV			1.75 H	342	67.7	42.1
5	#10380.00	58.5 PK	68.2	-9.7	2.08 H	49	41.7	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	5150.00	61.9 PK	74.0	-12.1	1.81 V	325	55.4	6.5
2	5150.00	49.4 AV	54.0	-4.6	1.81 V	325	42.9	6.5
3	*5190.00	119.8 PK			1.70 V	324	77.7	42.1
4	*5190.00	106.2 AV			1.70 V	324	64.1	42.1
5	#10380.00	58.5 PK	68.2	-9.7	1.64 V	295	41.7	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 802.11ax (HE40)	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	*5230.00	125.5 PK			1.92 H	342	83.6	41.9
2	*5230.00	112.4 AV			1.92 H	342	70.5	41.9
3	5350.00	60.9 PK	74.0	-13.1	1.88 H	343	54.6	6.3
4	5350.00	49.6 AV	54.0	-4.4	1.88 H	343	43.3	6.3
5	#10460.00	59.1 PK	68.2	-9.1	2.18 H	74	41.8	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	*5230.00	123.6 PK			1.67 V	348	81.7	41.9
2	*5230.00	109.7 AV			1.67 V	348	67.8	41.9
3	5350.00	59.8 PK	74.0	-14.2	1.81 V	339	53.5	6.3
4	5350.00	49.2 AV	54.0	-4.8	1.81 V	339	42.9	6.3
5	#10460.00	59.3 PK	68.2	-8.9	1.55 V	311	42.0	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 802.11ax (HE40)	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	#5648.72	60.8 PK	68.2	-7.4	1.69 H	357	54.6	6.2
2	#5650.00	67.1 PK	68.2	-1.1	1.72 H	334	61.0	6.1
3	*5755.00	125.5 PK			1.69 H	357	83.5	42.0
4	*5755.00	111.8 AV			1.69 H	357	69.8	42.0
5	#5946.79	59.1 PK	68.2	-9.1	1.69 H	357	52.1	7.0
6	11510.00	61.5 PK	74.0	-12.5	2.91 H	55	43.6	17.9
7	11510.00	48.5 AV	54.0	-5.5	2.91 H	55	30.6	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	#5647.44	60.6 PK	68.2	-7.6	1.69 V	346	54.4	6.2
2	#5650.00	65.4 PK	68.2	-2.8	1.75 V	339	59.3	6.1
3	*5755.00	123.5 PK			1.69 V	346	81.5	42.0
4	*5755.00	110.4 AV			1.69 V	346	68.4	42.0
5	#5944.23	59.0 PK	68.2	-9.2	1.69 V	346	52.0	7.0
6	11510.00	60.9 PK	74.0	-13.1	1.66 V	15	43.0	17.9
7	11510.00	47.5 AV	54.0	-6.5	1.66 V	15	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 802.11ax (HE40)	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	#5641.03	60.3 PK	68.2	-7.9	1.71 H	353	54.1	6.2
2	*5795.00	127.0 PK			1.71 H	353	85.0	42.0
3	*5795.00	112.9 AV			1.71 H	353	70.9	42.0
4	#5925.00	65.5 PK	68.2	-2.7	1.86 H	353	58.5	7.0
5	#5925.00	60.6 PK	68.2	-7.6	1.71 H	353	53.6	7.0
6	11590.00	60.7 PK	74.0	-13.3	2.69 H	59	43.2	17.5
7	11590.00	47.8 AV	54.0	-6.2	2.69 H	59	30.3	17.5
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	#5618.59	59.9 PK	68.2	-8.3	1.65 V	348	53.8	6.1
2	*5795.00	124.6 PK			1.65 V	348	82.6	42.0
3	*5795.00	111.0 AV			1.65 V	348	69.0	42.0
4	#5925.00	60.4 PK	68.2	-7.8	1.66 V	351	53.4	7.0
5	#5951.92	59.8 PK	68.2	-8.4	1.65 V	348	52.8	7.0
6	11590.00	60.6 PK	74.0	-13.4	1.68 V	10	43.1	17.5
7	11590.00	47.3 AV	54.0	-6.7	1.68 V	10	29.8	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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 802.11ax (HE80)	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	5150.00	66.1 PK	74.0	-7.9	1.84 H	344	59.6	6.5
2	5150.00	53.0 AV	54.0	-1.0	1.84 H	344	46.5	6.5
3	*5210.00	119.3 PK			1.84 H	344	77.3	42.0
4	*5210.00	106.2 AV			1.84 H	344	64.2	42.0
5	5350.00	60.2 PK	74.0	-13.8	1.92 H	346	53.9	6.3
6	5350.00	49.1 AV	54.0	-4.9	1.92 H	346	42.8	6.3
7	#10420.00	58.8 PK	68.2	-9.4	2.19 H	48	41.6	17.2
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	5150.00	64.4 PK	74.0	-9.6	1.79 V	324	57.9	6.5
2	5150.00	51.2 AV	54.0	-2.8	1.79 V	324	44.7	6.5
3	*5210.00	116.1 PK			1.75 V	348	74.1	42.0
4	*5210.00	103.6 AV			1.75 V	348	61.6	42.0
5	5350.00	58.1 PK	74.0	-15.9	1.85 V	338	51.8	6.3
6	5350.00	46.8 AV	54.0	-7.2	1.85 V	338	40.5	6.3
7	#10420.00	59.0 PK	68.2	-9.2	1.56 V	305	41.8	17.2

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 802.11ax (HE80)	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	#5641.03	66.0 PK	68.2	-2.2	1.66 H	354	59.8	6.2
2	#5650.00	66.8 PK	68.2	-1.4	1.71 H	333	60.7	6.1
3	*5775.00	119.5 PK			1.66 H	354	77.5	42.0
4	*5775.00	106.3 AV			1.66 H	354	64.3	42.0
5	#5925.00	65.4 PK	68.2	-2.8	1.63 H	336	58.4	7.0
6	#5930.13	63.3 PK	68.2	-4.9	1.66 H	354	56.3	7.0
7	11550.00	60.9 PK	74.0	-13.1	2.63 H	63	43.1	17.8
8	11550.00	47.8 AV	54.0	-6.2	2.63 H	63	30.0	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	#5644.23	63.2 PK	68.2	-5.0	1.74 V	348	57.0	6.2
2	#5650.00	65.5 PK	68.2	-2.7	1.70 V	343	59.4	6.1
3	*5775.00	118.9 PK			1.74 V	348	76.9	42.0
4	*5775.00	105.5 AV			1.74 V	348	63.5	42.0
5	#5925.00	64.3 PK	68.2	-3.9	1.71 V	340	57.3	7.0
6	#5927.56	62.3 PK	68.2	-5.9	1.74 V	348	55.3	7.0
7	11550.00	60.7 PK	74.0	-13.3	1.70 V	11	42.9	17.8
8	11550.00	47.1 AV	54.0	-6.9	1.70 V	11	29.3	17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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.

Scanning radio (Radio 3)

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	5150.00	58.8 PK	74.0	-15.2	1.40 H	297	52.3	6.5
2	5150.00	46.0 AV	54.0	-8.0	1.40 H	297	39.5	6.5
3	*5180.00	107.3 PK			1.34 H	295	65.2	42.1
4	*5180.00	96.8 AV			1.34 H	295	54.7	42.1
5	5360.00	58.2 PK	74.0	-15.8	1.31 H	282	51.9	6.3
6	5360.00	46.5 AV	54.0	-7.5	1.31 H	282	40.2	6.3
7	#10360.00	59.2 PK	68.2	-9.0	2.21 H	116	42.6	16.6
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	66.0 PK	74.0	-8.0	1.68 V	11	59.5	6.5
2	5150.00	51.2 AV	54.0	-2.8	1.68 V	11	44.7	6.5
3	*5180.00	116.5 PK			1.60 V	2	74.4	42.1
4	*5180.00	106.3 AV			1.60 V	2	64.2	42.1
5	5360.00	62.6 PK	74.0	-11.4	1.69 V	3	56.3	6.3
6	5360.00	52.7 AV	54.0	-1.3	1.69 V	3	46.4	6.3
7	#10360.00	58.6 PK	68.2	-9.6	1.23 V	15	42.0	16.6

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 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	106.7 PK			1.32 H	297	64.6	42.1
2	*5200.00	96.4 AV			1.32 H	297	54.3	42.1
3	5366.00	58.9 PK	74.0	-15.1	1.36 H	289	52.6	6.3
4	5366.00	46.6 AV	54.0	-7.4	1.36 H	289	40.3	6.3
5	#10400.00	59.4 PK	68.2	-8.8	1.96 H	231	42.5	16.9
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	*5200.00	116.5 PK			2.02 V	357	74.4	42.1
2	*5200.00	106.1 AV			2.02 V	357	64.0	42.1
3	5366.00	64.5 PK	74.0	-9.5	1.76 V	1	58.2	6.3
4	5366.00	53.0 AV	54.0	-1.0	1.76 V	1	46.7	6.3
5	#10400.00	59.0 PK	68.2	-9.2	1.31 V	20	42.1	16.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	*5240.00	108.7 PK			1.50 H	296	66.8	41.9
2	*5240.00	98.5 AV			1.50 H	296	56.6	41.9
3	5400.00	58.0 PK	74.0	-16.0	1.44 H	293	51.5	6.5
4	5400.00	45.4 AV	54.0	-8.6	1.44 H	293	38.9	6.5
5	#10480.00	60.2 PK	68.2	-8.0	1.96 H	184	42.7	17.5
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	*5240.00	118.2 PK			1.80 V	2	76.3	41.9
2	*5240.00	108.1 AV			1.80 V	2	66.2	41.9
3	5400.00	63.1 PK	74.0	-10.9	1.72 V	4	56.6	6.5
4	5400.00	51.1 AV	54.0	-2.9	1.72 V	4	44.6	6.5
5	#10480.00	59.7 PK	68.2	-8.5	1.41 V	30	42.2	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	#5619.23	59.4 PK	68.2	-8.8	2.48 H	43	53.3	6.1
2	*5745.00	113.5 PK			2.48 H	43	71.5	42.0
3	*5745.00	102.7 AV			2.48 H	43	60.7	42.0
4	#5983.33	58.0 PK	68.2	-10.2	2.48 H	43	51.1	6.9
5	11490.00	60.3 PK	74.0	-13.7	1.68 H	174	42.3	18.0
6	11490.00	46.1 AV	54.0	-7.9	1.68 H	174	28.1	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	#5635.90	62.5 PK	68.2	-5.7	2.14 V	5	56.3	6.2
2	*5745.00	116.9 PK			2.14 V	5	74.9	42.0
3	*5745.00	106.4 AV			2.14 V	5	64.4	42.0
4	#5991.03	59.3 PK	68.2	-8.9	2.14 V	5	52.4	6.9
5	11490.00	60.0 PK	74.0	-14.0	1.88 V	216	42.0	18.0
6	11490.00	46.5 AV	54.0	-7.5	1.88 V	216	28.5	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	#5626.28	57.7 PK	68.2	-10.5	2.47 H	35	51.6	6.1
2	*5785.00	112.2 PK			2.47 H	35	70.3	41.9
3	*5785.00	101.7 AV			2.47 H	35	59.8	41.9
4	#5958.33	57.5 PK	68.2	-10.7	2.47 H	35	50.5	7.0
5	11570.00	59.6 PK	74.0	-14.4	1.82 H	163	42.0	17.6
6	11570.00	45.4 AV	54.0	-8.6	1.82 H	163	27.8	17.6
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	#5628.21	60.0 PK	68.2	-8.2	2.24 V	5	53.9	6.1
2	*5785.00	118.0 PK			2.24 V	5	76.1	41.9
3	*5785.00	107.1 AV			2.24 V	5	65.2	41.9
4	#5949.36	58.4 PK	68.2	-9.8	2.24 V	5	51.4	7.0
5	11570.00	59.4 PK	74.0	-14.6	2.56 V	155	41.8	17.6
6	11570.00	46.2 AV	54.0	-7.8	2.56 V	155	28.6	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	#5644.87	58.8 PK	68.2	-9.4	2.44 H	33	52.6	6.2
2	*5825.00	110.4 PK			2.44 H	33	68.2	42.2
3	*5825.00	99.8 AV			2.44 H	33	57.6	42.2
4	#5954.49	57.5 PK	68.2	-10.7	2.44 H	33	50.5	7.0
5	11650.00	59.6 PK	74.0	-14.4	1.88 H	191	41.9	17.7
6	11650.00	45.9 AV	54.0	-8.1	1.88 H	191	28.2	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	#5632.69	61.4 PK	68.2	-6.8	2.20 V	6	55.2	6.2
2	*5825.00	117.0 PK			2.20 V	6	74.8	42.2
3	*5825.00	106.6 AV			2.20 V	6	64.4	42.2
4	#5963.46	59.2 PK	68.2	-9.0	2.20 V	6	52.2	7.0
5	11650.00	60.2 PK	74.0	-13.8	1.89 V	188	42.5	17.7
6	11650.00	46.4 AV	54.0	-7.6	1.89 V	188	28.7	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 (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	5150.00	60.3 PK	74.0	-13.7	1.32 H	287	53.8	6.5
2	5150.00	46.5 AV	54.0	-7.5	1.32 H	287	40.0	6.5
3	*5180.00	106.7 PK			1.29 H	297	64.6	42.1
4	*5180.00	96.4 AV			1.29 H	297	54.3	42.1
5	5360.00	58.4 PK	74.0	-15.6	1.26 H	294	52.1	6.3
6	5360.00	45.7 AV	54.0	-8.3	1.26 H	294	39.4	6.3
7	#10360.00	59.2 PK	68.2	-9.0	1.96 H	213	42.6	16.6
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	56.5 PK	74.0	-17.5	1.84 V	359	50.0	6.5
2	5150.00	51.5 AV	54.0	-2.5	1.84 V	359	45.0	6.5
3	*5180.00	116.3 PK			1.59 V	359	74.2	42.1
4	*5180.00	105.9 AV			1.59 V	359	63.8	42.1
5	5360.00	62.6 PK	74.0	-11.4	1.86 V	2	56.3	6.3
6	5360.00	52.5 AV	54.0	-1.5	1.86 V	2	46.2	6.3
7	#10360.00	58.8 PK	68.2	-9.4	1.39 V	23	42.2	16.6

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 (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	106.3 PK			1.24 H	297	64.2	42.1
2	*5200.00	95.8 AV			1.24 H	297	53.7	42.1
3	5360.00	58.9 PK	74.0	-15.1	1.29 H	288	52.6	6.3
4	5360.00	46.7 AV	54.0	-7.3	1.29 H	288	40.4	6.3
5	#10400.00	59.3 PK	68.2	-8.9	1.79 H	232	42.4	16.9
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	*5200.00	115.7 PK			1.69 V	1	73.6	42.1
2	*5200.00	105.5 AV			1.69 V	1	63.4	42.1
3	5360.00	63.3 PK	74.0	-10.7	1.79 V	3	57.0	6.3
4	5360.00	53.0 AV	54.0	-1.0	1.79 V	3	46.7	6.3
5	#10400.00	59.1 PK	68.2	-9.1	1.23 V	23	42.2	16.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	*5240.00	108.4 PK			1.19 H	300	66.5	41.9
2	*5240.00	97.6 AV			1.19 H	300	55.7	41.9
3	5393.00	58.1 PK	74.0	-15.9	1.21 H	292	51.6	6.5
4	5393.00	45.7 AV	54.0	-8.3	1.21 H	292	39.2	6.5
5	#10480.00	60.0 PK	68.2	-8.2	2.03 H	188	42.5	17.5
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	*5240.00	117.8 PK			1.55 V	1	75.9	41.9
2	*5240.00	107.2 AV			1.55 V	1	65.3	41.9
3	5393.00	63.8 PK	74.0	-10.2	1.76 V	3	57.3	6.5
4	5393.00	51.1 AV	54.0	-2.9	1.76 V	3	44.6	6.5
5	#10480.00	59.5 PK	68.2	-8.7	1.37 V	20	42.0	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	#5606.41	59.5 PK	68.2	-8.7	2.51 H	40	53.4	6.1
2	*5745.00	112.7 PK			2.51 H	40	70.7	42.0
3	*5745.00	102.3 AV			2.51 H	40	60.3	42.0
4	#5977.56	57.3 PK	68.2	-10.9	2.51 H	40	50.4	6.9
5	11490.00	59.8 PK	74.0	-14.2	1.83 H	199	41.8	18.0
6	11490.00	45.6 AV	54.0	-8.4	1.83 H	199	27.6	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	#5639.74	60.4 PK	68.2	-7.8	2.16 V	6	54.2	6.2
2	*5745.00	116.7 PK			2.16 V	6	74.7	42.0
3	*5745.00	106.1 AV			2.16 V	6	64.1	42.0
4	#5970.51	59.2 PK	68.2	-9.0	2.16 V	6	52.3	6.9
5	11490.00	60.3 PK	74.0	-13.7	1.62 V	239	42.3	18.0
6	11490.00	46.4 AV	54.0	-7.6	1.62 V	239	28.4	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	#5628.21	58.1 PK	68.2	-10.1	2.48 H	39	52.0	6.1
2	*5785.00	112.1 PK			2.48 H	39	70.2	41.9
3	*5785.00	101.5 AV			2.48 H	39	59.6	41.9
4	#5992.31	57.1 PK	68.2	-11.1	2.48 H	39	50.2	6.9
5	11570.00	59.6 PK	74.0	-14.4	1.73 H	165	42.0	17.6
6	11570.00	45.6 AV	54.0	-8.4	1.73 H	165	28.0	17.6
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	#5617.95	58.9 PK	68.2	-9.3	2.21 V	6	52.8	6.1
2	*5785.00	117.6 PK			2.21 V	6	75.7	41.9
3	*5785.00	106.9 AV			2.21 V	6	65.0	41.9
4	#5939.74	58.2 PK	68.2	-10.0	2.21 V	6	51.2	7.0
5	11570.00	59.7 PK	74.0	-14.3	1.68 V	134	42.1	17.6
6	11570.00	46.3 AV	54.0	-7.7	1.68 V	134	28.7	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	#5645.51	60.0 PK	68.2	-8.2	2.44 H	36	53.8	6.2
2	*5825.00	110.1 PK			2.44 H	36	67.9	42.2
3	*5825.00	99.3 AV			2.44 H	36	57.1	42.2
4	#5987.18	57.1 PK	68.2	-11.1	2.44 H	36	50.2	6.9
5	11650.00	60.0 PK	74.0	-14.0	1.96 H	174	42.3	17.7
6	11650.00	45.4 AV	54.0	-8.6	1.96 H	174	27.7	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	#5636.54	61.9 PK	68.2	-6.3	2.19 V	6	55.7	6.2
2	*5825.00	117.3 PK			2.19 V	6	75.1	42.2
3	*5825.00	106.4 AV			2.19 V	6	64.2	42.2
4	#5939.74	59.8 PK	68.2	-8.4	2.19 V	6	52.8	7.0
5	11650.00	59.9 PK	74.0	-14.1	1.63 V	236	42.2	17.7
6	11650.00	46.0 AV	54.0	-8.0	1.63 V	236	28.3	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 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	5150.00	58.8 PK	74.0	-15.2	1.32 H	292	52.3	6.5
2	5150.00	45.9 AV	54.0	-8.1	1.32 H	292	39.4	6.5
3	*5190.00	102.6 PK			1.46 H	295	60.5	42.1
4	*5190.00	92.1 AV			1.46 H	295	50.0	42.1
5	5360.00	58.8 PK	74.0	-15.2	1.40 H	296	52.5	6.3
6	5360.00	46.7 AV	54.0	-7.3	1.40 H	296	40.4	6.3
7	#10380.00	59.1 PK	68.2	-9.1	2.11 H	167	42.3	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	5150.00	59.5 PK	74.0	-14.5	1.61 V	0	53.0	6.5
2	5150.00	47.0 AV	54.0	-7.0	1.61 V	0	40.5	6.5
3	*5190.00	112.0 PK			1.59 V	1	69.9	42.1
4	*5190.00	101.3 AV			1.59 V	1	59.2	42.1
5	5360.00	62.9 PK	74.0	-11.1	1.82 V	3	56.6	6.3
6	5360.00	52.9 AV	54.0	-1.1	1.82 V	3	46.6	6.3
7	#10380.00	58.8 PK	68.2	-9.4	1.45 V	17	42.0	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 (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	*5230.00	105.3 PK			1.48 H	286	63.4	41.9
2	*5230.00	94.8 AV			1.48 H	286	52.9	41.9
3	5360.00	58.3 PK	74.0	-15.7	1.44 H	288	52.0	6.3
4	5360.00	45.7 AV	54.0	-8.3	1.44 H	288	39.4	6.3
5	#10460.00	59.6 PK	68.2	-8.6	1.89 H	216	42.3	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	*5230.00	114.5 PK			1.53 V	1	72.6	41.9
2	*5230.00	104.1 AV			1.53 V	1	62.2	41.9
3	5360.00	63.6 PK	74.0	-10.4	1.77 V	3	57.3	6.3
4	5360.00	52.5 AV	54.0	-1.5	1.77 V	3	46.2	6.3
5	#10460.00	59.6 PK	68.2	-8.6	1.27 V	36	42.3	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 (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	#5619.23	59.9 PK	68.2	-8.3	2.51 H	38	53.8	6.1
2	*5755.00	109.6 PK			2.51 H	38	67.6	42.0
3	*5755.00	99.2 AV			2.51 H	38	57.2	42.0
4	#5927.56	57.5 PK	68.2	-10.7	2.51 H	38	50.5	7.0
5	11510.00	60.0 PK	74.0	-14.0	1.69 H	217	42.1	17.9
6	11510.00	45.8 AV	54.0	-8.2	1.69 H	217	27.9	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	#5625.64	62.7 PK	68.2	-5.5	1.92 V	4	56.6	6.1
2	*5755.00	112.3 PK			1.92 V	4	70.3	42.0
3	*5755.00	102.0 AV			1.92 V	4	60.0	42.0
4	#5934.62	58.9 PK	68.2	-9.3	1.92 V	4	51.9	7.0
5	11510.00	59.6 PK	74.0	-14.4	1.66 V	198	41.7	17.9
6	11510.00	45.9 AV	54.0	-8.1	1.66 V	198	28.0	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 (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	#5621.79	58.9 PK	68.2	-9.3	2.49 H	37	52.8	6.1
2	*5795.00	108.8 PK			2.49 H	37	66.8	42.0
3	*5795.00	98.4 AV			2.49 H	37	56.4	42.0
4	#5975.64	57.1 PK	68.2	-11.1	2.49 H	37	50.2	6.9
5	11590.00	59.7 PK	74.0	-14.3	1.78 H	149	42.2	17.5
6	11590.00	45.3 AV	54.0	-8.7	1.78 H	149	27.8	17.5
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	#5630.77	61.5 PK	68.2	-6.7	2.15 V	6	55.3	6.2
2	*5795.00	113.6 PK			2.15 V	6	71.6	42.0
3	*5795.00	103.3 AV			2.15 V	6	61.3	42.0
4	#5954.49	59.7 PK	68.2	-8.5	2.15 V	6	52.7	7.0
5	11590.00	59.2 PK	74.0	-14.8	1.77 V	238	41.7	17.5
6	11590.00	45.4 AV	54.0	-8.6	1.77 V	238	27.9	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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	5150.00	59.2 PK	74.0	-14.8	1.39 H	288	52.7	6.5
2	5150.00	47.0 AV	54.0	-7.0	1.39 H	288	40.5	6.5
3	*5210.00	92.7 PK			1.33 H	286	50.7	42.0
4	*5210.00	82.4 AV			1.33 H	286	40.4	42.0
5	5350.00	57.8 PK	74.0	-16.2	1.36 H	287	51.5	6.3
6	5350.00	45.5 AV	54.0	-8.5	1.36 H	287	39.2	6.3
7	#10420.00	59.3 PK	68.2	-8.9	2.18 H	199	42.1	17.2
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	5150.00	66.5 PK	74.0	-7.5	1.47 V	1	60.0	6.5
2	5150.00	53.0 AV	54.0	-1.0	1.47 V	1	46.5	6.5
3	*5210.00	103.6 PK			1.92 V	0	61.6	42.0
4	*5210.00	93.6 AV			1.92 V	0	51.6	42.0
5	5350.00	59.1 PK	74.0	-14.9	1.61 V	357	52.8	6.3
6	5350.00	46.7 AV	54.0	-7.3	1.61 V	357	40.4	6.3
7	#10420.00	58.9 PK	68.2	-9.3	1.47 V	39	41.7	17.2

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 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	#5647.44	60.4 PK	68.2	-7.8	2.47 H	38	54.2	6.2
2	#5650.00	62.9 PK	68.2	-5.3	1.61 H	28	56.8	6.1
3	*5775.00	106.5 PK			2.47 H	38	64.5	42.0
4	*5775.00	95.6 AV			2.47 H	38	53.6	42.0
5	#5925.00	58.3 PK	68.2	-9.9	1.58 H	42	51.3	7.0
6	#5946.15	57.7 PK	68.2	-10.5	2.47 H	38	50.7	7.0
7	11550.00	60.1 PK	74.0	-13.9	2.18 H	220	42.3	17.8
8	11550.00	47.4 AV	54.0	-6.6	2.18 H	220	29.6	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	#5648.08	63.6 PK	68.2	-4.6	2.15 V	6	57.4	6.2
2	#5650.00	66.5 PK	68.2	-1.7	1.93 V	5	60.4	6.1
3	*5775.00	111.1 PK			2.15 V	6	69.1	42.0
4	*5775.00	99.4 AV			2.15 V	6	57.4	42.0
5	#5925.00	64.5 PK	68.2	-3.7	2.25 V	9	57.5	7.0
6	#5951.28	59.7 PK	68.2	-8.5	2.15 V	6	52.7	7.0
7	11550.00	59.5 PK	74.0	-14.5	1.74 V	266	41.7	17.8
8	11550.00	47.7 AV	54.0	-6.3	1.74 V	266	29.9	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.

