FCC Test Report

Report No.:	RFBDYS-WTW-P21030719A
FCC ID:	2AKCZ-107
Test Model:	APL67-107
Received Date:	Mar. 26, 2021
Test Date:	Apr. 09 ~ Jun. 28, 2021
Issued Date:	Feb. 15, 2023
Applicant:	SonicWall Inc.
Address:	1033 McCarthy Blvd., Milpitas, CA 95035, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RFBDYS-WTW-P21030719A	Original release.	Feb. 15, 2023

1 Certificate of Conformity

Product: Wireless Access Point

Brand: SONICWALL

Test Model: APL67-107

Sample Status: Engineering sample

Applicant: SonicWall Inc.

Test Date: Apr. 09 ~ Jun. 28, 2021

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

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

Prepared by : Polly Chien , **Date:** Feb. 15, 2023

Polly Chien / Specialist

Approved by : Jeremy Lin , **Date:** Feb. 15, 2023

Jeremy Lin / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(9)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -7.31dB at 0.50972MHz.
15.407(b) (1/2/3/4(i/ii)/9)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5350.00MHz, 5370.00MHz & 5470.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector are I-PEX not a standard connector.

Note:
1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. For U-NII-1, 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.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.86 dB
	200MHz ~1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless Access Point
Brand	SONICWALL
Test Model	APL67-107
Sample Status	Engineering sample
Power Supply Rating	12Vdc from Adapter 48-56Vdc from POE
Modulation Type	802.11a: BPSK, QPSK, 16QAM, 64QAM 802.11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM 802.11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n (HT20/40): up to 600Mbps 802.11ac (VHT20/40/80): up to 1733.3Mbps 802.11ax: up to 2402Mbps
Operating Frequency	5260 ~ 5320MHz, 5500 ~ 5720MHz
Number of Channel	5G traffic radio (Radio 1): 5170 ~ 5300MHz: 802.11ac (VHT80+VHT80), 802.11ax (HE80+HE80): 1 5260 ~ 5320MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 4 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 5500 ~ 5720MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 12 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 6 802.11ac (VHT80), 802.11ax (HE80): 3 802.11ac (VHT80+VHT80), 802.11ax (HE80+HE80): 1
Output Power	5G traffic radio (Radio 1): CDD Mode: 5260~5320MHz: 141.212mW 5500~5720MHz: 203.148mW Beamforming Mode: 5260~5320MHz: 88.282mW 5500~5720MHz: 90.326mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	BRACKET T-BAR IAP LFP
Cable Supplied	NA

Note:

1. This report is prepared for FCC class II permissive change. The difference compared with the original report (BV CPS report no.: RFBDYS-WTW-P21030719-1) is adding 5.26GHz to 5.32GHz, 5.50GHz to 5.70GHz and 5180~5240MHz [802ac (VHT80+VHT80), 802.11ax (HE80+HE80)] mode by software.
2. The EUT incorporates a MIMO function. Physically, the EUT provides 4 completed transmitters and 4 receivers.

Radio	Modulation Mode	Beamforming Mode	TX Function
5G traffic radio (Radio 1)	802.11a	Not Support	4TX
	802.11n (HT20)	Support	4TX
	802.11n (HT40)	Support	4TX
	802.11ac (VHT20)	Support	4TX
	802.11ac (VHT40)	Support	4TX
	802.11ac (VHT80)	Support	4TX
	802.11ac (VHT80+80)	Support	2TX+2TX
	802.11ax (HE20)	Support	4TX
	802.11ax (HE40)	Support	4TX
	802.11ax (HE80)	Support	4TX
	802.11ax (HE80+80)	Support	2TX+2TX

* The bandwidth and modulation are similar for HT20/HT40 on 802.11n mode and VHT20/VHT40/VHT80/VHT80+80 on 802.11ac mode and HE20/HE40/HE80/HE80+80 on 802.11ax mode. Therefore the investigated worst case is the representative mode in test report. (Final test mode refer section 3.2.1)

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

3. The EUT consumes power from the following adapter and PoE.

Adapter (Support unit only)	
Brand	Sunny
Model	SYS1546-3612-T3
Input Power	100-240Vac, 1.5A MAX, 50-60Hz
Output Power	12Vdc, 3.0A
Power cord	Non-shielded AC (1.77m) Non-shielded DC (1.86m) with one core

POE (Support unit only)	
Brand	EnGenius
Model	EPA5006GAT
Input Power	100-240Vac, 0.8A, 50-60Hz
Output Power	48-56Vdc, 0.6A
Power cord	Non-shielded AC (0.5m)

4. The following antennas were provided to the EUT.

Antenna Type	PIFA					
Antenna Connector	I-PEX					
Antenna No.	Gain (dBi)					
	2400MHz	2450MHz	2500MHz	5150MHz	5500MHz	5850MHz
2G1	3.34	3.54	3.44	-	-	-
2G2	3.51	4.29	4.46	-	-	-
2G3	2.71	2.94	2.96	-	-	-
2G4	2.64	3.69	3.86	-	-	-
5G1	-	-	-	4.94	4.03	4.33
5G2	-	-	-	4.24	3.68	3.66
5G3	-	-	-	3.65	4.82	4.28
5G4	-	-	-	4.44	5.01	5.74
Scan	3.98	2.98	2.74	4.95	3.32	3.79
BLE	3.56	3.13	3.02	-	-	-

*Detail antenna specification please refer to antenna datasheet and/an antenna gain measurement report.

5. The simultaneous operation mode was determined by client.

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

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

*2GHz traffic radio (Radio 2) and 2GHz Scanning radio (Radio 3) cannot transmit at same time.

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

3.2 Description of Test Modes

5170~5300MHz:

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

Channel	Frequency
42+58	5210MHz+5290MHz

5260~5320MHz:

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

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

Channel	Frequency
58	5290MHz

5500~5700MHz:

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		

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

Channel	Frequency
106+122	5530 MHz+5610 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	EUT power from adapter
B	-	√	√	-	EUT power from PoE

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

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

Note:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
2. For radiated emission (below 1GHz) and power line conducted emission test items chosen the worst maximum power mode.
3. "-"means no effect.

Radiated Emission Test (Above 1GHz):

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

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0	Radio 1
	802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	MCS0	
	802.11ax (HE40)		54 to 62	54, 62	OFDMA	MCS0	
	802.11ax (HE80)		58	58	OFDMA	MCS0	
	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDMA	6.0	
	802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	MCS0	
	802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	MCS0	
	802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	MCS0	
	802.11ax (HE80+80)	5170-5300 5500-5720	42+58	42+58	OFDMA	MCS0	
			106+122	106+122	OFDMA	MCS0	

Radiated Emission Test (Below 1GHz):

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

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
A, B	802.11ax (HE80	5500-5720	106 to 138	122	OFDMA	MCS0	Radio 1

Power Line Conducted Emission Test:

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

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
A, B	802.11ax (HE80	5500-5720	106 to 138	122	OFDMA	MCS0	Radio 1

Antenna Port Conducted Measurement:

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

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

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0	Radio 1
	802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	MCS0	
	802.11ax (HE40)		54 to 62	54, 62	OFDMA	MCS0	
	802.11ax (HE80)		58	58	OFDMA	MCS0	
	802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDMA	6.0	
	802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	MCS0	
	802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	MCS0	
	802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	MCS0	
	802.11ax (HE80+80)	5170-5300 5500-5720	42+58	42+58	OFDMA	MCS0	
			106+122	106+122	OFDMA	MCS0	

*802.11n (VHT20), 802.11n (VHT40), 802.11n (VHT80), 802.11n (VHT80+80) are for Conducted Output Power Measurement only.

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	23 deg. C, 66% RH	120Vac, 60Hz	Edison Lee, Adair Peng
RE<1G	23 deg. C, 66% RH	120Vac, 60Hz 54Vdc	Titan Hsu
PLC	24 deg. C, 69% RH	120Vac, 60Hz 54Vdc	Adair Peng
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Jisyong Wang

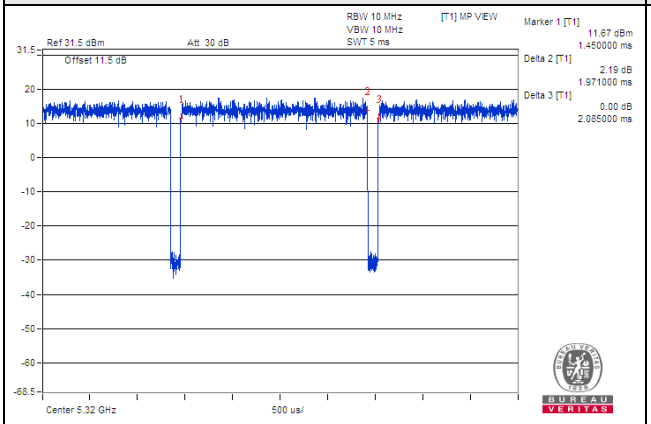
3.3 Duty Cycle of Test Signal

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

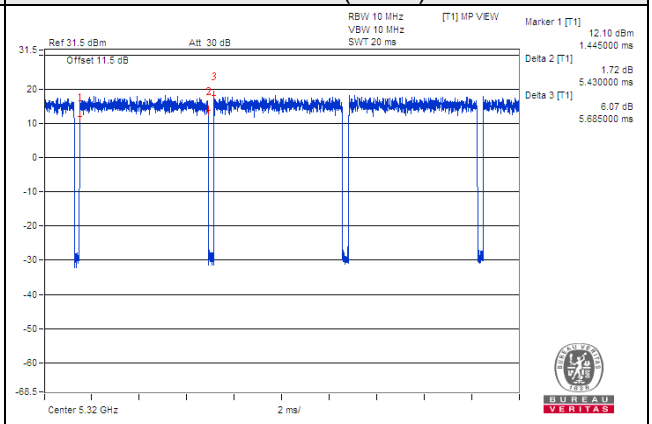
5G traffic radio (Radio 1)

802.11a: Duty cycle = 1.971/2.085 = 0.945, Duty factor = 10 * log (1/0.945) = 0.24
802.11ax (HE20): Duty cycle = 5.430/5.685 = 0.955, Duty factor = 10 * log (1/0.955) = 0.20
802.11ax (HE40): Duty cycle = 5.410/5.710 = 0.947, Duty factor = 10 * log (1/0.933) = 0.23
802.11ax (HE80): Duty cycle = 5.420/5.710 = 0.949, Duty factor = 10 * log (1/0.949) = 0.23

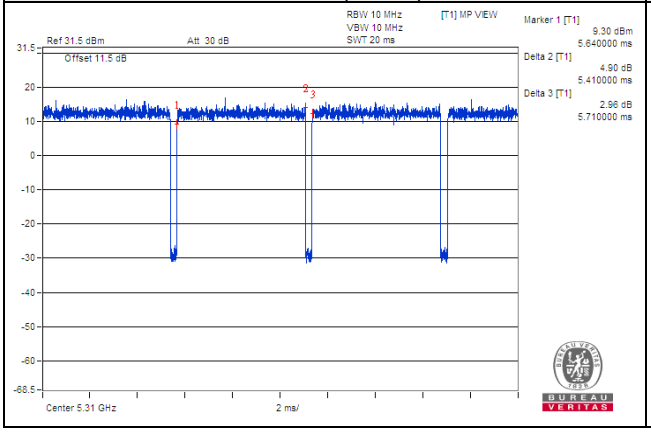
802.11a



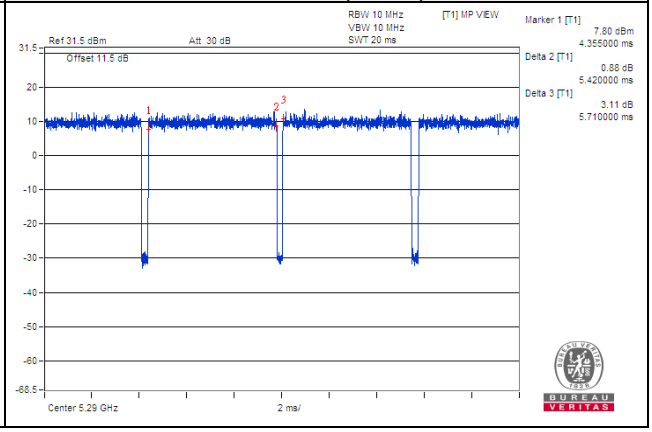
802.11ax (HE20)



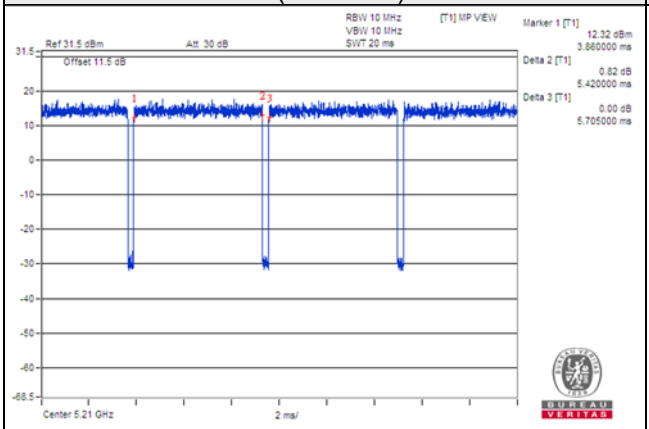
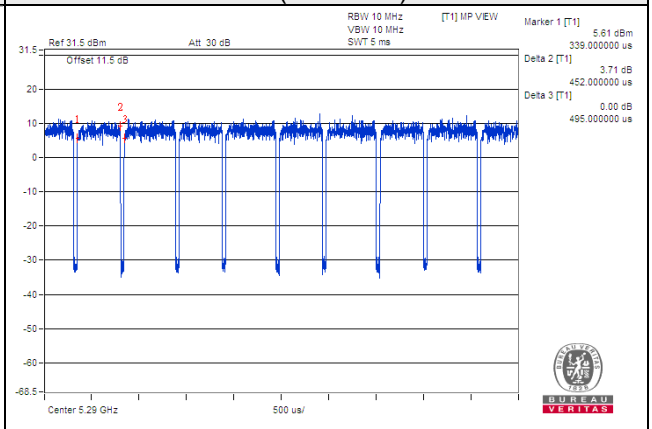
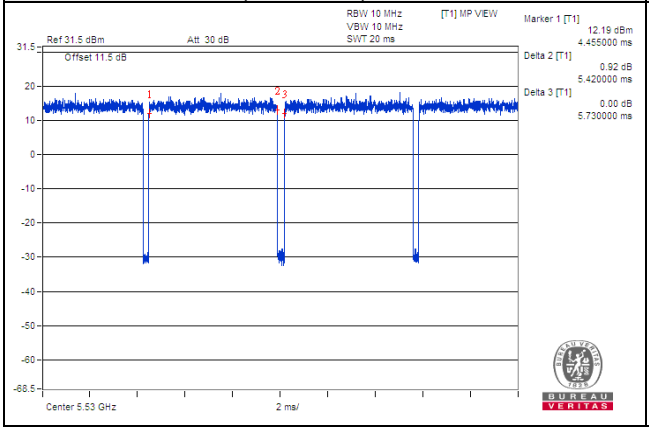
802.11ax (HE40)



802.11ax (HE80)



802.11ax (HE80+80): CH 42: Duty cycle = 5.420/5.705 = 0.950, Duty factor = 10 * log (1/0.950) = 0.22
802.11ax (HE80+80): CH 58: Duty cycle = 0.452/0.495 = 0.913, Duty factor = 10 * log (1/0.913) = 0.39
802.11ax (HE80+80): CH 106, 122: Duty cycle = 5.420/5.730 = 0.946, Duty factor = 10 * log (1/0.946) = 0.24

802.11ax (HE80+80):CH 42	802.11ax (HE80+80):CH 58
	
802.11ax (HE80+80):CH 106, 122	
	

3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved	-
B.	Adapter	Sunny	SYS1546-3612-T3	NA	NA	Provided by client
C.	POE	SENAO	EPA5006GAT	NA	NA	Provided by client
D.	Flash	HP	v250W	NA	NA	-

Note:

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

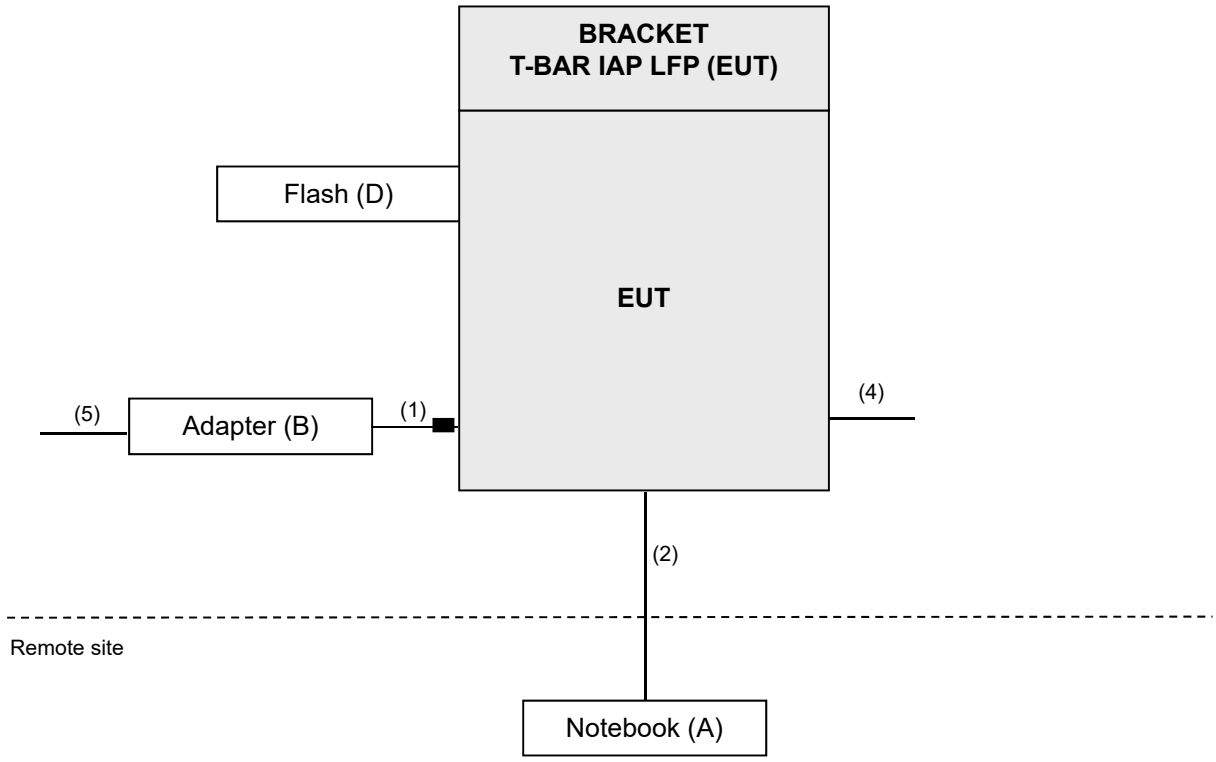
ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Power cable	1	1.86	N	1	Provided by client
2.	LAN	1	7.0	N	0	RJ45, Cat5e
3.	LAN	1	1.5	N	0	RJ45, Cat5e
4.	Console	1	1.5	N	0	-
5.	AC Power cable	1	1.77	N	0	Provided by client
6.	AC Power cable	1	0.5	N	0	Provided by client

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

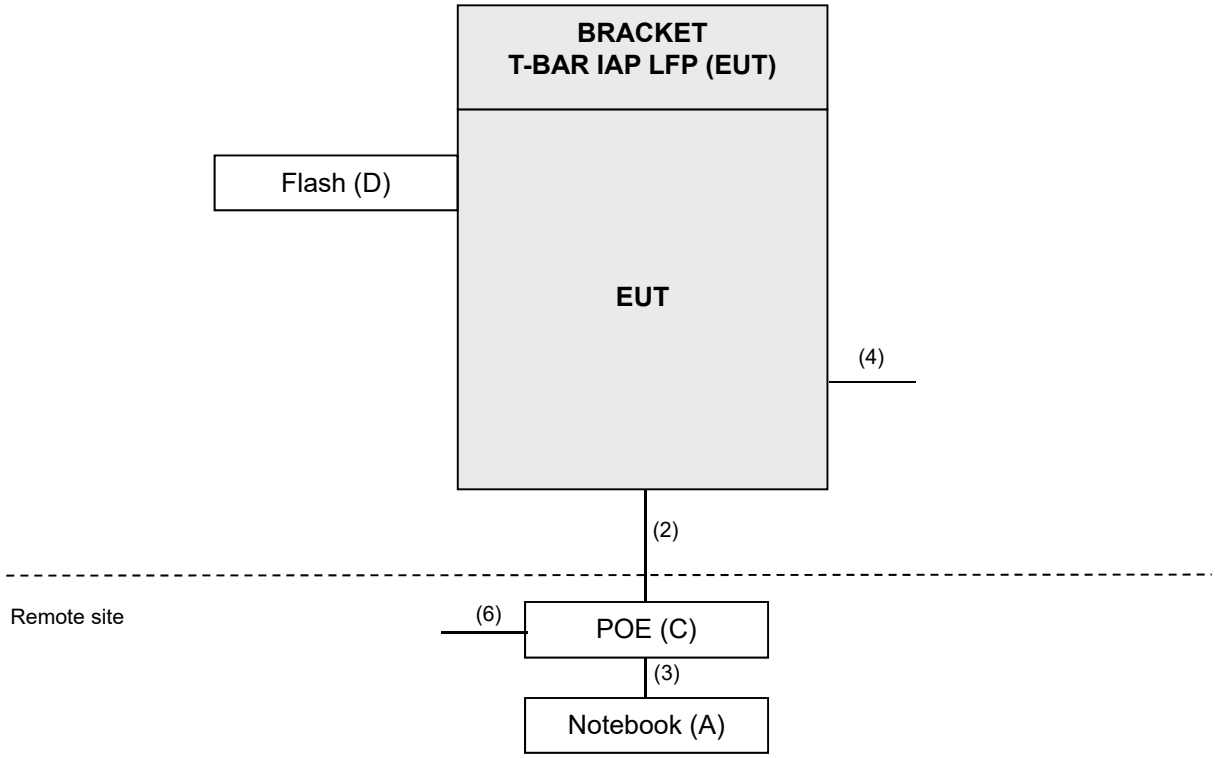
3.4.1 Configuration of System under Test

3.4.2 Configuration of System under Test

Test Mode A



Test Mode B



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.

KDB 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

<table>
<tr><td colspan="3">Applicable To</td><td colspan="2">Limit</td></tr>
<tr><td colspan="3" rowspan="2">789033 D02 General UNII Test Procedure New Rules v02r01</td><td colspan="2">Field Strength at 3m</td></tr>
<tr><td>PK: 74 (dBμV/m)</td><td>AV: 54 (dBμV/m)</td></tr>
<tr><td>Frequency Band</td><td colspan="2">Applicable To</td><td>EIRP Limit</td><td>Equivalent Field Strength at 3m</td></tr>
<tr><td>5150~5250 MHz</td><td colspan="2">15.407(b)(1)</td><td rowspan="3">PK: -27 (dBm/MHz)</td><td rowspan="3">PK: 68.2(dBμV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td colspan="2">15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td colspan="2">15.407(b)(3)</td></tr>
<tr><td>5725~5850 MHz</td><td>☒</td><td>15.407(b)(4)(i)</td><td>PK: -27 (dBm/MHz) *1
PK: 10 (dBm/MHz) *2
PK: 15.6 (dBm/MHz) *3
PK: 27 (dBm/MHz) *4</td><td>PK: 68.2(dBμV/m) *1
PK: 105.2 (dBμV/m) *2
PK: 110.8(dBμV/m) *3
PK: 122.2 (dBμV/m) *4</td></tr>
<tr><td colspan="5">*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.</td></tr>
</table>

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102579	Jul. 07, 2020	Jul. 06, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jun. 09, 2020	Jun. 08, 2021
			Jun. 07, 2021	Jun. 06, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 04, 2020	Nov. 03, 2021
HORN Antenna SCHWARZBECK	9120D	209	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 22, 2020	Nov. 21, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 06, 2020	Jul. 05, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 16, 2020	Aug. 15, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Mar. 22, 2021	Mar. 21, 2022
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH3-01	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM- SM-8000	Cable-CH3-03 (309224+170907)	Aug. 16, 2020	Aug. 15, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY5519 0004/MY55190007/MY 55210005	Jul. 13, 2020	Jul. 12, 2021
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Sep. 04, 2020	Sep. 03, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	10115	Feb. 03, 2021	Feb. 02, 2022

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

4.1.3 Test Procedures

For Radiated emission below 30MHz

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

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

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

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

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

Note:

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

For Radiated emission above 30MHz

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

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

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

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

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

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

Note:

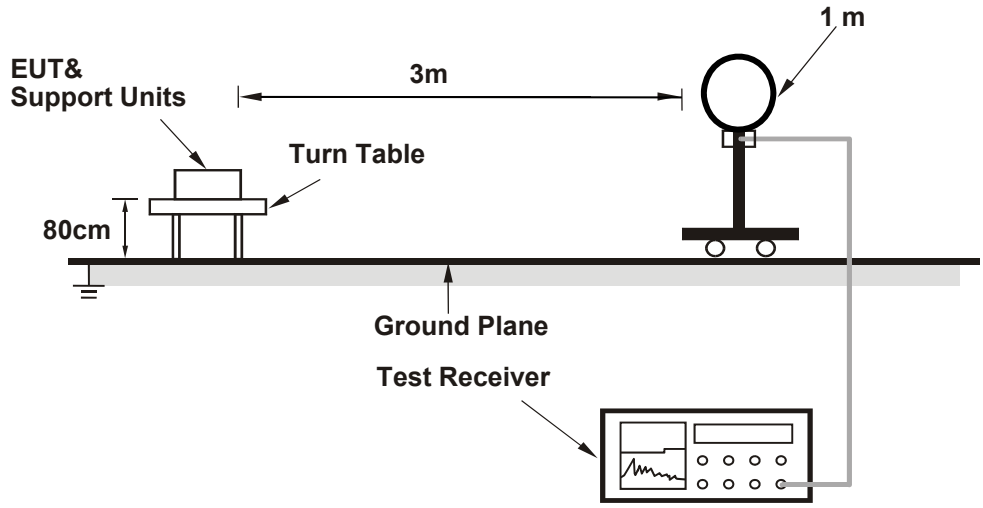
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
   5G traffic radio (Radio 1)
   (802.11a: RBW = 1MHz, VBW = 1kHz; 802.11ax (HE20): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE40): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE80): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE80+80): CH42, 106, 122: RBW = 1MHz, VBW = 1kHz; 802.11ax (HE80+80): CH58: RBW = 1MHz, VBW = 3kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

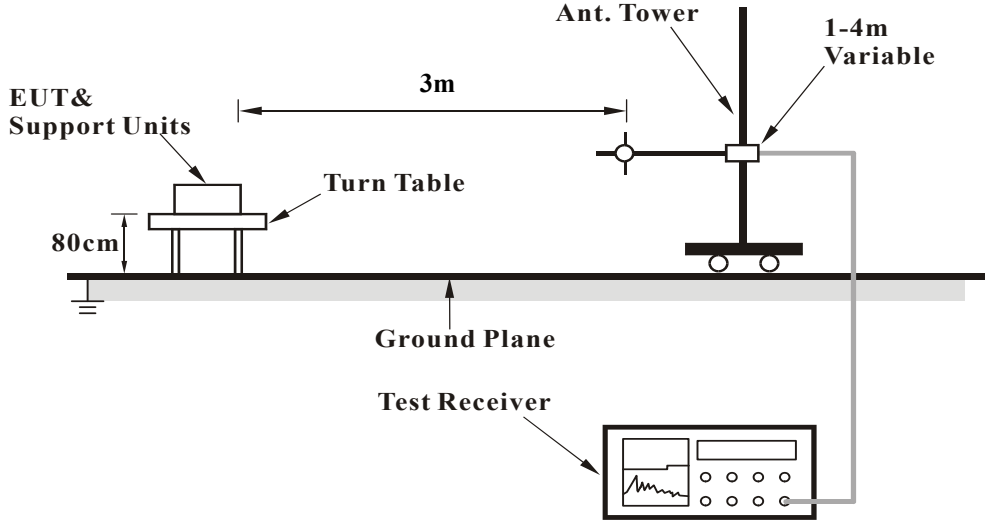
No deviation.

