

FCC Test Report

Report No.: RFBHJS-WTW-P20080536-1

FCC ID: PD5-NWA1000

Test Model: NWA1000

Received Date: Aug. 27, 2020

Test Date: Sep. 04, 2020 ~ Jun. 11, 2021

Issued Date: Jun. 18, 2021

Applicant: Delta Electronics, Inc.

Address: No.252, Shang Ying Rd., Kuei San District, Taoyuan City 33341, Taiwan

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

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City
33383, Taiwan

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Release Control Record

Issue No.	Description	Date Issued
RFBHJS-WTW-P20080536-1	Original release	Jun. 18, 2021

1 Certificate of Conformity

Product: Wireless Access Point

Brand: Nile Global

Test Model: NWA1000

Sample Status: Engineering sample

Applicant: Delta Electronics, Inc.

Test Date: Sep. 04, 2020 ~ Jun. 11, 2021

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

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

Prepared by : Polly Chien, **Date:** Jun. 18, 2021
Polly Chien / Specialist

Approved by : Bruce Chen, **Date:** Jun. 18, 2021
Bruce Chen / Senior Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(8)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -5.46dB at 2.82600MHz.
15.407(b)(1/2/3/4(i/ii)/8)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5150.00MHz.
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 IPEX 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	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.86 dB
Radiated Emissions above 1 GHz	200MHz ~ 1000MHz	3.87 dB
	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless Access Point
Brand	Nile Global
Test Model	NWA1000
Sample Status	Engineering sample
Power Supply Rating	12Vdc from Adapter 55Vdc from PoE
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM 1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDMA
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n (HT20/40): 6.5 to 600Mbps (MCS0 to MCS31) 802.11ac (VHT20/40/80): 6.5 to 1733Mbps (MCS0 to MCS9, NSS=1 to 4) 802.11ax: 18 to 2400Mbps (MCS0 to MCS11, NSS=1 to 4)
Operating Frequency	5180 ~ 5240MHz, 5745 ~ 5825MHz
Number of Channel	For QCN-5154 Module: 5180~5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 4 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 5745~5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 5 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 2 802.11ac (VHT80), 802.11ax (HE80): 1 For QCA-9889 Module: 5180 ~ 5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5745 ~ 5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1

Output Power	For QCN-5154 Module: CDD Mode: 5180 ~ 5240MHz: 477.372mW 5745 ~ 5825MHz: 585.520mW Beamforming Mode: 5180 ~ 5240MHz: 384.938mW 5745 ~ 5825MHz: 394.924mW For QCA-9889 Module: CDD Mode: 5180 ~ 5240MHz: 49.091mW 5745 ~ 5825MHz: 48.865mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Refer to Note
Cable Supplied	NA

Note:

1. The EUT incorporates a MIMO function. Physically, the EUT provides 4 completed transmitters and 4 receivers.

Radio	Modulation Mode	Beamforming Mode	TX Function
QCN-5154 Module	802.11a	Not Support	4TX
	802.11n (HT20)	Support	4TX
	802.11n (HT40)	Support	4TX
	802.11ac (VHT20)	Support	4TX
	802.11ac (VHT40)	Support	4TX
	802.11ac (VHT80)	Support	4TX
	802.11ax (HE20)	Support	4TX
	802.11ax (HE40)	Support	4TX
	802.11ax (HE80)	Support	4TX
QCA-9889 Module	802.11a	Not Support	1TX
	802.11n (HT20)	Not Support	1TX
	802.11n (HT40)	Not Support	1TX
	802.11ac (VHT20)	Not Support	1TX
	802.11ac (VHT40)	Not Support	1TX
	802.11ac (VHT80)	Not Support	1TX

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

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

2. There are four modules for the EUT.

Module	Function
QCN-5124	WLAN 2.4G (TX/RX)
QCN-5154	WLAN 5G (TX/RX)
QCA-9889	WLAN 2.4G & 5G (TX/RX)
CSR8811	BT LE

3. The EUT uses following adapter & PoE Injector.

Adapter	
Brand	I.T.E
Model	MU42B1120350-A1
Input Power	100-240Vac~50/60Hz 1.5A
Output Power	12Vdc, 3.5A
Power Cable	1.5m non-shielded power cable without core

PoE Injector (Support unit)	
Brand	YAMAHA
Model	YPS-PoE-AT
Input Power	100-240Vac
Output Power	55Vdc

4. The EUT uses following antennas.

Ant. No.	1	2	3	4	5	6	7	8	9	10 (BLE)
Ant. Type	PIFA		PCB		PIFA		PCB		PIFA	PIFA
Frequency (MHz)	2412-2484				5150-5825				2400-2500/ 5150-5825	2400-2500
Gain (dBi)	4.6	4.2	3.4	3.7	5	5	3	2.3	4.6/5	4.4
Connector	IPEX								IPEX	IPEX

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

5. WLAN 2.4GHz and WLAN 5GHz technologies can transmit simultaneously except BT.

3.2 Description of Test Modes

For 5180 ~ 5240MHz:

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

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

Channel	Frequency
42	5210MHz

For 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

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

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description	
	RE $\geq$ 1G	RE<1G	PLC	APCM	Module	
A	√	√	√	√	QCN-5124	Power from adapter
B	-	√	√	-		Power from PoE
C	√	√	√	√	QCA-9889	Power from adapter
D	-	√	√	-		Power from PoE

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

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Note:

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

Radiated Emission Test (Above 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	QCN-5154
	802.11ax (HE20)		36 to 48	36, 40, 48	OFDMA	MCS0	
	802.11ax (HE40)		38 to 46	38, 46	OFDMA	MCS0	
	802.11ax (HE80)		42	42	OFDMA	MCS0	
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	
	802.11ax (HE20)		149 to 165	149, 157, 165	OFDMA	MCS0	
	802.11ax (HE40)		151 to 159	151, 159	OFDMA	MCS0	
	802.11ax (HE80)		155	155	OFDMA	MCS0	
C	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	QCA-9889
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	6.5	
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	13.5	
	802.11ac (VHT80)		42	42	OFDM	29.3	
C	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	6.5	
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	13.5	
	802.11ac (VHT80)		155	155	OFDM	29.3	

Radiated Emission Test (Below 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
A, B	802.11ax (HE20)	5745-5825	149 to 165	149	OFDMA	MCS0	QCN-5154
C, D	802.11ac (VHT20)	5180-5240	36 to 48	48	OFDM	6.5	QCA-9889

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
A, B	802.11ax (HE20)	5745-5825	149 to 165	149	OFDMA	MCS0	QCN-5154
C, D	802.11ac (VHT20)	5180-5240	36 to 48	48	OFDM	6.5	QCA-9889

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	QCN-5154
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5	
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5	
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	MCS0	
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	MCS0	
	802.11ac (VHT80)		42	42	OFDM	MCS0	
	802.11ax (HE20)		36 to 48	36, 40, 48	OFDMA	MCS0	
	802.11ax (HE40)		38 to 46	38, 46	OFDMA	MCS0	
	802.11ax (HE80)		42	42	OFDMA	MCS0	
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	6.5	
	802.11n (HT40)		151 to 159	151, 159	OFDM	13.5	
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	MCS0	
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	MCS0	
	802.11ac (VHT80)		155	155	OFDM	MCS0	
	802.11ax (HE20)		149 to 165	149, 157, 165	OFDMA	MCS0	
	802.11ax (HE40)		151 to 159	151, 159	OFDMA	MCS0	
	802.11ax (HE80)		155	155	OFDMA	MCS0	

*802.11n (HT20)/802.11n (VHT20), 802.11n (HT40)/802.11n (VHT40), 802.11n (VHT80) are for Conducted Output Power Measurement only.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)	Remark
C	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	QCA-9889
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	6.5	
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	13.5	
	802.11ac (VHT80)		42	42	OFDM	29.3	
C	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	6.5	
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	13.5	
	802.11ac (VHT80)		155	155	OFDM	29.3	

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	23 deg. C, 67% RH 25 deg. C, 70% RH	120Vac, 60Hz	Adair Peng, Rex Wang
RE<1G	25 deg. C, 70% RH 23 deg. C, 66% RH	120Vac, 60Hz	Adair Peng, Titan Hsu, Hans Wu
PLC	23 deg. C, 66% RH 24 deg. C, 66% RH 25 deg. C, 75% RH	120Vac, 60Hz	Titan Hsu, Edison Lee, Hans Wu
APCM	25 deg. C, 76% RH 25 deg. C, 60% RH	120Vac, 60Hz	Jisyong Wang, Ivan Tseng

3.3 Duty Cycle of Test Signal

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

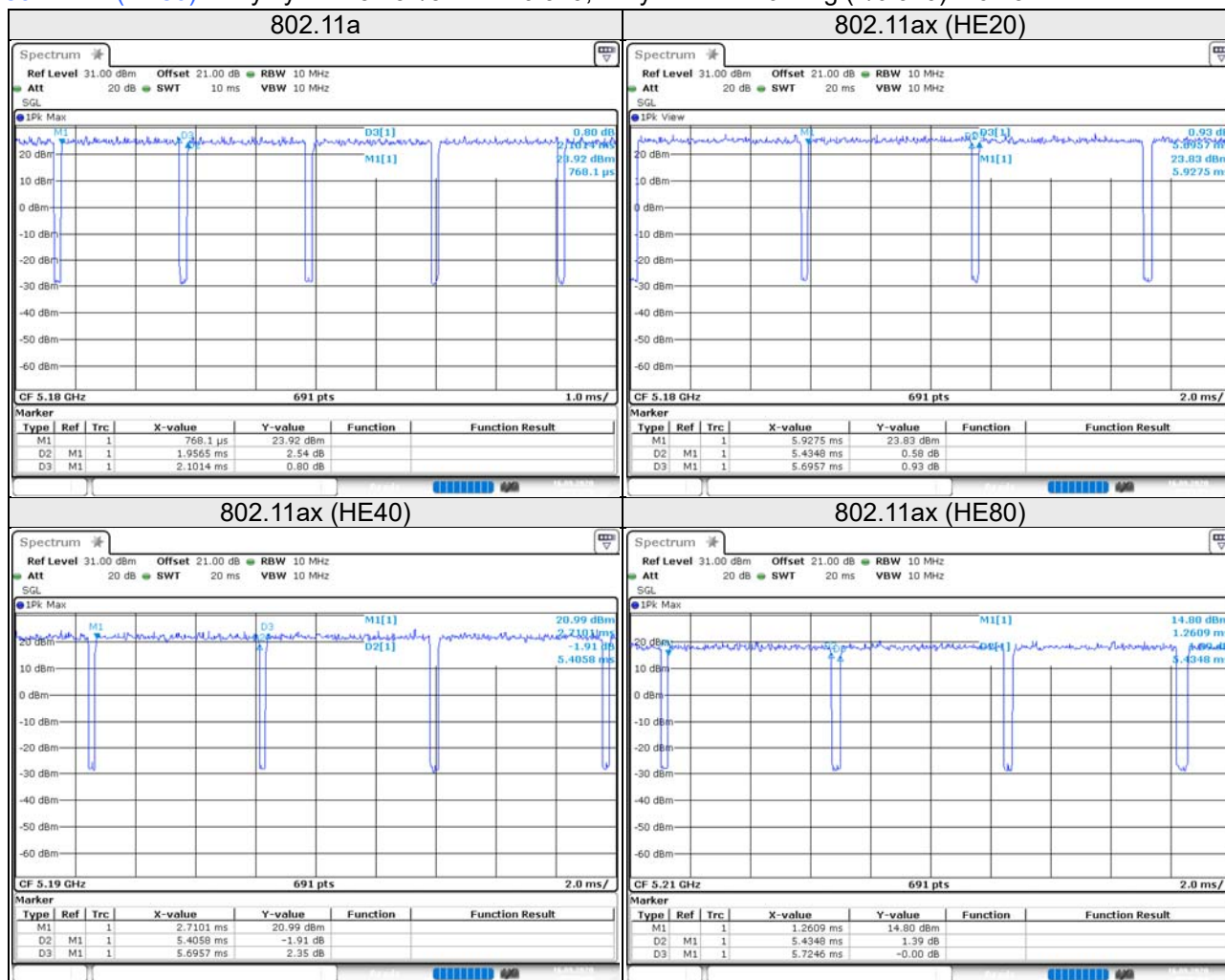
Mode A

802.11a: Duty cycle = $1.956/2.101 = 0.931$, Duty factor = $10 * \log(1/0.931) = 0.31$

802.11ax (HE20): Duty cycle = $5.434/5.695 = 0.954$, Duty factor = $10 * \log(1/0.954) = 0.20$

802.11ax (HE40): Duty cycle = $5.405/5.695 = 0.949$, Duty factor = $10 * \log(1/0.949) = 0.23$

802.11ax (HE80): Duty cycle = $5.434/5.724 = 0.949$, Duty factor = $10 * \log(1/0.949) = 0.23$



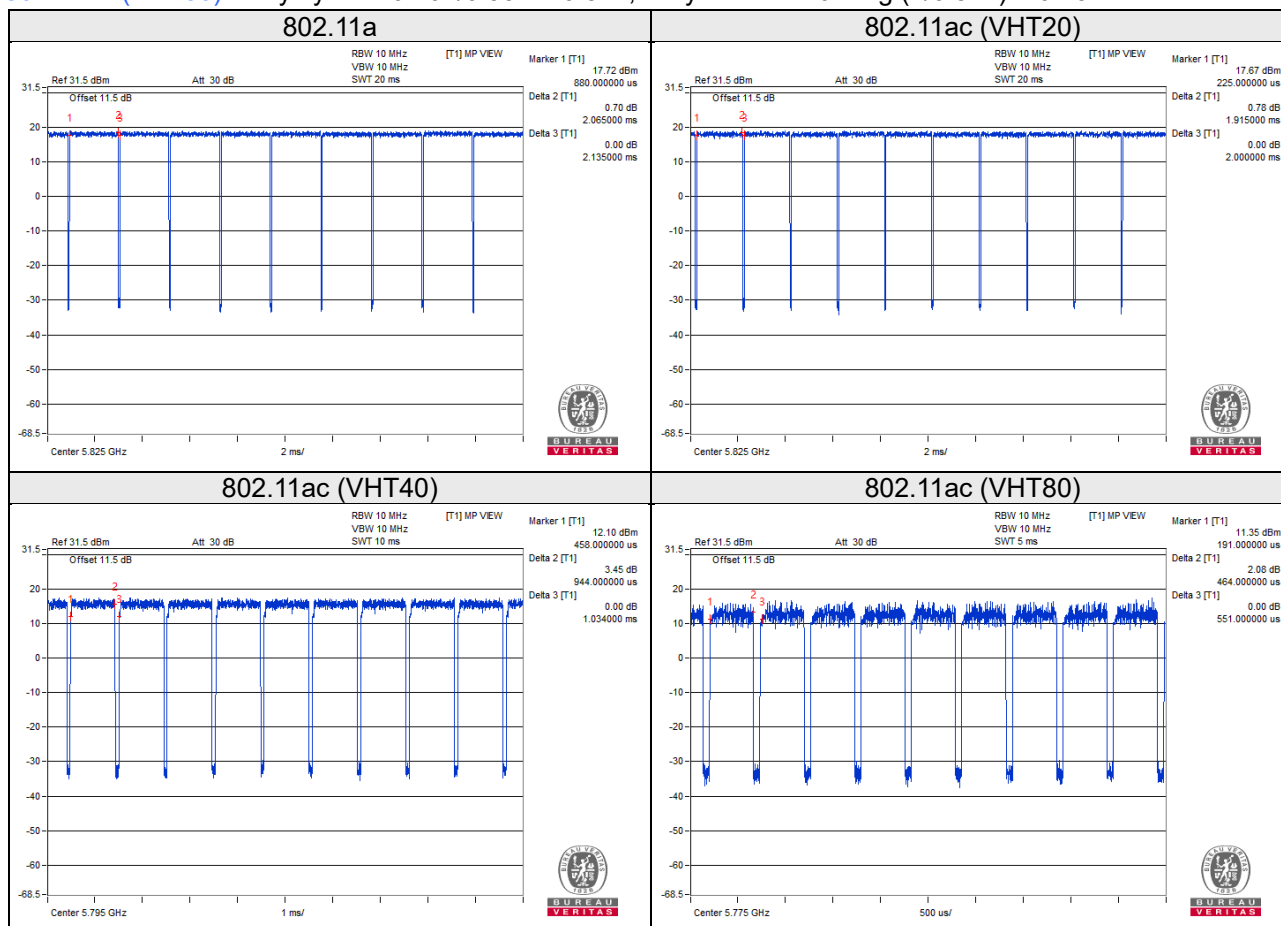
Mode C

802.11a: Duty cycle = $2.065/2.135 = 0.967$, Duty factor = $10 * \log(1/0.967) = 0.14$

802.11ac (VHT20): Duty cycle = $1.915/2.000 = 0.958$, Duty factor = $10 * \log(1/0.958) = 0.19$

802.11ac (VHT40): Duty cycle = $0.944/1.034 = 0.913$, Duty factor = $10 * \log(1/0.913) = 0.40$

802.11ac (VHT80): Duty cycle = $0.464/0.551 = 0.842$, Duty factor = $10 * \log(1/0.842) = 0.75$



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved	-
B.	PoE Injector	YAMAHA	YPS-PoE-AT	NA	NA	Provided by client

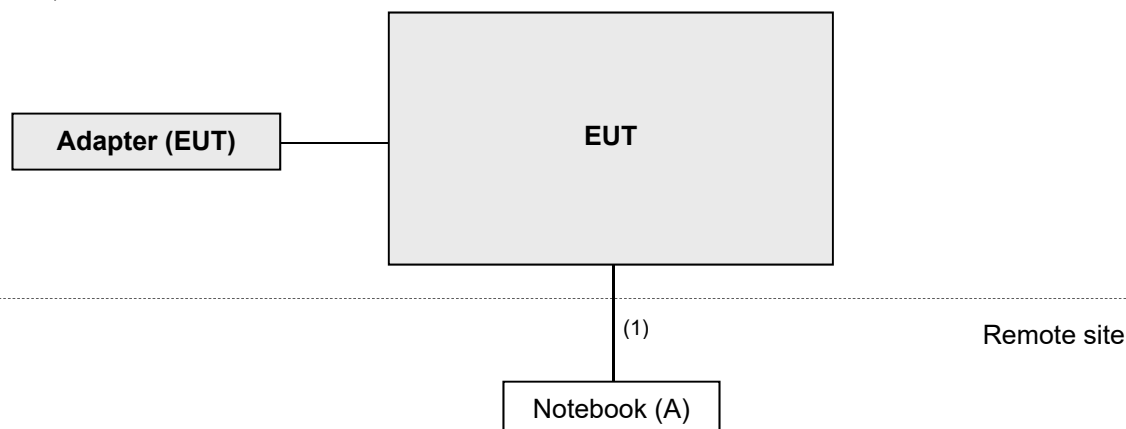
Note:

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

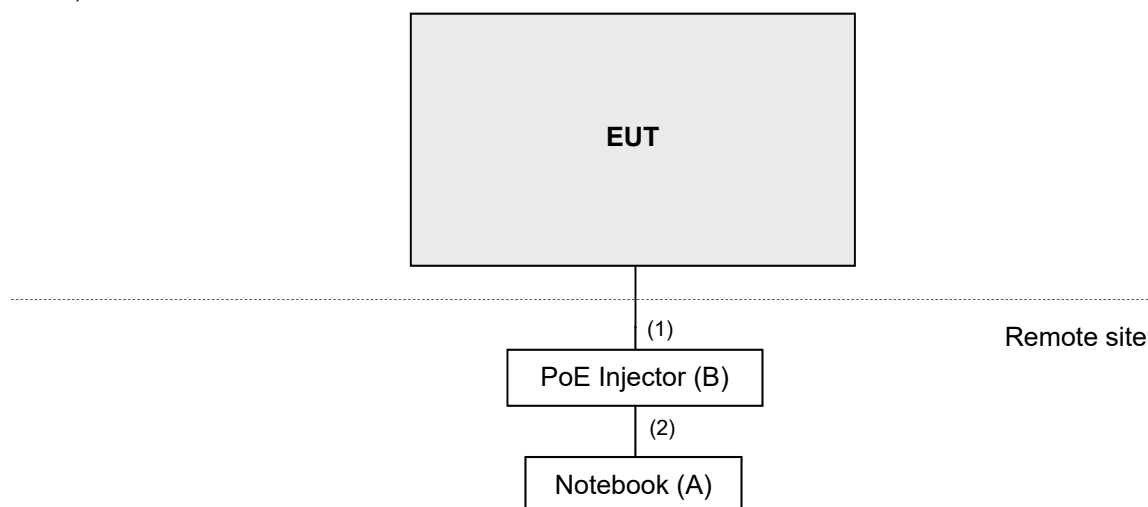
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN	1	7	N	0	RJ45, Cat5e
2.	LAN	1	1.5	N	0	RJ45, Cat5e

3.4.1 Configuration of System under Test

Mode A, C



Mode B, D



3.5 General Description of Applied Standards

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

Test standard:

FCC Part 15, Subpart E (15.407)

ANSI C63.10:2013

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

References Test Guidance:

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

Note:

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

Limits of unwanted emission out of the restricted bands

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

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver ROHDE & SCHWARZ	ESR3	102579	Jul. 07, 2020	Jul. 06, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 16, 2020	Sep. 15, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 11, 2019	Nov. 10, 2020
			Nov. 04, 2020	Nov. 03, 2021
HORN Antenna SCHWARZBECK	9120D	209	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 24, 2019	Nov. 23, 2020
			Nov. 22, 2020	Nov. 21, 2021
Loop Antenna TESEQ	HLA 6121	45745	Jul. 06, 2020	Jul. 05, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 16, 2020	Aug. 15, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Mar. 23, 2020	Mar. 22, 2021
			Mar. 22, 2021	Mar. 21, 2022
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH3-01	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM- SM-8000	Cable-CH3-03 (309224+170907)	Aug. 16, 2020	Aug. 15, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY5 5190004/MY55190 007/MY55210005	Jul. 13, 2020	Jul. 12, 2021
Pre-amplifier (18GHz- 40GHz) EMC	EMC184045B	980175	Sep. 04, 2020	Sep. 03, 2021

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

4.1.3 Test Procedures

For Radiated emission below 30MHz

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

Note:

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

For Radiated emission above 30MHz

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

Note:

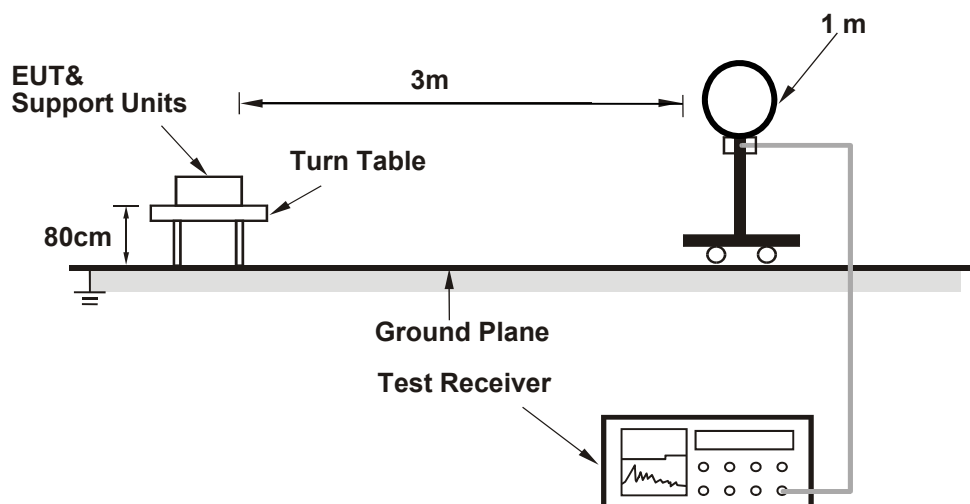
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
Mode A:
(802.11a: RBW = 1MHz, VBW = 1kHz; 802.11ax (HE20): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE40): RBW = 1MHz, VBW = 1kHz; 802.11ax (HE80): RBW = 1MHz, VBW = 1kHz)
Mode C:
(802.11a: RBW = 1MHz, VBW = 1kHz; 802.11ac (VHT20): RBW = 1MHz, VBW = 1kHz; 802.11ac (VHT40): RBW = 1MHz, VBW = 3kHz; 802.11ac (VHT80): RBW = 1MHz, VBW = 3kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

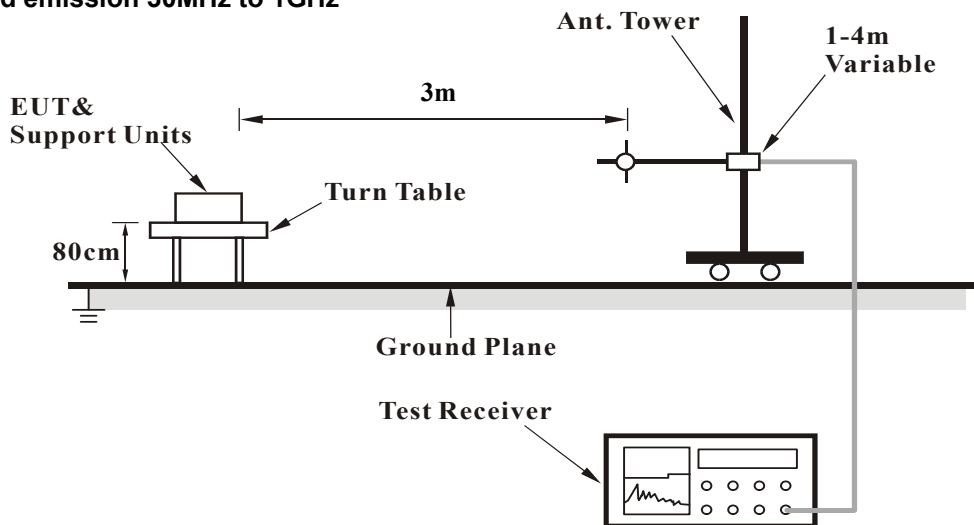
No deviation.

