FCC Test Report
(5GHz WLAN)

Report No.: RFBHKO-WTW-P21090237-1

FCC ID: 2AUS4-NFD1

Test Model: NF-D1

Received Date: 2021/9/8

Test Date: 2021/9/13 ~ 2021/11/1

Issued Date: 2021/11/15

Applicant: Neatframe AS

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

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FCC Registration / Designation Number: 198487 / TW2021

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Release Control Record

Issue No.	Description	Date Issued
RFBHKO-WTW-P21090237-1	Original release	2021/11/15

1 Certificate of Conformity

Product: Neat Bar Pro

Brand: neat.

Test Model: NF-D1

Sample Status: Engineering sample

Applicant: Neatframe AS

Test Date: 2021/9/13 ~ 2021/11/1

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 : Annie Chang , **Date:** 2021/11/15
Annie Chang / Senior Specialist

Approved by : Jeremy Lin , **Date:** 2021/11/15
Jeremy Lin / 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)(9)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -3.93dB at 0.46641MHz.
15.407(b)(1/2/3/4(i/ii)/9)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.01dB at 890.99MHz.
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:
1. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOBE test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
2. For U-NII-1, U-NII-2A, U-NII-2C band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex B. Test Procedures refer to report 4.1.3.
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	3.00 dB
Conducted Emissions	9kHz ~ 40GHz	2.63 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	2.38 dB
	30MHz ~ 1GHz	5.70 dB
Radiated Emissions above 1 GHz	Above 1GHz	5.21 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Neat Bar Pro
Brand	neat.
Test Model	NF-D1
Power Supply Rating	AC I/P: 100-240V, 50/60Hz, 1.2A
Modulation Type	256QAM,64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM for OFDMA
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54Mbps 802.11n up to 300Mbps 802.11ac: up to 866.7Mbps 802.11ax: up to 1201Mbps
Operating Frequency	5180~5240MHz, 5260~5320MHz, 5500~5700MHz, 5745~5825MHz
Number of Channel	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 5260~5320MHz: 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 5500~5700MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 8 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 3 802.11ac (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
Output Power	5180~5240MHz: 68.218mW 5260~5320MHz: 71.979mW 5500~5700MHz: 73.161mW 5745~5825MHz: 77.948mW
Antenna Type	Refer to note as below
Antenna Connector	Refer to note as below
Accessory Device	Neat pad <Brand: neat., Model: A1C>
Cable Supplied	Shielded HDMI cable (2.0m) Shielded LAN cable (2.0m) Non-shielded AC 3-Pin cable (3.0m)

Note:

1. WLAN 2.4GHz & WLAN 5GHz & Bluetooth & mmWave technologies cannot transmit at same time.

2. The EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	TX Function	RX Function
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX
802.11ax (HE20)	2TX	2RX
802.11ax (HE40)	2TX	2RX
802.11ax (HE80)	2TX	2RX

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

3. The following antennas were provided to the EUT.

Ant. 1 Gain (dBi)	Ant. 2 Gain (dBi)	Antenna Type	Antenna Connector
4.27	3.69	PCB	ipex

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

3.2 Description of Test Modes

For 5180 ~ 5240MHz:

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

5260~5320MHz:

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

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

Channel	Frequency
58	5290MHz

5500~5700MHz:

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

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

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

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

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

Channel	Frequency
106	5530 MHz

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≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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

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

Radiated Emission Test (Above 1GHz):

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

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11ax (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	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	MCS0
	802.11ax (HE40)		54 to 62	54, 62	OFDMA	MCS0
	802.11ax (HE80)		58	58	OFDMA	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	6.0
	802.11ax (HE20)		100 to 140	100, 116, 132, 140	OFDMA	MCS0
	802.11ax (HE40)		102 to 134	102, 110, 134,	OFDMA	MCS0
	802.11ax (HE80)		106	106	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

Radiated Emission Test (Below 1GHz):

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

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	157	OFDM	6.0
-	802.11a	5260-5320	52 to 64		OFDM	6.0
-	802.11a	5500-5700	100 to 140		OFDM	6.0
-	802.11a	5745-5825	149 to 165		OFDM	6.0

Power Line Conducted Emission Test:

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

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	157	OFDM	6.0
-	802.11a	5260-5320	52 to 64		OFDM	6.0
-	802.11a	5500-5700	100 to 140		OFDM	6.0
-	802.11a	5745-5825	149 to 165		OFDM	6.0

Antenna Port Conducted Measurement:

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

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

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

Antenna Port Conducted Measurement (Transmit Power excluded)						
EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11ax (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	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	MCS0
	802.11ax (HE40)		54 to 62	54, 62	OFDMA	MCS0
	802.11ax (HE80)		58	58	OFDMA	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	6.0
	802.11ax (HE20)		100 to 140	100, 116, 132, 140	OFDMA	MCS0
	802.11ax (HE40)		102 to 134	102, 110, 134,	OFDMA	MCS0
	802.11ax (HE80)		106	106	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

Transmit Power Measurement						
EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	MCS0
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	MCS0
	802.11ac (VHT80)		42	42	OFDM	MCS0
	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	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5
	802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	MCS0
	802.11ac (VHT40)		54 to 62	54, 62	OFDM	MCS0
	802.11ac (VHT80)		58	58	OFDM	MCS0
	802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	MCS0
	802.11ax (HE40)		54 to 62	54, 62	OFDMA	MCS0
	802.11ax (HE80)		58	58	OFDMA	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	6.0
	802.11n (HT20)		100 to 140	100, 116, 132, 140	OFDM	6.5
	802.11n (HT40)		102 to 134	102, 110, 134,	OFDM	13.5
	802.11ac (VHT20)		100 to 140	100, 116, 132, 140	OFDM	MCS0
	802.11ac (VHT40)		102 to 134	102, 110, 134,	OFDM	MCS0
	802.11ac (VHT80)		106	106	OFDM	MCS0
	802.11ax (HE20)		100 to 140	100, 116, 132, 140	OFDMA	MCS0
	802.11ax (HE40)		102 to 134	102, 110, 134,	OFDMA	MCS0
	802.11ax (HE80)		106	106	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	MCS0
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	MCS0
	802.11ac (VHT80)		155	155	OFDM	MCS0
	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

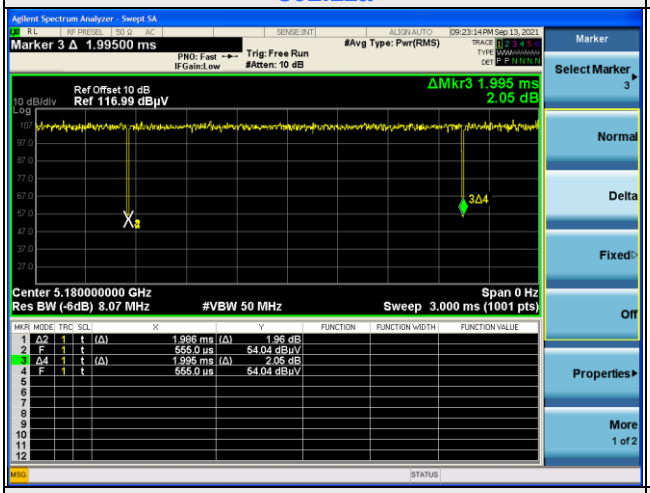
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	22deg. C, 58%RH	120Vac, 60Hz	Jed Wu
RE<1G	25deg. C, 72%RH	120Vac, 60Hz	Ian Chang
PLC	25deg. C, 75%RH	120Vac, 60Hz	Ian Chang
APCM	25deg. C, 76%RH	120Vac, 60Hz	Dalen Dai

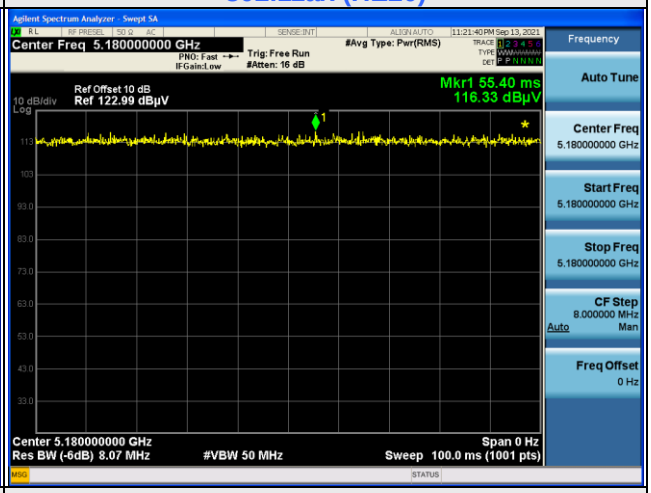
3.3 Duty Cycle of Test Signal

Duty cycle of test signal is ≥ 98 %, duty factor is not required.
802.11a: Duty cycle = 1.986/1.995 = 0.995
802.11ax (HE20): Duty cycle = 100%
802.11ax (HE40): Duty cycle = 100%
802.11ax (HE80): Duty cycle = 100%

802.11a

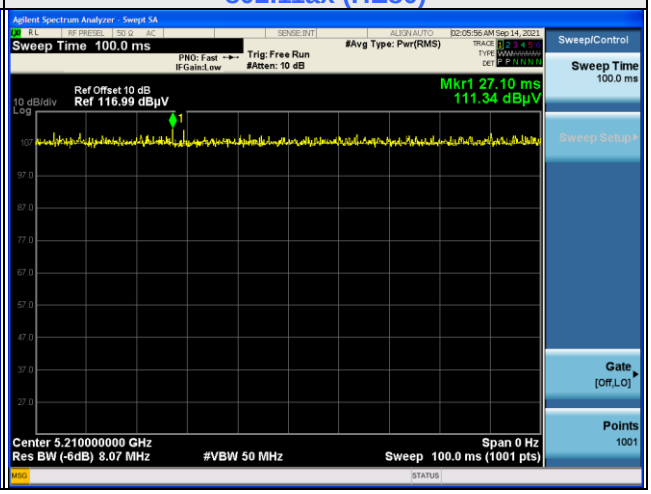


802.11ax (HE20)



802.11ax (HE40)

802.11ax (HE80)



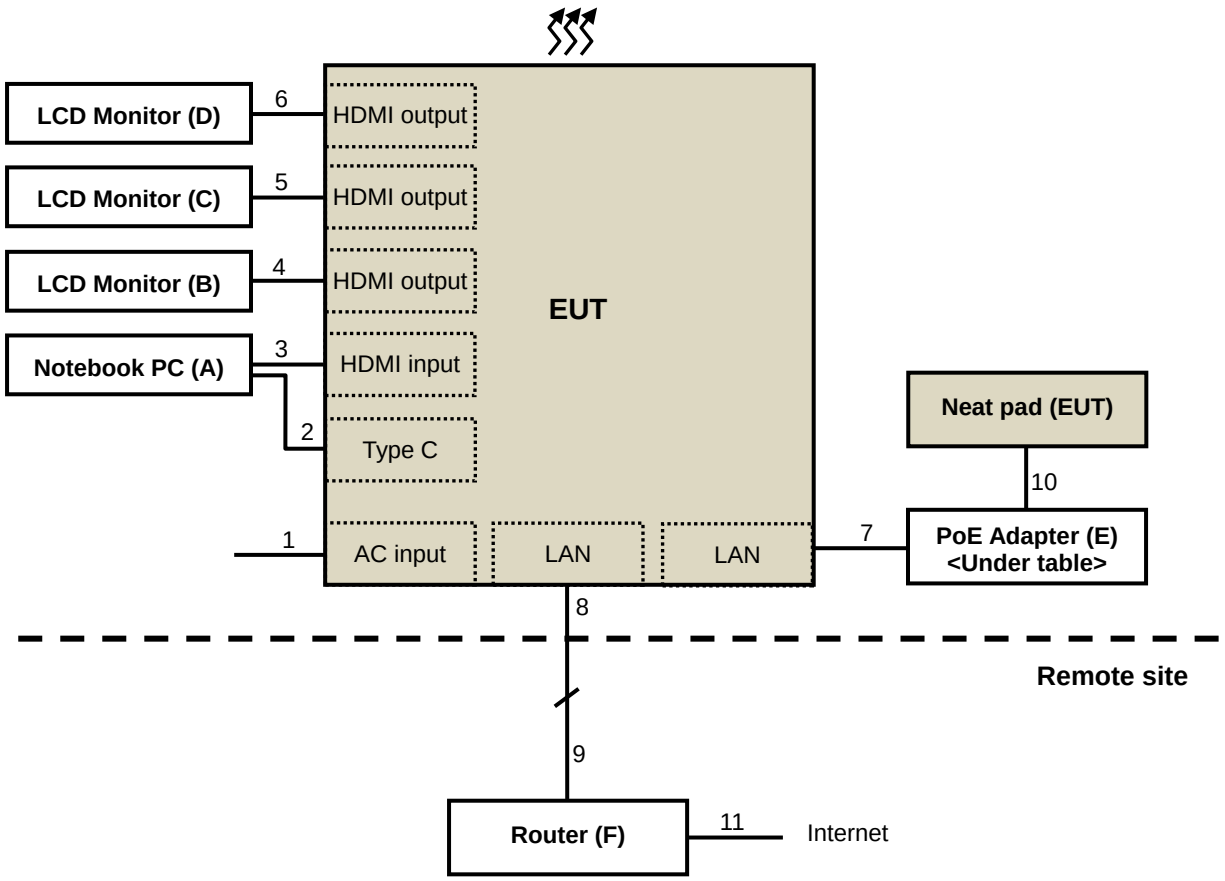
3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook PC	DELL	Latitude 5401	7FJL3X2	N/A	Provided by Lab
B.	LCD Monitor	ASUS	VG289	N/A	N/A	Supplied by applicant
C.	LCD Monitor	ASUS	VG289	N/A	N/A	Supplied by applicant
D.	LCD Monitor	ASUS	VG289	N/A	N/A	Supplied by applicant
E.	POE Adapter	PHIHONG	POE16R-1AFG	N/A	N/A	Supplied by applicant
F.	Router	TOTO Link	N300RB	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/ No)	Cores (Qty.)	Remarks
1.	AC cable	1	3	N	0	Supplied by applicant
2.	USB Type C cable	1	1.7	Y	0	Supplied by applicant
3.	HDMI cable	1	2	Y	0	Supplied by applicant
4.	HDMI cable	1	1.5	Y	0	Supplied by applicant
5.	HDMI cable	1	1.5	Y	0	Supplied by applicant
6.	HDMI cable	1	1.5	Y	0	Supplied by applicant
7.	LAN cable	1	3	Y	0	Supplied by applicant
8.	LAN cable	1	3	Y	0	Supplied by applicant
9.	LAN cable	1	10	Y	0	Provided by Lab (RJ45, Cat.5e)
10.	LAN cable	1	1	N	0	Provided by Lab (RJ45, Cat.5e)
11.	LAN cable	1	1	N	0	Provided by Lab (RJ45, Cat.5e)

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

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

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

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

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

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model no.	Serial No.	Calibrated Date	Calibrated Until
Test Receiver Agilent	N9038A	MY51210129	2021/3/12	2022/3/11
Software BVADT	ADT_Radiated_V8.7.08	NA	NA	NA
Software BVADT	ADT_RF Test Software V6.6.5.4	NA	NA	NA
Auto Control System(Antenna Tower, Table, Controller) ADT	SC100+AT100+TT100	0306	NA	NA
Pre_Amplifier EMCI	EMC001340	980269	2021/6/29	2022/6/28
LOOP ANTENNA EMCI	LPA600	270	2021/9/2	2023/9/1
RF Coaxial Cable Pacific	8D-FB	Cable-CH6-02	2021/7/13	2022/7/12
Pre_Amplifier HP	8447D	2432A03504	2021/2/18	2022/2/17
Bi-log Broadband Antenna Schwarzbeck	VULB9168	139	2020/11/6	2021/11/5
Attenuator Mini-Circuits	UNAT-5+	PAD-CH6-01	2021/7/13	2022/7/12
RF Coaxial Cable Pacific	8D-FB	Cable-CH6-02	2021/7/13	2022/7/12
Antenna(Horn) EMCO	3115	00028257	2020/11/22	2021/11/21
Test Receiver Agilent	N9038A	MY51210129	2021/3/12	2022/3/11
Pre-amplifier HP	8449B	3008A01201	2021/2/19	2022/2/18
RF Coaxial Cable NEAT BAR PROER SUHNER	SF-102	Cable-CH6-01	2021/7/8	2022/7/7
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	2021/5/28	2022/5/27
Fix tool for Boresight	BAF-01	5	NA	NA
Pre_Amplifier MITEQ	AMF-6F-260400-33-8P	892164	2021/2/19	2022/2/18
Antenna(Horn) Schwarzbeck	BBHA-9170	BBHA9170190	2020/11/22	2021/11/21
Spectrum Analyzer R&S	FSV40	101544	2021/5/24	2022/5/23
RF Coaxial Cable WOKEN	WC01	Cable-CH10-03	2021/7/8	2022/7/7
RF Coaxial Cable Rosnol	K1K50-UP0279-K1K50-3000	Cable-CH10(3m)-04	2021/7/8	2022/7/7
Highpass filter SUHNER	11SH10-7000/T18000-O/OP	SN 4	2021/5/28	2022/5/27

NOTE:
1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in LK - 966 chamber 1.
4. Tested Date: 2021/9/13 ~ 2021/11/1

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

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

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

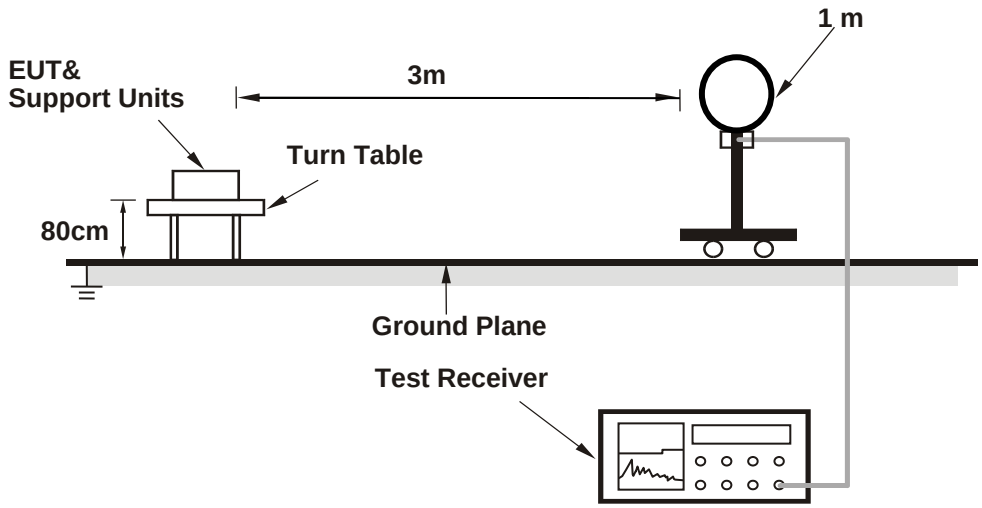
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz. (802.11a: RBW = 1MHz, VBW = 10Hz; 802.11ax (HE20): RBW = 1MHz, VBW = 10Hz; 802.11ax (HE40): RBW = 1MHz, VBW = 10Hz; 802.11ax (HE80): RBW = 1MHz, VBW = 10Hz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

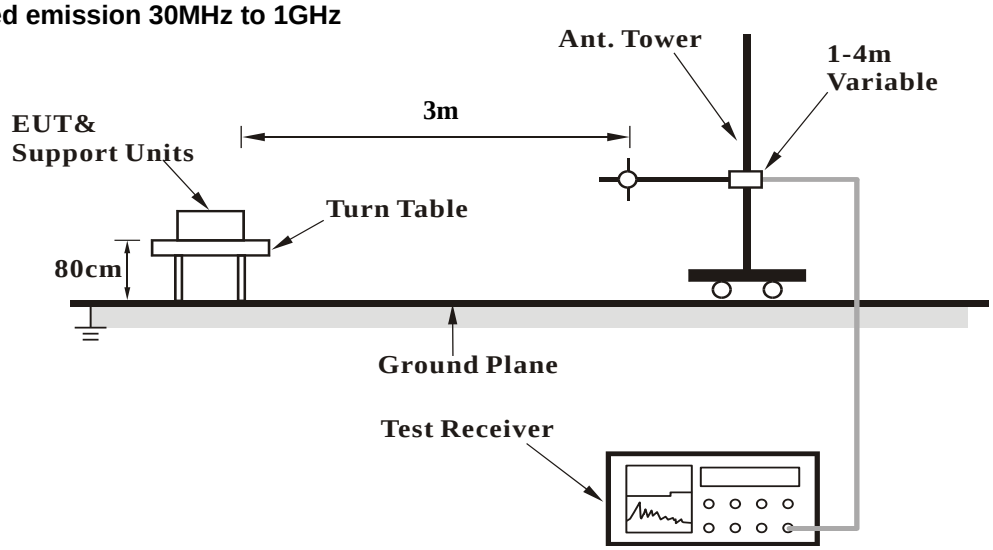
No deviation.

4.1.5 Test Setup

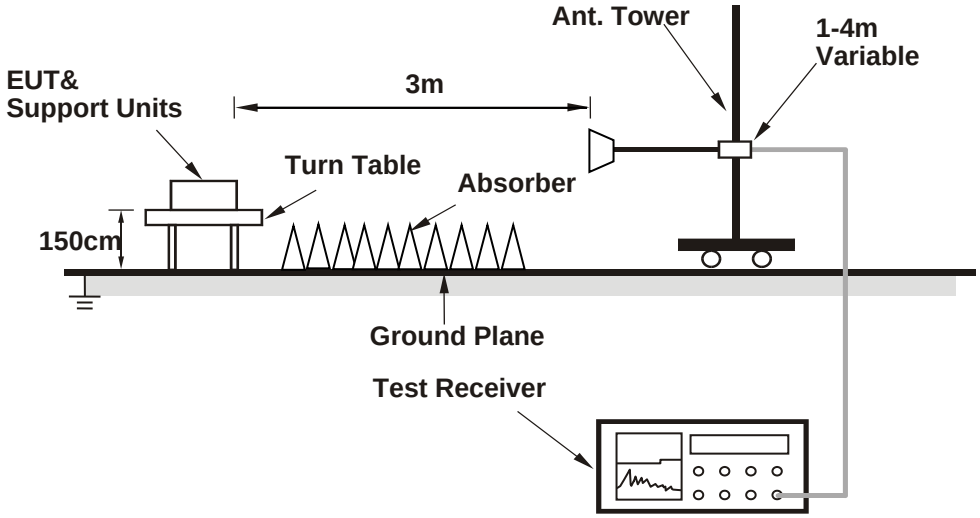
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

a. Placed the EUT on the testing table.
b. Video camera of EUT captured video image, then sent messages to ext. monitors.
c. Notebook sent messages to EUT.
d. Neat pad sent messages to EUT.
e. EUT sent messages to ext. monitors.
f. The necessary accessories enable the system in full functions.

