

FCC Test Report (WLAN)

Report No.: RF200121E05A-1

FCC ID: UXX-S5A103A

Test Model: S5A108A, S5A103A

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Test Date: Sep. 12 to Oct. 13, 2020

Issued Date: Nov. 19, 2020

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**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RF200121E05A-1	Original release.	Nov. 19, 2020

1 Certificate of Conformity

Product: 5G Adapter

Brand: Cradlepoint, Inc.

Test Model: S5A108A, S5A103A

Sample Status: ENGINEERING SAMPLE

Applicant: Cradlepoint, Inc.

Test Date: Sep. 12 to Oct. 13, 2020

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

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

Prepared by :  _____, **Date:** _____ Nov. 19, 2020
Claire Kuan / Specialist

Approved by :  _____, **Date:** _____ Nov. 19, 2020
Clark Lin / Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -5.72 dB at 0.15000 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5149.80MHz & 5150.00MHz & 5350.00MHz.
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. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is R-SMA or i-pex(MHF) not a standard connector.

Note:

1. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.
2. For U-NII-1 band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex B. Test Procedures refer to report 4.1.3.
3. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.9 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.1 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.1 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (WLAN)

Product	5G Adapter
Brand	Cradlepoint, Inc.
Test Model	S5A108A, S5A103A
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	56 Vdc from POE adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT (20/40) mode in 2.4GHz 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	DSSS, OFDM, OFDMA
Transfer Rate	802.11b: up to 11 Mbps 802.11a/g: up to 54 Mbps 802.11n: up to 600 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up to 2401.9 Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462 GHz 5GHz: 5.18~ 5.24 GHz, 5.745 ~ 5.825 GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20), VHT20, 802.11ax (HE20): 11 802.11n (HT40), VHT40, 802.11ax (HE40): 7 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 9 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 4 802.11ac (VHT80), 802.11ax (HE80): 2
Output Power	CDD Mode: 2.412 ~ 2.462 GHz: 616.167 mW 5.18 ~ 5.24 GHz: 30.022 mW 5.745 ~ 5.825 GHz: 745.572 mW Beamforming Mode: 2.412 ~ 2.462 GHz: 424.502 mW 5.18 ~ 5.24 GHz: 8.961 mW 5.745 ~ 5.825 GHz: 269.652 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	POE Adapter x 1
Data Cable Supplied	NA

Note:

1. All models are listed as below.

Brand	Model	Difference
Cradlepoint, Inc.	S5A103A	1. Appearance differences. 2. Antennas differences. 3. Indoor use.
	S5A108A	1. Appearance differences. 2. Antennas differences. 3. Outdoor use.

Note: Output power is same for above models.

2. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3
WLAN (2.4GHz)	WLAN (5GHz)	WWAN (LTE+GPS)

3. Simultaneously transmission condition.

Condition	Technology		
1	WLAN (2.4GHz)	WLAN (5GHz)	WWAN (LTE+GPS)

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

4. The EUT contains certified WWAN module which FCC ID: N7NEM91.

5. The antenna provided to the EUT, please refer to the following table:

For Model: S5A108A					
Antenna No.	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type	Cable Length
Ant 1	2.47	2.4~2.4835 GHz	Dipole	R-SMA	170mm
	2.18	5.15~5.25 GHz			
	2.47	5.725~5.85 GHz			
Ant 2	2.47	2.4~2.4835 GHz	Dipole	R-SMA	170mm
	2.18	5.15~5.25 GHz			
	2.47	5.725~5.85 GHz			
Ant 3	2.47	2.4~2.4835 GHz	Dipole	R-SMA	170mm
	2.18	5.15~5.25 GHz			
	2.47	5.725~5.85 GHz			
Ant 4	2.47	2.4~2.4835 GHz	Dipole	R-SMA	170mm
	2.18	5.15~5.25 GHz			
	2.47	5.725~5.85 GHz			
LTE Ant 1 (GPS)	2.5	700~960 MHz	Dipole	N-Type	-
	2.2	1428~1600 MHz			
	4.3	1700~2700 MHz			
	4.6	3300~3700 MHz			
	6.1	5150~5925 MHz			
LTE Ant 2	2.5	700~960 MHz			
	2.2	1428~1600 MHz			
	4.3	1700~2700 MHz			
	4.6	3300~3700 MHz			
	6.1	5150~5925 MHz			
LTE Ant 3	2.5	700~960 MHz			
	2.2	1428~1600 MHz			
	4.3	1700~2700 MHz			
	4.6	3300~3700 MHz			
	6.1	5150~5925 MHz			
LTE Ant 4	2.5	700~960 MHz			
	2.2	1428~1600 MHz			
	4.3	1700~2700 MHz			
	4.6	3300~3700 MHz			
	6.1	5150~5925 MHz			

For Model: S5A103A

Antenna No.	Antenna Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type	Cable Length
Ant 1	2.54	2.4~2.4835 GHz	PIFA	i-pex(MHF)	74 mm
	5.16	5.15~5.25 GHz			
	5.65	5.725~5.85 GHz			
Ant 2	2.38	2.4~2.4835 GHz	PIFA	i-pex(MHF)	91 mm
	5.2	5.15~5.25 GHz			
	5.18	5.725~5.85 GHz			
Ant 3	3.59	2.4~2.4835 GHz	PIFA	i-pex(MHF)	197 mm
	5.96	5.15~5.25 GHz			
	5.71	5.725~5.85 GHz			
Ant 4	1.88	2.4~2.4835 GHz	PIFA	i-pex(MHF)	288 mm
	5.09	5.15~5.25 GHz			
	5.75	5.725~5.85 GHz			
LTE Ant 1 (GPS)	1.42	619~960 MHz	Dipole	SMA	-
	0.88	1445~1515 MHz			
	2.69	1710~2700 MHz			
	4.13	3400~3700 MHz			
	4.29	5150~5925 MHz			
LTE Ant 2	1.42	619~960 MHz			
	0.88	1445~1515 MHz			
	2.69	1710~2700 MHz			
	4.13	3400~3700 MHz			
	4.29	5150~5925 MHz			
LTE Ant 3	1.42	619~960 MHz			
	0.88	1445~1515 MHz			
	2.69	1710~2700 MHz			
	4.13	3400~3700 MHz			
	4.29	5150~5925 MHz			
LTE Ant 4	1.42	619~960 MHz			
	0.88	1445~1515 MHz			
	2.69	1710~2700 MHz			
	4.13	3400~3700 MHz			
	4.29	5150~5925 MHz			

Note: Max. gain was selected for the final test, except for the radiated emissions test.

6. The EUT must be supplied from POE adapter as following table:

Brand	Model No.	Spec.
PHIHONG	POE90U-1BT-2	Input: 100-240Vac, 2.5A, 50/60Hz Output: 56V, 0.8A

7. The EUT incorporates a MIMO function.

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	4TX	4RX
802.11g	4TX	4RX
802.11n (HT20)	4TX	4RX
802.11n (HT40)	4TX	4RX
VHT20	4TX	4RX
VHT40	4TX	4RX
802.11ax (HE20)	4TX	4RX
802.11ax (HE40)	4TX	4RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	4TX	4RX
802.11n (HT20)	4TX	4RX
802.11n (HT40)	4TX	4RX
802.11ac (VHT20)	4TX	4RX
802.11ac (VHT40)	4TX	4RX
802.11ac (VHT80)	4TX	4RX
802.11ax (HE20)	4TX	4RX
802.11ax (HE40)	4TX	4RX
802.11ax (HE80)	4TX	4RX

Note:

- All of modulation mode support beamforming function except 802.11 a/b/g/n modulation mode.
 - The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
 - The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), 802.11ac mode for 20MHz (40MHz, 80MHz) and 802.11ax mode for 20MHz (40MHz, 80MHz), therefore the manufacturer will control the power for 802.11n/ac mode is the same as the 802.11ax mode or more lower than it and investigated worst case to representative mode in test report. (Final test mode refer to section 3.2.1)
8. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.
9. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

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

Channel	Frequency
42	5210 MHz

FOR 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

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

Channel	Frequency
155	5775 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE \geq 1G	RE $<$ 1G	PLC	APCM	
1	√	√	√	√	For Model: S5A103A (Indoor)
2	√	√	√	-	For Model: S5A108A (Outdoor)

Where **RE \geq 1G**: Radiated Emission above 1GHz

RE $<$ 1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Note: The EUT had been pre-tested on the positioned of laying-flat and wall-mount. The worst case was found when positioned of on wall-mount.

Radiated Emission Test (Above 1GHz):

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

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6Mb/s
802.11ax (HE20)		36 to 48	36, 40, 48	OFDMA	BPSK	MCS0
802.11ax (HE40)		38 to 46	38, 46	OFDMA	BPSK	MCS0
802.11ax (HE80)		42	42	OFDMA	BPSK	MCS0
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6Mb/s
802.11ax (HE20)		149 to 165	149, 157, 165	OFDMA	BPSK	MCS0
802.11ax (HE40)		151 to 159	151, 159	OFDMA	BPSK	MCS0
802.11ax (HE80)		155	155	OFDMA	BPSK	MCS0

Radiated Emission Test (Below 1GHz):

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

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5180-5240 5745-5825	36 to 48 149 to 165	149	OFDM	BPSK	6Mb/s

Power Line Conducted Emission Test:

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

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240 5745-5825	36 to 48 149 to 165	149	OFDM	BPSK	6Mb/s

Antenna Port Conducted Measurement:

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

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (output power only)		36 to 48	36, 40, 48	OFDM	BPSK	MCS0
802.11ac (VHT40) (output power only)		38 to 46	38, 46	OFDM	BPSK	MCS0
802.11ac (VHT80) (output power only)		42	42	OFDM	BPSK	MCS0
802.11ax (HE20)		36 to 48	36, 40, 48	OFDMA	BPSK	MCS0
802.11ax (HE40)		38 to 46	38, 46	OFDMA	BPSK	MCS0
802.11ax (HE80)		42	42	OFDMA	BPSK	MCS0
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (output power only)		149 to 165	149, 157, 165	OFDM	BPSK	MCS0
802.11ac (VHT40) (output power only)		151 to 159	151, 159	OFDM	BPSK	MCS0
802.11ac (VHT80) (output power only)		155	155	OFDM	BPSK	MCS0
802.11ax (HE20)		149 to 165	149, 157, 165	OFDMA	BPSK	MCS0
802.11ax (HE40)		151 to 159	151, 159	OFDMA	BPSK	MCS0
802.11ax (HE80)		155	155	OFDMA	BPSK	MCS0
Beamforming Mode (output power only)						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ac (VHT20)	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	MCS0
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	MCS0
802.11ac (VHT80)		42	42	OFDM	BPSK	MCS0
802.11ax (HE20)		36 to 48	36, 40, 48	OFDMA	BPSK	MCS0
802.11ax (HE40)		38 to 46	38, 46	OFDMA	BPSK	MCS0
802.11ax (HE80)		42	42	OFDMA	BPSK	MCS0
802.11ac (VHT20)	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	MCS0
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	MCS0
802.11ac (VHT80)		155	155	OFDM	BPSK	MCS0
802.11ax (HE20)		149 to 165	149, 157, 165	OFDMA	BPSK	MCS0
802.11ax (HE40)		151 to 159	151, 159	OFDMA	BPSK	MCS0
802.11ax (HE80)		155	155	OFDMA	BPSK	MCS0

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE \geq 1G	23deg. C, 68%RH	120Vac, 60Hz	Benson Chao
RE $<$ 1G	26deg. C, 71%RH	120Vac, 60Hz	Benson Chao
PLC	25deg. C, 59%RH	120Vac, 60Hz	Sampson Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Kevin Ko

3.3 Duty Cycle of Test Signal

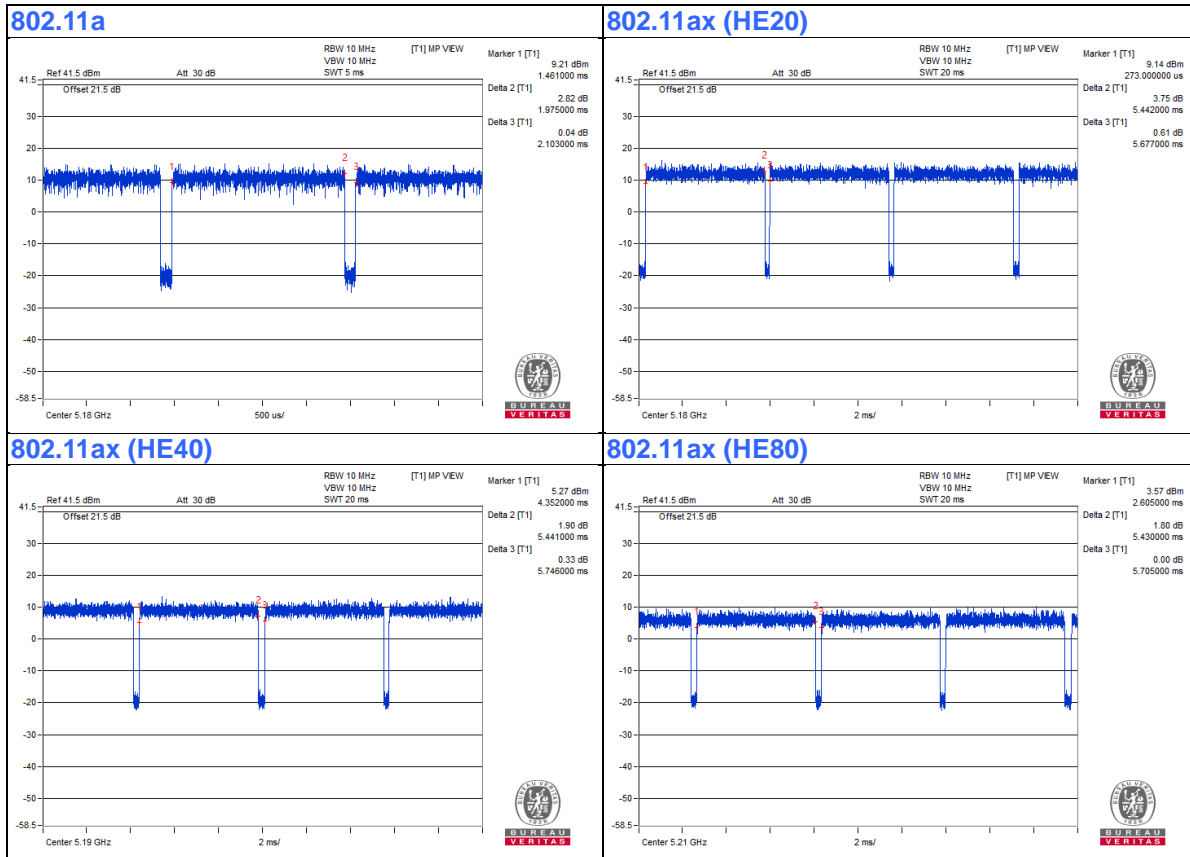
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 1.975 ms/2.103 ms = 0.939, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.27 \text{ dB}$

802.11ax (HE20): Duty cycle = 5.442 ms/5.677 ms = 0.959, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.18 \text{ dB}$

802.11ax (HE40): Duty cycle = 5.441 ms/5.746 ms = 0.947, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.24 \text{ dB}$

802.11ax (HE80): Duty cycle = 5.43 ms/5.705 ms = 0.952, Duty factor = $10 \cdot \log(1/\text{Duty cycle}) = 0.21 \text{ dB}$



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No	FCC ID	Remarks
A.	Laptop	DELL	P88G	G1WJL42	PD93165NG	Provided by Lab
B.	Laptop	HP	TPN-Q186	5CD8212YYK	FCC DoC	Provided by Lab
C.	iPod	Apple	MD778TA/A	CC4JL03FF4T1	NA	Provided by Lab
D.	SIM Card	keysight	NA	NA	NA	Provided by Lab
E.	SIM Card	keysight	NA	NA	NA	Provided by Lab

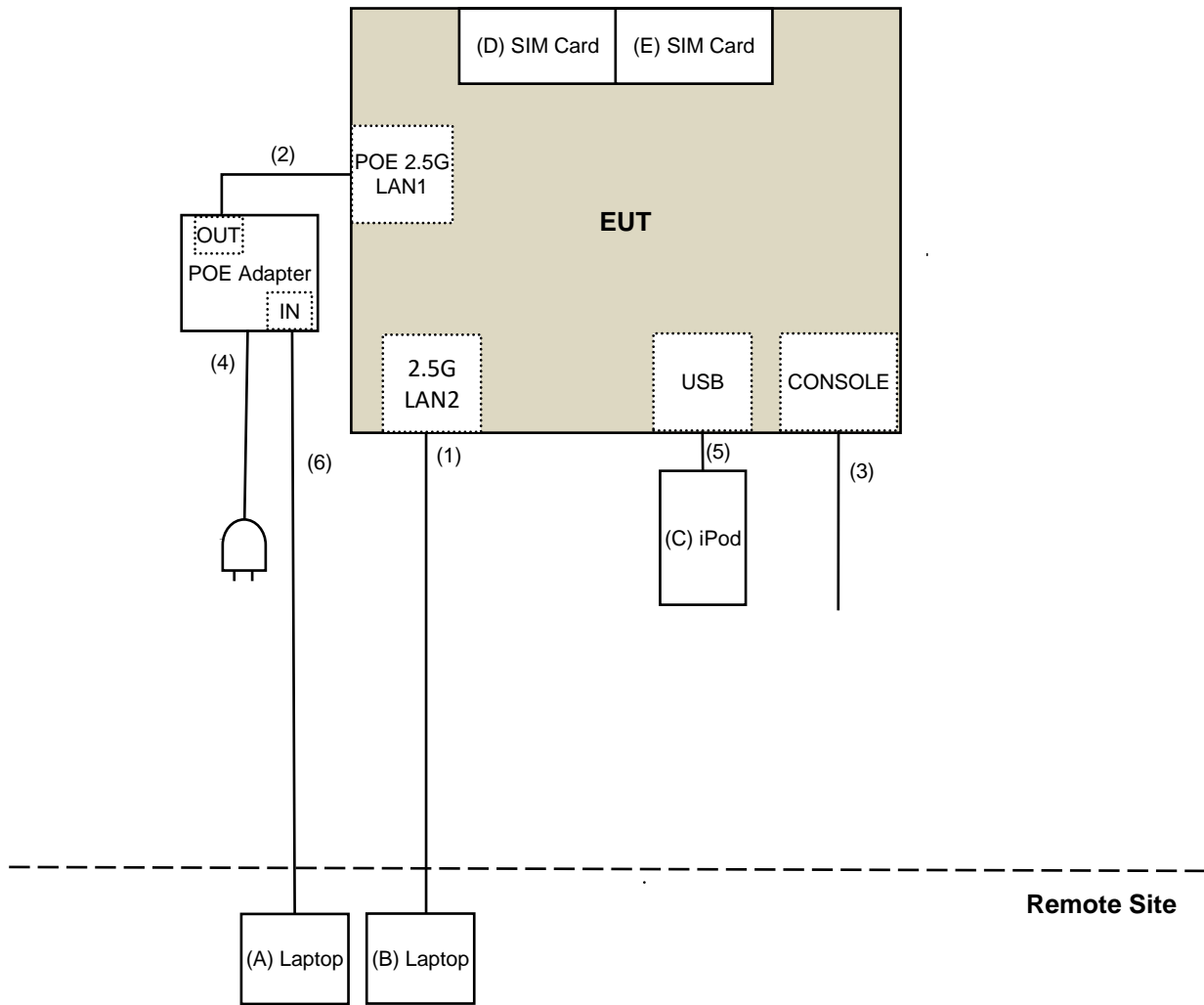
Note:

1. All power cords of the above support units are non-shielded (1.5m).

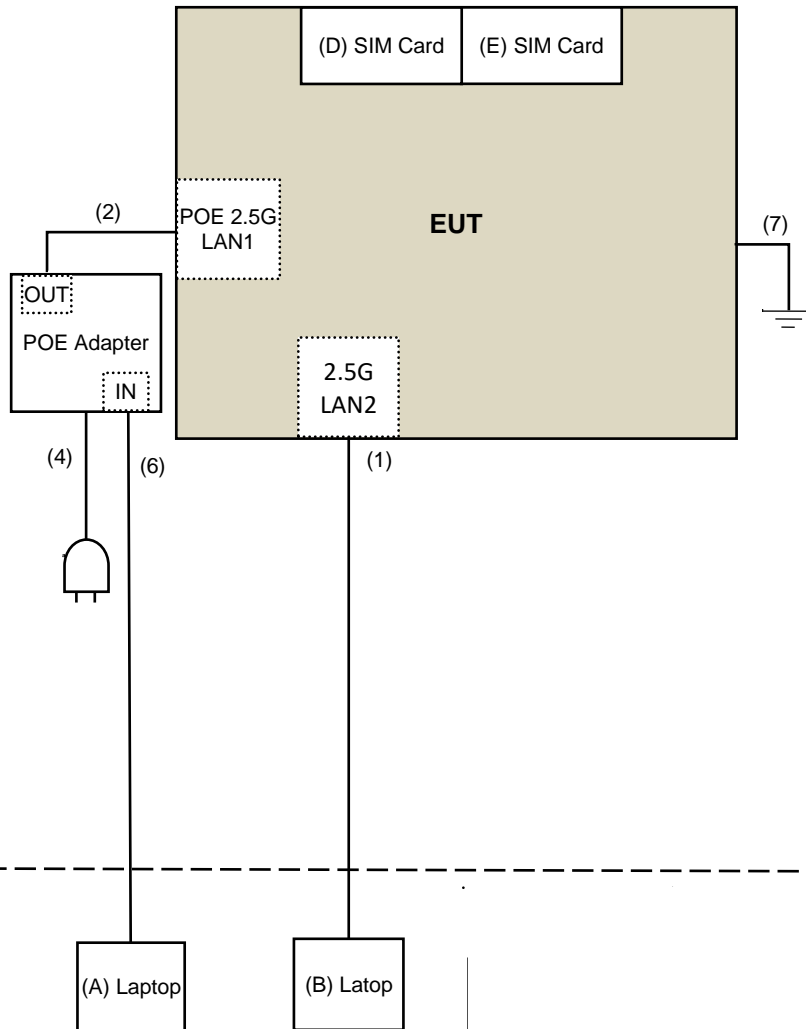
ID	Descriptions (Cables)	Qty	Length (m)	Shielding (Yes/No)	Cores (Number)	Remarks
1	RJ-45 Cable	1	10	No	0	Provided by Lab
2	RJ-45 Cable	1	3	No	0	Provided by Lab
3	Console Cable	1	1.5	No	0	Provided by Lab
4	AC Cable	1	1.8	No	0	Provided by Lab
5	USB Cable	1	0.1	Yes	0	Provided by Lab
6	RJ-45 Cable	1	10	No	0	Provided by Lab
7	Ground Cable	1	3	Yes	0	Provided by Lab

3.4.1 Configuration of System under Test

For Model: S5A103A (Indoor)



For Model: S5A108A (Outdoor)



3.5 General Description of Applied Standards and References

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

Test Standard:

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2013

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

References Test Guidance:

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

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

Limits of unwanted emission out of the restricted bands

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

Note:

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

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

4.1.2 Test Instruments

For radiated emission & BandEdge & OOB test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESR7	102026	Apr. 22, 2020	Apr. 21, 2021
Spectrum Analyzer Keysight	N9030B	MY57141948	May 22, 2020	May 21, 2021
Pre-Amplifier EMCi	EMC001340	980142	May 25, 2020	May 24, 2021
Loop Antenna Electro-Metrics	EM-6879	264	Feb. 18, 2020	Feb. 17, 2021
RF Cable	NA	LOOPCAB-001	Jan. 08, 2020	Jan. 07, 2021
RF Cable	NA	LOOPCAB-002	Jan. 08, 2020	Jan. 07, 2021
Pre-Amplifier EMCi	EMC330N	980538	Apr. 28, 2020	Apr. 27, 2021
Trilog Broadband Antenna SCHWARZBECK	VULB9168	9168-0842	Nov. 08, 2019	Nov. 07, 2020
RF Cable	8D	966-5-1	Apr. 29, 2020	Apr. 28, 2021
RF Cable	8D	966-5-2	Apr. 29, 2020	Apr. 28, 2021
RF Cable	8D	966-5-3	Apr. 29, 2020	Apr. 28, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	Jan. 14, 2020	Jan. 13, 2021
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-1819	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCi	EMC12630SE	980509	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCi	EMC104-SM-SM-1500	180503	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCi	EMC104-SM-SM-2000	180501	Apr. 29, 2020	Apr. 28, 2021
RF Cable EMCi	EMC104-SM-SM-6000	180506	Apr. 29, 2020	Apr. 28, 2021
Pre-Amplifier EMCi	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	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 966 Chamber No. 5.
3. Tested Date: Sep. 12 to Oct. 13, 2020

For other test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Power meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021
Power sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 16, 2020	Jan. 15, 2021
True RMS Clamp Meter FLUKE	325	31130711WS	June 06, 2020	June 05, 2021
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

- NOTE:**
1. The test was performed in Oven room 2.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: Oct. 13, 2020

4.1.3 Test Procedure

For Radiated emission below 30MHz

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

Note:

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

For Radiated emission above 30MHz

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

Note:

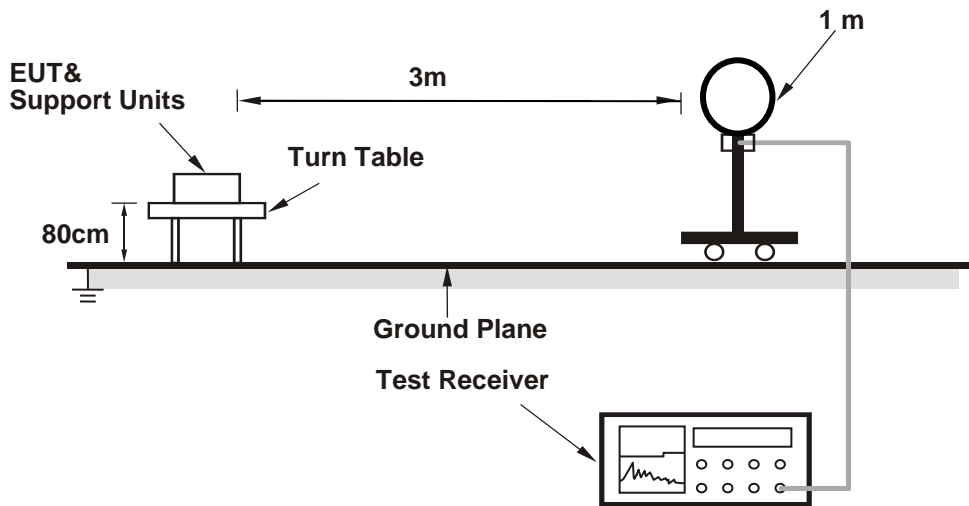
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

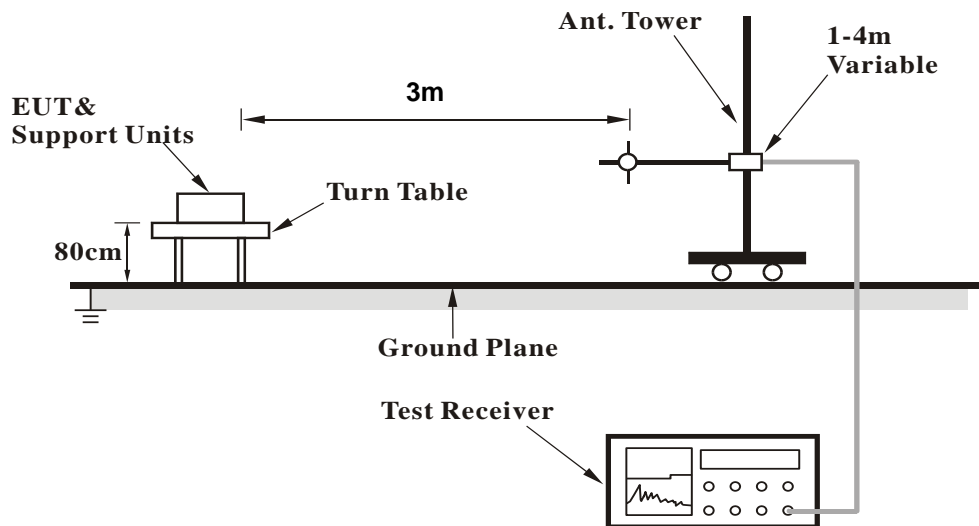
No deviation.