4.1.5 Test Setup

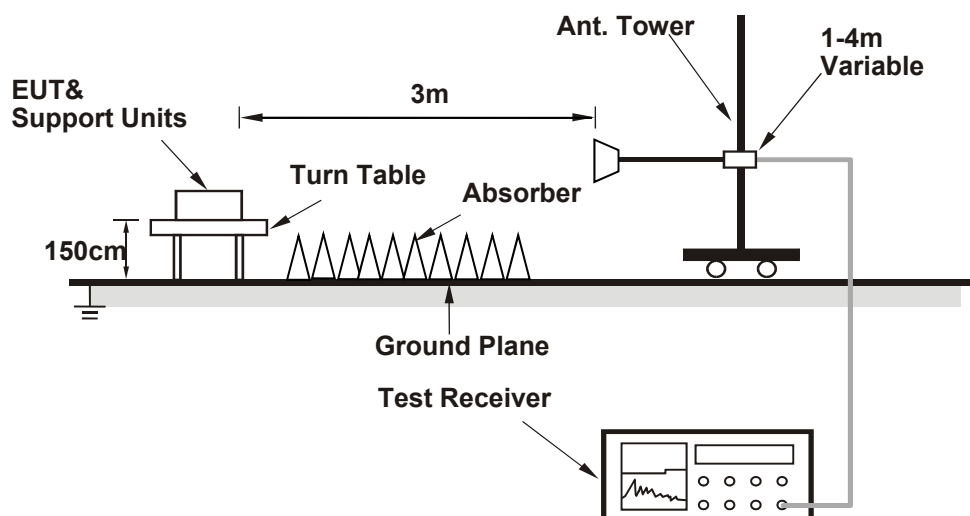
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

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

4.1.7 Test Results

Above 1GHz data:

Mode A

802.11a

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.7 PK	74.0	-5.3	3.00 H	133	62.2	6.5
2	5150.00	53.5 AV	54.0	-0.5	3.00 H	133	47.0	6.5
3	*5180.00	122.1 PK			3.00 H	133	80.0	42.1
4	*5180.00	112.1 AV			3.00 H	133	70.0	42.1
5	#10360.00	58.3 PK	68.2	-9.9	2.59 H	123	41.7	16.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.9 PK	74.0	-8.1	2.76 V	173	59.4	6.5
2	5150.00	50.5 AV	54.0	-3.5	2.76 V	173	44.0	6.5
3	*5180.00	121.6 PK			1.73 V	276	79.5	42.1
4	*5180.00	111.1 AV			1.73 V	276	69.0	42.1
5	#10360.00	58.4 PK	68.2	-9.8	2.61 V	229	41.8	16.6

Remarks:

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

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	121.1 PK			2.46 H	189	79.0	42.1
2	*5200.00	111.5 AV			2.46 H	189	69.4	42.1
3	#10400.00	57.9 PK	68.2	-10.3	2.63 H	120	41.0	16.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	121.3 PK			2.31 V	171	79.2	42.1
2	*5200.00	111.5 AV			2.31 V	171	69.4	42.1
3	#10400.00	57.7 PK	68.2	-10.5	2.59 V	232	40.8	16.9

Remarks:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	121.7 PK			2.53 H	183	79.8	41.9
2	*5240.00	111.9 AV			2.53 H	183	70.0	41.9
3	5350.00	58.7 PK	74.0	-15.3	2.33 H	136	52.4	6.3
4	5350.00	47.0 AV	54.0	-7.0	2.33 H	136	40.7	6.3
5	#10480.00	58.9 PK	68.2	-9.3	2.63 H	128	41.4	17.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	120.9 PK			2.18 V	347	79.0	41.9
2	*5240.00	110.2 AV			2.18 V	347	68.3	41.9
3	5350.00	58.9 PK	74.0	-15.1	2.44 V	246	52.6	6.3
4	5350.00	46.1 AV	54.0	-7.9	2.44 V	246	39.8	6.3
5	#10480.00	59.1 PK	68.2	-9.1	2.64 V	233	41.6	17.5

Remarks:

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

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5643.59	58.0 PK	68.2	-10.2	2.29 H	166	51.8	6.2
2	*5745.00	84.6 PK			2.29 H	166	78.4	6.2
3	*5745.00	74.9 AV			2.29 H	166	68.7	6.2
4	#5931.41	58.2 PK	68.2	-10.0	2.29 H	166	51.2	7.0
5	11490.00	59.5 PK	74.0	-14.5	2.51 H	150	41.5	18.0
6	11490.00	46.0 AV	54.0	-8.0	2.51 H	150	28.0	18.0

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.23	58.3 PK	68.2	-9.9	2.27 V	117	52.1	6.2
2	*5745.00	122.2 PK			2.27 V	117	80.2	42.0
3	*5745.00	111.7 AV			2.27 V	117	69.7	42.0
4	#5927.56	59.4 PK	68.2	-8.8	2.27 V	117	52.4	7.0
5	11490.00	59.7 PK	74.0	-14.3	1.93 V	203	41.7	18.0
6	11490.00	46.2 AV	54.0	-7.8	1.93 V	203	28.2	18.0

Remarks:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5614.74	58.4 PK	68.2	-9.8	2.20 H	170	52.3	6.1
2	*5785.00	120.6 PK			2.20 H	170	78.7	41.9
3	*5785.00	110.2 AV			2.20 H	170	68.3	41.9
4	#5925.00	58.4 PK	68.2	-9.8	2.20 H	170	51.4	7.0
5	11570.00	59.2 PK	74.0	-14.8	2.45 H	144	41.6	17.6
6	11570.00	45.7 AV	54.0	-8.3	2.45 H	144	28.1	17.6

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5620.51	58.7 PK	68.2	-9.5	2.28 V	187	52.6	6.1
2	*5785.00	122.6 PK			2.28 V	187	80.7	41.9
3	*5785.00	112.2 AV			2.28 V	187	70.3	41.9
4	#5945.51	58.5 PK	68.2	-9.7	2.28 V	187	51.5	7.0
5	11570.00	59.6 PK	74.0	-14.4	2.01 V	211	42.0	17.6
6	11570.00	45.6 AV	54.0	-8.4	2.01 V	211	28.0	17.6

Remarks:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5632.05	57.9 PK	68.2	-10.3	2.22 H	166	51.7	6.2
2	*5825.00	120.5 PK			2.22 H	166	78.3	42.2
3	*5825.00	110.8 AV			2.22 H	166	68.6	42.2
4	#5987.82	58.8 PK	68.2	-9.4	2.22 H	166	51.9	6.9
5	11650.00	59.7 PK	74.0	-14.3	1.99 H	198	42.0	17.7
6	11650.00	45.8 AV	54.0	-8.2	1.99 H	198	28.1	17.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5620.51	58.1 PK	68.2	-10.1	2.27 V	187	52.0	6.1
2	*5825.00	121.6 PK			2.27 V	187	79.4	42.2
3	*5825.00	111.9 AV			2.27 V	187	69.7	42.2
4	#5996.79	58.8 PK	68.2	-9.4	2.27 V	187	51.9	6.9
5	11650.00	59.5 PK	74.0	-14.5	2.09 V	120	41.8	17.7
6	11650.00	45.7 AV	54.0	-8.3	2.09 V	120	28.0	17.7

Remarks:

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

802.11ax (HE20)

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.6 PK	74.0	-3.4	2.55 H	136	64.1	6.5
2	5150.00	52.8 AV	54.0	-1.2	2.55 H	136	46.3	6.5
3	*5180.00	125.2 PK			2.55 H	136	83.1	42.1
4	*5180.00	111.4 AV			2.55 H	136	69.3	42.1
5	#10360.00	58.7 PK	68.2	-9.5	2.10 H	133	42.1	16.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.6 PK	74.0	-5.4	2.15 V	167	62.1	6.5
2	5150.00	51.5 AV	54.0	-2.5	2.15 V	167	45.0	6.5
3	*5180.00	123.8 PK			2.15 V	167	81.7	42.1
4	*5180.00	110.5 AV			2.15 V	167	68.4	42.1
5	#10360.00	58.6 PK	68.2	-9.6	1.91 V	212	42.0	16.6

Remarks:

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

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	125.3 PK			2.48 H	178	83.2	42.1
2	*5200.00	111.5 AV			2.48 H	178	69.4	42.1
3	#10400.00	58.4 PK	68.2	-9.8	2.85 H	133	41.5	16.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	124.6 PK			2.20 V	171	82.5	42.1
2	*5200.00	110.8 AV			2.20 V	171	68.7	42.1
3	#10400.00	58.2 PK	68.2	-10.0	1.91 V	225	41.3	16.9

Remarks:

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

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	125.1 PK			2.82 H	243	83.2	41.9
2	*5240.00	111.7 AV			2.82 H	243	69.8	41.9
3	5350.00	59.3 PK	74.0	-14.7	2.82 H	243	53.0	6.3
4	5350.00	45.0 AV	54.0	-9.0	2.82 H	243	38.7	6.3
5	#10480.00	59.1 PK	68.2	-9.1	2.85 H	150	41.6	17.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	124.3 PK			2.35 V	178	82.4	41.9
2	*5240.00	110.8 AV			2.35 V	178	68.9	41.9
3	5350.00	58.9 PK	74.0	-15.1	2.35 V	178	52.6	6.3
4	5350.00	44.8 AV	54.0	-9.2	2.35 V	178	38.5	6.3
5	#10480.00	58.8 PK	68.2	-9.4	1.87 V	212	41.3	17.5

Remarks:

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

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5641.67	58.5 PK	68.2	-9.7	2.22 H	171	52.3	6.2
2	*5745.00	124.7 PK			2.22 H	171	82.7	42.0
3	*5745.00	110.7 AV			2.22 H	171	68.7	42.0
4	#5965.38	58.5 PK	68.2	-9.7	2.22 H	171	51.5	7.0
5	11490.00	60.1 PK	74.0	-13.9	2.57 H	141	42.1	18.0
6	11490.00	45.9 AV	54.0	-8.1	2.57 H	141	27.9	18.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5607.05	57.1 PK	68.2	-11.1	2.64 V	193	51.0	6.1
2	*5745.00	125.6 PK			2.64 V	193	83.6	42.0
3	*5745.00	111.7 AV			2.64 V	193	69.7	42.0
4	#5984.62	58.3 PK	68.2	-9.9	2.64 V	193	51.4	6.9
5	11490.00	59.5 PK	74.0	-14.5	1.93 V	209	41.5	18.0
6	11490.00	46.0 AV	54.0	-8.0	1.93 V	209	28.0	18.0

Remarks:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5633.33	58.0 PK	68.2	-10.2	2.02 H	159	51.8	6.2
2	*5785.00	122.4 PK			2.02 H	159	80.5	41.9
3	*5785.00	109.4 AV			2.02 H	159	67.5	41.9
4	#5935.90	58.1 PK	68.2	-10.1	2.02 H	159	51.1	7.0
5	11570.00	59.4 PK	74.0	-14.6	2.61 H	149	41.8	17.6
6	11570.00	45.4 AV	54.0	-8.6	2.61 H	149	27.8	17.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5609.62	58.5 PK	68.2	-9.7	2.78 V	150	52.4	6.1
2	*5785.00	124.4 PK			2.78 V	150	82.5	41.9
3	*5785.00	111.0 AV			2.78 V	150	69.1	41.9
4	#5937.82	58.2 PK	68.2	-10.0	2.78 V	150	51.2	7.0
5	11570.00	59.5 PK	74.0	-14.5	2.05 V	211	41.9	17.6
6	11570.00	45.5 AV	54.0	-8.5	2.05 V	211	27.9	17.6

Remarks:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5637.18	59.3 PK	68.2	-8.9	2.43 H	22	53.1	6.2
2	*5825.00	124.2 PK			2.43 H	22	82.0	42.2
3	*5825.00	110.4 AV			2.43 H	22	68.2	42.2
4	#5977.56	58.5 PK	68.2	-9.7	2.43 H	22	51.6	6.9
5	11650.00	59.6 PK	74.0	-14.4	2.51 H	139	41.9	17.7
6	11650.00	45.8 AV	54.0	-8.2	2.51 H	139	28.1	17.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5637.82	58.3 PK	68.2	-9.9	2.57 V	0	52.1	6.2
2	*5825.00	125.2 PK			2.57 V	0	83.0	42.2
3	*5825.00	111.4 AV			2.57 V	0	69.2	42.2
4	#5951.92	59.4 PK	68.2	-8.8	2.57 V	0	52.4	7.0
5	11650.00	59.8 PK	74.0	-14.2	2.05 V	221	42.1	17.7
6	11650.00	46.0 AV	54.0	-8.0	2.05 V	221	28.3	17.7

Remarks:

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

802.11ax (HE40)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.2 PK	74.0	-5.8	2.35 H	299	61.7	6.5
2	5150.00	53.8 AV	54.0	-0.2	2.35 H	299	47.3	6.5
3	*5190.00	121.5 PK			2.35 H	299	79.4	42.1
4	*5190.00	108.5 AV			2.35 H	299	66.4	42.1
5	#10380.00	59.0 PK	68.2	-9.2	2.91 H	142	42.2	16.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.0 PK	74.0	-6.0	2.03 V	166	61.5	6.5
2	5150.00	53.5 AV	54.0	-0.5	2.03 V	166	47.0	6.5
3	*5190.00	120.7 PK			2.03 V	166	78.6	42.1
4	*5190.00	107.9 AV			2.03 V	166	65.8	42.1
5	#10380.00	58.8 PK	68.2	-9.4	1.98 V	208	42.0	16.8

Remarks:

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

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	118.9 PK			2.41 H	187	77.0	41.9
2	*5230.00	106.2 AV			2.41 H	187	64.3	41.9
3	5363.00	67.3 PK	74.0	-6.7	2.41 H	187	61.0	6.3
4	5363.00	53.3 AV	54.0	-0.7	2.41 H	187	47.0	6.3
5	#10460.00	59.6 PK	68.2	-8.6	3.05 H	161	42.3	17.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	118.4 PK			2.11 V	177	76.5	41.9
2	*5230.00	105.6 AV			2.11 V	177	63.7	41.9
3	5363.00	66.9 PK	74.0	-7.1	2.11 V	177	60.6	6.3
4	5363.00	52.9 AV	54.0	-1.1	2.11 V	177	46.6	6.3
5	#10460.00	59.3 PK	68.2	-8.9	1.92 V	203	42.0	17.3

Remarks:

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

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5616.67	58.2 PK	68.2	-10.0	1.85 H	171	52.1	6.1
2	*5755.00	121.6 PK			1.85 H	171	79.6	42.0
3	*5755.00	108.9 AV			1.85 H	171	66.9	42.0
4	#5952.56	58.2 PK	68.2	-10.0	1.85 H	171	51.2	7.0
5	11510.00	59.7 PK	74.0	-14.3	2.59 H	147	41.8	17.9
6	11510.00	46.2 AV	54.0	-7.8	2.59 H	147	28.3	17.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.87	58.3 PK	68.2	-9.9	2.43 V	2	52.1	6.2
2	*5755.00	122.8 PK			2.43 V	2	80.8	42.0
3	*5755.00	110.3 AV			2.43 V	2	68.3	42.0
4	#5933.33	59.8 PK	68.2	-8.4	2.43 V	2	52.8	7.0
5	11510.00	59.9 PK	74.0	-14.1	1.99 V	220	42.0	17.9
6	11510.00	46.4 AV	54.0	-7.6	1.99 V	220	28.5	17.9

Remarks:

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

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5622.44	58.5 PK	68.2	-9.7	1.91 H	166	52.4	6.1
2	*5795.00	121.5 PK			1.91 H	166	79.5	42.0
3	*5795.00	108.7 AV			1.91 H	166	66.7	42.0
4	#5975.00	58.4 PK	68.2	-9.8	1.91 H	166	51.5	6.9
5	11590.00	59.3 PK	74.0	-14.7	2.69 H	159	41.8	17.5
6	11590.00	45.5 AV	54.0	-8.5	2.69 H	159	28.0	17.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5616.03	58.7 PK	68.2	-9.5	2.28 V	15	52.6	6.1
2	*5795.00	122.7 PK			2.28 V	15	80.7	42.0
3	*5795.00	109.5 AV			2.28 V	15	67.5	42.0
4	#5930.13	59.4 PK	68.2	-8.8	2.28 V	15	52.4	7.0
5	11590.00	59.3 PK	74.0	-14.7	1.95 V	203	41.8	17.5
6	11590.00	45.7 AV	54.0	-8.3	1.95 V	203	28.2	17.5

Remarks:

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

802.11ax (HE80)

CHANNEL	TX Channel 42	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.1 PK	74.0	-4.9	2.42 H	209	62.6	6.5
2	5150.00	53.5 AV	54.0	-0.5	2.42 H	209	47.0	6.5
3	*5210.00	117.9 PK			2.42 H	209	75.9	42.0
4	*5210.00	104.4 AV			2.42 H	209	62.4	42.0
5	5350.00	57.0 PK	74.0	-17.0	2.42 H	209	50.7	6.3
6	5350.00	43.5 AV	54.0	-10.5	2.42 H	209	37.2	6.3
7	#10420.00	59.9 PK	68.2	-8.3	3.03 H	122	42.7	17.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.9 PK	74.0	-5.1	2.06 V	163	62.4	6.5
2	5150.00	53.4 AV	54.0	-0.6	2.06 V	163	46.9	6.5
3	*5210.00	116.3 PK			2.07 V	164	74.3	42.0
4	*5210.00	104.0 AV			2.07 V	164	62.0	42.0
5	5350.00	57.3 PK	74.0	-16.7	2.06 V	163	51.0	6.3
6	5350.00	44.5 AV	54.0	-9.5	2.06 V	163	38.2	6.3
7	#10420.00	58.9 PK	68.2	-9.3	1.85 V	220	41.7	17.2

Remarks:

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

CHANNEL	TX Channel 155	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5646.79	60.2 PK	68.2	-8.0	1.82 H	165	54.0	6.2
2	#5650.00	61.4 PK	68.2	-6.8	1.82 H	165	55.3	6.1
3	*5775.00	117.9 PK			1.82 H	165	75.9	42.0
4	*5775.00	105.6 AV			1.82 H	165	63.6	42.0
5	#5925.00	60.0 PK	68.2	-8.2	1.82 H	165	53.0	7.0
6	#5986.54	58.4 PK	68.2	-9.8	1.82 H	165	51.5	6.9
7	11550.00	60.3 PK	74.0	-13.7	2.64 H	144	42.5	17.8
8	11550.00	46.3 AV	54.0	-7.7	2.64 H	144	28.5	17.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5642.95	59.3 PK	68.2	-8.9	2.48 V	4	53.1	6.2
2	#5650.00	60.1 PK	68.2	-8.1	2.48 V	4	54.0	6.1
3	*5775.00	120.7 PK			2.48 V	4	78.7	42.0
4	*5775.00	106.8 AV			2.48 V	4	64.8	42.0
5	#5925.00	60.0 PK	68.2	-8.2	2.48 V	4	53.0	7.0
6	#6000.00	58.8 PK	68.2	-9.4	2.48 V	4	51.9	6.9
7	11550.00	60.5 PK	74.0	-13.5	1.91 V	195	42.7	17.8
8	11550.00	46.7 AV	54.0	-7.3	1.91 V	195	28.9	17.8

Remarks:

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

Mode C

802.11a

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.2 PK	74.0	-14.8	2.82 H	297	45.8	13.4
2	5150.00	48.4 AV	54.0	-5.6	2.82 H	297	35.0	13.4
3	*5180.00	103.9 PK			2.82 H	297	61.4	42.5
4	*5180.00	94.9 AV			2.82 H	297	52.4	42.5
5	#10360.00	60.4 PK	68.2	-7.8	1.77 H	208	37.3	23.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.2 PK	74.0	-13.8	2.59 V	250	46.8	13.4
2	5150.00	49.6 AV	54.0	-4.4	2.59 V	250	36.2	13.4
3	*5180.00	110.5 PK			2.59 V	250	68.0	42.5
4	*5180.00	101.4 AV			2.59 V	250	58.9	42.5
5	#10360.00	60.1 PK	68.2	-8.1	1.50 V	40	37.0	23.1

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.

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	105.2 PK			2.52 H	270	62.8	42.4
2	*5200.00	96.1 AV			2.52 H	270	53.7	42.4
3	#10400.00	62.9 PK	68.2	-5.3	1.68 H	204	39.2	23.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	110.2 PK			2.64 V	249	67.8	42.4
2	*5200.00	100.7 AV			2.64 V	249	58.3	42.4
3	#10400.00	63.1 PK	68.2	-5.1	1.56 V	234	39.4	23.7

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.

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	105.4 PK			2.50 H	268	63.0	42.4
2	*5240.00	96.6 AV			2.50 H	268	54.2	42.4
3	5350.00	60.5 PK	74.0	-13.5	2.50 H	268	47.3	13.2
4	5350.00	48.0 AV	54.0	-6.0	2.50 H	268	34.8	13.2
5	#10480.00	61.5 PK	68.2	-6.7	1.63 H	238	38.7	22.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	110.5 PK			2.51 V	253	68.1	42.4
2	*5240.00	101.4 AV			2.51 V	253	59.0	42.4
3	5350.00	59.6 PK	74.0	-14.4	2.51 V	253	46.4	13.2
4	5350.00	48.2 AV	54.0	-5.8	2.51 V	253	35.0	13.2
5	#10480.00	60.6 PK	68.2	-7.6	1.56 V	247	37.8	22.8

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.

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5619.20	63.1 PK	68.2	-5.1	2.57 H	312	49.4	13.7
2	*5745.00	104.1 PK			2.57 H	312	60.4	43.7
3	*5745.00	95.3 AV			2.57 H	312	51.6	43.7
4	#5930.40	64.2 PK	68.2	-4.0	2.57 H	312	49.6	14.6
5	11490.00	63.1 PK	74.0	-10.9	1.55 H	216	37.9	25.2
6	11490.00	52.2 AV	54.0	-1.8	1.55 H	216	27.0	25.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5621.20	63.3 PK	68.2	-4.9	2.50 V	246	49.5	13.8
2	*5745.00	109.9 PK			2.50 V	246	66.2	43.7
3	*5745.00	100.6 AV			2.50 V	246	56.9	43.7
4	#5958.80	63.3 PK	68.2	-4.9	2.50 V	246	48.7	14.6
5	11490.00	63.4 PK	74.0	-10.6	1.56 V	232	38.2	25.2
6	11490.00	52.8 AV	54.0	-1.2	1.56 V	232	27.6	25.2

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.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5638.40	62.9 PK	68.2	-5.3	2.40 H	286	49.2	13.7
2	*5785.00	104.8 PK			2.40 H	286	60.8	44.0
3	*5785.00	95.4 AV			2.40 H	286	51.4	44.0
4	#5947.60	63.8 PK	68.2	-4.4	2.40 H	286	49.2	14.6
5	11570.00	63.2 PK	74.0	-10.8	1.69 H	243	38.2	25.0
6	11570.00	52.4 AV	54.0	-1.6	1.69 H	243	27.4	25.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5606.80	62.1 PK	68.2	-6.1	2.53 V	293	48.4	13.7
2	*5785.00	109.8 PK			2.53 V	293	65.8	44.0
3	*5785.00	100.6 AV			2.53 V	293	56.6	44.0
4	#5929.60	62.5 PK	68.2	-5.7	2.53 V	293	47.9	14.6
5	11570.00	63.2 PK	74.0	-10.8	1.62 V	211	38.2	25.0
6	11570.00	52.4 AV	54.0	-1.6	1.62 V	211	27.4	25.0

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.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5633.60	62.4 PK	68.2	-5.8	2.42 H	287	48.7	13.7
2	*5825.00	105.2 PK			2.42 H	287	61.2	44.0
3	*5825.00	96.0 AV			2.42 H	287	52.0	44.0
4	#5941.20	65.0 PK	68.2	-3.2	2.42 H	287	50.4	14.6
5	11650.00	63.1 PK	74.0	-10.9	1.52 H	177	38.4	24.7
6	11650.00	52.5 AV	54.0	-1.5	1.52 H	177	27.8	24.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5643.20	62.5 PK	68.2	-5.7	2.57 V	294	48.8	13.7
2	*5825.00	111.2 PK			2.57 V	294	67.2	44.0
3	*5825.00	101.5 AV			2.57 V	294	57.5	44.0
4	#5978.40	64.2 PK	68.2	-4.0	2.57 V	294	49.7	14.5
5	11650.00	63.0 PK	74.0	-11.0	1.58 V	199	38.3	24.7
6	11650.00	52.3 AV	54.0	-1.7	1.58 V	199	27.6	24.7

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.

802.11ax (HE20)

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	59.9 PK	74.0	-14.1	2.82 H	270	46.5	13.4
2	5150.00	49.0 AV	54.0	-5.0	2.82 H	270	35.6	13.4
3	*5180.00	105.2 PK			2.82 H	270	62.7	42.5
4	*5180.00	96.3 AV			2.82 H	270	53.8	42.5
5	#10360.00	61.6 PK	68.2	-6.6	1.62 H	228	38.5	23.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.8 PK	74.0	-13.2	2.58 V	251	47.4	13.4
2	5150.00	50.2 AV	54.0	-3.8	2.58 V	251	36.8	13.4
3	*5180.00	109.7 PK			2.58 V	251	67.2	42.5
4	*5180.00	100.6 AV			2.58 V	251	58.1	42.5
5	#10360.00	61.0 PK	68.2	-7.2	1.54 V	286	37.9	23.1

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.

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	103.2 PK			2.78 H	295	60.8	42.4
2	*5200.00	94.7 AV			2.78 H	295	52.3	42.4
3	#10400.00	62.4 PK	68.2	-5.8	1.64 H	210	38.7	23.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	110.0 PK			2.48 V	250	67.6	42.4
2	*5200.00	101.1 AV			2.48 V	250	58.7	42.4
3	#10400.00	62.0 PK	68.2	-6.2	1.74 V	246	38.3	23.7

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.

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	103.0 PK			2.48 H	297	60.6	42.4
2	*5240.00	94.2 AV			2.48 H	297	51.8	42.4
3	5350.00	59.6 PK	74.0	-14.4	2.48 H	297	46.4	13.2
4	5350.00	47.8 AV	54.0	-6.2	2.48 H	297	34.6	13.2
5	#10480.00	60.7 PK	68.2	-7.5	1.64 H	207	37.9	22.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	110.0 PK			2.50 V	253	67.6	42.4
2	*5240.00	101.0 AV			2.50 V	253	58.6	42.4
3	5350.00	59.1 PK	74.0	-14.9	2.50 V	253	45.9	13.2
4	5350.00	48.2 AV	54.0	-5.8	2.50 V	253	35.0	13.2
5	#10480.00	62.2 PK	68.2	-6.0	1.63 V	213	39.4	22.8

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.

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5622.00	65.1 PK	68.2	-3.1	2.45 H	285	51.3	13.8
2	*5745.00	105.5 PK			2.45 H	285	61.8	43.7
3	*5745.00	96.6 AV			2.45 H	285	52.9	43.7
4	#5954.00	64.2 PK	68.2	-4.0	2.45 H	285	49.6	14.6
5	11490.00	63.0 PK	74.0	-11.0	1.55 H	216	37.8	25.2
6	11490.00	52.3 AV	54.0	-1.7	1.55 H	216	27.1	25.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5643.20	62.9 PK	68.2	-5.3	2.46 V	244	49.2	13.7
2	*5745.00	109.5 PK			2.46 V	244	65.8	43.7
3	*5745.00	100.5 AV			2.46 V	244	56.8	43.7
4	#5974.40	63.4 PK	68.2	-4.8	2.46 V	244	48.9	14.5
5	11490.00	63.4 PK	74.0	-10.6	1.55 V	239	38.2	25.2
6	11490.00	52.7 AV	54.0	-1.3	1.55 V	239	27.5	25.2

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.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5621.20	63.4 PK	68.2	-4.8	2.42 H	285	49.6	13.8
2	*5785.00	105.3 PK			2.42 H	285	61.3	44.0
3	*5785.00	96.4 AV			2.42 H	285	52.4	44.0
4	#5974.00	63.9 PK	68.2	-4.3	2.42 H	285	49.4	14.5
5	11570.00	63.0 PK	74.0	-11.0	1.64 H	219	38.0	25.0
6	11570.00	52.4 AV	54.0	-1.6	1.64 H	219	27.4	25.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5617.60	63.0 PK	68.2	-5.2	2.39 V	252	49.3	13.7
2	*5785.00	110.5 PK			2.39 V	252	66.5	44.0
3	*5785.00	101.0 AV			2.39 V	252	57.0	44.0
4	#5944.40	62.5 PK	68.2	-5.7	2.39 V	252	47.9	14.6
5	11570.00	63.3 PK	74.0	-10.7	1.59 V	230	38.3	25.0
6	11570.00	52.6 AV	54.0	-1.4	1.59 V	230	27.6	25.0

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.

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5637.60	63.6 PK	68.2	-4.6	2.24 H	287	49.9	13.7
2	*5825.00	105.3 PK			2.24 H	287	61.3	44.0
3	*5825.00	96.2 AV			2.24 H	287	52.2	44.0
4	#5955.60	63.8 PK	68.2	-4.4	2.24 H	287	49.2	14.6
5	11650.00	62.5 PK	74.0	-11.5	1.57 H	214	37.8	24.7
6	11650.00	52.0 AV	54.0	-2.0	1.57 H	214	27.3	24.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5637.60	63.6 PK	68.2	-4.6	2.49 V	250	49.9	13.7
2	*5825.00	110.7 PK			2.49 V	250	66.7	44.0
3	*5825.00	101.9 AV			2.49 V	250	57.9	44.0
4	#5935.60	64.5 PK	68.2	-3.7	2.49 V	250	50.0	14.5
5	11650.00	63.0 PK	74.0	-11.0	1.54 V	229	38.3	24.7
6	11650.00	52.4 AV	54.0	-1.6	1.54 V	229	27.7	24.7

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.

802.11ax (HE40)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.4 PK	74.0	-13.6	3.48 H	252	47.0	13.4
2	5150.00	50.2 AV	54.0	-3.8	3.48 H	252	36.8	13.4
3	*5190.00	98.2 PK			3.48 H	252	55.7	42.5
4	*5190.00	90.8 AV			3.48 H	252	48.3	42.5
5	#10380.00	60.9 PK	68.2	-7.3	1.58 H	226	37.5	23.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.9 PK	74.0	-10.1	2.49 V	250	50.5	13.4
2	5150.00	53.6 AV	54.0	-0.4	2.49 V	250	40.2	13.4
3	*5190.00	103.6 PK			2.49 V	250	61.1	42.5
4	*5190.00	94.1 AV			2.49 V	250	51.6	42.5
5	#10380.00	61.3 PK	68.2	-6.9	1.65 V	231	37.9	23.4

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.

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	101.7 PK			3.55 H	255	59.3	42.4
2	*5230.00	92.3 AV			3.55 H	255	49.9	42.4
3	5350.00	59.0 PK	74.0	-15.0	3.55 H	255	45.8	13.2
4	5350.00	48.0 AV	54.0	-6.0	3.55 H	255	34.8	13.2
5	#10460.00	61.3 PK	68.2	-6.9	1.53 H	217	38.2	23.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	105.7 PK			2.55 V	251	63.3	42.4
2	*5230.00	96.1 AV			2.55 V	251	53.7	42.4
3	5350.00	60.5 PK	74.0	-13.5	2.55 V	251	47.3	13.2
4	5350.00	48.5 AV	54.0	-5.5	2.55 V	251	35.3	13.2
5	#10460.00	61.9 PK	68.2	-6.3	1.62 V	208	38.8	23.1

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.

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5615.60	62.5 PK	68.2	-5.7	2.47 H	284	48.8	13.7
2	*5755.00	102.2 PK			2.47 H	284	58.4	43.8
3	*5755.00	93.3 AV			2.47 H	284	49.5	43.8
4	#5976.80	63.7 PK	68.2	-4.5	2.47 H	284	49.2	14.5
5	11510.00	62.8 PK	74.0	-11.2	1.62 H	217	37.7	25.1
6	11510.00	52.3 AV	54.0	-1.7	1.62 H	217	27.2	25.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5627.20	63.8 PK	68.2	-4.4	2.44 V	245	50.1	13.7
2	*5755.00	107.0 PK			2.44 V	245	63.2	43.8
3	*5755.00	98.1 AV			2.44 V	245	54.3	43.8
4	#5955.60	64.1 PK	68.2	-4.1	2.44 V	245	49.5	14.6
5	11510.00	63.1 PK	74.0	-10.9	1.51 V	241	38.0	25.1
6	11510.00	52.7 AV	54.0	-1.3	1.51 V	241	27.6	25.1

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.