4.1.7 Test Results

ABOVE 1GHz DATA

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**Emission Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5150.00	58.48 PK	74.00	-15.52	1.72 H	305	51.67	6.81
2	5150.00	46.91 AV	54.00	-7.09	1.72 H	305	40.10	6.81
3	*5180.00	108.47 PK			1.72 H	305	101.44	7.03
4	*5180.00	100.37 AV			1.72 H	305	93.34	7.03
5	#10360.00	64.07 PK	68.20	-4.13	1.83 H	141	49.51	14.56
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	59.09 PK	74.00	-14.91	1.95 V	287	52.28	6.81
2	5150.00	48.68 AV	54.00	-5.32	1.95 V	287	41.87	6.81
3	*5180.00	113.16 PK			1.95 V	287	106.13	7.03
4	*5180.00	104.26 AV			1.95 V	287	97.23	7.03
5	#10360.00	65.82 PK	68.20	-2.38	1.55 V	131	51.26	14.56

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	108.77 PK			1.64 H	306	101.60	7.17
2	*5200.00	100.32 AV			1.64 H	306	93.15	7.17
3	#10400.00	59.74 PK	68.20	-8.46	1.63 H	207	45.12	14.62
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	113.47 PK			2.02 V	286	106.30	7.17
2	*5200.00	104.12 AV			2.02 V	286	96.95	7.17
3	#10400.00	63.63 PK	68.20	-4.57	1.67 V	133	49.01	14.62

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	108.92 PK			1.71 H	306	101.58	7.34
2	*5240.00	100.69 AV			1.71 H	306	93.35	7.34
3	5350.00	58.91 PK	74.00	-15.09	1.71 H	306	51.07	7.84
4	5350.00	47.57 AV	54.00	-6.43	1.71 H	306	39.73	7.84
5	#10480.00	60.52 PK	68.20	-7.68	1.43 H	309	45.49	15.03
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	113.94 PK			2.18 V	285	106.60	7.34
2	*5240.00	104.68 AV			2.18 V	285	97.34	7.34
3	5350.00	59.06 PK	74.00	-14.94	2.18 V	285	51.22	7.84
4	5350.00	47.49 AV	54.00	-6.51	2.18 V	285	39.65	7.84
5	#10480.00	62.54 PK	68.20	-5.66	1.49 V	132	47.51	15.03

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.65 PK	74.00	-15.35	1.47 H	299	51.84	6.81
2	5150.00	47.44 AV	54.00	-6.56	1.47 H	299	40.63	6.81
3	*5260.00	109.19 PK			1.47 H	299	101.74	7.45
4	*5260.00	100.92 AV			1.47 H	299	93.47	7.45
5	#10520.00	61.16 PK	68.20	-7.04	1.49 H	309	46.00	15.16
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	58.56 PK	74.00	-15.44	2.16 V	284	51.75	6.81
2	5150.00	47.89 AV	54.00	-6.11	2.16 V	284	41.08	6.81
3	*5260.00	114.93 PK			2.16 V	284	107.48	7.45
4	*5260.00	105.02 AV			2.16 V	284	97.57	7.45
5	#10520.00	63.08 PK	68.20	-5.12	1.32 V	292	47.92	15.16

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	111.08 PK			1.77 H	307	103.34	7.74
2	*5300.00	102.46 AV			1.77 H	307	94.72	7.74
3	10600.00	58.45 PK	74.00	-15.55	1.58 H	310	43.14	15.31
4	10600.00	46.00 AV	54.00	-8.00	1.58 H	310	30.69	15.31
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	115.31 PK			2.05 V	286	107.57	7.74
2	*5300.00	105.79 AV			2.05 V	286	98.05	7.74
3	10600.00	63.32 PK	74.00	-10.68	1.51 V	130	48.01	15.31
4	10600.00	50.42 AV	54.00	-3.58	1.51 V	130	35.11	15.31

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	110.25 PK			1.60 H	311	102.47	7.78
2	*5320.00	101.91 AV			1.60 H	311	94.13	7.78
3	5350.00	58.75 PK	74.00	-15.25	1.60 H	311	50.91	7.84
4	5350.00	47.66 AV	54.00	-6.34	1.60 H	311	39.82	7.84
5	10640.00	57.82 PK	74.00	-16.18	1.73 H	309	42.41	15.41
6	10640.00	45.99 AV	54.00	-8.01	1.73 H	309	30.58	15.41
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	115.19 PK			2.14 V	286	107.41	7.78
2	*5320.00	105.76 AV			2.14 V	286	97.98	7.78
3	5350.00	58.59 PK	74.00	-15.41	2.14 V	286	50.75	7.84
4	5350.00	47.95 AV	54.00	-6.05	2.14 V	286	40.11	7.84
5	10640.00	62.01 PK	74.00	-11.99	1.54 V	130	46.60	15.41
6	10640.00	49.08 AV	54.00	-4.92	1.54 V	130	33.67	15.41

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	58.96 PK	74.00	-15.04	1.62 H	312	51.01	7.95
2	5460.00	47.93 AV	54.00	-6.07	1.62 H	312	39.98	7.95
3	#5470.00	59.07 PK	68.20	-9.13	1.62 H	312	51.10	7.97
4	*5500.00	109.99 PK			1.62 H	312	101.98	8.01
5	*5500.00	101.17 AV			1.62 H	312	93.16	8.01
6	11000.00	53.20 PK	74.00	-20.80	1.65 H	313	37.31	15.89
7	11000.00	42.62 AV	54.00	-11.38	1.65 H	313	26.73	15.89
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	59.52 PK	74.00	-14.48	2.12 V	278	51.57	7.95
2	5460.00	48.37 AV	54.00	-5.63	2.12 V	278	40.42	7.95
3	#5470.00	59.88 PK	68.20	-8.32	2.12 V	278	51.91	7.97
4	*5500.00	115.82 PK			2.12 V	278	107.81	8.01
5	*5500.00	105.97 AV			2.12 V	278	97.96	8.01
6	11000.00	55.61 PK	74.00	-18.39	1.50 V	129	39.72	15.89
7	11000.00	44.19 AV	54.00	-9.81	1.50 V	129	28.30	15.89

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	109.64 PK			1.81 H	312	102.10	7.54
2	*5580.00	100.72 AV			1.81 H	312	93.18	7.54
3	11160.00	54.91 PK	74.00	-19.09	1.64 H	310	38.86	16.05
4	11160.00	43.61 AV	54.00	-10.39	1.64 H	310	27.56	16.05
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	112.75 PK			2.28 V	289	105.21	7.54
2	*5580.00	103.35 AV			2.28 V	289	95.81	7.54
3	11160.00	55.83 PK	74.00	-18.17	1.48 V	132	39.78	16.05
4	11160.00	44.53 AV	54.00	-9.47	1.48 V	132	28.48	16.05

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 132：5660 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	*5660.00	108.48 PK			1.93 H	312	101.26	7.22
2	*5660.00	99.99 AV			1.93 H	312	92.77	7.22
3	11320.00	55.31 PK	74.00	-18.69	1.68 H	302	38.75	16.56
4	11320.00	44.10 AV	54.00	-9.90	1.68 H	302	27.54	16.56
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	*5660.00	112.63 PK			1.51 V	318	105.41	7.22
2	*5660.00	102.93 AV			1.51 V	318	95.71	7.22
3	11320.00	56.38 PK	74.00	-17.62	1.56 V	139	39.82	16.56
4	11320.00	45.09 AV	54.00	-8.91	1.56 V	139	28.53	16.56

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	108.91 PK			1.69 H	307	101.78	7.13
2	*5700.00	99.95 AV			1.69 H	307	92.82	7.13
3	#5725.00	58.32 PK	68.20	-9.88	1.69 H	307	51.15	7.17
4	11400.00	53.86 PK	74.00	-20.14	1.63 H	311	37.21	16.65
5	11400.00	43.13 AV	54.00	-10.87	1.63 H	311	26.48	16.65
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	113.43 PK			2.16 V	273	106.30	7.13
2	*5700.00	104.05 AV			2.16 V	273	96.92	7.13
3	#5725.00	59.30 PK	68.20	-8.90	2.16 V	273	52.13	7.17
4	11400.00	55.76 PK	74.00	-18.24	1.50 V	133	39.11	16.65
5	11400.00	44.59 AV	54.00	-9.41	1.50 V	133	27.94	16.65

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	#5624.57	57.83 PK	68.20	-10.37	1.56 H	312	50.50	7.33
2	*5745.00	107.80 PK			1.56 H	312	100.59	7.21
3	*5745.00	100.03 AV			1.56 H	312	92.82	7.21
4	#5967.52	58.18 PK	68.20	-10.02	1.56 H	312	50.70	7.48
5	11490.00	54.61 PK	74.00	-19.39	1.62 H	310	37.85	16.76
6	11490.00	42.91 AV	54.00	-11.09	1.62 H	310	26.15	16.76
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	#5579.93	58.61 PK	68.20	-9.59	2.12 V	281	51.07	7.54
2	*5745.00	114.30 PK			2.12 V	281	107.09	7.21
3	*5745.00	105.08 AV			2.12 V	281	97.87	7.21
4	#5986.05	59.17 PK	68.20	-9.03	2.12 V	281	51.63	7.54
5	11490.00	55.85 PK	74.00	-18.15	1.72 V	222	39.09	16.76
6	11490.00	43.69 AV	54.00	-10.31	1.72 V	222	26.93	16.76

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	#5597.50	57.52 PK	68.20	-10.68	1.39 H	314	50.10	7.42
2	*5785.00	107.75 PK			1.39 H	314	100.47	7.28
3	*5785.00	100.15 AV			1.39 H	314	92.87	7.28
4	#6020.73	59.16 PK	68.20	-9.04	1.39 H	314	51.57	7.59
5	11570.00	54.64 PK	74.00	-19.36	1.69 H	309	37.65	16.99
6	11570.00	43.28 AV	54.00	-10.72	1.69 H	309	26.29	16.99
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	#5612.23	58.39 PK	68.20	-9.81	2.10 V	280	51.03	7.36
2	*5785.00	114.77 PK			2.10 V	280	107.49	7.28
3	*5785.00	105.31 AV			2.10 V	280	98.03	7.28
4	#5982.73	58.68 PK	68.20	-9.52	2.10 V	280	51.16	7.52
5	11570.00	56.01 PK	74.00	-17.99	1.58 V	311	39.02	16.99
6	11570.00	45.18 AV	54.00	-8.82	1.58 V	311	28.19	16.99

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	#5621.73	57.36 PK	68.20	-10.84	1.46 H	313	50.02	7.34
2	*5825.00	108.01 PK			1.46 H	313	100.73	7.28
3	*5825.00	100.25 AV			1.46 H	313	92.97	7.28
4	#6015.02	59.05 PK	68.20	-9.15	1.46 H	313	51.46	7.59
5	11650.00	54.93 PK	74.00	-19.07	1.67 H	303	37.69	17.24
6	11650.00	44.20 AV	54.00	-9.80	1.67 H	303	26.96	17.24
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	#5597.98	57.94 PK	68.20	-10.26	2.07 V	288	50.52	7.42
2	*5825.00	114.09 PK			2.07 V	288	106.81	7.28
3	*5825.00	104.89 AV			2.07 V	288	97.61	7.28
4	#5971.80	58.94 PK	68.20	-9.26	2.07 V	288	51.45	7.49
5	11650.00	56.55 PK	74.00	-17.45	1.60 V	309	39.31	17.24
6	11650.00	45.48 AV	54.00	-8.52	1.60 V	309	28.24	17.24

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	58.61 PK	74.00	-15.39	1.74 H	305	51.80	6.81
2	5150.00	47.40 AV	54.00	-6.60	1.74 H	305	40.59	6.81
3	*5180.00	110.35 PK			1.74 H	305	103.32	7.03
4	*5180.00	99.24 AV			1.74 H	305	92.21	7.03
5	#10360.00	64.96 PK	68.20	-3.24	1.82 H	141	50.40	14.56
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	58.91 PK	74.00	-15.09	2.13 V	287	52.10	6.81
2	5150.00	48.21 AV	54.00	-5.79	2.13 V	287	41.40	6.81
3	*5180.00	114.14 PK			2.13 V	287	107.11	7.03
4	*5180.00	103.10 AV			2.13 V	287	96.07	7.03
5	#10360.00	66.11 PK	68.20	-2.09	1.60 V	138	51.55	14.56

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	110.50 PK			1.56 H	302	103.33	7.17
2	*5200.00	99.33 AV			1.56 H	302	92.16	7.17
3	#10400.00	63.05 PK	68.20	-5.15	1.74 H	142	48.43	14.62
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	113.98 PK			2.12 V	288	106.81	7.17
2	*5200.00	103.13 AV			2.12 V	288	95.96	7.17
3	#10400.00	63.86 PK	68.20	-4.34	1.67 V	133	49.24	14.62

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	109.45 PK			1.71 H	301	102.11	7.34
2	*5240.00	98.80 AV			1.71 H	301	91.46	7.34
3	5350.00	58.88 PK	74.00	-15.12	1.71 H	301	51.04	7.84
4	5350.00	47.54 AV	54.00	-6.46	1.71 H	301	39.70	7.84
5	#10480.00	60.11 PK	68.20	-8.09	1.50 H	310	45.08	15.03
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	114.60 PK			2.08 V	284	107.26	7.34
2	*5240.00	103.93 AV			2.08 V	284	96.59	7.34
3	5350.00	59.34 PK	74.00	-14.66	2.08 V	284	51.50	7.84
4	5350.00	48.00 AV	54.00	-6.00	2.08 V	284	40.16	7.84
5	#10480.00	64.24 PK	68.20	-3.96	1.53 V	133	49.21	15.03

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 52：5260 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.30 PK	74.00	-15.70	1.69 H	299	51.49	6.81
2	5150.00	47.34 AV	54.00	-6.66	1.69 H	299	40.53	6.81
3	*5260.00	110.12 PK			1.69 H	299	102.67	7.45
4	*5260.00	99.73 AV			1.69 H	299	92.28	7.45
5	#10520.00	59.92 PK	68.20	-8.28	1.65 H	307	44.76	15.16
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	58.73 PK	74.00	-15.27	2.08 V	282	51.92	6.81
2	5150.00	47.84 AV	54.00	-6.16	2.08 V	282	41.03	6.81
3	*5260.00	115.11 PK			2.08 V	282	107.66	7.45
4	*5260.00	104.04 AV			2.08 V	282	96.59	7.45
5	#10520.00	63.73 PK	68.20	-4.47	1.59 V	133	48.57	15.16

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 60：5300 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	111.83 PK			1.68 H	308	104.09	7.74
2	*5300.00	100.84 AV			1.68 H	308	93.10	7.74
3	10600.00	56.97 PK	74.00	-17.03	1.63 H	305	41.66	15.31
4	10600.00	45.21 AV	54.00	-8.79	1.63 H	305	29.90	15.31
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	115.50 PK			2.05 V	282	107.76	7.74
2	*5300.00	104.64 AV			2.05 V	282	96.90	7.74
3	10600.00	60.97 PK	74.00	-13.03	1.66 V	127	45.66	15.31
4	10600.00	48.05 AV	54.00	-5.95	1.66 V	127	32.74	15.31

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 64：5320 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	111.08 PK			1.60 H	312	103.30	7.78
2	*5320.00	100.19 AV			1.60 H	312	92.41	7.78
3	5350.00	59.05 PK	74.00	-14.95	1.60 H	312	51.21	7.84
4	5350.00	47.52 AV	54.00	-6.48	1.60 H	312	39.68	7.84
5	10640.00	55.89 PK	74.00	-18.11	1.73 H	323	40.48	15.41
6	10640.00	44.01 AV	54.00	-9.99	1.73 H	323	28.60	15.41
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	115.51 PK			2.15 V	283	107.73	7.78
2	*5320.00	104.66 AV			2.15 V	283	96.88	7.78
3	5350.00	58.66 PK	74.00	-15.34	2.15 V	283	50.82	7.84
4	5350.00	47.81 AV	54.00	-6.19	2.15 V	283	39.97	7.84
5	10640.00	60.86 PK	74.00	-13.14	1.65 V	130	45.45	15.41
6	10640.00	47.28 AV	54.00	-6.72	1.65 V	130	31.87	15.41

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 100：5500 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	59.62 PK	74.00	-14.38	1.69 H	311	51.67	7.95
2	5460.00	47.95 AV	54.00	-6.05	1.69 H	311	40.00	7.95
3	#5470.00	59.76 PK	68.20	-8.44	1.69 H	311	51.79	7.97
4	*5500.00	110.97 PK			1.69 H	311	102.96	8.01
5	*5500.00	100.09 AV			1.69 H	311	92.08	8.01
6	11000.00	53.11 PK	74.00	-20.89	1.61 H	296	37.22	15.89
7	11000.00	42.75 AV	54.00	-11.25	1.61 H	296	26.86	15.89
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	59.38 PK	74.00	-14.62	2.12 V	277	51.43	7.95
2	5460.00	48.25 AV	54.00	-5.75	2.12 V	277	40.30	7.95
3	#5470.00	59.30 PK	68.20	-8.90	2.12 V	277	51.33	7.97
4	*5500.00	115.67 PK			2.12 V	277	107.66	8.01
5	*5500.00	104.76 AV			2.12 V	277	96.75	8.01
6	11000.00	55.35 PK	74.00	-18.65	1.50 V	130	39.46	15.89
7	11000.00	43.72 AV	54.00	-10.28	1.50 V	130	27.83	15.89

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 116：5580 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	110.59 PK			1.73 H	311	103.05	7.54
2	*5580.00	99.51 AV			1.73 H	311	91.97	7.54
3	11160.00	53.23 PK	74.00	-20.77	1.58 H	302	37.18	16.05
4	11160.00	42.74 AV	54.00	-11.26	1.58 H	302	26.69	16.05
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	113.14 PK			2.19 V	290	105.60	7.54
2	*5580.00	102.21 AV			2.19 V	290	94.67	7.54
3	11160.00	55.91 PK	74.00	-18.09	1.47 V	132	39.86	16.05
4	11160.00	44.69 AV	54.00	-9.31	1.47 V	132	28.64	16.05

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 132：5660 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	*5660.00	109.83 PK			1.93 H	313	102.61	7.22
2	*5660.00	97.93 AV			1.93 H	313	90.71	7.22
3	11320.00	53.61 PK	74.00	-20.39	1.60 H	296	37.05	16.56
4	11320.00	43.19 AV	54.00	-10.81	1.60 H	296	26.63	16.56
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	*5660.00	112.02 PK			2.06 V	319	104.80	7.22
2	*5660.00	100.99 AV			2.06 V	319	93.77	7.22
3	11320.00	56.32 PK	74.00	-17.68	1.52 V	136	39.76	16.56
4	11320.00	45.14 AV	54.00	-8.86	1.52 V	136	28.58	16.56

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 140：5700 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	109.47 PK			1.68 H	307	102.34	7.13
2	*5700.00	98.46 AV			1.68 H	307	91.33	7.13
3	#5725.00	58.71 PK	68.20	-9.49	1.68 H	307	51.54	7.17
4	11400.00	53.90 PK	74.00	-20.10	1.59 H	299	37.25	16.65
5	11400.00	43.60 AV	54.00	-10.40	1.59 H	299	26.95	16.65
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	109.85 PK			1.99 V	313	102.72	7.13
2	*5700.00	98.99 AV			1.99 V	313	91.86	7.13
3	#5725.00	58.74 PK	68.20	-9.46	1.99 V	313	51.57	7.17
4	11400.00	56.28 PK	74.00	-17.72	1.49 V	136	39.63	16.65
5	11400.00	44.42 AV	54.00	-9.58	1.49 V	136	27.77	16.65

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	#5595.12	57.56 PK	68.20	-10.64	1.48 H	312	50.12	7.44
2	*5745.00	109.36 PK			1.48 H	312	102.15	7.21
3	*5745.00	98.30 AV			1.48 H	312	91.09	7.21
4	#6013.60	58.86 PK	68.20	-9.34	1.48 H	312	51.27	7.59
5	11490.00	54.43 PK	74.00	-19.57	1.68 H	305	37.67	16.76
6	11490.00	42.97 AV	54.00	-11.03	1.68 H	305	26.21	16.76
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	#5554.27	58.11 PK	68.20	-10.09	2.10 V	280	50.42	7.69
2	*5745.00	114.59 PK			2.10 V	280	107.38	7.21
3	*5745.00	103.69 AV			2.10 V	280	96.48	7.21
4	#5960.87	58.48 PK	68.20	-9.72	2.10 V	280	51.03	7.45
5	11490.00	56.02 PK	74.00	-17.98	1.70 V	218	39.26	16.76
6	11490.00	44.33 AV	54.00	-9.67	1.70 V	218	27.57	16.76

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	#5638.35	57.97 PK	68.20	-10.23	1.47 H	311	50.69	7.28
2	*5785.00	109.75 PK			1.47 H	311	102.47	7.28
3	*5785.00	98.65 AV			1.47 H	311	91.37	7.28
4	#6024.05	59.71 PK	68.20	-8.49	1.47 H	311	52.12	7.59
5	11570.00	54.40 PK	74.00	-19.60	1.66 H	313	37.41	16.99
6	11570.00	43.29 AV	54.00	-10.71	1.66 H	313	26.30	16.99
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	#5618.87	57.75 PK	68.20	-10.45	2.18 V	281	50.41	7.34
2	*5785.00	115.40 PK			2.18 V	281	108.12	7.28
3	*5785.00	104.20 AV			2.18 V	281	96.92	7.28
4	#5999.82	58.55 PK	68.20	-9.65	2.18 V	281	50.97	7.58
5	11570.00	55.65 PK	74.00	-18.35	1.55 V	304	38.66	16.99
6	11570.00	44.97 AV	54.00	-9.03	1.55 V	304	27.98	16.99

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	#5625.05	58.42 PK	68.20	-9.78	1.46 H	312	51.10	7.32
2	*5825.00	110.63 PK			1.46 H	312	103.35	7.28
3	*5825.00	99.50 AV			1.46 H	312	92.22	7.28
4	#6020.25	59.02 PK	68.20	-9.18	1.46 H	312	51.43	7.59
5	11650.00	54.96 PK	74.00	-19.04	1.62 H	315	37.72	17.24
6	11650.00	44.73 AV	54.00	-9.27	1.62 H	315	27.49	17.24
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	#5598.93	58.18 PK	68.20	-10.02	2.08 V	289	50.77	7.41
2	*5825.00	115.23 PK			2.08 V	289	107.95	7.28
3	*5825.00	104.19 AV			2.08 V	289	96.91	7.28
4	#5956.60	59.13 PK	68.20	-9.07	2.08 V	289	51.68	7.45
5	11650.00	56.43 PK	74.00	-17.57	1.59 V	307	39.19	17.24
6	11650.00	45.69 AV	54.00	-8.31	1.59 V	307	28.45	17.24

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	59.16 PK	74.00	-14.84	1.73 H	303	52.35	6.81
2	5150.00	48.76 AV	54.00	-5.24	1.73 H	303	41.95	6.81
3	*5190.00	107.46 PK			1.73 H	303	100.35	7.11
4	*5190.00	97.46 AV			1.73 H	303	90.35	7.11
5	#10380.00	60.79 PK	68.20	-7.41	1.81 H	142	46.20	14.59
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	61.65 PK	74.00	-12.35	2.13 V	285	54.84	6.81
2	5150.00	50.76 AV	54.00	-3.24	2.13 V	285	43.95	6.81
3	*5190.00	111.65 PK			2.13 V	285	104.54	7.11
4	*5190.00	100.31 AV			2.13 V	285	93.20	7.11
5	#10380.00	63.54 PK	68.20	-4.66	1.63 V	130	48.95	14.59

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	108.26 PK			1.71 H	306	100.96	7.30
2	*5230.00	98.11 AV			1.71 H	306	90.81	7.30
3	5350.00	59.33 PK	74.00	-14.67	1.71 H	306	51.49	7.84
4	5350.00	48.43 AV	54.00	-5.57	1.71 H	306	40.59	7.84
5	#10460.00	55.69 PK	68.20	-12.51	1.50 H	310	40.76	14.93
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	112.05 PK			2.27 V	279	104.75	7.30
2	*5230.00	100.75 AV			2.27 V	279	93.45	7.30
3	5350.00	59.53 PK	74.00	-14.47	2.27 V	279	51.69	7.84
4	5350.00	47.95 AV	54.00	-6.05	2.27 V	279	40.11	7.84
5	#10460.00	59.35 PK	68.20	-8.85	1.57 V	133	44.42	14.93

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 54：5270 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.27 PK	74.00	-15.73	1.46 H	298	51.46	6.81
2	5150.00	47.35 AV	54.00	-6.65	1.46 H	298	40.54	6.81
3	*5270.00	108.32 PK			1.46 H	298	100.80	7.52
4	*5270.00	97.81 AV			1.46 H	298	90.29	7.52
5	#10540.00	57.18 PK	68.20	-11.02	1.59 H	307	41.98	15.20
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	59.47 PK	74.00	-14.53	2.17 V	282	52.66	6.81
2	5150.00	48.07 AV	54.00	-5.93	2.17 V	282	41.26	6.81
3	*5270.00	113.11 PK			2.17 V	282	105.59	7.52
4	*5270.00	102.03 AV			2.17 V	282	94.51	7.52
5	#10540.00	58.91 PK	68.20	-9.29	1.18 V	291	43.71	15.20

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 62：5310 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	108.90 PK			1.60 H	311	101.14	7.76
2	*5310.00	98.20 AV			1.60 H	311	90.44	7.76
3	5350.00	59.02 PK	74.00	-14.98	1.60 H	311	51.18	7.84
4	5350.00	48.26 AV	54.00	-5.74	1.60 H	311	40.42	7.84
5	10620.00	54.32 PK	74.00	-19.68	1.68 H	305	38.96	15.36
6	10620.00	43.21 AV	54.00	-10.79	1.68 H	305	27.85	15.36
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	113.79 PK			1.97 V	282	106.03	7.76
2	*5310.00	102.31 AV			1.97 V	282	94.55	7.76
3	5350.00	59.52 PK	74.00	-14.48	1.97 V	282	51.68	7.84
4	5350.00	48.79 AV	54.00	-5.21	1.97 V	282	40.95	7.84
5	10620.00	57.28 PK	74.00	-16.72	1.62 V	128	41.92	15.36
6	10620.00	45.31 AV	54.00	-8.69	1.62 V	128	29.95	15.36

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 102：5510 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	58.84 PK	74.00	-15.16	1.93 H	311	50.89	7.95
2	5460.00	47.97 AV	54.00	-6.03	1.93 H	311	40.02	7.95
3	#5470.00	59.25 PK	68.20	-8.95	1.93 H	311	51.28	7.97
4	*5510.00	108.65 PK			1.93 H	311	100.70	7.95
5	*5510.00	98.06 AV			1.93 H	311	90.11	7.95
6	11020.00	53.14 PK	74.00	-20.86	1.64 H	298	37.24	15.90
7	11020.00	42.51 AV	54.00	-11.49	1.64 H	298	26.61	15.90
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	59.55 PK	74.00	-14.45	2.11 V	279	51.60	7.95
2	5460.00	48.30 AV	54.00	-5.70	2.11 V	279	40.35	7.95
3	#5470.00	62.37 PK	68.20	-5.83	2.11 V	279	54.40	7.97
4	*5510.00	112.95 PK			2.11 V	279	105.00	7.95
5	*5510.00	102.00 AV			2.11 V	279	94.05	7.95
6	11020.00	54.90 PK	74.00	-19.10	1.56 V	127	39.00	15.90
7	11020.00	42.95 AV	54.00	-11.05	1.56 V	127	27.05	15.90

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 110：5550 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	108.59 PK			1.76 H	311	100.87	7.72
2	*5550.00	97.60 AV			1.76 H	311	89.88	7.72
3	11100.00	53.11 PK	74.00	-20.89	1.60 H	298	37.16	15.95
4	11100.00	42.88 AV	54.00	-11.12	1.60 H	298	26.93	15.95
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	112.79 PK			2.09 V	281	105.07	7.72
2	*5550.00	101.72 AV			2.09 V	281	94.00	7.72
3	11100.00	55.27 PK	74.00	-18.73	1.56 V	131	39.32	15.95
4	11100.00	44.09 AV	54.00	-9.91	1.56 V	131	28.14	15.95

