

FCC Test Report

Report No.: RF200615C06-1

FCC ID: H8NTN502A1

Test Model: TN502A1

Series Model: TN502A1(WOS), access, access(WOS) (refer to item 3.1 for more details)

Received Date: Apr. 04, 2020

Test Date: Apr. 04 ~ Oct. 23, 2020

Issued Date: Oct. 27, 2020

Applicant: ASKEY COMPUTER CORP.

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**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RF200615C06-1	Original release	Oct. 27, 2020

1 Certificate of Conformity

Product: TurboFon E4 / Handheld Device (refer to item 3.1 for more details)

Brand: TURBONET / Copernic (refer to item 3.1 for more details)

Test Model: TN502A1

Series Model: TN502A1(WOS), access, access(WOS) (refer to item 3.1 for more details)

Sample Status: Engineering sample

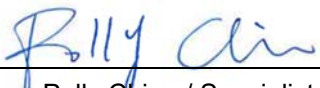
Applicant: ASKEY COMPUTER CORP.

Test Date: Apr. 04 ~ Oct. 23, 2020

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 / Specialist

Date:

Oct. 27, 2020

Approved by :


Bruce Chen / Senior Project Engineer

Date:

Oct. 27, 2020

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -15.92dB at 0.39400MHz.
15.407(b)(1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.0dB at 5925.00MHz.
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 spring not standard connector.

Note:

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

2.1 Measurement Uncertainty

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

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

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	TurboFon E4 / Handheld Device (Refer to Note)
Brand	TURBONET / Coppernic (Refer to Note)
Test Model	TN502A1
Series Model	TN502A1(WOS), access, access(WOS)
Model Difference	Refer to Note
Sample Status	Engineering sample
Power Supply Rating	3.85Vdc (from battery) 5.0Vdc / 9.0Vdc / 12.0Vdc (from adapter)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 150Mbps 802.11ac: up to 433.3Mbps
Operating Frequency	5180 ~ 5240MHz, 5260 ~ 5320MHz, 5500 ~ 5700MHz, 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5260 ~ 5320MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5500 ~ 5700MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 11 802.11n (HT40), 802.11ac (VHT40): 5 802.11ac (VHT80): 2 5745 ~ 5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1
Output Power	5180 ~ 5240MHz: 78.524mW 5260 ~ 5320MHz: 78.705mW 5500 ~ 5700MHz: 78.524mW 5745 ~ 5825MHz: 78.886mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	Refer to note
Cable Supplied	0.95m shielded USB cable without core

Note:

1. All models are listed as below. Model TN502A1 is the representative for final test.

Brand	Product name	Model	Difference	
TURBONET	TurboFon E4	TN502A1	With scanner	-
		TN502A1(WOS)	Without scanner	-
Coppernic	Handheld Device	access	With scanner	Model: access is electrically identical to TN502A1, different brands and model names are for marketing purpose.
		access(WOS)	Without scanner	Model: access(WOS) is electrically identical to TN502A1(WOS), different brands and model names are for marketing purpose.

2. The EUT provide 1 completed transmitter and 1 receiver.

Modulation Mode	TX Function
802.11a	1TX
802.11n (HT20)	1TX
802.11n (HT40)	1TX
802.11ac (VHT20)	1TX
802.11ac (VHT40)	1TX
802.11ac (VHT80)	1TX

* The bandwidth and modulation are similar for HT20/HT40 on 802.11n mode and VHT20/VHT40 on 802.11ac mode, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

3. The EUT uses following antennas.

Ant. Type	PIFA						
Ant. Connector	Spring						
Ant. 1 (WLAN)							
Frequency (MHz)	2400	2450	2500	5150	5350	5725	5825
Peak Gain (dBi)	0.76	1.31	1.46	1.07	1.46	2.23	1.65

* The max. gain was chosen for final tests.

4. The EUT consumes power from the following accessory devices.

Battery	
Brand	ETI
Model	BP19-002710
Rating	3.85Vdc, 4000mAh, 15.4Wh

Adapter	
Brand	CHANNEL WELL TECHNOLOGY
Model	2ACP0183C
Input Power	100-240Vac~0.5A , 50/60Hz
Output Power	5.0Vdc / 3.0A 15.0W / 9.0Vdc / 2.0A 18.0W / 12.0Vdc / 1.5A 18.0W

Item	Brand	Model	Description
Docking Station 1 (optional)	TURBONET	DS12310	The models and brand names of docking station are electrically identical, different models and brand names are for marketing purpose. The docking station 1 was chosen for final test.
Docking Station 2 (optional)	COPPERNIC	DS-ACCESS	
Data Cable Supplied	0.95m shielding USB cable without core		
Adapter (For docking use)			
Brand	Sunny ELECTRONICS CORP.		
Model	SYS1541-2412		
Input Power	100-240Vac, 1.0A, 50/60Hz		
Output Power	+12Vdc, 2A		
Power line	1.5m power cable without core		

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

3.2 Description of Test Modes

For 5180 ~ 5240MHz:

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

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):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

For 5260 ~ 5320MHz:

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290MHz

For 5500 ~ 5700MHz:

11 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

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

5 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

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

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	122	5610 MHz

For 5745 ~ 5825MHz:

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

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):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

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	
A	√	√	√	√	EUT with Adapter
B	-	-	√	-	EUT with Notebook
C	-	√	√	-	EUT with Docking Station

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:

- The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane for mode A, B.**
- "-": 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)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5
	802.11ac (VHT80)		42	42	OFDM	29.3
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5
	802.11ac (VHT80)		58	58	OFDM	29.3
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0
	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	6.5
	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	13.5
	802.11ac (VHT80)		106 to 122	106, 122	OFDM	29.3
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 (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)
A, C	802.11a	5180-5240	36 to 48	60	OFDM	6.0
	802.11a	5260-5320	52 to 64		OFDM	6.0
	802.11a	5500-5700	100 to 140		OFDM	6.0
	802.11a	5745-5825	149 to 165		OFDM	6.0

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A, B, C	802.11a	5180-5240	36 to 48	60	OFDM	6.0
	802.11a	5260-5320	52 to 64		OFDM	6.0
	802.11a	5500-5700	100 to 140		OFDM	6.0
	802.11a	5745-5825	149 to 165		OFDM	6.0

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	6.5
	802.11n (HT40)		38 to 46	38, 46	OFDM	13.5
	802.11ac (VHT80)		42	42	OFDM	29.3
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11n (HT20)		52 to 64	52, 60, 64	OFDM	6.5
	802.11n (HT40)		54 to 62	54, 62	OFDM	13.5
	802.11ac (VHT80)		58	58	OFDM	29.3
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0
	802.11n (HT20)		100 to 140	100, 116, 140	OFDM	6.5
	802.11n (HT40)		102 to 134	102, 110, 134	OFDM	13.5
	802.11ac (VHT80)		106 to 122	106, 122	OFDM	29.3
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 (VHT80)		155	155	OFDM	29.3

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE \geq 1G	23 deg. C, 66% RH 23 deg. C, 67% RH	120Vac, 60Hz	Titan Hsu, Adair Peng
RE<1G	23 deg. C, 66% RH	120Vac, 60Hz	Titan Hsu
PLC	23 deg. C, 67% RH 25 deg. C, 69% RH	120Vac, 60Hz	Adair Peng, Luis Lee
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Gavin Wu

3.3 Duty Cycle of Test Signal

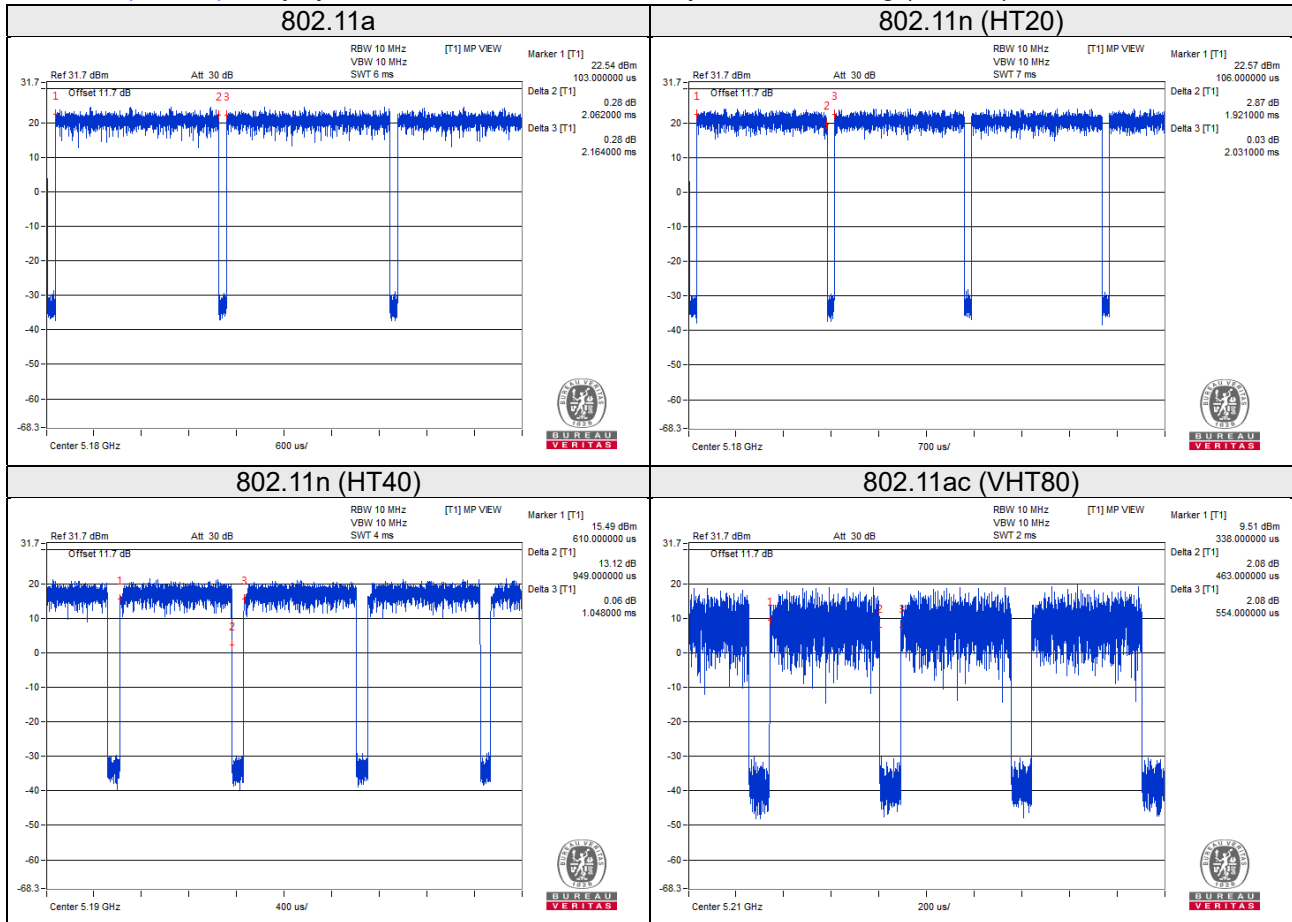
Duty cycle of test signal is < 98%, duty factor is required.

802.11a: Duty cycle = 2.062/2.164 = 0.953, Duty factor = $10 \cdot \log(1/0.953) = 0.21$

802.11n (HT20): Duty cycle = 1.921/2.031 = 0.946, Duty factor = $10 \cdot \log(1/0.946) = 0.24$

802.11n (HT40): Duty cycle = 0.949/1.048 = 0.906, Duty factor = $10 \cdot \log(1/0.906) = 0.43$

802.11ac (VHT80): Duty cycle = 0.463/0.554 = 0.836, Duty factor = $10 \cdot \log(1/0.836) = 0.78$



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	Lenovo	80Q7	PF0KUGU6	FCC DoC Approved	-
B.	Docking Station	TURBONET	DS12310	NA	NA	Provided by client
C.	Adapter	Sunny ELECTRONICS CORP.	SYS1541-2412	NA	NA	Provided by client

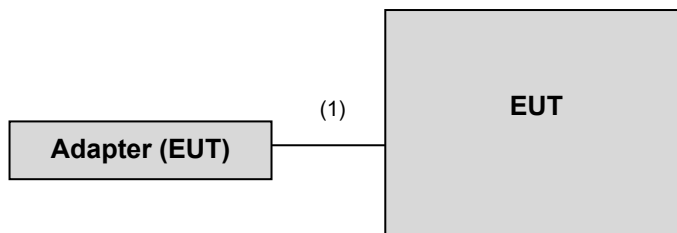
Note:

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

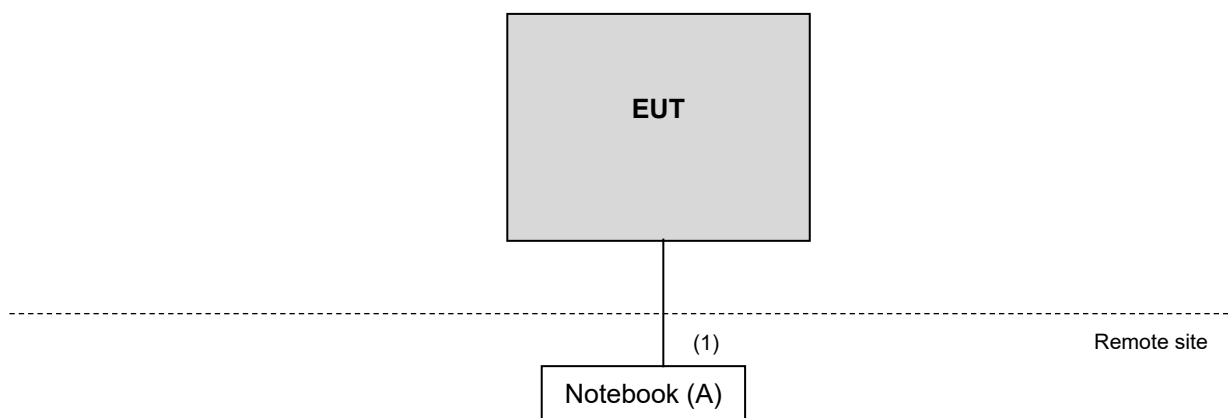
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	0.95	Y	0	Accessory
2.	Power cable	1	1.5	-	0	Provided by client
3.	USB cable	1	0.95	Y	0	Accessory of cradle

3.4.1 Configuration of System under Test

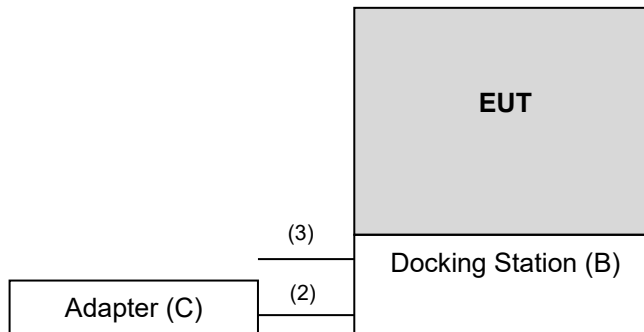
Mode A



Mode B



Mode C



3.5 General Description of Applied Standards and References

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

Test standard:

FCC Part 15, Subpart E (15.407)

ANSI C63.10:2013

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

References Test Guidance:

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

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	<input checked="" type="checkbox"/> 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}
	<input type="checkbox"/> 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.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Dec. 31, 2019	Dec. 30, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jun. 04, 2019	Jun. 03, 2020
			Jun. 09, 2020	Jun. 08, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 11, 2019	Nov. 10, 2020
HORN Antenna SCHWARZBECK	9120D	209	Nov. 24, 2019	Nov. 23, 2020
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 24, 2019	Nov. 23, 2020
Loop Antenna TESEQ	HLA 6121	45745	Jul. 01, 2019	Jun. 30, 2020
			Jul. 06, 2020	Jul. 05, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 20, 2019	Aug. 19, 2020
			Aug. 16, 2020	Aug. 15, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Mar. 23, 2020	Mar. 22, 2021
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH3-01	Aug. 20, 2019	Aug. 19, 2020
			Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 20, 2019	Aug. 19, 2020
			Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM- SM-8000	Cable-CH3-03 (309224+170907)	Aug. 20, 2019	Aug. 19, 2020
			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/MY55190 004/MY55190007/MY55 210005	Jul. 15, 2019	Jul. 14, 2020
			Jul. 13, 2020	Jul. 12, 2021
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Sep. 05, 2019	Sep. 04, 2020
			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:

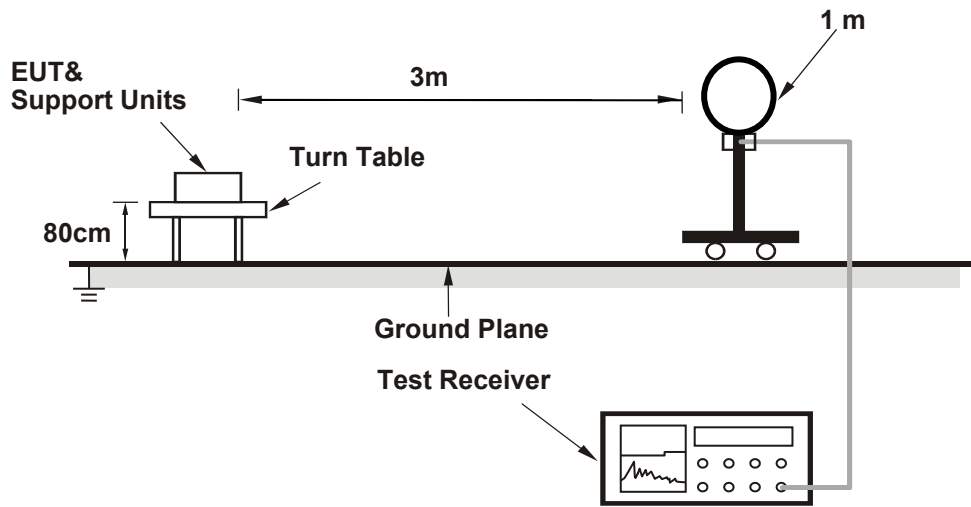
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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.
(802.11a: RBW = 1MHz, VBW = 1kHz; 802.11n (HT20): RBW = 1MHz, VBW = 1kHz;
802.11n (HT40): RBW = 1MHz, VBW = 3kHz; 11ac (VHT80): RBW = 1MHz, VBW = 10kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

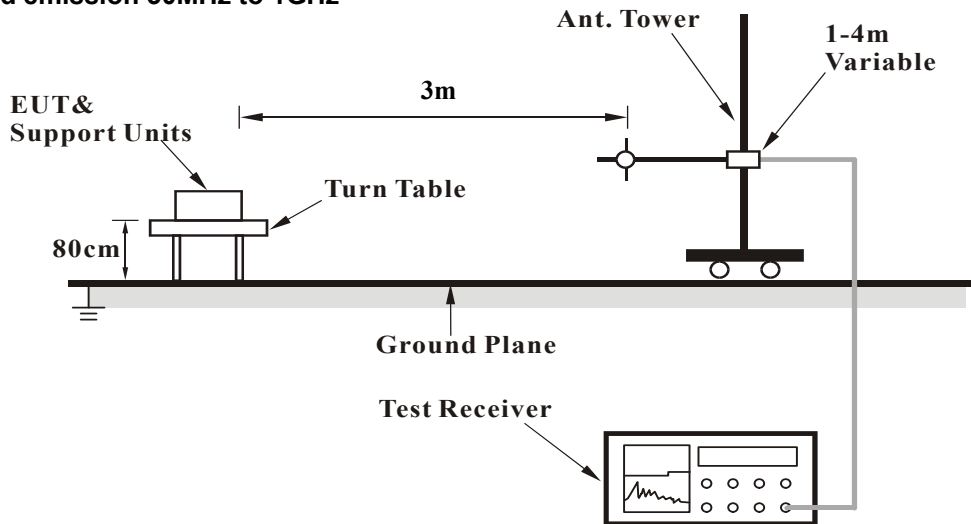
No deviation.

4.1.5 Test Setup

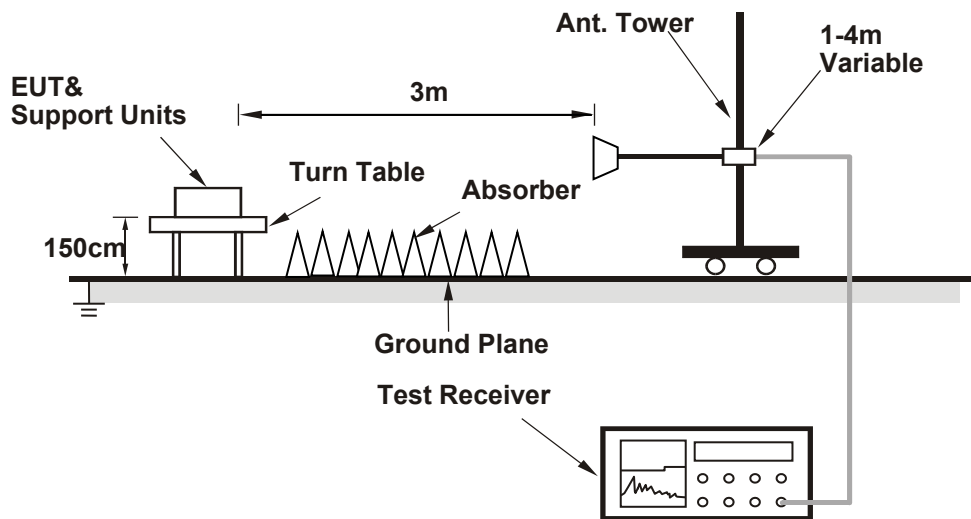
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

- a. Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz data:

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	68.3 PK	74.0	-5.7	1.73 H	251	64.2	4.1
2	5150.00	51.7 AV	54.0	-2.3	1.73 H	251	47.6	4.1
3	*5180.00	113.3 PK			1.73 H	251	74.0	39.3
4	*5180.00	102.3 AV			1.73 H	251	63.0	39.3
5	#10360.00	59.2 PK	68.2	-9.0	1.56 H	303	42.0	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	69.1 PK	74.0	-4.9	1.81 V	96	65.0	4.1
2	5150.00	52.3 AV	54.0	-1.7	1.81 V	96	48.2	4.1
3	*5180.00	112.7 PK			1.81 V	96	73.4	39.3
4	*5180.00	101.9 AV			1.81 V	96	62.6	39.3
5	#10360.00	59.4 PK	68.2	-8.8	1.63 V	203	42.2	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 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	113.3 PK			1.75 H	253	74.0	39.3
2	*5200.00	102.7 AV			1.75 H	253	63.4	39.3
3	#10400.00	60.5 PK	68.2	-7.7	1.61 H	300	43.1	17.4

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	*5200.00	113.9 PK			1.76 V	96	74.6	39.3
2	*5200.00	103.5 AV			1.76 V	96	64.2	39.3
3	#10400.00	60.7 PK	68.2	-7.5	1.75 V	215	43.3	17.4

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 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	112.5 PK			1.71 H	249	73.4	39.1
2	*5240.00	102.3 AV			1.71 H	249	63.2	39.1
3	5350.00	54.4 PK	74.0	-19.6	1.71 H	249	50.3	4.1
4	5350.00	41.4 AV	54.0	-12.6	1.71 H	249	37.3	4.1
5	#10480.00	60.2 PK	68.2	-8.0	1.57 H	307	42.2	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	*5240.00	113.6 PK			1.74 V	94	74.5	39.1
2	*5240.00	103.5 AV			1.74 V	94	64.4	39.1
3	5350.00	54.6 PK	74.0	-19.4	1.74 V	94	50.5	4.1
4	5350.00	41.5 AV	54.0	-12.5	1.74 V	94	37.4	4.1
5	#10480.00	60.1 PK	68.2	-8.1	1.66 V	200	42.1	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 52	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	55.3 PK	74.0	-18.7	1.81 H	247	51.2	4.1
2	5150.00	42.3 AV	54.0	-11.7	1.81 H	247	38.2	4.1
3	*5260.00	112.2 PK			1.81 H	247	73.2	39.0
4	*5260.00	101.7 AV			1.81 H	247	62.7	39.0
5	#10520.00	60.6 PK	68.2	-7.6	1.63 H	308	42.3	18.3

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	5150.00	55.4 PK	74.0	-18.6	1.64 V	105	51.3	4.1
2	5150.00	42.3 AV	54.0	-11.7	1.64 V	105	38.2	4.1
3	*5260.00	114.2 PK			1.64 V	105	75.2	39.0
4	*5260.00	103.8 AV			1.64 V	105	64.8	39.0
5	#10520.00	60.6 PK	68.2	-7.6	1.73 V	205	42.3	18.3

Remarks:

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

CHANNEL	TX Channel 60	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	*5300.00	110.9 PK			1.76 H	241	71.8	39.1
2	*5300.00	101.0 AV			1.76 H	241	61.9	39.1
3	10600.00	61.0 PK	74.0	-13.0	1.52 H	308	42.1	18.9
4	10600.00	48.0 AV	54.0	-6.0	1.52 H	308	29.1	18.9

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	*5300.00	114.3 PK			1.65 V	97	75.2	39.1
2	*5300.00	104.0 AV			1.65 V	97	64.9	39.1
3	10600.00	61.1 PK	74.0	-12.9	1.76 V	209	42.2	18.9
4	10600.00	48.1 AV	54.0	-5.9	1.76 V	209	29.2	18.9

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.