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5626.80	62.6 PK	68.2	-5.6	2.41 H	286	48.9	13.7
2	*5795.00	101.8 PK			2.41 H	286	57.8	44.0
3	*5795.00	93.1 AV			2.41 H	286	49.1	44.0
4	#5929.60	63.1 PK	68.2	-5.1	2.41 H	286	48.5	14.6
5	11590.00	62.5 PK	74.0	-11.5	1.55 H	209	37.6	24.9
6	11590.00	52.0 AV	54.0	-2.0	1.55 H	209	27.1	24.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5620.00	63.2 PK	68.2	-5.0	2.43 V	249	49.5	13.7
2	*5795.00	107.4 PK			2.43 V	249	63.4	44.0
3	*5795.00	98.3 AV			2.43 V	249	54.3	44.0
4	#5957.60	64.4 PK	68.2	-3.8	2.43 V	249	49.8	14.6
5	11590.00	63.2 PK	74.0	-10.8	1.58 V	232	38.3	24.9
6	11590.00	52.4 AV	54.0	-1.6	1.58 V	232	27.5	24.9

Remarks:

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

802.11ax (HE80)

CHANNEL	TX Channel 42	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	61.0 PK	74.0	-13.0	3.58 H	256	47.6	13.4
2	5150.00	49.7 AV	54.0	-4.3	3.58 H	256	36.3	13.4
3	*5210.00	91.5 PK			3.58 H	256	49.1	42.4
4	*5210.00	82.2 AV			3.58 H	256	39.8	42.4
5	#10420.00	60.6 PK	68.2	-7.6	1.59 H	194	37.1	23.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	63.5 PK	74.0	-10.5	2.51 V	246	50.1	13.4
2	5150.00	53.9 AV	54.0	-0.1	2.51 V	246	40.5	13.4
3	*5210.00	97.3 PK			2.51 V	246	54.9	42.4
4	*5210.00	87.8 AV			2.51 V	246	45.4	42.4
5	#10420.00	60.8 PK	68.2	-7.4	1.48 V	229	37.3	23.5

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.

CHANNEL	TX Channel 155	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5649.20	62.6 PK	68.2	-5.6	2.67 H	285	48.9	13.7
2	*5775.00	99.6 PK			2.67 H	285	55.8	43.8
3	*5775.00	90.9 AV			2.67 H	285	47.1	43.8
4	#5957.20	63.7 PK	68.2	-4.5	2.67 H	285	49.1	14.6
5	11550.00	62.8 PK	74.0	-11.2	1.49 H	214	37.8	25.0
6	11550.00	52.3 AV	54.0	-1.7	1.49 H	214	27.3	25.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5645.60	67.1 PK	68.2	-1.1	2.33 V	250	53.4	13.7
2	*5775.00	104.6 PK			2.33 V	250	60.8	43.8
3	*5775.00	95.7 AV			2.33 V	250	51.9	43.8
4	#5962.40	60.7 PK	68.2	-7.5	2.33 V	250	46.1	14.6
5	11550.00	63.4 PK	74.0	-10.6	1.57 V	238	38.4	25.0
6	11550.00	52.8 AV	54.0	-1.2	1.57 V	238	27.8	25.0

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.

Below 1GHz Worst-Case Data:

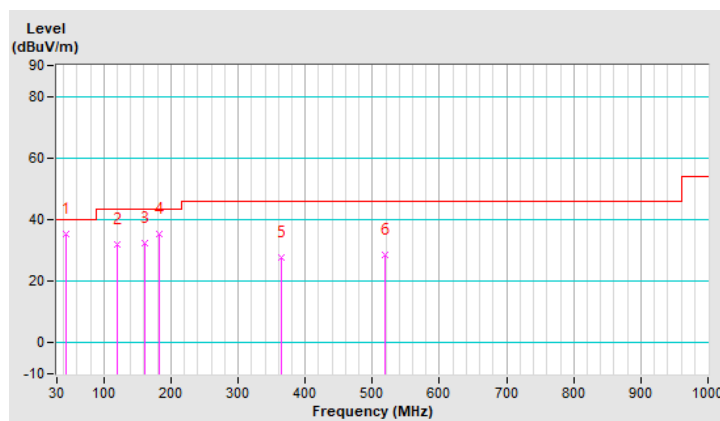
802.11ax (HE20)

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	44.06	35.2 QP	40.0	-4.8	1.51 H	232	44.4	-9.2
2	119.97	32.0 QP	43.5	-11.5	1.51 H	79	42.8	-10.8
3	160.74	32.4 QP	43.5	-11.1	1.51 H	260	40.8	-8.4
4	181.83	35.4 QP	43.5	-8.1	1.51 H	231	45.4	-10.0
5	364.58	27.6 QP	46.0	-18.4	1.00 H	130	32.8	-5.2
6	519.22	28.5 QP	46.0	-17.5	1.00 H	16	30.4	-1.9

Remarks:

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

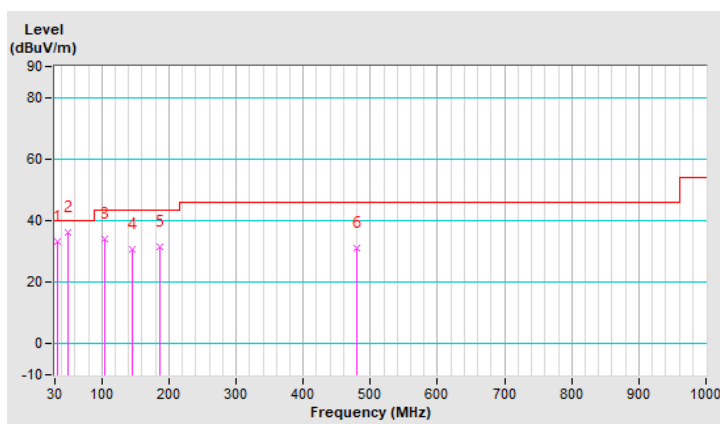


CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	34.22	33.4 QP	40.0	-6.6	1.00 V	198	43.9	-10.5
2	49.68	36.3 QP	40.0	-3.7	1.00 V	44	45.4	-9.1
3	104.51	33.9 QP	43.5	-9.6	1.00 V	101	46.3	-12.4
4	145.28	30.5 QP	43.5	-13.0	1.00 V	19	39.2	-8.7
5	186.04	31.6 QP	43.5	-11.9	1.00 V	217	42.0	-10.4
6	479.86	31.1 QP	46.0	-14.9	1.00 V	330	33.7	-2.6

Remarks:

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

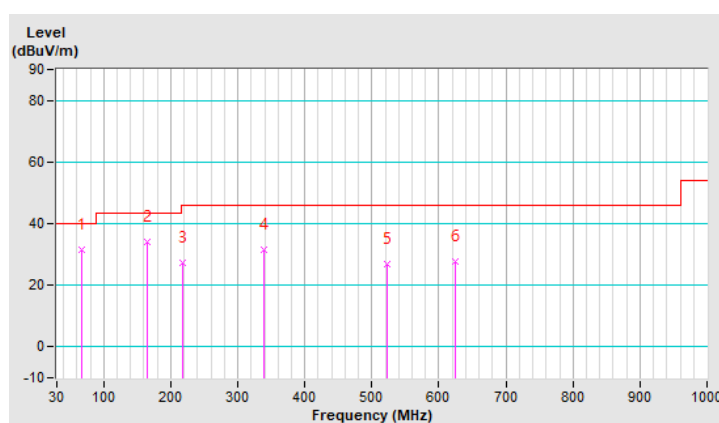


CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	66.55	31.6 QP	40.0	-8.4	1.00 H	11	41.9	-10.3
2	164.96	34.1 QP	43.5	-9.4	1.00 H	93	42.7	-8.6
3	216.97	27.5 QP	46.0	-18.5	1.00 H	238	38.1	-10.6
4	339.28	31.7 QP	46.0	-14.3	2.00 H	71	37.5	-5.8
5	522.03	26.7 QP	46.0	-19.3	1.50 H	281	28.6	-1.9
6	624.65	27.8 QP	46.0	-18.2	1.00 H	250	27.0	0.8

Remarks:

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

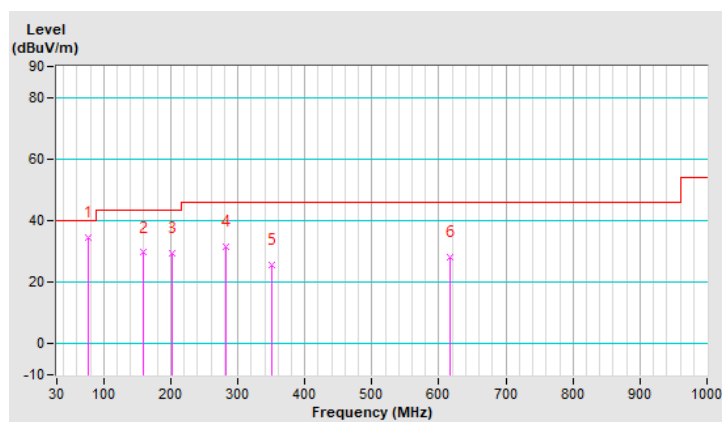


CHANNEL	TX Channel 149	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	77.80	34.5 QP	40.0	-5.5	1.00 V	66	47.3	-12.8
2	159.33	29.6 QP	43.5	-13.9	1.00 V	43	37.9	-8.3
3	202.91	29.3 QP	43.5	-14.2	1.00 V	27	40.6	-11.3
4	281.64	31.6 QP	46.0	-14.4	1.50 V	99	38.5	-6.9
5	350.52	25.7 QP	46.0	-20.3	1.00 V	122	31.3	-5.6
6	616.22	28.1 QP	46.0	-17.9	2.00 V	322	27.3	0.8

Remarks:

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



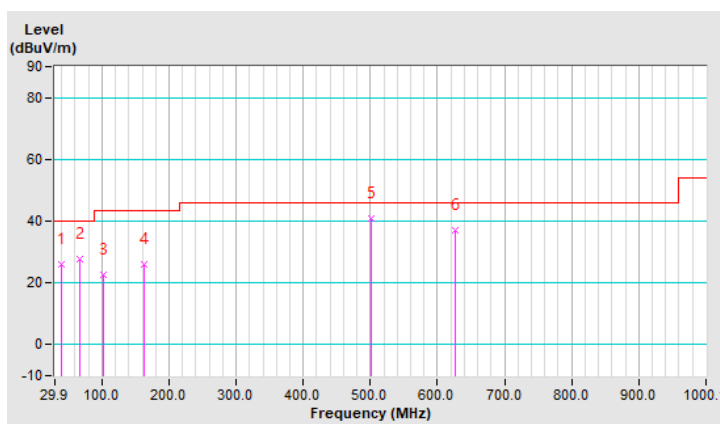
802.11ac (VHT20)

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	C

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	40.57	25.9 QP	40.0	-14.1	1.00 H	112	35.3	-9.4
2	67.74	27.9 QP	40.0	-12.1	1.00 H	99	38.4	-10.5
3	101.69	22.7 QP	43.5	-20.8	1.00 H	18	35.8	-13.1
4	162.82	26.2 QP	43.5	-17.3	1.49 H	138	35.1	-8.9
5	500.45	40.9 QP	46.0	-5.1	1.00 H	121	44.8	-3.9
6	625.60	36.9 QP	46.0	-9.1	1.00 H	109	37.4	-0.5

Remarks:

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

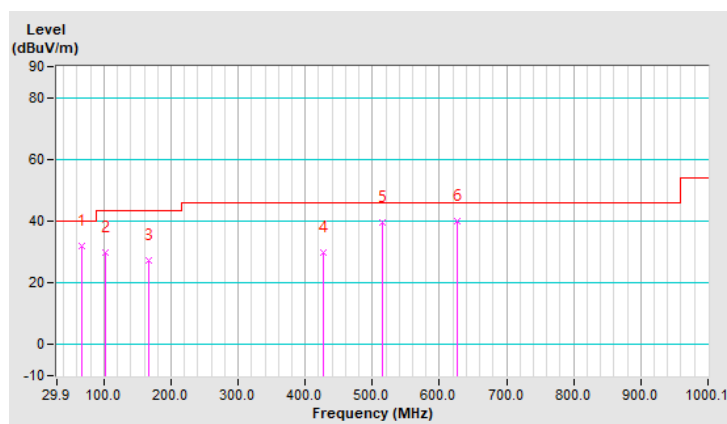


CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	C

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	67.74	31.9 QP	40.0	-8.1	1.50 V	358	42.4	-10.5
2	101.69	29.9 QP	43.5	-13.6	1.50 V	319	43.0	-13.1
3	166.70	27.5 QP	43.5	-16.0	1.26 V	223	36.5	-9.0
4	426.71	29.8 QP	46.0	-16.2	1.26 V	198	35.1	-5.3
5	515.97	39.5 QP	46.0	-6.5	1.26 V	293	43.1	-3.6
6	625.60	39.8 QP	46.0	-6.2	1.26 V	302	40.3	-0.5

Remarks:

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

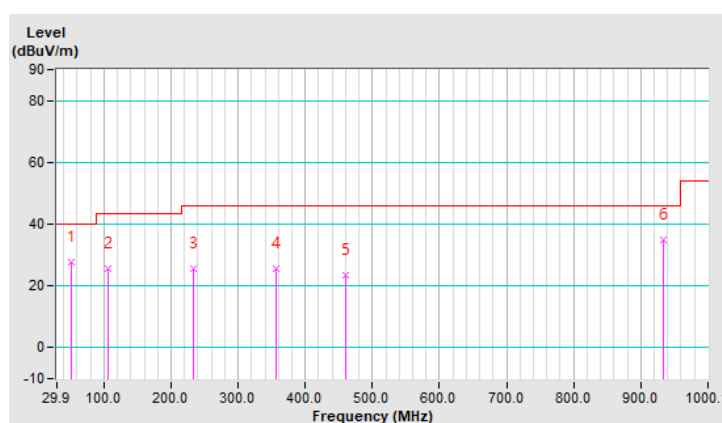


CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	D

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	51.24	27.9 QP	40.0	-12.1	1.50 H	65	36.8	-8.9
2	105.58	25.7 QP	43.5	-17.8	1.50 H	273	38.2	-12.5
3	233.64	25.8 QP	46.0	-20.2	1.00 H	280	36.6	-10.8
4	356.86	25.4 QP	46.0	-20.6	2.00 H	310	32.0	-6.6
5	459.70	23.5 QP	46.0	-22.5	1.00 H	221	28.0	-4.5
6	933.16	34.9 QP	46.0	-11.1	1.00 H	192	28.0	6.9

Remarks:

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

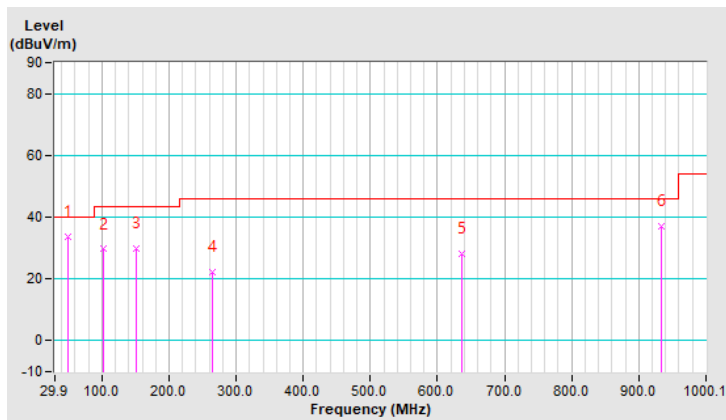


CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	D

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	50.27	33.5 QP	40.0	-6.5	2.00 V	249	42.4	-8.9
2	101.69	29.6 QP	43.5	-13.9	2.00 V	204	42.7	-13.1
3	150.20	30.0 QP	43.5	-13.5	1.50 V	186	38.7	-8.7
4	264.69	22.4 QP	46.0	-23.6	2.00 V	250	31.3	-8.9
5	635.30	28.1 QP	46.0	-17.9	1.00 V	205	28.5	-0.4
6	934.13	36.9 QP	46.0	-9.1	2.00 V	111	30.0	6.9

Remarks:

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



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

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

4.2.2 Test Instruments

Tested date: Aug. 31, 2020~ Jun. 06, 2021

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Dec. 31, 2019	Dec. 30, 2020
		100613	Dec. 04, 2020	Dec. 03, 2021
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 04, 2020	Sep. 03, 2021
LISN/AMN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 20, 2020	Feb. 19, 2021
			Feb. 25, 2021	Feb. 24, 2022
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 28, 2020	Aug. 27, 2021
Software ADT	BV ADT_Conc_ V7.3.7.4	NA	NA	NA

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

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

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

4.2.3 Test Procedures

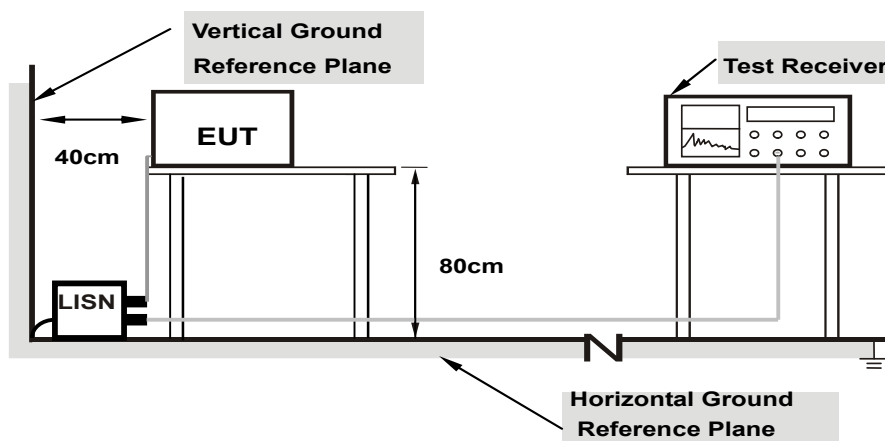
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data:

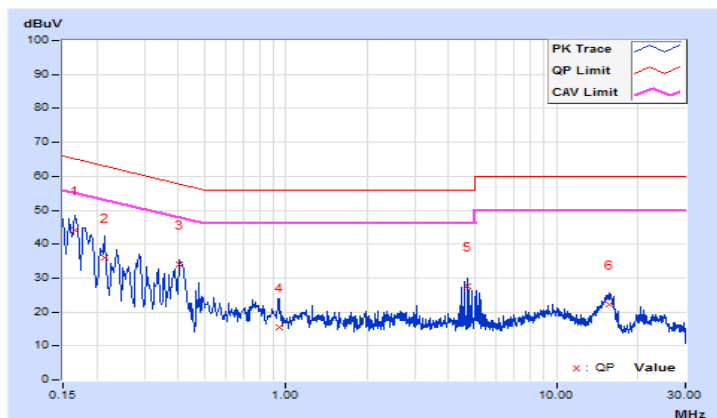
802.11ax (HE20)

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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16600	9.83	34.24	21.20	44.07	31.03	65.16	55.16	-21.09	-24.13
2	0.21400	9.85	26.01	13.94	35.86	23.79	63.05	53.05	-27.19	-29.26
3	0.40600	9.87	24.24	19.49	34.11	29.36	57.73	47.73	-23.62	-18.37
4	0.94200	9.91	5.45	0.30	15.36	10.21	56.00	46.00	-40.64	-35.79
5	4.67400	10.01	17.52	3.70	27.53	13.71	56.00	46.00	-28.47	-32.29
6	15.69400	10.16	12.07	7.61	22.23	17.77	60.00	50.00	-37.77	-32.23

Remarks:

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

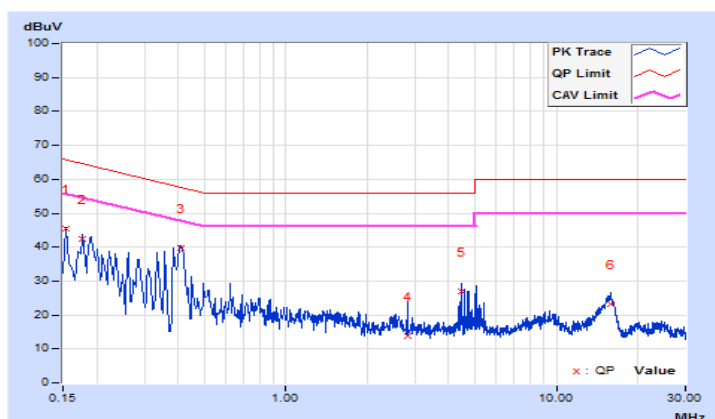


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	9.84	35.55	25.89	45.39	35.73	65.78	55.78	-20.39	-20.05
2	0.17800	9.85	32.65	20.87	42.50	30.72	64.58	54.58	-22.08	-23.86
3	0.40712	9.90	29.86	26.06	39.76	35.96	57.71	47.71	-17.95	-11.75
4	2.83000	10.02	3.88	1.22	13.90	11.24	56.00	46.00	-42.10	-34.76
5	4.47400	10.05	16.91	2.72	26.96	12.77	56.00	46.00	-29.04	-33.23
6	15.86200	10.26	12.90	8.55	23.16	18.81	60.00	50.00	-36.84	-31.19

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.

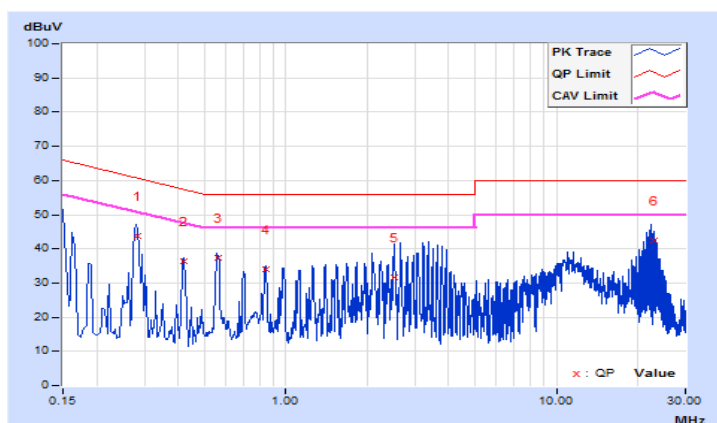


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.28200	9.66	34.08	32.64	43.74	42.30	60.76	50.76	-17.02	-8.46
2	0.41799	9.66	26.77	25.22	36.43	34.88	57.49	47.49	-21.06	-12.61
3	0.55998	9.66	27.62	26.90	37.28	36.56	56.00	46.00	-18.72	-9.44
4	0.84019	9.67	24.32	22.54	33.99	32.21	56.00	46.00	-22.01	-13.79
5	2.50600	9.71	22.02	10.63	31.73	20.34	56.00	46.00	-24.27	-25.66
6	22.89400	9.85	32.71	31.76	42.56	41.61	60.00	50.00	-17.44	-8.39

Remarks:

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

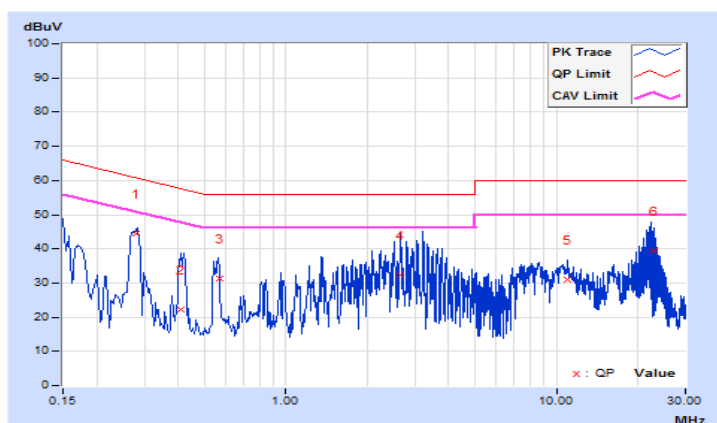


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.27859	9.68	34.75	33.32	44.43	43.00	60.86	50.86	-16.43	-7.86
2	0.40712	9.68	12.42	0.51	22.10	10.19	57.71	47.71	-35.61	-37.52
3	0.56600	9.68	21.79	14.74	31.47	24.42	56.00	46.00	-24.53	-21.58
4	2.63400	9.74	22.49	4.09	32.23	13.83	56.00	46.00	-23.77	-32.17
5	10.92600	9.85	21.22	4.96	31.07	14.81	60.00	50.00	-28.93	-35.19
6	22.88600	9.97	29.52	27.70	39.49	37.67	60.00	50.00	-20.51	-12.33

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.



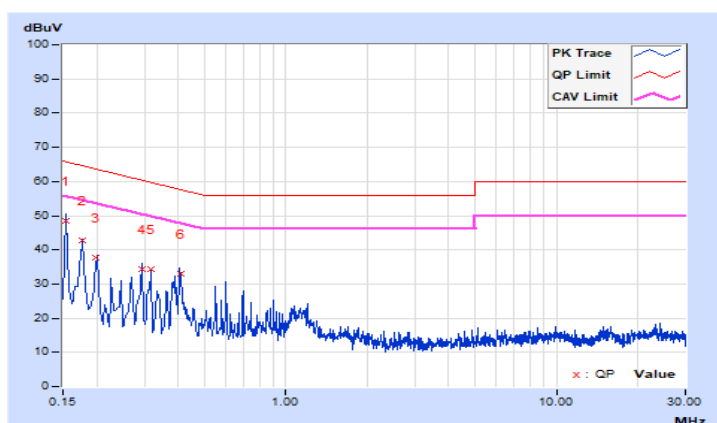
802.11ac (VHT20)

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

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	9.76	38.60	20.73	48.36	30.49	65.78	55.78	-17.42	-25.29
2	0.17661	9.76	33.09	17.07	42.85	26.83	64.64	54.64	-21.79	-27.81
3	0.19884	9.77	28.09	9.63	37.86	19.40	63.66	53.66	-25.80	-34.26
4	0.29289	9.80	24.51	7.31	34.31	17.11	60.44	50.44	-26.13	-33.33
5	0.31698	9.81	24.59	7.40	34.40	17.21	59.79	49.79	-25.39	-32.58
6	0.41000	9.83	23.27	19.28	33.10	29.11	57.65	47.65	-24.55	-18.54

Remarks:

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

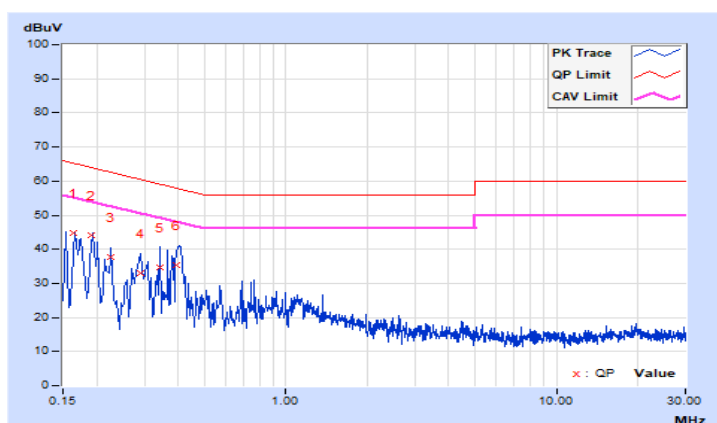


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	C		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16492	9.81	34.92	19.36	44.73	29.17	65.21	55.21	-20.48	-26.04
2	0.19114	9.83	34.20	16.97	44.03	26.80	63.99	53.99	-19.96	-27.19
3	0.22446	9.84	27.88	12.56	37.72	22.40	62.65	52.65	-24.93	-30.25
4	0.28906	9.86	22.98	11.23	32.84	21.09	60.55	50.55	-27.71	-29.46
5	0.34124	9.88	24.83	10.60	34.71	20.48	59.17	49.17	-24.46	-28.69
6	0.39238	9.90	25.60	16.18	35.50	26.08	58.01	48.01	-22.51	-21.93

Remarks:

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

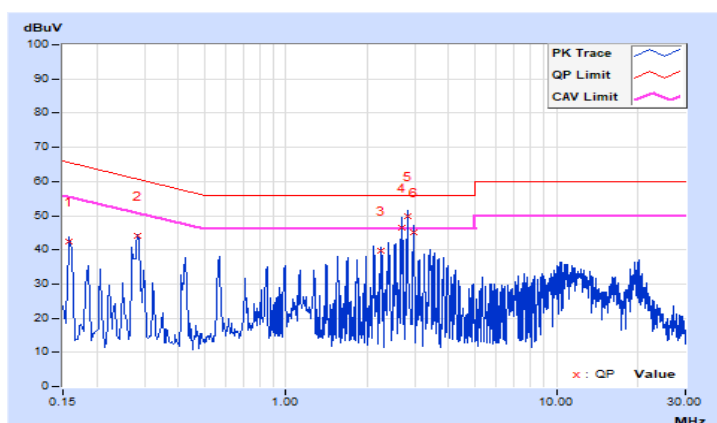


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	D		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	9.67	32.59	3.79	42.26	13.46	65.57	55.57	-23.31	-42.11
2	0.28200	9.68	34.55	33.53	44.23	43.21	60.76	50.76	-16.53	-7.55
3	2.23800	9.73	30.00	3.83	39.73	13.56	56.00	46.00	-16.27	-32.44
4	2.69000	9.74	36.81	20.11	46.55	29.85	56.00	46.00	-9.45	-16.15
5	2.81000	9.74	40.18	17.64	49.92	27.38	56.00	46.00	-6.08	-18.62
6	2.96200	9.74	35.48	7.07	45.22	16.81	56.00	46.00	-10.78	-29.19

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.