Below 1GHz Worst-Case Data:

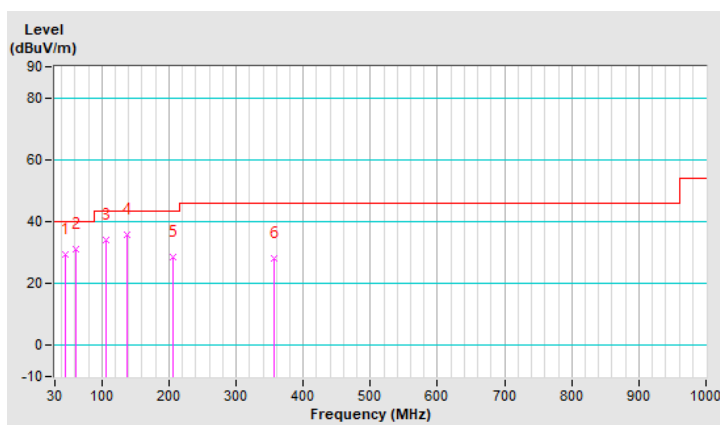
5G traffic radio (Radio 2)

RF Mode	TX 802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	45.46	29.6 QP	40.0	-10.4	1.49 H	126	38.7	-9.1
2	60.93	31.2 QP	40.0	-8.8	1.49 H	149	41.0	-9.8
3	105.91	34.1 QP	43.5	-9.4	1.49 H	286	46.5	-12.4
4	138.25	35.7 QP	43.5	-7.8	1.00 H	105	44.8	-9.1
5	205.72	28.7 QP	43.5	-14.8	1.00 H	67	39.8	-11.1
6	356.14	28.3 QP	46.0	-17.7	1.00 H	277	33.8	-5.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

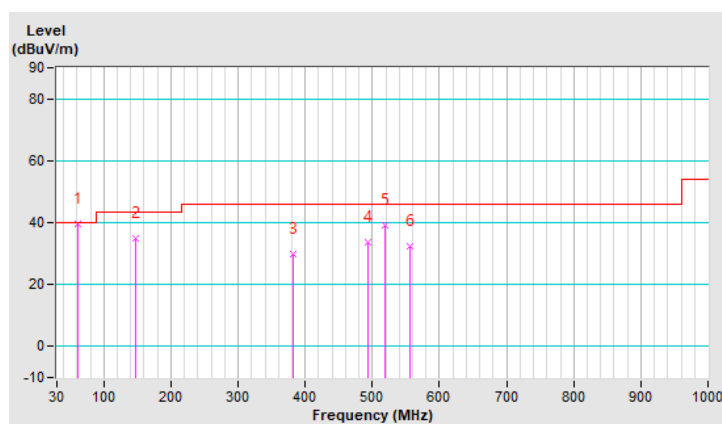


RF Mode	TX 802.11ax (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	60.93	39.7 QP	40.0	-0.3	1.01 V	349	49.5	-9.8
2	148.09	34.9 QP	43.5	-8.6	1.01 V	57	43.6	-8.7
3	381.45	29.8 QP	46.0	-16.2	1.01 V	258	34.8	-5.0
4	493.91	33.5 QP	46.0	-12.5	1.01 V	353	36.0	-2.5
5	519.22	39.1 QP	46.0	-6.9	1.01 V	349	41.0	-1.9
6	555.77	32.5 QP	46.0	-13.5	1.01 V	255	33.6	-1.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



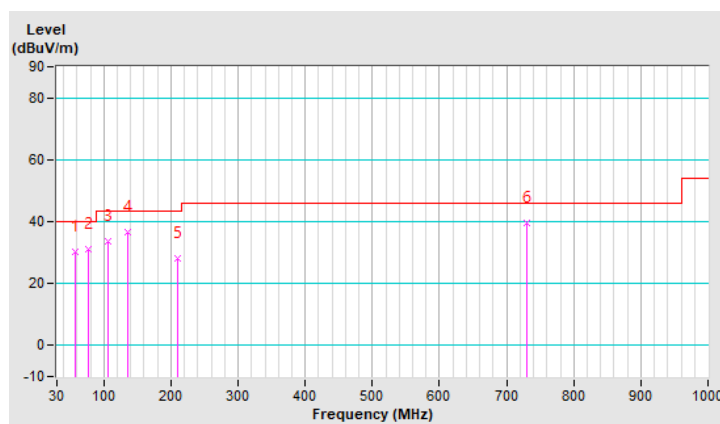
Scanning radio (Radio 3)

RF Mode	TX 802.11ac (VHT20)	Channel	CH 48 : 5240 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	58.12	30.1 QP	40.0	-9.9	1.50 H	148	39.4	-9.3
2	77.80	31.0 QP	40.0	-9.0	1.50 H	108	43.8	-12.8
3	105.91	33.7 QP	43.5	-9.8	1.50 H	103	46.1	-12.4
4	135.43	36.6 QP	43.5	-6.9	1.50 H	85	46.0	-9.4
5	209.94	28.2 QP	43.5	-15.3	1.00 H	49	39.2	-11.0
6	730.09	39.5 QP	46.0	-6.5	1.00 H	56	36.9	2.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

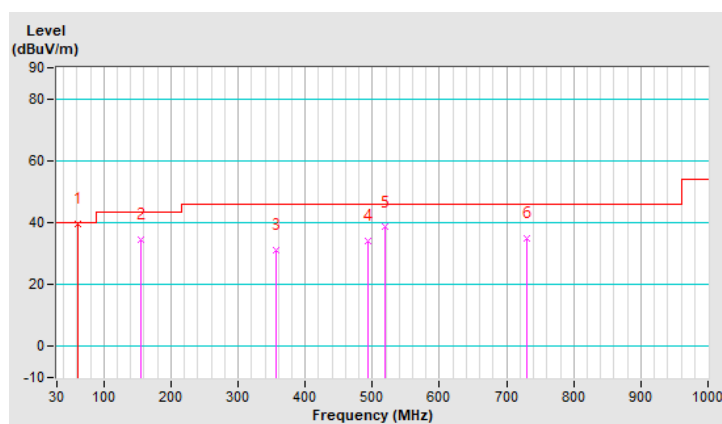


RF Mode	TX 802.11ac (VHT20)	Channel	CH 48 : 5240 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	61.17	39.5 QP	40.0	-0.5	1.00 V	4	49.3	-9.8
2	155.12	34.6 QP	43.5	-8.9	1.01 V	120	43.1	-8.5
3	356.14	31.0 QP	46.0	-15.0	1.50 V	13	36.5	-5.5
4	493.91	34.2 QP	46.0	-11.8	1.01 V	336	36.7	-2.5
5	519.22	38.5 QP	46.0	-7.5	1.01 V	5	40.4	-1.9
6	730.09	35.1 QP	46.0	-10.9	1.01 V	5	32.5	2.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

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

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Dec. 31, 2019	Dec. 30, 2020
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 04, 2020	Sep. 03, 2021
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 20, 2020	Feb. 19, 2021
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 28, 2020	Aug. 27, 2021
Software ADT	BV ADT_Conc_ V7.3.7.4	NA	NA	NA

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

2. The test was performed in HwaYa Shielded Room 1 (Conduction 1).

3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

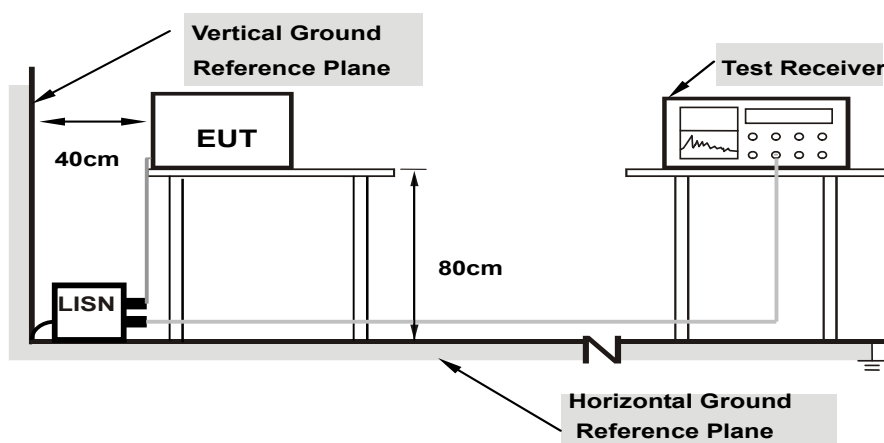
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data:

5G traffic radio (Radio 2)

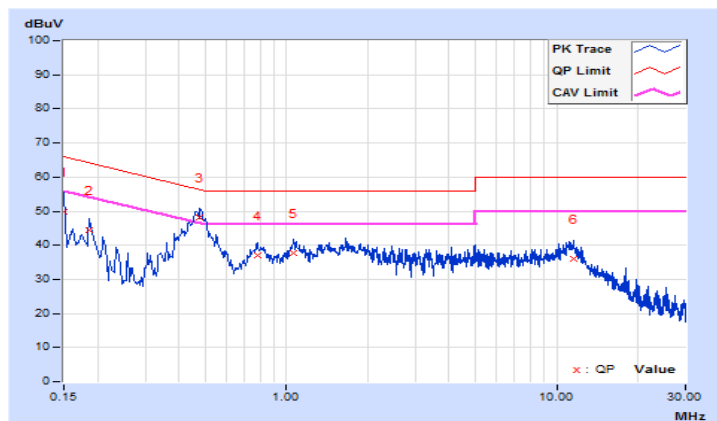
802.11ax (HE40)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.82	39.94	29.83	49.76	39.65	66.00	56.00	-16.24	-16.35
2	0.18600	9.84	34.60	24.69	44.44	34.53	64.21	54.21	-19.77	-19.68
3	0.47800	9.88	38.20	32.51	48.08	42.39	56.37	46.37	-8.29	-3.98
4	0.77800	9.90	27.21	22.45	37.11	32.35	56.00	46.00	-18.89	-13.65
5	1.06600	9.91	27.64	23.24	37.55	33.15	56.00	46.00	-18.45	-12.85
6	11.60600	10.09	25.94	20.57	36.03	30.66	60.00	50.00	-23.97	-19.34

Remarks:

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

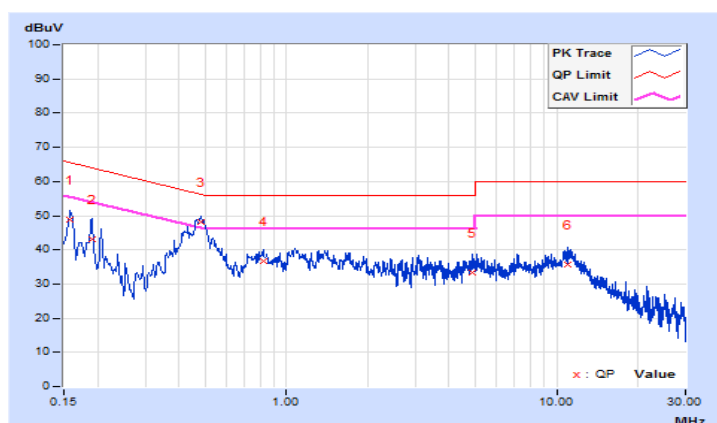


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.84	39.14	28.58	48.98	38.42	65.57	55.57	-16.59	-17.15
2	0.19000	9.85	33.29	24.50	43.14	34.35	64.04	54.04	-20.90	-19.69
3	0.48190	9.91	38.11	33.01	48.02	42.92	56.31	46.31	-8.29	-3.39
4	0.81800	9.93	26.64	22.22	36.57	32.15	56.00	46.00	-19.43	-13.85
5	4.85000	10.05	23.20	17.59	33.25	27.64	56.00	46.00	-22.75	-18.36
6	10.97000	10.15	25.47	20.20	35.62	30.35	60.00	50.00	-24.38	-19.65

Remarks:

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



Scanning radio (Radio 3)

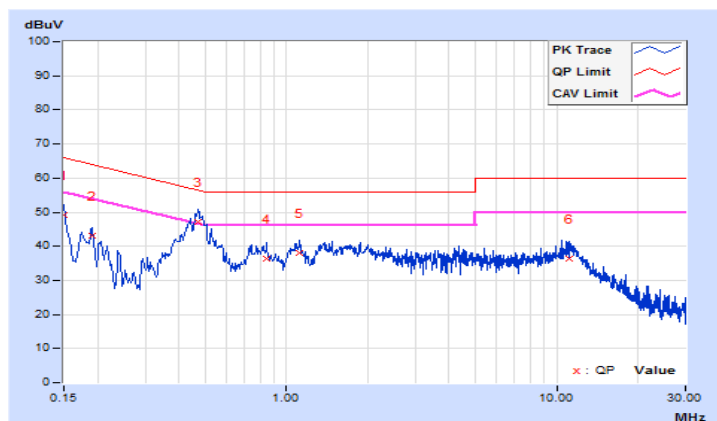
802.11ac (VHT20)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.82	39.34	29.81	49.16	39.63	66.00	56.00	-16.84	-16.37
2	0.19000	9.84	33.18	24.21	43.02	34.05	64.04	54.04	-21.02	-19.99
3	0.47000	9.87	37.36	31.88	47.23	41.75	56.51	46.51	-9.28	-4.76
4	0.84200	9.90	26.44	21.57	36.34	31.47	56.00	46.00	-19.66	-14.53
5	1.12200	9.91	27.99	23.47	37.90	33.38	56.00	46.00	-18.10	-12.62
6	11.07000	10.08	26.25	20.78	36.33	30.86	60.00	50.00	-23.67	-19.14

Remarks:

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

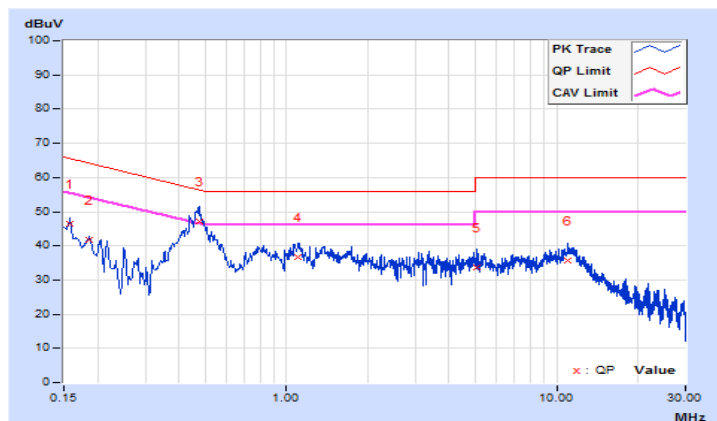


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.84	36.48	29.61	46.32	39.45	65.57	55.57	-19.25	-16.12
2	0.18600	9.85	31.89	24.97	41.74	34.82	64.21	54.21	-22.47	-19.39
3	0.47400	9.90	37.18	32.06	47.08	41.96	56.44	46.44	-9.36	-4.48
4	1.10794	9.95	26.77	22.53	36.72	32.48	56.00	46.00	-19.28	-13.52
5	5.06200	10.06	23.77	17.72	33.83	27.78	60.00	50.00	-26.17	-22.22
6	10.99000	10.15	25.59	20.19	35.74	30.34	60.00	50.00	-24.26	-19.66

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

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

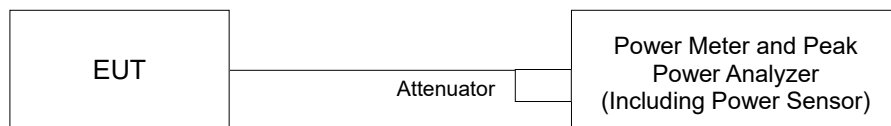
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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

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

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

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

5G traffic radio (Radio 2)

CDD Mode (For U-NII-1 Band - Outdoor Access Point)

802.11a

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
36	5180	17.02	17.22	103.073	20.13	25.83	0.63	20.76	21.00	Pass
40	5200	17.12	17.33	105.598	20.24	25.83	0.63	20.87	21.00	Pass
48	5240	17.03	17.52	106.960	20.29	25.83	0.63	20.92	21.00	Pass

Note:

1. Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to 30 - (10.17 - 6) = 25.83dBm.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.63dBi) + array gain = (0 dB (i.e., no array gain) for $N_{ANT} \leq 4$).

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
36	5180	16.83	17.01	98.429	19.93	25.83	0.63	20.56	21.00	Pass
40	5200	16.73	17.01	97.332	19.88	25.83	0.63	20.51	21.00	Pass
48	5240	16.78	17.11	99.047	19.96	25.83	0.63	20.59	21.00	Pass

Note:

1. Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to 30 - (10.17 - 6) = 25.83dBm.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.63dBi) + array gain = (0 dB (i.e., no array gain) for $N_{ANT} \leq 4$).

802.11n (HT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
38	5190	16.83	16.98	98.083	19.92	25.83	0.63	20.55	21.00	Pass
46	5230	16.87	17.14	100.401	20.02	25.83	0.63	20.65	21.00	Pass

Note:

1. Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to 30 - (10.17 - 6) = 25.83dBm.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.63dBi) + array gain = (0 dB (i.e., no array gain) for $N_{ANT} \leq 4$).

802.11ac (VHT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
36	5180	16.94	17.10	100.717	20.03	25.83	0.63	20.66	21.00	Pass
40	5200	16.85	17.14	100.178	20.01	25.83	0.63	20.64	21.00	Pass
48	5240	16.94	17.24	102.397	20.10	25.83	0.63	20.73	21.00	Pass

Note:

1. Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to 30 - (10.17 - 6) = 25.83dBm.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.63dBi) + array gain = (0 dB (i.e., no array gain) for $N_{ANT} \leq 4$).

802.11ac (VHT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
38	5190	16.96	17.13	101.301	20.06	25.83	0.63	20.69	21.00	Pass
46	5230	16.98	17.24	102.855	20.12	25.83	0.63	20.75	21.00	Pass

Note:

1. Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to 30 - (10.17 - 6) = 25.83dBm.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.63dBi) + array gain = (0 dB (i.e., no array gain) for $N_{ANT} \leq 4$).

802.11ac (VHT80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
42	5210	16.82	16.99	98.087	19.92	25.83	0.63	20.55	21.00	Pass

Note:

1. Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to 30 - (10.17 - 6) = 25.83dBm.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.63dBi) + array gain = (0 dB (i.e., no array gain) for $N_{ANT} \leq 4$).

802.11ax (HE20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
36	5180	17.12	17.29	105.103	20.22	25.83	0.63	20.85	21.00	Pass
40	5200	17.04	17.31	104.409	20.19	25.83	0.63	20.82	21.00	Pass
48	5240	17.12	17.43	106.858	20.29	25.83	0.63	20.92	21.00	Pass

Note:

1. Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.63dBi) + array gain = (0 dB (i.e., no array gain) for $N_{\text{ANT}} \leq 4$).

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
38	5190	17.12	17.32	105.474	20.23	25.83	0.63	20.86	21.00	Pass
46	5230	17.14	17.42	106.968	20.29	25.83	0.63	20.92	21.00	Pass

Note:

1. Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.63dBi) + array gain = (0 dB (i.e., no array gain) for $N_{\text{ANT}} \leq 4$).

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
42	5210	17.01	17.17	102.354	20.10	25.83	0.63	20.73	21.00	Pass

Note:

1. Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.63dBi) + array gain = (0 dB (i.e., no array gain) for $N_{\text{ANT}} \leq 4$).

CDD Mode (For U-NII-1 Band - Indoor Access Point)

802.11a

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	20.98	21.06	252.958	24.03	25.83	Pass
40	5200	20.45	20.49	222.861	23.48	25.83	Pass
48	5240	20.51	20.58	226.748	23.56	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	20.95	20.92	248.046	23.95	25.83	Pass
40	5200	20.85	20.84	242.957	23.86	25.83	Pass
48	5240	20.74	20.95	243.028	23.86	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11n (HT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	19.65	19.64	184.302	22.66	25.83	Pass
46	5230	22.17	22.53	343.877	25.36	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ac (VHT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	21.07	21.02	254.412	24.06	25.83	Pass
40	5200	20.95	20.92	248.046	23.95	25.83	Pass
48	5240	20.85	21.03	248.384	23.95	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ac (VHT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	19.75	19.78	189.467	22.78	25.83	Pass
46	5230	22.25	22.56	348.182	25.42	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ac (VHT80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	18.54	18.67	145.070	21.62	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ax (HE20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	21.35	21.25	269.810	24.31	25.83	Pass
40	5200	21.10	21.15	259.142	24.14	25.83	Pass
48	5240	21.03	21.25	260.117	24.15	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	19.77	19.83	191.003	22.81	25.83	Pass
46	5230	22.29	22.61	351.823	25.46	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	18.54	18.67	145.070	21.62	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

CDD Mode (For U-NII-3 Band)

802.11a

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
149	5745	22.52	22.59	360.200	25.57	25.83	Pass
157	5785	22.49	22.56	357.721	25.54	25.83	Pass
165	5825	22.47	22.41	350.784	25.45	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
149	5745	22.16	22.02	323.658	25.10	25.83	Pass
157	5785	22.35	22.26	340.058	25.32	25.83	Pass
165	5825	22.30	22.11	332.379	25.22	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11n (HT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
151	5755	21.87	22.11	316.370	25.00	25.83	Pass
159	5795	22.39	22.48	350.391	25.45	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ac (VHT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
149	5745	22.26	22.29	337.701	25.29	25.83	Pass
157	5785	22.45	22.35	347.583	25.41	25.83	Pass
165	5825	22.35	22.22	338.516	25.30	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ac (VHT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
151	5755	22.02	22.19	324.798	25.12	25.83	Pass
159	5795	22.44	22.57	356.105	25.52	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ac (VHT80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
155	5775	20.56	20.51	226.223	23.55	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ax (HE20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
149	5745	22.42	22.49	352.001	25.47	25.83	Pass
157	5785	22.64	22.51	361.892	25.59	25.83	Pass
165	5825	22.54	22.39	352.854	25.48	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
151	5755	22.15	22.35	335.850	25.26	25.83	Pass
159	5795	22.62	22.77	372.044	25.71	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
155	5775	20.75	20.71	236.611	23.74	25.83	Pass

Note: Antenna gain = 10.17dBi > 6dBi, so the power limit shall be reduced to $30 - (10.17 - 6) = 25.83\text{dBm}$.