CHANNEL	TX Channel 64	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	*5320.00	110.6 PK			1.78 H	253	71.4	39.2
2	*5320.00	99.8 AV			1.78 H	253	60.6	39.2
3	5350.00	63.6 PK	74.0	-10.4	1.78 H	253	59.5	4.1
4	5350.00	49.9 AV	54.0	-4.1	1.78 H	253	45.8	4.1
5	10640.00	60.9 PK	74.0	-13.1	1.66 H	315	42.3	18.6
6	10640.00	47.8 AV	54.0	-6.2	1.66 H	315	29.2	18.6

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	*5320.00	111.7 PK			1.62 V	118	72.5	39.2
2	*5320.00	101.9 AV			1.62 V	118	62.7	39.2
3	5350.00	66.6 PK	74.0	-7.4	1.62 V	118	62.5	4.1
4	5350.00	52.6 AV	54.0	-1.4	1.62 V	118	48.5	4.1
5	10640.00	60.9 PK	74.0	-13.1	1.82 V	213	42.3	18.6
6	10640.00	47.9 AV	54.0	-6.1	1.82 V	213	29.3	18.6

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.

CHANNEL	TX Channel 100	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	5460.00	59.7 PK	74.0	-14.3	1.65 H	252	55.2	4.5
2	5460.00	44.8 AV	54.0	-9.2	1.65 H	252	40.3	4.5
3	#5470.00	61.5 PK	68.2	-6.7	1.65 H	252	57.0	4.5
4	*5500.00	109.2 PK			1.65 H	252	69.5	39.7
5	*5500.00	99.1 AV			1.65 H	252	59.4	39.7
6	11000.00	61.5 PK	74.0	-12.5	1.77 H	314	42.2	19.3
7	11000.00	48.5 AV	54.0	-5.5	1.77 H	314	29.2	19.3

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	5460.00	61.8 PK	74.0	-12.2	1.61 V	125	57.3	4.5
2	5460.00	46.0 AV	54.0	-8.0	1.61 V	125	41.5	4.5
3	#5470.00	66.5 PK	68.2	-1.7	1.61 V	125	62.0	4.5
4	*5500.00	110.5 PK			1.61 V	125	70.8	39.7
5	*5500.00	100.3 AV			1.61 V	125	60.6	39.7
6	11000.00	61.5 PK	74.0	-12.5	1.65 V	218	42.2	19.3
7	11000.00	48.3 AV	54.0	-5.7	1.65 V	218	29.0	19.3

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 116	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	*5580.00	110.9 PK			1.71 H	252	71.2	39.7
2	*5580.00	100.4 AV			1.71 H	252	60.7	39.7
3	11160.00	60.9 PK	74.0	-13.1	1.78 H	303	42.3	18.6
4	11160.00	47.9 AV	54.0	-6.1	1.78 H	303	29.3	18.6

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	*5580.00	111.4 PK			1.64 V	130	71.7	39.7
2	*5580.00	100.8 AV			1.64 V	130	61.1	39.7
3	11160.00	60.9 PK	74.0	-13.1	1.69 V	220	42.3	18.6
4	11160.00	47.8 AV	54.0	-6.2	1.69 V	220	29.2	18.6

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.

CHANNEL	TX Channel 140	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	*5700.00	110.0 PK			1.71 H	253	70.2	39.8
2	*5700.00	99.6 AV			1.71 H	253	59.8	39.8
3	#5725.00	66.5 PK	68.2	-1.7	1.71 H	253	61.8	4.7
4	11400.00	60.8 PK	74.0	-13.2	1.59 H	315	42.3	18.5
5	11400.00	47.6 AV	54.0	-6.4	1.59 H	315	29.1	18.5

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	*5700.00	110.6 PK			1.54 V	146	70.8	39.8
2	*5700.00	100.2 AV			1.54 V	146	60.4	39.8
3	#5725.00	66.7 PK	68.2	-1.5	1.54 V	146	62.0	4.7
4	11400.00	60.8 PK	74.0	-13.2	1.72 V	215	42.3	18.5
5	11400.00	47.7 AV	54.0	-6.3	1.72 V	215	29.2	18.5

Remarks:

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

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	#5634.62	55.8 PK	68.2	-12.4	1.75 H	249	51.3	4.5
2	*5745.00	112.2 PK			1.75 H	249	72.2	40.0
3	*5745.00	101.7 AV			1.75 H	249	61.7	40.0
4	#5989.74	56.8 PK	68.2	-11.4	1.75 H	249	51.4	5.4
5	11490.00	61.2 PK	74.0	-12.8	1.85 H	324	42.4	18.8
6	11490.00	48.1 AV	54.0	-5.9	1.85 H	324	29.3	18.8

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	#5631.41	55.6 PK	68.2	-12.6	1.43 V	138	51.1	4.5
2	*5745.00	110.6 PK			1.43 V	138	70.6	40.0
3	*5745.00	100.5 AV			1.43 V	138	60.5	40.0
4	#5975.00	56.3 PK	68.2	-11.9	1.43 V	138	51.0	5.3
5	11490.00	61.1 PK	74.0	-12.9	1.73 V	226	42.3	18.8
6	11490.00	48.1 AV	54.0	-5.9	1.73 V	226	29.3	18.8

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 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	#5620.51	56.6 PK	68.2	-11.6	1.80 H	253	52.1	4.5
2	*5785.00	112.6 PK			1.80 H	253	72.4	40.2
3	*5785.00	102.6 AV			1.80 H	253	62.4	40.2
4	#5989.10	56.5 PK	68.2	-11.7	1.80 H	253	51.1	5.4
5	11570.00	60.8 PK	74.0	-13.2	1.85 H	331	42.3	18.5
6	11570.00	47.8 AV	54.0	-6.2	1.85 H	331	29.3	18.5

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	#5620.51	56.4 PK	68.2	-11.8	1.52 V	138	51.9	4.5
2	*5785.00	110.3 PK			1.52 V	138	70.1	40.2
3	*5785.00	100.3 AV			1.52 V	138	60.1	40.2
4	#5982.05	56.2 PK	68.2	-12.0	1.52 V	138	50.8	5.4
5	11570.00	60.9 PK	74.0	-13.1	1.79 V	230	42.4	18.5
6	11570.00	47.8 AV	54.0	-6.2	1.79 V	230	29.3	18.5

Remarks:

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

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	#5613.46	56.1 PK	68.2	-12.1	1.78 H	249	51.6	4.5
2	*5825.00	111.6 PK			1.78 H	249	71.2	40.4
3	*5825.00	101.8 AV			1.78 H	249	61.4	40.4
4	#5987.82	56.4 PK	68.2	-11.8	1.78 H	249	51.0	5.4
5	11650.00	60.8 PK	74.0	-13.2	1.80 H	330	42.3	18.5
6	11650.00	47.8 AV	54.0	-6.2	1.80 H	330	29.3	18.5

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	#5601.92	55.5 PK	68.2	-12.7	1.61 V	148	51.0	4.5
2	*5825.00	111.0 PK			1.61 V	148	70.6	40.4
3	*5825.00	100.6 AV			1.61 V	148	60.2	40.4
4	#5937.82	56.4 PK	68.2	-11.8	1.61 V	148	51.1	5.3
5	11650.00	60.7 PK	74.0	-13.3	1.79 V	232	42.2	18.5
6	11650.00	47.6 AV	54.0	-6.4	1.79 V	232	29.1	18.5

Remarks:

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

802.11n (HT20)

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	68.9 PK	74.0	-5.1	1.71 H	244	64.8	4.1
2	5150.00	52.7 AV	54.0	-1.3	1.71 H	244	48.6	4.1
3	*5180.00	111.8 PK			1.71 H	244	72.5	39.3
4	*5180.00	101.1 AV			1.71 H	244	61.8	39.3
5	#10360.00	59.4 PK	68.2	-8.8	1.61 H	293	42.2	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	69.5 PK	74.0	-4.5	1.73 V	95	65.4	4.1
2	5150.00	52.8 AV	54.0	-1.2	1.73 V	95	48.7	4.1
3	*5180.00	112.4 PK			1.73 V	95	73.1	39.3
4	*5180.00	101.3 AV			1.73 V	95	62.0	39.3
5	#10360.00	59.6 PK	68.2	-8.6	1.74 V	209	42.4	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 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	112.7 PK			1.75 H	255	73.4	39.3
2	*5200.00	101.5 AV			1.75 H	255	62.2	39.3
3	#10400.00	60.9 PK	68.2	-7.3	1.53 H	304	43.5	17.4

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	*5200.00	113.5 PK			1.66 V	108	74.2	39.3
2	*5200.00	102.3 AV			1.66 V	108	63.0	39.3
3	#10400.00	60.8 PK	68.2	-7.4	1.69 V	211	43.4	17.4

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 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	112.4 PK			1.71 H	250	73.3	39.1
2	*5240.00	101.3 AV			1.71 H	250	62.2	39.1
3	5350.00	55.4 PK	74.0	-18.6	1.71 H	250	51.3	4.1
4	5350.00	41.5 AV	54.0	-12.5	1.71 H	250	37.4	4.1
5	#10480.00	60.0 PK	68.2	-8.2	1.58 H	303	42.0	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	*5240.00	113.4 PK			1.72 V	93	74.3	39.1
2	*5240.00	102.3 AV			1.72 V	93	63.2	39.1
3	5350.00	54.9 PK	74.0	-19.1	1.72 V	93	50.8	4.1
4	5350.00	41.6 AV	54.0	-12.4	1.72 V	93	37.5	4.1
5	#10480.00	60.2 PK	68.2	-8.0	1.71 V	193	42.2	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 52	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	56.3 PK	74.0	-17.7	1.80 H	243	52.2	4.1
2	5150.00	42.3 AV	54.0	-11.7	1.80 H	243	38.2	4.1
3	*5260.00	112.1 PK			1.80 H	243	73.1	39.0
4	*5260.00	101.3 AV			1.80 H	243	62.3	39.0
5	#10520.00	60.6 PK	68.2	-7.6	1.59 H	305	42.3	18.3

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	5150.00	55.4 PK	74.0	-18.6	1.65 V	94	51.3	4.1
2	5150.00	42.4 AV	54.0	-11.6	1.65 V	94	38.3	4.1
3	*5260.00	113.7 PK			1.65 V	94	74.7	39.0
4	*5260.00	102.7 AV			1.65 V	94	63.7	39.0
5	#10520.00	60.5 PK	68.2	-7.7	1.77 V	208	42.2	18.3

Remarks:

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

CHANNEL	TX Channel 60	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	*5300.00	111.5 PK			1.79 H	243	72.4	39.1
2	*5300.00	100.6 AV			1.79 H	243	61.5	39.1
3	10600.00	61.2 PK	74.0	-12.8	1.55 H	299	42.3	18.9
4	10600.00	48.0 AV	54.0	-6.0	1.55 H	299	29.1	18.9

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	*5300.00	113.9 PK			1.66 V	106	74.8	39.1
2	*5300.00	102.9 AV			1.66 V	106	63.8	39.1
3	10600.00	61.2 PK	74.0	-12.8	1.79 V	213	42.3	18.9
4	10600.00	48.1 AV	54.0	-5.9	1.79 V	213	29.2	18.9

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.

CHANNEL	TX Channel 64	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	*5320.00	109.5 PK			1.78 H	248	70.3	39.2
2	*5320.00	98.6 AV			1.78 H	248	59.4	39.2
3	5350.00	64.4 PK	74.0	-9.6	1.78 H	248	60.3	4.1
4	5350.00	49.5 AV	54.0	-4.5	1.78 H	248	45.4	4.1
5	10640.00	60.8 PK	74.0	-13.2	1.62 H	304	42.2	18.6
6	10640.00	47.9 AV	54.0	-6.1	1.62 H	304	29.3	18.6

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	*5320.00	112.0 PK			1.66 V	108	72.8	39.2
2	*5320.00	101.7 AV			1.66 V	108	62.5	39.2
3	5350.00	66.6 PK	74.0	-7.4	1.66 V	108	62.5	4.1
4	5350.00	52.6 AV	54.0	-1.4	1.66 V	108	48.5	4.1
5	10640.00	60.9 PK	74.0	-13.1	1.82 V	207	42.3	18.6
6	10640.00	47.8 AV	54.0	-6.2	1.82 V	207	29.2	18.6

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.

CHANNEL	TX Channel 100	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	5460.00	59.0 PK	74.0	-15.0	1.65 H	253	54.5	4.5
2	5460.00	45.1 AV	54.0	-8.9	1.65 H	253	40.6	4.5
3	#5470.00	63.6 PK	68.2	-4.6	1.65 H	253	59.1	4.5
4	*5500.00	109.0 PK			1.65 H	253	69.3	39.7
5	*5500.00	98.3 AV			1.65 H	253	58.6	39.7
6	11000.00	61.5 PK	74.0	-12.5	1.69 H	308	42.2	19.3
7	11000.00	48.4 AV	54.0	-5.6	1.69 H	308	29.1	19.3

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	5460.00	61.3 PK	74.0	-12.7	1.61 V	126	56.8	4.5
2	5460.00	46.7 AV	54.0	-7.3	1.61 V	126	42.2	4.5
3	#5470.00	66.5 PK	68.2	-1.7	1.61 V	126	62.0	4.5
4	*5500.00	110.5 PK			1.61 V	126	70.8	39.7
5	*5500.00	99.8 AV			1.61 V	126	60.1	39.7
6	11000.00	61.6 PK	74.0	-12.4	1.75 V	223	42.3	19.3
7	11000.00	48.6 AV	54.0	-5.4	1.75 V	223	29.3	19.3

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 116	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	*5580.00	110.9 PK			1.71 H	253	71.2	39.7
2	*5580.00	100.0 AV			1.71 H	253	60.3	39.7
3	11160.00	60.9 PK	74.0	-13.1	1.59 H	302	42.3	18.6
4	11160.00	47.9 AV	54.0	-6.1	1.59 H	302	29.3	18.6

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	*5580.00	111.7 PK			1.42 V	128	72.0	39.7
2	*5580.00	100.8 AV			1.42 V	128	61.1	39.7
3	11160.00	60.7 PK	74.0	-13.3	1.66 V	223	42.1	18.6
4	11160.00	47.8 AV	54.0	-6.2	1.66 V	223	29.2	18.6

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.

CHANNEL	TX Channel 140	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	*5700.00	108.4 PK			1.71 H	250	68.6	39.8
2	*5700.00	97.8 AV			1.71 H	250	58.0	39.8
3	#5725.00	66.4 PK	68.2	-1.8	1.71 H	250	61.7	4.7
4	11400.00	60.8 PK	74.0	-13.2	1.72 H	319	42.3	18.5
5	11400.00	47.7 AV	54.0	-6.3	1.72 H	319	29.2	18.5

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	*5700.00	109.0 PK			1.65 V	141	69.2	39.8
2	*5700.00	98.3 AV			1.65 V	141	58.5	39.8
3	#5725.00	66.6 PK	68.2	-1.6	1.65 V	141	61.9	4.7
4	11400.00	60.7 PK	74.0	-13.3	1.72 V	218	42.2	18.5
5	11400.00	47.8 AV	54.0	-6.2	1.72 V	218	29.3	18.5

Remarks:

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

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	#5635.26	55.4 PK	68.2	-12.8	1.60 H	246	50.9	4.5
2	*5745.00	111.5 PK			1.60 H	246	71.5	40.0
3	*5745.00	100.9 AV			1.60 H	246	60.9	40.0
4	#5956.41	56.6 PK	68.2	-11.6	1.60 H	246	51.3	5.3
5	11490.00	61.2 PK	74.0	-12.8	1.77 H	328	42.4	18.8
6	11490.00	47.9 AV	54.0	-6.1	1.77 H	328	29.1	18.8

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	#5621.15	55.7 PK	68.2	-12.5	1.48 V	148	51.2	4.5
2	*5745.00	111.3 PK			1.48 V	148	71.3	40.0
3	*5745.00	100.2 AV			1.48 V	148	60.2	40.0
4	#5967.95	57.1 PK	68.2	-11.1	1.48 V	148	51.8	5.3
5	11460.00	61.1 PK	74.0	-12.9	1.76 V	231	42.4	18.7
6	11460.00	48.0 AV	54.0	-6.0	1.76 V	231	29.3	18.7

Remarks:

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

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	#5644.87	55.8 PK	68.2	-12.4	1.80 H	249	51.3	4.5
2	*5785.00	112.7 PK			1.80 H	249	72.5	40.2
3	*5785.00	102.0 AV			1.80 H	249	61.8	40.2
4	#5989.10	57.3 PK	68.2	-10.9	1.80 H	249	51.9	5.4
5	11570.00	60.8 PK	74.0	-13.2	1.79 H	330	42.3	18.5
6	11570.00	47.8 AV	54.0	-6.2	1.79 H	330	29.3	18.5

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	#5624.36	55.4 PK	68.2	-12.8	1.45 V	140	50.9	4.5
2	*5785.00	110.6 PK			1.45 V	140	70.4	40.2
3	*5785.00	99.8 AV			1.45 V	140	59.6	40.2
4	#5989.10	57.0 PK	68.2	-11.2	1.45 V	140	51.6	5.4
5	11570.00	60.7 PK	74.0	-13.3	1.81 V	228	42.2	18.5
6	11570.00	47.7 AV	54.0	-6.3	1.81 V	228	29.2	18.5

Remarks:

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

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	#5611.54	55.5 PK	68.2	-12.7	1.79 H	247	51.0	4.5
2	*5825.00	112.1 PK			1.79 H	247	71.7	40.4
3	*5825.00	101.3 AV			1.79 H	247	60.9	40.4
4	#5970.51	57.2 PK	68.2	-11.0	1.79 H	247	51.9	5.3
5	11650.00	60.7 PK	74.0	-13.3	1.83 H	332	42.2	18.5
6	11650.00	47.7 AV	54.0	-6.3	1.83 H	332	29.2	18.5

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	#5633.33	56.1 PK	68.2	-12.1	1.61 V	150	51.6	4.5
2	*5825.00	111.1 PK			1.61 V	150	70.7	40.4
3	*5825.00	100.1 AV			1.61 V	150	59.7	40.4
4	#5954.49	57.6 PK	68.2	-10.6	1.61 V	150	52.3	5.3
5	11650.00	60.9 PK	74.0	-13.1	1.82 V	236	42.4	18.5
6	11650.00	47.8 AV	54.0	-6.2	1.82 V	236	29.3	18.5

Remarks:

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

802.11n (HT40)

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	65.5 PK	74.0	-8.5	1.68 H	251	61.4	4.1
2	5150.00	52.3 AV	54.0	-1.7	1.68 H	251	48.2	4.1
3	*5190.00	105.3 PK			1.68 H	251	66.0	39.3
4	*5190.00	95.3 AV			1.68 H	251	56.0	39.3
5	#10380.00	59.8 PK	68.2	-8.4	1.60 H	312	42.4	17.4

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	65.3 PK	74.0	-8.7	1.67 V	93	61.2	4.1
2	5150.00	52.6 AV	54.0	-1.4	1.67 V	93	48.5	4.1
3	*5190.00	105.8 PK			1.67 V	93	66.5	39.3
4	*5190.00	95.9 AV			1.67 V	93	56.6	39.3
5	#10380.00	59.8 PK	68.2	-8.4	1.81 V	193	42.4	17.4

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	109.4 PK			1.71 H	249	70.3	39.1
2	*5230.00	98.6 AV			1.71 H	249	59.5	39.1
3	5350.00	68.3 PK	74.0	-5.7	1.71 H	249	64.2	4.1
4	5350.00	51.3 AV	54.0	-2.7	1.71 H	249	47.2	4.1
5	#10460.00	60.1 PK	68.2	-8.1	1.61 H	293	42.3	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	5150.00	68.0 PK	74.0	-6.0	1.79 V	93	63.9	4.1
2	5150.00	52.3 AV	54.0	-1.7	1.79 V	93	48.2	4.1
3	*5230.00	110.6 PK			1.79 V	93	71.5	39.1
4	*5230.00	99.8 AV			1.79 V	93	60.7	39.1
5	#10460.00	60.3 PK	68.2	-7.9	1.75 V	203	42.5	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.

CHANNEL	TX Channel 54	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	56.3 PK	74.0	-17.7	1.70 H	248	52.2	4.1
2	5150.00	43.3 AV	54.0	-10.7	1.70 H	248	39.2	4.1
3	*5270.00	108.7 PK			1.70 H	248	69.6	39.1
4	*5270.00	98.1 AV			1.70 H	248	59.0	39.1
5	5350.00	61.9 PK	74.0	-12.1	1.70 H	248	57.8	4.1
6	5350.00	48.9 AV	54.0	-5.1	1.70 H	248	44.8	4.1
7	#10540.00	60.8 PK	68.2	-7.4	1.62 H	311	42.3	18.5

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	47.2 PK	74.0	-26.8	1.73 V	96	43.1	4.1
2	5150.00	43.7 AV	54.0	-10.3	1.73 V	96	39.6	4.1
3	*5270.00	110.7 PK			1.73 V	96	71.6	39.1
4	*5270.00	100.1 AV			1.73 V	96	61.0	39.1
5	5350.00	64.8 PK	74.0	-9.2	1.73 V	96	60.7	4.1
6	5350.00	52.5 AV	54.0	-1.5	1.73 V	96	48.4	4.1
7	#10540.00	60.7 PK	68.2	-7.5	1.82 V	211	42.2	18.5

Remarks:

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

CHANNEL	TX Channel 62	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	*5310.00	103.2 PK			1.79 H	243	64.0	39.2
2	*5310.00	93.4 AV			1.79 H	243	54.2	39.2
3	5350.00	60.5 PK	74.0	-13.5	1.79 H	243	56.4	4.1
4	5350.00	47.3 AV	54.0	-6.7	1.79 H	243	43.2	4.1
5	10620.00	61.0 PK	74.0	-13.0	1.59 H	305	42.2	18.8
6	10620.00	47.9 AV	54.0	-6.1	1.59 H	305	29.1	18.8

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	*5310.00	105.6 PK			1.78 V	112	66.4	39.2
2	*5310.00	95.8 AV			1.78 V	112	56.6	39.2
3	5350.00	65.8 PK	74.0	-8.2	1.78 V	112	61.7	4.1
4	5350.00	52.5 AV	54.0	-1.5	1.78 V	112	48.4	4.1
5	10620.00	61.0 PK	74.0	-13.0	1.82 V	211	42.2	18.8
6	10620.00	47.9 AV	54.0	-6.1	1.82 V	211	29.1	18.8

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.