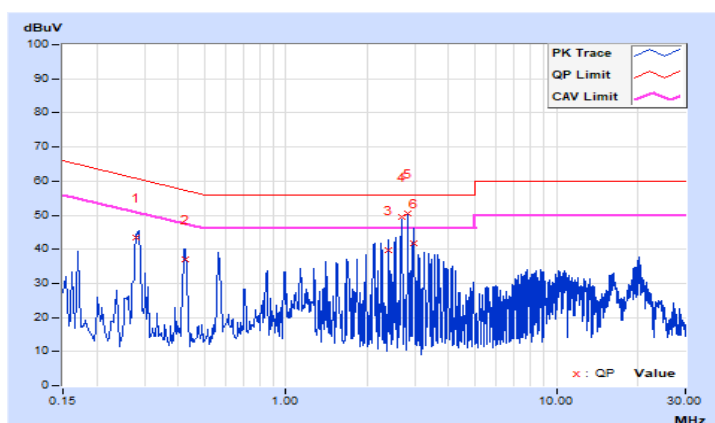


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	D		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.27786	9.75	33.52	29.32	43.27	39.07	60.88	50.88	-17.61	-11.81
2	0.42600	9.76	27.41	25.81	37.17	35.57	57.33	47.33	-20.16	-11.76
3	2.40600	9.80	29.79	21.04	39.59	30.84	56.00	46.00	-16.41	-15.16
4	2.67800	9.81	39.71	19.38	49.52	29.19	56.00	46.00	-6.48	-16.81
5	2.82600	9.81	40.73	26.18	50.54	35.99	56.00	46.00	-5.46	-10.01
6	2.96200	9.81	31.98	19.39	41.79	29.20	56.00	46.00	-14.21	-16.80

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 $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
	√	Indoor Access Point	1 Watt (30 dBm)
		Mobile and Portable client device	250mW (24 dBm)
U-NII-2A			250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C			250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

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

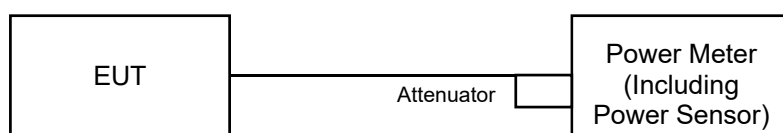
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

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

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

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

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Mode A

CDD Mode

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.24	19.02	19.34	19.11	331.117	25.20	30.00	Pass
40	5200	19.18	19.08	19.12	19.00	324.795	25.12	30.00	Pass
48	5240	19.16	19.06	19.07	19.03	323.659	25.10	30.00	Pass
149	5745	21.55	21.51	21.39	21.27	556.157	27.45	30.00	Pass
157	5785	21.44	21.77	21.48	21.19	561.757	27.50	30.00	Pass
165	5825	21.45	21.56	21.03	21.25	542.973	27.35	30.00	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	20.09	20.08	20.52	19.96	415.756	26.19	30.00	Pass
40	5200	20.22	19.95	20.22	19.91	407.197	26.10	30.00	Pass
48	5240	20.19	20.18	20.21	19.96	412.741	26.16	30.00	Pass
149	5745	21.68	21.49	21.53	21.32	565.912	27.53	30.00	Pass
157	5785	21.38	21.51	21.18	21.08	538.437	27.31	30.00	Pass
165	5825	21.43	21.63	21.03	21.18	542.526	27.34	30.00	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	20.63	20.43	20.89	20.59	463.314	26.66	30.00	Pass
46	5230	18.13	18.01	18.01	18.13	256.523	24.09	30.00	Pass
151	5755	21.53	21.61	21.35	21.22	556.003	27.45	30.00	Pass
159	5795	21.43	21.62	21.19	21.18	546.949	27.38	30.00	Pass

802.11ac (VHT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	20.13	20.13	20.56	20.01	420.070	26.23	30.00	Pass
40	5200	20.26	20.02	20.28	19.98	412.831	26.16	30.00	Pass
48	5240	20.22	20.26	20.24	20.01	417.278	26.20	30.00	Pass
149	5745	21.72	21.53	21.57	21.36	571.148	27.57	30.00	Pass
157	5785	21.43	21.56	21.23	21.12	544.373	27.36	30.00	Pass
165	5825	21.48	21.68	21.06	21.22	547.914	27.39	30.00	Pass

802.11ac (VHT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	20.68	20.48	20.91	20.63	467.558	26.70	30.00	Pass
46	5230	18.16	18.09	18.11	18.19	260.512	24.16	30.00	Pass
151	5755	21.56	21.68	21.41	21.29	563.393	27.51	30.00	Pass
159	5795	21.51	21.68	21.26	21.23	555.210	27.44	30.00	Pass

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	19.75	19.32	19.52	19.33	355.153	25.50	30.00	Pass
155	5775	21.43	21.53	21.06	21.22	541.306	27.33	30.00	Pass

802.11ax (HE20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	20.16	20.17	20.62	20.04	424.015	26.27	30.00	Pass
40	5200	20.33	20.03	20.40	20.03	418.929	26.22	30.00	Pass
48	5240	20.44	20.32	20.35	20.07	428.326	26.32	30.00	Pass
149	5745	21.84	21.67	21.66	21.44	585.520	27.68	30.00	Pass
157	5785	21.53	21.67	21.33	21.23	557.696	27.46	30.00	Pass
165	5825	21.62	21.88	21.15	21.35	566.156	27.53	30.00	Pass

802.11ax (HE40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	20.74	20.61	21.03	20.68	477.372	26.79	30.00	Pass
46	5230	18.31	18.11	18.17	18.36	266.642	24.26	30.00	Pass
151	5755	21.78	21.81	21.51	21.41	582.302	27.65	30.00	Pass
159	5795	21.61	21.85	21.41	21.44	575.658	27.60	30.00	Pass

802.11ax (HE80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	19.86	19.45	19.66	19.49	366.323	25.64	30.00	Pass
155	5775	21.61	21.71	21.25	21.43	565.476	27.52	30.00	Pass

Beamforming Mode

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.59	19.58	20.02	19.46	370.543	25.69	26.07	Pass
40	5200	19.72	19.45	19.72	19.41	362.914	25.60	26.07	Pass
48	5240	19.61	19.62	19.79	19.46	366.621	25.64	26.07	Pass
149	5745	19.68	19.49	19.53	19.32	357.066	25.53	26.07	Pass
157	5785	19.38	19.51	19.18	19.08	339.731	25.31	26.07	Pass
165	5825	19.43	19.63	19.53	19.18	352.070	25.47	26.07	Pass

Note: Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30-(9.93-6) = 26.07\text{dBm}$.

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	19.63	19.43	19.89	19.59	368.024	25.66	26.07	Pass
46	5230	18.13	18.01	18.01	18.13	256.508	24.09	26.07	Pass
151	5755	20.03	20.11	19.85	19.78	394.924	25.97	26.07	Pass
159	5795	19.97	20.12	19.61	19.62	385.147	25.86	26.07	Pass

Note: Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30-(9.93-6) = 26.07\text{dBm}$.

802.11ac (VHT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.67	19.67	20.06	19.59	377.748	25.77	26.07	Pass
40	5200	19.84	19.52	19.72	19.48	368.391	25.66	26.07	Pass
48	5240	19.78	19.74	19.76	19.51	373.204	25.72	26.07	Pass
149	5745	19.72	19.53	19.57	19.36	360.370	25.57	26.07	Pass
157	5785	19.43	19.56	19.23	19.12	343.476	25.36	26.07	Pass
165	5825	19.48	19.68	20.06	20.22	388.200	25.89	26.07	Pass

Note: Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30-(9.93-6) = 26.07\text{dBm}$.

802.11ac (VHT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	19.72	19.48	19.91	19.87	377.472	25.77	26.07	Pass
46	5230	18.16	18.09	18.11	18.19	260.512	24.16	26.07	Pass
151	5755	19.56	19.68	19.41	19.29	355.477	25.51	26.07	Pass
159	5795	19.51	19.68	19.26	19.23	350.314	25.44	26.07	Pass

Note: Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30-(9.93-6) = 26.07\text{dBm}$.

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	19.75	19.32	19.52	19.33	355.153	25.50	26.07	Pass
155	5775	19.97	20.03	19.56	19.72	384.126	25.84	26.07	Pass

Note: Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30-(9.93-6) = 26.07\text{dBm}$.

802.11ax (HE20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	19.74	19.73	20.12	19.56	381.328	25.81	26.07	Pass
40	5200	19.83	19.53	19.90	19.53	373.371	25.72	26.07	Pass
48	5240	19.96	19.78	19.85	19.74	384.938	25.85	26.07	Pass
149	5745	19.84	19.67	19.66	19.44	369.438	25.68	26.07	Pass
157	5785	19.53	19.67	19.33	19.23	351.883	25.46	26.07	Pass
165	5825	19.62	19.88	19.15	19.35	357.220	25.53	26.07	Pass

Note: Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30-(9.93-6) = 26.07\text{dBm}$.

802.11ax (HE40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	19.86	19.89	20.03	19.72	388.776	25.90	26.07	Pass
46	5230	18.31	18.11	18.17	18.36	266.642	24.26	26.07	Pass
151	5755	19.78	19.81	19.51	19.41	367.408	25.65	26.07	Pass
159	5795	19.61	19.85	19.41	19.44	363.216	25.60	26.07	Pass

Note: Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30-(9.93-6) = 26.07\text{dBm}$.

802.11ax (HE80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	19.86	19.45	19.66	19.49	366.323	25.64	26.07	Pass
155	5775	19.69	19.79	19.58	19.67	371.855	25.70	26.07	Pass

Note: Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the power limit shall be reduced to $30-(9.93-6) = 26.07\text{dBm}$.

Mode C

CDD Mode

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	46.774	16.70	30.00	Pass
40	5200	45.920	16.62	30.00	Pass
48	5240	47.098	16.73	30.00	Pass
149	5745	47.315	16.75	30.00	Pass
157	5785	43.853	16.42	30.00	Pass
165	5825	41.591	16.19	30.00	Pass

802.11ac (VHT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	48.084	16.82	30.00	Pass
40	5200	47.315	16.75	30.00	Pass
48	5240	49.091	16.91	30.00	Pass
149	5745	48.865	16.89	30.00	Pass
157	5785	44.875	16.52	30.00	Pass
165	5825	42.855	16.32	30.00	Pass

802.11ac (VHT40)

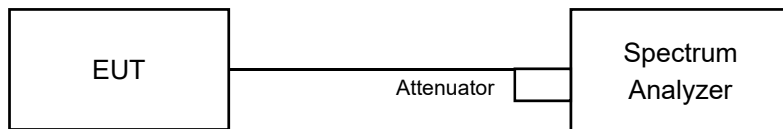
Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	20.606	13.14	30.00	Pass
46	5230	43.251	16.36	30.00	Pass
151	5755	43.152	16.35	30.00	Pass
159	5795	38.994	15.91	30.00	Pass

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	9.506	9.78	30.00	Pass
155	5775	40.458	16.07	30.00	Pass

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Result

Mode A

802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	16.56	16.44	16.44	16.44
40	5200	16.44	16.44	16.32	16.32
48	5240	16.44	16.44	16.44	16.44

802.11ax (HE20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	18.96	18.96	18.96	18.96
40	5200	18.96	18.96	18.96	18.96
48	5240	18.96	18.96	18.96	18.96

802.11ax (HE40)

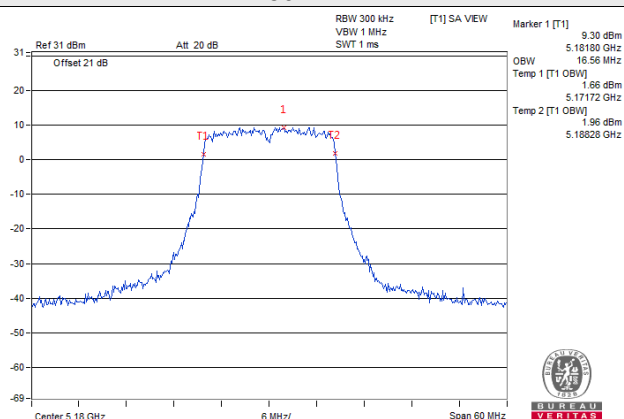
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
38	5190	37.80	37.60	37.80	37.60
46	5230	38.00	37.80	38.00	37.60

802.11ax (HE80)

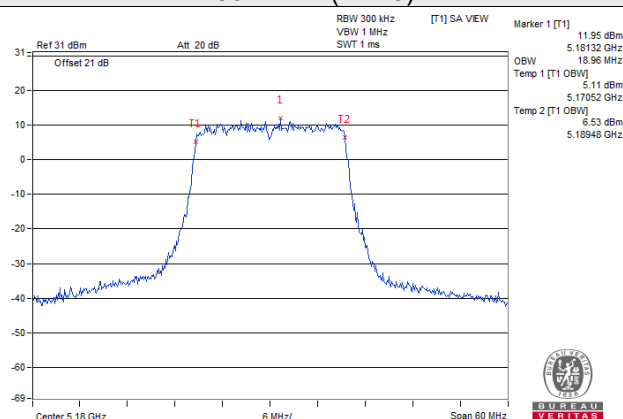
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	77.04	77.04	77.28	77.04

Spectrum Plot of Worst Value

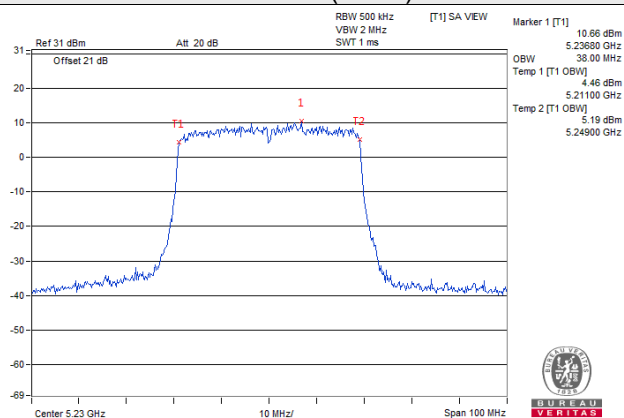
802.11a



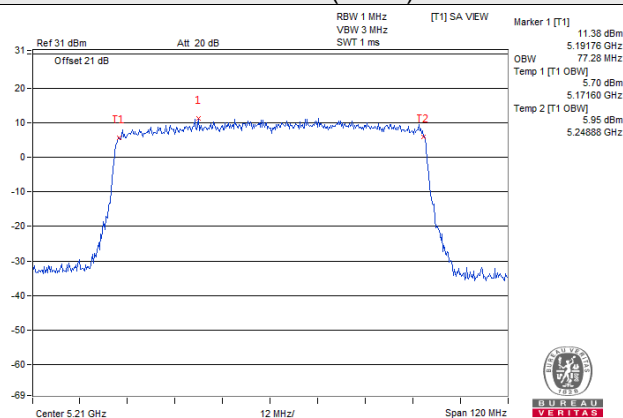
802.11ax (HE20)



802.11ax (HE40)

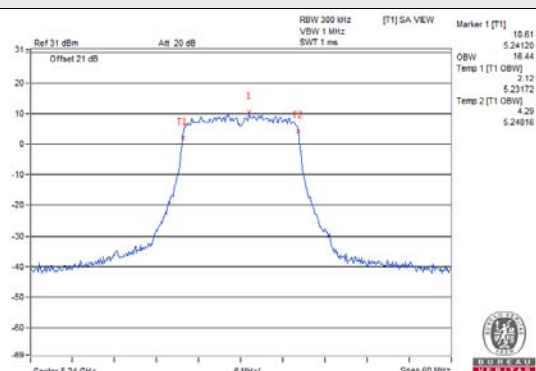


802.11ax (HE80)

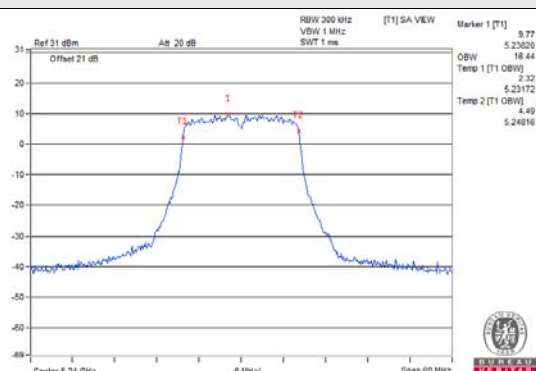


Spectrum Plot for near By DFS Band

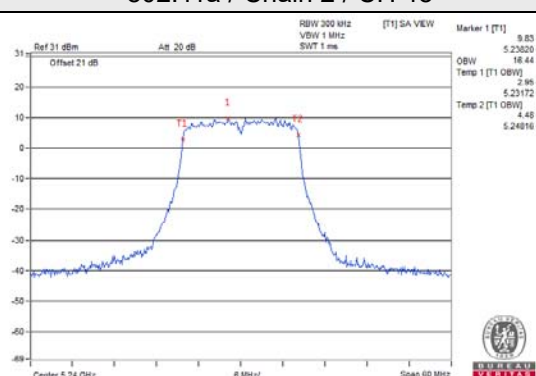
802.11a / Chain 0 / CH 48



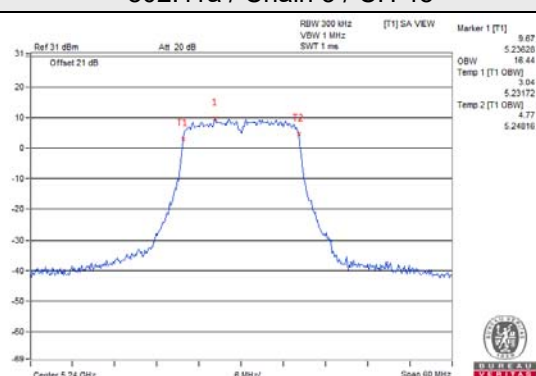
802.11a / Chain 1 / CH 48



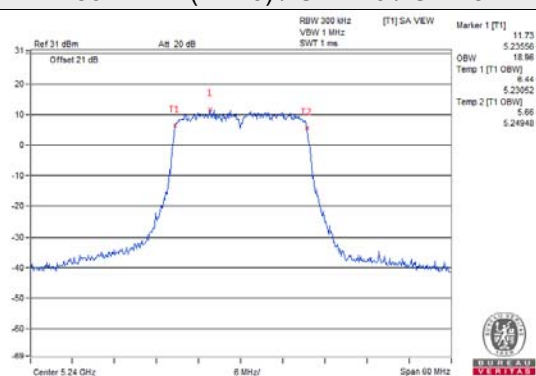
802.11a / Chain 2 / CH 48



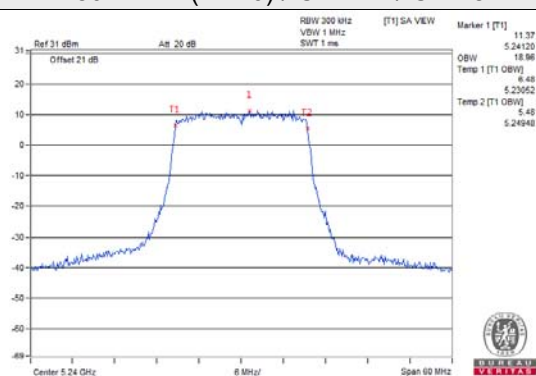
802.11a / Chain 3 / CH 48



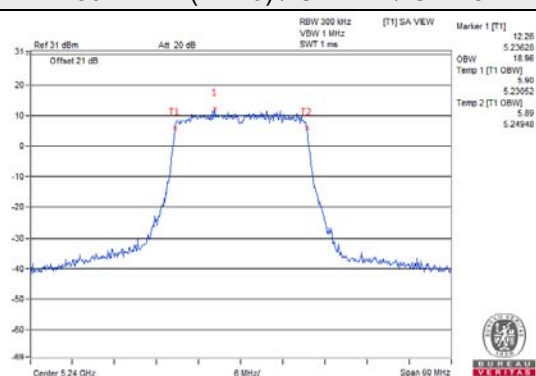
802.11ax (HE20) / Chain 0 / CH 48



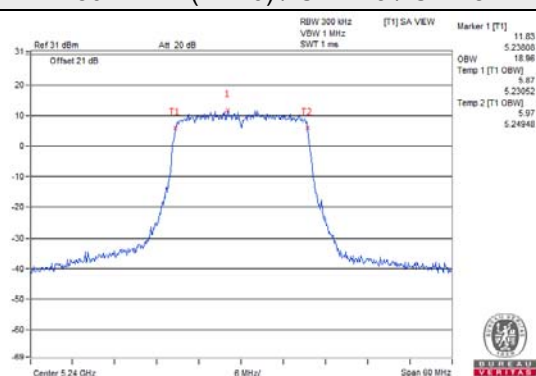
802.11ax (HE20) / Chain 1 / CH 48



802.11ax (HE20) / Chain 2 / CH 48

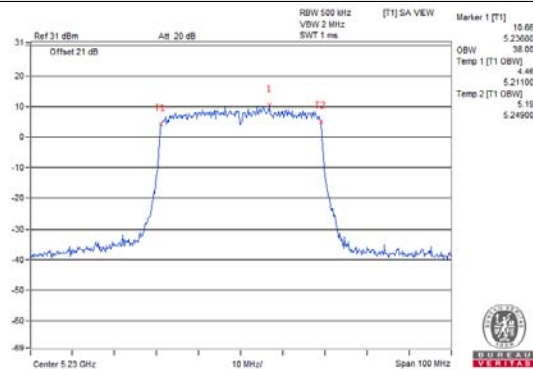


802.11ax (HE20) / Chain 3 / CH 48

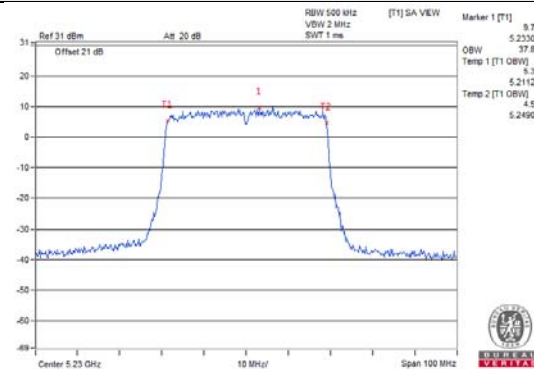


Spectrum Plot for near By DFS Band

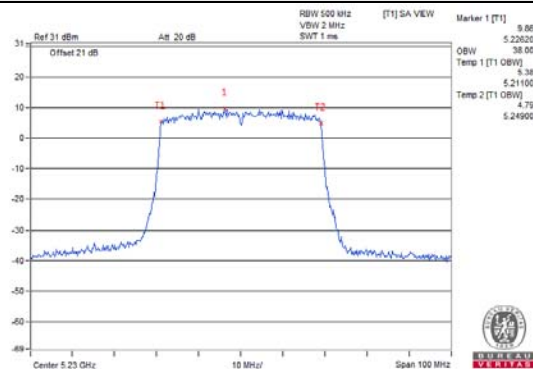
802.11ax (HE40) / Chain 0 / CH 46



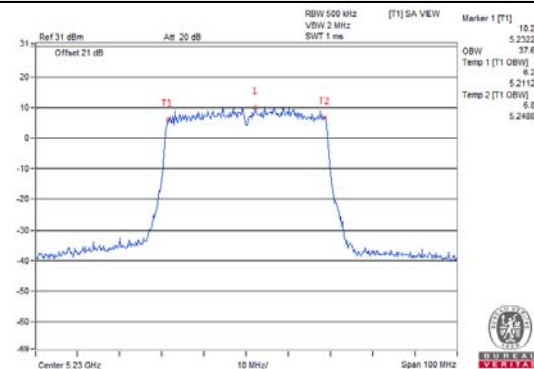
802.11ax (HE40) / Chain 1 / CH 46



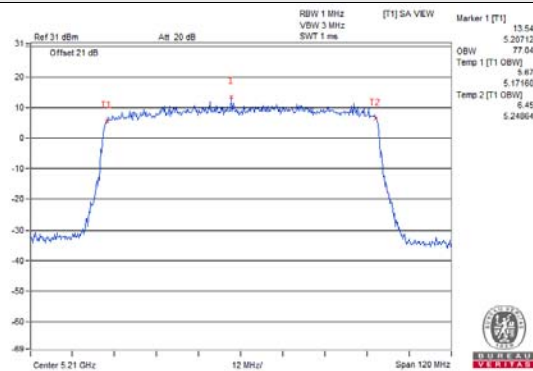
802.11ax (HE40) / Chain 2 / CH 46



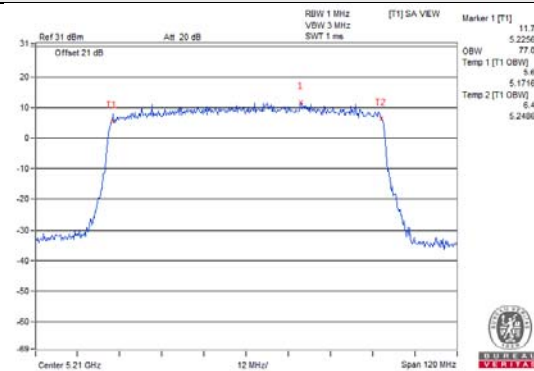
802.11ax (HE40) / Chain 3 / CH 46



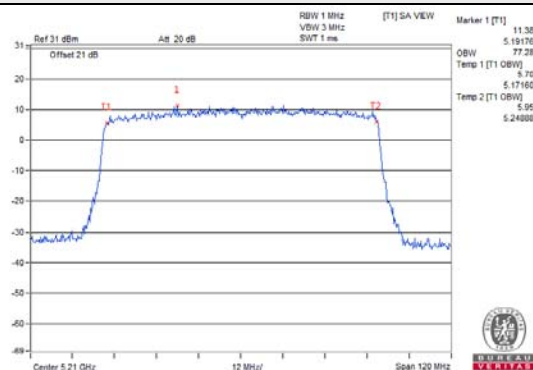
802.11ax (HE80) / Chain 0 / CH 42



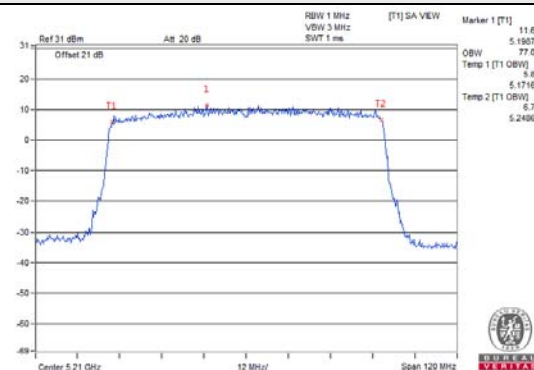
802.11ax (HE80) / Chain 1 / CH 42



802.11ax (HE80) / Chain 2 / CH 42



802.11ax (HE80) / Chain 3 / CH 42



802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
149	5745	16.43	16.40	16.40	16.40
157	5785	16.40	16.40	16.40	16.40
165	5825	16.50	16.50	16.50	16.50

802.11ax (HE20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
149	5745	18.96	19.00	19.00	19.00
157	5785	18.90	18.90	18.90	18.90
165	5825	19.00	19.00	19.00	19.00

802.11ax (HE40)

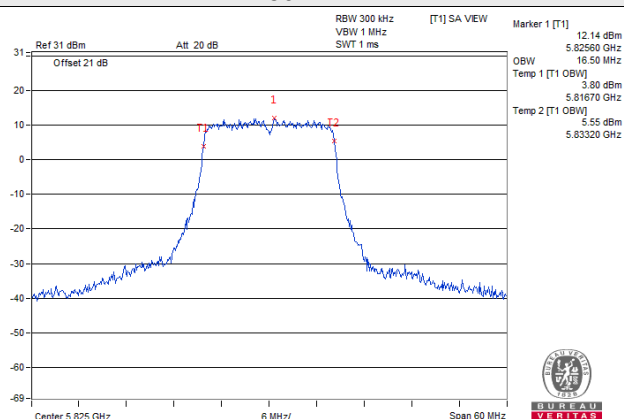
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
151	5755	37.68	37.83	37.66	37.83
159	5795	37.83	37.83	37.83	37.83

802.11ax (HE80)

