



Test report No. : 4788520121-US-R1-V0
Page : 1 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

RADIO TEST REPORT

Product : RetinaVue 700 Imager
Model Name : RetinaVue 700 Imager
FCC ID : 2AFB3WA-WEC700
Test Regulation : FCC 47 CFR Part 15 Subpart E (Section 15.407)
Received Date : Jun. 28, 2018
Test Date : Jul. 12, 2018 ~ Feb. 13, 2019
Issued Date : Mar. 26, 2019

Applicant : Medimaging Integrated Solution Inc
1st FL, 7 R&D Rd II, Hsinchu Science Park, Hsinchu,
30076, Taiwan

Issued By : Underwriters Laboratories Taiwan Co., Ltd.
Building B and Building E, No. 372-7, Sec. 4, Zhongxing
Rd., Zhudong Township, Hsinchu County, Taiwan



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Test report No. : 4788520121-US-R1-V0
Page : 2 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

REVISION HISTORY

Original Test Report No.: 4788520121-US-R1-V0

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Table Of Contents

1. Attestation of Test Results	4
2. Summary of Test Results	5
3. Test Methodology	6
4. Facilities and Accreditation	6
5. Measurement Uncertainty	7
6. Equipment under Test	8
6.1. Description of EUT	8
6.2. Channel List	9
6.3. Test Condition	10
6.4. Description Of Available Antennas	10
6.5. Test Mode Applicability and Tested Channel Detail	11
6.6. Duty cycle	12
7. Test Equipment	13
8. Description of Test Setup	15
9. Test Results	16
9.1. 6dB Bandwidth	16
9.2. 26dB Bandwidth	18
9.3. Occupied Bandwidth	20
9.4. Conducted output power	22
9.5. Power Spectral Density	25
9.6. Frequency Stability	29
9.7. Radiated Spurious Emission	31
9.8. AC Power Line Conducted Emission	58
Appendix I Radiated Band Edge and OOB Measurement	64
Appendix II Radiated Spurious Emission Measurement	78



Test report No. : 4788520121-US-R1-V0
Page : 4 of 85
Issued date : Mar. 26, 2019
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1. Attestation of Test Results

APPLICANT: Medimaging Integrated Solution Inc
1st FL, 7 R&D Rd II, Hsinchu Science Park, Hsinchu, 30076,
Taiwan

MANUFACTURER Medimaging Integrated Solution Inc
1st FL, 7 R&D Rd II, Hsinchu Science Park, Hsinchu, 30076,
Taiwan

EUT DESCRIPTION: RetinaVue 700 Imager

BRAND: Welch Allyn

MODEL: RetinaVue 700 Imager

SAMPLE STAGE: Production equivalent

DATE of TESTED: Jul. 12, 2018 ~ Dec. 13, 2018

APPLICABLE STANDARDS	
STANDARD	Test Results
FCC 47 CFR PART 15 Subpart E (Section 15.407)	PASS

Underwriters Laboratories Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Underwriters Laboratories Taiwan Co., Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Underwriters Laboratories Taiwan Co., Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Prepared By:

Evelyn Lee
Project Handler

Date :Mar. 26, 2019

Approved and Authorized By:

Stanley Wu
Project Engineer

Date :Mar. 26, 2019

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2. Summary of Test Results

Summary of Test Results		
FCC Clause	Test Items	Result
15.407(e)	6dB Bandwidth	PASS
2.1049	Occupied Bandwidth	See Note2
15.403(i)	26dB Bandwidth	PASS
15.407(a)(1/2/3)	Conducted Output Power	PASS
15.407(a)(1/2/3)	Power Spectral Density	PASS
15.407(g)	Frequency Stability	PASS
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions and Band Edge Measurement	PASS
15.407(b)(6)	AC Power Conducted Emission	PASS
15.203	Antenna Requirement	PASS
15.407(h)	Dynamic Frequency Selection	See Note3

Note:

1. For the Radiated Band Edge and OOB test plots were recorded in Appendix I, the Radiated Emissions test plots were recorded in Appendix II.
2. The Occupied Bandwidth was reference only.
3. The "Dynamic Frequency Selection measurement" was recorded in Report No.: 4788520121-US-R2-V0

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3. Test Methodology

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, KDB 789033 D02 General UNII Test Procedure New Rules v02r01, KDB414788 D01 Radiated Test Site v01, ANSI C63.10-2013.

4. Facilities and Accreditation

Test Location	Underwriters Laboratories Taiwan Co., Ltd.
Address	Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Accreditation Certificate	Underwriters Laboratories Taiwan Co., Ltd. is accredited by TAF, Laboratory Code 3398. The full scope of accreditation can be viewed at http://accreditation.taftw.org.tw/taf/public/basic/viewApplyItems.action?unitNo=3398

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5. Measurement Uncertainty

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor $k=2$.

Test Item	Measurement Frequency Range	K	U(dB)
Conducted disturbance at mains terminals ports	0.15MHz ~ 30MHz	2	2.6
RF Conducted	9 kHz - 40GHz	2	1.0
Radiated disturbance below 30MHz	9 kHz - 30 MHz	2	2.4
Radiated disturbance below 1 GHz	30MHz ~ 1GHz	2	5.5
Radiated disturbance above 1GHz	1GHz ~ 40GHz	2	5.0

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6. Equipment under Test

6.1. Description of EUT

Product	RetinaVue 700 Imager	
Brand Name	Welch Allyn	
Model Name	RetinaVue 700 Imager	
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5745 ~ 5825 MHz	
Modulation	64QAM, 16QAM, QPSK, BPSK	
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to MCS7	
Number of Channel	5180 ~ 5240 MHz	4 for 802.11a, 802.11n (HT20)
	5260 ~ 5320 MHz	4 for 802.11a, 802.11n (HT20)
	5745 ~ 5825 MHz	5 for 802.11a, 802.11n (HT20)
Maximum Output Power	5180 ~ 5240 MHz: 14.33 dBm 5260 ~ 5320 MHz: 14.43 dBm 5745 ~ 5825 MHz: 14.11 dBm	
Normal Voltage	100~240Vac for adapter 7.2Vdc for battery	
Hardware Version	AM5718 Main Board (EUT): A2 WB45NBT (RF Module): 04R	
Software Version	V1.00.00	

Note:

1. The EUT provides one completed transmitter and one receiver.

Modulation Mode	Tx,Rx Function
802.11a	1TX,1RX
802.11n (HT20)	1TX,1RX

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2. The EUT contains following accessory devices.

Product	Brand	Model	Description
Power Adapter	EDACPOWER ELEC	EM1024PR	Input:100~240Vac, 1.0~0.5A, 50-60Hz Output:12Vdc/3A
Rechargeable Li-ion Battery	MiiS	33.0143250001	7.2Vdc, 3200 mAh
		33.0146500401	7.2Vdc, 6400 mAh (Option)
USB Cable	N/A	N/A	Length: 1.8m, with 2 cores, shielded

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer the manufacturer's or user's manual.

6.2. Channel List

FOR 5180 ~ 5240MHz

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

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

FOR 5260 ~ 5320MHz

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

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

FOR 5745 ~ 5825MHz:

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

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

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6.3. Test Condition

Test Item	Test Site No.	Environmental Condition	Input Power	Test Date	Tested by
Antenna Port Conducted Measurement	SR4	24°C / 68%RH	120Vac / 60 Hz	Jul. 26, 2018 ~ Feb. 13, 2019	Wayne Chen
Radiated Spurious Emission	966-2	26°C / 60%RH	120Vac / 60 Hz	Jul. 12, 2018 ~ Dec. 04, 2018	Wayne Chen
AC power Line Conducted Emission	SR1	25°C / 63%RH	120Vac / 60 Hz	Jul. 12, 2018 ~ Jul. 24, 2018	Wayne Chen

FCC Test Firm Registration Number: 498077

6.4. Description Of Available Antennas

Antenna	Brand Name	Model Name	Antenna Type	Antenna Gain(dBi)
0	Laird	ENB2449A1-18MHF1	Embedded Dipole	3.9

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Doc No: 17-EM-F0878 / 3.0



6.5. Test Mode Applicability and Tested Channel Detail

Test item	Mode	Frequency Band (MHz)	Modulation Technology	Available Channel	Test Channel	Data Rate
Radiated Emissions (Above 1GHz)	802.11a	5180-5240	OFDM	36 to 48	36, 44, 48	6.0
	802.11n(HT20)		OFDM	36 to 48	36, 44, 48	MCS0
	802.11a	5260-5320	OFDM	52 to 64	52, 60, 64	6.0
	802.11n(HT20)		OFDM	52 to 64	52, 60, 64	MCS0
	802.11a	5745-5825	OFDM	149 to 165	149, 157, 165	6.0
	802.11n(HT20)		OFDM	149 to 165	149, 157, 165	MCS0
Radiated Emissions (Below 1GHz)	802.11a	5180-5240	OFDM	36 to 48	36	6.0
AC Power Line Conducted Emission	802.11a	5180-5240	OFDM	36 to 48	36	6.0
Antenna Port Conducted Measurement	802.11a	5180-5240	OFDM	36 to 48	36, 44, 48	6.0
	802.11n(HT20)		OFDM	36 to 48	36, 44, 48	MCS0
	802.11a	5260-5320	OFDM	52 to 64	52, 60, 64	6.0
	802.11n(HT20)		OFDM	52 to 64	52, 60, 64	MCS0
	802.11a	5745-5825	OFDM	149 to 165	149, 157, 165	6.0
	802.11n(HT20)		OFDM	149 to 165	149, 157, 165	MCS0

Note:

1. 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).
2. For below 1 GHz radiated emission and AC power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case.
3. For Antenna Port Conducted Measurement, this item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
4. The fundamental of the EUT was investigated in three orthogonal axes X/Y/Z, it was determined that X axis was worst-case . Therefore, all final radiated testing was performed with the EUT in X axis.
5. The USB-B port was for data transfer (read/write) function, and pre-scan radiation has been determined by the stand-alone mode (the worst case).

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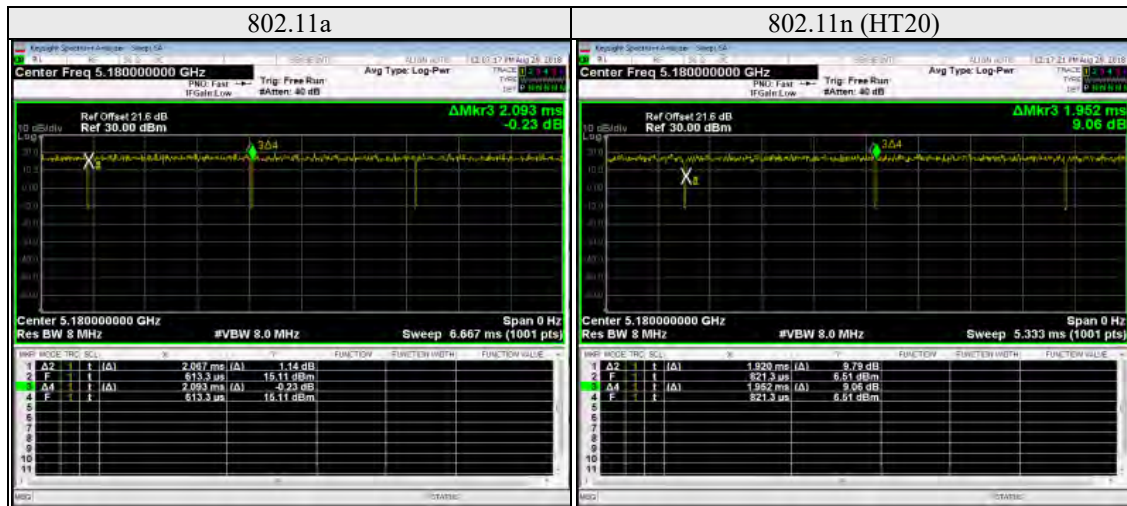
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6.6. Duty cycle

802.11a: Duty cycle = $2.067/2.093 = 0.9876$, duty cycle of test signal is $\geq 98\%$, duty factor is not required.

802.11n (HT20): Duty cycle = $1.92/1.952 = 0.9836$, duty cycle of test signal is $\geq 98\%$, duty factor is not required.





7. Test Equipment

Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
Radiated Spurious Emission					
Spectrum Analyzer	Keysight	N9010A	MY56070827	Nov. 28, 2017	1 year
				Nov. 8, 2018	1 year
EMI Test Receiver	Rohde & Schwarz	ESR7	101754	Nov. 28, 2017	1 year
				Nov. 8, 2018	1 year
Loop Antenna	ETS lindgren	6502	00213440	Dec. 7, 2017	1 year
Trilog-Broadband Antenna with 5dB Attenuator	Schwarzbeck & EMC	VULB 9168 & N-6-05	774 & AT-N0538	Feb. 12, 2018	1 year
Horn Antenna (1-18 GHz)	Schwarzbeck	BBHA 9120 D	01690	Jan. 23, 2018	1 year
Horn Antenna(18-40 GHz)	Schwarzbeck	BBHA 9170	781	Jan.12, 2018	1 year
Preamplifier (30-1000 MHz)	EMCI	EMC330E	980405	Feb. 1, 2018	1 year
Preamplifier (1-18 GHz)	EMCI	EMC051835BE	980406	Feb. 2, 2018	1 year
Preamplifier (18-40GHz)	EMCI	EMC184040SE	980426	Apr. 26, 2018	1 year
RF Cable (9 KHz~18 GHz)	UltraPhase & EMC Instrument	A1K50-UP0358-A1K50-1500&EMC106-NM-SM-2500/7000	170111-4&170219/170102	Feb. 1, 2018	1 year
RF Cable (18 GHz~40 GHz)	UltraPhase	K1K50-UP0264-K1K50-2500/2500/600	170214-2/170214-6/170111-1	Feb. 1, 2018	1 year

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 14 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
Antenna Port Conducted Measurement					
Spectrum Analyzer	Keysight	N9010A	MY56070834	Nov. 20, 2017	1 year
				Nov. 8, 2018	1 year
Pulse Power Sensor	Anrisu	MA2411B	1531202	Dec. 14, 2017	1 year
Power Meter	Anrisu	ML2495A	1645002	Dec. 14, 2017	1 year
Temperature & Humidity Test Chamber	GIANT FORCE	GTH-150-40-CP-AR	MAA1701-010	Mar.20,2018	1 year
AC power Line Conducted Emission					
EMI Test Receiver	Rohde & Schwarz	ESR7	101753	Nov. 28, 2017	1 year
				Nov. 14, 2018	1 year
Two-Line V-Network	Rohde & Schwarz	ENV216	102136	Aug. 2, 2017	1 year
				Aug. 5, 2018	1 year
Impuls-Begrenzer Pulse Limiter	Rohde & Schwarz	ESH3-Z2	102219-Qt	July 31, 2017	1 year
				Aug. 5, 2018	1 year
Cables	Huber+Suhner	RG 214/U	FCC-BCICF-4 RF	Feb. 1, 2018	1 year

UL Software

Description	Name	Version
Radiated measurement	EZ_EMG	1.1.4.2
Conducted measurement	Keysight.TestSystem	1.0.0.0
AC power Line Conducted Emission	EZ_EMG	1.1.4.2

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8. Description of Test Setup

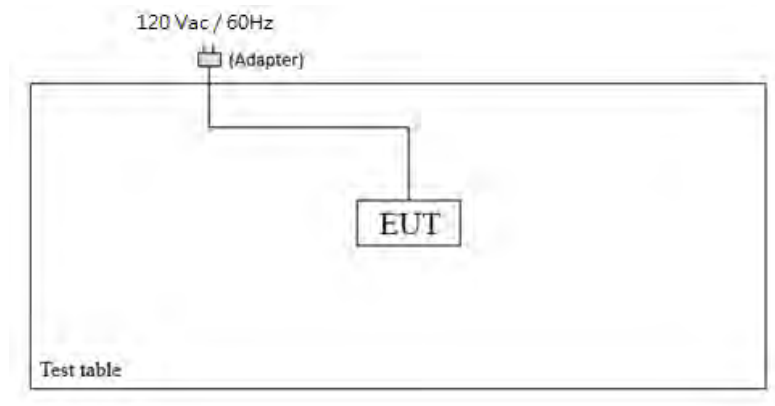
Support Equipment

Item	Equipment	Brand Name	Model Name	S/N
1	Notebook	DELL	Latitude E5470	3JFKWF2

Test Setup

Controlled using a bespoke application (Teraterm469) on a test Notebook. The application was used to enable a continuous transmission mode and to select the test channels, data rates, modulation schemes and power setting as required.

Setup Diagram for Test



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9. Test Results

9.1. 6dB Bandwidth

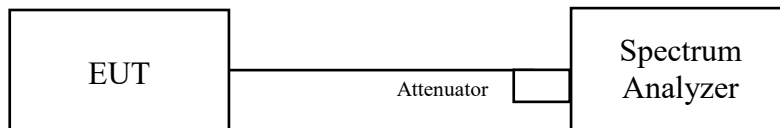
Requirements

The minimum 6 dB bandwidth shall be at least 500 kHz.

