FCC Test Report (DFS Band)

Report No.:	RFBAOZ-WTW-P21060679-2
FCC ID:	2AHKM-ARIA3411
Test Model:	ARIA3411
Series Model:	OS3411
Received Date:	2021/6/22
Test Date:	2021/8/30 ~ 2021/9/27 ; 2022/2/10
Issued Date:	2022/4/25
Applicant:	Hitron Technologies Inc.
Address:	No. 1-8, Li-Hsin 1st Rd. Hsinchu Science Park, Hsinchu 30078, Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
RFBAOZ-WTW-P21060679-2	Original release.	2022/4/25

1 Certificate of Conformity

Product: Tri-band WiFi Extender

Brand: hitron

Test Model: ARIA3411

Series Model: OS3411

Sample Status: Engineering sample

Applicant: Hitron Technologies Inc.

Test Date: 2021/8/30 ~ 2021/9/27 ; 2022/2/10

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

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

Prepared by : Cherry Chuo , **Date:** 2022/4/25

Cherry Chuo / Specialist

Approved by : , **Date:** 2022/4/25

Clark Lin / Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -12.90 dB at 19.50767 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.2 dB at 5470.00 MHz.
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(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is ipex(MHF) not a standard connector.

Note:
1. For U-NII-2A and U-NII-2C band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
2. 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	1.9 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.5 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.1 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (DFS Band)

Product	Tri-band WiFi Extender
Brand	hitron
Test Model	ARIA3411
Series Model	OS3411
Status of EUT	Engineering sample
Power Supply Rating	12 Vdc from power adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7 Mbps 802.11ax: up to 1201.0 Mbps
Operating Frequency	5.26 ~ 5.32GHz, 5.50 ~ 5.72GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 16 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 8 802.11ac (VHT80), 802.11ax (HE80): 4
Output Power	**CDD Mode:** **5.26 ~ 5.32 GHz:** 246.12 mW **5.5 ~ 5.72 GHz:** 234.382 mW **Beamforming Mode:** **5.26 ~ 5.32 GHz:** 201.213 mW **5.5 ~ 5.72 GHz:** 201.391 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x1
Data Cable Supplied	Yellow RJ45 Cable for ARIA3411 (Unshielded, 1.5M) x 1, White RJ45 Cable for OS3411 (Unshielded, 1.5M) x 1

Note:

1. This report is prepared for FCC class II change. The difference compared with the Report No.: RFBAOZ-WTW-P21060679-1 as the following:
   - ◆ Add DFS band <5250~5350 MHz & 5470~5725 MHz> by software.
   - ◆ Add shielding & gasket.
2. According to above conditions, for DFS band all of test items need to be performed and all data was verified to meet the requirements.
3. The EUT has two model names which are identical to each other in all aspects except for the followings:

Model Name	Difference
ARIA3411	with black housing
OS3411	with white housing
Note: From the above models, model: **ARIA3411** was selected as representative model for the test and its data are recorded in this report.	

4. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3	Radio 4
Bluetooth	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz

5. Simultaneously transmission condition.

Condition	Technology			
1	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz	Bluetooth
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.				

6. For radiated emissions, the EUT was pre-tested under the following modes:

Test Mode	**Description**
Mode A	**Yellow RJ45 Cable**
Mode B	White RJ45 Cable

From the above modes, the worst radiated emissions was found in **Mode A**. Therefore only the test data of the modes were recorded in this report.

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

Antenna NO.	Model	Antenna Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Length
1	RFPCA252525IMLB901	2.63	2.4~2.4835	printed PCB	ipex(MHF)	24cm
		4.02	5.15~5.85			
2	RFPCA282525IMLB901	2.6	2.4~2.4835	printed PCB	ipex(MHF)	24cm
		3.81	5.15~5.85			
3	RFPCA212009IMMB901	3.59	5.85~7.125	printed PCB	ipex(MHF)	10cm
4	RFPCA221508IMMB901	4.71	5.85~7.125	printed PCB	ipex(MHF)	7.5cm
5	RFPCA221514IMMB901	4.7	5.85~7.125	printed PCB	ipex(MHF)	13.5cm
6	RFPCA212009IMMB902	4.59	5.85~7.125	printed PCB	ipex(MHF)	8.5cm
7 (for BT)	RFPCA381007IMAB301	4.77	2.4~2.4835	printed PCB	ipex(MHF)	6.5cm

8. The EUT power needs to be supplied from a power adapter, the information is as below table:

Brand	Model No.	Spec.	Description
APD	WA-30P12FU	Input: 100-240 Vac, 0.9 A Max, 50-60 Hz Output: 12 Vdc, 2.5 A DC output cable (Unshielded, 1.5 m)	Black (for model: ARIA3411) White (for model: OS3411)

9. The EUT incorporates a MIMO function:

5GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
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

Note:
1. All of modulation mode support beamforming function except 802.11a modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), 802.11ac mode for 20MHz (40MHz, 80MHz) and 802.11ax mode for 20MHz (40MHz, 80MHz), therefore the manufacturer will control the power for 802.11n/ac mode is the same as the 802.11ax or more lower than it and investigated worst case to representative mode in test report. (Final test mode refer to section 3.2.1)

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

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

3.2 Description of Test Modes

FOR 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	5290 MHz

FOR 5500 ~ 5720MHz

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

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

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

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

3 channels are provided for 802.11ac (VHT80), 802.11ax (HE80):

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

Where **RE≥1G:** Radiated Emission above 1GHz **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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6Mb/s
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6Mb/s
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	BPSK	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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE80)	5260-5320 5500-5720	58 106 to 138	58	OFDMA	BPSK	MCS0

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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE80)	5260-5320 5500-5720	58 106 to 138	58	OFDMA	BPSK	MCS0

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.

CDD Mode						
Mode	**FREQ. Band (MHz)**	**Available Channel**	**Tested Channel**	**Modulation Technology**	**Modulation Type**	**Data Rate Parameter**
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (output power only)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40) (output power only)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80) (output power only)		58	58	OFDM	BPSK	MCS0
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (output power only)		100 to 144	100, 116, 140, 144	OFDM	BPSK	MCS0
802.11ac (VHT40) (output power only)		102 to 142	102, 110, 134, 142	OFDM	BPSK	MCS0
802.11ac (VHT80) (output power only)		106 to 138	106, 122, 138	OFDM	BPSK	MCS0
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	BPSK	MCS0
Beamforming Mode (output power only)						
Mode	**FREQ. Band (MHz)**	**Available Channel**	**Tested Channel**	**Modulation Technology**	**Modulation Type**	**Data Rate Parameter**
802.11ac (VHT20)	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80)		58	58	OFDM	BPSK	MCS0
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11ac (VHT20)	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	MCS0
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	MCS0
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	MCS0
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	BPSK	MCS0

Test Condition:

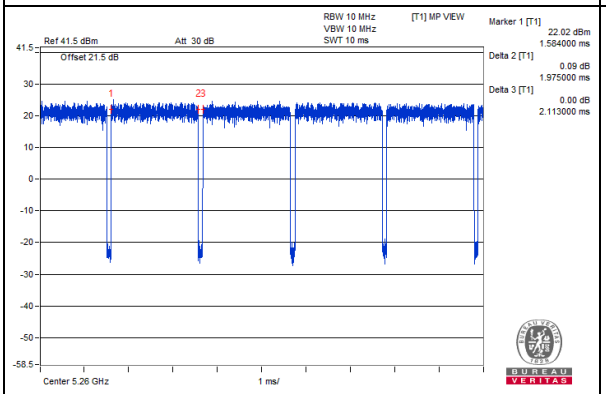
Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	25deg. C, 67%RH	120Vac, 60Hz	Sampson Chen
RE<1G	24deg. C, 63%RH	120Vac, 60Hz	Sampson Chen
PLC	29deg. C, 66%RH	120Vac, 60Hz	Sampson Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Leon Dai

3.3 Duty Cycle of Test Signal

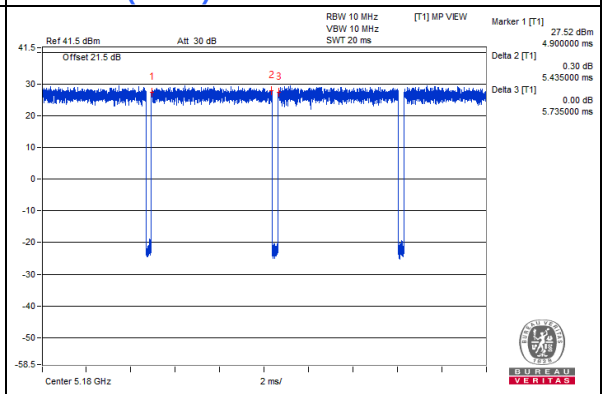
Duty cycle of test signal is < 98 %, duty factor shall be considered.

802.11a: Duty cycle = 1.975 ms/2.113 ms =0.935, Duty factor = 10 * log (1/Duty cycle) =0.29 dB
802.11ax (HE20): Duty cycle = 5.435 ms/5.735 ms = 0.948, Duty factor = 10 * log (1/Duty cycle) = 0.23 dB
802.11ax (HE40): Duty cycle = 5.438 ms/5.698 ms = 0.954, Duty factor = 10 * log (1/Duty cycle) = 0.20 dB
802.11ax (HE80): Duty cycle = 5.437 ms/5.713 ms = 0.952, Duty factor = 10 * log (1/Duty cycle) = 0.22 dB

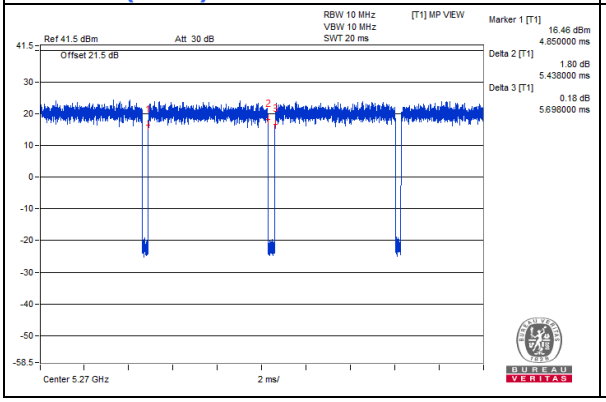
802.11a



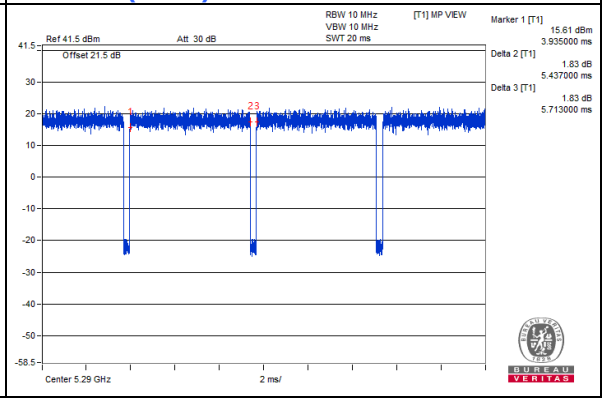
802.11ax (HE20)



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.

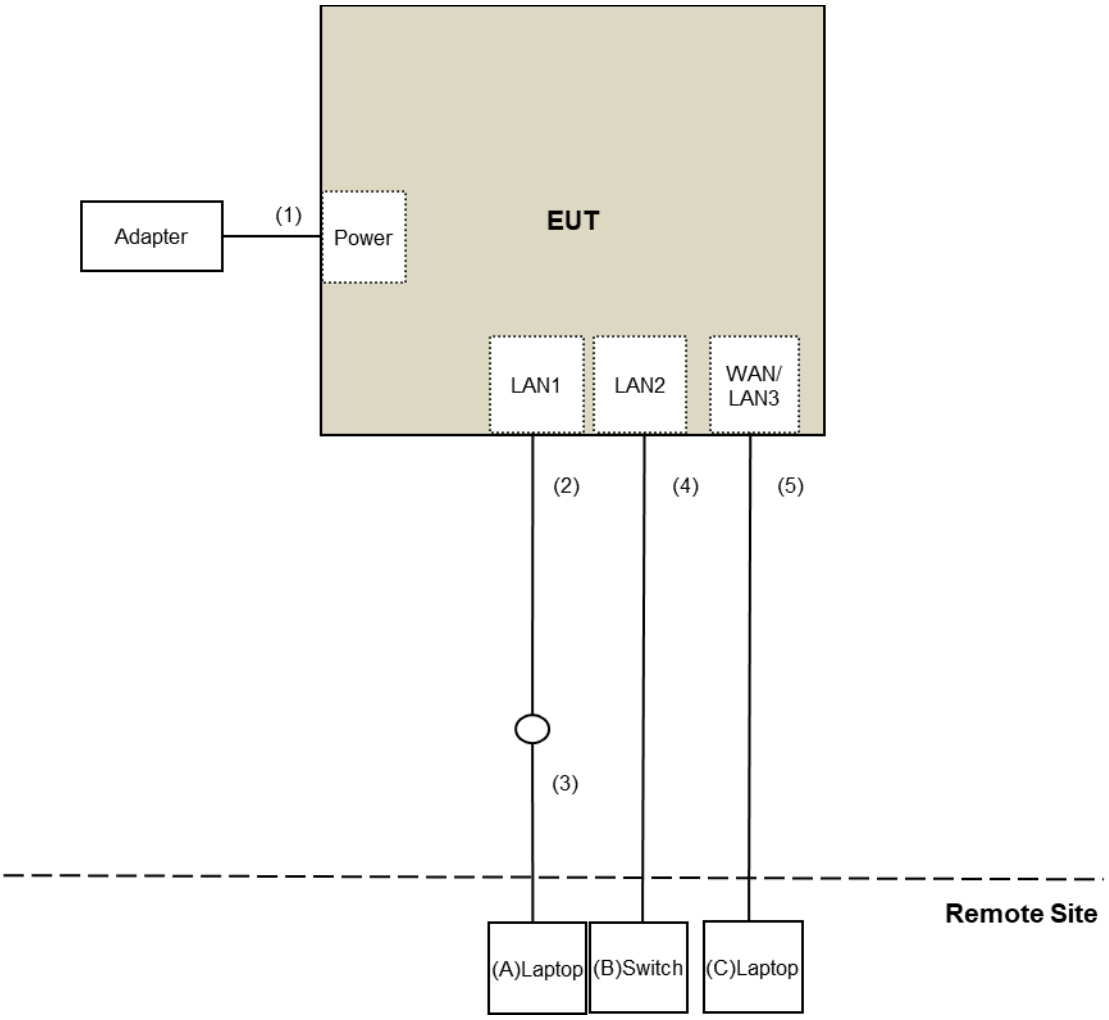
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
B.	Switch	D-Link	DGS-1005D	DR8WC92000523	NA	Provided by Lab
C.	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	N/A	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.5	No	0	Supplied by client
2.	RJ-45 Cable	1	1.5	No	0	Supplied by client
3.	RJ-45 Cable	1	10	No	0	Provided by Lab
4.	RJ-45 Cable	1	10	No	0	Provided by Lab
5.	RJ-45 Cable	1	10	No	0	Provided by Lab

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
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

For Radiated Emission (above 1GHz) & Bandedge test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210202	2020/12/1	2021/11/30
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Horn Antenna SCHWARZBECK	BBHA 9120D	9120D-783	2020/11/22	2021/11/21
Pre_Amplifier EMCI	EMC 12630 SE	980638	2021/4/7	2022/4/6
RF Cable-Frequency Range : 1-26.5GHz EMCI	EMC104-SM-SM-1200	160922	2020/12/25	2021/12/24
RF Coaxial Cable EMCI	EMC104-SM-SM-2000	180502	2021/4/26	2022/4/25
RF Coaxial Cable EMCI	EMC104-SM-SM-6000	180418	2021/4/26	2022/4/25
Pre_Amplifier EMCI	EMC184045SE	980387	2021/1/11	2022/1/10
Horn Antenna Schwarzbeck	BBHA 9170	BBHA9170519	2020/11/22	2021/11/21
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2021/1/11	2022/1/10
RF cable (40GHz) EMCI	EMC-KM-KM-4000	200214	2021/3/10	2022/3/9

Note:

1. The 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 966 Chamber No. 4.
3. Tested Date: 2021/8/30 ~ 2021/9/13

For Radiated emission test (below 1GHz):

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210202	2021/11/19	2022/11/18
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Pre_Amplifier EMCI	EMC001340	980142	2021/5/24	2022/5/23
LOOP ANTENNA Electro-Metrics	EM-6879	264	2021/3/5	2022/3/4
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2022/1/6	2023/1/5
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-002	2022/1/6	2023/1/5
Pre_Amplifier EMCI	EMC330N	980701	2021/3/10	2022/3/9
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-406	2021/10/27	2022/10/26
RF Coaxial Cable COMMATE/PEWC	8D	966-4-1	2021/3/17	2022/3/16
RF Coaxial Cable COMMATE/PEWC	8D	966-4-2	2021/3/17	2022/3/16
RF Coaxial Cable COMMATE/PEWC	8D	966-4-3	2021/3/17	2022/3/16
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-03	2022/1/10	2023/1/9

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 966 Chamber No. 4.
3. Tested Date: 2022/2/10

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	101516	2021/3/8	2022/3/7
Power Meter Anritsu	ML2495A	1529002	2021/6/21	2022/6/20
Pulse Power Sensor Anritsu	MA2411B	1339443	2021/5/31	2022/5/30
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2021/4/13	2022/4/12
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA
AC Power Source GOOD WILL	6905S	1991551	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2021/1/14	2022/1/13

NOTE: 1. The test was performed in Oven room 2.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: 2021/9/27

4.1.3 Test Procedure

For Radiated emission below 30MHz

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

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

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

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

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

Note:

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

For Radiated emission above 30MHz

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

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

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

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

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

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

Note:

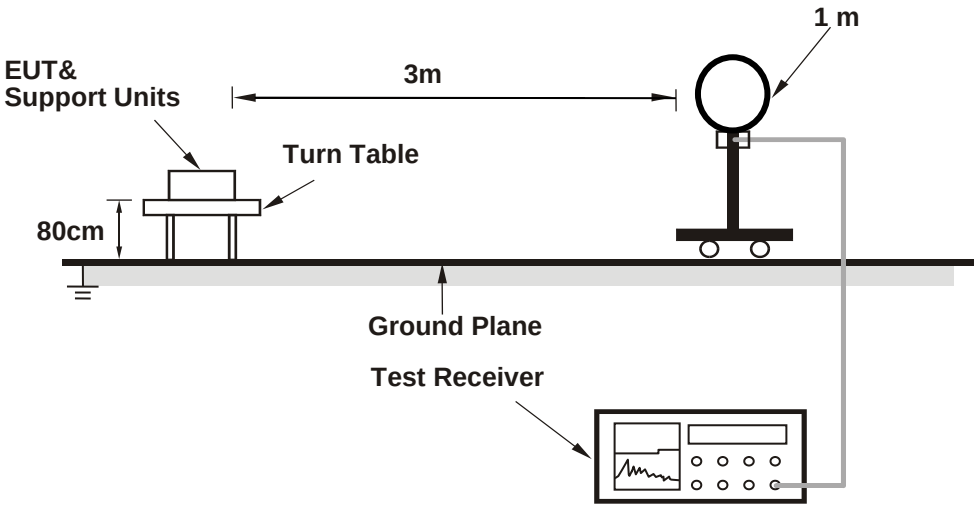
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

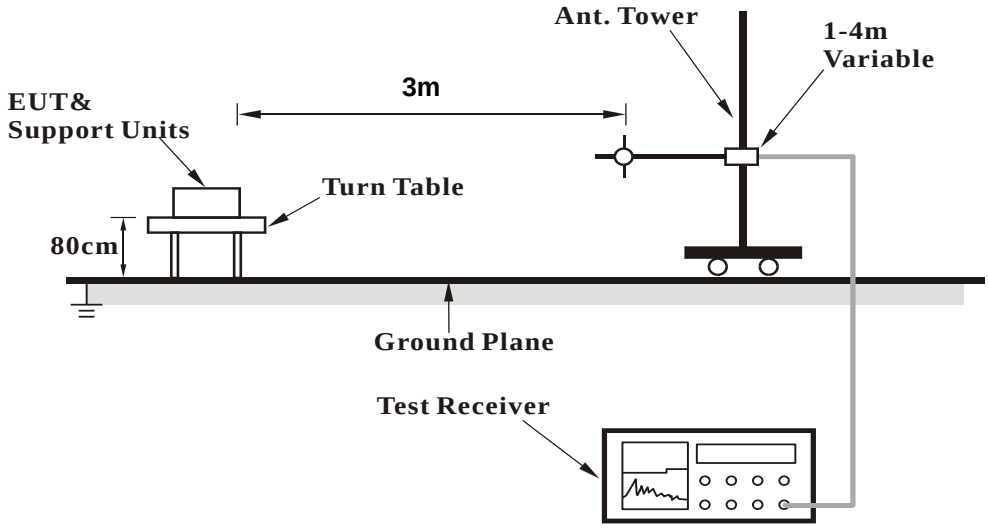
No deviation.