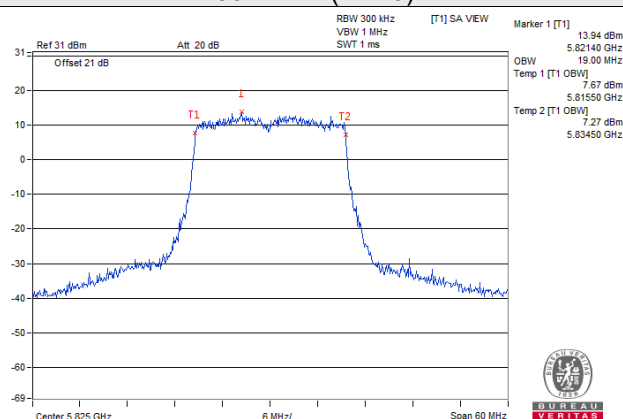
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
155	5775	77.10	77.00	77.00	77.00

Spectrum Plot of Worst Value

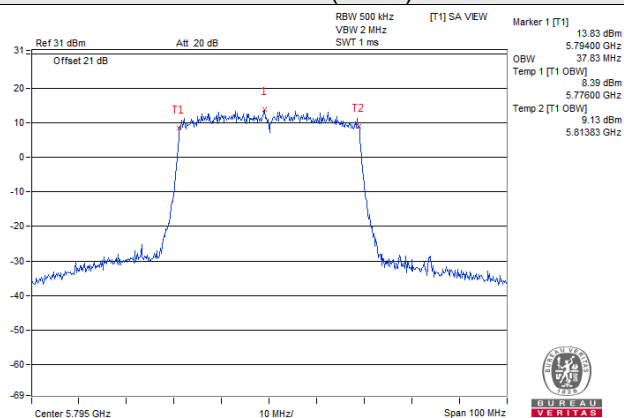
802.11a



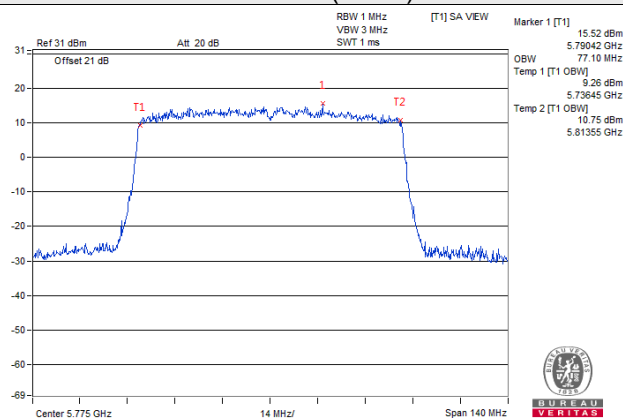
802.11ax (HE20)



802.11ax (HE40)

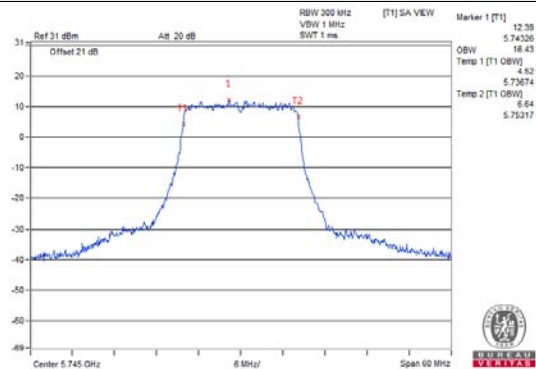


802.11ax (HE80)

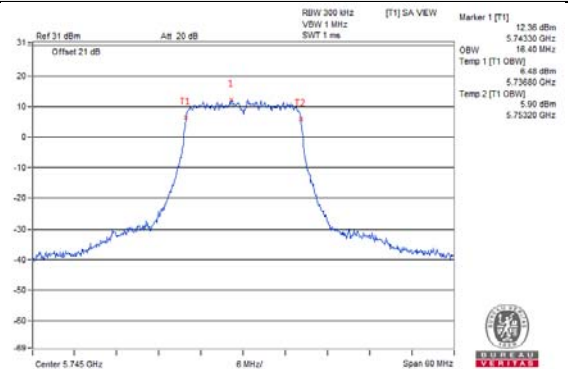


Spectrum Plot for near By DFS Band

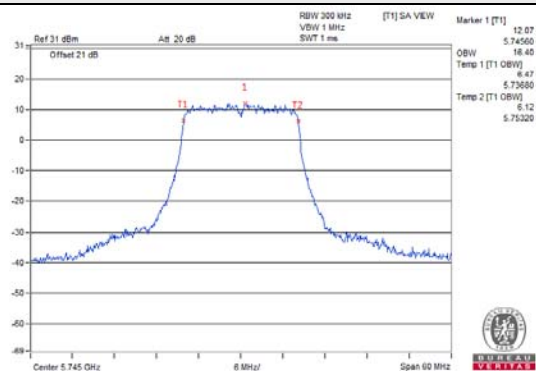
802.11a / Chain 0 / CH 149



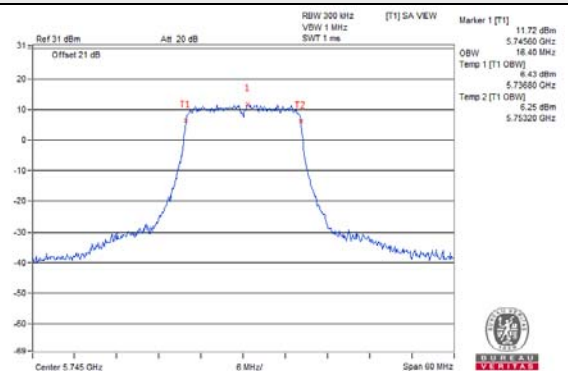
802.11a / Chain 1 / CH 149



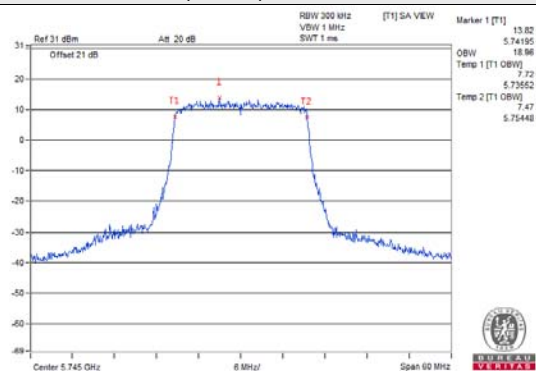
802.11a / Chain 2 / CH 149



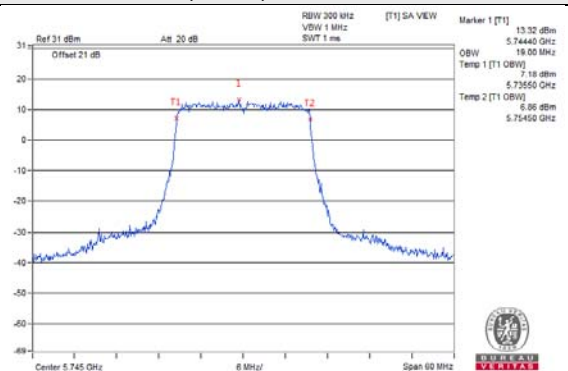
802.11a / Chain 3 / CH 149



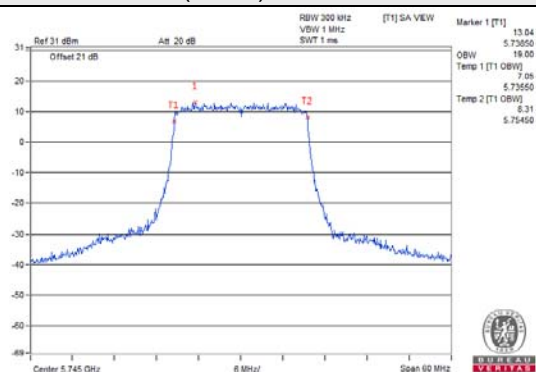
802.11ax (HE20) / Chain 0 / CH 149



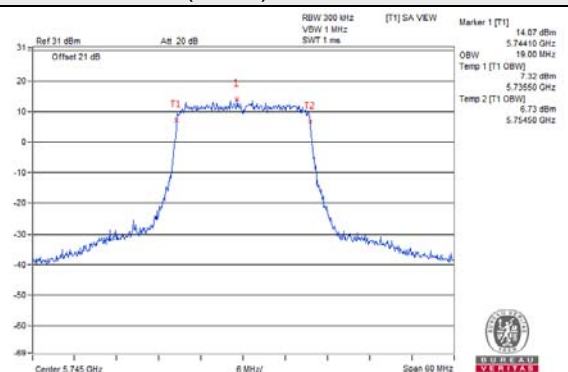
802.11ax (HE20) / Chain 1 / CH 149



802.11ax (HE20) / Chain 2 / CH 149

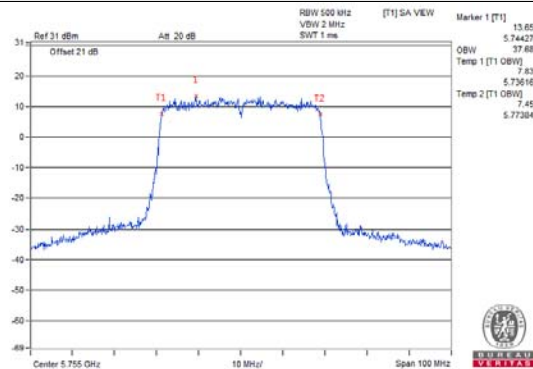


802.11ax (HE20) / Chain 3 / CH 149

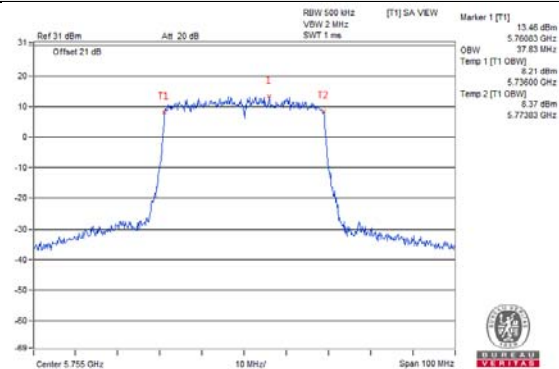


Spectrum Plot for near By DFS Band

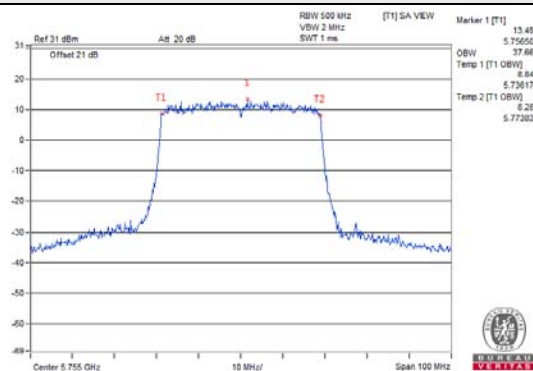
802.11ax (HE40) / Chain 0 / CH 151



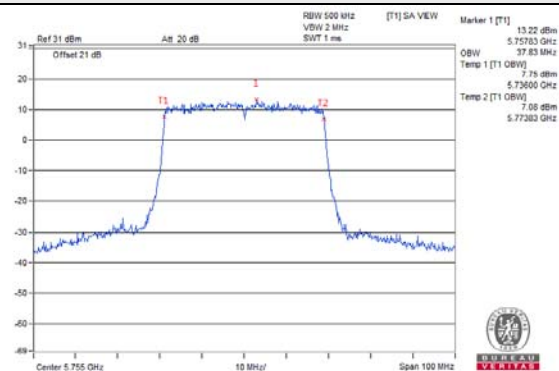
802.11ax (HE40) / Chain 1 / CH 151



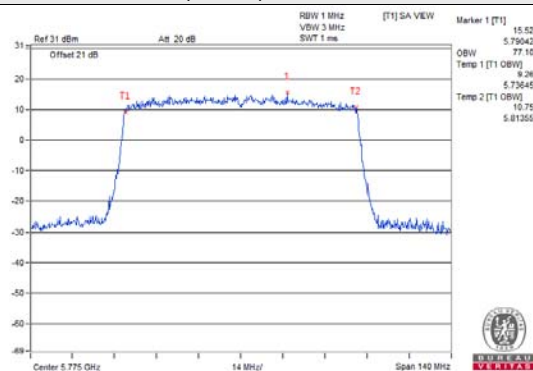
802.11ax (HE40) / Chain 2 / CH 151



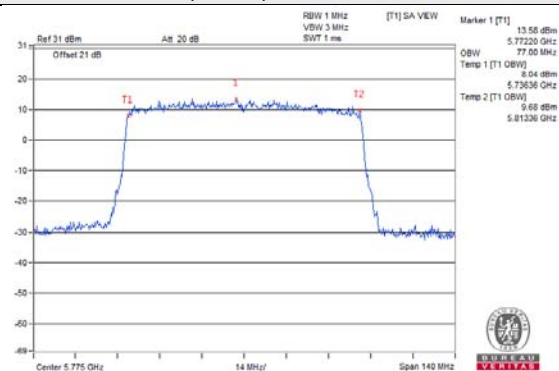
802.11ax (HE40) / Chain 3 / CH 151



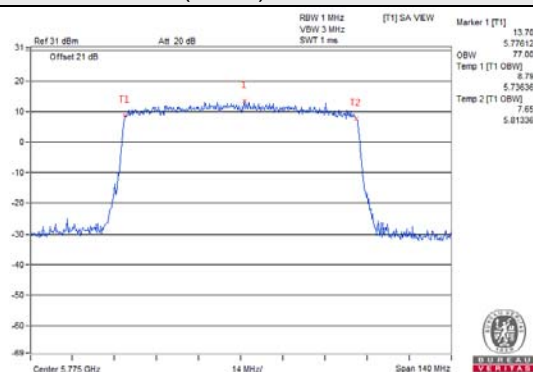
802.11ax (HE80) / Chain 0 / CH 155



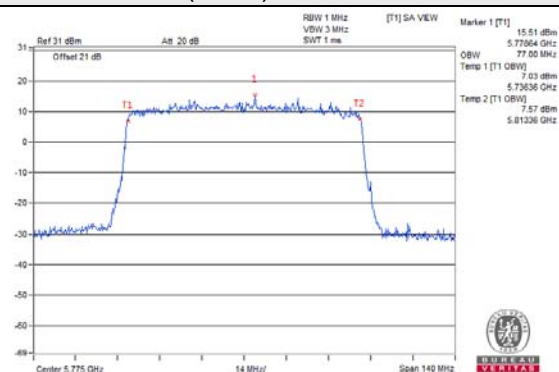
802.11ax (HE80) / Chain 1 / CH 155



802.11ax (HE80) / Chain 2 / CH 155



802.11ax (HE80) / Chain 3 / CH 155



Mode C

802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
36	5180	18.12
40	5200	18.00
48	5240	18.72
149	5745	18.84
157	5785	19.20
165	5825	20.40

802.11ac (VHT20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
36	5180	18.72
40	5200	18.84
48	5240	19.26
149	5745	18.12
157	5785	19.32
165	5825	20.76

802.11ac (VHT40)

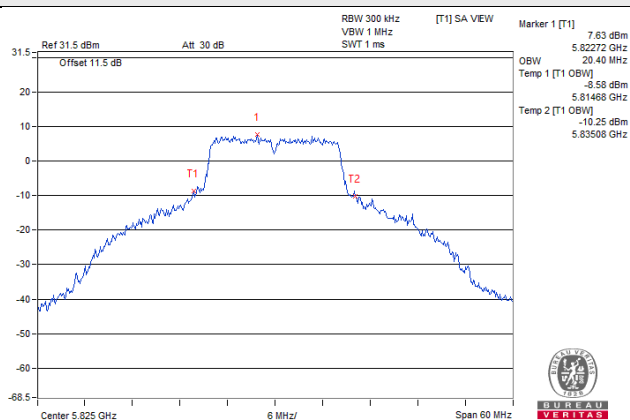
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
38	5190	37.44
46	5230	37.56
151	5755	37.44
159	5795	37.80

802.11ac (VHT80)

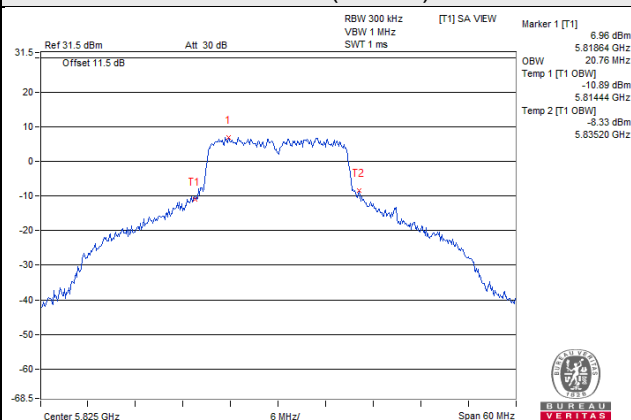
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
42	5210	76.56
155	5775	77.52

Spectrum Plot of Worst Value

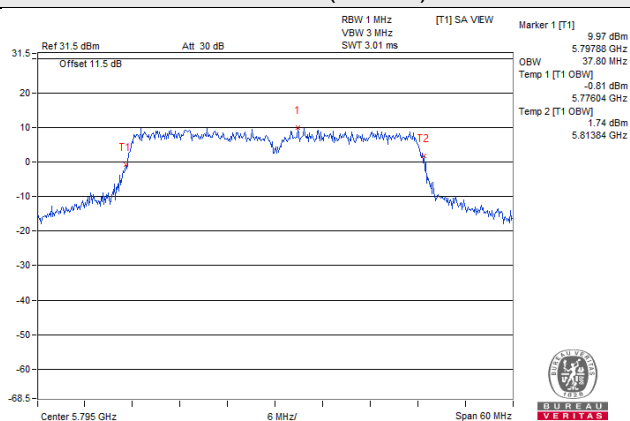
802.11a



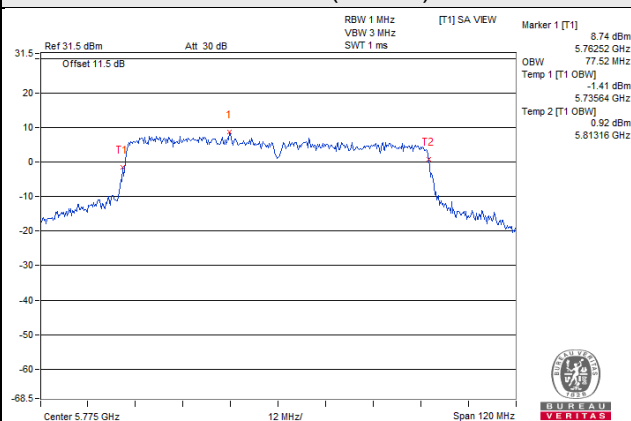
802.11ac (VHT20)



802.11ac (VHT40)

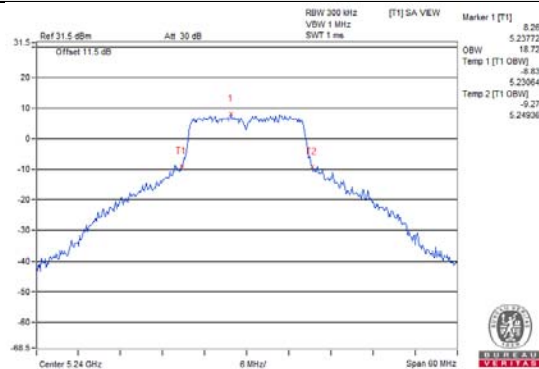


802.11ac (VHT80)

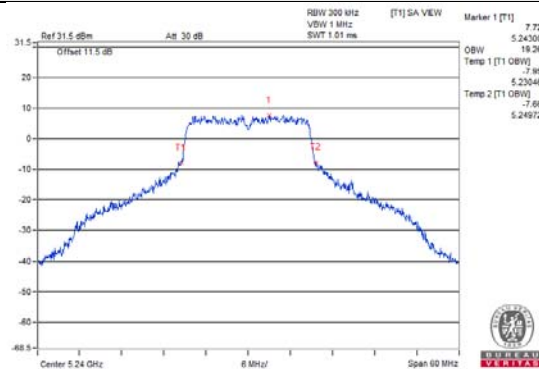


Spectrum Plot for near By DFS Band

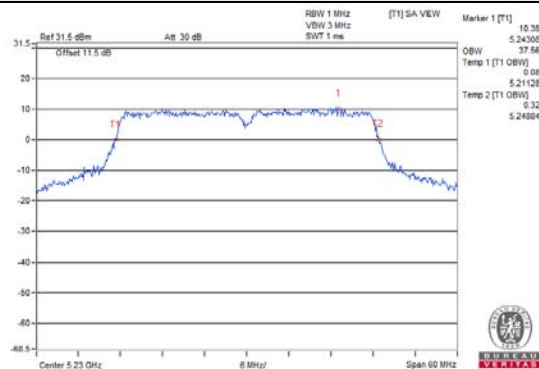
802.11a / CH 48



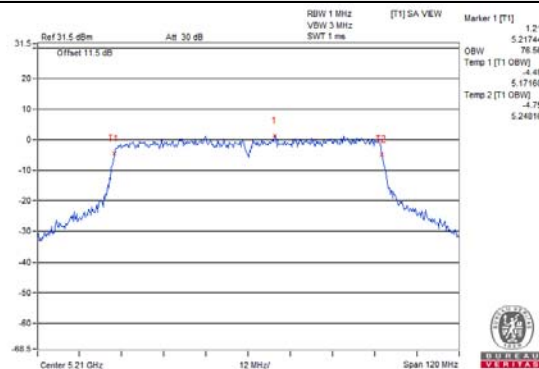
802.11ac (VHT20) / CH 48



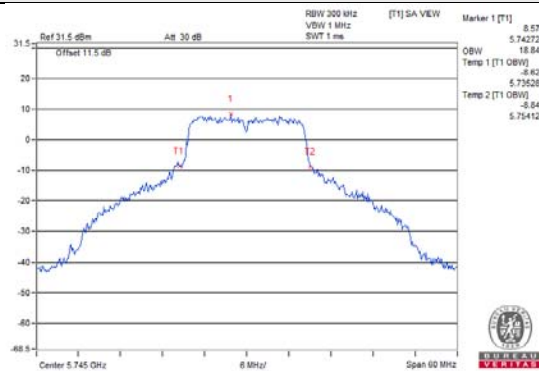
802.11ac (VHT40) / CH 46



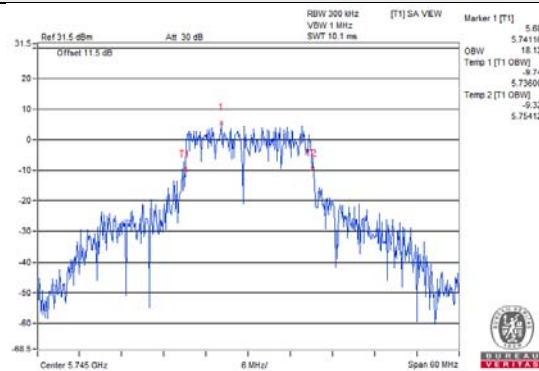
802.11ac (VHT80) / CH 42



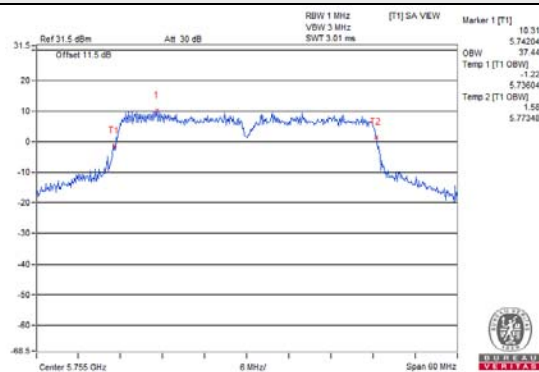
802.11a / CH 149



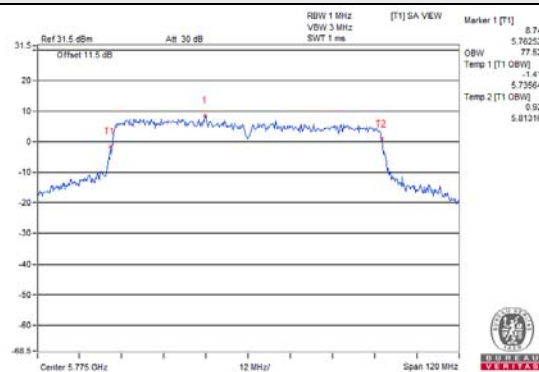
802.11ac (VHT20) / CH 149



802.11ac (VHT40) / CH 151



802.11ac (VHT80) / CH 155

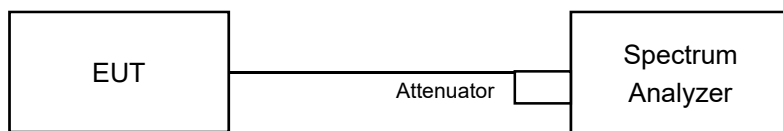


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

For U-NII-1 band:

Using method SA-2

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

For U-NII-3 band:

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 500 kHz, Set VBW ≥ 1 MHz, Detector = RMS
- Use the peak marker function to determine the maximum power level in any 500 kHz band segment within the fundamental EBW.
- Sweep time = auto, trigger set to “free run”.
- Trace average at least 100 traces in power averaging mode.
- Record the max value and add 10 log (1/duty cycle)

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

Mode A

For U-NII-1 band:

802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	5.36	5.39	5.37	5.39	0.31	11.71	13.07	Pass
40	5200	5.37	5.36	5.36	5.36	0.31	11.69	13.07	Pass
48	5240	5.27	5.32	5.36	5.34	0.31	11.65	13.07	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $17-(9.93-6) = 13.07\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	5.37	5.61	5.47	5.58	0.20	11.73	13.07	Pass
40	5200	5.46	5.49	5.58	5.40	0.20	11.70	13.07	Pass
48	5240	5.20	5.44	5.37	5.32	0.20	11.55	13.07	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $17-(9.93-6) = 13.07\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	3.06	3.19	3.30	3.07	0.23	9.41	13.07	Pass
46	5230	0.98	0.90	0.91	1.03	0.23	7.21	13.07	Pass

Note:

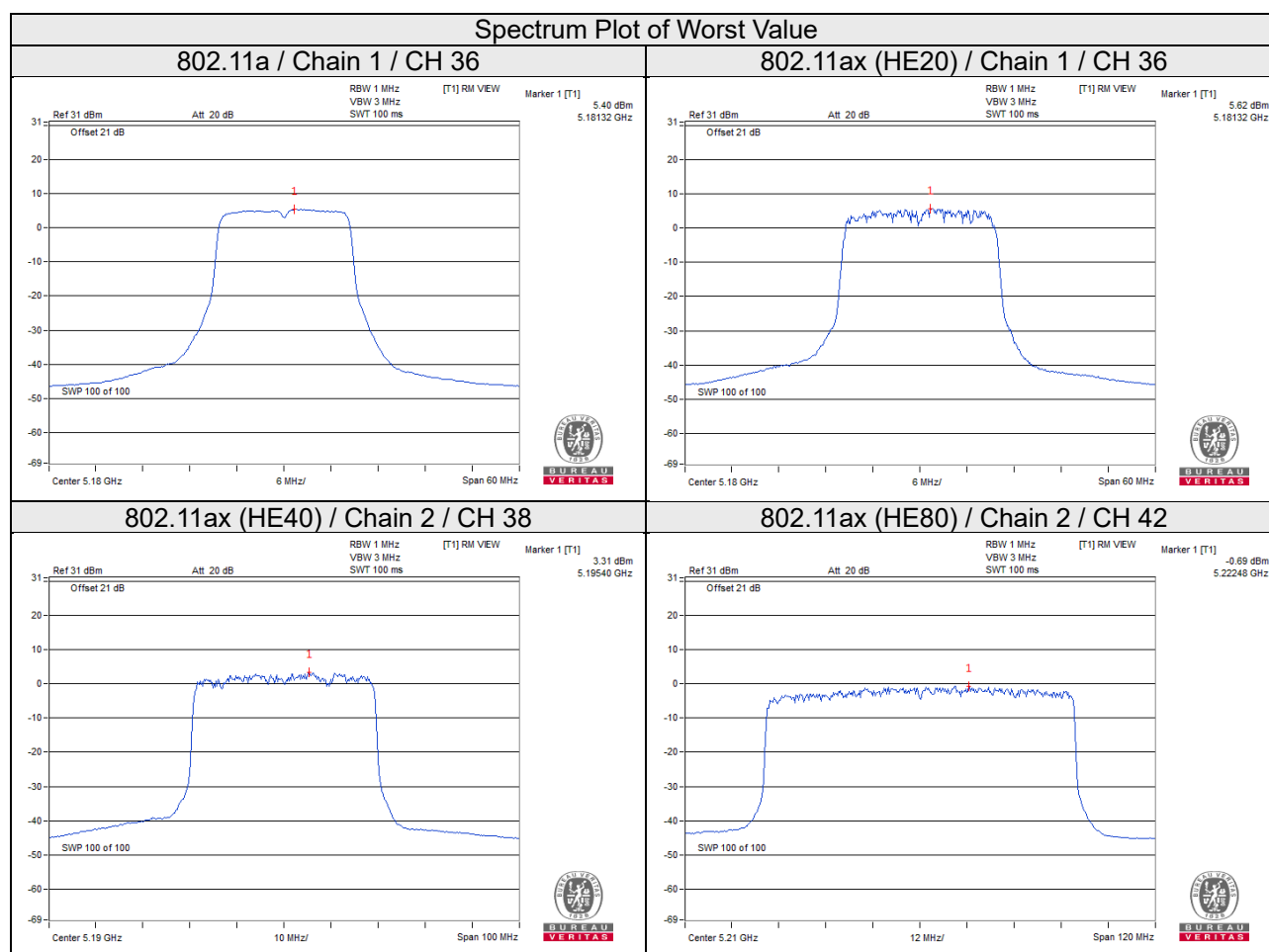
1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $17-(9.93-6) = 13.07\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	-0.98	-0.72	-0.70	-0.72	0.23	5.47	13.07	Pass

Note:

- Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $17-(9.93-6) = 13.07\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.