Beamforming Mode (For U-NII-1 Band - Outdoor Access Point)

802.11ac (VHT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
36	5180	13.93	14.09	50.362	17.02	22.89	3.64	20.66	21.00	Pass
40	5200	13.84	14.13	50.092	17.00	22.89	3.64	20.64	21.00	Pass
48	5240	13.93	14.23	51.202	17.09	22.89	3.64	20.73	21.00	Pass

Note:

1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. Beamforming gain = 3.01dBi
4. EIRP = average power + (0.63dBi) + beamforming gain (3.01dBi).

802.11ac (VHT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
38	5190	13.95	14.12	50.654	17.05	22.89	3.64	20.69	21.00	Pass
46	5230	13.97	14.23	51.431	17.11	22.89	3.64	20.75	21.00	Pass

Note:

1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. Beamforming gain = 3.01dBi
4. EIRP = average power + (0.63dBi) + beamforming gain (3.01dBi).

802.11ac (VHT80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
42	5210	13.81	13.98	49.047	16.91	22.89	3.64	20.55	21.00	Pass

Note:

1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. Beamforming gain = 3.01dBi
4. EIRP = average power + (0.63dBi) + beamforming gain (3.01dBi).

802.11ax (HE20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
36	5180	14.11	14.28	52.555	17.21	22.89	3.64	20.85	21.00	Pass
40	5200	14.03	14.30	52.208	17.18	22.89	3.64	20.82	21.00	Pass
48	5240	14.11	14.42	53.433	17.28	22.89	3.64	20.92	21.00	Pass

Note:

1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. Beamforming gain = 3.01dBi
4. EIRP = average power + (0.63dBi) + beamforming gain (3.01dBi).

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
38	5190	14.11	14.31	52.741	17.22	22.89	3.64	20.86	21.00	Pass
46	5230	14.13	14.41	53.488	17.28	22.89	3.64	20.92	21.00	Pass

Note:

1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. Beamforming gain = 3.01dBi
4. EIRP = average power + (0.63dBi) + beamforming gain (3.01dBi).

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
		Chain 0	Chain 1							
42	5210	14.00	14.16	51.180	17.09	22.89	3.64	20.73	21.00	Pass

Note:

1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.
2. Antenna gain = 0.63dBi (above 30 degrees from the horizon).
3. Beamforming gain = 3.01dBi
4. EIRP = average power + (0.63dBi) + beamforming gain (3.01dBi).

Beamforming Mode (For U-NII-1 Band - Indoor Access Point)

802.11ac (VHT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	18.06	18.01	127.215	21.05	22.89	Pass
40	5200	17.94	17.91	124.032	20.94	22.89	Pass
48	5240	17.84	18.02	124.200	20.94	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

802.11ac (VHT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	16.74	16.77	94.740	19.77	22.89	Pass
46	5230	19.24	19.55	174.103	22.41	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

802.11ac (VHT80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	15.53	15.66	72.540	18.61	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

802.11ax (HE20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	18.34	18.24	134.915	21.30	22.89	Pass
40	5200	18.09	18.14	129.580	21.13	22.89	Pass
48	5240	18.02	18.24	130.068	21.14	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	16.76	16.82	95.508	19.80	22.89	Pass
46	5230	19.28	19.60	175.924	22.45	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	15.53	15.66	72.540	18.61	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

Beamforming Mode (For U-NII-3 Band)

802.11ac (VHT20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
149	5745	19.25	19.28	168.862	22.28	22.89	Pass
157	5785	19.44	19.34	173.804	22.40	22.89	Pass
165	5825	19.34	19.21	169.269	22.29	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

802.11ac (VHT40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
151	5755	19.01	19.18	162.410	22.11	22.89	Pass
159	5795	19.43	19.56	178.065	22.51	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

802.11ac (VHT80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
155	5775	17.55	17.50	113.119	20.54	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

802.11ax (HE20)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
149	5745	19.41	19.48	176.013	22.46	22.89	Pass
157	5785	19.63	19.50	180.958	22.58	22.89	Pass
165	5825	19.53	19.38	176.439	22.47	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

802.11ax (HE40)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
151	5755	19.14	19.34	167.937	22.25	22.89	Pass
159	5795	19.61	19.76	186.035	22.70	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

802.11ax (HE80)

Chan.	Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
155	5775	17.74	17.70	118.314	20.73	22.89	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.

Scanning radio (Radio 3)

For U-NII-1 Band - Outdoor Access Point

802.11a

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
36	5180	66.834	18.25	30.00	0.48	18.73	21.00	Pass
40	5200	54.576	17.37	30.00	0.48	17.85	21.00	Pass
48	5240	105.196	20.22	30.00	0.48	20.70	21.00	Pass

Note:

1. Antenna gain = 4.92dBi < 6dBi, so the power limit not need to reduced.
2. Antenna gain = 0.48dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.48dBi) + array gain = (0 dB (i.e., no array gain) for NANT ≤ 4).

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
36	5180	63.826	18.05	30.00	0.48	18.53	21.00	Pass
40	5200	50.816	17.06	30.00	0.48	17.54	21.00	Pass
48	5240	105.682	20.24	30.00	0.48	20.72	21.00	Pass

Note:

1. Antenna gain = 4.92dBi < 6dBi, so the power limit not need to reduced.
2. Antenna gain = 0.48dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.48dBi) + array gain = (0 dB (i.e., no array gain) for NANT ≤ 4).

802.11n (HT40)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
38	5190	41.495	16.18	30.00	0.48	16.66	21.00	Pass
46	5230	98.175	19.92	30.00	0.48	20.40	21.00	Pass

Note:

1. Antenna gain = 4.92dBi < 6dBi, so the power limit not need to reduced.
2. Antenna gain = 0.48dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.48dBi) + array gain = (0 dB (i.e., no array gain) for NANT ≤ 4).

802.11ac (VHT20)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
36	5180	65.163	18.14	30.00	0.48	18.62	21.00	Pass
40	5200	51.880	17.15	30.00	0.48	17.63	21.00	Pass
48	5240	108.143	20.34	30.00	0.48	20.82	21.00	Pass

Note:

1. Antenna gain = 4.92dBi < 6dBi, so the power limit not need to reduced.
2. Antenna gain = 0.48dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.48dBi) + array gain = (0 dB (i.e., no array gain) for NANT ≤ 4).

802.11ac (VHT40)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
38	5190	41.976	16.23	30.00	0.48	16.71	21.00	Pass
46	5230	101.625	20.07	30.00	0.48	20.55	21.00	Pass

Note:

1. Antenna gain = 4.92dBi < 6dBi, so the power limit not need to reduced.
2. Antenna gain = 0.48dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.48dBi) + array gain = (0 dB (i.e., no array gain) for NANT ≤ 4).

802.11ac (VHT80)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Ant. Gain (dBi)	EIRP (dBm)	EIRP limit (dBm)	Pass / Fail
42	5210	13.868	11.42	30.00	0.48	11.90	21.00	Pass

Note:

1. Antenna gain = 4.92dBi < 6dBi, so the power limit not need to reduced.
2. Antenna gain = 0.48dBi (above 30 degrees from the horizon).
3. EIRP = average power + (0.48dBi) + array gain = (0 dB (i.e., no array gain) for NANT ≤ 4).

For U-NII-1 Band - Indoor Access Point

802.11a

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	66.834	18.25	30.00	Pass
40	5200	54.576	17.37	30.00	Pass
48	5240	105.196	20.22	30.00	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	63.826	18.05	30.00	Pass
40	5200	50.816	17.06	30.00	Pass
48	5240	105.682	20.24	30.00	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	41.495	16.18	30.00	Pass
46	5230	98.175	19.92	30.00	Pass

802.11ac (VHT20)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	65.163	18.14	30.00	Pass
40	5200	51.880	17.15	30.00	Pass
48	5240	108.143	20.34	30.00	Pass

802.11ac (VHT40)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	41.976	16.23	30.00	Pass
46	5230	101.625	20.07	30.00	Pass

802.11ac (VHT80)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	13.868	11.42	30.00	Pass

For U-NII-3 Band

802.11a

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
149	5745	100.693	20.03	30.00	Pass
157	5785	101.158	20.05	30.00	Pass
165	5825	101.391	20.06	30.00	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
149	5745	98.855	19.95	30.00	Pass
157	5785	100.462	20.02	30.00	Pass
165	5825	100.693	20.03	30.00	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
151	5755	98.855	19.95	30.00	Pass
159	5795	98.175	19.92	30.00	Pass

802.11ac (VHT20)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
149	5745	100.925	20.04	30.00	Pass
157	5785	102.565	20.11	30.00	Pass
165	5825	102.802	20.12	30.00	Pass

802.11ac (VHT40)

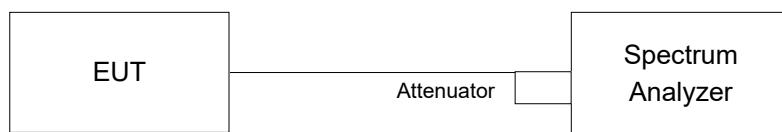
Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
151	5755	100.693	20.03	30.00	Pass
159	5795	101.391	20.06	30.00	Pass

802.11ac (VHT80)

Chan.	Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Pass / Fail
155	5775	84.528	19.27	30.00	Pass

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Result

5G traffic radio (Radio 2)

802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.44	16.44
40	5200	16.44	16.44
48	5240	16.44	16.44
149	5745	16.44	16.44
157	5785	16.44	16.44
165	5825	16.44	16.44

802.11ax (HE20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.96	19.08
40	5200	18.96	19.08
48	5240	19.08	19.08
149	5745	18.96	18.96
157	5785	18.96	18.96
165	5825	18.96	19.08

802.11ax (HE40)

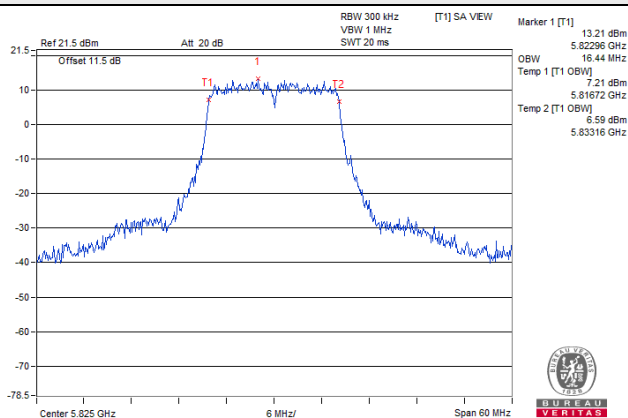
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	38.04	38.04
46	5230	38.04	38.16
151	5755	38.04	38.04
159	5795	38.04	38.04

802.11ax (HE80)

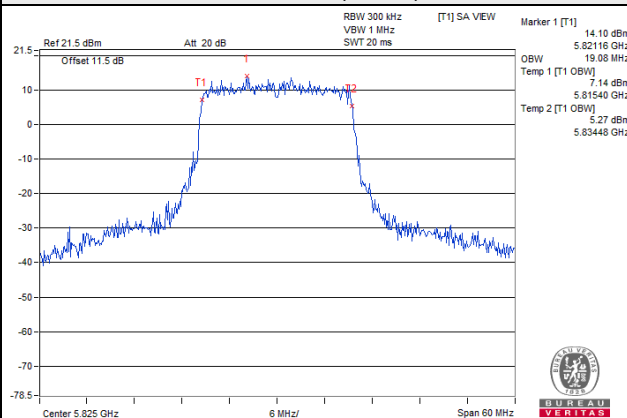
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	77.52	77.28
155	5775	77.04	77.28

Spectrum Plot of Worst Value

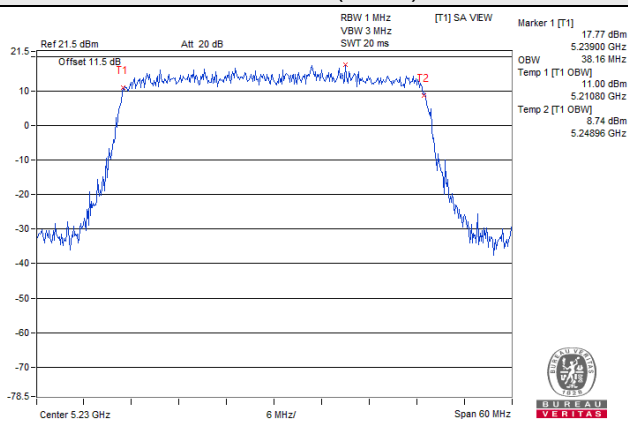
802.11a



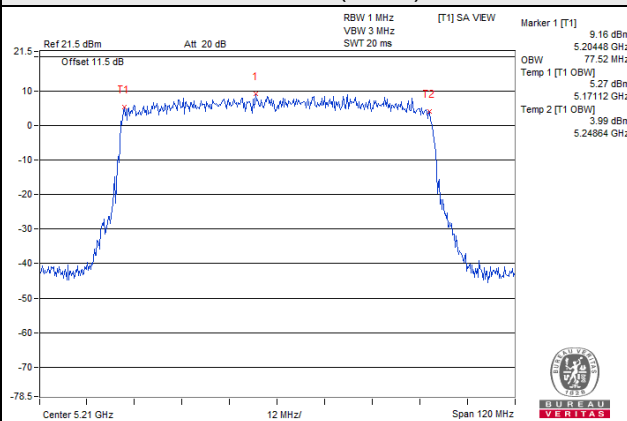
802.11ax (HE20)



802.11ax (HE40)

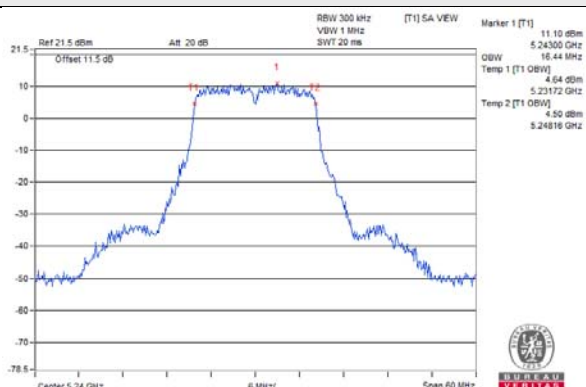


802.11ax (HE80)

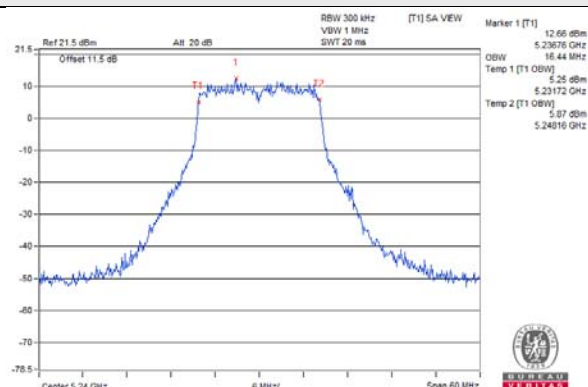


Spectrum Plot for near By DFS Band

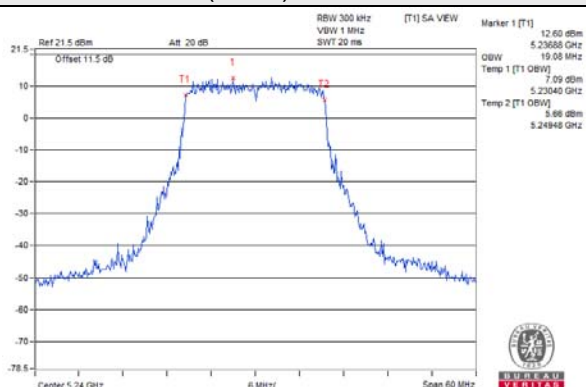
802.11a / Chain 0 / CH 48



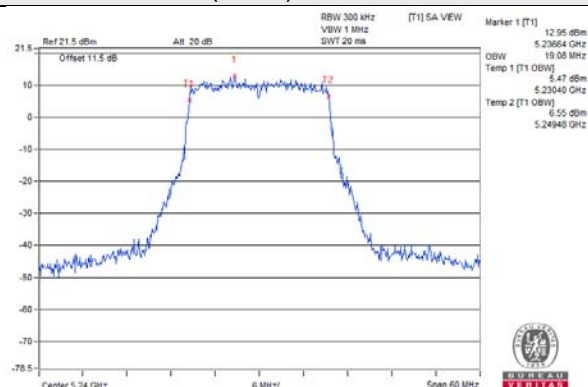
802.11a / Chain 1 / CH 48



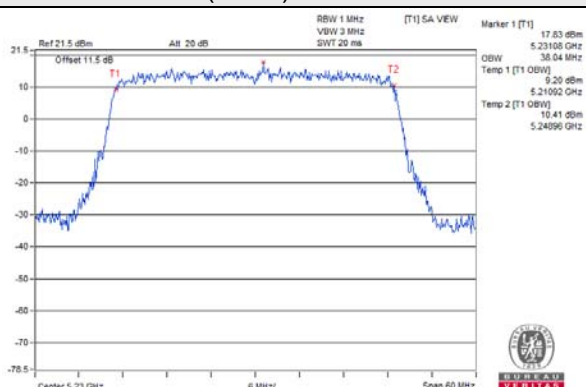
802.11ax (HE20) / Chain 0 / CH 48



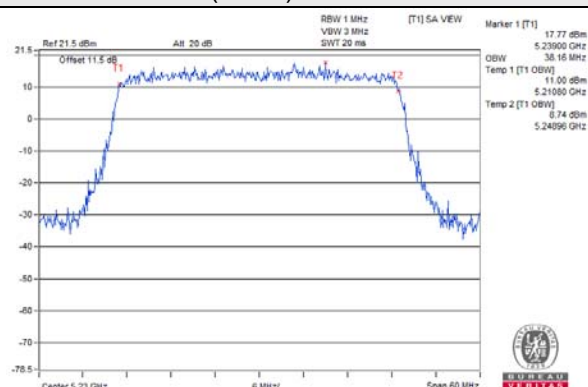
802.11ax (HE20) / Chain 1 / CH 48



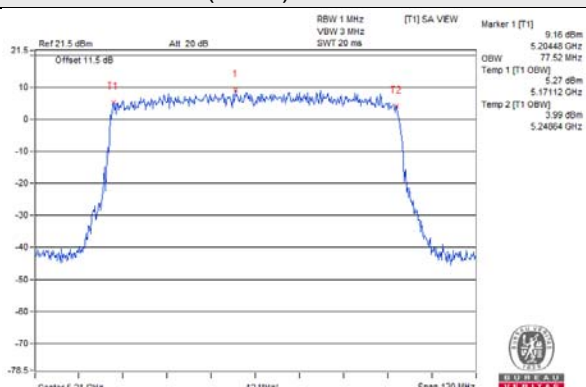
802.11ax (HE40) / Chain 0 / CH 46



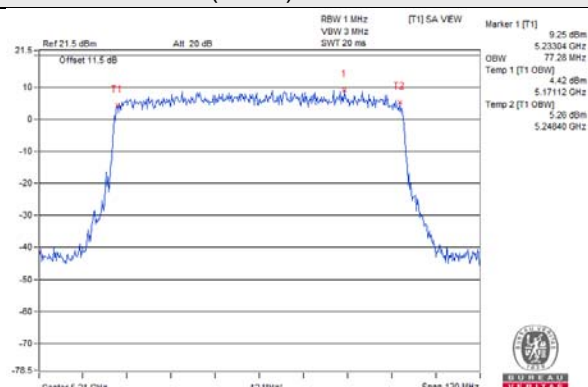
802.11ax (HE40) / Chain 1 / CH 46



802.11ax (HE80) / Chain 0 / CH 42

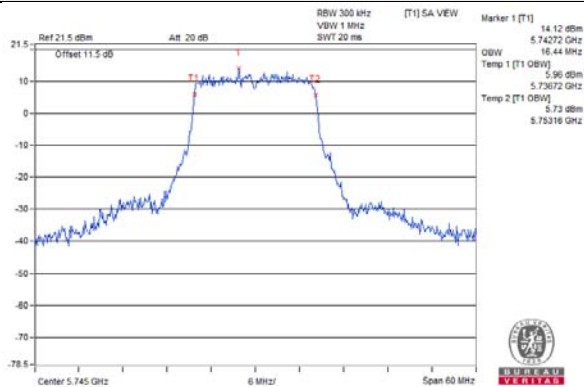


802.11ax (HE80) / Chain 1 / CH 42

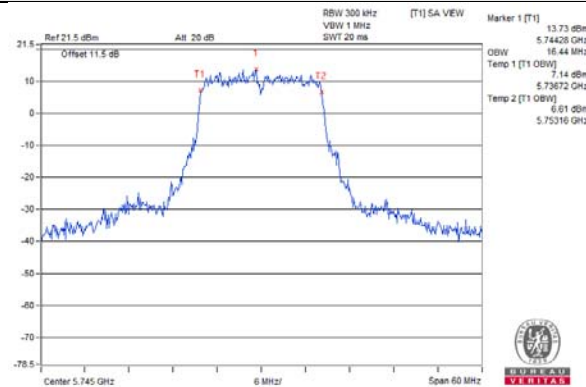


Spectrum Plot for near By DFS Band

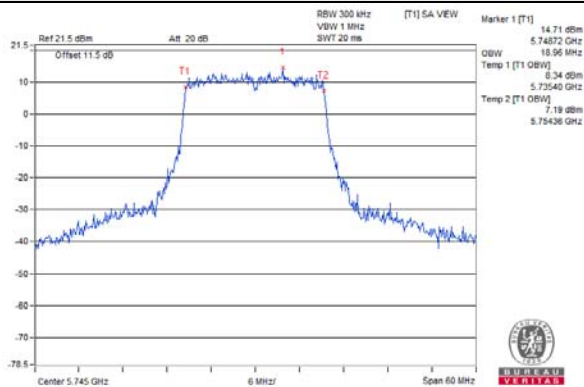
802.11a / Chain 0 / CH 149



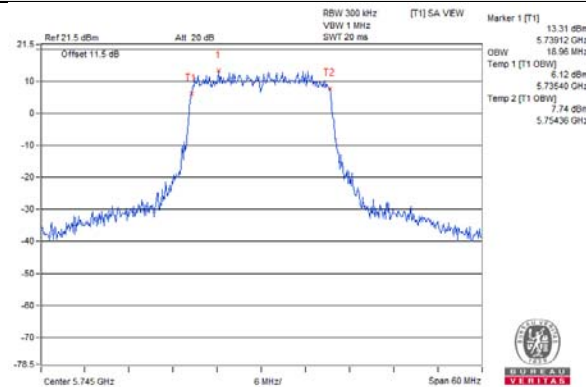
802.11a / Chain 1 / CH 149



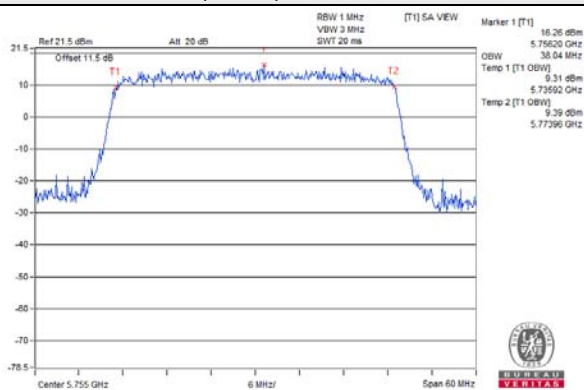
802.11ax (HE20) / Chain 0 / CH 149



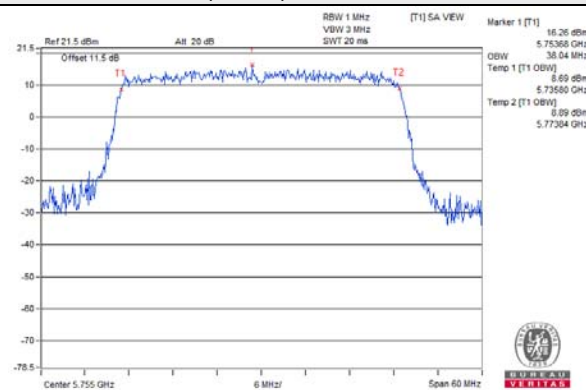
802.11ax (HE20) / Chain 1 / CH 149



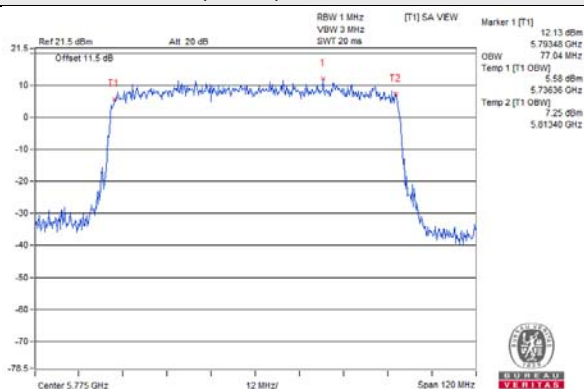
802.11ax (HE40) / Chain 0 / CH 151



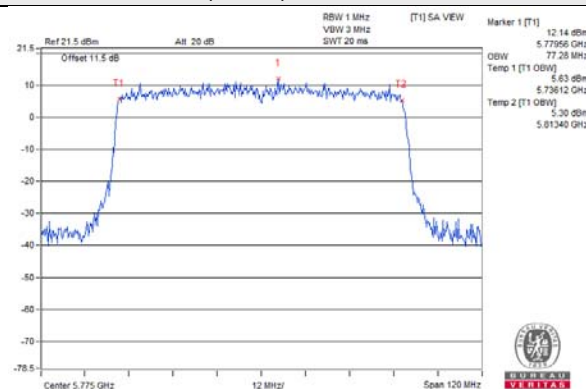
802.11ax (HE40) / Chain 1 / CH 151



802.11ax (HE80) / Chain 0 / CH 155



802.11ax (HE80) / Chain 1 / CH 155



Scanning radio (Radio 3)