4.1.5 Test Setup

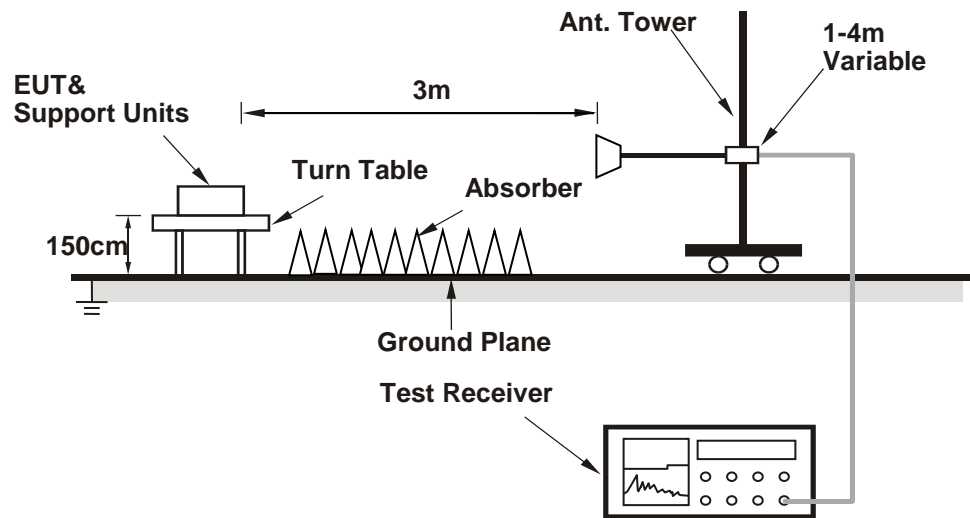
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

- Connected the EUT with the Laptop which is placed on remote site.
- Controlling software (qdart_conn.win.1.0_installer_00070.1) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results (Mode 1)

CDD Mode

Above 1GHz Data:

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	67.7 PK	74.0	-6.3	1.78 H	202	66.0	1.7
2	5150.00	53.8 AV	54.0	-0.2	1.78 H	202	52.1	1.7
3	*5180.00	119.3 PK			1.78 H	202	117.8	1.5
4	*5180.00	109.7 AV			1.78 H	202	108.2	1.5
5	#10360.00	49.5 PK	68.2	-18.7	1.38 H	161	38.3	11.2
6	15540.00	49.9 PK	74.0	-24.1	1.59 H	149	38.2	11.7
7	15540.00	37.3 AV	54.0	-16.7	1.59 H	149	25.6	11.7

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	72.6 PK	74.0	-1.4	1.44 V	200	70.9	1.7
2	5150.00	53.9 AV	54.0	-0.1	1.44 V	200	52.2	1.7
3	*5180.00	120.3 PK			1.44 V	200	118.8	1.5
4	*5180.00	110.5 AV			1.44 V	200	109.0	1.5
5	#10360.00	48.9 PK	68.2	-19.3	2.16 V	160	37.7	11.2
6	15540.00	51.8 PK	74.0	-22.2	1.61 V	134	40.1	11.7
7	15540.00	38.7 AV	54.0	-15.3	1.61 V	134	27.0	11.7

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	60.0 PK	74.0	-14.0	2.50 H	175	58.3	1.7
2	5150.00	49.1 AV	54.0	-4.9	2.50 H	175	47.4	1.7
3	*5200.00	119.6 PK			2.50 H	175	118.2	1.4
4	*5200.00	110.0 AV			2.50 H	175	108.6	1.4
5	5350.00	73.3 PK	74.0	-0.7	2.50 H	175	71.9	1.4
6	5350.00	53.8 AV	54.0	-0.2	2.50 H	175	52.4	1.4
7	#10400.00	49.7 PK	68.2	-18.5	1.36 H	179	38.2	11.5
8	15600.00	57.1 PK	74.0	-16.9	1.44 H	174	45.6	11.5
9	15600.00	43.9 AV	54.0	-10.1	1.44 H	174	32.4	11.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	60.3 PK	74.0	-13.7	1.50 V	210	58.6	1.7
2	5150.00	49.4 AV	54.0	-4.6	1.50 V	210	47.7	1.7
3	*5200.00	121.8 PK			1.73 V	188	120.4	1.4
4	*5200.00	111.9 AV			1.73 V	188	110.5	1.4
5	5350.00	73.9 PK	74.0	-0.1	1.95 V	185	72.5	1.4
6	5350.00	53.9 AV	54.0	-0.1	1.95 V	185	52.5	1.4
7	#10400.00	49.6 PK	68.2	-18.6	1.89 V	360	38.1	11.5
8	15600.00	53.0 PK	74.0	-21.0	1.69 V	153	41.5	11.5
9	15600.00	40.7 AV	54.0	-13.3	1.69 V	153	29.2	11.5

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5048.78	55.5 PK	74.0	-18.5	2.96 H	195	53.7	1.8
2	5048.78	43.3 AV	54.0	-10.7	2.96 H	195	41.5	1.8
3	*5240.00	121.5 PK			2.96 H	195	120.3	1.2
4	*5240.00	117.5 AV			2.96 H	195	116.3	1.2
5	#10480.00	51.6 PK	68.2	-16.6	1.55 H	172	40.1	11.5
6	15720.00	51.6 PK	74.0	-22.4	2.22 H	147	40.5	11.1
7	15720.00	41.6 AV	54.0	-12.4	2.22 H	147	30.5	11.1

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	5050.51	55.2 PK	74.0	-18.8	1.75 V	189	53.4	1.8
2	5050.51	43.8 AV	54.0	-10.2	1.75 V	189	42.0	1.8
3	*5240.00	121.6 PK			1.75 V	189	120.4	1.2
4	*5240.00	111.8 AV			1.75 V	189	110.6	1.2
5	#10480.00	49.6 PK	68.2	-18.6	2.48 V	169	38.1	11.5
6	15720.00	52.6 PK	74.0	-21.4	2.43 V	216	41.5	11.1
7	15720.00	38.9 AV	54.0	-15.1	2.43 V	216	27.8	11.1

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 149 : 5745 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5637.22	60.0 PK	68.2	-8.2	2.56 H	182	58.3	1.7
2	*5745.00	118.5 PK			2.56 H	182	116.6	1.9
3	*5745.00	107.9 AV			2.56 H	182	106.0	1.9
4	#5940.68	54.6 PK	68.2	-13.6	2.56 H	182	52.2	2.4
5	11490.00	49.4 PK	74.0	-24.6	1.45 H	172	36.9	12.5
6	11490.00	39.6 AV	54.0	-14.4	1.45 H	172	27.1	12.5
7	#17235.00	61.6 PK	68.2	-6.6	1.50 H	181	45.8	15.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.62	60.2 PK	68.2	-8.0	1.05 V	180	58.5	1.7
2	*5745.00	123.0 PK			1.05 V	180	121.1	1.9
3	*5745.00	112.9 AV			1.05 V	180	111.0	1.9
4	#5927.68	54.8 PK	68.2	-13.4	1.05 V	180	52.4	2.4
5	11490.00	49.5 PK	74.0	-24.5	1.56 V	187	37.0	12.5
6	11490.00	39.2 AV	54.0	-14.8	1.56 V	187	26.7	12.5
7	#17235.00	56.7 PK	68.2	-11.5	1.40 V	218	40.9	15.8

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5596.86	53.4 PK	68.2	-14.8	2.35 H	187	51.8	1.6
2	*5785.00	124.0 PK			2.35 H	187	122.0	2.0
3	*5785.00	113.6 AV			2.35 H	187	111.6	2.0
4	#5980.61	54.6 PK	68.2	-13.6	2.35 H	187	52.1	2.5
5	11570.00	50.9 PK	74.0	-23.1	1.63 H	184	38.0	12.9
6	11570.00	42.9 AV	54.0	-11.1	1.63 H	184	30.0	12.9
7	#17355.00	68.0 PK	68.2	-0.2	1.54 H	109	51.2	16.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5591.14	54.2 PK	68.2	-14.0	1.00 V	168	52.6	1.6
2	*5785.00	123.0 PK			1.00 V	168	121.0	2.0
3	*5785.00	112.5 AV			1.00 V	168	110.5	2.0
4	#5979.99	53.8 PK	68.2	-14.4	1.00 V	168	51.3	2.5
5	11570.00	49.8 PK	74.0	-24.2	1.68 V	187	36.9	12.9
6	11570.00	40.1 AV	54.0	-13.9	1.68 V	187	27.2	12.9
7	#17355.00	61.2 PK	68.2	-7.0	1.97 V	234	44.4	16.8

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5627.60	53.7 PK	68.2	-14.5	2.49 H	183	52.0	1.7
2	*5825.00	123.8 PK			2.49 H	183	121.6	2.2
3	*5825.00	113.1 AV			2.49 H	183	110.9	2.2
4	#5927.80	60.0 PK	68.2	-8.2	2.49 H	183	57.6	2.4
5	11650.00	54.1 PK	74.0	-19.9	1.37 H	162	41.2	12.9
6	11650.00	46.0 AV	54.0	-8.0	1.37 H	162	33.1	12.9
7	#17475.00	53.1 PK	68.2	-15.1	1.58 H	172	34.4	18.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5632.29	53.3 PK	68.2	-14.9	1.76 V	170	51.6	1.7
2	*5825.00	123.7 PK			1.76 V	170	121.5	2.2
3	*5825.00	113.5 AV			1.76 V	170	111.3	2.2
4	#5930.77	58.7 PK	68.2	-9.5	1.76 V	170	56.3	2.4
5	11650.00	49.5 PK	74.0	-24.5	2.34 V	130	36.6	12.9
6	11650.00	39.1 AV	54.0	-14.9	2.34 V	130	26.2	12.9
7	#17475.00	63.1 PK	68.2	-5.1	1.49 V	158	44.4	18.7

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	64.7 PK	74.0	-9.3	2.68 H	174	63.0	1.7
2	5150.00	50.5 AV	54.0	-3.5	2.68 H	174	48.8	1.7
3	*5180.00	122.0 PK			2.64 H	173	120.5	1.5
4	*5180.00	109.9 AV			2.64 H	173	108.4	1.5
5	#10360.00	49.6 PK	68.2	-18.6	1.60 H	228	38.4	11.2
6	15540.00	51.0 PK	74.0	-23.0	2.55 H	188	39.3	11.7
7	15540.00	36.5 AV	54.0	-17.5	2.55 H	188	24.8	11.7

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	5149.80	71.4 PK	74.0	-2.6	1.52 V	172	69.7	1.7
2	5149.80	53.9 AV	54.0	-0.1	1.52 V	172	52.2	1.7
3	*5180.00	124.1 PK			1.52 V	172	122.6	1.5
4	*5180.00	112.4 AV			1.52 V	172	110.9	1.5
5	#10360.00	49.0 PK	68.2	-19.2	2.81 V	196	37.8	11.2
6	15540.00	48.9 PK	74.0	-25.1	1.24 V	248	37.2	11.7
7	15540.00	32.3 AV	54.0	-21.7	1.24 V	248	20.6	11.7

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5135.69	65.0 PK	74.0	-9.0	2.62 H	175	63.3	1.7
2	5135.69	51.1 AV	54.0	-2.9	2.62 H	175	49.4	1.7
3	*5200.00	124.1 PK			2.62 H	175	122.7	1.4
4	*5200.00	112.2 AV			2.62 H	175	110.8	1.4
5	#10400.00	49.6 PK	68.2	-18.6	1.60 H	190	38.1	11.5
6	15600.00	58.2 PK	74.0	-15.8	1.54 H	178	46.7	11.5
7	15600.00	43.1 AV	54.0	-10.9	1.54 H	178	31.6	11.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.9 PK	74.0	-8.1	1.50 V	191	64.2	1.7
2	5150.00	52.5 AV	54.0	-1.5	1.50 V	191	50.8	1.7
3	*5200.00	112.5 PK			1.50 V	191	111.1	1.4
4	*5200.00	111.2 AV			1.50 V	191	109.8	1.4
5	#10400.00	49.2 PK	68.2	-19.0	2.82 V	170	37.7	11.5
6	15600.00	53.6 PK	74.0	-20.4	1.70 V	144	42.1	11.5
7	15600.00	40.5 AV	54.0	-13.5	1.70 V	144	29.0	11.5

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5046.53	55.0 PK	74.0	-19.0	1.39 H	192	53.2	1.8
2	5046.53	44.7 AV	54.0	-9.3	1.39 H	192	42.9	1.8
3	*5240.00	124.4 PK			1.39 H	192	123.2	1.2
4	*5240.00	112.1 AV			1.39 H	192	110.9	1.2
5	5433.60	54.0 PK	74.0	-20.0	1.39 H	192	52.4	1.6
6	5433.60	42.3 AV	54.0	-11.7	1.39 H	192	40.7	1.6
7	#10480.00	52.2 PK	68.2	-16.0	1.98 H	167	40.7	11.5
8	15720.00	57.9 PK	74.0	-16.1	2.30 H	146	46.8	11.1
9	15720.00	43.4 AV	54.0	-10.6	2.30 H	146	32.3	11.1

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	54.3 PK	74.0	-19.7	1.50 V	192	52.6	1.7
2	5150.00	45.0 AV	54.0	-9.0	1.50 V	192	43.3	1.7
3	*5240.00	122.5 PK			1.50 V	192	121.3	1.2
4	*5240.00	111.6 AV			1.50 V	192	110.4	1.2
5	5424.74	53.0 PK	74.0	-21.0	1.50 V	192	51.4	1.6
6	5424.74	43.0 AV	54.0	-11.0	1.50 V	192	41.4	1.6
7	#10480.00	50.6 PK	68.2	-17.6	2.50 V	169	39.1	11.5
8	15720.00	54.2 PK	74.0	-19.8	2.55 V	216	43.1	11.1
9	15720.00	40.5 AV	54.0	-13.5	2.55 V	216	29.4	11.1

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 149 : 5745 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5641.97	59.4 PK	68.2	-8.8	1.56 H	113	57.7	1.7
2	*5745.00	121.9 PK			1.56 H	113	120.0	1.9
3	*5745.00	109.9 AV			1.56 H	113	108.0	1.9
4	#5933.14	53.5 PK	68.2	-14.7	1.56 H	113	51.1	2.4
5	11490.00	48.6 PK	74.0	-25.4	1.57 H	183	36.1	12.5
6	11490.00	40.3 AV	54.0	-13.7	1.57 H	183	27.8	12.5
7	#17235.00	61.6 PK	68.2	-6.6	1.68 H	193	45.8	15.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5639.17	59.4 PK	68.2	-8.8	1.63 V	168	57.7	1.7
2	*5745.00	123.7 PK			1.63 V	168	121.8	1.9
3	*5745.00	112.2 AV			1.63 V	168	110.3	1.9
4	#5930.39	55.1 PK	68.2	-13.1	1.63 V	168	52.7	2.4
5	11490.00	50.2 PK	74.0	-23.8	2.48 V	185	37.7	12.5
6	11490.00	40.4 AV	54.0	-13.6	2.48 V	185	27.9	12.5
7	#17235.00	55.3 PK	68.2	-12.9	1.02 V	238	39.5	15.8

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5585.84	54.6 PK	68.2	-13.6	2.35 H	167	52.9	1.7
2	*5785.00	122.8 PK			2.35 H	167	120.8	2.0
3	*5785.00	111.5 AV			2.35 H	167	109.5	2.0
4	#5931.97	54.4 PK	68.2	-13.8	2.35 H	167	52.0	2.4
5	11570.00	50.9 PK	74.0	-23.1	1.54 H	185	38.0	12.9
6	11570.00	43.9 AV	54.0	-10.1	1.54 H	185	31.0	12.9
7	#17355.00	65.8 PK	68.2	-2.4	1.60 H	110	49.0	16.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5596.70	53.1 PK	68.2	-15.1	1.50 V	180	51.5	1.6
2	*5785.00	123.3 PK			1.50 V	180	121.3	2.0
3	*5785.00	111.5 AV			1.50 V	180	109.5	2.0
4	#5980.84	55.3 PK	68.2	-12.9	1.50 V	180	52.8	2.5
5	11570.00	50.1 PK	74.0	-23.9	1.90 V	184	37.2	12.9
6	11570.00	39.4 AV	54.0	-14.6	1.90 V	184	26.5	12.9
7	#17355.00	59.3 PK	68.2	-8.9	1.91 V	235	42.5	16.8

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5625.58	53.6 PK	68.2	-14.6	1.61 H	167	51.9	1.7
2	*5825.00	122.7 PK			1.61 H	165	120.5	2.2
3	*5825.00	111.7 AV			1.61 H	165	109.5	2.2
4	#5941.80	59.5 PK	68.2	-8.7	1.61 H	167	57.1	2.4
5	11650.00	52.8 PK	74.0	-21.2	1.20 H	178	39.9	12.9
6	11650.00	44.7 AV	54.0	-9.3	1.20 H	178	31.8	12.9
7	#17475.00	67.9 PK	68.2	-0.3	1.50 H	176	49.2	18.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5634.35	53.9 PK	68.2	-14.3	1.00 V	184	52.2	1.7
2	*5825.00	124.7 PK			1.00 V	184	122.5	2.2
3	*5825.00	112.1 AV			1.00 V	184	109.9	2.2
4	#5925.58	61.1 PK	68.2	-7.1	1.00 V	184	58.7	2.4
5	11650.00	50.5 PK	74.0	-23.5	2.40 V	195	37.6	12.9
6	11650.00	39.3 AV	54.0	-14.7	2.40 V	195	26.4	12.9
7	#17475.00	63.5 PK	68.2	-4.7	1.81 V	232	44.8	18.7

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	67.3 PK	74.0	-6.7	1.50 H	190	65.6	1.7
2	5150.00	53.6 AV	54.0	-0.4	1.50 H	190	51.9	1.7
3	*5190.00	118.3 PK			1.50 H	190	116.8	1.5
4	*5190.00	102.7 AV			1.50 H	190	101.2	1.5
5	#10380.00	48.6 PK	68.2	-19.6	1.74 H	243	37.3	11.3
6	15570.00	46.5 PK	74.0	-27.5	1.80 H	218	34.9	11.6
7	15570.00	35.3 AV	54.0	-18.7	1.80 H	218	23.7	11.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	62.6 PK	74.0	-11.4	2.40 V	160	60.9	1.7
2	5150.00	49.7 AV	54.0	-4.3	2.40 V	160	48.0	1.7
3	*5190.00	118.9 PK			2.40 V	160	117.4	1.5
4	*5190.00	102.2 AV			2.40 V	160	100.7	1.5
5	#10380.00	47.9 PK	68.2	-20.3	2.20 V	174	36.6	11.3
6	15570.00	48.3 PK	74.0	-25.7	1.89 V	264	36.7	11.6
7	15570.00	35.2 AV	54.0	-18.8	1.89 V	264	23.6	11.6

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5147.06	54.8 PK	74.0	-19.2	1.50 H	199	53.1	1.7
2	5147.06	43.4 AV	54.0	-10.6	1.50 H	199	41.7	1.7
3	*5230.00	109.0 PK			1.50 H	199	107.7	1.3
4	*5230.00	97.3 AV			1.50 H	199	96.0	1.3
5	#10460.00	49.8 PK	68.2	-18.4	1.35 H	174	38.5	11.3
6	15690.00	51.4 PK	74.0	-22.6	2.43 H	174	40.2	11.2
7	15690.00	38.9 AV	54.0	-15.1	2.43 H	174	27.7	11.2

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	5149.66	53.4 PK	74.0	-20.6	1.62 V	190	51.7	1.7
2	5149.66	42.5 AV	54.0	-11.5	1.62 V	190	40.8	1.7
3	*5230.00	108.0 PK			1.62 V	190	106.7	1.3
4	*5230.00	97.2 AV			1.62 V	190	95.9	1.3
5	#10460.00	48.6 PK	68.2	-19.6	3.02 V	174	37.3	11.3
6	15690.00	52.2 PK	74.0	-21.8	2.50 V	216	41.0	11.2
7	15690.00	39.0 AV	54.0	-15.0	2.50 V	216	27.8	11.2

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 151 : 5755 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.29	61.9 PK	68.2	-6.3	2.30 H	182	60.2	1.7
2	*5755.00	110.8 PK			2.30 H	182	108.9	1.9
3	*5755.00	98.7 AV			2.30 H	182	96.8	1.9
4	#5928.44	51.7 PK	68.2	-16.5	2.30 H	182	49.3	2.4
5	11510.00	49.6 PK	74.0	-24.4	1.79 H	183	37.1	12.5
6	11510.00	41.1 AV	54.0	-12.9	1.79 H	183	28.6	12.5
7	#17265.00	58.9 PK	68.2	-9.3	1.57 H	104	42.9	16.0

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	#5646.75	59.4 PK	68.2	-8.8	1.40 V	153	57.7	1.7
2	*5755.00	112.2 PK			1.40 V	153	110.3	1.9
3	*5755.00	98.8 AV			1.40 V	153	96.9	1.9
4	#5932.11	49.0 PK	68.2	-19.2	1.40 V	153	46.6	2.4
5	11510.00	49.5 PK	74.0	-24.5	1.59 V	160	37.0	12.5
6	11510.00	37.9 AV	54.0	-16.1	1.59 V	160	25.4	12.5
7	#17265.00	54.6 PK	68.2	-13.6	2.10 V	227	38.6	16.0