4.1.5 Test Setup

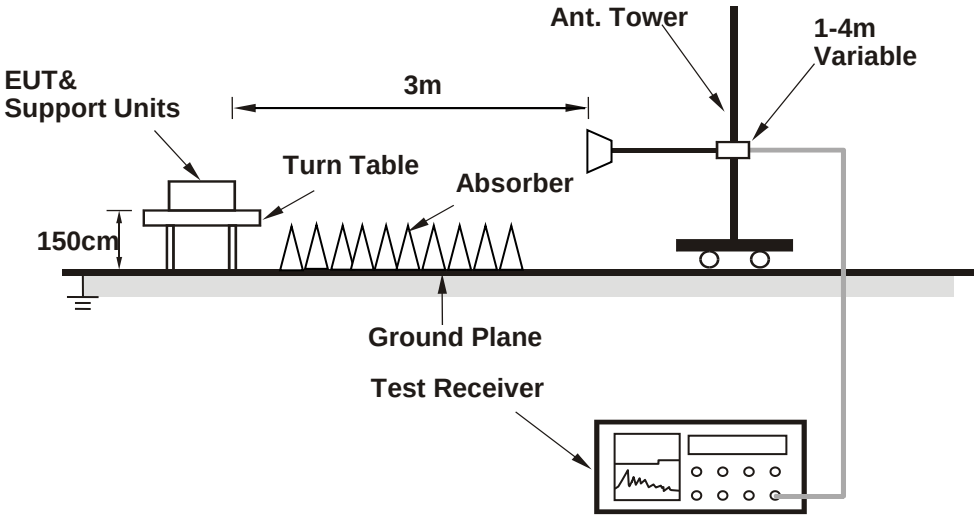
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

a. Connected the EUT with the Laptop Computer which is placed on remote site.
b. Controlling software (qdart_conn.win.1.0_installer_00076.1) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data

RF Mode	TX 802.11a	Channel	CH 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	50.5 PK	74.0	-23.5	3.61 H	248	49.0	1.5
2	5150.00	39.8 AV	54.0	-14.2	3.61 H	248	38.3	1.5
3	*5260.00	116.8 PK			3.61 H	248	115.7	1.1
4	*5260.00	108.1 AV			3.61 H	248	107.0	1.1
5	5375.98	51.0 PK	74.0	-23.0	3.61 H	248	49.7	1.3
6	5375.98	40.4 AV	54.0	-13.6	3.61 H	248	39.1	1.3
7	#10520.00	44.4 PK	68.2	-23.8	2.07 H	177	33.5	10.9
8	15780.00	50.2 PK	74.0	-23.8	1.31 H	125	38.4	11.8
9	15780.00	37.4 AV	54.0	-16.6	1.31 H	125	25.6	11.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	56.0 PK	74.0	-18.0	1.69 V	257	54.5	1.5
2	5150.00	44.6 AV	54.0	-9.4	1.69 V	257	43.1	1.5
3	*5260.00	119.2 PK			1.69 V	257	118.1	1.1
4	*5260.00	109.8 AV			1.69 V	257	108.7	1.1
5	5350.00	56.8 PK	74.0	-17.2	1.69 V	257	55.5	1.3
6	5350.00	45.4 AV	54.0	-8.6	1.69 V	257	44.1	1.3
7	#10520.00	46.1 PK	68.2	-22.1	1.27 V	274	35.2	10.9
8	15780.00	49.5 PK	74.0	-24.5	2.54 V	118	37.7	11.8
9	15780.00	36.5 AV	54.0	-17.5	2.54 V	118	24.7	11.8

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 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	117.0 PK			3.71 H	223	115.8	1.2
2	*5300.00	108.4 AV			3.71 H	223	107.2	1.2
3	5350.00	60.1 PK	74.0	-13.9	3.71 H	223	58.8	1.3
4	5350.00	48.1 AV	54.0	-5.9	3.71 H	223	46.8	1.3
5	10600.00	44.2 PK	74.0	-29.8	2.10 H	172	33.2	11.0
6	10600.00	33.5 AV	54.0	-20.5	2.10 H	172	22.5	11.0
7	15900.00	49.6 PK	74.0	-24.4	1.29 H	129	37.4	12.2
8	15900.00	36.5 AV	54.0	-17.5	1.29 H	129	24.3	12.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	119.1 PK			1.65 V	254	117.9	1.2
2	*5300.00	109.7 AV			1.65 V	254	108.5	1.2
3	5350.00	63.0 PK	74.0	-11.0	1.65 V	254	61.7	1.3
4	5350.00	51.1 AV	54.0	-2.9	1.65 V	254	49.8	1.3
5	10600.00	45.9 PK	74.0	-28.1	1.24 V	275	34.9	11.0
6	10600.00	35.5 AV	54.0	-18.5	1.24 V	275	24.5	11.0
7	15900.00	49.4 PK	74.0	-24.6	2.47 V	101	37.2	12.2
8	15900.00	36.8 AV	54.0	-17.2	2.47 V	101	24.6	12.2

Remarks:

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

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	115.3 PK			3.65 H	233	114.1	1.2
2	*5320.00	105.9 AV			3.65 H	233	104.7	1.2
3	5350.00	60.8 PK	74.0	-13.2	3.65 H	233	59.5	1.3
4	5350.00	50.5 AV	54.0	-3.5	3.65 H	233	49.2	1.3
5	10640.00	44.4 PK	74.0	-29.6	2.08 H	177	33.3	11.1
6	10640.00	33.8 AV	54.0	-20.2	2.08 H	177	22.7	11.1
7	15960.00	49.6 PK	74.0	-24.4	1.24 H	138	37.4	12.2
8	15960.00	37.0 AV	54.0	-17.0	1.24 H	138	24.8	12.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	118.1 PK			1.62 V	257	116.9	1.2
2	*5320.00	108.9 AV			1.62 V	257	107.7	1.2
3	5350.00	66.8 PK	74.0	-7.2	1.62 V	257	65.5	1.3
4	5350.00	53.5 AV	54.0	-0.5	1.62 V	257	52.2	1.3
5	10640.00	46.2 PK	74.0	-27.8	1.26 V	265	35.1	11.1
6	10640.00	35.4 AV	54.0	-18.6	1.26 V	265	24.3	11.1
7	15960.00	49.7 PK	74.0	-24.3	2.48 V	119	37.5	12.2
8	15960.00	36.6 AV	54.0	-17.4	2.48 V	119	24.4	12.2

Remarks:

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

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	5457.70	56.1 PK	74.0	-17.9	3.60 H	240	54.6	1.5
2	5457.70	42.1 AV	54.0	-11.9	3.60 H	240	40.6	1.5
3	#5467.50	62.1 PK	68.2	-6.1	3.60 H	240	60.6	1.5
4	*5500.00	116.5 PK			3.60 H	240	115.0	1.5
5	*5500.00	107.5 AV			3.60 H	240	106.0	1.5
6	11000.00	51.6 PK	74.0	-22.4	2.24 H	192	39.8	11.8
7	11000.00	40.7 AV	54.0	-13.3	2.24 H	192	28.9	11.8
8	#16500.00	63.7 PK	68.2	-4.5	2.01 H	165	49.6	14.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5457.60	59.2 PK	74.0	-14.8	1.61 V	270	57.7	1.5
2	5457.60	47.1 AV	54.0	-6.9	1.61 V	270	45.6	1.5
3	#5467.25	67.5 PK	68.2	-0.7	1.61 V	270	66.0	1.5
4	*5500.00	119.5 PK			1.61 V	270	118.0	1.5
5	*5500.00	109.6 AV			1.61 V	270	108.1	1.5
6	11000.00	49.4 PK	74.0	-24.6	1.36 V	291	37.6	11.8
7	11000.00	39.4 AV	54.0	-14.6	1.36 V	291	27.6	11.8
8	#16500.00	53.3 PK	68.2	-14.9	2.54 V	109	39.2	14.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
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	118.3 PK			3.55 H	227	116.6	1.7
2	*5580.00	108.6 AV			3.55 H	227	106.9	1.7
3	11160.00	52.4 PK	74.0	-21.6	2.19 H	214	40.5	11.9
4	11160.00	41.3 AV	54.0	-12.7	2.19 H	214	29.4	11.9
5	#16740.00	63.1 PK	68.2	-5.1	1.93 H	162	47.3	15.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	120.1 PK			1.73 V	276	118.4	1.7
2	*5580.00	110.8 AV			1.73 V	276	109.1	1.7
3	11160.00	49.4 PK	74.0	-24.6	1.30 V	278	37.5	11.9
4	11160.00	39.4 AV	54.0	-14.6	1.30 V	278	27.5	11.9
5	#16740.00	53.3 PK	68.2	-14.9	2.63 V	132	37.5	15.8

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 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	114.6 PK			3.47 H	229	112.7	1.9
2	*5700.00	105.6 AV			3.47 H	229	103.7	1.9
3	#5725.00	62.3 PK	68.2	-5.9	3.47 H	229	60.3	2.0
4	11400.00	51.8 PK	74.0	-22.2	2.28 H	209	39.2	12.6
5	11400.00	40.7 AV	54.0	-13.3	2.28 H	209	28.1	12.6
6	#17100.00	63.7 PK	68.2	-4.5	2.02 H	140	47.3	16.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	116.6 PK			1.58 V	266	114.7	1.9
2	*5700.00	107.4 AV			1.58 V	266	105.5	1.9
3	#5725.00	67.4 PK	68.2	-0.8	1.58 V	266	65.4	2.0
4	11400.00	49.9 PK	74.0	-24.1	1.29 V	288	37.3	12.6
5	11400.00	40.0 AV	54.0	-14.0	1.29 V	288	27.4	12.6
6	#17100.00	54.0 PK	68.2	-14.2	2.61 V	134	37.6	16.4

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.6 PK	74.0	-23.4	3.49 H	221	49.1	1.5
2	5460.00	40.3 AV	54.0	-13.7	3.49 H	221	38.8	1.5
3	#5470.00	51.6 PK	68.2	-16.6	3.49 H	221	50.1	1.5
4	*5720.00	116.6 PK			3.49 H	221	114.6	2.0
5	*5720.00	107.8 AV			3.49 H	221	105.8	2.0
6	#5850.00	48.9 PK	68.2	-19.3	3.49 H	221	46.6	2.3
7	11440.00	52.1 PK	74.0	-21.9	2.20 H	221	39.5	12.6
8	11440.00	41.2 AV	54.0	-12.8	2.20 H	221	28.6	12.6
9	#17160.00	63.4 PK	68.2	-4.8	1.97 H	157	46.8	16.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	51.7 PK	74.0	-22.3	1.76 V	267	50.2	1.5
2	5460.00	41.3 AV	54.0	-12.7	1.76 V	267	39.8	1.5
3	#5470.00	52.3 PK	68.2	-15.9	1.76 V	267	50.8	1.5
4	*5720.00	118.5 PK			1.76 V	267	116.5	2.0
5	*5720.00	109.1 AV			1.76 V	267	107.1	2.0
6	#5850.00	49.5 PK	68.2	-18.7	1.76 V	267	47.2	2.3
7	11440.00	50.3 PK	74.0	-23.7	1.25 V	290	37.7	12.6
8	11440.00	40.0 AV	54.0	-14.0	1.25 V	290	27.4	12.6
9	#17160.00	54.3 PK	68.2	-13.9	2.61 V	128	37.7	16.6

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 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	53.2 PK	74.0	-20.8	3.87 H	345	51.7	1.5
2	5150.00	39.7 AV	54.0	-14.3	3.87 H	345	38.2	1.5
3	*5260.00	117.7 PK			3.87 H	345	116.6	1.1
4	*5260.00	106.7 AV			3.87 H	345	105.6	1.1
5	5376.65	52.9 PK	74.0	-21.1	3.87 H	345	51.6	1.3
6	5376.65	40.1 AV	54.0	-13.9	3.87 H	345	38.8	1.3
7	#10520.00	44.7 PK	68.2	-23.5	2.12 H	157	33.8	10.9
8	15780.00	49.8 PK	74.0	-24.2	1.31 H	119	38.0	11.8
9	15780.00	37.0 AV	54.0	-17.0	1.31 H	119	25.2	11.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	51.2 PK	74.0	-22.8	1.48 V	28	49.7	1.5
2	5150.00	44.5 AV	54.0	-9.5	1.48 V	28	43.0	1.5
3	*5260.00	120.1 PK			1.48 V	28	119.0	1.1
4	*5260.00	108.1 AV			1.48 V	28	107.0	1.1
5	5350.00	52.2 PK	74.0	-21.8	1.48 V	28	50.9	1.3
6	5350.00	46.4 AV	54.0	-7.6	1.48 V	28	45.1	1.3
7	#10520.00	46.0 PK	68.2	-22.2	1.23 V	285	35.1	10.9
8	15780.00	49.2 PK	74.0	-24.8	2.53 V	107	37.4	11.8
9	15780.00	36.2 AV	54.0	-17.8	2.53 V	107	24.4	11.8

Remarks:

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

RF Mode	TX 802.11ax (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	117.8 PK			3.79 H	337	116.6	1.2
2	*5300.00	106.3 AV			3.79 H	337	105.1	1.2
3	5350.00	58.6 PK	74.0	-15.4	3.79 H	337	57.3	1.3
4	5350.00	42.6 AV	54.0	-11.4	3.79 H	337	41.3	1.3
5	10600.00	44.5 PK	74.0	-29.5	2.07 H	185	33.5	11.0
6	10600.00	34.0 AV	54.0	-20.0	2.07 H	185	23.0	11.0
7	15900.00	49.9 PK	74.0	-24.1	1.31 H	123	37.7	12.2
8	15900.00	36.8 AV	54.0	-17.2	1.31 H	123	24.6	12.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	119.8 PK			1.63 V	26	118.6	1.2
2	*5300.00	107.9 AV			1.63 V	26	106.7	1.2
3	5350.00	63.2 PK	74.0	-10.8	1.63 V	26	61.9	1.3
4	5350.00	47.4 AV	54.0	-6.6	1.63 V	26	46.1	1.3
5	10600.00	45.3 PK	74.0	-28.7	1.21 V	285	34.3	11.0
6	10600.00	35.0 AV	54.0	-19.0	1.21 V	285	24.0	11.0
7	15900.00	49.6 PK	74.0	-24.4	2.48 V	107	37.4	12.2
8	15900.00	36.7 AV	54.0	-17.3	2.48 V	107	24.5	12.2

Remarks:

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

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	117.4 PK			3.85 H	339	116.2	1.2
2	*5320.00	106.0 AV			3.85 H	339	104.8	1.2
3	5350.00	61.1 PK	74.0	-12.9	3.85 H	339	59.8	1.3
4	5350.00	50.0 AV	54.0	-4.0	3.85 H	339	48.7	1.3
5	10640.00	44.3 PK	74.0	-29.7	2.11 H	156	33.2	11.1
6	10640.00	33.2 AV	54.0	-20.8	2.11 H	156	22.1	11.1
7	15960.00	49.7 PK	74.0	-24.3	1.31 H	138	37.5	12.2
8	15960.00	37.0 AV	54.0	-17.0	1.31 H	138	24.8	12.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	120.5 PK			1.56 V	20	119.3	1.2
2	*5320.00	108.5 AV			1.56 V	20	107.3	1.2
3	5350.00	66.5 PK	74.0	-7.5	1.56 V	20	65.2	1.3
4	5350.00	53.5 AV	54.0	-0.5	1.56 V	20	52.2	1.3
5	10640.00	46.5 PK	74.0	-27.5	1.20 V	280	35.4	11.1
6	10640.00	35.9 AV	54.0	-18.1	1.20 V	280	24.8	11.1
7	15960.00	49.1 PK	74.0	-24.9	2.46 V	119	36.9	12.2
8	15960.00	36.1 AV	54.0	-17.9	2.46 V	119	23.9	12.2

Remarks:

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

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	5458.50	54.3 PK	74.0	-19.7	3.67 H	239	52.8	1.5
2	5458.50	42.3 AV	54.0	-11.7	3.67 H	239	40.8	1.5
3	#5464.70	63.5 PK	68.2	-4.7	3.67 H	239	62.0	1.5
4	*5500.00	117.9 PK			3.67 H	239	116.4	1.5
5	*5500.00	106.8 AV			3.67 H	239	105.3	1.5
6	11000.00	52.7 PK	74.0	-21.3	2.25 H	210	40.9	11.8
7	11000.00	41.4 AV	54.0	-12.6	2.25 H	210	29.6	11.8
8	#16500.00	63.8 PK	68.2	-4.4	2.03 H	149	49.7	14.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5457.40	61.6 PK	74.0	-12.4	1.84 V	271	60.1	1.5
2	5457.40	48.4 AV	54.0	-5.6	1.84 V	271	46.9	1.5
3	**#5470.00**	**68.0 PK**	**68.2**	**-0.2**	**1.84 V**	**271**	**66.5**	**1.5**
4	*5500.00	120.7 PK			1.84 V	271	119.2	1.5
5	*5500.00	109.1 AV			1.84 V	271	107.6	1.5
6	11000.00	50.3 PK	74.0	-23.7	1.25 V	296	38.5	11.8
7	11000.00	39.9 AV	54.0	-14.1	1.25 V	296	28.1	11.8
8	#16500.00	53.8 PK	68.2	-14.4	2.63 V	133	39.7	14.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
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	118.1 PK			3.59 H	218	116.4	1.7
2	*5580.00	107.1 AV			3.59 H	218	105.4	1.7
3	11160.00	51.9 PK	74.0	-22.1	2.22 H	207	40.0	11.9
4	11160.00	40.9 AV	54.0	-13.1	2.22 H	207	29.0	11.9
5	#16740.00	64.1 PK	68.2	-4.1	1.96 H	141	48.3	15.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	120.8 PK			1.73 V	262	119.1	1.7
2	*5580.00	109.4 AV			1.73 V	262	107.7	1.7
3	11160.00	50.4 PK	74.0	-23.6	1.34 V	298	38.5	11.9
4	11160.00	40.0 AV	54.0	-14.0	1.34 V	298	28.1	11.9
5	#16740.00	53.6 PK	68.2	-14.6	2.62 V	106	37.8	15.8

Remarks:

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

RF Mode	TX 802.11ax (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	116.4 PK			3.54 H	249	114.5	1.9
2	*5700.00	104.6 AV			3.54 H	249	102.7	1.9
3	#5725.00	63.2 PK	68.2	-5.0	3.54 H	249	61.2	2.0
4	11400.00	51.8 PK	74.0	-22.2	2.20 H	205	39.2	12.6
5	11400.00	40.9 AV	54.0	-13.1	2.20 H	205	28.3	12.6
6	#17100.00	63.6 PK	68.2	-4.6	1.95 H	164	47.2	16.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	118.6 PK			1.49 V	176	116.7	1.9
2	*5700.00	106.9 AV			1.49 V	176	105.0	1.9
3	#5725.00	66.7 PK	68.2	-1.5	1.49 V	176	64.7	2.0
4	11400.00	49.6 PK	74.0	-24.4	1.28 V	309	37.0	12.6
5	11400.00	39.8 AV	54.0	-14.2	1.28 V	309	27.2	12.6
6	#17100.00	54.1 PK	68.2	-14.1	2.56 V	133	37.7	16.4

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 144：5720 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.3 PK	74.0	-23.7	3.51 H	237	48.8	1.5
2	5460.00	40.1 AV	54.0	-13.9	3.51 H	237	38.6	1.5
3	#5470.00	50.9 PK	68.2	-17.3	3.51 H	237	49.4	1.5
4	*5720.00	118.3 PK			3.51 H	237	116.3	2.0
5	*5720.00	107.3 AV			3.51 H	237	105.3	2.0
6	#5850.00	51.2 PK	68.2	-17.0	3.51 H	237	48.9	2.3
7	11440.00	52.5 PK	74.0	-21.5	2.25 H	217	39.9	12.6
8	11440.00	41.3 AV	54.0	-12.7	2.25 H	217	28.7	12.6
9	#17160.00	64.0 PK	68.2	-4.2	2.03 H	152	47.4	16.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.9 PK	74.0	-23.1	1.53 V	182	49.4	1.5
2	5460.00	40.5 AV	54.0	-13.5	1.53 V	182	39.0	1.5
3	#5470.00	51.1 PK	68.2	-17.1	1.53 V	182	49.6	1.5
4	*5720.00	120.8 PK			1.53 V	182	118.8	2.0
5	*5720.00	109.2 AV			1.53 V	182	107.2	2.0
6	#5850.00	51.3 PK	68.2	-16.9	1.53 V	182	49.0	2.3
7	11440.00	50.1 PK	74.0	-23.9	1.35 V	277	37.5	12.6
8	11440.00	40.2 AV	54.0	-13.8	1.35 V	277	27.6	12.6
9	#17160.00	54.1 PK	68.2	-14.1	2.55 V	118	37.5	16.6

Remarks:

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

RF Mode	TX 802.11ax (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	50.1 PK	74.0	-23.9	3.77 H	349	48.6	1.5
2	5150.00	40.9 AV	54.0	-13.1	3.77 H	349	39.4	1.5
3	*5270.00	114.0 PK			3.77 H	349	112.9	1.1
4	*5270.00	103.6 AV			3.77 H	349	102.5	1.1
5	5350.00	56.0 PK	74.0	-18.0	3.77 H	349	54.7	1.3
6	5350.00	43.1 AV	54.0	-10.9	3.77 H	349	41.8	1.3
7	#10540.00	44.2 PK	68.2	-24.0	2.04 H	173	33.2	11.0
8	15810.00	50.3 PK	74.0	-23.7	1.21 H	126	38.5	11.8
9	15810.00	37.4 AV	54.0	-16.6	1.21 H	126	25.6	11.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	57.6 PK	74.0	-16.4	2.58 V	221	56.1	1.5
2	5150.00	45.6 AV	54.0	-8.4	2.58 V	221	44.1	1.5
3	*5270.00	116.9 PK			2.58 V	221	115.8	1.1
4	*5270.00	105.3 AV			2.58 V	221	104.2	1.1
5	5350.00	67.4 PK	74.0	-6.6	2.58 V	221	66.1	1.3
6	5350.00	51.3 AV	54.0	-2.7	2.58 V	221	50.0	1.3
7	#10540.00	46.4 PK	68.2	-21.8	1.24 V	285	35.4	11.0
8	15810.00	49.7 PK	74.0	-24.3	2.47 V	110	37.9	11.8
9	15810.00	36.8 AV	54.0	-17.2	2.47 V	110	25.0	11.8

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 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	112.3 PK			3.82 H	352	111.1	1.2
2	*5310.00	101.1 AV			3.82 H	352	99.9	1.2
3	5350.00	61.0 PK	74.0	-13.0	3.82 H	352	59.7	1.3
4	5350.00	49.5 AV	54.0	-4.5	3.82 H	352	48.2	1.3
5	10620.00	44.5 PK	74.0	-29.5	2.01 H	180	33.4	11.1
6	10620.00	33.9 AV	54.0	-20.1	2.01 H	180	22.8	11.1
7	15930.00	50.3 PK	74.0	-23.7	1.24 H	135	38.2	12.1
8	15930.00	37.4 AV	54.0	-16.6	1.24 H	135	25.3	12.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	115.1 PK			2.51 V	226	113.9	1.2
2	*5310.00	103.6 AV			2.51 V	226	102.4	1.2
3	5350.00	63.4 PK	74.0	-10.6	2.51 V	226	62.1	1.3
4	5350.00	53.2 AV	54.0	-0.8	2.51 V	226	51.9	1.3
5	10620.00	46.0 PK	74.0	-28.0	1.28 V	285	34.9	11.1
6	10620.00	35.1 AV	54.0	-18.9	1.28 V	285	24.0	11.1
7	15930.00	49.0 PK	74.0	-25.0	2.46 V	102	36.9	12.1
8	15930.00	36.0 AV	54.0	-18.0	2.46 V	102	23.9	12.1

Remarks:

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

RF Mode	TX 802.11ax (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	59.2 PK	74.0	-14.8	3.40 H	238	57.7	1.5
2	5460.00	44.7 AV	54.0	-9.3	3.40 H	238	43.2	1.5
3	#5470.00	62.4 PK	68.2	-5.8	3.40 H	238	60.9	1.5
4	*5510.00	113.1 PK			3.40 H	238	111.6	1.5
5	*5510.00	102.2 AV			3.40 H	238	100.7	1.5
6	11020.00	52.0 PK	74.0	-22.0	2.22 H	211	40.2	11.8
7	11020.00	41.0 AV	54.0	-13.0	2.22 H	211	29.2	11.8
8	#16530.00	63.7 PK	68.2	-4.5	2.00 H	138	49.4	14.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	61.7 PK	74.0	-12.3	2.23 V	182	60.2	1.5
2	5460.00	49.1 AV	54.0	-4.9	2.23 V	182	47.6	1.5
3	#5470.00	67.8 PK	68.2	-0.4	2.23 V	182	66.3	1.5
4	*5510.00	115.6 PK			2.23 V	182	114.1	1.5
5	*5510.00	104.1 AV			2.23 V	182	102.6	1.5
6	11020.00	50.1 PK	74.0	-23.9	1.29 V	291	38.3	11.8
7	11020.00	40.3 AV	54.0	-13.7	1.29 V	291	28.5	11.8
8	#16530.00	53.3 PK	68.2	-14.9	2.63 V	127	39.0	14.3

Remarks:

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

RF Mode	TX 802.11ax (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	5460.00	61.6 PK	74.0	-12.4	3.59 H	225	60.1	1.5
2	5460.00	43.1 AV	54.0	-10.9	3.59 H	225	41.6	1.5
3	#5470.00	62.9 PK	68.2	-5.3	3.59 H	225	61.4	1.5
4	*5550.00	114.9 PK			3.59 H	225	113.4	1.5
5	*5550.00	104.1 AV			3.59 H	225	102.6	1.5
6	11100.00	51.4 PK	74.0	-22.6	2.22 H	204	39.5	11.9
7	11100.00	40.5 AV	54.0	-13.5	2.22 H	204	28.6	11.9
8	#16650.00	63.4 PK	68.2	-4.8	2.01 H	160	48.1	15.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	64.3 PK	74.0	-9.7	2.16 V	189	62.8	1.5
2	5460.00	46.4 AV	54.0	-7.6	2.16 V	189	44.9	1.5
3	#5470.00	67.5 PK	68.2	-0.7	2.16 V	189	66.0	1.5
4	*5550.00	116.7 PK			2.16 V	189	115.2	1.5
5	*5550.00	105.9 AV			2.16 V	189	104.4	1.5
6	11100.00	49.9 PK	74.0	-24.1	1.34 V	292	38.0	11.9
7	11100.00	39.9 AV	54.0	-14.1	1.34 V	292	28.0	11.9
8	#16650.00	53.7 PK	68.2	-14.5	2.59 V	119	38.4	15.3

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 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	113.8 PK			3.43 H	217	111.9	1.9
2	*5670.00	103.5 AV			3.43 H	217	101.6	1.9
3	#5725.00	63.1 PK	68.2	-5.1	3.43 H	217	61.1	2.0
4	11340.00	51.8 PK	74.0	-22.2	2.23 H	195	39.4	12.4
5	11340.00	40.7 AV	54.0	-13.3	2.23 H	195	28.3	12.4
6	#17010.00	63.8 PK	68.2	-4.4	1.94 H	140	47.2	16.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	115.7 PK			1.35 V	183	113.8	1.9
2	*5670.00	104.8 AV			1.35 V	183	102.9	1.9
3	#5725.00	67.9 PK	68.2	-0.3	1.35 V	183	65.9	2.0
4	11340.00	50.4 PK	74.0	-23.6	1.36 V	300	38.0	12.4
5	11340.00	40.2 AV	54.0	-13.8	1.36 V	300	27.8	12.4
6	#17010.00	53.8 PK	68.2	-14.4	2.55 V	122	37.2	16.6