802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
36	5180	17.04
40	5200	17.04
48	5240	17.16
149	5745	18.60
157	5785	21.24
165	5825	21.60

802.11ac (VHT20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
36	5180	18.24
40	5200	18.12
48	5240	18.36
149	5745	19.20
157	5785	22.08
165	5825	22.20

802.11ac (VHT40)

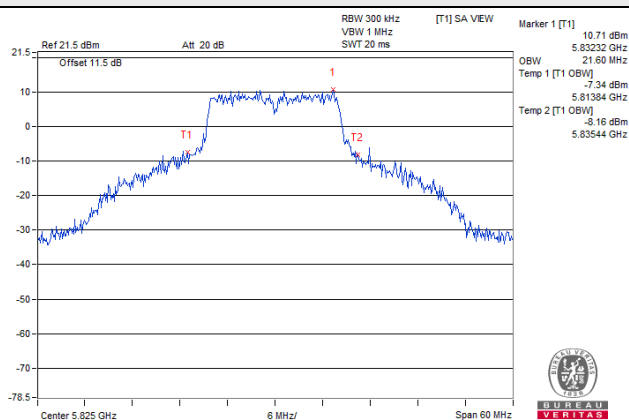
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
38	5190	37.08
46	5230	37.08
151	5755	37.44
159	5795	38.04

802.11ac (VHT80)

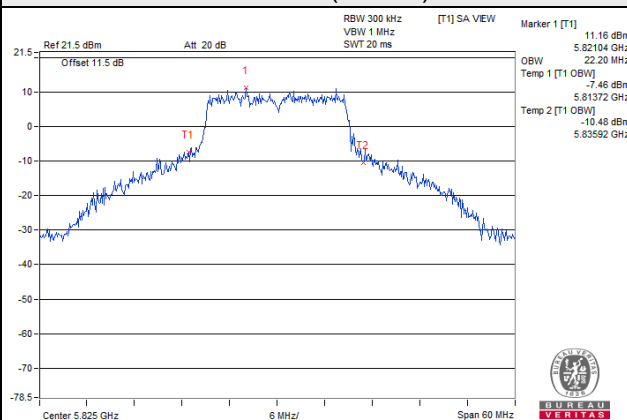
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
42	5210	76.32
155	5775	76.56

Spectrum Plot of Worst Value

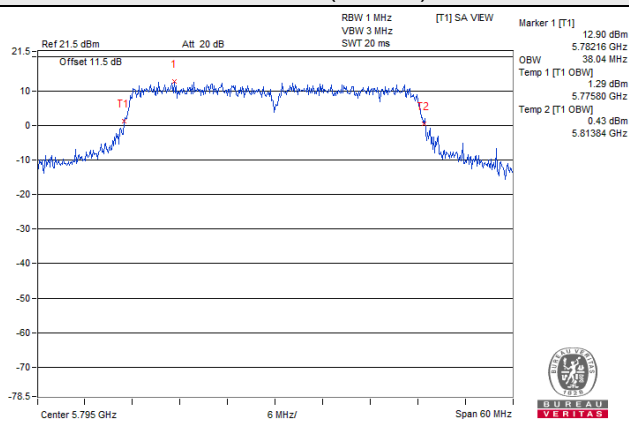
802.11a



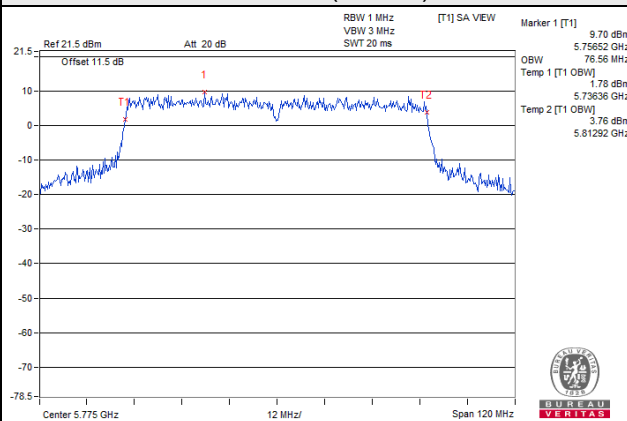
802.11ac (VHT20)



802.11ac (VHT40)

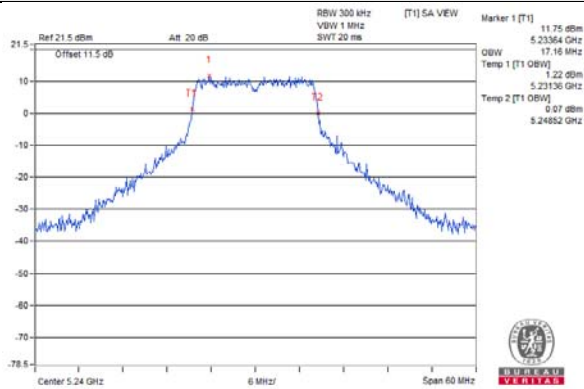


802.11ac (VHT80)

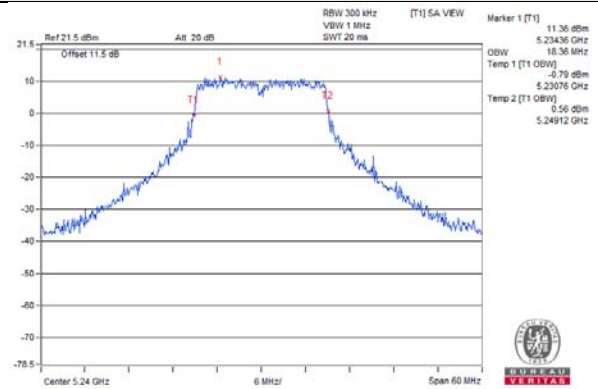


Spectrum Plot for near By DFS Band

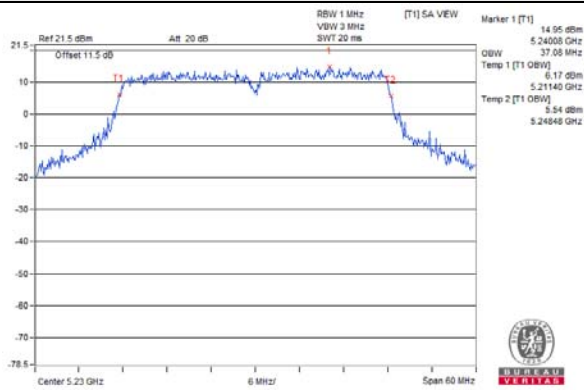
802.11a / CH 48



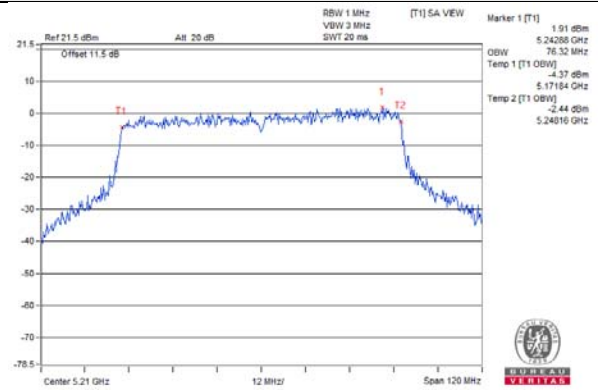
802.11ac (VHT20) / CH 48



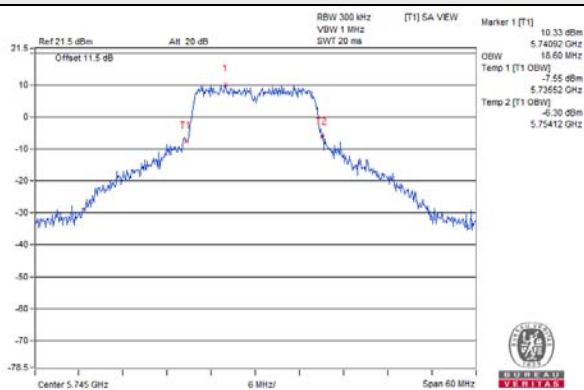
802.11ac (VHT40) / CH 46



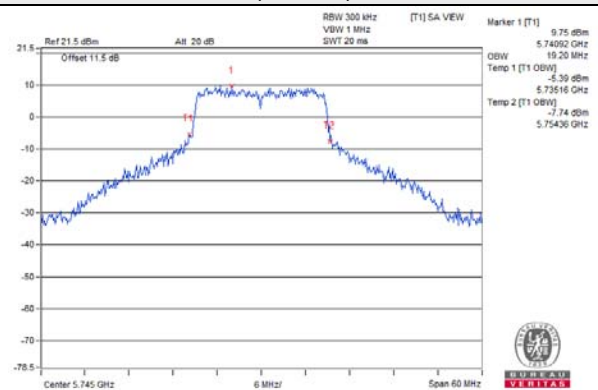
802.11ac (VHT80) / CH 42



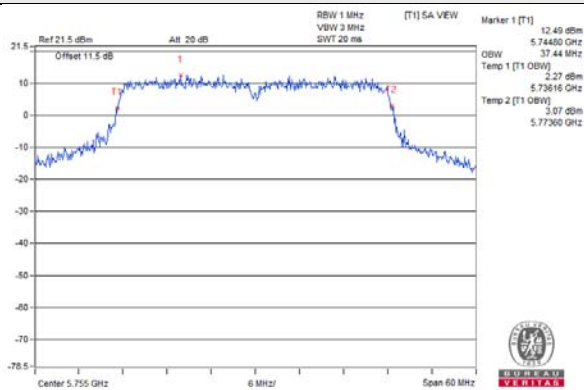
802.11a / CH 149



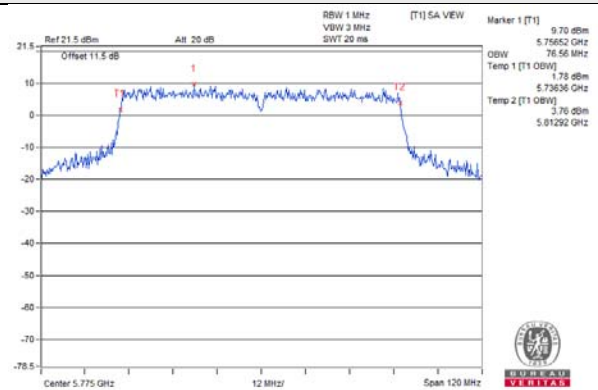
802.11ac (VHT20) / CH 149



802.11ac (VHT40) / CH 151



802.11ac (VHT80) / CH 155

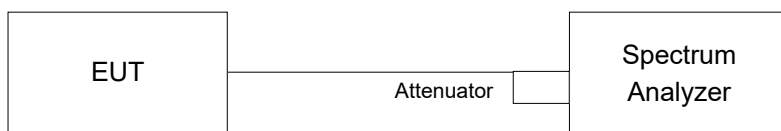


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

For U-NII-1 band:

Using method SA-2

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

For U-NII-3 band:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

5G traffic radio (Radio 2)

For U-NII-1 band:

802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	6.59	6.31	0.32	9.79	9.89	Pass
40	5200	6.57	6.38	0.32	9.81	9.89	Pass
48	5240	6.42	6.41	0.32	9.75	9.89	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $17 - (13.11 - 6) = 9.89\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	6.33	6.56	0.21	9.67	9.89	Pass
40	5200	6.65	6.44	0.21	9.77	9.89	Pass
48	5240	6.35	6.65	0.21	9.72	9.89	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $17 - (13.11 - 6) = 9.89\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	1.85	1.74	0.24	5.04	9.89	Pass
46	5230	5.01	5.29	0.24	8.40	9.89	Pass

Note:

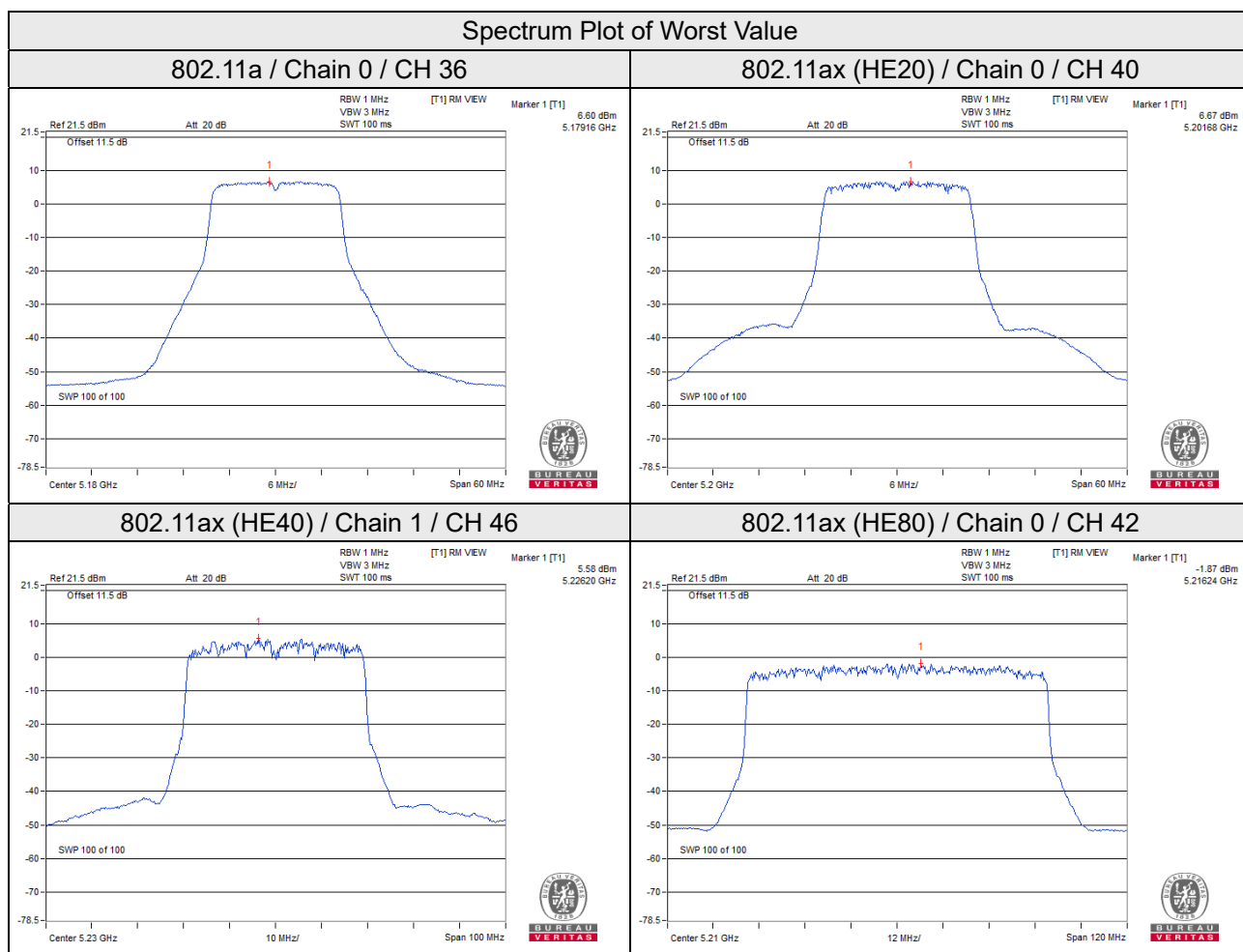
1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $17 - (13.11 - 6) = 9.89\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-1.91	-2.40	0.73	1.59	9.89	Pass

Note:

- Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $17 - (13.11 - 6) = 9.89\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.



For U-NII-3 band:

802.11a

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	0.13	2.35	3.01	0.32	5.68	22.89	Pass
	157	5785	0.48	2.70	3.01	0.32	6.03	22.89	Pass
	165	5825	0.54	2.76	3.01	0.32	6.09	22.89	Pass
1	149	5745	0.25	2.47	3.01	0.32	5.80	22.89	Pass
	157	5785	0.10	2.32	3.01	0.32	5.65	22.89	Pass
	165	5825	0.33	2.55	3.01	0.32	5.88	22.89	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N_{ANT}) dB.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	-1.03	1.19	3.01	0.21	4.41	22.89	Pass
	157	5785	-1.00	1.22	3.01	0.21	4.44	22.89	Pass
	165	5825	-0.96	1.26	3.01	0.21	4.48	22.89	Pass
1	149	5745	-1.21	1.01	3.01	0.21	4.23	22.89	Pass
	157	5785	-1.30	0.92	3.01	0.21	4.14	22.89	Pass
	165	5825	-1.10	1.12	3.01	0.21	4.34	22.89	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N_{ANT}) dB.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	151	5755	-4.20	-1.98	3.01	0.24	1.27	22.89	Pass
	159	5795	-3.43	-1.21	3.01	0.24	2.04	22.89	Pass
1	151	5755	-4.37	-2.15	3.01	0.24	1.10	22.89	Pass
	159	5795	-3.70	-1.48	3.01	0.24	1.77	22.89	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N_{ANT}) dB.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

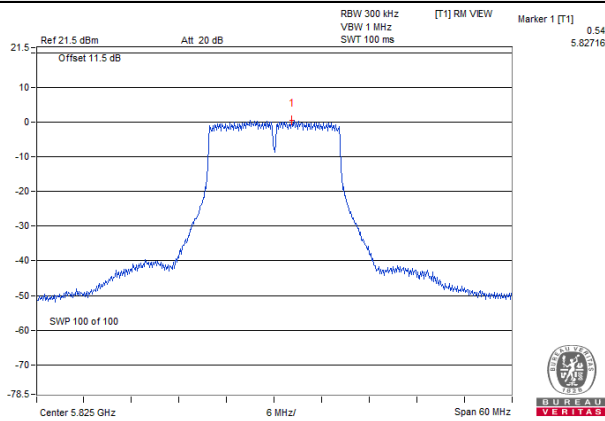
TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	155	5775	-8.62	-6.40	3.01	0.73	-2.66	22.89	Pass
1	155	5775	-8.73	-6.51	3.01	0.73	-2.77	22.89	Pass

Note:

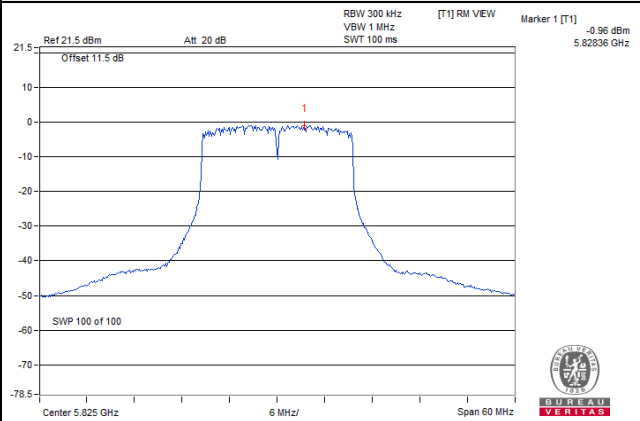
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N_{ANT}) dB.
2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 13.11\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (13.11 - 6) = 22.89\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

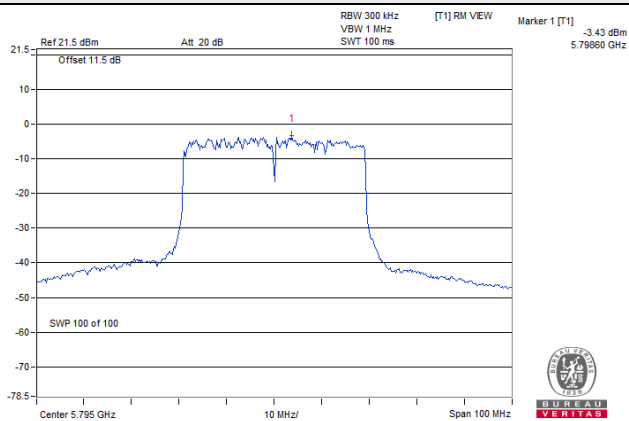
802.11a



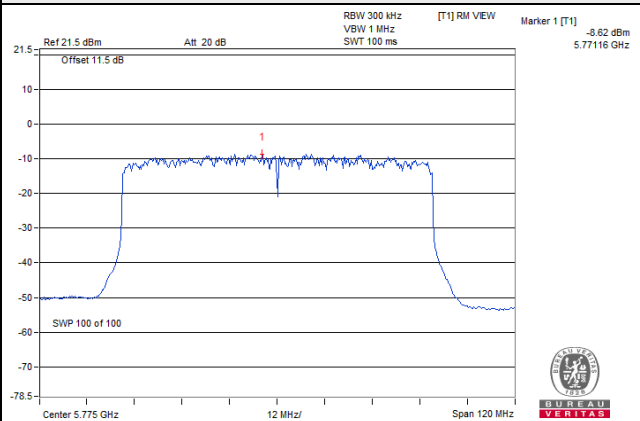
802.11ax (HE20)