4.1.5 Test Setup

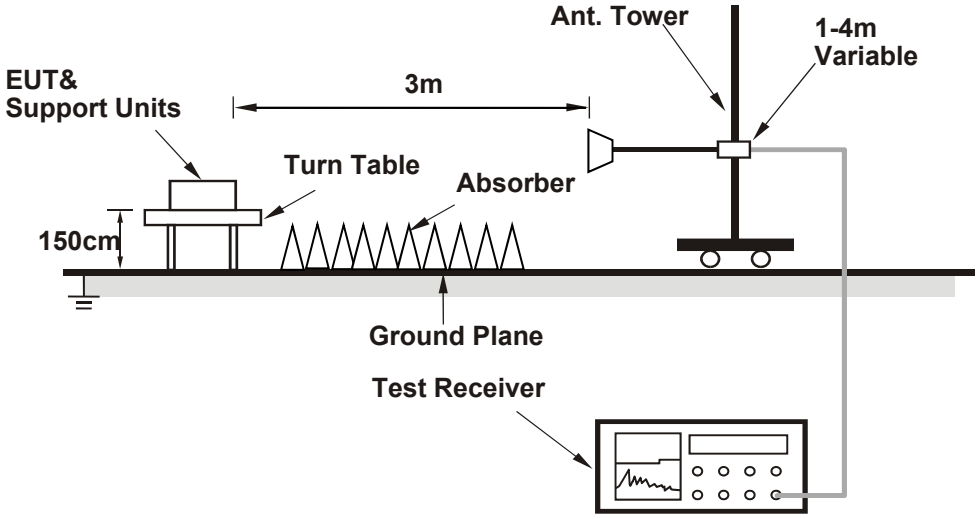
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

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

4.1.7 Test Results

Above 1GHz data:

5G traffic radio (Radio 1)

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	57.6 PK	74.0	-16.4	2.56 H	317	51.2	6.4
2	5150.00	44.7 AV	54.0	-9.3	2.56 H	317	38.3	6.4
3	*5260.00	114.4 PK			2.58 H	309	72.5	41.9
4	*5260.00	104.9 AV			2.58 H	309	63.0	41.9
5	#10520.00	59.2 PK	68.2	-9.0	1.12 H	39	41.0	18.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.3 PK	74.0	-15.7	1.63 V	351	51.9	6.4
2	5150.00	44.5 AV	54.0	-9.5	1.63 V	351	38.1	6.4
3	*5260.00	109.3 PK			1.49 V	347	67.4	41.9
4	*5260.00	100.7 AV			1.49 V	347	58.8	41.9
5	#10520.00	59.0 PK	68.2	-9.2	1.58 V	15	40.8	18.2

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 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	114.8 PK			1.98 H	315	72.9	41.9
2	*5300.00	105.8 AV			1.98 H	315	63.9	41.9
3	10600.00	58.7 PK	74.0	-15.3	1.12 H	56	41.1	17.6
4	10600.00	45.9 AV	54.0	-8.1	1.12 H	56	28.3	17.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	110.4 PK			1.89 V	350	68.5	41.9
2	*5300.00	101.0 AV			1.89 V	350	59.1	41.9
3	10600.00	58.6 PK	74.0	-15.4	1.68 V	14	41.0	17.6
4	10600.00	45.6 AV	54.0	-8.4	1.68 V	14	28.0	17.6

Remarks:

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

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	113.2 PK			2.20 H	309	71.2	42.0
2	*5320.00	103.4 AV			2.20 H	309	61.4	42.0
3	5350.00	57.7 PK	74.0	-16.3	2.38 H	324	51.4	6.3
4	5350.00	44.7 AV	54.0	-9.3	2.38 H	324	38.4	6.3
5	10640.00	58.8 PK	74.0	-15.2	1.17 H	40	41.3	17.5
6	10640.00	45.6 AV	54.0	-8.4	1.17 H	40	28.1	17.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	109.3 PK			1.89 V	350	67.3	42.0
2	*5320.00	99.5 AV			1.89 V	350	57.5	42.0
3	5350.00	57.7 PK	74.0	-16.3	1.88 V	344	51.4	6.3
4	5350.00	44.5 AV	54.0	-9.5	1.88 V	344	38.2	6.3
5	10640.00	58.3 PK	74.0	-15.7	1.77 V	26	40.8	17.5
6	10640.00	45.0 AV	54.0	-9.0	1.77 V	26	27.5	17.5

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	58.4 PK	74.0	-15.6	2.30 H	323	52.1	6.3
2	5460.00	45.1 AV	54.0	-8.9	2.30 H	323	38.8	6.3
3	#5470.00	58.8 PK	68.2	-9.4	2.41 H	319	52.6	6.2
4	*5500.00	114.3 PK			2.32 H	314	72.2	42.1
5	*5500.00	104.8 AV			2.32 H	314	62.7	42.1
6	11000.00	59.1 PK	74.0	-14.9	1.51 H	66	41.0	18.1
7	11000.00	46.7 AV	54.0	-7.3	1.51 H	66	28.6	18.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	58.3 PK	74.0	-15.7	1.47 V	33	52.0	6.3
2	5460.00	44.6 AV	54.0	-9.4	1.47 V	33	38.3	6.3
3	#5470.00	58.8 PK	68.2	-9.4	1.50 V	39	52.6	6.2
4	*5500.00	111.4 PK			1.42 V	30	69.3	42.1
5	*5500.00	101.7 AV			1.42 V	30	59.6	42.1
6	11000.00	58.8 PK	74.0	-15.2	1.75 V	20	40.7	18.1
7	11000.00	46.6 AV	54.0	-7.4	1.75 V	20	28.5	18.1

Remarks:

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

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	114.9 PK			1.68 H	319	72.8	42.1
2	*5580.00	105.1 AV			1.68 H	319	63.0	42.1
3	11160.00	59.7 PK	74.0	-14.3	1.59 H	63	41.3	18.4
4	11160.00	47.2 AV	54.0	-6.8	1.59 H	63	28.8	18.4
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	*5580.00	111.9 PK			1.49 V	33	69.8	42.1
2	*5580.00	102.1 AV			1.49 V	33	60.0	42.1
3	11160.00	59.4 PK	74.0	-14.6	1.79 V	22	41.0	18.4
4	11160.00	46.8 AV	54.0	-7.2	1.79 V	22	28.4	18.4

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.

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	114.2 PK			1.94 H	315	71.9	42.3
2	*5700.00	105.0 AV			1.94 H	315	62.7	42.3
3	#5725.00	58.0 PK	68.2	-10.2	2.03 H	320	51.8	6.2
4	11400.00	59.1 PK	74.0	-14.9	1.60 H	52	41.2	17.9
5	11400.00	46.6 AV	54.0	-7.4	1.60 H	52	28.7	17.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	111.1 PK			1.55 V	36	68.8	42.3
2	*5700.00	102.0 AV			1.55 V	36	59.7	42.3
3	#5725.00	57.9 PK	68.2	-10.3	1.60 V	40	51.7	6.2
4	11400.00	58.9 PK	74.0	-15.1	1.80 V	26	41.0	17.9
5	11400.00	46.4 AV	54.0	-7.6	1.80 V	26	28.5	17.9

Remarks:

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

RF Mode	TX 802.11a	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	#5470.00	58.1 PK	68.2	-10.1	2.10 H	316	51.9	6.2
2	*5720.00	113.5 PK			2.08 H	314	71.3	42.2
3	*5720.00	104.0 AV			2.08 H	314	61.8	42.2
4	#5850.00	58.4 PK	68.2	-9.8	2.06 H	308	51.7	6.7
5	11440.00	59.4 PK	74.0	-14.6	1.23 H	33	41.2	18.2
6	11440.00	46.4 AV	54.0	-7.6	1.23 H	33	28.2	18.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	57.3 PK	68.2	-10.9	1.44 V	18	51.1	6.2
2	*5720.00	110.6 PK			1.46 V	24	68.4	42.2
3	*5720.00	100.9 AV			1.46 V	24	58.7	42.2
4	#5850.00	58.4 PK	68.2	-9.8	1.52 V	23	51.7	6.7
5	11440.00	59.0 PK	74.0	-15.0	1.59 V	12	40.8	18.2
6	11440.00	45.8 AV	54.0	-8.2	1.59 V	12	27.6	18.2

Remarks:

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

RF Mode	TX 802.11ax (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	57.9 PK	74.0	-16.1	2.16 H	314	51.5	6.4
2	5150.00	44.8 AV	54.0	-9.2	2.16 H	314	38.4	6.4
3	*5260.00	118.8 PK			2.40 H	274	76.9	41.9
4	*5260.00	105.7 AV			2.40 H	274	63.8	41.9
5	#10520.00	59.1 PK	68.2	-9.1	1.24 H	44	40.9	18.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	57.8 PK	74.0	-16.2	1.88 V	345	51.4	6.4
2	5150.00	44.6 AV	54.0	-9.4	1.88 V	345	38.2	6.4
3	*5260.00	113.2 PK			1.82 V	356	71.3	41.9
4	*5260.00	100.4 AV			1.82 V	356	58.5	41.9
5	#10520.00	59.1 PK	68.2	-9.1	1.62 V	19	40.9	18.2

Remarks:

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

RF Mode	TX 802.11ax (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	119.4 PK			1.92 H	318	77.5	41.9
2	*5300.00	105.8 AV			1.92 H	318	63.9	41.9
3	10600.00	58.8 PK	74.0	-15.2	1.23 H	35	41.2	17.6
4	10600.00	45.9 AV	54.0	-8.1	1.23 H	35	28.3	17.6
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	112.7 PK			1.75 V	349	70.8	41.9
2	*5300.00	100.6 AV			1.75 V	349	58.7	41.9
3	10600.00	58.8 PK	74.0	-15.2	1.49 V	18	41.2	17.6
4	10600.00	45.6 AV	54.0	-8.4	1.49 V	18	28.0	17.6

Remarks:

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

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	117.2 PK			2.26 H	307	75.2	42.0
2	*5320.00	104.7 AV			2.26 H	307	62.7	42.0
3	5350.00	58.3 PK	74.0	-15.7	3.14 H	218	52.0	6.3
4	5350.00	45.3 AV	54.0	-8.7	3.14 H	218	39.0	6.3
5	10640.00	58.8 PK	74.0	-15.2	1.29 H	40	41.3	17.5
6	10640.00	45.8 AV	54.0	-8.2	1.29 H	40	28.3	17.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	112.4 PK			1.87 V	354	70.4	42.0
2	*5320.00	99.6 AV			1.87 V	354	57.6	42.0
3	5350.00	57.8 PK	74.0	-16.2	1.88 V	355	51.5	6.3
4	5350.00	44.4 AV	54.0	-9.6	1.88 V	355	38.1	6.3
5	10640.00	58.3 PK	74.0	-15.7	1.63 V	14	40.8	17.5
6	10640.00	45.3 AV	54.0	-8.7	1.63 V	14	27.8	17.5

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	57.6 PK	74.0	-16.4	1.93 H	320	51.3	6.3
2	5460.00	44.5 AV	54.0	-9.5	1.93 H	320	38.2	6.3
3	#5470.00	58.0 PK	68.2	-10.2	1.97 H	315	51.8	6.2
4	*5500.00	118.4 PK			1.90 H	312	76.3	42.1
5	*5500.00	105.5 AV			1.90 H	312	63.4	42.1
6	11000.00	59.6 PK	74.0	-14.4	1.67 H	49	41.5	18.1
7	11000.00	47.0 AV	54.0	-7.0	1.67 H	49	28.9	18.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	57.5 PK	74.0	-16.5	1.55 V	37	51.2	6.3
2	5460.00	44.4 AV	54.0	-9.6	1.55 V	37	38.1	6.3
3	#5470.00	57.9 PK	68.2	-10.3	1.61 V	30	51.7	6.2
4	*5500.00	115.4 PK			1.57 V	33	73.3	42.1
5	*5500.00	102.4 AV			1.57 V	33	60.3	42.1
6	11000.00	59.2 PK	74.0	-14.8	1.77 V	25	41.1	18.1
7	11000.00	46.6 AV	54.0	-7.4	1.77 V	25	28.5	18.1

Remarks:

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

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	118.0 PK			1.93 H	311	75.9	42.1
2	*5580.00	105.3 AV			1.93 H	311	63.2	42.1
3	11160.00	60.0 PK	74.0	-14.0	1.75 H	58	41.6	18.4
4	11160.00	47.4 AV	54.0	-6.6	1.75 H	58	29.0	18.4
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	*5580.00	114.9 PK			1.53 V	36	72.8	42.1
2	*5580.00	102.1 AV			1.53 V	36	60.0	42.1
3	11160.00	59.7 PK	74.0	-14.3	1.61 V	27	41.3	18.4
4	11160.00	47.2 AV	54.0	-6.8	1.61 V	27	28.8	18.4

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.

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	118.1 PK			2.14 H	299	75.8	42.3
2	*5700.00	105.2 AV			2.14 H	299	62.9	42.3
3	#5725.00	58.5 PK	68.2	-9.7	2.01 H	305	52.3	6.2
4	11400.00	59.4 PK	74.0	-14.6	1.71 H	50	41.5	17.9
5	11400.00	46.8 AV	54.0	-7.2	1.71 H	50	28.9	17.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	115.0 PK			1.52 V	31	72.7	42.3
2	*5700.00	102.1 AV			1.52 V	31	59.8	42.3
3	#5725.00	58.5 PK	68.2	-9.7	1.58 V	39	52.3	6.2
4	11400.00	59.2 PK	74.0	-14.8	1.58 V	20	41.3	17.9
5	11400.00	46.4 AV	54.0	-7.6	1.58 V	20	28.5	17.9

Remarks:

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

RF Mode	TX 802.11ax (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	#5470.00	58.0 PK	68.2	-10.2	2.11 H	310	51.8	6.2
2	*5720.00	118.6 PK			2.10 H	309	76.4	42.2
3	*5720.00	105.9 AV			2.10 H	309	63.7	42.2
4	#5850.00	58.6 PK	68.2	-9.6	2.07 H	308	51.9	6.7
5	11440.00	59.1 PK	74.0	-14.9	1.29 H	39	40.9	18.2
6	11440.00	46.1 AV	54.0	-7.9	1.29 H	39	27.9	18.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	57.5 PK	68.2	-10.7	1.49 V	31	51.3	6.2
2	*5720.00	113.4 PK			1.45 V	22	71.2	42.2
3	*5720.00	100.6 AV			1.45 V	22	58.4	42.2
4	#5850.00	58.8 PK	68.2	-9.4	1.50 V	19	52.1	6.7
5	11440.00	59.1 PK	74.0	-14.9	1.80 V	23	40.9	18.2
6	11440.00	45.7 AV	54.0	-8.3	1.80 V	23	27.5	18.2

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 54：5270 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.4 PK	74.0	-15.6	2.04 H	316	52.0	6.4
2	5150.00	45.6 AV	54.0	-8.4	2.04 H	316	39.2	6.4
3	*5270.00	118.6 PK			2.17 H	313	76.7	41.9
4	*5270.00	106.0 AV			2.17 H	313	64.1	41.9
5	5350.00	59.0 PK	74.0	-15.0	2.20 H	313	52.7	6.3
6	5350.00	45.7 AV	54.0	-8.3	2.20 H	313	39.4	6.3
7	#10540.00	59.6 PK	68.3	-8.7	1.28 H	39	41.5	18.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	57.9 PK	74.0	-16.1	1.88 V	360	51.5	6.4
2	5150.00	44.8 AV	54.0	-9.2	1.88 V	360	38.4	6.4
3	*5270.00	113.1 PK			1.82 V	352	71.2	41.9
4	*5270.00	101.1 AV			1.82 V	352	59.2	41.9
5	5350.00	57.6 PK	74.0	-16.4	1.74 V	359	51.3	6.3
6	5350.00	44.9 AV	54.0	-9.1	1.74 V	359	38.6	6.3
7	#10540.00	58.9 PK	68.2	-9.3	1.66 V	22	40.8	18.1

Remarks:

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

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	118.5 PK			2.16 H	314	76.5	42.0
2	*5310.00	105.9 AV			2.16 H	314	63.9	42.0
3	5350.00	61.5 PK	74.0	-12.5	2.31 H	319	55.2	6.3
4	5350.00	49.1 AV	54.0	-4.9	2.31 H	319	42.8	6.3
5	10620.00	59.2 PK	74.0	-14.8	1.32 H	47	41.5	17.7
6	10620.00	46.2 AV	54.0	-7.8	1.32 H	47	28.5	17.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	113.3 PK			1.70 V	3	71.3	42.0
2	*5310.00	101.0 AV			1.70 V	3	59.0	42.0
3	5350.00	58.3 PK	74.0	-15.7	1.69 V	15	52.0	6.3
4	5350.00	36.4 AV	54.0	-17.6	1.69 V	15	30.1	6.3
5	10620.00	58.6 PK	74.0	-15.4	1.66 V	17	40.9	17.7
6	10620.00	45.6 AV	54.0	-8.4	1.66 V	17	27.9	17.7

Remarks:

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

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	3.10 H	288	52.9	6.3
2	5460.00	46.6 AV	54.0	-7.4	3.10 H	288	40.3	6.3
3	#5470.00	62.1 PK	68.2	-6.1	2.52 H	293	55.9	6.2
4	*5510.00	118.5 PK			2.40 H	311	76.4	42.1
5	*5510.00	104.5 AV			2.40 H	311	62.4	42.1
6	11020.00	59.5 PK	74.0	-14.5	1.82 H	61	41.4	18.1
7	11020.00	46.0 AV	54.0	-8.0	1.82 H	61	27.9	18.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	58.8 PK	74.0	-15.2	1.50 V	30	52.5	6.3
2	5460.00	46.4 AV	54.0	-7.6	1.50 V	30	40.1	6.3
3	#5470.00	61.1 PK	68.2	-7.1	1.52 V	33	54.9	6.2
4	*5510.00	115.4 PK			1.59 V	39	73.3	42.1
5	*5510.00	101.5 AV			1.59 V	39	59.4	42.1
6	11020.00	59.2 PK	74.0	-14.8	1.66 V	22	41.1	18.1
7	11020.00	45.7 AV	54.0	-8.3	1.66 V	22	27.6	18.1

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 110：5550 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	118.3 PK			2.06 H	313	76.2	42.1
2	*5550.00	105.5 AV			2.06 H	313	63.4	42.1
3	11100.00	59.9 PK	74.0	-14.1	1.79 H	55	41.7	18.2
4	11100.00	46.4 AV	54.0	-7.6	1.79 H	55	28.2	18.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	115.1 PK			1.59 V	37	73.0	42.1
2	*5550.00	102.3 AV			1.59 V	37	60.2	42.1
3	11100.00	59.5 PK	74.0	-14.5	1.67 V	25	41.3	18.2
4	11100.00	46.0 AV	54.0	-8.0	1.67 V	25	27.8	18.2

Remarks:

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

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	118.4 PK			2.04 H	313	76.2	42.2
2	*5670.00	105.7 AV			2.04 H	313	63.5	42.2
3	#5725.00	62.4 PK	68.2	-5.8	1.94 H	313	56.2	6.2
4	11340.00	60.1 PK	74.0	-13.9	1.83 H	61	41.8	18.3
5	11340.00	46.6 AV	54.0	-7.4	1.83 H	61	28.3	18.3
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	115.2 PK			1.55 V	39	73.0	42.2
2	*5670.00	102.5 AV			1.55 V	39	60.3	42.2
3	#5725.00	61.7 PK	68.2	-6.5	1.51 V	35	55.5	6.2
4	11340.00	59.8 PK	74.0	-14.2	1.58 V	26	41.5	18.3
5	11340.00	46.3 AV	54.0	-7.7	1.58 V	26	28.0	18.3

Remarks:

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

RF Mode	TX 802.11ax (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	#5470.00	58.0 PK	68.2	-10.2	2.11 H	309	51.8	6.2
2	*5710.00	117.5 PK			2.04 H	315	75.2	42.3
3	*5710.00	105.4 AV			2.04 H	315	63.1	42.3
4	#5850.00	58.4 PK	68.2	-9.8	2.00 H	319	51.7	6.7
5	11420.00	58.3 PK	74.0	-15.7	1.39 H	31	40.3	18.0
6	11420.00	45.1 AV	54.0	-8.9	1.39 H	31	27.1	18.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	57.4 PK	68.2	-10.8	1.39 V	33	51.2	6.2
2	*5710.00	113.7 PK			1.40 V	28	71.4	42.3
3	*5710.00	100.8 AV			1.40 V	28	58.5	42.3
4	#5850.00	58.4 PK	68.2	-9.8	1.50 V	37	51.7	6.7
5	11420.00	58.3 PK	74.0	-15.7	1.78 V	8	40.3	18.0
6	11420.00	45.3 AV	54.0	-8.7	1.78 V	8	27.3	18.0

Remarks:

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

RF Mode	TX 802.11ax (HE80)	Channel	CH 58：5290 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.8 PK	74.0	-15.2	2.04 H	303	52.4	6.4
2	5150.00	45.6 AV	54.0	-8.4	2.04 H	303	39.2	6.4
3	*5290.00	115.5 PK			2.15 H	315	73.6	41.9
4	*5290.00	103.1 AV			2.15 H	315	61.2	41.9
5	5350.00	60.1 PK	74.0	-13.9	2.26 H	314	53.8	6.3
6	5350.00	52.6 AV	54.0	-1.4	2.26 H	314	46.3	6.3
7	#10580.00	59.1 PK	68.2	-9.1	1.29 H	33	41.3	17.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	57.5 PK	74.0	-16.5	1.59 V	9	51.1	6.4
2	5150.00	44.6 AV	54.0	-9.4	1.59 V	9	38.2	6.4
3	*5290.00	110.5 PK			1.58 V	3	68.6	41.9
4	*5290.00	98.3 AV			1.58 V	3	56.4	41.9
5	5350.00	60.2 PK	74.0	-13.8	1.67 V	18	53.9	6.3
6	5350.00	48.7 AV	54.0	-5.3	1.67 V	18	42.4	6.3
7	#10580.00	58.9 PK	68.2	-9.3	1.69 V	11	41.1	17.8

Remarks:

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

RF Mode	TX 802.11ax (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	5450.00	64.7 PK	74.0	-9.3	1.73 H	311	58.4	6.3
2	5450.00	50.6 AV	54.0	-3.4	1.73 H	311	44.3	6.3
3	**#5470.00**	**67.2 PK**	**68.2**	**-1.0**	**1.72 H**	**311**	**61.0**	**6.2**
4	*5530.00	115.6 PK			1.82 H	312	73.5	42.1
5	*5530.00	102.6 AV			1.82 H	312	60.5	42.1
6	#5725.00	57.9 PK	68.2	-10.3	1.77 H	309	51.7	6.2
7	11060.00	59.6 PK	74.0	-14.4	1.79 H	66	41.5	18.1
8	11060.00	46.3 AV	54.0	-7.7	1.79 H	66	28.2	18.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5450.00	62.9 PK	74.0	-11.1	1.59 V	34	56.6	6.3
2	5450.00	48.8 AV	54.0	-5.2	1.59 V	34	42.5	6.3
3	#5470.00	64.8 PK	68.2	-3.4	1.66 V	35	58.6	6.2
4	*5530.00	112.4 PK			1.50 V	35	70.3	42.1
5	*5530.00	99.4 AV			1.50 V	35	57.3	42.1
6	#5725.00	57.8 PK	68.2	-10.4	1.00 V	30	51.6	6.2
7	11060.00	59.3 PK	74.0	-14.7	1.56 V	20	41.2	18.1
8	11060.00	46.0 AV	54.0	-8.0	1.56 V	20	27.9	18.1

Remarks:

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

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	5460.00	58.3 PK	74.0	-15.7	1.90 H	315	52.0	6.3
2	5460.00	45.0 AV	54.0	-9.0	1.90 H	315	38.7	6.3
3	#5470.00	60.4 PK	68.2	-7.8	1.91 H	310	54.2	6.2
4	*5610.00	116.3 PK			1.85 H	312	74.2	42.1
5	*5610.00	103.6 AV			1.85 H	312	61.5	42.1
6	#5725.00	66.9 PK	68.2	-1.3	1.85 H	309	60.7	6.2
7	11220.00	60.2 PK	74.0	-13.8	1.86 H	61	41.7	18.5
8	11220.00	46.9 AV	54.0	-7.1	1.86 H	61	28.4	18.5
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	58.1 PK	74.0	-15.9	1.55 V	34	51.8	6.3
2	5460.00	44.9 AV	54.0	-9.1	1.55 V	34	38.6	6.3
3	#5470.00	56.7 PK	68.2	-11.5	1.61 V	39	50.5	6.2
4	*5610.00	113.2 PK			1.57 V	41	71.1	42.1
5	*5610.00	100.4 AV			1.57 V	41	58.3	42.1
6	#5725.00	59.0 PK	68.2	-9.2	1.63 V	30	52.8	6.2
7	11220.00	59.9 PK	74.0	-14.1	1.63 V	29	41.4	18.5
8	11220.00	46.6 AV	54.0	-7.4	1.63 V	29	28.1	18.5

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 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	#5470.00	58.3 PK	68.2	-9.9	2.19 H	322	52.1	6.2
2	*5690.00	117.7 PK			2.04 H	317	75.4	42.3
3	*5690.00	104.7 AV			2.04 H	317	62.4	42.3
4	#5850.00	58.9 PK	68.2	-9.3	2.10 H	310	52.2	6.7
5	11380.00	58.7 PK	74.0	-15.3	1.44 H	28	40.8	17.9
6	11380.00	45.5 AV	54.0	-8.5	1.44 H	28	27.6	17.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	57.9 PK	68.2	-10.3	1.55 V	35	51.7	6.2
2	*5690.00	111.2 PK			1.48 V	31	68.9	42.3
3	*5690.00	99.2 AV			1.48 V	31	56.9	42.3
4	#5850.00	58.3 PK	68.2	-9.9	1.44 V	27	51.6	6.7
5	11380.00	58.1 PK	74.0	-15.9	1.77 V	10	40.2	17.9
6	11380.00	45.0 AV	54.0	-9.0	1.77 V	10	27.1	17.9

Remarks:

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

RF Mode	TX 802.11ax (HE80+80)	Channel	CH 42+58： 5210 MHz+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	5050.00	59.5 PK	74.0	-14.5	1.69 H	309	53.2	6.3
2	5050.00	52.6 AV	54.0	-1.4	1.69 H	309	46.3	6.3
3	5130.00	62.7 PK	74.0	-11.3	2.26 H	307	56.3	6.4
4	5130.00	52.2 AV	54.0	-1.8	2.26 H	307	45.8	6.4
5	*5210.00	110.6 PK			2.32 H	311	68.6	42.0
6	*5210.00	98.2 AV			2.32 H	311	56.2	42.0
7	*5290.00	110.8 PK			2.64 H	312	68.9	41.9
8	*5290.00	97.4 AV			2.64 H	312	55.5	41.9
9	5370.00	60.2 PK	74.0	-13.8	2.12 H	313	53.9	6.3
10	5370.00	48.9 AV	54.0	-5.1	2.12 H	313	42.6	6.3
11	#10420.00	58.7 PK	68.2	-9.5	1.54 H	110	41.7	17.0
12	#10580.00	60.2 PK	68.2	-8.0	1.47 H	97	42.4	17.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5050.00	59.7 PK	74.0	-14.3	1.43 V	18	53.4	6.3
2	5050.00	51.1 AV	54.0	-2.9	1.43 V	18	44.8	6.3
3	5130.00	61.2 PK	74.0	-12.8	1.28 V	16	54.8	6.4
4	5130.00	48.0 AV	54.0	-6.0	1.28 V	16	41.6	6.4
5	*5210.00	108.2 PK			1.55 V	29	66.2	42.0
6	*5210.00	95.5 AV			1.55 V	29	53.5	42.0
7	*5290.00	105.6 PK			2.06 V	50	63.7	41.9
8	*5290.00	93.0 AV			2.06 V	50	51.1	41.9
9	5370.00	59.9 PK	74.0	-14.1	1.82 V	32	53.6	6.3
10	5370.00	48.6 AV	54.0	-5.4	1.82 V	32	42.3	6.3
11	#10420.00	58.3 PK	68.2	-9.9	1.71 V	202	41.3	17.0
12	#10580.00	59.8 PK	68.2	-8.4	1.63 V	222	42.0	17.8

Remarks:

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

RF Mode	TX 802.11ax (HE80+80)	Channel	CH 106+122： 5530 MHz+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	5370.00	60.6 PK	74.0	-13.4	2.35 H	312	54.3	6.3
2	**5370.00**	**53.0 AV**	**54.0**	**-1.0**	**2.35 H**	**312**	**46.7**	**6.3**
3	#5470.00	64.8 PK	68.2	-3.4	2.39 H	316	58.6	6.2
4	*5530.00	110.7 PK			2.18 H	312	68.6	42.1
5	*5530.00	97.7 AV			2.18 H	312	55.6	42.1
6	*5610.00	110.1 PK			3.56 H	295	68.0	42.1
7	*5610.00	96.6 AV			3.56 H	295	54.5	42.1
8	#5725.00	58.8 PK	68.2	-9.4	2.40 H	321	52.6	6.2
9	11060.00	59.7 PK	74.0	-14.3	1.65 H	120	41.6	18.1
10	11060.00	46.5 AV	54.0	-7.5	1.65 H	120	28.4	18.1
11	11220.00	60.4 PK	74.0	-13.6	1.58 H	102	41.9	18.5
12	11220.00	47.0 AV	54.0	-7.0	1.58 H	102	28.5	18.5
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	5370.00	60.3 PK	74.0	-13.7	1.58 V	33	54.0	6.3
2	5370.00	51.9 AV	54.0	-2.1	1.58 V	33	45.6	6.3
3	#5470.00	61.8 PK	68.2	-6.4	1.53 V	37	55.6	6.2
4	*5530.00	107.3 PK			1.65 V	30	65.2	42.1
5	*5530.00	94.6 AV			1.65 V	30	52.5	42.1
6	*5610.00	106.4 PK			1.79 V	17	64.3	42.1
7	*5610.00	93.6 AV			1.79 V	17	51.5	42.1
8	#5725.00	58.1 PK	68.2	-10.1	1.94 V	24	51.9	6.2
9	11060.00	59.3 PK	74.0	-14.7	1.77 V	209	41.2	18.1
10	11060.00	46.1 AV	54.0	-7.9	1.77 V	209	28.0	18.1
11	11220.00	59.9 PK	74.0	-14.1	1.69 V	197	41.4	18.5
12	11220.00	46.5 AV	54.0	-7.5	1.69 V	197	28.0	18.5

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.