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 142：5710 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.6 PK	74.0	-23.4	3.79 H	222	49.1	1.5
2	5460.00	40.7 AV	54.0	-13.3	3.79 H	222	39.2	1.5
3	#5470.00	50.8 PK	68.2	-17.4	3.79 H	222	49.3	1.5
4	*5710.00	114.8 PK			3.79 H	222	112.8	2.0
5	*5710.00	104.3 AV			3.79 H	222	102.3	2.0
6	#5850.00	57.6 PK	68.2	-10.6	3.79 H	222	55.3	2.3
7	11420.00	51.9 PK	74.0	-22.1	2.21 H	192	39.3	12.6
8	11420.00	40.7 AV	54.0	-13.3	2.21 H	192	28.1	12.6
9	#17130.00	64.2 PK	68.2	-4.0	1.93 H	141	47.7	16.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	51.2 PK	74.0	-22.8	1.38 V	178	49.7	1.5
2	5460.00	41.6 AV	54.0	-12.4	1.38 V	178	40.1	1.5
3	#5470.00	51.9 PK	68.2	-16.3	1.38 V	178	50.4	1.5
4	*5710.00	116.6 PK			1.38 V	178	114.6	2.0
5	*5710.00	106.0 AV			1.38 V	178	104.0	2.0
6	#5850.00	60.0 PK	68.2	-8.2	1.38 V	178	57.7	2.3
7	11420.00	49.7 PK	74.0	-24.3	1.34 V	287	37.1	12.6
8	11420.00	39.5 AV	54.0	-14.5	1.34 V	287	26.9	12.6
9	#17130.00	53.6 PK	68.2	-14.6	2.55 V	129	37.1	16.5

Remarks:

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

RF Mode	TX 802.11ax (HE80)	Channel	CH 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	5113.00	51.9 PK	74.0	-22.1	3.90 H	210	50.5	1.4
2	5113.00	40.3 AV	54.0	-13.7	3.90 H	210	38.9	1.4
3	*5290.00	108.2 PK			3.90 H	210	107.1	1.1
4	*5290.00	97.6 AV			3.90 H	210	96.5	1.1
5	5354.00	58.8 PK	74.0	-15.2	3.90 H	210	57.5	1.3
6	5354.00	46.3 AV	54.0	-7.7	3.90 H	210	45.0	1.3
7	#10580.00	44.2 PK	68.2	-24.0	2.07 H	177	33.2	11.0
8	15870.00	49.6 PK	74.0	-24.4	1.25 H	122	37.4	12.2
9	15870.00	36.5 AV	54.0	-17.5	1.25 H	122	24.3	12.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	56.2 PK	74.0	-17.8	2.42 V	261	54.7	1.5
2	5150.00	43.7 AV	54.0	-10.3	2.42 V	261	42.2	1.5
3	*5290.00	112.1 PK			2.42 V	261	111.0	1.1
4	*5290.00	99.8 AV			2.42 V	261	98.7	1.1
5	5350.00	66.6 PK	74.0	-7.4	2.42 V	261	65.3	1.3
6	5350.00	53.3 AV	54.0	-0.7	2.42 V	261	52.0	1.3
7	#10580.00	46.4 PK	68.2	-21.8	1.25 V	260	35.4	11.0
8	15870.00	49.3 PK	74.0	-24.7	2.53 V	103	37.1	12.2
9	15870.00	36.2 AV	54.0	-17.8	2.53 V	103	24.0	12.2

Remarks:

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

RF Mode	TX 802.11ax (HE80)	Channel	CH 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	56.4 PK	74.0	-17.6	3.84 H	248	54.9	1.5
2	5460.00	44.6 AV	54.0	-9.4	3.84 H	248	43.1	1.5
3	#5468.80	58.2 PK	68.2	-10.0	3.84 H	248	56.7	1.5
4	*5530.00	109.3 PK			3.84 H	248	107.8	1.5
5	*5530.00	98.8 AV			3.84 H	248	97.3	1.5
6	#5729.00	52.7 PK	68.2	-15.5	3.84 H	248	50.7	2.0
7	11060.00	52.6 PK	74.0	-21.4	2.18 H	216	40.7	11.9
8	11060.00	41.2 AV	54.0	-12.8	2.18 H	216	29.3	11.9
9	#16590.00	63.5 PK	68.2	-4.7	1.94 H	153	48.6	14.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5453.70	66.9 PK	74.0	-7.1	1.31 V	267	65.4	1.5
2	5453.70	52.0 AV	54.0	-2.0	1.31 V	267	50.5	1.5
3	#5470.00	67.2 PK	68.2	-1.0	1.31 V	267	65.7	1.5
4	*5530.00	111.4 PK			1.31 V	267	109.9	1.5
5	*5530.00	100.5 AV			1.31 V	267	99.0	1.5
6	#5746.00	52.3 PK	68.2	-15.9	1.31 V	267	50.2	2.1
7	11060.00	49.9 PK	74.0	-24.1	1.32 V	292	38.0	11.9
8	11060.00	39.6 AV	54.0	-14.4	1.32 V	292	27.7	11.9
9	#16590.00	53.8 PK	68.2	-14.4	2.62 V	129	38.9	14.9

Remarks:

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

RF Mode	TX 802.11ax (HE80)	Channel	CH 122：5610 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	109.6 PK			3.70 H	238	107.9	1.7
2	*5610.00	99.2 AV			3.70 H	238	97.5	1.7
3	#5725.00	62.7 PK	68.2	-5.5	3.70 H	238	60.7	2.0
4	11220.00	52.1 PK	74.0	-21.9	2.21 H	208	40.1	12.0
5	11220.00	40.8 AV	54.0	-13.2	2.21 H	208	28.8	12.0
6	#16830.00	63.8 PK	68.2	-4.4	2.01 H	167	47.6	16.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	111.9 PK			1.72 V	266	110.2	1.7
2	*5610.00	101.5 AV			1.72 V	266	99.8	1.7
3	#5725.00	67.4 PK	68.2	-0.8	1.72 V	266	65.4	2.0
4	11220.00	49.7 PK	74.0	-24.3	1.33 V	279	37.7	12.0
5	11220.00	39.7 AV	54.0	-14.3	1.33 V	279	27.7	12.0
6	#16830.00	53.9 PK	68.2	-14.3	2.57 V	132	37.7	16.2

Remarks:

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

RF Mode	TX 802.11ax (HE80)	Channel	CH 138：5690 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	57.6 PK	74.0	-16.4	3.77 H	244	56.1	1.5
2	5460.00	42.1 AV	54.0	-11.9	3.77 H	244	40.6	1.5
3	#5470.00	60.7 PK	68.2	-7.5	3.77 H	244	59.2	1.5
4	*5690.00	111.1 PK			3.77 H	244	109.2	1.9
5	*5690.00	100.4 AV			3.77 H	244	98.5	1.9
6	#5850.00	63.4 PK	68.2	-4.8	3.77 H	244	61.1	2.3
7	11380.00	51.5 PK	74.0	-22.5	2.26 H	196	39.0	12.5
8	11380.00	40.5 AV	54.0	-13.5	2.26 H	196	28.0	12.5
9	#17070.00	63.7 PK	68.2	-4.5	1.93 H	138	47.3	16.4
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	59.6 PK	74.0	-14.4	1.68 V	262	58.1	1.5
2	5460.00	43.3 AV	54.0	-10.7	1.68 V	262	41.8	1.5
3	#5470.00	63.2 PK	68.2	-5.0	1.68 V	262	61.7	1.5
4	*5690.00	113.2 PK			1.68 V	262	111.3	1.9
5	*5690.00	102.3 AV			1.68 V	262	100.4	1.9
6	#5850.00	67.7 PK	68.2	-0.5	1.68 V	262	65.4	2.3
7	11380.00	50.4 PK	74.0	-23.6	1.31 V	297	37.9	12.5
8	11380.00	40.1 AV	54.0	-13.9	1.31 V	297	27.6	12.5
9	#17070.00	54.2 PK	68.2	-14.0	2.62 V	109	37.8	16.4

Remarks:

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

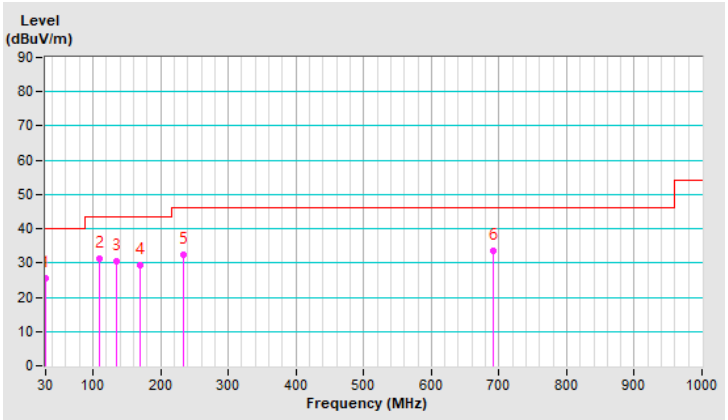
Below 1GHz Data:

RF Mode	TX 802.11ax (HE80)	Channel	CH 58：5290 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	30.41	25.5 QP	40.0	-14.5	1.00 H	219	39.1	-13.6
2	109.39	31.4 QP	43.5	-12.1	3.00 H	258	46.7	-15.3
3	134.61	30.4 QP	43.5	-13.1	1.50 H	336	43.3	-12.9
4	170.24	29.4 QP	43.5	-14.1	1.50 H	258	42.0	-12.6
5	233.62	32.3 QP	46.0	-13.7	1.00 H	137	46.2	-13.9
6	692.26	33.4 QP	46.0	-12.6	2.00 H	229	34.2	-0.8

Remarks:

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

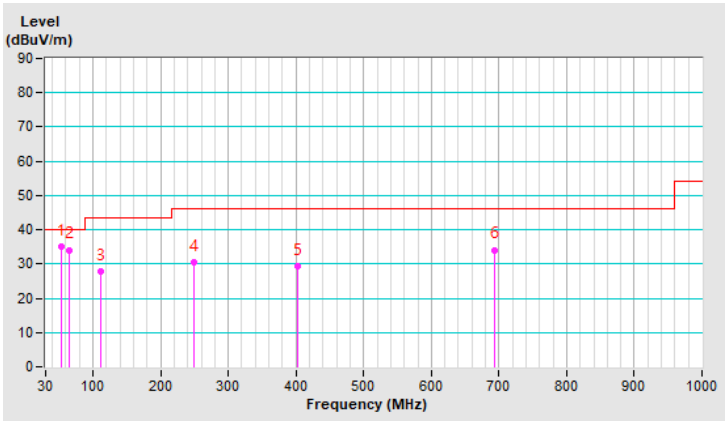


RF Mode	TX 802.11ax (HE80)	Channel	CH 58：5290 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	53.85	35.2 QP	40.0	-4.8	1.00 V	271	47.9	-12.7
2	64.70	34.1 QP	40.0	-5.9	1.00 V	29	48.0	-13.9
3	110.76	27.9 QP	43.5	-15.6	1.50 V	278	43.1	-15.2
4	248.89	30.5 QP	46.0	-15.5	1.50 V	143	43.3	-12.8
5	403.21	29.4 QP	46.0	-16.6	1.00 V	225	37.3	-7.9
6	692.79	34.1 QP	46.0	-11.9	2.00 V	237	34.9	-0.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit 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 R&S	ESCS 30	847124/029	2020/10/20	2021/10/19
LISN R&S	ESH3-Z5	848773/004	2020/10/27	2021/10/26
LISN R & S	ESH3-Z5	835239/001	2021/3/26	2022/3/25
50 ohms Terminator	50	3	2020/10/26	2021/10/25
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2020/9/26	2021/9/25
Fixed attenuator STI	STI02-2200-10	005	2021/8/27	2022/8/26
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:
1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3 Tested Date: 2021/8/31

4.2.3 Test Procedure

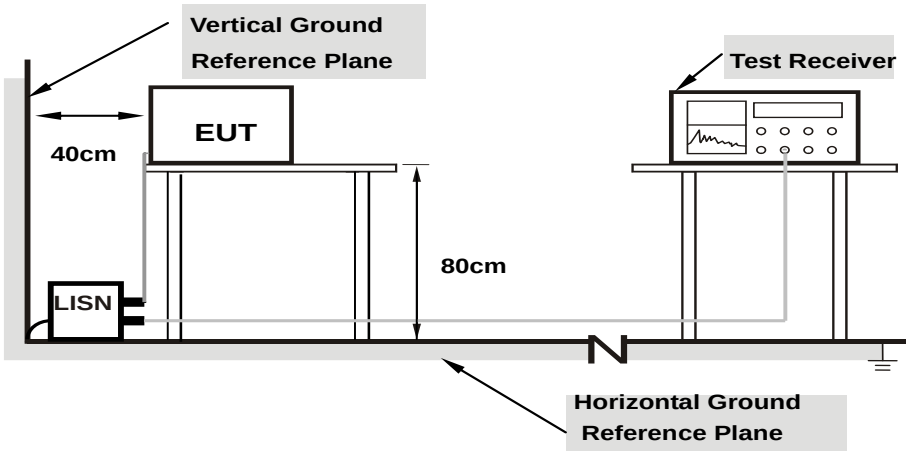
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

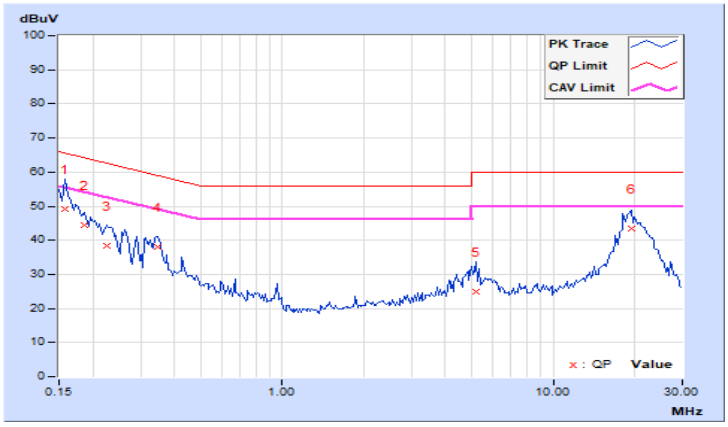
4.2.7 Test Results

RF Mode	TX 802.11ax (HE80)	Channel	CH 58：5290 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	0.15760	10.04	39.23	25.47	49.27	35.51	65.59	55.59	-16.32	-20.08
2	0.18529	10.05	34.37	20.60	44.42	30.65	64.25	54.25	-19.83	-23.60
3	0.22431	10.06	28.21	15.23	38.27	25.29	62.66	52.66	-24.39	-27.37
4	0.34565	10.07	28.05	21.11	38.12	31.18	59.07	49.07	-20.95	-17.89
5	5.21078	10.40	14.59	6.37	24.99	16.77	60.00	50.00	-35.01	-33.23
6	**19.50767**	**11.49**	**31.84**	**25.61**	**43.33**	**37.10**	**60.00**	**50.00**	**-16.67**	**-12.90**

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

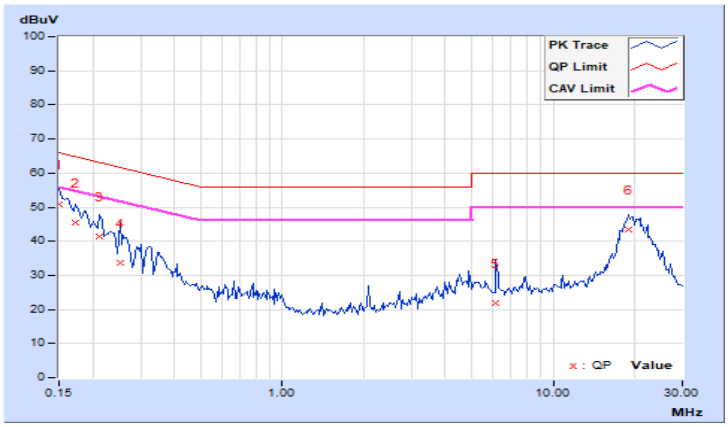


RF Mode	TX 802.11ax (HE80)	Channel	CH 58：5290 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

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	0.15019	10.02	40.70	26.57	50.72	36.59	65.99	55.99	-15.27	-19.40
2	0.17326	10.04	35.46	21.87	45.50	31.91	64.80	54.80	-19.30	-22.89
3	0.21263	10.06	31.30	17.38	41.36	27.44	63.10	53.10	-21.74	-25.66
4	0.25140	10.06	23.70	8.37	33.76	18.43	61.71	51.71	-27.95	-33.28
5	6.12867	10.42	11.41	4.57	21.83	14.99	60.00	50.00	-38.17	-35.01
6	19.03926	11.18	32.23	25.47	43.41	36.65	60.00	50.00	-16.59	-13.35

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)
		Client device	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

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

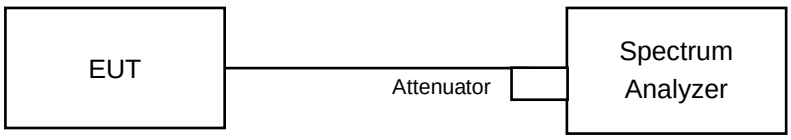
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

4.3.2 Test Setup

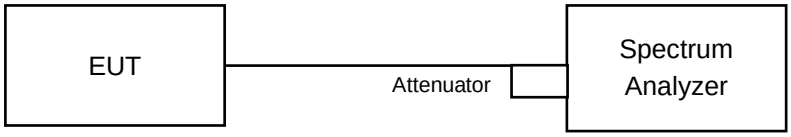
FOR POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz:



For other channels:

FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz:

Follow FCC KDB 789033 UNII test procedure:
Method SA-2

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

For other channels:

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

FOR 26dB OCCUPIED BANDWIDTH

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Results

CDD Mode

POWER OUTPUT

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.77	19.71	188.382	22.75	24	PASS
60	5300	19.88	19.92	195.45	22.91	24	PASS
64	5320	19.92	19.82	194.115	22.88	24	PASS
100	5500	19.84	19.84	192.766	22.85	24	PASS
116	5580	20.10	19.89	199.828	23.01	24	PASS
140	5700	20.16	19.52	193.289	22.86	24	PASS
*144 (U-NII-2C Band)	5720	18.58	18.22	148.161	21.71	22.86	PASS
*144 (U-NII-3 Band)	5720	11.80	11.57	31.551	14.99	30	PASS

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

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	20.74	24.16 > 24
60	5300	20.69	24.15 > 24
64	5320	20.84	24.18 > 24
100	5500	20.62	24.14 > 24
116	5580	20.68	24.15 > 24
140	5700	20.57	24.13 > 24
144 (U-NII-2C Band)	5720	15.35	22.86 < 24

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.73	19.94	192.6	22.85	24	PASS
60	5300	19.98	19.71	193.081	22.86	24	PASS
64	5320	19.96	19.65	191.34	22.82	24	PASS
100	5500	19.94	19.85	195.233	22.91	24	PASS
116	5580	19.57	19.37	177.07	22.48	24	PASS
140	5700	20.18	19.68	197.128	22.95	24	PASS
*144 (U-NII-2C Band)	5720	18.75	18.32	150.798	21.78	22.97	PASS
*144 (U-NII-3 Band)	5720	12.71	12.51	38.502	15.85	30	PASS

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

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.61	24.34 > 24
60	5300	21.72	24.36 > 24
64	5320	21.89	24.4 > 24
100	5500	21.63	24.35 > 24
116	5580	21.74	24.37 > 24
140	5700	21.53	24.33 > 24
144 (U-NII-2C Band)	5720	15.76	22.97 < 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	20.49	20.61	227.024	23.56	24	PASS
62	5310	20.33	19.99	207.665	23.17	24	PASS
102	5510	20.53	20.31	220.379	23.43	24	PASS
110	5550	20.61	20.27	221.494	23.45	24	PASS
134	5670	20.51	20.28	219.12	23.41	24	PASS
*142 (U-NII-2C Band)	5710	19.20	18.87	167.929	22.25	24	PASS
*142 (U-NII-3 Band)	5710	7.81	7.89	12.774	11.06	30	PASS

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

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	42.58	27.29 > 24
62	5310	42.42	27.27 > 24
102	5510	42.34	27.26 > 24
110	5550	42.4	27.27 > 24
134	5670	42.41	27.27 > 24
142 (U-NII-2C Band)	5710	36.03	26.56 > 24

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	20.92	20.81	244.098	23.88	24	PASS
106	5530	20.10	19.92	200.504	23.02	24	PASS
122	5610	20.12	20.25	208.727	23.20	24	PASS
*138 (U-NII-2C Band)	5690	19.40	19.37	182.405	22.61	24	PASS
*138 (U-NII-3 Band)	5690	3.76	4.43	5.412	7.33	30	PASS

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

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	83.13	30.19 > 24
106	5530	83.41	30.21 > 24
122	5610	82.88	30.18 > 24
138 (U-NII-2C Band)	5690	76.77	29.85 > 24

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	20.16	20.12	206.554	23.15	24	PASS
60	5300	20.13	19.92	201.213	23.04	24	PASS
64	5320	20.21	19.94	203.582	23.09	24	PASS
100	5500	20.22	20.31	212.595	23.28	24	PASS
116	5580	20.06	19.88	198.666	22.98	24	PASS
140	5700	20.32	19.80	203.146	23.08	24	PASS
*144 (U-NII-2C Band)	5720	19.15	18.54	162.156	22.10	22.97	PASS
*144 (U-NII-3 Band)	5720	13.40	12.96	43.946	16.43	30	PASS

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

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.61	24.34 > 24
60	5300	21.72	24.36 > 24
64	5320	21.89	24.4 > 24
100	5500	21.63	24.35 > 24
116	5580	21.74	24.37 > 24
140	5700	21.53	24.33 > 24
144 (U-NII-2C Band)	5720	15.76	22.97 < 24

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	20.65	20.54	229.385	23.61	24	PASS
62	5310	20.43	19.90	208.132	23.18	24	PASS
102	5510	20.56	20.37	222.656	23.48	24	PASS
110	5550	20.61	20.31	222.479	23.47	24	PASS
134	5670	20.55	20.31	220.9	23.44	24	PASS
*142 (U-NII-2C Band)	5710	19.42	19.24	179.641	22.54	24	PASS
*142 (U-NII-3 Band)	5710	9.47	9.35	18.296	12.62	30	PASS

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

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	42.58	27.29 > 24
62	5310	42.42	27.27 > 24
102	5510	42.34	27.26 > 24
110	5550	42.4	27.27 > 24
134	5670	42.41	27.27 > 24
142 (U-NII-2C Band)	5710	36.03	26.56 > 24

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	21.26	20.51	246.12	23.91	24	PASS
106	5530	20.55	20.46	224.674	23.52	24	PASS
122	5610	20.50	20.87	234.382	23.70	24	PASS
*138 (U-NII-2C Band)	5690	19.72	19.42	190.456	22.80	24	PASS
*138 (U-NII-3 Band)	5690	4.64	6.23	7.469	8.73	30	PASS

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

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	83.13	30.19 > 24
106	5530	83.41	30.21 > 24
122	5610	82.88	30.18 > 24
138 (U-NII-2C Band)	5690	76.77	29.85 > 24

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.57	19.44	178.476	22.52	23.07	PASS
60	5300	19.98	19.71	193.081	22.86	23.07	PASS
64	5320	19.53	19.20	172.919	22.38	23.07	PASS
100	5500	19.49	19.61	180.331	22.56	23.07	PASS
116	5580	19.57	19.37	177.07	22.48	23.07	PASS
140	5700	19.61	19.13	173.258	22.39	23.07	PASS
*144 (U-NII-2C Band)	5720	18.60	18.06	143.947	21.58	22.04	PASS
*144 (U-NII-3 Band)	5720	12.11	12.41	35.532	15.51	29.07	PASS

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

1. For U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
2. For U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
3. For U-NII-3: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi , so the power limit shall be reduced to 30-(6.93-6) = 29.07dBm.