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 (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5635.57	53.4 PK	68.2	-14.8	1.36 H	186	51.7	1.7
2	*5795.00	110.1 PK			1.36 H	186	108.0	2.1
3	*5795.00	97.9 AV			1.36 H	186	95.8	2.1
4	#5930.15	58.3 PK	68.2	-9.9	1.36 H	186	55.9	2.4
5	11590.00	52.1 PK	74.0	-21.9	1.50 H	185	39.3	12.8
6	11590.00	44.2 AV	54.0	-9.8	1.50 H	185	31.4	12.8
7	#17385.00	63.1 PK	68.2	-5.1	1.58 H	109	45.8	17.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5634.63	50.5 PK	68.2	-17.7	1.55 V	152	48.8	1.7
2	*5795.00	110.0 PK			1.55 V	152	107.9	2.1
3	*5795.00	98.8 AV			1.55 V	152	96.7	2.1
4	#5935.25	58.5 PK	68.2	-9.7	1.55 V	152	56.1	2.4
5	11590.00	49.8 PK	74.0	-24.2	2.08 V	169	37.0	12.8
6	11590.00	38.0 AV	54.0	-16.0	2.08 V	169	25.2	12.8
7	#17385.00	58.3 PK	68.2	-9.9	1.92 V	234	41.0	17.3

Remarks:

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

RF Mode	TX 802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5135.54	61.0 PK	74.0	-13.0	1.39 H	199	59.3	1.7
2	5135.54	48.4 AV	54.0	-5.6	1.39 H	199	46.7	1.7
3	*5210.00	107.5 PK			1.39 H	199	106.1	1.4
4	*5210.00	95.3 AV			1.39 H	199	93.9	1.4
5	5355.77	50.1 PK	74.0	-23.9	1.39 H	199	48.7	1.4
6	5355.77	36.2 AV	54.0	-17.8	1.39 H	199	34.8	1.4
7	#10420.00	48.6 PK	68.2	-19.6	1.57 H	189	37.2	11.4
8	15630.00	47.6 PK	74.0	-26.4	1.98 H	215	36.2	11.4
9	15630.00	35.4 AV	54.0	-18.6	1.98 H	215	24.0	11.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	66.2 PK	74.0	-7.8	1.00 V	171	64.5	1.7
2	5150.00	51.0 AV	54.0	-3.0	1.00 V	171	49.3	1.7
3	*5210.00	105.8 PK			1.00 V	171	104.4	1.4
4	*5210.00	91.3 AV			1.00 V	171	89.9	1.4
5	5350.00	51.0 PK	74.0	-23.0	1.00 V	171	49.6	1.4
6	5350.00	37.3 AV	54.0	-16.7	1.00 V	171	35.9	1.4
7	#10420.00	48.4 PK	68.2	-19.8	1.44 V	182	37.0	11.4
8	15630.00	47.2 PK	74.0	-26.8	2.19 V	154	35.8	11.4
9	15630.00	35.0 AV	54.0	-19.0	2.19 V	154	23.6	11.4

Remarks:

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

RF Mode	TX 802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5644.98	65.2 PK	68.2	-3.0	2.21 H	185	63.5	1.7
2	*5775.00	106.9 PK			2.21 H	185	104.9	2.0
3	*5775.00	94.6 AV			2.21 H	185	92.6	2.0
4	#5926.97	64.9 PK	68.2	-3.3	2.11 H	185	62.5	2.4
5	11550.00	50.3 PK	74.0	-23.7	1.32 H	160	37.6	12.7
6	11550.00	42.3 AV	54.0	-11.7	1.32 H	160	29.6	12.7
7	#17325.00	56.1 PK	68.2	-12.1	1.49 H	233	39.7	16.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5647.43	65.2 PK	68.2	-3.0	1.53 V	168	63.5	1.7
2	*5775.00	106.7 PK			1.53 V	168	104.7	2.0
3	*5775.00	95.0 AV			1.53 V	168	93.0	2.0
4	#5928.71	64.8 PK	68.2	-3.4	1.53 V	168	62.4	2.4
5	11550.00	50.4 PK	74.0	-23.6	1.73 V	161	37.7	12.7
6	11550.00	39.0 AV	54.0	-15.0	1.73 V	161	26.3	12.7
7	#17325.00	53.4 PK	68.2	-14.8	1.50 V	190	37.0	16.4

Remarks:

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

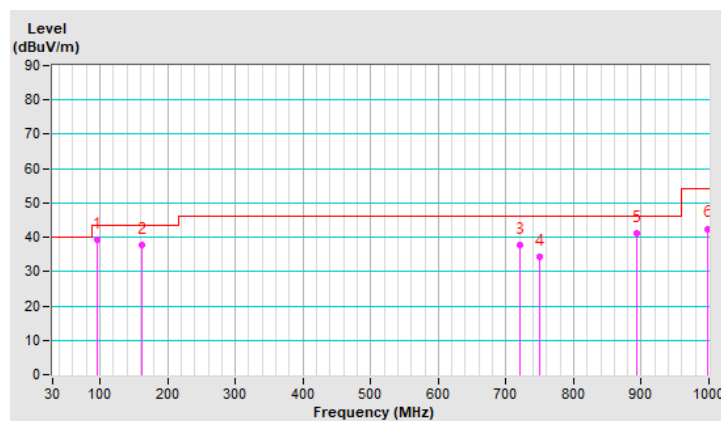
Below 1GHz Data:

RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	96.83	39.2 QP	43.5	-4.3	2.00 H	266	56.7	-17.5
2	162.01	37.7 QP	43.5	-5.8	2.00 H	301	50.2	-12.5
3	721.13	37.8 QP	46.0	-8.2	4.00 H	349	41.3	-3.5
4	749.98	34.4 QP	46.0	-11.6	1.00 H	244	37.2	-2.8
5	893.00	41.2 QP	46.0	-4.8	2.00 H	305	42.3	-1.1
6	997.80	42.5 QP	54.0	-11.5	1.00 H	322	42.2	0.3

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 of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



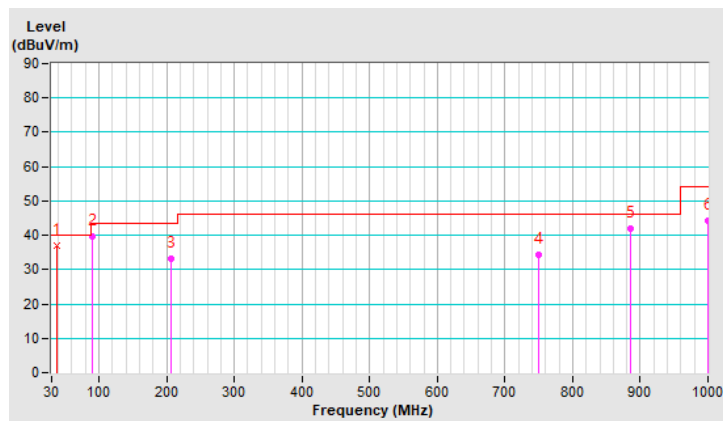
RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	37.60	36.9 QP	40.0	-3.1	1.00 V	187	50.0	-13.1
2	90.79	39.7 QP	43.5	-3.8	2.00 V	358	58.1	-18.4
3	206.34	33.2 QP	43.5	-10.3	2.00 V	358	49.3	-16.1
4	750.12	34.2 QP	46.0	-11.8	1.00 V	64	37.0	-2.8
5	884.68	42.0 QP	46.0	-4.0	1.00 V	312	43.3	-1.3
6	999.80	44.1 QP	54.0	-9.9	2.00 V	207	43.8	0.3

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 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.



4.1.8 Test Results (Mode 2)

CDD Mode
Above 1GHz Data:

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5148.67	54.7 PK	74.0	-19.3	1.38 H	329	53.0	1.7
2	5148.67	43.5 AV	54.0	-10.5	1.38 H	329	41.8	1.7
3	*5180.00	107.2 PK			1.38 H	329	105.7	1.5
4	*5180.00	97.0 AV			1.38 H	329	95.5	1.5
5	#10360.00	48.4 PK	68.2	-19.8	1.58 H	195	37.2	11.2
6	15540.00	47.8 PK	74.0	-26.2	1.43 H	219	36.1	11.7
7	15540.00	35.8 AV	54.0	-18.2	1.43 H	219	24.1	11.7
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	71.6 PK	74.0	-2.4	2.20 V	31	69.9	1.7
2	5150.00	51.7 AV	54.0	-2.3	2.20 V	31	50.0	1.7
3	*5180.00	121.6 PK			2.20 V	31	120.1	1.5
4	*5180.00	111.9 AV			2.20 V	31	110.4	1.5
5	#10360.00	47.1 PK	68.2	-21.1	1.43 V	172	35.9	11.2
6	15540.00	48.9 PK	74.0	-25.1	1.49 V	186	37.2	11.7
7	15540.00	35.8 AV	54.0	-18.2	1.49 V	186	24.1	11.7

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	58.1 PK	74.0	-15.9	1.45 H	332	56.4	1.7
2	5150.00	46.8 AV	54.0	-7.2	1.45 H	332	45.1	1.7
3	*5200.00	112.1 PK			1.45 H	332	110.7	1.4
4	*5200.00	101.9 AV			1.45 H	332	100.5	1.4
5	5350.00	52.5 PK	74.0	-21.5	1.45 H	332	51.1	1.4
6	5350.00	39.5 AV	54.0	-14.5	1.45 H	332	38.1	1.4
7	#10400.00	50.3 PK	68.2	-17.9	1.38 H	142	38.8	11.5
8	15600.00	51.8 PK	74.0	-22.2	1.59 H	228	40.3	11.5
9	15600.00	40.6 AV	54.0	-13.4	1.59 H	228	29.1	11.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	68.9 PK	74.0	-5.1	2.34 V	37	67.2	1.7
2	5150.00	52.9 AV	54.0	-1.1	2.34 V	37	51.2	1.7
3	*5200.00	120.5 PK			2.34 V	37	119.1	1.4
4	*5200.00	110.7 AV			2.34 V	37	109.3	1.4
5	5350.00	54.3 PK	74.0	-19.7	2.34 V	37	52.9	1.4
6	5350.00	43.2 AV	54.0	-10.8	2.34 V	37	41.8	1.4
7	#10400.00	49.5 PK	68.2	-18.7	2.20 V	267	38.0	11.5
8	15600.00	52.6 PK	74.0	-21.4	1.50 V	269	41.1	11.5
9	15600.00	41.2 AV	54.0	-12.8	1.50 V	269	29.7	11.5

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5049.58	51.6 PK	74.0	-22.4	3.08 H	292	49.8	1.8
2	5049.58	40.4 AV	54.0	-13.6	3.08 H	292	38.6	1.8
3	*5240.00	111.9 PK			3.08 H	292	110.7	1.2
4	*5240.00	101.6 AV			3.08 H	292	100.4	1.2
5	5452.06	51.7 PK	74.0	-22.3	3.08 H	292	50.1	1.6
6	5452.06	40.7 AV	54.0	-13.3	3.08 H	292	39.1	1.6
7	#10480.00	48.8 PK	68.2	-19.4	1.68 H	264	37.3	11.5
8	15720.00	48.2 PK	74.0	-25.8	1.73 H	92	37.1	11.1
9	15720.00	35.9 AV	54.0	-18.1	1.73 H	92	24.8	11.1

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	5146.22	55.9 PK	74.0	-18.1	2.48 V	331	54.2	1.7
2	5146.22	43.8 AV	54.0	-10.2	2.48 V	331	42.1	1.7
3	*5240.00	120.2 PK			2.48 V	331	119.0	1.2
4	*5240.00	110.0 AV			2.48 V	331	108.8	1.2
5	5360.28	53.1 PK	74.0	-20.9	2.48 V	331	51.7	1.4
6	5360.28	42.7 AV	54.0	-11.3	2.48 V	331	41.3	1.4
7	#10480.00	49.8 PK	68.2	-18.4	1.50 V	263	38.3	11.5
8	15720.00	49.5 PK	74.0	-24.5	1.46 V	90	38.4	11.1
9	15720.00	36.7 AV	54.0	-17.3	1.46 V	90	25.6	11.1

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 149 : 5745 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.05	54.2 PK	68.2	-14.0	2.70 H	71	52.5	1.7
2	*5745.00	115.9 PK			2.70 H	71	114.0	1.9
3	*5745.00	105.9 AV			2.70 H	71	104.0	1.9
4	#5950.34	53.1 PK	68.2	-15.1	2.70 H	71	50.6	2.5
5	11490.00	50.0 PK	74.0	-24.0	1.36 H	84	37.5	12.5
6	11490.00	37.5 AV	54.0	-16.5	1.36 H	84	25.0	12.5
7	#17235.00	55.0 PK	68.2	-13.2	1.48 H	224	39.2	15.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5641.56	59.2 PK	68.2	-9.0	1.61 V	300	57.5	1.7
2	*5745.00	124.4 PK			1.61 V	300	122.5	1.9
3	*5745.00	114.4 AV			1.61 V	300	112.5	1.9
4	#5932.89	54.7 PK	68.2	-13.5	1.61 V	300	52.3	2.4
5	11490.00	49.6 PK	74.0	-24.4	1.84 V	215	37.1	12.5
6	11490.00	37.4 AV	54.0	-16.6	1.84 V	215	24.9	12.5
7	#17235.00	53.4 PK	68.2	-14.8	1.43 V	215	37.6	15.8

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5580.46	50.9 PK	68.2	-17.3	2.06 H	306	49.2	1.7
2	*5785.00	117.5 PK			2.06 H	306	115.5	2.0
3	*5785.00	106.5 AV			2.06 H	306	104.5	2.0
4	#6009.22	51.9 PK	68.2	-16.3	2.06 H	306	49.3	2.6
5	11570.00	49.3 PK	74.0	-24.7	1.36 H	237	36.4	12.9
6	11570.00	37.2 AV	54.0	-16.8	1.36 H	237	24.3	12.9
7	#17355.00	54.3 PK	68.2	-13.9	2.30 H	241	37.5	16.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5597.61	52.3 PK	68.2	-15.9	1.51 V	297	50.7	1.6
2	*5785.00	125.1 PK			1.51 V	297	123.1	2.0
3	*5785.00	114.4 AV			1.51 V	297	112.4	2.0
4	#5930.27	54.5 PK	68.2	-13.7	1.51 V	297	52.1	2.4
5	11570.00	50.1 PK	74.0	-23.9	1.11 V	235	37.2	12.9
6	11570.00	37.0 AV	54.0	-17.0	1.11 V	235	24.1	12.9
7	#17355.00	51.5 PK	68.2	-16.7	2.05 V	173	34.7	16.8

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5576.71	52.0 PK	68.2	-16.2	2.11 H	71	50.3	1.7
2	*5825.00	113.8 PK			2.11 H	71	111.6	2.2
3	*5825.00	103.2 AV			2.11 H	71	101.0	2.2
4	#5926.41	55.8 PK	68.2	-12.4	2.11 H	71	53.4	2.4
5	11650.00	50.9 PK	74.0	-23.1	1.50 H	248	38.0	12.9
6	11650.00	37.7 AV	54.0	-16.3	1.50 H	248	24.8	12.9
7	#17475.00	55.2 PK	68.2	-13.0	1.40 H	214	36.5	18.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5635.01	52.2 PK	68.2	-16.0	1.72 V	301	50.5	1.7
2	*5825.00	123.3 PK			1.72 V	301	121.1	2.2
3	*5825.00	113.0 AV			1.72 V	301	110.8	2.2
4	#5940.28	58.0 PK	68.2	-10.2	1.72 V	301	55.6	2.4
5	11650.00	50.4 PK	74.0	-23.6	1.31 V	203	37.5	12.9
6	11650.00	37.7 AV	54.0	-16.3	1.31 V	203	24.8	12.9
7	#17475.00	54.2 PK	68.2	-14.0	2.54 V	167	35.5	18.7

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 36 : 5180 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	55.9 PK	74.0	-18.1	1.47 H	328	54.2	1.7
2	5150.00	45.2 AV	54.0	-8.8	1.47 H	328	43.5	1.7
3	*5180.00	108.5 PK			1.47 H	328	107.0	1.5
4	*5180.00	97.8 AV			1.47 H	328	96.3	1.5
5	#10360.00	49.3 PK	68.2	-18.9	2.10 H	144	38.1	11.2
6	15540.00	49.3 PK	74.0	-24.7	1.94 H	166	37.6	11.7
7	15540.00	35.6 AV	54.0	-18.4	1.94 H	166	23.9	11.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.4 PK	74.0	-8.6	2.51 V	333	63.7	1.7
2	5150.00	53.2 AV	54.0	-0.8	2.51 V	333	51.5	1.7
3	*5180.00	120.5 PK			2.51 V	333	119.0	1.5
4	*5180.00	108.6 AV			2.51 V	333	107.1	1.5
5	#10360.00	52.9 PK	68.2	-15.3	1.32 V	235	41.7	11.2
6	15540.00	40.1 PK	74.0	-33.9	1.94 V	190	28.4	11.7
7	15540.00	35.6 AV	54.0	-18.4	1.94 V	190	23.9	11.7

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 40 : 5200 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.9 PK	74.0	-19.1	1.46 H	333	53.2	1.7
2	5150.00	44.0 AV	54.0	-10.0	1.46 H	333	42.3	1.7
3	*5200.00	113.4 PK			1.46 H	333	112.0	1.4
4	*5200.00	101.7 AV			1.46 H	333	100.3	1.4
5	5350.00	51.4 PK	74.0	-22.6	1.46 H	333	50.0	1.4
6	5350.00	39.2 AV	54.0	-14.8	1.46 H	333	37.8	1.4
7	#10400.00	53.0 PK	68.2	-15.2	1.62 H	188	41.5	11.5
8	15600.00	53.5 PK	74.0	-20.5	1.57 H	217	42.0	11.5
9	15600.00	40.3 AV	54.0	-13.7	1.57 H	217	28.8	11.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.8 PK	74.0	-8.2	2.60 V	330	64.1	1.7
2	5150.00	52.7 AV	54.0	-1.3	2.60 V	330	51.0	1.7
3	*5200.00	121.7 PK			2.60 V	330	120.3	1.4
4	*5200.00	110.2 AV			2.60 V	330	108.8	1.4
5	5350.00	53.9 PK	74.0	-20.1	2.60 V	330	52.5	1.4
6	5350.00	42.1 AV	54.0	-11.9	2.60 V	330	40.7	1.4
7	#10400.00	53.3 PK	68.2	-14.9	1.50 V	188	41.8	11.5
8	15600.00	53.2 PK	74.0	-20.8	1.30 V	180	41.7	11.5
9	15600.00	42.0 AV	54.0	-12.0	1.30 V	180	30.5	11.5

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 48 : 5240 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5049.55	50.9 PK	74.0	-23.1	1.90 H	45	49.1	1.8
2	5049.55	40.3 AV	54.0	-13.7	1.90 H	45	38.5	1.8
3	*5240.00	114.3 PK			1.90 H	45	113.1	1.2
4	*5240.00	101.8 AV			1.90 H	45	100.6	1.2
5	5427.62	51.4 PK	74.0	-22.6	1.90 H	45	49.8	1.6
6	5427.62	39.6 AV	54.0	-14.4	1.90 H	45	38.0	1.6
7	#10480.00	53.6 PK	68.2	-14.6	1.68 H	129	42.1	11.5
8	15720.00	52.2 PK	74.0	-21.8	2.40 H	139	41.1	11.1
9	15720.00	40.6 AV	54.0	-13.4	2.40 H	139	29.5	11.1

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	54.4 PK	74.0	-19.6	2.57 V	33	52.7	1.7
2	5150.00	43.3 AV	54.0	-10.7	2.57 V	33	41.6	1.7
3	*5240.00	122.4 PK			2.57 V	33	121.2	1.2
4	*5240.00	110.4 AV			2.57 V	33	109.2	1.2
5	5439.20	52.6 PK	74.0	-21.4	2.57 V	33	51.0	1.6
6	5439.20	42.3 AV	54.0	-11.7	2.57 V	33	40.7	1.6
7	#10480.00	53.8 PK	68.2	-14.4	1.73 V	245	42.3	11.5
8	15720.00	52.9 PK	74.0	-21.1	1.80 V	184	41.8	11.1
9	15720.00	39.7 AV	54.0	-14.3	1.80 V	184	28.6	11.1

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 149 : 5745 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5568.85	51.1 PK	68.2	-17.1	2.13 H	70	49.4	1.7
2	*5745.00	117.8 PK			2.13 H	70	115.9	1.9
3	*5745.00	105.8 AV			2.13 H	70	103.9	1.9
4	#5974.28	52.3 PK	68.2	-15.9	2.13 H	70	49.8	2.5
5	11490.00	53.9 PK	74.0	-20.1	1.64 H	157	41.4	12.5
6	11490.00	41.7 AV	54.0	-12.3	1.64 H	157	29.2	12.5
7	#17235.00	58.0 PK	68.2	-10.2	1.28 H	216	42.2	15.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5645.57	60.5 PK	68.2	-7.7	1.65 V	294	58.8	1.7
2	*5745.00	127.2 PK			1.65 V	294	125.3	1.9
3	*5745.00	114.0 AV			1.65 V	294	112.1	1.9
4	#5932.76	54.8 PK	68.2	-13.4	1.65 V	294	52.4	2.4
5	11490.00	54.4 PK	74.0	-19.6	1.97 V	206	41.9	12.5
6	11490.00	41.8 AV	54.0	-12.2	1.97 V	206	29.3	12.5
7	#17235.00	56.5 PK	68.2	-11.7	1.26 V	183	40.7	15.8

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 157 : 5785 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5580.03	50.6 PK	68.2	-17.6	2.11 H	70	48.9	1.7
2	*5785.00	117.2 PK			2.11 H	70	115.2	2.0
3	*5785.00	105.1 AV			2.11 H	70	103.1	2.0
4	#5926.77	52.0 PK	68.2	-16.2	2.11 H	70	49.6	2.4
5	11570.00	50.5 PK	74.0	-23.5	1.09 H	275	37.6	12.9
6	11570.00	36.5 AV	54.0	-17.5	1.09 H	275	23.6	12.9
7	#17355.00	57.2 PK	68.2	-11.0	1.28 H	174	40.4	16.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5646.03	54.5 PK	68.2	-13.7	1.50 V	300	52.8	1.7
2	*5785.00	125.2 PK			1.50 V	300	123.2	2.0
3	*5785.00	114.1 AV			1.50 V	300	112.1	2.0
4	#5940.32	54.0 PK	68.2	-14.2	1.50 V	300	51.6	2.4
5	11570.00	49.6 PK	74.0	-24.4	1.24 V	182	36.7	12.9
6	11570.00	37.1 AV	54.0	-16.9	1.24 V	182	24.2	12.9
7	#17355.00	52.6 PK	68.2	-15.6	1.58 V	158	35.8	16.8

Remarks:

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

RF Mode	TX 802.11ax (HE20)	Channel	CH 165 : 5825 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5580.83	50.6 PK	68.2	-17.6	1.97 H	303	48.9	1.7
2	*5825.00	117.3 PK			1.97 H	303	115.1	2.2
3	*5825.00	104.8 AV			1.97 H	303	102.6	2.2
4	#5929.00	57.2 PK	68.2	-11.0	1.97 H	303	54.8	2.4
5	11650.00	51.0 PK	74.0	-23.0	1.44 H	173	38.1	12.9
6	11650.00	37.4 AV	54.0	-16.6	1.44 H	173	24.5	12.9
7	#17475.00	54.4 PK	68.2	-13.8	1.28 H	229	35.7	18.7

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	#5640.61	54.8 PK	68.2	-13.4	1.92 V	77	53.1	1.7
2	*5825.00	125.0 PK			1.92 V	77	122.8	2.2
3	*5825.00	113.3 AV			1.92 V	77	111.1	2.2
4	#5935.64	62.9 PK	68.2	-5.3	1.92 V	77	60.5	2.4
5	11650.00	49.7 PK	74.0	-24.3	1.50 V	234	36.8	12.9
6	11650.00	37.4 AV	54.0	-16.6	1.50 V	234	24.5	12.9
7	#17475.00	53.6 PK	68.2	-14.6	1.38 V	194	34.9	18.7

