

FCC Part 15, Subpart E Test Report

FCC ID: ARS-10BDL5051T

Applicant: Top Victory Electronics (Taiwan) Co Ltd

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Manufacturer: MMD(Shanghai)Electronics Technology Co Ltd

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Product(s): Colour Monitor

Brand(s): Philips

Test Model(s): 10BDL5051T

Series Model(s): See section 2.1

Test Date: Mar. 16, 2024 ~ Apr. 02, 2024

Issued Date: Apr. 03, 2024

Issued By: Hwa-Hsing (Dongguan) Testing Co., Ltd.

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Test Firm Registration No.: 915896

Standards: FCC Part 15, Subpart E, Section 15.407
ANSI C63.10:2013

The above equipment has been tested by **Hwa-Hsing (Dongguan) Testing Co., Ltd.**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

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Nature Lee

Reviewed by :



Dragon Long

Approved by :



Scott He

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Release Control Record

Issue No.	Description	Date Issued
23122202-01-RF-US-04	Original Release	Apr. 03, 2024

1. Summary of Test Results

FCC part 15, subpart e (section 15.407 under new rule) ANSI C63.10:2013 789033 D02 General UNII Test Procedures New Rules v01r03 KDB 662911 D01 v02r01			
Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Meet the requirement of limit.

Note: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class A (DoC). The test report has been issued separately.

1.1 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:

The listed uncertainties are the worst cases uncertainty for the entire range of measurement. Please note that the uncertainty values are provided for informational purposes only and are not used in determining the PASS/FAIL results.

Measurement	Frequency	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.66 dB
Radiated Emissions up to 1 GHz	9KHz ~ 30MHz	2.16 dB
	30MHz ~ 1000MHz	3.47 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	4.84 dB
	18GHz ~ 40GHz	4.67 dB

1.2 Modification Record

There were no modifications required for compliance.

2. General Information

2.1 General Description of EUT

Product(s)	Colour Monitor
Test Model(s)	10BDL5051T
Sample No.	HS2403020001; HS2403020004
Series Model(s)	10BDL***** The "*" could be any alphanumeric character including blank for marketing differentiation.
Status of EUT	Engineering Prototype
Power Supply Rating	DC 12V from Adapter or DC 48V from POE
Modulation Technology	OFDM
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to mcs7 802.11ac: up to mcs9
Operating Frequency	5180~5240MHz,5745~5825MHz
Number of Channel	See the section 2.2
Maximum Output Power	13.86dBm for 5150 ~ 5250MHz 14.18dBm for 5725 ~ 5850MHz
Antenna Type	PIFA Antenna
Max. Antenna Gain	2.69dBi for 5150 ~ 5250MHz 2.91dBi for 5725 ~ 5850MHz
Antenna Connector	I-PEX
Accessory Device	N/A
Data Cable Supplied	Adapter Cable: Unshielded, 180cm

Note:

1. Please refer to the EUT photo document (23122202-01-01&-02) for detailed product photo.
2. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.
3. Model difference: These models are only different from model name for trade purpose.
4. For the test results, the EUT had been tested with all power supply type, and only the worst case was shown in the test report.
5. The EUT incorporates SISO function, provides 1 completed Transmit and 1 Receive Chain.

Support mode	Transmit and receive mode	Transmit and receive chain
802.11a	SISO	1TX/1RX
802.11n HT20	SISO	1TX/1RX
802.11n HT40	SISO	1TX/1RX
802.11ac VHT20	SISO	1TX/1RX
802.11ac VHT40	SISO	1TX/1RX
802.11ac VHT80	SISO	1TX/1RX

2.2 Description of Test Channels

For 5150 ~ 5250MHz

4 channels are provided for 802.11a, 802.11ac 20MHz, 802.11n (20MHz):

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

2 channels are provided for 802.11ac 40MHz, 802.11n (40MHz):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel are provided for 802.11ac (80MHz):

Channel	Frequency	Channel	Frequency
42	5210MHz	--	--

For 5725 ~ 5850MHz

5 channels are provided for 802.11a, 802.11a c 20MHz, 802.11n (20MHz):

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

2 channels are provided for 802.11a c 40MHz, 802.11n (40MHz):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (80MHz):

Channel	Frequency	Channel	Frequency
155	5775MHz	--	--

2.3 Power setting value from test software:

Test mode	Antenna Chains TX/RX	Freq. Band (MHz)	Power setting value
802.11a	SISO	5150-5250	Default
802.11n (20MHz)	SISO		Default
802.11n (40MHz)	SISO		Default
802.11ac 20MHz	SISO		Default
802.11ac 40MHz	SISO		Default
802.11ac 80MHz	SISO		Default
802.11a	SISO	5725-5850	Default
802.11n (20MHz)	SISO		Default
802.11n (40MHz)	SISO		Default
802.11ac 20MHz	SISO		Default
802.11ac 40MHz	SISO		Default
802.11ac 80MHz	SISO		Default

2.4 Test Mode Applicability and Tested Channel Detail

Applicable test items	X-Axis	Y-Axis	Z-Axis	Voltage Supply
AC Power Conducted Emission	N/A	N/A	N/A	DC12V from adapter via AC120V input
Radiated Emissions	√	√	√	
Band Edge Measurement	N/A	N/A	N/A	
Max Average Transmit Power	N/A	N/A	N/A	
Peak Power Spectral Density	N/A	N/A	N/A	
Frequency Stability	N/A	N/A	N/A	

1. The EUT had been pre-tested on the positioned of each 3 Axis.
2. "N/A" means no effect.

Applicable test items	Antenna Transmit and receive mode	X-Axis	Y-Axis	Z-Axis
Radiated Emissions	SISO	√	√	*√

1. * means the worst-case axis.

Antenna Transmit and receive mode	Test mode	Centre Frequency	Worst-Axis
SISO mode	802.11n HT20	5240MHz	Z
	802.11ac VHT20	5240MHz	Z
	802.11n HT40	5230MHz	Z
	802.11ac VHT40	5230MHz	Z

- 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.

Power Line Conducted Emission Test:

EUT Configure mode	Worst Position	Freq. Band (MHz)	Antenna Transmitter technique	Tested channel	Modulation technology	Modulation type	Data rate (Mbps)
802.11a	-	5150-5250 5725-5850	SISO	36	OFDM	BPSK	6.0

Radiated Emission Test (Below 1GHz):

EUT Configure mode	Worst Position	Freq. Band (MHz)	Antenna Transmitter technique	Worst case channel	Modulation technology	Modulation type	Data rate (Mbps)
802.11a	Z-plane	5150-5250 5725-5850	SISO	36	OFDM	BPSK	6.0

Radiated Emission Test (Above 1GHz):

EUT configure mode	Worst position	Freq. Band (MHz)	Antenna Transmitter technique	Tested channel	Modulation technology	Modulation type	Data rate (Mbps)
802.11a	Z-plane	5150-5250	SISO	36, 40, 48	OFDM	BPSK	6.0
802.11n (20MHz)	Z-plane		SISO	36, 40, 48	OFDM	BPSK	MCS0
802.11n (40MHz)	Z-plane		SISO	38, 46	OFDM	BPSK	MCS0
802.11ac 80MHz	Z-plane		SISO	42	OFDM	BPSK	MCS0
802.11a	Z-plane	5725-5850	SISO	149, 157, 165	OFDM	BPSK	6.0
802.11n (20MHz)	Z-plane		SISO	149, 157, 165	OFDM	BPSK	MCS0
802.11n (40MHz)	Z-plane		SISO	151, 159	OFDM	BPSK	MCS0
802.11ac 80MHz	Z-plane		SISO	155	OFDM	BPSK	MCS0

Antenna Port Conducted Measurement:

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

EUT configure mode	Antenna Transmitter technique	Freq. Band (MHz)	Tested channel	Modulation technology	Modulation type	Data rate (Mbps)
802.11a	SISO	5150-5250	36, 40, 48	OFDM	BPSK	6.0
802.11n (20MHz)	SISO		36, 40, 48	OFDM	BPSK	MCS0
802.11n (40MHz)	SISO		38, 46	OFDM	BPSK	MCS0
802.11ac 80MHz	SISO		42	OFDM	BPSK	MCS0
802.11a	SISO	5725-5850	149, 157, 165	OFDM	BPSK	6.0
802.11n (20MHz)	SISO		149, 157, 165	OFDM	BPSK	MCS0
802.11n (40MHz)	SISO		151, 159	OFDM	BPSK	MCS0
802.11ac 80MHz	SISO		155	OFDM	BPSK	MCS0

Test Condition:

Applicable test items	Environmental Conditions	Tested by
AC Power Conducted Emission	25deg. C, 65%RH	Jim Xu
Radiated Emissions	25deg. C, 65%RH	Jim Xu
Antenna Port Conducted Measurement	25deg. C, 65%RH	Dragon long

2.5 Description of Support Units

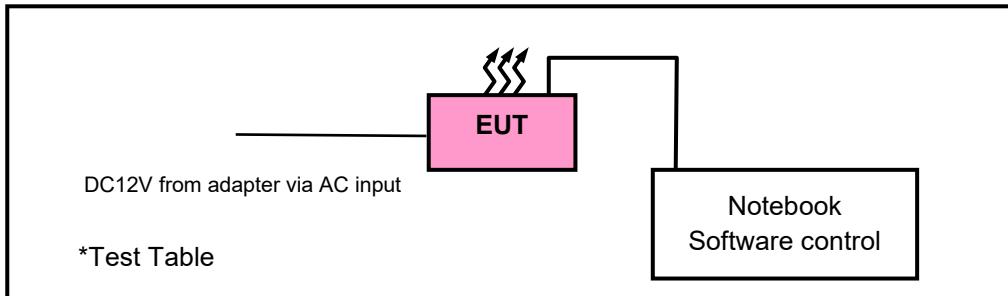
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Notebook	Lenovo	ThinkPad X280	SL10P97665	N/A

Insert Cable Connections to/from EUT provided by test team.