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.61	24.34 > 24
60	5300	21.72	24.36 > 24
64	5320	21.89	24.4 > 24
100	5500	21.63	24.35 > 24
116	5580	21.74	24.37 > 24
140	5700	21.53	24.33 > 24
144 (U-NII-2C Band)	5720	15.76	22.97 < 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	19.85	19.76	191.229	22.82	23.07	PASS
62	5310	19.83	19.30	181.275	22.58	23.07	PASS
102	5510	19.86	19.63	188.661	22.76	23.07	PASS
110	5550	19.89	19.63	189.332	22.77	23.07	PASS
134	5670	19.86	19.64	188.873	22.76	23.07	PASS
*142 (U-NII-2C Band)	5710	18.44	18.17	141.913	21.52	23.07	PASS
*142 (U-NII-3 Band)	5710	8.21	5.27	10.465	10.20	29.07	PASS

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

1. For U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
2. For U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
3. For U-NII-3: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi , so the power limit shall be reduced to 30-(6.93-6) = 29.07dBm.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	42.58	27.29 > 24
62	5310	42.42	27.27 > 24
102	5510	42.34	27.26 > 24
110	5550	42.4	27.27 > 24
134	5670	42.41	27.27 > 24
142 (U-NII-2C Band)	5710	36.03	26.56 > 24

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	20.10	19.33	188.033	22.74	23.07	PASS
106	5530	19.82	19.79	191.22	22.82	23.07	PASS
122	5610	19.35	19.76	180.723	22.57	23.07	PASS
*138 (U-NII-2C Band)	5690	18.86	19.04	165.055	22.18	23.07	PASS
*138 (U-NII-3 Band)	5690	4.26	4.73	5.925	7.73	29.07	PASS

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

1. For U-NII-2A: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
2. For U-NII-2C: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
3. For U-NII-3: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 6.93dBi > 6dBi , so the power limit shall be reduced to 30-(6.93-6) = 29.07dBm.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	83.13	30.19 > 24
106	5530	83.41	30.21 > 24
122	5610	82.88	30.18 > 24
138 (U-NII-2C Band)	5690	76.77	29.85 > 24

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.78	19.67	187.743	22.74	23.07	PASS
60	5300	20.13	19.92	201.213	23.04	23.07	PASS
64	5320	19.77	19.49	183.762	22.64	23.07	PASS
100	5500	19.74	19.88	191.464	22.82	23.07	PASS
116	5580	20.06	19.88	198.666	22.98	23.07	PASS
140	5700	19.85	19.37	183.102	22.63	23.07	PASS
*144 (U-NII-2C Band)	5720	18.89	18.34	153.721	21.87	22.04	PASS
*144 (U-NII-3 Band)	5720	12.75	13.26	42.229	16.26	29.07	PASS

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

1. For U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
2. For U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
3. For U-NII-3: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi , so the power limit shall be reduced to 30-(6.93-6) = 29.07dBm.

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.61	24.34 > 24
60	5300	21.72	24.36 > 24
64	5320	21.89	24.4 > 24
100	5500	21.63	24.35 > 24
116	5580	21.74	24.37 > 24
140	5700	21.53	24.33 > 24
144 (U-NII-2C Band)	5720	15.76	22.97 < 24

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	20.09	19.96	201.177	23.04	23.07	PASS
62	5310	20.08	19.51	191.19	22.81	23.07	PASS
102	5510	20.11	19.92	200.74	23.03	23.07	PASS
110	5550	20.15	19.90	201.238	23.04	23.07	PASS
134	5670	20.06	19.90	199.115	22.99	23.07	PASS
*142 (U-NII-2C Band)	5710	19.08	18.50	158.957	22.01	23.07	PASS
*142 (U-NII-3 Band)	5710	8.90	7.77	14.404	11.58	29.07	PASS

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

1. For U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
2. For U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
3. For U-NII-3: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi , so the power limit shall be reduced to 30-(6.93-6) = 29.07dBm.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	42.58	27.29 > 24
62	5310	42.42	27.27 > 24
102	5510	42.34	27.26 > 24
110	5550	42.4	27.27 > 24
134	5670	42.41	27.27 > 24
142 (U-NII-2C Band)	5710	36.03	26.56 > 24

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	20.32	19.56	198.011	22.97	23.07	PASS
106	5530	20.06	20.00	201.391	23.04	23.07	PASS
122	5610	19.58	19.96	189.865	22.78	23.07	PASS
*138 (U-NII-2C Band)	5690	19.08	19.07	169.838	22.30	23.07	PASS
*138 (U-NII-3 Band)	5690	4.91	5.35	6.856	8.36	29.07	PASS

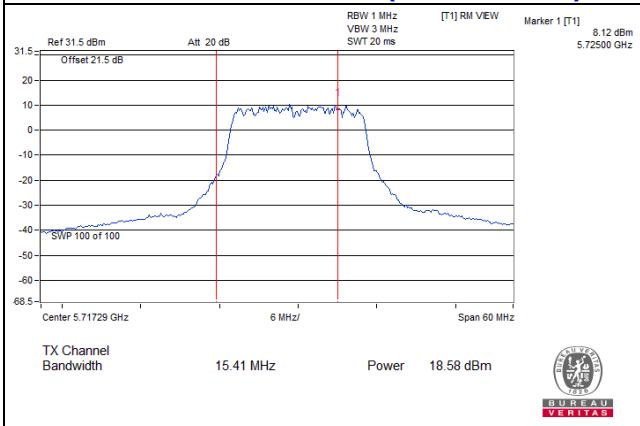
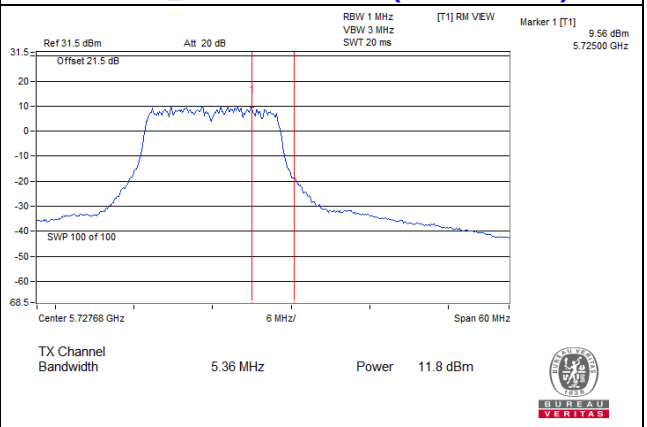
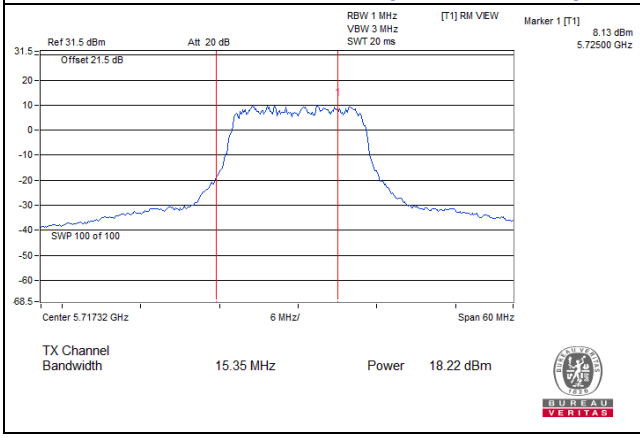
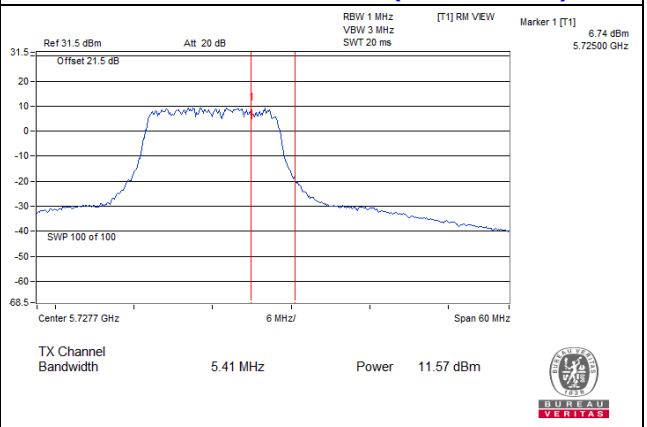
Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.

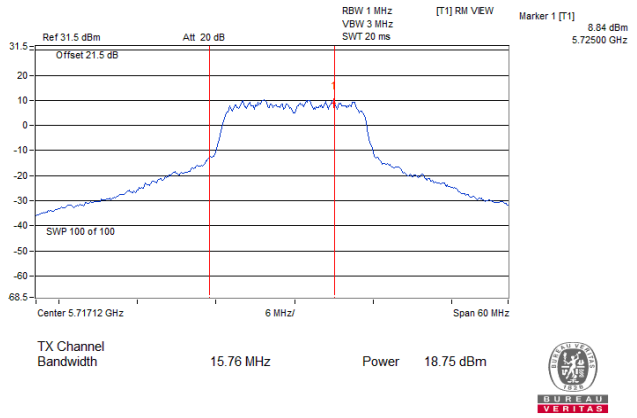
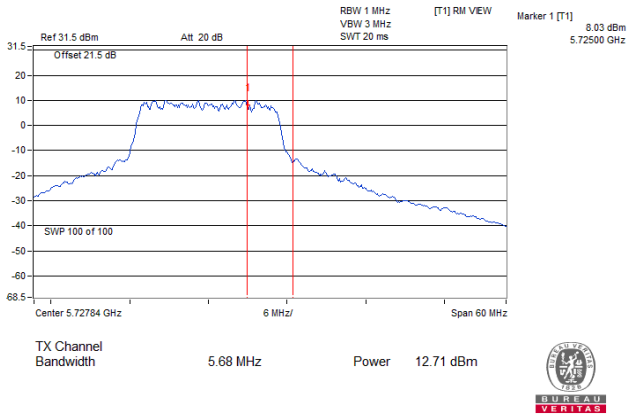
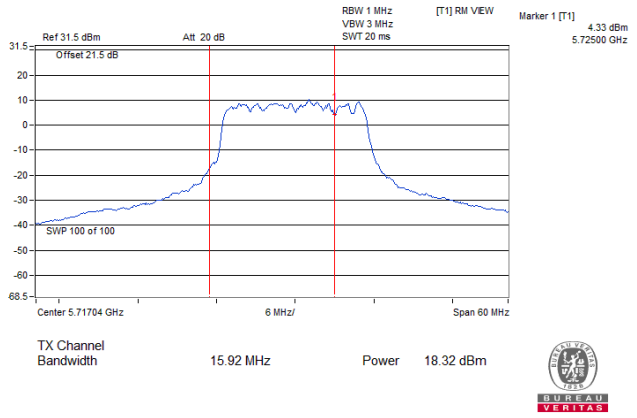
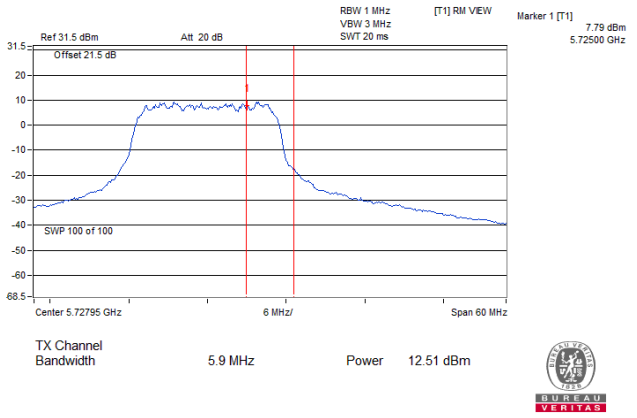
1. For U-NII-2A: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
2. For U-NII-2C: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 6.93dBi > 6dBi, so the power limit shall be reduced to “Determined Conducted Limit- (6.93-6)”.
3. For U-NII-3: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 6.93dBi > 6dBi , so the power limit shall be reduced to 30-(6.93-6) = 29.07dBm.

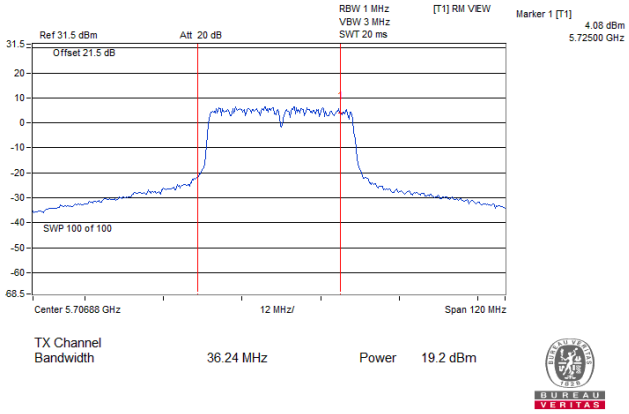
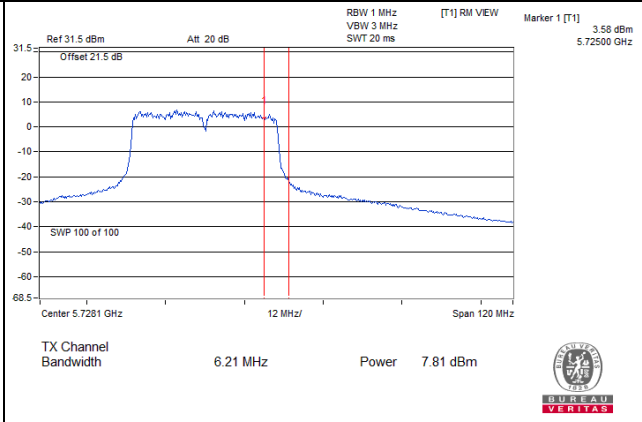
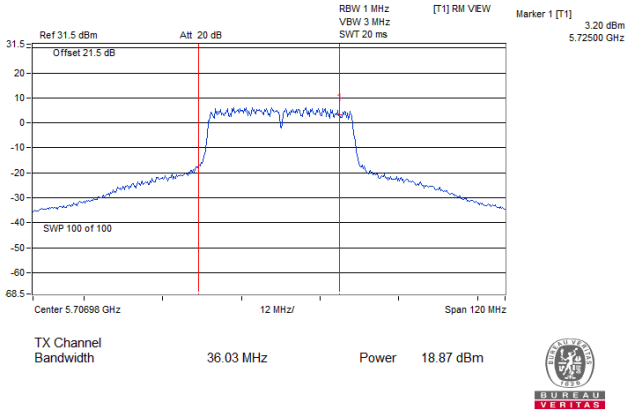
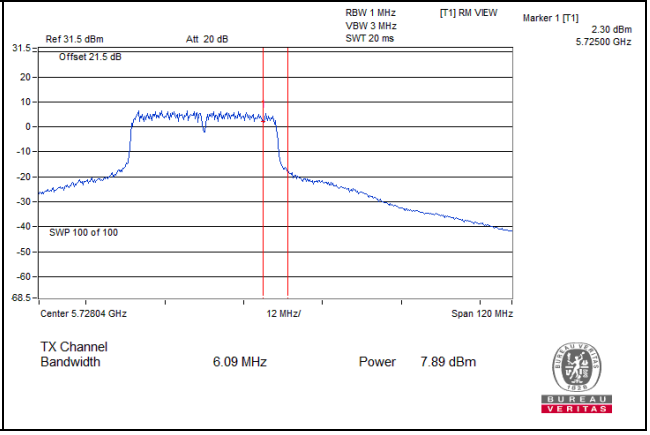
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	83.13	30.19 > 24
106	5530	83.41	30.21 > 24
122	5610	82.88	30.18 > 24
138 (U-NII-2C Band)	5690	76.77	29.85 > 24

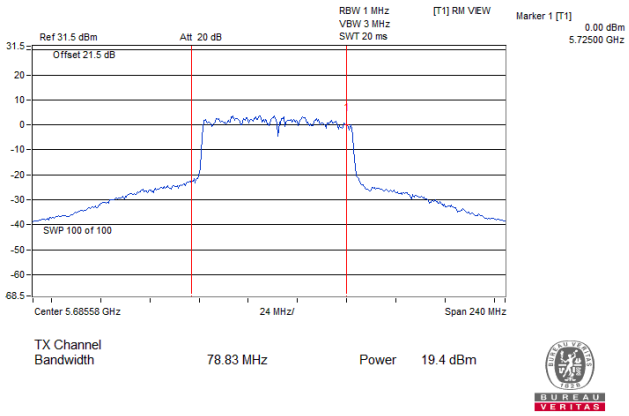
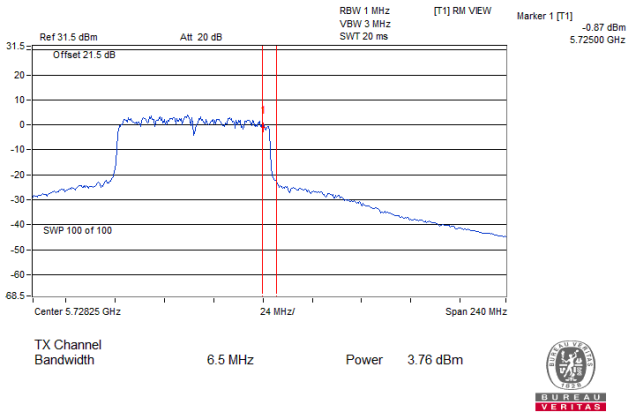
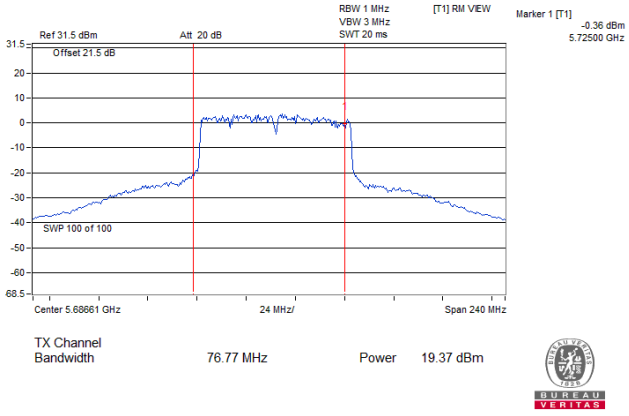
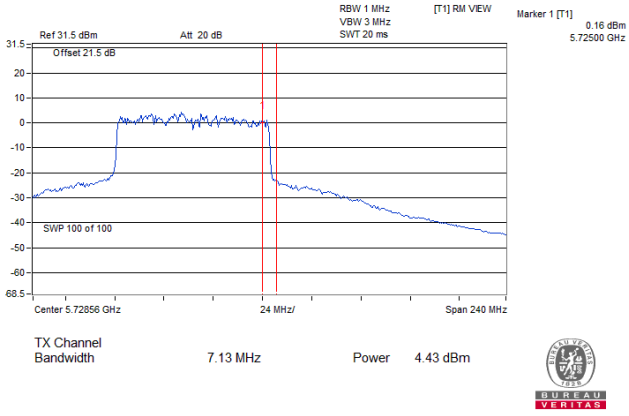
For channel straddling 5725MHz of Power

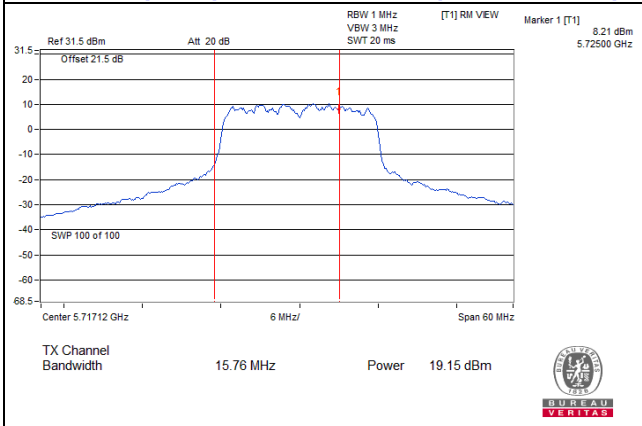
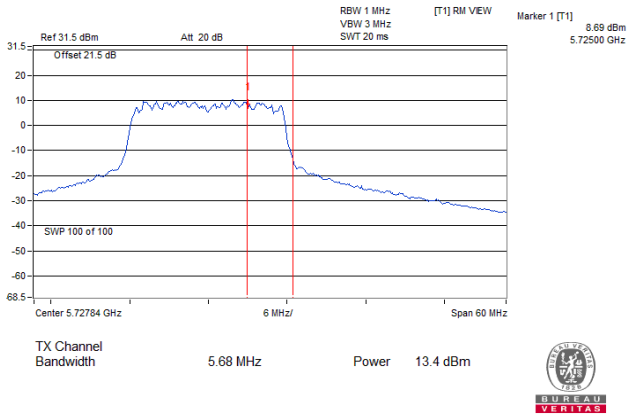
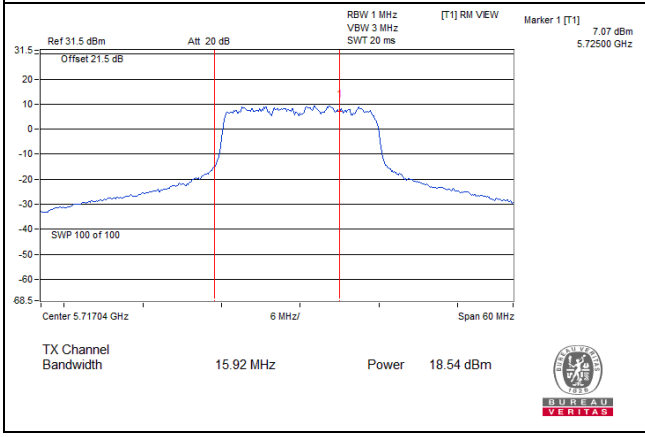
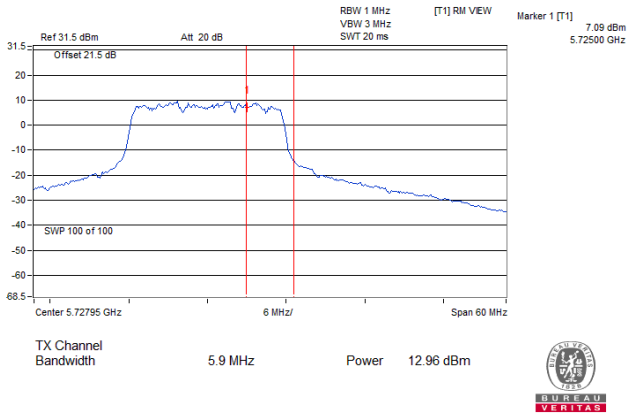
CDD Mode

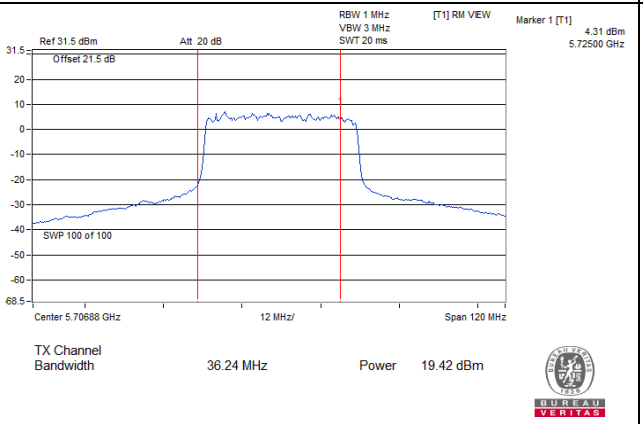
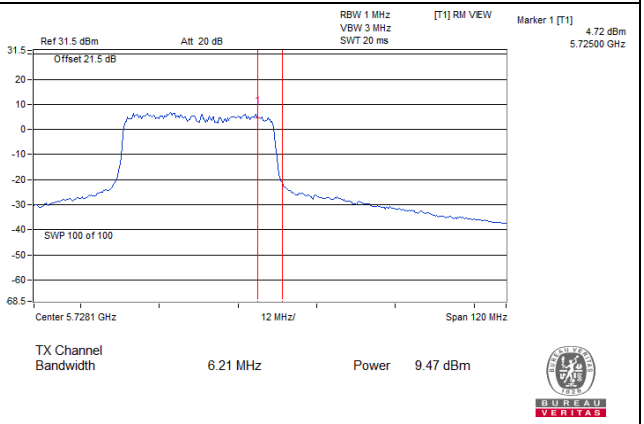
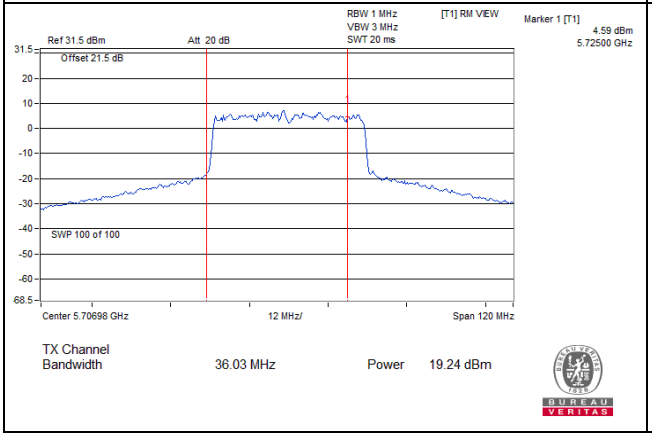
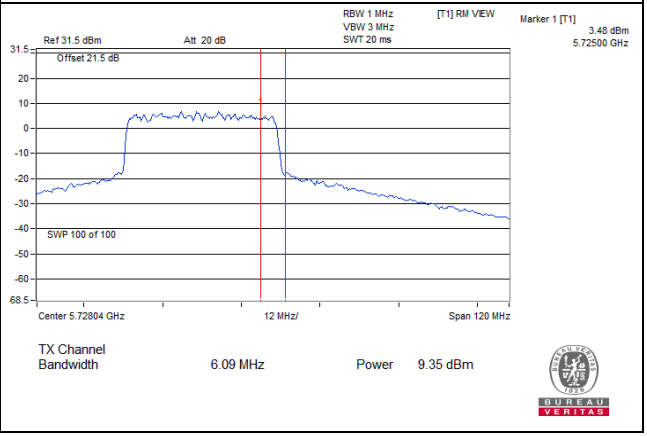
Spectrum Plot Value of Power	
802.11a_Chain 0 / CH144 (U-NII-2C Band)	**802.11a_Chain 0 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.41 MHz Power 18.58 dBm	 TX Channel Bandwidth 5.36 MHz Power 11.8 dBm
802.11a_Chain 1 / CH144 (U-NII-2C Band)	**802.11a_Chain 1 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.35 MHz Power 18.22 dBm	 TX Channel Bandwidth 5.41 MHz Power 11.57 dBm