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

Test Setup



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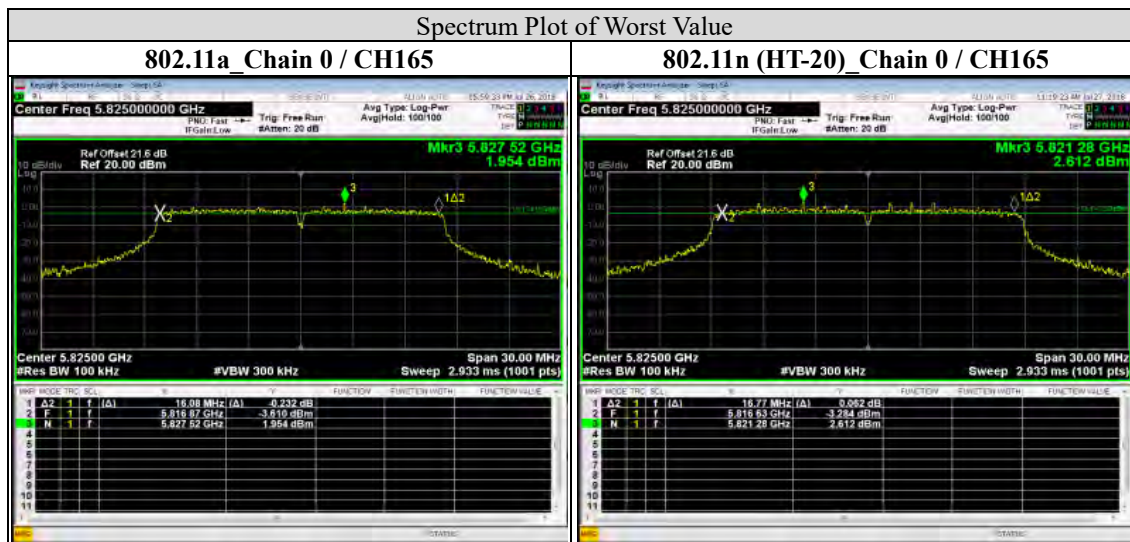
Test Data

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.32	0.5	Pass
157	5785	16.29	0.5	Pass
165	5825	16.08	0.5	Pass

802.11n (HT-20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	17.19	0.5	Pass
157	5785	17.04	0.5	Pass
165	5825	16.77	0.5	Pass



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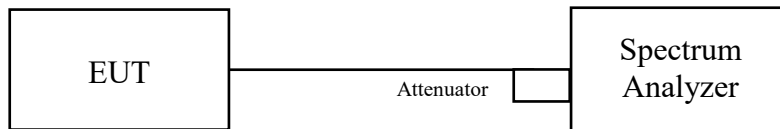


9.2. 26dB Bandwidth

Test procedure

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

Test Setup



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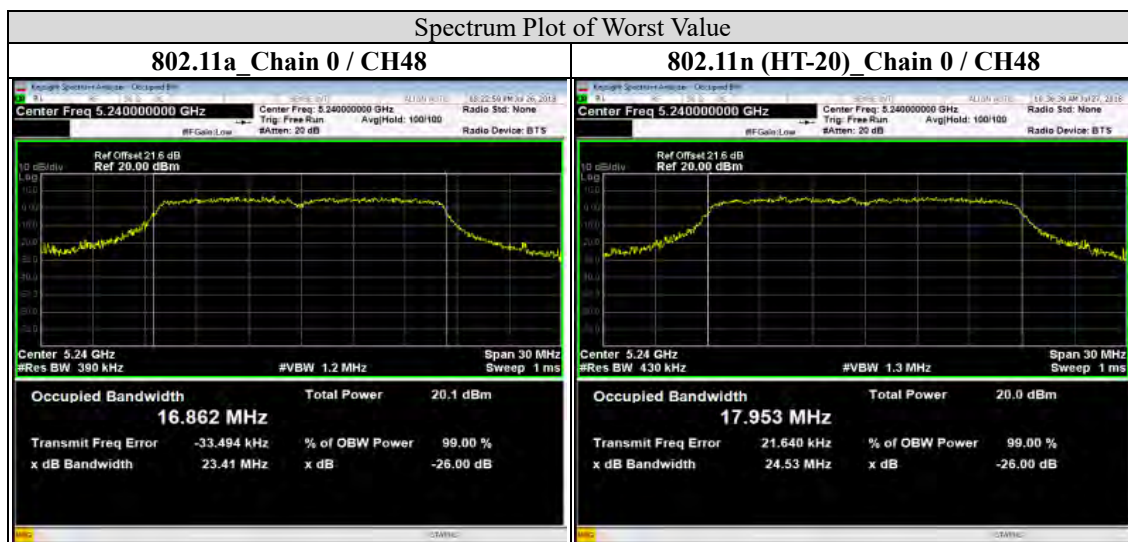
Test Data

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	26 dB Bandwidth (MHz)	PASS / FAIL
36	5180	22.21	PASS
44	5220	22.19	PASS
48	5240	23.41	PASS
52	5260	22.03	PASS
60	5300	22.51	PASS
64	5320	22.29	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	26 dB Bandwidth (MHz)	PASS / FAIL
36	5180	23.04	PASS
44	5220	24.51	PASS
48	5240	24.53	PASS
52	5260	23.13	PASS
60	5300	23.36	PASS
64	5320	24.15	PASS



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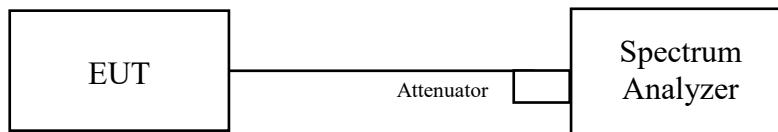


9.3. Occupied Bandwidth

Test procedure

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1% to 5% of the OBW
4. Set VBW $\geq 3 \times$ RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99% power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

Test Setup



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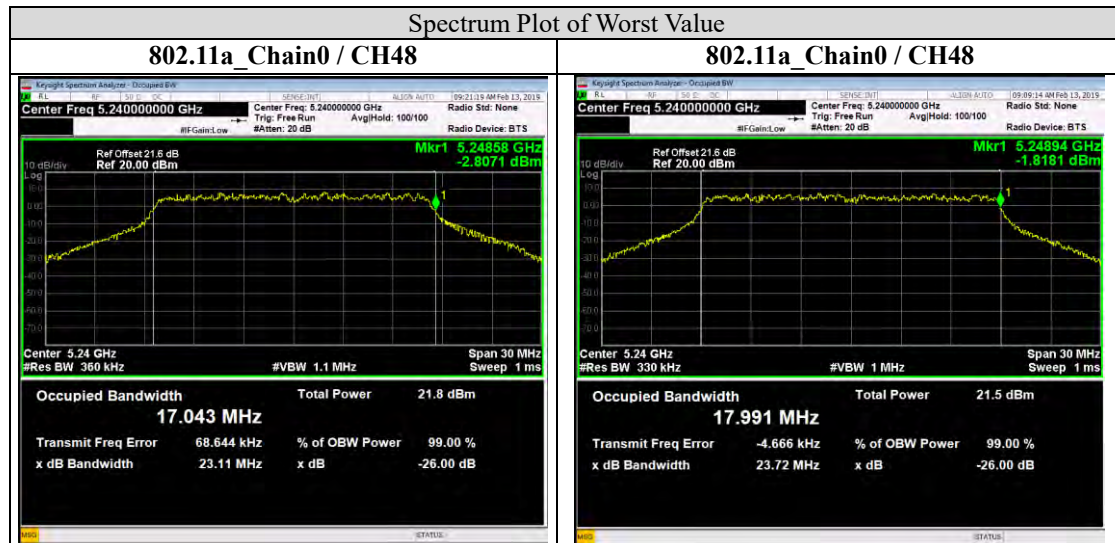
Test Data

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	16.642
44	5220	16.663
48	5240	17.043
52	5260	16.645
60	5300	16.600
64	5320	16.640
149	5745	16.582
157	5785	16.703
165	5825	16.649

802.11n (HT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.823
44	5220	17.820
48	5240	17.991
52	5260	17.825
60	5300	17.766
64	5320	17.833
149	5745	17.790
157	5785	17.787
165	5825	17.780



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9.4. Conducted output power

Requirements

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)
	√	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

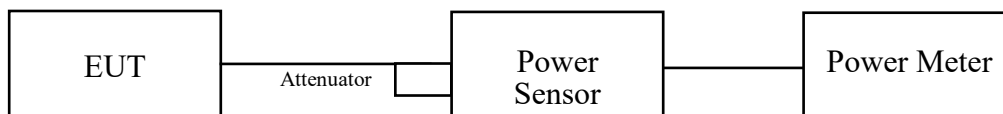
Test Procedure

Test method PM-G

For 802.11a, 802.11n (HT20)

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.

Test Setup



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Test Data

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	27.10	14.33	24	PASS
40	5200	26.79	14.28	24	PASS
48	5240	26.61	14.25	24	PASS
52	5260	27.73	14.43	24	PASS
60	5300	26.00	14.15	24	PASS
64	5320	23.77	13.76	24	PASS
149	5745	25.76	14.11	30	PASS
157	5785	24.38	13.87	30	PASS
165	5825	24.72	13.93	30	PASS

NOTE:

For U-NII-2A Band:

1. $11\text{dBm} + 10\log(22.03) = 24.43\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(22.51) = 24.52\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(22.29) = 24.48\text{ dBm} > 24\text{dBm}$.

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802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	MAXIMUM CONDUCTED POWER (mW)	MAXIMUM CONDUCTED POWER (dBm)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	22.13	13.45	24	PASS
40	5200	23.60	13.73	24	PASS
48	5240	24.89	13.96	24	PASS
52	5260	25.53	14.07	24	PASS
60	5300	25.35	14.04	24	PASS
64	5320	23.60	13.73	24	PASS
149	5745	25.18	14.01	30	PASS
157	5785	24.21	13.84	30	PASS
165	5825	23.39	13.69	30	PASS

NOTE:

For U-NII-2A Band:

1. $11\text{dBm} + 10\log(23.13) = 24.64\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(23.36) = 24.68\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(24.15) = 24.83\text{ dBm} > 24\text{dBm}$.

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9.5. Power Spectral Density

Requirements

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

Test procedure

For U-NII-1, U-NII-2A band:

Using method SA-1 and Duty cycle $\geq 98\%$

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

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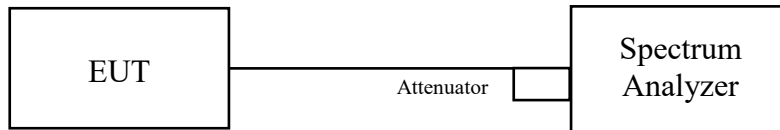


For U-NII-3:

Duty cycle $\geq 98\%$

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

Test Setup



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Doc No: 17-EM-F0878 / 3.0



Test Data

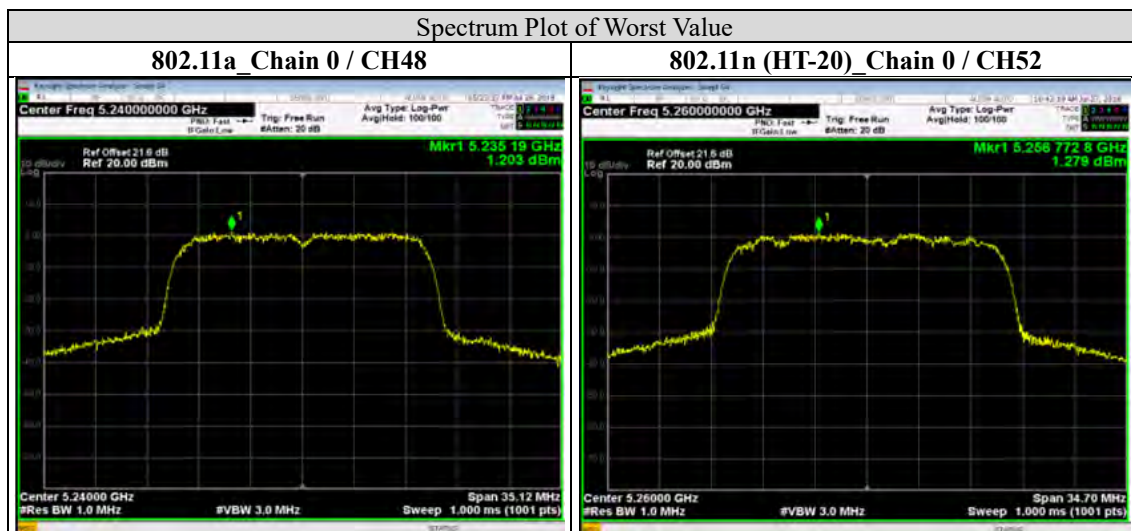
For U-NII-1, U-NII-2A Band

802.11a

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	1.166	11	PASS
44	5220	1.113	11	PASS
48	5240	1.203	11	PASS
52	5260	0.111	11	PASS
60	5300	-0.433	11	PASS
64	5320	0.034	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
36	5180	0.883	11	PASS
44	5220	0.095	11	PASS
48	5240	0.980	11	PASS
52	5260	1.279	11	PASS
60	5300	0.426	11	PASS
64	5320	0.133	11	PASS



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For U-NII-3 Band

802.11a

Channel	Frequency (MHz)	PSD (dBm/300 kHz)	BWCF (dB)	PSD with BWCF (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
149	5745	-4.033	2.218	-1.815	30	Pass
157	5785	-3.759	2.218	-1.541	30	Pass
165	5825	-4.154	2.218	-1.936	30	Pass

Note:

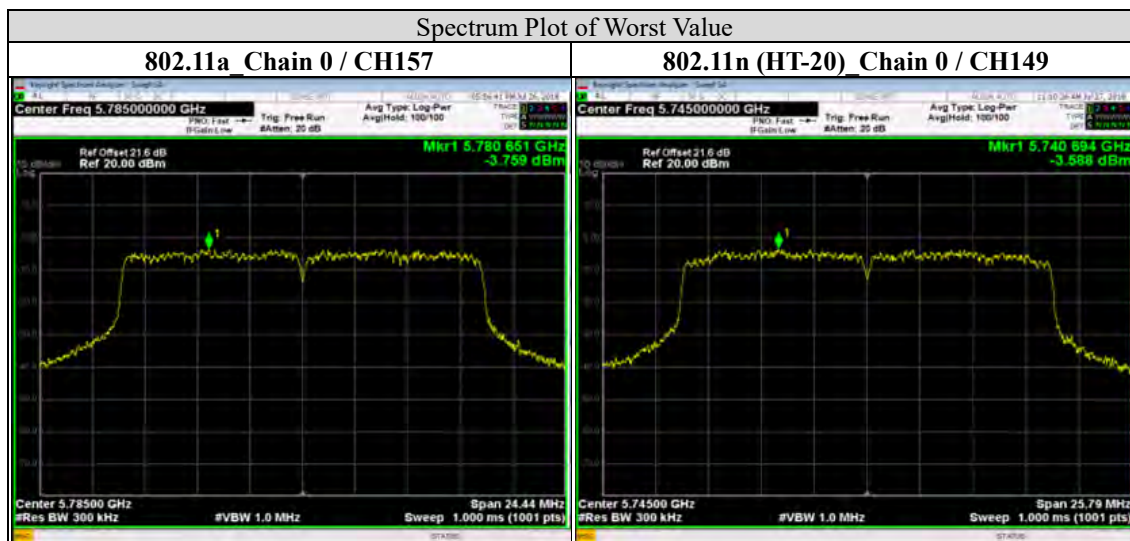
- Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500 \text{ kHz}/300\text{kHz})$.

802.11n (HT20)

Channel	Frequency (MHz)	PSD (dBm/300 kHz)	BWCF (dB)	PSD with BWCF (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
149	5745	-3.588	2.218	-1.370	30	Pass
157	5785	-4.191	2.218	-1.973	30	Pass
165	5825	-3.825	2.218	-1.607	30	Pass

Note:

- Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500 \text{ kHz}/300\text{kHz})$.



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9.6. Frequency Stability

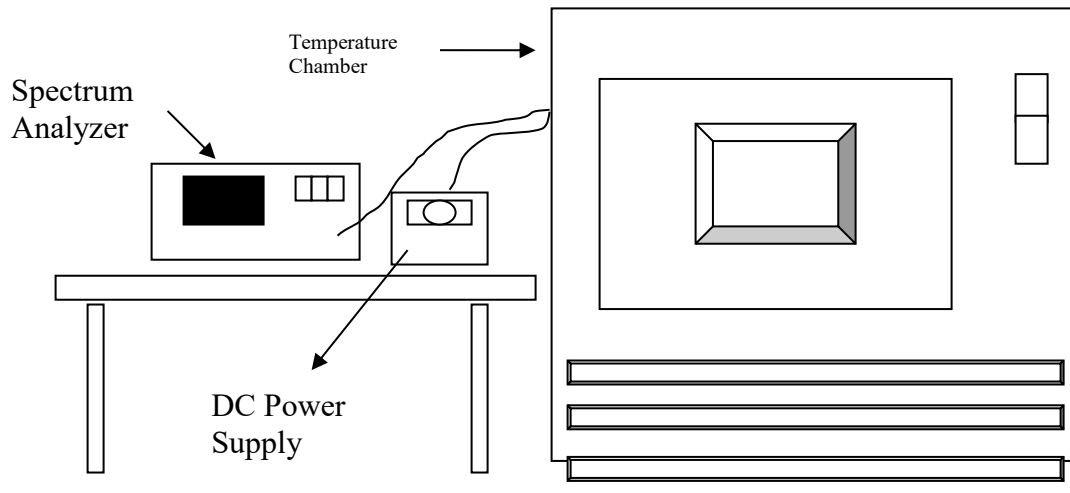
Requirements

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

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 2 and 3 with the temperature chamber set to the lowest temperature.
- 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.

Test Setup





Test Data

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)
50	8.4	5179.983	-3.282	5179.988	-2.317	5179.995	-0.965	5179.991	-1.737
40	8.4	5179.975	-4.826	5180.013	2.510	5180.015	2.896	5180.025	4.826
30	8.4	5179.951	-9.459	5180.025	4.826	5180.042	8.108	5180.034	6.564
20	8.4	5179.977	-4.440	5180.021	4.054	5180.047	9.073	5179.995	-0.965
10	8.4	5180.014	2.703	5180.015	2.896	5180.045	8.687	5180.045	8.687
0	8.4	5179.972	-5.405	5179.985	-2.896	5180.012	2.317	5180.026	5.019
-10	8.4	5180.025	4.826	5179.992	-1.544	5179.997	-0.579	5180.017	3.282
-20	8.4	5179.991	-1.737	5180.025	4.826	5180.022	4.247	5179.989	-2.124
-30	8.4	5179.976	-4.633	5179.985	-2.896	5179.955	-8.687	5179.994	-1.158
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)	Measured Frequency (MHz)	Freq. Drift (ppm)
20	7.14	5180.015	2.896	5180.022	4.247	5179.985	-2.896	5180.015	2.896
20	9.66	5180.019	3.668	5180.035	6.757	5180.018	3.475	5180.026	5.019

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9.7. Radiated Spurious Emission

Requirements

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

Frequency(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.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 32 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

Limits of unwanted emission out of the restricted bands

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

Note:

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

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

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Doc No: 17-EM-F0878 / 3.0



Test Procedures

[For 9 kHz ~ 30 MHz]

- 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. For measurement below 30MHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

NOTE:

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

[For above 30 MHz]

- 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. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

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Doc No: 17-EM-F0878 / 3.0



Note:

- a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- b. 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.
- c. 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.