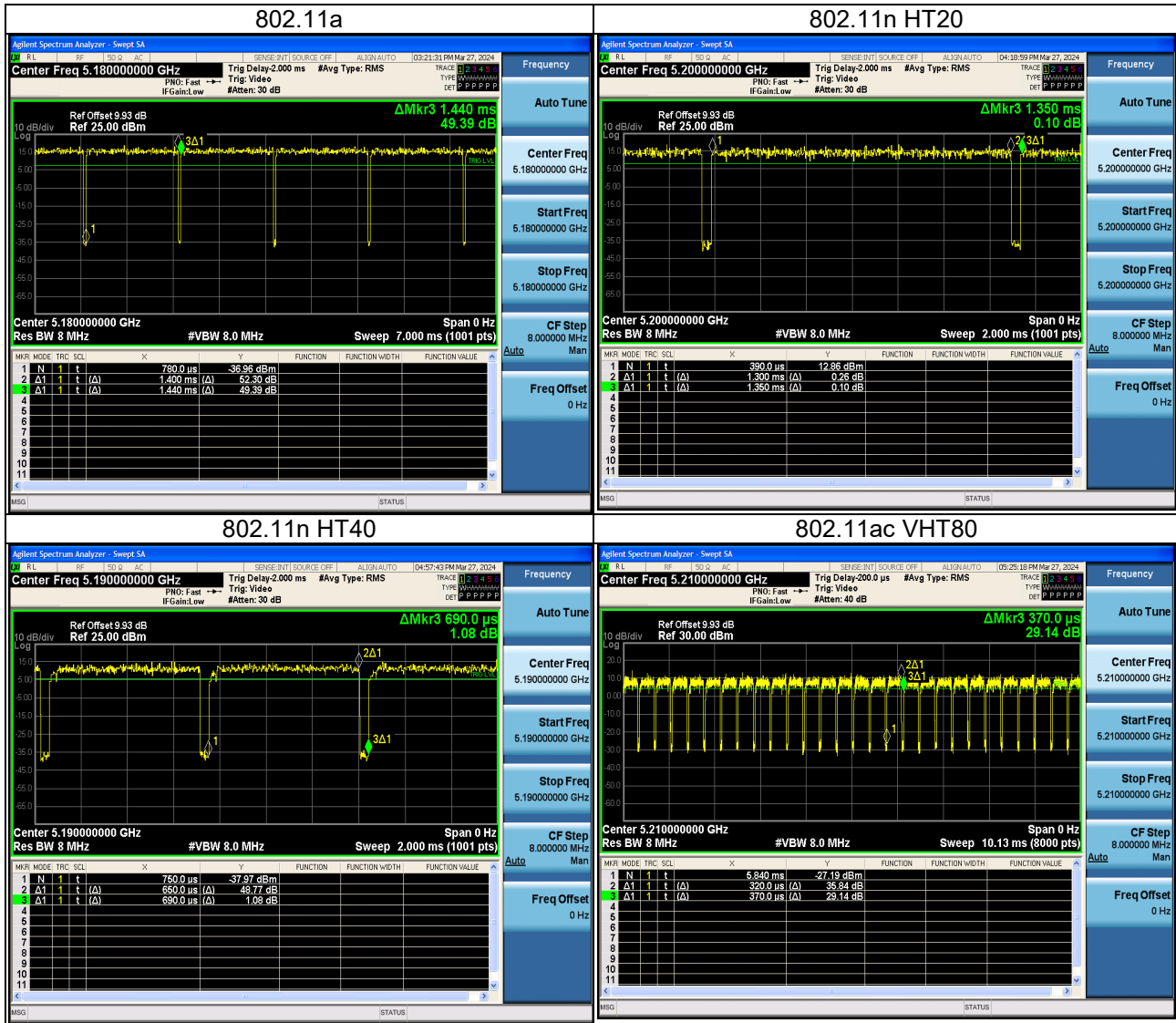
No.	Signal Cable Description Of The Above Support Units
1.	USB serial cable Un-shielding 1.0m

2.6 Configuration of System under Test



2.7 Duty Cycle of Test Signal

Test mode	Duty cycle (%)	Duty cycle factor=10*log (1/duty cycle) (dB)
802.11a	97.22%	0.12
802.11n HT20	96.30%	0.16
802.11n HT40	94.20%	0.26
802.11ac VHT80	86.49%	0.63



3. Test Types and Results

3.1 Radiated Emission and Band-edge Measurement

3.1.1 Limits of radiated emission and band-edge measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power:

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

* DTS emissions in non-restricted frequency bands Subclause 11.11 of ANSI C63.10 is applicable.

* DTS emissions in restricted frequency bands Subclause 11.12 of ANSI C63.10 is applicable

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.

3.1.2 Limits of unwanted emission out of the restricted bands

Applicable to	Limit	
789033 D02 General UNII Test Procedures New Rules v01r03	Field strength at 3m	
	PK: 74 (dBuV/m)	AV: 54 (dBuV/m)
Applicable to	EIRP Limit	Equivalent field strength at 3m
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBuV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	Note	Note

*For transmitters operating in the 5.725-5.85 GHz band:

Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). An alternative to the band emissions mask is specified in Section 15.407(b)(4)(ii). The alternative limits are based on the highest antenna gain specified in the filing. There are also marketing and importation restrictions for the alternative limit.

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

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

3.1.3 Test Instruments

Radiated emission below 30MHz:

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	100962	2024-12-17
3m Semi-anechoic Chamber	MAORUI	9m*6m*6m	NSEMC003	2026-03-12**
Test software	FARAD	FARAD	EZ_EMCV1.1.4.2	N/A
Loop Antenna	EMCI	HLA 6121	56735	2024-05-04*
Antenna Tower	MF	MFA-440H	NA	NA
Turn Table	MF	MFT-201SS	NA	NA
Antenna Tower&Turn Table Controller	MF	MF-7802	NA	NA

Frequency Range below 1GHz:

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver (9kHz~3GHz)	Rohde&Schwarz	ESPI 7	101978	2024-12-17
Broadband antenna (25MHz~2500MHz)	Schwarzbeck	VULB 9168	937	2024-08-18
3m Semi-anechoic Chamber	MAORUI	9m*6m*6m	HS-2018037	2026-03-12**
Signal Amplifier (30MHz~1000MHz)	Com-power	PAM-103	18020051	2024-08-06
Attenuator	R&S	TS2GA-6dB	18101101	N/A
Test software	FARAD	EZ_EMCV1.1.4.2	N/A	N/A

Frequency Range above 1GHz:

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESPI 7	101978	2024-12-17
3m Semi-anechoic Chamber	MAORUI	9m*6m*6m	NSEMC003	2026-03-12**
Test software	FARAD	EZ_EMCV1.1.4.2	N/A	N/A
Digital Multimeter	FLUKE	15B+	43512617WS	2024-08-07
Horn Antenna	Schwarzbeck	BBHA 9170	979	2024-05-03*
Spectrum Analyzer	Rohde&Schwarz	FSV-40N	101783	2024-12-17
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	25	2024-08-06
Pre-Amplifier	EMCI	EMC 184045SE	9870709	2024-12-17
Spectrum	Keysight	N9020A	MY51240612	2024-08-06

Note:

1. The calibration interval of the above test instruments is 12 months or 24 months (*) or 36 months (**).
2. The test was performed in 966.

3.1.4 Test Procedures

a. Peak emission levels are measured by setting the instrument as follow:

- 1) RBW & VBW setting as a function of frequency:

Frequency	RBW	VBW
9kHz~150kHz	200Hz	600Hz
0.15MHz~30MHz	9kHz	30kHz
30MHz~1000MHz	120kHz	300kHz
>1000MHz	1MHz	3MHz

- 2) Detector = peak.
 3) Sweep time = auto.
 4) Trace mode = max hold.
 5) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be lengthened for low-duty-cycle applications.)

Note: If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement

b. Average emission levels are measured by setting the instrument as follow:

- **Trace averaging with continuous EUT transmission at full power**

If the EUT can be configured or modified to transmit continuously ($D \geq 98\%$), then the average emission levels shall be measured using the following method (with EUT transmitting continuously):

- 1) RBW=1 MHz (unless otherwise specified).
- 2) VBW ≥ 3 *RBW.
- 3) Detector =RMS
- 4) Sweep time = auto.
- 5) Perform a trace average of at least 100 traces.

- **Trace averaging across ON and OFF times of the EUT transmissions followed by duty cycle correction**

If continuous transmission of the EUT ($D \geq 98\%$) cannot be achieved and the duty cycle is constant (duty cycle variations are less than $\pm 2\%$), then the following procedure shall be used

- 1) The EUT shall be configured to operate at the maximum achievable duty cycle.
- 2) Measure the duty cycle D of the transmitter output signal as described in 11.6.
- 3) RBW=1 MHz (unless otherwise specified).
- 4) VBW ≥ 3 *RBW.
- 5) Detector =RMS
- 6) Sweep time = auto.
- 7) Perform a trace average of at least 100 traces.

A correction factor shall be added to the measurement results prior to comparing with the emission limit to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

*If power averaging (rms) mode was used in step 5). then the applicable correction factor is $[10 \log(1/D)]$, where D is the duty cycle.

**If linear voltage averaging mode was used in step f). then the applicable correction factor is $[20 \log(1/D)]$, where D is the duty cycle.

***If a specific emission is demonstrated to be continuous ($D > 98\%$) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that.

● Reduced VBW Averaging across ON and OFF times of the EUT transmissions with max hold

If continuous transmission of the EUT ($D > 98\%$) cannot be achieved and the duty cycle is not constant (duty cycle variations exceed $\pm 2\%$), then the following procedure shall be used:

- 1) RBW = 1MHz.
 - 2) VBW $\geq 1/T$.
 - 3) Detector =peak
 - 4) Sweep time = auto.
 - 5) Trace mode = max hold.
 - 6) Allow max hold to run for at least $[50 \times (1/ D)]$ traces
- c. The EUT was placed on the top of a rotating table 0.8 meters (below 1GHz) / 1.5 meters (1-18GHz) / 1.5 meters (18-40GHz) above the reference ground. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The EUT was set 3meters away from the interference-receiving antenna (Below 1GHz) & (Above 1-18GHz), which was mounted on the top of a variable-height antenna tower. The EUT was set 1meters away from the interference-receiving antenna (18-40GHz).
- e. 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.
- f. 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.
- g. 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.
- h. The test-receiver system was set to peak and average detected 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:

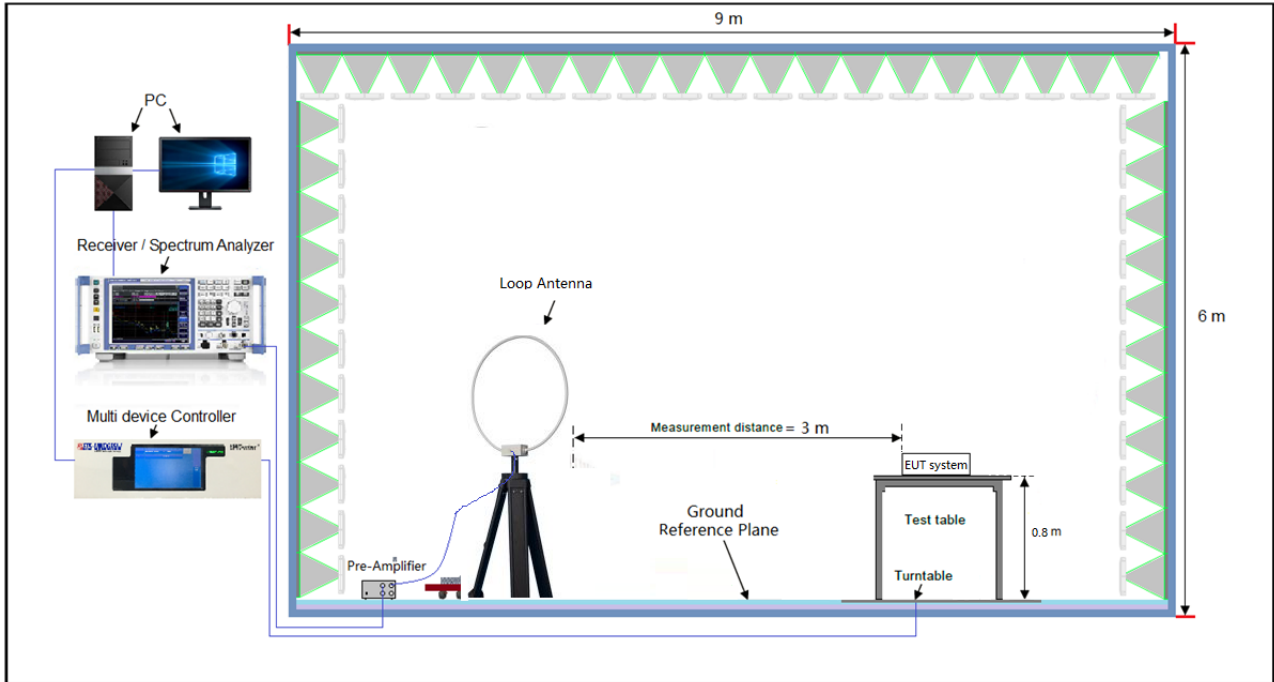
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz & 360kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth =3mHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth =1/T for Average (Duty cycle < 98 %) detection at frequency above 1 GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is =10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