Below 1GHz Worst-Case

5G traffic radio (Radio 1)

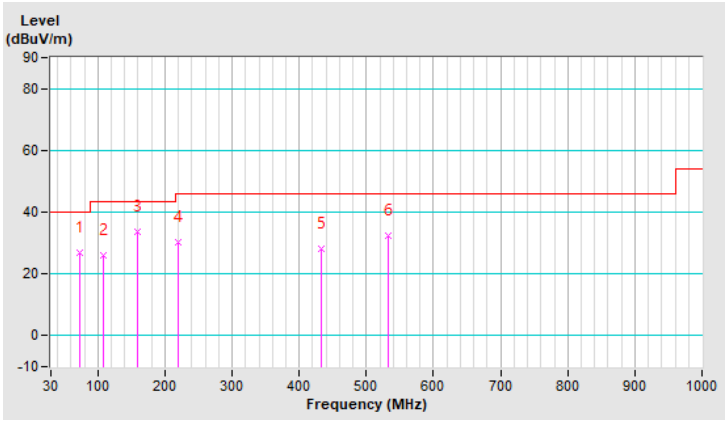
802.11ax (HE80)

CHANNEL	TX Channel 122	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	72.17	26.8 QP	40.0	-13.2	1.50 H	11	38.3	-11.5
2	108.72	25.9 QP	43.5	-17.6	1.00 H	12	37.9	-12.0
3	159.33	33.7 QP	43.5	-9.8	1.00 H	235	42.0	-8.3
4	219.78	30.3 QP	46.0	-15.7	1.50 H	204	40.8	-10.5
5	432.06	28.1 QP	46.0	-17.9	1.00 H	122	31.7	-3.6
6	533.28	32.3 QP	46.0	-13.7	2.00 H	167	33.9	-1.6

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 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.

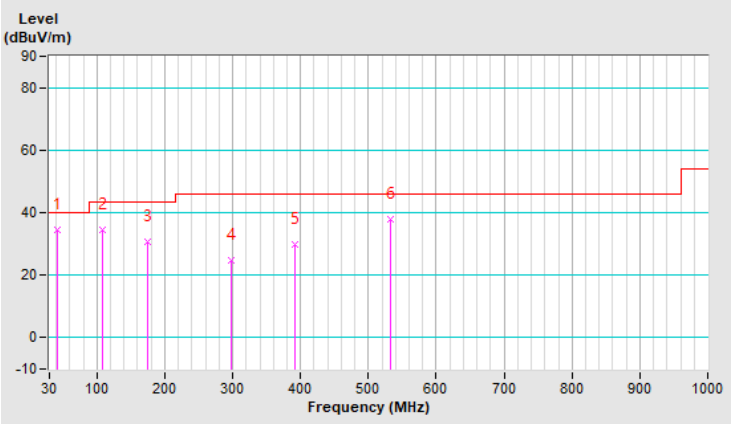


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	41.25	34.6 QP	40.0	-5.4	1.00 V	254	43.9	-9.3
2	108.72	34.7 QP	43.5	-8.8	1.00 V	63	46.7	-12.0
3	174.80	30.5 QP	43.5	-13.0	1.00 V	18	39.7	-9.2
4	297.10	24.6 QP	46.0	-21.4	1.00 V	235	31.2	-6.6
5	391.29	29.8 QP	46.0	-16.2	1.00 V	87	34.6	-4.8
6	533.28	37.7 QP	46.0	-8.3	1.00 V	14	39.3	-1.6

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 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.

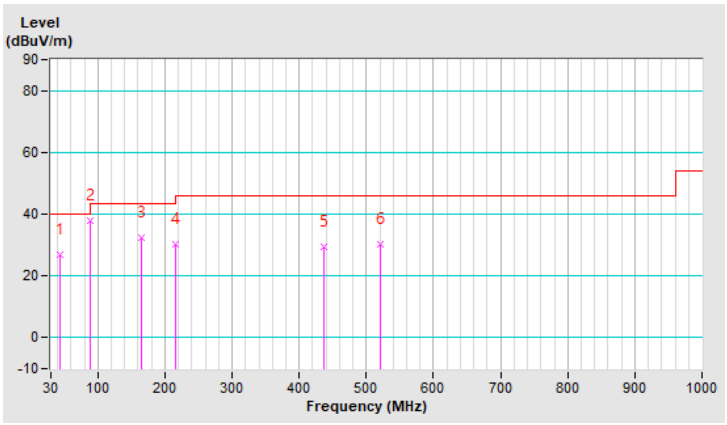


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	44.06	26.9 QP	40.0	-13.1	1.00 H	61	36.1	-9.2
2	89.04	37.7 QP	43.5	-5.8	1.50 H	92	52.0	-14.3
3	164.96	32.2 QP	43.5	-11.3	1.50 H	118	40.8	-8.6
4	215.57	30.1 QP	43.5	-13.4	1.50 H	183	40.8	-10.7
5	437.68	29.6 QP	46.0	-16.4	1.00 H	124	33.1	-3.5
6	520.62	30.4 QP	46.0	-15.6	1.50 H	150	32.3	-1.9

Remarks:

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

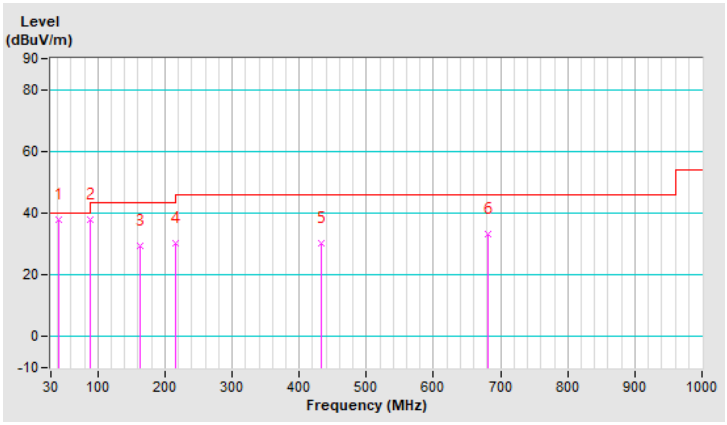


CHANNEL	TX Channel 122	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	42.65	38.0 QP	40.0	-2.0	1.50 V	16	47.4	-9.4
2	89.04	37.8 QP	43.5	-5.7	1.50 V	156	52.1	-14.3
3	162.14	29.4 QP	43.5	-14.1	1.50 V	251	37.8	-8.4
4	215.57	30.3 QP	43.5	-13.2	1.50 V	16	41.0	-10.7
5	433.46	30.4 QP	46.0	-15.6	1.00 V	68	33.9	-3.5
6	680.88	33.4 QP	46.0	-12.6	2.00 V	353	31.5	1.9

Remarks:

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



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102783	Dec. 21, 2020	Dec. 20, 2021
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 04, 2020	Sep. 03, 2021
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 28, 2021	Jan. 27, 2022
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Aug. 18, 2020	Aug. 17, 2021
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2 (Conduction 2).
3. The VCCI Site Registration No. is C-12047.
4. Tested date: May 10, 2021

4.2.3 Test Procedures

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

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

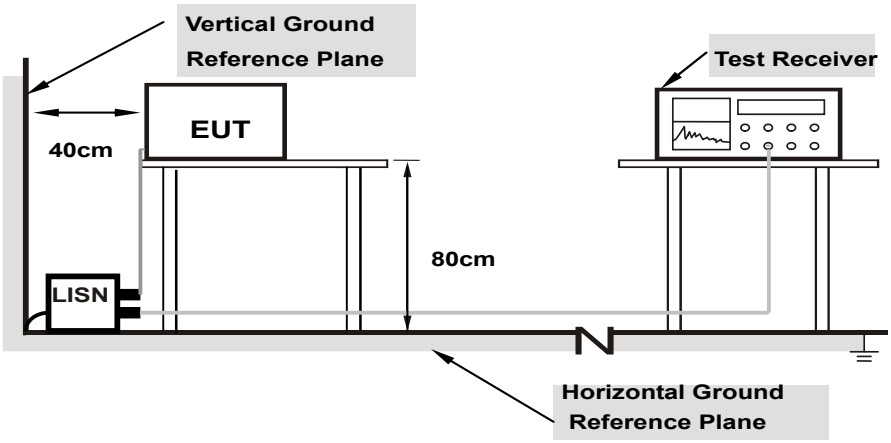
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data:

5G traffic radio (Radio 1)

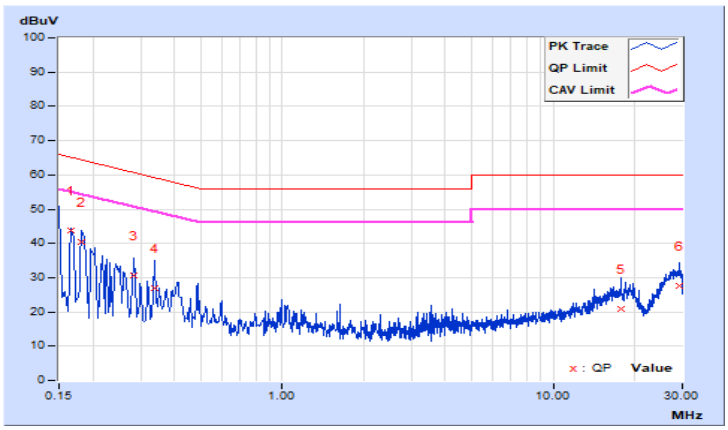
802.11ax (HE80)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16564	10.07	33.71	17.91	43.78	27.98	65.18	55.18	-21.40	-27.20
2	0.18128	10.07	30.43	14.00	40.50	24.07	64.43	54.43	-23.93	-30.36
3	0.28294	10.08	20.67	4.85	30.75	14.93	60.73	50.73	-29.98	-35.80
4	0.33768	10.09	16.72	5.82	26.81	15.91	59.26	49.26	-32.45	-33.35
5	17.84666	10.42	10.61	3.99	21.03	14.41	60.00	50.00	-38.97	-35.59
6	29.15438	10.22	17.34	11.10	27.56	21.32	60.00	50.00	-32.44	-28.68

Remarks:

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

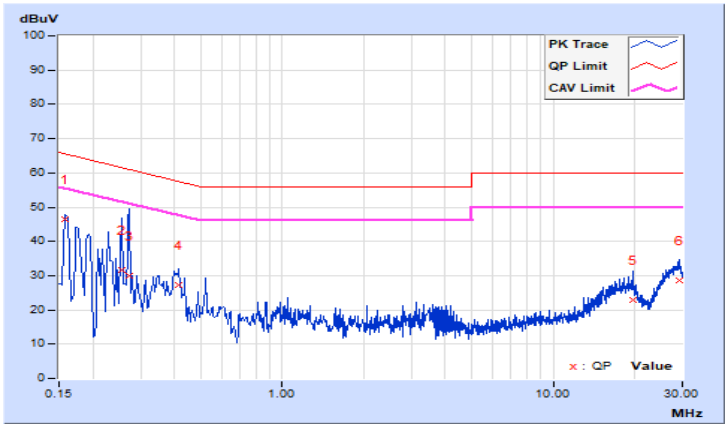


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15782	10.08	36.25	20.38	46.33	30.46	65.58	55.58	-19.25	-25.12
2	0.25557	10.09	21.68	10.03	31.77	20.12	61.57	51.57	-29.80	-31.45
3	0.27120	10.09	19.93	8.20	30.02	18.29	61.08	51.08	-31.06	-32.79
4	0.41588	10.10	17.20	11.40	27.30	21.50	57.53	47.53	-30.23	-26.03
5	19.65699	10.64	12.13	5.64	22.77	16.28	60.00	50.00	-37.23	-33.72
6	29.41244	10.40	18.17	11.97	28.57	22.37	60.00	50.00	-31.43	-27.63

Remarks:

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

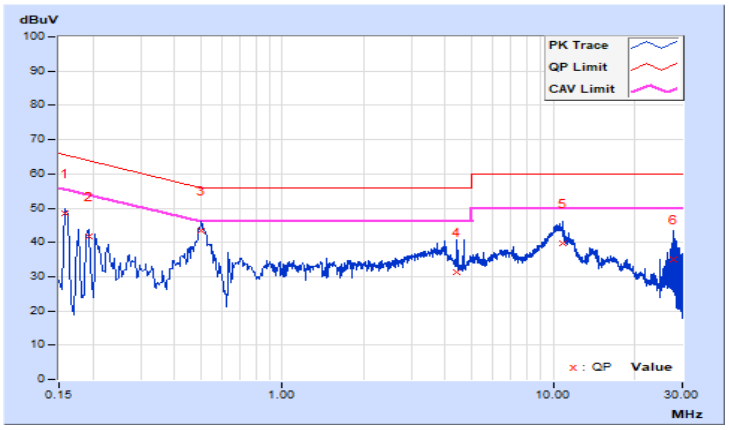


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15782	10.07	38.47	23.36	48.54	33.43	65.58	55.58	-17.04	-22.15
2	0.19255	10.08	31.83	17.59	41.91	27.67	63.93	53.93	-22.02	-26.26
3	0.50190	10.10	33.49	27.21	43.59	37.31	56.00	46.00	-12.41	-8.69
4	4.41972	10.23	21.18	14.33	31.41	24.56	56.00	46.00	-24.59	-21.44
5	10.84385	10.33	29.49	23.85	39.82	34.18	60.00	50.00	-20.18	-15.82
6	27.83280	10.25	24.83	15.46	35.08	25.71	60.00	50.00	-24.92	-24.29

Remarks:

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

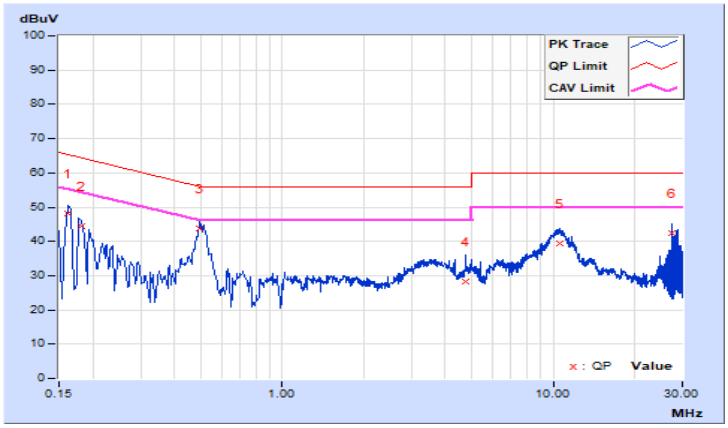


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16173	10.08	38.02	22.12	48.10	32.20	65.37	55.37	-17.27	-23.17
2	0.18128	10.08	34.33	18.91	44.41	28.99	64.43	54.43	-20.02	-25.44
3	0.49799	10.11	33.71	28.42	43.82	38.53	56.03	46.03	-12.21	-7.50
4	4.73252	10.28	17.96	10.60	28.24	20.88	56.00	46.00	-27.76	-25.12
5	10.56624	10.42	29.13	23.29	39.55	33.71	60.00	50.00	-20.45	-16.29
6	27.59038	10.45	31.86	23.39	42.31	33.84	60.00	50.00	-17.69	-16.16

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

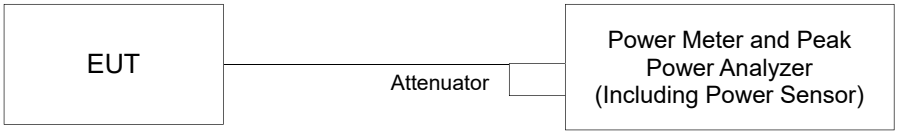
Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

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

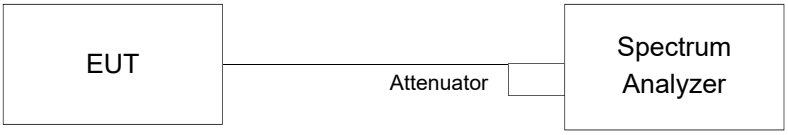
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

For Power Output



For 26dB Bandwidth and power output of ransmission above 5.725 GHz where the EBW crosses 5.725 GHz



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

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

For transmission above 5.725 GHz where the EBW crosses 5.725 GHz
For channel aggregation (channel 138, 142, 144) measurement refer to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II E 2 e) method SA-2A.

For 26dB Bandwidth

a. Set RBW = approximately 1% of the emission bandwidth.

b. Set the VBW > RBW.

c. Detector = Peak.

d. Trace mode = max hold.

e. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Power Output:

5G traffic radio (Radio 1)

CDD Mode

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	12.37	11.59	12.18	11.73	63.093	18.00	23.88	Pass
60	5300	12.52	11.46	12.08	12.41	65.422	18.16	23.87	Pass
64	5320	12.41	11.47	12.03	12.39	64.743	18.11	23.85	Pass
100	5500	11.78	11.92	12.25	12.59	65.569	18.17	23.91	Pass
116	5580	11.97	12.11	12.32	12.75	67.893	18.32	23.83	Pass
140	5700	12.01	12.13	12.31	12.38	66.536	18.23	23.90	Pass
144	5720 (For U-NII-2C)	11.87	12.27	12.56	12.55	62.244	17.94	22.68	Pass
144	5720 (For U-NII-3)	6.68	6.65	5.81	5.63	12.058	10.81	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (19.54) = 23.90 < 24dBm
2. 11dBm + 10log (19.76) = 23.95 < 24dBm
3. 11dBm + 10log (19.50) = 23.90 < 24dBm
4. 11dBm + 10log (19.81) = 23.96 < 24dBm
5. 11dBm + 10log (19.75) = 23.95 < 24dBm
6. 11dBm + 10log (19.52) = 23.90 < 24dBm
7. 11dBm + 10log (5725.00 - 5710.20) = 22.70 < 24dBm

Chain 1
1. 11dBm + 10log (19.71) = 23.94 < 24dBm
2. 11dBm + 10log (19.55) = 23.91 < 24dBm
3. 11dBm + 10log (19.47) = 23.89 < 24dBm
4. 11dBm + 10log (19.55) = 23.91 < 24dBm
5. 11dBm + 10log (19.23) = 23.83 < 24dBm
6. 11dBm + 10log (19.78) = 23.96 < 24dBm
7. 11dBm + 10log (5725.00 - 5710.27) = 22.68 < 24dBm

Chain 2
1. 11dBm + 10log (19.41) = 23.88 < 24dBm
2. 11dBm + 10log (19.46) = 23.89 < 24dBm
3. 11dBm + 10log (19.29) = 23.85 < 24dBm
4. 11dBm + 10log (19.65) = 23.93 < 24dBm
5. 11dBm + 10log (19.59) = 23.92 < 24dBm
6. 11dBm + 10log (19.58) = 23.91 < 24dBm
7. 11dBm + 10log (5725.00 - 5710.18) = 22.70 < 24dBm

Chain 3

1. 11dBm + 10log (19.45) = 23.88 < 24dBm
2. 11dBm + 10log (19.38) = 23.87 < 24dBm
3. 11dBm + 10log (19.64) = 23.93 < 24dBm
4. 11dBm + 10log (19.69) = 23.94 < 24dBm
5. 11dBm + 10log (19.62) = 23.92 < 24dBm
6. 11dBm + 10log (19.59) = 23.92 < 24dBm
7. 11dBm + 10log (5725.00 - 5710.27) = 22.68 < 24dBm

802.11ac (VHT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	12.61	11.63	12.50	12.65	68.984	18.39	24.00	Pass
60	5300	12.95	11.95	12.73	13.05	74.325	18.71	24.00	Pass
64	5320	12.73	11.74	12.41	12.74	69.872	18.44	24.00	Pass
100	5500	12.30	12.48	12.70	13.42	75.283	18.77	24.00	Pass
116	5580	12.56	12.83	12.63	13.31	76.969	18.86	24.00	Pass
140	5700	12.41	12.65	12.71	12.89	73.943	18.69	24.00	Pass
144	5720 (For U-NII-2C)	12.20	12.30	12.38	12.68	69.412	18.41	24.00	Pass
144	5720 (For U-NII-3)	6.32	6.45	6.30	6.83	17.786	12.50	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (21.27) = 24.27 > 24dBm
2. 11dBm + 10log (20.92) = 24.20 > 24dBm
3. 11dBm + 10log (21.10) = 24.24 > 24dBm
4. 11dBm + 10log (21.19) = 24.26 > 24dBm
5. 11dBm + 10log (20.96) = 24.21 > 24dBm
6. 11dBm + 10log (21.02) = 24.22 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.42) = 22.92 < 24dBm

Chain 1
1. 11dBm + 10log (21.20) = 24.26 > 24dBm
2. 11dBm + 10log (20.75) = 24.17 > 24dBm
3. 11dBm + 10log (20.94) = 24.20 > 24dBm
4. 11dBm + 10log (21.18) = 24.25 > 24dBm
5. 11dBm + 10log (21.24) = 24.27 > 24dBm
6. 11dBm + 10log (20.88) = 24.19 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.42) = 22.92 < 24dBm

Chain 2
1. 11dBm + 10log (20.84) = 24.18 > 24dBm
2. 11dBm + 10log (20.94) = 24.20 > 24dBm
3. 11dBm + 10log (20.87) = 24.19 > 24dBm
4. 11dBm + 10log (21.07) = 24.23 > 24dBm
5. 11dBm + 10log (20.99) = 24.22 > 24dBm
6. 11dBm + 10log (21.25) = 24.27 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.49) = 22.90 < 24dBm

Chain 3

1. 11dBm + 10log (21.52) = 24.32 > 24dBm
2. 11dBm + 10log (21.16) = 24.25 > 24dBm
3. 11dBm + 10log (21.01) = 24.22 > 24dBm
4. 11dBm + 10log (21.18) = 24.25 > 24dBm
5. 11dBm + 10log (21.33) = 24.28 > 24dBm
6. 11dBm + 10log (21.06) = 24.23 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.58) = 22.88 < 24dBm

802.11ac (VHT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	15.63	14.65	15.63	15.45	137.368	21.38	24.00	Pass
62	5310	15.75	14.68	15.61	15.65	140.080	21.46	24.00	Pass
102	5510	14.89	15.13	15.56	15.60	135.698	21.33	24.00	Pass
110	5550	15.11	15.30	15.57	16.00	142.187	21.53	24.00	Pass
134	5670	15.38	15.16	15.48	15.83	140.925	21.49	24.00	Pass
142	5710 (For U-NII-2C)	15.40	15.03	15.41	15.85	139.728	21.45	24.00	Pass
142	5710 (For U-NII-3)	8.71	8.85	8.52	9.72	31.592	15.00	30.00	Pass

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

Chain 0

1. 11dBm + 10log (41.89) = 27.22 > 24dBm
2. 11dBm + 10log (42.39) = 27.27 > 24dBm
3. 11dBm + 10log (42.09) = 27.24 > 24dBm
4. 11dBm + 10log (42.14) = 27.24 > 24dBm
5. 11dBm + 10log (42.32) = 27.26 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.05) = 26.55 > 24dBm

Chain 1

1. 11dBm + 10log (42.13) = 27.24 > 24dBm
2. 11dBm + 10log (42.21) = 27.25 > 24dBm
3. 11dBm + 10log (42.08) = 27.24 > 24dBm
4. 11dBm + 10log (42.18) = 27.25 > 24dBm
5. 11dBm + 10log (42.57) = 27.29 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.03) = 26.55 > 24dBm

Chain 2

1. 11dBm + 10log (42.25) = 27.25 > 24dBm
2. 11dBm + 10log (42.30) = 27.26 > 24dBm
3. 11dBm + 10log (42.15) = 27.24 > 24dBm
4. 11dBm + 10log (42.55) = 27.28 > 24dBm
5. 11dBm + 10log (42.29) = 27.26 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.07) = 26.55 > 24dBm

Chain 3

1. 11dBm + 10log (41.92) = 27.22 > 24dBm
2. 11dBm + 10log (42.14) = 27.24 > 24dBm
3. 11dBm + 10log (41.97) = 27.22 > 24dBm
4. 11dBm + 10log (42.33) = 27.26 > 24dBm
5. 11dBm + 10log (42.17) = 27.25 > 24dBm
6. 11dBm + 10log (5725.00 - 5688.82) = 26.58 > 24dBm

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	15.72	14.82	15.34	15.71	139.101	21.43	24.00	Pass
106	5530	15.38	15.70	16.12	16.18	154.089	21.88	24.00	Pass
122	5610	16.87	16.93	17.25	17.08	202.097	23.06	24.00	Pass
138	5690 (For U-NII-2C)	16.85	16.74	17.03	16.92	195.294	22.91	24.00	Pass
138	5690 (For U-NII-3)	10.55	10.71	11.20	10.35	47.148	16.73	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0

1. 11dBm + 10log (82.99) = 30.19 > 24dBm
2. 11dBm + 10log (83.29) = 30.20 > 24dBm
3. 11dBm + 10log (83.72) = 30.22 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.82) = 29.81 > 24dBm

Chain 1

1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (82.85) = 30.18 > 24dBm
3. 11dBm + 10log (83.34) = 30.20 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.76) = 29.82 > 24dBm

Chain 2

1. 11dBm + 10log (82.79) = 30.17 > 24dBm
2. 11dBm + 10log (83.05) = 30.19 > 24dBm
3. 11dBm + 10log (83.50) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.64) = 29.82 > 24dBm

Chain 3

1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (83.08) = 30.19 > 24dBm
3. 11dBm + 10log (83.29) = 30.20 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.69) = 29.82 > 24dBm

802.11ac (VHT80+80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	15.16	16.05	-	-	73.081	18.64	30.00	Pass
58	5290	-	-	15.10	15.45	67.435	18.29	24.00	Pass
106	5530	14.95	15.18	-	-	137.810	21.39	24.00	Pass
122	5610	-	-	15.50	15.81				

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (82.94) = 30.18 > 24dBm
2. 11dBm + 10log (83.44) = 30.21 > 24dBm
Chain 1
1. 11dBm + 10log (82.86) = 30.18 > 24dBm
2. 11dBm + 10log (83.67) = 30.22 > 24dBm
Chain 2
1. 11dBm + 10log (85.68) = 30.32 > 24dBm
Chain 3
1. 11dBm + 10log (82.76) = 30.17 > 24dBm

802.11ax (HE20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	12.64	11.65	12.53	12.68	69.429	18.42	24.00	Pass
60	5300	12.99	11.98	12.76	13.08	74.886	18.74	24.00	Pass
64	5320	12.75	11.79	12.43	12.79	70.447	18.48	24.00	Pass
100	5500	12.33	12.51	12.72	13.46	75.813	18.80	24.00	Pass
116	5580	12.58	12.85	12.66	13.34	77.416	18.89	24.00	Pass
140	5700	12.43	12.67	12.75	12.91	74.371	18.71	24.00	Pass
144	5720 (For U-NII-2C)	12.25	12.33	12.40	12.71	69.930	18.45	22.88	Pass
144	5720 (For U-NII-3)	6.34	6.49	6.33	6.85	17.899	12.53	30.00	Pass