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 134：5670 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	107.49 PK			1.63 H	308	100.29	7.20
2	*5670.00	96.37 AV			1.63 H	308	89.17	7.20
3	#5725.00	58.65 PK	68.20	-9.55	1.63 H	308	51.48	7.17
4	11340.00	53.83 PK	74.00	-20.17	1.65 H	303	37.26	16.57
5	11340.00	43.02 AV	54.00	-10.98	1.65 H	303	26.45	16.57
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	108.12 PK			2.37 V	256	100.92	7.20
2	*5670.00	97.08 AV			2.37 V	256	89.88	7.20
3	#5725.00	58.49 PK	68.20	-9.71	2.37 V	256	51.32	7.17
4	11340.00	55.14 PK	74.00	-18.86	1.48 V	129	38.57	16.57
5	11340.00	43.88 AV	54.00	-10.12	1.48 V	129	27.31	16.57

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	#5615.07	58.08 PK	68.20	-10.12	1.56 H	313	50.72	7.36
2	*5755.00	107.80 PK			1.56 H	313	100.58	7.22
3	*5755.00	96.27 AV			1.56 H	313	89.05	7.22
4	#5993.65	59.15 PK	68.20	-9.05	1.56 H	313	51.60	7.55
5	11510.00	53.40 PK	74.00	-20.60	1.64 H	299	36.59	16.81
6	11510.00	43.09 AV	54.00	-10.91	1.64 H	299	26.28	16.81
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	#5593.70	58.28 PK	68.20	-9.92	2.02 V	281	50.83	7.45
2	*5755.00	112.69 PK			2.02 V	281	105.47	7.22
3	*5755.00	101.72 AV			2.02 V	281	94.50	7.22
4	#5936.65	58.99 PK	68.20	-9.21	2.02 V	281	51.64	7.35
5	11510.00	55.69 PK	74.00	-18.31	1.57 V	296	38.88	16.81
6	11510.00	44.96 AV	54.00	-9.04	1.57 V	296	28.15	16.81

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	#5638.82	58.28 PK	68.20	-9.92	1.54 H	313	51.00	7.28
2	*5795.00	107.86 PK			1.54 H	313	100.56	7.30
3	*5795.00	96.55 AV			1.54 H	313	89.25	7.30
4	#5996.02	58.75 PK	68.20	-9.45	1.54 H	313	51.17	7.58
5	11590.00	54.78 PK	74.00	-19.22	1.64 H	304	37.74	17.04
6	11590.00	43.41 AV	54.00	-10.59	1.64 H	304	26.37	17.04
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5585.15	58.26 PK	68.20	-9.94	2.17 V	284	50.75	7.51
2	*5795.00	112.47 PK			2.17 V	284	105.17	7.30
3	*5795.00	101.76 AV			2.17 V	284	94.46	7.30
4	#5977.50	59.57 PK	68.20	-8.63	2.17 V	284	52.06	7.51
5	11590.00	55.63 PK	74.00	-18.37	1.64 V	297	38.59	17.04
6	11590.00	44.60 AV	54.00	-9.40	1.64 V	297	27.56	17.04

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	59.24 PK	74.00	-14.76	1.64 H	303	52.43	6.81
2	5150.00	49.54 AV	54.00	-4.46	1.64 H	303	42.73	6.81
3	*5210.00	103.95 PK			1.64 H	303	96.74	7.21
4	*5210.00	93.28 AV			1.64 H	303	86.07	7.21
5	5350.00	58.63 PK	74.00	-15.37	1.64 H	303	50.79	7.84
6	5350.00	48.55 AV	54.00	-5.45	1.64 H	303	40.71	7.84
7	#10420.00	56.48 PK	68.20	-11.72	1.27 H	289	41.76	14.72
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	62.29 PK	74.00	-11.71	2.01 V	287	55.48	6.81
2	5150.00	51.38 AV	54.00	-2.62	2.01 V	287	44.57	6.81
3	*5210.00	109.08 PK			2.01 V	287	101.87	7.21
4	*5210.00	97.74 AV			2.01 V	287	90.53	7.21
5	5350.00	59.18 PK	74.00	-14.82	2.01 V	287	51.34	7.84
6	5350.00	48.09 AV	54.00	-5.91	2.01 V	287	40.25	7.84
7	#10420.00	59.44 PK	68.20	-8.76	1.54 V	132	44.72	14.72

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 58：5290 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	59.45 PK	74.00	-14.55	1.47 H	298	52.64	6.81
2	5150.00	47.47 AV	54.00	-6.53	1.47 H	298	40.66	6.81
3	*5290.00	106.27 PK			1.47 H	298	98.60	7.67
4	*5290.00	95.66 AV			1.47 H	298	87.99	7.67
5	5350.00	59.48 PK	74.00	-14.52	1.47 H	298	51.64	7.84
6	5350.00	48.15 AV	54.00	-5.85	1.47 H	298	40.31	7.84
7	#10580.00	54.73 PK	68.20	-13.47	1.65 H	308	39.45	15.28
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	58.50 PK	74.00	-15.50	2.06 V	282	51.69	6.81
2	5150.00	47.81 AV	54.00	-6.19	2.06 V	282	41.00	6.81
3	*5290.00	110.46 PK			2.06 V	282	102.79	7.67
4	*5290.00	99.37 AV			2.06 V	282	91.70	7.67
5	5350.00	64.72 PK	74.00	-9.28	2.06 V	282	56.88	7.84
6	5350.00	49.87 AV	54.00	-4.13	2.06 V	282	42.03	7.84
7	#10580.00	56.44 PK	68.20	-11.76	1.55 V	134	41.16	15.28

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 106：5530 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	59.63 PK	74.00	-14.37	1.60 H	310	51.68	7.95
2	5460.00	47.98 AV	54.00	-6.02	1.60 H	310	40.03	7.95
3	#5470.00	59.75 PK	68.20	-8.45	1.60 H	310	51.78	7.97
4	*5530.00	105.78 PK			1.60 H	310	97.95	7.83
5	*5530.00	94.76 AV			1.60 H	310	86.93	7.83
6	11060.00	53.69 PK	74.00	-20.31	1.66 H	301	37.77	15.92
7	11060.00	42.92 AV	54.00	-11.08	1.66 H	301	27.00	15.92
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	60.27 PK	74.00	-13.73	2.12 V	281	52.32	7.95
2	5460.00	48.46 AV	54.00	-5.54	2.12 V	281	40.51	7.95
3	#5470.00	63.54 PK	68.20	-4.66	2.12 V	281	55.57	7.97
4	*5530.00	109.40 PK			2.12 V	281	101.57	7.83
5	*5530.00	98.51 AV			2.12 V	281	90.68	7.83
6	11060.00	54.15 PK	74.00	-19.85	1.63 V	296	38.23	15.92
7	11060.00	43.46 AV	54.00	-10.54	1.63 V	296	27.54	15.92

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	#5572.80	57.58 PK	68.20	-10.62	1.47 H	312	50.00	7.58
2	*5775.00	104.08 PK			1.47 H	312	96.82	7.26
3	*5775.00	93.03 AV			1.47 H	312	85.77	7.26
4	#6024.05	59.22 PK	68.20	-8.98	1.47 H	312	51.63	7.59
5	11550.00	53.81 PK	74.00	-20.19	1.66 H	300	36.89	16.92
6	11550.00	43.33 AV	54.00	-10.67	1.66 H	300	26.41	16.92
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	#5569.95	57.83 PK	68.20	-10.37	2.10 V	280	50.23	7.60
2	*5775.00	109.90 PK			2.10 V	280	102.64	7.26
3	*5775.00	98.84 AV			2.10 V	280	91.58	7.26
4	#6019.77	58.91 PK	68.20	-9.29	2.10 V	280	51.32	7.59
5	11550.00	54.48 PK	74.00	-19.52	1.57 V	307	37.56	16.92
6	11550.00	43.40 AV	54.00	-10.60	1.57 V	307	26.48	16.92

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.

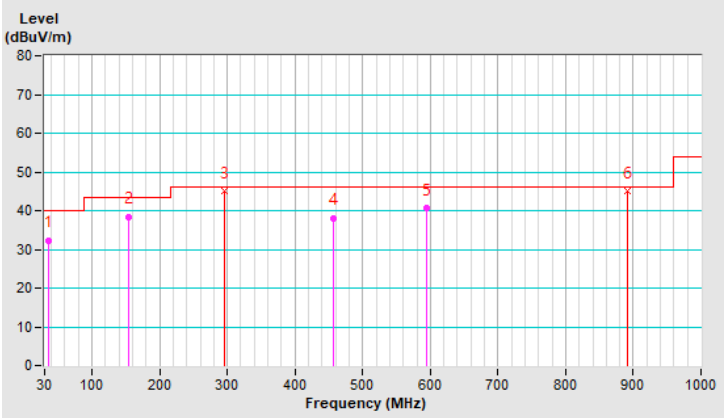
BELOW 1GHz WORST-CASE DATA

RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	36.21	32.13 QP	40.00	-7.87	3.64 H	354	40.31	-8.18
2	154.11	38.24 QP	43.50	-5.26	2.38 H	360	44.41	-6.17
3	296.27	44.92 QP	46.00	-1.08	1.14 H	174	49.21	-4.29
4	457.67	38.05 QP	46.00	-7.95	2.85 H	215	38.70	-0.65
5	594.01	40.54 QP	46.00	-5.46	1.68 H	206	38.39	2.15
6	890.99	44.99 QP	46.00	-1.01	1.42 H	193	37.40	7.59

Remarks:

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

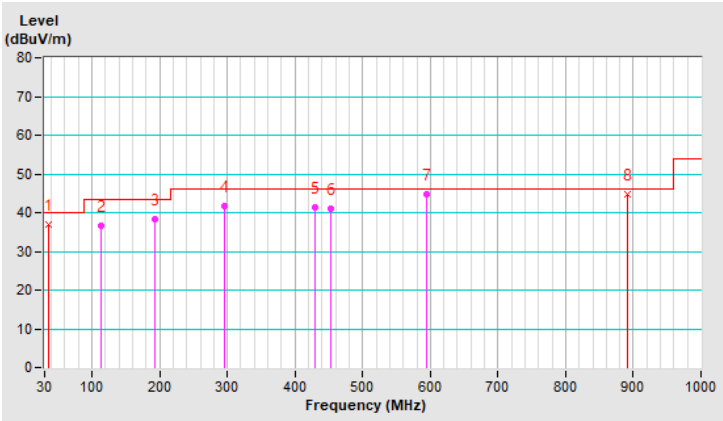


RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	36.67	37.01 QP	40.00	-2.99	1.21 V	126	45.15	-8.14
2	114.05	36.56 QP	43.50	-6.94	1.38 V	198	45.97	-9.41
3	192.81	38.23 QP	43.50	-5.27	1.84 V	101	46.90	-8.67
4	296.31	41.75 QP	46.00	-4.25	2.58 V	186	46.04	-4.29
5	428.96	41.49 QP	46.00	-4.51	1.47 V	163	42.71	-1.22
6	452.77	40.98 QP	46.00	-5.02	1.18 V	167	41.75	-0.77
7	594.01	44.88 QP	46.00	-1.12	1.23 V	144	42.73	2.15
8	890.98	44.70 QP	46.00	-1.30	1.05 V	171	37.11	7.59

Remarks:

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



4.2 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.	Calibrated Date	Calibrated Until
Test Receiver ESR3 R&S	ESR3	102412	2021/1/29	2022/1/28
LISN SCHWARZBECK	NSLK 8128	8128-244	2020/11/19	2021/11/18
LISN SCHWARZBECK	NNLK8129	8129229	2021/5/20	2022/5/19
DC LISN SCHWARZBECK	NNLK 8121	8121-808	2021/4/18	2022/4/17
LISN SCHWARZBECK	NNLK 8121	8121-731	2021/4/28	2022/4/27
LISN R&S	ENV216	101196	2021/4/26	2022/4/25
LISN R&S	ESH3-Z5	100220	2020/12/1	2021/11/30
LISN R&S	ESH3-Z6	844950/018	2021/7/25	2022/7/24
DC LISN R&S	ESH3-Z6	100219	2021/7/25	2022/7/24
High Voltage Probe Schwarzbeck	TK9420	00982	2021/1/8	2022/1/7
RF Coaxial Cable Commate	5D-FB	Cable-CO5-01	2021/1/29	2022/1/28
Attenuator STI	STI02-2200-10	NO.4	2021/9/3	2022/9/2
50 Ohms Terminator LYNICS	0900510	E1-01-305	2021/2/17	2022/2/16
Isolation Transformer Erika Fiedler	D-65396	017	2021/9/9	2022/9/8
Software BVADT	Cond_V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Linkou Conduction05
3. The VCCI Site Registration No. C-11093.
4. Tested Date: 2021/10/27

4.2.3 Test Procedures

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

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

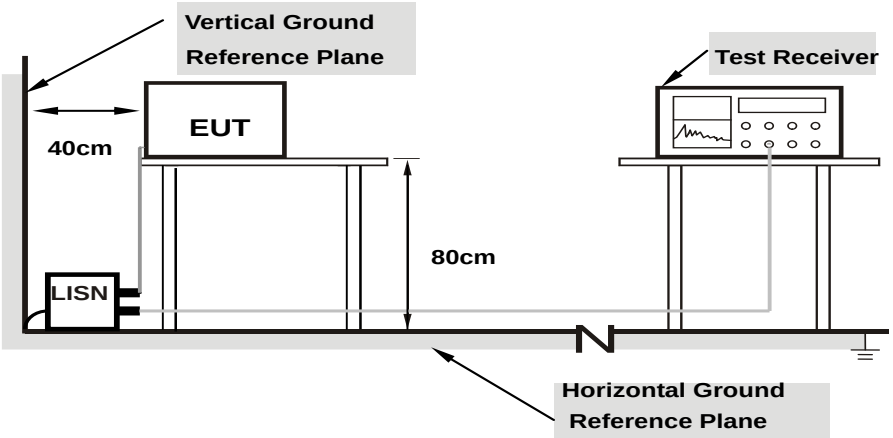
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as Item 4.1.6.

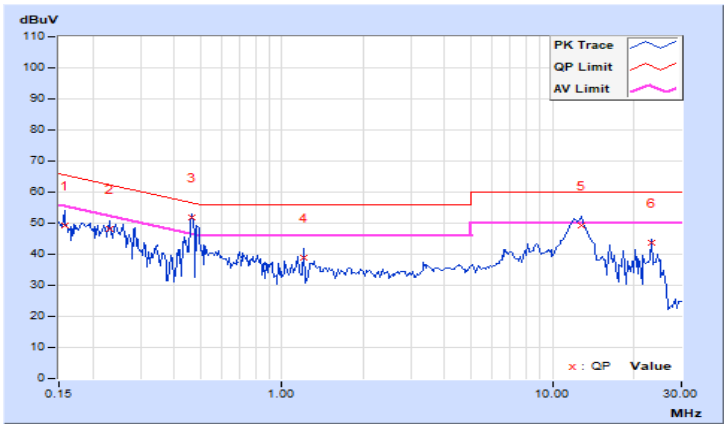
4.2.7 Test Results

RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.88	39.28	30.40	49.16	40.28	65.58	55.58	-16.42	-15.30
2	0.23203	9.88	38.22	30.75	48.10	40.63	62.38	52.38	-14.28	-11.75
3	0.46641	9.91	41.79	32.59	51.70	42.50	56.58	46.58	-4.88	-4.08
4	1.20703	9.96	28.78	21.24	38.74	31.20	56.00	46.00	-17.26	-14.80
5	12.80469	10.29	38.85	31.92	49.14	42.21	60.00	50.00	-10.86	-7.79
6	23.12891	10.48	33.09	32.27	43.57	42.75	60.00	50.00	-16.43	-7.25

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

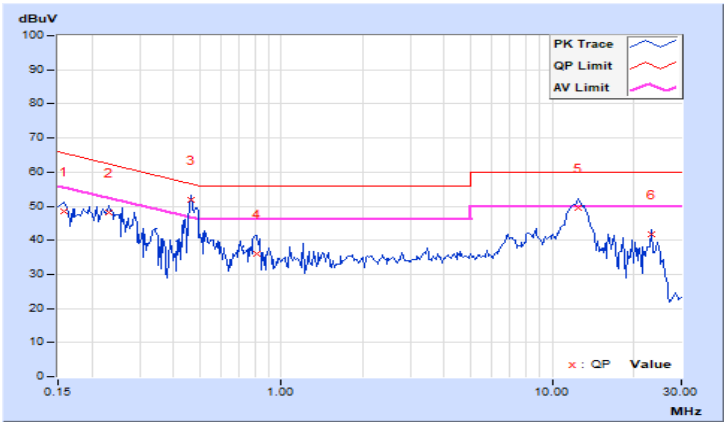


RF Mode	TX 802.11a	Channel	CH 157：5785 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.89	38.60	30.25	48.49	40.14	65.58	55.58	-17.09	-15.44
2	0.23203	9.89	38.10	30.62	47.99	40.51	62.38	52.38	-14.39	-11.87
3	**0.46641**	**9.92**	**41.87**	**32.73**	**51.79**	**42.65**	**56.58**	**46.58**	**-4.79**	**-3.93**
4	0.81016	9.94	26.01	20.02	35.95	29.96	56.00	46.00	-20.05	-16.04
5	12.50391	10.30	39.20	32.32	49.50	42.62	60.00	50.00	-10.50	-7.38
6	23.12891	10.50	31.10	30.33	41.60	40.83	60.00	50.00	-18.40	-9.17

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 (23.97 dBm)
U-NII-2A	√		250mW (23.97 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (23.97 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

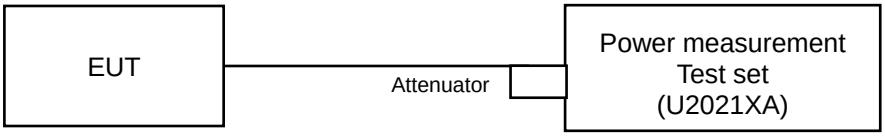
*B is the 26 dB emission bandwidth in megahertz
Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

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

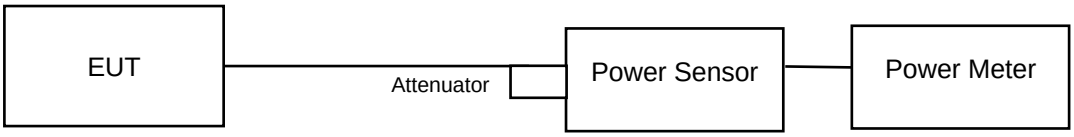
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

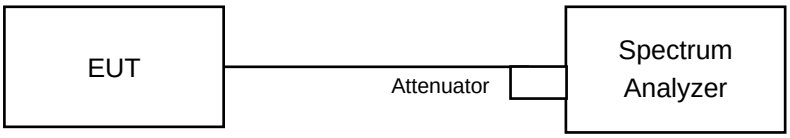
For Power Output Measurement



Or



For 26dB Bandwidth Measurement



4.3.3 Test Instruments

Description & Manufacturer	Model no.	Serial No.	Calibrated Date	Calibrated Until
Pulse Power Sensor Anritsu	MA2411B	0738404	2021/4/15	2022/4/14
Peak Power meter Anritsu	ML2495A	0842014	2021/4/15	2022/4/14
Spectrum Analyzer R&S	FSV40	101042	2021/9/9	2022/9/8
MIMO Power measurement Test set KEYSIGHT	U2021XA	U2021XA_001	2021/6/16	2022/6/15

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 LK - Oven
3. Tested Date: 2021/10/29

4.3.4 Test Procedure

For Average Power Measurement

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

For 26dB Bandwidth Measurement

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Power Output:

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	15.43	15.59	71.138	18.52	23.97	Pass
40	5200	15.31	15.86	72.510	18.60	23.97	Pass
48	5240	15.09	15.90	71.189	18.52	23.97	Pass
52	5260	15.23	15.87	**71.979**	18.57	23.81	Pass
60	5300	15.16	15.74	70.307	18.47	23.77	Pass
64	5320	15.21	15.46	68.345	18.35	23.78	Pass
100	5500	15.07	15.65	68.865	18.38	23.79	Pass
116	5580	15.12	16.03	72.595	18.61	23.77	Pass
132	5660	15.29	15.92	72.891	18.63	23.82	Pass
140	5700	15.37	15.88	**73.161**	18.64	23.85	Pass
149	5745	15.32	16.39	77.592	18.90	30.00	Pass
157	5785	15.44	16.33	**77.948**	18.92	30.00	Pass
165	5825	15.46	16.11	75.988	18.81	30.00	Pass

NOTE:

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

Chain 0

1. 11dBm + 10log(19.26) = 23.85 dBm > 23.97dBm.
2. 11dBm + 10log(19.34) = 23.86 dBm > 23.97dBm.
3. 11dBm + 10log(19.13) = 23.82 dBm > 23.97dBm.
4. 11dBm + 10log(19.04) = 23.80 dBm > 23.97dBm.
5. 11dBm + 10log(19.15) = 23.82 dBm > 23.97dBm.
6. 11dBm + 10log(19.42) = 23.88 dBm > 23.97dBm.
7. 11dBm + 10log(19.29) = 23.85 dBm > 23.97dBm.

Chain 1

1. 11dBm + 10log(19.11) = 23.81 dBm > 23.97dBm.
2. 11dBm + 10log(18.96) = 23.77 dBm > 23.97dBm.
3. 11dBm + 10log(19.01) = 23.78 dBm > 23.97dBm.
4. 11dBm + 10log(19.03) = 23.79 dBm > 23.97dBm.
5. 11dBm + 10log(18.95) = 23.77 dBm > 23.97dBm.
6. 11dBm + 10log(19.15) = 23.82 dBm > 23.97dBm.
7. 11dBm + 10log(19.46) = 23.89 dBm > 23.97dBm.

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	14.66	14.82	59.580	17.75	23.97	Pass
40	5200	14.62	14.96	60.306	17.80	23.97	Pass
48	5240	14.23	15.15	59.219	17.72	23.97	Pass
52	5260	14.50	15.31	62.146	17.93	23.97	Pass
60	5300	14.46	15.06	59.988	17.78	23.97	Pass
64	5320	14.53	14.75	58.233	17.65	23.97	Pass
100	5500	14.47	15.01	59.685	17.76	23.97	Pass
116	5580	14.28	15.55	62.684	17.97	23.97	Pass
132	5660	14.59	15.22	62.040	17.93	23.97	Pass
140	5700	14.51	15.23	61.591	17.90	23.97	Pass
149	5745	14.66	15.75	66.825	18.25	30.00	Pass
157	5785	14.57	15.82	66.836	18.25	30.00	Pass
165	5825	14.85	15.41	65.303	18.15	30.00	Pass

NOTE:

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

Chain 0

1. 11dBm + 10log(21.10) = 24.24 dBm > 23.97dBm.
2. 11dBm + 10log(20.89) = 24.20 dBm > 23.97dBm.
3. 11dBm + 10log(21.00) = 24.22 dBm > 23.97dBm.
4. 11dBm + 10log(21.03) = 24.23 dBm > 23.97dBm.
5. 11dBm + 10log(20.92) = 24.20 dBm > 23.97dBm.
6. 11dBm + 10log(20.81) = 24.18 dBm > 23.97dBm.
7. 11dBm + 10log(21.21) = 24.26 dBm > 23.97dBm.

Chain 1

1. 11dBm + 10log(21.06) = 24.23 dBm > 23.97dBm.
2. 11dBm + 10log(20.85) = 24.19 dBm > 23.97dBm.
3. 11dBm + 10log(21.02) = 24.23 dBm > 23.97dBm.
4. 11dBm + 10log(21.01) = 24.22 dBm > 23.97dBm.
5. 11dBm + 10log(20.92) = 24.20 dBm > 23.97dBm.
6. 11dBm + 10log(20.89) = 24.20 dBm > 23.97dBm.
7. 11dBm + 10log(21.29) = 24.28 dBm > 23.97dBm.

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	15.02	15.40	66.442	18.22	23.97	Pass
46	5230	14.85	15.53	66.276	18.21	23.97	Pass
54	5270	14.82	15.51	65.902	18.19	23.97	Pass
62	5310	14.86	15.07	62.756	17.98	23.97	Pass
102	5510	14.84	15.11	62.913	17.99	23.97	Pass
110	5550	14.87	15.59	66.915	18.26	23.97	Pass
134	5670	14.97	15.80	69.424	18.42	23.97	Pass
151	5755	15.11	16.05	72.706	18.62	30.00	Pass
159	5795	15.18	16.02	72.955	18.63	30.00	Pass

NOTE:

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

Chain 0

1. 11dBm + 10log(41.99) = 27.23 dBm > 23.97dBm.
2. 11dBm + 10log(41.74) = 27.21 dBm > 23.97dBm.
3. 11dBm + 10log(41.64) = 27.19 dBm > 23.97dBm.
4. 11dBm + 10log(41.63) = 27.19 dBm > 23.97dBm.
5. 11dBm + 10log(42.01) = 27.23 dBm > 23.97dBm.

Chain 1

1. 11dBm + 10log(41.64) = 27.19 dBm > 23.97dBm.
2. 11dBm + 10log(41.65) = 27.19 dBm > 23.97dBm.
3. 11dBm + 10log(41.71) = 27.20 dBm > 23.97dBm.
4. 11dBm + 10log(41.90) = 27.22 dBm > 23.97dBm.
5. 11dBm + 10log(41.77) = 27.20 dBm > 23.97dBm.