CHANNEL	TX Channel 102	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	5460.00	60.5 PK	74.0	-13.5	1.62 H	254	56.0	4.5
2	5460.00	44.5 AV	54.0	-9.5	1.62 H	254	40.0	4.5
3	#5470.00	62.7 PK	68.2	-5.5	1.62 H	254	58.2	4.5
4	*5510.00	102.9 PK			1.62 H	254	63.2	39.7
5	*5510.00	93.0 AV			1.62 H	254	53.3	39.7
6	11020.00	61.4 PK	74.0	-12.6	1.72 H	315	42.3	19.1
7	11020.00	48.3 AV	54.0	-5.7	1.72 H	315	29.2	19.1

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	5460.00	63.5 PK	74.0	-10.5	1.60 V	128	59.0	4.5
2	5460.00	46.0 AV	54.0	-8.0	1.60 V	128	41.5	4.5
3	#5470.00	66.5 PK	68.2	-1.7	1.60 V	128	62.0	4.5
4	*5510.00	104.2 PK			1.60 V	128	64.5	39.7
5	*5510.00	94.4 AV			1.60 V	128	54.7	39.7
6	11020.00	61.4 PK	74.0	-12.6	1.66 V	217	42.3	19.1
7	11020.00	48.3 AV	54.0	-5.7	1.66 V	217	29.2	19.1

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 110	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	5460.00	58.7 PK	74.0	-15.3	1.70 H	251	54.2	4.5
2	5460.00	44.9 AV	54.0	-9.1	1.70 H	251	40.4	4.5
3	#5470.00	63.2 PK	68.2	-5.0	1.70 H	251	58.7	4.5
4	*5550.00	107.8 PK			1.70 H	251	68.1	39.7
5	*5550.00	97.4 AV			1.70 H	251	57.7	39.7
6	11100.00	60.9 PK	74.0	-13.1	1.66 H	305	42.3	18.6
7	11100.00	47.8 AV	54.0	-6.2	1.66 H	305	29.2	18.6

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	5460.00	60.8 PK	74.0	-13.2	1.58 V	135	56.3	4.5
2	5460.00	46.6 AV	54.0	-7.4	1.58 V	135	42.1	4.5
3	#5470.00	66.5 PK	68.2	-1.7	1.58 V	135	62.0	4.5
4	*5550.00	108.6 PK			1.58 V	135	68.9	39.7
5	*5550.00	98.1 AV			1.58 V	135	58.4	39.7
6	11100.00	61.0 PK	74.0	-13.0	1.77 V	221	42.4	18.6
7	11100.00	47.8 AV	54.0	-6.2	1.77 V	221	29.2	18.6

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 134	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	*5670.00	105.9 PK			1.66 H	254	66.1	39.8
2	*5670.00	98.6 AV			1.66 H	254	58.8	39.8
3	#5725.00	66.5 PK	68.2	-1.7	1.66 H	254	61.8	4.7
4	11340.00	60.8 PK	74.0	-13.2	1.72 H	315	42.1	18.7
5	11340.00	47.9 AV	54.0	-6.1	1.72 H	315	29.2	18.7

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	*5670.00	106.7 PK			1.66 V	144	66.9	39.8
2	*5670.00	96.5 AV			1.66 V	144	56.7	39.8
3	#5725.00	66.7 PK	68.2	-1.5	1.66 V	144	62.0	4.7
4	11340.00	61.0 PK	74.0	-13.0	1.72 V	215	42.3	18.7
5	11340.00	48.0 AV	54.0	-6.0	1.72 V	215	29.3	18.7

Remarks:

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

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	#5639.10	55.8 PK	68.2	-12.4	1.71 H	248	51.3	4.5
2	*5755.00	109.8 PK			1.71 H	248	69.8	40.0
3	*5755.00	99.4 AV			1.71 H	248	59.4	40.0
4	#5983.33	57.8 PK	68.2	-10.4	1.71 H	248	52.4	5.4
5	11510.00	60.8 PK	74.0	-13.2	1.75 H	293	41.9	18.9
6	11510.00	47.4 AV	54.0	-6.6	1.75 H	293	28.5	18.9

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	#5650.00	56.2 PK	68.2	-12.0	1.47 V	147	51.8	4.4
2	*5755.00	108.3 PK			1.47 V	147	68.3	40.0
3	*5755.00	97.7 AV			1.47 V	147	57.7	40.0
4	#5971.79	56.2 PK	68.2	-12.0	1.47 V	147	50.9	5.3
5	11510.00	60.7 PK	74.0	-13.3	1.81 V	221	41.8	18.9
6	11510.00	47.1 AV	54.0	-6.9	1.81 V	221	28.2	18.9

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	#5648.72	56.1 PK	68.2	-12.1	1.75 H	251	51.6	4.5
2	*5795.00	109.7 PK			1.75 H	251	69.4	40.3
3	*5795.00	99.0 AV			1.75 H	251	58.7	40.3
4	#5997.44	57.1 PK	68.2	-11.1	1.75 H	251	51.7	5.4
5	11590.00	60.2 PK	74.0	-13.8	1.69 H	299	41.8	18.4
6	11590.00	46.7 AV	54.0	-7.3	1.69 H	299	28.3	18.4

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	#5612.18	55.5 PK	68.2	-12.7	1.46 V	147	51.0	4.5
2	*5795.00	107.5 PK			1.46 V	147	67.2	40.3
3	*5795.00	97.1 AV			1.46 V	147	56.8	40.3
4	#5989.10	57.3 PK	68.2	-10.9	1.46 V	147	51.9	5.4
5	11590.00	60.0 PK	74.0	-14.0	1.81 V	230	41.6	18.4
6	11590.00	46.5 AV	54.0	-7.5	1.81 V	230	28.1	18.4

Remarks:

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

802.11ac (VHT80)

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	62.9 PK	74.0	-11.1	1.71 H	250	58.8	4.1
2	5150.00	51.1 AV	54.0	-2.9	1.71 H	250	47.0	4.1
3	*5210.00	102.0 PK			1.71 H	250	62.8	39.2
4	*5210.00	92.0 AV			1.71 H	250	52.8	39.2
5	5350.00	54.9 PK	74.0	-19.1	1.71 H	250	50.8	4.1
6	5350.00	42.9 AV	54.0	-11.1	1.71 H	250	38.8	4.1
7	#10420.00	60.0 PK	68.2	-8.2	1.55 H	301	42.4	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	5150.00	64.2 PK	74.0	-9.8	1.73 V	107	60.1	4.1
2	5150.00	52.4 AV	54.0	-1.6	1.73 V	107	48.3	4.1
3	*5210.00	102.7 PK			1.73 V	107	63.5	39.2
4	*5210.00	93.0 AV			1.73 V	107	53.8	39.2
5	5350.00	55.4 PK	74.0	-18.6	1.73 V	107	51.3	4.1
6	5350.00	43.2 AV	54.0	-10.8	1.73 V	107	39.1	4.1
7	#10420.00	60.1 PK	68.2	-8.1	1.73 V	199	42.5	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 58	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	55.4 PK	74.0	-18.6	1.75 H	246	51.3	4.1
2	5150.00	43.1 AV	54.0	-10.9	1.75 H	246	39.0	4.1
3	*5290.00	100.3 PK			1.75 H	246	61.2	39.1
4	*5290.00	91.0 AV			1.75 H	246	51.9	39.1
5	5350.00	59.6 PK	74.0	-14.4	1.75 H	246	55.5	4.1
6	5350.00	48.6 AV	54.0	-5.4	1.75 H	246	44.5	4.1
7	#10580.00	60.9 PK	68.2	-7.3	1.62 H	311	42.1	18.8

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	55.2 PK	74.0	-18.8	1.73 V	100	51.1	4.1
2	5150.00	43.4 AV	54.0	-10.6	1.73 V	100	39.3	4.1
3	*5290.00	102.2 PK			1.73 V	100	63.1	39.1
4	*5290.00	92.5 AV			1.73 V	100	53.4	39.1
5	5350.00	65.1 PK	74.0	-8.9	1.73 V	100	61.0	4.1
6	5350.00	52.4 AV	54.0	-1.6	1.73 V	100	48.3	4.1
7	#10580.00	61.2 PK	68.2	-7.0	1.82 V	214	42.4	18.8

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 106	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	5460.00	60.9 PK	74.0	-13.1	1.74 H	253	56.4	4.5
2	5460.00	49.8 AV	54.0	-4.2	1.74 H	253	45.3	4.5
3	#5470.00	62.8 PK	68.2	-5.4	1.74 H	253	58.3	4.5
4	*5530.00	99.4 PK			1.74 H	253	59.7	39.7
5	*5530.00	89.8 AV			1.74 H	253	50.1	39.7
6	#5725.00	56.4 PK	68.2	-11.8	1.74 H	253	51.7	4.7
7	11060.00	61.3 PK	74.0	-12.7	1.65 H	308	42.4	18.9
8	11060.00	48.5 AV	54.0	-5.5	1.65 H	308	29.6	18.9

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	5460.00	63.4 PK	74.0	-10.6	1.68 V	138	58.9	4.5
2	5460.00	51.7 AV	54.0	-2.3	1.68 V	138	47.2	4.5
3	#5470.00	66.5 PK	68.2	-1.7	1.68 V	138	62.0	4.5
4	*5530.00	101.1 PK			1.68 V	138	61.4	39.7
5	*5530.00	91.6 AV			1.68 V	138	51.9	39.7
6	#5725.00	55.9 PK	68.2	-12.3	1.68 V	138	51.2	4.7
7	11060.00	61.4 PK	74.0	-12.6	1.59 V	209	42.5	18.9
8	11060.00	48.5 AV	54.0	-5.5	1.59 V	209	29.6	18.9

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 122	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	5460.00	58.5 PK	74.0	-15.5	1.71 H	261	54.0	4.5
2	5460.00	47.7 AV	54.0	-6.3	1.71 H	261	43.2	4.5
3	#5470.00	60.5 PK	68.2	-7.7	1.71 H	261	56.0	4.5
4	*5610.00	104.6 PK			1.71 H	261	64.8	39.8
5	*5610.00	95.1 AV			1.71 H	261	55.3	39.8
6	#5725.00	66.7 PK	68.2	-1.5	1.71 H	261	62.0	4.7
7	11220.00	60.9 PK	74.0	-13.1	1.63 H	313	42.2	18.7
8	11220.00	48.2 AV	54.0	-5.8	1.63 H	313	29.5	18.7

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	5460.00	60.2 PK	74.0	-13.8	1.63 V	146	55.7	4.5
2	5460.00	46.9 AV	54.0	-7.1	1.63 V	146	42.4	4.5
3	#5470.00	61.6 PK	68.2	-6.6	1.63 V	146	57.1	4.5
4	*5610.00	105.0 PK			1.63 V	146	65.2	39.8
5	*5610.00	95.2 AV			1.63 V	146	55.4	39.8
6	#5725.00	66.9 PK	68.2	-1.3	1.63 V	146	62.2	4.7
7	11220.00	61.0 PK	74.0	-13.0	1.74 V	214	42.3	18.7
8	11220.00	48.3 AV	54.0	-5.7	1.74 V	214	29.6	18.7

Remarks:

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

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	#5648.08	66.0 PK	68.2	-2.2	1.68 H	251	61.5	4.5
2	#5650.00	67.1 PK	68.2	-1.1	1.68 H	251	62.7	4.4
3	*5775.00	106.7 PK			1.68 H	251	66.6	40.1
4	*5775.00	97.3 AV			1.68 H	251	57.2	40.1
5	#5925.00	67.2 PK	68.2	-1.0	1.68 H	251	61.9	5.3
6	#5926.28	65.2 PK	68.2	-3.0	1.68 H	251	59.9	5.3
7	11550.00	60.6 PK	74.0	-13.4	1.79 H	285	41.9	18.7
8	11550.00	48.2 AV	54.0	-5.8	1.79 H	285	29.5	18.7

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	#5644.23	65.6 PK	68.2	-2.6	1.57 V	147	61.1	4.5
2	#5650.00	66.7 PK	68.2	-1.5	1.57 V	147	62.3	4.4
3	*5775.00	104.9 PK			1.57 V	147	64.8	40.1
4	*5775.00	95.3 AV			1.57 V	147	55.2	40.1
5	#5925.00	65.8 PK	68.2	-2.4	1.57 V	147	60.5	5.3
6	#5929.49	63.4 PK	68.2	-4.8	1.57 V	147	58.1	5.3
7	11550.00	60.5 PK	74.0	-13.5	1.85 V	222	41.8	18.7
8	11550.00	48.0 AV	54.0	-6.0	1.85 V	222	29.3	18.7

Remarks:

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

Below 1GHz Worst-Case Data:

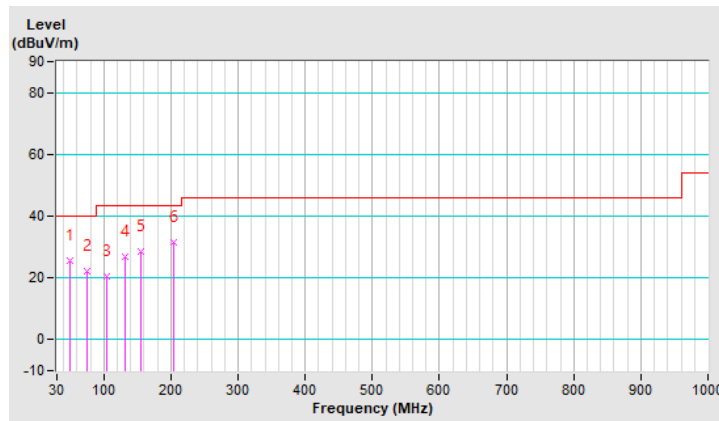
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CHANNEL	TX Channel 60	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

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	49.68	25.7 QP	40.0	-14.3	1.00 H	219	34.5	-8.8
2	74.99	22.2 QP	40.0	-17.8	1.50 H	154	34.1	-11.9
3	104.51	20.4 QP	43.5	-23.1	1.50 H	315	32.8	-12.4
4	132.62	26.8 QP	43.5	-16.7	1.50 H	42	36.5	-9.7
5	155.12	28.7 QP	43.5	-14.8	1.00 H	254	37.3	-8.6
6	204.32	31.5 QP	43.5	-12.0	1.50 H	56	43.1	-11.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. 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.

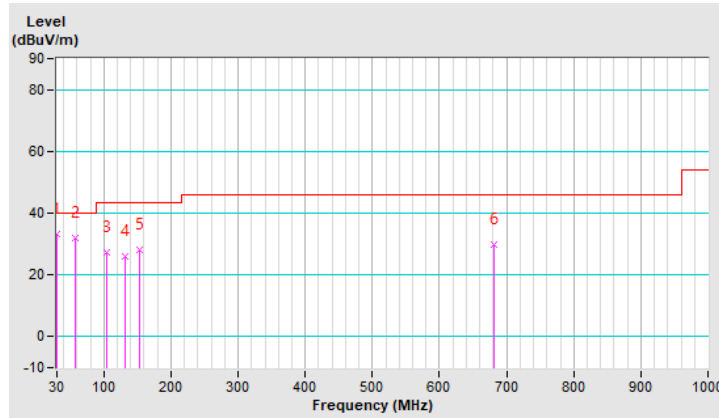


CHANNEL	TX Channel 60	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

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	30.00	33.3 QP	40.0	-6.7	1.49 V	213	43.7	-10.4
2	56.71	31.8 QP	40.0	-8.2	1.49 V	64	40.9	-9.1
3	104.51	27.3 QP	43.5	-16.2	1.00 V	16	39.7	-12.4
4	131.22	26.1 QP	43.5	-17.4	1.00 V	11	36.0	-9.9
5	153.71	28.1 QP	43.5	-15.4	1.00 V	322	36.7	-8.6
6	680.88	30.0 QP	46.0	-16.0	1.49 V	321	28.0	2.0

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. 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.



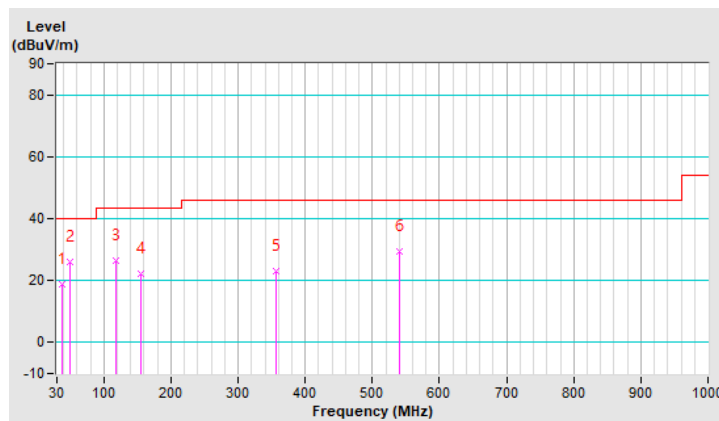
CHANNEL	TX Channel 60	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	C

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	38.43	19.0 QP	40.0	-21.0	1.49 H	16	28.8	-9.8
2	49.68	25.9 QP	40.0	-14.1	1.49 H	16	35.0	-9.1
3	117.16	26.3 QP	43.5	-17.2	1.00 H	309	37.5	-11.2
4	155.12	22.0 QP	43.5	-21.5	1.49 H	16	30.4	-8.4
5	356.14	23.0 QP	46.0	-23.0	1.49 H	357	28.5	-5.5
6	540.30	29.6 QP	46.0	-16.4	1.49 H	16	31.0	-1.4

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. 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.

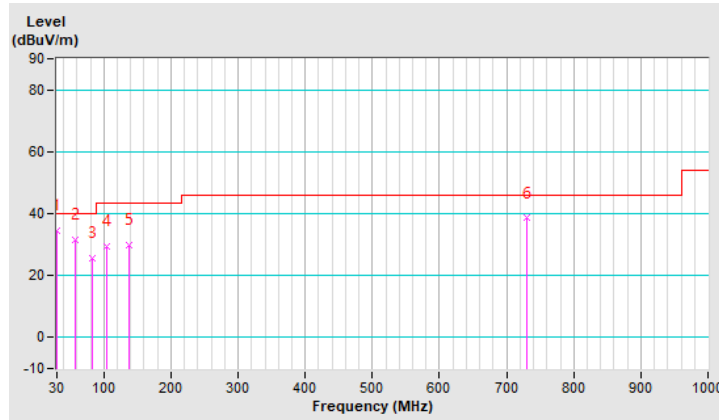


CHANNEL	TX Channel 60	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	C

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	30.00	34.5 QP	40.0	-5.5	1.00 V	334	45.1	-10.6
2	56.71	31.7 QP	40.0	-8.3	1.00 V	115	41.0	-9.3
3	83.42	25.6 QP	40.0	-14.4	1.00 V	16	39.6	-14.0
4	104.51	29.3 QP	43.5	-14.2	1.00 V	261	41.7	-12.4
5	138.25	29.8 QP	43.5	-13.7	1.00 V	140	38.9	-9.1
6	730.09	38.5 QP	46.0	-7.5	1.00 V	16	35.9	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.



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: Apr. 30 ~ Oct. 23, 2020

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 11, 2019	Dec. 10, 2020
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 05, 2019 Sep. 04, 2020	Sep. 04, 2020 Sep. 03, 2021
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 20, 2020	Feb. 19, 2021
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 22, 2019 Aug. 28, 2020	Aug. 21, 2020 Aug. 27, 2021
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

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

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

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

4.2.3 Test Procedures

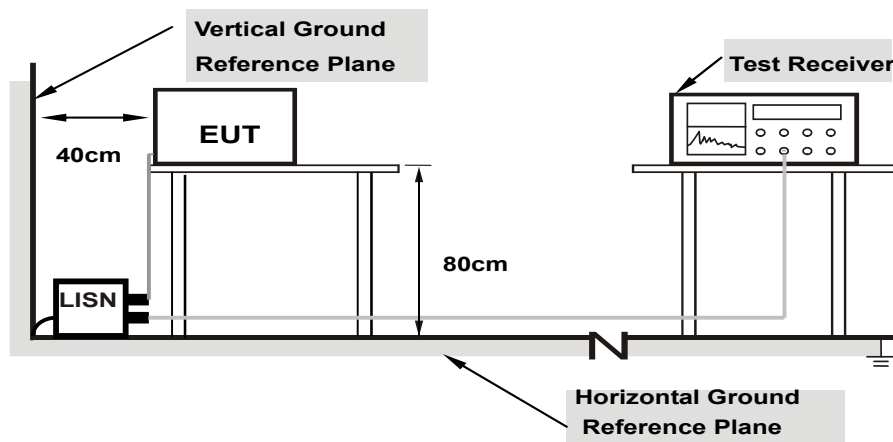
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

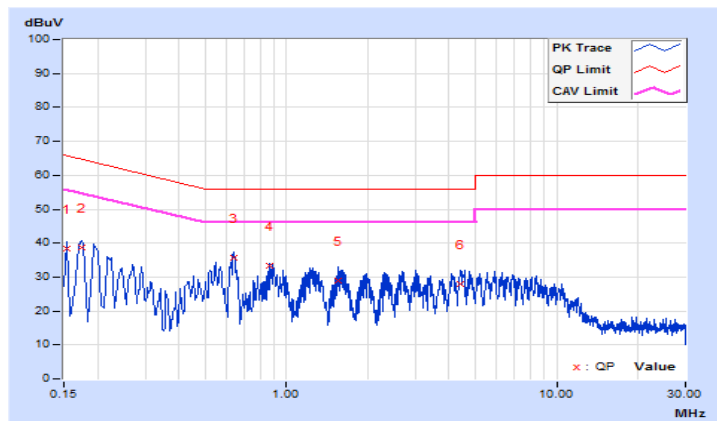
802.11a

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	0.15400	9.63	28.73	16.53	38.36	26.16	65.78	55.78	-27.42	-29.62
2	0.17384	9.63	29.21	17.69	38.84	27.32	64.77	54.77	-25.93	-27.45
3	0.63714	9.66	25.95	17.77	35.61	27.43	56.00	46.00	-20.39	-18.57
4	0.87000	9.67	23.56	13.69	33.23	23.36	56.00	46.00	-22.77	-22.64
5	1.55400	9.71	19.40	10.07	29.11	19.78	56.00	46.00	-26.89	-26.22
6	4.40200	9.80	18.25	9.41	28.05	19.21	56.00	46.00	-27.95	-26.79

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.