802.11ax (HE40)



802.11ax (HE80)



Scanning radio (Radio 3)

For U-NII-1 band:

802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	4.55	0.21	4.76	17.00	Pass
40	5200	4.39	0.21	4.60	17.00	Pass
48	5240	7.37	0.21	7.58	17.00	Pass

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

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	4.20	0.18	4.38	17.00	Pass
40	5200	3.51	0.18	3.69	17.00	Pass
48	5240	6.99	0.18	7.17	17.00	Pass

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

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
38	5190	4.16	0.35	4.51	17.00	Pass
46	5230	3.95	0.35	4.30	17.00	Pass

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

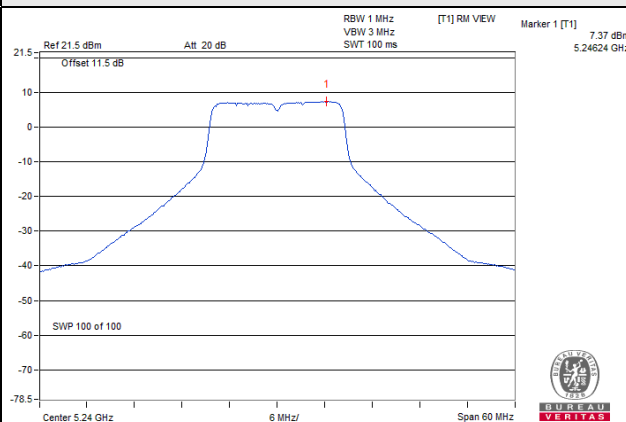
802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
42	5210	-8.90	0.71	-8.19	17.00	Pass

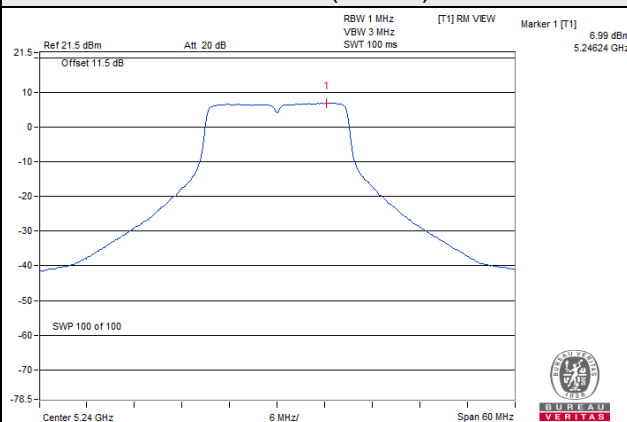
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

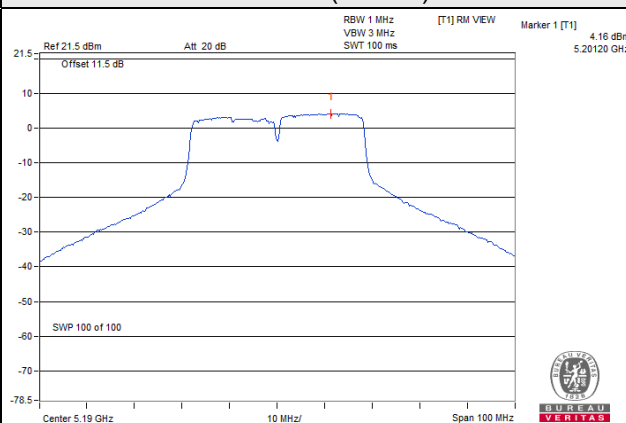
802.11a



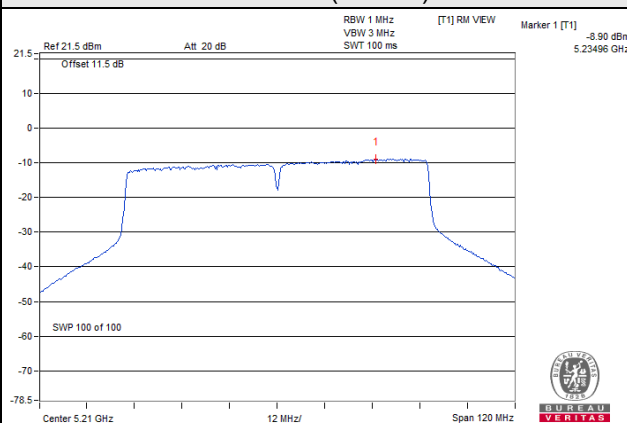
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



For U-NII-3 band:

802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	-2.40	-0.18	0.21	0.03	30.00	Pass
157	5785	-1.92	0.30	0.21	0.51	30.00	Pass
165	5825	-1.92	0.30	0.21	0.51	30.00	Pass

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

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	-2.69	-0.47	0.18	-0.29	30.00	Pass
157	5785	-2.12	0.10	0.18	0.28	30.00	Pass
165	5825	-2.14	0.08	0.18	0.26	30.00	Pass

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

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
151	5755	-6.42	-4.20	0.35	-3.85	30.00	Pass
159	5795	-5.54	-3.32	0.35	-2.97	30.00	Pass

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

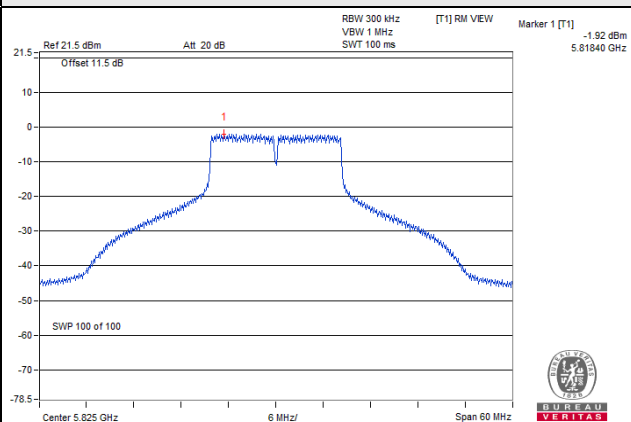
802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
155	5775	-9.45	-7.23	0.71	-6.52	30.00	Pass

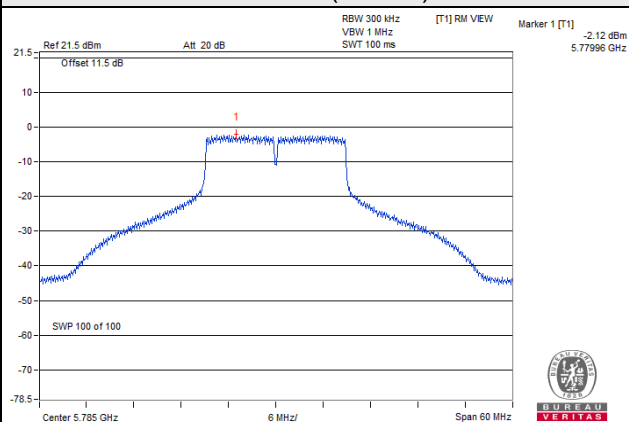
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

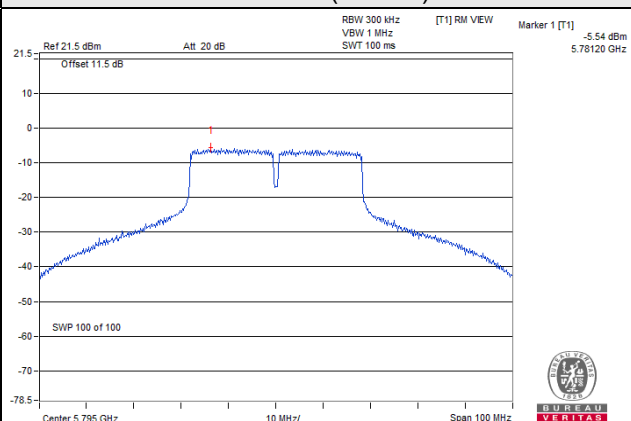
802.11a



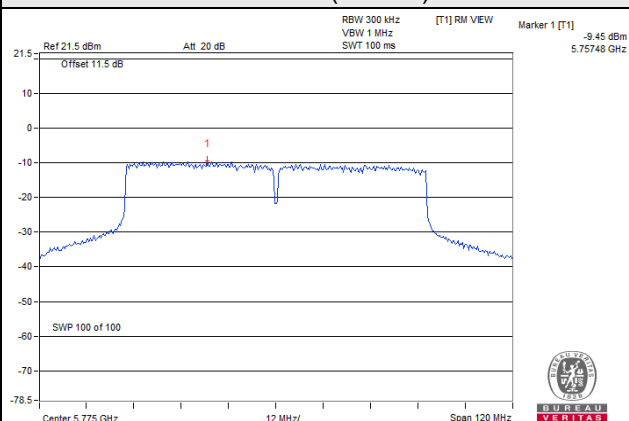
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)

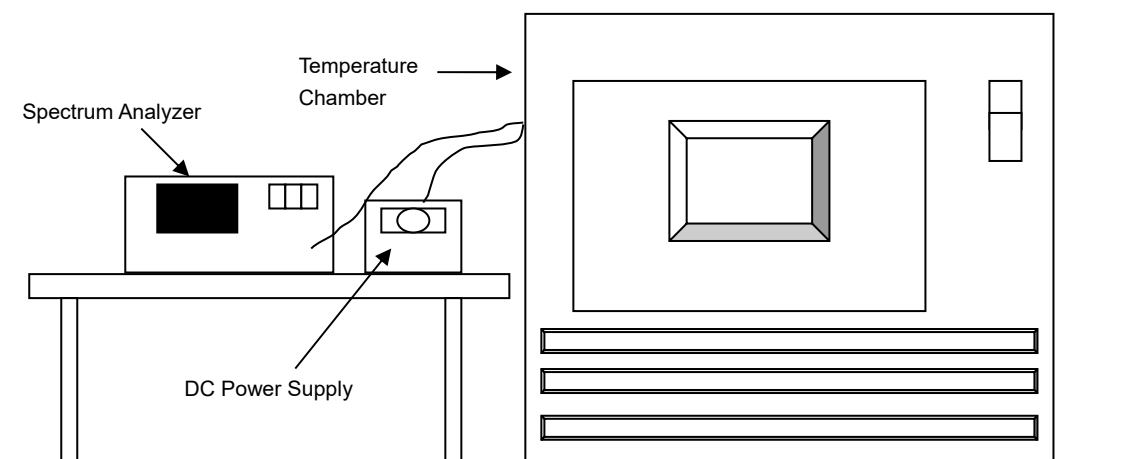


4.6 Frequency Stability

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 16, 2020	Sep. 15, 2021
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 01, 2020	May 31, 2021
Digital Multimeter Fluke	87-III	70360742	Jun. 23, 2020	Jun. 22, 2021
DC Power Supply TOPWARD	6306A	727263	NA	NA

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

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

5G traffic radio (Radio 2)

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
55	54.0	5179.984	Pass	5179.9816	Pass	5179.9862	Pass	5179.9842	Pass
50	54.0	5180.0209	Pass	5180.0171	Pass	5180.0204	Pass	5180.0191	Pass
40	54.0	5179.9945	Pass	5179.9941	Pass	5179.9946	Pass	5179.9957	Pass
30	54.0	5179.9881	Pass	5179.9853	Pass	5179.9863	Pass	5179.987	Pass
20	54.0	5180.0196	Pass	5180.0167	Pass	5180.0204	Pass	5180.0177	Pass
10	54.0	5179.9733	Pass	5179.9769	Pass	5179.9755	Pass	5179.977	Pass
0	54.0	5180.0032	Pass	5180.0022	Pass	5180.0069	Pass	5180.0045	Pass
-10	54.0	5180.0072	Pass	5180.0035	Pass	5180.0054	Pass	5180.0034	Pass
-20	54.0	5180.0185	Pass	5180.0231	Pass	5180.0195	Pass	5180.0185	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	62.1	5180.0196	Pass	5180.0173	Pass	5180.0195	Pass	5180.017	Pass
	54.0	5180.0196	Pass	5180.0167	Pass	5180.0204	Pass	5180.0177	Pass
	45.9	5180.0186	Pass	5180.0159	Pass	5180.021	Pass	5180.0173	Pass

Scanning radio (Radio 3)

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
55	54.0	5179.9903	Pass	5179.9894	Pass	5179.9909	Pass	5179.989	Pass
50	54.0	5180.0204	Pass	5180.0195	Pass	5180.0206	Pass	5180.022	Pass
40	54.0	5179.9911	Pass	5179.9879	Pass	5179.9879	Pass	5179.9919	Pass
30	54.0	5180.0172	Pass	5180.0213	Pass	5180.0186	Pass	5180.0212	Pass
20	54.0	5179.99	Pass	5179.9862	Pass	5179.9887	Pass	5179.9858	Pass
10	54.0	5179.9815	Pass	5179.9837	Pass	5179.9828	Pass	5179.9841	Pass
0	54.0	5179.977	Pass	5179.9736	Pass	5179.9764	Pass	5179.9756	Pass
-10	54.0	5179.9787	Pass	5179.9771	Pass	5179.9794	Pass	5179.9773	Pass
-20	54.0	5179.9998	Pass	5179.9977	Pass	5180.0001	Pass	5179.9977	Pass

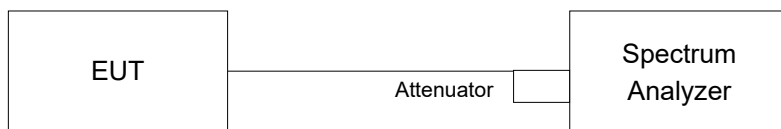
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	62.1	5179.9908	Pass	5179.9857	Pass	5179.9896	Pass	5179.986	Pass
	54.0	5179.99	Pass	5179.9862	Pass	5179.9887	Pass	5179.9858	Pass
	45.9	5179.99	Pass	5179.9872	Pass	5179.9896	Pass	5179.9852	Pass

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

5G traffic radio (Radio 2)

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	15.91	16.03	0.50	Pass
157	5785	16.03	15.39	0.50	Pass
165	5825	15.79	16.08	0.50	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	18.23	18.14	0.50	Pass
157	5785	18.15	17.49	0.50	Pass
165	5825	18.27	18.51	0.50	Pass

802.11ax (HE40)

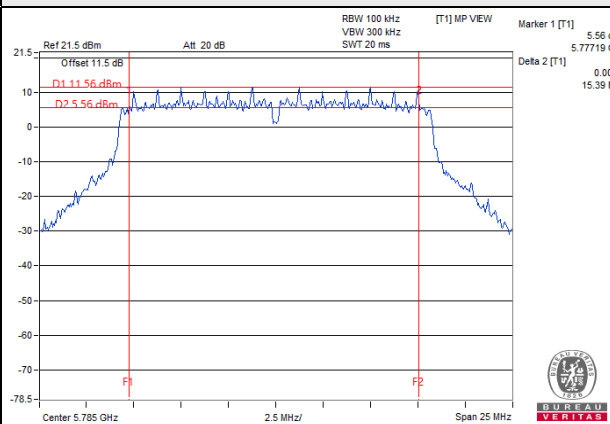
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	37.65	37.83	0.50	Pass
159	5795	37.83	36.94	0.50	Pass

802.11ax (HE80)

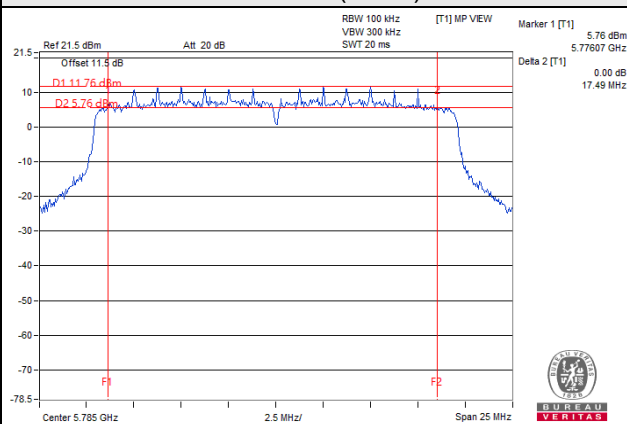
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	75.95	72.14	0.50	Pass

Spectrum Plot of Worst Value

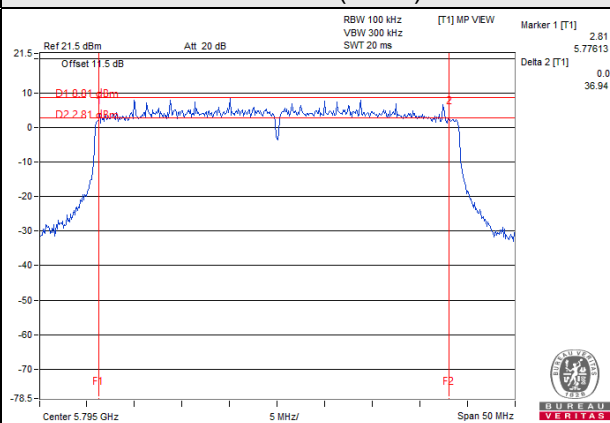
802.11a



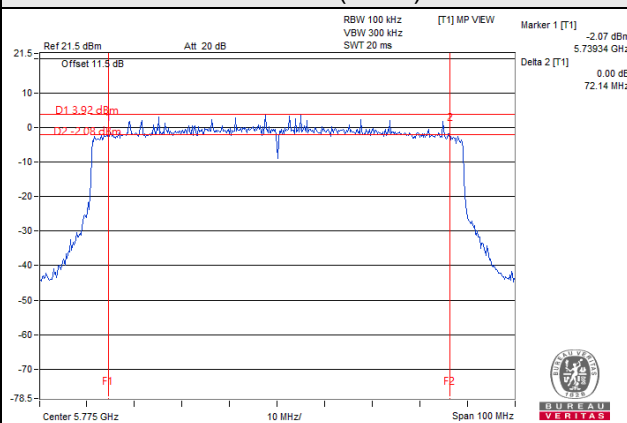
802.11ax (HE20)



802.11ax (HE40)



802.11ax (HE80)



Scanning radio (Radio 3)

802.11a

Chan.	Freq. (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.40	0.50	Pass
157	5785	16.39	0.50	Pass
165	5825	16.41	0.50	Pass

802.11ac (VHT20)

Chan.	Freq. (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.64	0.50	Pass
157	5785	17.61	0.50	Pass
165	5825	17.61	0.50	Pass

802.11ac (VHT40)

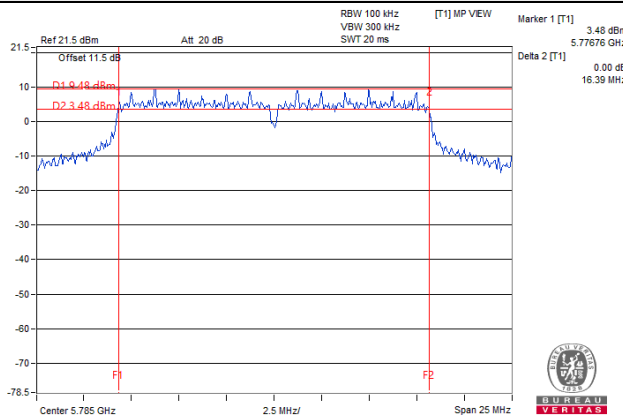
Chan.	Freq. (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	36.48	0.50	Pass
159	5795	36.36	0.50	Pass

802.11ac (VHT80)

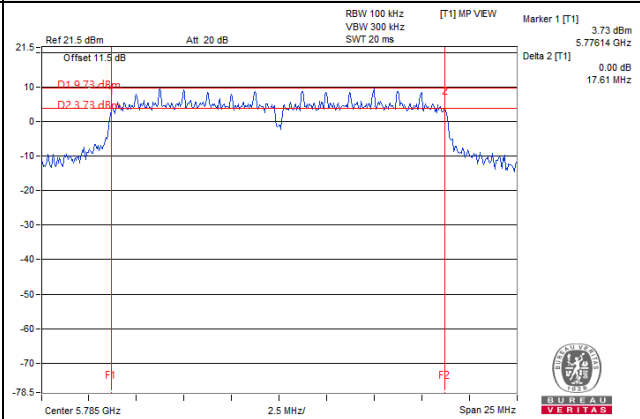
Chan.	Freq. (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
155	5775	75.92	0.50	Pass

Spectrum Plot of Worst Value

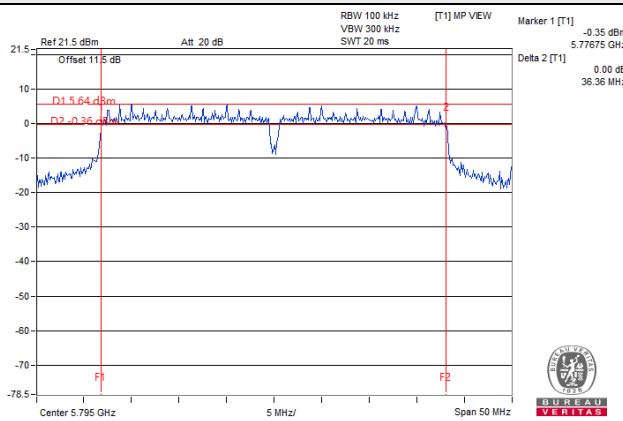
802.11a



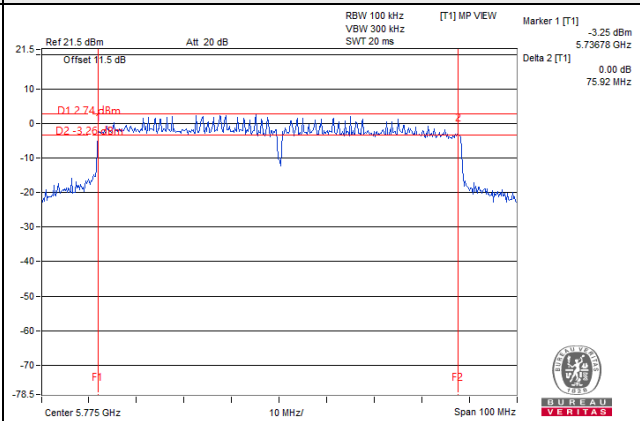
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)