For U-NII-3 band:

802.11a

TX chain	Chan.	Freq. (MHz)	PSD w/o Duty Factor	10 log (N=4) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500 kHz)	Pass / Fail
			(dBm/500kHz)					
0	149	5745	-0.92	6.02	0.31	5.41	26.07	Pass
	157	5785	-0.77	6.02	0.31	5.56	26.07	Pass
	165	5825	-0.80	6.02	0.31	5.53	26.07	Pass
1	149	5745	-0.86	6.02	0.31	5.47	26.07	Pass
	157	5785	-0.70	6.02	0.31	5.63	26.07	Pass
	165	5825	-0.86	6.02	0.31	5.47	26.07	Pass
2	149	5745	-0.88	6.02	0.31	5.45	26.07	Pass
	157	5785	-0.92	6.02	0.31	5.41	26.07	Pass
	165	5825	-0.95	6.02	0.31	5.38	26.07	Pass
3	149	5745	-0.85	6.02	0.31	5.48	26.07	Pass
	157	5785	-0.70	6.02	0.31	5.63	26.07	Pass
	165	5825	-0.79	6.02	0.31	5.54	26.07	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add $10 \log (N_{ANT})$ dB.
2. Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $30-(9.93-6)=26.07\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

TX chain	Chan.	Freq. (MHz)	PSD w/o Duty Factor	10 log (N=4) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500 kHz)	Pass / Fail
			(dBm/500kHz)					
0	149	5745	-2.27	6.02	0.20	3.95	26.07	Pass
	157	5785	-2.04	6.02	0.20	4.18	26.07	Pass
	165	5825	-2.00	6.02	0.20	4.22	26.07	Pass
1	149	5745	-2.21	6.02	0.20	4.01	26.07	Pass
	157	5785	-2.21	6.02	0.20	4.01	26.07	Pass
	165	5825	-2.02	6.02	0.20	4.20	26.07	Pass
2	149	5745	-2.56	6.02	0.20	3.66	26.07	Pass
	157	5785	-2.04	6.02	0.20	4.18	26.07	Pass
	165	5825	-1.98	6.02	0.20	4.24	26.07	Pass
3	149	5745	-2.18	6.02	0.20	4.04	26.07	Pass
	157	5785	-1.90	6.02	0.20	4.32	26.07	Pass
	165	5825	-1.79	6.02	0.20	4.43	26.07	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add $10 \log (N_{ANT})$ dB.
2. Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $30-(9.93-6)=26.07\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

TX chain	Chan.	Freq. (MHz)	PSD w/o Duty Factor	10 log (N=4) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500 kHz)	Pass / Fail
			(dBm/500kHz)					
0	151	5755	-4.79	6.02	0.23	1.46	26.07	Pass
	159	5795	-4.69	6.02	0.23	1.56	26.07	Pass
1	151	5755	-4.99	6.02	0.23	1.26	26.07	Pass
	159	5795	-4.73	6.02	0.23	1.52	26.07	Pass
2	151	5755	-5.13	6.02	0.23	1.12	26.07	Pass
	159	5795	-5.08	6.02	0.23	1.17	26.07	Pass
3	151	5755	-4.91	6.02	0.23	1.34	26.07	Pass
	159	5795	-5.01	6.02	0.23	1.24	26.07	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N_{ANT}) dB.
2. Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $30-(9.93-6)=26.07\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

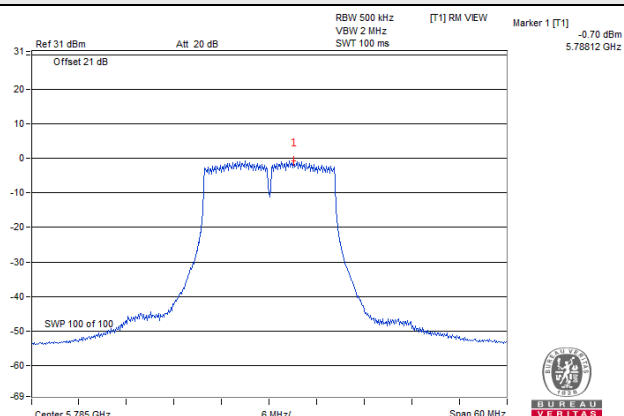
TX chain	Chan.	Freq. (MHz)	PSD w/o Duty Factor	10 log (N=4) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500 kHz)	Pass / Fail
			(dBm/500kHz)					
0	155	5775	-7.71	6.02	0.23	-1.46	26.07	Pass
1	155	5775	-7.77	6.02	0.23	-1.52	26.07	Pass
2	155	5775	-7.77	6.02	0.23	-1.52	26.07	Pass
3	155	5775	-7.72	6.02	0.23	-1.47	26.07	Pass

Note:

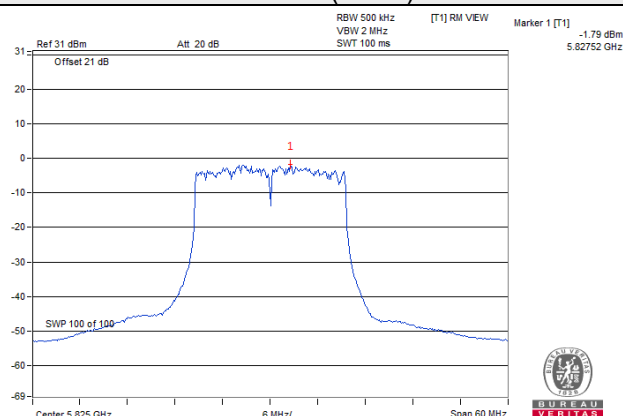
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N_{ANT}) dB.
2. Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4] = 9.93\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $30-(9.93-6)=26.07\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

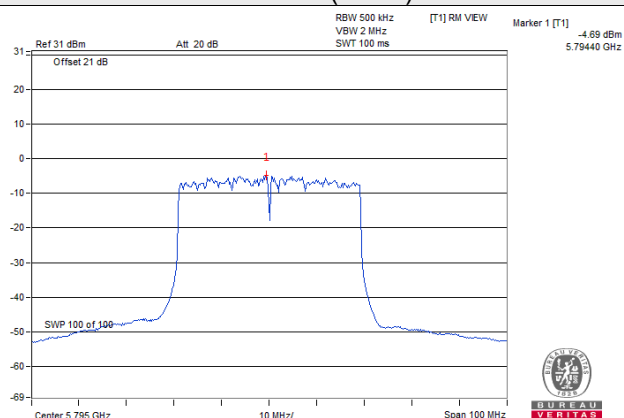
802.11a



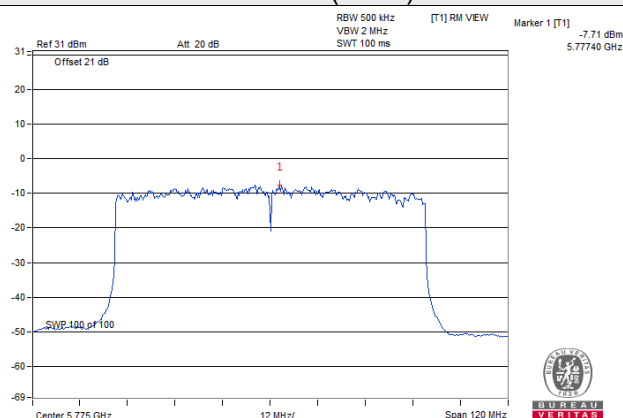
802.11ax (HE20)



802.11ax (HE40)



802.11ax (HE80)



Mode C

For U-NII-1 band:

802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	3.89	0.14	4.03	17.00	Pass
40	5200	3.82	0.14	3.97	17.00	Pass
48	5240	3.86	0.14	4.01	17.00	Pass

Note:

1. Refer to section 3.3 for duty cycle spectrum plot.
2. Max. Antenna Gain 5 dBi < 6dBi, so the power density limit no need to reduced.

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	3.83	0.19	4.02	17.00	Pass
40	5200	3.81	0.19	4.00	17.00	Pass
48	5240	3.81	0.19	4.00	17.00	Pass

Note:

1. Refer to section 3.3 for duty cycle spectrum plot.
2. Max. Antenna Gain 5 dBi < 6dBi, so the power density limit no need to reduced.

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
38	5190	-3.00	0.40	-2.60	17.00	Pass
46	5230	0.15	0.40	0.55	17.00	Pass

Note:

1. Refer to section 3.3 for duty cycle spectrum plot.
2. Max. Antenna Gain 5 dBi < 6dBi, so the power density limit no need to reduced.

802.11ac (VHT80)

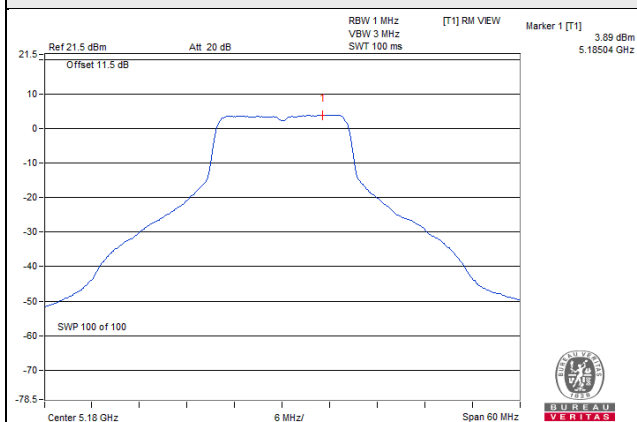
Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
42	5210	-9.24	0.75	-8.49	17.00	Pass

Note:

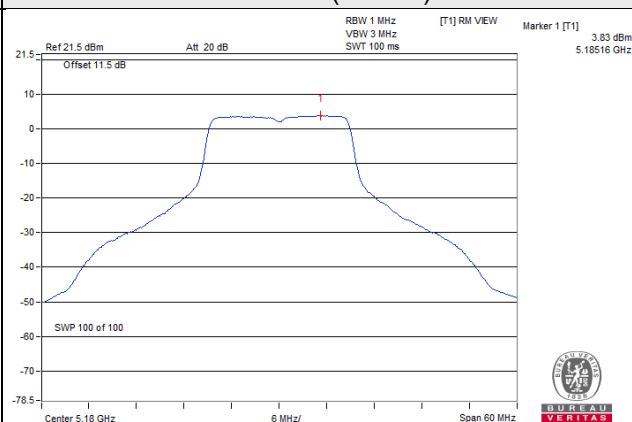
1. Refer to section 3.3 for duty cycle spectrum plot.
2. Max. Antenna Gain 5 dBi < 6dBi, so the power density limit no need to reduced.

Spectrum Plot of Worst Value

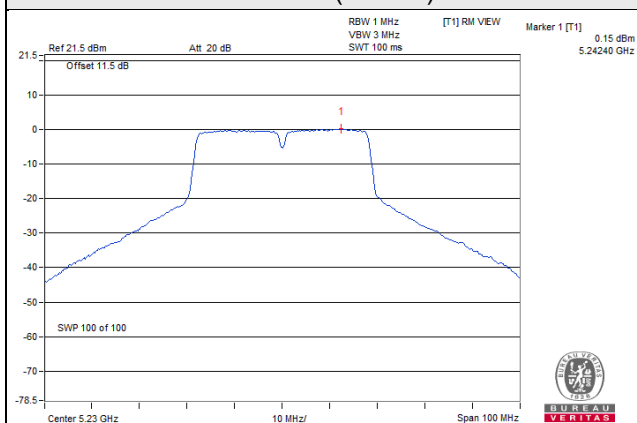
802.11a



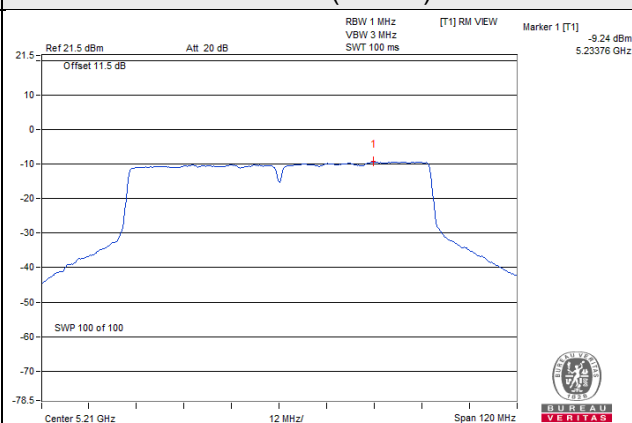
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



For U-NII-3 band:

802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	0.01	2.23	0.14	2.37	30.00	Pass
157	5785	-0.67	1.55	0.14	1.69	30.00	Pass
165	5825	-0.64	1.58	0.14	1.72	30.00	Pass

Note:

1. Refer to section 3.3 for duty cycle spectrum plot.
2. Max. Antenna Gain 5 dBi < 6dBi, so the power density limit no need to reduced.

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	-0.54	1.68	0.19	1.87	30.00	Pass
157	5785	-1.00	1.22	0.19	1.41	30.00	Pass
165	5825	-1.06	1.16	0.19	1.35	30.00	Pass

Note:

1. Refer to section 3.3 for duty cycle spectrum plot.
2. Max. Antenna Gain 5 dBi < 6dBi, so the power density limit no need to reduced.

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
151	5755	-3.81	-1.59	0.40	-1.19	30.00	Pass
159	5795	-4.09	-1.87	0.40	-1.47	30.00	Pass

Note:

1. Refer to section 3.3 for duty cycle spectrum plot.
2. Max. Antenna Gain 5 dBi < 6dBi, so the power density limit no need to reduced.

802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	Total PSD with Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		(dBm/300kHz)	(dBm/500kHz)				
155	5775	-6.71	-4.49	0.75	-3.74	30.00	Pass

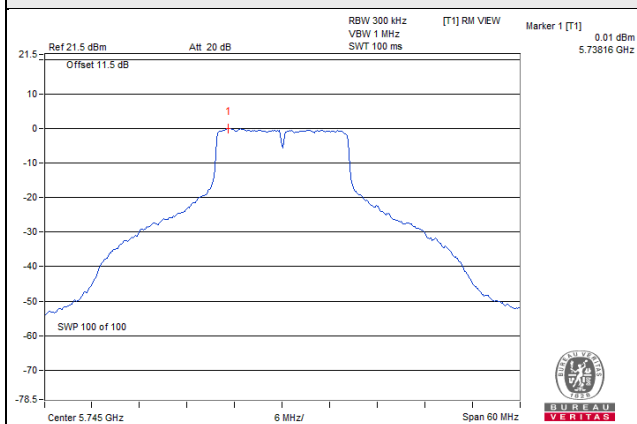
Note:

1. Refer to section 3.3 for duty cycle spectrum plot.
2. Max. Antenna Gain 5 dBi < 6dBi, so the power density limit no need to reduced.

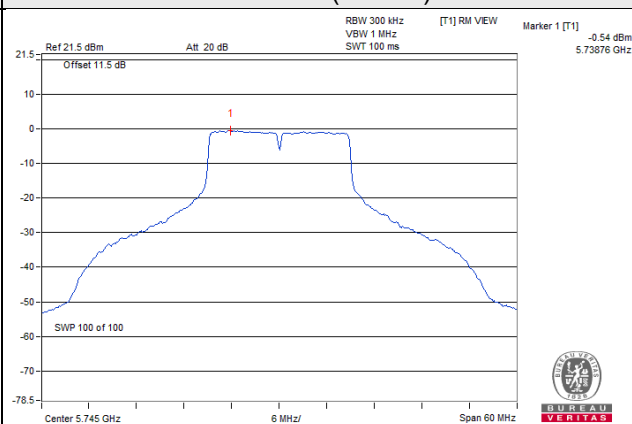
.

Spectrum Plot of Worst Value

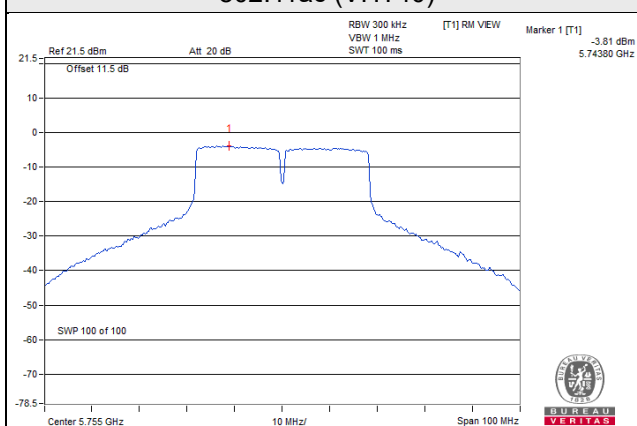
802.11a



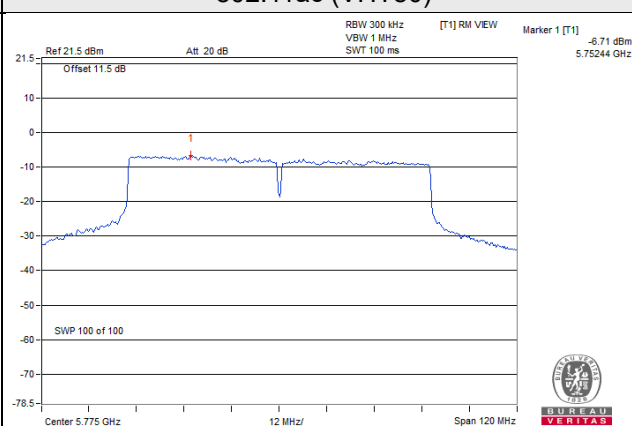
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)

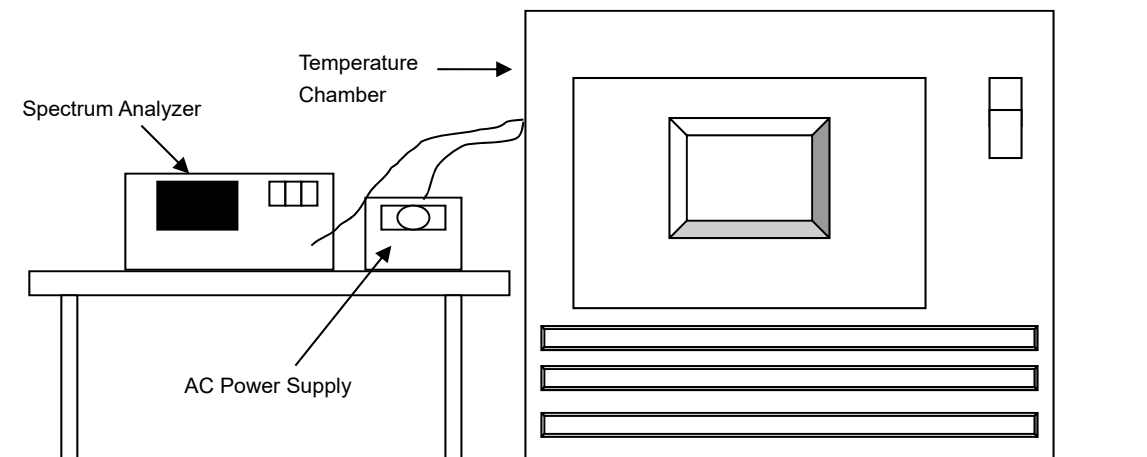


4.6 Frequency Stability

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 12, 2020	Jun. 11, 2021
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 01, 2020	May 31, 2021
			Jun. 01, 2021	May 31, 2022
Digital Multimeter Fluke	87-III	70360742	Jun. 23, 2020	Jun. 22, 2021
AC Power Supply Exttech	CFW-105	E000603	NA	NA

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

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

Mode A

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
50	120	5180.0127	PASS	5180.0115	PASS	5180.0096	PASS	5180.0106	PASS
40	120	5180.0227	PASS	5180.0225	PASS	5180.0223	PASS	5180.0262	PASS
30	120	5179.9891	PASS	5179.9898	PASS	5179.9878	PASS	5179.9906	PASS
20	120	5179.9970	PASS	5180.0005	PASS	5179.9992	PASS	5180.0000	PASS
10	120	5179.9741	PASS	5179.9759	PASS	5179.9727	PASS	5179.9757	PASS
0	120	5179.9737	PASS	5179.9745	PASS	5179.9778	PASS	5179.9780	PASS
-10	120	5179.9968	PASS	5179.9975	PASS	5179.9967	PASS	5179.9976	PASS
-20	120	5180.0171	PASS	5180.0159	PASS	5180.0147	PASS	5180.0160	PASS
-30	120	5179.9817	PASS	5179.9820	PASS	5179.9776	PASS	5179.9798	PASS

Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5179.9978	PASS	5180.0001	PASS	5179.9985	PASS	5180.0004	PASS
	120	5179.9970	PASS	5180.0005	PASS	5179.9992	PASS	5180.0000	PASS
	102	5179.9971	PASS	5180.0006	PASS	5179.9996	PASS	5179.9991	PASS

Mode C

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
50	120	5179.9798	PASS	5179.9764	PASS	5179.9802	PASS	5179.9811	PASS
40	120	5179.9938	PASS	5179.9950	PASS	5179.9940	PASS	5179.9943	PASS
30	120	5179.9792	PASS	5179.9768	PASS	5179.9773	PASS	5179.9760	PASS
20	120	5179.9824	PASS	5179.9871	PASS	5179.9840	PASS	5179.9831	PASS
10	120	5179.9863	PASS	5179.9876	PASS	5179.9907	PASS	5179.9900	PASS
0	120	5179.9808	PASS	5179.9817	PASS	5179.9785	PASS	5179.9794	PASS
-10	120	5179.9825	PASS	5179.9814	PASS	5179.9804	PASS	5179.9823	PASS
-20	120	5179.9934	PASS	5179.9946	PASS	5179.9952	PASS	5179.9936	PASS
-30	120	5180.0216	PASS	5180.0203	PASS	5180.0204	PASS	5180.0242	PASS

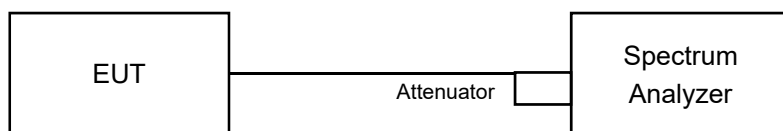
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5179.9820	PASS	5179.9862	PASS	5179.9830	PASS	5179.9841	PASS
	120	5179.9824	PASS	5179.9871	PASS	5179.9840	PASS	5179.9831	PASS
	102	5179.9819	PASS	5179.9869	PASS	5179.9838	PASS	5179.9835	PASS

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

Mode A

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	16.38	16.38	16.38	16.41	0.5	Pass
157	5785	16.39	16.40	16.39	16.39	0.5	Pass
165	5825	16.39	16.38	16.39	16.38	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	18.96	18.93	18.95	18.96	0.5	Pass
157	5785	18.95	18.99	18.97	18.84	0.5	Pass
165	5825	18.98	18.98	18.98	19.00	0.5	Pass

802.11ax (HE40)

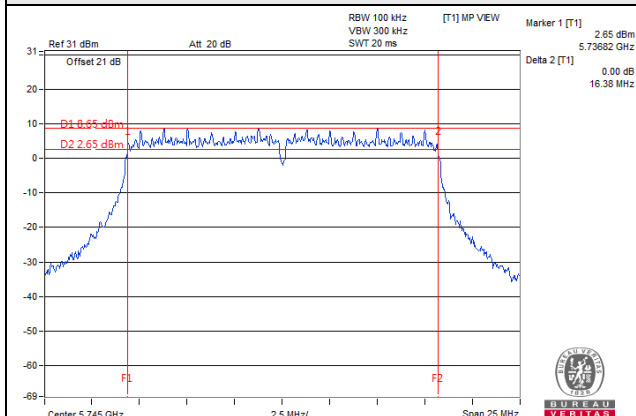
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	37.76	37.98	37.77	38.12	0.5	Pass
159	5795	38.14	38.03	38.05	38.02	0.5	Pass

802.11ax (HE80)

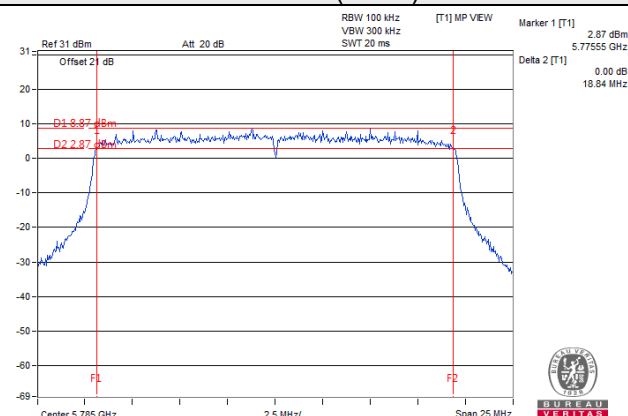
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	77.58	77.61	77.67	77.71	0.5	Pass

Spectrum Plot of Worst Value

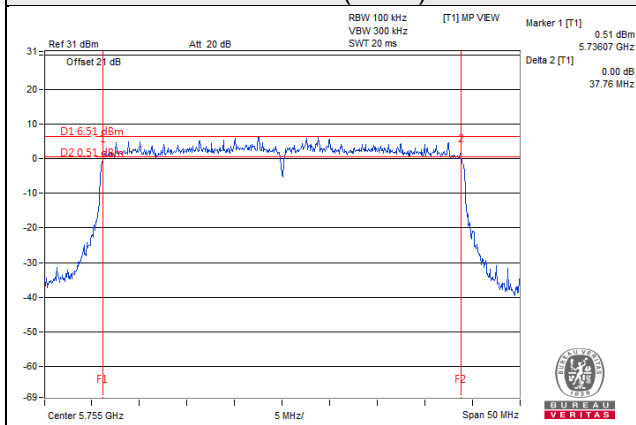
802.11a



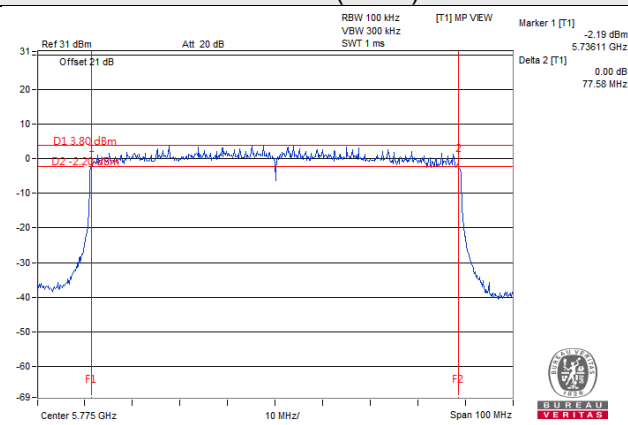
802.11ax (HE20)



802.11ax (HE40)



802.11ax (HE80)



Mode C

802.11a

Chan.	Freq. (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.08	0.50	Pass
157	5785	16.09	0.50	Pass
165	5825	16.33	0.50	Pass

802.11ac (VHT20)

Chan.	Freq. (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.56	0.50	Pass
157	5785	17.61	0.50	Pass
165	5825	17.59	0.50	Pass

802.11ac (VHT40)

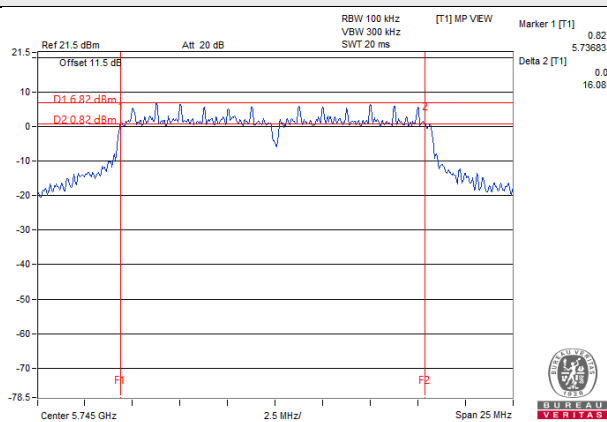
Chan.	Freq. (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.89	0.50	Pass
159	5795	36.07	0.50	Pass

802.11ac (VHT80)

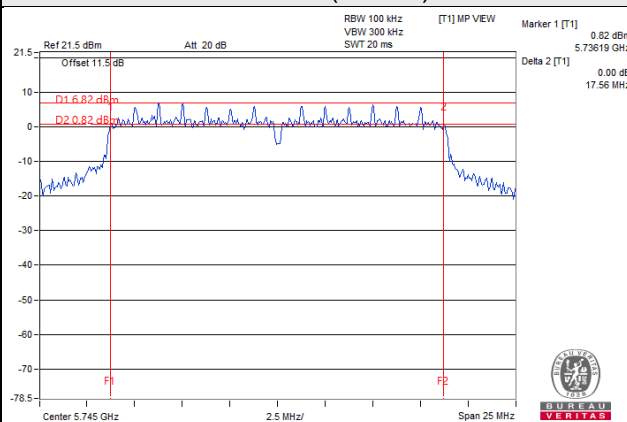
Chan.	Freq. (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
155	5775	75.71	0.50	Pass