Configuration	Average	
	RBW	VBW
802.11a	1MHz	10 Hz
802.11n (HT20)		10 Hz

Note: Refer to section 6.6 for duty cycle.

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

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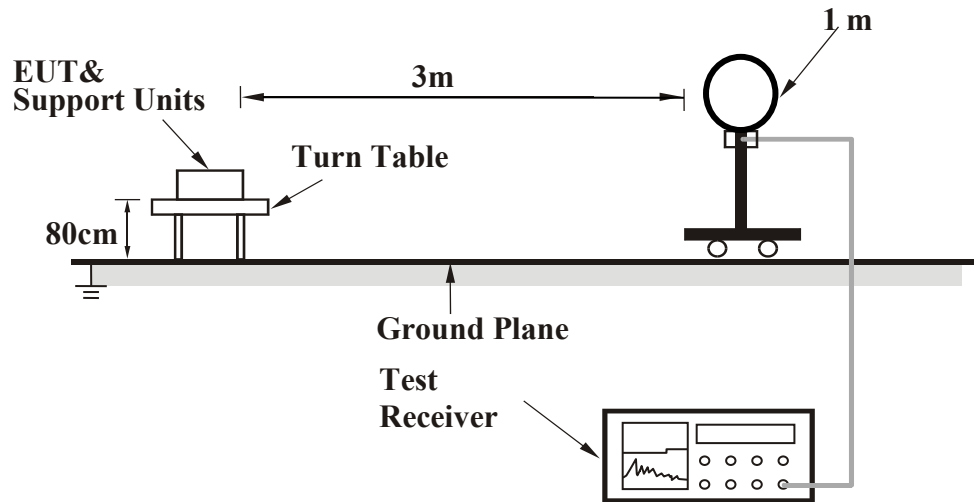
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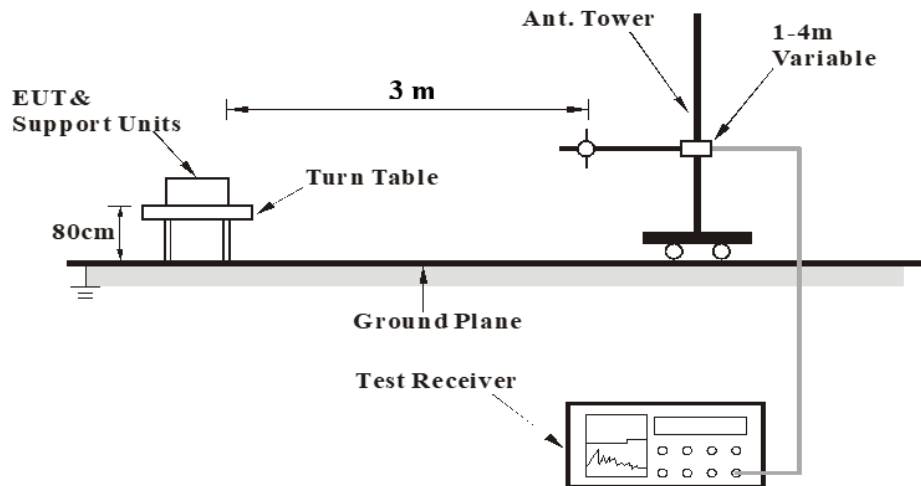


Test Setup

<Frequency Range 9 kHz ~ 30 MHz>



<Frequency Range 30 MHz ~ 1 GHz >



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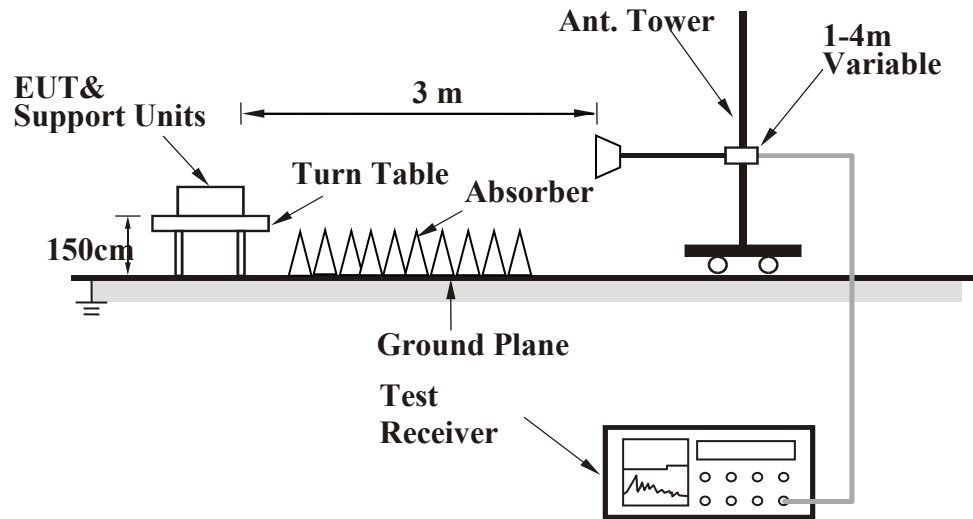
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Doc No: 17-EM-F0878 / 3.0



<Frequency Range above 1 GHz>



For the actual test configuration, please refer to the Setup Configurations.

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Doc No: 17-EM-F0878 / 3.0



Test Data

Above 1GHz Data

802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 36	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	56.99	6.19	63.18	74.00	-10.82	peak
@	5181.930	105.88	6.22	112.10	-	-	peak
-	5150.000	42.40	6.19	48.59	54.00	-5.41	AVG
@	5183.200	96.68	6.22	102.90	-	-	AVG
#	10360.000	42.52	6.99	49.51	68.20	-18.69	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	44.82	6.19	51.01	74.00	-22.99	peak
@	5178.330	96.09	6.22	102.31	-	-	peak
-	5150.000	35.28	6.19	41.47	54.00	-12.53	AVG
@	5176.700	87.29	6.22	93.51	-	-	AVG
#	10360.000	41.41	6.99	48.40	68.20	-19.80	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 38 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 44	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	47.31	6.19	53.50	74.00	-20.50	peak
@	5223.460	105.24	6.26	111.50	-	-	peak
-	5150.000	35.54	6.19	41.73	54.00	-12.27	AVG
@	5223.250	96.32	6.26	102.58	-	-	AVG
#	10440.000	40.62	7.18	47.80	68.20	-20.40	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	45.32	6.22	51.54	74.00	-22.46	peak
@	5225.380	96.89	6.27	103.16	-	-	peak
-	5150.000	33.02	6.19	39.21	54.00	-14.79	AVG
@	5225.130	86.83	6.26	93.09	-	-	AVG
#	10440.000	43.30	7.18	50.48	68.20	-17.72	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 39 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	45.91	6.19	52.10	74.00	-21.90	peak
@	5246.320	104.66	6.29	110.95	-	-	peak
-	5150.000	34.21	6.19	40.40	54.00	-13.60	AVG
@	5243.150	93.61	6.29	99.90	-	-	AVG
#	10480.000	43.15	7.27	50.42	68.20	-17.78	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	44.31	6.19	50.50	74.00	-23.50	peak
@	5235.490	95.10	6.27	101.37	-	-	peak
-	5150.000	33.04	6.19	39.23	54.00	-14.77	AVG
@	5236.650	85.79	6.27	92.06	-	-	AVG
#	10480.000	41.08	7.27	48.35	68.20	-19.85	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 40 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5265.240	104.58	6.31	110.89	-	-	peak
-	5350.000	44.33	6.39	50.72	74.00	-23.28	peak
@	5263.120	95.33	6.31	101.64	-	-	AVG
-	5350.000	34.92	6.39	41.31	54.00	-12.69	AVG
#	10520.000	42.62	7.37	49.99	68.20	-18.21	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5258.470	96.23	6.30	102.53	-	-	peak
-	5350.000	43.16	6.39	49.55	74.00	-24.45	peak
@	5265.120	86.79	6.31	93.10	-	-	AVG
-	5350.000	32.55	6.39	38.94	54.00	-15.06	AVG
#	10520.000	43.54	7.37	50.91	68.20	-17.29	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 41 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 60	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5297.340	104.27	6.33	110.60	-	-	peak
-	5350.000	45.55	6.39	51.94	74.00	-22.06	peak
@	5296.550	92.78	6.34	99.12	-	-	AVG
-	5350.000	33.64	6.39	40.03	54.00	-13.97	AVG
*	10600.000	42.88	7.53	50.41	74.00	-23.59	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5296.300	96.76	6.34	103.10	-	-	peak
-	5350.000	44.90	6.39	51.29	74.00	-22.71	peak
@	5296.680	87.64	6.34	93.98	-	-	AVG
-	5350.000	32.58	6.39	38.97	54.00	-15.03	AVG
*	10600.000	43.07	7.53	50.60	74.00	-23.40	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
7. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



EUT Test Condition		Measurement Detail	
Channel	Channel 64	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5322.660	103.24	6.36	109.60	-	-	peak
-	5350.000	49.54	6.39	55.93	74.00	-18.07	peak
@	5322.550	93.07	6.36	99.43	-	-	AVG
-	5350.000	38.06	6.39	44.45	54.00	-9.55	AVG
*	10640.000	43.72	7.61	51.33	74.00	-22.67	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5322.920	95.47	6.36	101.83	-	-	peak
-	5350.000	45.43	6.39	51.82	74.00	-22.18	peak
@	5324.400	84.65	6.36	91.01	-	-	AVG
-	5350.000	33.75	6.39	40.14	54.00	-13.86	AVG
*	10640.000	43.27	7.61	50.88	74.00	-23.12	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
7. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 43 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
#	5563.667	46.51	6.64	53.15	68.20	-15.05	peak
-	5697.600	46.52	6.86	53.38	103.42	-50.04	peak
-	5717.517	56.44	6.89	63.33	110.10	-46.77	peak
-	5722.367	60.49	6.90	67.39	116.20	-48.81	peak
@	5741.083	100.94	6.93	107.87	-	-	peak
*	11490.000	41.32	8.55	49.87	74.00	-24.13	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
#	5571.933	46.09	6.65	52.74	68.20	-15.46	peak
-	5663.400	46.32	6.81	53.13	78.12	-24.99	peak
-	5717.767	49.44	6.89	56.33	110.17	-53.84	peak
-	5724.000	56.68	6.90	63.58	119.92	-56.34	peak
@	5739.417	93.95	6.93	100.88	-	-	peak
*	11490.000	42.60	8.55	51.15	74.00	-22.85	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
7. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 44 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 157	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
#	5619.083	47.33	6.73	54.06	68.20	-14.14	peak
-	5694.667	47.03	6.85	53.88	101.25	-47.37	peak
-	5706.350	45.93	6.87	52.80	106.98	-54.18	peak
-	5720.850	46.58	6.90	53.48	112.74	-59.26	peak
@	5781.283	101.27	6.99	108.26	-	-	peak
-	5851.833	44.74	7.11	51.85	118.02	-66.17	peak
-	5870.283	45.33	7.15	52.48	106.52	-54.04	peak
-	5895.800	46.01	7.18	53.19	89.81	-36.62	peak
#	5950.483	46.22	7.28	53.50	68.20	-14.70	peak
*	11570.000	40.67	8.53	49.20	74.00	-24.80	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
#	5639.733	46.31	6.76	53.07	68.20	-15.13	peak
-	5671.350	45.83	6.82	52.65	84.00	-31.35	peak
-	5702.483	45.70	6.86	52.56	105.90	-53.34	peak
-	5724.050	45.67	6.90	52.57	120.03	-67.46	peak
@	5782.083	94.65	6.99	101.64	-	-	peak
-	5852.850	45.13	7.11	52.24	115.70	-63.46	peak
-	5859.617	45.71	7.13	52.84	109.51	-56.67	peak
-	5923.933	46.85	7.23	54.08	68.99	-14.91	peak
#	5927.400	45.92	7.24	53.16	68.20	-15.04	peak
*	11570.000	41.68	8.53	50.21	74.00	-23.79	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " # ": The radiated frequency is out of the restricted band.
6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
7. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 45 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 165	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5821.317	101.68	7.07	108.75	-	-	peak
-	5850.183	57.55	7.11	64.66	121.78	-57.12	peak
-	5857.850	55.38	7.12	62.50	110.00	-47.50	peak
-	5904.133	46.02	7.21	53.23	83.64	-30.41	peak
#	5995.117	46.26	7.35	53.61	68.20	-14.59	peak
*	11650.000	41.20	8.52	49.72	74.00	-24.28	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5818.600	94.35	7.07	101.42	-	-	peak
-	5852.483	51.04	7.11	58.15	116.54	-58.39	peak
-	5858.333	49.03	7.12	56.15	109.87	-53.72	peak
-	5915.083	46.05	7.22	53.27	75.54	-22.27	peak
#	5950.133	46.52	7.28	53.80	68.20	-14.40	peak
*	11650.000	41.85	8.52	50.37	74.00	-23.63	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
7. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 46 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

802.11n (HT20)

EUT Test Condition		Measurement Detail	
Channel	Channel 36	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5145.660	52.95	6.19	59.14	74.00	-14.86	peak
@	5184.660	104.08	6.23	110.31	-	-	peak
-	5150.000	40.00	6.19	46.19	54.00	-7.81	AVG
@	5185.230	94.62	6.23	100.85	-	-	AVG
#	10360.000	42.49	6.99	49.48	68.20	-18.72	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	46.19	6.19	52.38	74.00	-21.62	peak
@	5176.690	95.01	6.22	101.23	-	-	peak
-	5150.000	35.19	6.19	41.38	54.00	-12.62	AVG
@	5174.570	86.40	6.21	92.61	-	-	AVG
#	10360.000	40.62	6.99	47.61	68.20	-20.59	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 47 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 44	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	44.46	6.19	50.65	74.00	-23.35	peak
@	5215.460	103.81	6.26	110.07	-	-	peak
-	5150.000	33.96	6.19	40.15	54.00	-13.85	AVG
@	5225.330	94.74	6.27	101.01	-	-	AVG
#	10440.000	44.14	7.18	51.32	68.20	-16.88	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	43.54	6.19	49.73	74.00	-24.27	peak
@	5218.550	95.04	6.26	101.30	-	-	peak
-	5150.000	32.71	6.19	38.90	54.00	-15.10	AVG
@	5216.970	85.21	6.26	91.47	-	-	AVG
#	10440.000	40.69	7.18	47.87	68.20	-20.33	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 48 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	44.19	6.19	50.38	74.00	-23.62	peak
@	5244.100	103.57	6.29	109.86	-	-	peak
-	5150.000	34.23	6.19	40.42	54.00	-13.58	AVG
@	5245.420	94.55	6.29	100.84	-	-	AVG
#	10480.000	43.49	7.27	50.76	68.20	-17.44	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	5150.000	43.45	6.19	49.64	74.00	-24.36	peak
@	5235.580	95.00	6.27	101.27	-	-	peak
-	5150.000	32.99	6.19	39.18	54.00	-14.82	AVG
@	5242.960	86.01	6.29	92.30	-	-	AVG
#	10480.000	42.33	7.27	49.60	68.20	-18.60	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5262.710	104.70	6.31	111.01	-	-	peak
-	5391.030	47.62	6.42	54.04	74.00	-19.96	peak
@	5265.290	95.61	6.31	101.92	-	-	AVG
-	5350.000	35.50	6.39	41.89	54.00	-12.11	AVG
#	10520.000	43.43	7.37	50.80	68.20	-17.40	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5263.750	96.31	6.31	102.62	-	-	peak
-	5350.000	43.77	6.39	50.16	74.00	-23.84	peak
@	5265.240	86.90	6.31	93.21	-	-	AVG
-	5350.000	32.20	6.39	38.59	54.00	-15.41	AVG
#	10520.000	44.13	7.37	51.50	68.20	-16.70	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 50 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 60	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5303.450	103.47	6.34	109.81	-	-	peak
-	5350.000	43.06	6.39	49.45	74.00	-24.55	peak
@	5294.670	92.67	6.34	99.01	-	-	AVG
-	5350.000	33.70	6.39	40.09	54.00	-13.91	AVG
*	10600.000	41.74	7.53	49.27	74.00	-24.73	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5297.340	94.90	6.33	101.23	-	-	peak
-	5350.000	43.03	6.39	49.42	74.00	-24.58	peak
@	5294.600	81.82	6.34	88.16	-	-	AVG
-	5350.000	32.26	6.39	38.65	54.00	-15.35	AVG
*	10600.000	39.77	7.53	47.30	74.00	-26.70	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
7. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 51 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 64	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5324.590	103.04	6.36	109.40	-	-	peak
-	5350.000	50.88	6.39	57.27	74.00	-16.73	peak
@	5314.590	90.06	6.35	96.41	-	-	AVG
-	5350.000	35.09	6.39	41.48	54.00	-12.52	AVG
*	10640.000	43.00	7.61	50.61	74.00	-23.39	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5323.740	96.08	6.36	102.44	-	-	peak
-	5350.000	46.58	6.39	52.97	74.00	-21.03	peak
@	5323.220	83.35	6.36	89.71	-	-	AVG
-	5350.000	33.03	6.39	39.42	54.00	-14.58	AVG
*	10640.000	44.22	7.61	51.83	74.00	-22.17	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
7. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 52 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
#	5591.083	46.69	6.68	53.37	68.20	-14.83	peak
-	5696.667	46.57	6.86	53.43	102.73	-49.30	peak
-	5711.950	56.79	6.89	63.68	108.55	-44.87	peak
-	5723.683	62.96	6.90	69.86	119.20	-49.34	peak
@	5741.167	100.46	6.93	107.39	-	-	peak
*	11490.000	43.36	8.55	51.91	74.00	-22.09	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
#	5631.933	45.93	6.74	52.67	68.20	-15.53	peak
-	5682.683	46.27	6.83	53.10	92.39	-39.29	peak
-	5716.950	50.95	6.89	57.84	109.95	-52.11	peak
-	5722.883	54.37	6.90	61.27	117.37	-56.10	peak
@	5740.267	95.38	6.93	102.31	-	-	peak
*	11490.000	42.25	8.55	50.80	74.00	-23.20	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
7. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 53 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 157	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
#	5620.483	46.88	6.74	53.62	68.20	-14.58	peak
-	5679.433	46.51	6.82	53.33	89.98	-36.65	peak
-	5719.933	46.36	6.90	53.26	110.78	-57.52	peak
-	5723.100	46.97	6.90	53.87	117.87	-64.00	peak
@	5780.600	101.00	6.99	107.99	-	-	peak
-	5851.233	45.37	7.11	52.48	119.39	-66.91	peak
-	5862.833	45.66	7.14	52.80	108.61	-55.81	peak
-	5917.667	46.31	7.22	53.53	73.63	-20.10	peak
#	5968.800	46.28	7.32	53.60	68.20	-14.60	peak
*	11570.000	41.10	8.53	49.63	74.00	-24.37	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
#	5648.600	46.28	6.78	53.06	68.20	-15.14	peak
-	5694.517	45.95	6.85	52.80	101.14	-48.34	peak
-	5717.783	45.81	6.89	52.70	110.18	-57.48	peak
-	5723.500	45.37	6.90	52.27	118.78	-66.51	peak
@	5779.550	94.99	6.99	101.98	-	-	peak
-	5852.617	45.58	7.11	52.69	116.23	-63.54	peak
-	5858.683	45.88	7.12	53.00	109.77	-56.77	peak
-	5876.200	46.31	7.15	53.46	104.31	-50.85	peak
#	5941.883	46.09	7.26	53.35	68.20	-14.85	peak
*	11570.000	41.38	8.53	49.91	74.00	-24.09	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. " # ": The radiated frequency is out of the restricted band.
6. " * ": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
7. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 54 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