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 38 : 5190 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5145.04	56.5 PK	74.0	-17.5	2.27 H	36	54.8	1.7
2	5145.04	43.7 AV	54.0	-10.3	2.27 H	36	42.0	1.7
3	*5190.00	104.1 PK			2.27 H	36	102.6	1.5
4	*5190.00	93.4 AV			2.27 H	36	91.9	1.5
5	#10380.00	48.2 PK	68.2	-20.0	1.57 H	168	36.9	11.3
6	15570.00	47.4 PK	74.0	-26.6	1.38 H	214	35.8	11.6
7	15570.00	35.6 AV	54.0	-18.4	1.38 H	214	24.0	11.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	66.0 PK	74.0	-8.0	2.47 V	68	64.3	1.7
2	5150.00	53.7 AV	54.0	-0.3	2.47 V	68	52.0	1.7
3	*5190.00	114.2 PK			2.47 V	68	112.7	1.5
4	*5190.00	102.8 AV			2.47 V	68	101.3	1.5
5	#10380.00	49.0 PK	68.2	-19.2	1.30 V	264	37.7	11.3
6	15570.00	49.2 PK	74.0	-24.8	1.50 V	132	37.6	11.6
7	15570.00	35.7 AV	54.0	-18.3	1.50 V	132	24.1	11.6

Remarks:

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

RF Mode	TX 802.11ax (HE40)	Channel	CH 46 : 5230 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	107.6 PK			2.28 H	49	106.3	1.3
2	*5230.00	95.0 AV			2.28 H	49	93.7	1.3
3	5350.00	50.0 PK	74.0	-24.0	2.28 H	49	48.6	1.4
4	5350.00	38.0 AV	54.0	-16.0	2.28 H	49	36.6	1.4
5	#10460.00	49.3 PK	68.2	-18.9	2.30 H	241	38.0	11.3
6	15690.00	47.8 PK	74.0	-26.2	1.85 H	218	36.6	11.2
7	15690.00	35.1 AV	54.0	-18.9	1.85 H	218	23.9	11.2

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	*5230.00	117.8 PK			2.33 V	298	116.5	1.3
2	*5230.00	106.2 AV			2.33 V	298	104.9	1.3
3	5355.16	54.3 PK	74.0	-19.7	2.33 V	298	52.9	1.4
4	5355.16	43.1 AV	54.0	-10.9	2.33 V	298	41.7	1.4
5	#10460.00	48.7 PK	68.2	-19.5	1.94 V	205	37.4	11.3
6	15690.00	48.0 PK	74.0	-26.0	1.14 V	95	36.8	11.2
7	15690.00	35.2 AV	54.0	-18.8	1.14 V	95	24.0	11.2

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 151 : 5755 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5638.09	56.5 PK	68.2	-11.7	2.22 H	301	54.8	1.7
2	*5755.00	111.3 PK			2.22 H	301	109.4	1.9
3	*5755.00	101.5 AV			2.22 H	301	99.6	1.9
4	#5995.36	57.4 PK	68.2	-10.8	2.22 H	301	54.8	2.6
5	11510.00	50.3 PK	74.0	-23.7	1.50 H	241	37.8	12.5
6	11510.00	37.4 AV	54.0	-16.6	1.50 H	241	24.9	12.5
7	#17265.00	52.2 PK	68.2	-16.0	1.34 H	182	36.2	16.0

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	#5649.92	66.1 PK	68.2	-2.1	2.08 V	2	64.4	1.7
2	*5755.00	118.7 PK			2.08 V	2	116.8	1.9
3	*5755.00	107.8 AV			2.08 V	2	105.9	1.9
4	#5952.06	58.3 PK	68.2	-9.9	2.08 V	2	55.8	2.5
5	11510.00	49.9 PK	74.0	-24.1	1.55 V	215	37.4	12.5
6	11510.00	37.3 AV	54.0	-16.7	1.55 V	215	24.8	12.5
7	#17265.00	50.6 PK	68.2	-17.6	1.37 V	240	34.6	16.0

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 (HE40)	Channel	CH 159 : 5795 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5614.98	56.5 PK	68.2	-11.7	2.25 H	304	54.9	1.6
2	*5795.00	113.0 PK			2.25 H	304	110.9	2.1
3	*5795.00	102.4 AV			2.25 H	304	100.3	2.1
4	#5935.57	59.4 PK	68.2	-8.8	2.25 H	304	57.0	2.4
5	11590.00	49.2 PK	74.0	-24.8	1.50 H	183	36.4	12.8
6	11590.00	37.4 AV	54.0	-16.6	1.50 H	183	24.6	12.8
7	#17385.00	52.6 PK	68.2	-15.6	1.92 H	200	35.3	17.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.54	58.8 PK	68.2	-9.4	1.72 V	72	57.1	1.7
2	*5795.00	120.5 PK			1.72 V	72	118.4	2.1
3	*5795.00	109.4 AV			1.72 V	72	107.3	2.1
4	#5941.39	66.6 PK	68.2	-1.6	1.72 V	72	64.2	2.4
5	11590.00	49.6 PK	74.0	-24.4	1.69 V	207	36.8	12.8
6	11590.00	37.3 AV	54.0	-16.7	1.69 V	207	24.5	12.8
7	#17385.00	53.3 PK	68.2	-14.9	1.10 V	129	36.0	17.3

Remarks:

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

RF Mode	TX 802.11ax (HE80)	Channel	CH 42 : 5210 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5146.52	55.2 PK	74.0	-18.8	2.37 H	41	53.5	1.7
2	5146.52	43.6 AV	54.0	-10.4	2.37 H	41	41.9	1.7
3	*5210.00	98.5 PK			2.37 H	41	97.1	1.4
4	*5210.00	87.4 AV			2.37 H	41	86.0	1.4
5	5350.00	50.8 PK	74.0	-23.2	2.37 H	41	49.4	1.4
6	5350.00	37.8 AV	54.0	-16.2	2.37 H	41	36.4	1.4
7	#10420.00	48.3 PK	68.2	-19.9	1.27 H	142	36.9	11.4
8	15630.00	48.5 PK	74.0	-25.5	1.25 H	219	37.1	11.4
9	15630.00	35.6 AV	54.0	-18.4	1.25 H	219	24.2	11.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	64.2 PK	74.0	-9.8	2.57 V	74	62.5	1.7
2	5150.00	53.0 AV	54.0	-1.0	2.57 V	74	51.3	1.7
3	*5210.00	110.2 PK			2.57 V	74	108.8	1.4
4	*5210.00	99.2 AV			2.57 V	74	97.8	1.4
5	5350.00	53.6 PK	74.0	-20.4	2.57 V	74	52.2	1.4
6	5350.00	41.7 AV	54.0	-12.3	2.57 V	74	40.3	1.4
7	#10420.00	48.6 PK	68.2	-19.6	1.14 V	139	37.2	11.4
8	15630.00	46.8 PK	74.0	-27.2	1.77 V	240	35.4	11.4
9	15630.00	35.4 AV	54.0	-18.6	1.77 V	240	24.0	11.4

Remarks:

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

RF Mode	TX 802.11ax (HE80)	Channel	CH 155 : 5775 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5635.87	59.4 PK	68.2	-8.8	2.21 H	305	57.7	1.7
2	*5775.00	107.7 PK			2.21 H	305	105.7	2.0
3	*5775.00	96.3 AV			2.21 H	305	94.3	2.0
4	#5935.21	58.4 PK	68.2	-9.8	2.21 H	305	56.0	2.4
5	11550.00	50.5 PK	74.0	-23.5	1.94 H	218	37.8	12.7
6	11550.00	37.5 AV	54.0	-16.5	1.94 H	218	24.8	12.7
7	#17325.00	52.0 PK	68.2	-16.2	1.58 H	214	35.6	16.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5642.05	67.7 PK	68.2	-0.5	1.72 V	79	66.0	1.7
2	*5775.00	115.8 PK			1.72 V	79	113.8	2.0
3	*5775.00	103.6 AV			1.72 V	79	101.6	2.0
4	#5942.82	65.5 PK	68.2	-2.7	1.72 V	79	63.1	2.4
5	11550.00	49.9 PK	74.0	-24.1	1.37 V	168	37.2	12.7
6	11550.00	37.2 AV	54.0	-16.8	1.37 V	168	24.5	12.7
7	#17325.00	52.1 PK	68.2	-16.1	1.84 V	193	35.7	16.4

Remarks:

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

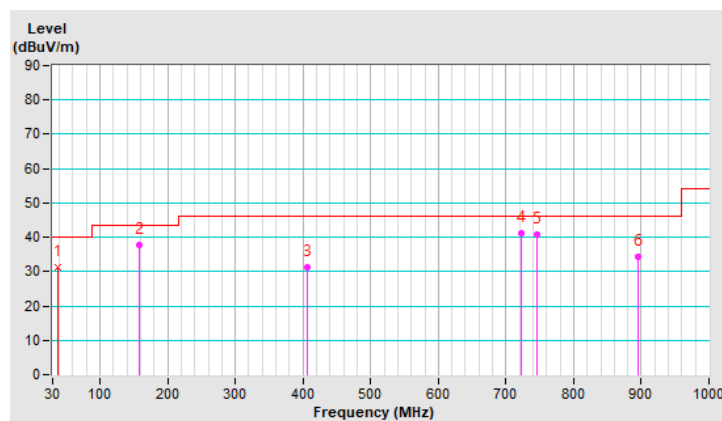
Below 1GHz Data:

RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	37.40	31.1 QP	40.0	-8.9	2.72 H	359	44.3	-13.2
2	158.71	37.7 QP	43.5	-5.8	1.00 H	305	50.2	-12.5
3	406.23	31.3 QP	46.0	-14.7	2.00 H	237	40.8	-9.5
4	721.78	41.2 QP	46.0	-4.8	2.00 H	291	44.7	-3.5
5	746.57	40.8 QP	46.0	-5.2	3.00 H	207	43.6	-2.8
6	894.32	34.4 QP	46.0	-11.6	2.00 H	359	35.5	-1.1

Remarks:

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



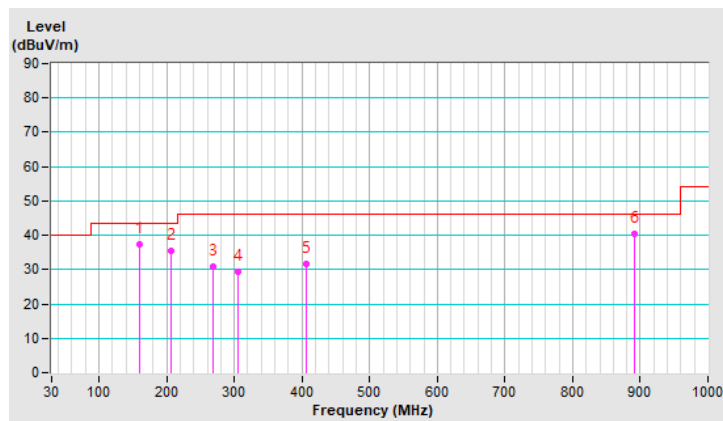
RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	159.40	37.2 QP	43.5	-6.3	2.00 V	290	49.7	-12.5
2	206.32	35.4 QP	43.5	-8.1	1.00 V	0	51.5	-16.1
3	268.65	30.8 QP	46.0	-15.2	1.00 V	28	43.9	-13.1
4	306.38	29.4 QP	46.0	-16.6	1.00 V	144	41.2	-11.8
5	406.33	31.8 QP	46.0	-14.2	2.00 V	228	41.3	-9.5
6	890.54	40.5 QP	46.0	-5.5	4.00 V	359	41.7	-1.2

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 of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

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

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 19, 2020	Mar. 18, 2021
50 ohms Terminator	50	3	Oct. 23, 2019	Oct. 22, 2020
RF Cable	5D-FB	COCCAB-001	Sep. 26, 2020	Sep. 25, 2021
Fixed attenuator EMCI	STI02-2200-10	005	Aug. 29, 2020	Aug. 28, 2021
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3. Tested Date: Oct. 05, 2020

4.2.3 Test Procedure

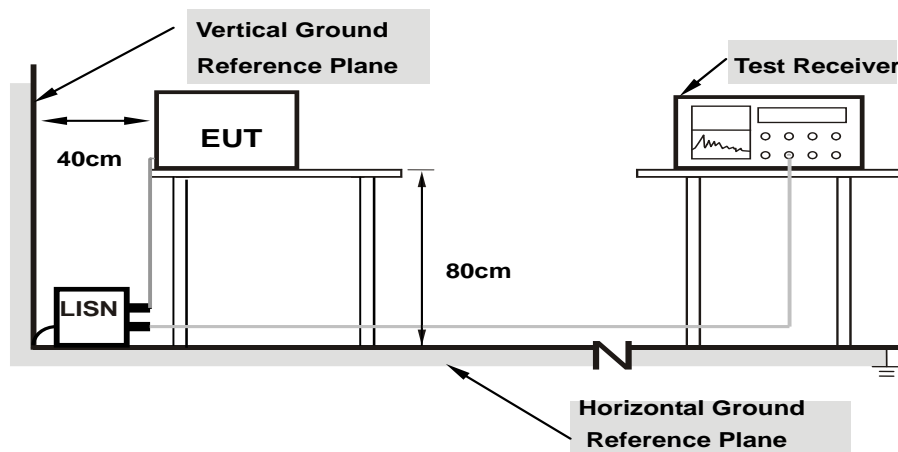
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

Note: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

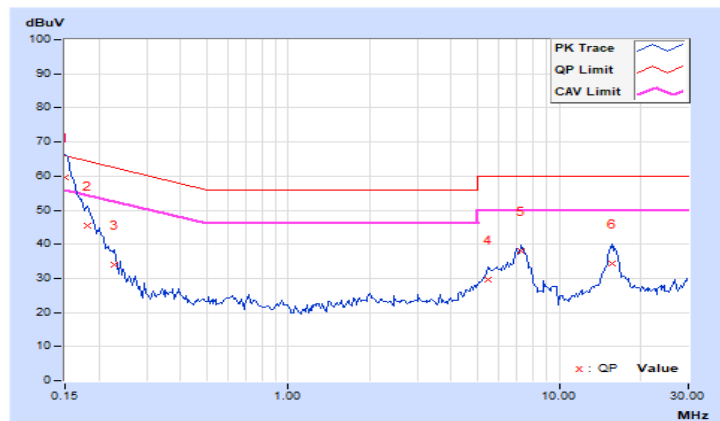
4.2.7 Test Results (Mode 1)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.15000	9.91	49.75	39.52	59.66	49.43	66.00	56.00	-6.34	-6.57
2	0.18125	9.92	35.68	24.50	45.60	34.42	64.43	54.43	-18.83	-20.01
3	0.22812	9.93	24.06	11.68	33.99	21.61	62.52	52.52	-28.53	-30.91
4	5.44922	10.20	19.51	15.15	29.71	25.35	60.00	50.00	-30.29	-24.65
5	7.26953	10.29	27.75	23.41	38.04	33.70	60.00	50.00	-21.96	-16.30
6	15.64063	10.77	23.64	19.04	34.41	29.81	60.00	50.00	-25.59	-20.19

Remarks:

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

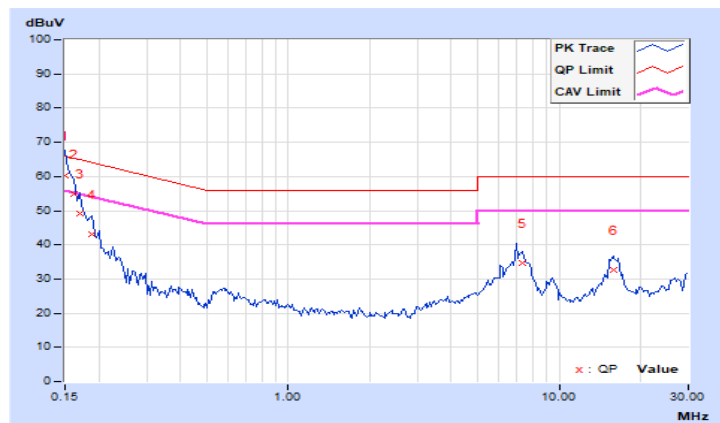


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
	1	0.15000	9.91	50.37	39.77	60.28	49.68	66.00	56.00	-5.72
2	0.16172	9.91	45.08	31.33	54.99	41.24	65.38	55.38	-10.39	-14.14
3	0.16953	9.92	39.25	25.67	49.17	35.59	64.98	54.98	-15.81	-19.39
4	0.18906	9.93	33.24	19.92	43.17	29.85	64.08	54.08	-20.91	-24.23
5	7.30078	10.24	24.33	19.62	34.57	29.86	60.00	50.00	-25.43	-20.14
6	15.82422	10.59	22.21	17.57	32.80	28.16	60.00	50.00	-27.20	-21.84

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



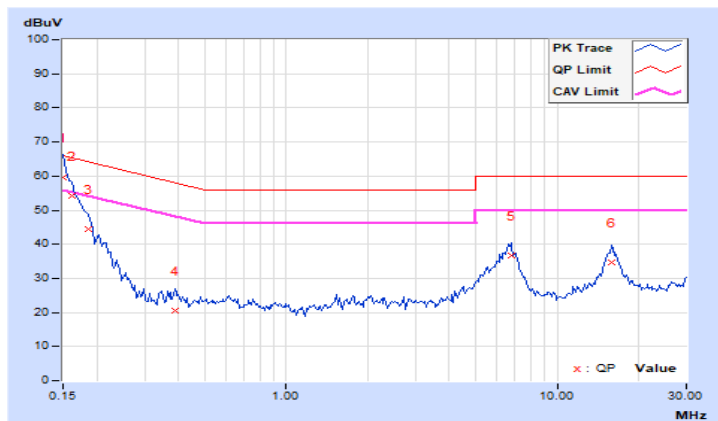
4.2.8 Test Results (Mode 2)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.15000	9.91	49.75	38.85	59.66	48.76	66.00	56.00	-6.34	-7.24
2	0.16172	9.91	44.39	30.49	54.30	40.40	65.38	55.38	-11.08	-14.98
3	0.18516	9.92	34.50	22.41	44.42	32.33	64.25	54.25	-19.83	-21.92
4	0.38828	9.95	10.64	3.00	20.59	12.95	58.10	48.10	-37.51	-35.15
5	6.75391	10.27	26.42	21.72	36.69	31.99	60.00	50.00	-23.31	-18.01
6	15.83984	10.78	23.85	19.07	34.63	29.85	60.00	50.00	-25.37	-20.15

Remarks:

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

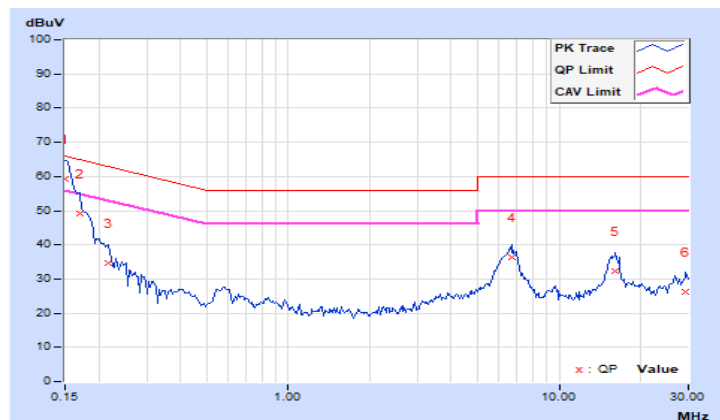


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
	1	0.15000	9.91	49.45	38.72	59.36	48.63	66.00	56.00	-6.64
2	0.16953	9.92	39.31	25.96	49.23	35.88	64.98	54.98	-15.75	-19.10
3	0.21641	9.93	24.77	14.03	34.70	23.96	62.96	52.96	-28.26	-29.00
4	6.71875	10.21	26.03	21.15	36.24	31.36	60.00	50.00	-23.76	-18.64
5	16.17969	10.61	21.55	16.50	32.16	27.11	60.00	50.00	-27.84	-22.89
6	29.39844	10.90	15.25	10.12	26.15	21.02	60.00	50.00	-33.85	-28.98

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

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

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

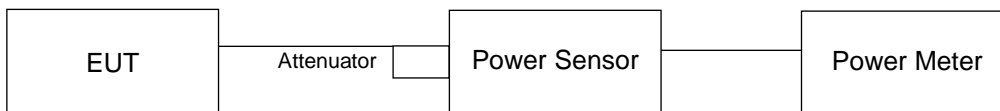
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

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

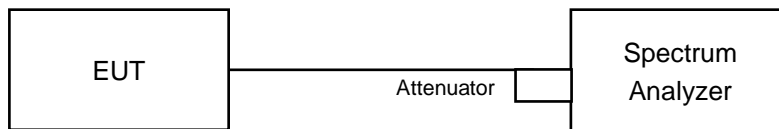
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR POWER OUTPUT MEASUREMENT

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

FOR 26dB OCCUPIED BANDWIDTH

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Results

For U-NII-1 Band

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	8.93	8.55	8.48	8.02	28.363	14.53	30.00	Pass
40	5200	8.79	8.72	8.50	7.96	28.347	14.53	30.00	Pass
48	5240	8.30	8.46	8.30	8.51	27.632	14.41	30.00	Pass

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	111.94	20.49	21.00	Pass
40	5200	111.944	20.49	21.00	Pass
48	5240	108.893	20.37	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p \leq 125mW(21 dBm) to compliance.

2. EIRP power = total power + max. gain, where max. gain is 5.96 dBi.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	8.64	8.46	8.47	8.40	28.275	14.51	30.00	Pass
40	5200	8.60	8.54	8.35	7.85	27.324	14.37	30.00	Pass
48	5240	8.22	8.40	8.26	8.21	26.877	14.29	30.00	Pass

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	111.43	20.47	21.00	Pass
40	5200	107.895	20.33	21.00	Pass
48	5240	105.925	20.25	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p \leq 125mW(21 dBm) to compliance.

2. EIRP power = total power + max. gain, where max. gain is 5.96 dBi.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	8.34	8.28	8.19	7.88	26.283	14.20	30.00	Pass
46	5230	8.18	8.51	8.64	8.66	28.329	14.52	30.00	Pass

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	103.75	20.16	21.00	Pass
46	5230	111.686	20.48	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p \leq 125mW(21 dBm) to compliance.

2. EIRP power = total power + max. gain, where max. gain is 5.96 dBi.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	8.13	8.13	8.18	8.08	26.006	14.15	30.00	Pass

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	102.57	20.11	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p \leq 125mW(21 dBm) to compliance.

2. EIRP power = total power + max. gain, where max. gain is 5.96 dBi.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	8.88	8.73	8.73	8.66	30.001	14.77	30.00	Pass
40	5200	8.85	8.81	8.58	8.12	28.974	14.62	30.00	Pass
48	5240	8.45	8.61	8.55	8.42	28.371	14.53	30.00	Pass

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	118.30	20.73	21.00	Pass
40	5200	114.288	20.58	21.00	Pass
48	5240	111.944	20.49	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p \leq 125mW(21 dBm) to compliance.

2. EIRP power = total power + max. gain, where max. gain is 5.96 dBi.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	8.57	8.50	8.42	8.10	27.681	14.42	30.00	Pass
46	5230	8.47	8.71	8.88	8.94	30.022	14.77	30.00	Pass

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	109.14	20.38	21.00	Pass
46	5230	118.304	20.73	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p \leq 125mW(21 dBm) to compliance.

2. EIRP power = total power + max. gain, where max. gain is 5.96 dBi.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	8.39	8.40	8.40	8.30	27.5	14.39	30.00	Pass

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	108.39	20.35	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p \leq 125mW(21 dBm) to compliance.

2. EIRP power = total power + max. gain, where max. gain is 5.96 dBi.

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	2.91	2.71	2.87	2.70	7.619	8.82	24.62	Pass
40	5200	2.78	2.74	2.56	3.01	7.579	8.80	24.62	Pass
48	5240	2.96	2.84	3.06	2.91	7.877	8.96	24.62	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.38 dBi > 6 dBi, so the power limit shall be reduced to $30 - (11.38 - 6) = 24.62$ dBm.

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	104.71	20.20	21.00	Pass
40	5200	104.232	20.18	21.00	Pass
48	5240	108.143	20.34	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p \leq 125mW(21 dBm) to compliance.

2. EIRP power = total power + directional gain, where max. gain is 11.38 dBi.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	3.05	3.13	3.22	3.07	8.201	9.14	24.62	Pass
46	5230	3.28	3.27	3.29	3.16	8.455	9.27	24.62	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.38 dBi > 6 dBi, so the power limit shall be reduced to $30 - (11.38 - 6) = 24.62$ dBm.

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	112.72	20.52	21.00	Pass
46	5230	116.145	20.65	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p \leq 125mW(21 dBm) to compliance.

2. EIRP power = total power + directional gain, where max. gain is 11.38 dBi.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	3.16	3.07	3.07	2.97	8.107	9.09	24.62	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.38 dBi > 6 dBi, so the power limit shall be reduced to $30 - (11.38 - 6) = 24.62$ dBm.

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	111.43	20.47	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p ≤ 125 mW(21 dBm) to compliance.