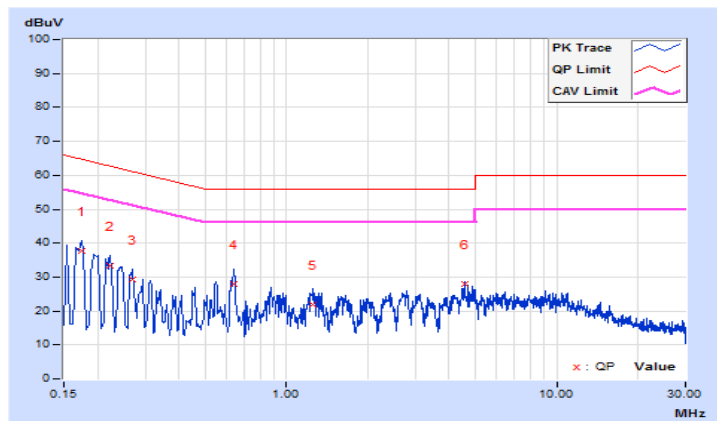


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

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	0.17400	9.65	28.01	14.78	37.66	24.43	64.77
2	0.22200	9.64	23.85	11.27	33.49	20.91	62.74	52.74	-29.25	-31.83
3	0.26992	9.65	19.71	7.56	29.36	17.21	61.12	51.12	-31.76	-33.91
4	0.63800	9.68	18.43	8.88	28.11	18.56	56.00	46.00	-27.89	-27.44
5	1.24600	9.71	12.32	3.81	22.03	13.52	56.00	46.00	-33.97	-32.48
6	4.56600	9.83	18.03	6.02	27.86	15.85	56.00	46.00	-28.14	-30.15

Remarks:

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

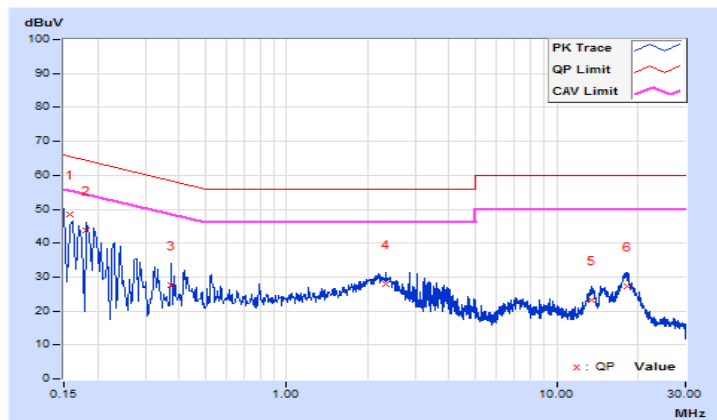


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

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	0.15811	9.63	38.99	22.68	48.62	32.31	65.56
2	0.18200	9.62	34.26	18.39	43.88	28.01	64.39	54.39	-20.51	-26.38
3	0.37400	9.65	18.00	5.70	27.65	15.35	58.41	48.41	-30.76	-33.06
4	2.32600	9.74	18.13	13.66	27.87	23.40	56.00	46.00	-28.13	-22.60
5	13.53400	9.89	13.25	8.13	23.14	18.02	60.00	50.00	-36.86	-31.98
6	18.20600	9.91	17.38	12.14	27.29	22.05	60.00	50.00	-32.71	-27.95

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.

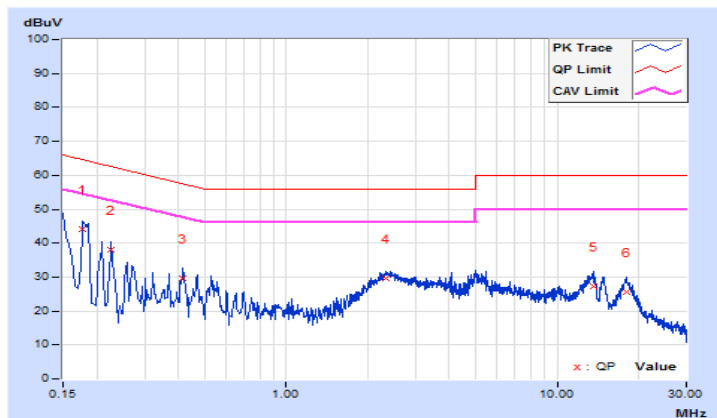


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

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	0.17800	9.65	34.62	19.90	44.27	29.55	64.58
2	0.22600	9.64	28.51	15.06	38.15	24.70	62.60	52.60	-24.45	-27.90
3	0.41400	9.67	19.94	9.58	29.61	19.25	57.57	47.57	-27.96	-28.32
4	2.34133	9.77	19.94	15.29	29.71	25.06	56.00	46.00	-26.29	-20.94
5	13.59400	9.96	17.34	10.24	27.30	20.20	60.00	50.00	-32.70	-29.80
6	18.03000	10.01	15.56	10.22	25.57	20.23	60.00	50.00	-34.43	-29.77

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.

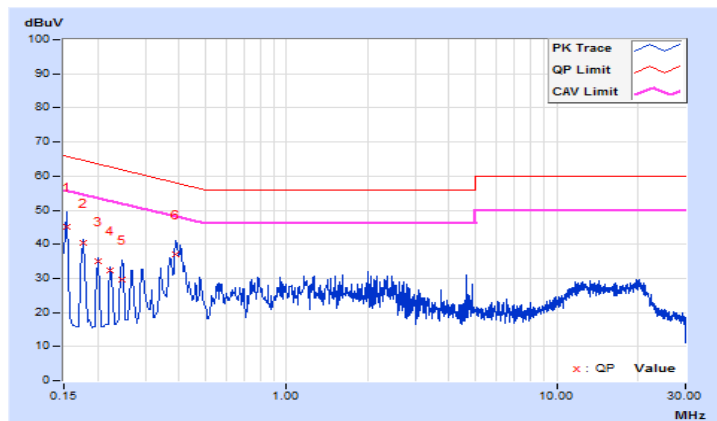


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	C		

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	0.15400	9.82	35.33	18.57	45.15	28.39	65.78
2	0.17800	9.84	30.68	14.05	40.52	23.89	64.58	54.58	-24.06	-30.69
3	0.20200	9.85	25.29	9.90	35.14	19.75	63.53	53.53	-28.39	-33.78
4	0.22200	9.85	22.45	7.61	32.30	17.46	62.74	52.74	-30.44	-35.28
5	0.24600	9.85	19.87	5.41	29.72	15.26	61.89	51.89	-32.17	-36.63
6	0.39000	9.87	27.15	20.92	37.02	30.79	58.06	48.06	-21.04	-17.27

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.

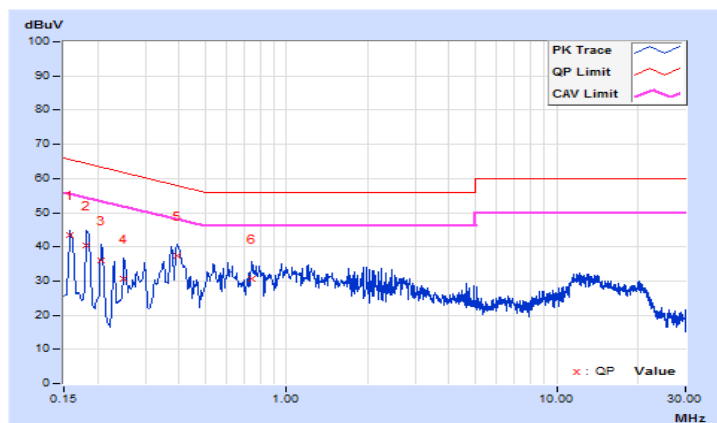


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	C		

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	0.15800	9.84	33.75	18.74	43.59	28.58	65.57
2	0.18200	9.85	30.41	15.75	40.26	25.60	64.39	54.39	-24.13	-28.79
3	0.20600	9.85	26.02	11.63	35.87	21.48	63.37	53.37	-27.50	-31.89
4	0.25000	9.86	20.86	9.64	30.72	19.50	61.76	51.76	-31.04	-32.26
5	0.39400	9.90	27.40	22.16	37.30	32.06	57.98	47.98	-20.68	-15.92
6	0.74600	9.92	20.74	14.61	30.66	24.53	56.00	46.00	-25.34	-21.47

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

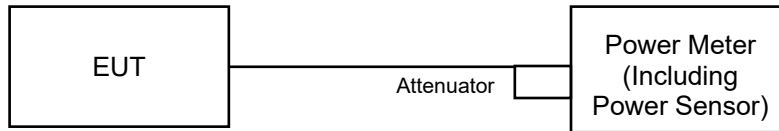
4.3.1 Limits of Transmit Power Measurement

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)

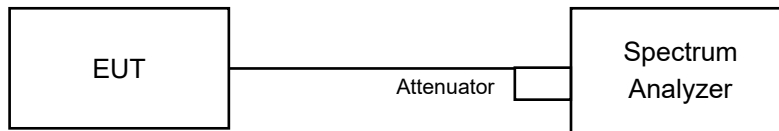
*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup

For Power Output



For 26dB Bandwidth



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

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

For 26dB Bandwidth

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Power Output:
802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	78.524	18.95	24.00	Pass
40	5200	77.625	18.90	24.00	Pass
48	5240	77.983	18.92	24.00	Pass
52	5260	76.736	18.85	24.00	Pass
60	5300	77.090	18.87	24.00	Pass
64	5320	78.705	18.96	24.00	Pass
100	5500	76.736	18.85	24.00	Pass
116	5580	76.560	18.84	24.00	Pass
140	5700	78.524	18.95	24.00	Pass
149	5745	77.804	18.91	30.00	Pass
157	5785	78.343	18.94	30.00	Pass
165	5825	78.705	18.96	30.00	Pass

Note:

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

1. $11\text{dBm} + 10\log(22.39) = 24.50 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(22.51) = 24.52 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(22.50) = 24.52 > 24\text{dBm}$
4. $11\text{dBm} + 10\log(23.47) = 24.70 > 24\text{dBm}$
5. $11\text{dBm} + 10\log(24.00) = 24.80 > 24\text{dBm}$
6. $11\text{dBm} + 10\log(23.91) = 24.78 > 24\text{dBm}$

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	78.163	18.93	24.00	Pass
40	5200	77.446	18.89	24.00	Pass
48	5240	77.625	18.90	24.00	Pass
52	5260	77.268	18.88	24.00	Pass
60	5300	76.033	18.81	24.00	Pass
64	5320	78.343	18.94	24.00	Pass
100	5500	76.384	18.83	24.00	Pass
116	5580	76.033	18.81	24.00	Pass
140	5700	77.804	18.91	24.00	Pass
149	5745	76.736	18.85	30.00	Pass
157	5785	77.625	18.90	30.00	Pass
165	5825	78.343	18.94	30.00	Pass

Note:

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

1. $11\text{dBm} + 10\log(23.76) = 24.75 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(24.65) = 24.91 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(23.81) = 24.76 > 24\text{dBm}$
4. $11\text{dBm} + 10\log(24.23) = 24.84 > 24\text{dBm}$
5. $11\text{dBm} + 10\log(23.64) = 24.73 > 24\text{dBm}$
6. $11\text{dBm} + 10\log(23.76) = 24.75 > 24\text{dBm}$

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	78.163	18.93	24.00	Pass
46	5230	75.162	18.76	24.00	Pass
54	5270	73.621	18.67	24.00	Pass
62	5310	78.163	18.93	24.00	Pass
102	5510	77.983	18.92	24.00	Pass
110	5550	77.268	18.88	24.00	Pass
134	5670	77.804	18.91	24.00	Pass
151	5755	78.886	18.97	30.00	Pass
159	5795	77.983	18.92	30.00	Pass

Note:

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

1. $11\text{dBm} + 10\log(42.49) = 27.28 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(42.31) = 27.26 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(42.39) = 27.27 > 24\text{dBm}$
4. $11\text{dBm} + 10\log(42.73) = 27.30 > 24\text{dBm}$
5. $11\text{dBm} + 10\log(42.46) = 27.27 > 24\text{dBm}$

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	75.858	18.80	24.00	Pass
58	5290	76.208	18.82	24.00	Pass
106	5530	75.858	18.80	24.00	Pass
122	5610	75.509	18.78	24.00	Pass
155	5775	75.162	18.76	30.00	Pass

Note:

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

1. $11\text{dBm} + 10\log(84.70) = 30.27 > 24\text{dBm}$
2. $11\text{dBm} + 10\log(84.75) = 30.28 > 24\text{dBm}$
3. $11\text{dBm} + 10\log(84.54) = 30.27 > 24\text{dBm}$

26dB Bandwidth:

802.11a

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)
52	5260	22.39
60	5300	22.51
64	5320	22.50
100	5500	23.47
116	5580	24.00
140	5700	23.91

802.11n (HT20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)
52	5260	23.76
60	5300	24.65
64	5320	23.81
100	5500	24.23
116	5580	23.64
140	5700	23.76

802.11n (HT40)

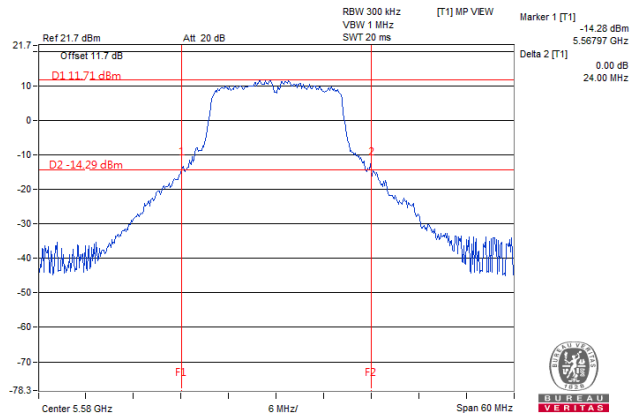
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)
54	5270	42.49
62	5310	42.31
102	5510	42.39
110	5550	42.73
134	5670	42.46

802.11ac (VHT80)

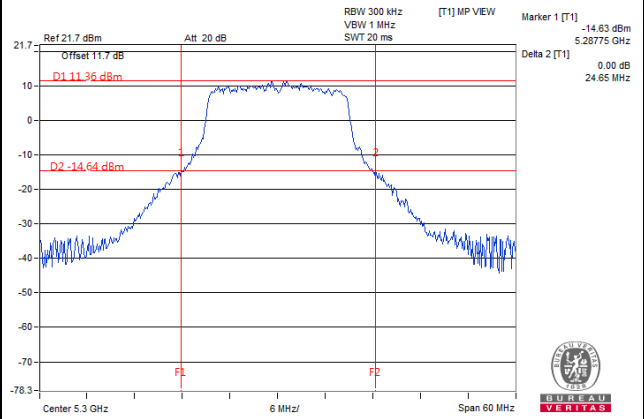
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)
58	5290	84.70
106	5530	84.75
122	5610	84.54

Spectrum Plot of Worst Value

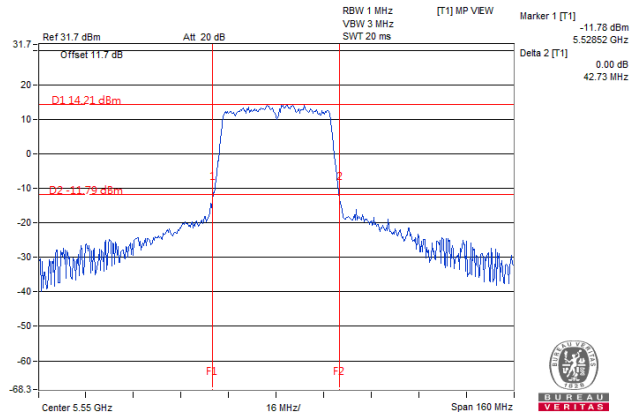
802.11a



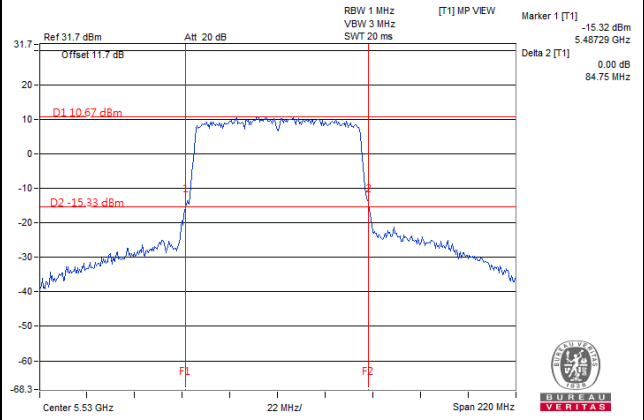
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



EUT Maximum Conducted Power

802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (dBm)	Output Power (mW)
5250~5350	18.96	78.705
5470~5725	18.95	78.524

802.11n (HT20)

Frequency Band (MHz)	Max. Power	
	Output Power (dBm)	Output Power (mW)
5250~5350	18.94	78.343
5470~5725	18.91	77.804

802.11n (HT40)

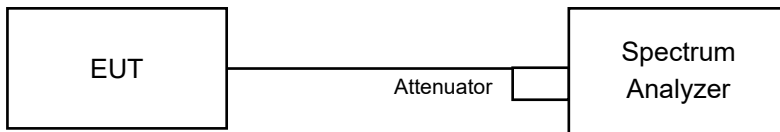
Frequency Band (MHz)	Max. Power	
	Output Power (dBm)	Output Power (mW)
5250~5350	18.93	78.163
5470~5725	18.92	77.983

802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (dBm)	Output Power (mW)
5250~5350	18.82	76.208
5470~5725	18.80	75.858

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

802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
36	5180	16.68
40	5200	16.68
48	5240	16.68
52	5260	16.68
60	5300	16.80
64	5320	16.68
100	5500	16.80
116	5580	16.80
140	5700	16.80
149	5745	16.68
157	5785	16.80
165	5825	16.68

802.11n (HT20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
36	5180	17.88
40	5200	17.88
48	5240	17.88
52	5260	17.88
60	5300	17.88
64	5320	17.88
100	5500	17.88
116	5580	17.88
140	5700	18.00
149	5745	17.88
157	5785	17.88
165	5825	17.88

802.11n (HT40)

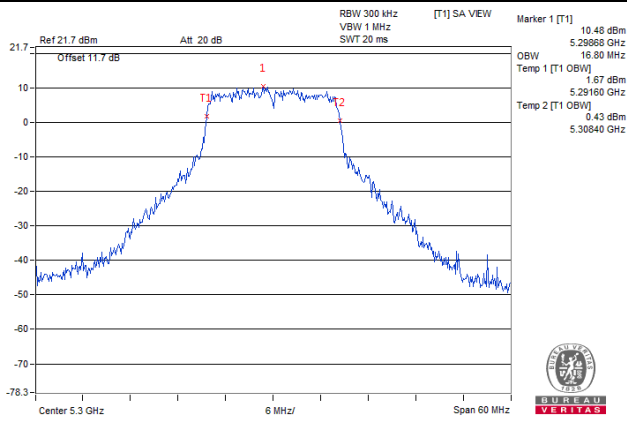
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
38	5190	36.72
46	5230	36.48
54	5270	36.72
62	5310	36.72
102	5510	36.72
110	5550	36.48
134	5670	36.48
151	5755	36.72
159	5795	36.72

802.11ac (VHT80)

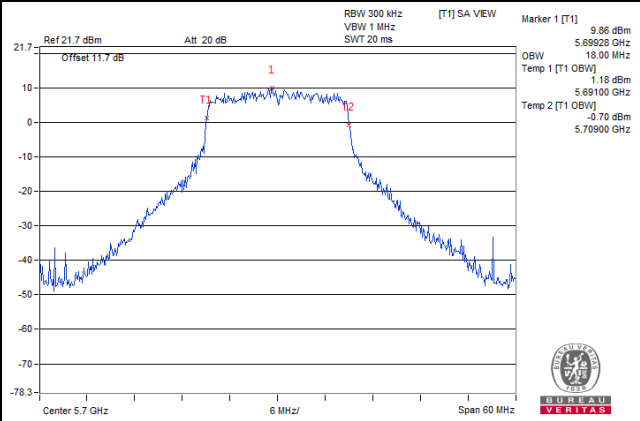
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)
42	5210	76.32
58	5290	75.84
106	5530	75.84
122	5610	76.32
155	5775	75.84

Spectrum Plot of Worst Value

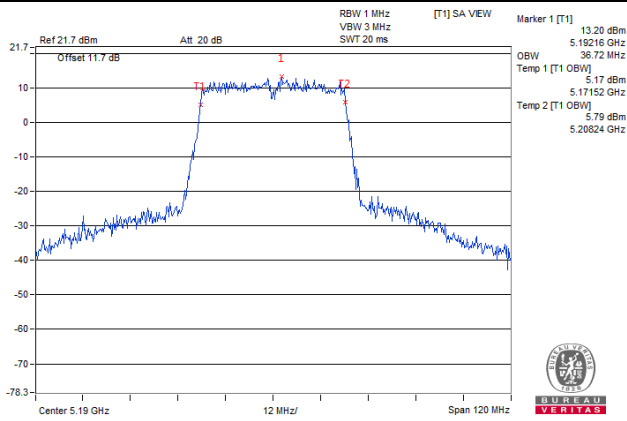
802.11a



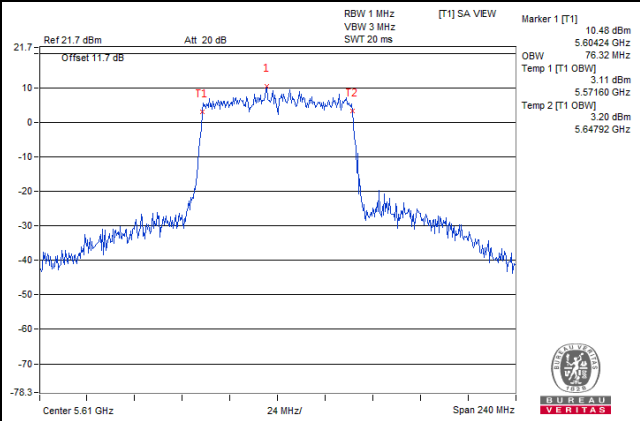
802.11n (HT20)



802.11n (HT40)

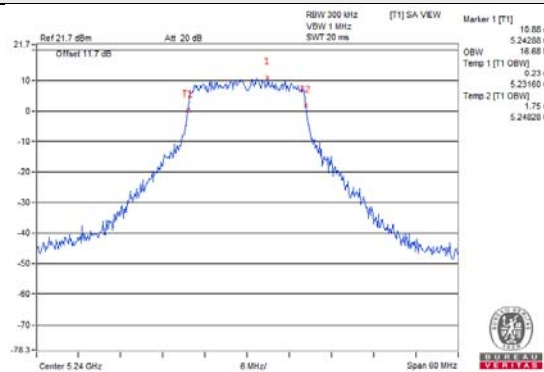


802.11ac (VHT80)