EUT Test Condition		Measurement Detail	
Channel	Channel 165	Frequency Range	1 GHz ~ 40 GHz

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5830.633	100.85	7.07	107.92	-	-	peak
-	5852.167	56.67	7.11	63.78	117.26	-53.48	peak
-	5857.983	55.19	7.12	62.31	109.96	-47.65	peak
-	5916.083	46.20	7.22	53.42	74.80	-21.38	peak
#	5956.183	46.42	7.29	53.71	68.20	-14.49	peak
*	11650.000	42.06	8.52	50.58	74.00	-23.42	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
@	5819.633	93.43	7.07	100.50	-	-	peak
-	5851.567	49.89	7.11	57.00	118.63	-61.63	peak
-	5857.417	47.42	7.12	54.54	110.12	-55.58	peak
-	5914.400	46.28	7.22	53.50	76.04	-22.54	peak
#	6032.233	45.59	7.48	53.07	68.20	-15.13	peak
*	11650.000	42.04	8.52	50.56	74.00	-23.44	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. "@": Fundamental Frequency.
5. "#": The radiated frequency is out of the restricted band.
6. "*": The peak result complies with AVG limit, AVG result is deemed to comply with AVG limit.
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Doc No: 17-EM-F0878 / 3.0



Below 1GHz Data

No non-compliance noted:

KDB 414788

- Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

- OFS and chamber correlation testing had been performed and chamber measured test results is the worst case test result.

Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

9 kHz ~ 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

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Doc No: 17-EM-F0878 / 3.0

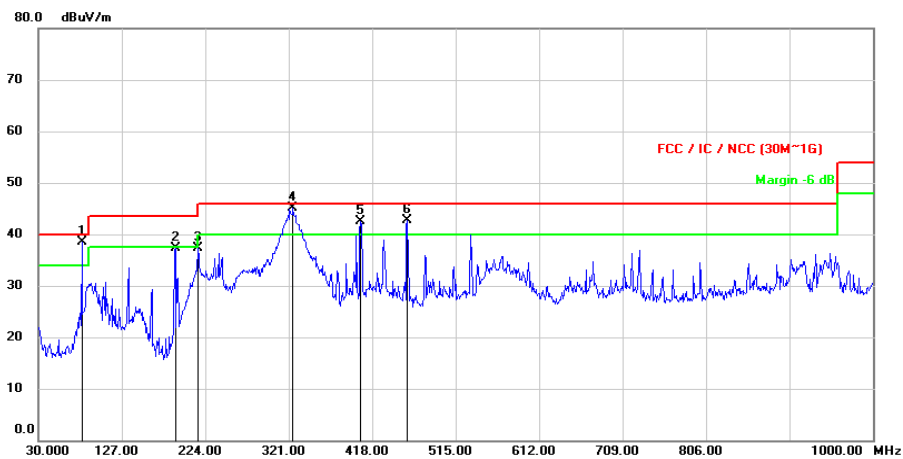


30 MHz ~ 1 GHz Data:

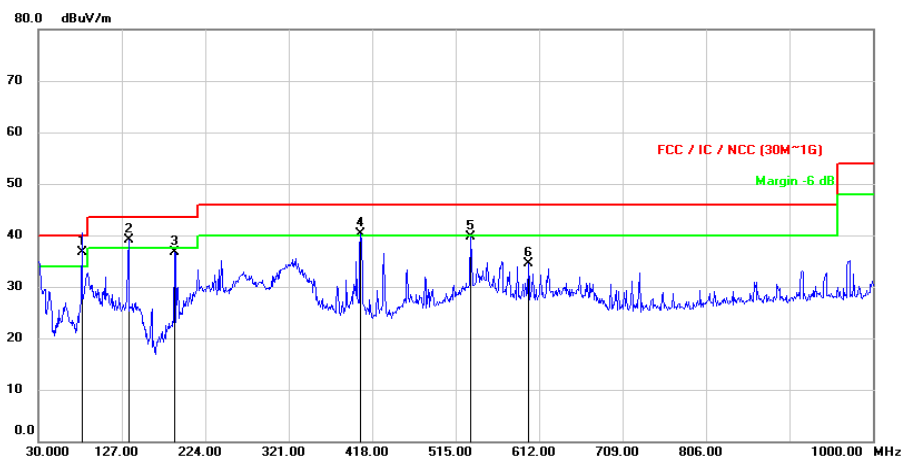
802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 36	Frequency Range	30 MHz ~ 1 GHz

Horizontal



Vertical



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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 57 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

Antenna Polarity & Test Distance: Horizontal at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	81.0220	58.60	-20.11	38.49	40.00	-1.51	peak
-	189.1446	54.91	-17.58	37.33	43.50	-6.17	peak
-	215.8196	55.16	-17.94	37.22	43.50	-6.28	peak
-	326.0763	58.91	-13.90	45.01	46.00	-0.99	peak
-	405.2606	54.22	-11.77	42.45	46.00	-3.55	peak
-	459.2573	53.19	-10.49	42.70	46.00	-3.30	peak
Antenna Polarity & Test Distance: Vertical at 3 m							
Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
-	81.0220	56.88	-20.11	36.77	40.00	-3.23	QP
-	135.0510	55.55	-16.54	39.01	43.50	-4.49	peak
-	189.0477	54.20	-17.57	36.63	43.50	-6.87	peak
-	404.9697	52.08	-11.78	40.30	46.00	-5.70	peak
-	533.3330	48.82	-9.17	39.65	46.00	-6.35	peak
-	600.0689	41.92	-7.43	34.49	46.00	-11.51	peak

Remarks:

1. Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
2. Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
3. Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
4. The other emission levels were very low against the limit.

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Doc No: 17-EM-F0878 / 3.0



9.8. AC Power Line Conducted Emission

Requirements

Frequency (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	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.

Test Procedures

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

NOTE:

1. 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.
2. All modes of operation were investigated and the worst-case emissions are reported

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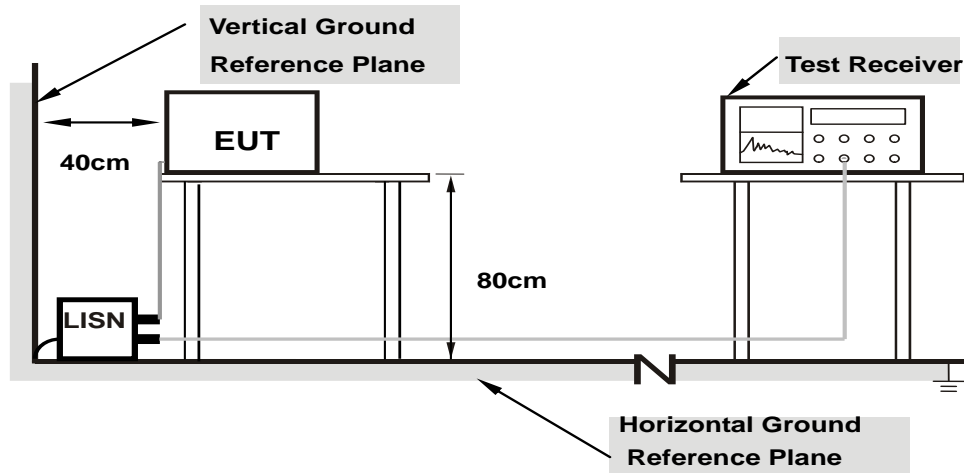
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Test Setup



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

For the actual test configuration, please refer to the Setup Configurations.

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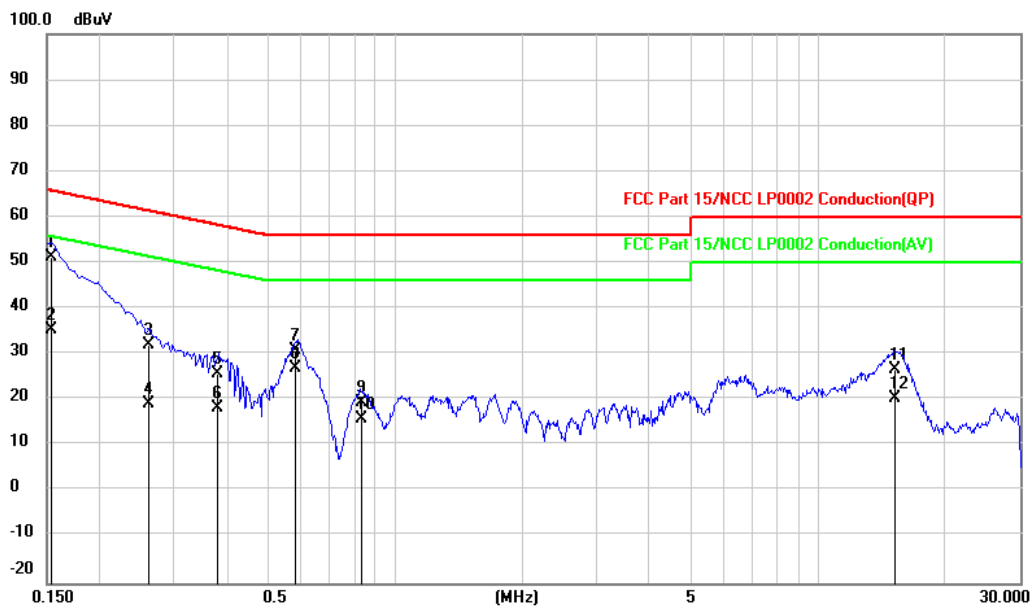


Test Data

802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 36	Frequency Range	150 kHz ~ 30 MHz

Phase of Power : Line (L)



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Doc No: 17-EM-F0878 / 3.0



Test report No. : 4788520121-US-R1-V0
Page : 61 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.1527	31.63	19.57	51.20	65.85	-14.65	QP
2	0.1527	15.85	19.57	35.42	55.85	-20.43	AVG
3	0.2615	12.58	19.60	32.18	61.38	-29.20	QP
4	0.2615	-0.48	19.60	19.12	51.38	-32.26	AVG
5	0.3781	6.26	19.60	25.86	58.32	-32.46	QP
6	0.3781	-1.45	19.60	18.15	48.32	-30.17	AVG
7	0.5806	11.32	19.58	30.90	56.00	-25.10	QP
8	0.5806	7.25	19.58	26.83	46.00	-19.17	AVG
9	0.8376	-0.09	19.61	19.52	56.00	-36.48	QP
10	0.8376	-3.87	19.61	15.74	46.00	-30.26	AVG
11	15.1619	6.70	20.02	26.72	60.00	-33.28	QP
12	15.1619	0.32	20.02	20.34	50.00	-29.66	AVG

Remarks:

1. Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB)
2. Margin(dB) = Result value (dBuV) - Limit value (dBuV)
3. Correction Factor(dB) = Insertion loss(dB) + Cable loss(dB)
4. The other emission levels were very low against the limit.

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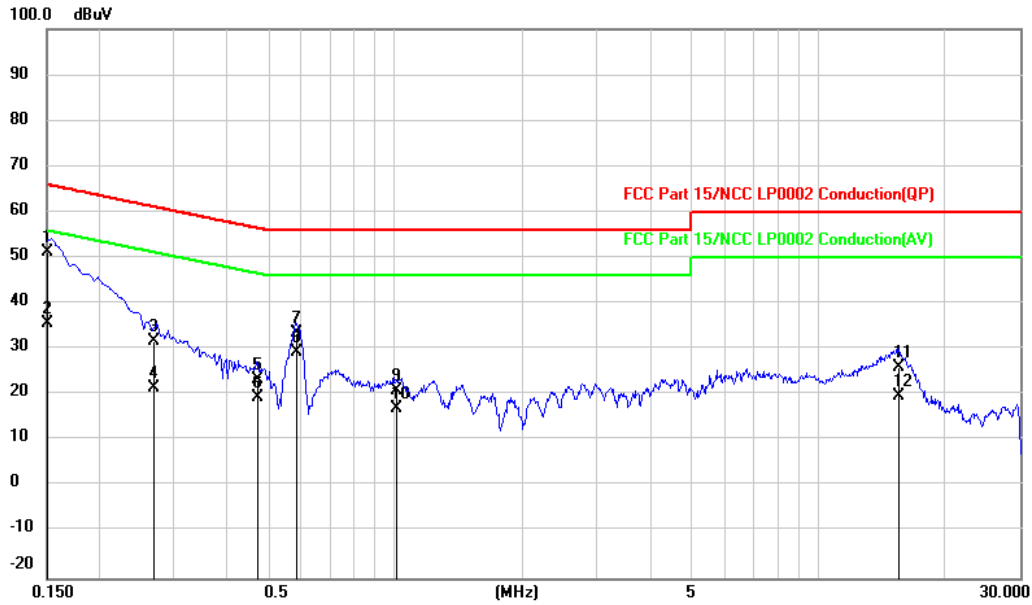
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Phase of Power : Neutral (N)



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Test report No. : 4788520121-US-R1-V0
Page : 63 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.1504	31.81	19.59	51.40	65.98	-14.58	QP
2	0.1504	16.07	19.59	35.66	55.98	-20.32	AVG
3	0.2696	12.15	19.61	31.76	61.13	-29.37	QP
4	0.2696	1.86	19.61	21.47	51.13	-29.66	AVG
5	0.4719	3.78	19.61	23.39	56.48	-33.09	QP
6	0.4719	-0.29	19.61	19.32	46.48	-27.16	AVG
7	0.5890	14.04	19.60	33.64	56.00	-22.36	QP
8	0.5890	9.80	19.60	29.40	46.00	-16.60	AVG
9	1.0029	1.43	19.63	21.06	56.00	-34.94	QP
10	1.0029	-2.45	19.63	17.18	46.00	-28.82	AVG
11	15.4423	5.94	20.10	26.04	60.00	-33.96	QP
12	15.4423	-0.41	20.10	19.69	50.00	-30.31	AVG

Remarks:

1. Result value (dBuV) = Reading value (dBuV) + Correction Factor (dB)
2. Margin(dB) = Result value (dBuV) - Limit value (dBuV)
3. Correction Factor(dB) = Insertion loss(dB) + Cable loss(dB)
4. The other emission levels were very low against the limit.