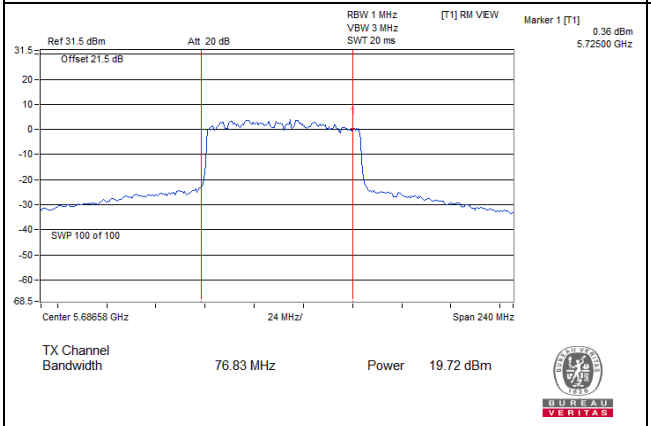
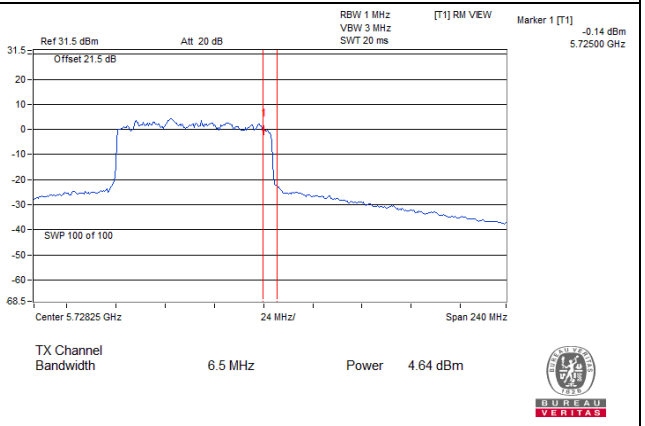
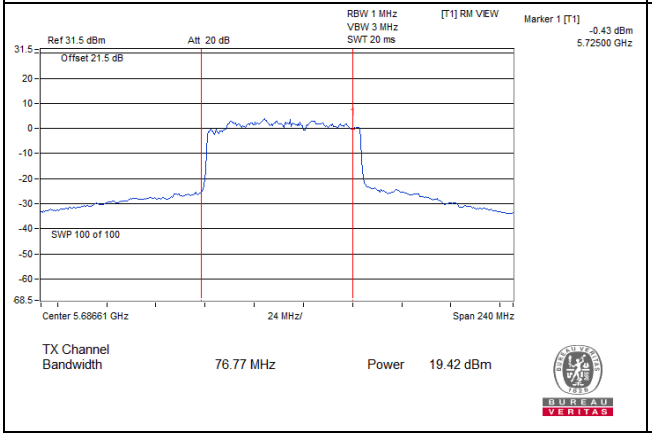
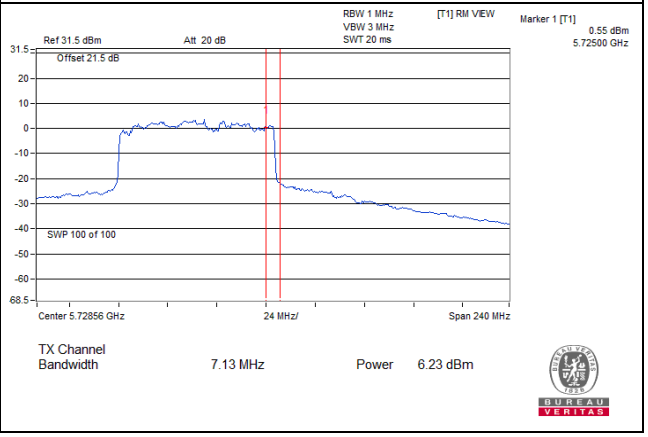
Spectrum Plot Value of Power	
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.76 MHz Power 18.75 dBm	 TX Channel Bandwidth 5.68 MHz Power 12.71 dBm
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.92 MHz Power 18.32 dBm	 TX Channel Bandwidth 5.9 MHz Power 12.51 dBm

Spectrum Plot Value of Power	
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 36.24 MHz Power 19.2 dBm	 TX Channel Bandwidth 6.21 MHz Power 7.81 dBm
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 36.03 MHz Power 18.87 dBm	 TX Channel Bandwidth 6.09 MHz Power 7.89 dBm

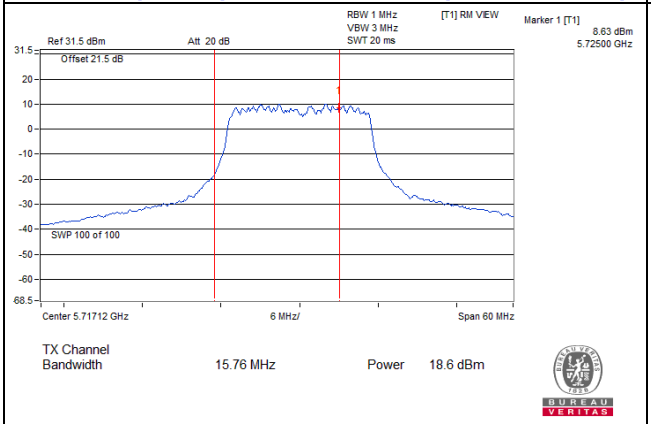
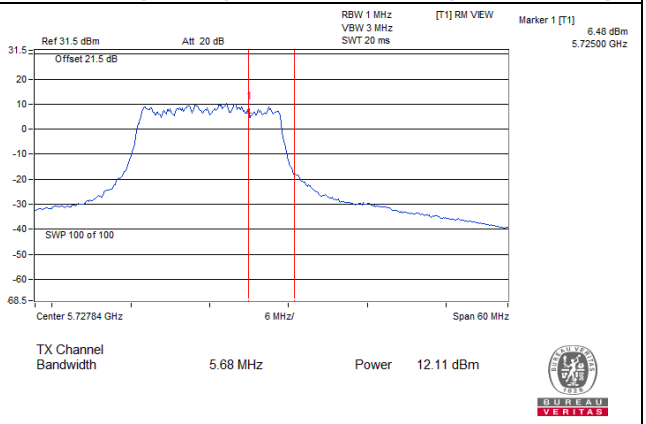
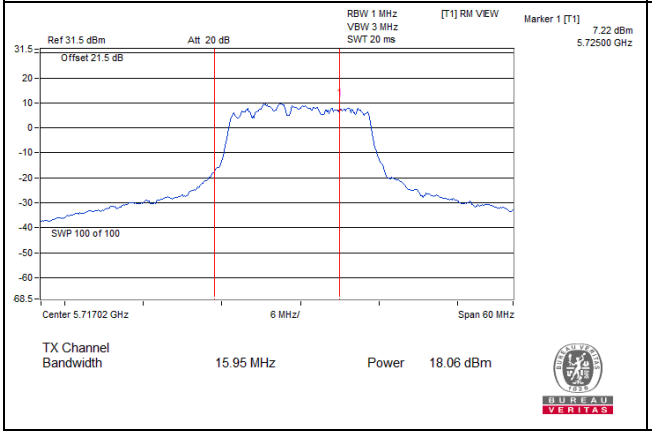
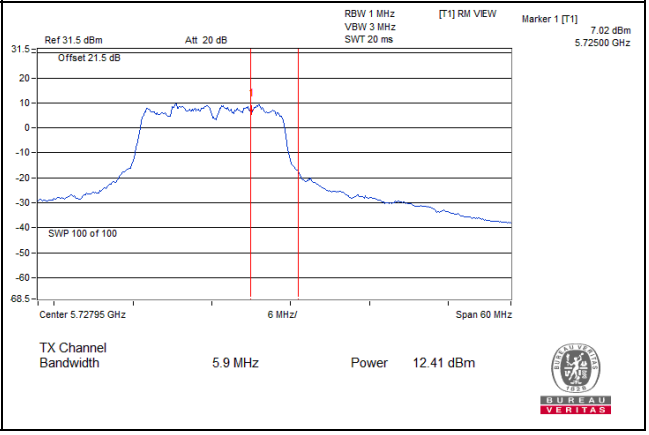
Spectrum Plot Value of Power	
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)**
 TX Channel Bandwidth 78.83 MHz Power 19.4 dBm	 TX Channel Bandwidth 6.5 MHz Power 3.76 dBm
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)**
 TX Channel Bandwidth 76.77 MHz Power 19.37 dBm	 TX Channel Bandwidth 7.13 MHz Power 4.43 dBm

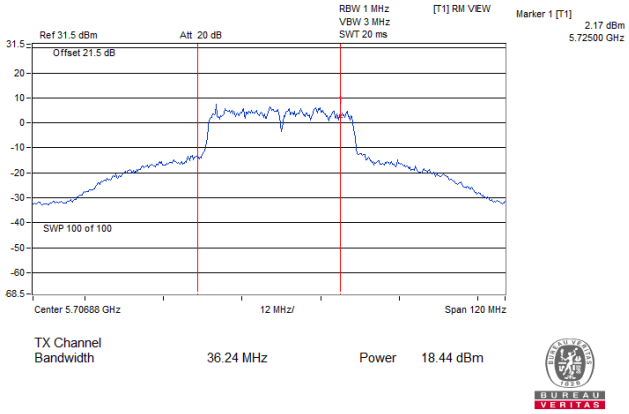
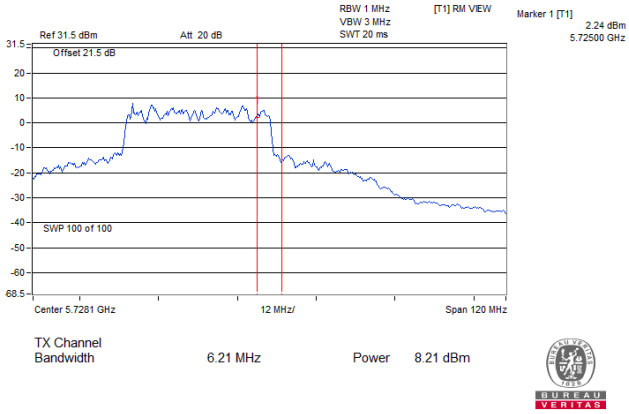
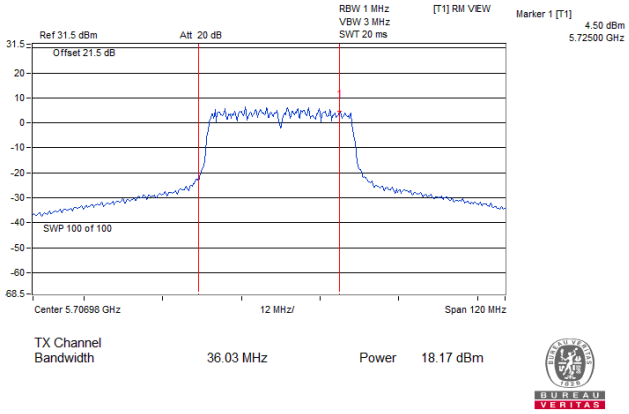
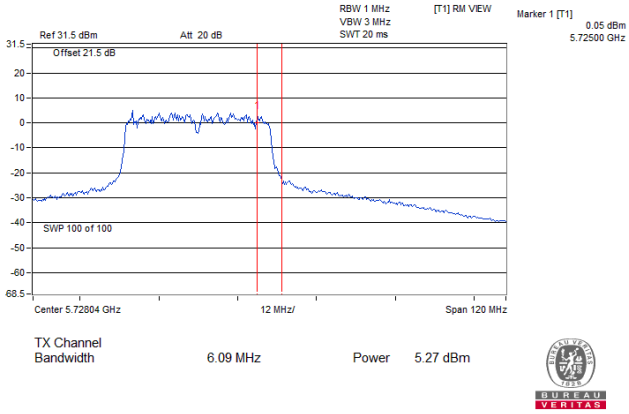
Spectrum Plot Value of Power	
802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.76 MHz Power 19.15 dBm	 TX Channel Bandwidth 5.68 MHz Power 13.4 dBm
802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.92 MHz Power 18.54 dBm	 TX Channel Bandwidth 5.9 MHz Power 12.96 dBm

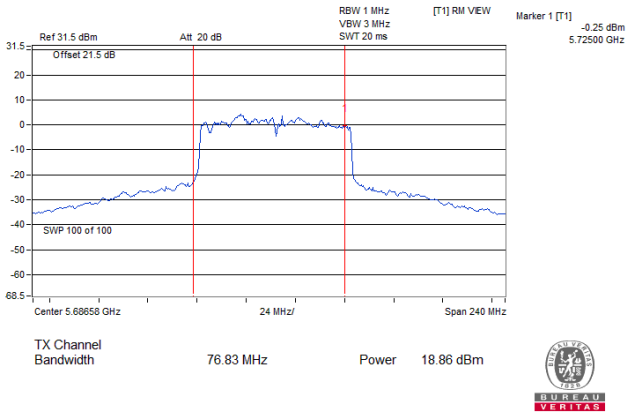
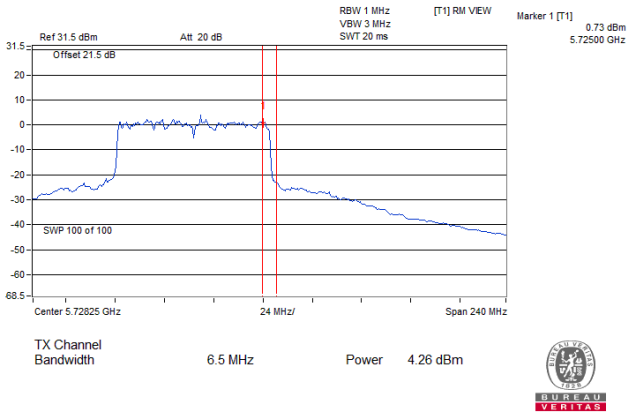
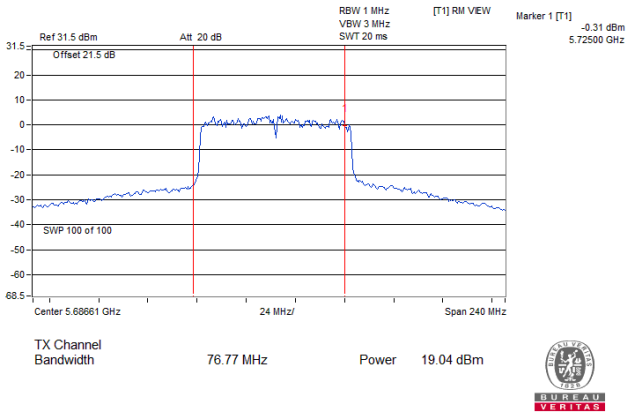
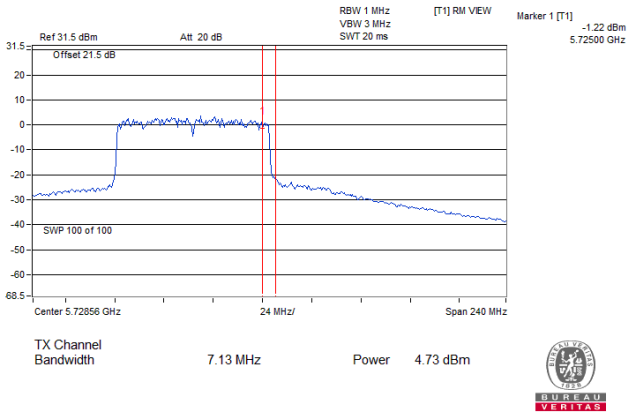
Spectrum Plot Value of Power	
802.11ax (HE40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 36.24 MHz Power 19.42 dBm	 TX Channel Bandwidth 6.21 MHz Power 9.47 dBm
802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 36.03 MHz Power 19.24 dBm	 TX Channel Bandwidth 6.09 MHz Power 9.35 dBm

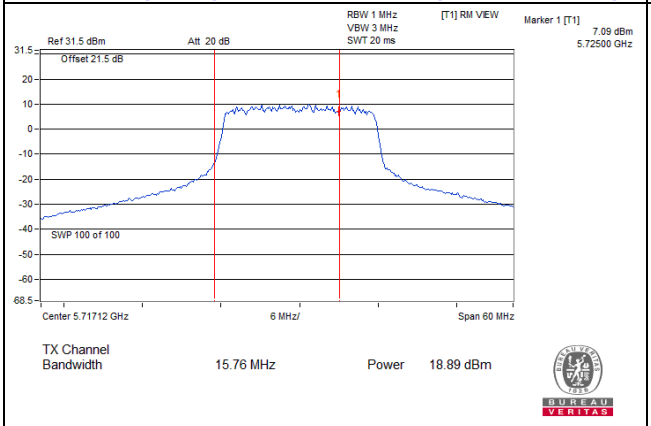
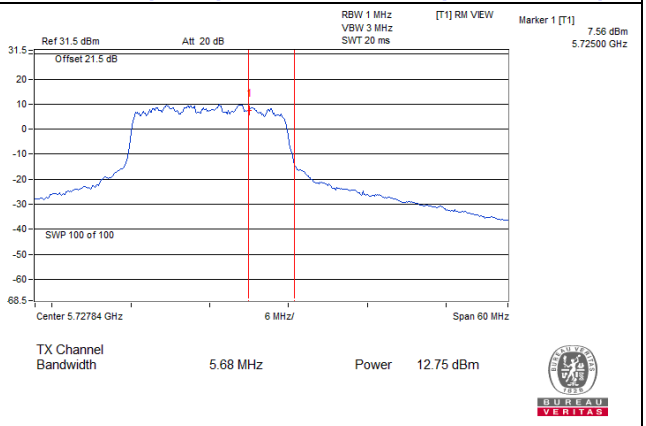
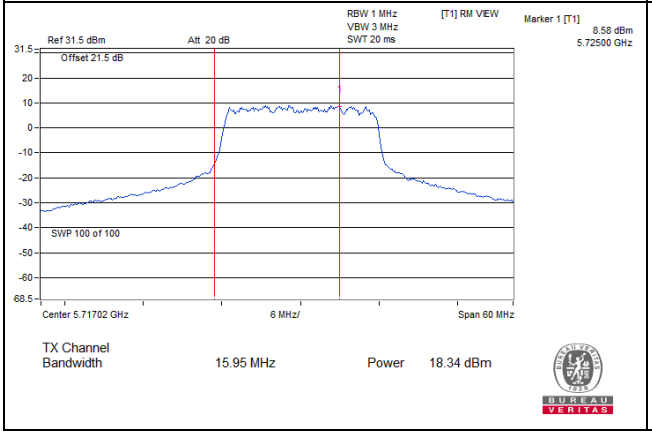
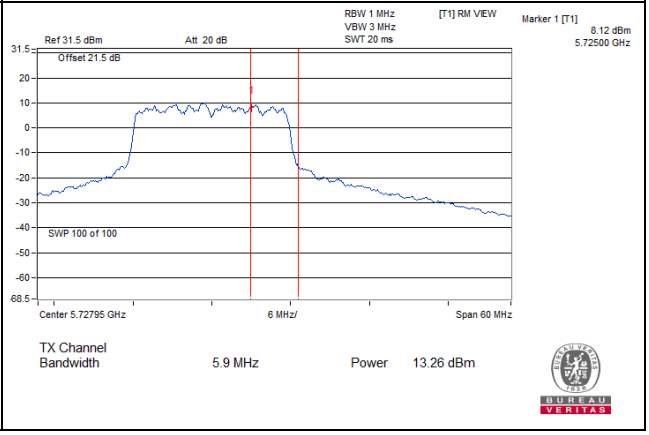
Spectrum Plot Value of Power	
802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)	**802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)**
 TX Channel Bandwidth 76.83 MHz Power 19.72 dBm	 TX Channel Bandwidth 6.5 MHz Power 4.64 dBm
802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)	**802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)**
 TX Channel Bandwidth 76.77 MHz Power 19.42 dBm	 TX Channel Bandwidth 7.13 MHz Power 6.23 dBm

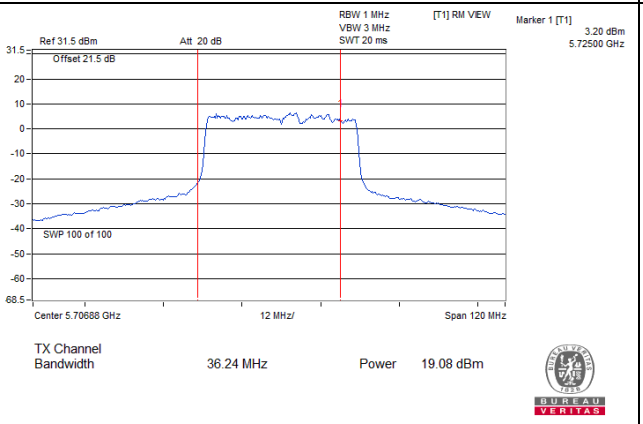
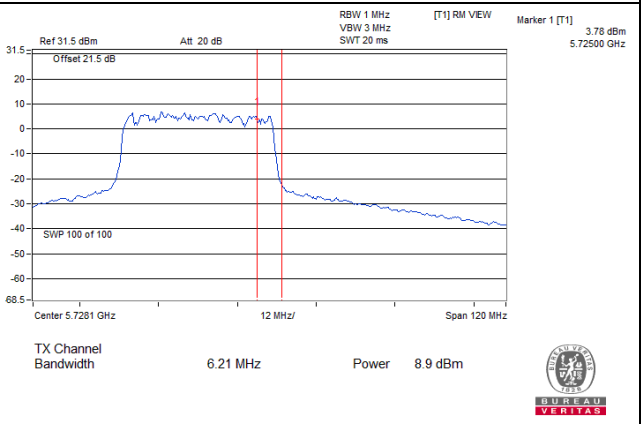
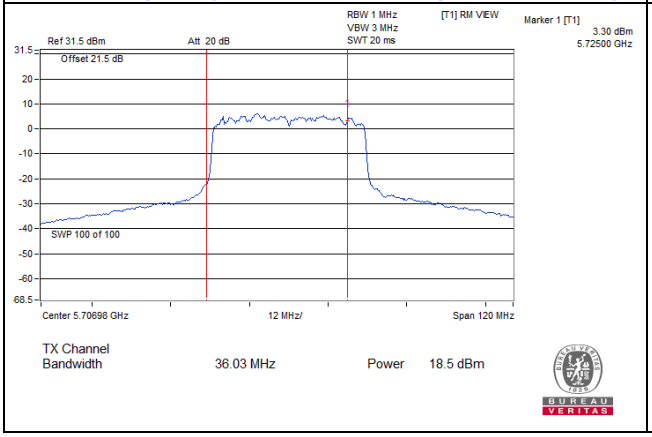
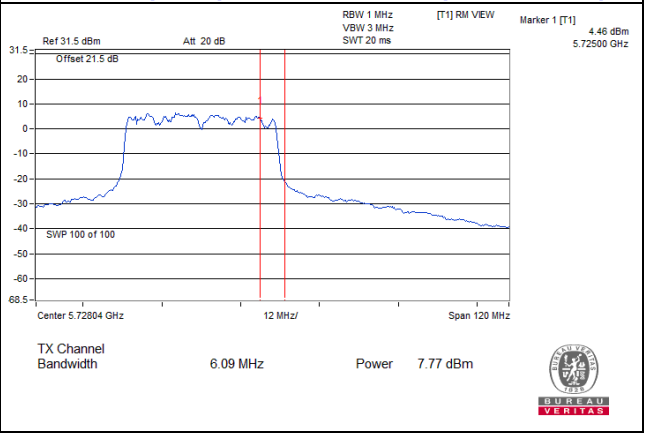
Beamforming Mode