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (21.27) = 24.27 > 24dBm
2. 11dBm + 10log (20.92) = 24.20 > 24dBm
3. 11dBm + 10log (21.10) = 24.24 > 24dBm
4. 11dBm + 10log (21.19) = 24.26 > 24dBm
5. 11dBm + 10log (20.96) = 24.21 > 24dBm
6. 11dBm + 10log (21.02) = 24.22 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.42) = 22.92 < 24dBm

Chain 1
1. 11dBm + 10log (21.20) = 24.26 > 24dBm
2. 11dBm + 10log (20.75) = 24.17 > 24dBm
3. 11dBm + 10log (20.94) = 24.20 > 24dBm
4. 11dBm + 10log (21.18) = 24.25 > 24dBm
5. 11dBm + 10log (21.24) = 24.27 > 24dBm
6. 11dBm + 10log (20.88) = 24.19 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.42) = 22.92 < 24dBm

Chain 2
1. 11dBm + 10log (20.84) = 24.18 > 24dBm
2. 11dBm + 10log (20.94) = 24.20 > 24dBm
3. 11dBm + 10log (20.87) = 24.19 > 24dBm
4. 11dBm + 10log (21.07) = 24.23 > 24dBm
5. 11dBm + 10log (20.99) = 24.22 > 24dBm
6. 11dBm + 10log (21.25) = 24.27 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.49) = 22.90 < 24dBm

Chain 3

1. 11dBm + 10log (21.52) = 24.32 > 24dBm
2. 11dBm + 10log (21.16) = 24.25 > 24dBm
3. 11dBm + 10log (21.01) = 24.22 > 24dBm
4. 11dBm + 10log (21.18) = 24.25 > 24dBm
5. 11dBm + 10log (21.33) = 24.28 > 24dBm
6. 11dBm + 10log (21.06) = 24.23 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.58) = 22.88 < 24dBm

802.11ax (HE40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	15.66	14.68	15.69	15.48	138.576	21.42	24.00	Pass
62	5310	15.81	14.72	15.63	15.67	**141.212**	21.50	24.00	Pass
102	5510	14.92	15.17	15.58	15.62	136.547	21.35	24.00	Pass
110	5550	15.14	15.32	15.61	16.02	143.086	21.56	24.00	Pass
134	5670	15.42	15.19	15.51	15.86	141.982	21.52	24.00	Pass
142	5710 (For U-NII-2C)	15.42	15.07	15.42	15.87	140.441	21.47	24.00	Pass
142	5710 (For U-NII-3)	8.74	8.87	8.54	9.74	31.755	15.02	30.00	Pass

Note:

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

Chain 0

1. 11dBm + 10log (41.89) = 27.22 > 24dBm
2. 11dBm + 10log (42.39) = 27.27 > 24dBm
3. 11dBm + 10log (42.09) = 27.24 > 24dBm
4. 11dBm + 10log (42.14) = 27.24 > 24dBm
5. 11dBm + 10log (42.32) = 27.26 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.05) = 26.55 > 24dBm

Chain 1

1. 11dBm + 10log (42.13) = 27.24 > 24dBm
2. 11dBm + 10log (42.21) = 27.25 > 24dBm
3. 11dBm + 10log (42.08) = 27.24 > 24dBm
4. 11dBm + 10log (42.18) = 27.25 > 24dBm
5. 11dBm + 10log (42.57) = 27.29 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.03) = 26.55 > 24dBm

Chain 2

1. 11dBm + 10log (42.25) = 27.25 > 24dBm
2. 11dBm + 10log (42.30) = 27.26 > 24dBm
3. 11dBm + 10log (42.15) = 27.24 > 24dBm
4. 11dBm + 10log (42.55) = 27.28 > 24dBm
5. 11dBm + 10log (42.29) = 27.26 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.07) = 26.55 > 24dBm

Chain 3

1. 11dBm + 10log (41.92) = 27.22 > 24dBm
2. 11dBm + 10log (42.14) = 27.24 > 24dBm
3. 11dBm + 10log (41.97) = 27.22 > 24dBm
4. 11dBm + 10log (42.33) = 27.26 > 24dBm
5. 11dBm + 10log (42.17) = 27.25 > 24dBm
6. 11dBm + 10log (5725.00 - 5688.82) = 26.58 > 24dBm

802.11ax (HE80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	15.75	14.88	15.37	15.75	140.363	21.47	24.00	Pass
106	5530	15.41	15.72	16.14	16.21	154.977	21.90	24.00	Pass
122	5610	16.89	16.95	17.27	17.11	**203.148**	23.08	24.00	Pass
138	5690 (For U-NII-2C)	16.89	16.77	17.09	16.99	197.570	22.96	24.00	Pass
138	5690 (For U-NII-3)	10.59	10.75	11.24	10.37	47.534	16.77	30.00	Pass

Note:

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

Chain 0

1. 11dBm + 10log (82.99) = 30.19 > 24dBm
2. 11dBm + 10log (83.29) = 30.20 > 24dBm
3. 11dBm + 10log (83.72) = 30.22 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.82) = 29.81 > 24dBm

Chain 1

1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (82.85) = 30.18 > 24dBm
3. 11dBm + 10log (83.34) = 30.20 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.76) = 29.82 > 24dBm

Chain 2

1. 11dBm + 10log (82.79) = 30.17 > 24dBm
2. 11dBm + 10log (83.05) = 30.19 > 24dBm
3. 11dBm + 10log (83.50) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.64) = 29.82 > 24dBm

Chain 3

1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (83.08) = 30.19 > 24dBm
3. 11dBm + 10log (83.29) = 30.20 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.69) = 29.82 > 24dBm

802.11ax (HE80+80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	15.19	16.08	-	-	73.588	18.67	30.00	Pass
58	5290	-	-	15.12	15.47	67.746	18.31	24.00	Pass
106	5530	14.97	15.20	-	-	138.44	21.41	24.00	Pass
122	5610	-	-	15.53	15.82				

Note:
For U-NII-2A, U-NII-2C Band:
Chain 0
1. 11dBm + 10log (82.94) = 30.18 > 24dBm
2. 11dBm + 10log (83.44) = 30.21 > 24dBm
Chain 1
1. 11dBm + 10log (82.86) = 30.18 > 24dBm
2. 11dBm + 10log (83.67) = 30.22 > 24dBm
Chain 2
1. 11dBm + 10log (85.68) = 30.32 > 24dBm
Chain 3
1. 11dBm + 10log (82.76) = 30.17 > 24dBm

Beamforming Mode

802.11ac (VHT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	12.61	11.63	12.50	12.65	68.984	18.39	19.65	Pass
60	5300	12.95	11.95	12.73	13.05	74.325	18.71	19.65	Pass
64	5320	12.73	11.74	12.41	12.74	69.872	18.44	19.65	Pass
100	5500	12.30	12.48	12.70	13.42	75.283	18.77	19.58	Pass
116	5580	12.56	12.83	12.63	13.31	76.969	18.86	19.58	Pass
140	5700	12.41	12.65	12.71	12.89	73.943	18.69	19.58	Pass
144	5720 (For U-NII-2C)	12.20	12.30	12.38	12.68	69.412	18.41	18.46	Pass
144	5720 (For U-NII-3)	6.32	6.45	6.30	6.83	17.786	12.50	25.44	Pass

Note:

For U-NII-2A, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.35dBi > 6dBi, so the limit shall be reduced to 24-(10.35-6) = 19.65dBm.
For U-NII-2C, The directional gain is is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 24-(10.42-6) = 19.58dBm.
For U-NII-2C(5720MHz), The directional gain is is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 22.88-(10.42-6) = 18.46dBm.
For U-NII-3, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.56dBi > 6dBi, so the limit shall be reduced to 24-(10.56-6) = 25.44dBm.

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

Chain 0

1. 11dBm + 10log (21.27) = 24.27 > 24dBm
2. 11dBm + 10log (20.92) = 24.20 > 24dBm
3. 11dBm + 10log (21.10) = 24.24 > 24dBm
4. 11dBm + 10log (21.19) = 24.26 > 24dBm
5. 11dBm + 10log (20.96) = 24.21 > 24dBm
6. 11dBm + 10log (21.02) = 24.22 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.42) = 22.92 < 24dBm

Chain 1

1. 11dBm + 10log (21.20) = 24.26 > 24dBm
2. 11dBm + 10log (20.75) = 24.17 > 24dBm
3. 11dBm + 10log (20.94) = 24.20 > 24dBm
4. 11dBm + 10log (21.18) = 24.25 > 24dBm
5. 11dBm + 10log (21.24) = 24.27 > 24dBm
6. 11dBm + 10log (20.88) = 24.19 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.42) = 22.92 < 24dBm

Chain 2

1. 11dBm + 10log (20.84) = 24.18 > 24dBm
2. 11dBm + 10log (20.94) = 24.20 > 24dBm
3. 11dBm + 10log (20.87) = 24.19 > 24dBm
4. 11dBm + 10log (21.07) = 24.23 > 24dBm
5. 11dBm + 10log (20.99) = 24.22 > 24dBm
6. 11dBm + 10log (21.25) = 24.27 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.49) = 22.90 < 24dBm

Chain 3

1. 11dBm + 10log (21.52) = 24.32 > 24dBm
2. 11dBm + 10log (21.16) = 24.25 > 24dBm
3. 11dBm + 10log (21.01) = 24.22 > 24dBm
4. 11dBm + 10log (21.18) = 24.25 > 24dBm
5. 11dBm + 10log (21.33) = 24.28 > 24dBm
6. 11dBm + 10log (21.06) = 24.23 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.58) = 22.88 < 24dBm

802.11ac (VHT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	13.51	12.53	13.51	13.33	84.312	19.26	19.65	Pass
62	5310	13.63	12.56	13.49	13.53	85.976	19.34	19.65	Pass
102	5510	12.76	13.00	13.43	13.47	83.095	19.20	19.58	Pass
110	5550	12.98	13.17	13.44	13.87	87.068	19.40	19.58	Pass
134	5670	13.25	13.03	13.35	13.70	86.295	19.36	19.58	Pass
142	5710 (For U-NII-2C)	13.40	13.03	13.41	13.85	88.163	19.45	19.58	Pass
142	5710 (For U-NII-3)	6.71	6.85	6.52	7.72	19.933	13.00	25.44	Pass

Note:

For U-NII-2A, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.35dBi > 6dBi, so the limit shall be reduced to 24-(10.35-6) = 19.65dBm.
For U-NII-2C, The directional gain is is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 24-(10.42-6) = 19.58dBm.
For U-NII-3, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.56dBi > 6dBi, so the limit shall be reduced to 24-(10.56-6) = 25.44dBm.

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

Chain 0

1. 11dBm + 10log (41.89) = 27.22 > 24dBm
2. 11dBm + 10log (42.39) = 27.27 > 24dBm
3. 11dBm + 10log (42.09) = 27.24 > 24dBm
4. 11dBm + 10log (42.14) = 27.24 > 24dBm
5. 11dBm + 10log (42.32) = 27.26 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.05) = 26.55 > 24dBm

Chain 1

1. 11dBm + 10log (42.13) = 27.24 > 24dBm
2. 11dBm + 10log (42.21) = 27.25 > 24dBm
3. 11dBm + 10log (42.08) = 27.24 > 24dBm
4. 11dBm + 10log (42.18) = 27.25 > 24dBm
5. 11dBm + 10log (42.57) = 27.29 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.03) = 26.55 > 24dBm

Chain 2

1. 11dBm + 10log (42.25) = 27.25 > 24dBm
2. 11dBm + 10log (42.30) = 27.26 > 24dBm
3. 11dBm + 10log (42.15) = 27.24 > 24dBm
4. 11dBm + 10log (42.55) = 27.28 > 24dBm
5. 11dBm + 10log (42.29) = 27.26 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.07) = 26.55 > 24dBm

Chain 3

1. 11dBm + 10log (41.92) = 27.22 > 24dBm
2. 11dBm + 10log (42.14) = 27.24 > 24dBm
3. 11dBm + 10log (41.97) = 27.22 > 24dBm
4. 11dBm + 10log (42.33) = 27.26 > 24dBm
5. 11dBm + 10log (42.17) = 27.25 > 24dBm
6. 11dBm + 10log (5725.00 - 5688.82) = 26.58 > 24dBm

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	13.60	12.70	13.22	13.59	85.375	19.31	19.65	Pass
106	5530	12.75	13.07	13.49	13.55	84.095	19.25	19.58	Pass
122	5610	13.24	13.30	13.62	13.45	87.611	19.43	19.58	Pass
138	5690 (For U-NII-2C)	12.89	12.77	13.09	12.99	78.654	18.96	19.58	Pass
138	5690 (For U-NII-3)	6.59	6.75	7.24	6.37	18.924	12.77	25.44	Pass

Note:

For U-NII-2A, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.35dBi > 6dBi, so the limit shall be reduced to 24-(10.35-6) = 19.65dBm.
For U-NII-2C, The directional gain is is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 24-(10.42-6) = 19.58dBm.
For U-NII-3, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.56dBi > 6dBi, so the limit shall be reduced to 24-(10.56-6) = 25.44dBm.

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

Chain 0

1. 11dBm + 10log (82.99) = 30.19 > 24dBm
2. 11dBm + 10log (83.29) = 30.20 > 24dBm
3. 11dBm + 10log (83.72) = 30.22 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.82) = 29.81 > 24dBm

Chain 1

1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (82.85) = 30.18 > 24dBm
3. 11dBm + 10log (83.34) = 30.20 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.76) = 29.82 > 24dBm

Chain 2

1. 11dBm + 10log (82.79) = 30.17 > 24dBm
2. 11dBm + 10log (83.05) = 30.19 > 24dBm
3. 11dBm + 10log (83.50) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.64) = 29.82 > 24dBm

Chain 3

1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (83.08) = 30.19 > 24dBm
3. 11dBm + 10log (83.29) = 30.20 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.69) = 29.82 > 24dBm

802.11ac (VHT80+80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	15.16	16.05	-	-	73.081	18.64	28.39	Pass
58	5290	-	-	15.10	15.45	67.435	18.29	22.94	Pass
106	5530	12.90	13.15	-	-	84.751	19.28	19.58	Pass
122	5610	-	-	13.32	13.64				

Note:
For U-NII-1, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/2$]=7.61dBi > 6dBi, so the limit shall be reduced to 30-(7.61-6) = 28.39dBm.
For U-NII-2A, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/2$]=7.06dBi > 6dBi, so the limit shall be reduced to 24-(7.06-6) = 22.94dBm.
For U-NII-2C, The directional gain is is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 24-(10.42-6) = 19.58dBm.

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

Chain 0

1. 11dBm + 10log (82.94) = 30.18 > 24dBm
2. 11dBm + 10log (83.44) = 30.21 > 24dBm

Chain 1

1. 11dBm + 10log (82.86) = 30.18 > 24dBm
2. 11dBm + 10log (83.67) = 30.22 > 24dBm

Chain 2

1. 11dBm + 10log (85.68) = 30.32 > 24dBm

Chain 3

1. 11dBm + 10log (82.76) = 30.17 > 24dBm

802.11ax (HE20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	12.64	11.65	12.53	12.68	69.429	18.42	19.65	Pass
60	5300	12.99	11.98	12.76	13.08	74.886	18.74	19.65	Pass
64	5320	12.75	11.79	12.43	12.79	70.447	18.48	19.65	Pass
100	5500	12.33	12.51	12.72	13.46	75.813	18.80	19.58	Pass
116	5580	12.58	12.85	12.66	13.34	77.416	18.89	19.58	Pass
140	5700	12.43	12.67	12.75	12.91	74.371	18.71	19.58	Pass
144	5720 (For U-NII-2C)	12.25	12.33	12.40	12.71	69.930	18.45	18.46	Pass
144	5720 (For U-NII-3)	6.34	6.49	6.33	6.85	17.899	12.53	25.44	Pass

Note:

For U-NII-2A, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.35dBi > 6dBi, so the limit shall be reduced to 24-(10.35-6) = 19.65dBm.
For U-NII-2C, The directional gain is is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 24-(10.42-6) = 19.58dBm.
For U-NII-2C(5720MHz), The directional gain is is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 22.88-(10.42-6) = 18.46dBm.
For U-NII-3, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.56dBi > 6dBi, so the limit shall be reduced to 24-(10.56-6) = 25.44dBm.

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

Chain 0

1. 11dBm + 10log (21.27) = 24.27 > 24dBm
2. 11dBm + 10log (20.92) = 24.20 > 24dBm
3. 11dBm + 10log (21.10) = 24.24 > 24dBm
4. 11dBm + 10log (21.19) = 24.26 > 24dBm
5. 11dBm + 10log (20.96) = 24.21 > 24dBm
6. 11dBm + 10log (21.02) = 24.22 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.42) = 22.92 < 24dBm

Chain 1

1. 11dBm + 10log (21.20) = 24.26 > 24dBm
2. 11dBm + 10log (20.75) = 24.17 > 24dBm
3. 11dBm + 10log (20.94) = 24.20 > 24dBm
4. 11dBm + 10log (21.18) = 24.25 > 24dBm
5. 11dBm + 10log (21.24) = 24.27 > 24dBm
6. 11dBm + 10log (20.88) = 24.19 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.42) = 22.92 < 24dBm

Chain 2

1. 11dBm + 10log (20.84) = 24.18 > 24dBm
2. 11dBm + 10log (20.94) = 24.20 > 24dBm
3. 11dBm + 10log (20.87) = 24.19 > 24dBm
4. 11dBm + 10log (21.07) = 24.23 > 24dBm
5. 11dBm + 10log (20.99) = 24.22 > 24dBm
6. 11dBm + 10log (21.25) = 24.27 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.49) = 22.90 < 24dBm

Chain 3

1. 11dBm + 10log (21.52) = 24.32 > 24dBm
2. 11dBm + 10log (21.16) = 24.25 > 24dBm
3. 11dBm + 10log (21.01) = 24.22 > 24dBm
4. 11dBm + 10log (21.18) = 24.25 > 24dBm
5. 11dBm + 10log (21.33) = 24.28 > 24dBm
6. 11dBm + 10log (21.06) = 24.23 > 24dBm
7. 11dBm + 10log (5725.00 - 5709.58) = 22.88 < 24dBm

802.11ax (HE40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	13.62	12.64	13.65	13.44	86.634	19.38	19.65	Pass
62	5310	13.77	12.68	13.59	13.63	**88.282**	19.46	19.65	Pass
102	5510	12.89	13.14	13.55	13.59	85.562	19.32	19.58	Pass
110	5550	13.11	13.29	13.58	13.99	89.659	19.53	19.58	Pass
134	5670	13.39	13.16	13.48	13.83	88.968	19.49	19.58	Pass
142	5710 (For U-NII-2C)	13.42	13.07	13.42	13.87	88.612	19.47	19.58	Pass
142	5710 (For U-NII-3)	6.74	6.87	6.54	7.74	20.036	13.02	25.44	Pass

Note:

For U-NII-2A, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.35dBi > 6dBi, so the limit shall be reduced to 24-(10.35-6) = 19.65dBm.
For U-NII-2C, The directional gain is is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 24-(10.42-6) = 19.58dBm.
For U-NII-3, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.56dBi > 6dBi, so the limit shall be reduced to 24-(10.56-6) = 25.44dBm.

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

Chain 0

1. 11dBm + 10log (41.89) = 27.22 > 24dBm
2. 11dBm + 10log (42.39) = 27.27 > 24dBm
3. 11dBm + 10log (42.09) = 27.24 > 24dBm
4. 11dBm + 10log (42.14) = 27.24 > 24dBm
5. 11dBm + 10log (42.32) = 27.26 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.05) = 26.55 > 24dBm

Chain 1

1. 11dBm + 10log (42.13) = 27.24 > 24dBm
2. 11dBm + 10log (42.21) = 27.25 > 24dBm
3. 11dBm + 10log (42.08) = 27.24 > 24dBm
4. 11dBm + 10log (42.18) = 27.25 > 24dBm
5. 11dBm + 10log (42.57) = 27.29 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.03) = 26.55 > 24dBm

Chain 2

1. 11dBm + 10log (42.25) = 27.25 > 24dBm
2. 11dBm + 10log (42.30) = 27.26 > 24dBm
3. 11dBm + 10log (42.15) = 27.24 > 24dBm
4. 11dBm + 10log (42.55) = 27.28 > 24dBm
5. 11dBm + 10log (42.29) = 27.26 > 24dBm
6. 11dBm + 10log (5725.00 - 5689.07) = 26.55 > 24dBm

Chain 3

1. 11dBm + 10log (41.92) = 27.22 > 24dBm
2. 11dBm + 10log (42.14) = 27.24 > 24dBm
3. 11dBm + 10log (41.97) = 27.22 > 24dBm
4. 11dBm + 10log (42.33) = 27.26 > 24dBm
5. 11dBm + 10log (42.17) = 27.25 > 24dBm
6. 11dBm + 10log (5725.00 - 5688.82) = 26.58 > 24dBm

802.11ax (HE80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	13.71	12.84	13.33	13.71	87.751	19.43	19.65	Pass
106	5530	12.78	13.09	13.51	13.58	84.580	19.27	19.58	Pass
122	5610	13.37	13.43	13.75	13.59	**90.326**	19.56	19.58	Pass
138	5690 (For U-NII-2C)	12.89	12.77	13.09	12.99	78.654	18.96	19.58	Pass
138	5690 (For U-NII-3)	6.59	6.75	7.24	6.37	18.924	12.77	25.44	Pass

Note:

For U-NII-2A, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.35dBi > 6dBi, so the limit shall be reduced to 24-(10.35-6) = 19.65dBm.
For U-NII-2C, The directional gain is is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 24-(10.42-6) = 19.58dBm.
For U-NII-3, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.56dBi > 6dBi, so the limit shall be reduced to 24-(10.56-6) = 25.44dBm.

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

Chain 0

1. 11dBm + 10log (82.99) = 30.19 > 24dBm
2. 11dBm + 10log (83.29) = 30.20 > 24dBm
3. 11dBm + 10log (83.72) = 30.22 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.82) = 29.81 > 24dBm

Chain 1

1. 11dBm + 10log (83.24) = 30.20 > 24dBm
2. 11dBm + 10log (82.85) = 30.18 > 24dBm
3. 11dBm + 10log (83.34) = 30.20 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.76) = 29.82 > 24dBm

Chain 2

1. 11dBm + 10log (82.79) = 30.17 > 24dBm
2. 11dBm + 10log (83.05) = 30.19 > 24dBm
3. 11dBm + 10log (83.50) = 30.21 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.64) = 29.82 > 24dBm

Chain 3

1. 11dBm + 10log (83.37) = 30.21 > 24dBm
2. 11dBm + 10log (83.08) = 30.19 > 24dBm
3. 11dBm + 10log (83.29) = 30.20 > 24dBm
4. 11dBm + 10log (5725.00 - 5648.69) = 29.82 > 24dBm

802.11ax (HE80+80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	15.19	16.08	-	-	73.588	18.67	28.39	Pass
58	5290	-	-	15.12	15.47	67.746	18.31	22.94	Pass
106	5530	12.93	13.16	-	-	86.549	19.37	19.58	Pass
122	5610	-	-	13.49	13.78				

Note:
For U-NII-1, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/2$]=7.61dBi > 6dBi, so the limit shall be reduced to 30-(7.61-6) = 28.39dBm.
For U-NII-2A, The directional gain is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/2$]=7.06dBi > 6dBi, so the limit shall be reduced to 24-(7.06-6) = 22.94dBm.
For U-NII-2C, The directional gain is is 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 24-(10.42-6) = 19.58dBm.

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

Chain 0

1. 11dBm + 10log (82.94) = 30.18 > 24dBm
2. 11dBm + 10log (83.44) = 30.21 > 24dBm

Chain 1

1. 11dBm + 10log (82.86) = 30.18 > 24dBm
2. 11dBm + 10log (83.67) = 30.22 > 24dBm

Chain 2

1. 11dBm + 10log (85.68) = 30.32 > 24dBm

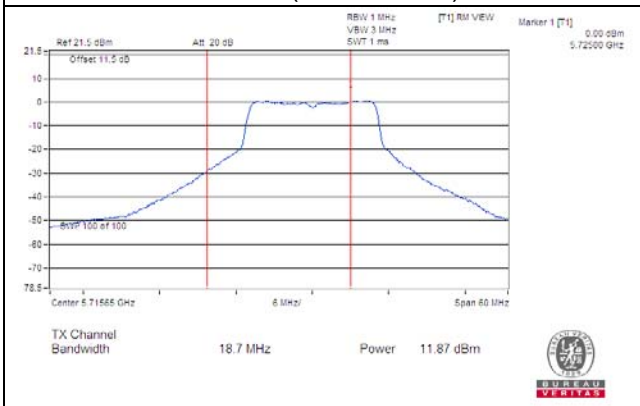
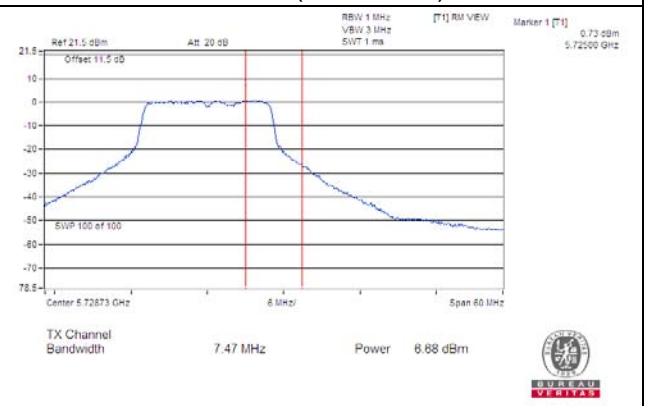
Chain 3

1. 11dBm + 10log (82.76) = 30.17 > 24dBm

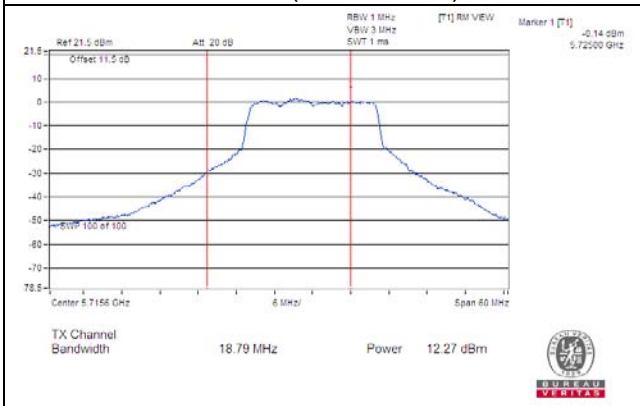
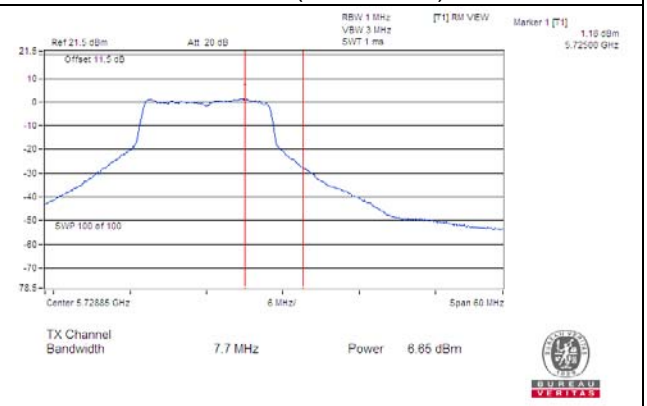
Straddle channel power plots:

802.11a

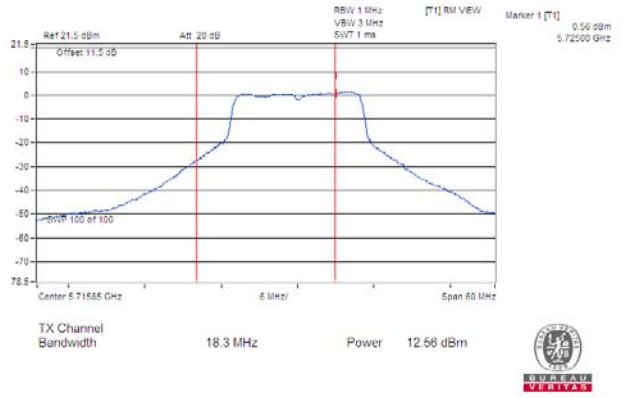
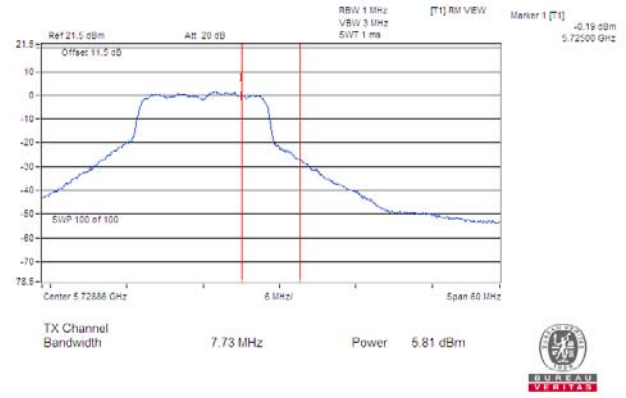
Chain 0

CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
	
TX Channel Bandwidth 18.7 MHz Power 11.87 dBm	TX Channel Bandwidth 7.47 MHz Power 6.88 dBm

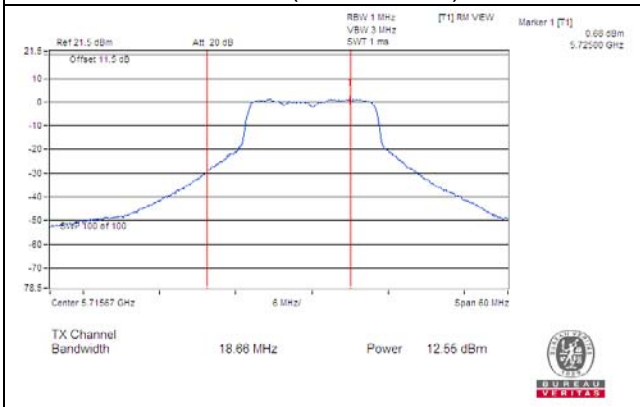
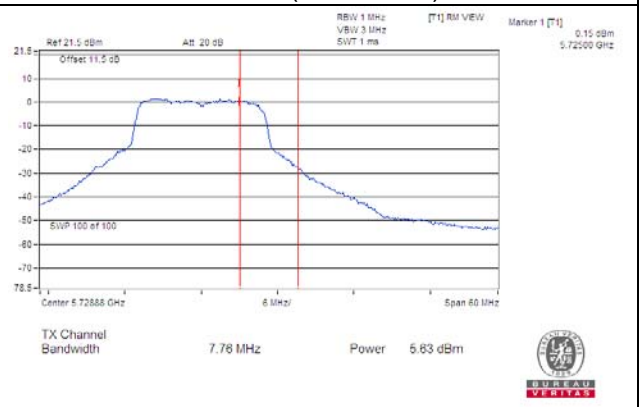
Chain 1

CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
	
TX Channel Bandwidth 18.79 MHz Power 12.27 dBm	TX Channel Bandwidth 7.7 MHz Power 6.65 dBm

Chain 2

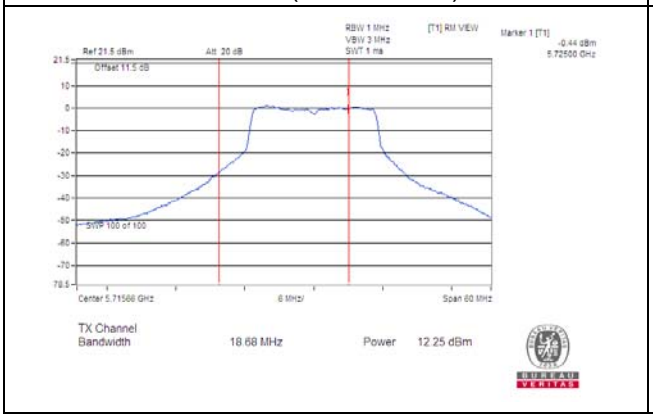
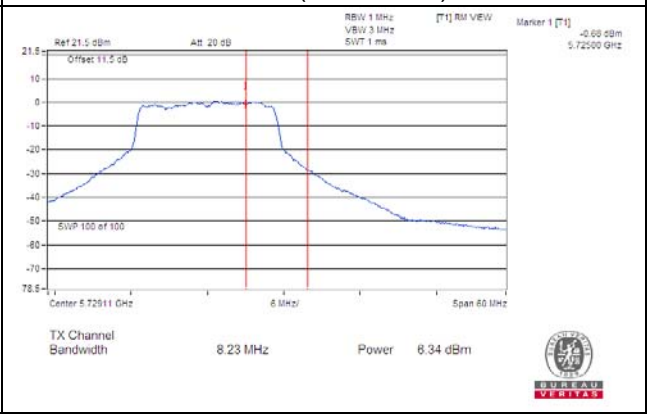
CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
	
TX Channel Bandwidth 18.3 MHz Power 12.56 dBm	TX Channel Bandwidth 7.73 MHz Power 5.81 dBm

Chain 3

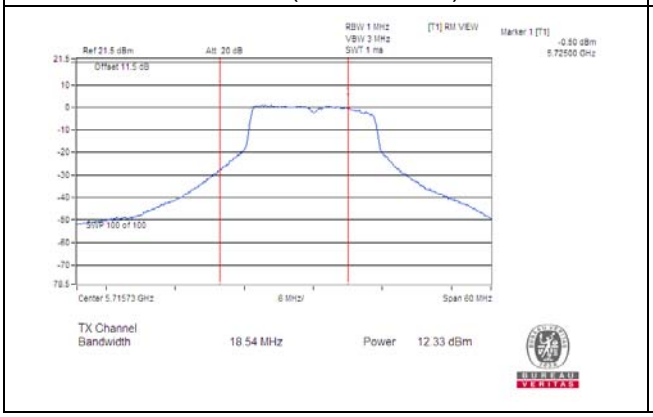
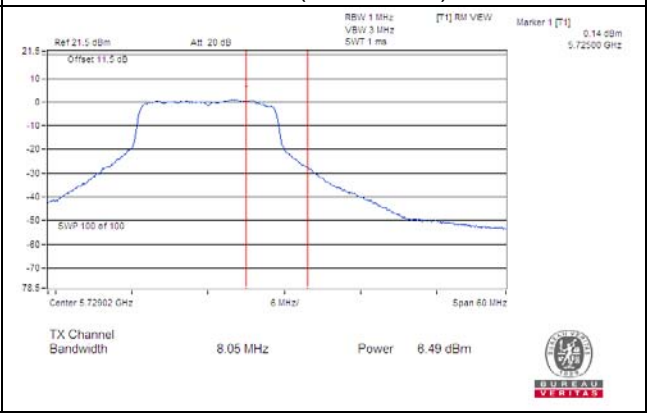
CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
	

802.11ax (HE20)

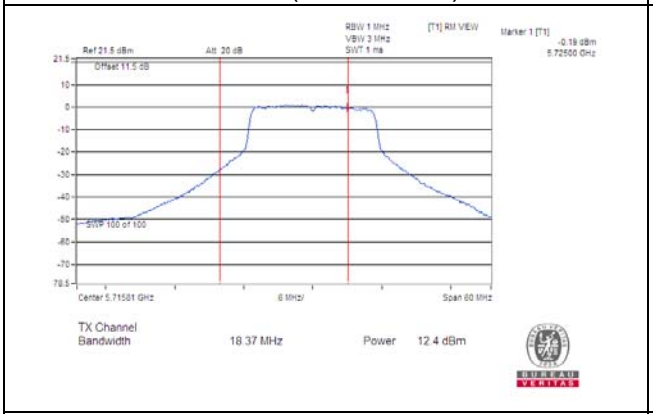
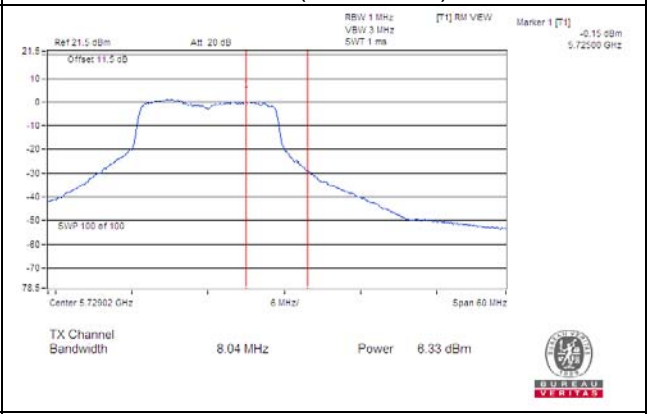
Chain 0

CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
	

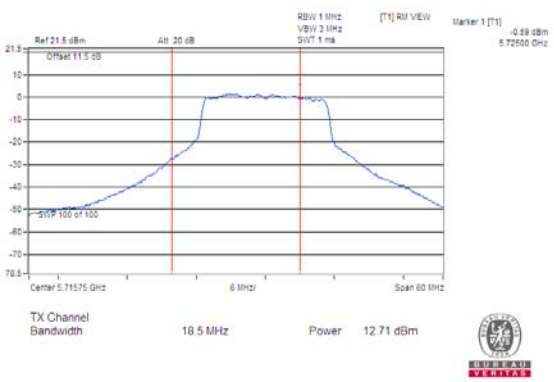
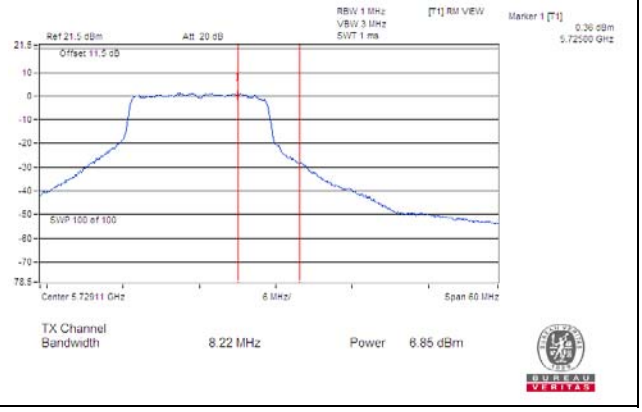
Chain 1

CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
	

Chain 2

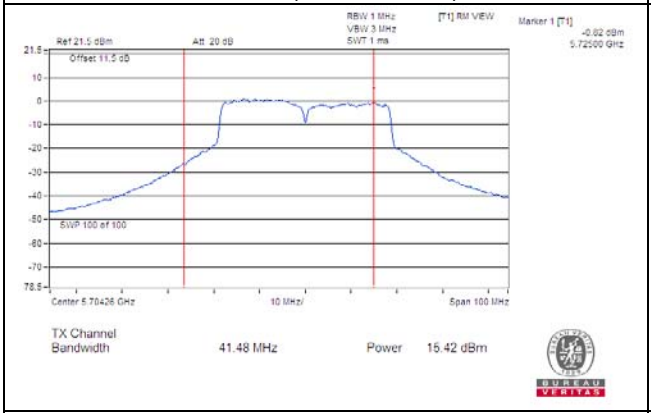
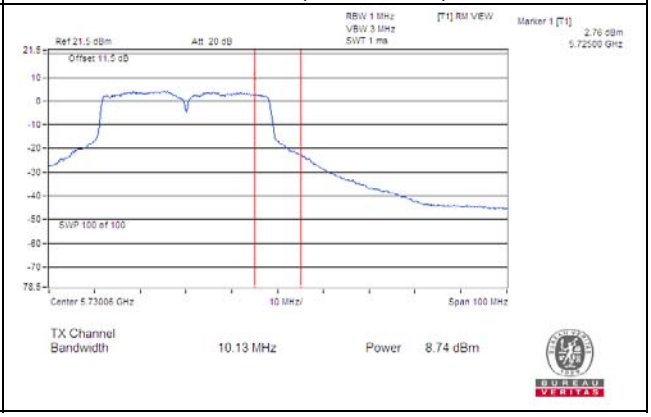
CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
	

Chain 3

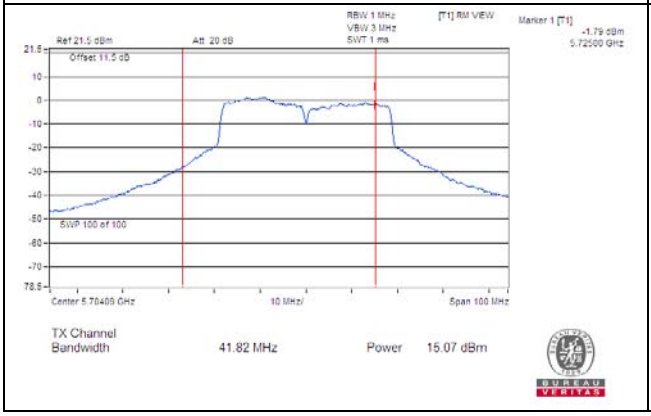
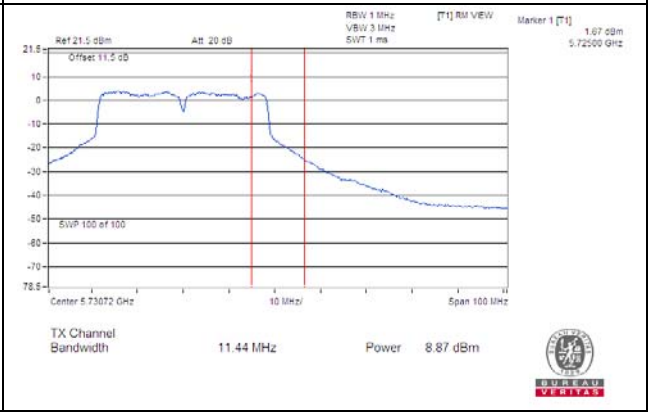
CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
	

802.11ax (HE40)

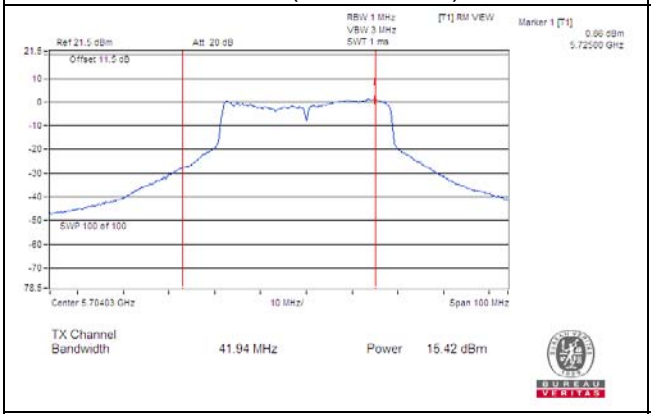
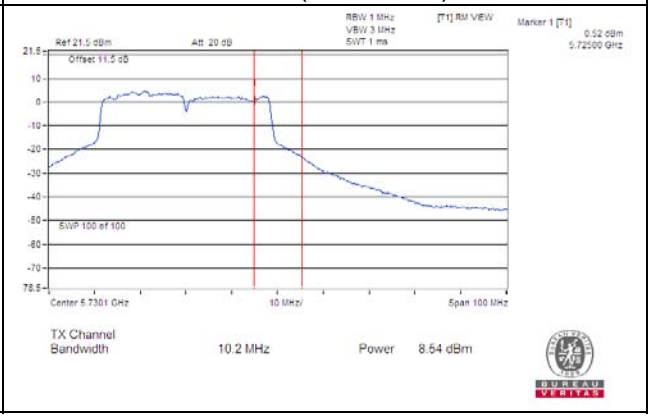
Chain 0

CH 142 (For U-NII-2C)	CH 142 (For U-NII-3)
	

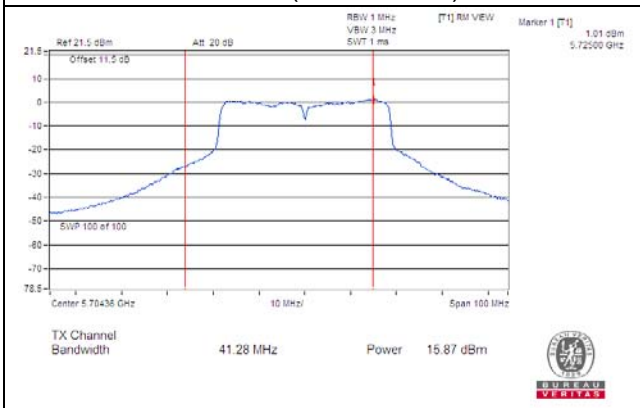
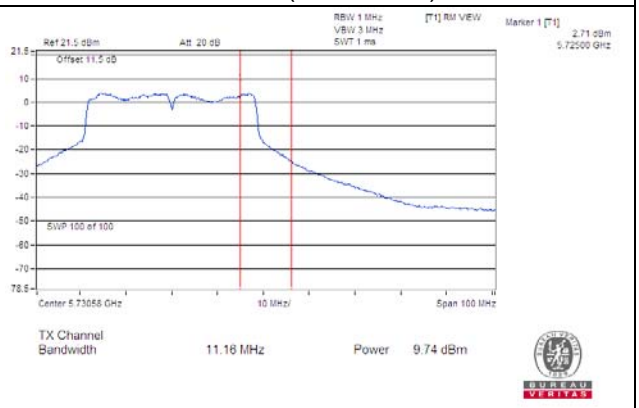
Chain 1

CH 142 (For U-NII-2C)	CH 142 (For U-NII-3)
	

Chain 2

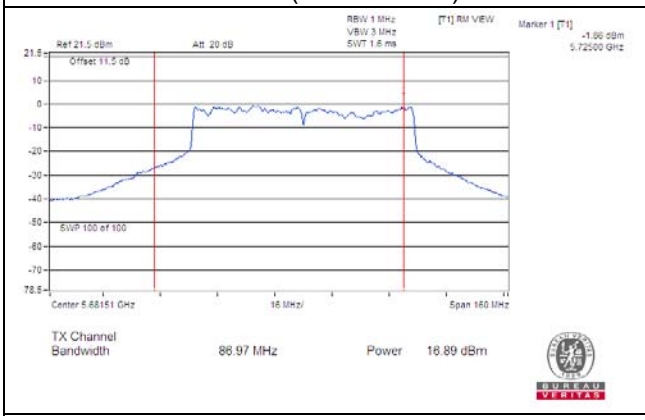
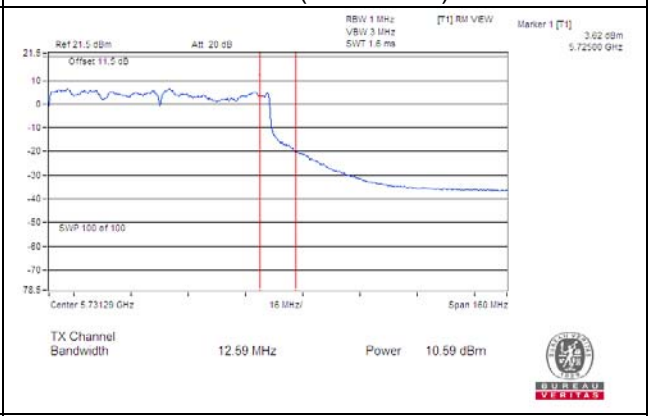
CH 142 (For U-NII-2C)	CH 142 (For U-NII-3)
	

Chain 3

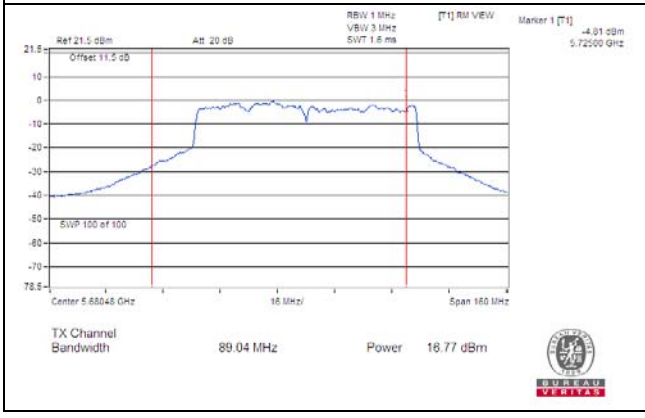
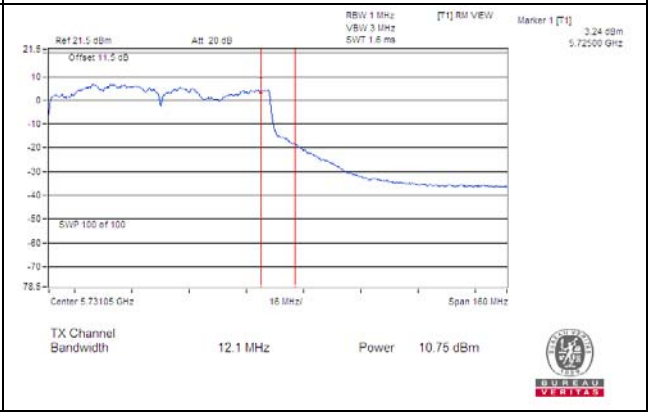
CH 142 (For U-NII-2C)	CH 142 (For U-NII-3)
	

802.11ax (HE80)

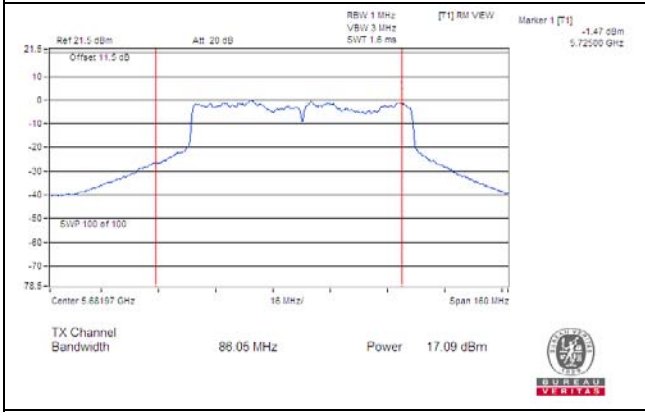
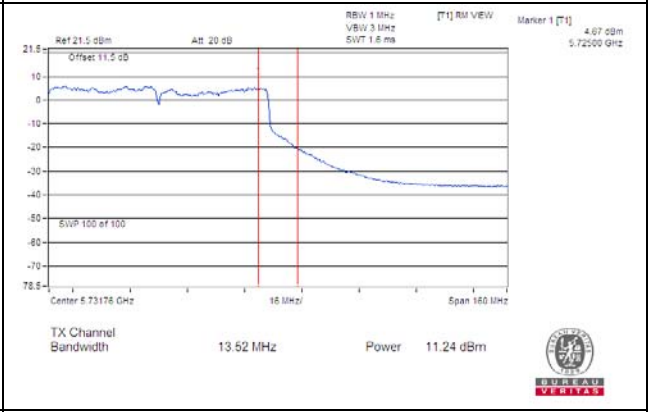
Chain 0

CH 138 (For U-NII-2C)	CH 138 (For U-NII-3)
	
TX Channel Bandwidth 86.97 MHz Power 16.89 dBm	TX Channel Bandwidth 12.59 MHz Power 10.59 dBm

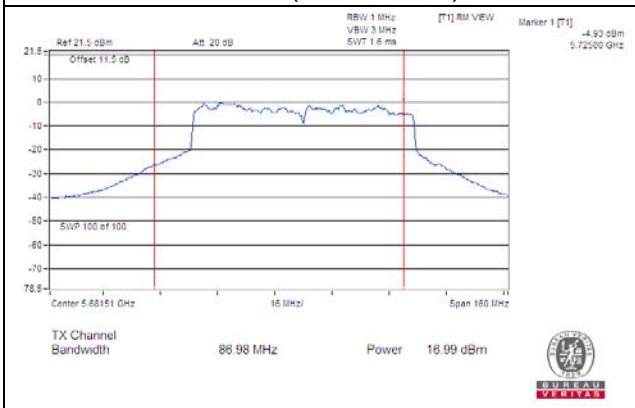
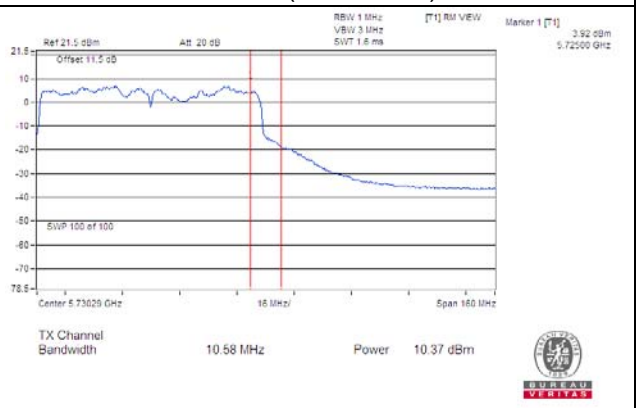
Chain 1

CH 138 (For U-NII-2C)	CH 138 (For U-NII-3)
	
TX Channel Bandwidth 89.04 MHz Power 16.77 dBm	TX Channel Bandwidth 12.1 MHz Power 10.75 dBm

Chain 2

CH 138 (For U-NII-2C)	CH 138 (For U-NII-3)
	
TX Channel Bandwidth 86.05 MHz Power 17.09 dBm	TX Channel Bandwidth 13.52 MHz Power 11.24 dBm

Chain 3

CH 138 (For U-NII-2C)	CH 138 (For U-NII-3)
	

26dB Bandwidth:

5G traffic radio (Radio 1)

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	19.54	19.71	19.41	19.45
60	5300	19.76	19.55	19.46	19.38
64	5320	19.50	19.47	19.29	19.64
100	5500	19.81	19.55	19.65	19.69
116	5580	19.75	19.23	19.59	19.62
140	5700	19.52	19.78	19.58	19.59
144	5720 (For U-NII-2C)	14.80	14.73	14.82	14.73

For CH144 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	21.27	21.20	20.84	21.52
60	5300	20.92	20.75	20.94	21.16
64	5320	21.10	20.94	20.87	21.01
100	5500	21.19	21.18	21.07	21.18
116	5580	20.96	21.24	20.99	21.33
140	5700	21.02	20.88	21.25	21.06
144	5720 (For U-NII-2C)	15.58	15.58	15.51	15.42

For CH144 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE40)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	41.89	42.13	42.25	41.92
62	5310	42.39	42.21	42.30	42.14
102	5510	42.09	42.08	42.15	41.97
110	5550	42.14	42.18	42.55	42.33
134	5670	42.32	42.57	42.29	42.17
142	5710 (For U-NII-2C)	35.95	35.97	35.93	36.18

For CH142 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

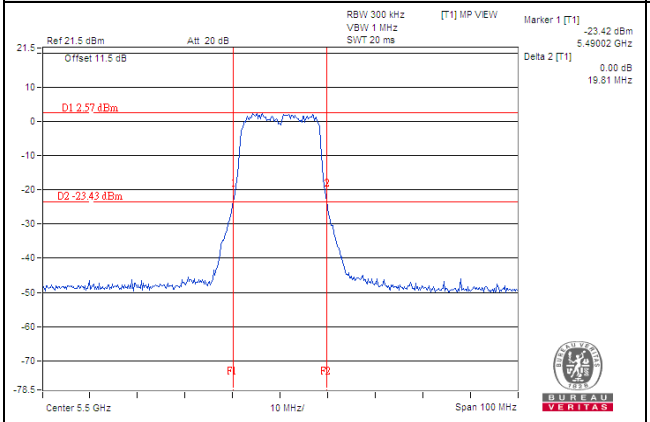
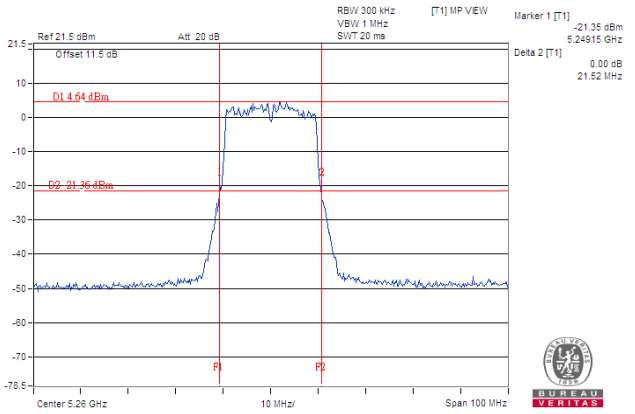
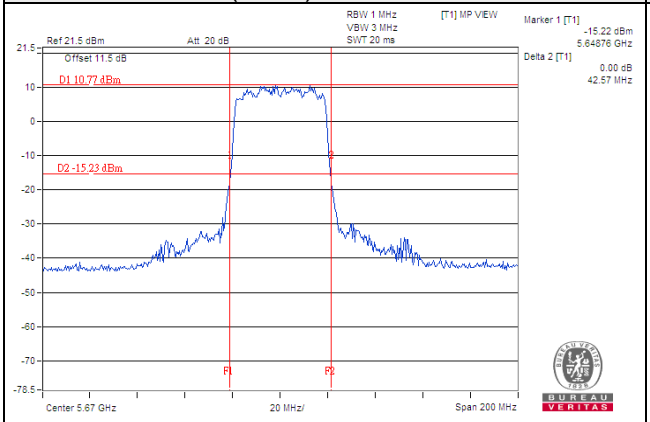
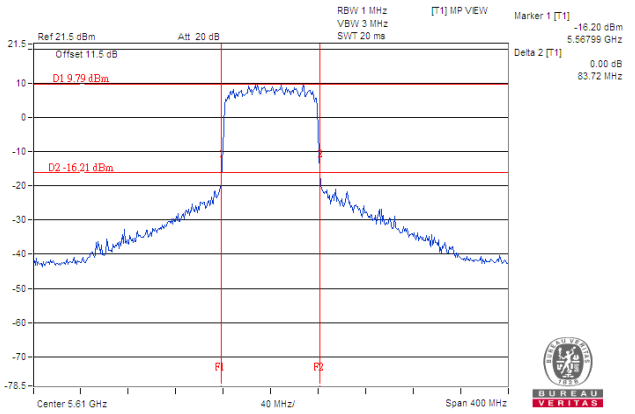
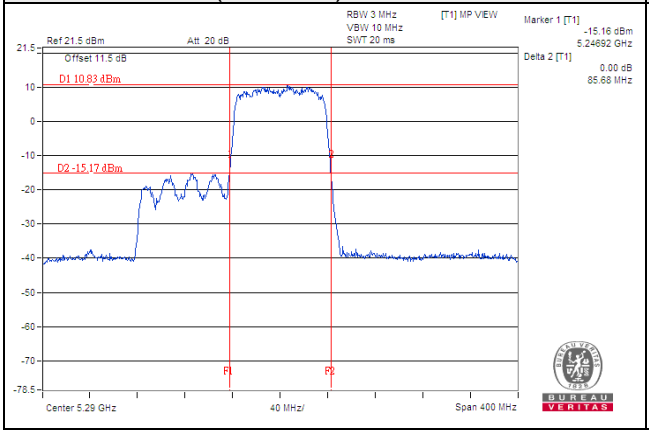
802.11ax (HE80)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	82.99	83.24	82.79	83.37
106	5530	83.29	82.85	83.05	83.08
122	5610	83.72	83.34	83.5	83.29
138	5690 (For U-NII-2C)	76.18	76.24	76.36	76.31