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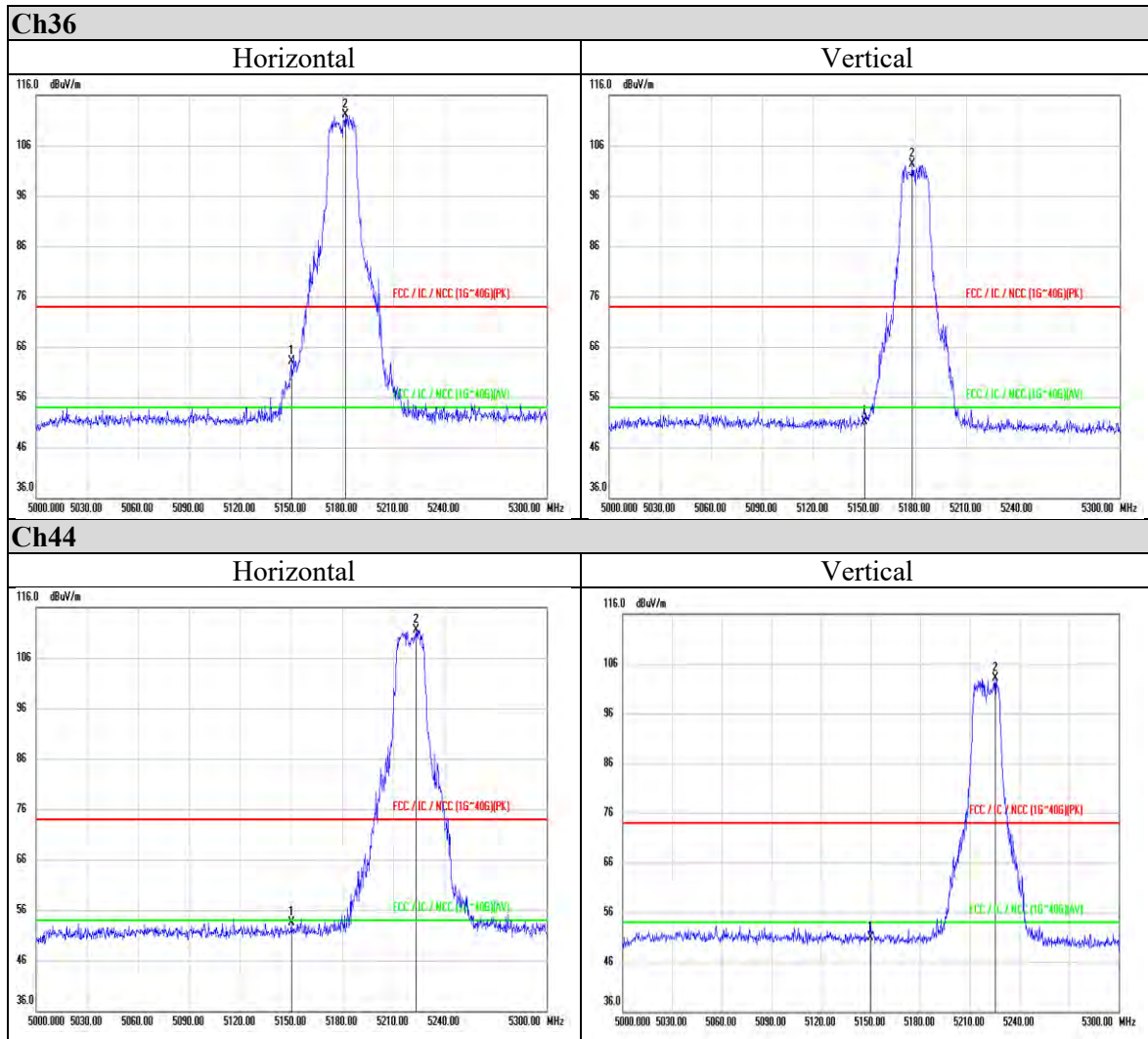
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Appendix I Radiated Band Edge and OOB Measurement

802.11a

Peak



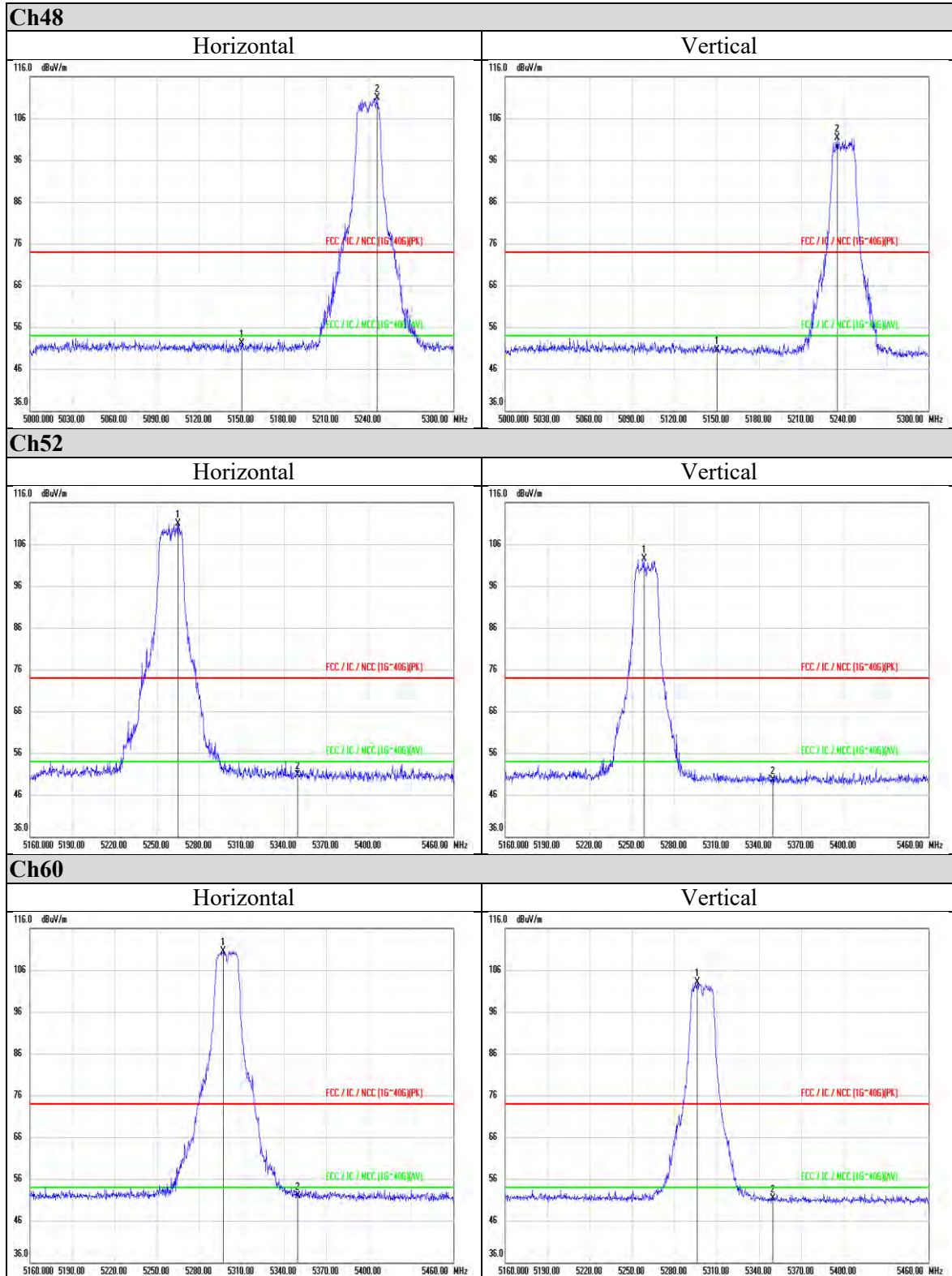
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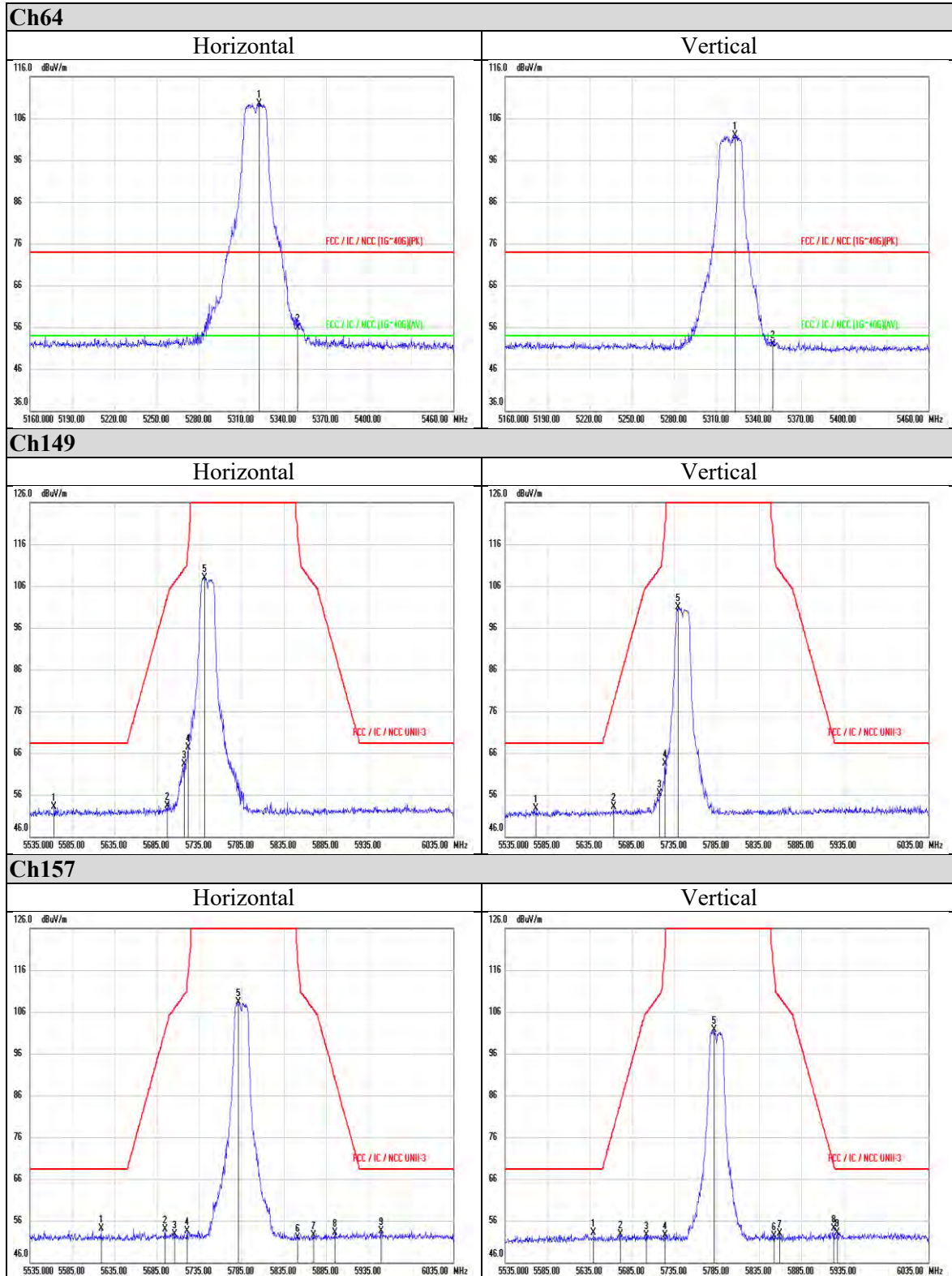
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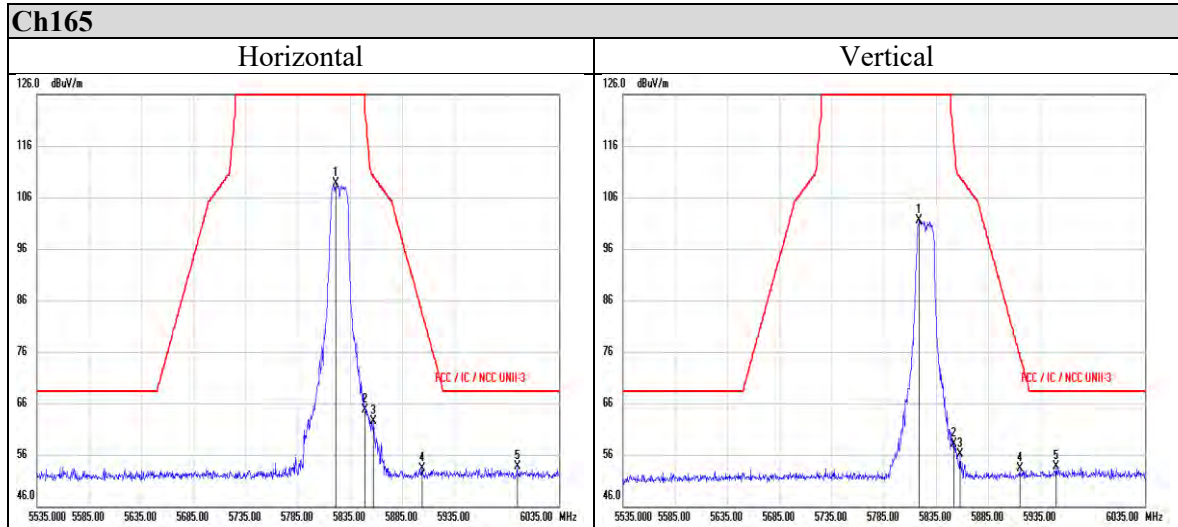
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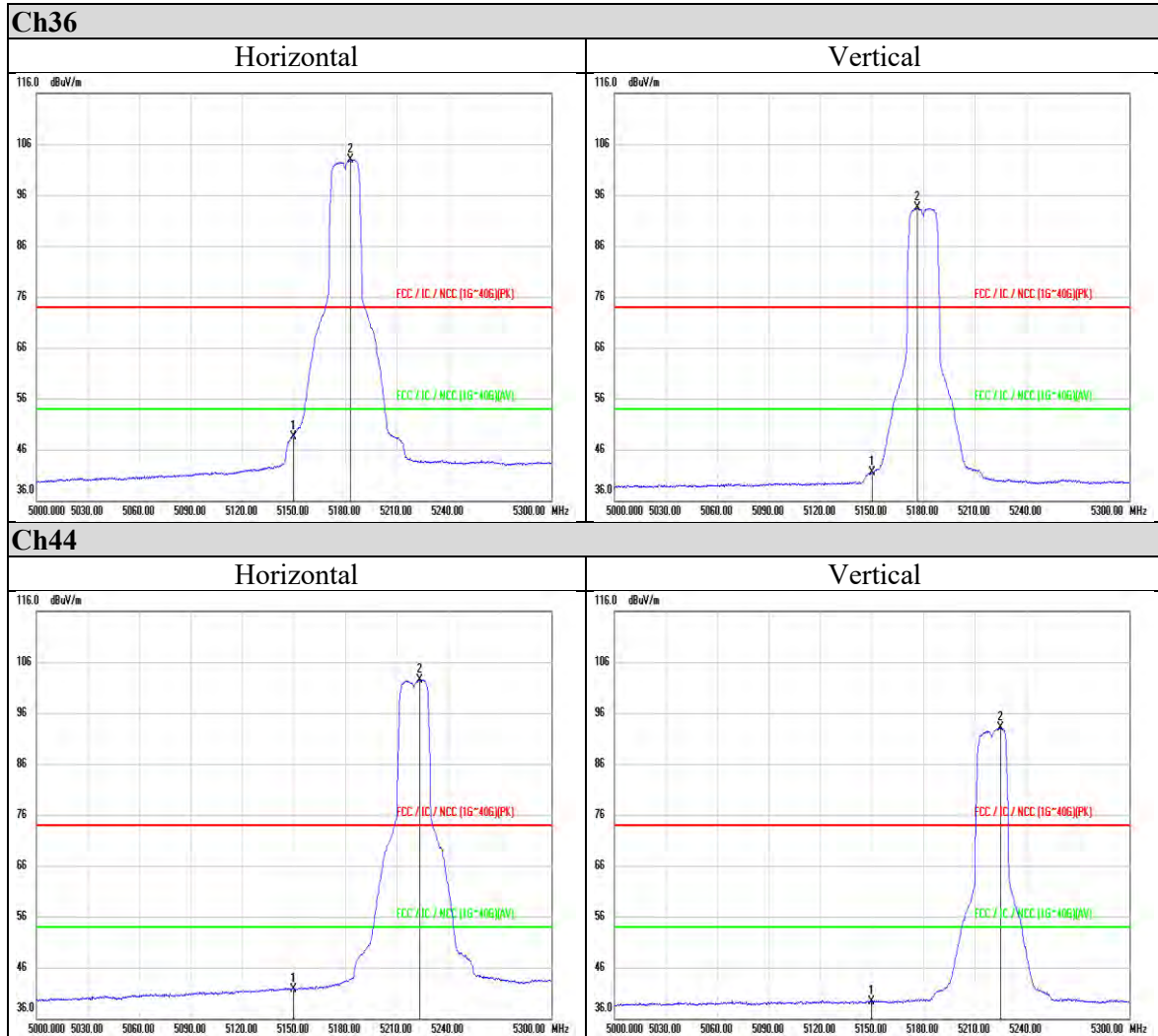
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Average