Spectrum Plot Value of Power	
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.76 MHz Power 18.6 dBm	 TX Channel Bandwidth 5.68 MHz Power 12.11 dBm
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)	**802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.95 MHz Power 18.06 dBm	 TX Channel Bandwidth 5.9 MHz Power 12.41 dBm

Spectrum Plot Value of Power	
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 36.24 MHz Power 18.44 dBm	 TX Channel Bandwidth 6.21 MHz Power 8.21 dBm
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 36.03 MHz Power 18.17 dBm	 TX Channel Bandwidth 6.09 MHz Power 5.27 dBm

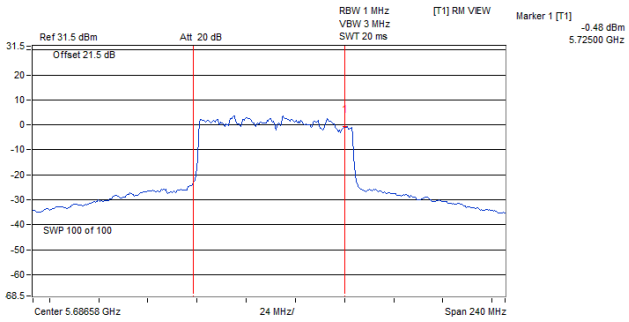
Spectrum Plot Value of Power	
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)**
 TX Channel Bandwidth 76.83 MHz Power 18.86 dBm	 TX Channel Bandwidth 6.5 MHz Power 4.26 dBm
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)	**802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)**
 TX Channel Bandwidth 76.77 MHz Power 19.04 dBm	 TX Channel Bandwidth 7.13 MHz Power 4.73 dBm

Spectrum Plot Value of Power	
802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.76 MHz Power 18.89 dBm	 TX Channel Bandwidth 5.68 MHz Power 12.75 dBm
802.11ax (HE20)_Chain 1 / CH144 (U-NII-2C Band)	**802.11ax (HE20)_Chain 1 / CH144 (U-NII-3 Band)**
 TX Channel Bandwidth 15.95 MHz Power 18.34 dBm	 TX Channel Bandwidth 5.9 MHz Power 13.26 dBm

Spectrum Plot Value of Power	
802.11ax (HE40)_Chain 0 / CH142 (U-NII-2C Band)	**802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 36.24 MHz Power 19.08 dBm	 TX Channel Bandwidth 6.21 MHz Power 8.9 dBm
802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C Band)	**802.11ax (HE40)_Chain 1 / CH142 (U-NII-3 Band)**
 TX Channel Bandwidth 36.03 MHz Power 18.5 dBm	 TX Channel Bandwidth 6.09 MHz Power 7.77 dBm

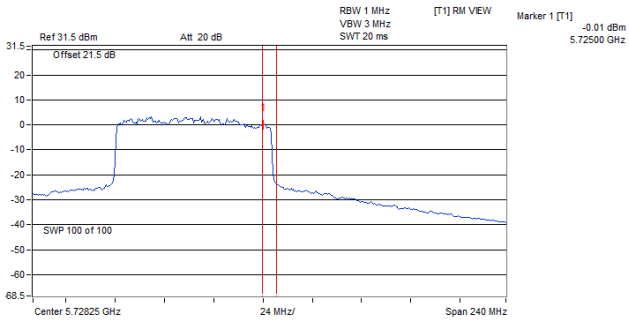
Spectrum Plot Value of Power

802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)



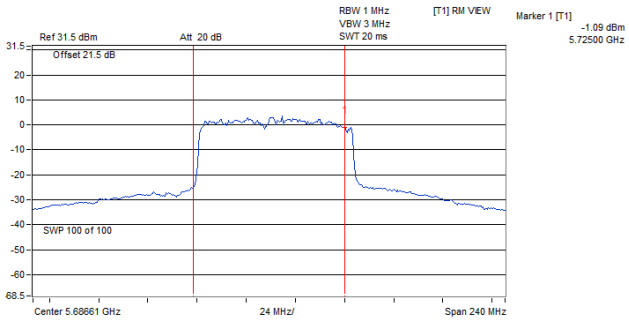
TX Channel Bandwidth 76.83 MHz Power 19.08 dBm

802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)



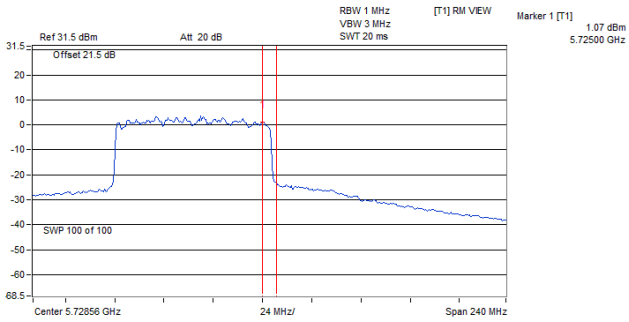
TX Channel Bandwidth 6.5 MHz Power 4.91 dBm

802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C Band)



TX Channel Bandwidth 76.77 MHz Power 19.07 dBm

802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)



TX Channel Bandwidth 7.13 MHz Power 5.35 dBm

CDD Mode

26dB OCCUPIED BANDWIDTH

802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain0	Chain1
52	5260	20.74	20.88
60	5300	20.69	20.76
64	5320	20.84	20.92
100	5500	20.62	20.64
116	5580	20.82	20.68
140	5700	20.57	20.73
144 (U-NII-2C Band)	5720	15.41	15.35

802.11ax (HE20)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain0	Chain1
52	5260	21.61	21.82
60	5300	21.91	21.72
64	5320	22.19	21.89
100	5500	21.63	21.66
116	5580	21.94	21.74
140	5700	22	21.53
144 (U-NII-2C Band)	5720	15.76	15.92

802.11ax (HE40)

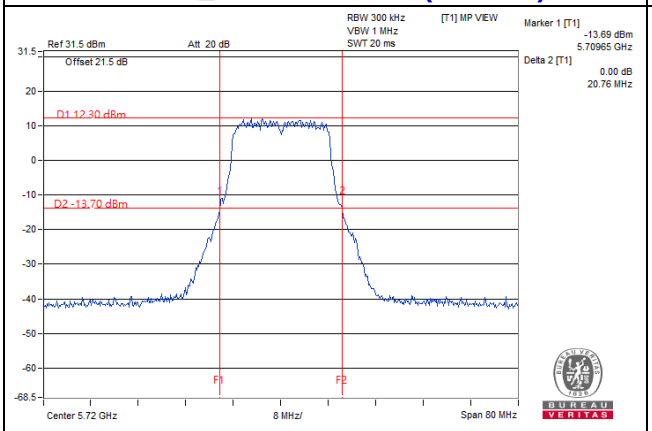
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain0	Chain1
54	5270	42.58	42.86
62	5310	42.95	42.42
102	5510	42.53	42.34
110	5550	42.4	42.55
134	5670	42.53	42.41
142 (U-NII-2C Band)	5710	36.24	36.03

802.11ax (HE80)

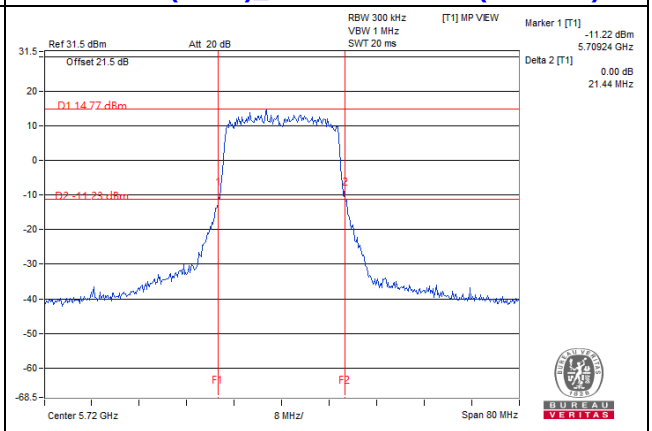
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain0	Chain1
58	5290	83.13	83.22
106	5530	83.41	83.44
122	5610	82.88	83.1
138 (U-NII-2C Band)	5690	76.83	76.77

Spectrum Plot of Worst Value

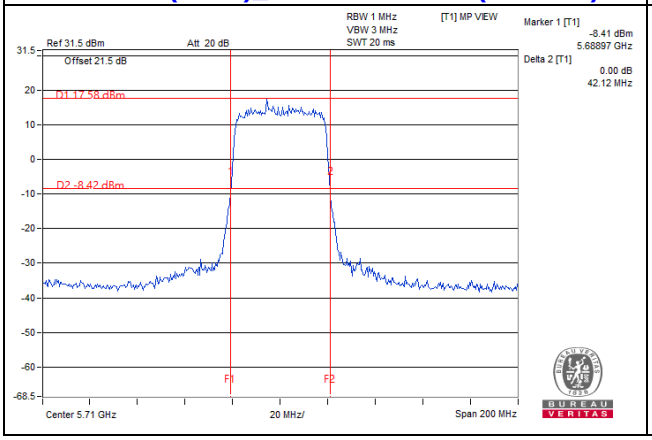
802.11a_Chain 1 / CH144 (U-NII-2C)



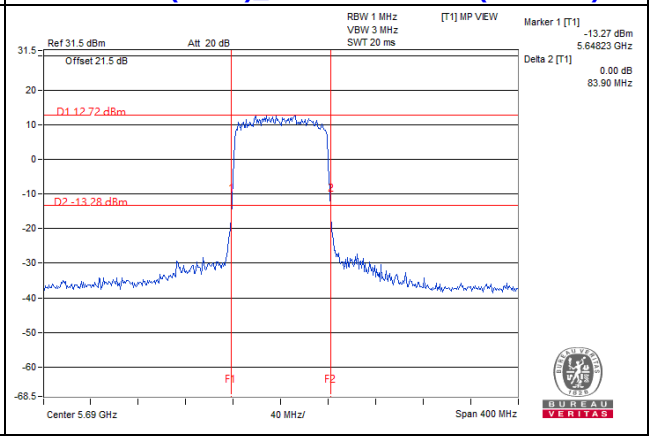
802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C)



802.11ax (HE40)_Chain 1 / CH142 (U-NII-2C)



802.11ax (HE80)_Chain 1 / CH138 (U-NII-2C)

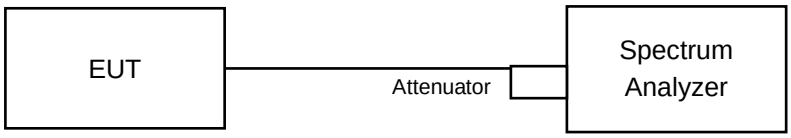


Note:

For CH144 (U-NII-2C) = 5725MHz - Marker 1
For CH142 (U-NII-2C) = 5725MHz - Marker 1
For CH138 (U-NII-2C) = 5725MHz - Marker 1

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Results

CDD Mode

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	16.44	16.44
60	5300	16.44	16.44
64	5320	16.44	16.44
100	5500	16.56	16.56
116	5580	16.44	16.44
140	5700	16.44	16.44
144 (U-NII-2C Band)	5720	13.4	13.28
144 (U-NII-3 Band)	5720	3.16	3.16

802.11ax (HE20)

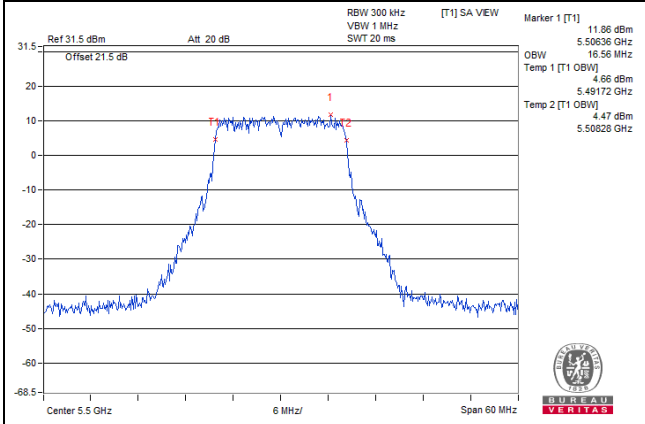
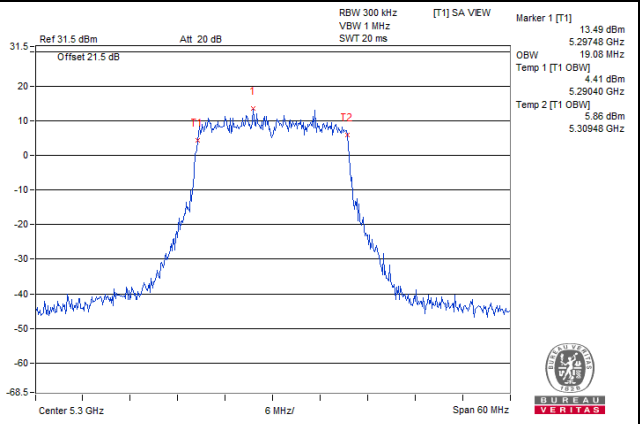
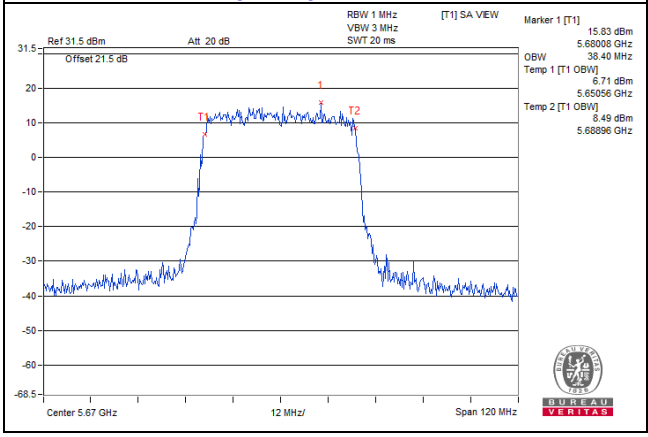
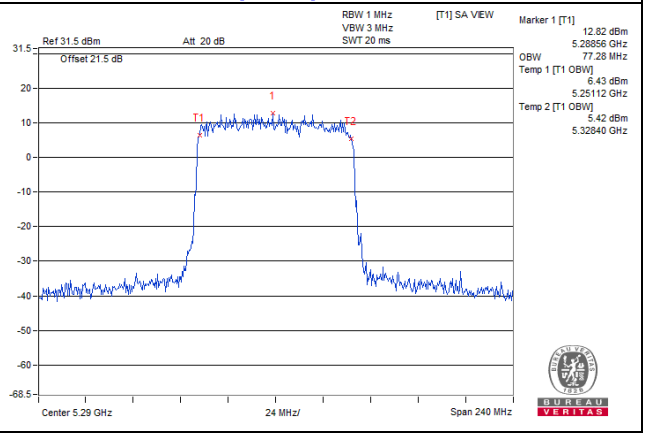
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	18.84	18.96
60	5300	19.08	18.96
64	5320	18.96	18.84
100	5500	19.08	19.08
116	5580	18.84	19.08
140	5700	18.96	19.08
144 (U-NII-2C Band)	5720	14.6	14.6
144 (U-NII-3 Band)	5720	4.48	4.48

802.11ax (HE40)

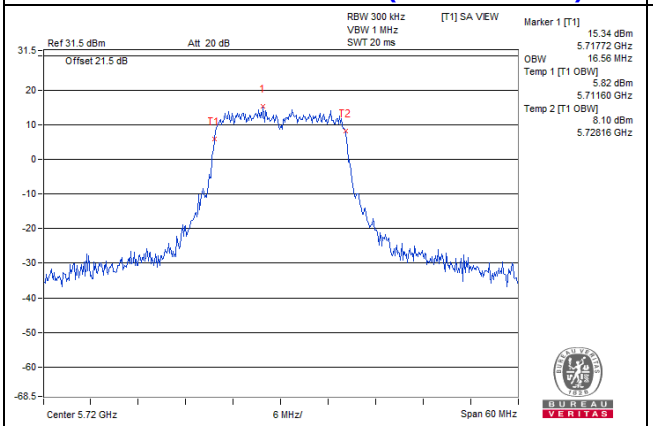
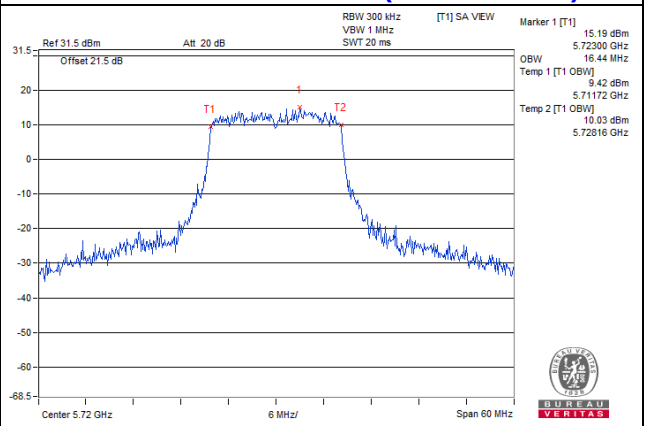
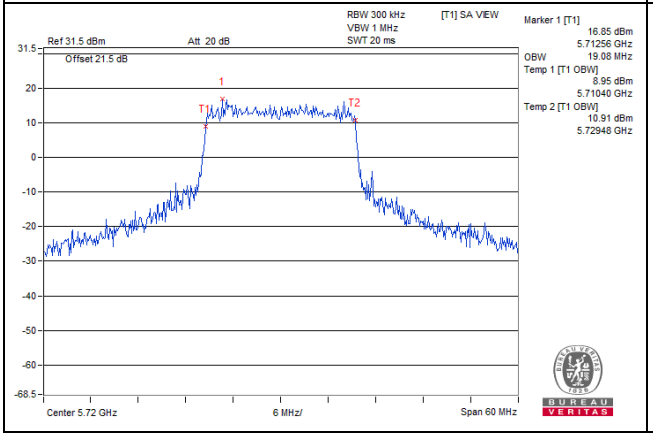
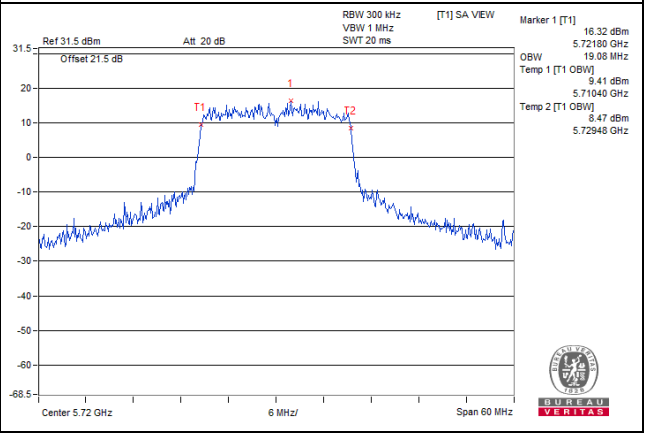
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	38.16	38.16
62	5310	38.16	38.16
102	5510	38.16	38.16
110	5550	37.68	38.16
134	5670	38.4	38.16
142 (U-NII-2C Band)	5710	34.2	34.44
142 (U-NII-3 Band)	5710	4.2	4.2

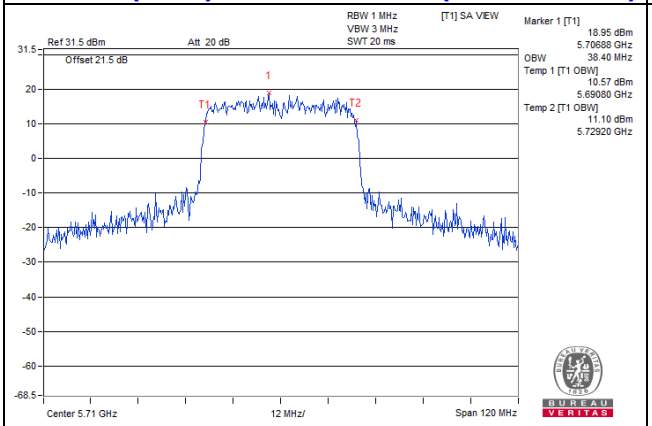
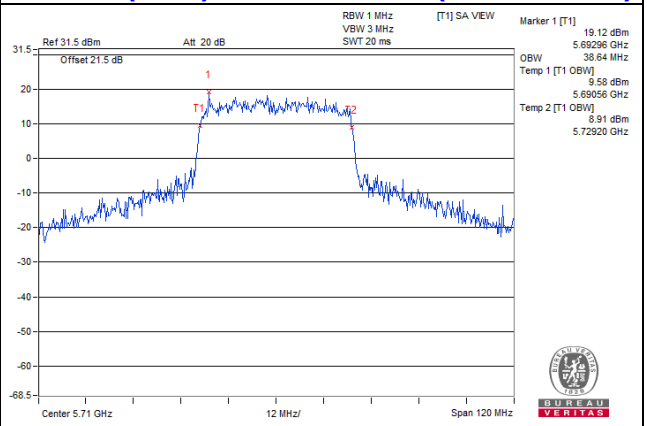
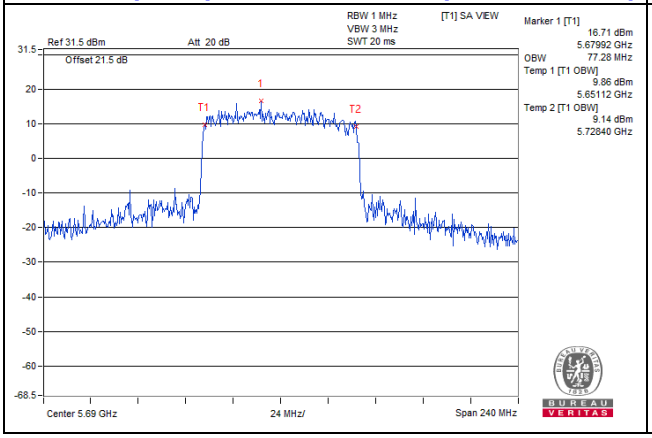
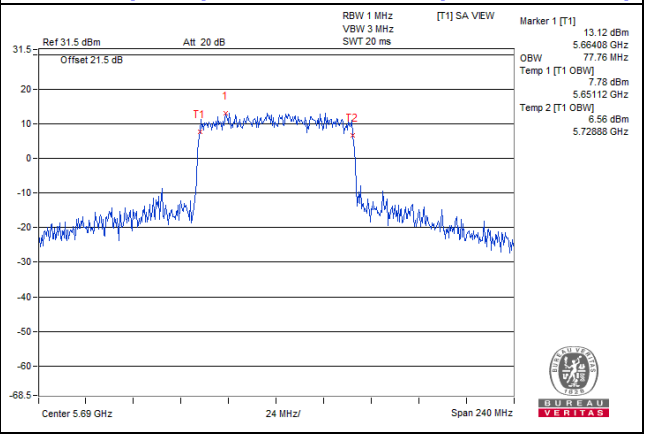
802.11ax (HE80)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	77.28	77.28
106	5530	77.28	76.8
122	5610	77.28	77.28
138 (U-NII-2C Band)	5690	73.88	73.88
138 (U-NII-3 Band)	5690	3.4	3.88

Spectrum Plot of Max. Value	
802.11a_Chain 0 / CH100	**802.11ax (HE20)_Chain 0 / CH60**
	