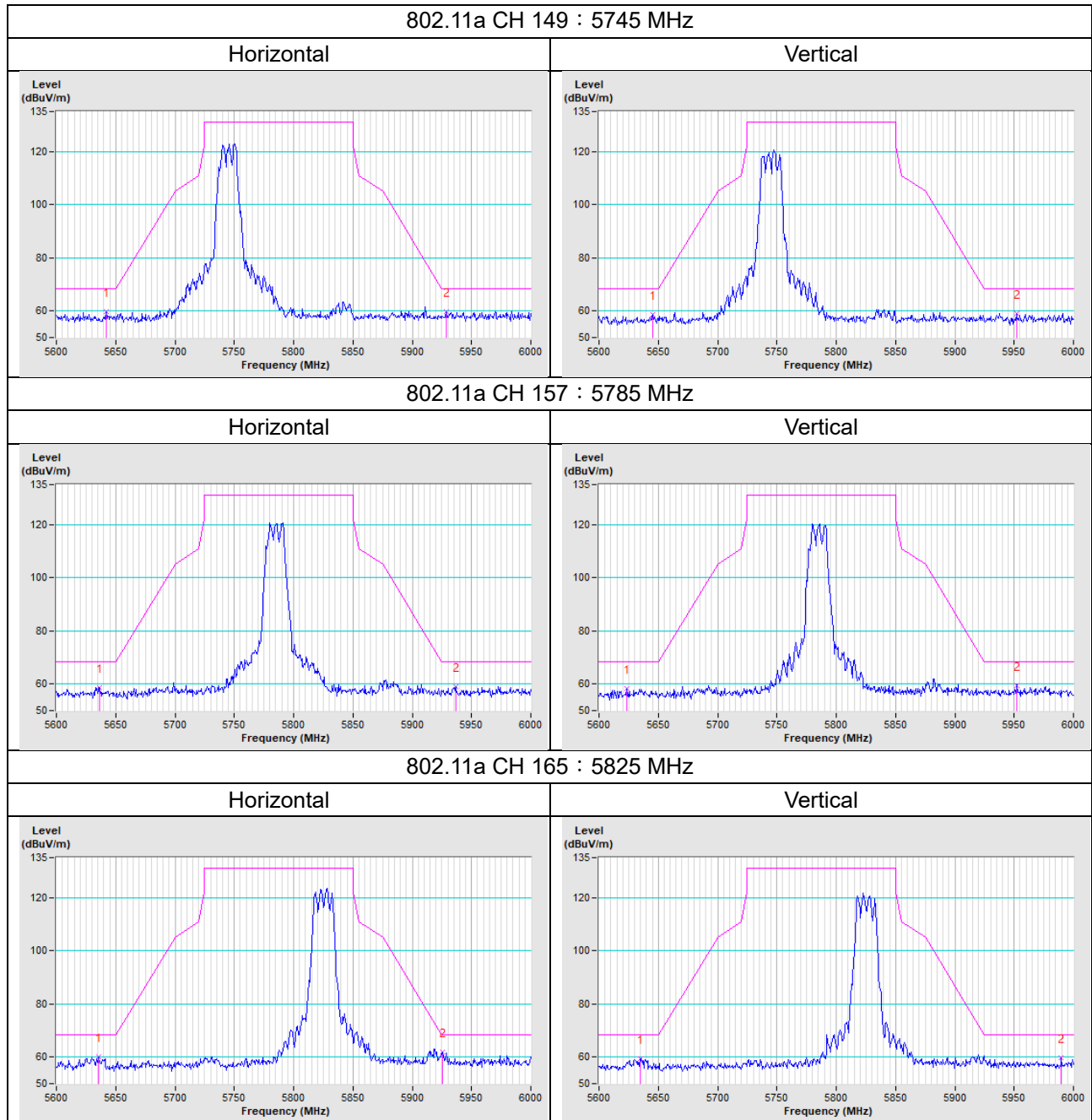


5 Pictures of Test Arrangements

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

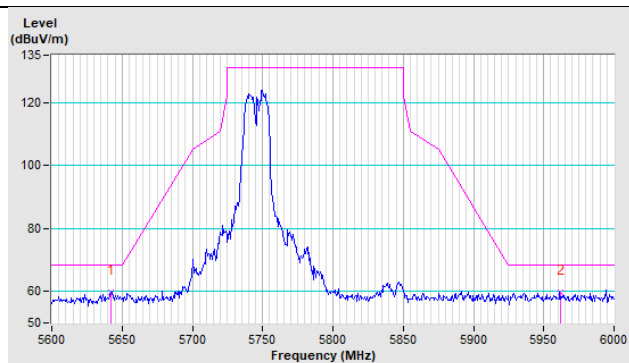
Annex A - Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

5G traffic radio (Radio 2)

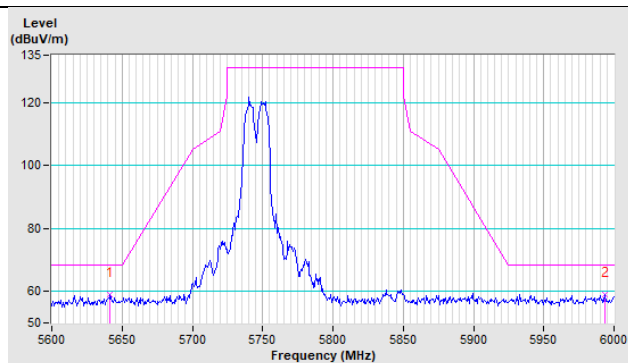


802.11ax (HE20) CH 149 : 5745 MHz

Horizontal

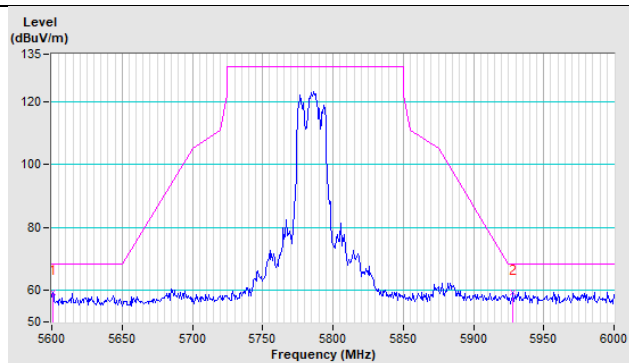


Vertical

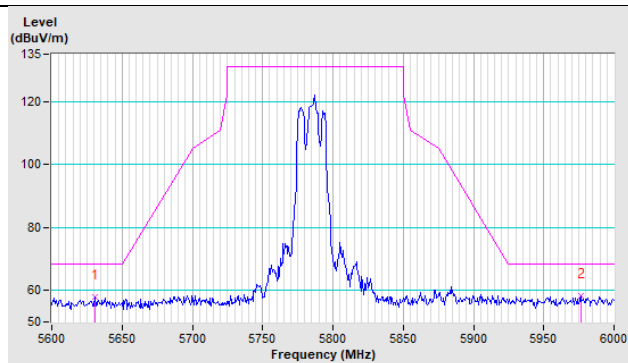


802.11ax (HE20) CH 157 : 5785 MHz

Horizontal

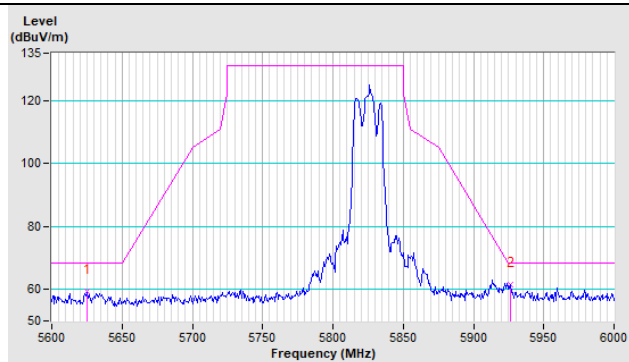


Vertical

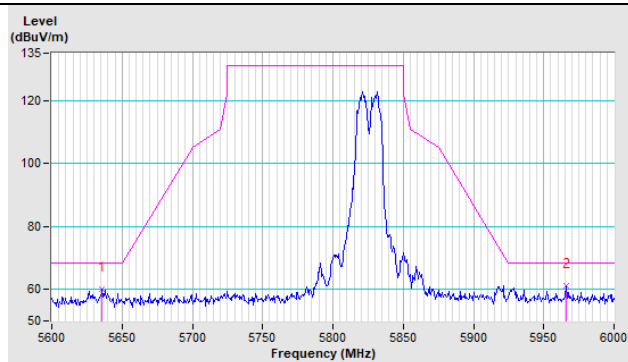


802.11ax (HE20) CH 165 : 5825 MHz

Horizontal

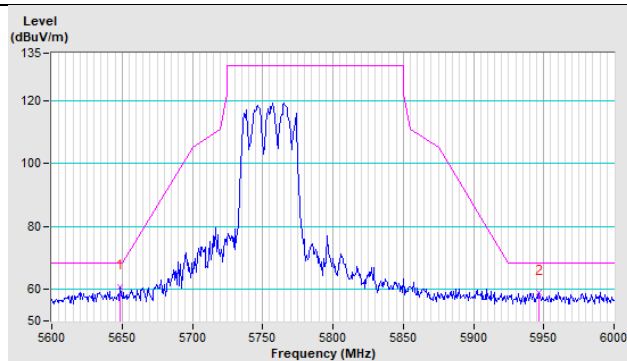


Vertical

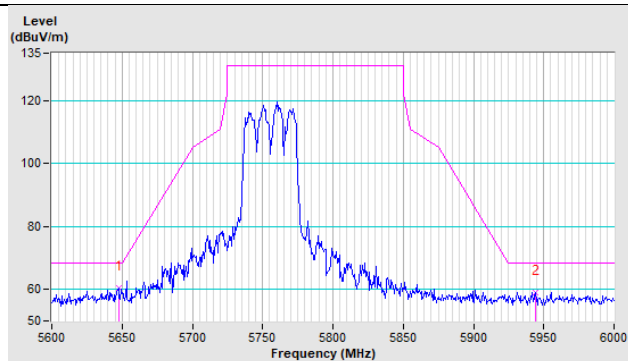


802.11ax (HE40) CH 151 : 5755 MHz

Horizontal

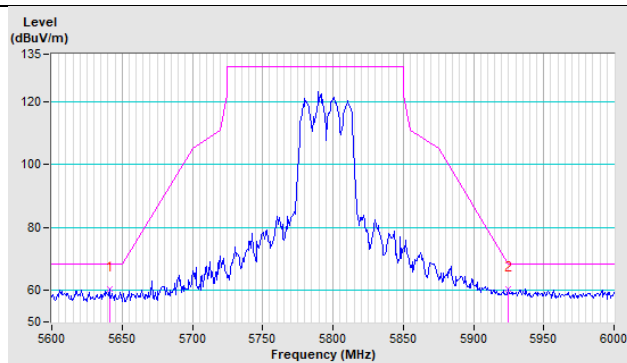


Vertical

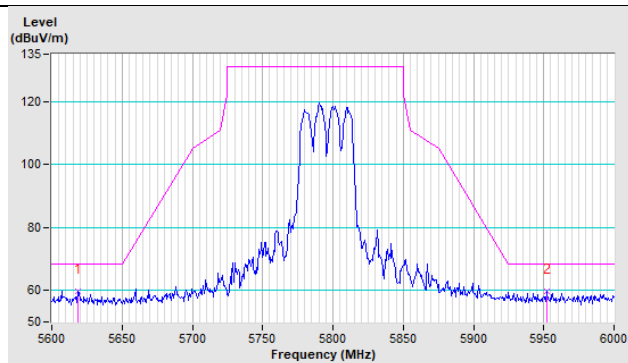


802.11ax (HE40) CH 159 : 5795 MHz

Horizontal

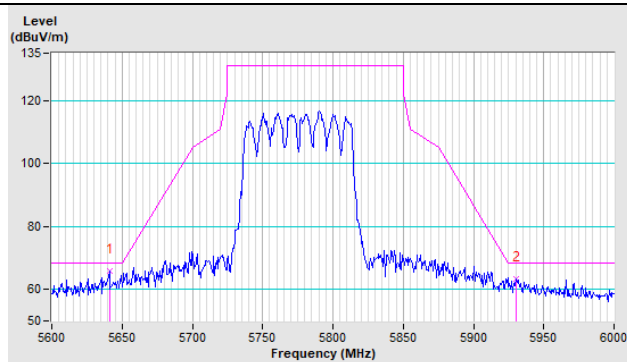


Vertical

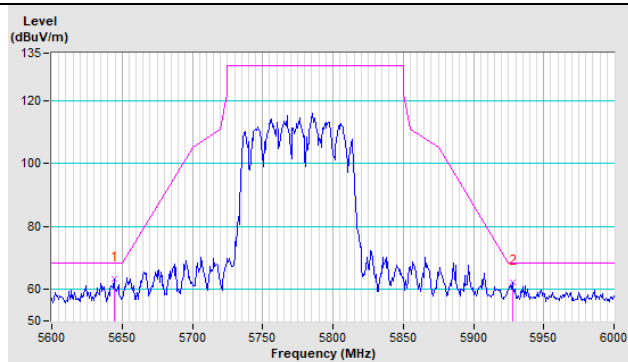


802.11ax (HE80) CH 155 : 5775 MHz

Horizontal

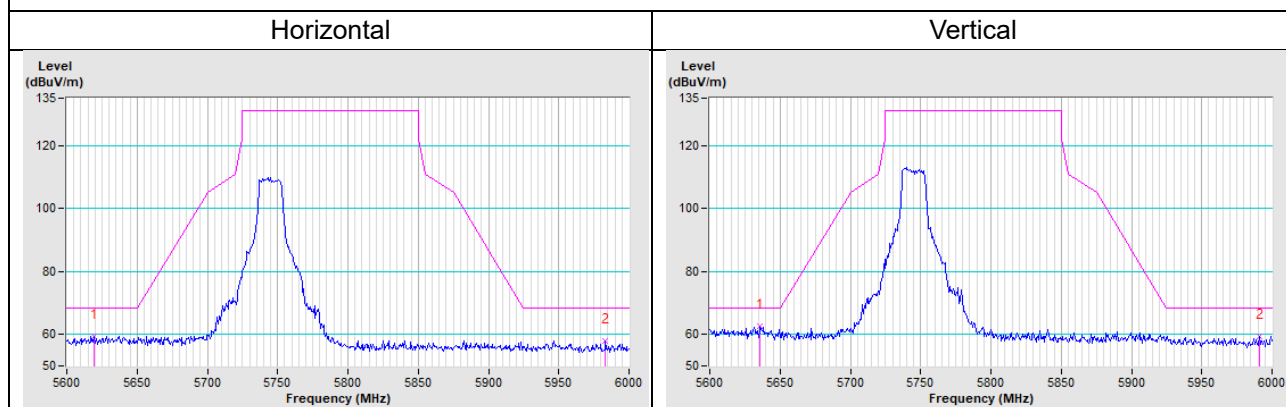


Vertical

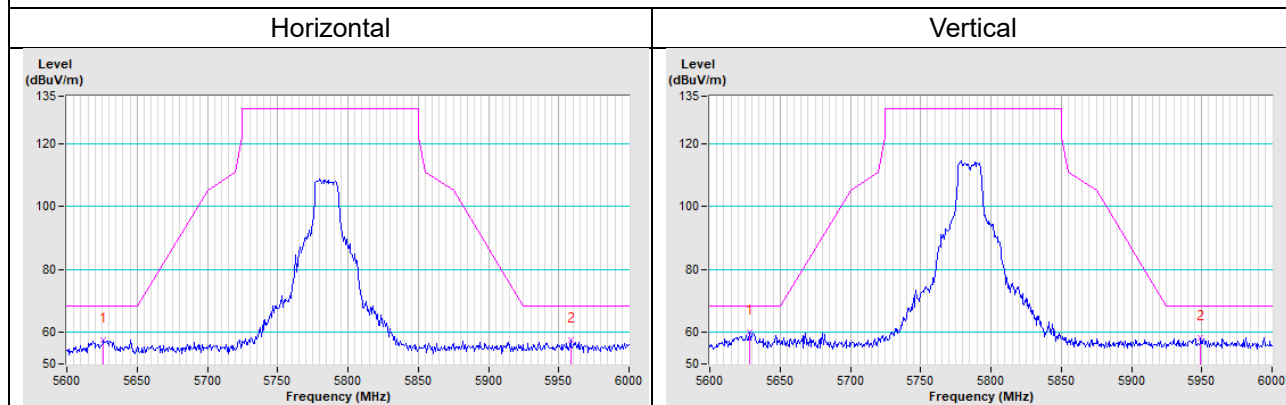


Scanning radio (Radio 3)