For CH138 (U-NII-2C Band): The 26dBc bandwidth below 5725MHz = 5725MHz - Marker 1

802.11ax (HE80+80)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	83.20	82.97	-	-
58	5290	-	-	85.68	82.76
106	5530	82.94	82.86	-	-
122	5610	-	-	83.44	83.67

Spectrum Plot of Worst Value	
802.11a / Chain 0 / Ch 100	802.11ax (HE20) / Chain 3 / Ch 52
	
802.11ax (HE40) / Chain 1 / Ch 134	802.11ax (HE80) / Chain 0 / Ch 122
	
802.11ax (HE80+80) / Chain 2 / Ch 58	
	

EUT Maximum Conducted Power

5G traffic radio (Radio 1)

CDD Mode

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	65.422	18.16
5470~5725	67.893	18.32

802.11ac (VHT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	74.325	18.71
5470~5725	76.969	18.86

802.11ac (VHT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	140.080	21.46
5470~5725	142.187	21.53

802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	139.101	21.43
5470~5725	202.097	23.06

802.11ac (VHT80+80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	67.435	18.29
5470~5725	137.810	21.39

802.11ax (HE20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	74.886	18.74
5470~5725	77.416	18.89

802.11ax (HE40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	141.212	21.50
5470~5725	143.086	21.56

802.11ax (HE80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	140.363	21.47
5470~5725	203.148	23.08

802.11ax (HE80+80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	67.746	18.31
5470~5725	138.44	21.41

Beamforming Mode

802.11ac (VHT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	74.325	18.71
5470~5725	76.969	18.86

802.11ac (VHT40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	85.976	19.34
5470~5725	88.163	19.45

802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	85.375	19.31
5470~5725	87.611	19.43

802.11ac (VHT80+80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	67.435	18.29
5470~5725	84.751	19.28

802.11ax (HE20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	74.886	18.74
5470~5725	77.416	18.89

802.11ax (HE40)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	88.282	19.46
5470~5725	89.659	19.53

802.11ax (HE80)

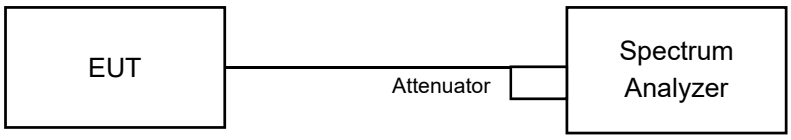
Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	87.751	19.43
5470~5725	90.326	19.56

802.11ax (HE80+80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	67.746	18.31
5470~5725	86.549	19.37

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Result

5G traffic radio (Radio 1)

802.11a

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

For CH144 (U-NII-2C Band): The Occupied bandwidth below 5725MHz = 5725MHz - Marker 1

For CH144 (UNII-3 Band): The Occupied bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
52	5260	18.84	19.08	18.84	19.08
60	5300	18.84	18.84	18.84	18.96
64	5320	18.84	18.84	18.84	18.84
100	5500	18.96	18.96	18.96	18.96
116	5580	18.84	18.84	18.84	18.96
140	5700	18.84	18.84	18.84	18.96
144	5720 (For U-NII-2C)	14.48	14.48	14.48	14.48
144	5720 (For U-NII-3)	4.36	4.48	4.36	4.36

For CH144 (U-NII-2C Band): The Occupied bandwidth below 5725MHz = 5725MHz - Marker 1

For CH144 (UNII-3 Band): The Occupied bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

802.11ax (HE40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
54	5270	38.64	38.64	38.64	38.64
62	5310	38.16	37.92	38.16	38.16
102	5510	37.92	37.92	37.92	37.92
110	5550	38.16	38.16	38.16	38.16
134	5670	37.92	38.16	38.16	38.16
142	5710 (For U-NII-2C)	34.08	34.08	34.08	34.08
142	5710 (For U-NII-3)	4.08	4.08	4.08	4.08

For CH142 (U-NII-2C Band): The Occupied bandwidth below 5725MHz = 5725MHz - Marker 1

For CH142 (UNII-3 Band): The Occupied bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

802.11ax (HE80)

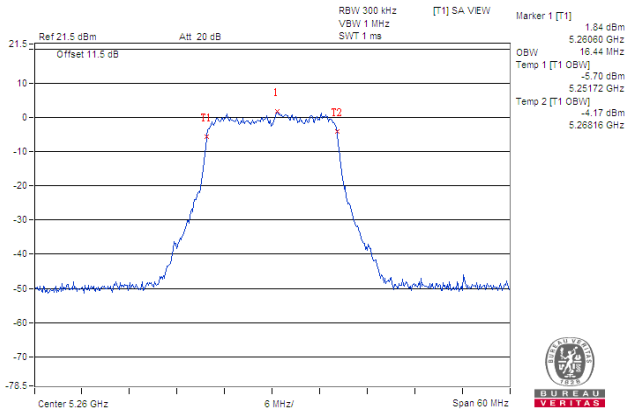
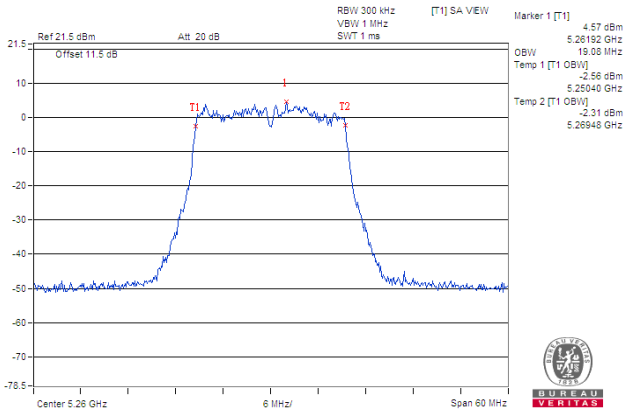
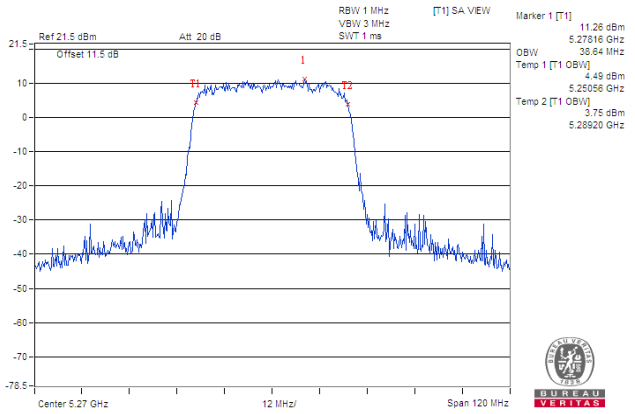
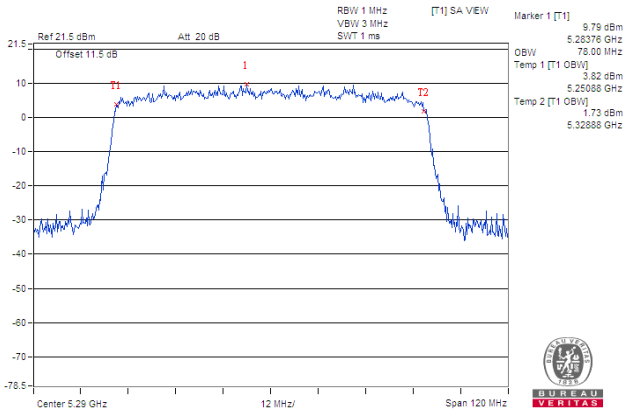
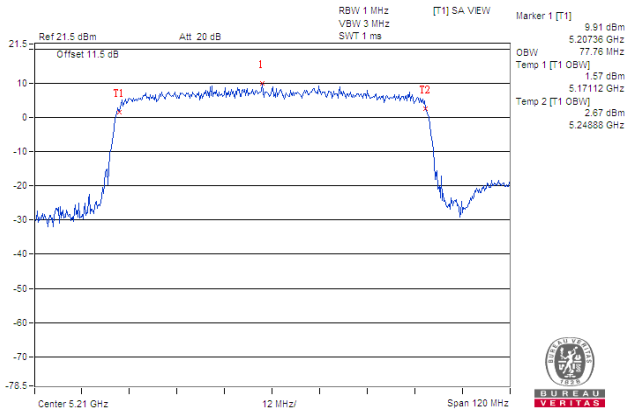
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
58	5290	77.28	77.76	77.52	78.00
106	5530	77.04	77.28	77.52	77.52
122	5610	77.52	77.52	77.52	77.52
138	5690 (For U-NII-2C)	73.88	73.64	73.64	73.64
138	5690 (For U-NII-3)	3.64	3.64	3.64	3.64

For CH138 (U-NII-2C Band): The Occupied bandwidth below 5725MHz = 5725MHz - Marker 1

For CH138 (UNII-3 Band): The Occupied bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

802.11ax (HE80+80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	77.76	77.76	-	-
58	5290	-	-	77.52	77.52
106	5530	77.28	77.28	-	-
122	5610	-	-	77.76	77.76

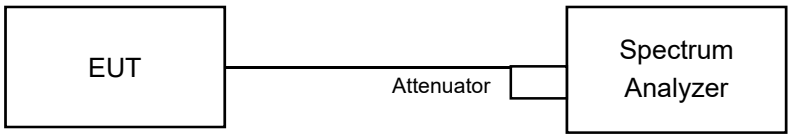
Spectrum Plot of Worst Value	
802.11a	802.11ax (HE20)
	
802.11ax (HE40)	802.11ax (HE80)
	
802.11ax (HE80+80)	
	

4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

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

Duty cycle of test signal is < 98%
Using method SA-2
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1MHz, Set VBW ≥ 3 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Record the max value and add 10 log (1/duty cycle)

For U-NII-3 band

Duty cycle <98%

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 (reducing) 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 Conditions

Same as 4.3.6.

4.5.7 Test Results

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

5G traffic radio (Radio 1)

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	0.22	0.01	0.28	-0.75	0.24	6.22	6.65	Pass
60	5300	-0.13	0.07	-0.73	-0.82	0.24	5.88	6.65	Pass
64	5320	0.25	0.27	-0.06	-0.70	0.24	6.22	6.65	Pass
100	5500	0.20	-0.93	-0.94	-0.04	0.24	5.87	6.58	Pass
116	5580	0.23	-0.15	0.30	-0.92	0.24	6.16	6.58	Pass
140	5700	-0.80	0.10	0.17	0.20	0.24	6.20	6.58	Pass
144	5720 (For U-NII-2C)	0.05	0.30	0.13	0.13	0.24	6.42	6.58	Pass

Note:
1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.35dBi > 6dBi, so the limit shall be reduced to 11-(10.35-6) = 6.65dBm.
   For U-NII-2C: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 11-(10.42-6) = 6.58dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
52	5260	-0.46	0.06	-0.19	0.25	0.20	6.14	6.65	Pass
60	5300	-0.32	-0.39	-0.28	-0.85	0.20	5.77	6.65	Pass
64	5320	-1.01	0.15	0.23	-0.72	0.20	5.92	6.65	Pass
100	5500	0.27	0.05	-0.37	-1.21	0.20	5.94	6.58	Pass
116	5580	-0.65	-0.53	-0.36	-0.41	0.20	5.73	6.58	Pass
140	5700	0.23	0.04	-0.14	-1.15	0.20	6.00	6.58	Pass
144	5720 (For U-NII-2C)	0.08	0.16	0.27	0.32	0.20	6.43	6.58	Pass

Note:
1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.35dBi > 6dBi, so the limit shall be reduced to 11-(10.35-6) = 6.65dBm.
   For U-NII-2C: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 11-(10.42-6) = 6.58dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
54	5270	-0.35	0.21	-0.83	-0.75	0.23	5.84	6.65	Pass
62	5310	0.09	-0.52	0.11	0.12	0.23	6.21	6.65	Pass
102	5510	-0.49	-0.21	-0.53	-0.32	0.23	5.87	6.65	Pass
110	5550	-0.37	0.08	-0.11	-0.04	0.23	6.15	6.58	Pass
134	5670	-0.07	0.23	0.23	-0.07	0.23	6.34	6.58	Pass
142	5710 (For U-NII-2C)	-0.05	0.22	-0.33	-0.03	0.23	6.21	6.58	Pass

Note:
1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.35dBi > 6dBi, so the limit shall be reduced to 11-(10.35-6) = 6.65dBm.
   For U-NII-2C: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 11-(10.42-6) = 6.58dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
58	5290	-3.26	-4.11	-3.70	-3.67	0.23	2.57	6.65	Pass
106	5530	-3.84	-4.41	-3.96	-3.92	0.23	2.22	6.58	Pass
122	5610	-3.19	-3.44	-2.64	-2.88	0.23	3.22	6.58	Pass
138	5690 (For U-NII-2C)	-3.20	-3.13	-3.28	-3.06	0.23	3.08	6.58	Pass

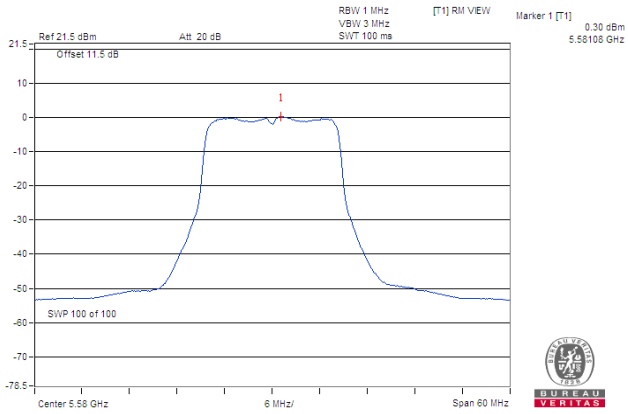
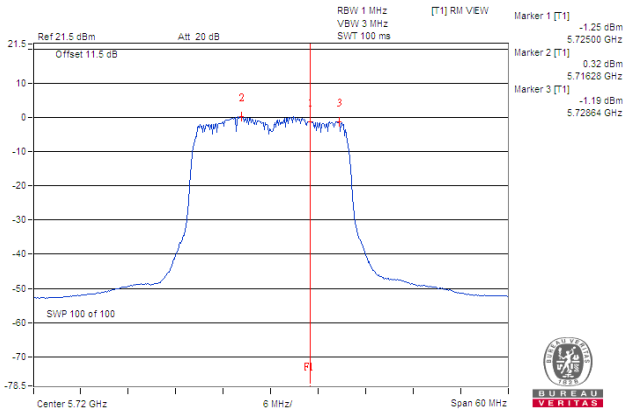
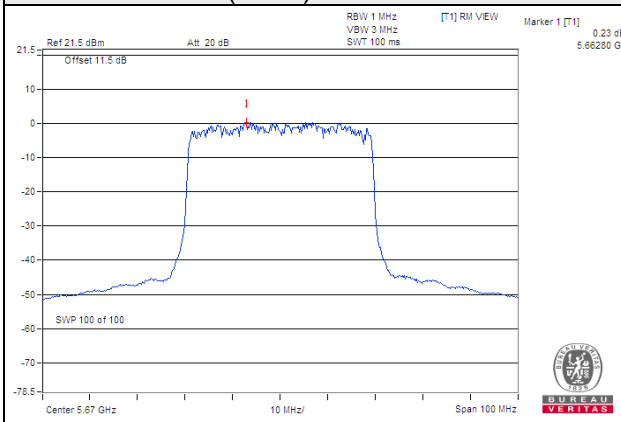
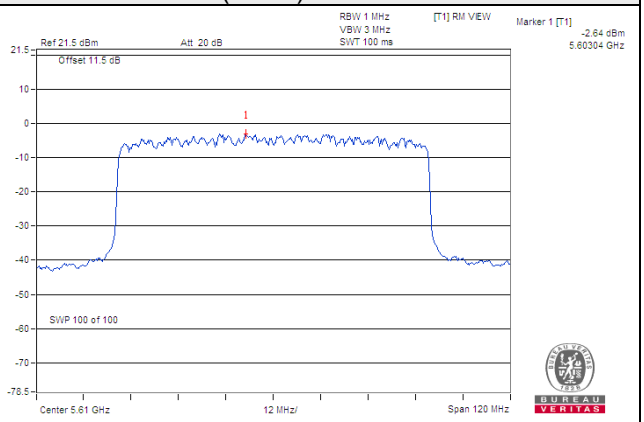
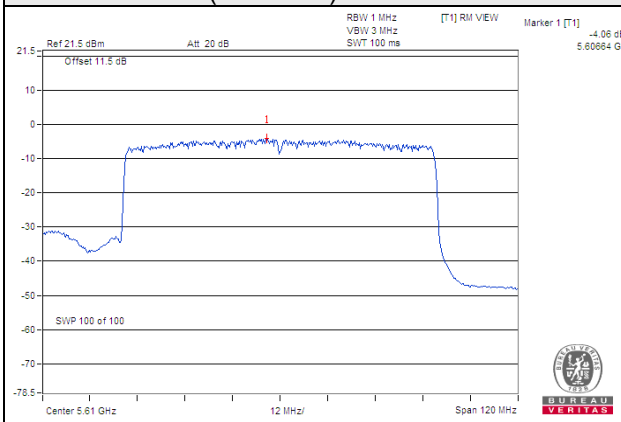
Note:
1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-2A: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.35dBi > 6dBi, so the limit shall be reduced to 11-(10.35-6) = 6.65dBm.
   For U-NII-2C: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 11-(10.42-6) = 6.58dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80+80)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	-4.86	-5.00	-	-	0.22	-1.70	15.39	Pass
58	5290	-	-	-5.67	-5.57	0.39	-2.21	9.94	Pass
106	5530	-4.68	-4.53	-	-	0.24	-1.35	6.58	Pass
122	5610	-	-	-4.63	-4.06	0.24	-1.08	6.58	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-1: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/2$]=7.61dBi > 6dBi, so the power density limit shall be reduced to 17-(7.61-6) = 15.39dBm.
   For U-NII-2A: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/2$]=7.06dBi > 6dBi, so the limit shall be reduced to 11-(7.06-6) = 9.94dBm.
   For U-NII-2C: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/4$]=10.42dBi > 6dBi, so the limit shall be reduced to 11-(10.42-6) = 6.58dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a / Chain 2 / CH 116	802.11ax (HE20) / Chain 3 / CH 144
	
802.11ax (HE40) / Chain 1 / CH 134	802.11ax (HE80) / Chain 2 / CH 122
	
802.11ax (HE80+80) / Chain 3 / CH122	
	

For U-NII-3 band

5G traffic radio (Radio 1)

802.11a

TX chain	Chan.	Freq. (MHz)	PSD w/o Duty Factor		10 log (N=4) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	144	5720 (For U-NII-3)	-11.28	-9.06	6.02	0.24	-2.80	25.44	Pass
1	144	5720 (For U-NII-3)	-11.03	-8.81	6.02	0.24	-2.55	25.44	Pass
2	144	5720 (For U-NII-3)	-11.16	-8.94	6.02	0.24	-2.68	25.44	Pass
3	144	5720 (For U-NII-3)	-11.20	-8.98	6.02	0.24	-2.72	25.44	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N_{ANT}) dB.
2. For U-NII-3: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/4$]=10.56dBi > 6dBi, so the limit shall be reduced to 30-(10.56-6) = 25.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

TX chain	Chan.	Freq. (MHz)	PSD w/o Duty Factor		10 log (N=4) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	144	5720 (For U-NII-3)	-12.10	-9.88	6.02	0.20	-3.66	25.44	Pass
1	144	5720 (For U-NII-3)	-12.00	-9.78	6.02	0.20	-3.56	25.44	Pass
2	144	5720 (For U-NII-3)	-12.05	-9.83	6.02	0.20	-3.61	25.44	Pass
3	144	5720 (For U-NII-3)	-12.11	-9.89	6.02	0.20	-3.67	25.44	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N_{ANT}) dB.
2. For U-NII-3: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/4$]=10.56dBi > 6dBi, so the limit shall be reduced to 30-(10.56-6) = 25.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

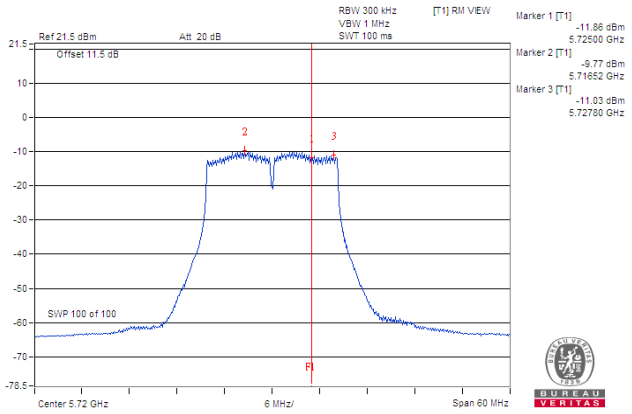
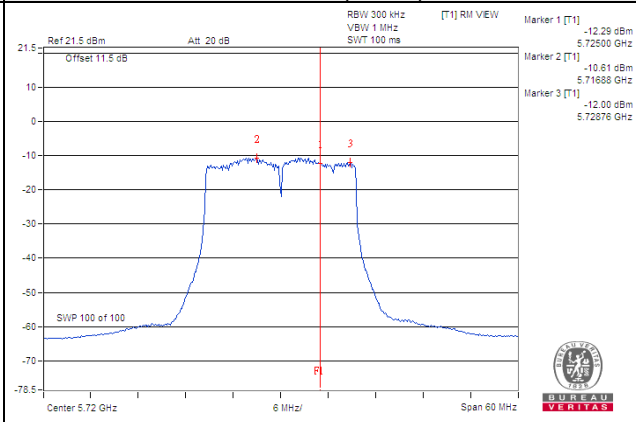
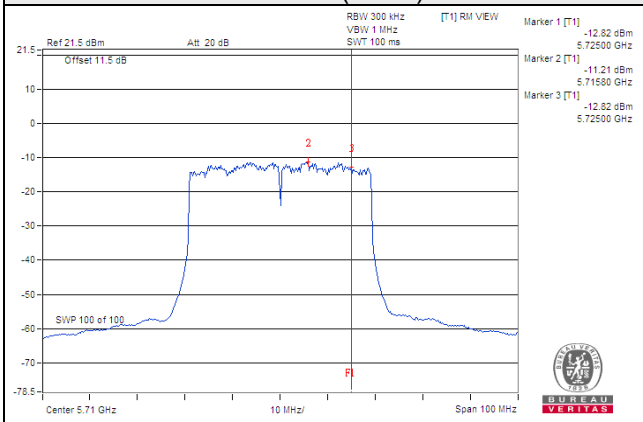
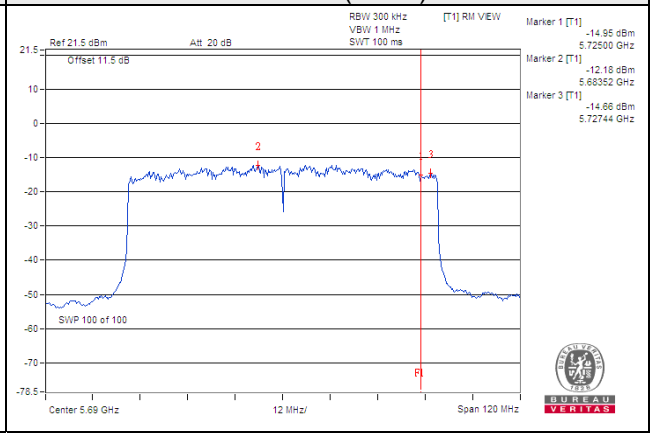
TX chain	Chan.	Freq. (MHz)	PSD w/o Duty Factor		10 log (N=4) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	142	5710 (For U-NII-3)	-12.82	-10.60	6.02	0.23	-4.35	25.44	Pass
1	142	5710 (For U-NII-3)	-12.90	-10.68	6.02	0.23	-4.43	25.44	Pass
2	142	5710 (For U-NII-3)	-12.98	-10.76	6.02	0.23	-4.51	25.44	Pass
3	142	5710 (For U-NII-3)	-12.92	-10.70	6.02	0.23	-4.45	25.44	Pass

Note:
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N_{ANT}) dB.
2. For U-NII-3: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.56dBi > 6dBi, so the limit shall be reduced to 30-(10.56-6) = 25.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

TX chain	Chan.	Freq. (MHz)	PSD w/o Duty Factor		10 log (N=4) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	138	5690 (For U-NII-3)	-14.79	-12.57	6.02	0.23	-6.32	25.44	Pass
1	138	5690 (For U-NII-3)	-14.74	-12.52	6.02	0.23	-6.27	25.44	Pass
2	138	5690 (For U-NII-3)	-14.76	-12.54	6.02	0.23	-6.29	25.44	Pass
3	138	5690 (For U-NII-3)	-14.66	-12.44	6.02	0.23	-6.19	25.44	Pass

Note:
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N_{ANT}) dB.
2. For U-NII-3: Directional Gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]=10.56dBi > 6dBi, so the limit shall be reduced to 30-(10.56-6) = 25.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

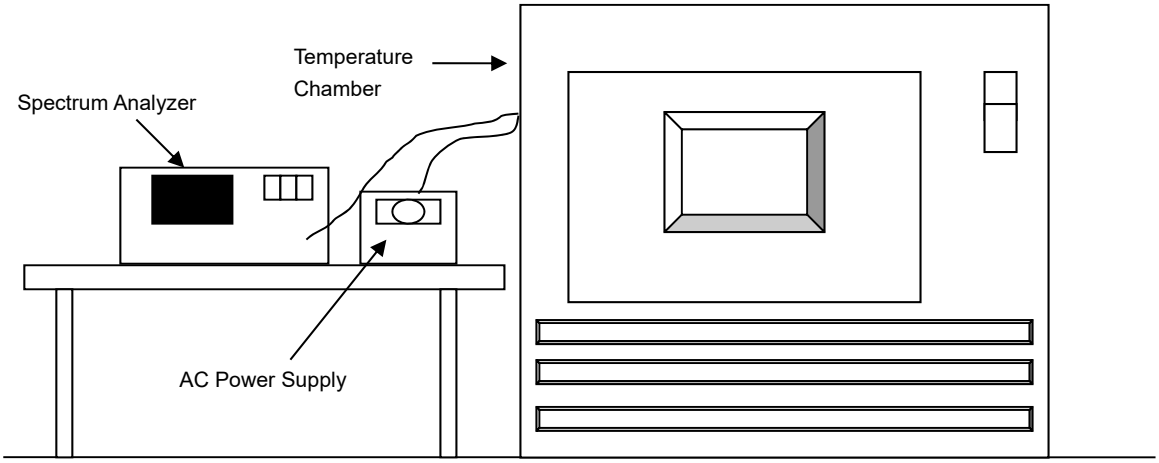
Spectrum Plot of Worst Value	
802.11a	802.11ax (HE20)
	