802.11ac (VHT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	14.72	14.88	60.409	17.81	23.97	Pass
40	5200	14.68	15.03	61.218	17.87	23.97	Pass
48	5240	14.27	15.21	59.920	17.78	23.97	Pass
52	5260	14.55	15.27	62.161	17.94	23.97	Pass
60	5300	14.50	15.10	60.543	17.82	23.97	Pass
64	5320	14.58	14.81	58.977	17.71	23.97	Pass
100	5500	14.49	15.06	60.182	17.79	23.97	Pass
116	5580	14.33	15.59	63.326	18.02	23.97	Pass
132	5660	14.55	15.23	61.853	17.91	23.97	Pass
140	5700	14.60	15.26	62.414	17.95	23.97	Pass
149	5745	14.72	15.81	67.755	18.31	30.00	Pass
157	5785	14.61	15.91	67.901	18.32	30.00	Pass
165	5825	14.88	15.47	65.998	18.20	30.00	Pass

NOTE:

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

Chain 0

1. 11dBm + 10log(21.10) = 24.24 dBm > 23.97dBm.
2. 11dBm + 10log(20.89) = 24.20 dBm > 23.97dBm.
3. 11dBm + 10log(21.00) = 24.22 dBm > 23.97dBm.
4. 11dBm + 10log(21.03) = 24.23 dBm > 23.97dBm.
5. 11dBm + 10log(20.92) = 24.20 dBm > 23.97dBm.
6. 11dBm + 10log(20.81) = 24.18 dBm > 23.97dBm.
7. 11dBm + 10log(21.21) = 24.26 dBm > 23.97dBm.

Chain 1

1. 11dBm + 10log(21.06) = 24.23 dBm > 23.97dBm.
2. 11dBm + 10log(20.85) = 24.19 dBm > 23.97dBm.
3. 11dBm + 10log(21.02) = 24.23 dBm > 23.97dBm.
4. 11dBm + 10log(21.01) = 24.22 dBm > 23.97dBm.
5. 11dBm + 10log(20.92) = 24.20 dBm > 23.97dBm.
6. 11dBm + 10log(20.89) = 24.20 dBm > 23.97dBm.
7. 11dBm + 10log(21.29) = 24.28 dBm > 23.97dBm.

802.11ac (VHT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	15.07	15.44	67.131	18.27	23.97	Pass
46	5230	14.92	15.61	67.437	18.29	23.97	Pass
54	5270	14.90	15.59	67.127	18.27	23.97	Pass
62	5310	14.93	15.10	63.477	18.03	23.97	Pass
102	5510	14.89	15.17	63.717	18.04	23.97	Pass
110	5550	14.91	15.61	67.366	18.28	23.97	Pass
134	5670	15.02	15.85	70.228	18.47	23.97	Pass
151	5755	15.18	16.11	73.793	18.68	30.00	Pass
159	5795	15.25	16.08	74.047	18.70	30.00	Pass

NOTE:

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

Chain 0

1. 11dBm + 10log(41.99) = 27.23 dBm > 23.97dBm.
2. 11dBm + 10log(41.74) = 27.21 dBm > 23.97dBm.
3. 11dBm + 10log(41.64) = 27.19 dBm > 23.97dBm.
4. 11dBm + 10log(41.63) = 27.19 dBm > 23.97dBm.
5. 11dBm + 10log(42.01) = 27.23 dBm > 23.97dBm.

Chain 1

1. 11dBm + 10log(41.64) = 27.19 dBm > 23.97dBm.
2. 11dBm + 10log(41.65) = 27.19 dBm > 23.97dBm.
3. 11dBm + 10log(41.71) = 27.20 dBm > 23.97dBm.
4. 11dBm + 10log(41.90) = 27.22 dBm > 23.97dBm.
5. 11dBm + 10log(41.77) = 27.20 dBm > 23.97dBm.

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	14.77	15.54	65.801	18.18	23.97	Pass
58	5290	14.78	15.30	63.945	18.06	23.97	Pass
106	5530	14.70	15.31	63.475	18.03	23.97	Pass
155	5775	14.93	16.14	72.232	18.59	30.00	Pass

NOTE:

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

Chain 0

1. 11dBm + 10log(83.43) = 30.21 dBm > 23.97dBm.
2. 11dBm + 10log(82.85) = 30.18 dBm > 23.97dBm.

Chain 1

1. 11dBm + 10log(82.83) = 30.18 dBm > 23.97dBm.
2. 11dBm + 10log(83.56) = 30.22 dBm > 23.97dBm.

802.11ax (HE20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	14.76	14.91	60.897	17.85	23.97	Pass
40	5200	14.72	15.06	61.711	17.90	23.97	Pass
48	5240	14.31	15.24	60.397	17.81	23.97	Pass
52	5260	14.58	15.31	62.670	17.97	23.97	Pass
60	5300	14.54	15.15	61.179	17.87	23.97	Pass
64	5320	14.62	14.84	59.452	17.74	23.97	Pass
100	5500	14.53	15.09	60.664	17.83	23.97	Pass
116	5580	14.37	15.63	63.912	18.06	23.97	Pass
132	5660	14.58	15.27	62.359	17.95	23.97	Pass
140	5700	14.63	15.31	63.003	17.99	23.97	Pass
149	5745	14.74	15.86	68.333	18.35	30.00	Pass
157	5785	14.66	15.95	68.597	18.36	30.00	Pass
165	5825	14.92	15.50	66.527	18.23	30.00	Pass

NOTE:

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

Chain 0

1. 11dBm + 10log(21.10) = 24.24 dBm > 23.97dBm.
2. 11dBm + 10log(20.89) = 24.20 dBm > 23.97dBm.
3. 11dBm + 10log(21.00) = 24.22 dBm > 23.97dBm.
4. 11dBm + 10log(21.03) = 24.23 dBm > 23.97dBm.
5. 11dBm + 10log(20.92) = 24.20 dBm > 23.97dBm.
6. 11dBm + 10log(20.81) = 24.18 dBm > 23.97dBm.
7. 11dBm + 10log(21.21) = 24.26 dBm > 23.97dBm.

Chain 1

1. 11dBm + 10log(21.06) = 24.23 dBm > 23.97dBm.
2. 11dBm + 10log(20.85) = 24.19 dBm > 23.97dBm.
3. 11dBm + 10log(21.02) = 24.23 dBm > 23.97dBm.
4. 11dBm + 10log(21.01) = 24.22 dBm > 23.97dBm.
5. 11dBm + 10log(20.92) = 24.20 dBm > 23.97dBm.
6. 11dBm + 10log(20.89) = 24.20 dBm > 23.97dBm.
7. 11dBm + 10log(21.29) = 24.28 dBm > 23.97dBm.

802.11ax (HE40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	15.10	15.48	67.678	18.30	23.97	Pass
46	5230	14.97	15.66	**68.218**	18.34	23.97	Pass
54	5270	14.94	15.62	67.664	18.30	23.97	Pass
62	5310	14.95	15.14	63.920	18.06	23.97	Pass
102	5510	14.93	15.19	64.154	18.07	23.97	Pass
110	5550	14.94	15.66	68.002	18.33	23.97	Pass
134	5670	15.05	15.90	70.893	18.51	23.97	Pass
151	5755	15.21	16.18	74.685	18.73	30.00	Pass
159	5795	15.29	16.11	74.638	18.73	30.00	Pass

NOTE:

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

Chain 0

1. 11dBm + 10log(41.99) = 27.23 dBm > 23.97dBm.
2. 11dBm + 10log(41.74) = 27.21 dBm > 23.97dBm.
3. 11dBm + 10log(41.64) = 27.19 dBm > 23.97dBm.
4. 11dBm + 10log(41.63) = 27.19 dBm > 23.97dBm.
5. 11dBm + 10log(42.01) = 27.23 dBm > 23.97dBm.

Chain 1

1. 11dBm + 10log(41.64) = 27.19 dBm > 23.97dBm.
2. 11dBm + 10log(41.65) = 27.19 dBm > 23.97dBm.
3. 11dBm + 10log(41.71) = 27.20 dBm > 23.97dBm.
4. 11dBm + 10log(41.90) = 27.22 dBm > 23.97dBm.
5. 11dBm + 10log(41.77) = 27.20 dBm > 23.97dBm.

802.11ax (HE80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	14.79	15.57	66.188	18.21	23.97	Pass
58	5290	14.82	15.33	64.458	18.09	23.97	Pass
106	5530	14.75	15.35	64.131	18.07	23.97	Pass
155	5775	14.99	16.17	72.950	18.63	30.00	Pass

NOTE:

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

Chain 0

1. 11dBm + 10log(83.43) = 30.21 dBm > 23.97dBm.
2. 11dBm + 10log(82.85) = 30.18 dBm > 23.97dBm.

Chain 1

1. 11dBm + 10log(82.83) = 30.18 dBm > 23.97dBm.
2. 11dBm + 10log(83.56) = 30.22 dBm > 23.97dBm.

26dB Bandwidth:

802.11a

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	19.26	19.11
60	5300	19.34	18.96
64	5320	19.13	19.01
100	5500	19.04	19.03
116	5580	19.15	18.95
132	5660	19.42	19.15
140	5700	19.29	19.46

802.11ax (HE20)

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	21.10	21.06
60	5300	20.89	20.85
64	5320	21.00	21.02
100	5500	21.03	21.01
116	5580	20.92	20.92
132	5660	20.81	20.89
140	5700	21.21	21.29

802.11ax (HE40)

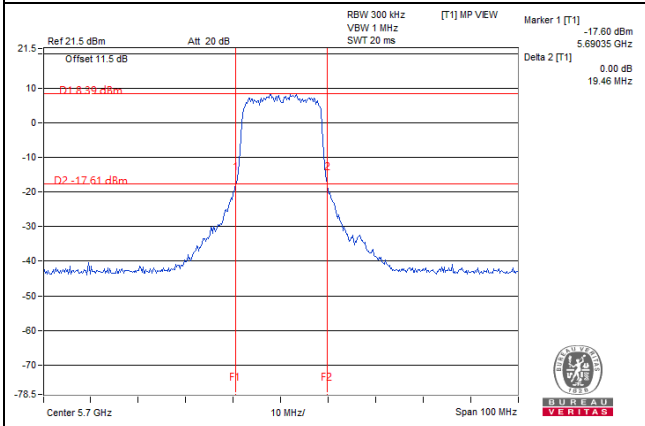
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	41.99	41.64
62	5310	41.74	41.65
102	5510	41.64	41.71
110	5550	41.63	41.9
134	5670	42.01	41.77

802.11ax (HE80)

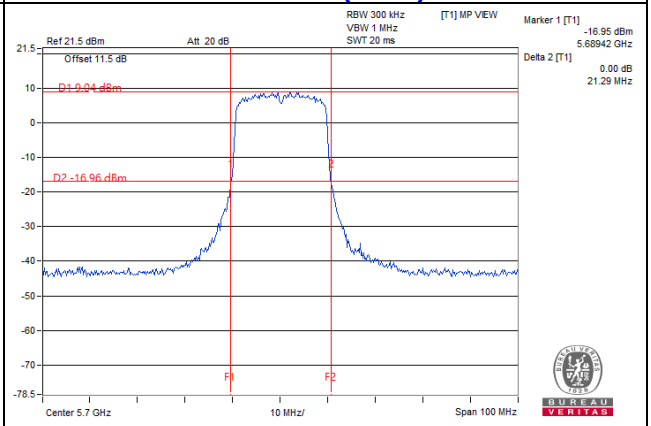
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	83.43	82.83
106	5530	82.85	83.56

Spectrum Plot of Worst Value

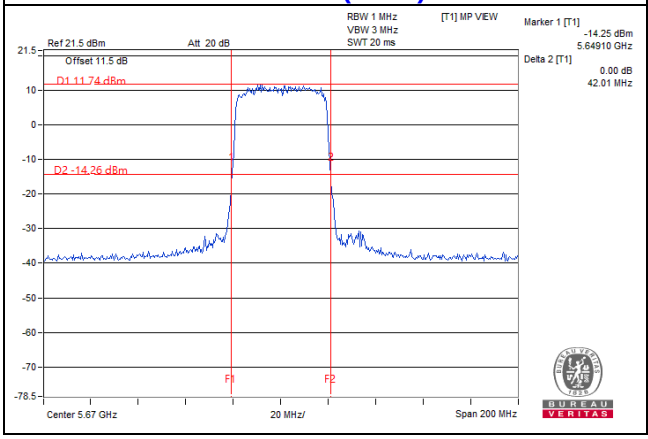
802.11a



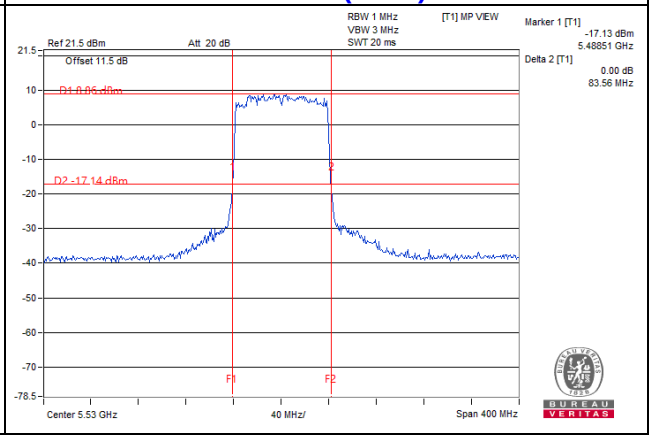
802.11ax (HE20)



802.11ax (HE40)



802.11ax (HE80)



EUT Maximum Conducted Power

802.11a

Frequency Band (MHz)	MAX. Power	
	Output Power(mW)	Output Power(dBm)
5250~5350	71.979	18.57
5470~5725	73.161	18.64

802.11ax (HE20)

Frequency Band (MHz)	MAX. Power	
	Output Power(mW)	Output Power(dBm)
5250~5350	62.670	17.97
5470~5725	63.912	18.06

802.11ax (HE40)

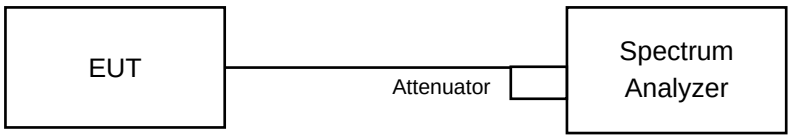
Frequency Band (MHz)	MAX. Power	
	Output Power(mW)	Output Power(dBm)
5250~5350	67.664	18.30
5470~5725	70.893	18.51

802.11ax (HE80)

Frequency Band (MHz)	MAX. Power	
	Output Power(mW)	Output Power(dBm)
5250~5350	64.458	18.09
5470~5725	64.131	18.07

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.3.3 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Result

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.32	16.32
40	5200	16.32	16.44
48	5240	16.32	16.32
52	5260	16.32	16.32
60	5300	16.32	16.32
64	5320	16.32	16.32
100	5500	16.32	16.32
116	5580	16.32	16.32
132	5660	16.32	16.32
140	5700	16.32	16.44
149	5745	16.35	16.35
157	5785	16.32	16.44
165	5825	16.32	16.32

802.11ax (HE20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.96	18.96
40	5200	18.96	18.96
48	5240	18.96	18.96
52	5260	18.96	18.84
60	5300	18.96	18.96
64	5320	18.96	18.96
100	5500	18.96	18.96
116	5580	18.96	18.96
132	5660	18.96	18.84
140	5700	18.84	18.84
149	5745	18.96	18.84
157	5785	18.96	18.96
165	5825	18.96	18.96

802.11ax (HE40)

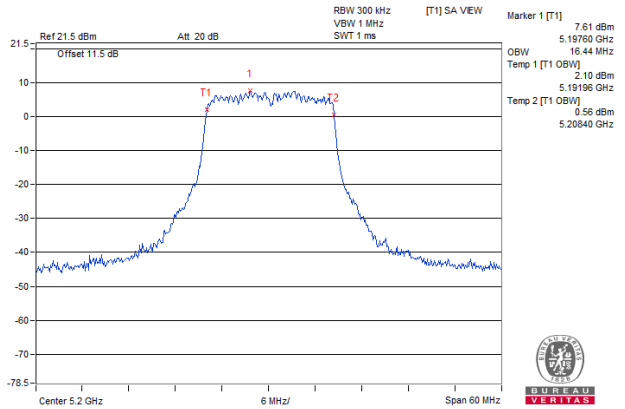
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	37.68	37.68
46	5230	37.92	37.92
54	5270	37.68	37.92
62	5310	37.68	37.92
102	5510	37.92	37.68
110	5550	37.92	37.68
134	5670	37.68	37.92
151	5755	37.74	37.92
159	5795	37.92	37.92

802.11ax (HE80)

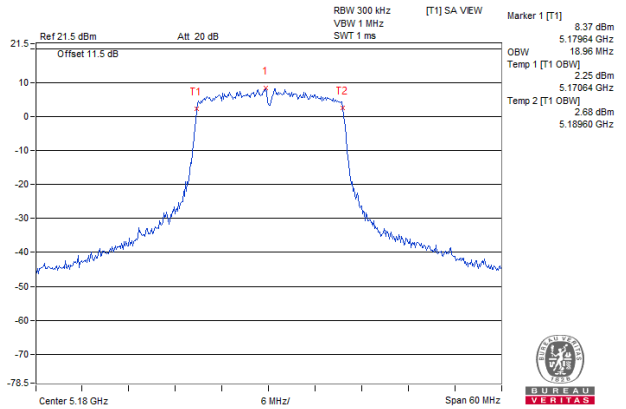
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	77.28	76.8
58	5290	77.28	77.28
106	5530	77.28	77.28
155	5775	77.76	77.28

Spectrum Plot of Worst Value

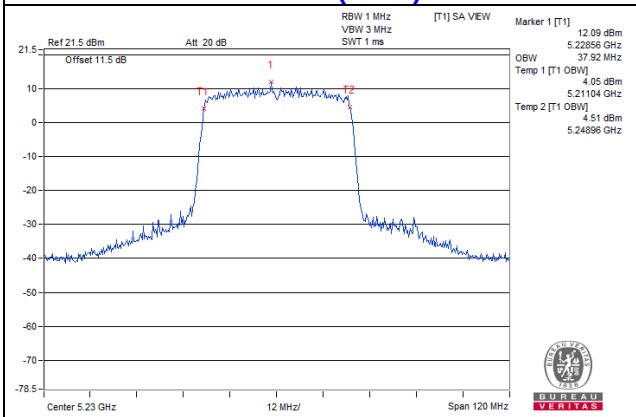
802.11a



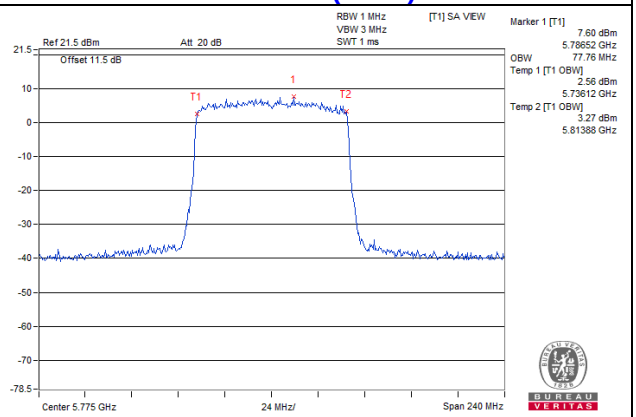
802.11ax (HE20)

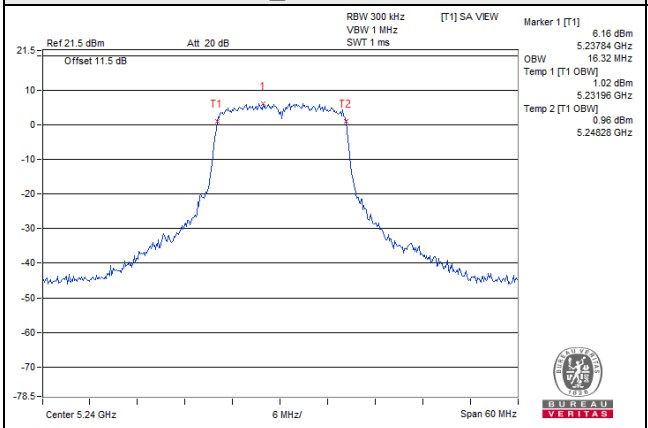
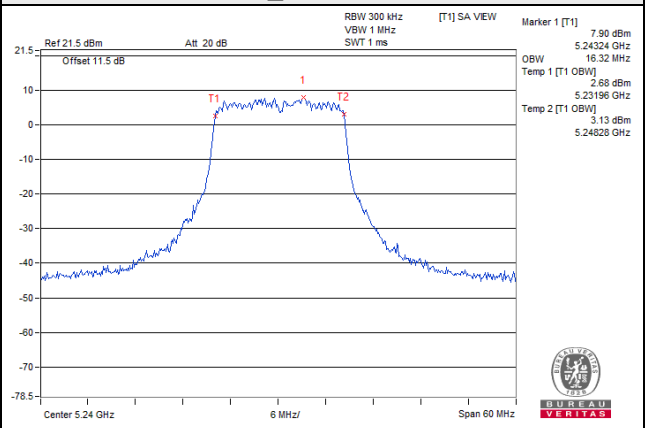
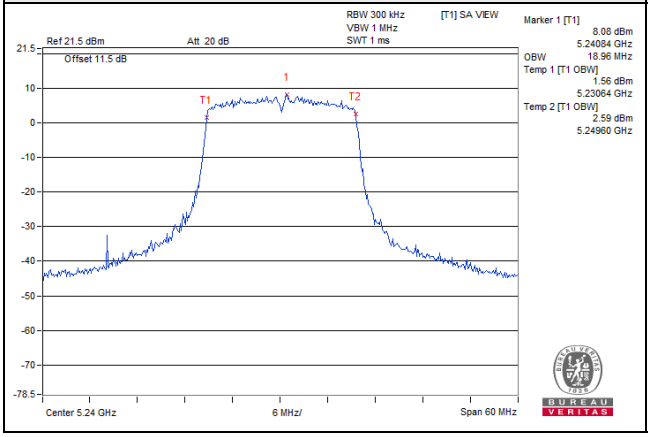
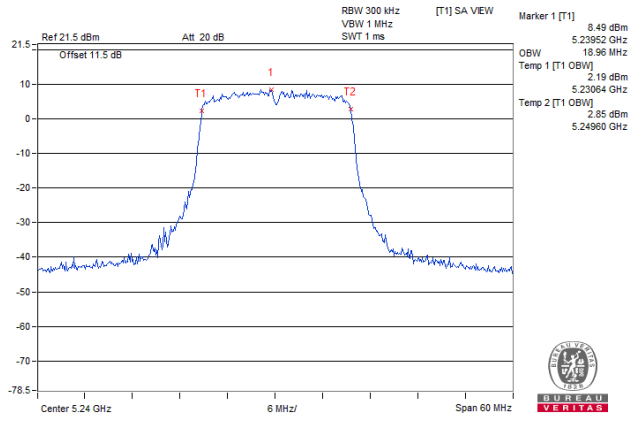


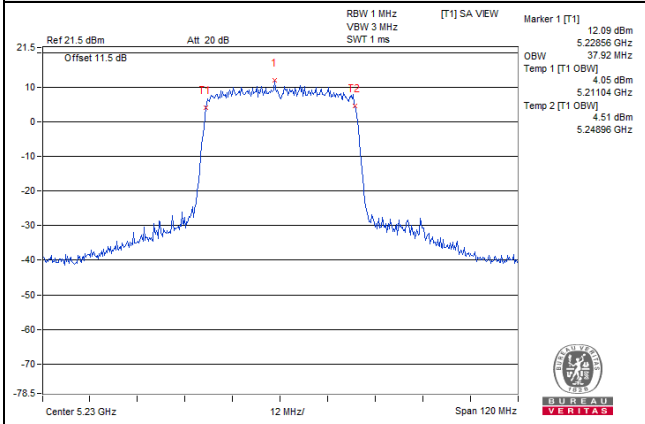
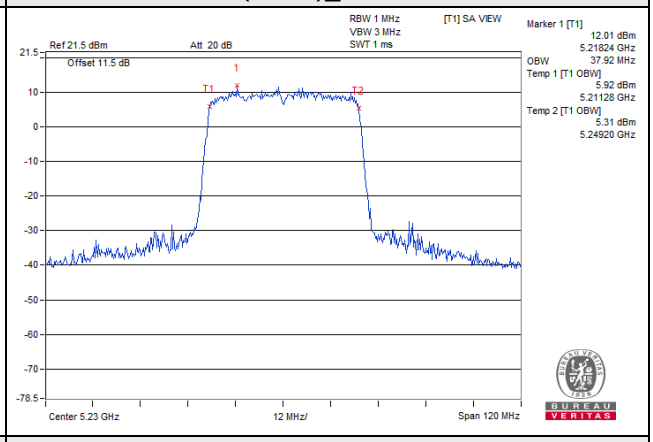
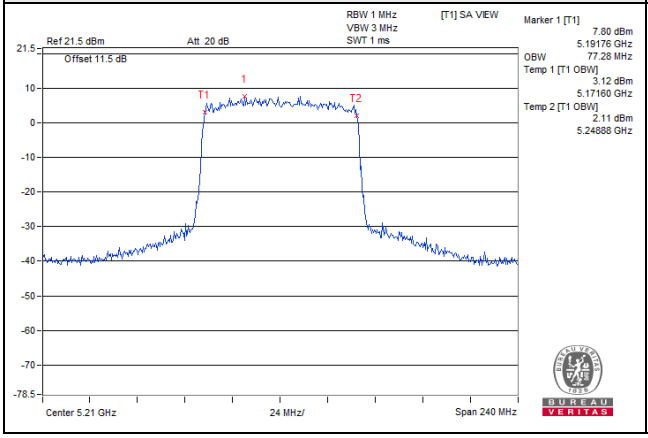
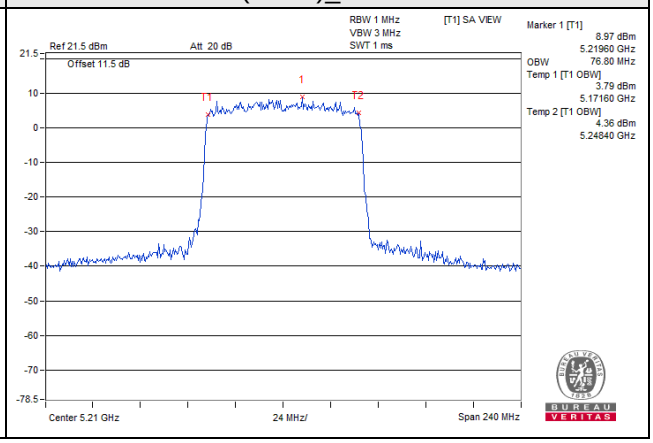
802.11ax (HE40)