2. EIRP power = total power + directional gain, where max. gain is 11.38 dBi.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	3.14	2.91	3.11	2.97	8.043	9.05	24.62	Pass
40	5200	3.03	3.02	2.84	3.23	8.04	9.05	24.62	Pass
48	5240	3.20	3.09	3.31	3.16	8.339	9.21	24.62	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.38 dBi > 6 dBi, so the power limit shall be reduced to $30 - (11.38 - 6) = 24.62$ dBm.

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	110.41	20.43	21.00	Pass
40	5200	110.408	20.43	21.00	Pass
48	5240	114.551	20.59	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p ≤ 125 mW(21 dBm) to compliance.

2. EIRP power = total power + directional gain, where max. gain is 11.38 dBi.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	3.31	3.41	3.43	3.30	8.677	9.38	24.62	Pass
46	5230	3.56	3.48	3.53	3.44	8.961	9.52	24.62	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.38 dBi > 6 dBi, so the power limit shall be reduced to $30 - (11.38 - 6) = 24.62$ dBm.

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	119.12	20.76	21.00	Pass
46	5230	123.027	20.90	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p ≤ 125 mW(21 dBm) to compliance.

2. EIRP power = total power + directional gain, where max. gain is 11.38 dBi.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	3.39	3.28	3.31	3.26	8.572	9.33	24.62	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 11.38 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $30 - (11.38 - 6) = 24.62 \text{ dBm}$.

EIRP POWER OUTPUT

Chan.	Chan. Freq. (MHz)	EIRP Power (mW)	EIRP Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	117.76	20.71	21.00	Pass

Note: 1. For device is outdoor access point and antenna at any elevation angle above 30 degrees as measured from the horizon, therefore Max. e.i.r.p $\leq 125\text{mW}(21 \text{ dBm})$ to compliance.

2. EIRP power = total power + directional gain, where max. gain is 11.38 dBi.

U-NII-3 Band

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	23.25	22.01	23.28	22.11	745.572	28.72	30.00	Pass
157	5785	23.17	21.98	23.11	22.23	737.006	28.67	30.00	Pass
165	5825	22.67	21.96	23.01	22.36	714.136	28.54	30.00	Pass

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	22.86	21.65	22.85	21.69	679.738	28.32	30.00	Pass
157	5785	22.77	21.59	22.80	21.85	677.101	28.31	30.00	Pass
165	5825	22.25	21.55	22.63	22.03	653.589	28.15	30.00	Pass

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	21.29	20.05	21.17	20.19	471.134	26.73	30.00	Pass
159	5795	21.56	20.81	21.29	20.99	523.911	27.19	30.00	Pass

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
155	5775	18.45	17.51	18.43	17.69	254.76	24.06	30.00	Pass

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	23.07	21.85	23.11	21.93	716.477	28.55	30.00	Pass
157	5785	23.03	21.86	23.01	22.12	717.287	28.56	30.00	Pass
165	5825	22.49	21.81	22.87	22.25	690.647	28.39	30.00	Pass

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	21.49	20.28	21.41	20.44	496.608	26.96	30.00	Pass
159	5795	21.78	21.04	21.53	21.21	552.081	27.42	30.00	Pass

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
155	5775	18.73	17.72	18.67	17.94	269.652	24.31	30.00	Pass

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	18.49	17.55	18.32	17.60	252.981	24.03	24.40	Pass
157	5785	18.41	17.47	18.35	17.63	251.524	24.01	24.40	Pass
165	5825	18.38	17.40	18.34	17.52	248.547	23.95	24.40	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.6dBi > 6 dBi, so the power limit shall be reduced to $30-(11.6-6) = 24.40$ dBm.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	18.50	17.45	18.33	17.71	253.482	24.04	24.40	Pass
159	5795	18.42	17.42	18.28	17.64	250.084	23.98	24.40	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.6dBi > 6 dBi, so the power limit shall be reduced to $30-(11.6-6) = 24.40$ dBm.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
155	5775	18.14	17.55	18.49	17.78	252.659	24.03	24.40	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.6dBi > 6 dBi, so the power limit shall be reduced to $30-(11.6-6) = 24.40$ dBm.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
149	5745	18.71	17.75	18.61	17.89	267.996	24.28	24.40	Pass
157	5785	18.68	17.69	18.59	17.85	265.77	24.25	24.40	Pass
165	5825	18.63	17.61	18.57	17.79	262.685	24.19	24.40	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.6dBi > 6 dBi, so the power limit shall be reduced to $30-(11.6-6) = 24.40$ dBm.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
151	5755	18.74	17.68	18.61	17.91	267.843	24.28	24.40	Pass
159	5795	18.67	17.65	18.55	17.85	264.399	24.22	24.40	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.6dBi > 6 dBi, so the power limit shall be reduced to $30-(11.6-6) = 24.40$ dBm.

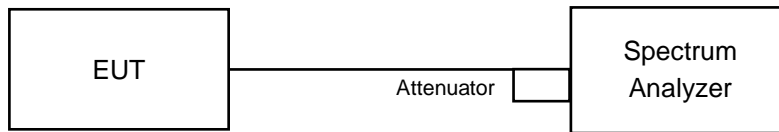
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
155	5775	18.73	17.72	18.67	17.94	269.652	24.31	24.40	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 11.6dBi > 6 dBi, so the power limit shall be reduced to $30-(11.6-6) = 24.40$ dBm.

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Results

CDD Mode

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	16.56	16.56	16.44	16.44
40	5200	16.44	16.56	16.44	16.44
48	5240	16.44	16.44	16.44	16.44
149	5745	34.49	34.79	36.38	33.91
157	5785	36	37.2	37.2	36.2
165	5825	37.2	37.8	36.4	38

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	19.08	18.84	19.08	18.96
40	5200	19.08	18.96	19.08	18.96
48	5240	19.08	18.96	19.08	18.96
149	5745	35.4	37	38.8	35.2
157	5785	38.2	40	37	38
165	5825	39.2	40.8	41	40.6

802.11ax (HE40)

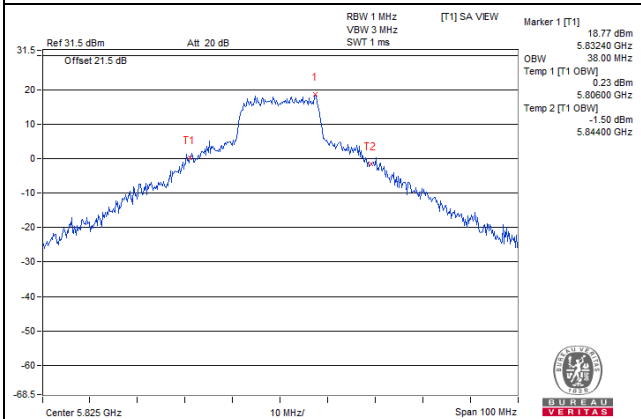
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
38	5190	38.16	38.4	37.92	38.16
46	5230	38.16	38.16	38.16	38.16
151	5755	45.36	50.4	42.96	44.88
159	5795	56.64	57.39	54.96	59.52

802.11ax (HE80)

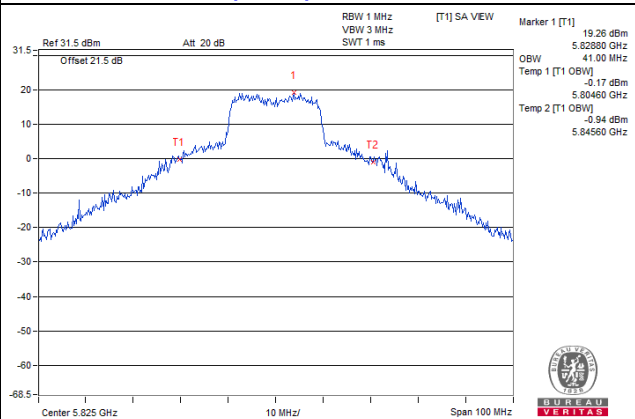
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	77.28	77.28	77.76	77.28
155	5775	77.28	77.28	77.76	77.76

Spectrum Plot of Max. Value

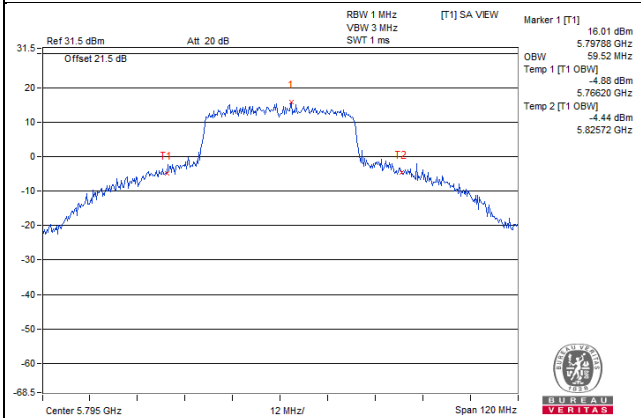
802.11a_Chain 3 / CH165



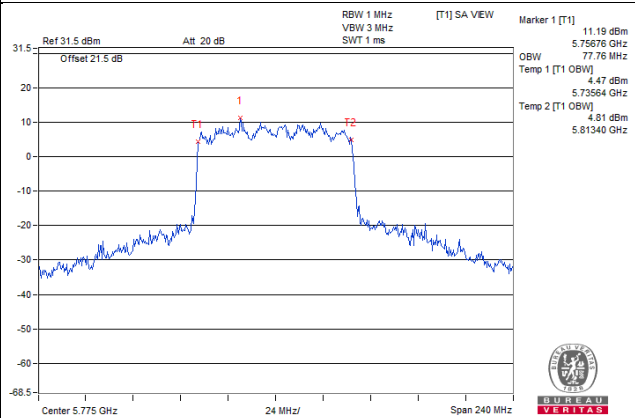
802.11ax (HE20)_Chain 2 / CH165



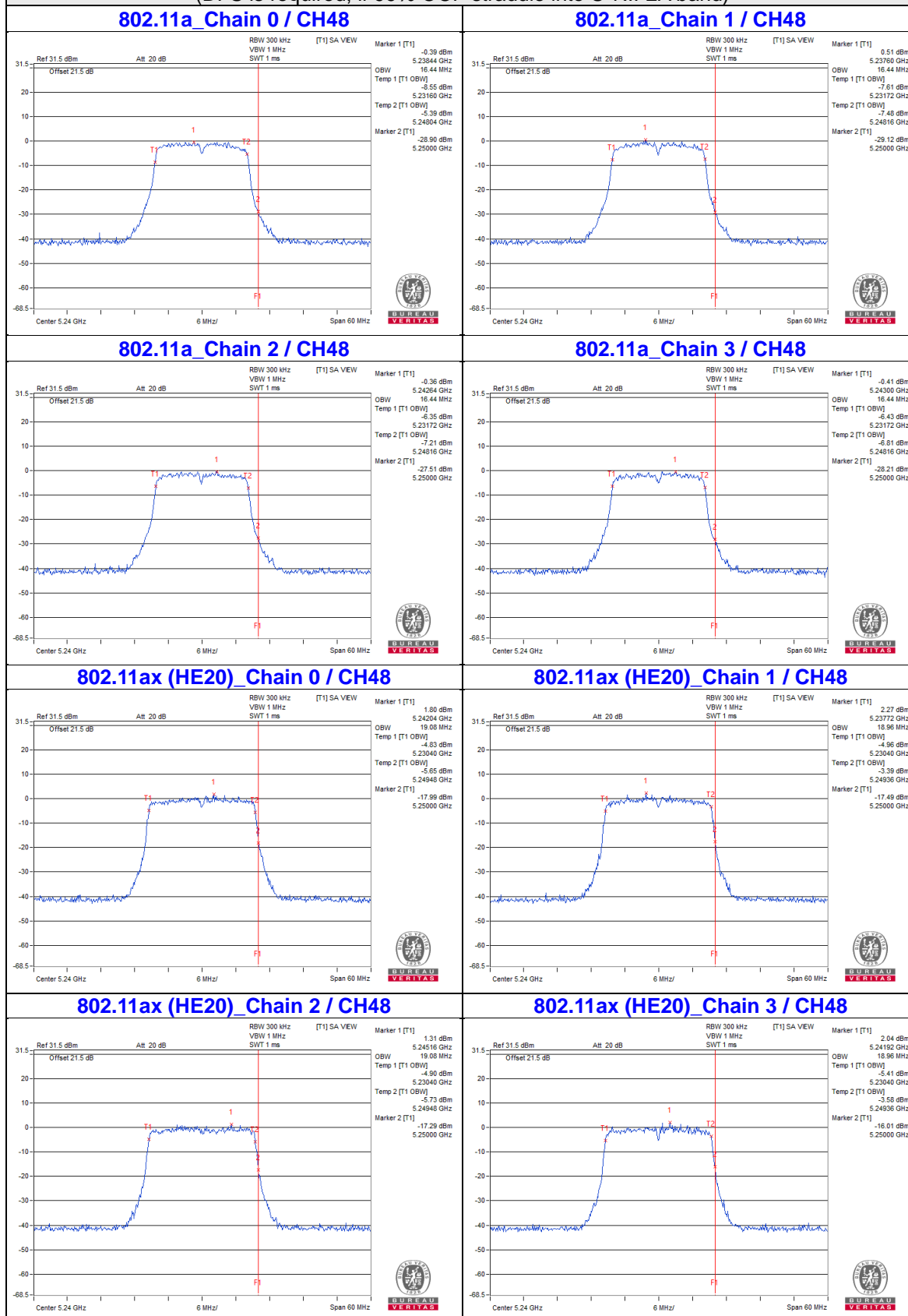
802.11ax (HE40)_Chain 3 / CH159



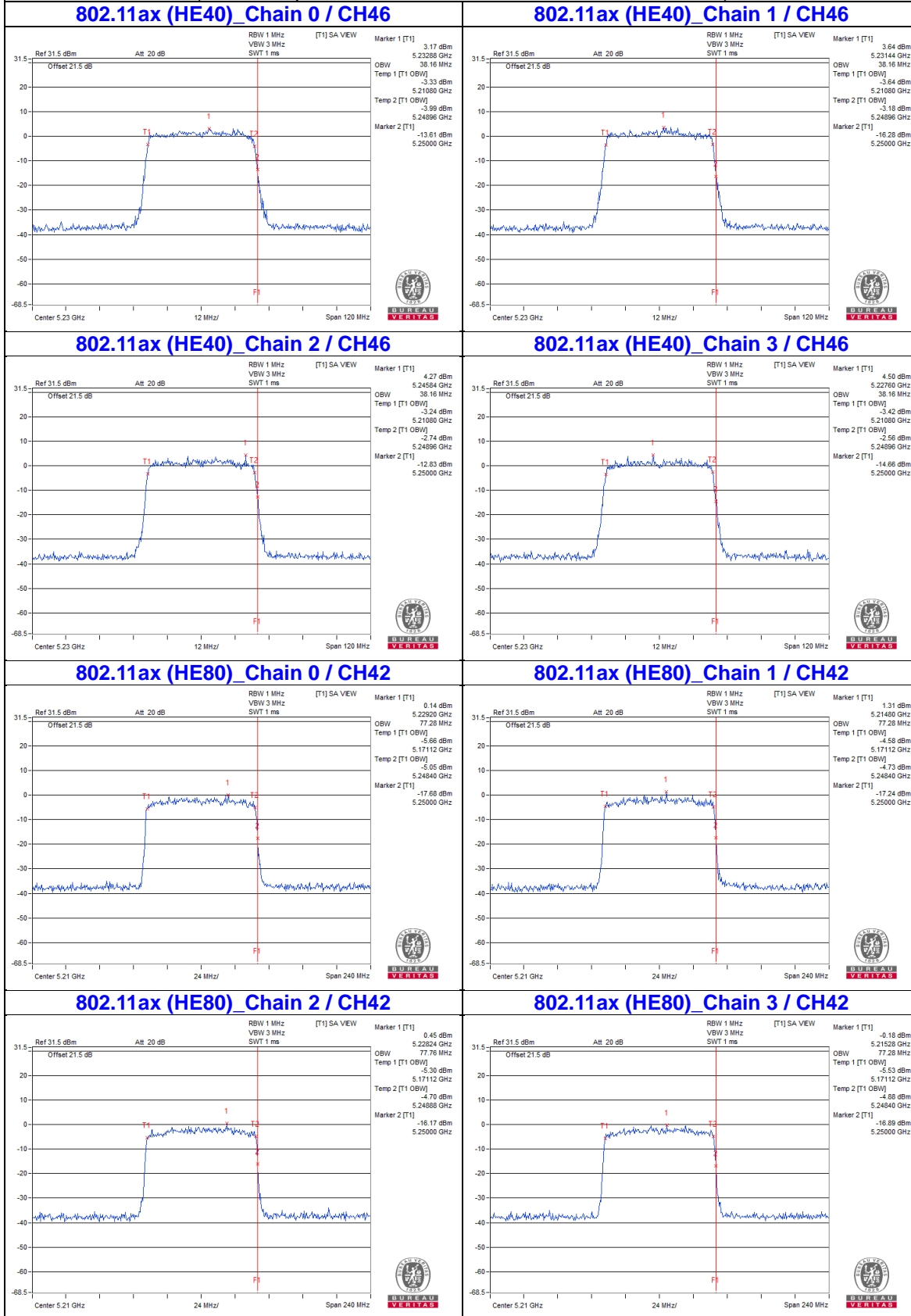
802.11ax (HE80)_Chain 2 / CH155



**Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)**

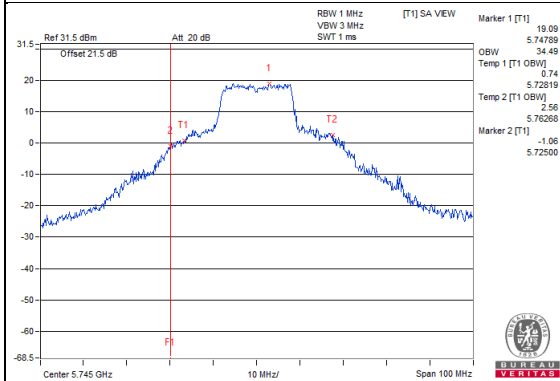


**Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)**

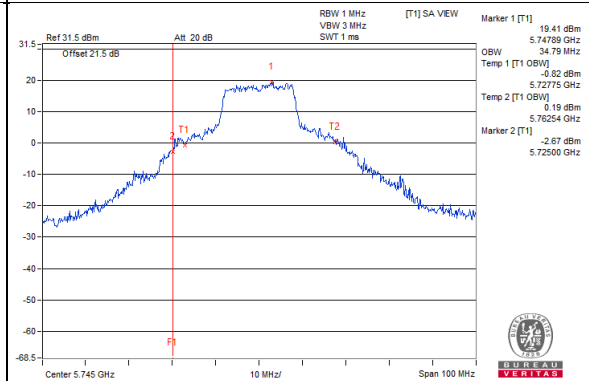


**Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)**

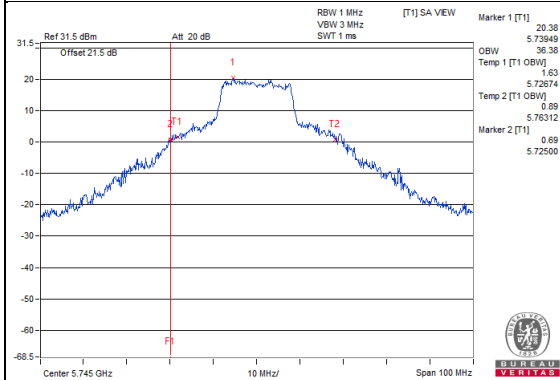
802.11a_Chain 0 / CH149



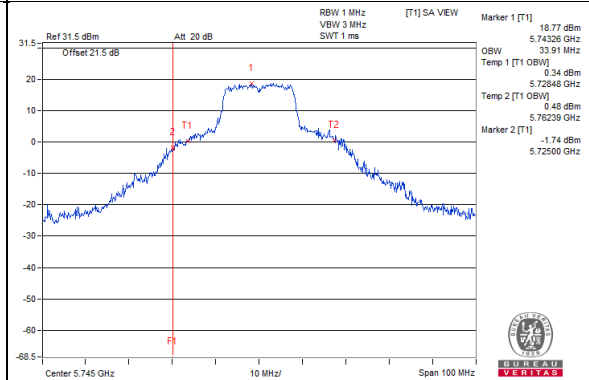
802.11a_Chain 1 / CH149



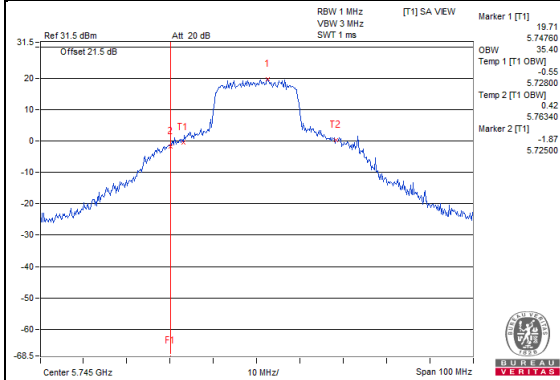
802.11a_Chain 2 / CH149



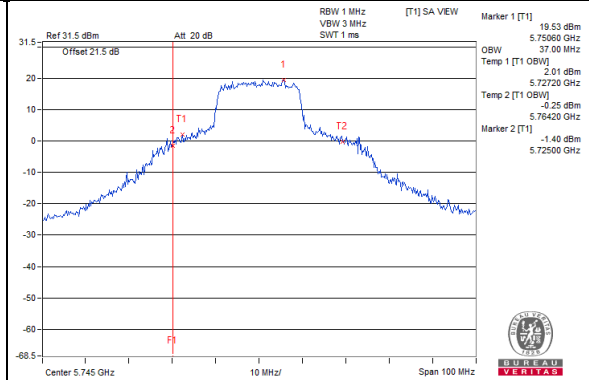
802.11a_Chain 3 / CH149



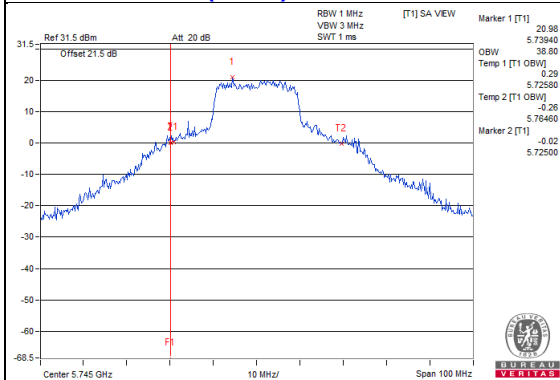
802.11ax (HE20)_Chain 0 / CH149



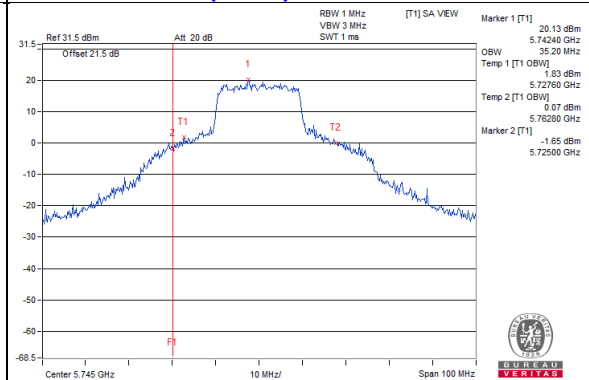
802.11ax (HE20)_Chain 1 / CH149



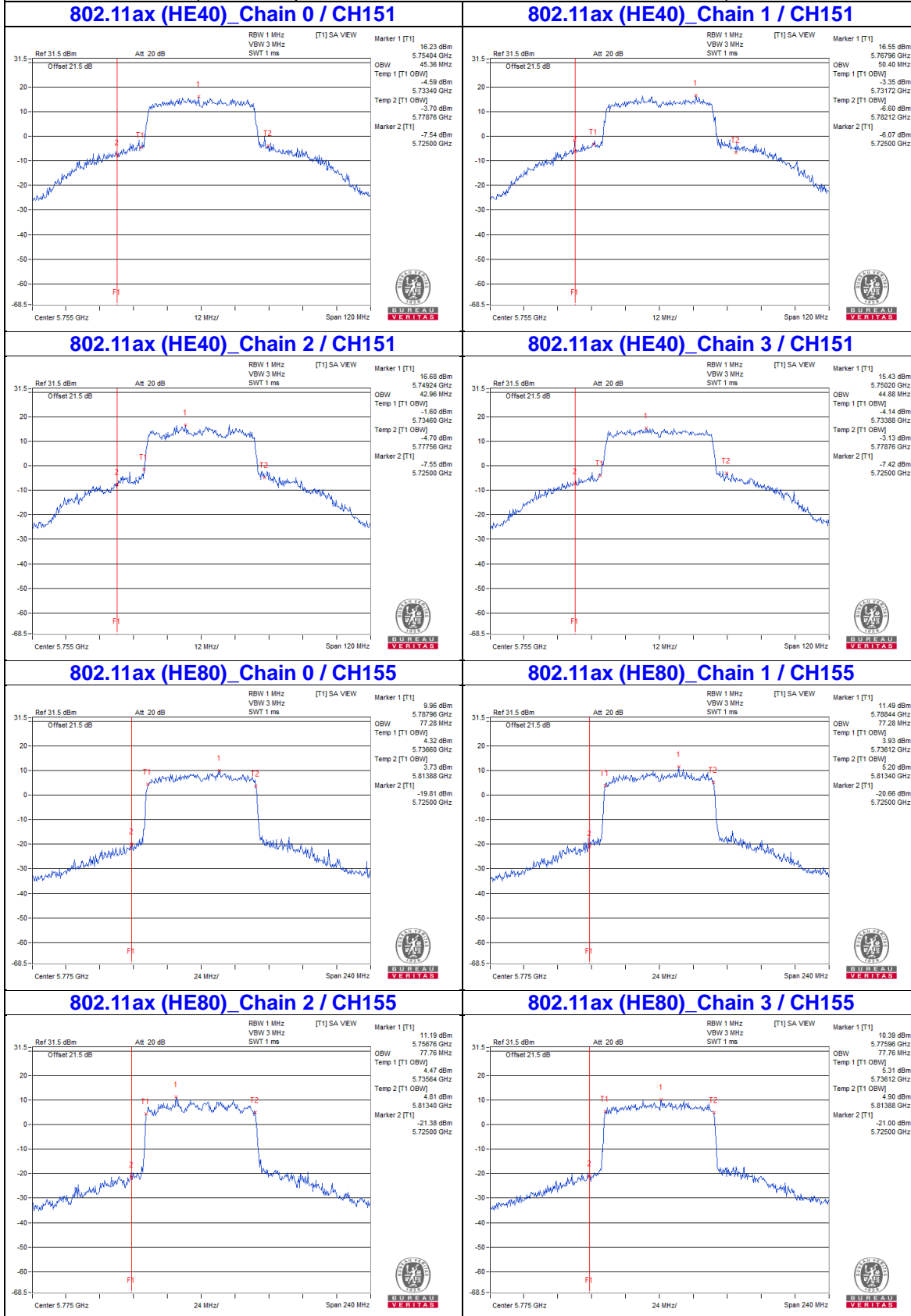
802.11ax (HE20)_Chain 2 / CH149



802.11ax (HE20)_Chain 3 / CH149



Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

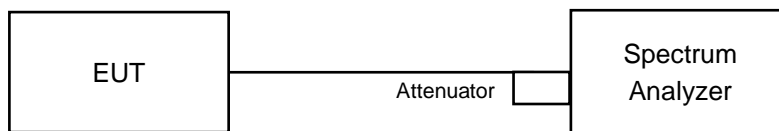


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For U-NII-1 band:

Using method SA-2

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

For U-NII-3 band:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For U-NII-1 Band

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	-4.36	-5.37	-5.51	-5.44	0.27	1.15	11.62	Pass
40	5200	-4.68	-7.17	-5.77	-5.63	0.27	0.57	11.62	Pass
48	5240	-5.53	-5.35	-4.74	-5.70	0.27	0.98	11.62	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 11.38 \text{ dBi} > 6 \text{ dBi}$, so the power density limit shall be reduced to $17 - (11.38 - 6) = 11.62 \text{ dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	-4.73	-5.24	-5.03	-5.97	0.18	0.99	11.62	Pass
40	5200	-5.96	-6.26	-5.68	-6.35	0.18	0.15	11.62	Pass
48	5240	-5.81	-6.69	-6.06	-6.30	0.18	0.00	11.62	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 11.38 \text{ dBi} > 6 \text{ dBi}$, so the power density limit shall be reduced to $17 - (11.38 - 6) = 11.62 \text{ dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	-9.17	-7.80	-9.74	-10.37	0.24	-2.91	11.62	Pass
46	5230	-8.18	-8.98	-8.75	-9.03	0.24	-2.46	11.62	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 11.38 \text{ dBi} > 6 \text{ dBi}$, so the power density limit shall be reduced to $17 - (11.38 - 6) = 11.62 \text{ dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

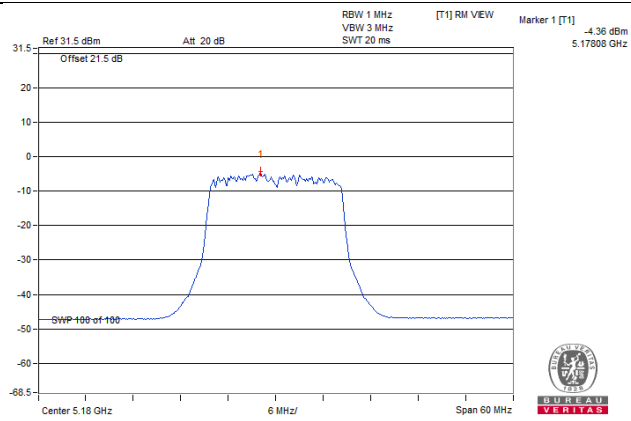
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	-13.81	-11.77	-11.90	-12.88	0.21	-6.28	11.62	Pass

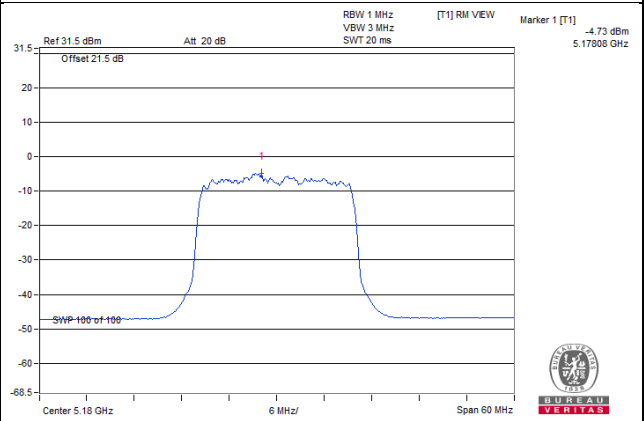
- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 11.38 \text{ dBi} > 6 \text{ dBi}$, so the power density limit shall be reduced to $17 - (11.38 - 6) = 11.62 \text{ dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

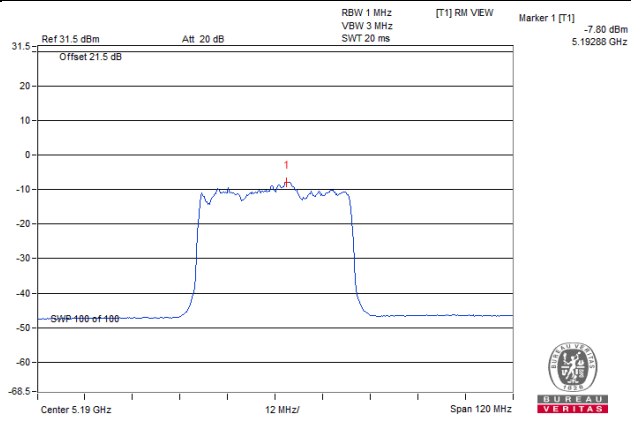
802.11a_Chain 0 / CH36



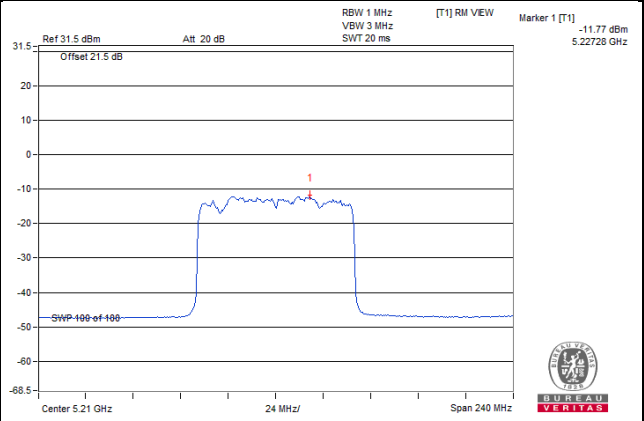
802.11ax (HE20)_Chain 0 / CH36



802.11ax (HE40)_Chain 1 / CH38



802.11ax (HE80)_Chain 1 / CH42



For U-NII-3 Band

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
149	5745	-0.63	0.15	0.70	0.21	0.27	6.43	8.65	24.40	Pass
157	5785	-0.07	-0.91	0.08	-0.52	0.27	5.96	8.18	24.40	Pass
165	5825	-0.61	-0.80	-0.46	-1.03	0.27	5.57	7.79	24.40	Pass

- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 11.6 \text{ dBi} > 6 \text{ dBi}$, so the power density limit shall be reduced to $30 - (11.6 - 6) = 24.40 \text{ dBm}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
149	5745	-1.26	-0.64	-0.88	-1.90	0.18	5.06	7.28	24.40	Pass
157	5785	-1.12	-1.48	-1.26	-1.77	0.18	4.80	7.02	24.40	Pass
165	5825	-1.65	-1.49	-1.85	-2.33	0.18	4.39	6.61	24.40	Pass

- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 11.6 \text{ dBi} > 6 \text{ dBi}$, so the power density limit shall be reduced to $30 - (11.6 - 6) = 24.40 \text{ dBm}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
151	5755	-5.62	-5.84	-5.05	-6.29	0.24	0.58	2.80	24.40	Pass
159	5795	-5.60	-4.76	-4.04	-5.49	0.24	1.33	3.55	24.40	Pass

- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 11.6 \text{ dBi} > 6 \text{ dBi}$, so the power density limit shall be reduced to $30 - (11.6 - 6) = 24.40 \text{ dBm}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

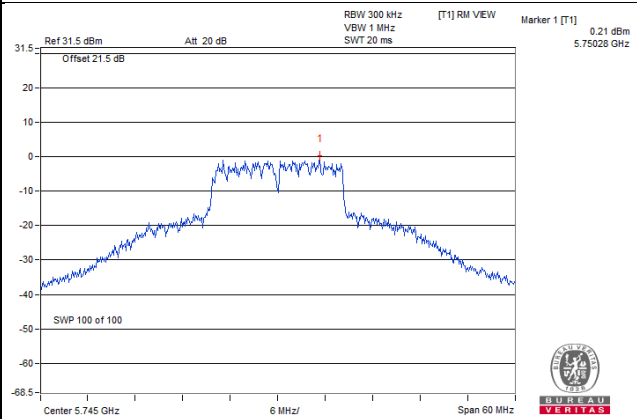
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300 kHz)	Total PSD (dBm/500 kHz)	PSD Limit (dBm/500 kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
155	5775	-10.73	-10.31	-10.35	-11.66	0.21	-4.49	-2.27	24.40	Pass

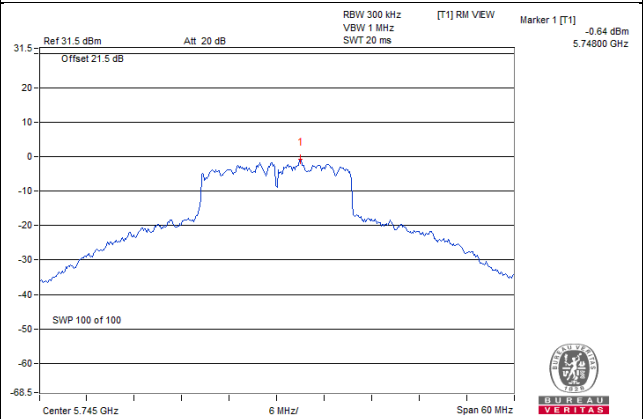
- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 11.6 \text{ dBi} > 6 \text{ dBi}$, so the power density limit shall be reduced to $30 - (11.6 - 6) = 24.40 \text{ dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

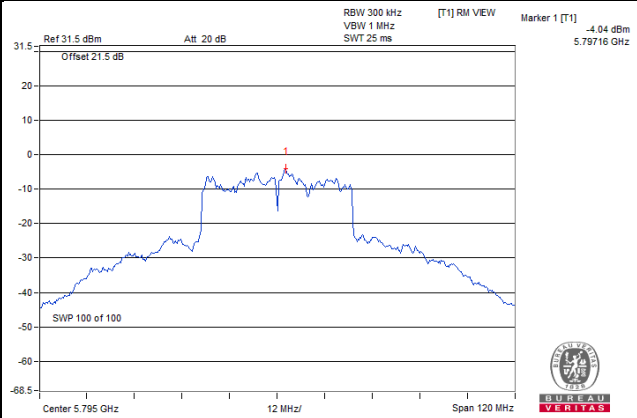
802.11a_Chain 3 / CH149



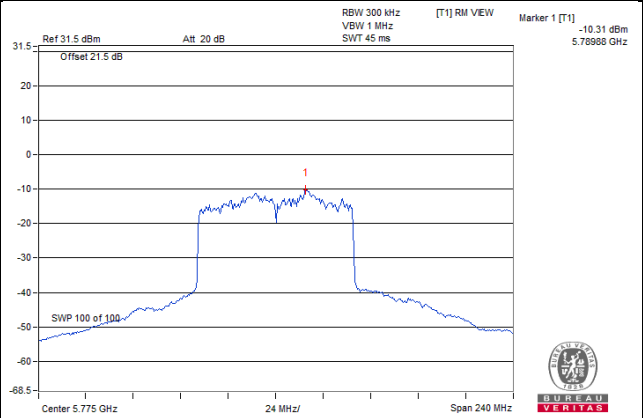
802.11ax (HE20)_Chain 1 / CH149



802.11ax (HE40)_Chain 2 / CH159



802.11ax (HE80)_Chain 1 / CH155

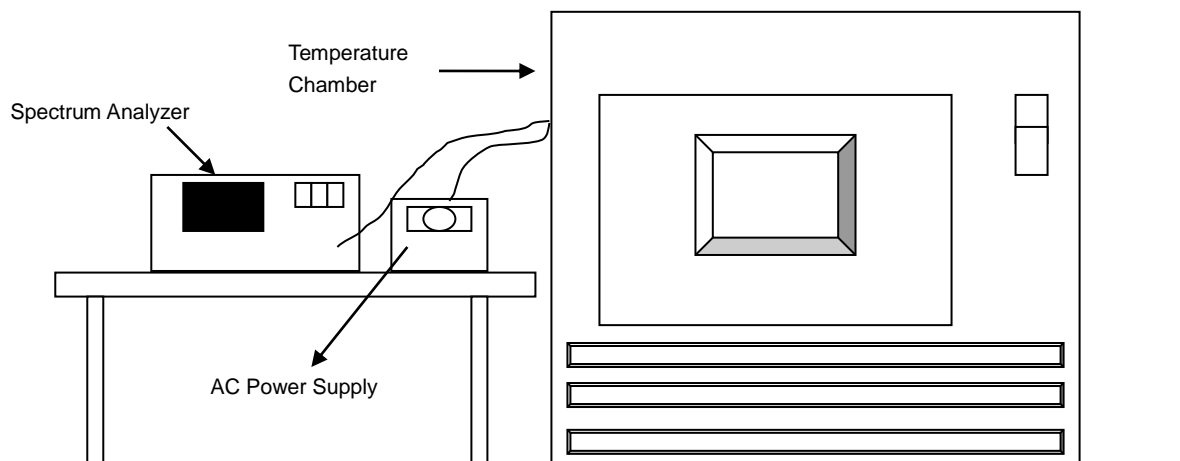


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
70	120	5180.0101	Pass	5180.0112	Pass	5180.0139	Pass	5180.012	Pass
60	120	5180.0183	Pass	5180.0177	Pass	5180.0161	Pass	5180.0152	Pass
50	120	5179.9889	Pass	5179.9897	Pass	5179.9878	Pass	5179.9879	Pass
40	120	5179.9792	Pass	5179.9827	Pass	5179.9827	Pass	5179.9796	Pass
30	120	5179.9978	Pass	5179.9992	Pass	5179.9988	Pass	5179.9977	Pass
20	120	5179.9828	Pass	5179.9799	Pass	5179.982	Pass	5179.9791	Pass
10	120	5180.0209	Pass	5180.0198	Pass	5180.0206	Pass	5180.0217	Pass
0	120	5179.9821	Pass	5179.9803	Pass	5179.9841	Pass	5179.985	Pass
-10	120	5179.9742	Pass	5179.9731	Pass	5179.9748	Pass	5179.9732	Pass
-20	120	5179.9791	Pass	5179.9774	Pass	5179.9808	Pass	5179.981	Pass
-30	120	5180.0182	Pass	5180.0219	Pass	5180.0223	Pass	5180.0185	Pass

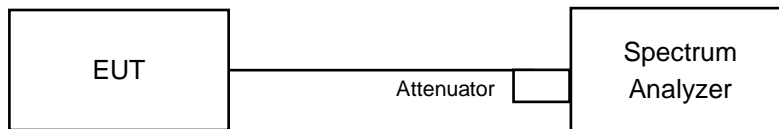
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5179.9821	Pass	5179.9795	Pass	5179.9825	Pass	5179.9797	Pass
	120	5179.9828	Pass	5179.9799	Pass	5179.982	Pass	5179.9791	Pass
	102	5179.9823	Pass	5179.9798	Pass	5179.9814	Pass	5179.98	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

MEASUREMENT PROCEDURE REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

CDD Mode

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	15.96	16.34	16.06	15.76	0.5	Pass
157	5785	16.34	16.33	16.34	16.38	0.5	Pass
165	5825	16.37	16	15.76	16.36	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		
149	5745	18.9	18.58	18.74	18.86	0.5	Pass
157	5785	18.61	19.02	18.54	18.73	0.5	Pass
165	5825	18.71	18.88	18.14	18.73	0.5	Pass

802.11ax (HE40)

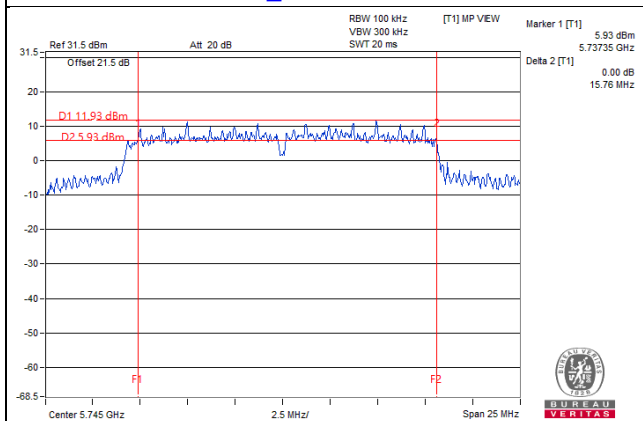
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	37.73	37.85	37.98	38.13	0.5	Pass
159	5795	38.09	37.6	36.58	37.7	0.5	Pass

802.11ax (HE80)

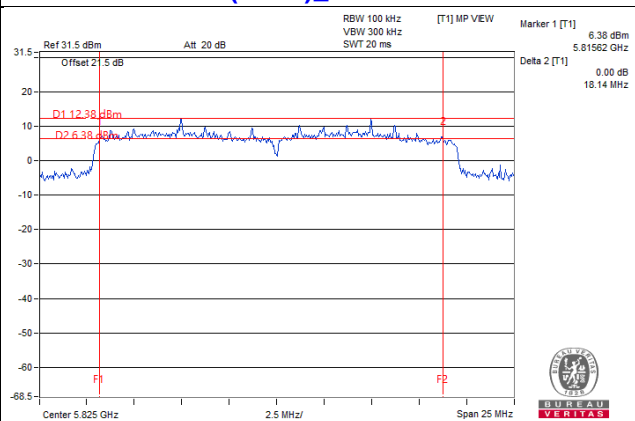
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	77.52	76.42	76.42	77.24	0.5	Pass

Spectrum Plot of Worst Value

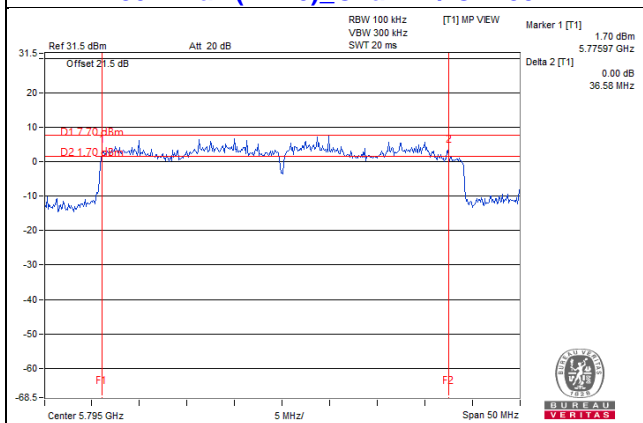
802.11a_Chain 3 / CH149



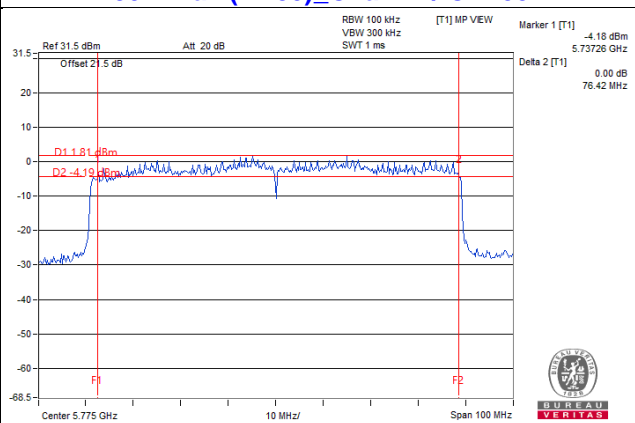
802.11ax (HE20)_Chain 2 / CH165



802.11ax (HE40)_Chain 2 / CH159



802.11ax (HE80)_Chain 1 / CH155



5 Pictures of Test Arrangements

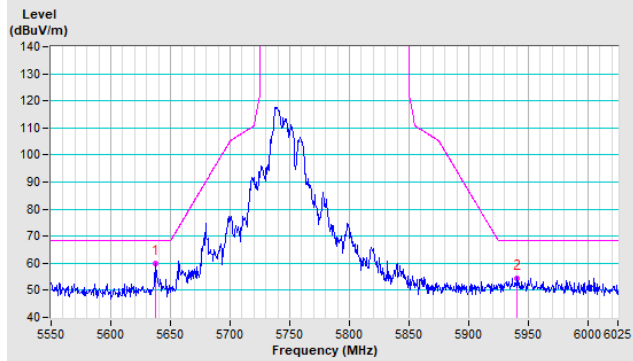
Please refer to the attached file (Test Setup Photo).