3.1.5 Deviation from Test Standard

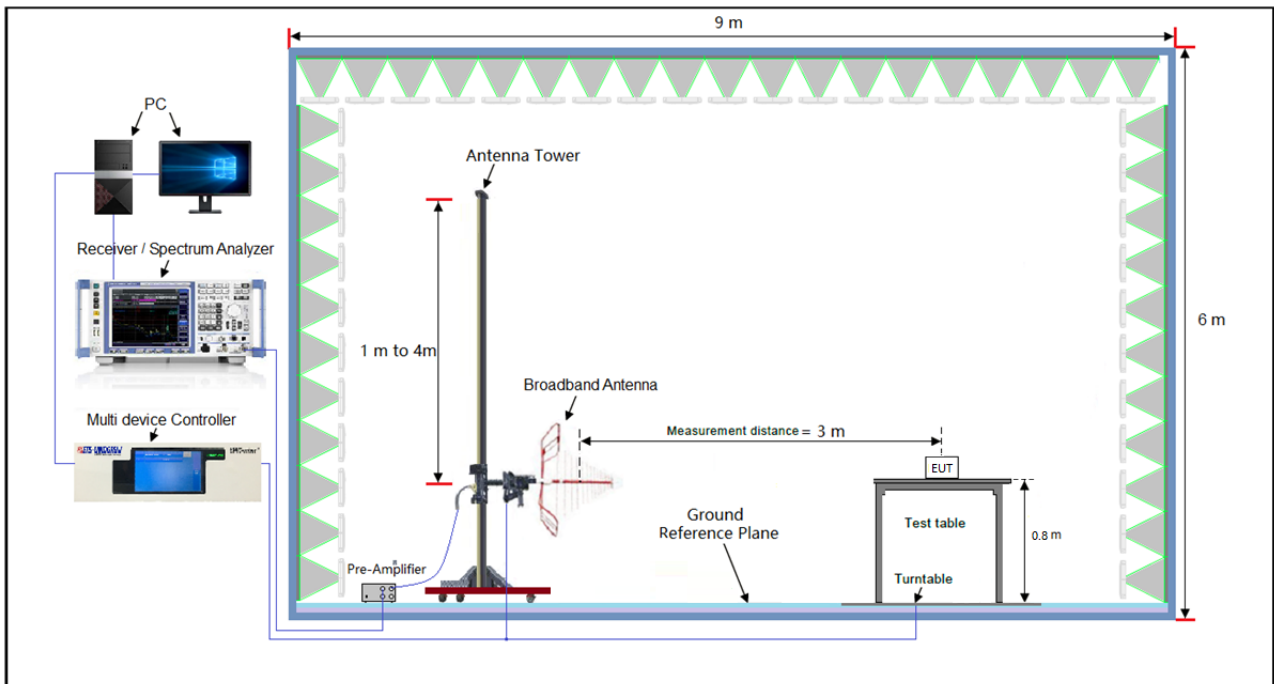
No deviation.

3.1.6 Test Setup

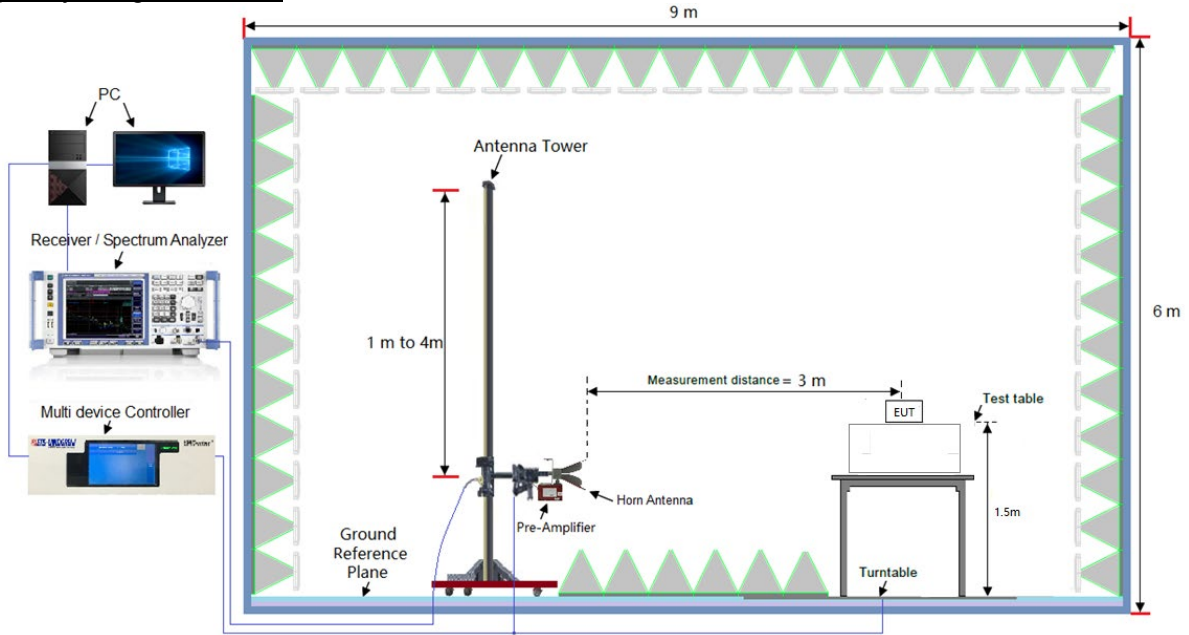
Radiated emission below 30MHz:



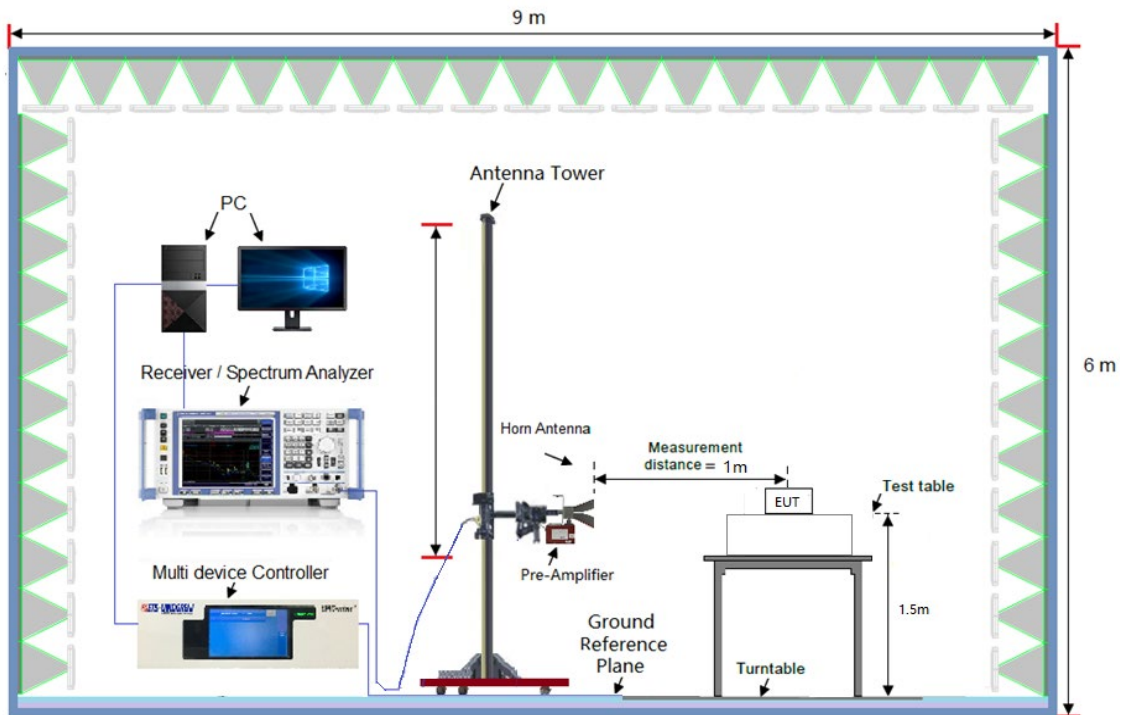
Frequency Range below 1GHz:



Frequency Range 1-18GHz:



Frequency Range 18-40GHz:



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

3.1.7 EUT Operating Conditions

- a. Placed the EUT on the testing table.

Lab: [Hwa-Hsing \(Dongguan\) Testing Co., Ltd.](#)
 Address: [No.101, Building N1, Yuyuan 2 Road, Yuyuan Industrial Park, HuangJiang Town, Dongguan City, People's Republic of China](#)

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

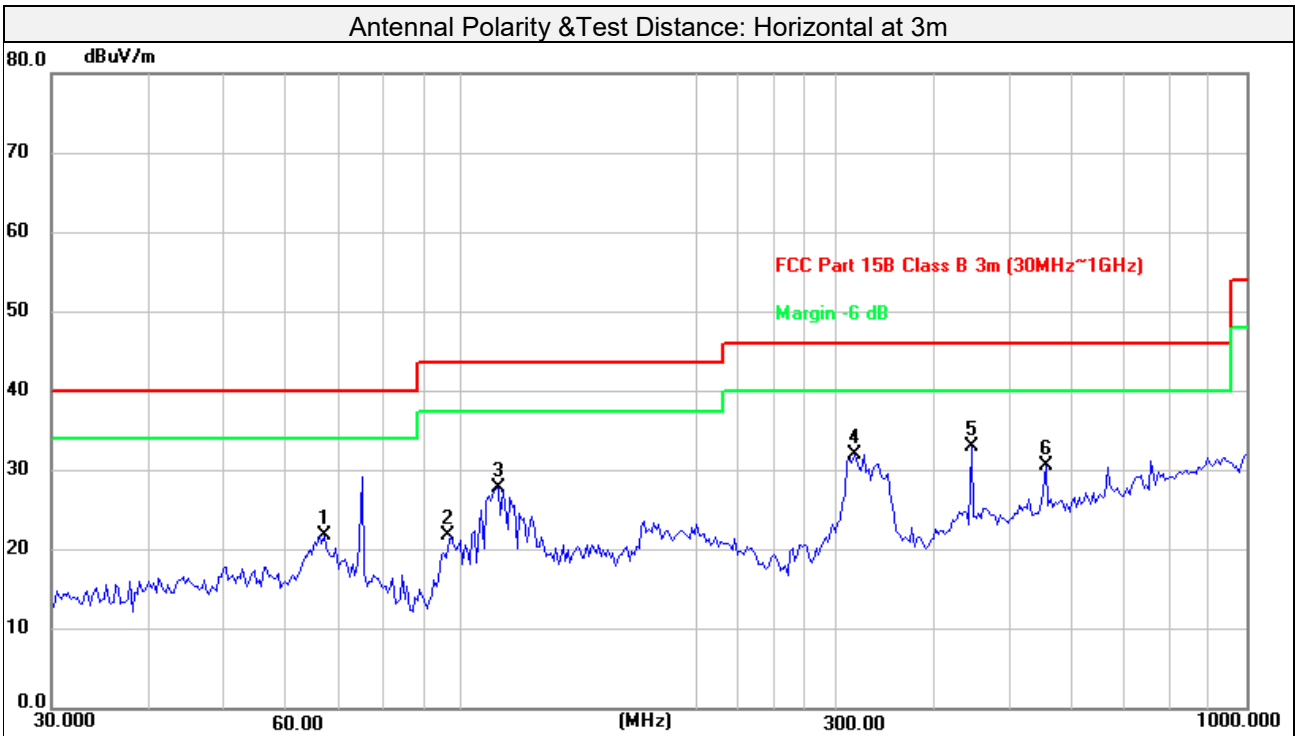
3.1.8 Test Results

9kHz ~ 30MHz Data:

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

30MHz ~ 1GHz Worst-Case Data:

Test Mode	802.11a TX		
Test Channel	Channel 100	Frequency Range	30MHz ~ 1GHz
Detector Function	Peak (PK) Quasi-peak (QP)	Tested By	Jim Xu

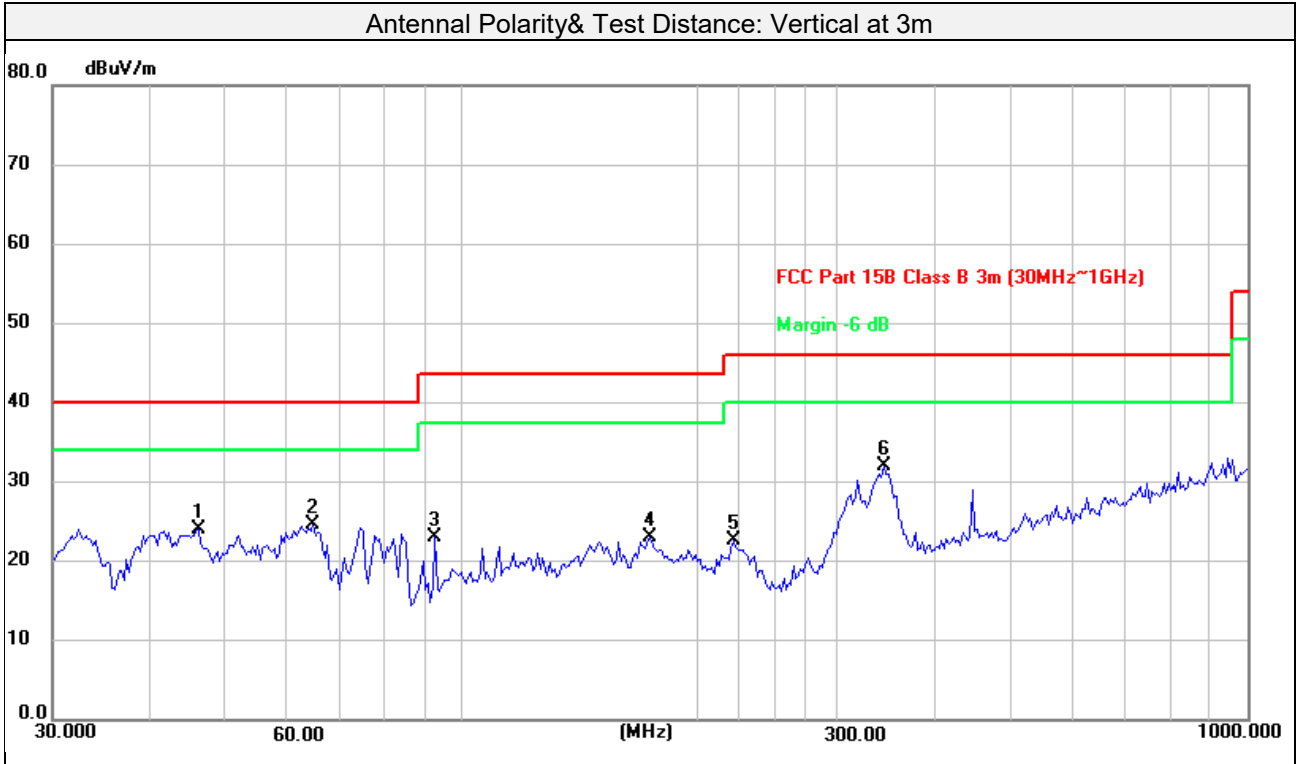


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	66.7325	37.93	-15.99	21.94	40.00	-18.06	peak	240	94
2	96.7749	41.23	-19.40	21.83	43.50	-21.67	peak	230	211
3	111.3468	44.38	-16.59	27.79	43.50	-15.71	peak	356	322
4	316.5890	44.85	-12.76	32.09	46.00	-13.91	peak	273	316
5	446.4141	41.40	-8.41	32.99	46.00	-13.01	peak	337	72
6	554.8254	36.51	-5.85	30.66	46.00	-15.34	peak	126	210

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value

Test Mode	802.11a TX		
Test Channel	Channel 100	Frequency Range	30MHz ~ 1GHz
Detector Function	Peak (PK) Quasi-peak (QP)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	46.0164	39.65	-15.62	24.03	40.00	-15.97	peak	228	40
2	64.4331	40.19	-15.64	24.55	40.00	-15.45	peak	296	47
3	92.1388	43.27	-20.24	23.03	43.50	-20.47	peak	107	274
4	173.2051	36.76	-13.81	22.95	43.50	-20.55	peak	224	261
5	221.3921	38.57	-16.02	22.55	46.00	-23.45	peak	140	262
6	344.3855	44.01	-11.92	32.09	46.00	-13.91	peak	306	222

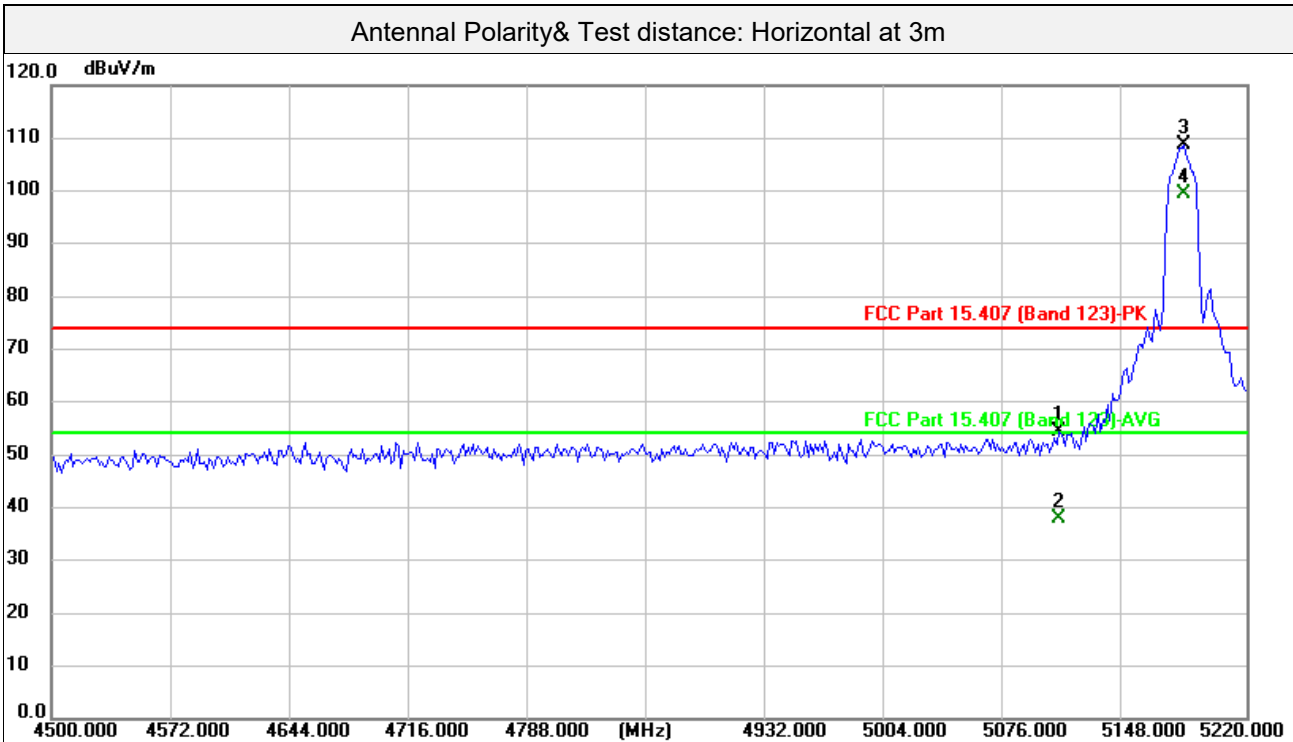
Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value

Above 1GHz Data:

802.11a

Test Mode	802.11a_5180MHz		
Test channel	36	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

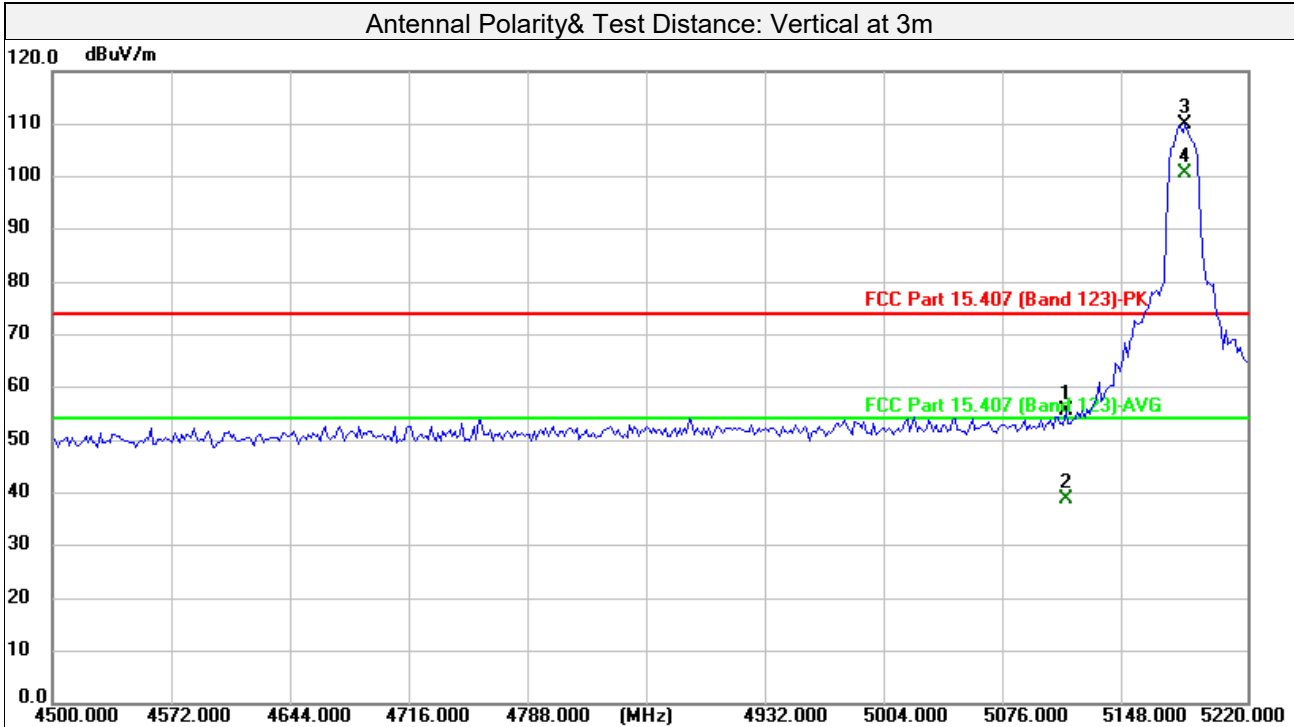


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5107.455	47.89	6.47	54.36	74.00	-19.64	peak	168	317
2	5107.455	31.46	6.47	37.93	54.00	-16.07	AVG	168	317
3	5182.485	99.72	8.92	108.64			peak	168	317
4	5182.485	90.64	8.92	99.56			AVG	168	317
5	10360.000	39.08	17.89	56.97	74.00	-17.03	peak	139	226
6	10360.000	28.98	17.89	46.87	54.00	-7.13	AVG	139	226
7	15540.000	35.04	22.17	57.21	74.00	-16.79	peak	107	218
8	15540.000	23.51	22.17	45.68	54.00	-8.32	AVG	107	218