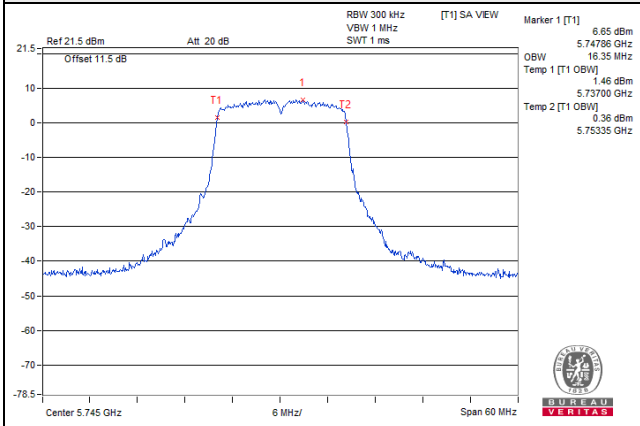
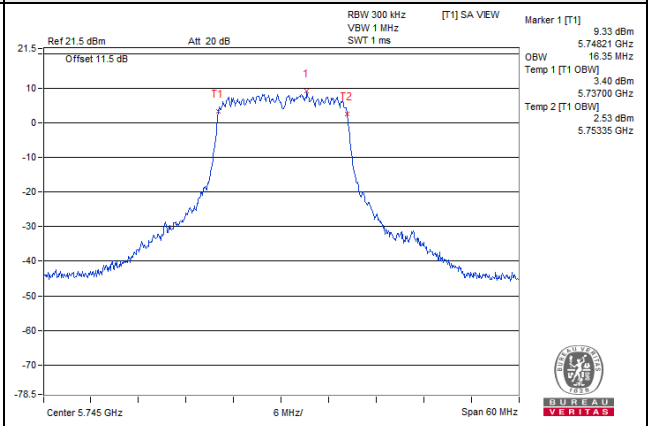
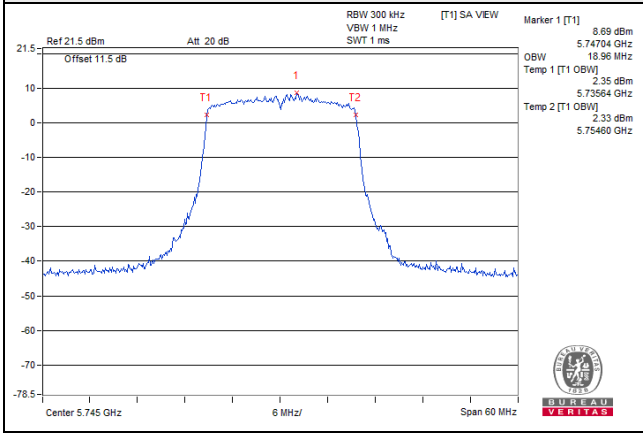
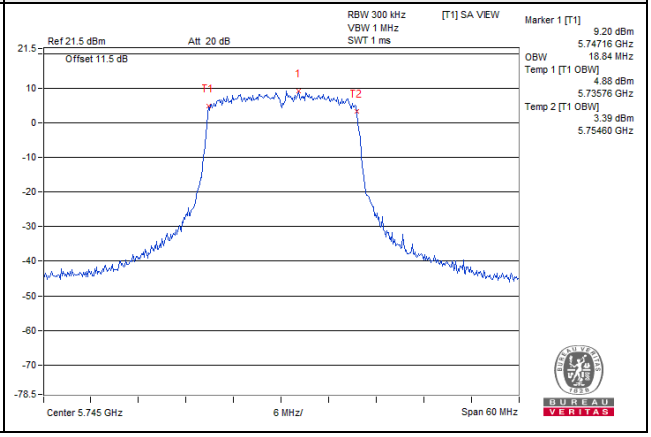


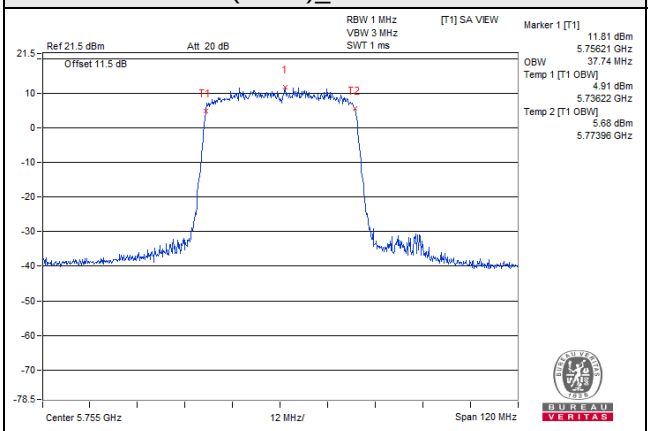
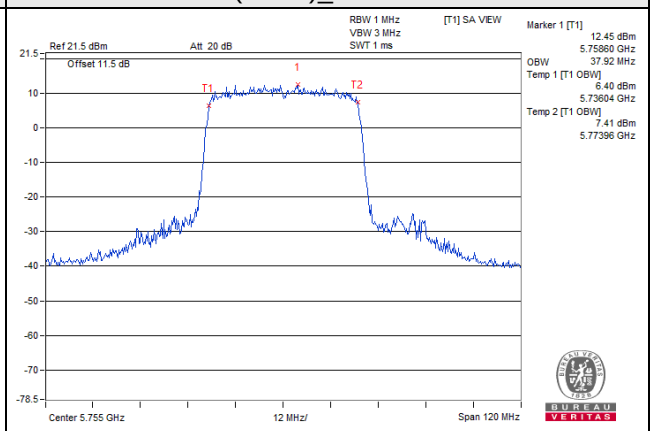
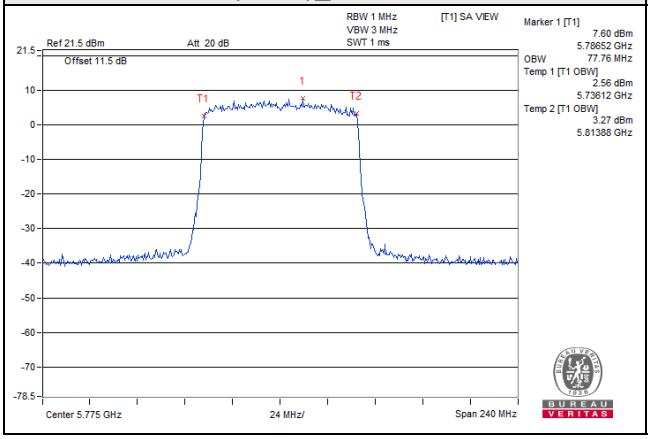
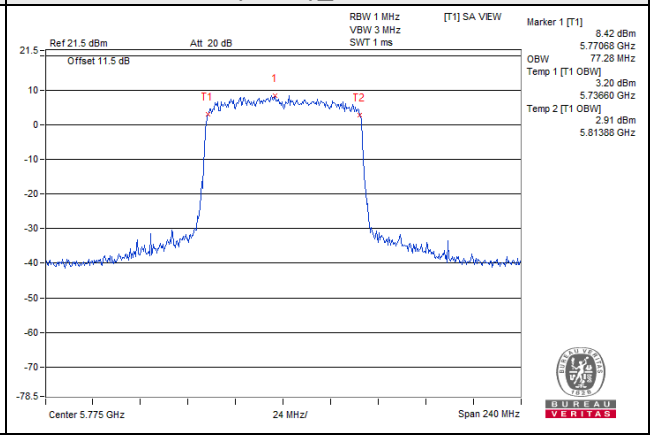
802.11ax (HE80)



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
	

Spectrum Plot for near By DFS Band	
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
	

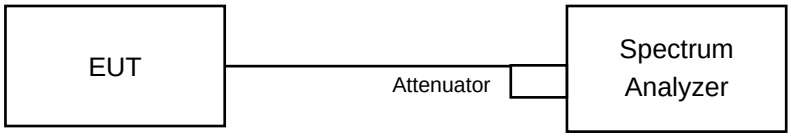
Spectrum Plot for near By DFS Band	
802.11ax (HE40)_Chain 0 / CH 151	802.11ax (HE40)_Chain 1 / CH 151
	
802.11ax (HE80)_Chain 0 / CH 155	802.11ax (HE80)_Chain 1 / CH 155
	

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 4.3.3 to get information of above instrument.

4.5.4 Test Procedures

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

For U-NII-3 band:
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 300 kHz, Set VBW ≥ 3 RBW, Detector = RMS
3) Sweep time = auto, trigger set to “free run”.
4) Trace average at least 100 traces in power averaging mode.
5) Record the max value
6) Scale the observed power level to an equivalent value in 300 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz/300kHz)

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

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

802.11a

Chan.	Freq. (MHz)	PSD (dBm)		Total PSD (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
36	5180	2.87	3.15	6.02	10.00	Pass
40	5200	2.82	3.43	6.15	10.00	Pass
48	5240	2.30	3.37	5.88	10.00	Pass
52	5260	2.51	3.51	6.05	10.00	Pass
60	5300	2.63	3.19	5.93	10.00	Pass
64	5320	2.44	2.81	5.64	10.00	Pass
100	5500	2.27	3.12	5.73	10.00	Pass
132	5660	2.36	3.66	6.07	10.00	Pass
116	5580	2.60	3.66	6.17	10.00	Pass
140	5700	2.75	3.52	6.16	10.00	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[$(10^{G1/20} + 10^{G2/20})^2/2$] = 7dBi > 6dBi , so the power density limit shall be reduced to 11-(7-6) = 10dBm.

802.11ax (HE20)

Chan.	Freq. (MHz)	PSD (dBm)		Total PSD (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
36	5180	1.71	2.18	4.96	10.00	Pass
40	5200	1.59	2.41	5.03	10.00	Pass
48	5240	1.22	2.37	4.84	10.00	Pass
52	5260	1.39	2.49	4.98	10.00	Pass
60	5300	1.49	2.12	4.83	10.00	Pass
64	5320	1.31	1.73	4.53	10.00	Pass
100	5500	1.28	1.83	4.57	10.00	Pass
116	5580	1.34	2.44	4.93	10.00	Pass
132	5660	1.57	2.40	5.01	10.00	Pass
140	5700	1.61	2.26	4.96	10.00	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[$(10^{G1/20} + 10^{G2/20})^2/2$] = 7dBi > 6dBi , so the power density limit shall be reduced to 11-(7-6) = 10dBm.

802.11ax (HE40)

Chan.	Freq. (MHz)	PSD (dBm)		Total PSD (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
38	5190	-0.72	-0.27	2.52	10.00	Pass
46	5230	-1.08	-0.09	2.45	10.00	Pass
54	5270	-0.87	-0.15	2.52	10.00	Pass
62	5310	-1.07	-0.68	2.14	10.00	Pass
102	5510	-1.05	-0.75	2.11	10.00	Pass
110	5550	-0.93	-0.11	2.51	10.00	Pass
134	5670	-0.91	-0.05	2.55	10.00	Pass

Note:

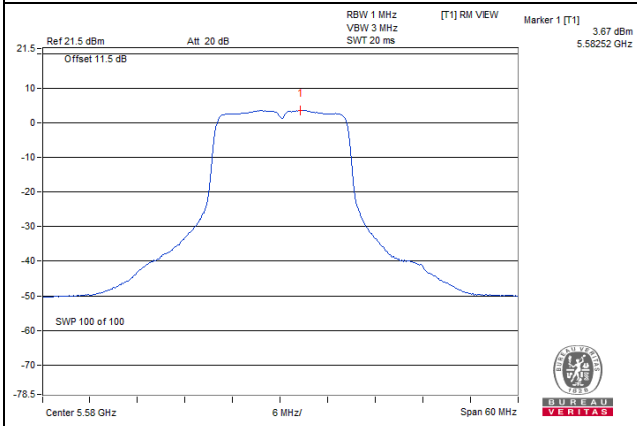
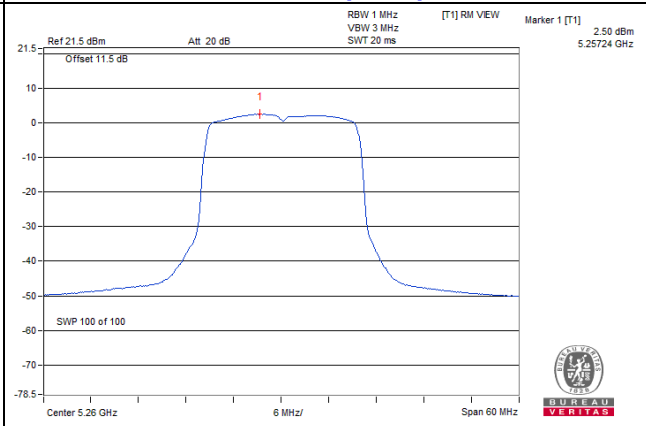
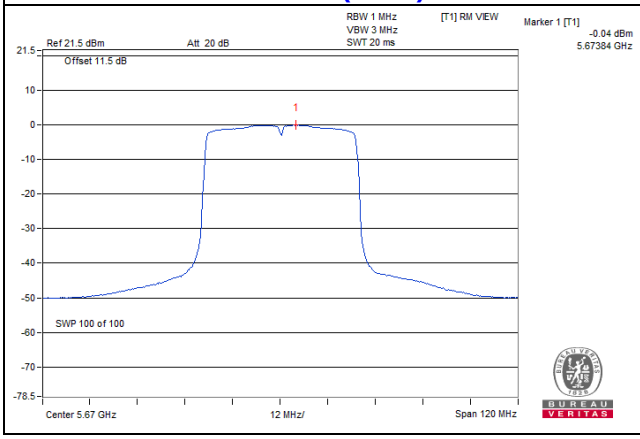
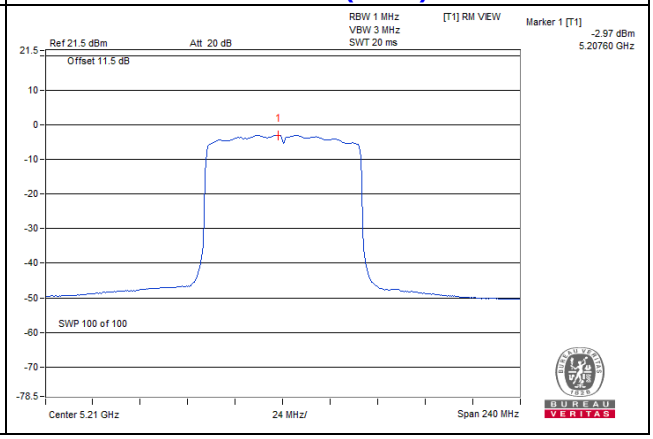
1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2/2$] = 7dBi > 6dBi , so the power density limit shall be reduced to 11-(7-6) = 10dBm.

802.11ax (HE80)

Chan.	Freq. (MHz)	PSD (dBm)		Total PSD (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
42	5210	-3.95	-2.98	-0.43	10.00	Pass
58	5290	-4.11	-3.34	-0.70	10.00	Pass
106	5530	-4.14	-3.35	-0.72	10.00	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[$(10^{G1/20} + 10^{G2/20})^2/2$] = 7dBi > 6dBi , so the power density limit shall be reduced to 11-(7-6) = 10dBm.

Spectrum Plot of Worst Value	
802.11a	**802.11ax (HE20)**
	
802.11ax (HE40)	**802.11ax (HE80)**
	

For U-NII-3 band:

802.11a

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	-5.99	-3.77	3.01	-0.76	29	Pass
	157	5785	-5.79	-3.57	3.01	-0.56	29	Pass
	165	5825	-5.96	-3.74	3.01	-0.73	29	Pass
1	149	5745	-4.63	-2.41	3.01	0.6	29	Pass
	157	5785	-4.84	-2.62	3.01	0.39	29	Pass
	165	5825	-5.21	-2.99	3.01	0.02	29	Pass

Note: 1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is measure value add 10 log (N_{ANT}) dB.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2] = 7dBi > 6dBi , so the power density limit shall be reduced to 30-(7-6)=29dBm/500kHz.

802.11ax (HE20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	-7.88	-5.66	3.01	-2.65	29	Pass
	157	5785	-8.07	-5.85	3.01	-2.84	29	Pass
	165	5825	-8.00	-5.78	3.01	-2.77	29	Pass
1	149	5745	-6.59	-4.37	3.01	-1.36	29	Pass
	157	5785	-6.82	-4.60	3.01	-1.59	29	Pass
	165	5825	-7.20	-4.98	3.01	-1.97	29	Pass

Note: 1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is measure value add 10 log (N_{ANT}) dB.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2] = 7dBi > 6dBi , so the power density limit shall be reduced to 30-(7-6)=29dBm/500kHz.

802.11ax (HE40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	151	5755	-10.02	-7.80	3.01	-4.79	29	Pass
	159	5795	-10.24	-8.02	3.01	-5.01	29	Pass
1	151	5755	-9.17	-6.95	3.01	-3.94	29	Pass
	159	5795	-9.35	-7.13	3.01	-4.12	29	Pass

Note: 1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is measure value add 10 log (N_{ANT}) dB.
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2] = 7dBi > 6dBi , so the power density limit shall be reduced to 30-(7-6)=29dBm/500kHz.

802.11ax (HE80)

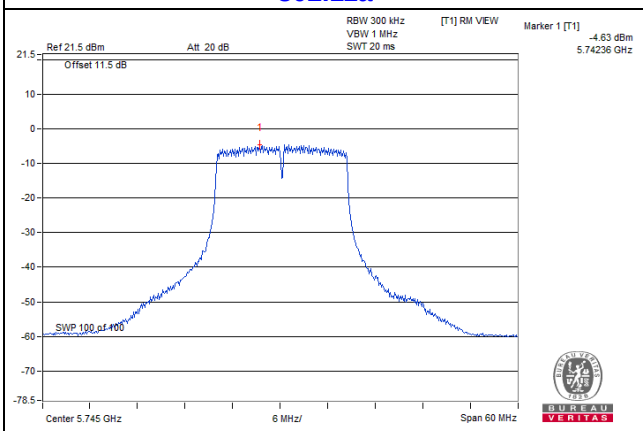
TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	155	5775	-13.37	-11.15	3.01	-8.14	29	Pass
1	155	5775	-12.06	-9.84	3.01	-6.83	29	Pass

Note: 1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is measure value add 10 log (N_{ANT}) dB.

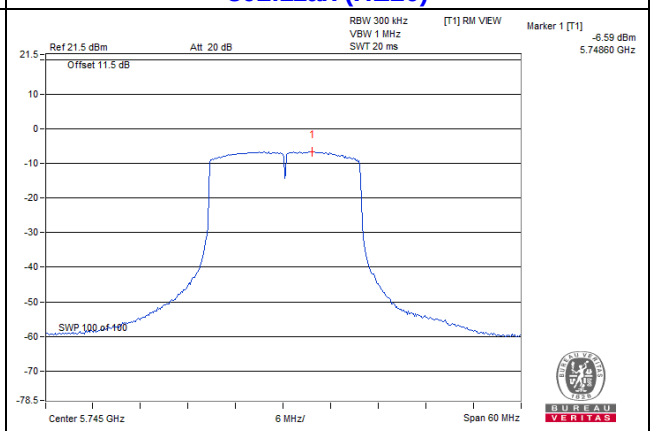
2. Directional gain = 10 log[$(10^{Chain0/20} + 10^{Chain1/20})^2$ / 2] = 7dBi > 6dBi , so the power density limit shall be reduced to 30-(7-6)=29dBm/500kHz.

Spectrum Plot of Worst Value

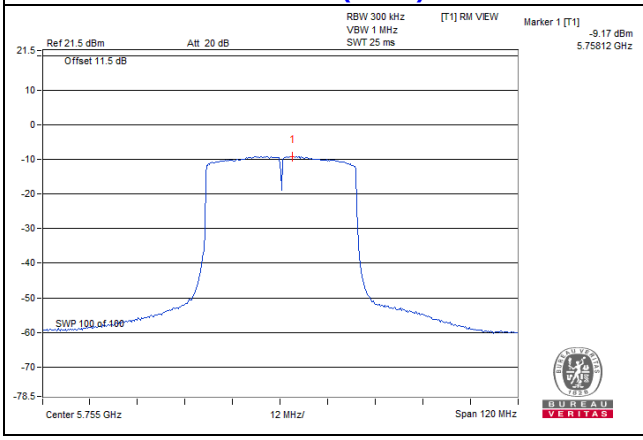
802.11a



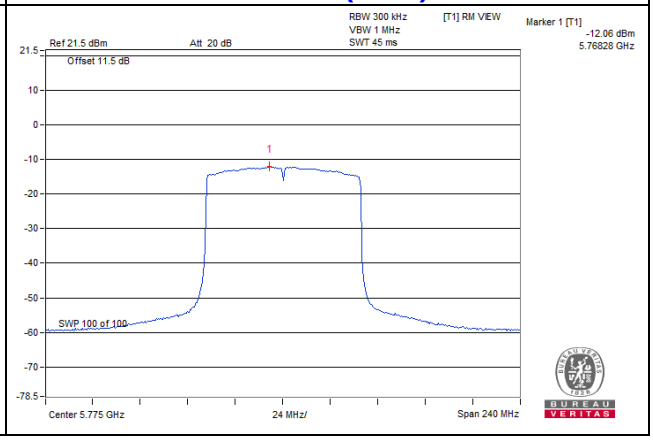
802.11ax (HE20)



802.11ax (HE40)



802.11ax (HE80)

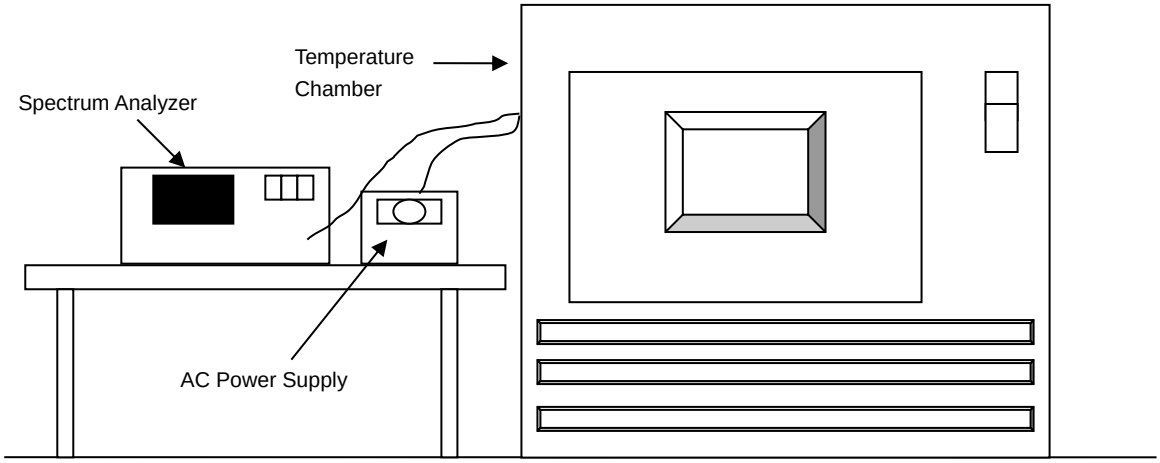


4.6 Frequency Stability

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.	Calibrated Date	Calibrated Until
Temperature & Humidity Chamber TERCHY	MHU-225AU	920409	2021/7/2	2022/7/1
Spectrum Analyzer R&S	FSV40	101042	2021/9/9	2022/9/8
Digital Multimeter Fluke	87-III	70360742	2021/6/24	2022/6/23
AC Power Source Preen	AFC-500W	F103040004	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. Tested Date: 2021/10/29

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
50	120	5179.9946	Pass	5179.9955	Pass	5179.9951	Pass	5179.9987	Pass
40	120	5179.9954	Pass	5179.9951	Pass	5179.9939	Pass	5179.9983	Pass
30	120	5179.9888	Pass	5179.9878	Pass	5179.9872	Pass	5179.9899	Pass
20	120	5180.0229	Pass	5180.0202	Pass	5180.0191	Pass	5180.0207	Pass
10	120	5179.9799	Pass	5179.982	Pass	5179.9807	Pass	5179.9785	Pass
0	120	5179.9787	Pass	5179.9786	Pass	5179.9788	Pass	5179.9779	Pass
-10	120	5179.9782	Pass	5179.9771	Pass	5179.9790	Pass	5179.9782	Pass
-20	120	5180.0099	Pass	5180.0098	Pass	5180.0097	Pass	5180.0084	Pass
-30	120	5179.9788	Pass	5179.9824	Pass	5179.9817	Pass	5179.9780	Pass

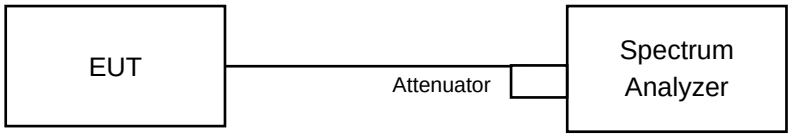
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5180.0245	Pass	5180.0245	Pass	5180.0239	Pass	5180.0220	Pass
	120	5180.0229	Pass	5180.0202	Pass	5180.0191	Pass	5180.0207	Pass
	102	5180.0256	Pass	5180.0263	Pass	5180.0267	Pass	5180.0244	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 4.3.3 to get information of above instrument.