Spectrum Plot of Worst Value

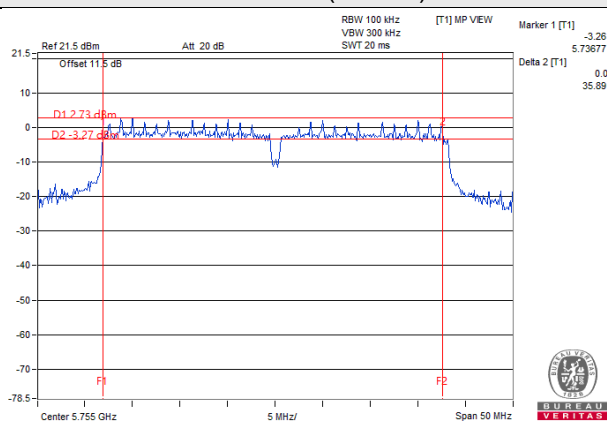
802.11a



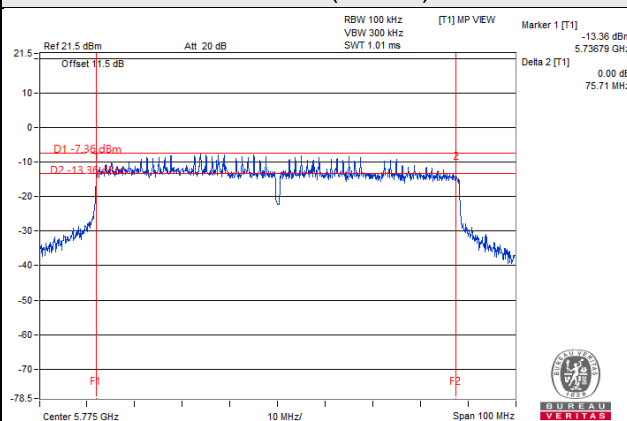
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



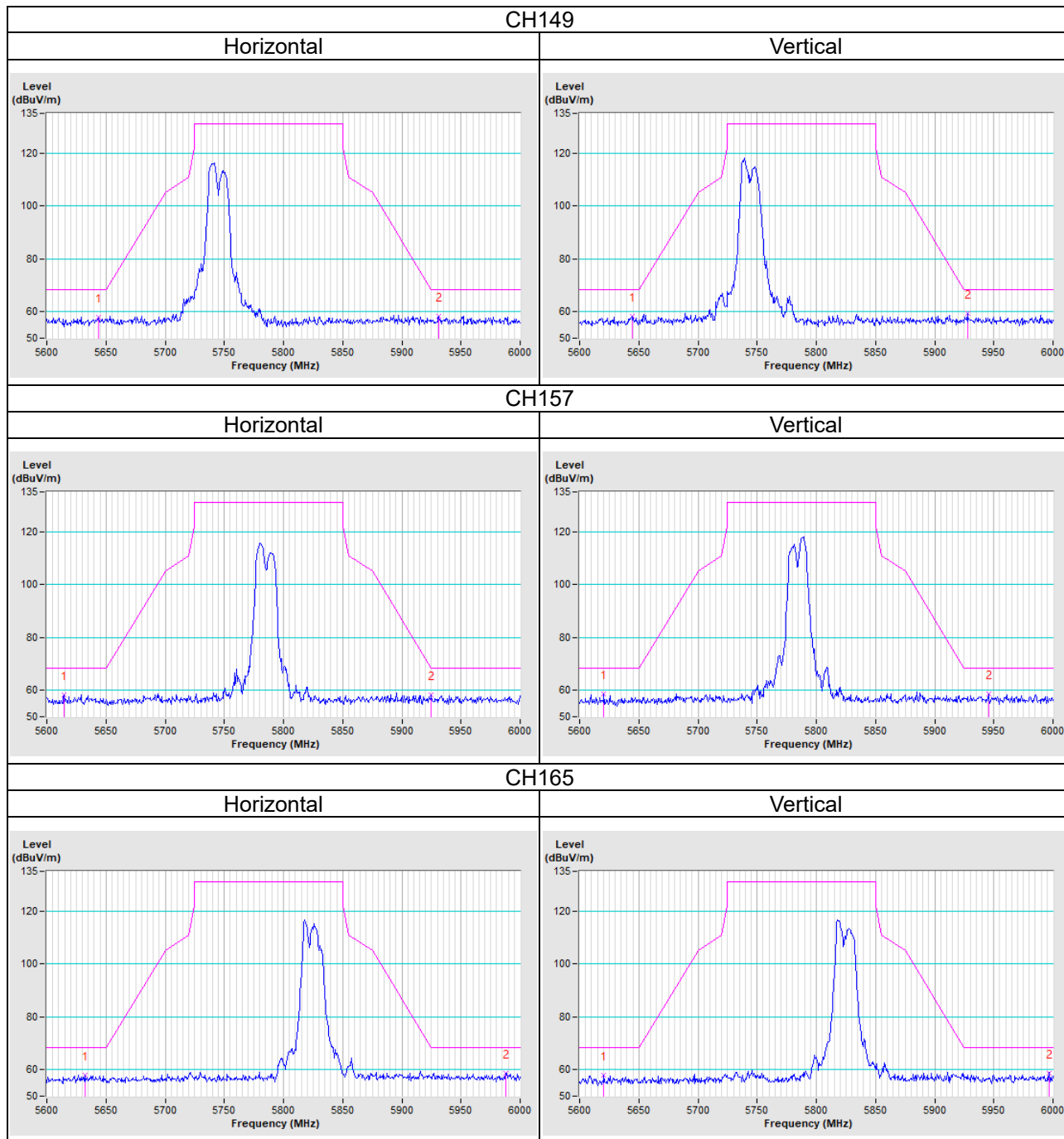
5 Pictures of Test Arrangements

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

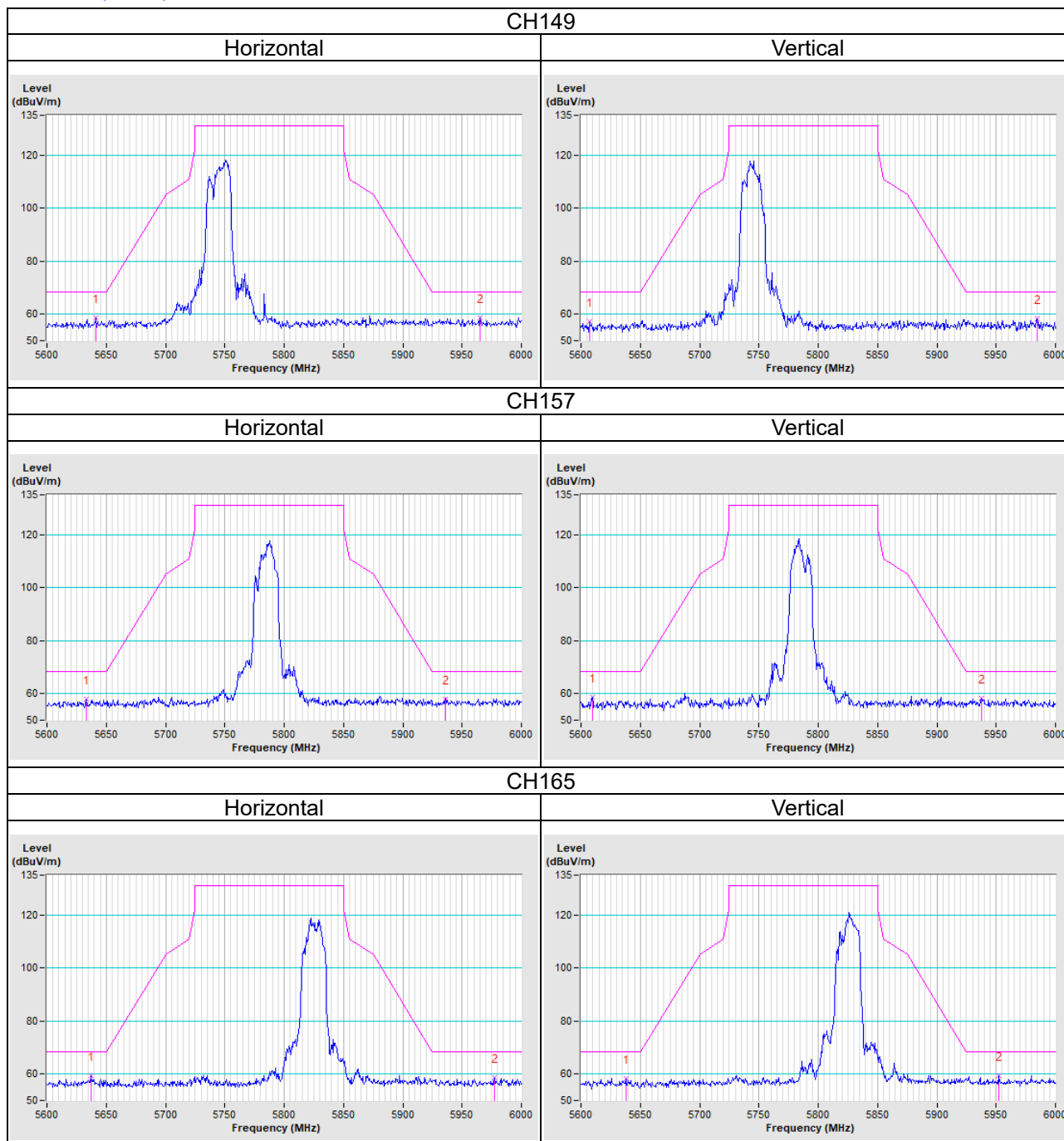
Annex A- Radiated out of Band Emission (OOBE) Measurement (For U-NII-3 band)

Mode A

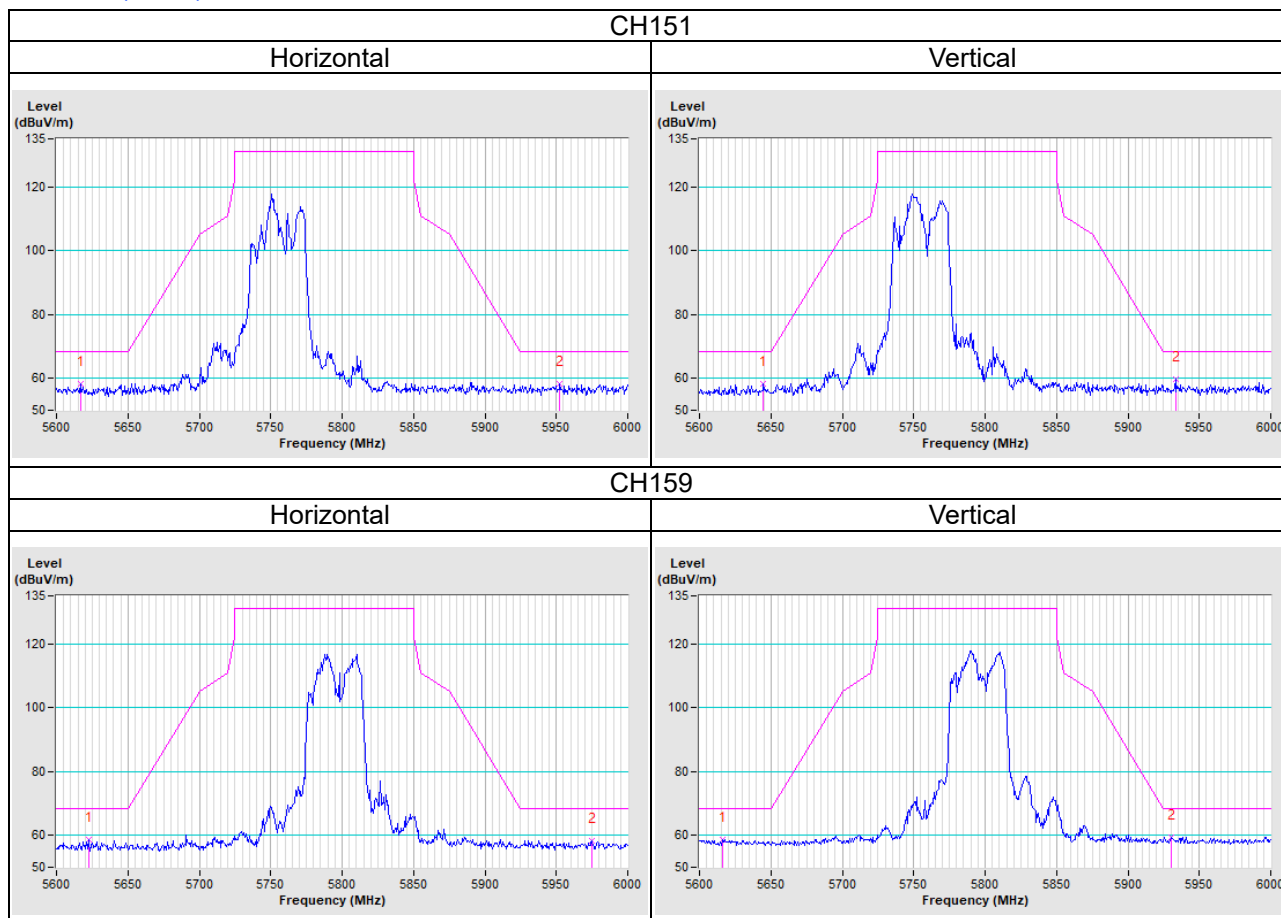
802.11a



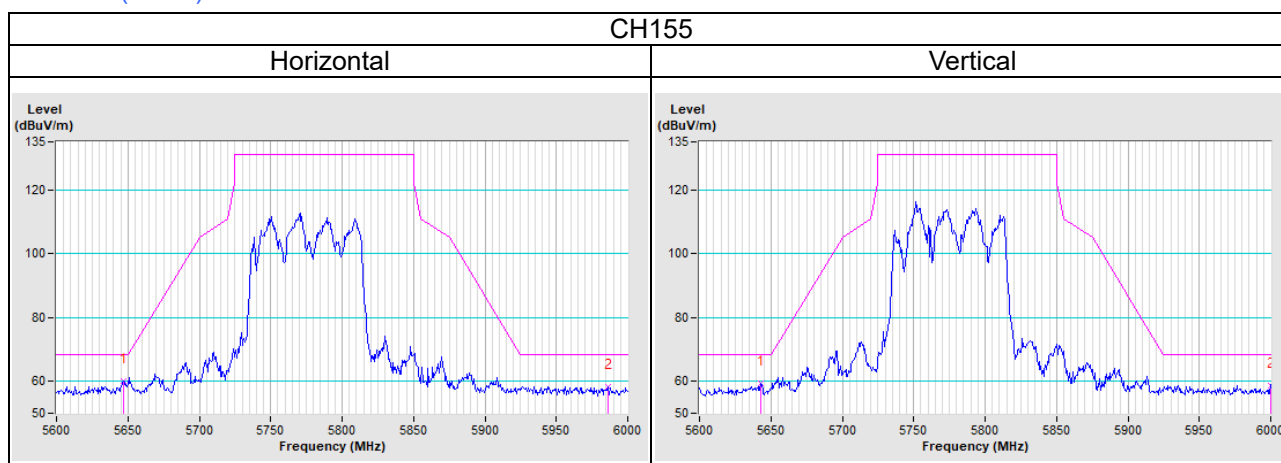
802.11ax (HE20)



802.11ax (HE40)

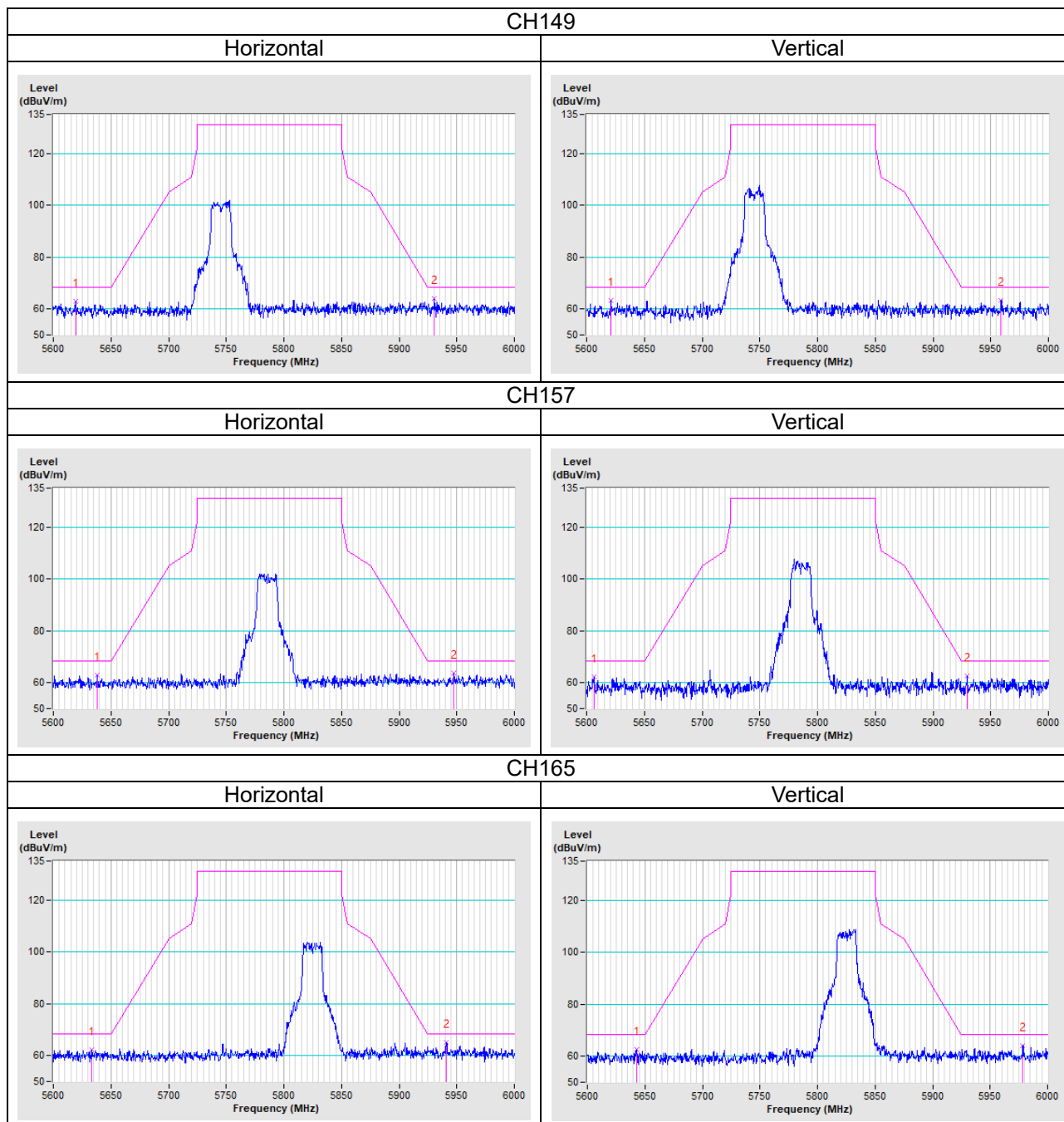


802.11ax (HE80)

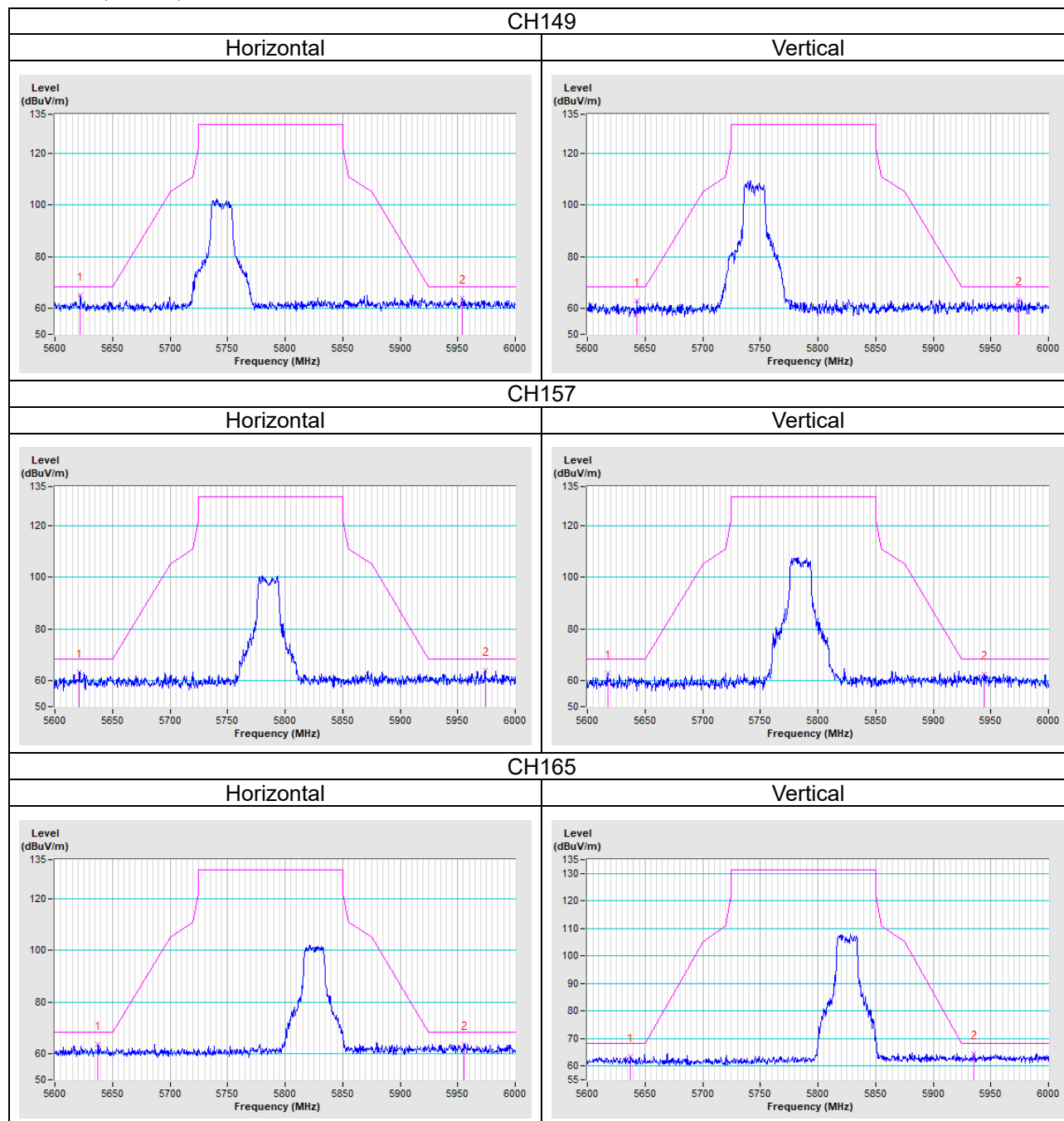


Mode C

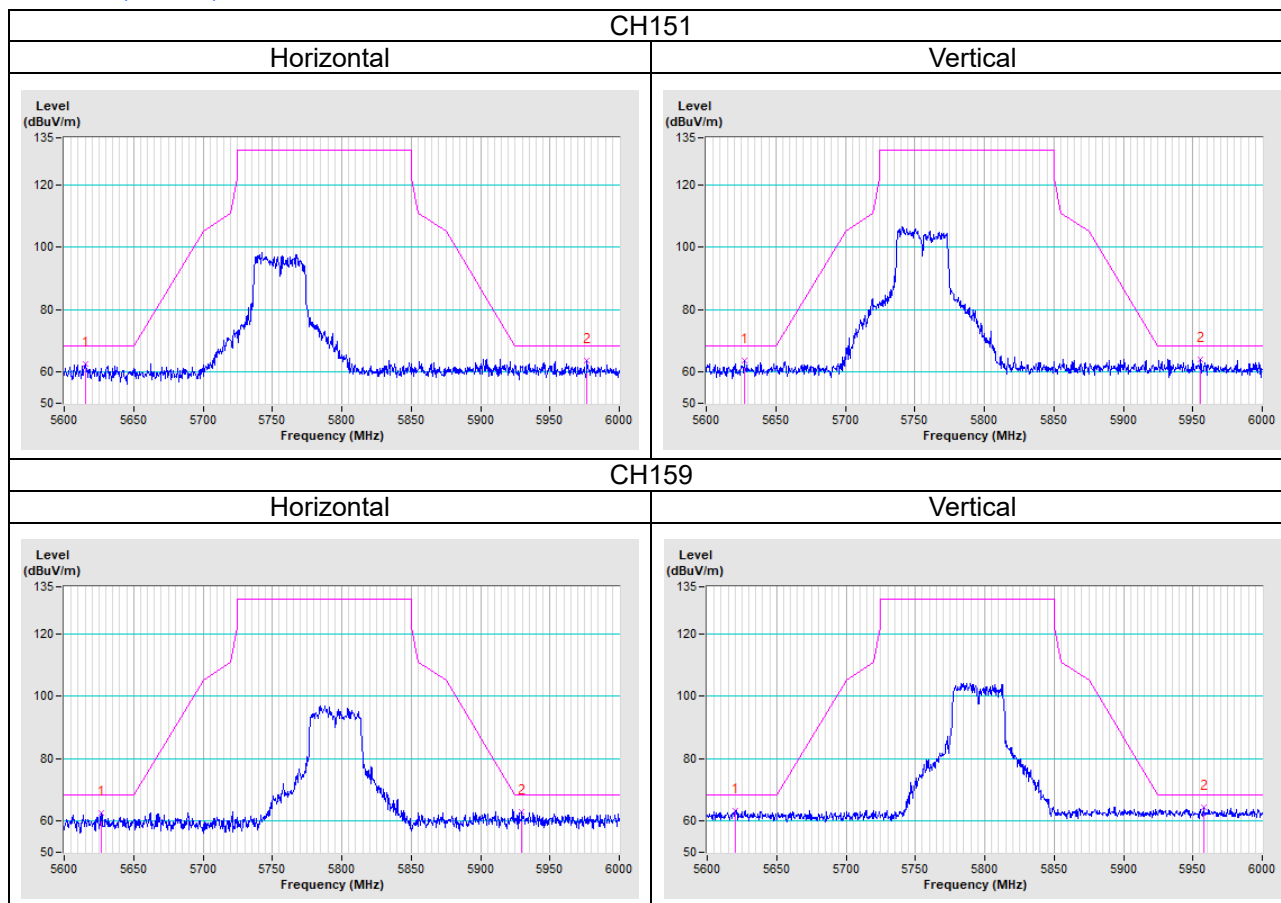
802.11a



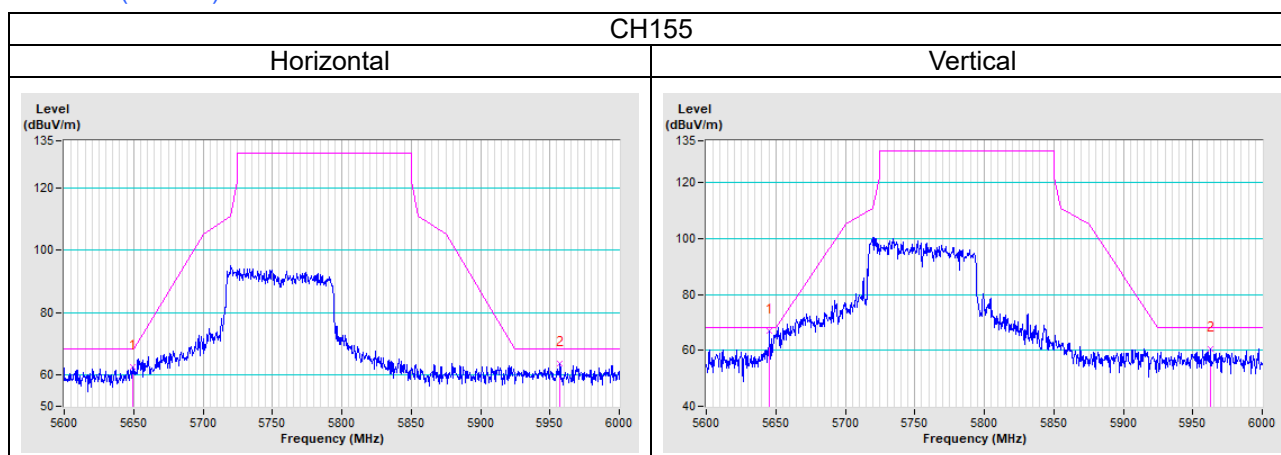
802.11ac (VHT20)



802.11ac (VHT40)