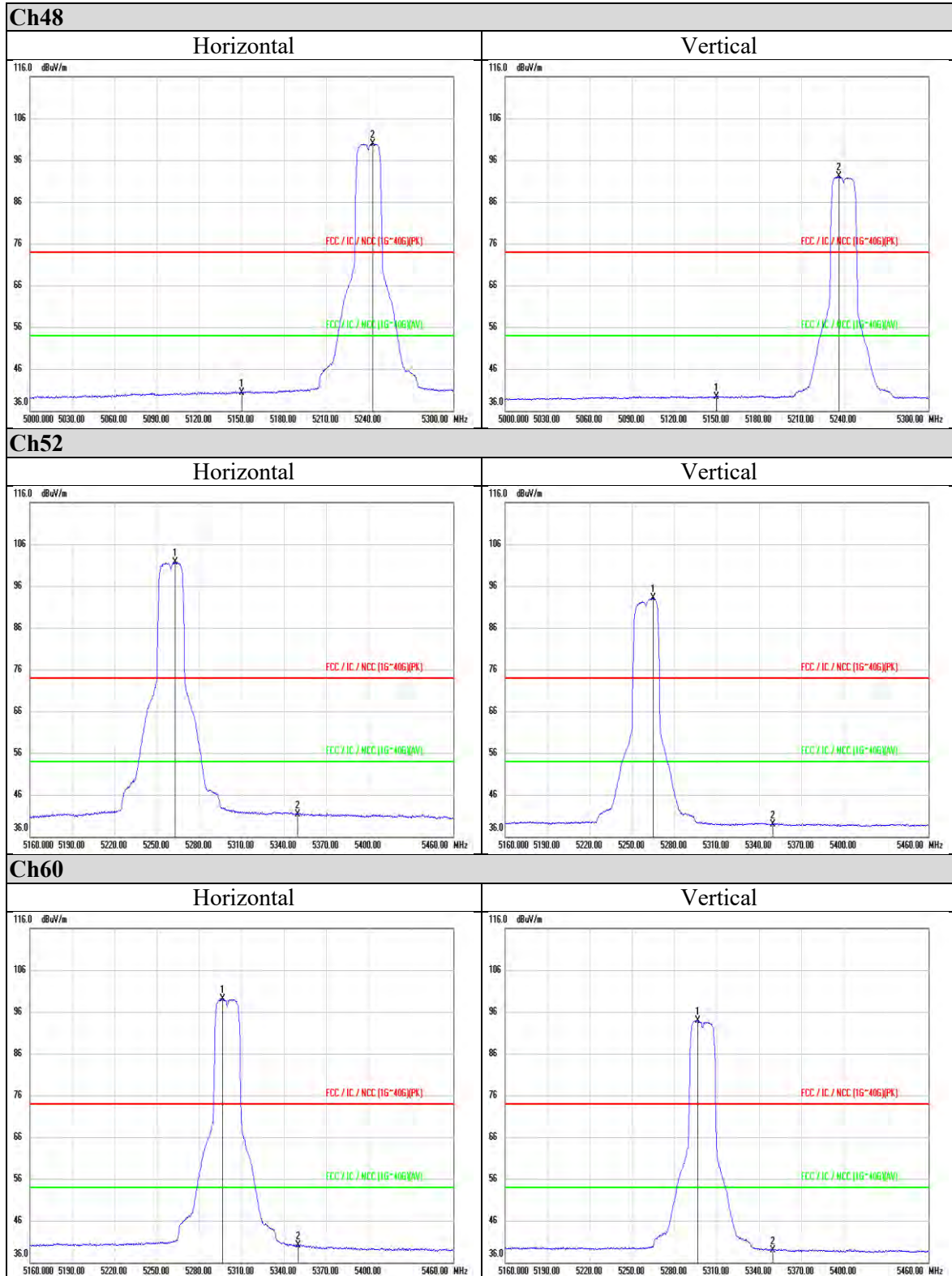
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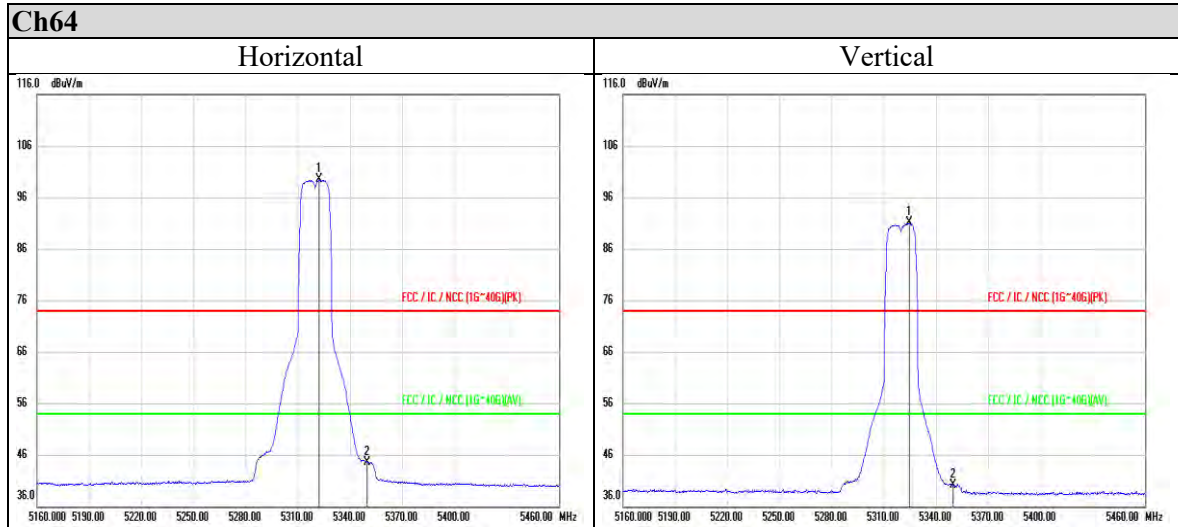
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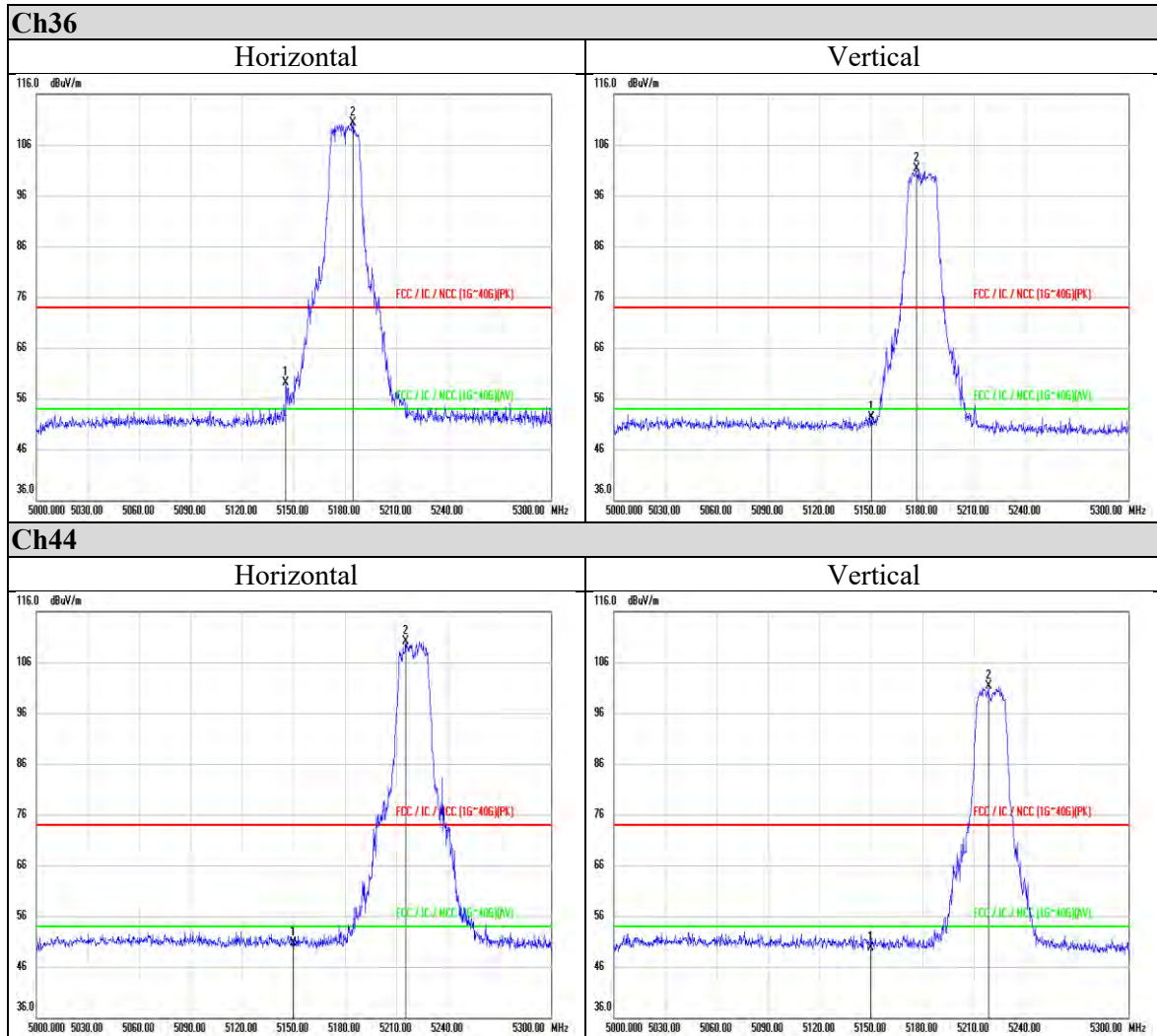
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802.11n (HT20)

Peak



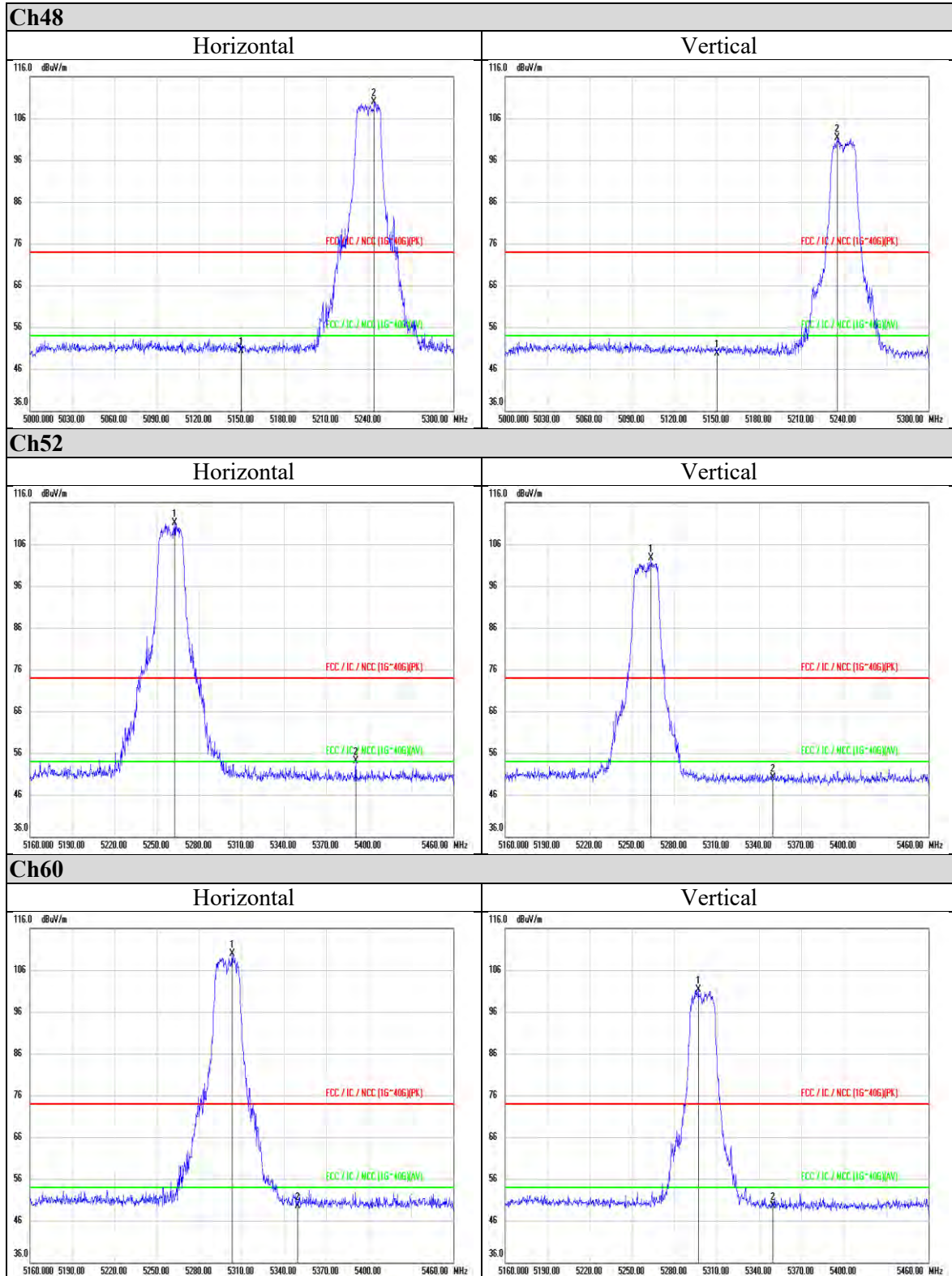
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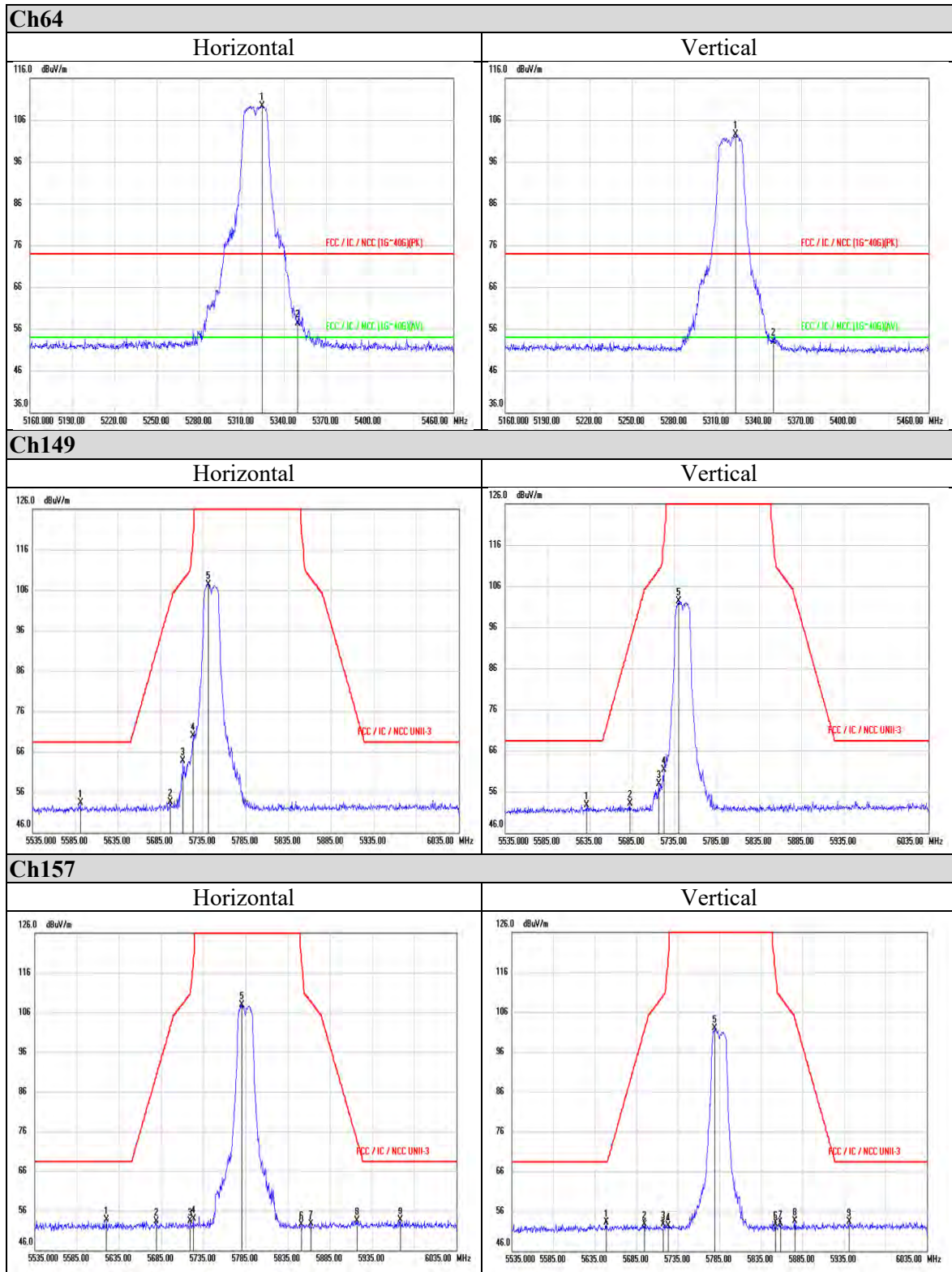
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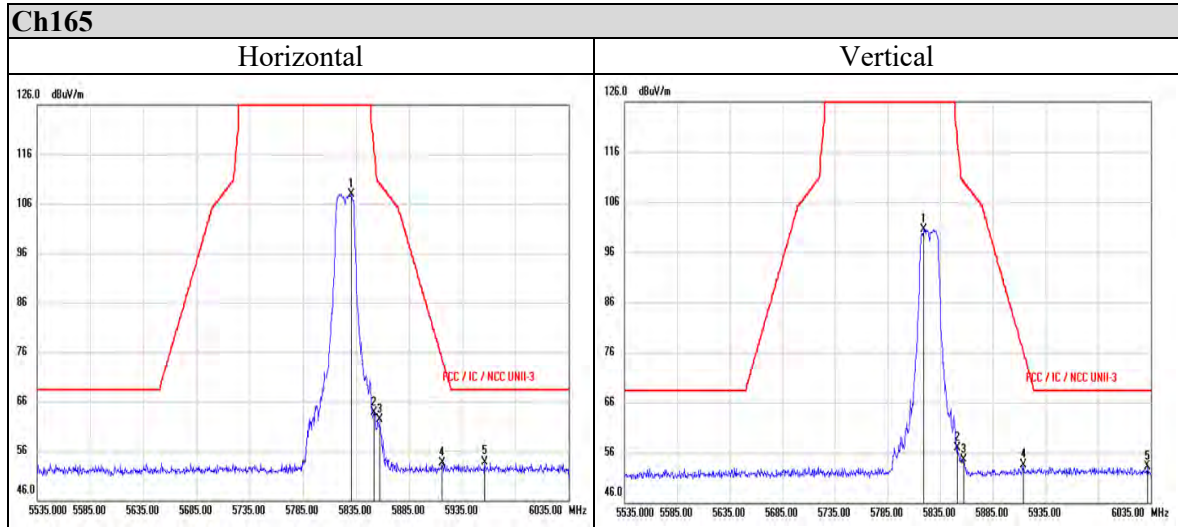
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Test report No. : 4788520121-US-R1-V0
Page : 74 of 85
Issued date : Mar. 26, 2019
FCC ID : 2AFB3WA-WEC700