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11a_5180MHz		
Test channel	36	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5110.341	48.98	6.57	55.55	74.00	-18.45	peak	103	245
2	5110.341	32.14	6.57	38.71	54.00	-15.29	AVG	103	245
3	5182.485	101.18	8.92	110.10			peak	103	245
4	5182.485	91.61	8.92	100.53			AVG	103	245
5	10360.000	39.22	17.89	57.11	74.00	-16.89	peak	136	229
6	10360.000	28.99	17.89	46.88	54.00	-7.12	AVG	136	229
7	15540.000	33.98	22.17	56.15	74.00	-17.85	peak	142	267
8	15540.000	23.66	22.17	45.83	54.00	-8.17	AVG	142	267

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11a_5200MHz		
Test channel	40	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

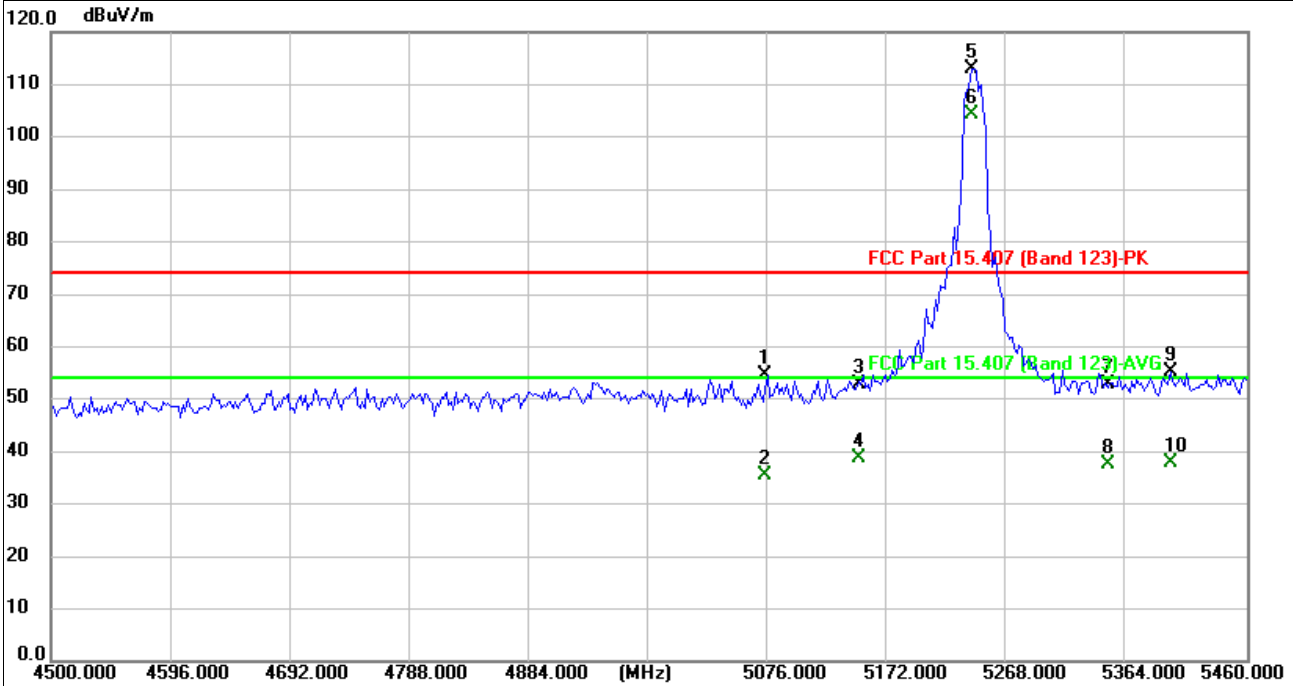
Antennal Polarity& Test Distance: Horizontal at 3m									
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5200.000	102.46	9.43	111.89			peak	313	312
2	5200.000	92.71	9.43	102.14			AVG	313	312
3	10400.000	39.28	18.00	57.28	74.00	-16.72	peak	382	301
4	10400.000	29.38	18.00	47.38	54.00	-6.62	AVG	382	301
5	15600.000	34.06	22.03	56.09	74.00	-17.91	peak	213	279
6	15600.000	24.83	22.03	46.86	54.00	-7.14	AVG	213	279
Antennal Polarity& Test Distance: Vertical at 3m									
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5200.000	99.61	9.49	109.10			peak	292	10
2	5200.000	91.08	9.49	100.57			AVG	292	10
3	10400.000	40.26	18.00	58.26	74.00	-15.74	peak	310	309
4	10400.000	30.15	18.00	48.15	54.00	-5.85	AVG	310	309
5	15600.000	35.21	22.03	57.24	74.00	-16.76	peak	335	139
6	15600.000	24.80	22.03	46.83	54.00	-7.17	AVG	335	139

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11a_5240MHz		
Test channel	48	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

Antennal Polarity& Test distance: Horizontal at 3m



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5075.230	48.31	6.16	54.47	74.00	-19.53	peak	333	260
2	5075.230	29.31	6.16	35.47	54.00	-18.53	AVG	333	260
3	5150.000	44.83	7.85	52.68	74.00	-21.32	peak	333	260
4	5150.000	30.98	7.85	38.83	54.00	-15.17	AVG	333	260
5	5240.681	104.67	8.39	113.06			peak	333	260
6	5240.681	95.80	8.39	104.19			AVG	333	260
7	5350.000	46.02	6.93	52.95	74.00	-21.05	peak	333	260
8	5350.000	30.50	6.93	37.43	54.00	-16.57	AVG	333	260
9	5398.437	48.15	7.06	55.21	74.00	-18.79	peak	333	260
10	5398.437	30.71	7.06	37.77	54.00	-16.23	AVG	333	260
11	10480.000	39.22	18.22	57.44	74.00	-16.56	peak	337	34
12	10480.000	28.05	18.22	46.27	54.00	-7.73	AVG	337	34
13	15720.000	34.36	21.75	56.11	74.00	-17.89	peak	291	294
14	15720.000	24.18	21.75	45.93	54.00	-8.07	AVG	291	294

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

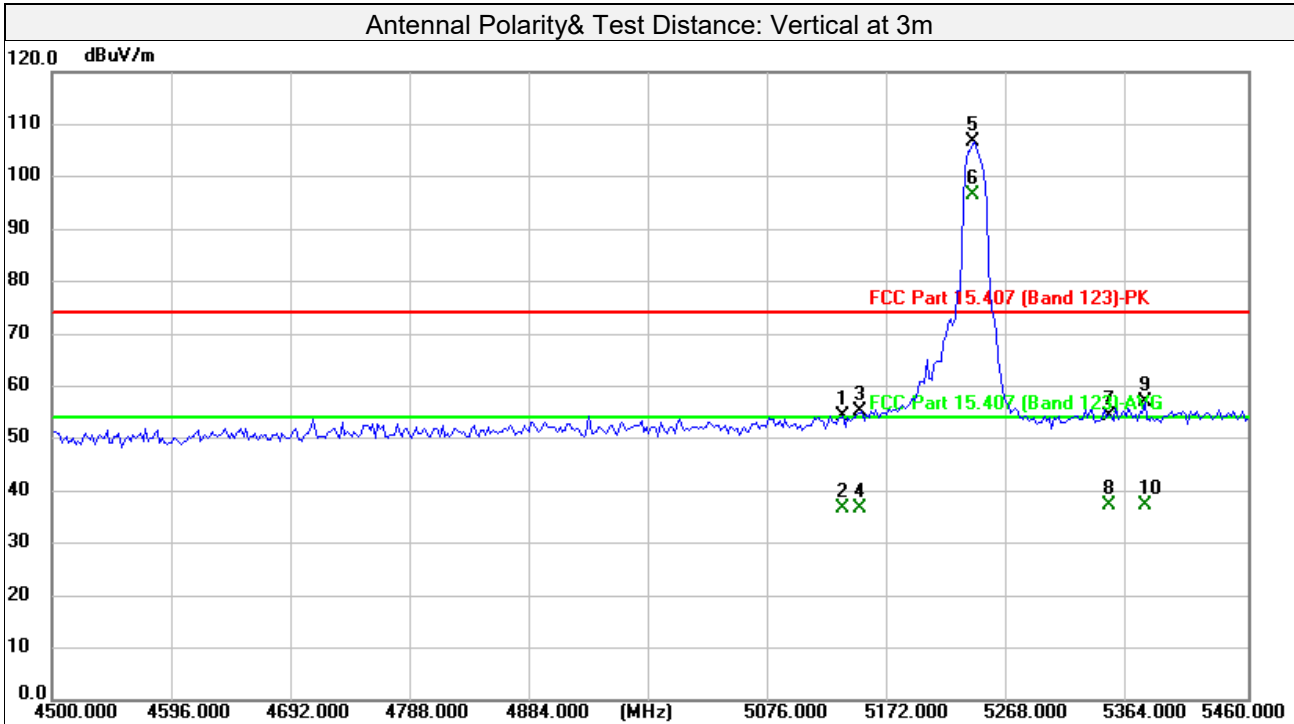
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Test Report No.: 23122202-01-RF-US-04

Test Mode	802.11a_5240MHz		
Test channel	48	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5134.870	47.09	7.36	54.45	74.00	-19.55	peak	342	10
2	5134.870	29.17	7.36	36.53	54.00	-17.47	AVG	342	10
3	5150.000	47.29	7.85	55.14	74.00	-18.86	peak	342	10
4	5150.000	28.86	7.85	36.71	54.00	-17.29	AVG	342	10
5	5240.681	98.27	8.39	106.66			peak	342	10
6	5240.681	88.22	8.39	96.61			AVG	342	10
7	5350.000	47.28	6.93	54.21	74.00	-19.79	peak	342	10
8	5350.000	30.42	6.93	37.35	54.00	-16.65	AVG	342	10
9	5377.275	49.99	7.00	56.99	74.00	-17.01	peak	342	10
10	5377.275	30.36	7.00	37.36	54.00	-16.64	AVG	342	10
11	10480.000	39.09	18.22	57.31	74.00	-16.69	peak	185	183
12	10480.000	27.77	18.22	45.99	54.00	-8.01	AVG	185	183
13	15720.000	34.62	21.75	56.37	74.00	-17.63	peak	166	96
14	15720.000	26.54	21.75	48.29	54.00	-5.71	AVG	166	96