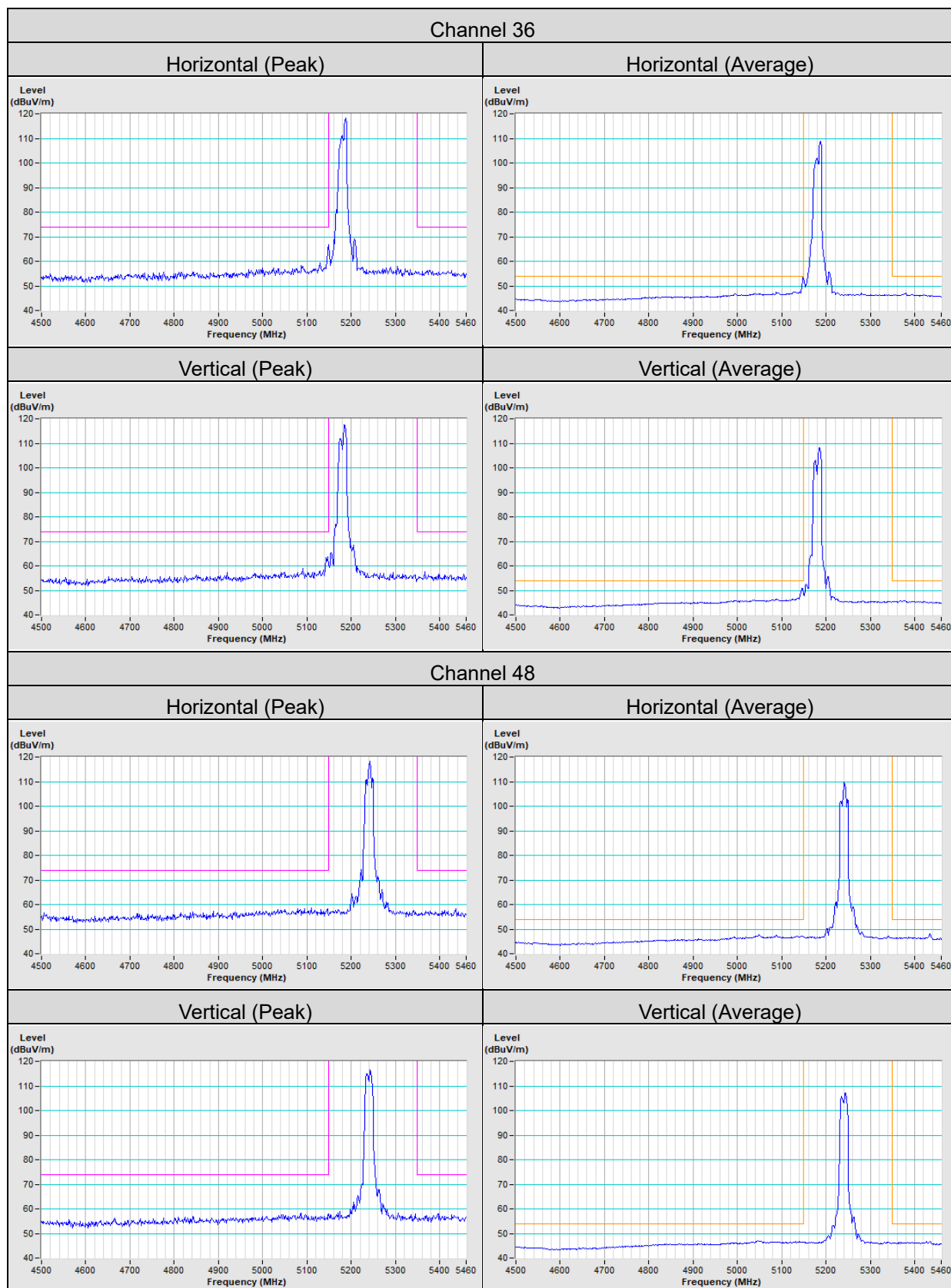
802.11ac (VHT80)



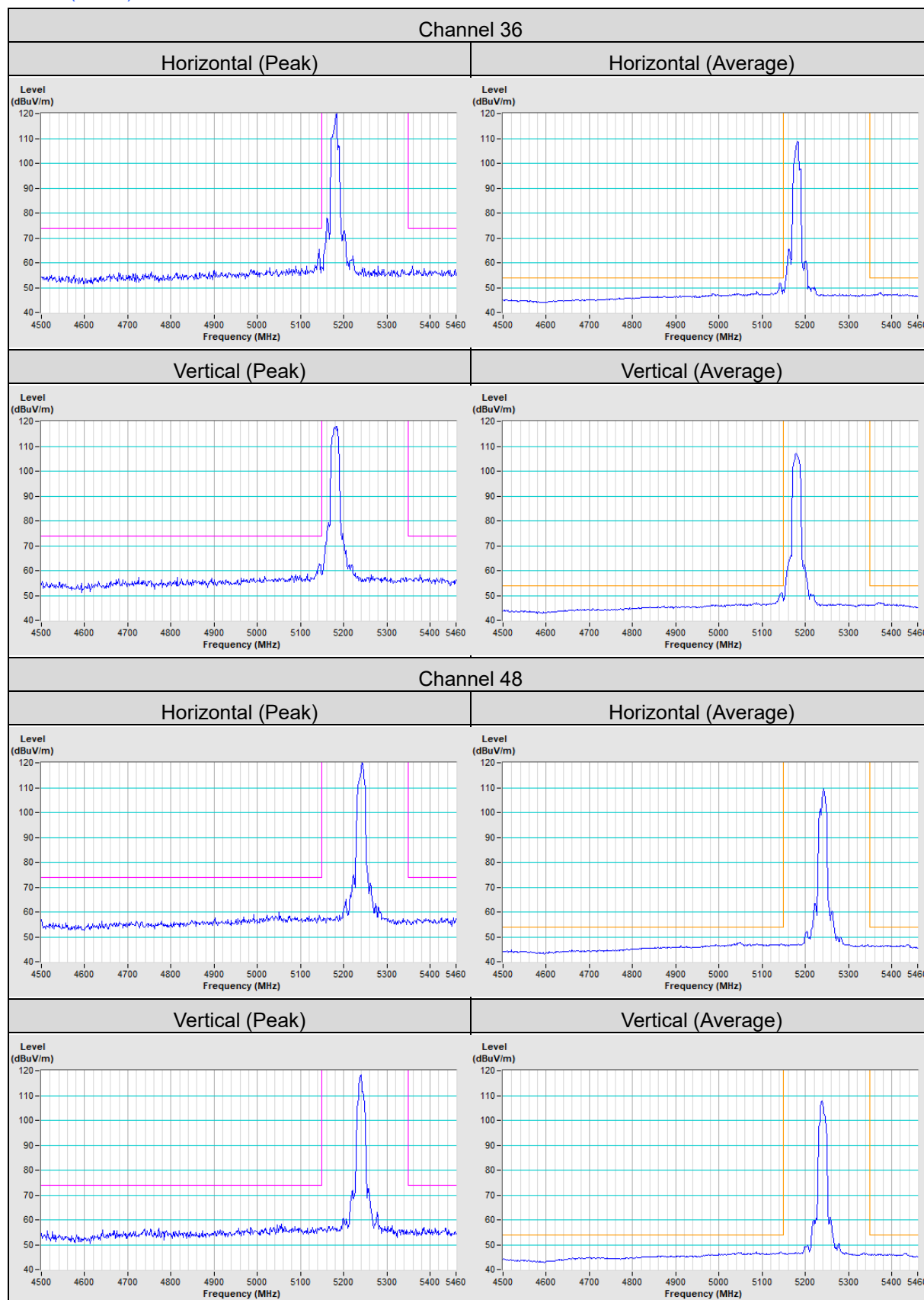
Annex B- Band Edge Measurement

Mode A

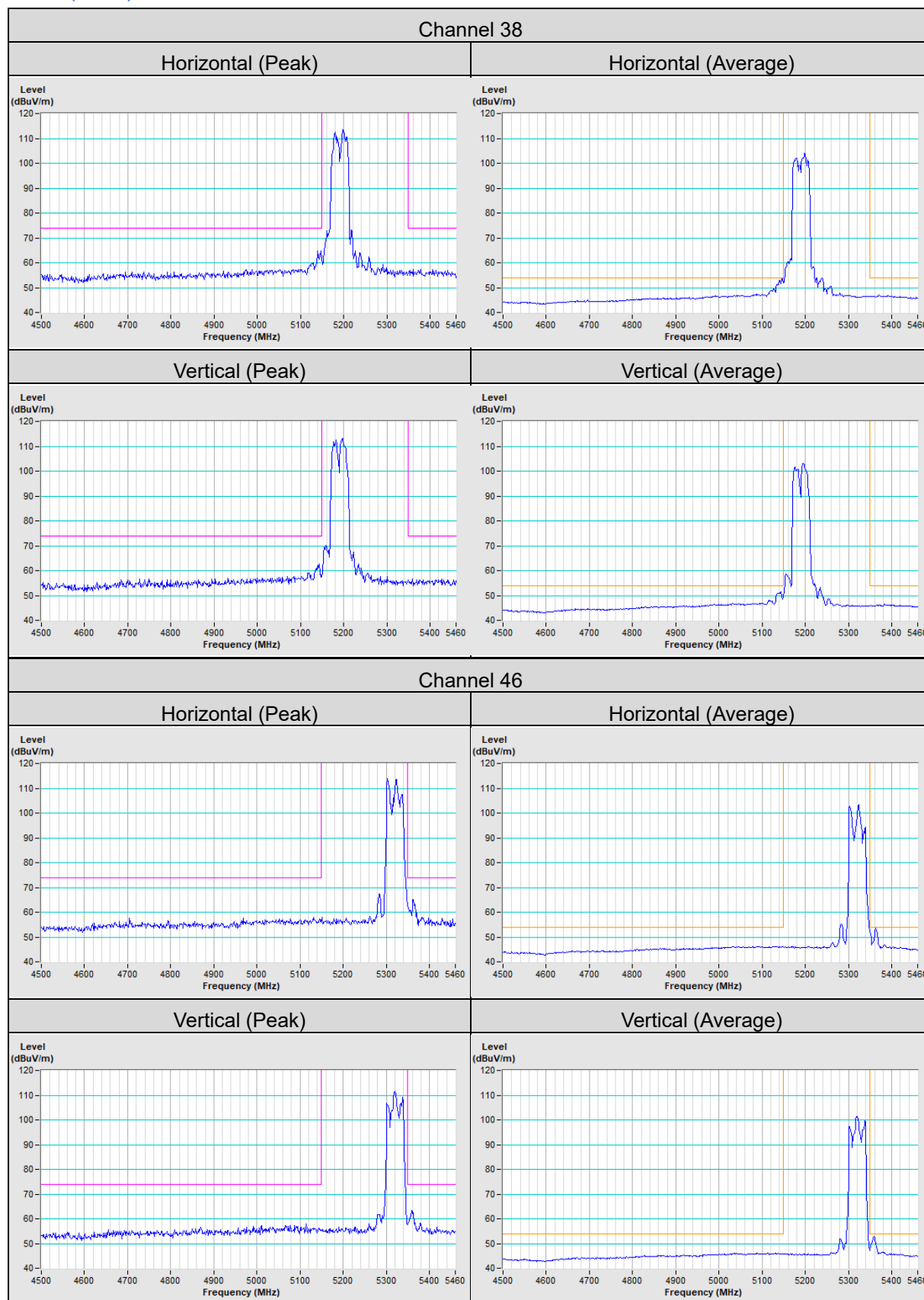
802.11a



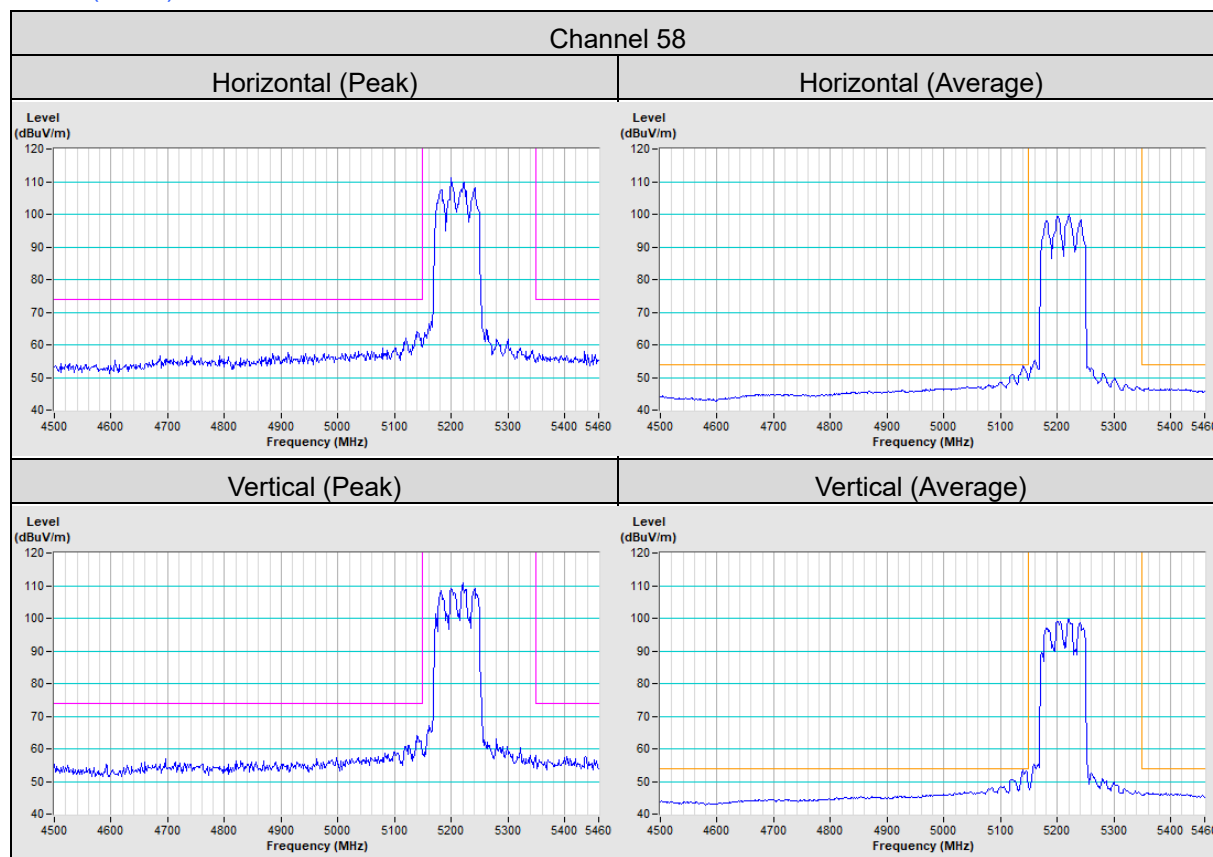
802.11ax (HE20)



802.11ax (HE40)

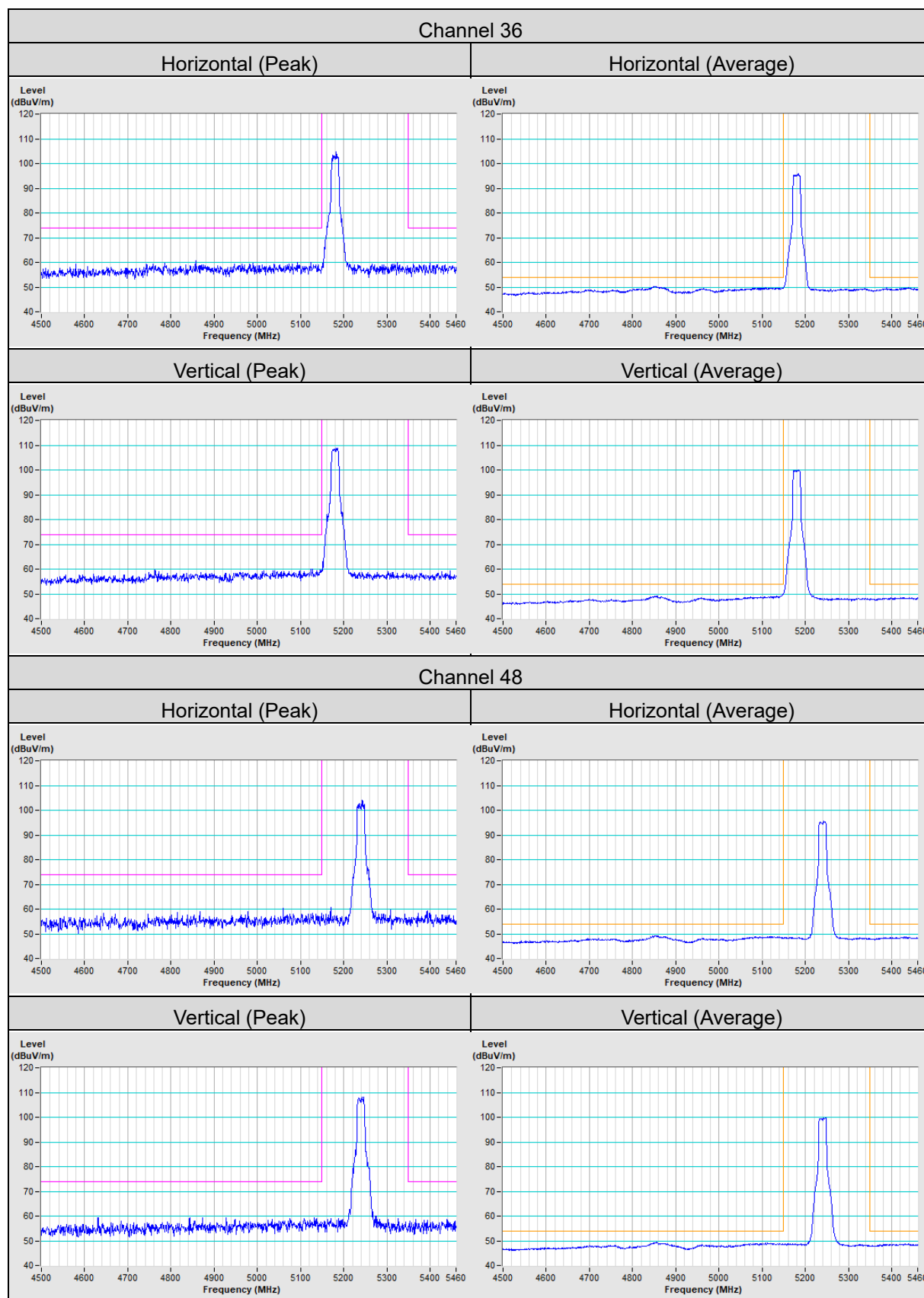


802.11ax (HE80)

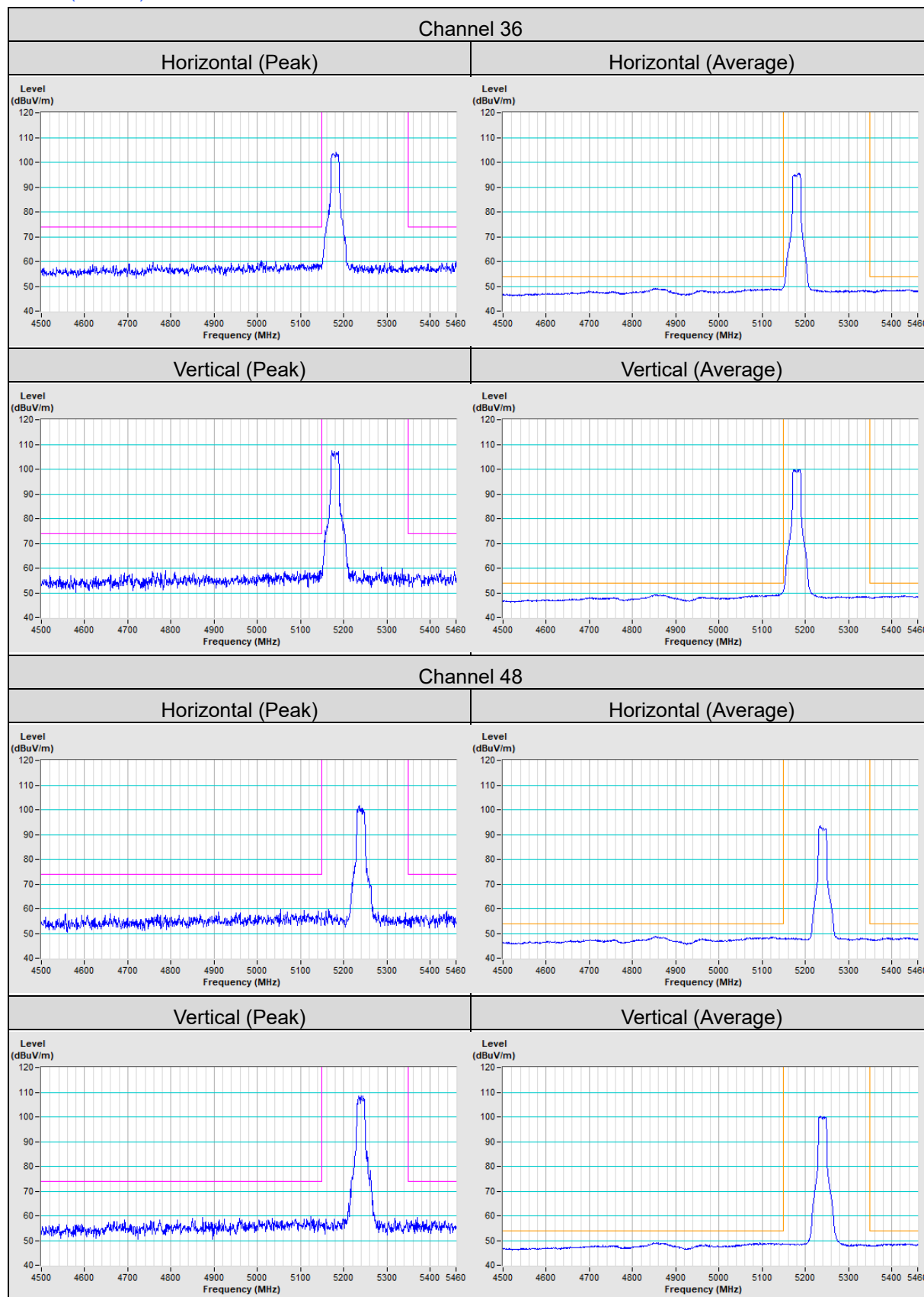


Mode C

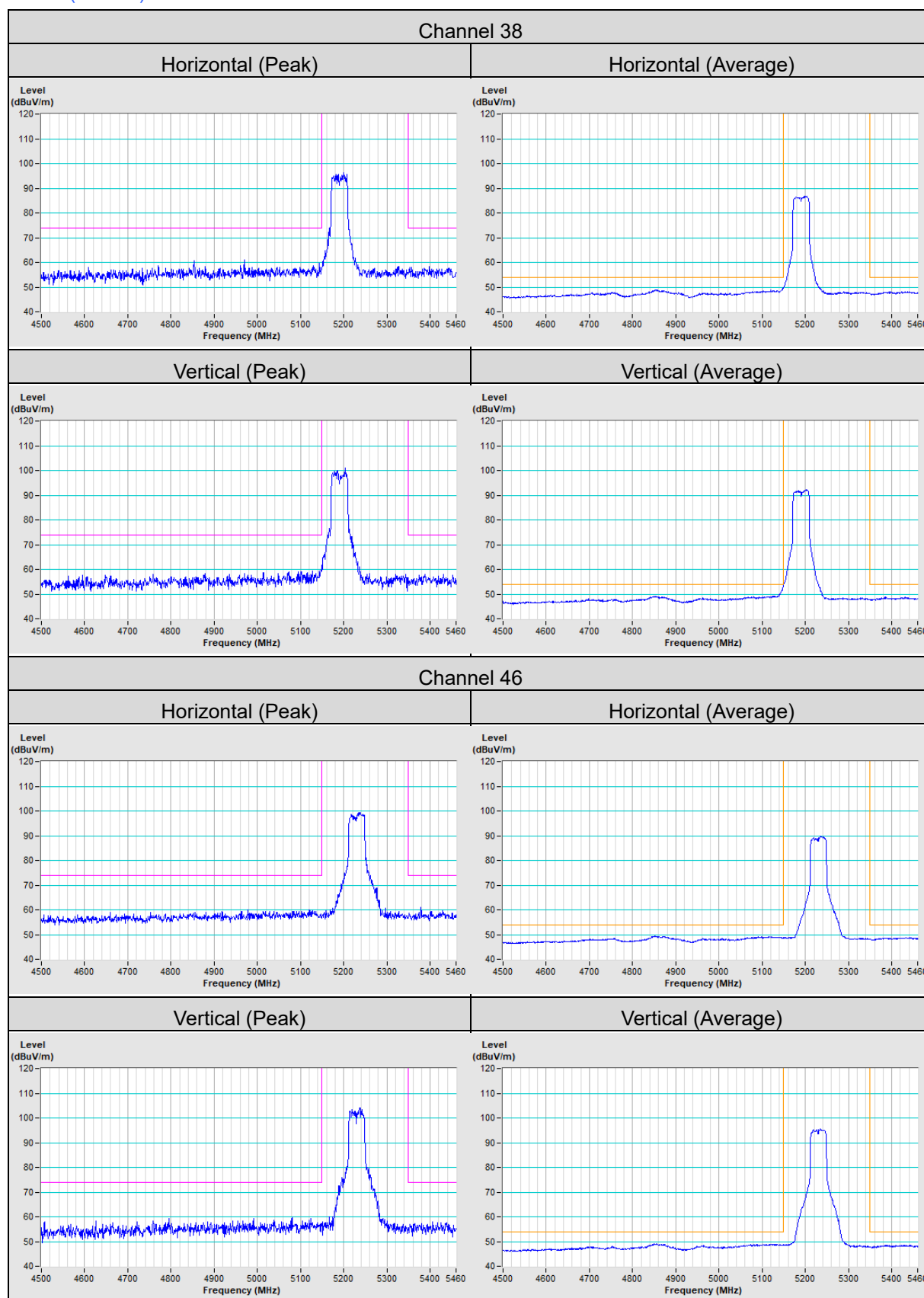
802.11a



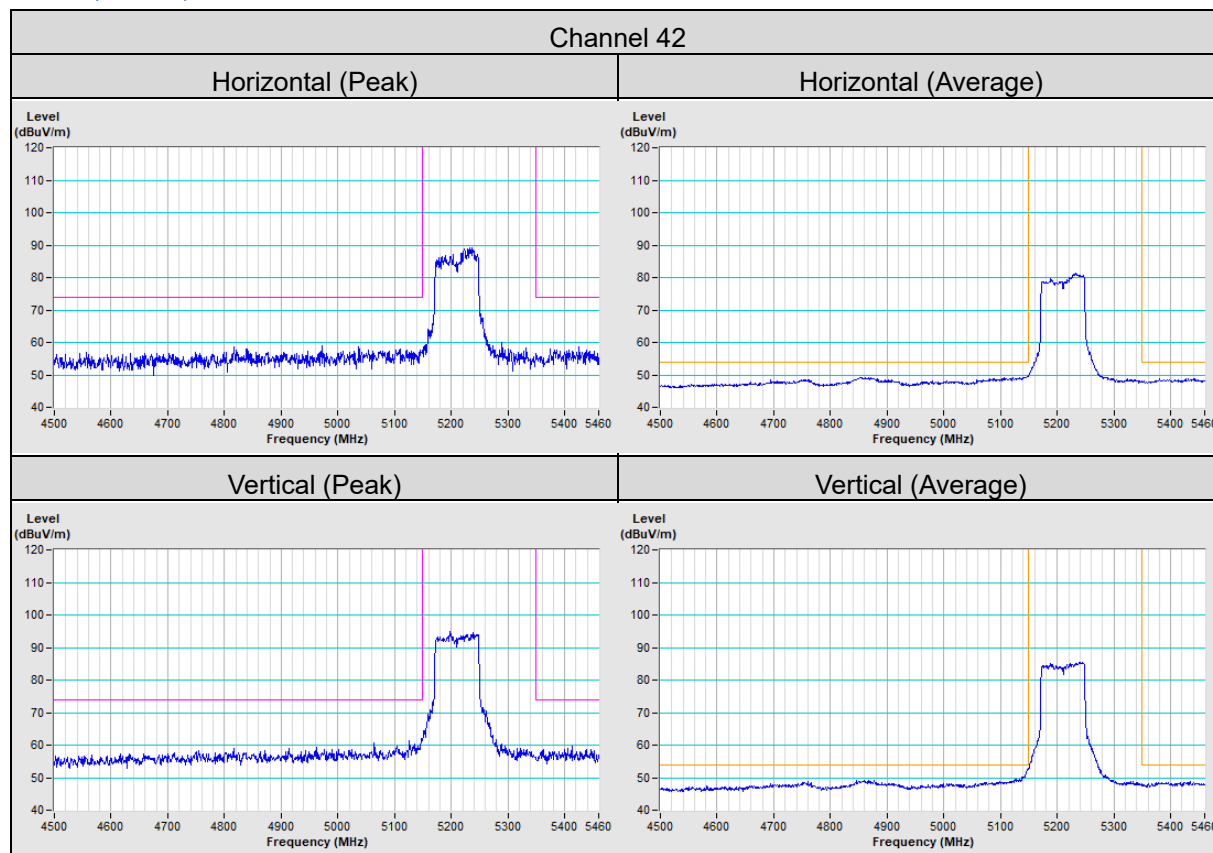
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



Appendix – Information of the Testing Laboratories

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

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

Linko EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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