802.11ax (HE40)_Chain 0 / CH134	**802.11ax (HE80)_Chain 0 / CH58**
	

For channel straddling 5725MHz of OCP99 BW

Spectrum Plot Value of OCP99 BW	
802.11a / Chain0 : CH144 (U-NII-2C Band)	**802.11a / Chain1 : CH144 (U-NII-2C Band)**
	
802.11ax (HE20) / Chain0 : CH144 (U-NII-2C Band)	**802.11ax (HE20) / Chain1 : CH144 (U-NII-2C Band)**
	

Spectrum Plot Value of OCP99 BW	
802.11ax (HE40) / Chain0 : CH142 (U-NII-2C Band)	**802.11ax (HE40) / Chain1 : CH142 (U-NII-2C Band)**
	
802.11ax (HE80) / Chain0 : CH138 (U-NII-2C Band)	**802.11ax (HE80) / Chain1 : CH138 (U-NII-2C Band)**
	

Note:

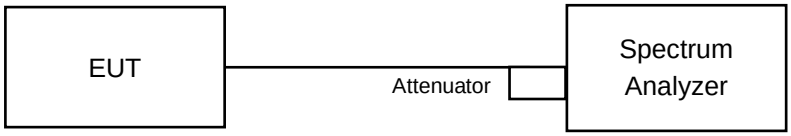
For CH144 (U-NII-2C) = 5725MHz - Temp 1
For CH142 (U-NII-2C) = 5725MHz - Temp 1
For CH138 (U-NII-2C) = 5725MHz - Temp 1
For CH144 (U-NII-3) = Temp 2 - 5725MHz
For CH142 (U-NII-3) = Temp 2 - 5725MHz
For CH138 (U-NII-3) = Temp 2 - 5725MHz

4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

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

Using method SA-2

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

For U-NII-3:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

CDD Mode

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

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
52	5260	6.39	6.71	0.29	9.86	10.07	PASS
60	5300	6.24	6.77	0.29	9.82	10.07	PASS
64	5320	6.05	6.78	0.29	9.73	10.07	PASS
100	5500	4.94	4.06	0.29	7.83	10.07	PASS
116	5580	4.45	4.98	0.29	8.03	10.07	PASS
140	5700	6.72	6.16	0.29	9.75	10.07	PASS
144 (U-NII-2C Band)	5720	6.21	6.16	0.29	9.49	10.07	PASS

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power density limit shall be reduced to 11-(6.93-6) = 10.07 dBm.
3. For U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power density limit shall be reduced to 11-(6.93-6) = 10.07 dBm.
4. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
52	5260	6.35	6.27	0.23	9.55	10.07	PASS
60	5300	6.33	6.33	0.23	9.57	10.07	PASS
64	5320	6.28	6.51	0.23	9.64	10.07	PASS
100	5500	4.75	4.35	0.23	7.80	10.07	PASS
116	5580	3.72	4.23	0.23	7.23	10.07	PASS
140	5700	6.64	5.60	0.23	9.39	10.07	PASS
144 (U-NII-2C Band)	5720	6.46	5.59	0.23	9.29	10.07	PASS

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power density limit shall be reduced to 11-(6.93-6) = 10.07 dBm.
3. For U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi, so the power density limit shall be reduced to 11-(6.93-6) = 10.07 dBm.
4. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

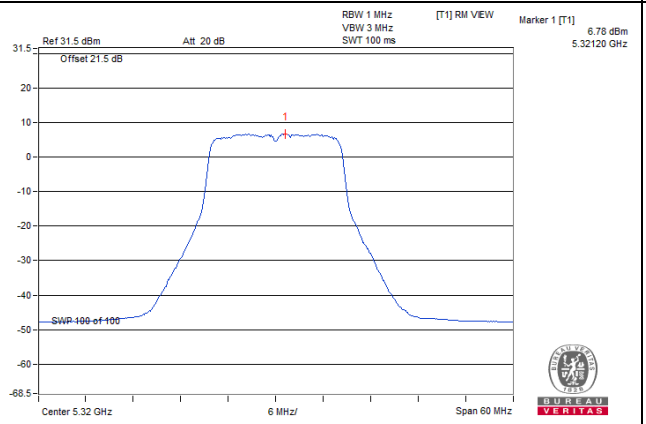
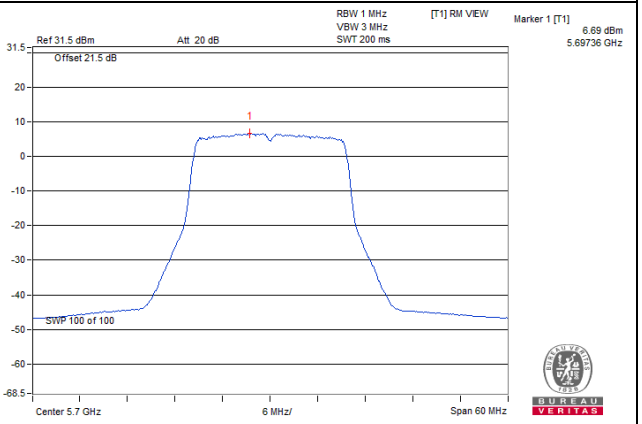
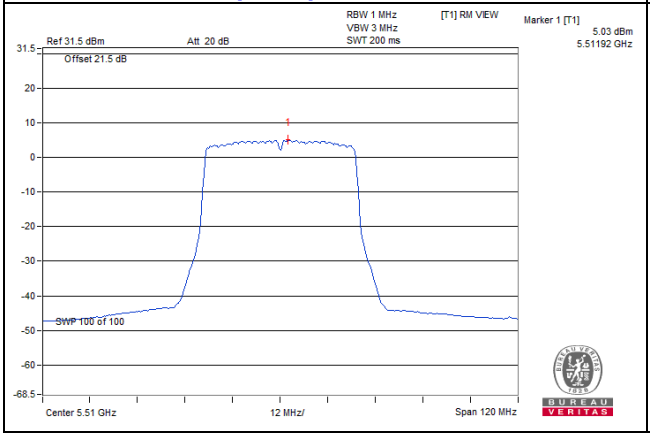
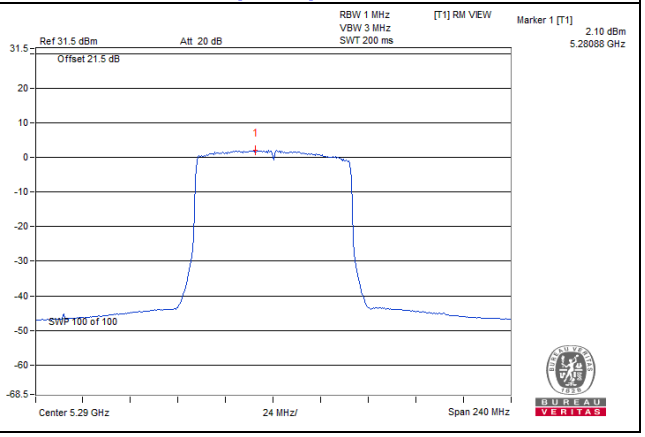
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
54	5270	4.21	4.09	0.20	7.36	10.07	PASS
62	5310	3.77	3.70	0.20	6.95	10.07	PASS
102	5510	5.03	4.06	0.20	7.79	10.07	PASS
110	5550	4.88	4.67	0.20	7.99	10.07	PASS
134	5670	3.94	3.44	0.20	6.91	10.07	PASS
142 (U-NII-2C Band)	5710	3.94	2.88	0.20	6.66	10.07	PASS

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 6.93dBi > 6dBi, so the power density limit shall be reduced to 11-(6.93-6) = 10.07 dBm.
3. For U-NII-2C: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 6.93dBi > 6dBi, so the power density limit shall be reduced to 11-(6.93-6) = 10.07 dBm.
4. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
58	5290	1.96	1.87	0.22	5.14	10.07	PASS
106	5530	1.96	1.32	0.22	4.88	10.07	PASS
122	5610	1.74	1.86	0.22	5.03	10.07	PASS
138 (U-NII-2C Band)	5690	1.35	0.19	0.22	4.03	10.07	PASS

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 6.93dBi > 6dBi, so the power density limit shall be reduced to 11-(6.93-6) = 10.07 dBm.
3. For U-NII-2C: The directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 6.93dBi > 6dBi, so the power density limit shall be reduced to 11-(6.93-6) = 10.07 dBm.
4. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a_Chain 1 / CH64	**802.11ax (HE20)_Chain 0 / CH140**
	
802.11ax (HE40)_Chain 0 / CH102	**802.11ax (HE80)_Chain 0 / CH58**
	

For U-NII-3:

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain0	Chain1					
144 (U-NII-3 Band)	5720	-2.37	-2.53	0.29	0.85	3.07	29.07	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi , so the power limit shall be reduced to 30-(6.93-6) = 29.07dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain0	Chain1					
144 (U-NII-3 Band)	5720	-2.82	-3.41	0.23	0.14	2.36	29.07	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi , so the power limit shall be reduced to 30-(6.93-6) = 29.07dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

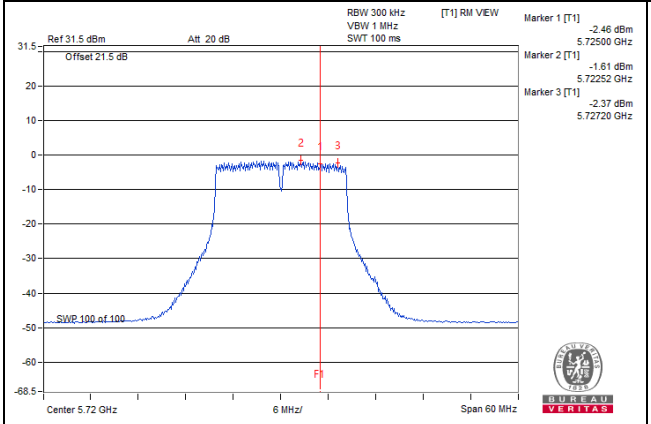
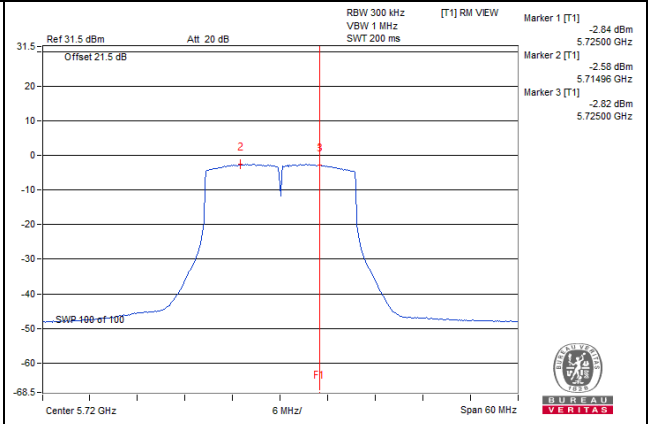
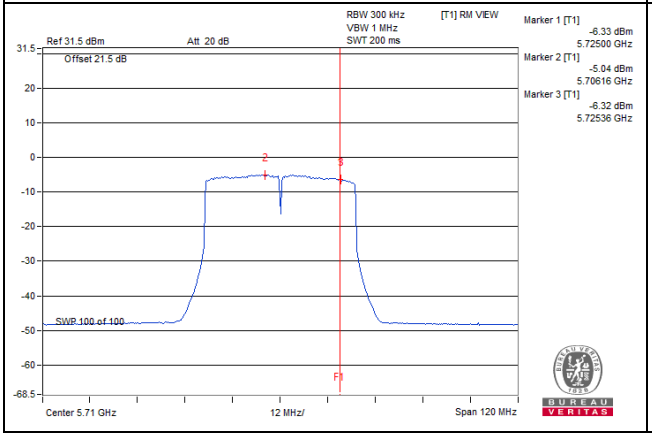
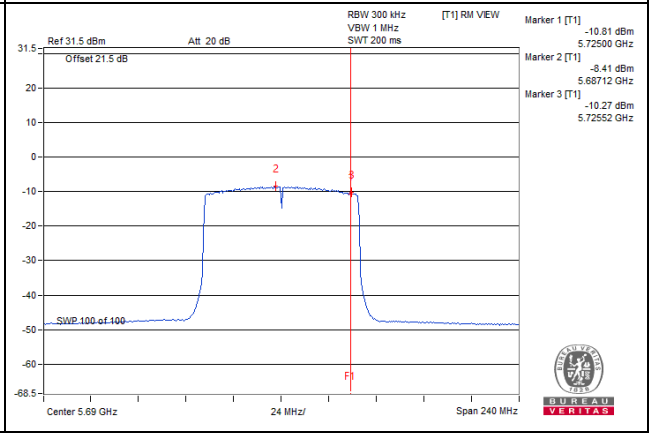
Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain0	Chain1					
142 (U-NII-3 Band)	5710	-6.32	-6.75	0.20	-3.32	-1.10	29.07	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi , so the power limit shall be reduced to 30-(6.93-6) = 29.07dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain0	Chain1					
138 (U-NII-3 Band)	5690	-10.47	-10.27	0.22	-7.14	-4.92	29.07	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.93dBi > 6dBi , so the power limit shall be reduced to 30-(6.93-6) = 29.07dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

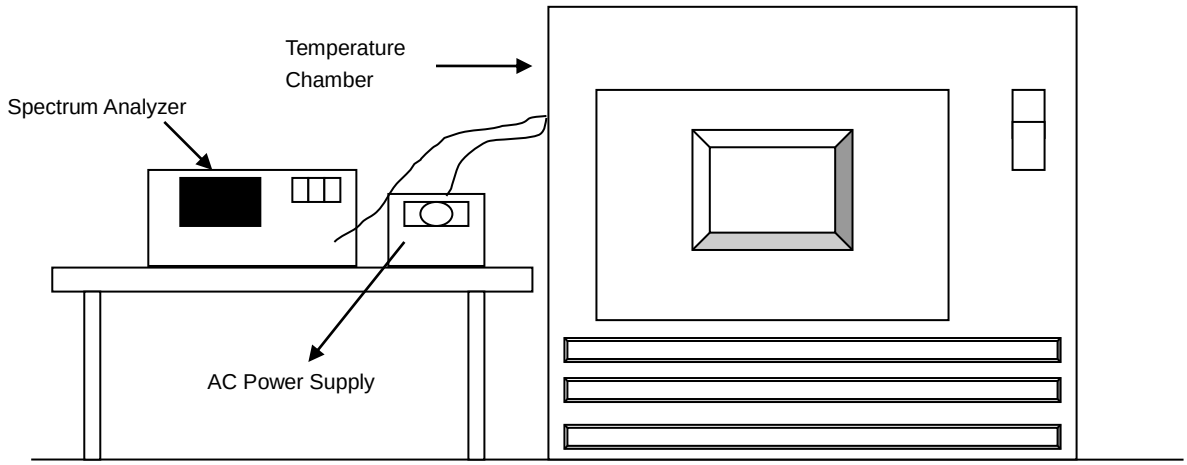
Spectrum Plot of Worst Value	
802.11a_Chain 0 / CH144 (U-NII-3 Band)	**802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)**
	
802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)	**802.11ax (HE80)_Chain 1 / CH138 (U-NII-3 Band)**
	

4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

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 until measurements down to the lowest specified temperature have been completed.

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: 5260 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
40	120	5260.0063	PASS	5260.008	PASS	5260.006	PASS	5260.0063	PASS
30	120	5259.9928	PASS	5259.9902	PASS	5259.993	PASS	5259.9939	PASS
20	120	5259.9761	PASS	5259.9764	PASS	5259.9756	PASS	5259.9786	PASS
10	120	5259.9907	PASS	5259.989	PASS	5259.9899	PASS	5259.9918	PASS
0	120	5260.02	PASS	5260.0201	PASS	5260.0206	PASS	5260.0205	PASS

Frequency Stability Versus Voltage									
Operating Frequency: 5260 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5259.9762	PASS	5259.9772	PASS	5259.9752	PASS	5259.9779	PASS
	120	5259.9761	PASS	5259.9764	PASS	5259.9756	PASS	5259.9786	PASS
	102	5259.9756	PASS	5259.9763	PASS	5259.9747	PASS	5259.9785	PASS

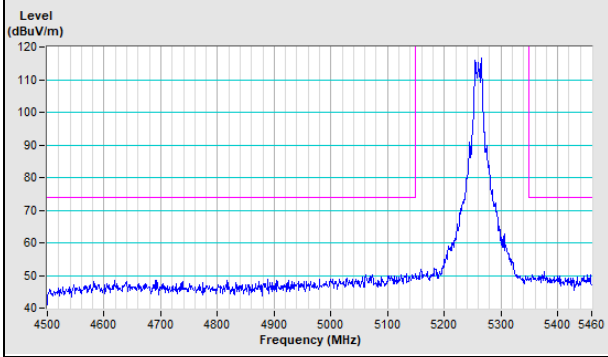
5 Pictures of Test Arrangements

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

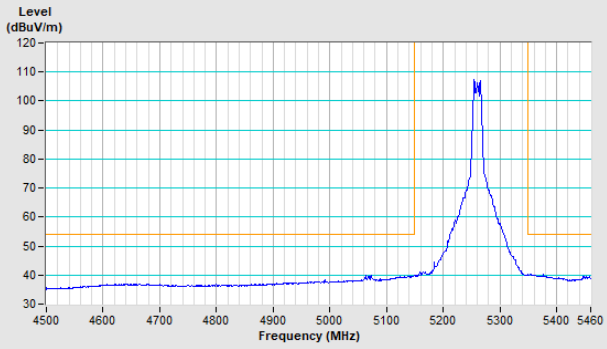
Annex A - Band-Edge Measurement (For U-NII-2A, U-NII-2C band)

802.11a Channel 52

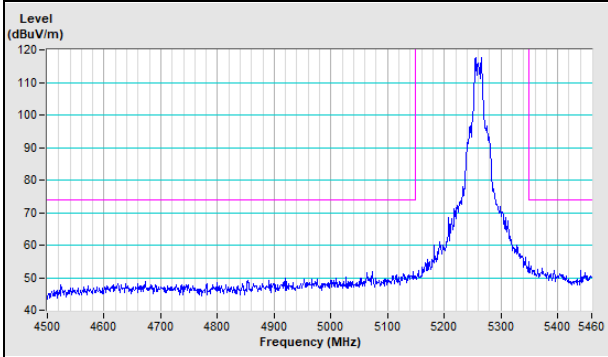
Horizontal (Peak)



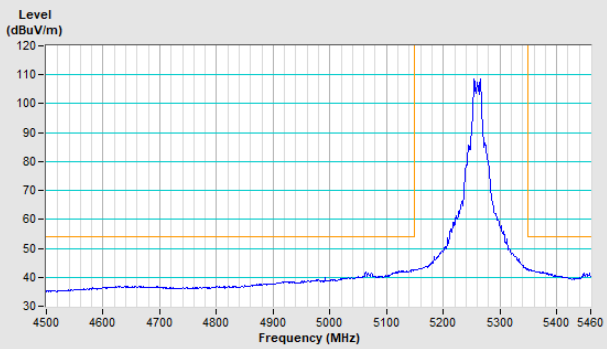
Horizontal (Average)



Vertical (Peak)

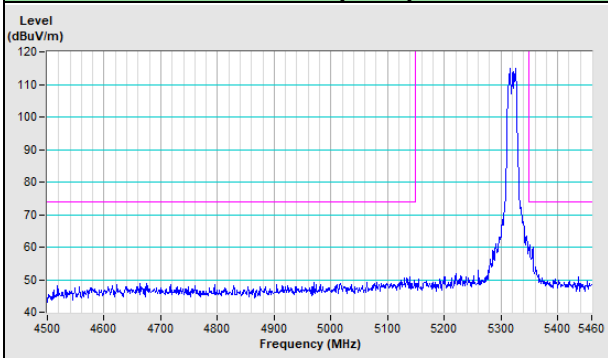


Vertical (Average)

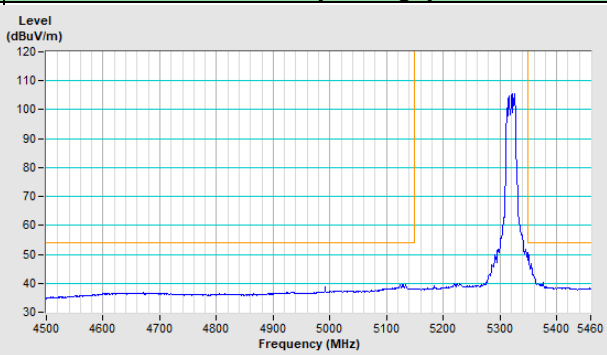


802.11a Channel 64

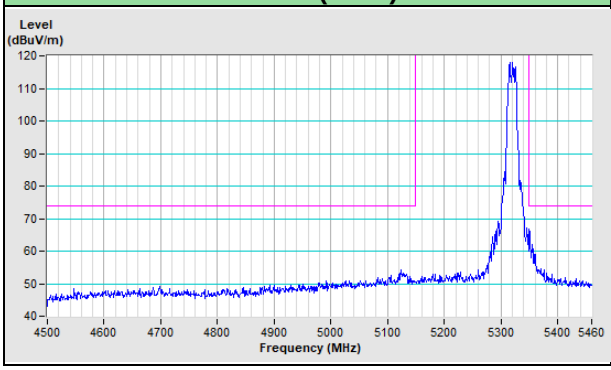
Horizontal (Peak)



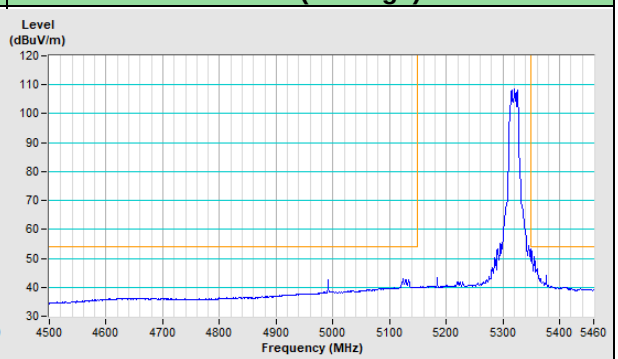
Horizontal (Average)

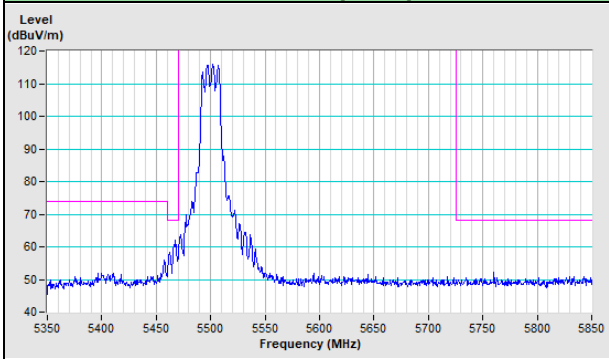
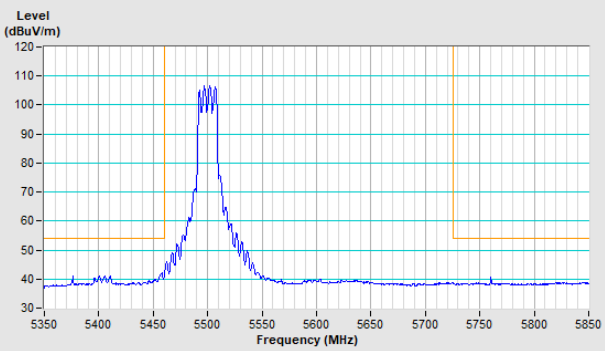
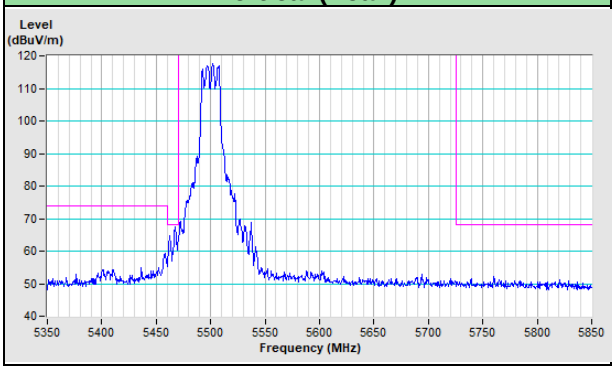
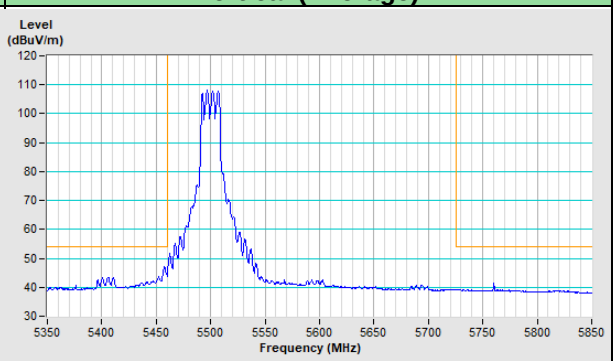