4.7.4 Test Procedure

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.33	16.36	0.5	Pass
157	5785	16.33	16.37	0.5	Pass
165	5825	16.34	16.38	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	18.80	18.69	0.5	Pass
157	5785	18.80	18.73	0.5	Pass
165	5825	18.76	18.75	0.5	Pass

802.11ax (HE40)

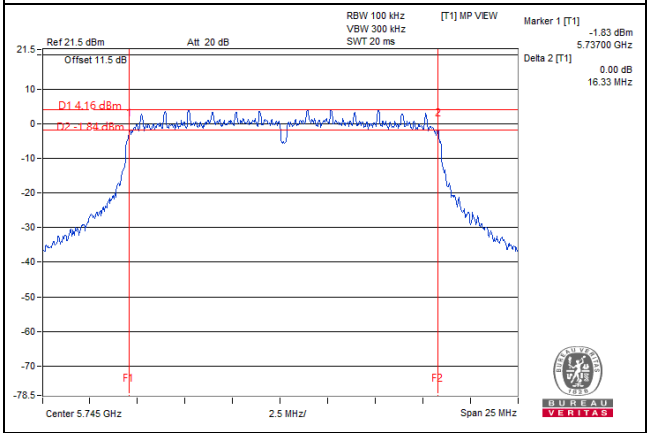
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	37.89	37.21	0.5	Pass
159	5795	37.70	37.54	0.5	Pass

802.11ax (HE80)

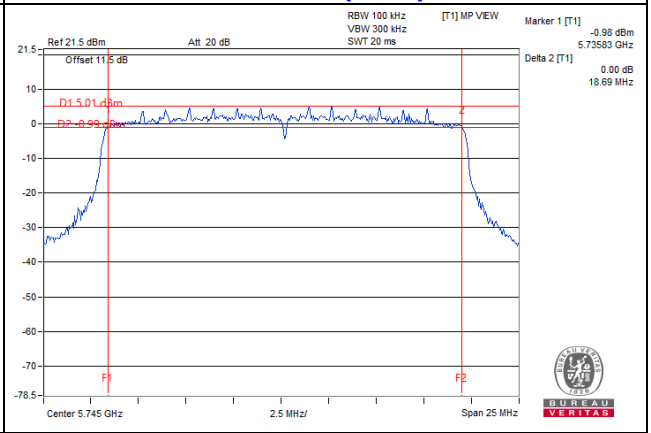
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	77.41	76.56	0.5	Pass

Spectrum Plot of Worst Value

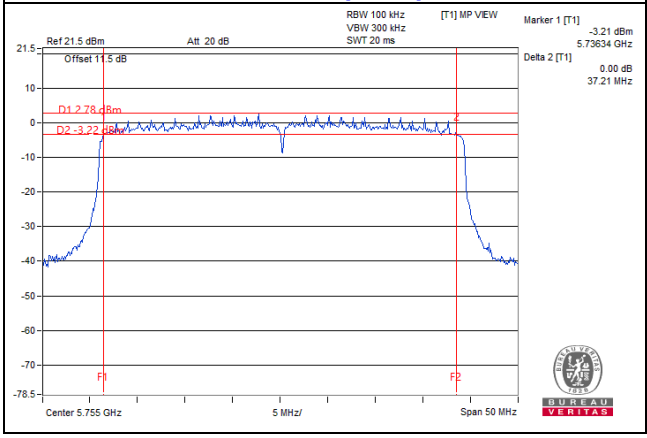
802.11a



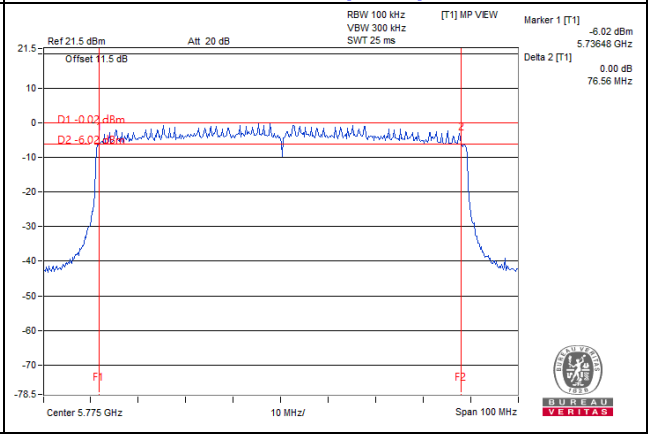
802.11ax (HE20)



802.11ax (HE40)



802.11ax (HE80)



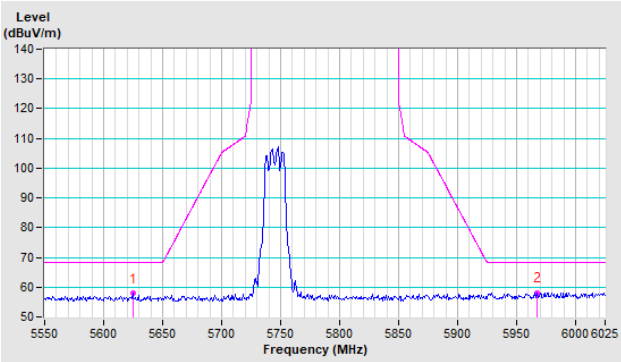
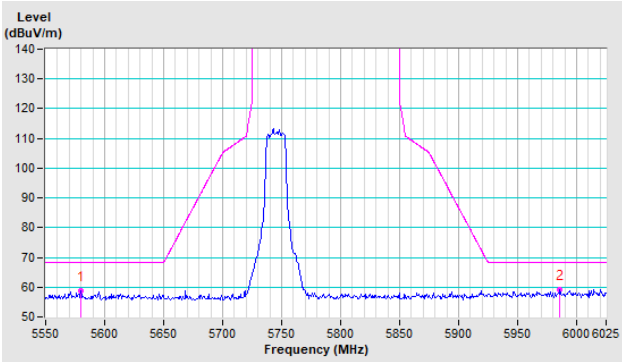
5 Pictures of Test Arrangements

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

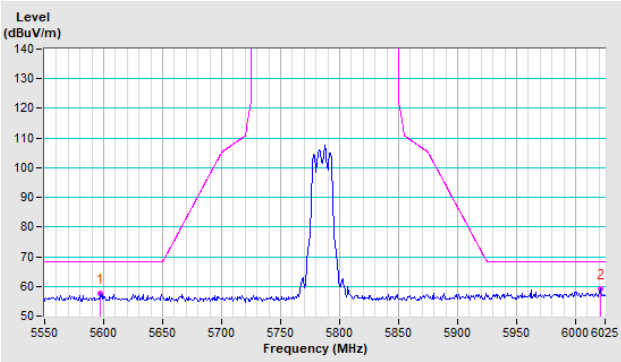
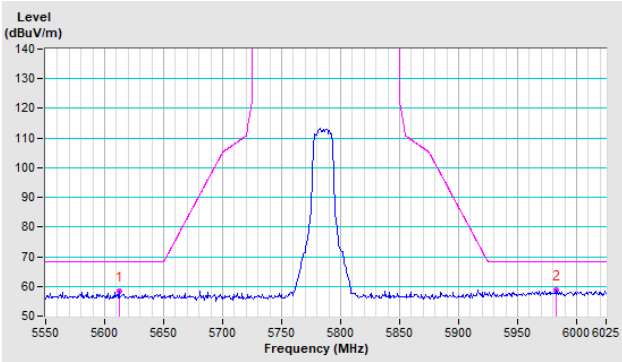
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

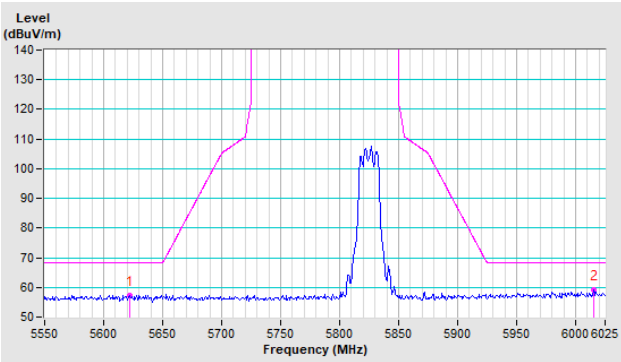
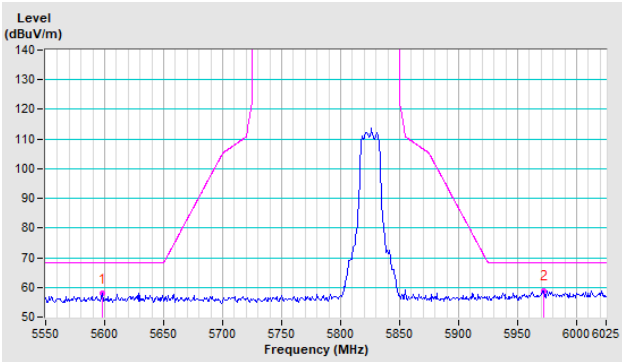
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

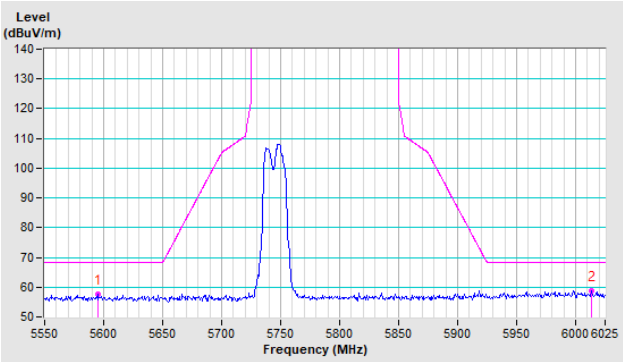
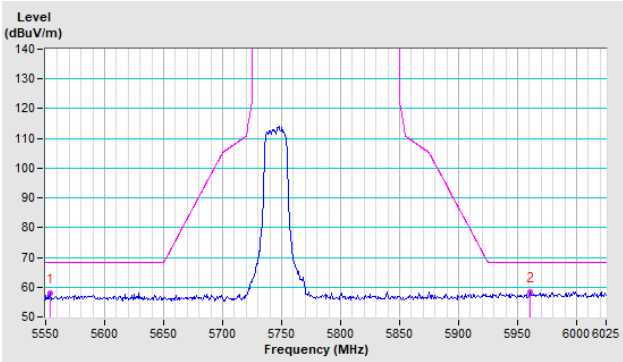
Horizontal	Vertical
	

CH 165 5825 MHz

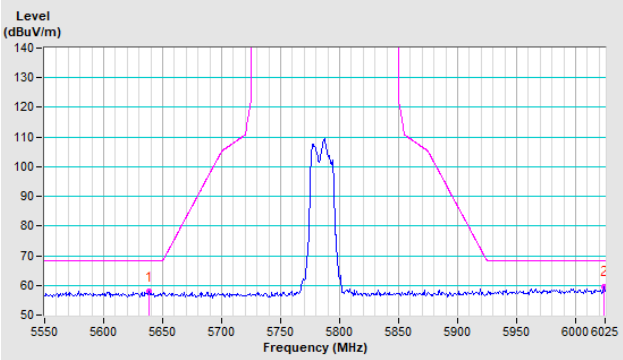
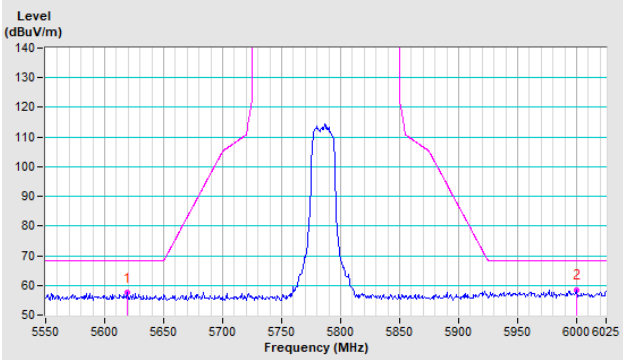
Horizontal	Vertical
	

802.11ax (HE20)

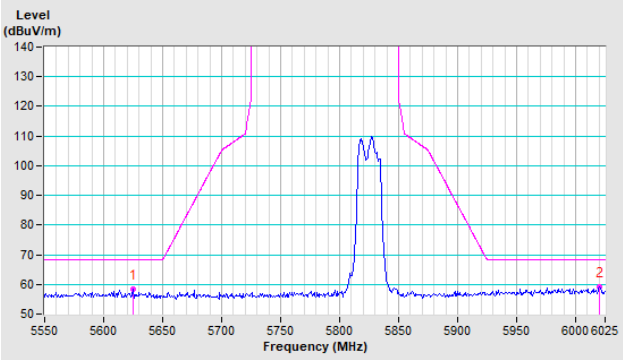
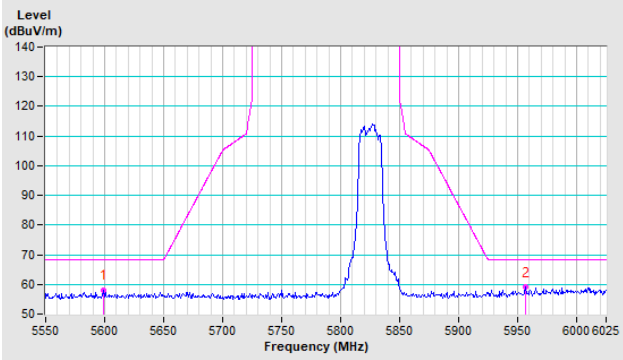
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

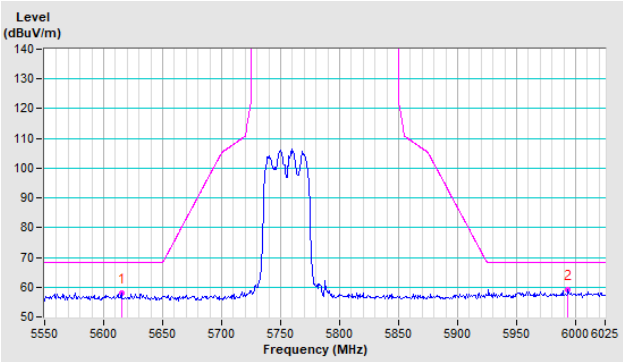
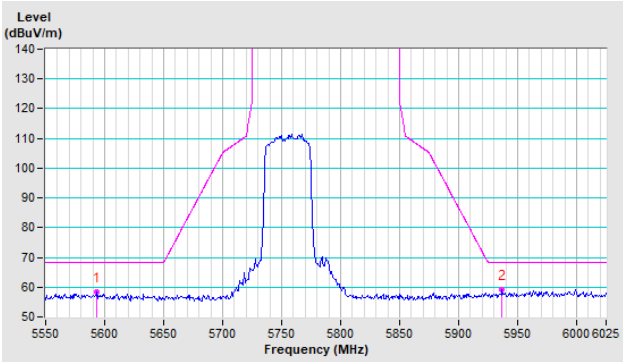
Horizontal	Vertical
	

CH 165 5825 MHz

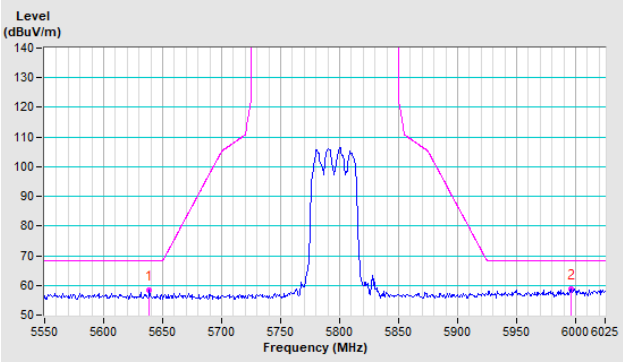
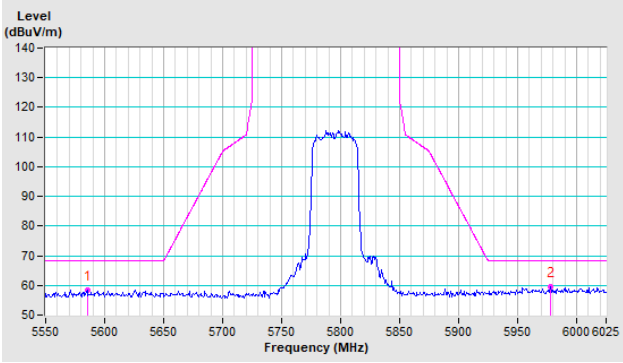
Horizontal	Vertical
	

802.11ax (HE40)

CH 151 5755 MHz

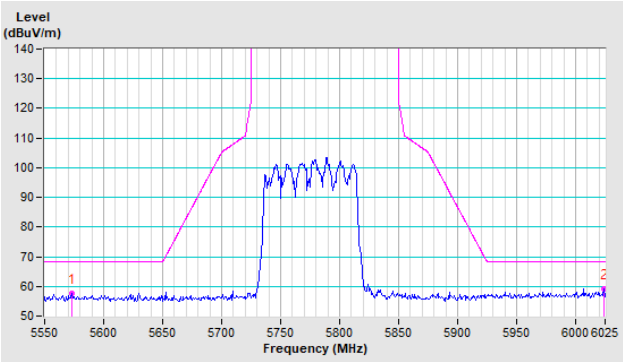
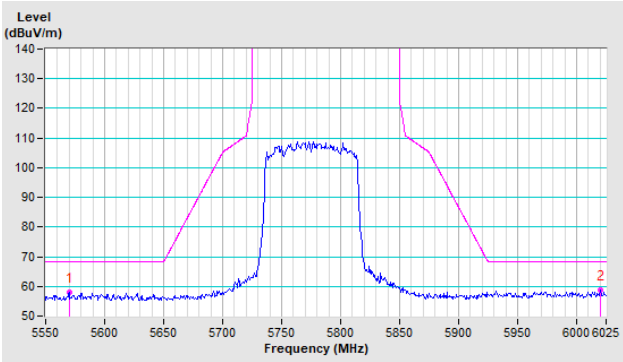
Horizontal	Vertical
	

CH 159 5795 MHz

Horizontal	Vertical
	

802.11ax (HE80)

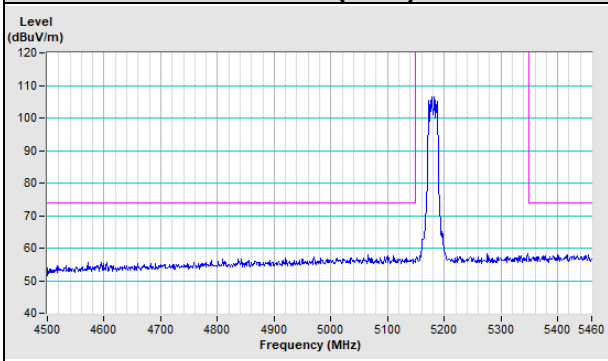
CH 155 5775 MHz

Horizontal	Vertical
	

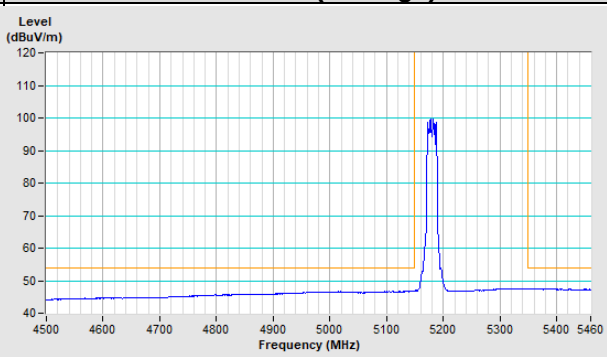
Annex B- Band Edge Measurement

802.11a Channel 36

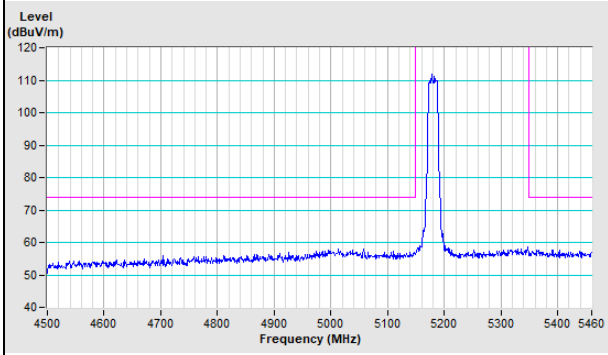
Horizontal (Peak)



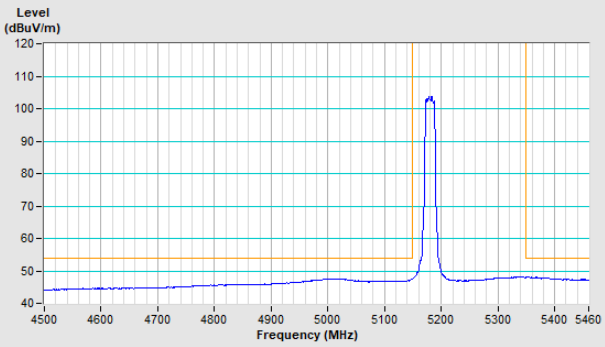
Horizontal (Average)



Vertical (Peak)

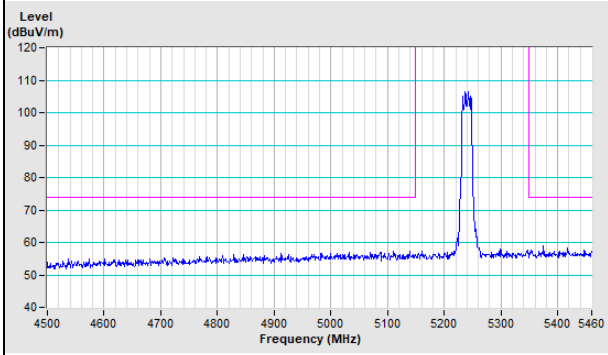


Vertical (Average)

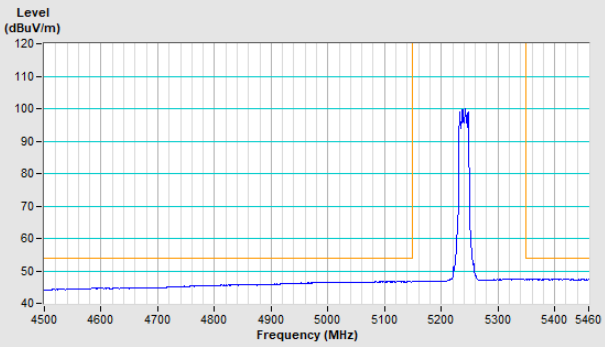


802.11a Channel 48

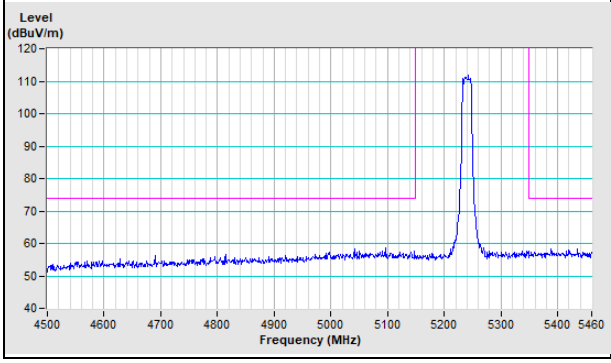
Horizontal (Peak)



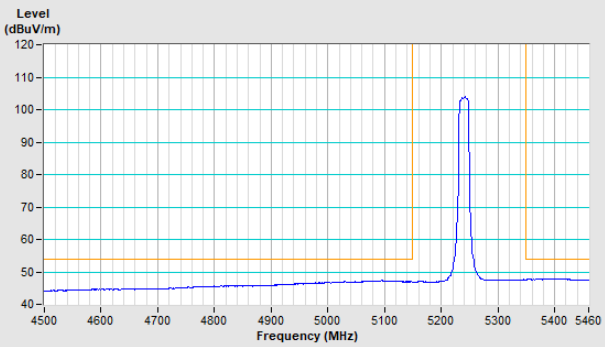
Horizontal (Average)



Vertical (Peak)

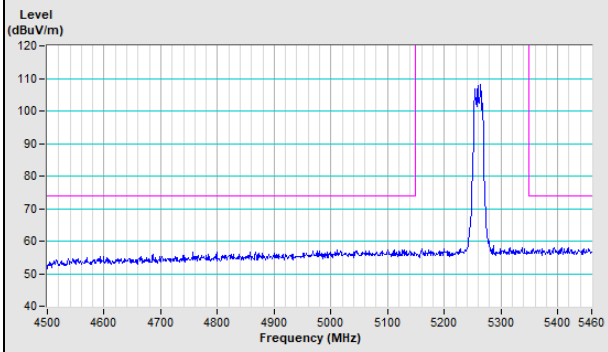


Vertical (Average)