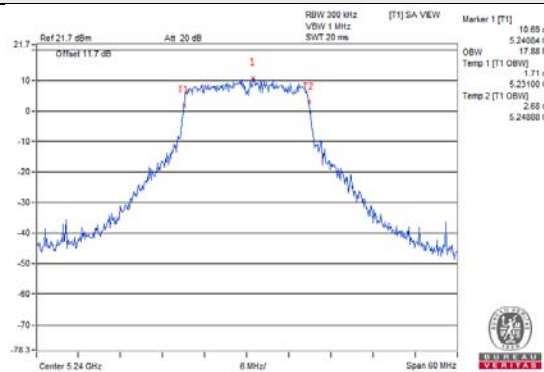


Spectrum Plot for near By DFS Band

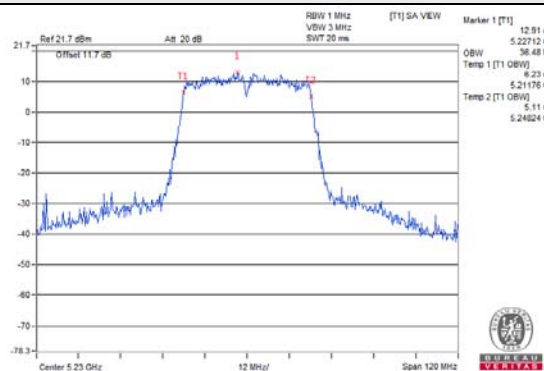
802.11a / CH 48



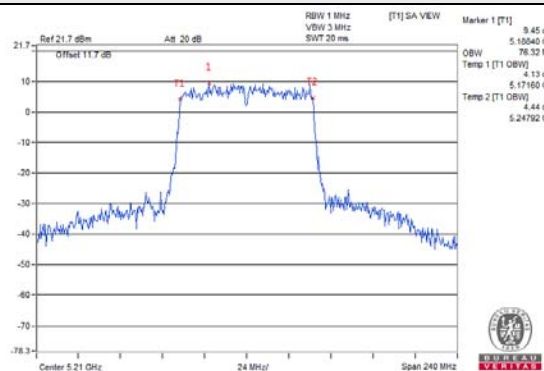
802.11n (HT20) / CH 48



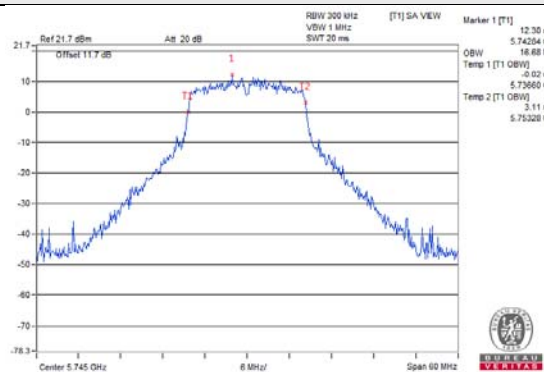
802.11n (HT40) / CH 46



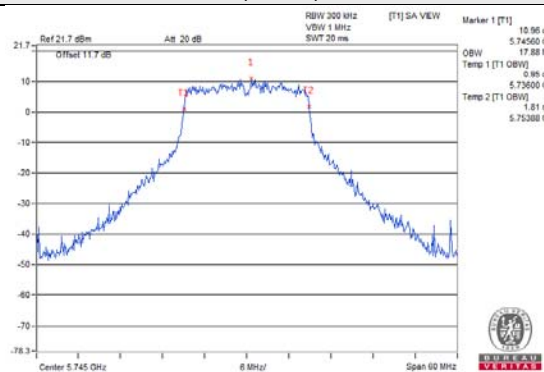
802.11ac (VHT80) / CH 42



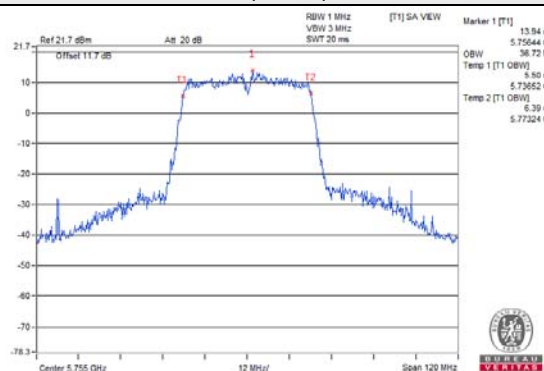
802.11a / CH 149



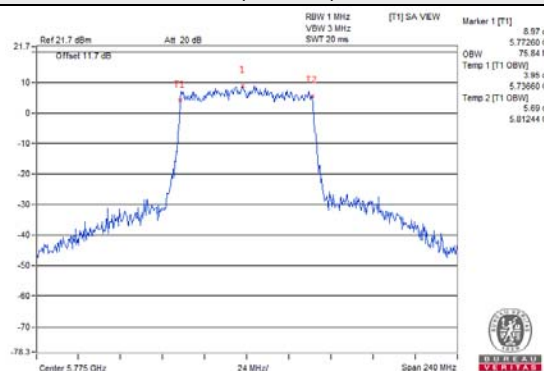
802.11n (HT20) / CH 149



802.11n (HT40) CH 151



802.11ac (VHT80) / CH 155

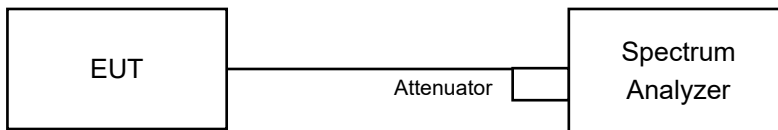


4.5 Peak Power Spectral Density Measurement

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

Using method SA-2

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1MHz, Set VBW \geq 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 $10 \log (1/\text{duty cycle})$

For U-NII-3 band:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

For U-NII-1, U-NII-2A and U-NII-2C 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	6.60	0.21	6.81	11.00	Pass
40	5200	6.80	0.21	7.01	11.00	Pass
48	5240	6.88	0.21	7.09	11.00	Pass
52	5260	6.79	0.21	7.00	11.00	Pass
60	5300	6.34	0.21	6.55	11.00	Pass
64	5320	6.60	0.21	6.81	11.00	Pass
100	5500	6.52	0.21	6.73	11.00	Pass
116	5580	6.35	0.21	6.56	11.00	Pass
140	5700	6.26	0.21	6.47	11.00	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

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	6.22	0.24	6.46	11.00	Pass
40	5200	6.21	0.24	6.45	11.00	Pass
48	5240	6.28	0.24	6.52	11.00	Pass
52	5260	6.15	0.24	6.39	11.00	Pass
60	5300	5.71	0.24	5.95	11.00	Pass
64	5320	5.95	0.24	6.19	11.00	Pass
100	5500	5.91	0.24	6.15	11.00	Pass
116	5580	5.79	0.24	6.03	11.00	Pass
140	5700	5.65	0.24	5.89	11.00	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

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	3.18	0.43	3.61	11.00	Pass
46	5230	2.55	0.43	2.98	11.00	Pass
54	5270	2.34	0.43	2.77	11.00	Pass
62	5310	2.56	0.43	2.99	11.00	Pass
102	5510	2.48	0.43	2.91	11.00	Pass
110	5550	2.74	0.43	3.17	11.00	Pass
134	5670	2.45	0.43	2.88	11.00	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

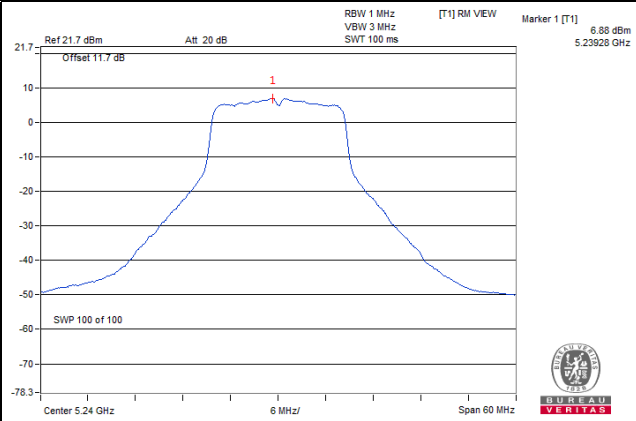
802.11ac (VHT80)

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	-0.33	0.78	0.45	11.00	Pass
58	5290	-0.83	0.78	-0.05	11.00	Pass
106	5530	-1.05	0.78	-0.27	11.00	Pass
122	5610	-0.93	0.78	-0.15	11.00	Pass

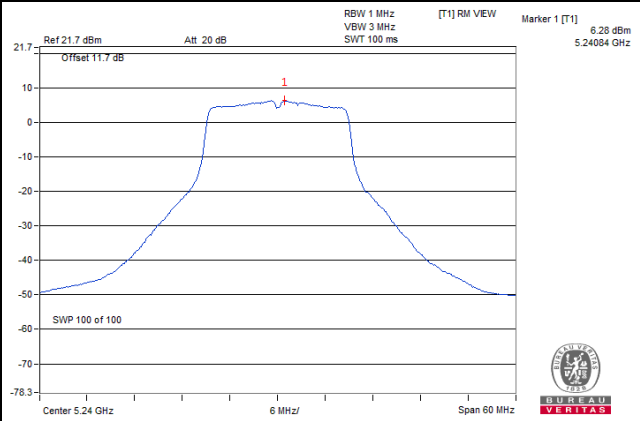
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

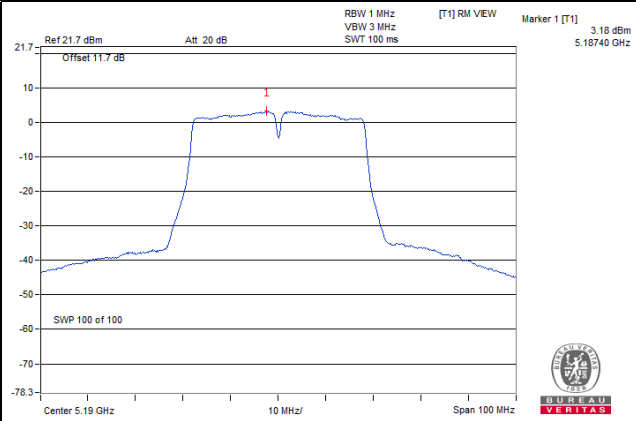
802.11a



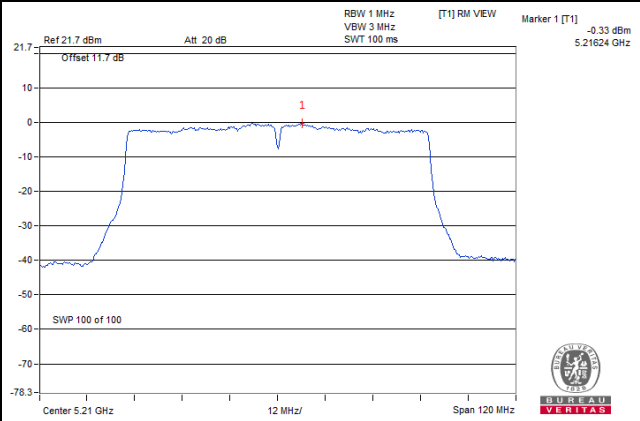
802.11n (HT20)



802.11n (HT40)



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	-2.22	0.00	0.21	0.21	30.00	Pass
157	5785	-1.47	0.75	0.21	0.96	30.00	Pass
165	5825	-1.97	0.25	0.21	0.46	30.00	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

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	-2.66	-0.44	0.24	-0.20	30.00	Pass
157	5785	-2.52	-0.30	0.24	-0.06	30.00	Pass
165	5825	-2.71	-0.49	0.24	-0.25	30.00	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

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	-6.93	-4.71	0.43	-4.28	30.00	Pass
159	5795	-7.06	-4.84	0.43	-4.41	30.00	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

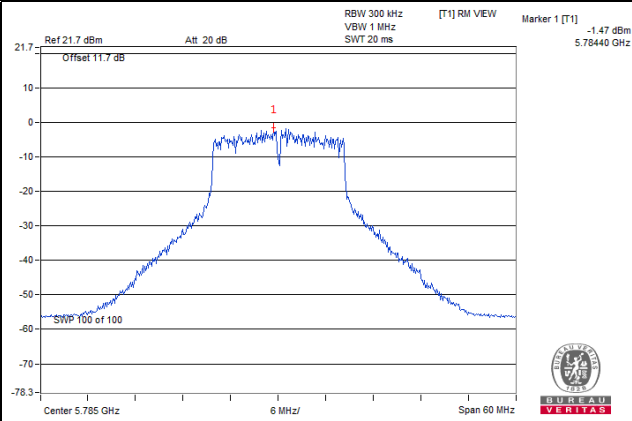
802.11ac (VHT80)

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	-10.53	-8.31	0.78	-7.53	30.00	Pass

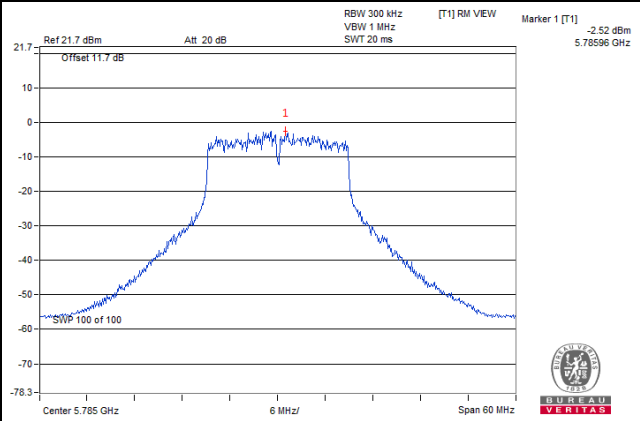
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

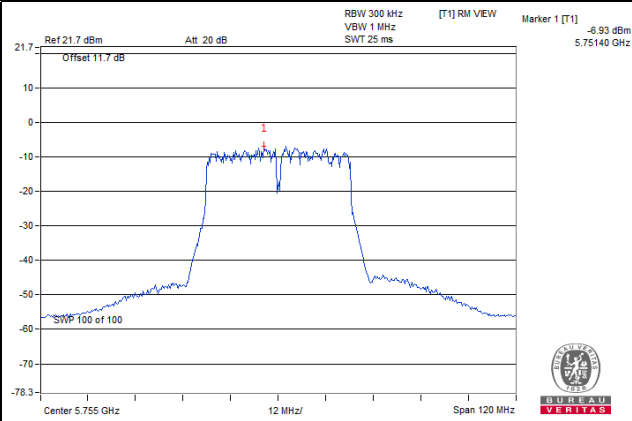
802.11a



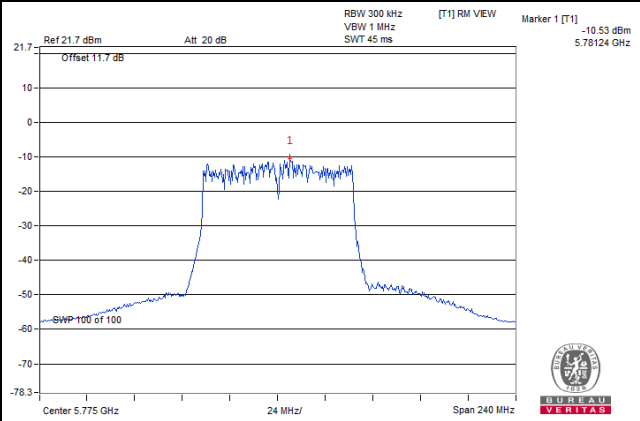
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

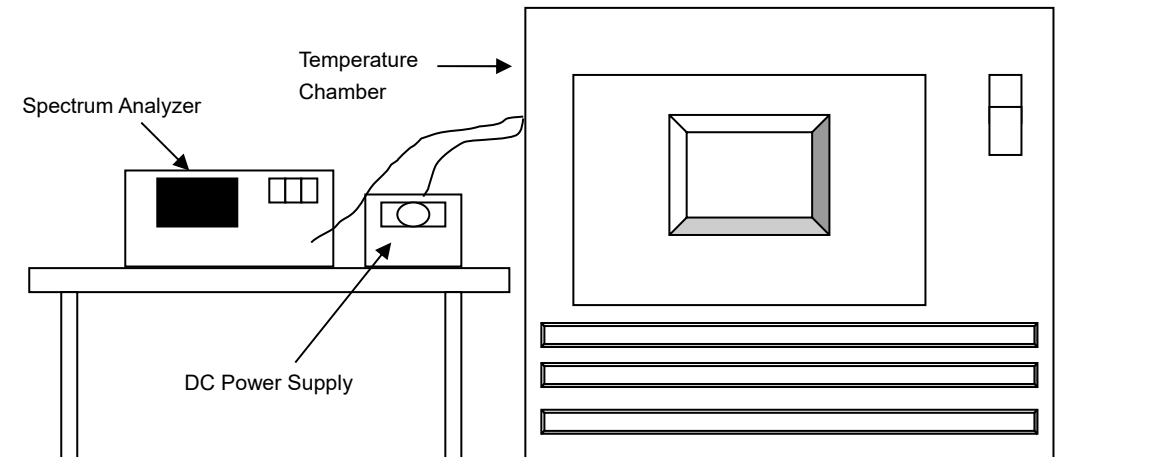


4.6 Frequency Stability

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

Tested date: Apr. 04, 2020

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 12, 2019	Jun. 11, 2020
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 03, 2019	Jun. 02, 2020
Digital Multimeter Fluke	87-III	70360742	Jun. 27, 2019	Jun. 26, 2020
DC Power Supply Topward	6306A	727263	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 DC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vdc)	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	3.85	5179.9891	PASS	5179.9874	PASS	5179.9892	PASS	5179.9872	PASS
40	3.85	5179.9982	PASS	5180.002	PASS	5180	PASS	5179.9986	PASS
30	3.85	5180.0077	PASS	5180.0055	PASS	5180.0057	PASS	5180.0095	PASS
20	3.85	5179.9998	PASS	5179.9983	PASS	5179.9973	PASS	5179.9983	PASS
10	3.85	5180.0093	PASS	5180.0123	PASS	5180.0132	PASS	5180.0104	PASS
0	3.85	5180.0162	PASS	5180.0143	PASS	5180.0157	PASS	5180.0185	PASS
-10	3.85	5179.9911	PASS	5179.9917	PASS	5179.9909	PASS	5179.9915	PASS
-20	3.85	5179.9951	PASS	5179.9939	PASS	5179.9956	PASS	5179.9935	PASS

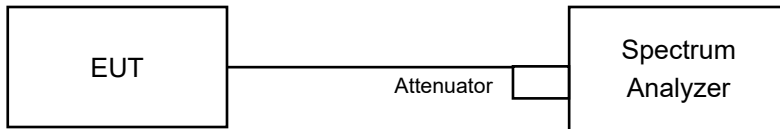
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	4.23	5179.9996	PASS	5179.9977	PASS	5179.9964	PASS	5179.9977	PASS
	3.85	5179.9998	PASS	5179.9983	PASS	5179.9973	PASS	5179.9983	PASS
	3.65	5180.0007	PASS	5179.9979	PASS	5179.9973	PASS	5179.9979	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

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	15.57	0.5	Pass
157	5785	15.66	0.5	Pass
165	5825	15.57	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.81	0.5	Pass
157	5785	15.96	0.5	Pass
165	5825	16.88	0.5	Pass

802.11n (HT40)

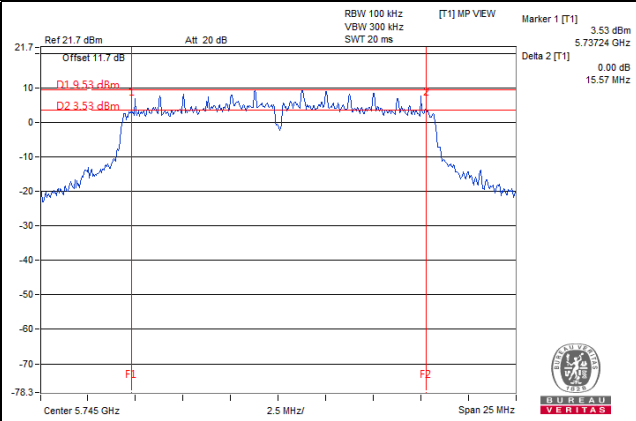
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	36.04	0.5	Pass
159	5795	35.52	0.5	Pass

802.11ac (VHT80)

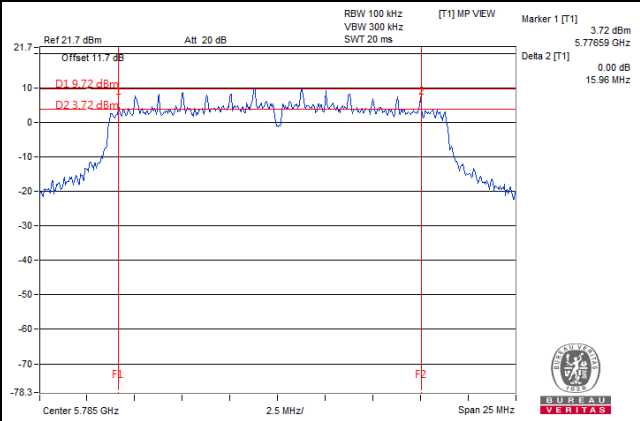
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
155	5775	75.62	0.5	Pass

Spectrum Plot of Worst Value

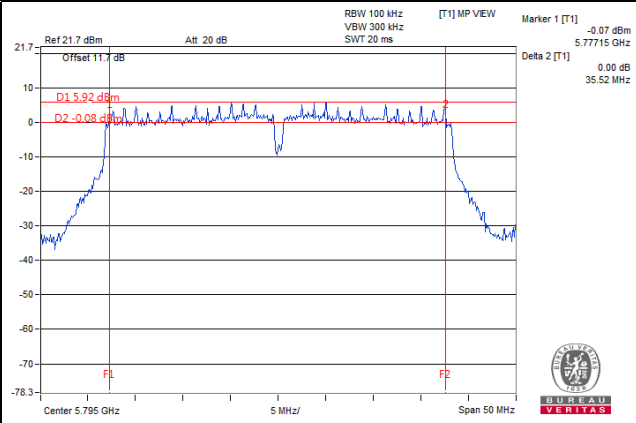
802.11a



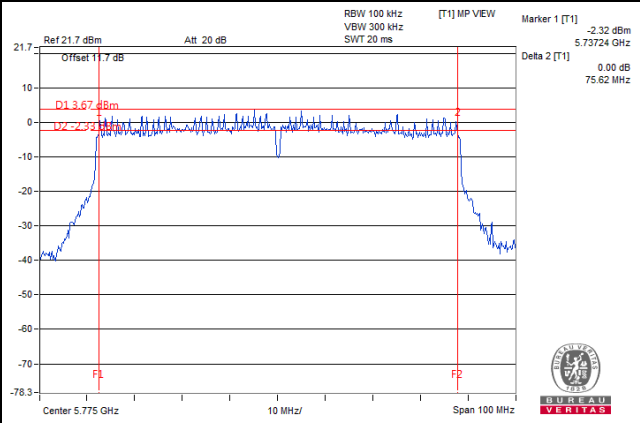
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