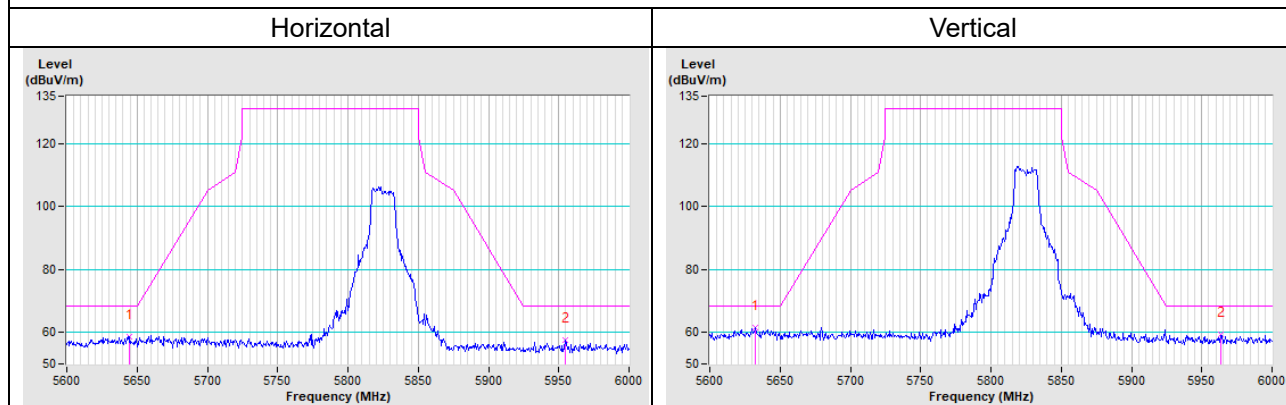
802.11a CH 149 : 5745 MHz



802.11a CH 157 : 5785 MHz

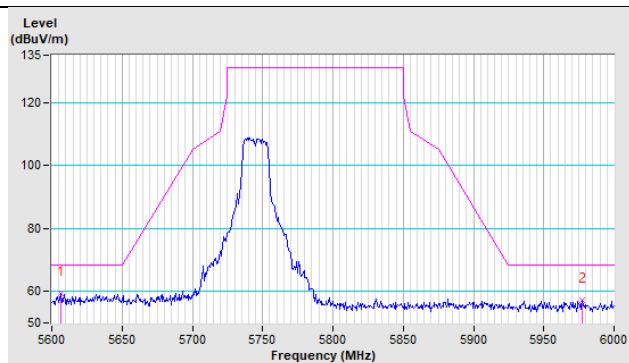


802.11a CH 165 : 5825 MHz

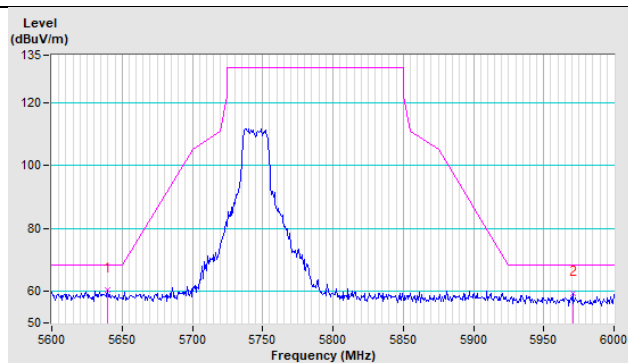


802.11ac (VHT20) CH 149 : 5745 MHz

Horizontal

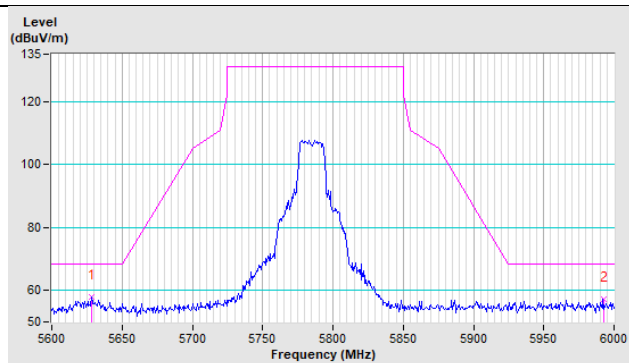


Vertical

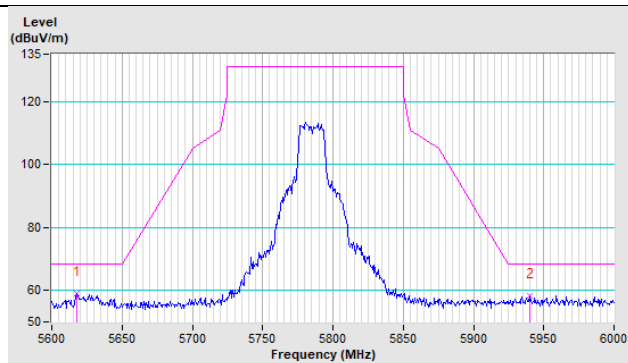


802.11ac (VHT20) CH 157 : 5785 MHz

Horizontal

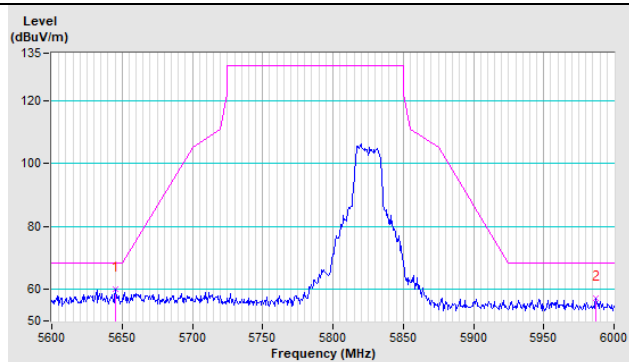


Vertical

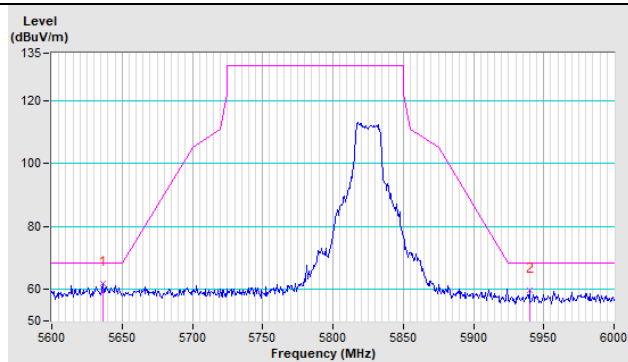


802.11ac (VHT20) CH 165 : 5825 MHz

Horizontal

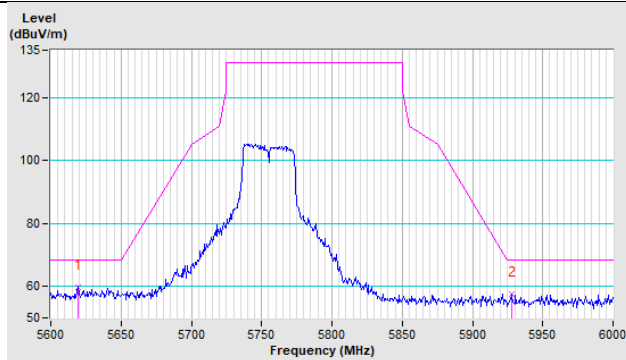


Vertical

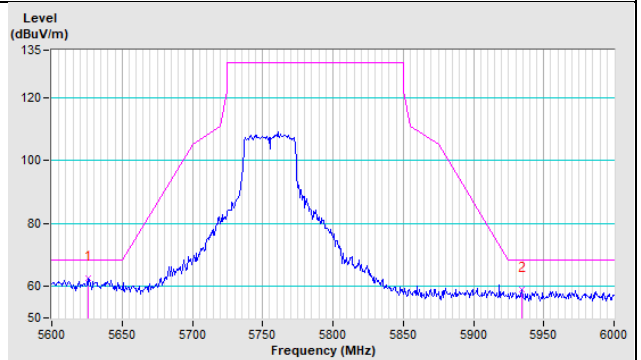


802.11ac (VHT40) CH 151 : 5755 MHz

Horizontal

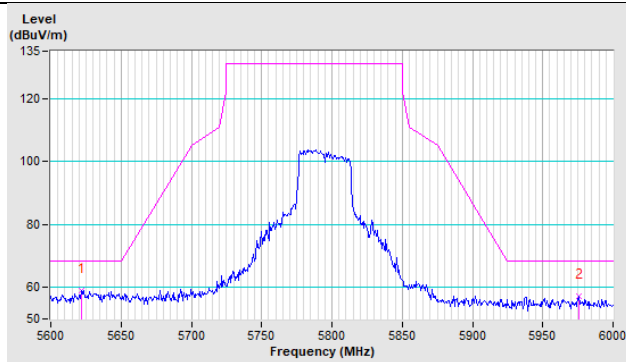


Vertical

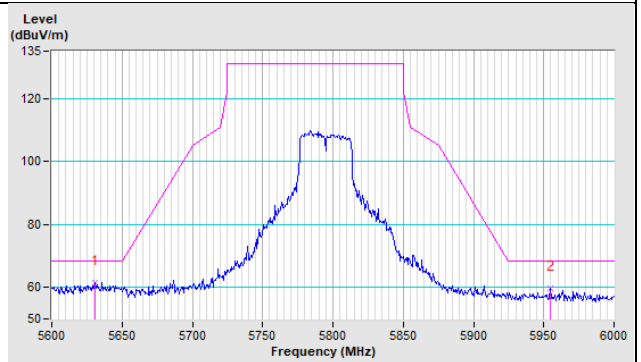


802.11ac (VHT40) CH 159 : 5795 MHz

Horizontal

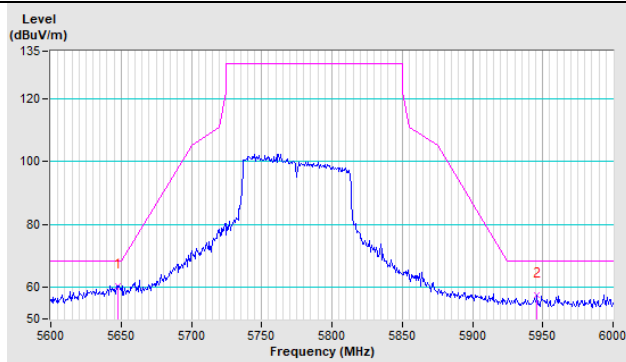


Vertical

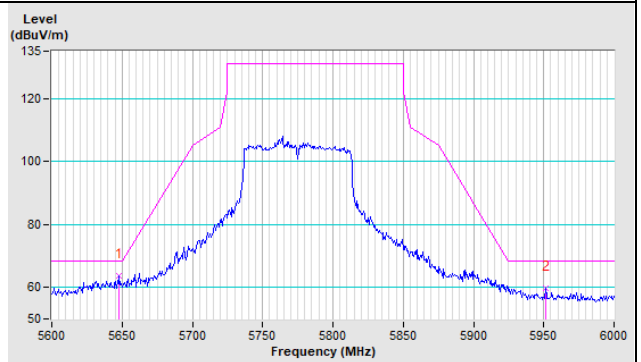


802.11ac (VHT80) CH 155 : 5775 MHz

Horizontal

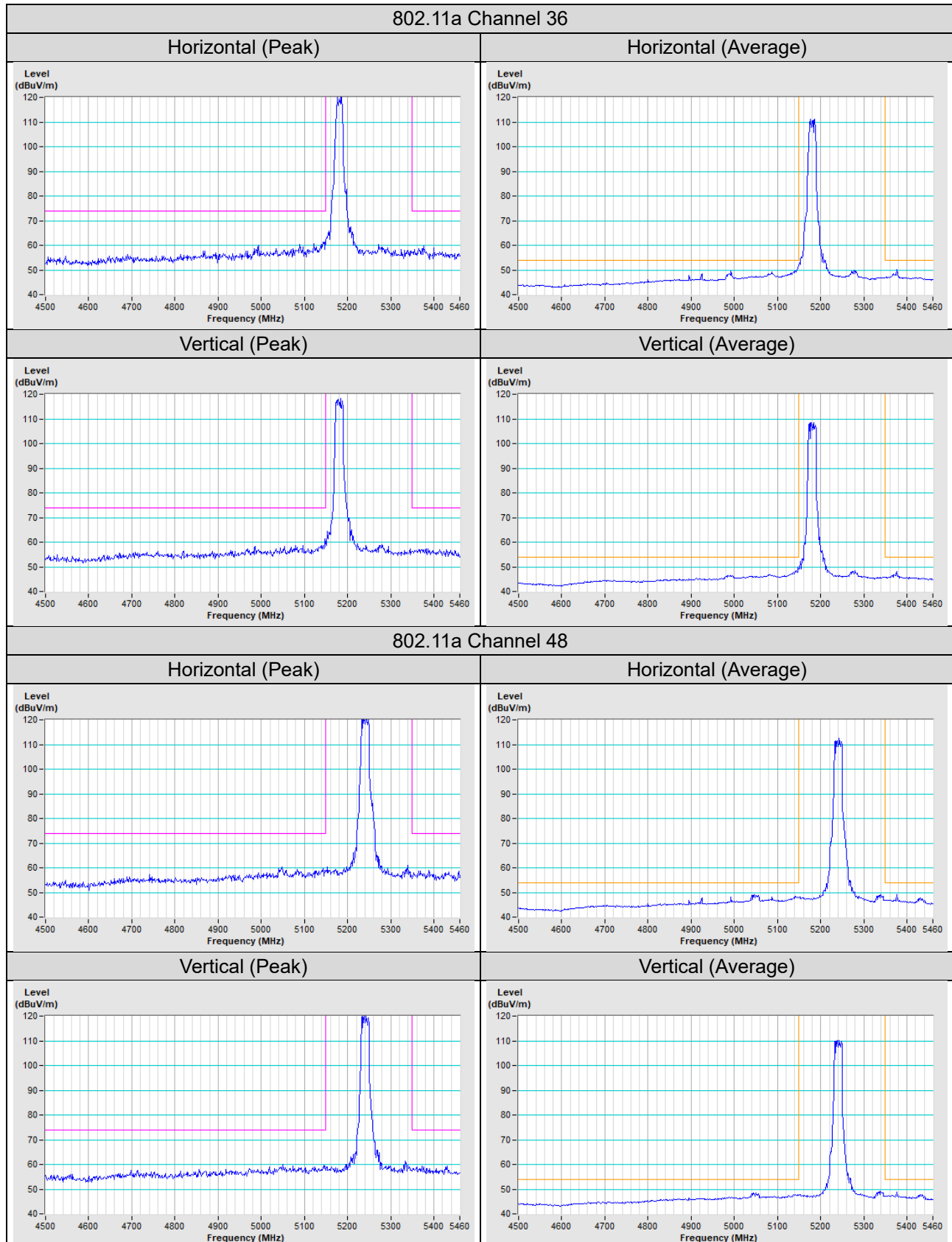


Vertical



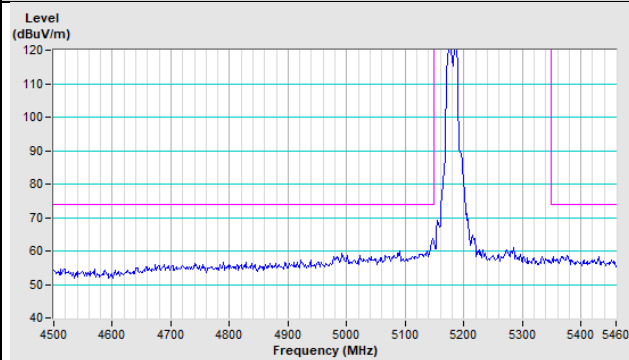
Annex B - Band Edge Measurement

5G traffic radio (Radio 2)

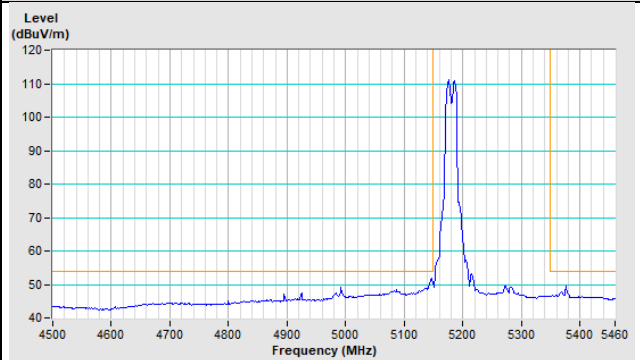


802.11ax (HE20) Channel 36

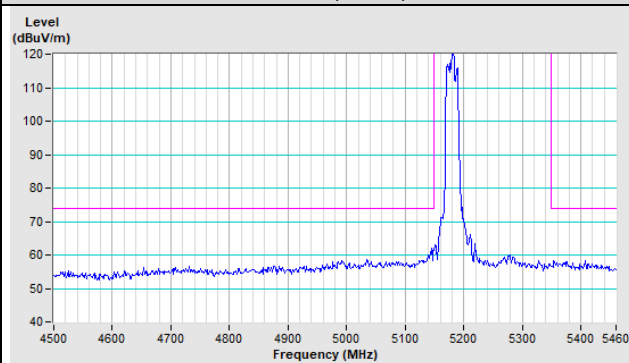
Horizontal (Peak)



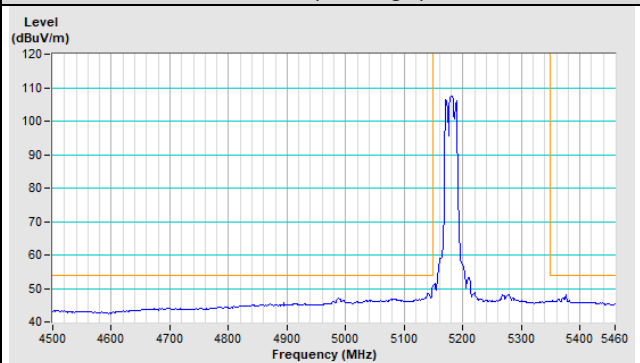
Horizontal (Average)



Vertical (Peak)

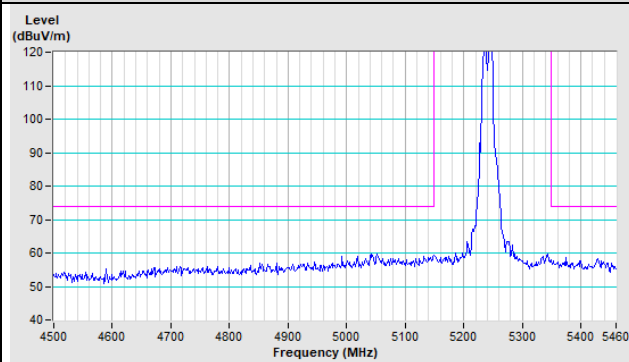


Vertical (Average)

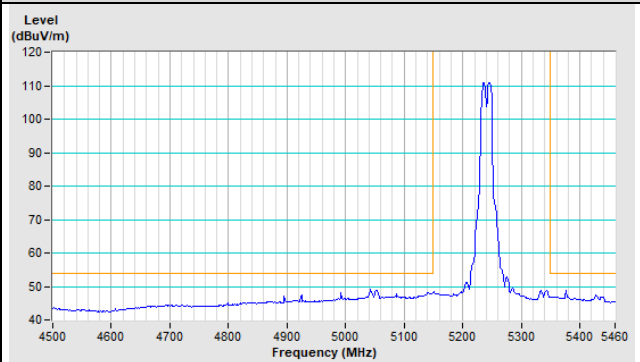


802.11ax (HE20) Channel 48

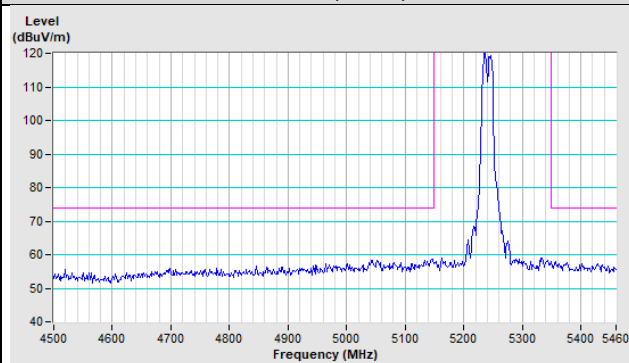
Horizontal (Peak)



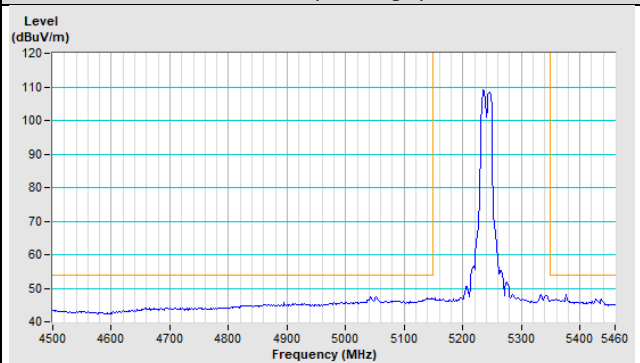
Horizontal (Average)



Vertical (Peak)

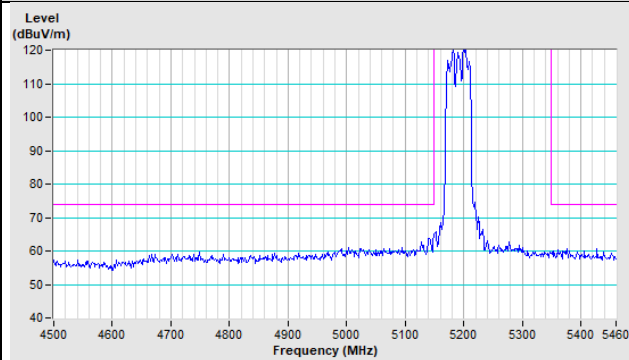


Vertical (Average)

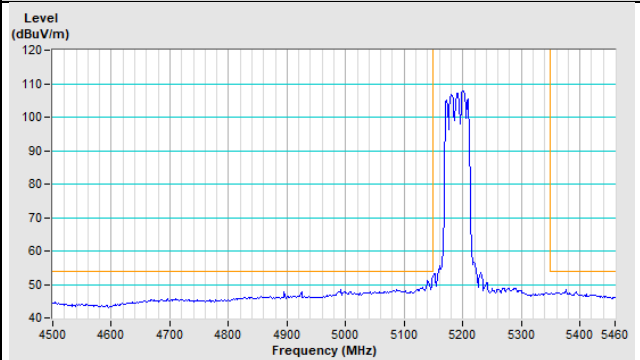


802.11ax (HE40) Channel 38

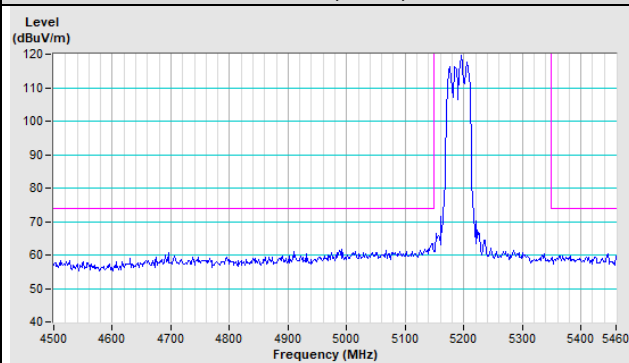
Horizontal (Peak)



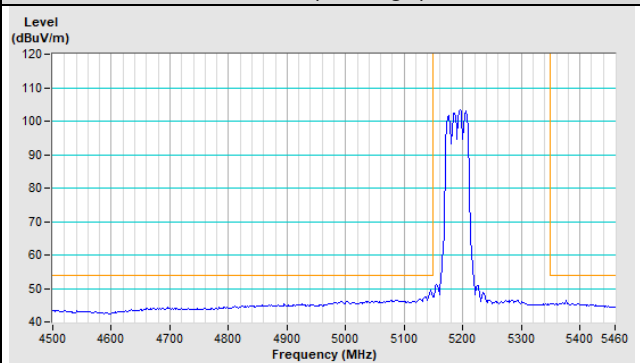
Horizontal (Average)



Vertical (Peak)

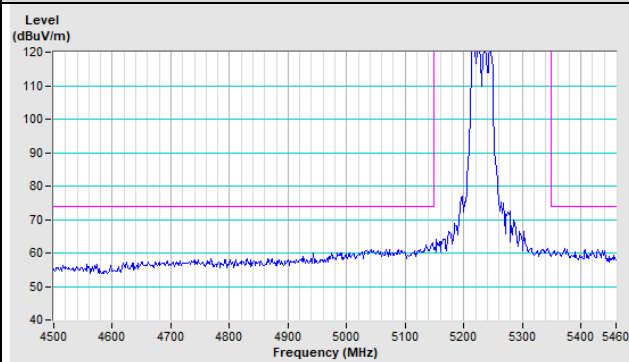


Vertical (Average)

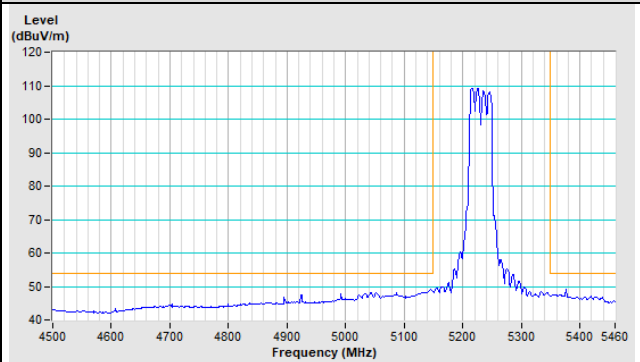


802.11ax (HE40) Channel 46

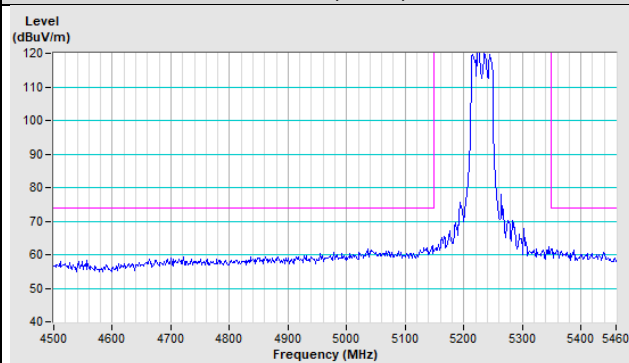
Horizontal (Peak)



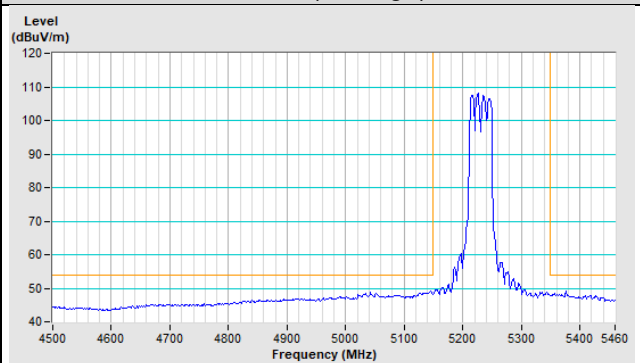
Horizontal (Average)



Vertical (Peak)

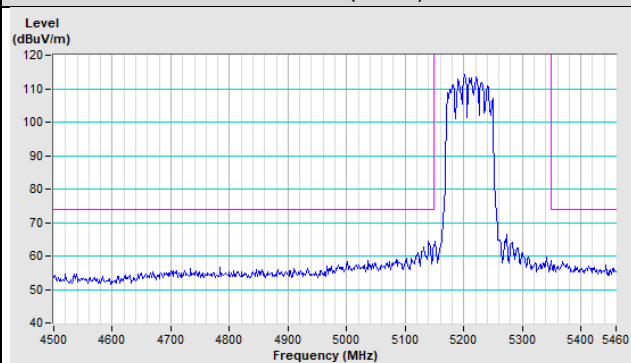


Vertical (Average)

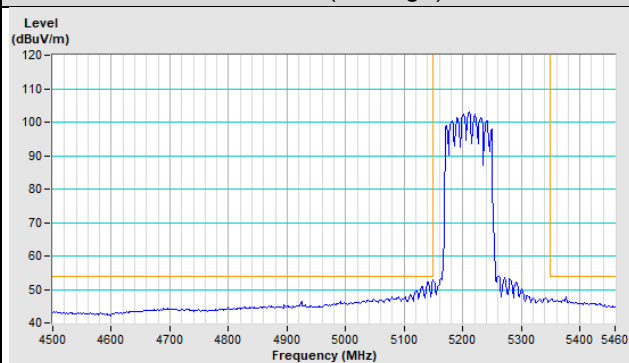


802.11ax (HE80) Channel 42

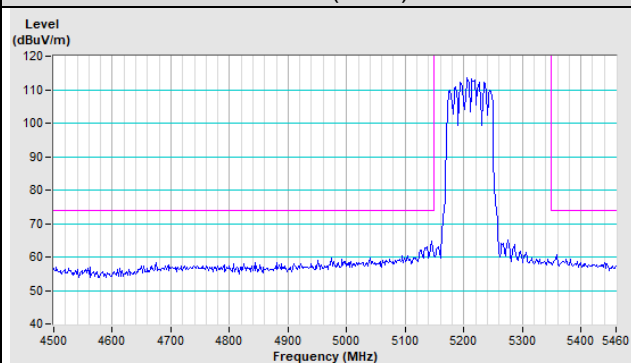
Horizontal (Peak)



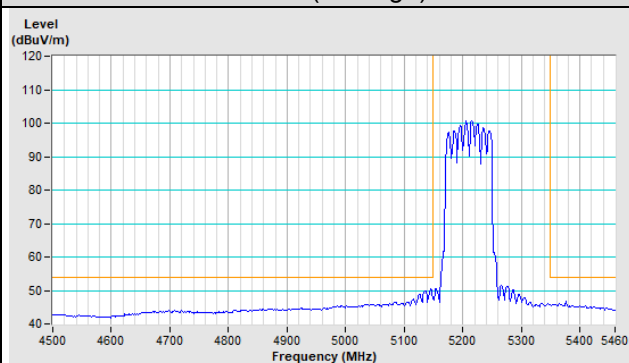
Horizontal (Average)