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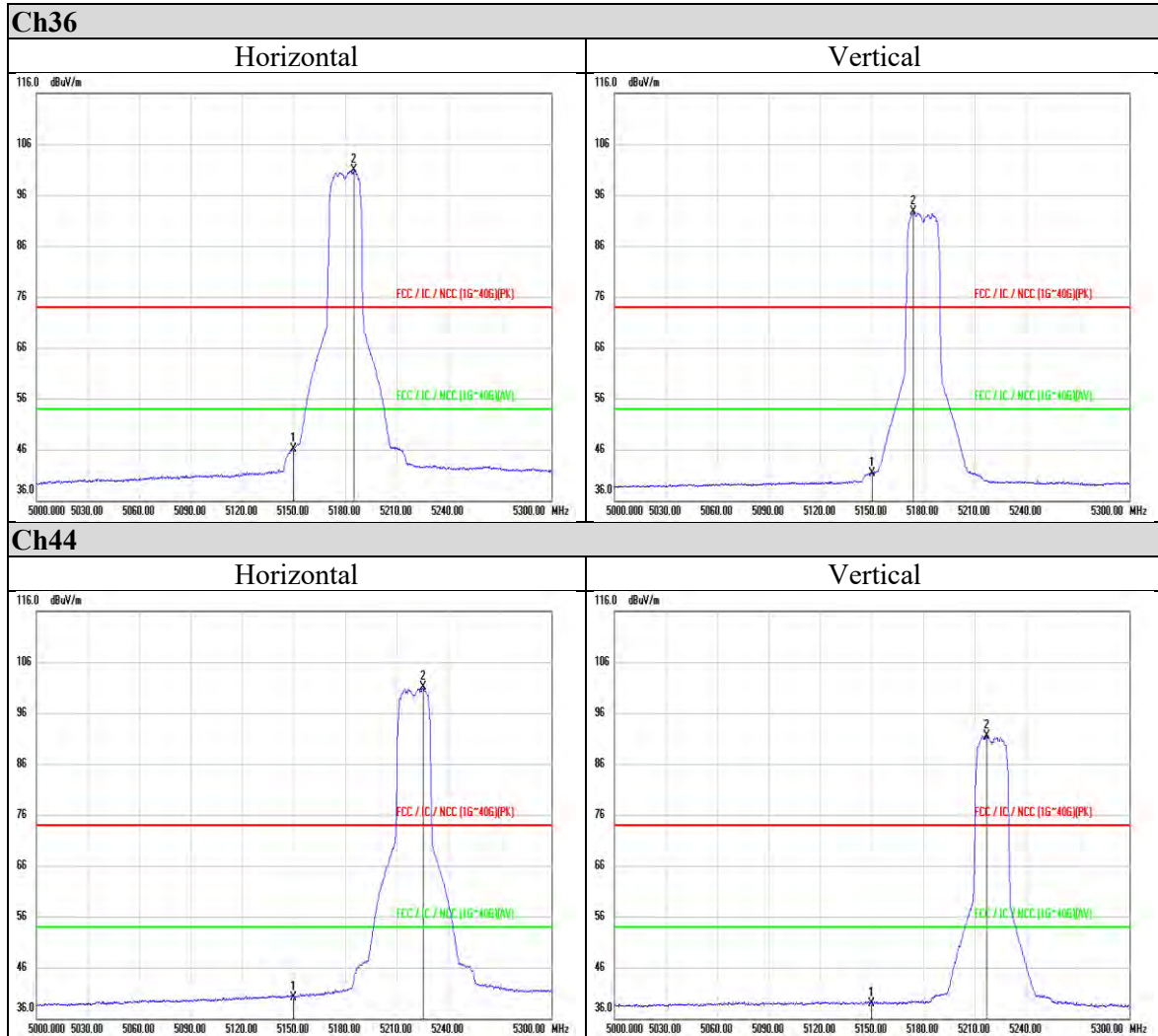
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Average



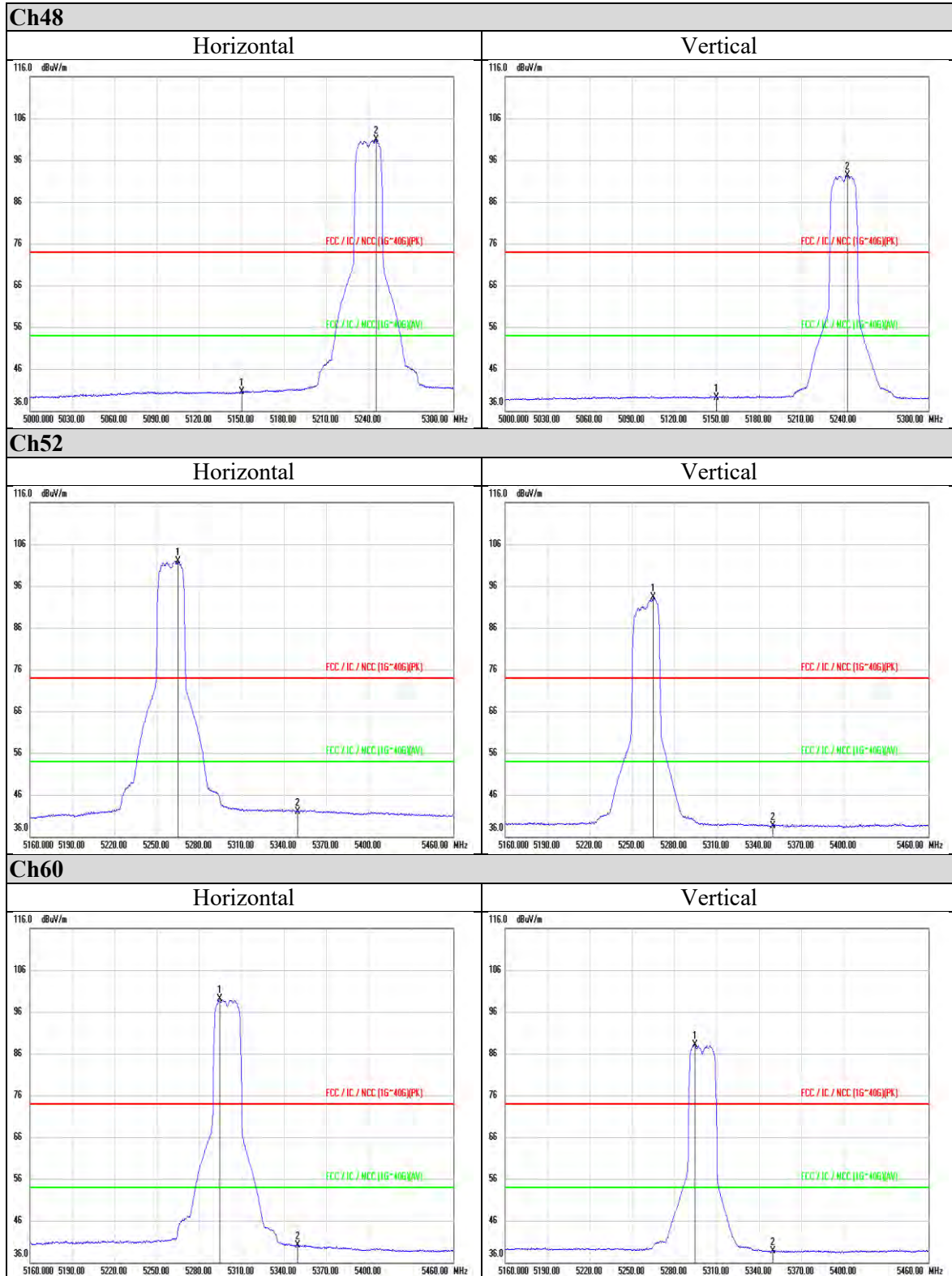
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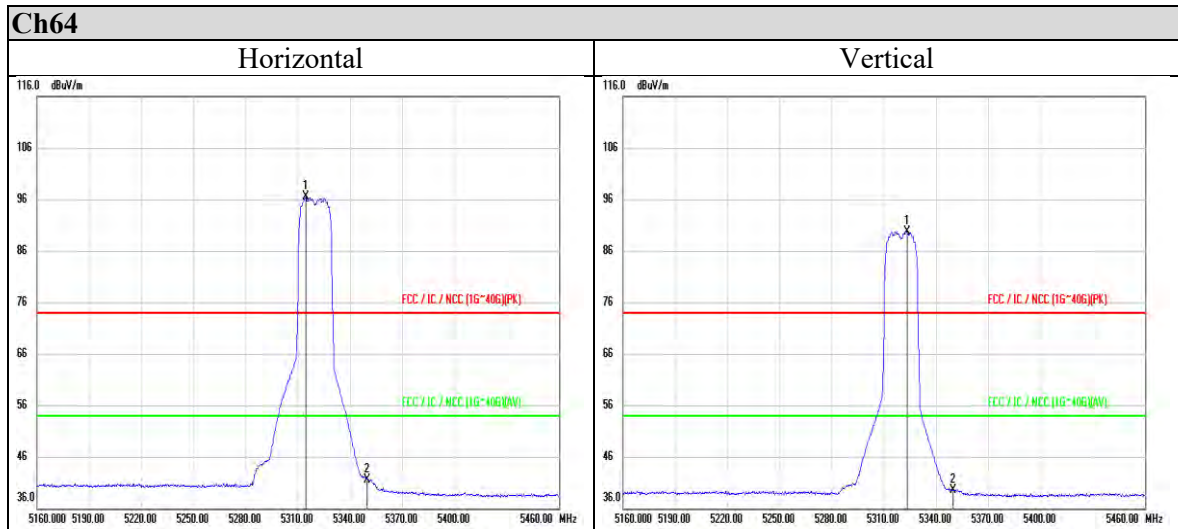
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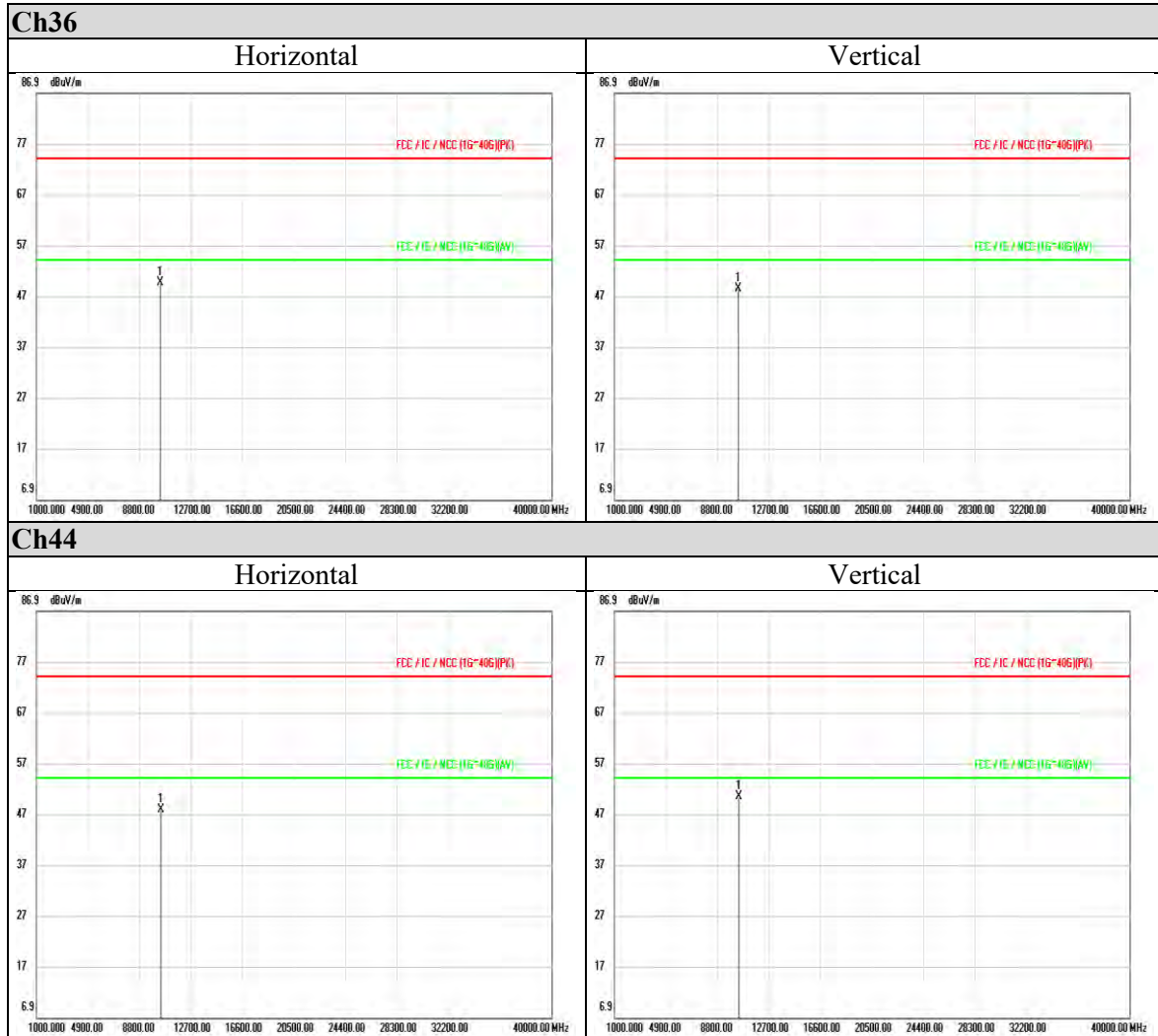
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Appendix II Radiated Spurious Emission Measurement