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

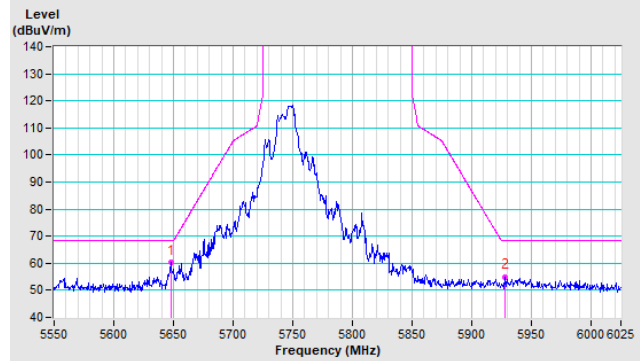
802.11a

CH 149 5745 MHz

Horizontal

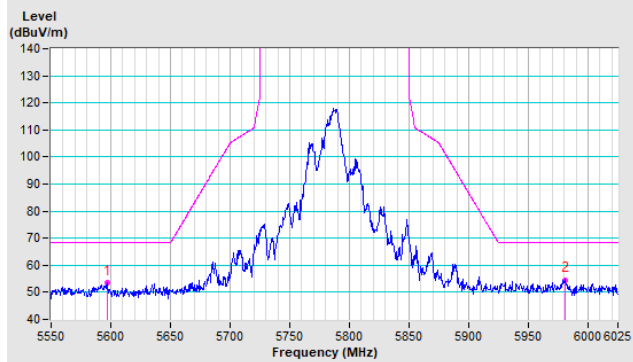


Vertical

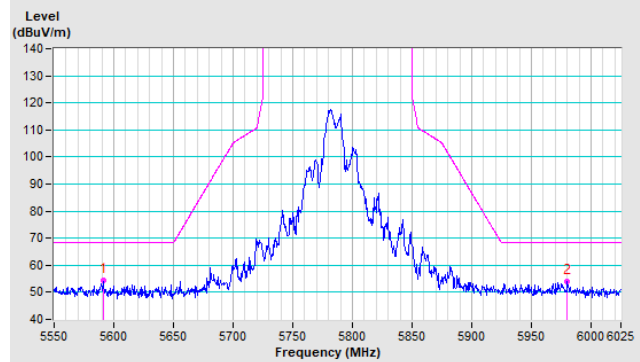


CH 157 5785 MHz

Horizontal

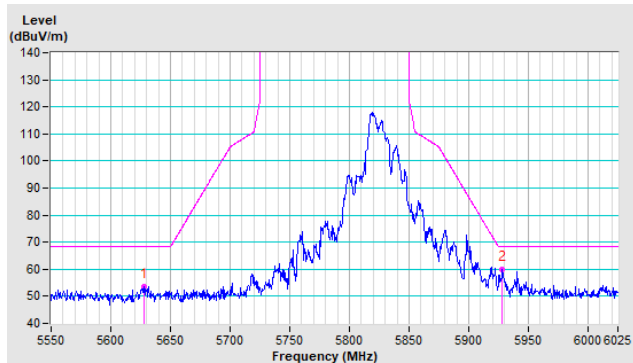


Vertical

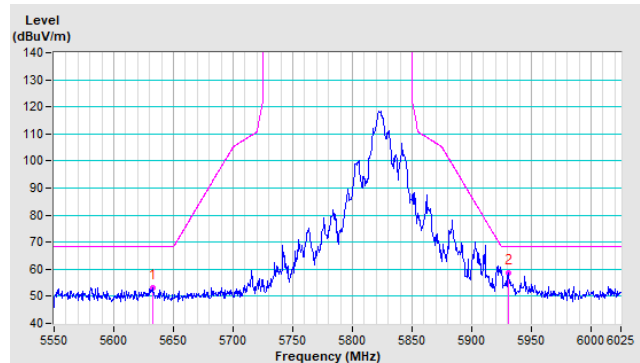


CH 165 5825 MHz

Horizontal



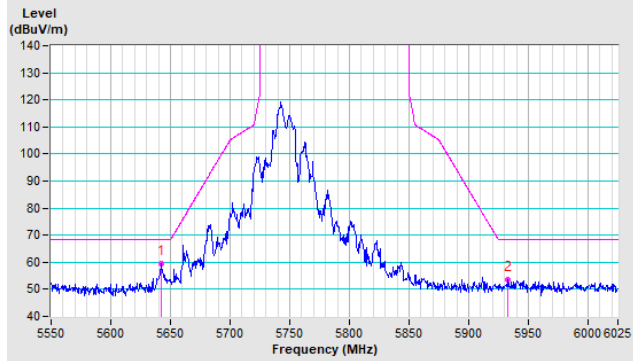
Vertical



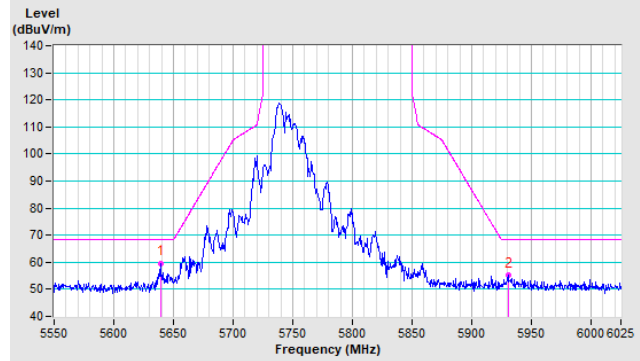
802.11ax (HE20)

CH 149 5745 MHz

Horizontal

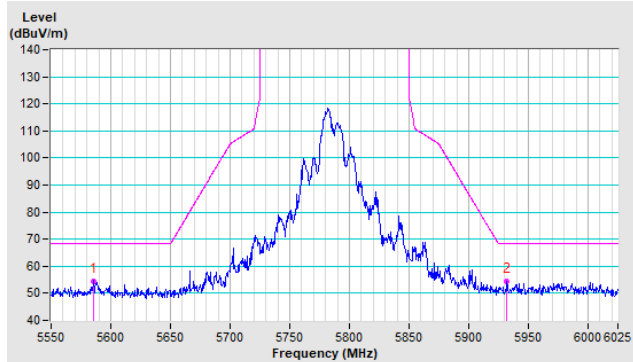


Vertical

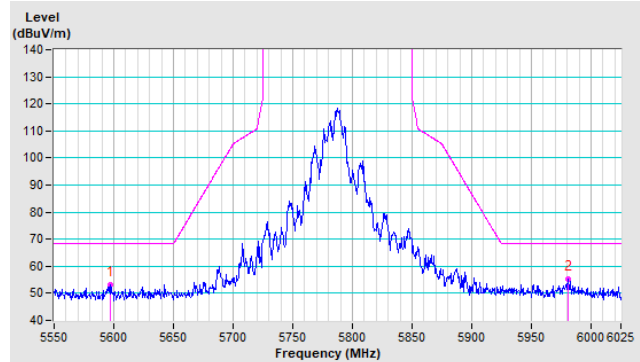


CH 157 5785 MHz

Horizontal

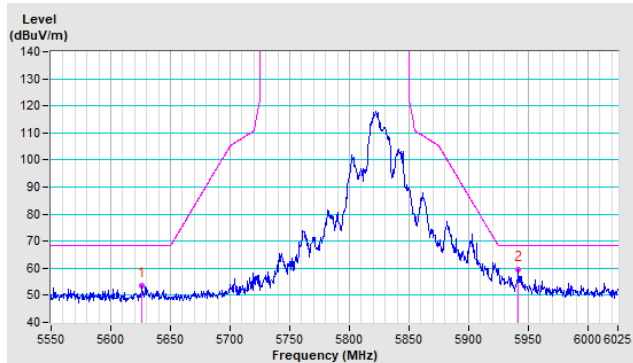


Vertical

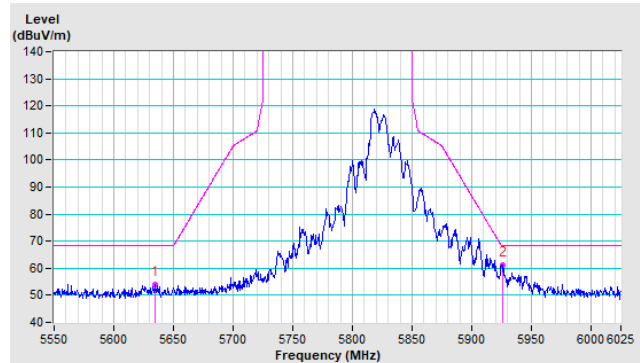


CH 165 5825 MHz

Horizontal



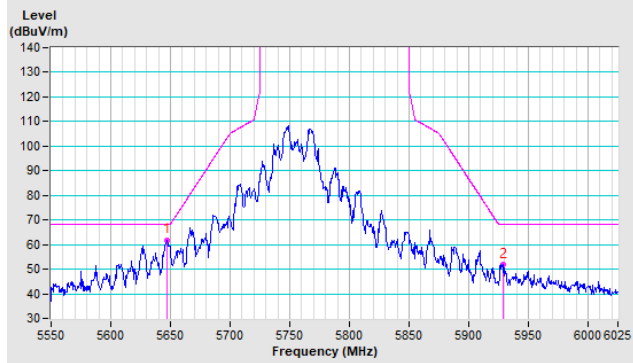
Vertical



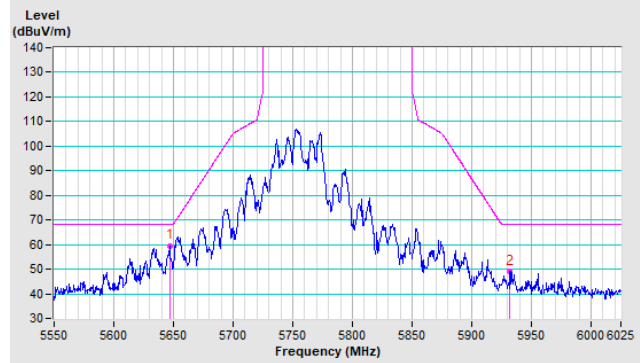
802.11ax (HE40)

CH 151 5755 MHz

Horizontal

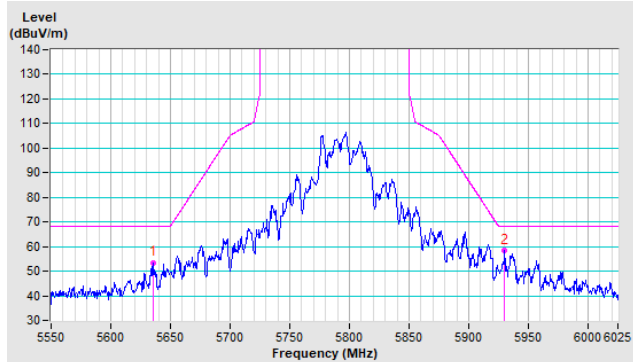


Vertical

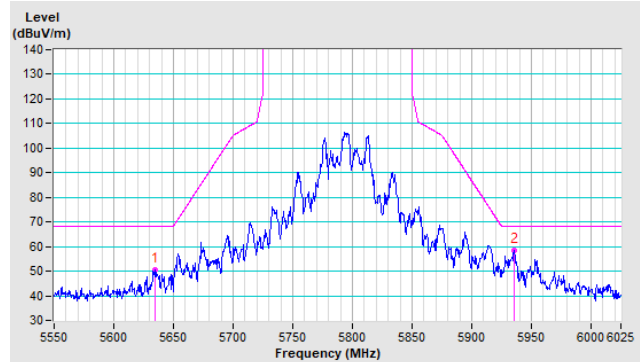


CH 159 5795 MHz

Horizontal



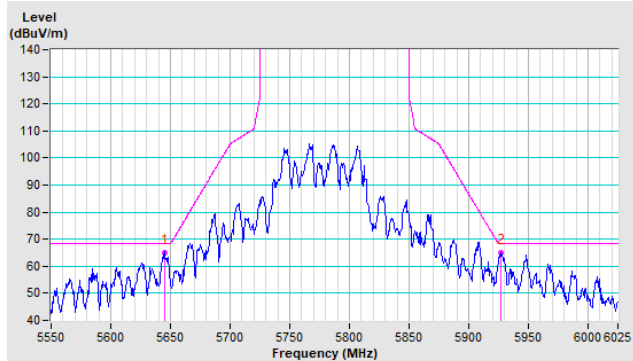
Vertical



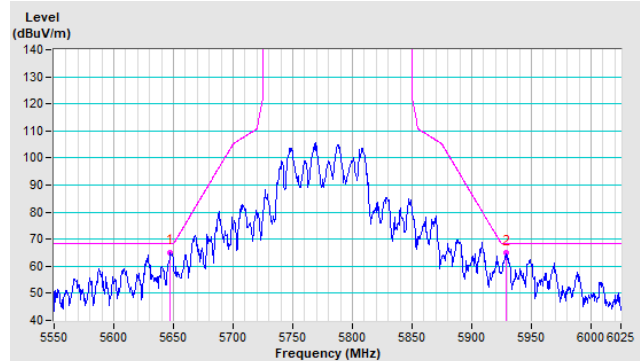
802.11ax (HE80)

CH 155 5775 MHz

Horizontal

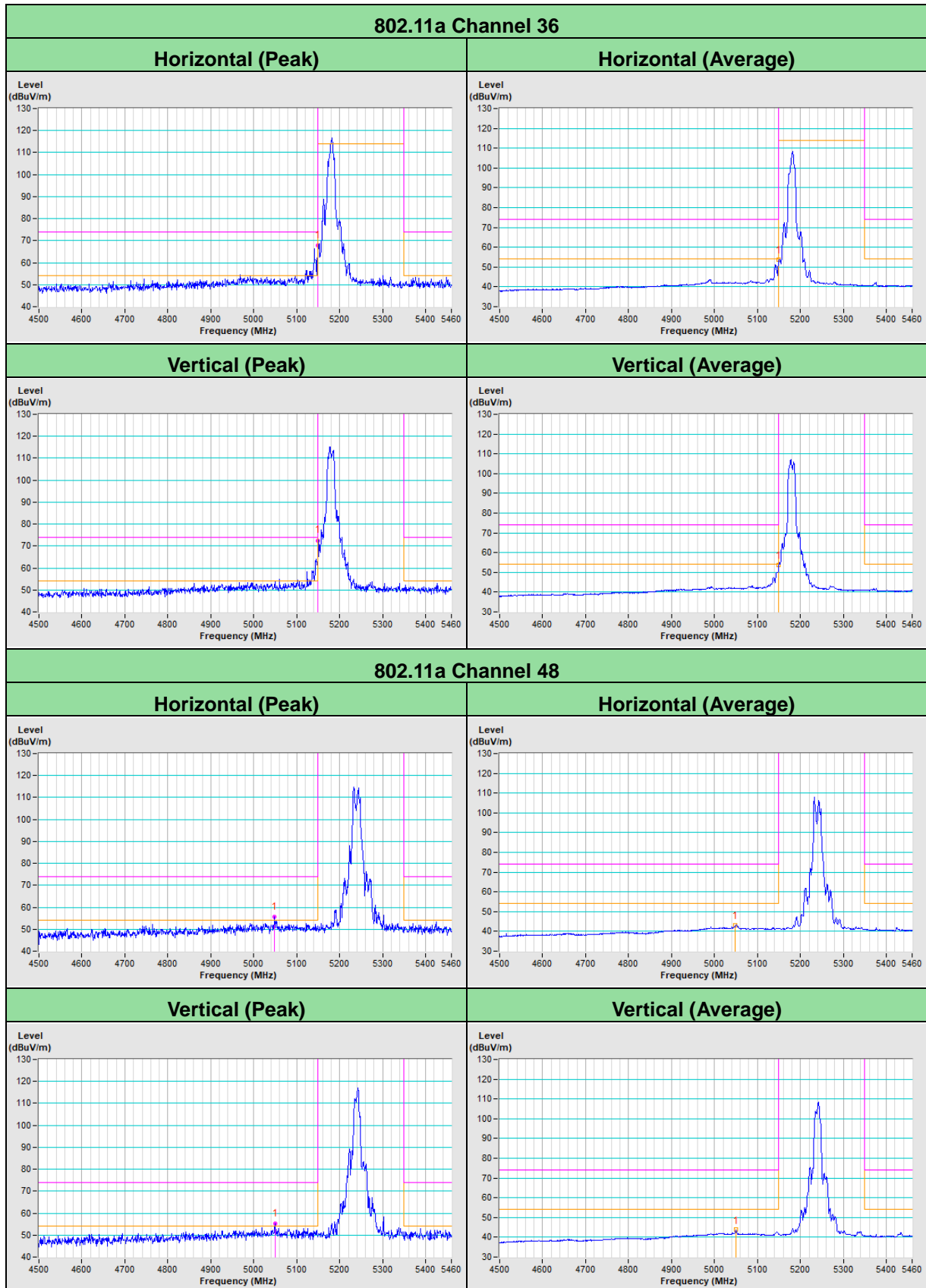


Vertical

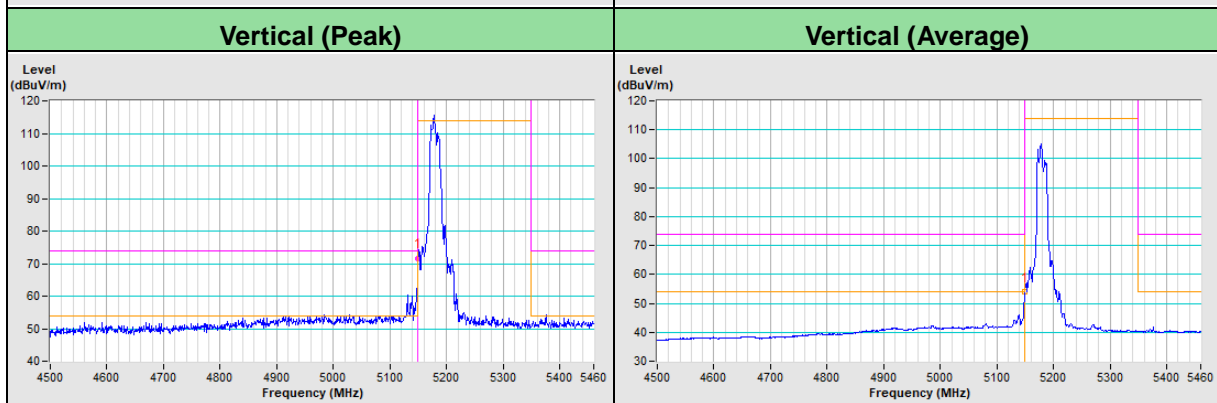
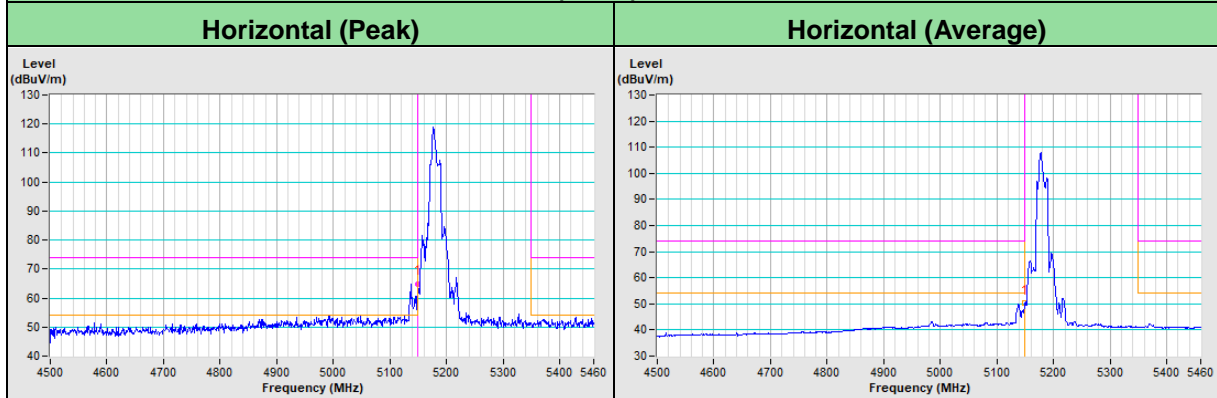


Annex B - Band-Edge Measurement (For U-NII-1 band)

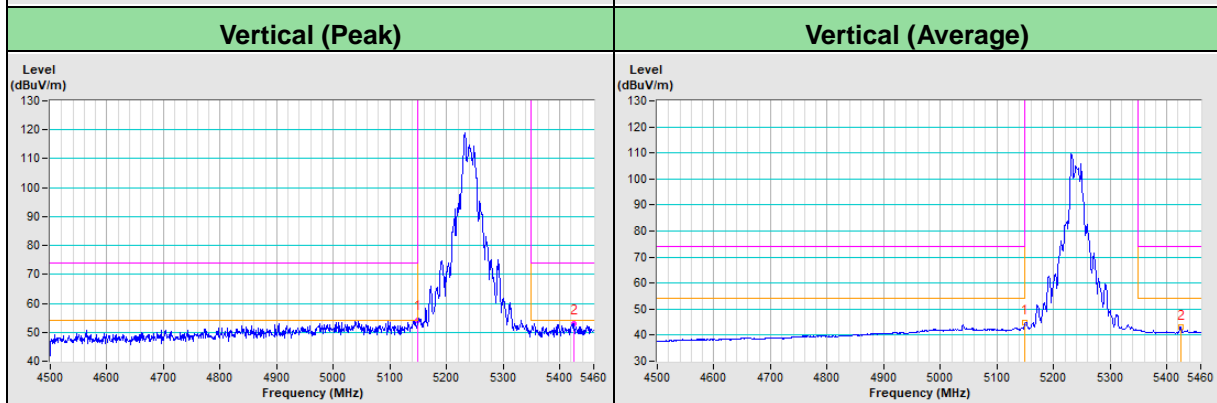
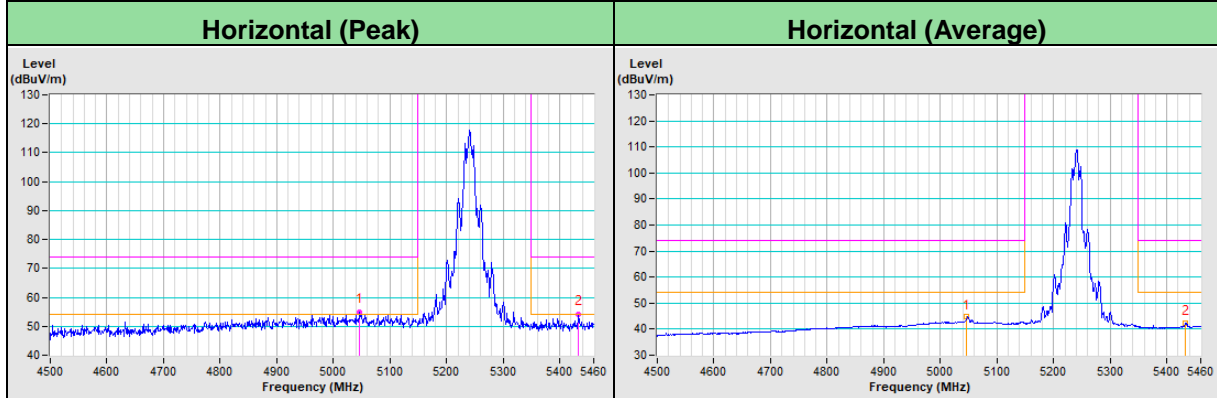
- Test Results (Mode 1)