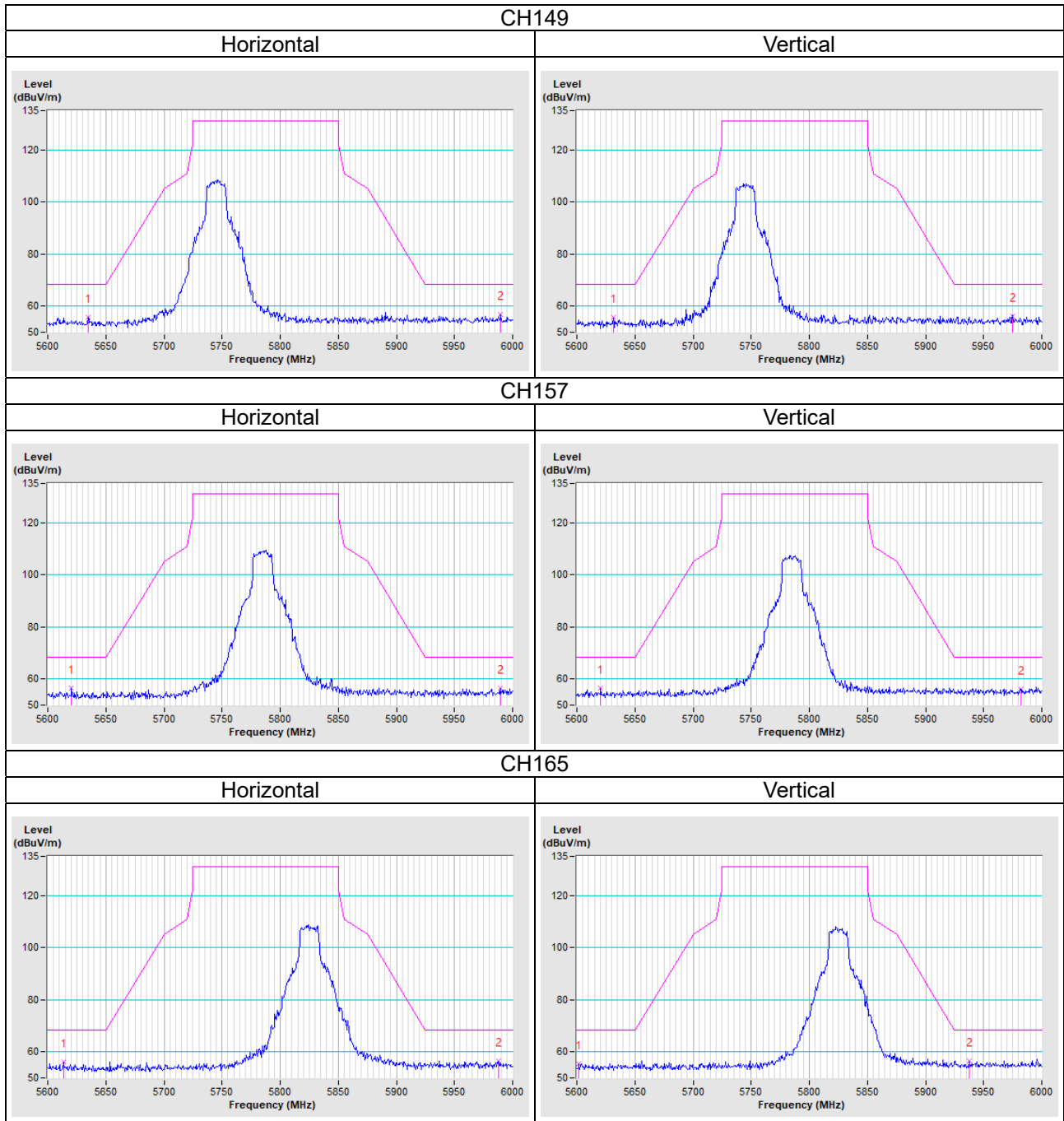


5 Pictures of Test Arrangements

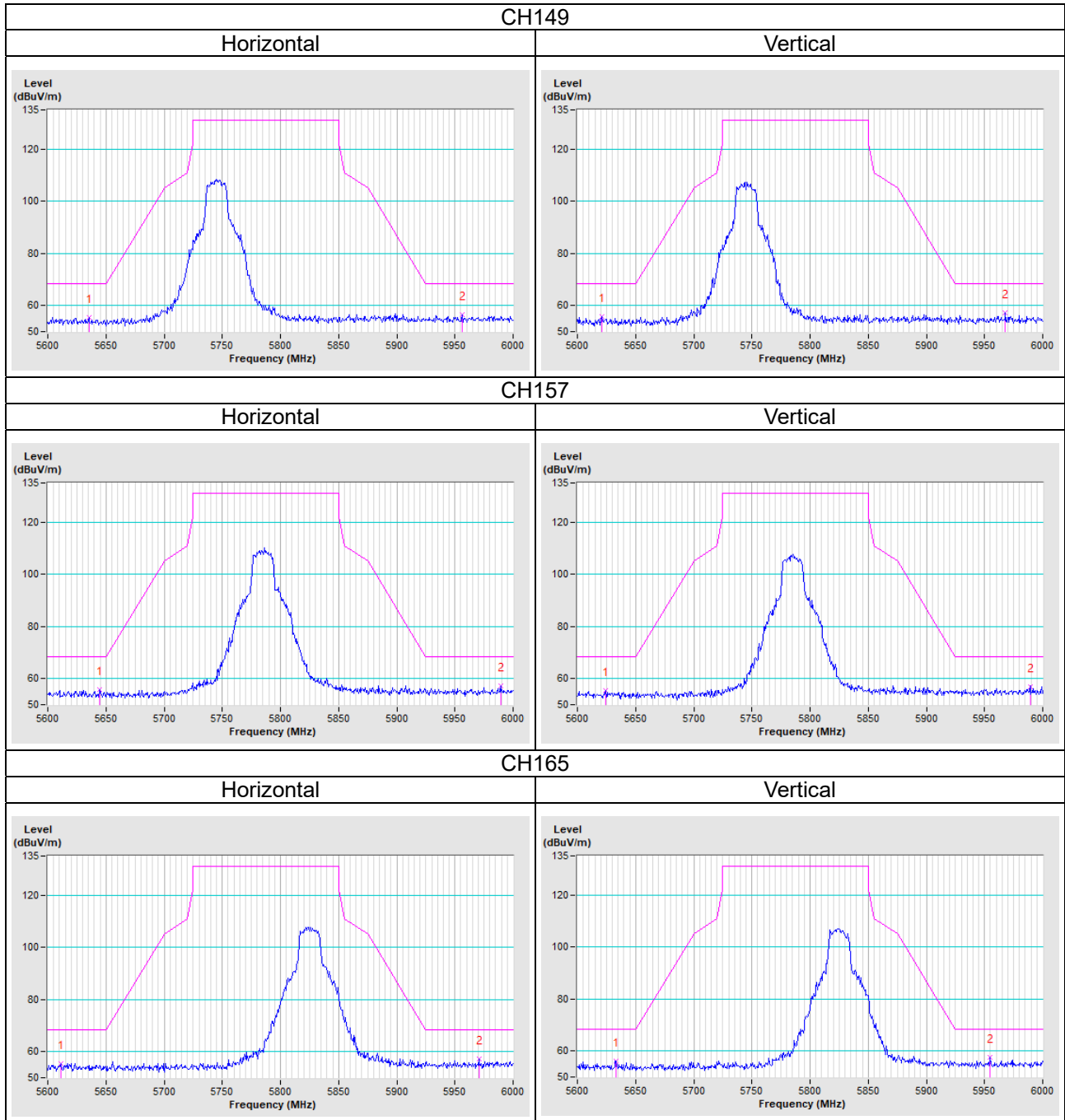
Please refer to the attached file (Test Setup Photo).

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

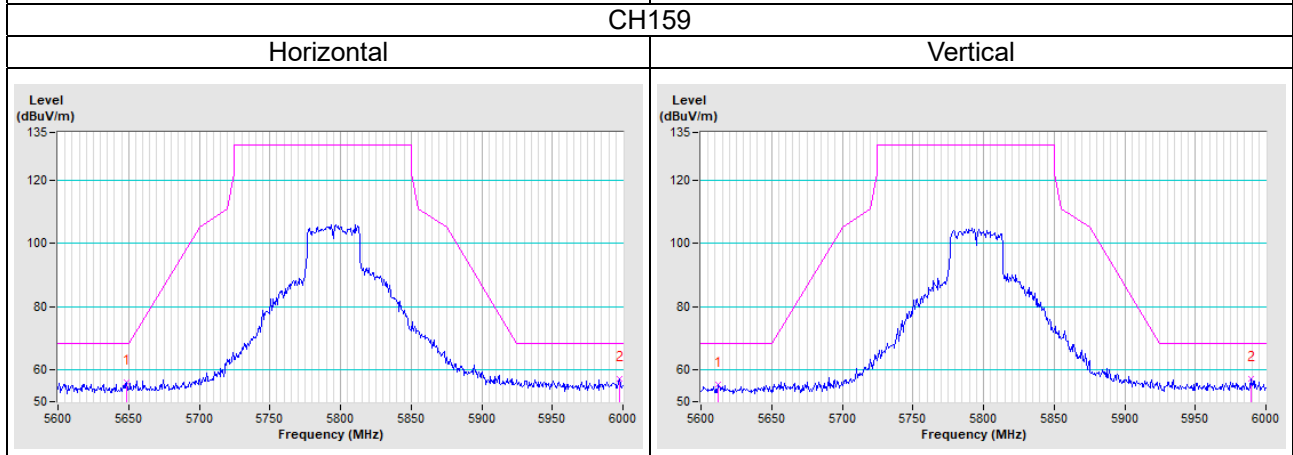
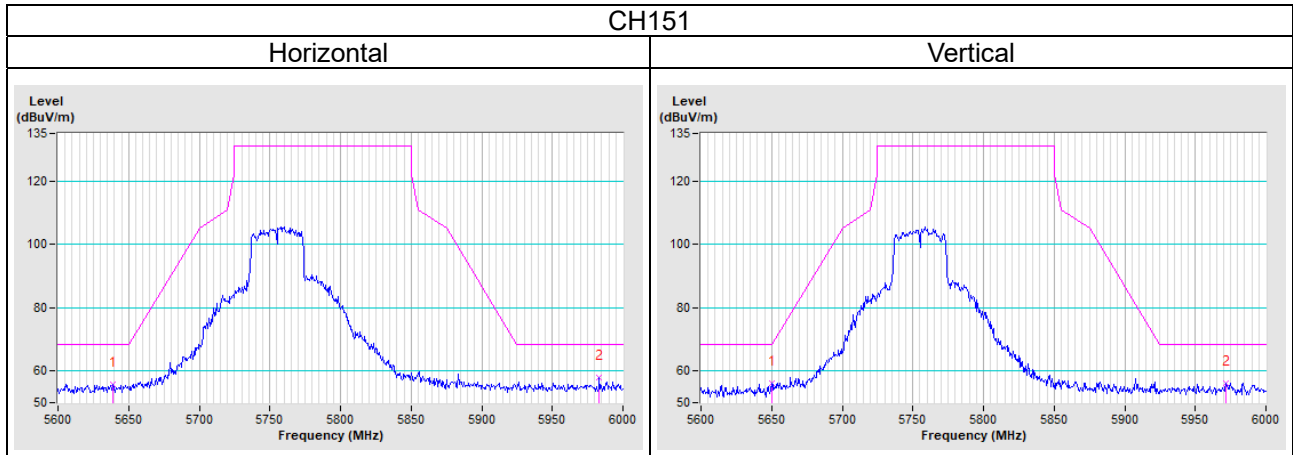
802.11a



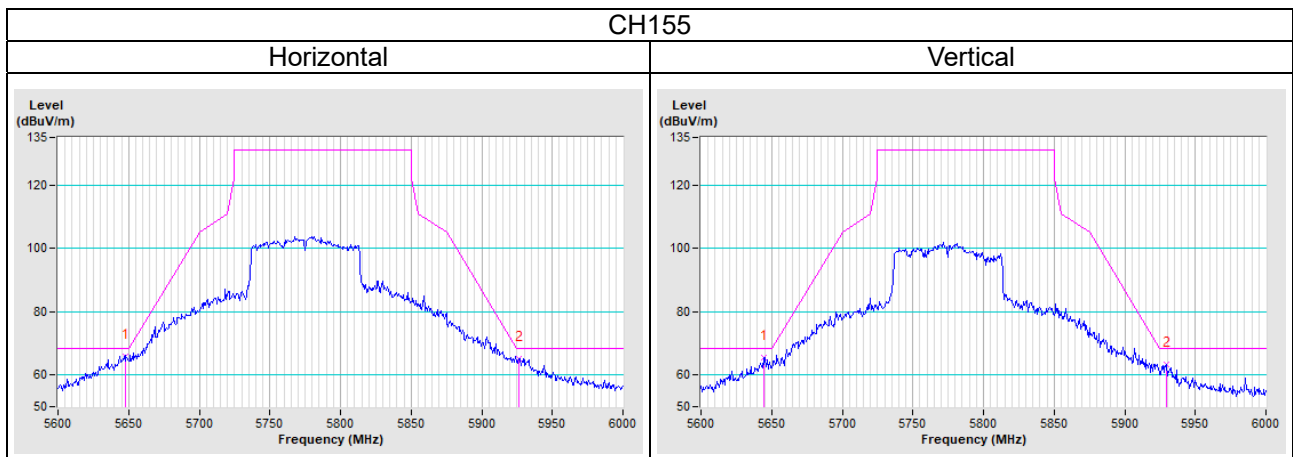
802.11n (HT20)



802.11n (HT40)

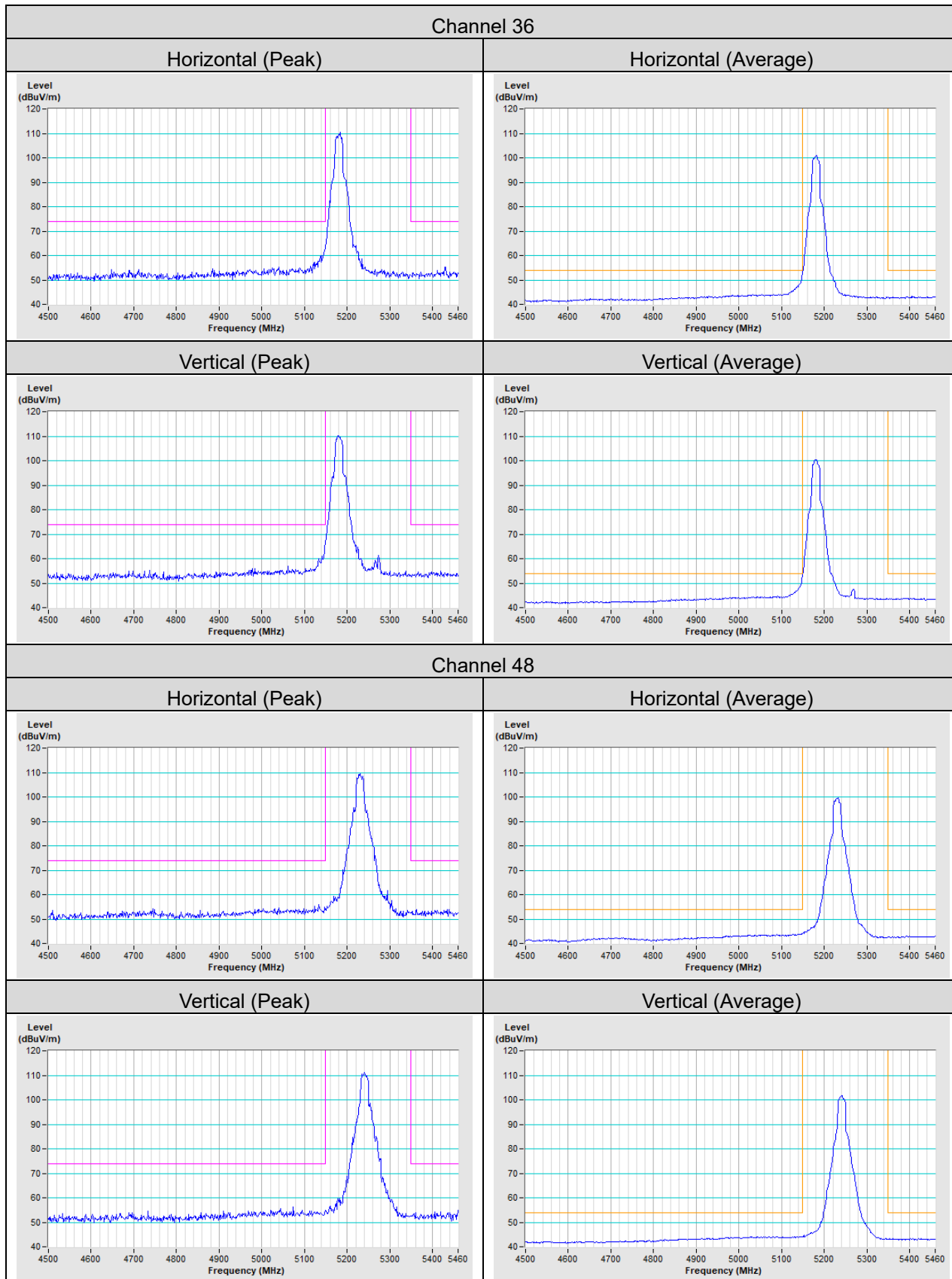


802.11ac (VHT80)



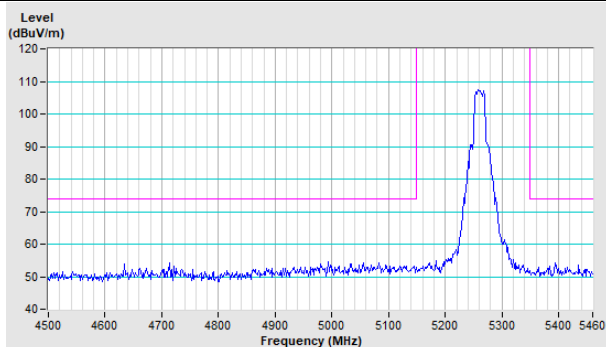
Annex B- Band Edge Measurement

802.11a

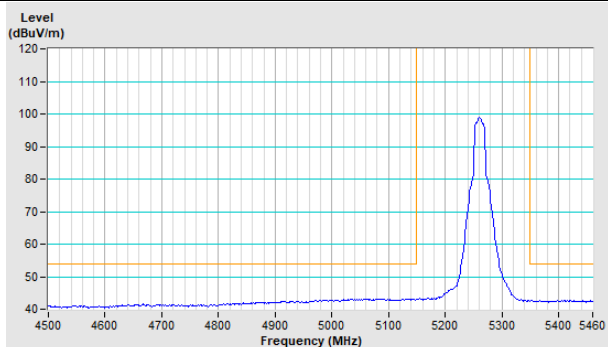


Channel 52

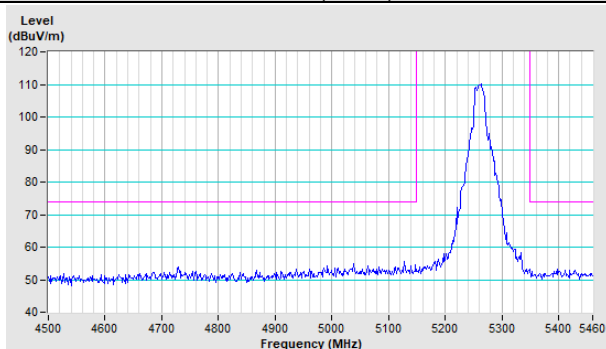
Horizontal (Peak)



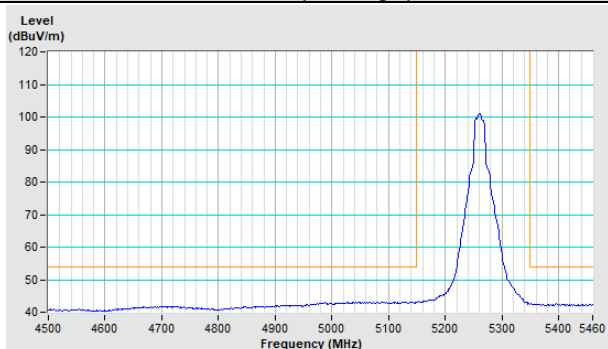
Horizontal (Average)



Vertical (Peak)

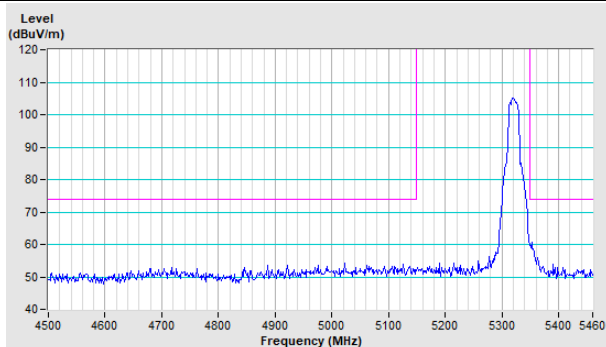


Vertical (Average)

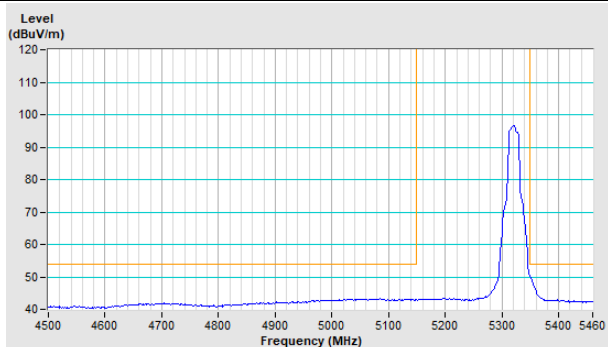


Channel 64

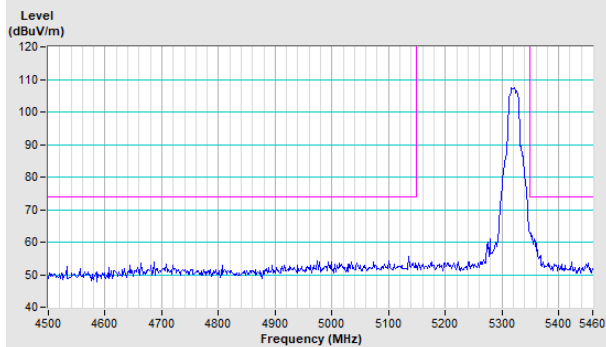
Horizontal (Peak)



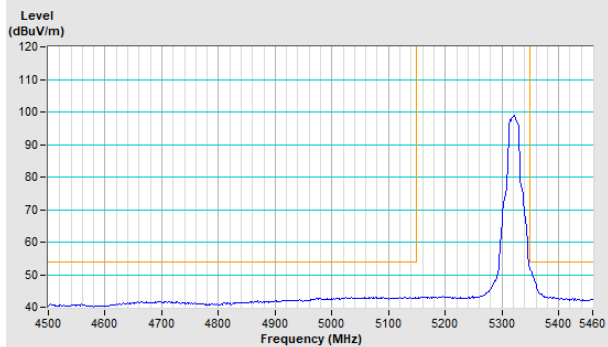
Horizontal (Average)