802.11ax (HE40)	802.11ax (HE80)
	

4.6 Frequency Stability

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 12, 2020	Jun. 11, 2021
Standard Temperature And Humidity Chamber GIANT FORCE	GTH-120-40-CP-AR	MAA1306-019	Sep. 09, 2020	Sep. 08, 2021
Digital Multimeter Fluke	87-III	70360742	Jun. 23, 2020	Jun. 22, 2021
AC Power Supply Extech	CFW-105	E000603	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. Tested date: May 24, 2021

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

5G traffic radio (Radio 1)

Frequency Stability Versus Temp.									
Operating Frequency: 5260MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
40	120	5260.0163	PASS	5260.0165	PASS	5260.0137	PASS	5260.0163	PASS
30	120	5259.9893	PASS	5259.9869	PASS	5259.9889	PASS	5259.9872	PASS
20	120	5260.0204	PASS	5260.0179	PASS	5260.0202	PASS	5260.0193	PASS
10	120	5259.9837	PASS	5259.9816	PASS	5259.9839	PASS	5259.9814	PASS
0	120	5260.0264	PASS	5260.0241	PASS	5260.0265	PASS	5260.0259	PASS

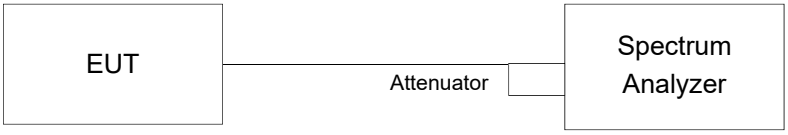
Frequency Stability Versus Voltage									
Operating Frequency: 5260MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5260.0198	PASS	5260.0177	PASS	5260.0208	PASS	5260.0203	PASS
	120	5260.0204	PASS	5260.0179	PASS	5260.0202	PASS	5260.0193	PASS
	102	5260.0214	PASS	5260.018	PASS	5260.02	PASS	5260.0197	PASS

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

5G traffic radio (Radio 1)

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
144	5720 (For U-NII-3)	3.17	3.16	3.17	3.17	0.5	Pass

802.11ax (HE20)

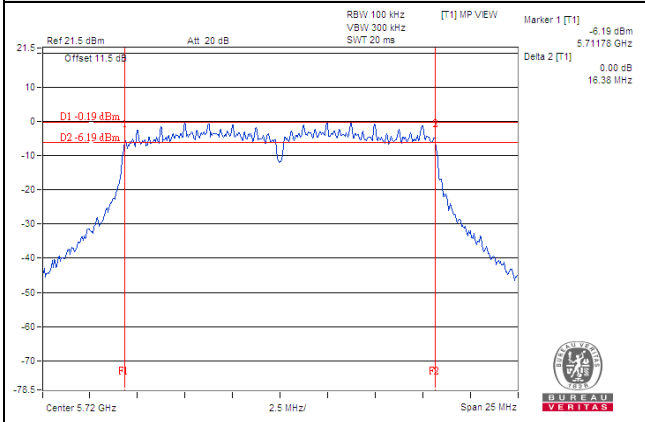
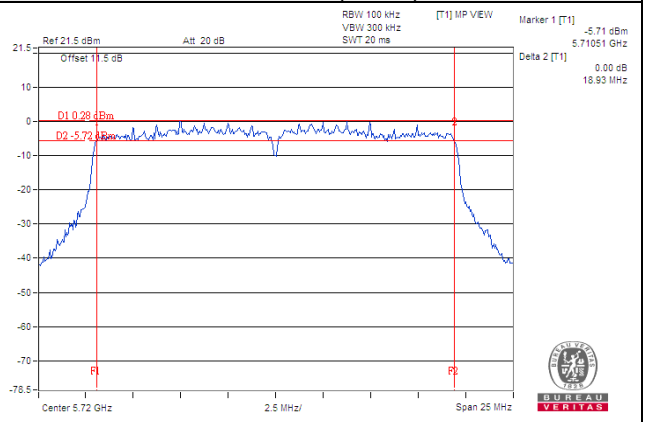
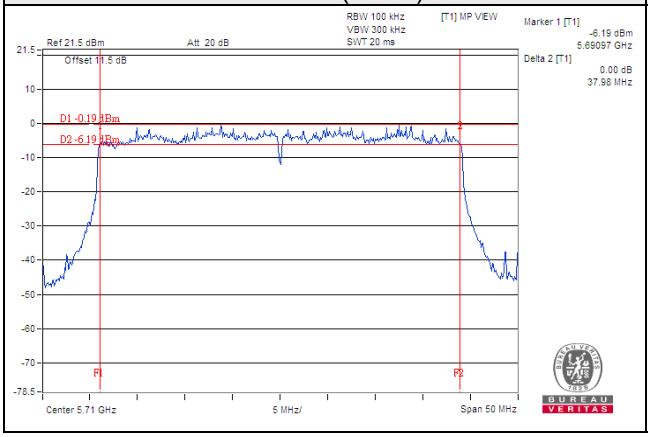
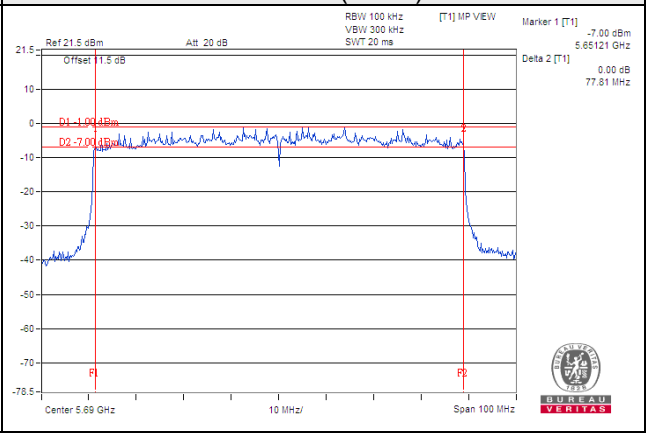
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
144	5720 (For U-NII-3)	4.45	4.46	4.46	4.44	0.5	Pass

802.11ax (HE40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
142	5710 (For U-NII-3)	3.95	3.98	4.05	3.98	0.5	Pass

802.11ax (HE80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
138	5690 (For U-NII-3)	4.03	4.04	4.04	4.02	0.5	Pass

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

Note:

For CH144 (UNII-3 Band): The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

For CH142 (UNII-3 Band): The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

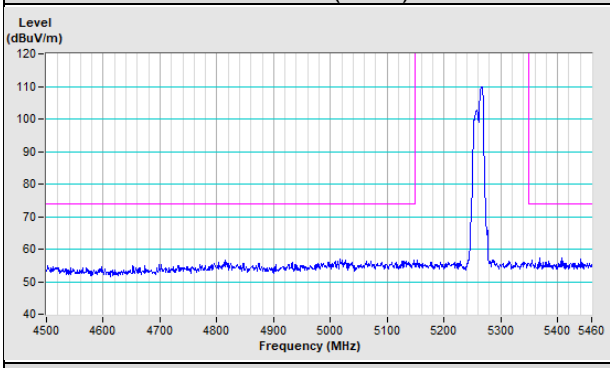
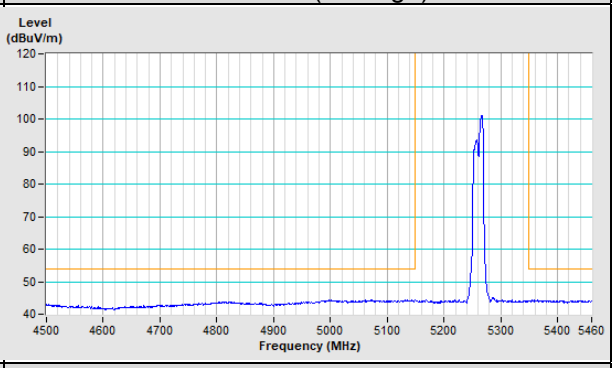
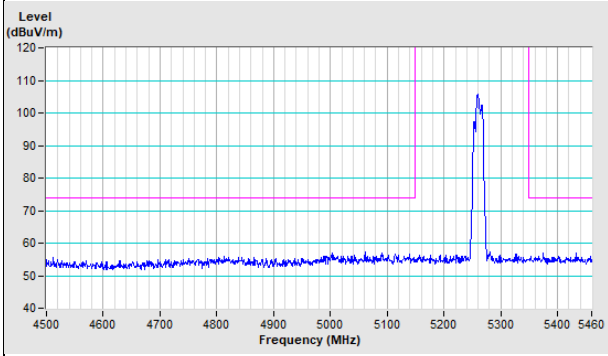
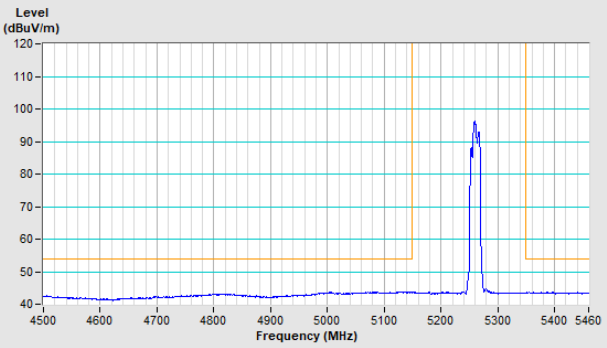
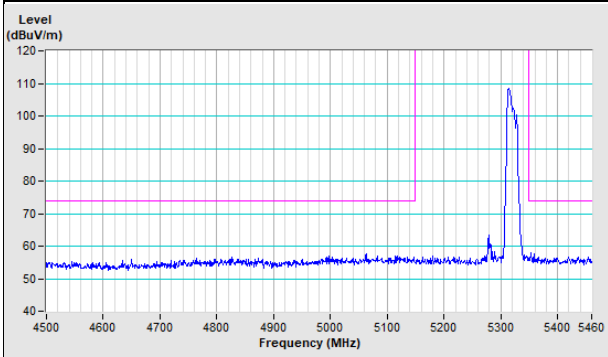
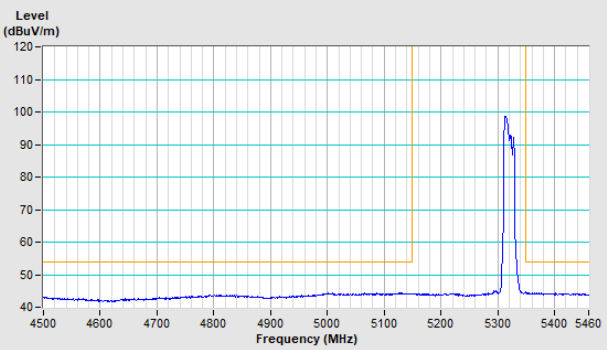
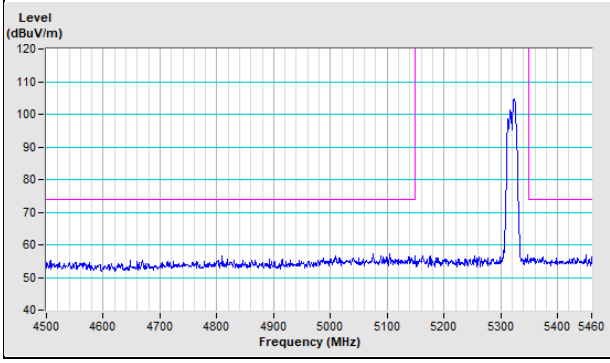
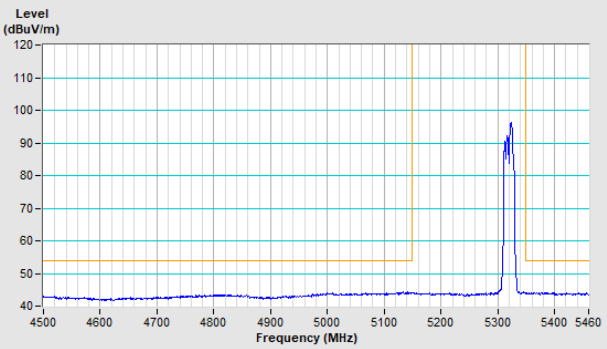
For CH138 (UNII-3 Band): The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

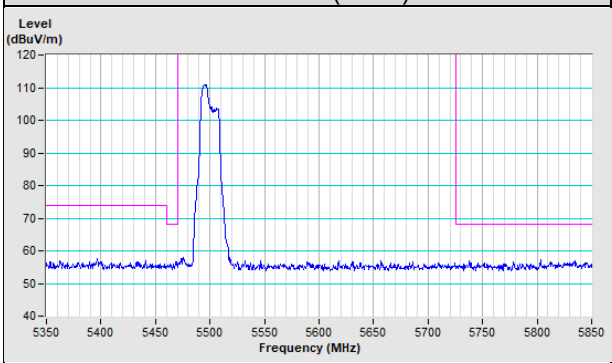
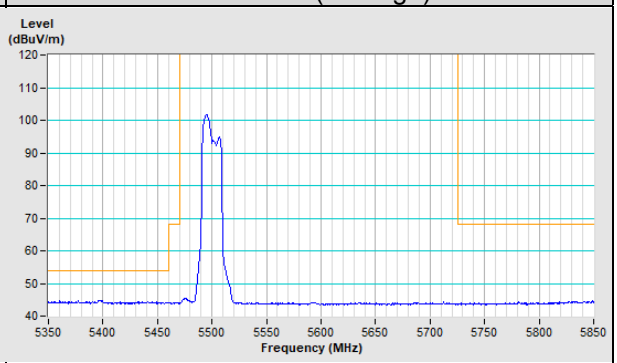
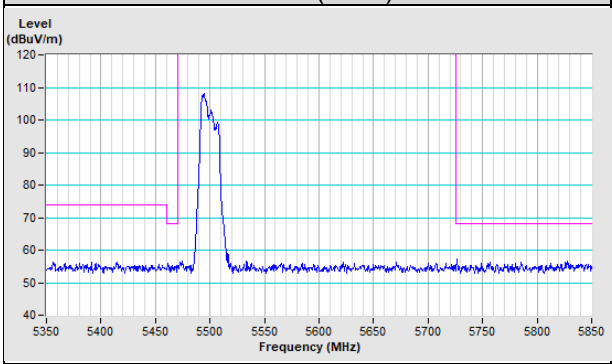
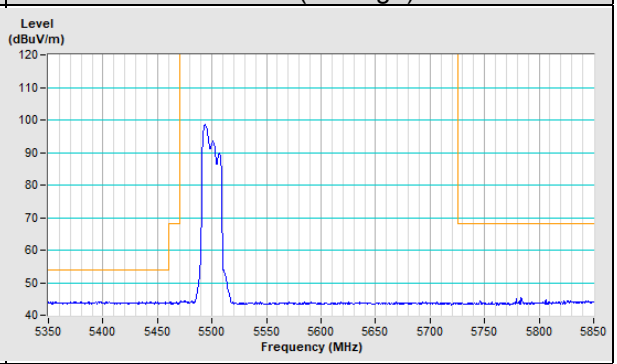
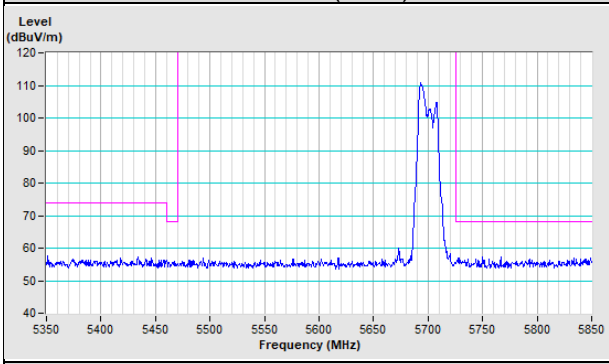
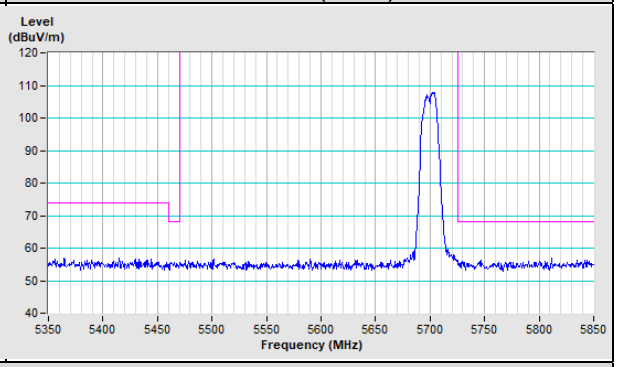
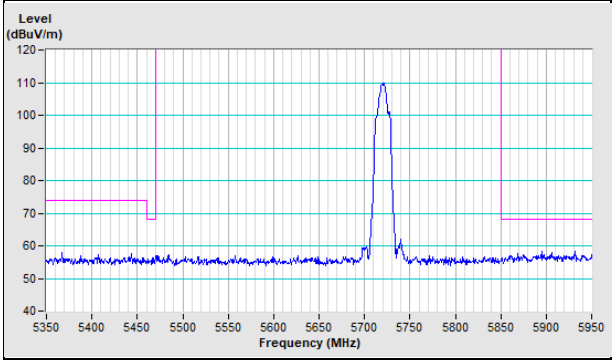
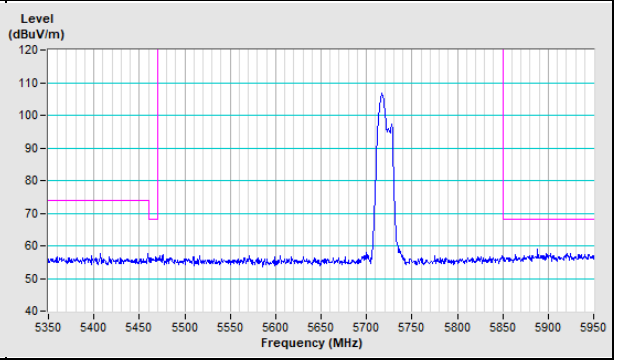
5 Pictures of Test Arrangements

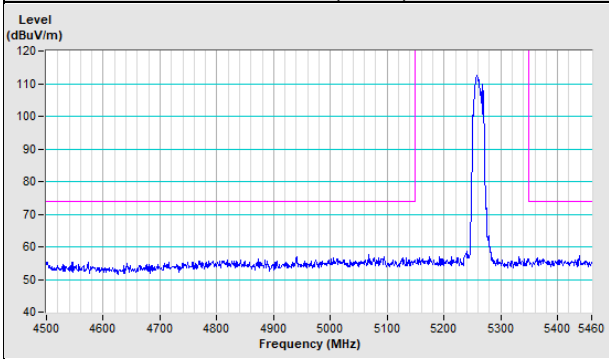
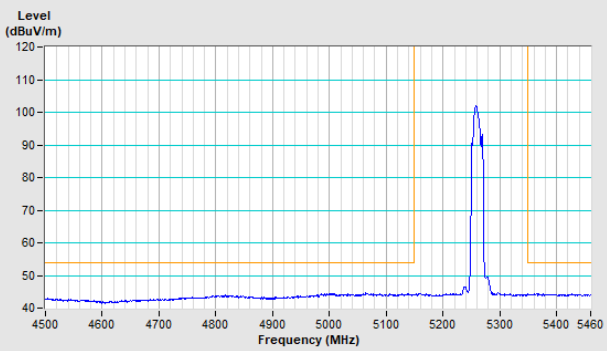
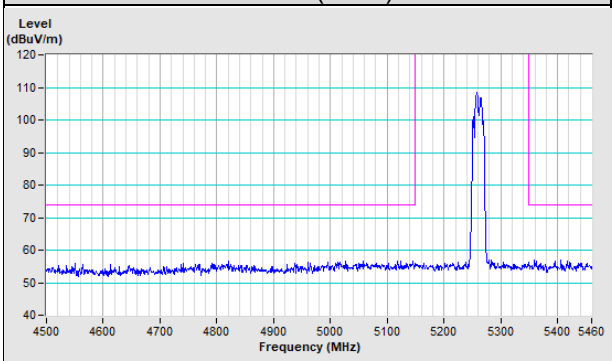
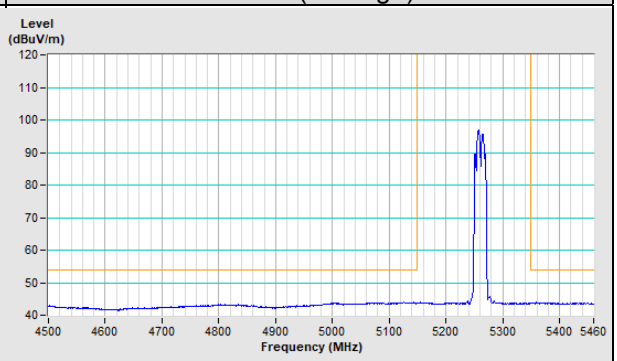
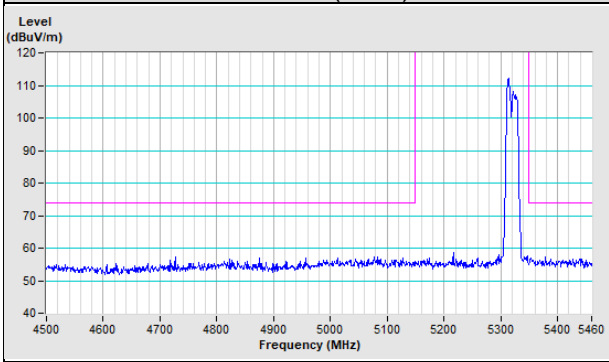
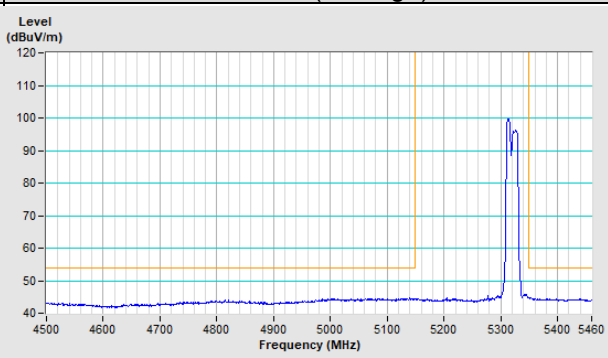
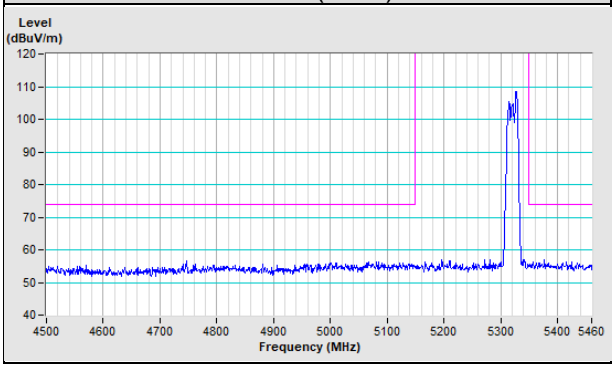
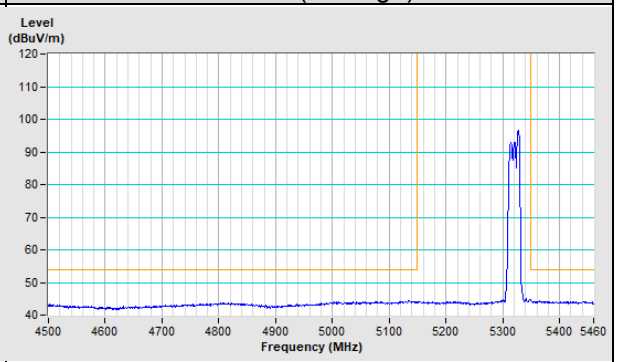
Please refer to the attached file (Test Setup Photo).

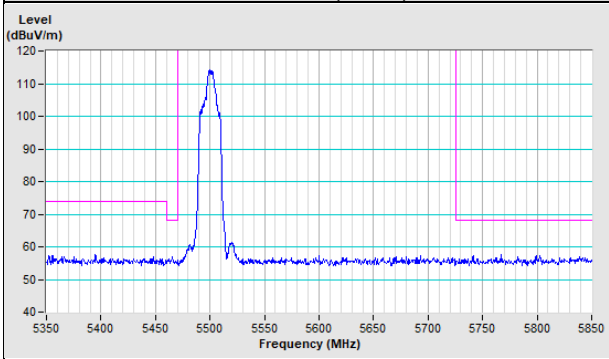
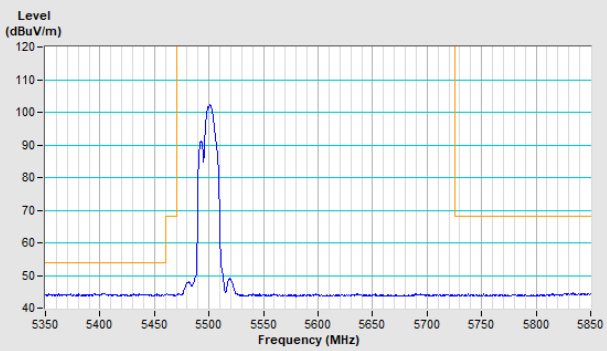
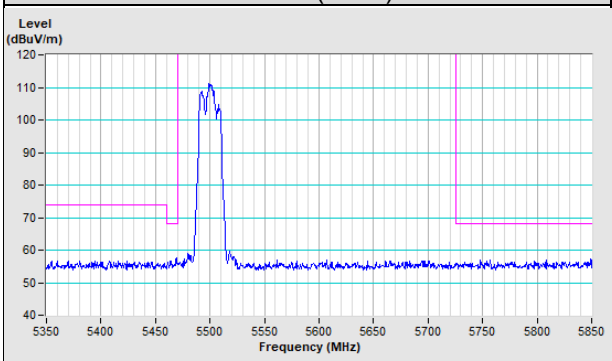
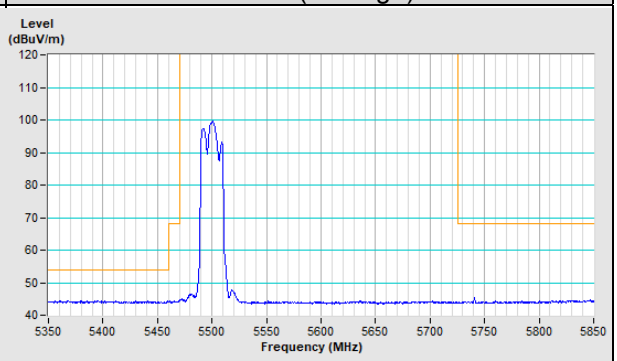
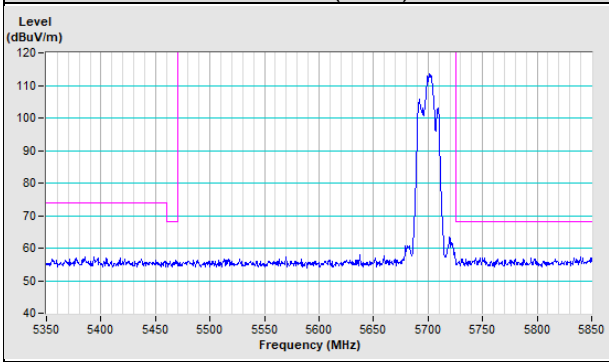
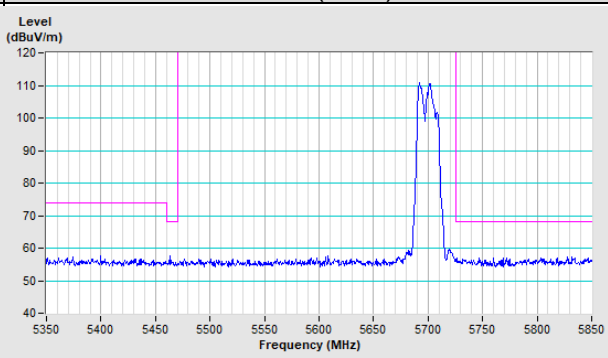
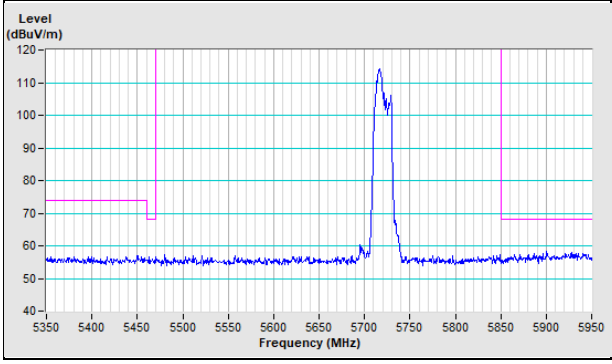
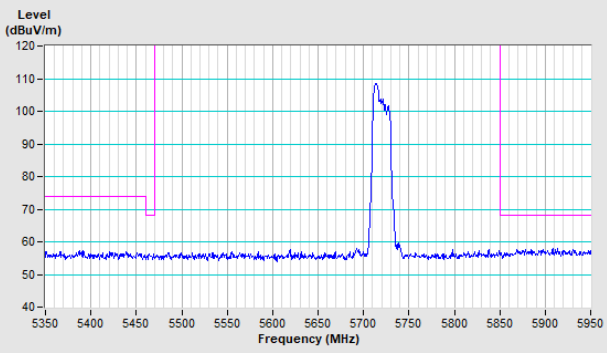
Annex A- Band Edge Measurement