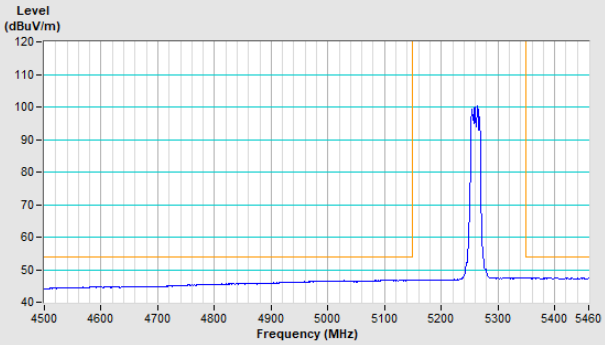


802.11a Channel 52

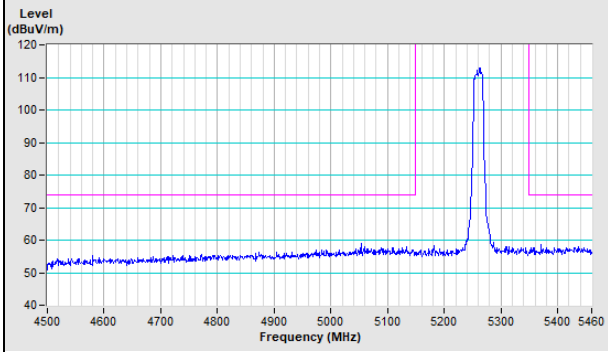
Horizontal (Peak)



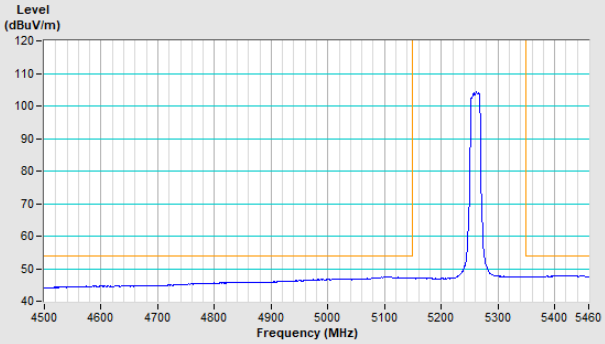
Horizontal (Average)



Vertical (Peak)

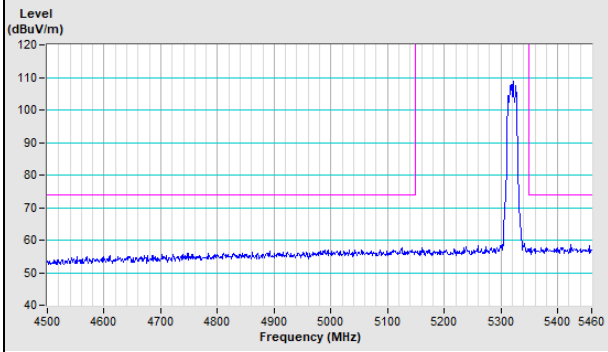


Vertical (Average)

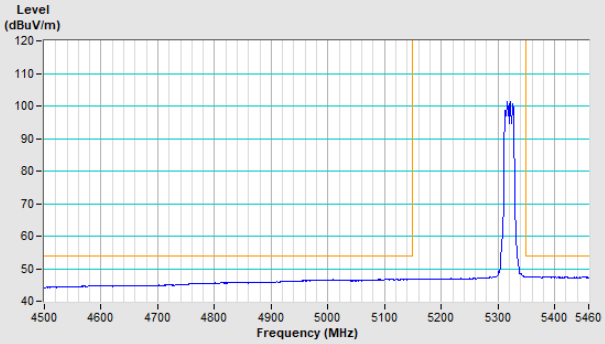


802.11a Channel 64

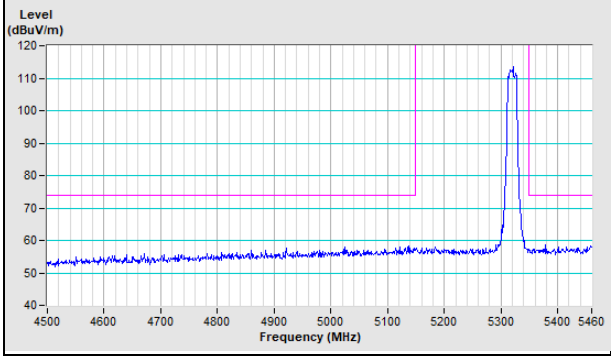
Horizontal (Peak)



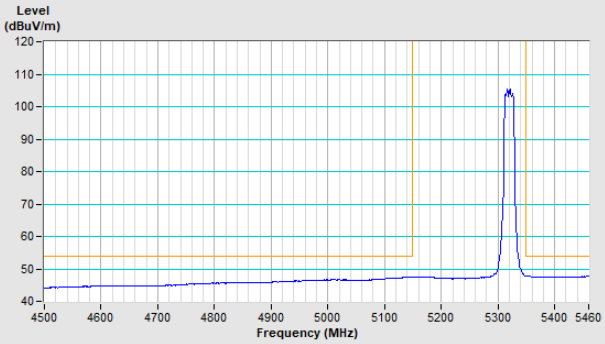
Horizontal (Average)



Vertical (Peak)

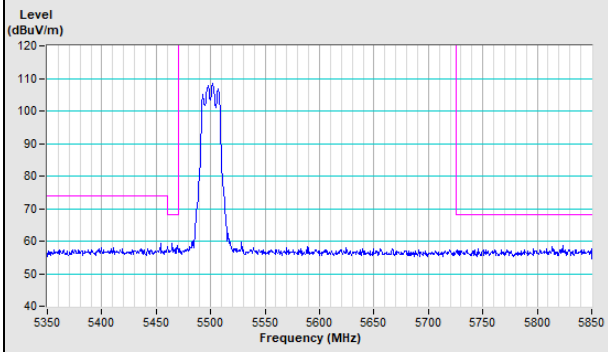


Vertical (Average)

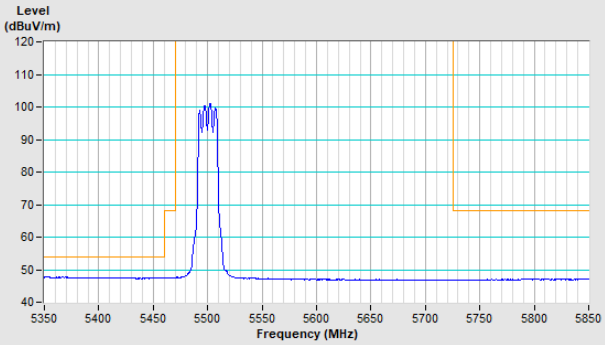


802.11a Channel 100

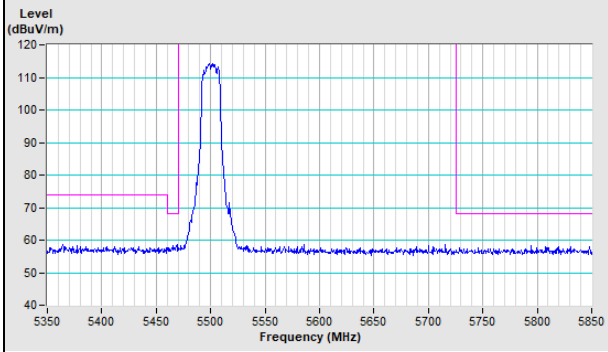
Horizontal (Peak)



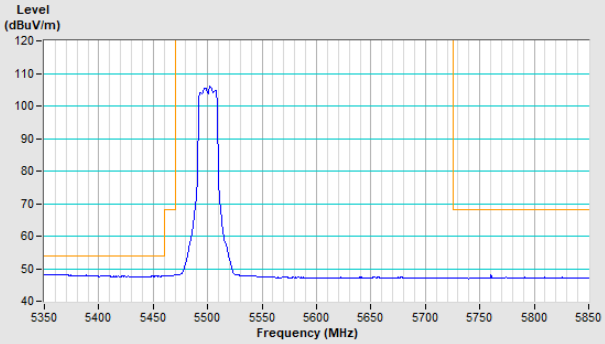
Horizontal (Average)



Vertical (Peak)

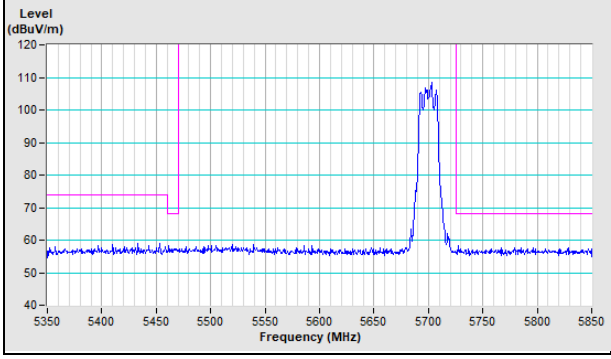


Vertical (Average)

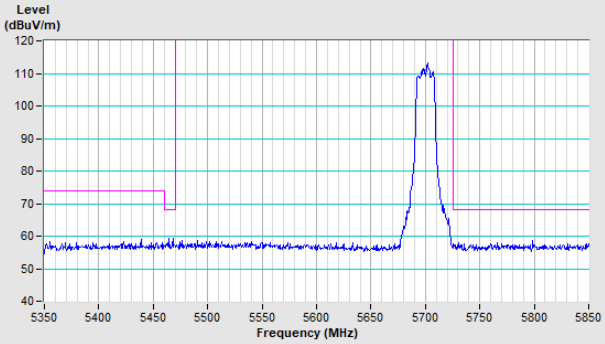


802.11a Channel 140

Horizontal (Peak)

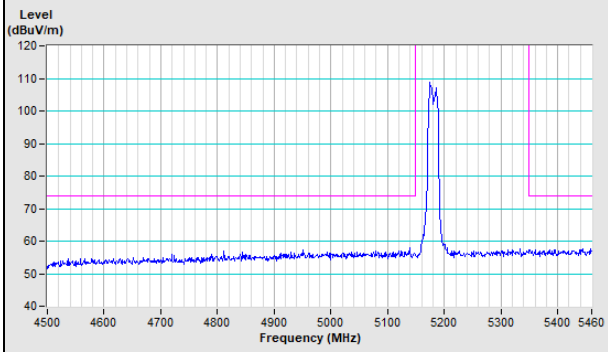


Vertical (Peak)

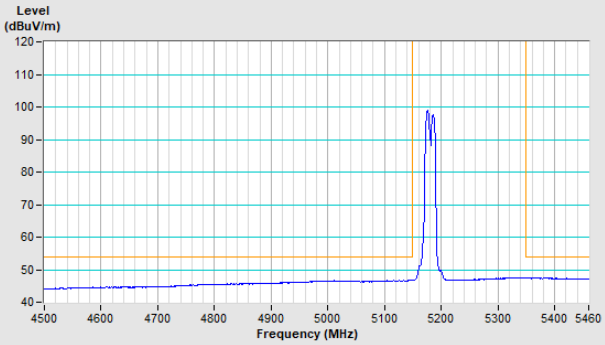


802.11ax (HE20) Channel 36

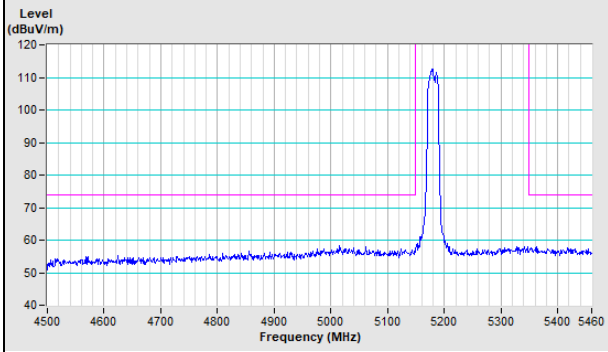
Horizontal (Peak)



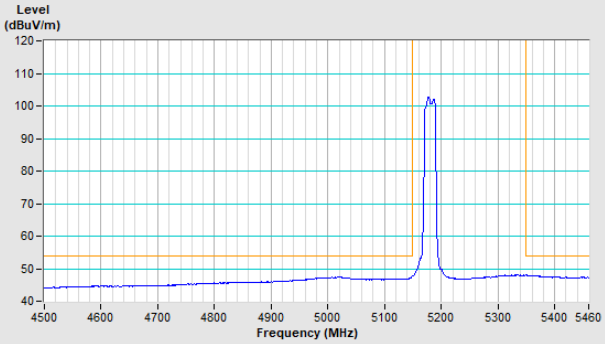
Horizontal (Average)



Vertical (Peak)

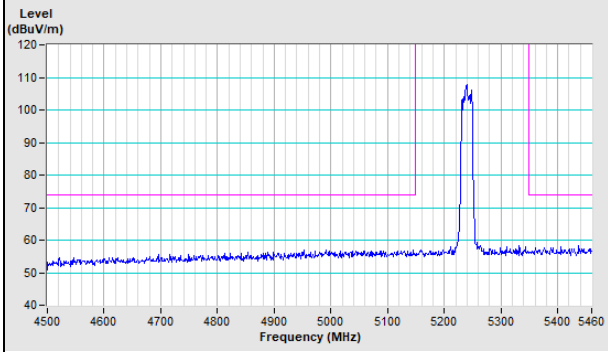


Vertical (Average)

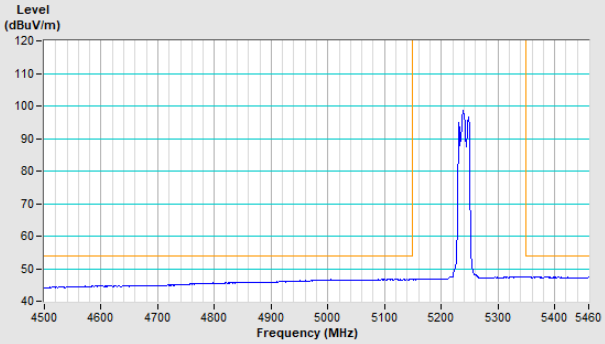


802.11ax (HE20) Channel 48

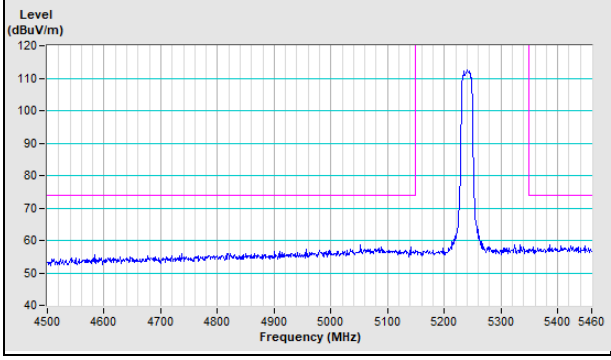
Horizontal (Peak)



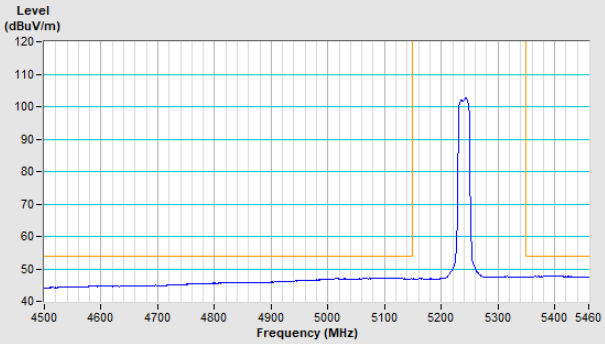
Horizontal (Average)



Vertical (Peak)

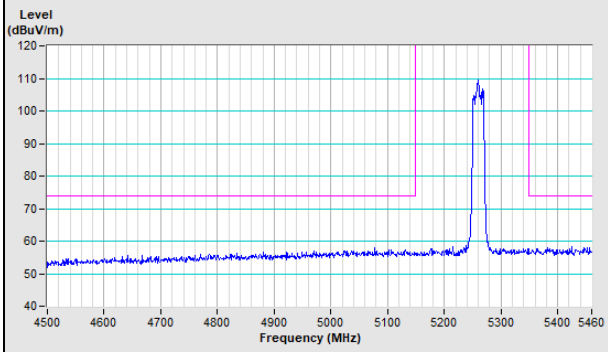


Vertical (Average)

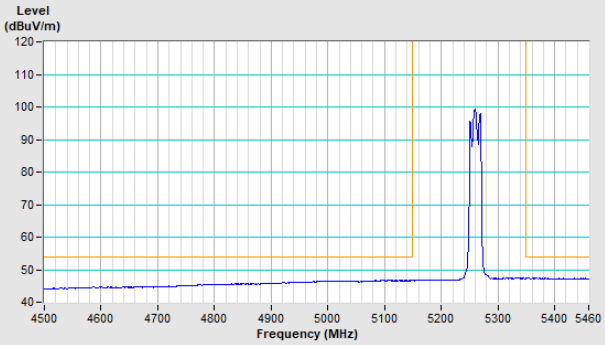


802.11ax (HE20) Channel 52

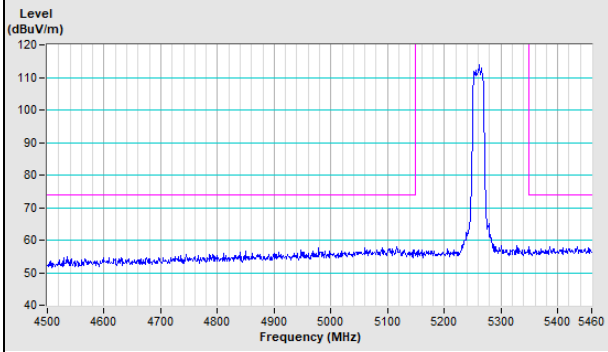
Horizontal (Peak)



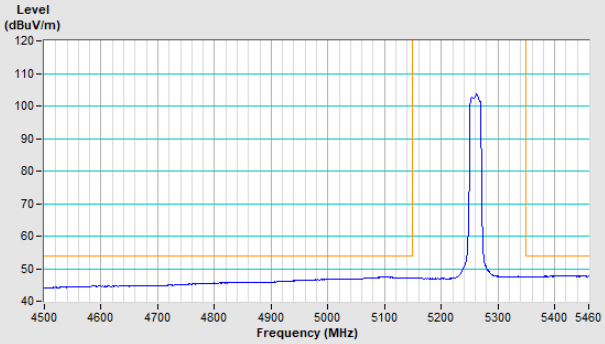
Horizontal (Average)



Vertical (Peak)

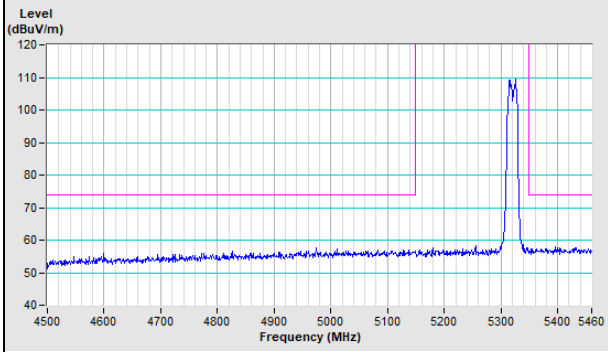


Vertical (Average)

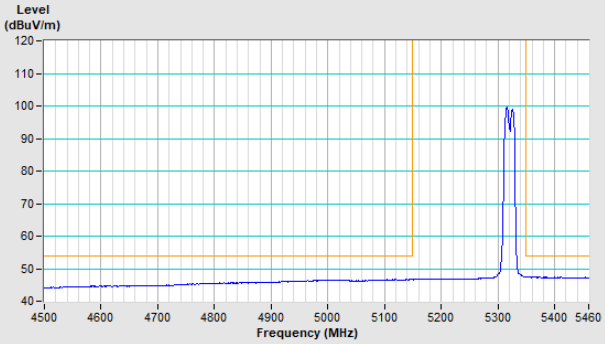


802.11ax (HE20) Channel 64

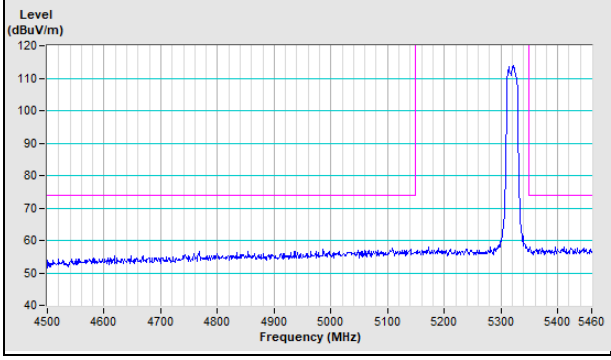
Horizontal (Peak)



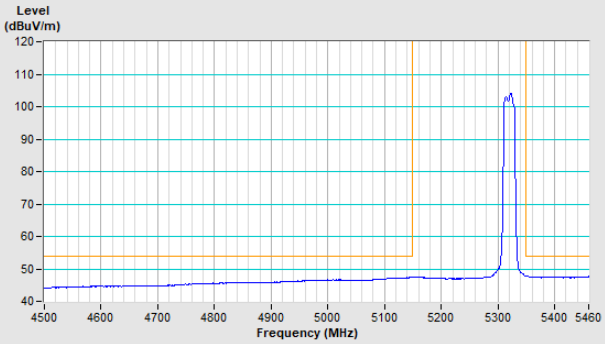
Horizontal (Average)



Vertical (Peak)

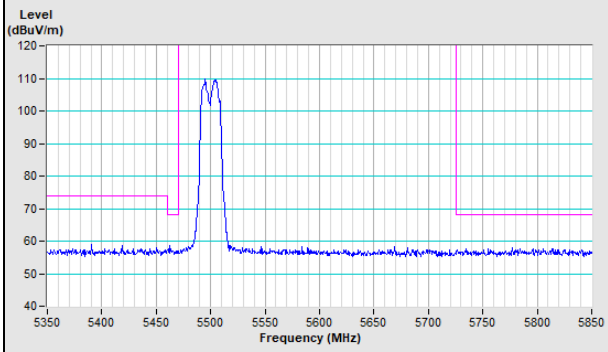


Vertical (Average)

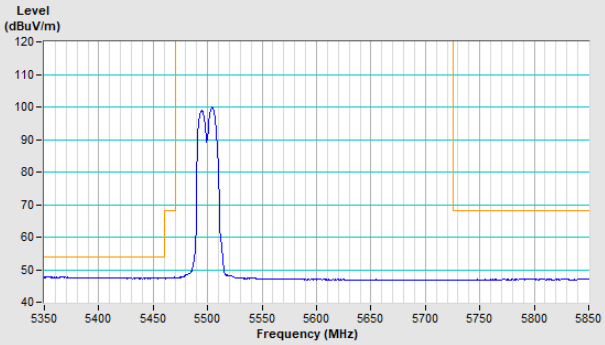


802.11ax (HE20) Channel 100

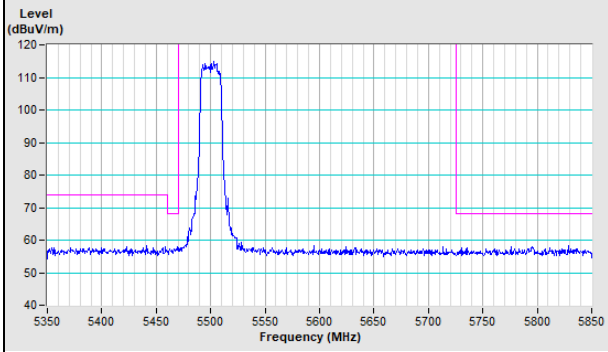
Horizontal (Peak)



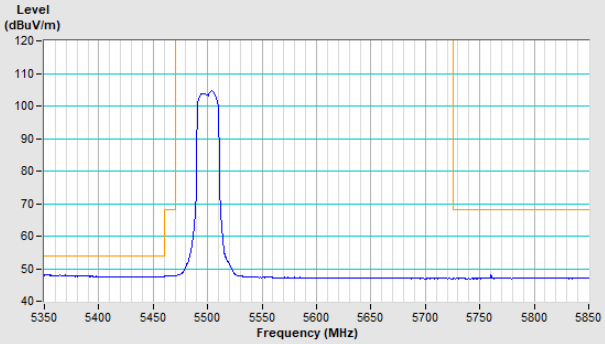
Horizontal (Average)



Vertical (Peak)

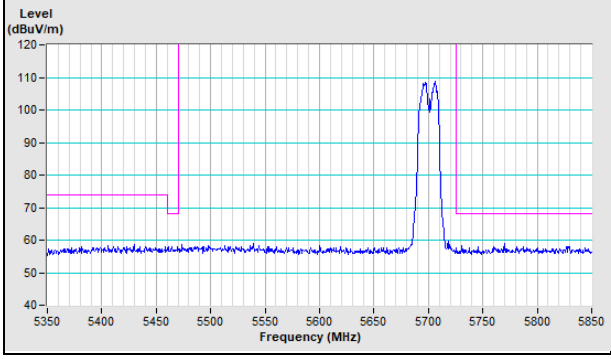


Vertical (Average)