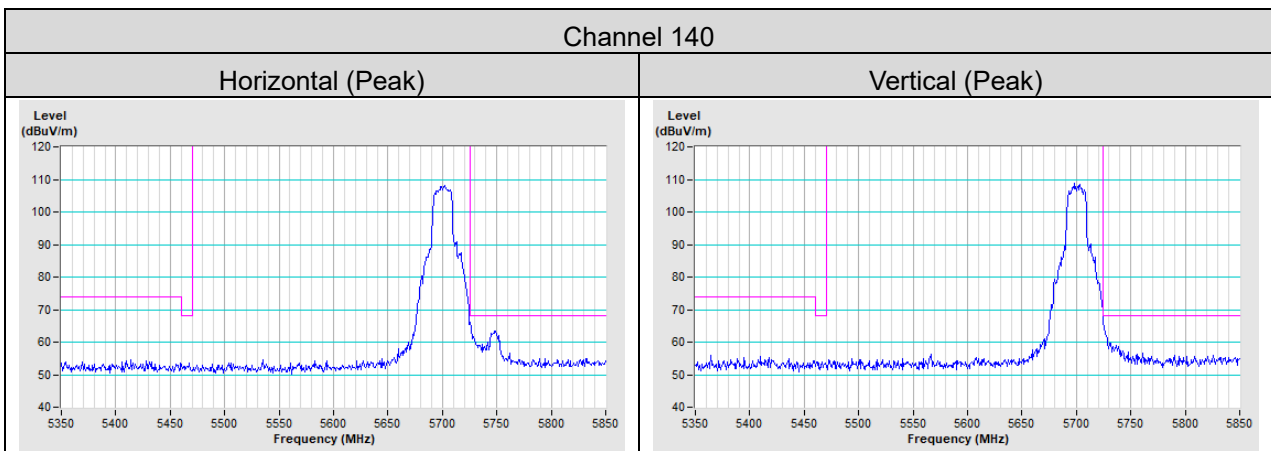
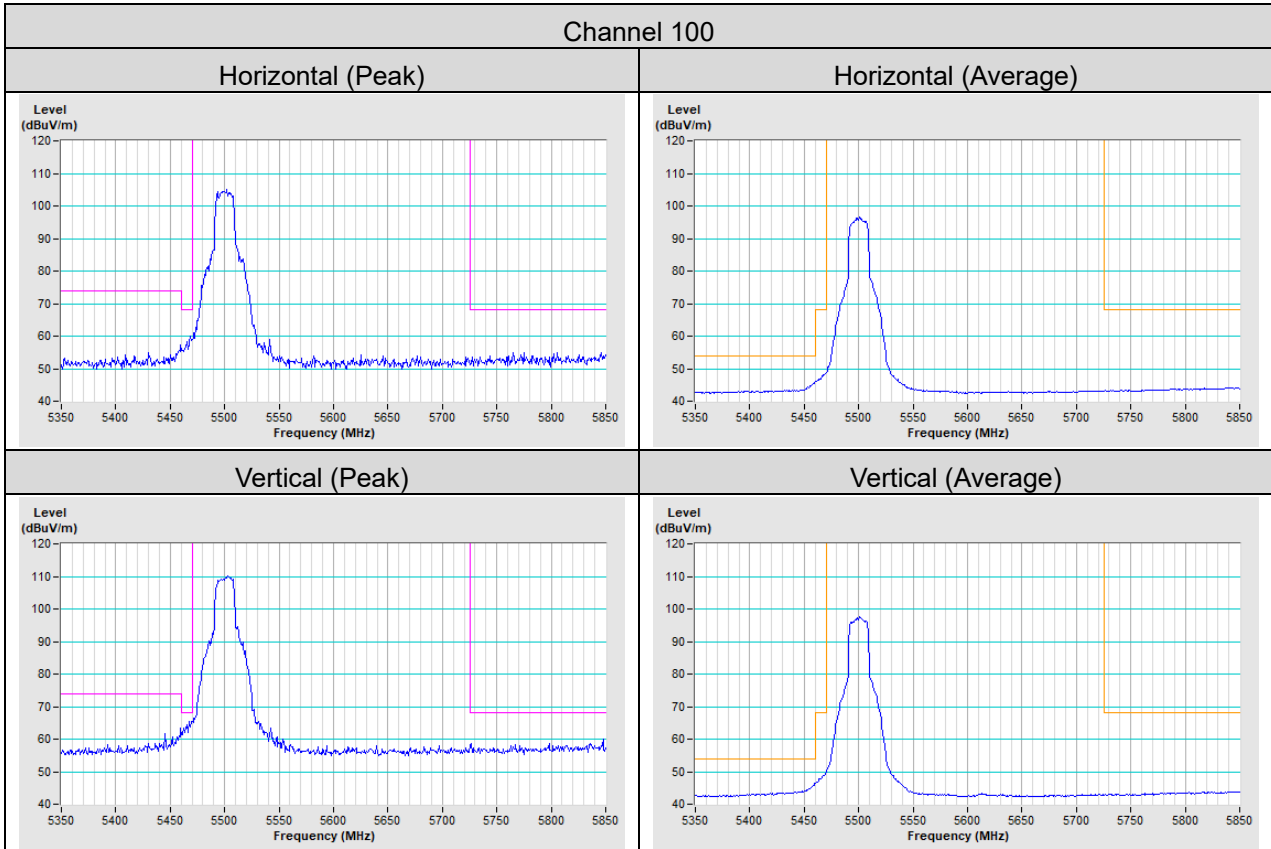


Vertical (Peak)

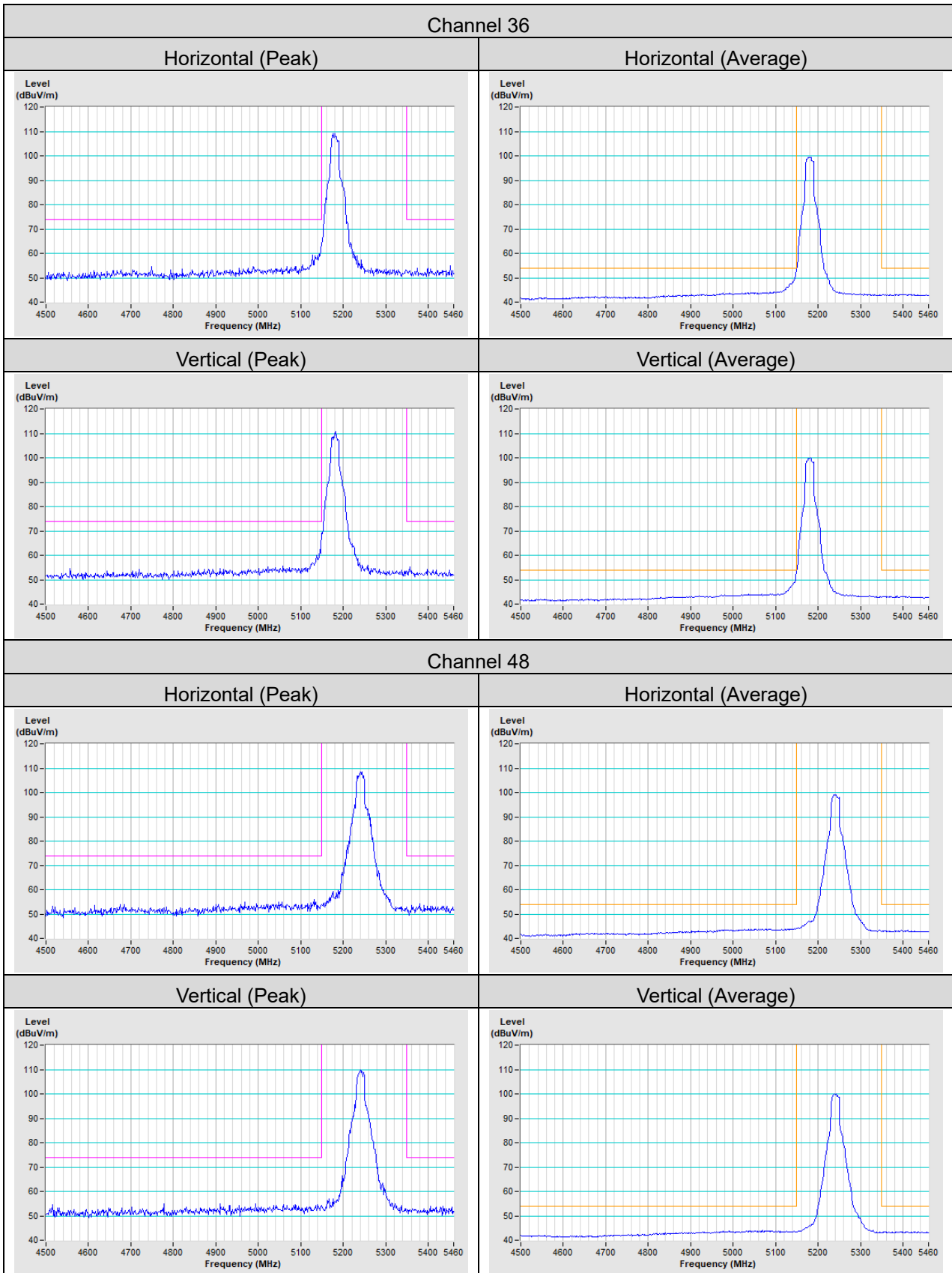


Vertical (Average)



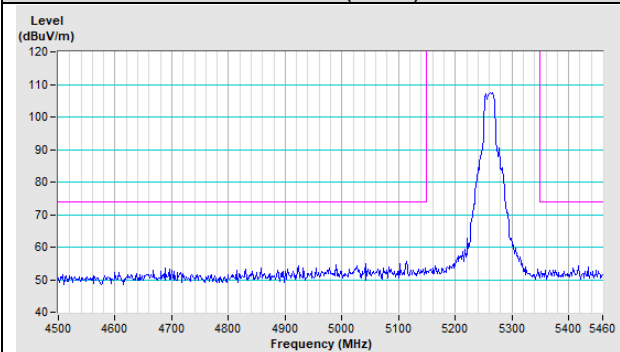


802.11n (HT20)

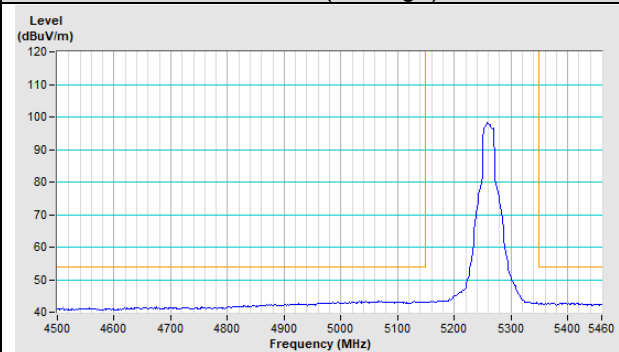


Channel 52

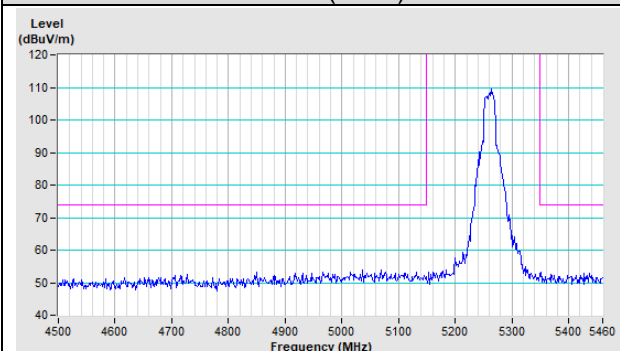
Horizontal (Peak)



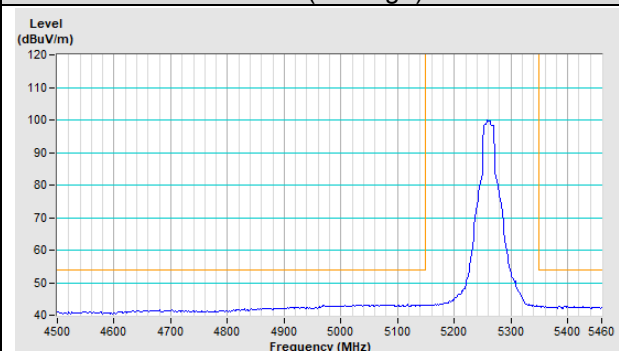
Horizontal (Average)



Vertical (Peak)

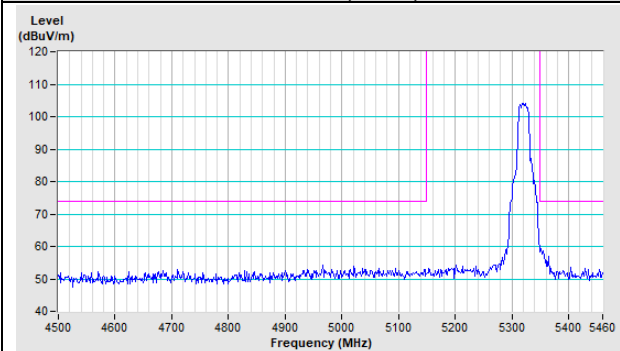


Vertical (Average)

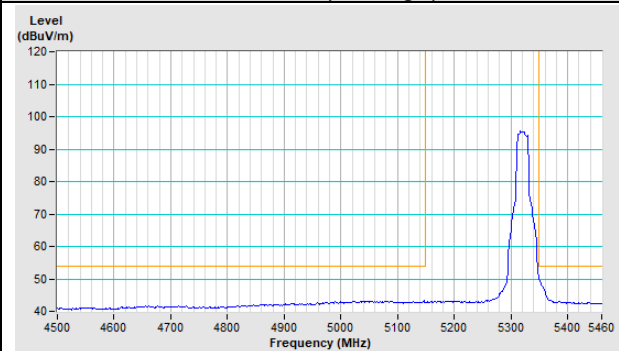


Channel 64

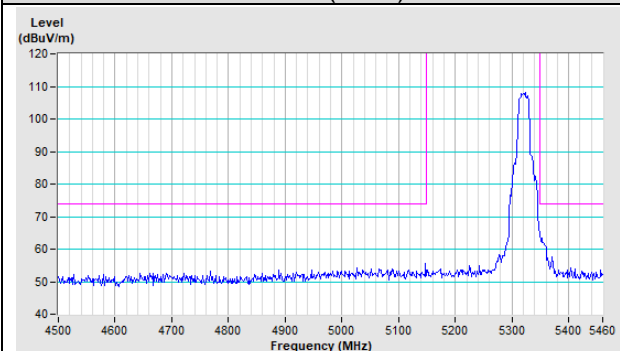
Horizontal (Peak)



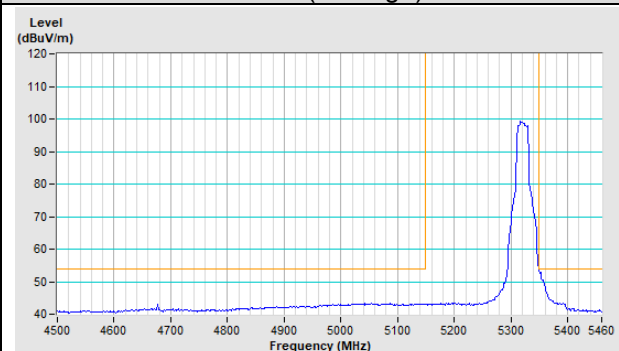
Horizontal (Average)

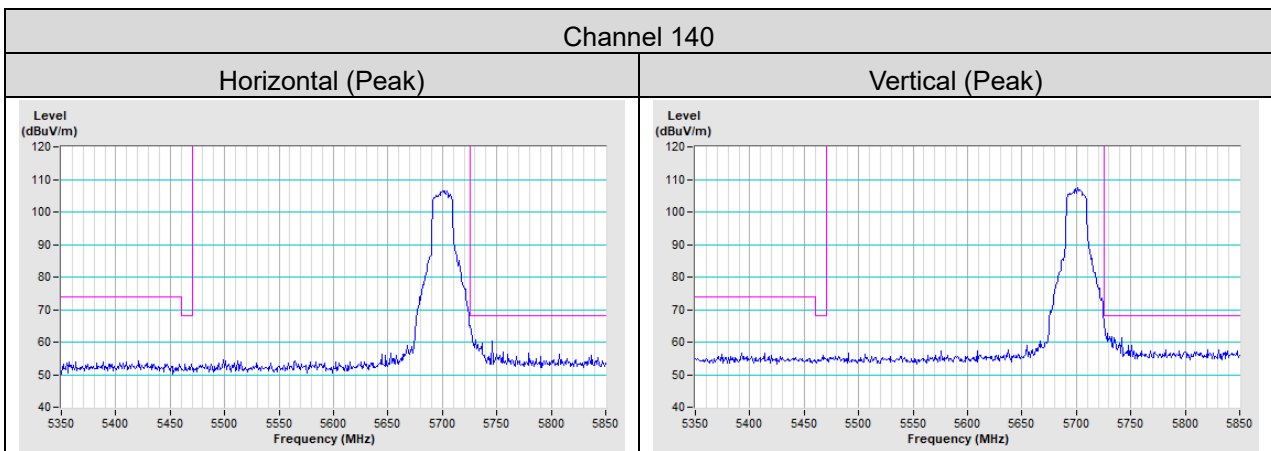
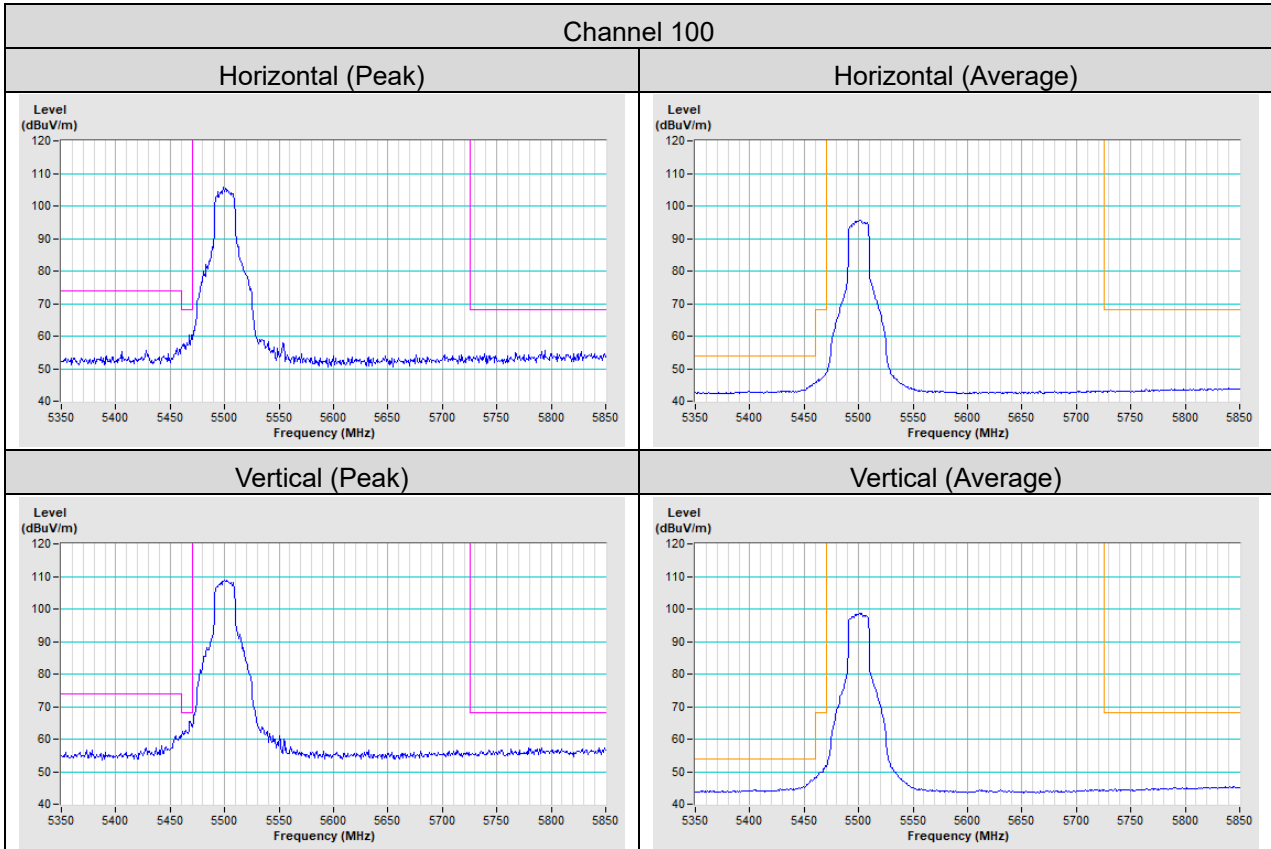


Vertical (Peak)

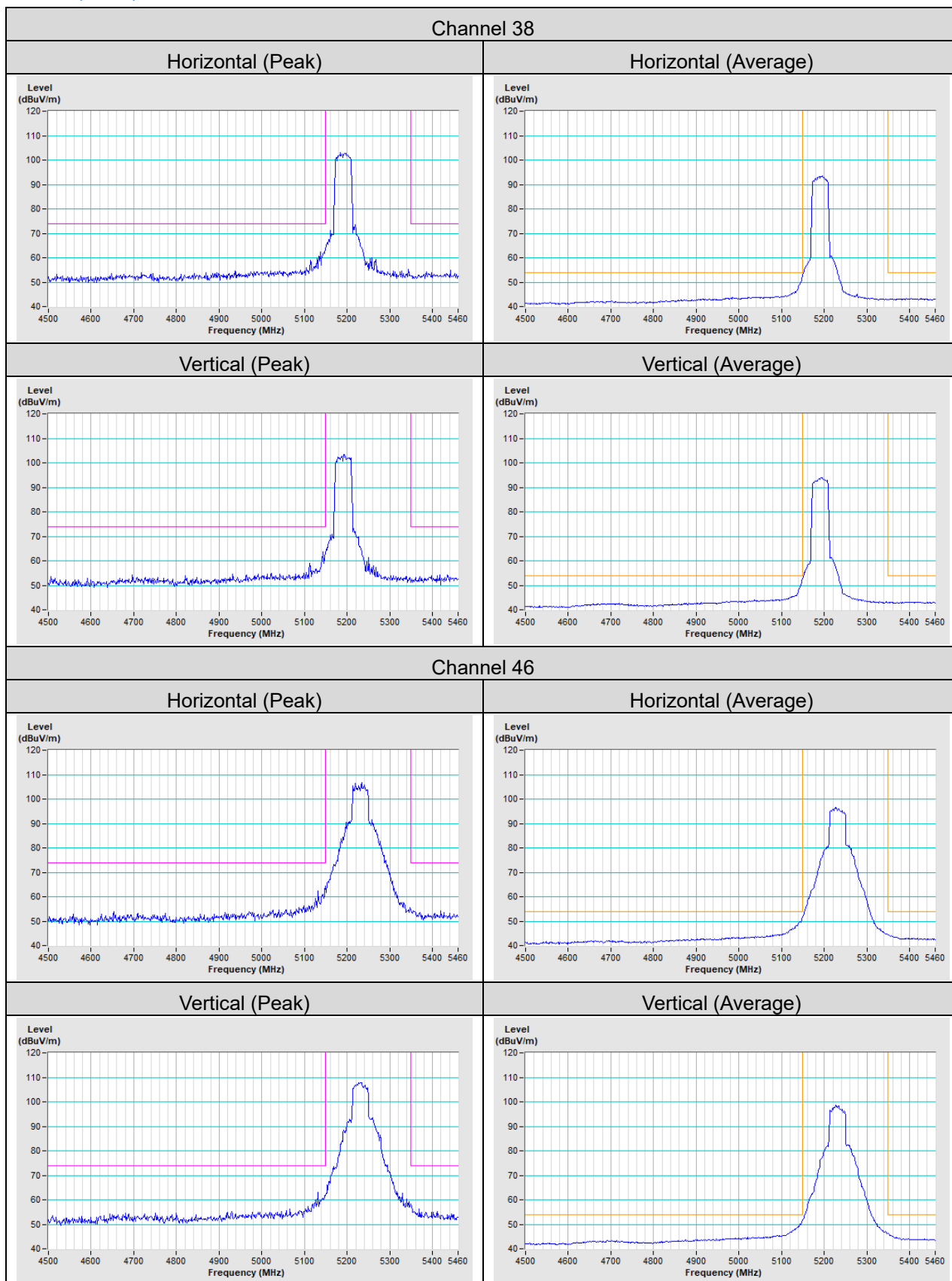


Vertical (Average)