802.11a



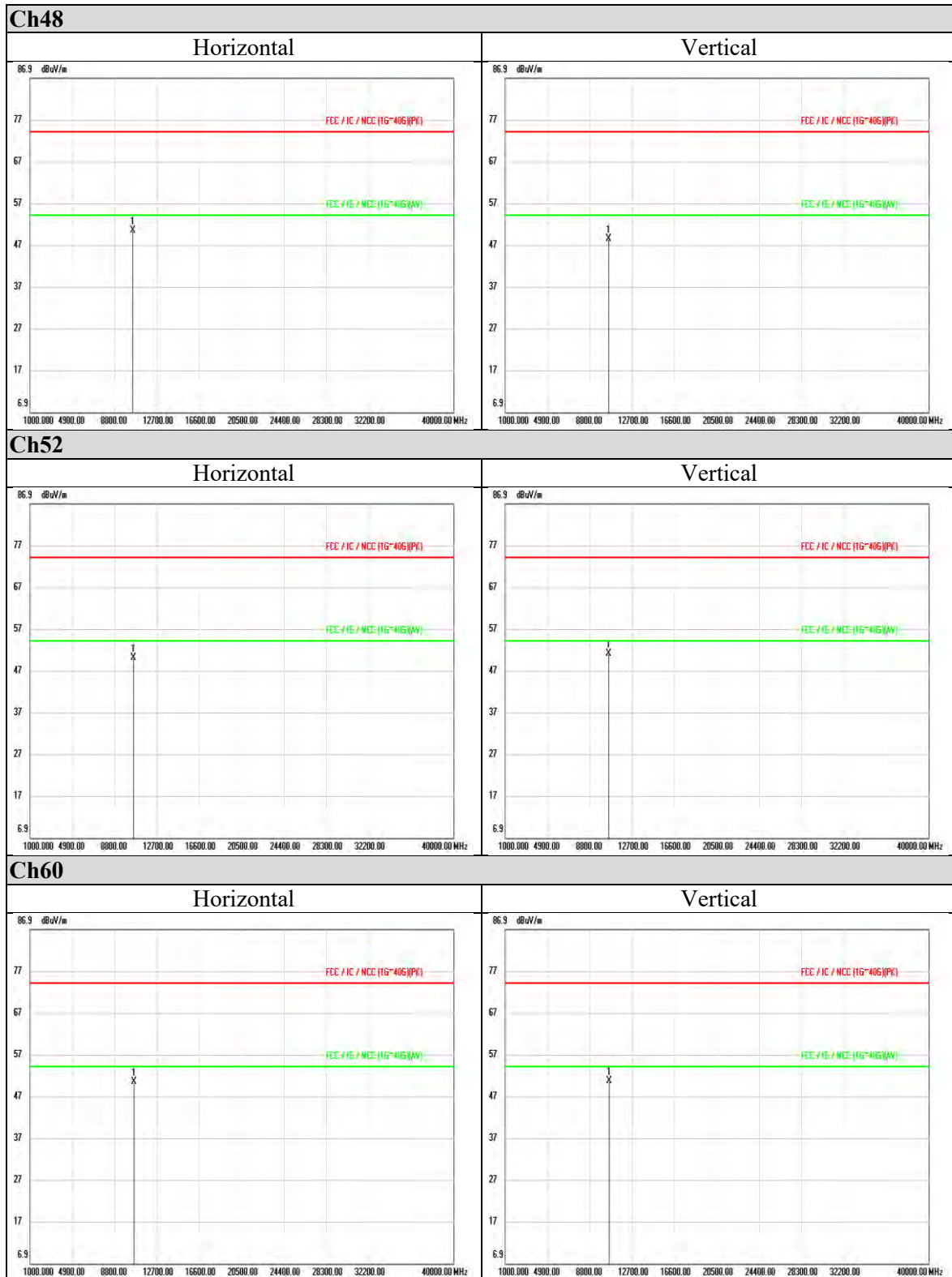
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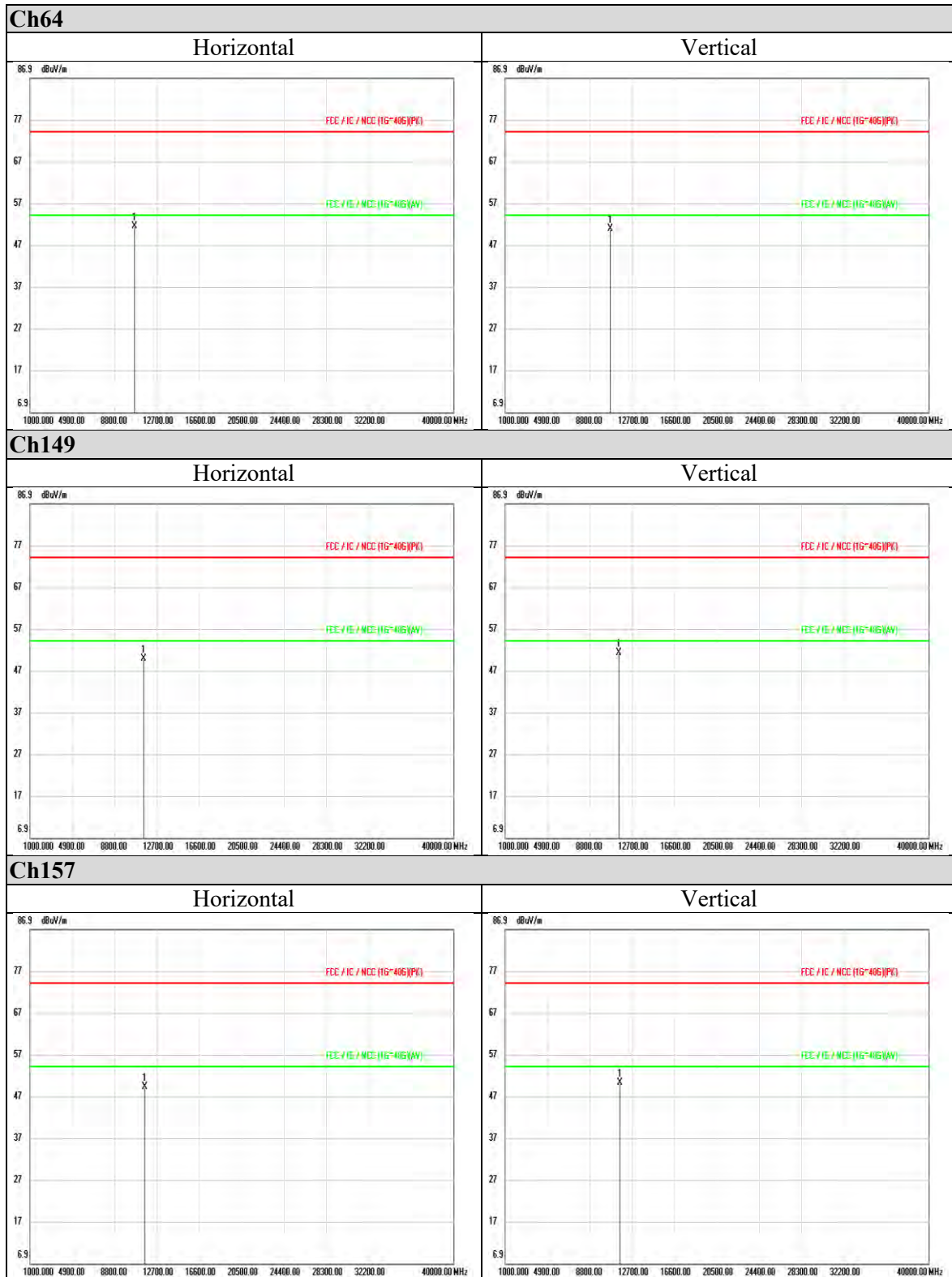
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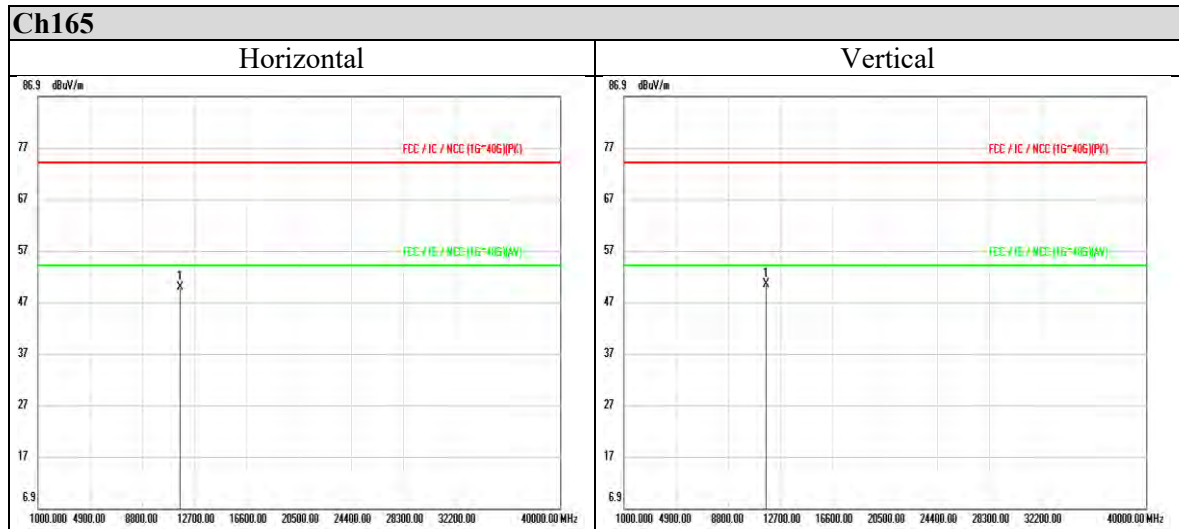
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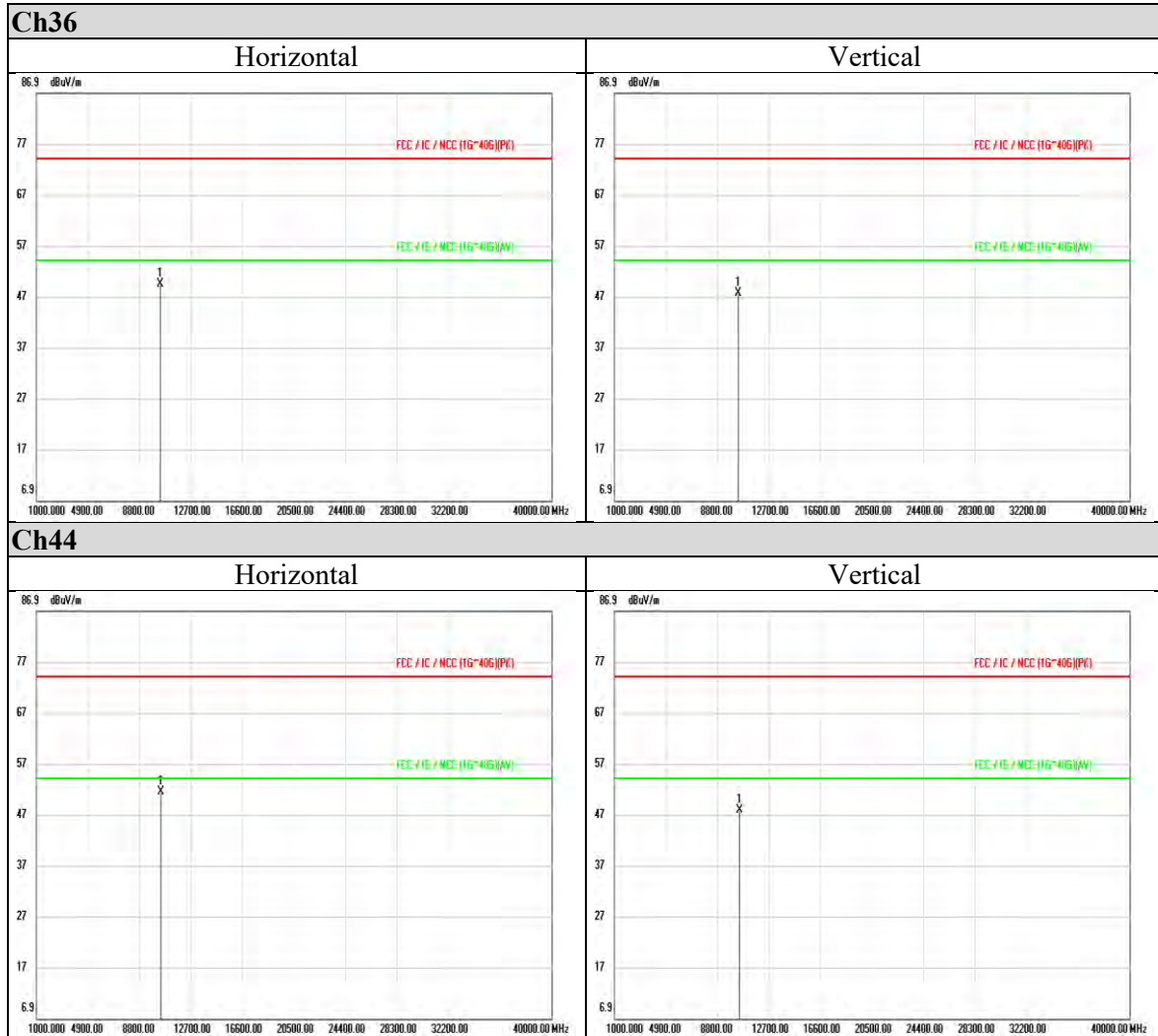
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802.11n (HT20)



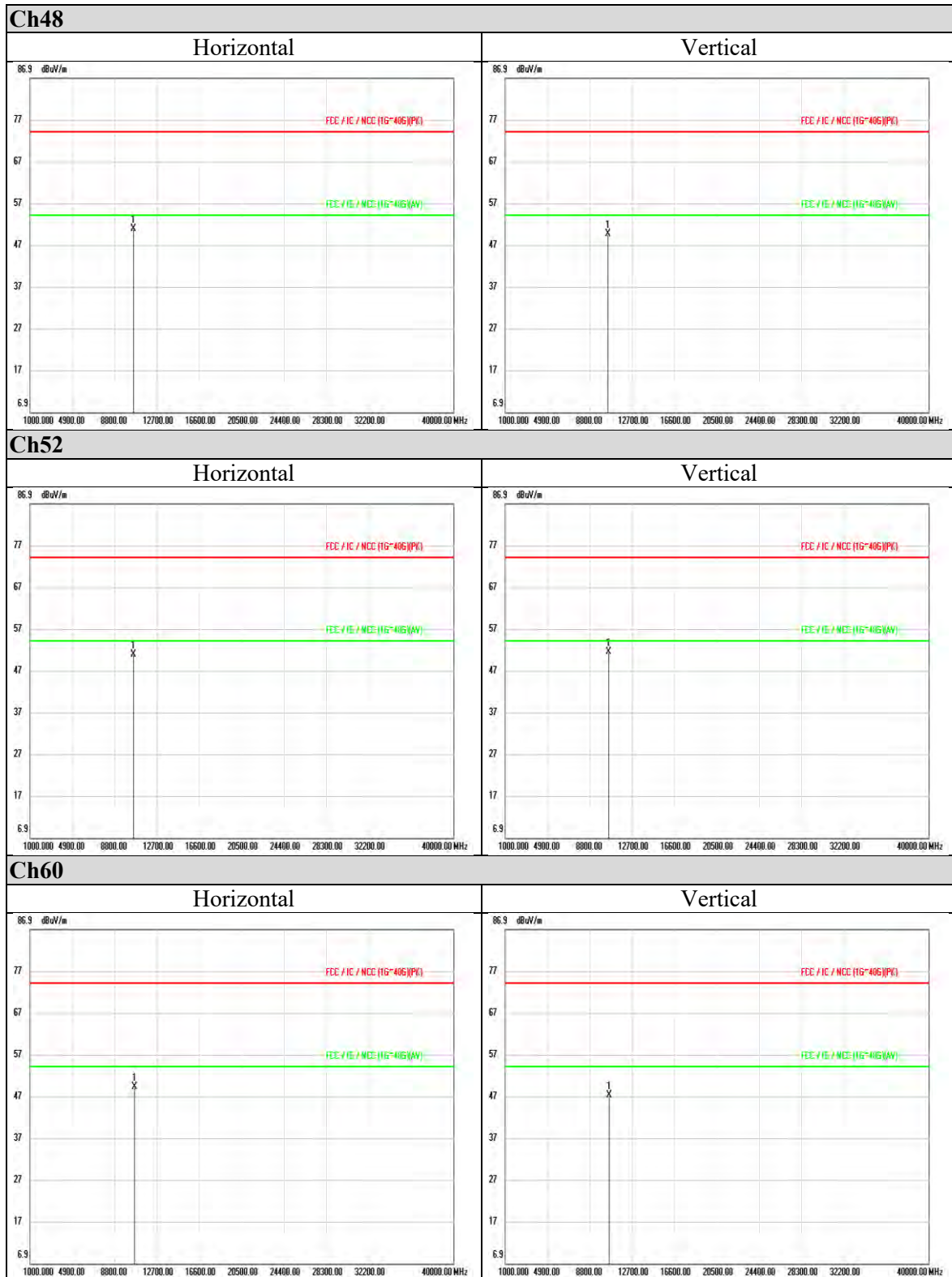
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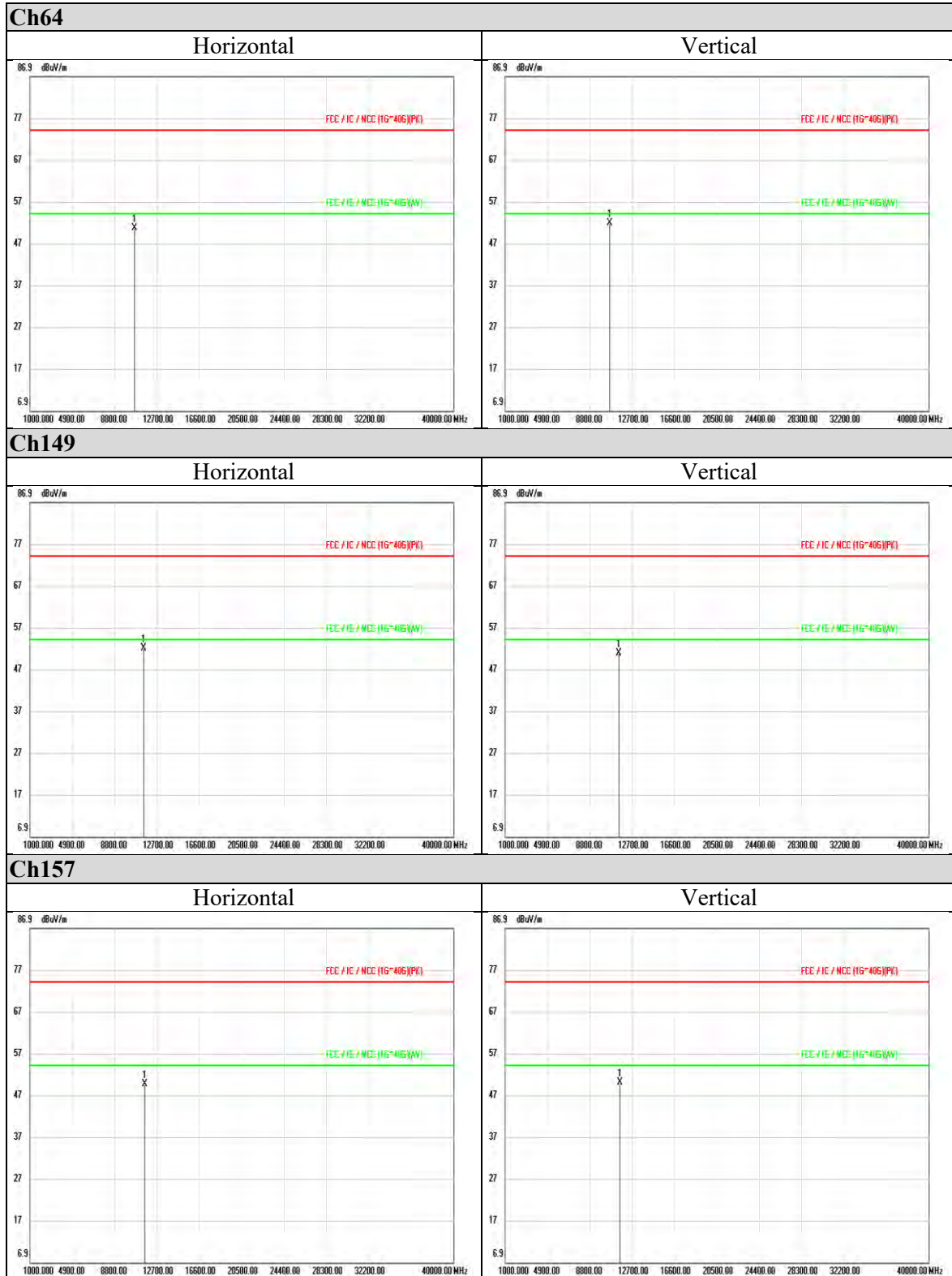
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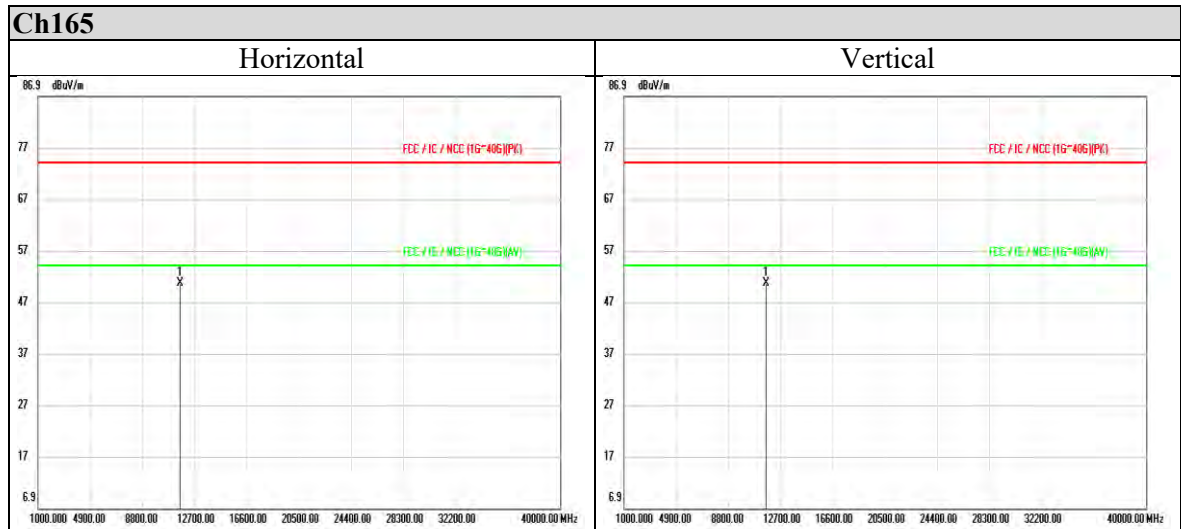
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