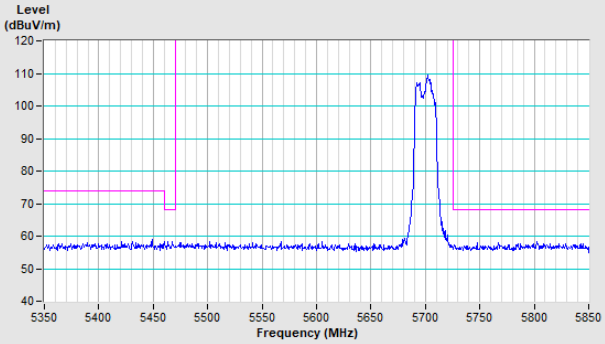


802.11ax (HE20) Channel 140

Horizontal (Peak)

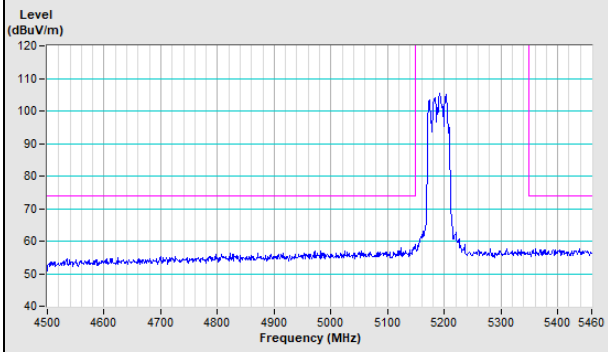


Vertical (Peak)

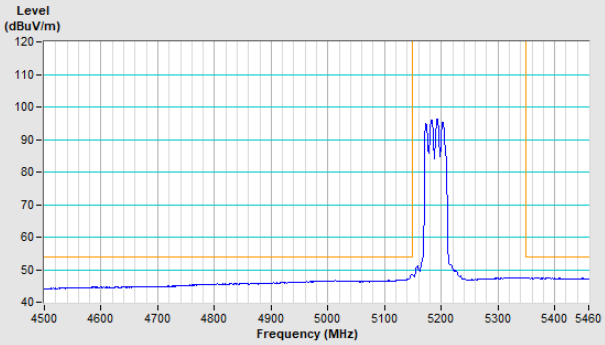


802.11ax (HE40) Channel 38

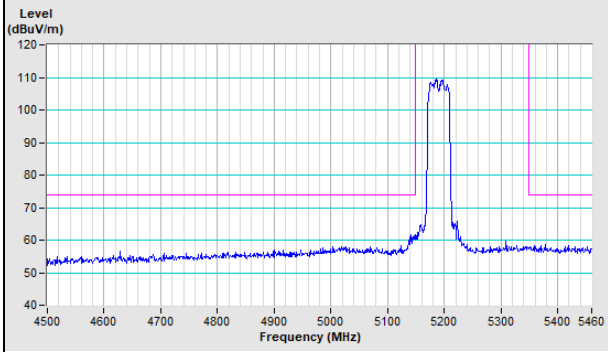
Horizontal (Peak)



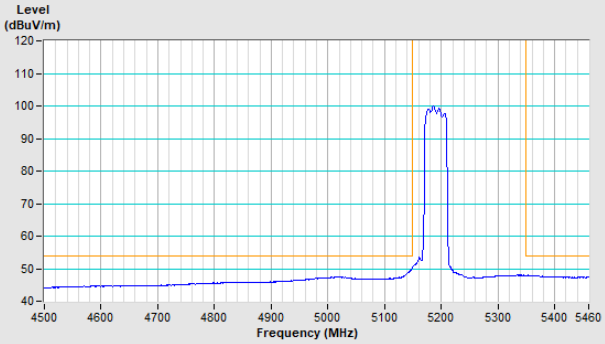
Horizontal (Average)



Vertical (Peak)

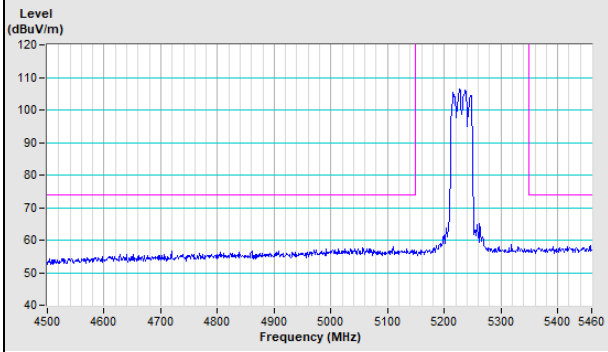


Vertical (Average)

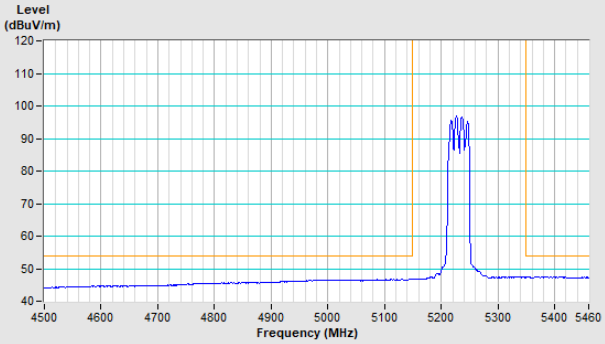


802.11ax (HE40) Channel 46

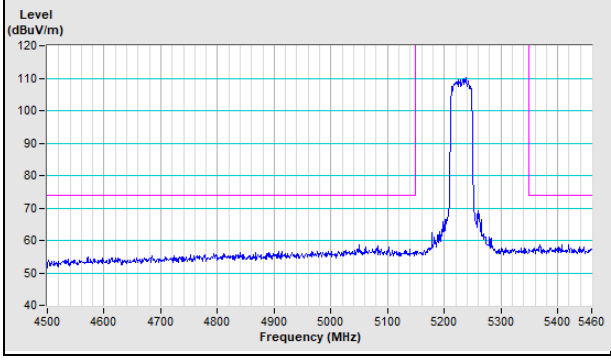
Horizontal (Peak)



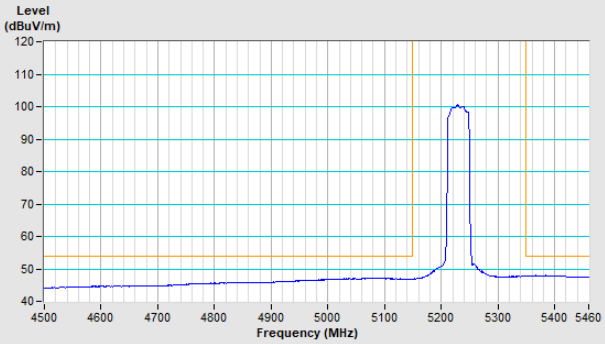
Horizontal (Average)



Vertical (Peak)

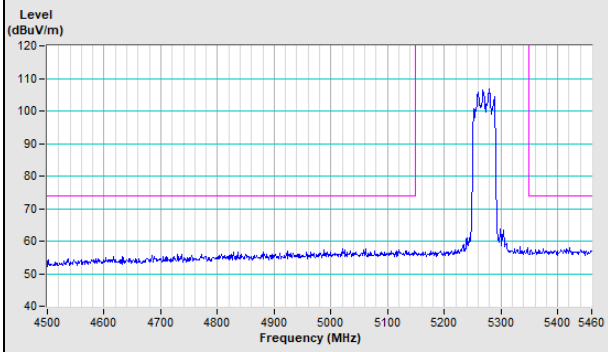


Vertical (Average)

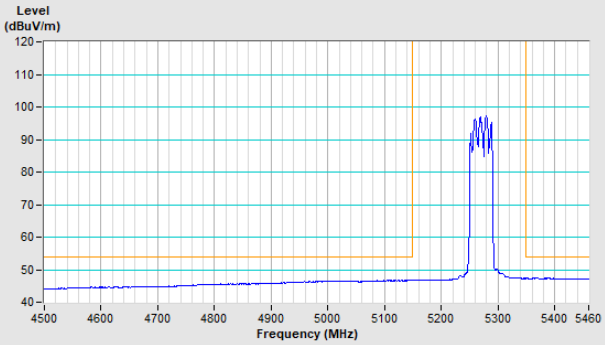


802.11ax (HE40) Channel 54

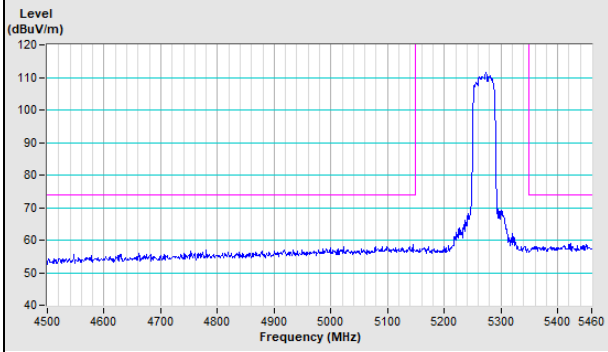
Horizontal (Peak)



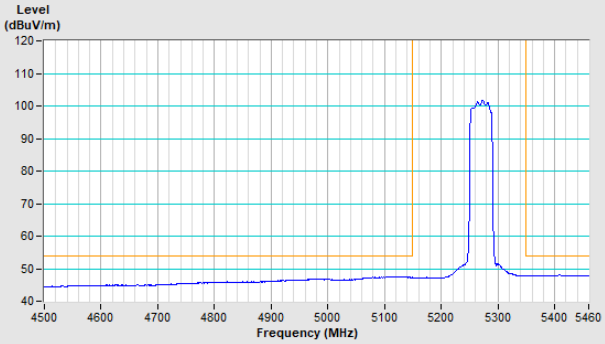
Horizontal (Average)



Vertical (Peak)

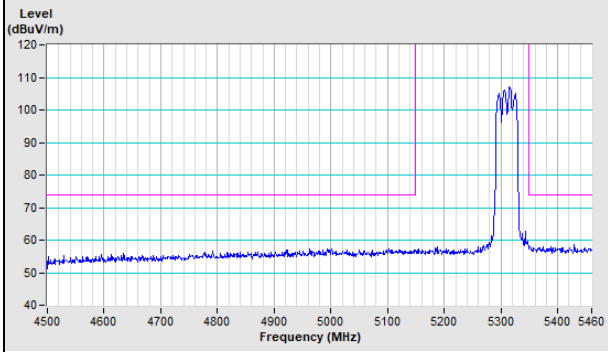


Vertical (Average)

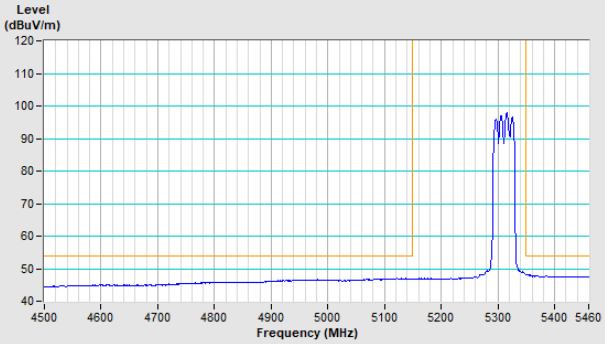


802.11ax (HE40) Channel 62

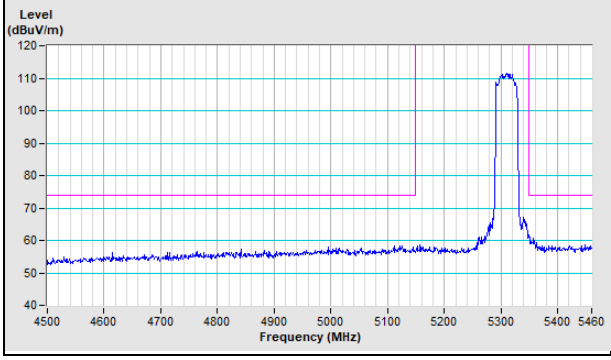
Horizontal (Peak)



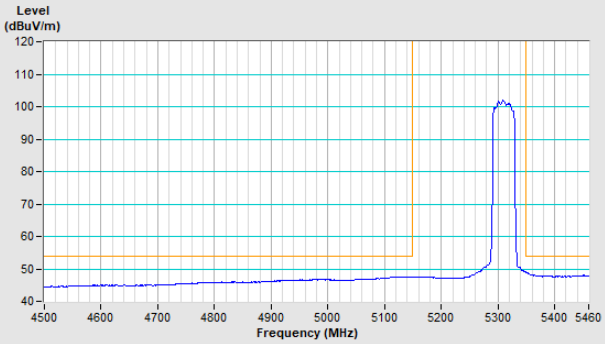
Horizontal (Average)



Vertical (Peak)

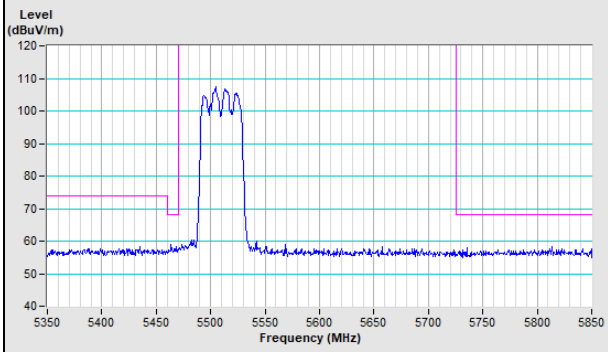


Vertical (Average)

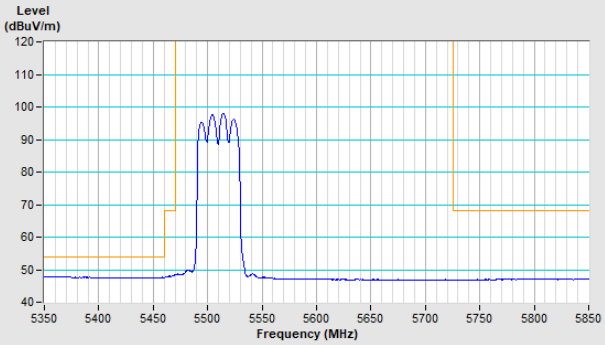


802.11ax (HE40) Channel 102

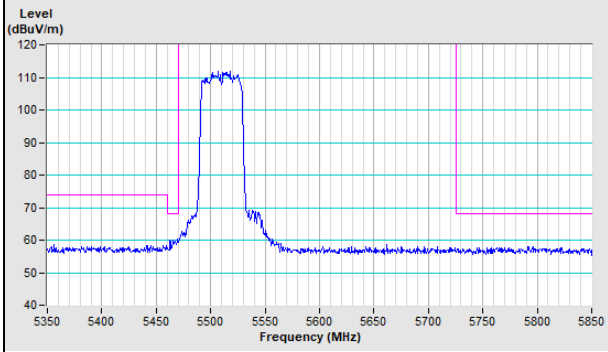
Horizontal (Peak)



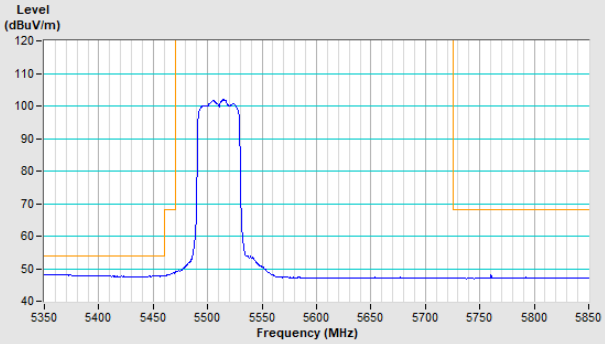
Horizontal (Average)



Vertical (Peak)

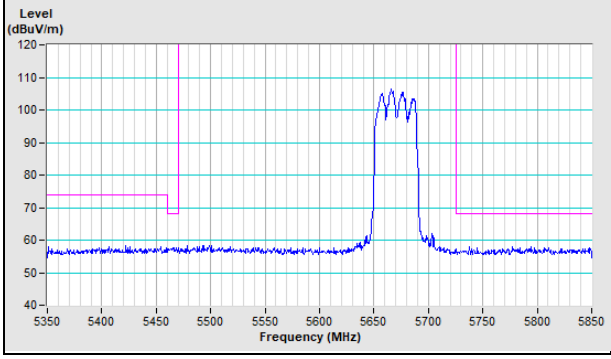


Vertical (Average)

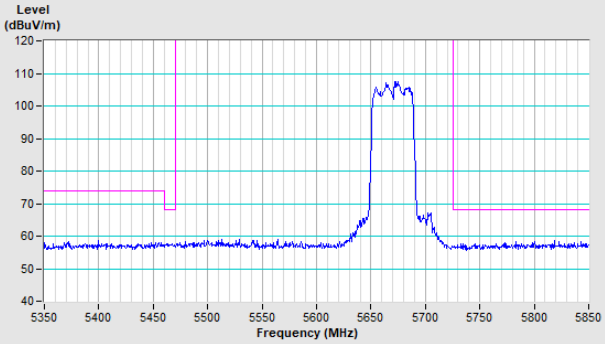


802.11ax (HE40) Channel 134

Horizontal (Peak)

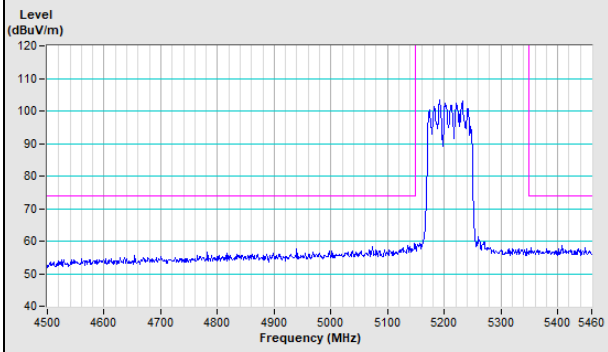


Vertical (Peak)

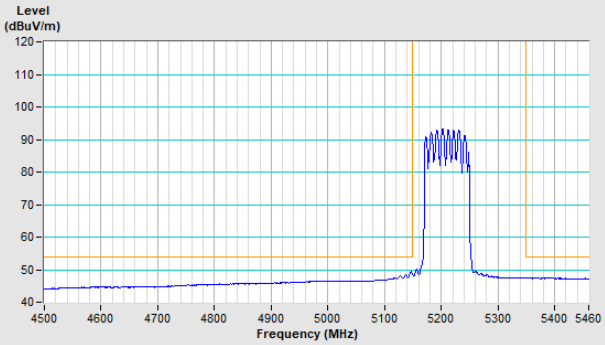


802.11ax (HE80) Channel 42

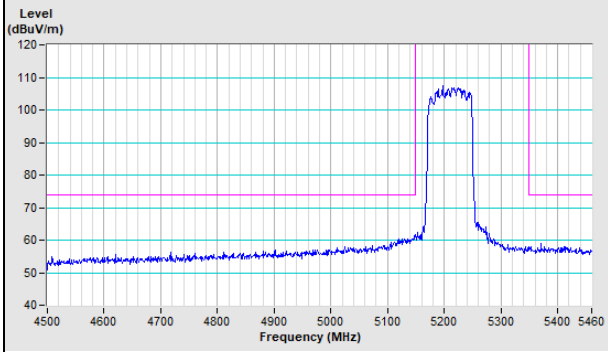
Horizontal (Peak)



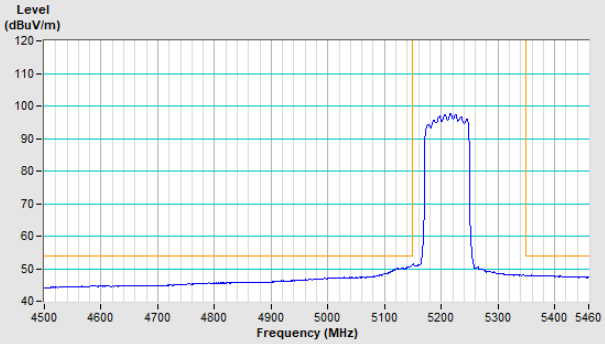
Horizontal (Average)



Vertical (Peak)

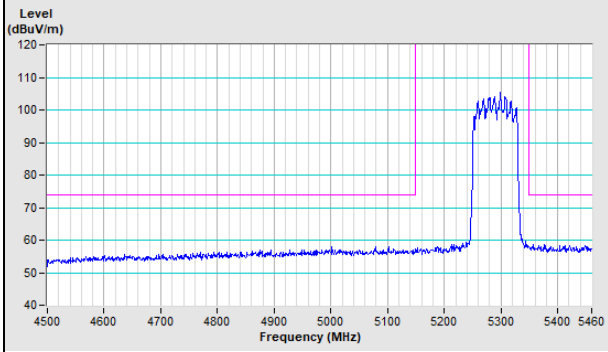


Vertical (Average)

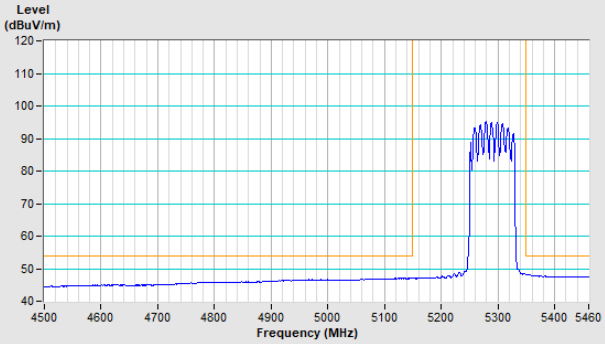


802.11ax (HE80) Channel 58

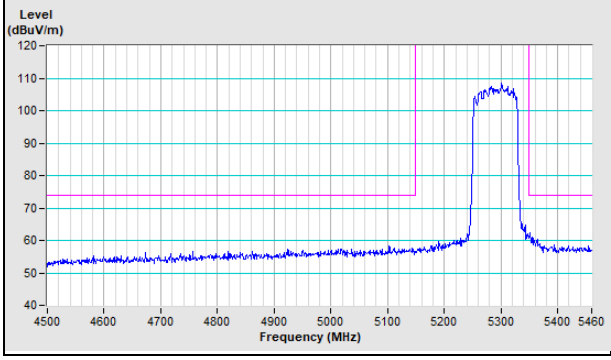
Horizontal (Peak)



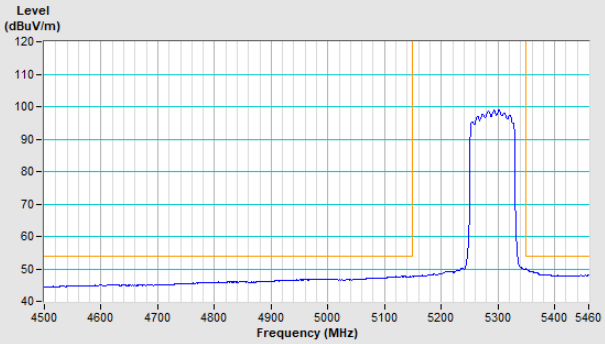
Horizontal (Average)

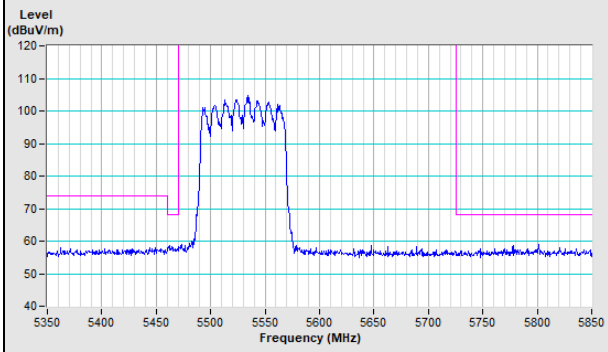
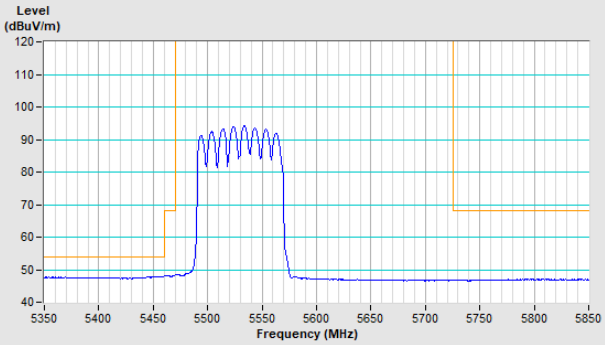
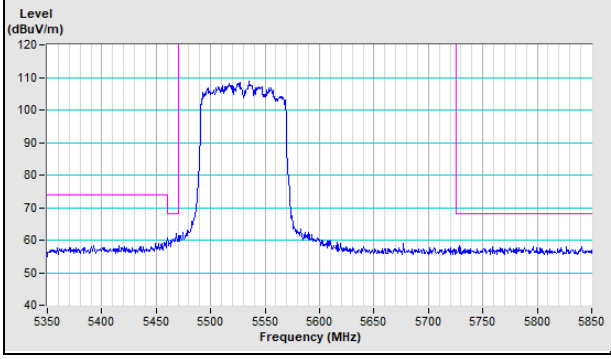
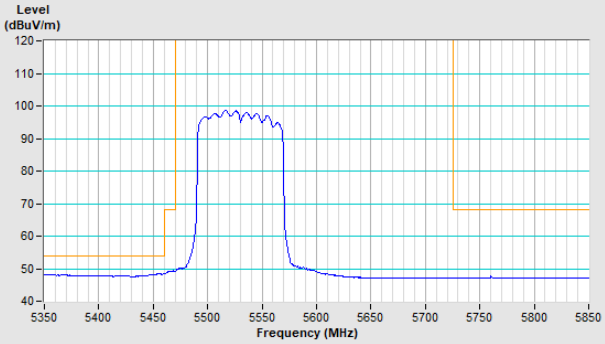


Vertical (Peak)



Vertical (Average)



802.11ax (HE80) Channel 106	
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.

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Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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