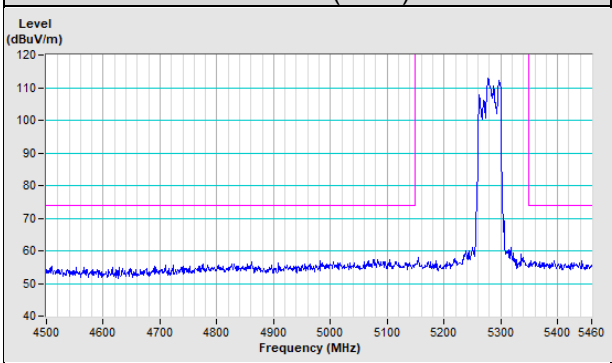
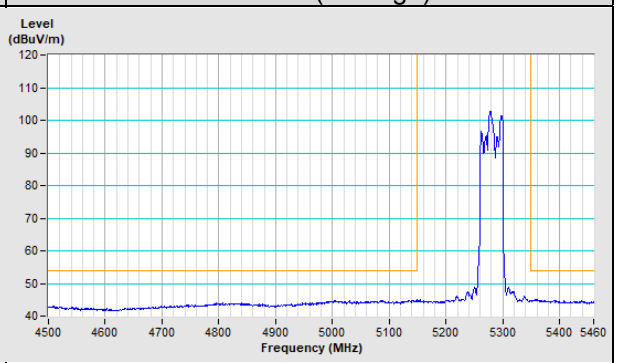
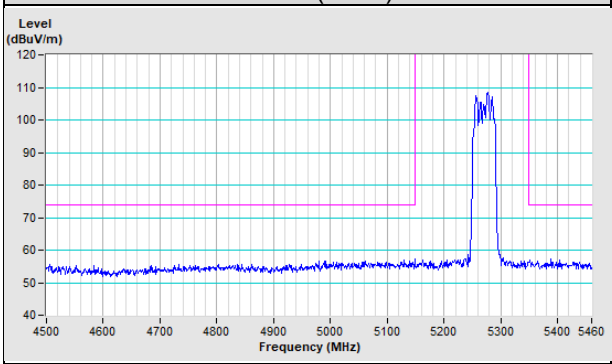
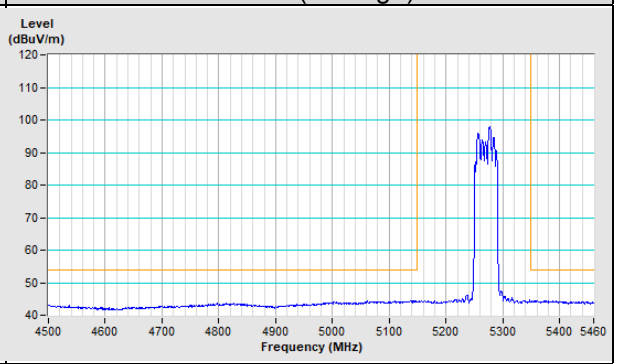
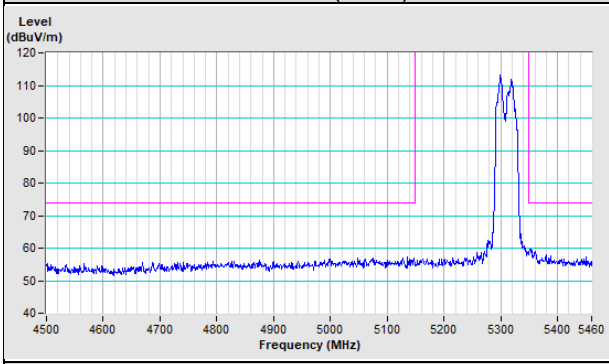
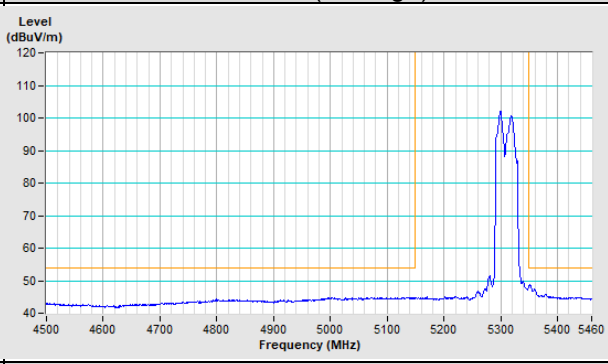
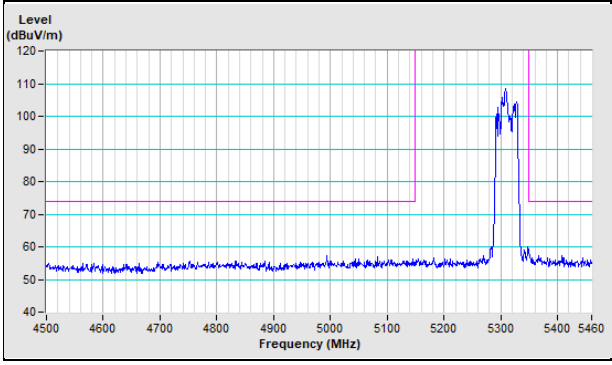
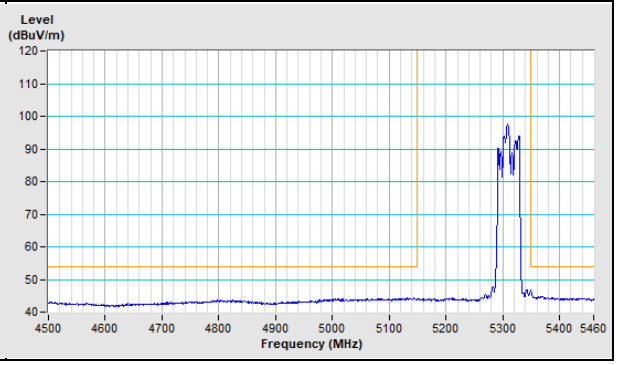
5G traffic radio (Radio 1)

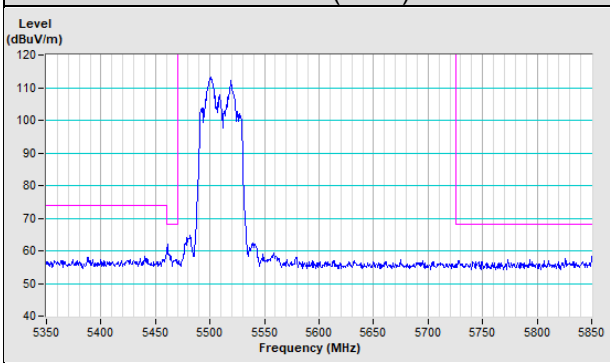
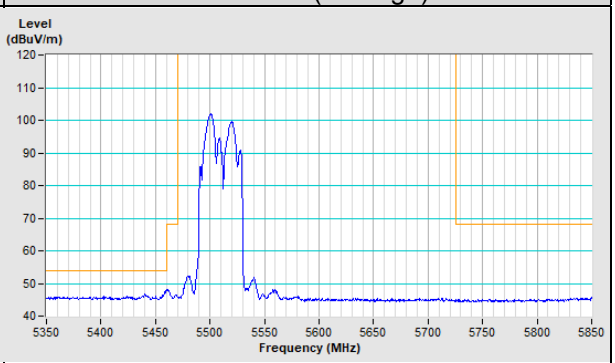
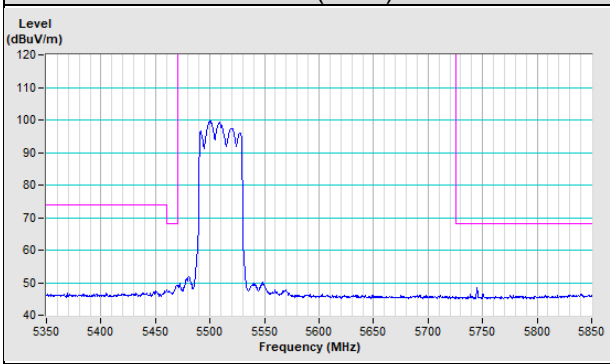
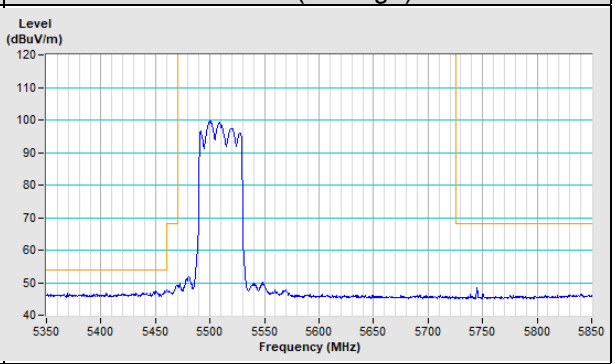
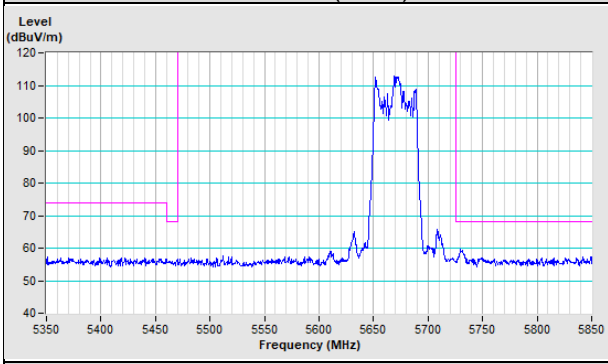
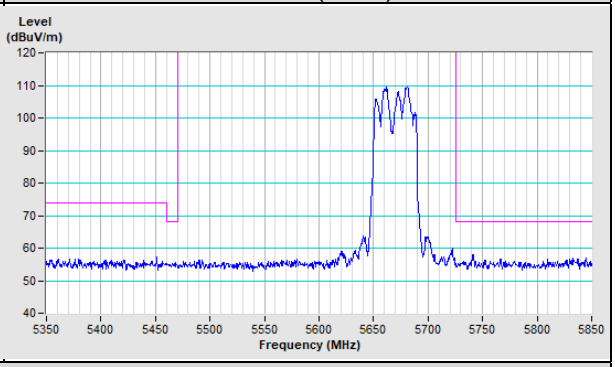
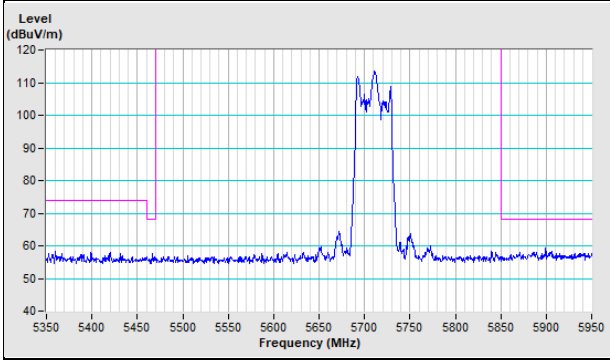
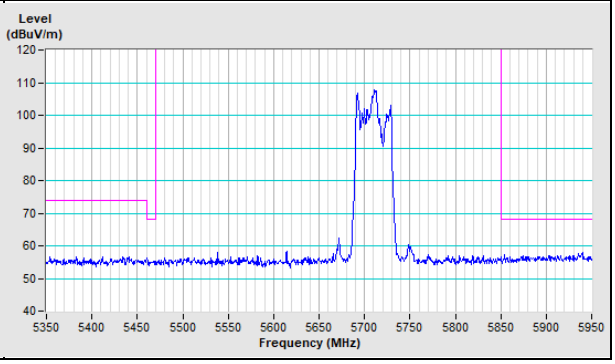
802.11a Channel 52	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11a Channel 64	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

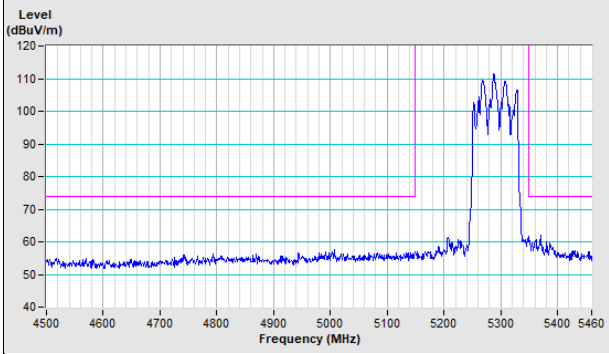
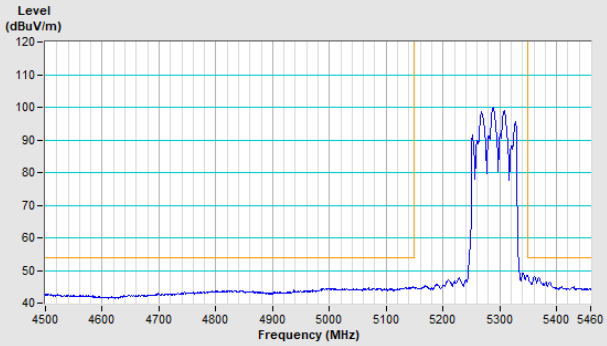
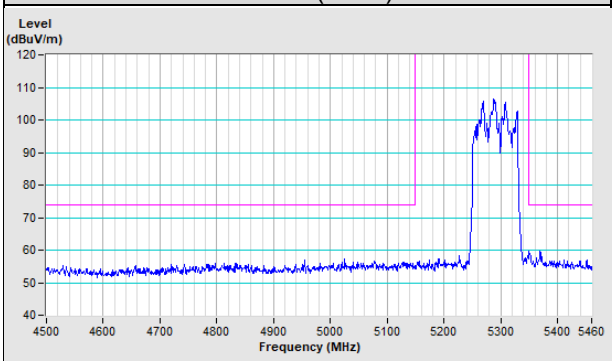
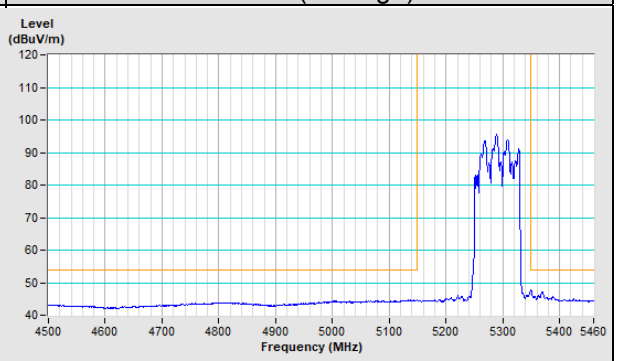
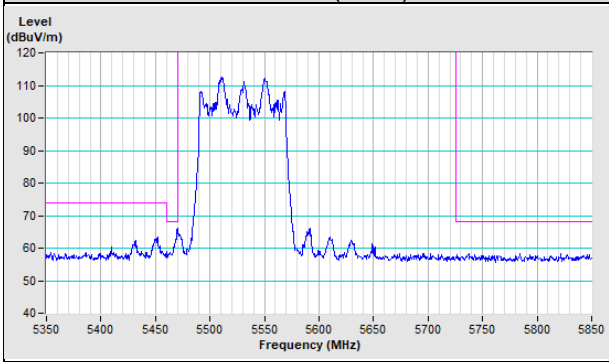
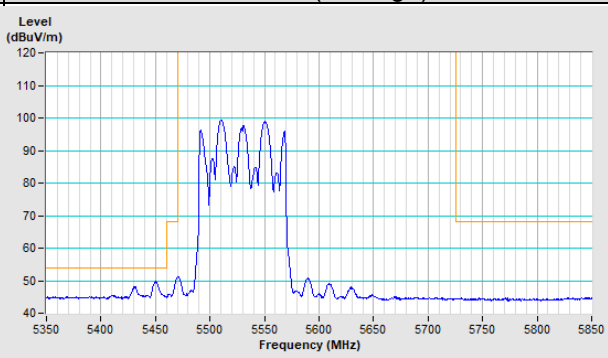
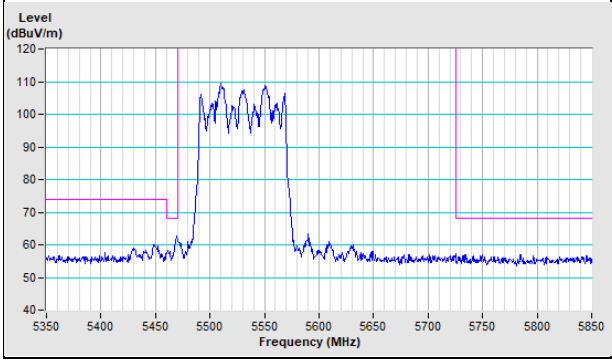
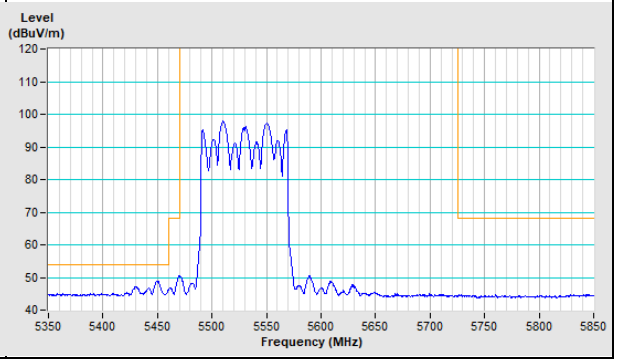
802.11a Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11a Channel 140	
Horizontal (Peak)	Vertical (Peak)
	
802.11a Channel 144	
Horizontal (Peak)	Vertical (Peak)
	

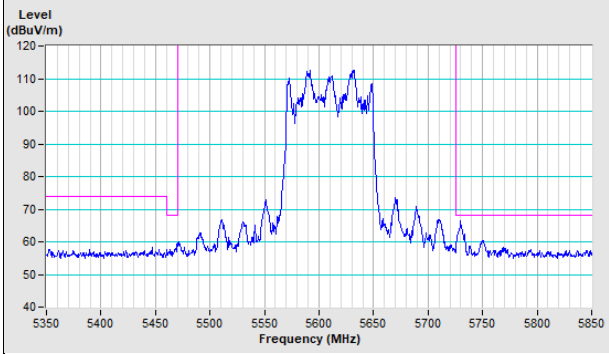
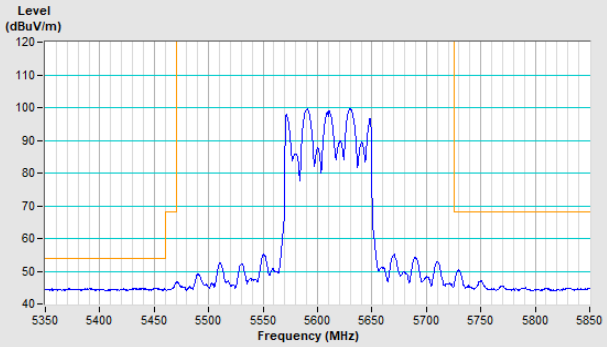
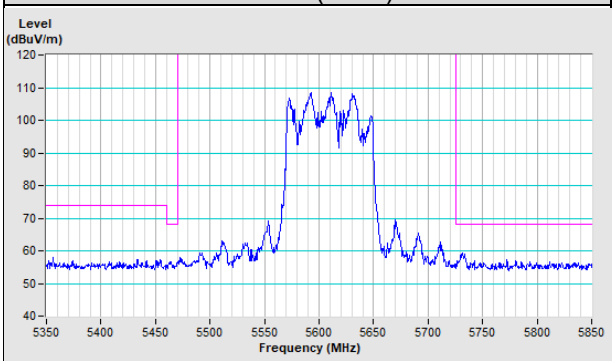
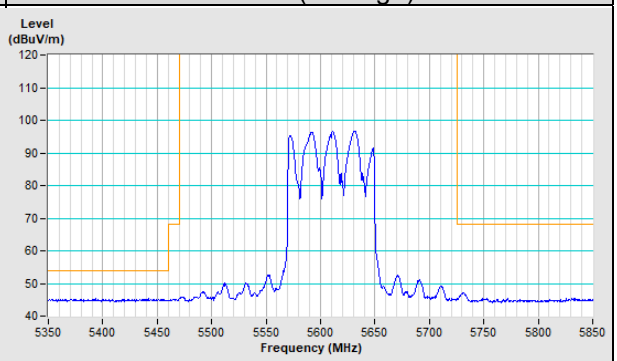
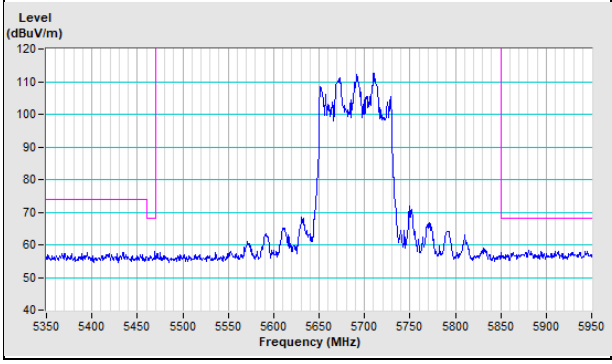
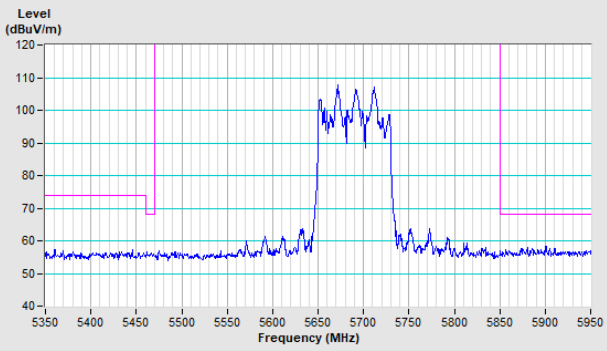
802.11ax (HE20) Channel 52	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11ax (HE20) Channel 64	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

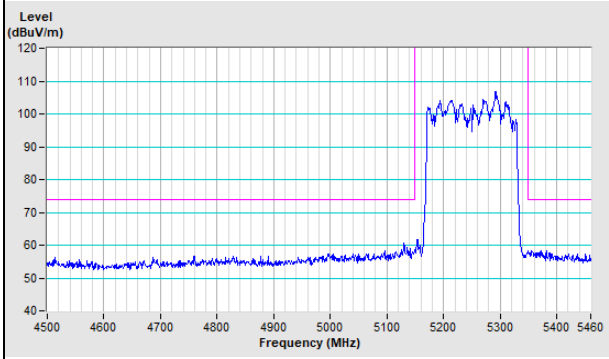
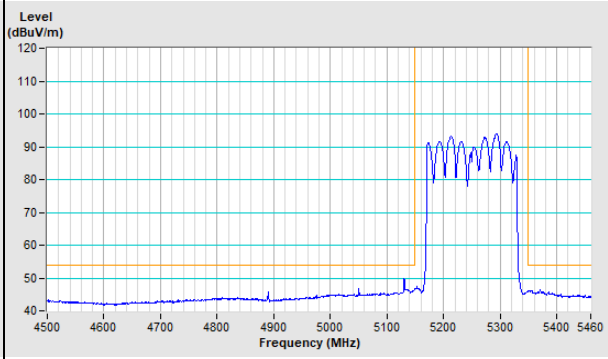
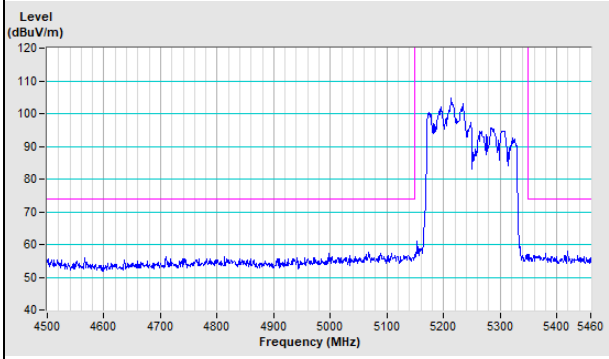
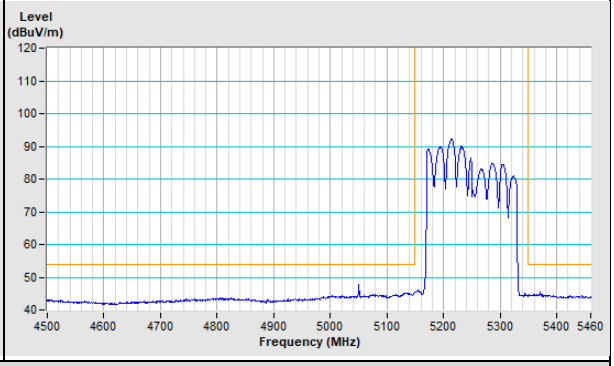
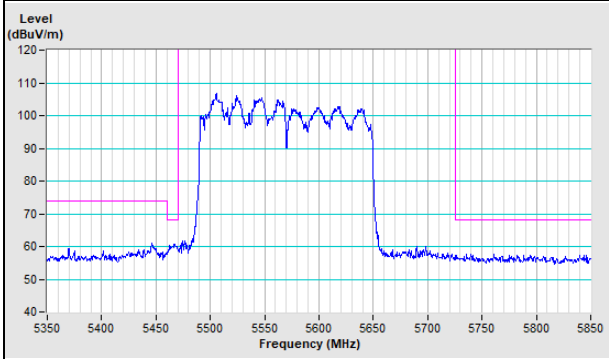
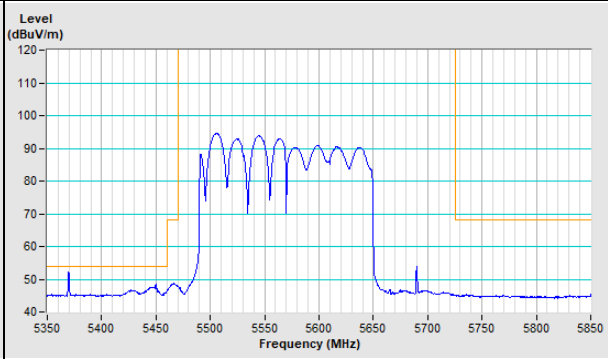
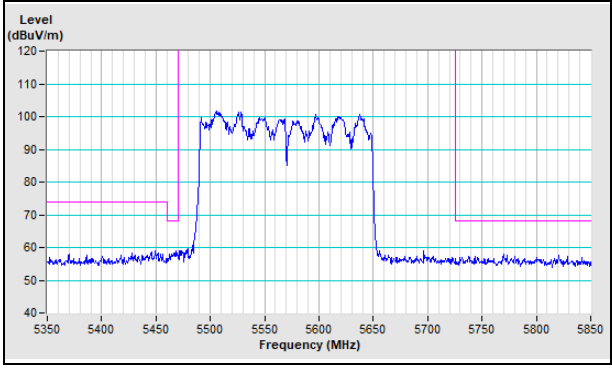
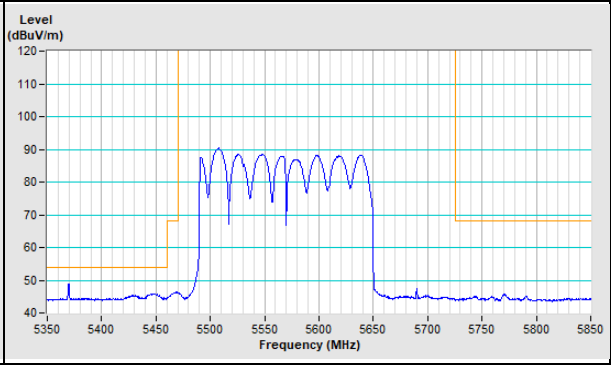
802.11ax (HE20) Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11ax (HE20) Channel 140	
Horizontal (Peak)	Vertical (Peak)
	
802.11ax (HE20) Channel 144	
Horizontal (Peak)	Vertical (Peak)
	

802.11ax (HE40) Channel 54	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11ax (HE40) Channel 62	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11ax (HE40) Channel 102	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11ax (HE40) Channel 134	
Horizontal (Peak)	Vertical (Peak)
	
802.11ax (HE40) Channel 142	
Horizontal (Peak)	Vertical (Peak)
	

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)
	

802.11ax (HE80) Channel 122	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11ax (HE80) Channel 138	
Horizontal (Peak)	Vertical (Peak)
	

802.11ax (HE80+80) Channel 42+58	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11ax (HE80+80) Channel 106+122	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

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

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