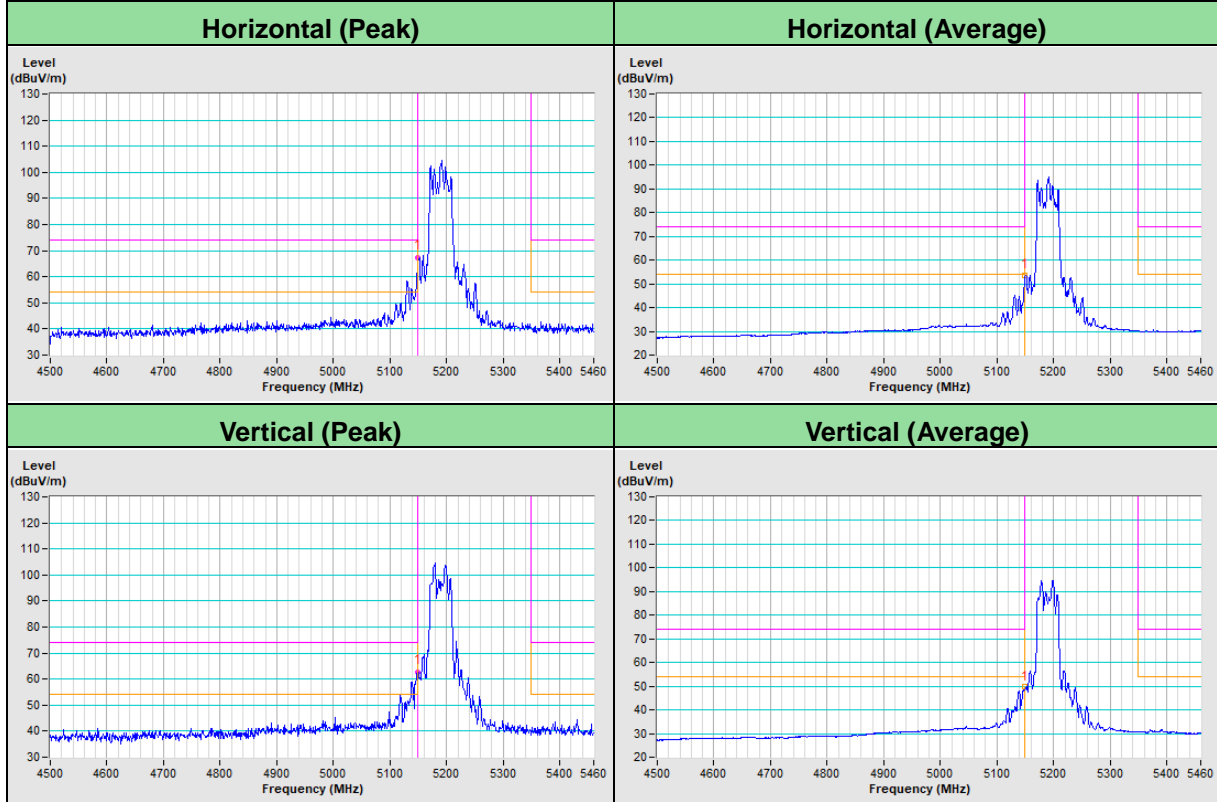
802.11ax (HE20) Channel 36



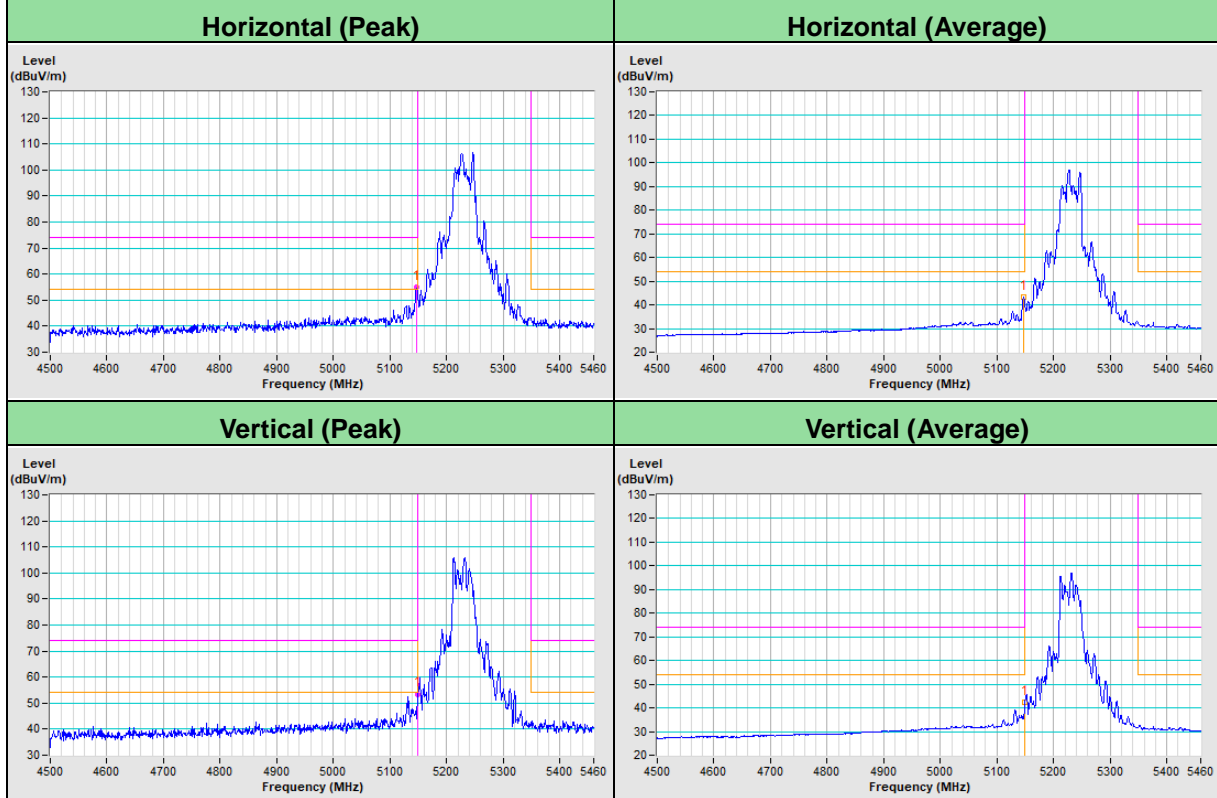
802.11ax (HE20) Channel 48



802.11ax (HE40) Channel 38

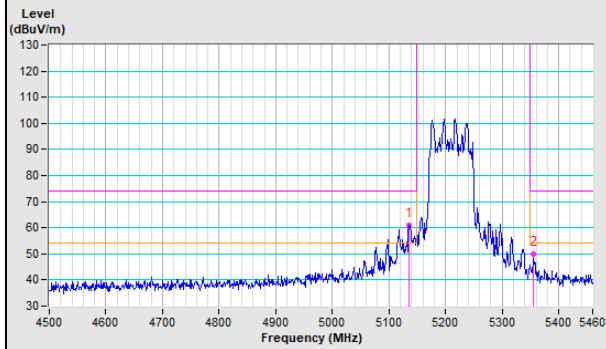


802.11ax (HE40) Channel 46

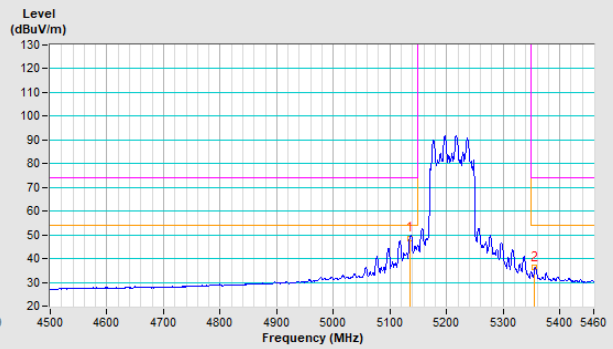


802.11ax (HE80) Channel 42

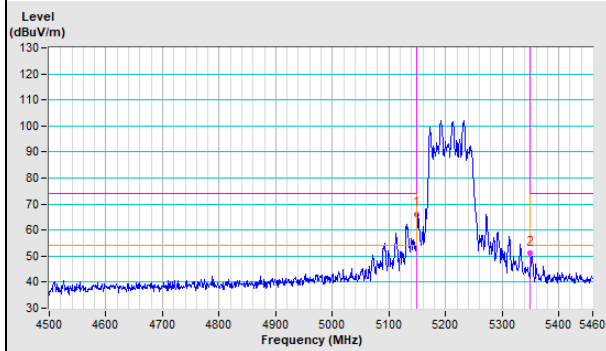
Horizontal (Peak)



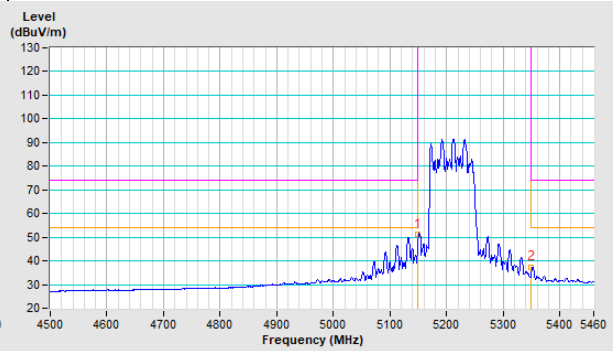
Horizontal (Average)



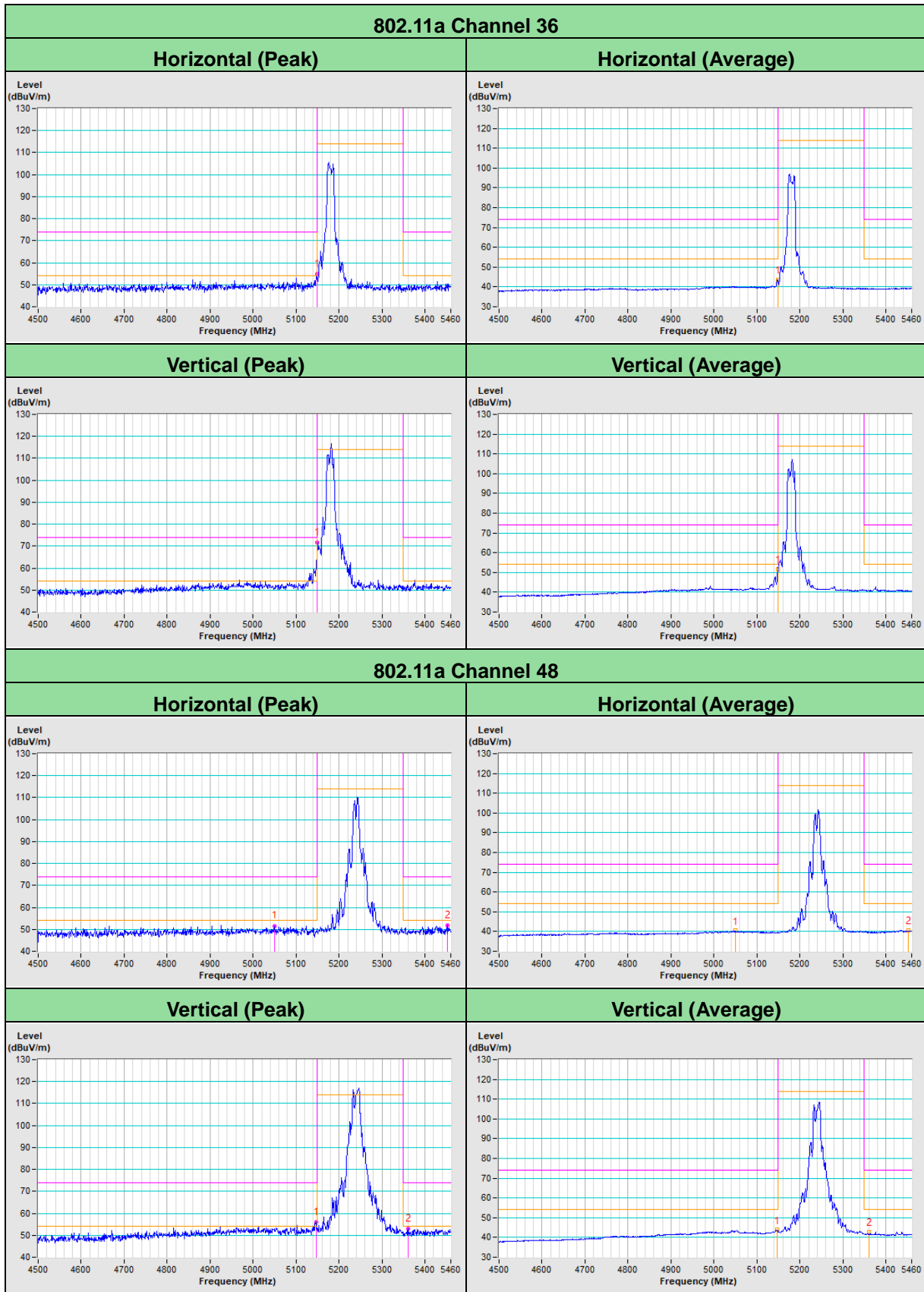
Vertical (Peak)



Vertical (Average)

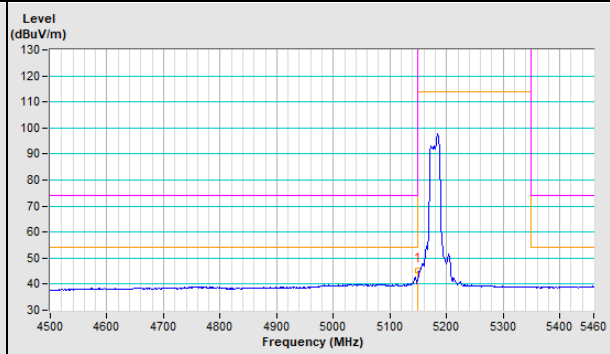
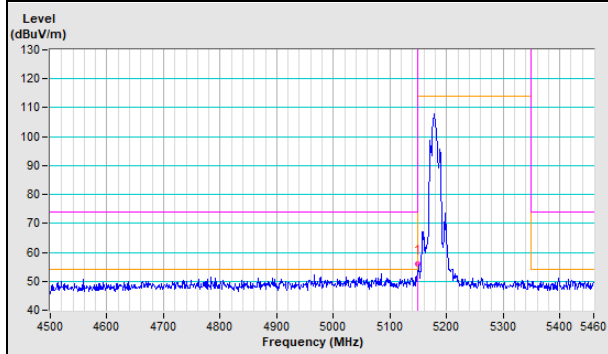


- Test Results (Mode 2)

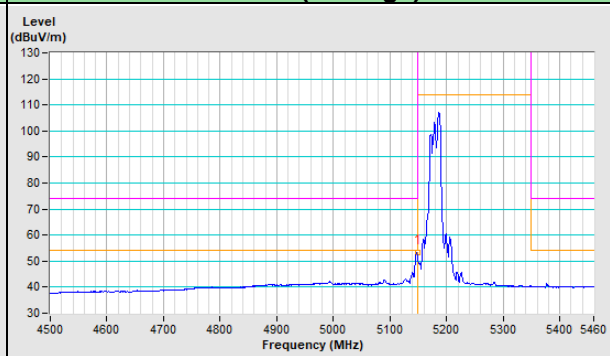
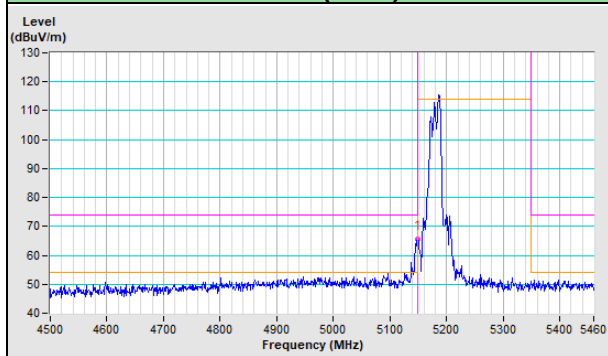


802.11ax (HE20) Channel 36

Horizontal (Peak)	Horizontal (Average)
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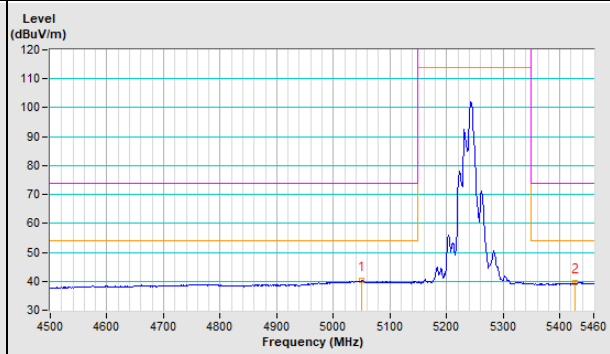
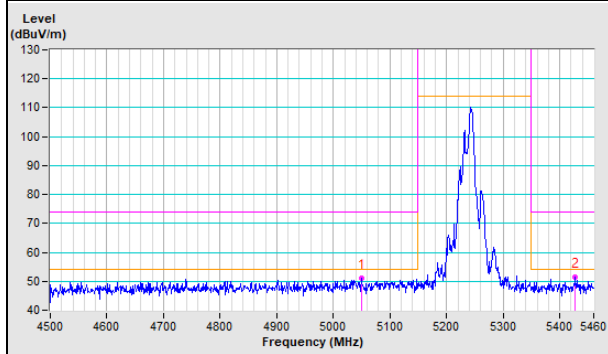


Vertical (Peak)	Vertical (Average)
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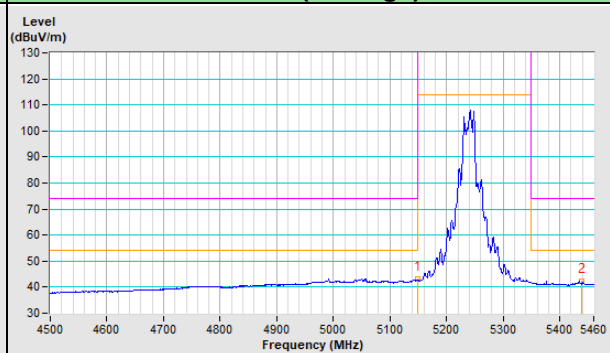
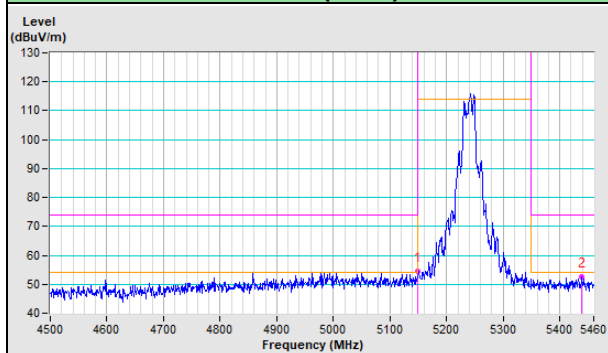


802.11ax (HE20) Channel 48

Horizontal (Peak)	Horizontal (Average)
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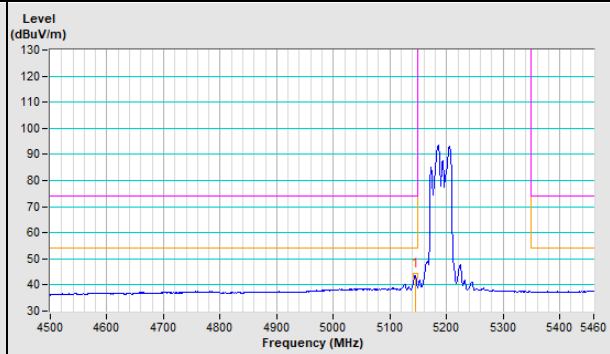
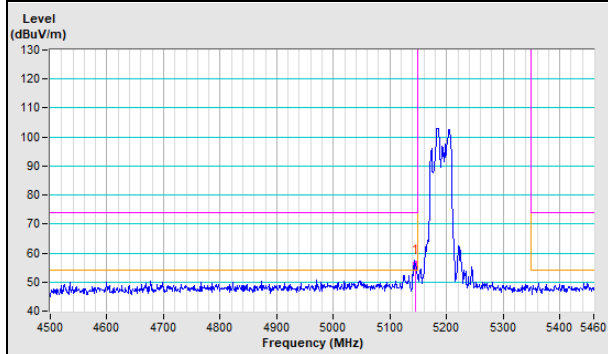


Vertical (Peak)	Vertical (Average)
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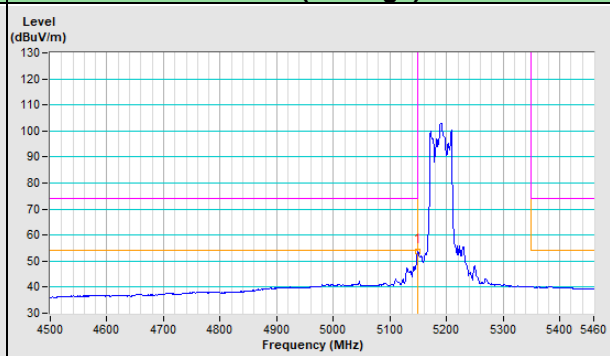
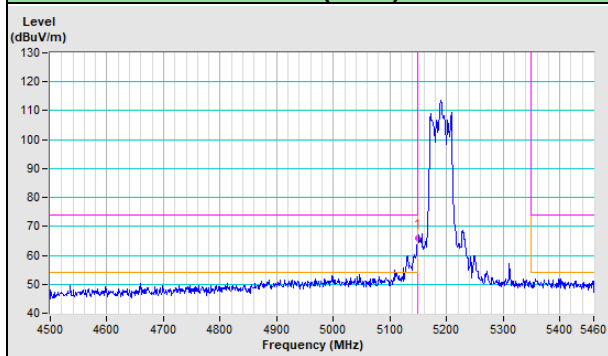


802.11ax (HE40) Channel 38

Horizontal (Peak)	Horizontal (Average)
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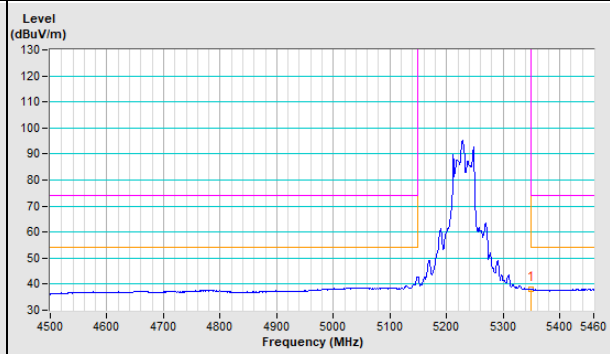
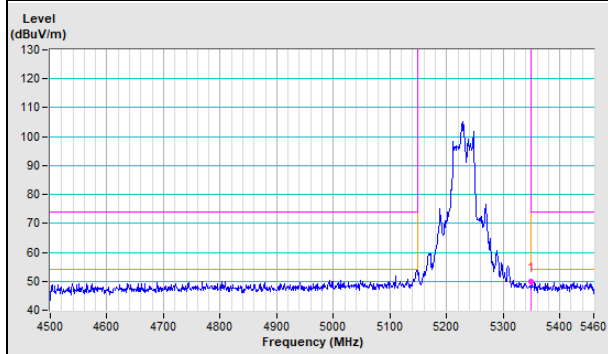


Vertical (Peak)	Vertical (Average)
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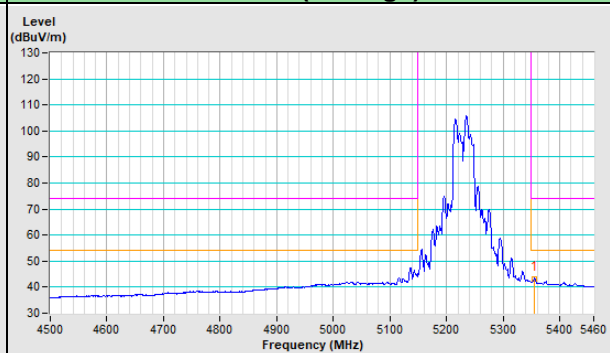
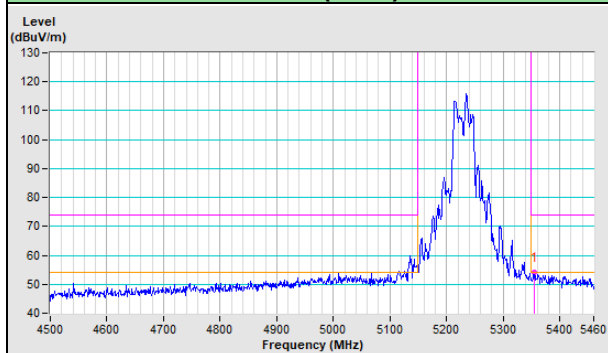


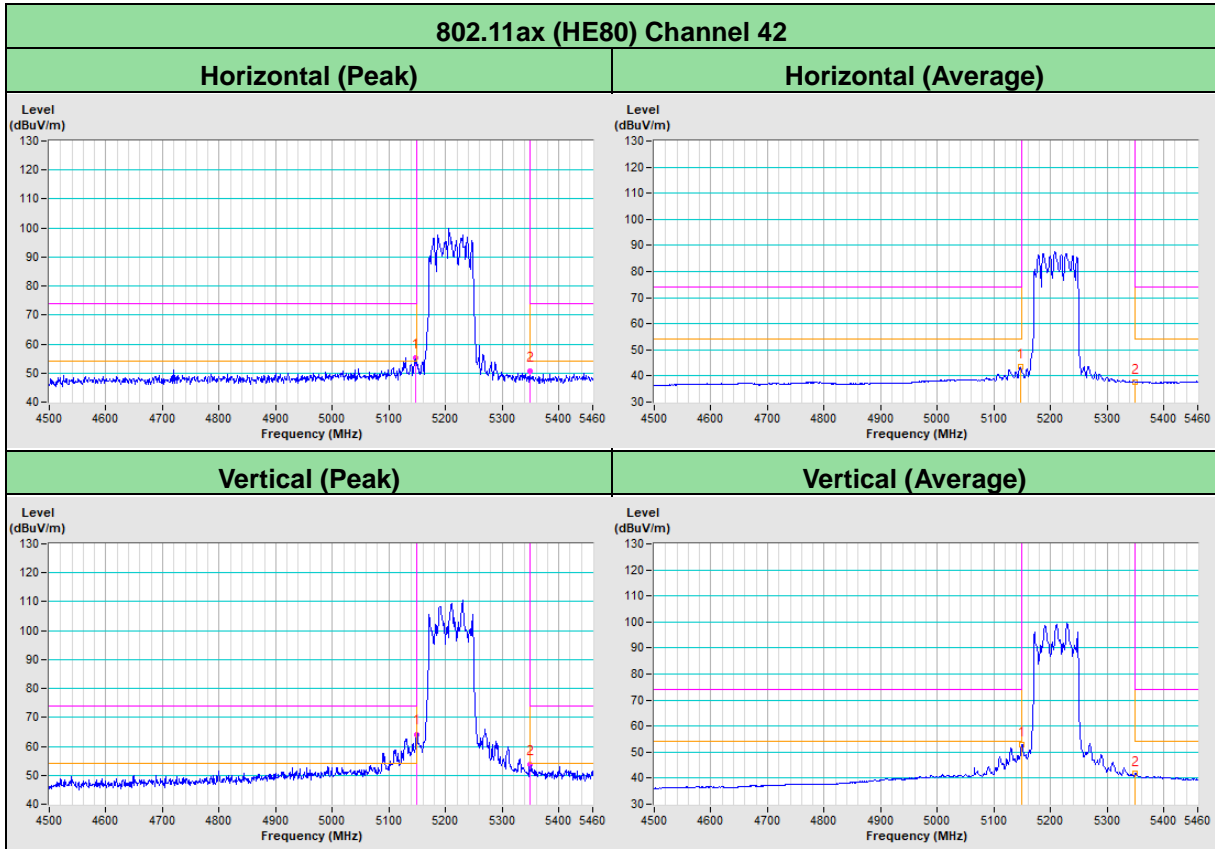
802.11ax (HE40) Channel 46

Horizontal (Peak)	Horizontal (Average)
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Vertical (Peak)	Vertical (Average)
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Appendix – Information of the Testing Laboratories

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

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

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Web Site: www.bureauveritas-adt.com

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

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