Remarks:

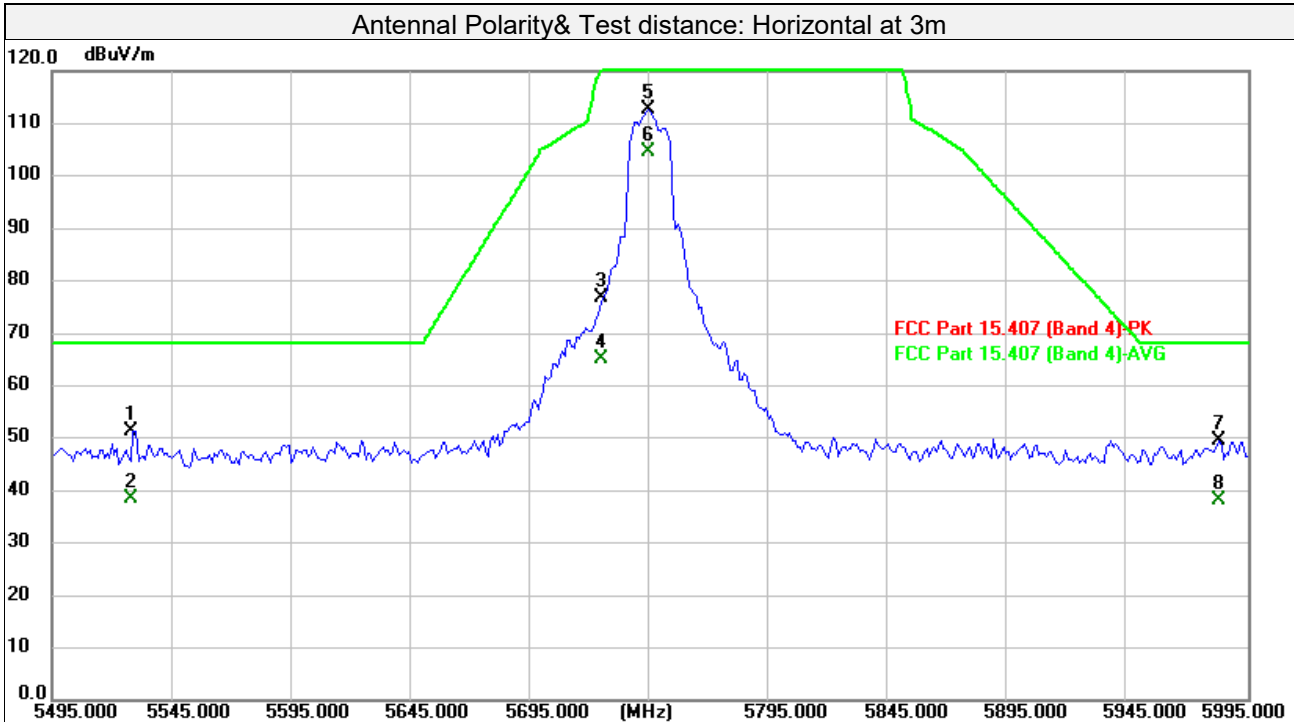
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Lab: [Hwa-Hsing \(Dongguan\) Testing Co., Ltd.](#)
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Test Mode	802.11a_5745MHz		
Test channel	149	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5529.068	44.04	7.38	51.42	68.20	-16.78	peak	375	269
2	5529.068	31.19	7.38	38.57	68.20	-29.63	AVG	375	269
3	5725.000	69.20	7.58	76.78	122.20	-45.42	peak	375	269
4	5725.000	57.58	7.58	65.16	122.20	-57.04	AVG	375	269
5	5744.499	105.04	7.60	112.64	122.20	-9.56	peak	375	269
6	5744.499	96.90	7.60	104.50	122.20	-17.70	AVG	375	269
7	5982.976	41.65	7.89	49.54	68.20	-18.66	peak	375	269
8	5982.976	30.39	7.89	38.28	68.20	-29.92	AVG	375	269
9	11490.000	37.68	19.53	57.21	74.00	-16.79	peak	164	25
10	11490.000	27.85	19.53	47.38	54.00	-6.62	AVG	164	25
11	17235.000	31.76	26.86	58.62	68.30	-9.68	peak	193	214
12	17235.000	19.91	26.86	46.77	54.00	-7.23	AVG	193	214

Remarks:

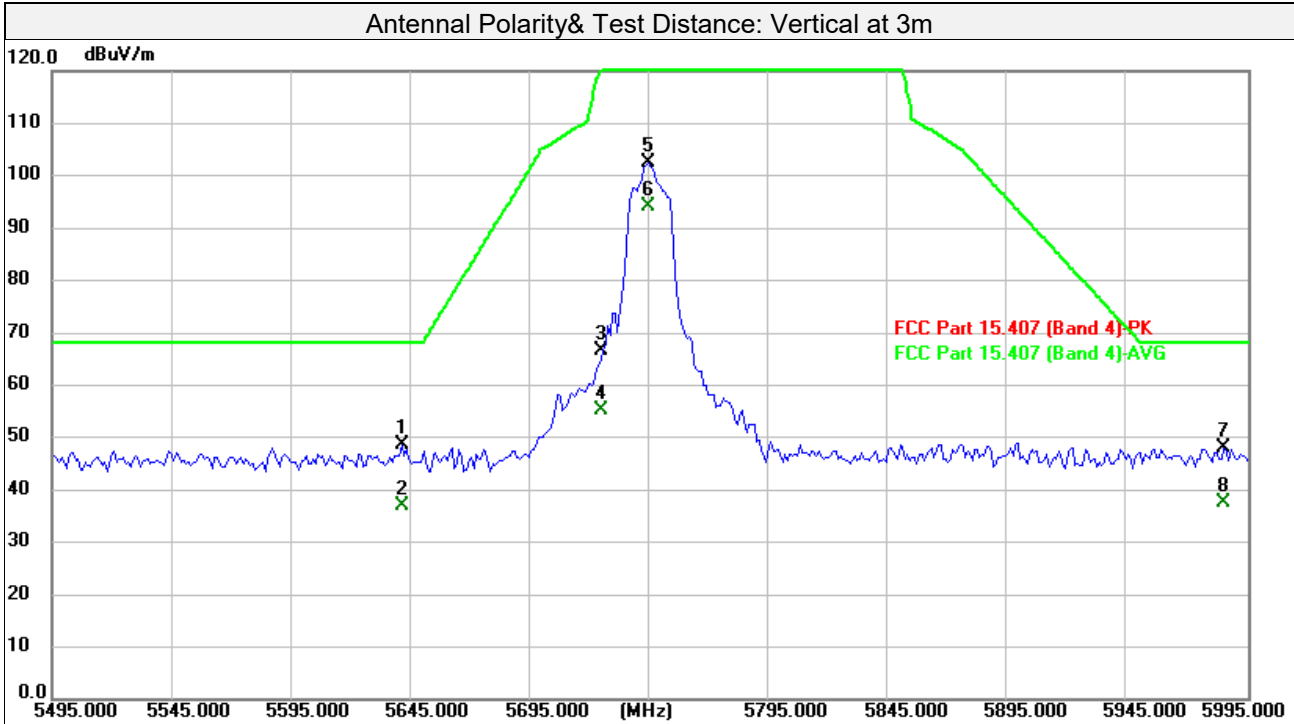
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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Test Mode	802.11a_5745MHz		
Test channel	149	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5641.293	41.27	7.49	48.76	68.20	-19.44	peak	349	162
2	5641.293	29.32	7.49	36.81	68.20	-31.39	AVG	349	162
3	5725.000	58.95	7.58	66.53	122.20	-55.67	peak	349	162
4	5725.000	47.70	7.58	55.28	122.20	-66.92	AVG	349	162
5	5744.499	94.78	7.60	102.38	122.20	-19.82	peak	349	162
6	5744.499	86.52	7.60	94.12	122.20	-28.08	AVG	349	162
7	5984.980	40.03	7.89	47.92	68.20	-20.28	peak	349	162
8	5984.980	29.52	7.89	37.41	68.20	-30.79	AVG	349	162
9	11490.000	36.76	19.53	56.29	74.00	-17.71	peak	400	237
10	11490.000	27.62	19.53	47.15	54.00	-6.85	AVG	400	237
11	17235.000	30.98	26.86	57.84	68.30	-10.46	peak	300	321
12	17235.000	19.43	26.86	46.29	54.00	-7.71	AVG	300	321

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

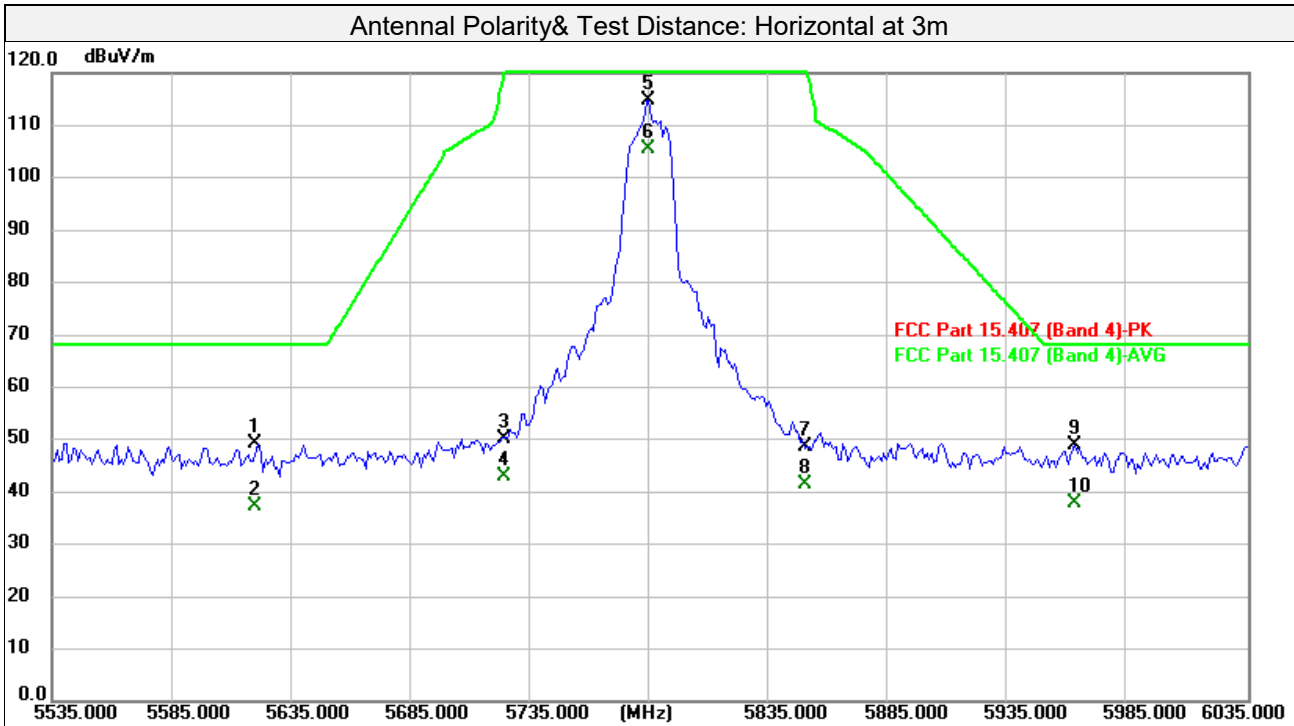
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Test Report No.: 23122202-01-RF-US-04