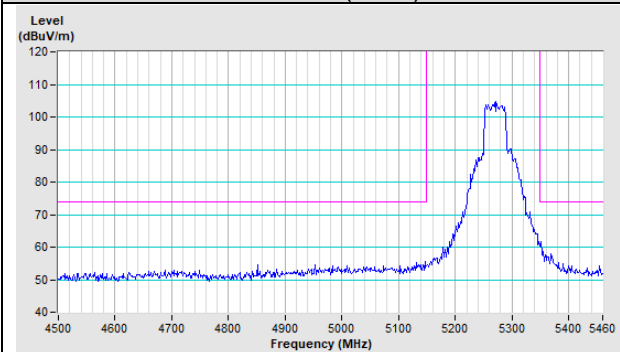


802.11n (HT40)

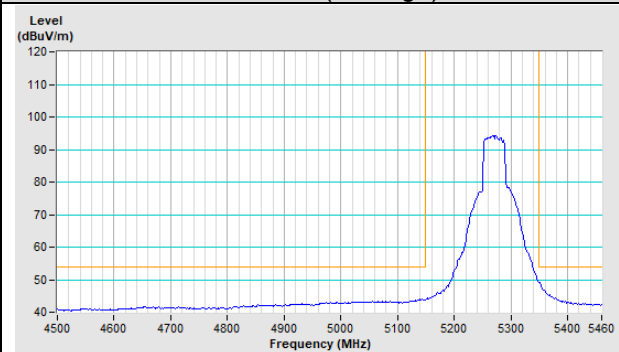


Channel 54

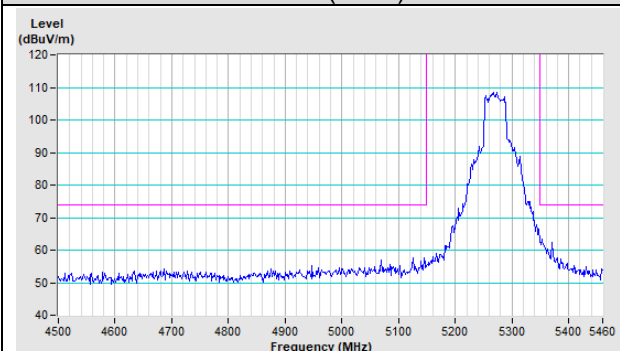
Horizontal (Peak)



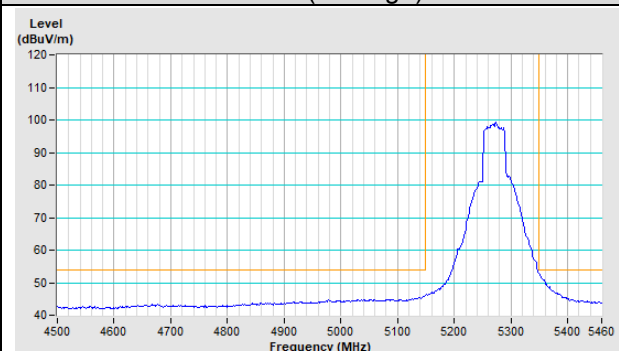
Horizontal (Average)



Vertical (Peak)

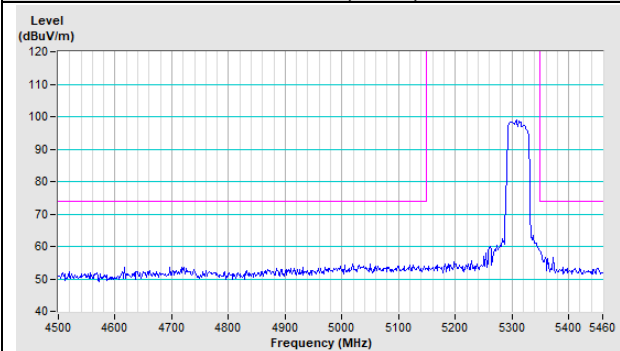


Vertical (Average)

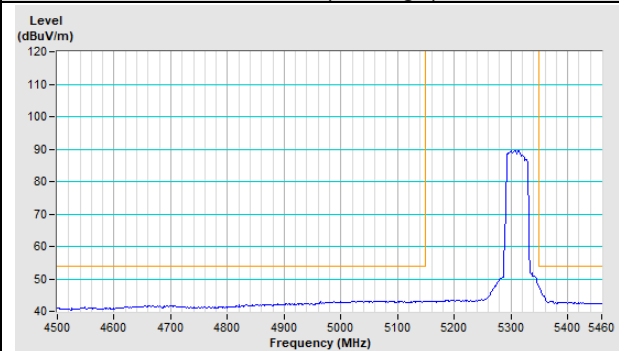


Channel 62

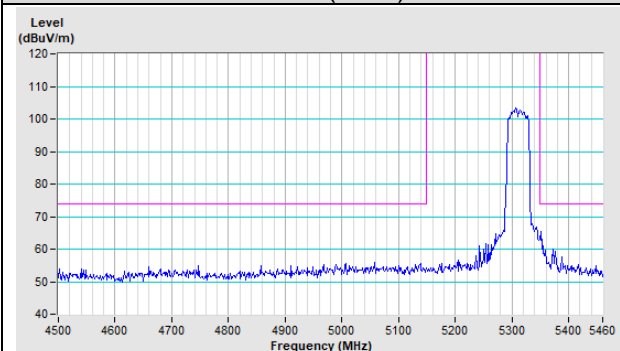
Horizontal (Peak)



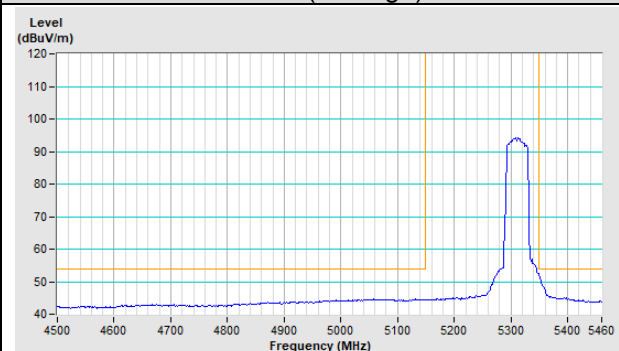
Horizontal (Average)



Vertical (Peak)

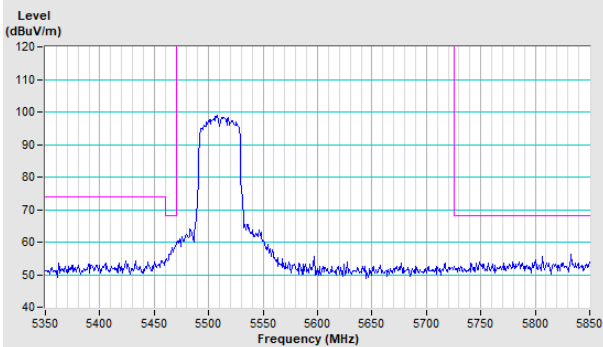


Vertical (Average)

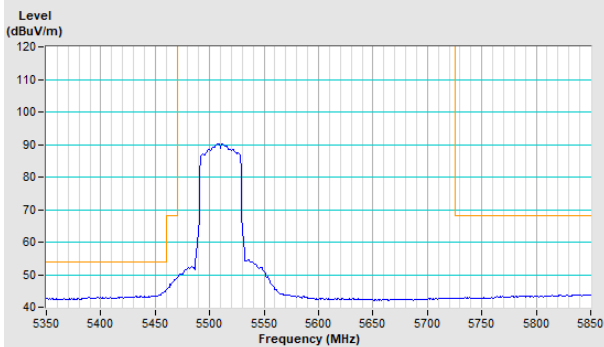


Channel 102

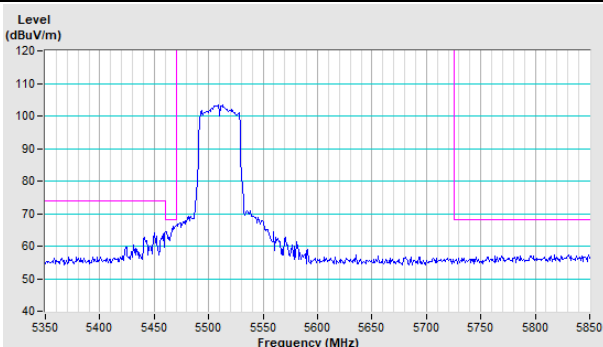
Horizontal (Peak)



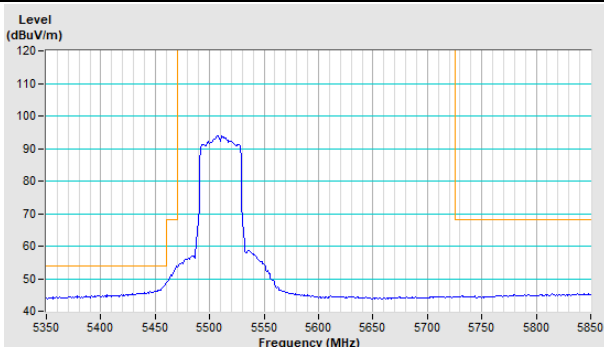
Horizontal (Average)



Vertical (Peak)

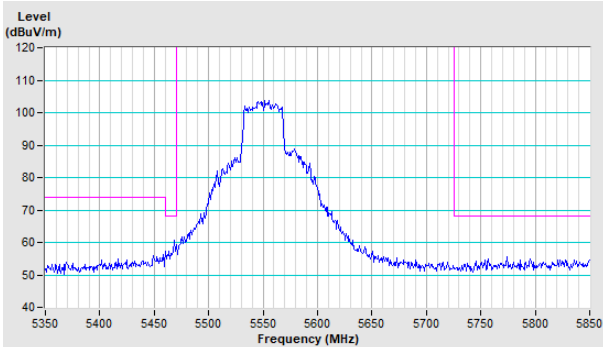


Vertical (Average)

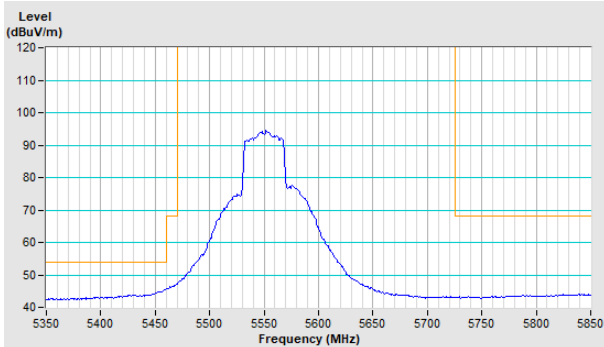


Channel 110

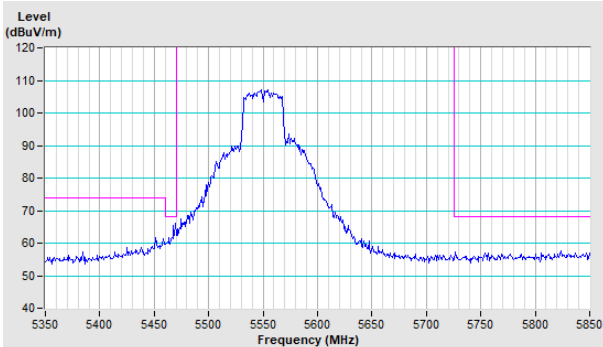
Horizontal (Peak)



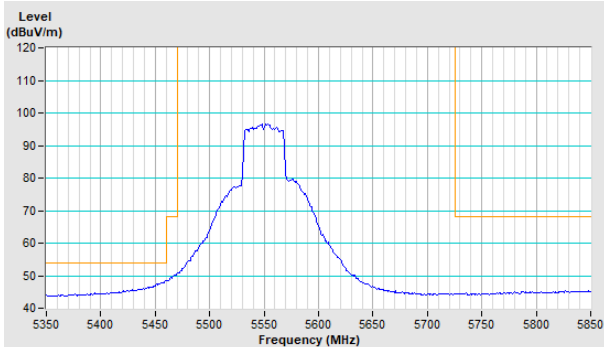
Horizontal (Average)



Vertical (Peak)

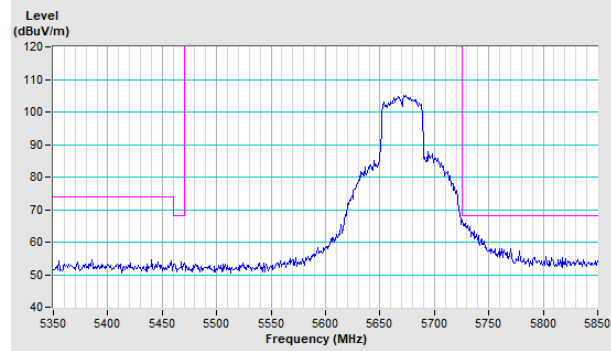


Vertical (Average)

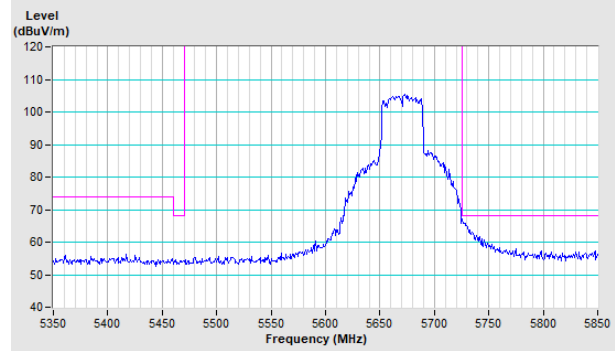


Channel 134

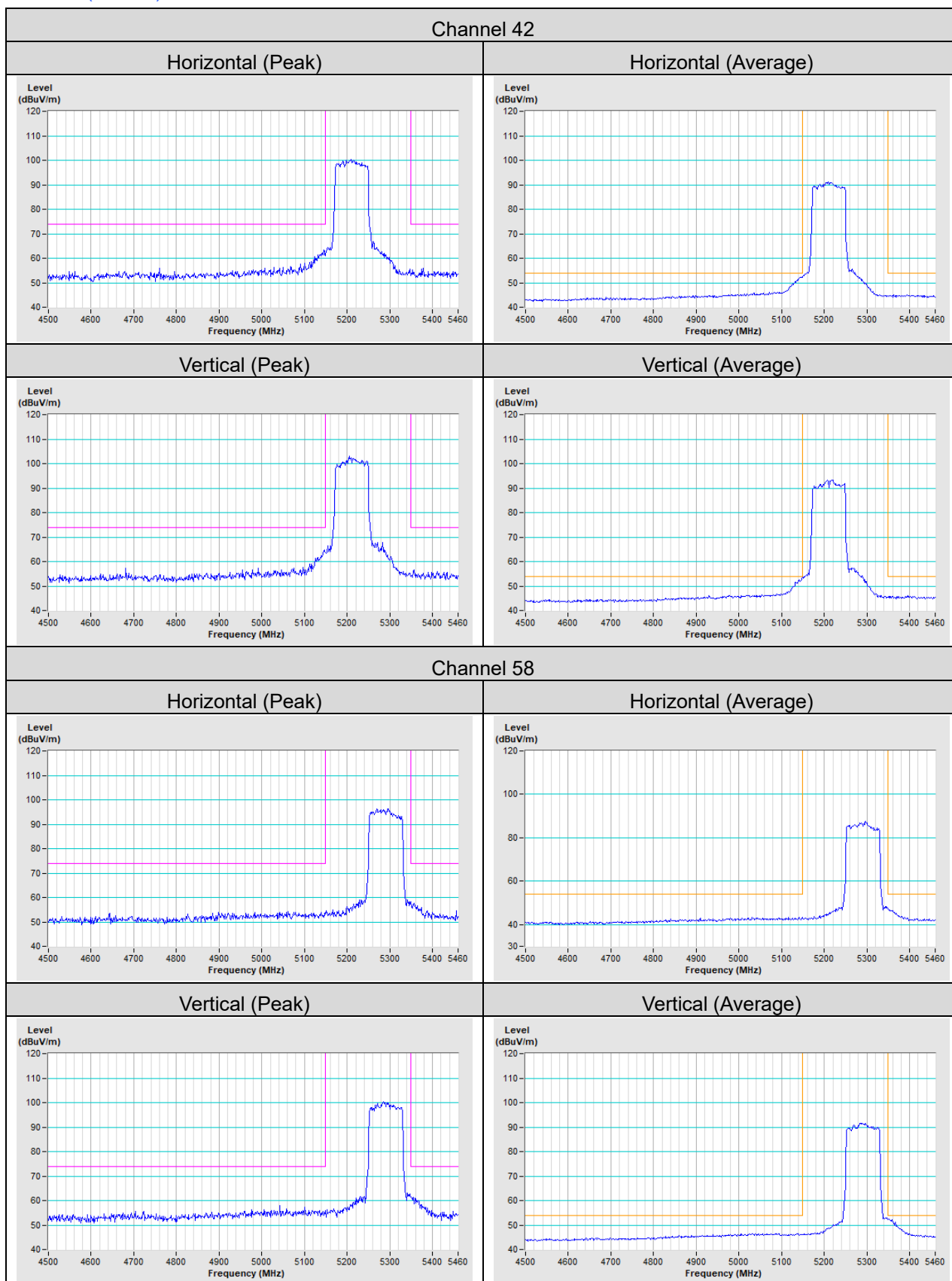
Horizontal (Peak)



Vertical (Peak)

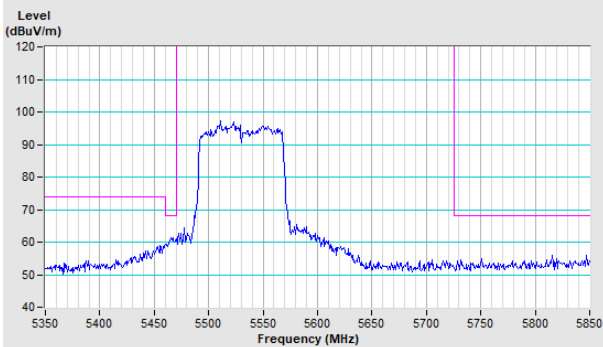


802.11ac (VHT80)

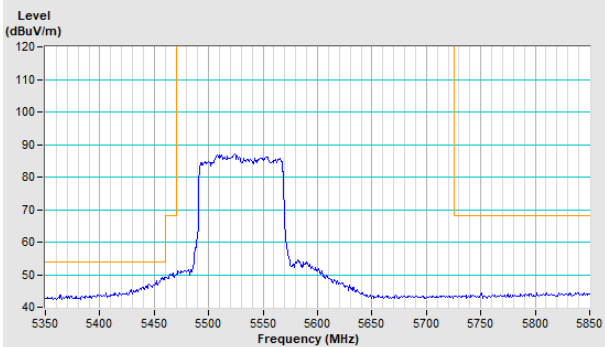


Channel 106

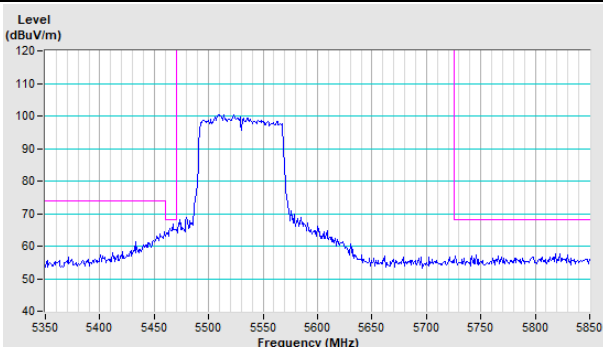
Horizontal (Peak)



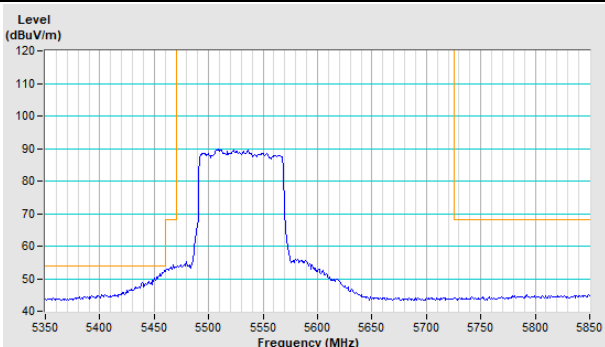
Horizontal (Average)



Vertical (Peak)

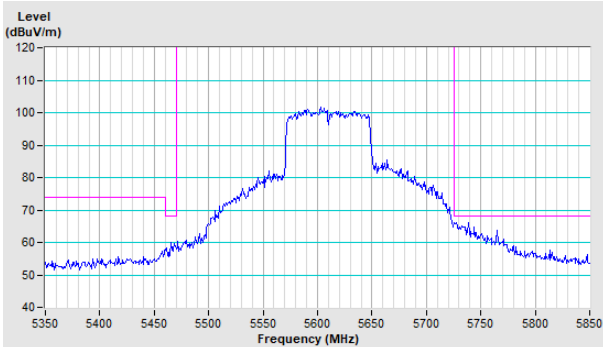


Vertical (Average)

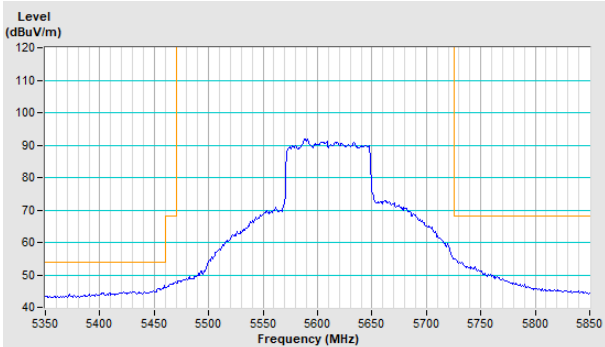


Channel 122

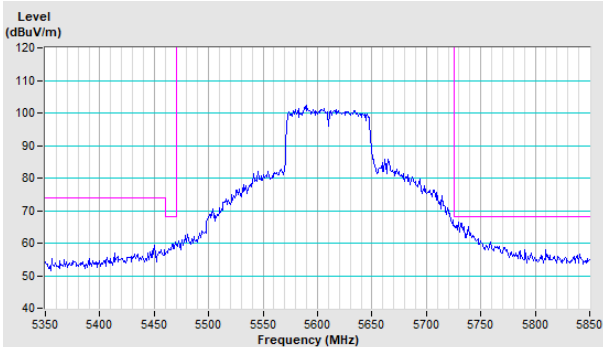
Horizontal (Peak)



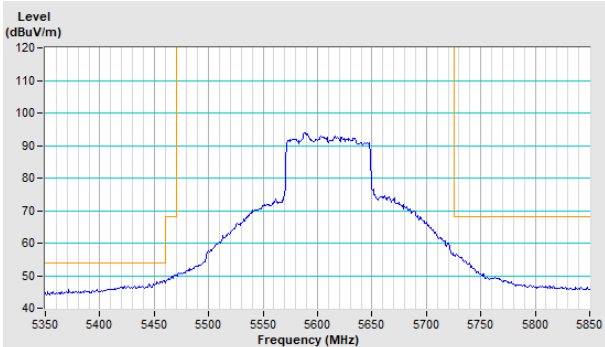
Horizontal (Average)



Vertical (Peak)



Vertical (Average)



Appendix – Information of the Testing Laboratories

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

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

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Web Site: www.bureauveritas-adt.com

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

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