Vertical (Peak)



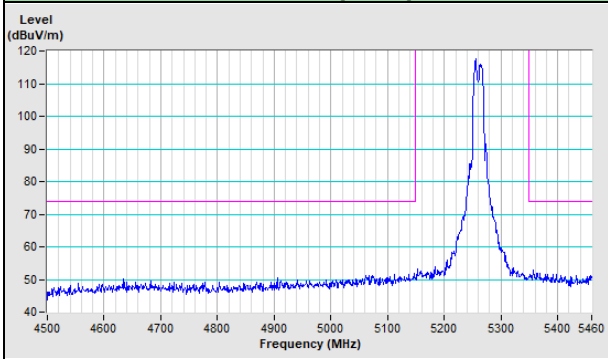
Vertical (Average)



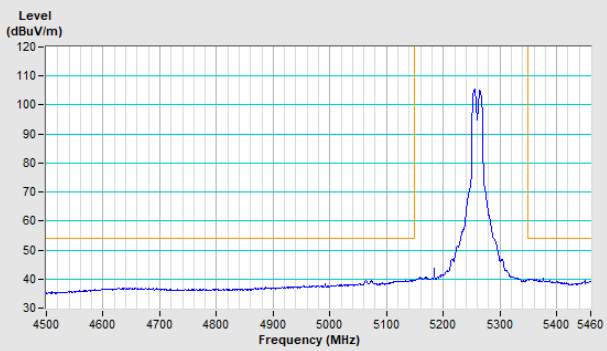
802.11a Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE20) Channel 52

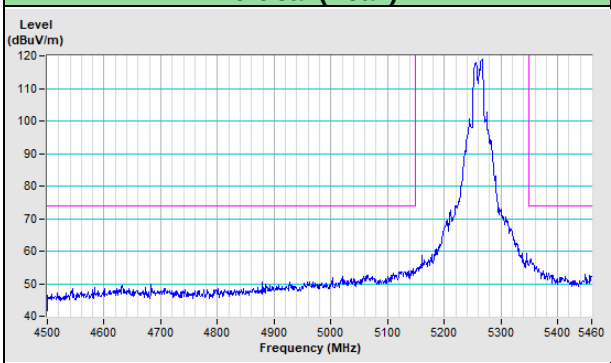
Horizontal (Peak)



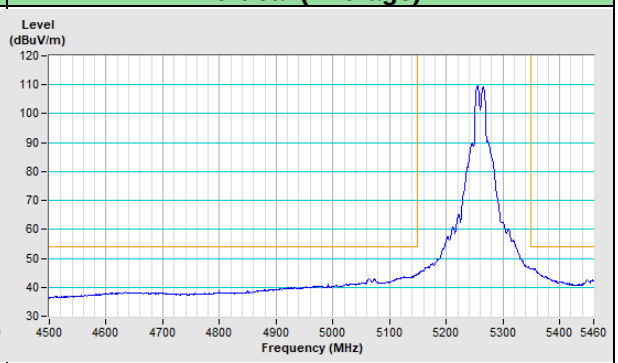
Horizontal (Average)



Vertical (Peak)

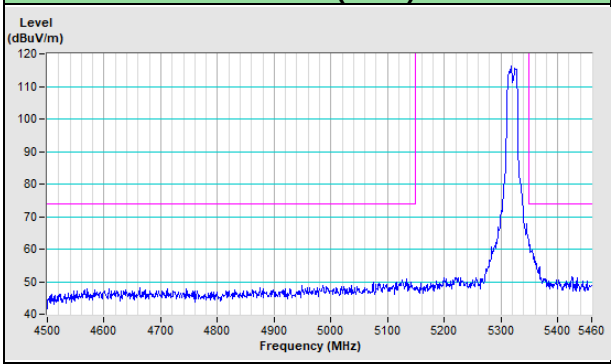


Vertical (Average)

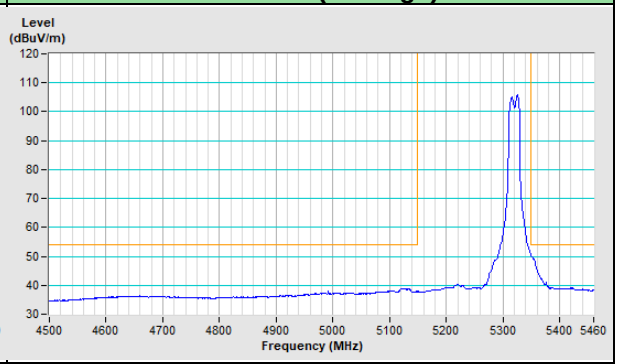


802.11ax (HE20) Channel 64

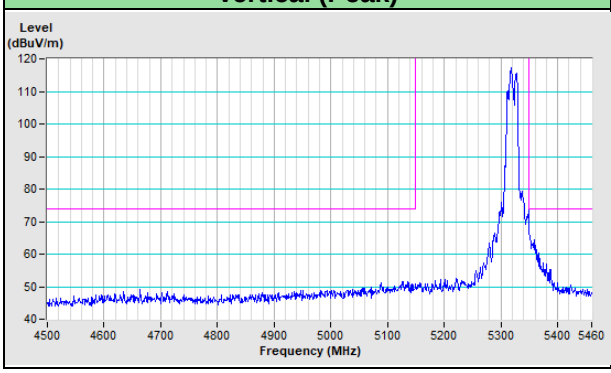
Horizontal (Peak)



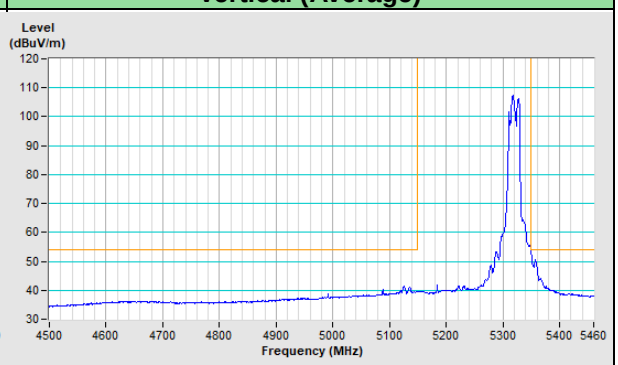
Horizontal (Average)

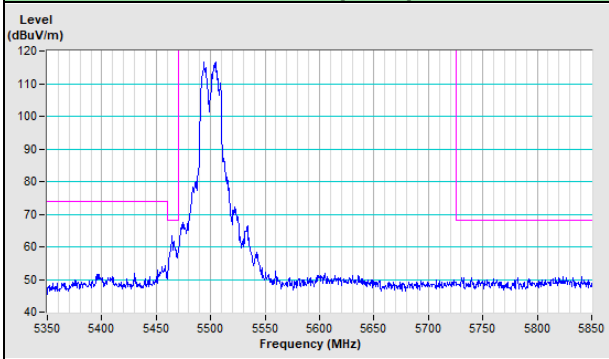
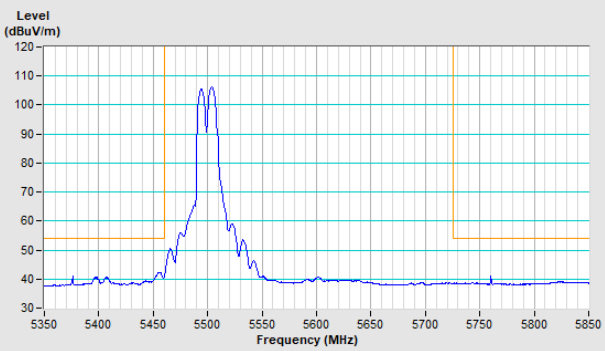
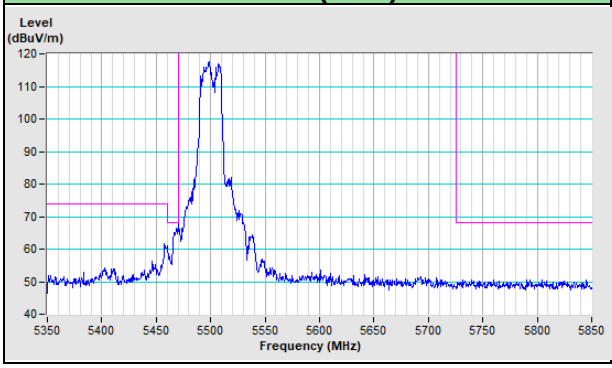
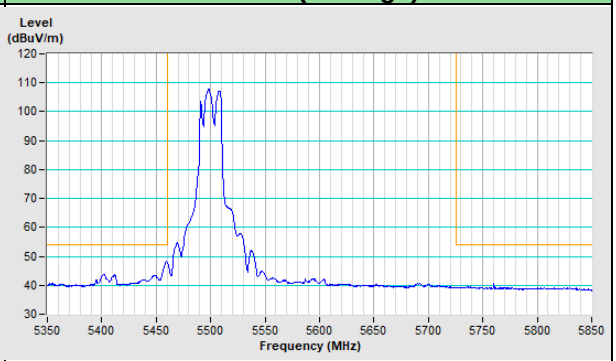


Vertical (Peak)



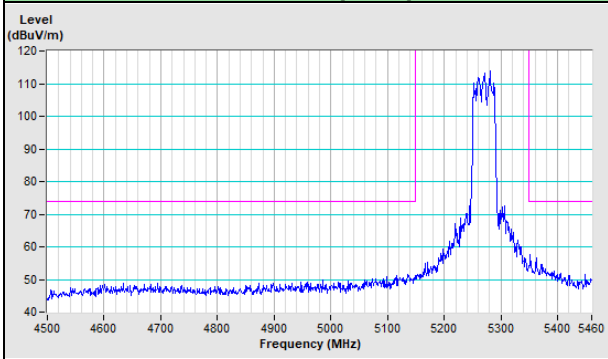
Vertical (Average)



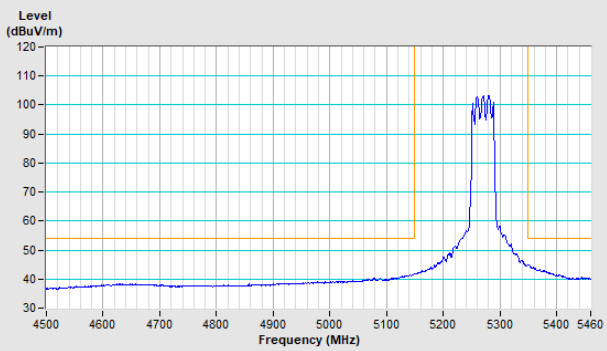
802.11ax (HE20) Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE40) Channel 54

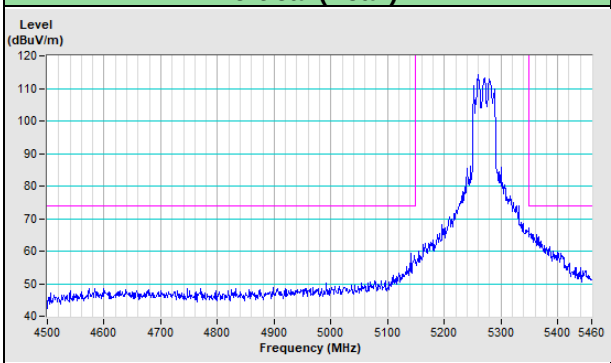
Horizontal (Peak)



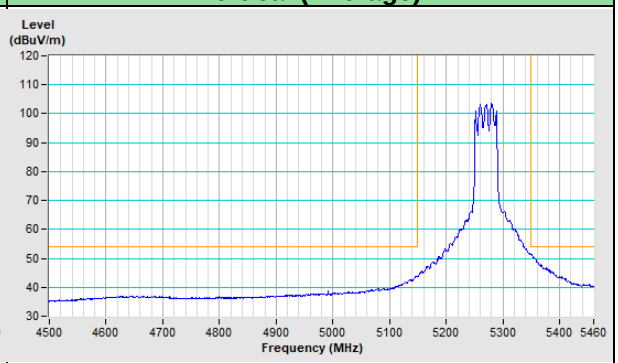
Horizontal (Average)



Vertical (Peak)

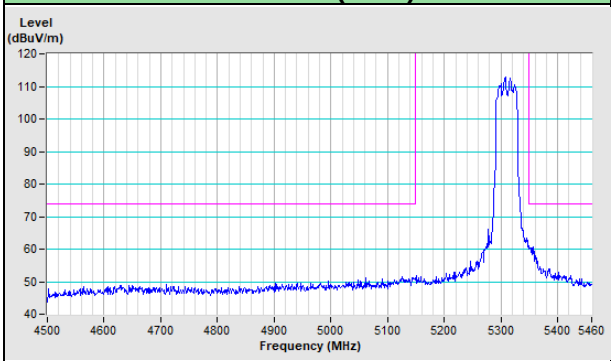


Vertical (Average)

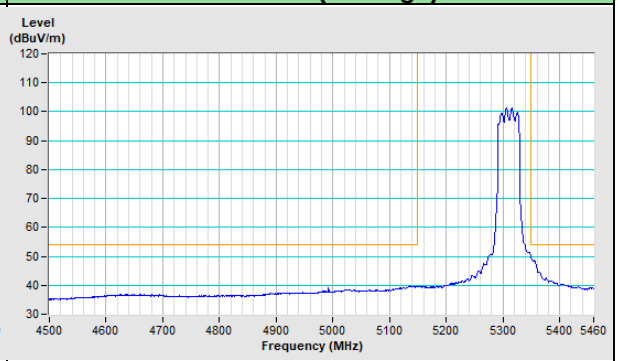


802.11ax (HE40) Channel 62

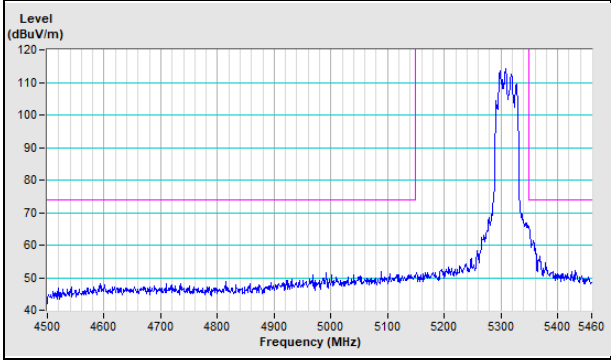
Horizontal (Peak)



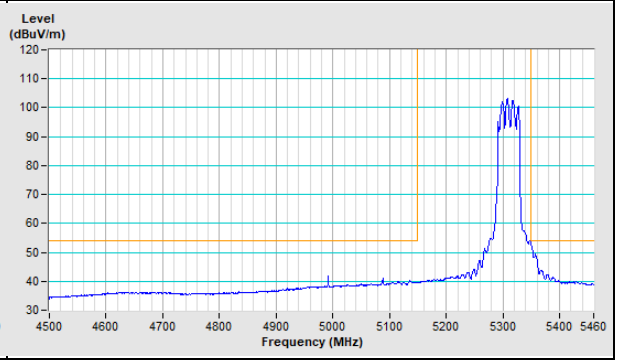
Horizontal (Average)

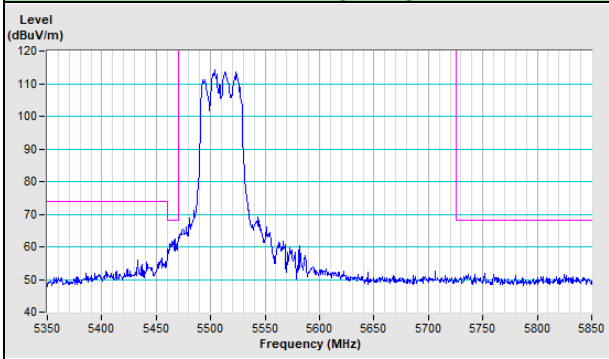
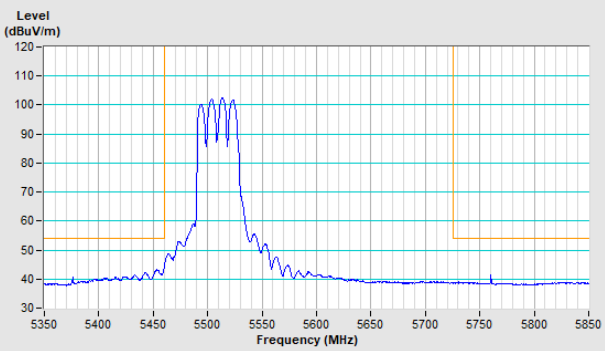
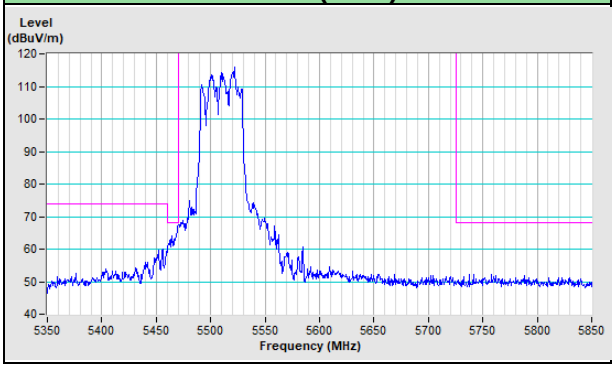
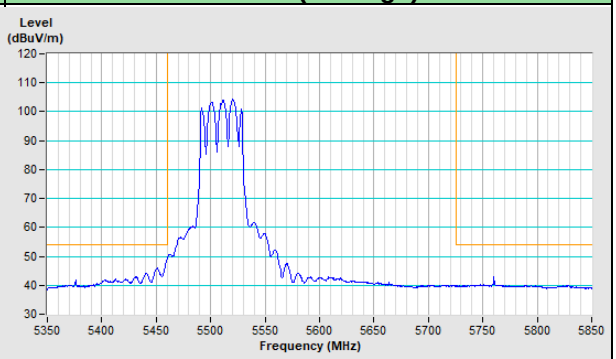


Vertical (Peak)



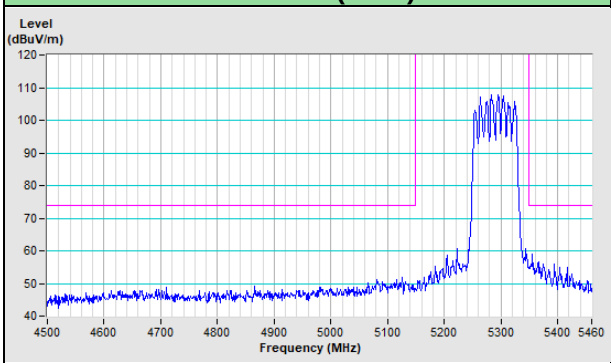
Vertical (Average)



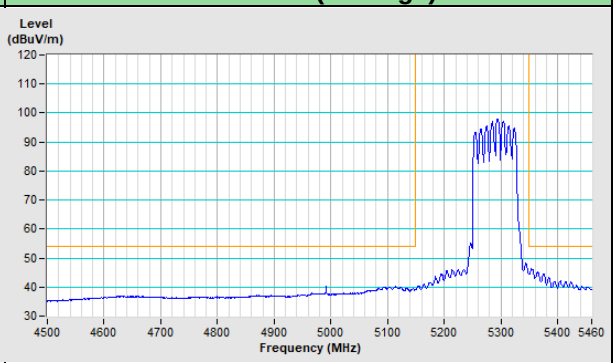
802.11ax (HE40) Channel 102	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE80) Channel 58

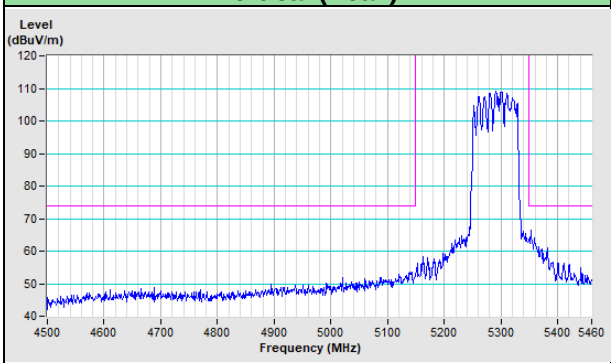
Horizontal (Peak)



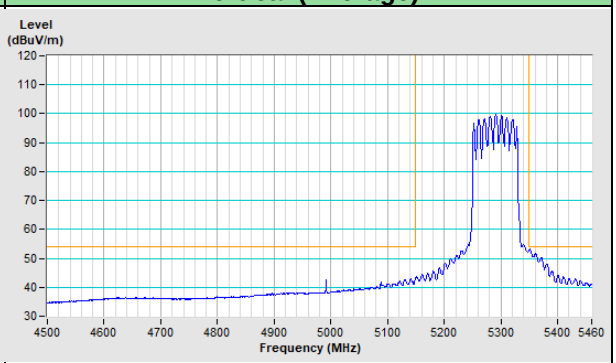
Horizontal (Average)



Vertical (Peak)

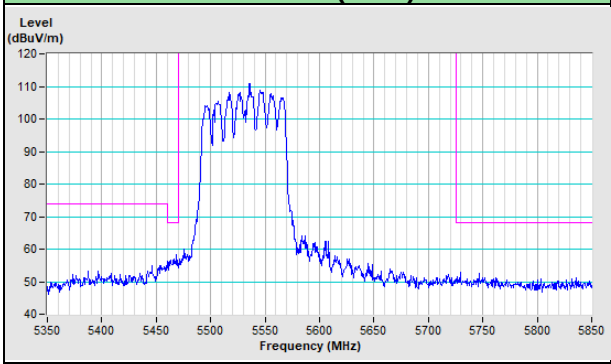


Vertical (Average)

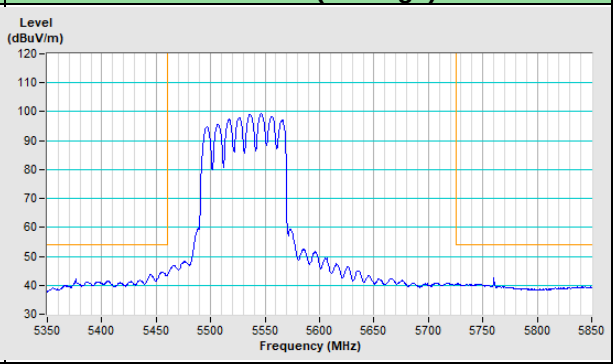


802.11ax (HE80) Channel 106

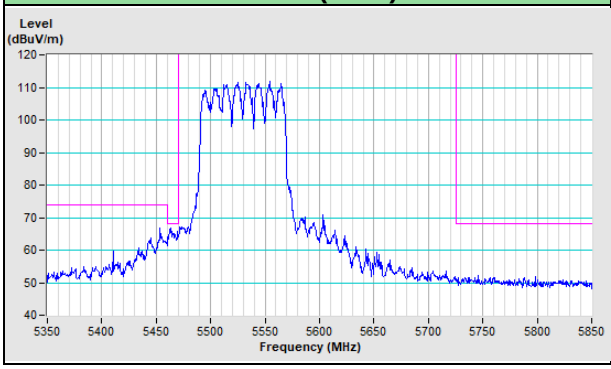
Horizontal (Peak)



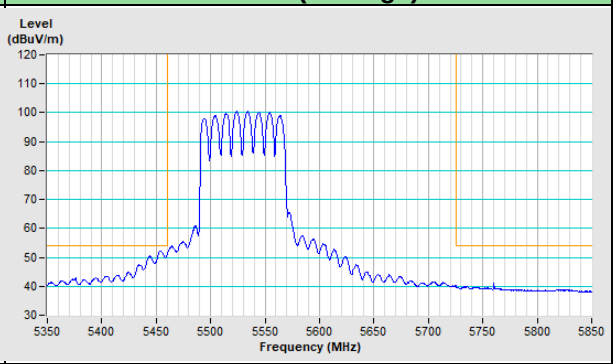
Horizontal (Average)



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 according to ISO/IEC 17025.

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

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Web Site: www.bureauveritas-adt.com

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

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