Test Mode	802.11a_5785MHz		
Test channel	157	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5621.172	41.89	7.46	49.35	68.20	-18.85	peak	316	275
2	5621.172	29.84	7.46	37.30	68.20	-30.90	AVG	316	275
3	5725.000	42.44	7.58	50.02	122.20	-72.18	peak	316	275
4	5725.000	35.23	7.58	42.81	122.20	-79.39	AVG	316	275
5	5784.499	107.10	7.65	114.75	122.20	-7.45	peak	316	275
6	5784.499	97.85	7.65	105.50	122.20	-16.70	AVG	316	275
7	5850.000	40.97	7.72	48.69	122.20	-73.51	peak	316	275
8	5850.000	33.86	7.72	41.58	122.20	-80.62	AVG	316	275
9	5962.856	41.00	7.86	48.86	68.20	-19.34	peak	316	275
10	5962.856	30.06	7.86	37.92	68.20	-30.28	AVG	316	275
11	11570.000	37.86	19.55	57.41	74.00	-16.59	peak	156	84
12	11570.000	27.80	19.55	47.35	54.00	-6.65	AVG	156	84
13	17355.000	31.32	27.62	58.94	68.30	-9.36	peak	144	226
14	17355.000	20.60	27.62	48.22	54.00	-5.78	AVG	144	226

Remarks:

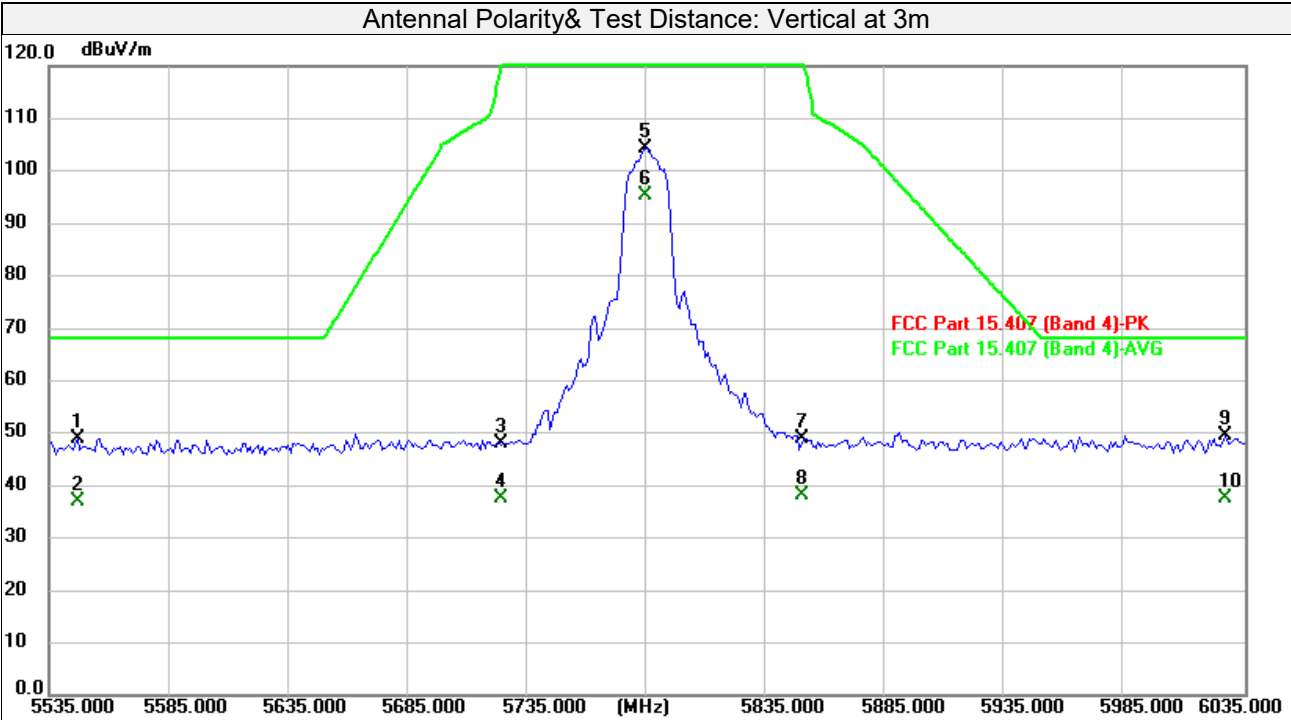
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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Test Mode	802.11a_5785MHz		
Test channel	157	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5547.024	41.60	7.39	48.99	68.20	-19.21	peak	283	43
2	5547.024	29.45	7.39	36.84	68.20	-31.36	AVG	283	43
3	5725.000	40.47	7.58	48.05	122.20	-74.15	peak	283	43
4	5725.000	30.11	7.58	37.69	122.20	-84.51	AVG	283	43
5	5784.499	96.65	7.65	104.30	122.20	-17.90	peak	283	43
6	5784.499	87.66	7.65	95.31	122.20	-26.89	AVG	283	43
7	5850.000	41.35	7.72	49.07	122.20	-73.13	peak	283	43
8	5850.000	30.46	7.72	38.18	122.20	-84.02	AVG	283	43
9	6026.984	41.43	8.02	49.45	68.20	-18.75	peak	283	43
10	6026.984	29.67	8.02	37.69	68.20	-30.51	AVG	283	43
11	11570.000	38.71	19.55	58.26	74.00	-15.74	peak	302	227
12	11570.000	28.69	19.55	48.24	54.00	-5.76	AVG	302	227
13	17355.000	30.31	27.62	57.93	68.30	-10.37	peak	177	168
14	17355.000	19.73	27.62	47.35	54.00	-6.65	AVG	177	168

Remarks:

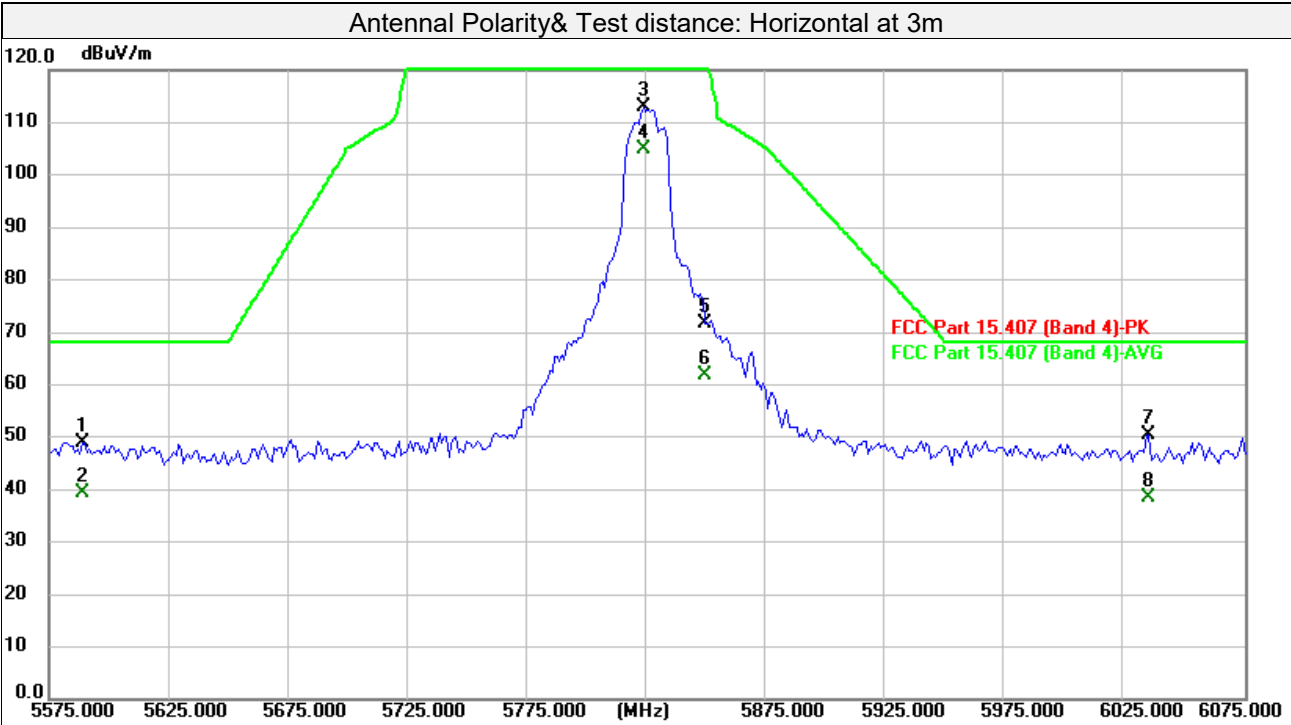
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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Test Mode	802.11a_5825MHz		
Test channel	165	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