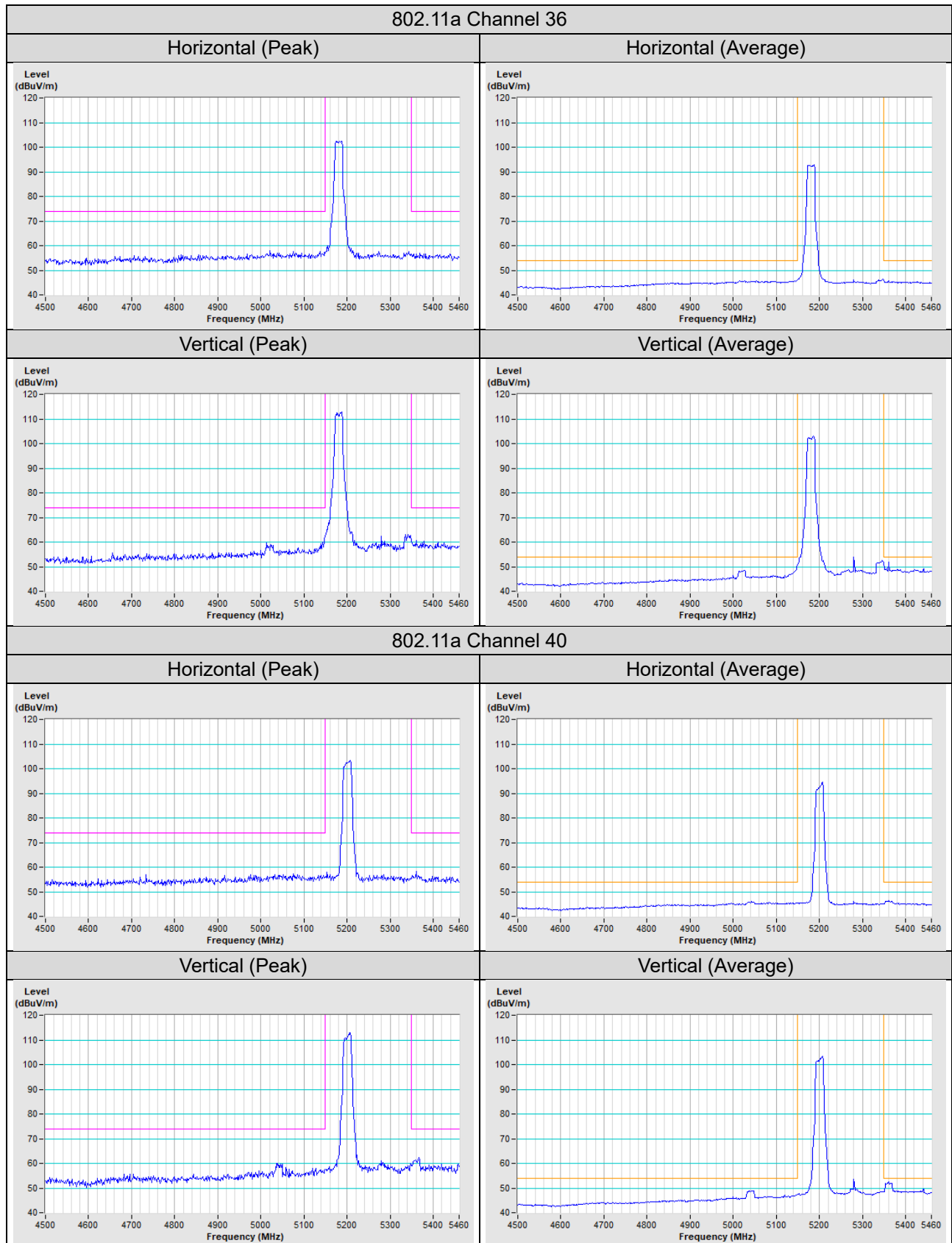
Vertical (Peak)



Vertical (Average)

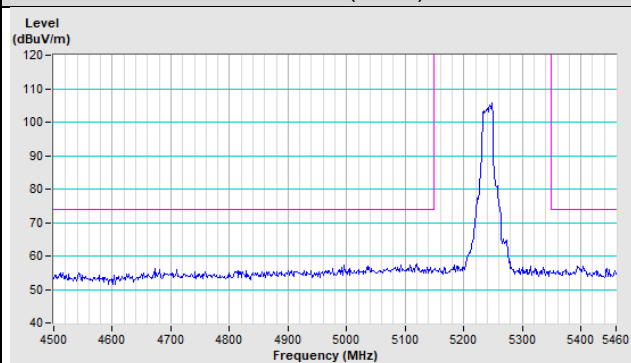


Scanning radio (Radio 3)

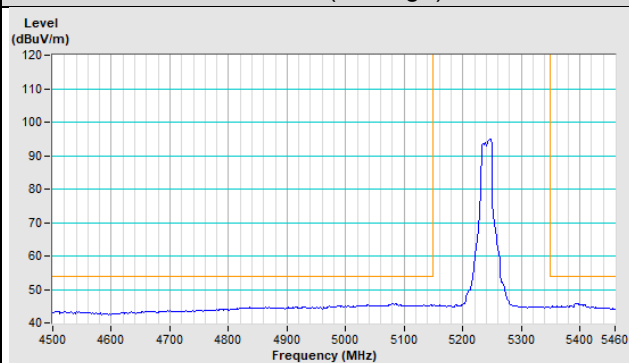


802.11a Channel 48

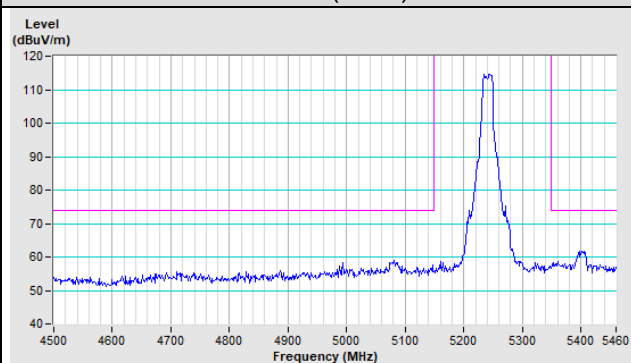
Horizontal (Peak)



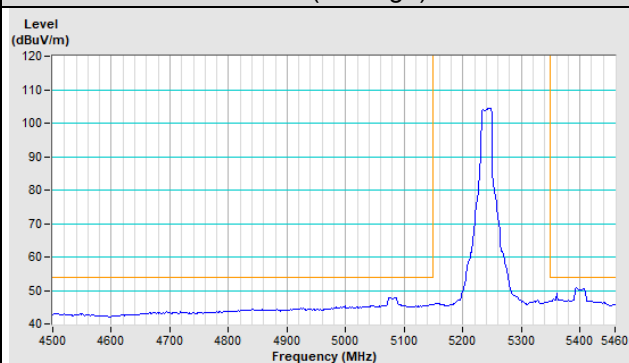
Horizontal (Average)



Vertical (Peak)

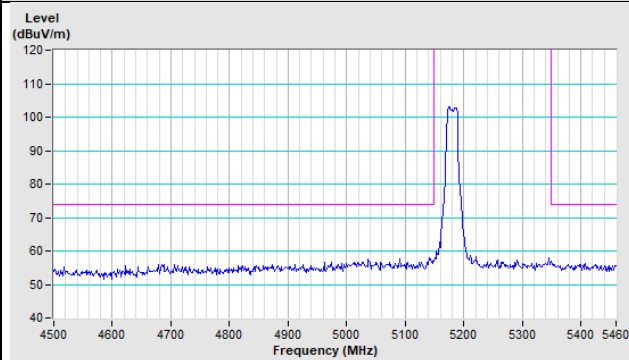


Vertical (Average)

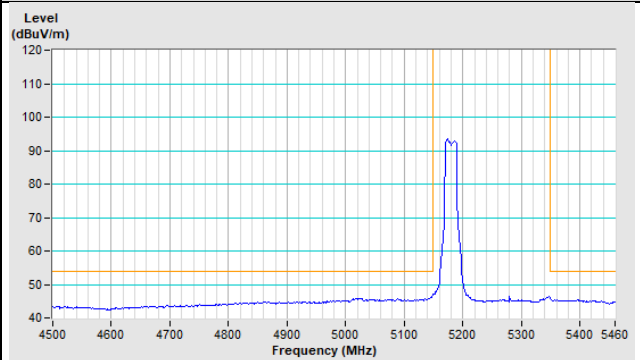


802.11ac (VHT20) Channel 36

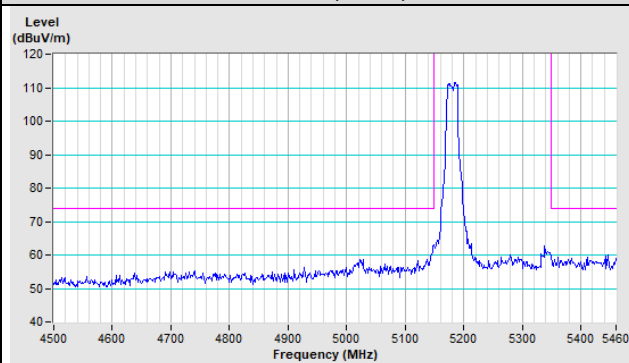
Horizontal (Peak)



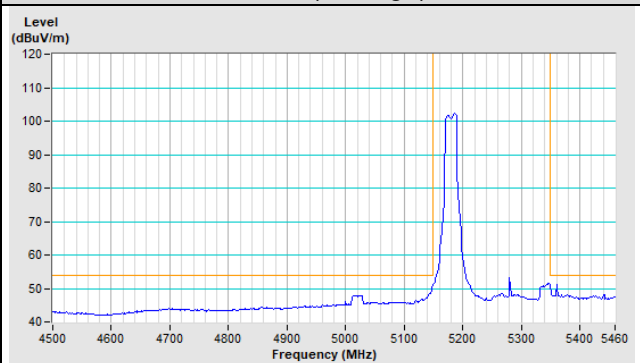
Horizontal (Average)



Vertical (Peak)

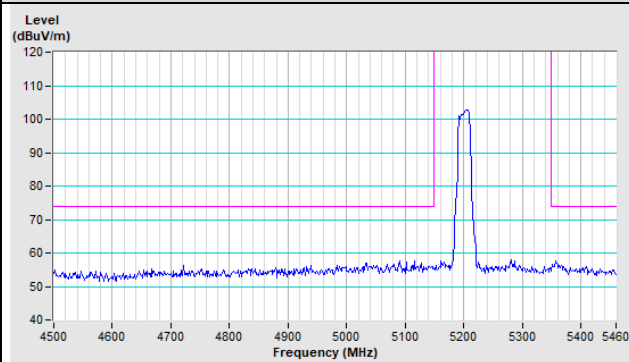


Vertical (Average)

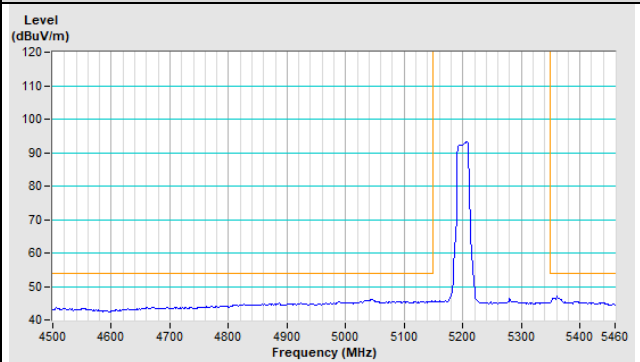


802.11ac (VHT20) Channel 40

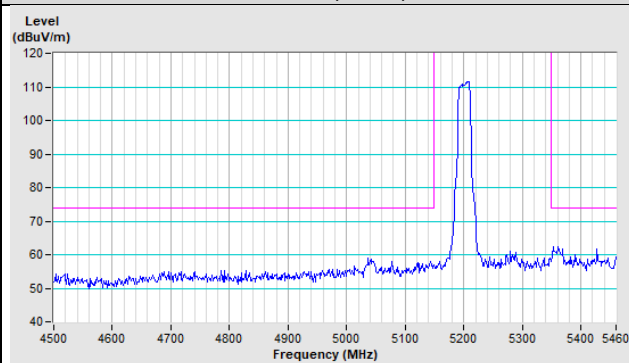
Horizontal (Peak)



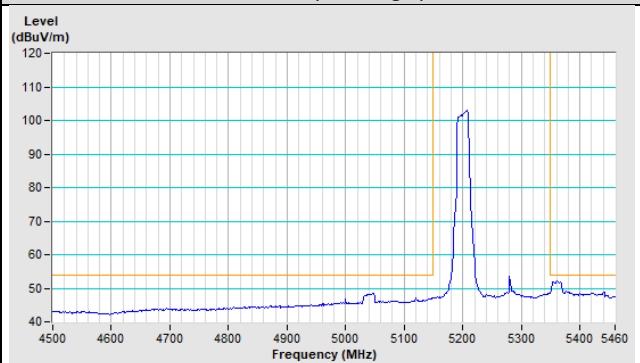
Horizontal (Average)



Vertical (Peak)

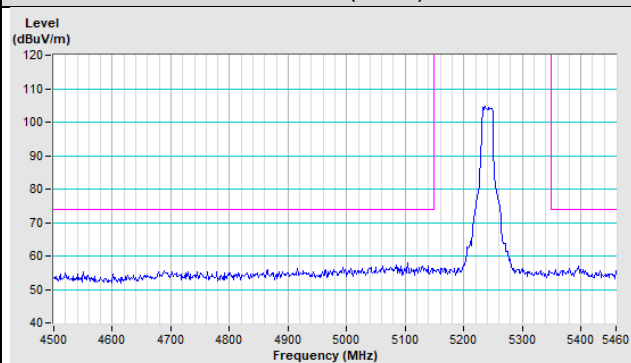


Vertical (Average)

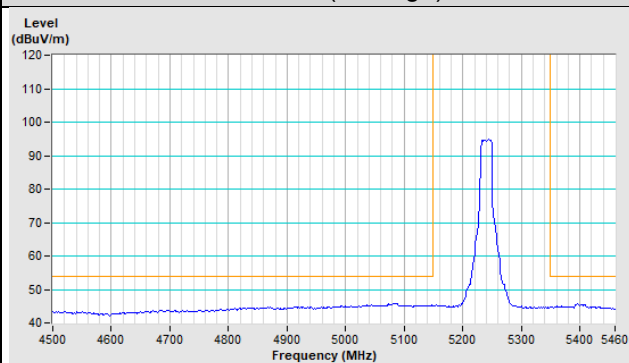


802.11ac (VHT20) Channel 48

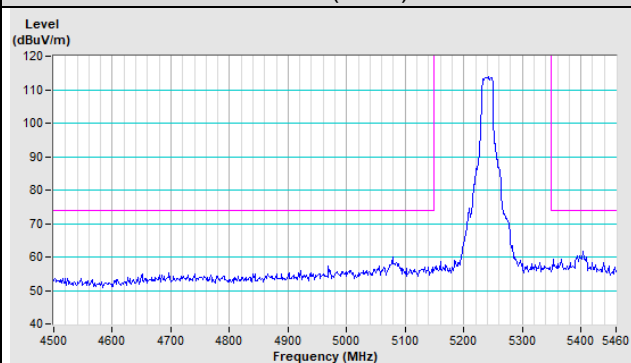
Horizontal (Peak)



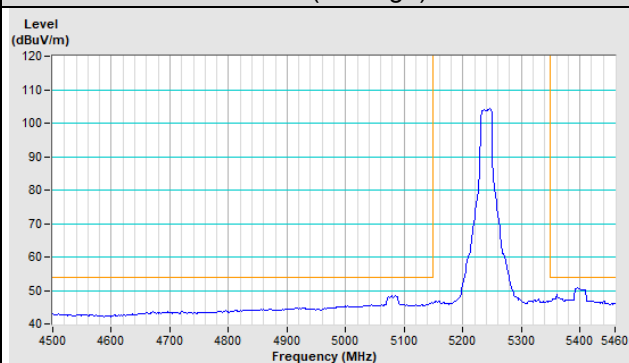
Horizontal (Average)



Vertical (Peak)

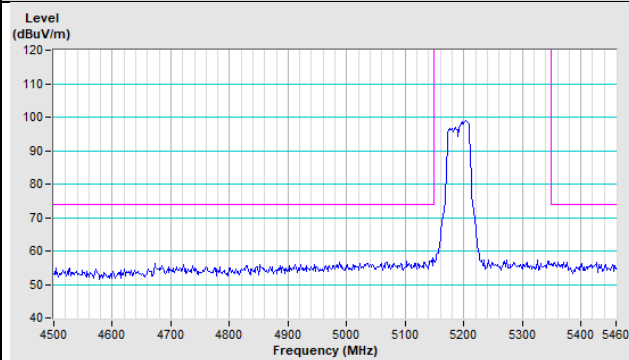


Vertical (Average)

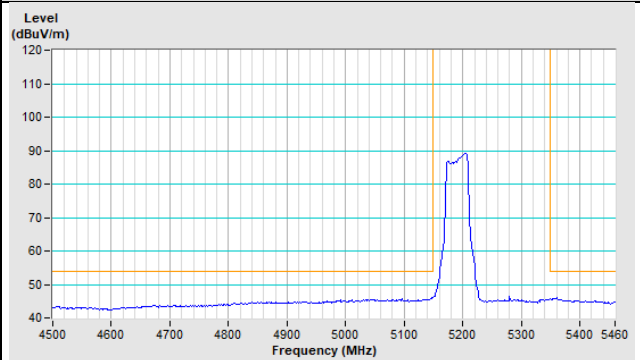


802.11ac (VHT40) Channel 38

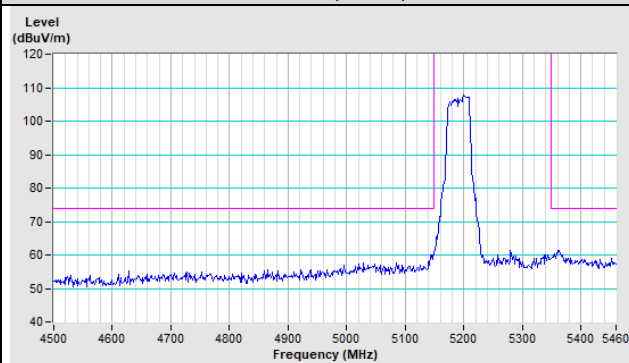
Horizontal (Peak)



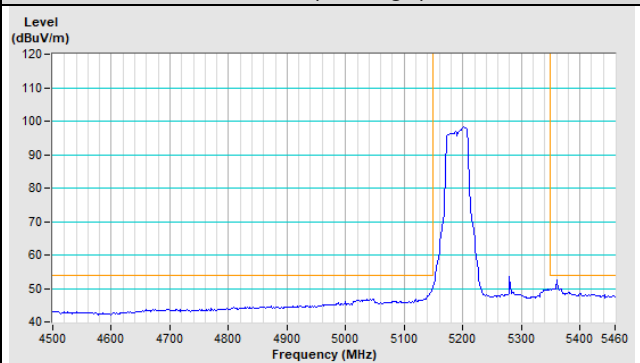
Horizontal (Average)



Vertical (Peak)

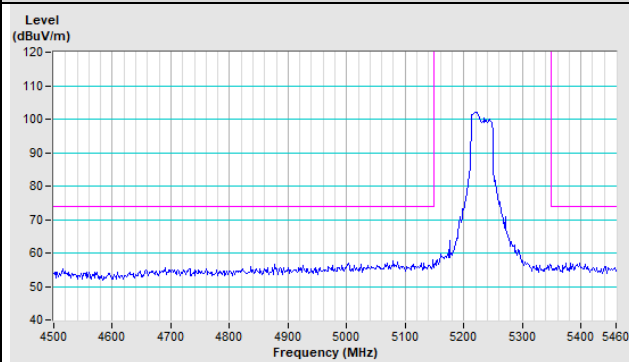


Vertical (Average)

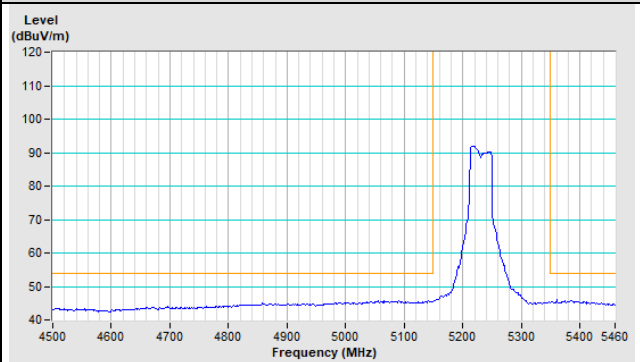


802.11ac (VHT40) Channel 46

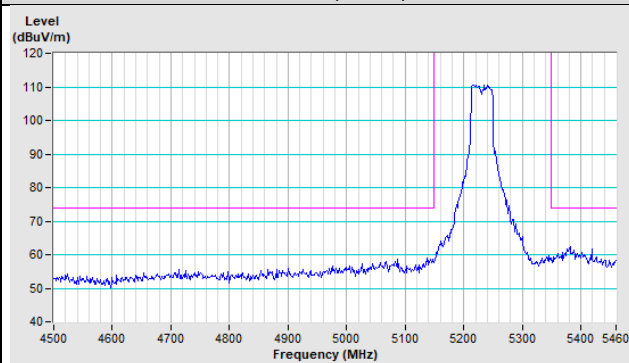
Horizontal (Peak)



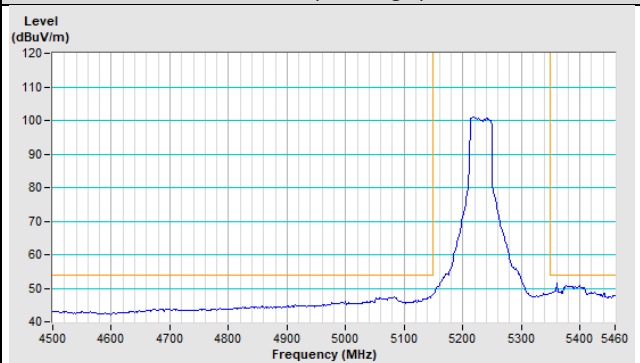
Horizontal (Average)



Vertical (Peak)

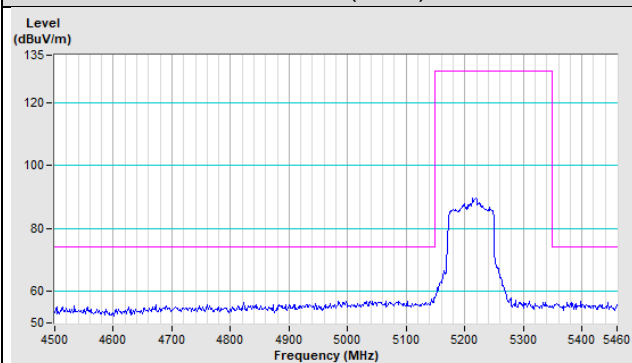


Vertical (Average)

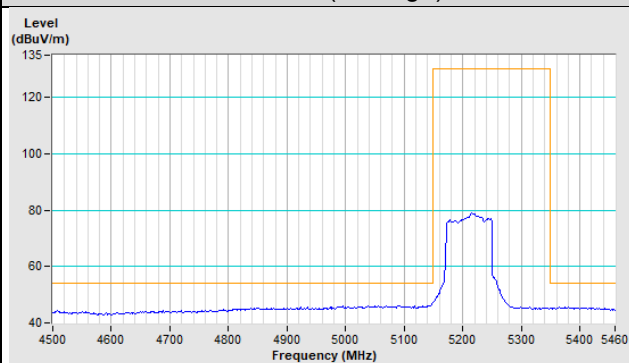


802.11ac (VHT80) Channel 42

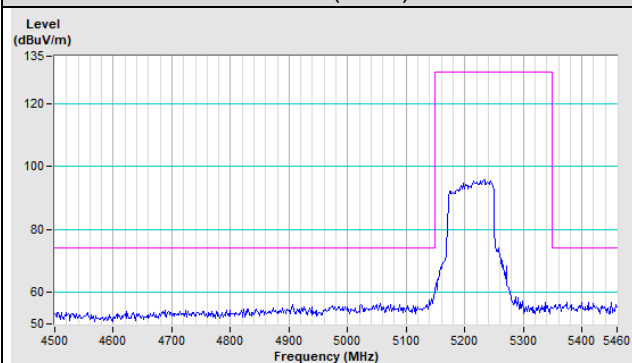
Horizontal (Peak)



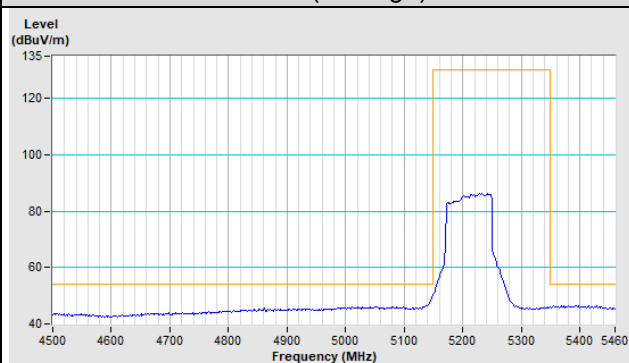
Horizontal (Average)



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 and approved according to ISO/IEC 17025.

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

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Web Site: www.bureauveritas-adt.com

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

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