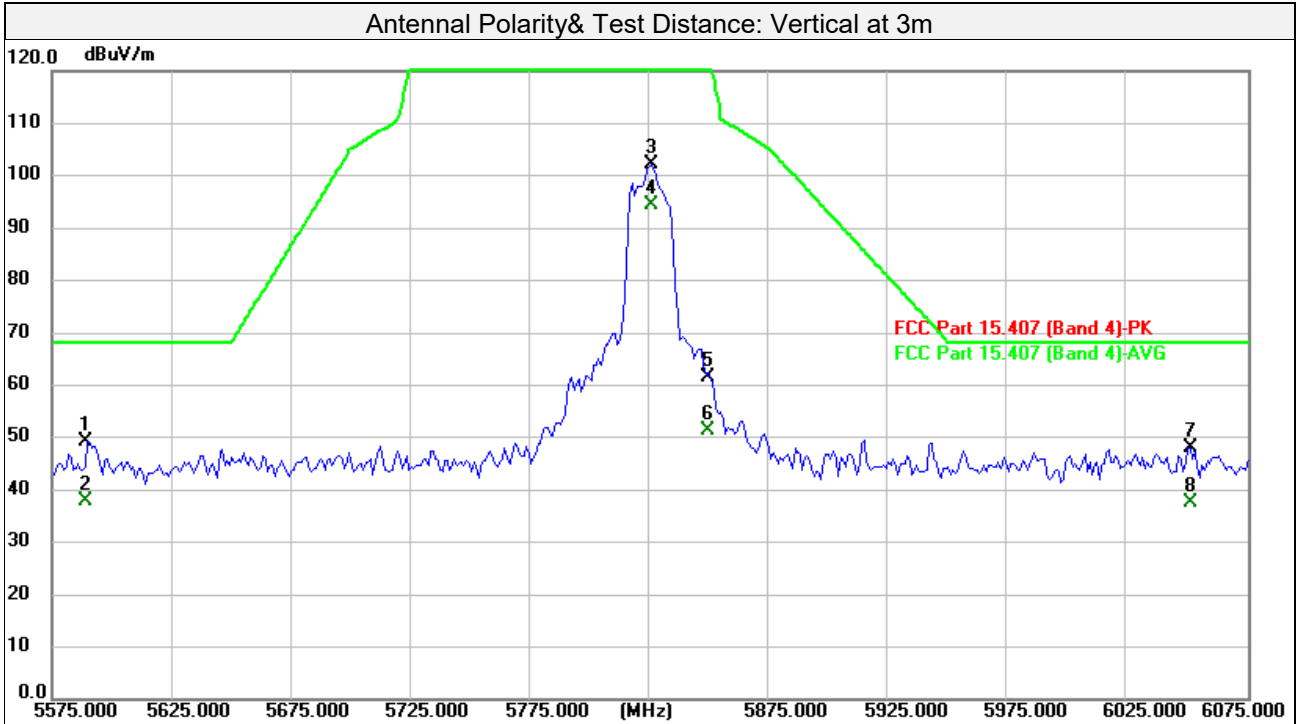


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5590.030	41.63	7.43	49.06	68.20	-19.14	peak	312	279
2	5590.030	31.83	7.43	39.26	68.20	-28.94	AVG	312	279
3	5823.497	105.33	7.69	113.02	122.20	-9.18	peak	312	279
4	5823.497	97.09	7.69	104.78	122.20	-17.42	AVG	312	279
5	5850.000	63.87	7.72	71.59	122.20	-50.61	peak	312	279
6	5850.000	54.07	7.72	61.79	122.20	-60.41	AVG	312	279
7	6034.920	42.32	8.06	50.38	68.20	-17.82	peak	312	279
8	6034.920	30.38	8.06	38.44	68.20	-29.76	AVG	312	279
9	11650.000	37.16	19.57	56.73	74.00	-17.27	peak	227	245
10	11650.000	26.68	19.57	46.25	54.00	-7.75	AVG	227	245
11	17475.000	29.38	28.39	57.77	68.30	-10.53	peak	319	331
12	17475.000	17.79	28.39	46.18	54.00	-7.82	AVG	319	331

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11a_5825MHz		
Test channel	165	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5590.030	41.66	7.43	49.09	68.20	-19.11	peak	320	316
2	5590.030	30.38	7.43	37.81	68.20	-30.39	AVG	320	316
3	5825.501	94.62	7.70	102.32	122.20	-19.88	peak	320	316
4	5825.501	86.77	7.70	94.47	122.20	-27.73	AVG	320	316
5	5850.000	53.68	7.72	61.40	122.20	-60.80	peak	320	316
6	5850.000	43.75	7.72	51.47	122.20	-70.73	AVG	320	316
7	6050.952	39.86	8.15	48.01	68.20	-20.19	peak	320	316
8	6050.952	29.35	8.15	37.50	68.20	-30.70	AVG	320	316
9	11650.000	38.06	19.57	57.63	74.00	-16.37	peak	303	91
10	11650.000	28.12	19.57	47.69	54.00	-6.31	AVG	303	91
11	17475.000	30.08	28.39	58.47	68.30	-9.83	peak	384	359
12	17475.000	19.33	28.39	47.72	54.00	-6.28	AVG	384	359

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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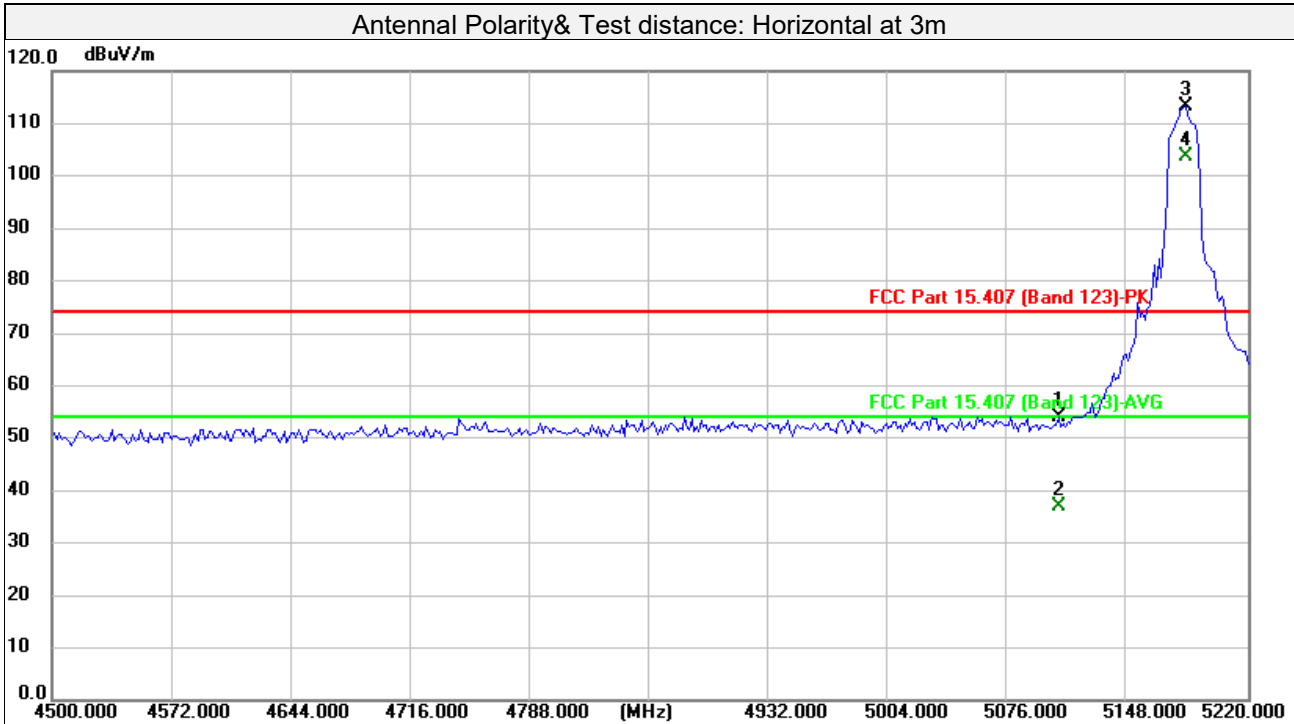
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Above 1GHz Data:

802.11n HT20

Test Mode	802.11n HT20_5180MHz		
Test channel	36	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

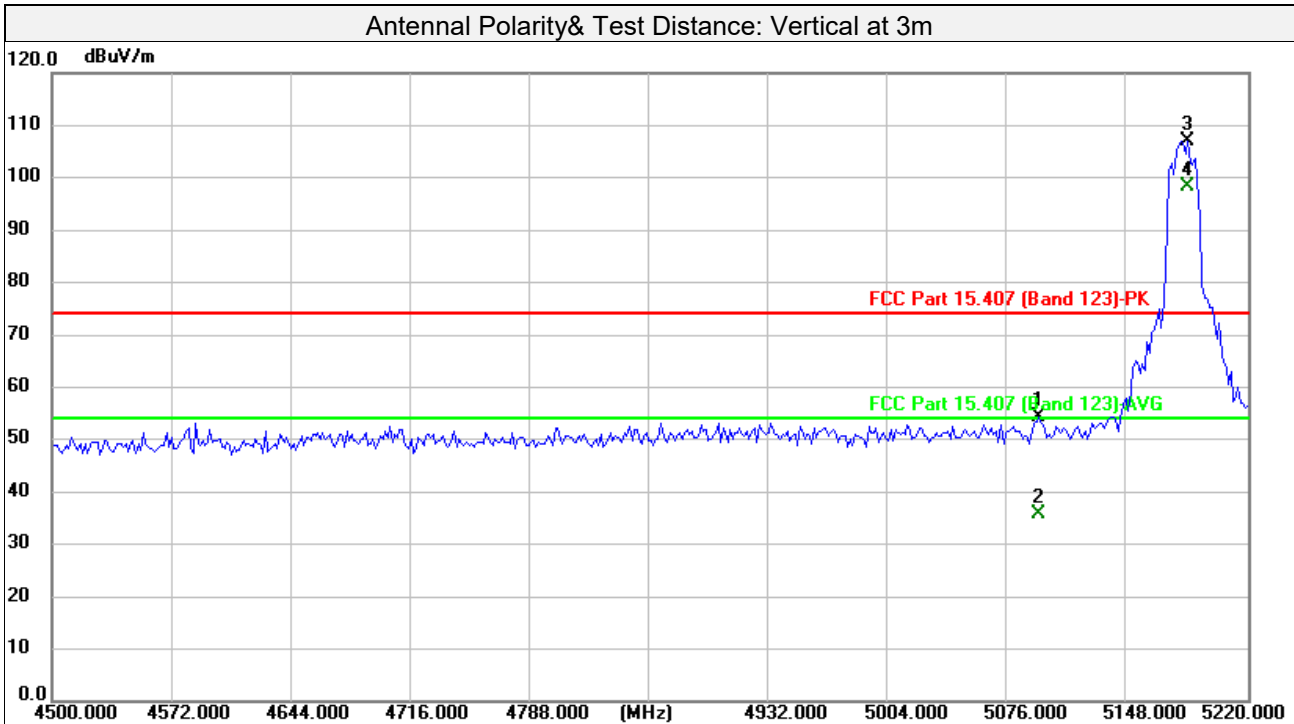


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5106.012	47.72	6.42	54.14	74.00	-19.86	peak	307	254
2	5106.012	30.66	6.42	37.08	54.00	-16.92	AVG	307	254
3	5182.485	104.29	8.92	113.21			peak	307	254
4	5182.485	94.67	8.92	103.59			AVG	307	254
5	10360.000	40.40	17.89	58.29	74.00	-15.71	peak	265	191
6	10360.000	30.48	17.89	48.37	54.00	-5.63	AVG	265	191
7	15540.000	34.95	22.17	57.12	74.00	-16.88	peak	235	339
8	15540.000	24.38	22.17	46.55	54.00	-7.45	AVG	235	339

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11n HT20_5180MHz		
Test channel	36	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5094.469	47.96	6.22	54.18	74.00	-19.82	peak	313	26
2	5094.469	29.57	6.22	35.79	54.00	-18.21	AVG	313	26
3	5183.928	97.95	8.97	106.92			peak	313	26
4	5183.928	89.33	8.97	98.30			AVG	313	26
5	10360.000	38.99	17.89	56.88	74.00	-17.12	peak	361	323
6	10360.000	29.29	17.89	47.18	54.00	-6.82	AVG	361	323
7	15540.000	35.21	22.17	57.38	74.00	-16.62	peak	349	237
8	15540.000	25.64	22.17	47.81	54.00	-6.19	AVG	349	237

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11n HT20_5200MHz		
Test channel	40	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

Antennal Polarity& Test Distance: Horizontal at 3m									
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5240.000	103.62	9.46	113.08			peak	338	267
2	5240.000	94.91	9.46	104.37			AVG	338	267
3	10400.000	40.26	18.00	58.26	74.00	-15.74	peak	142	150
4	10400.000	29.54	18.00	47.54	54.00	-6.46	AVG	142	150
5	15600.000	35.01	22.03	57.04	74.00	-16.96	peak	272	327
6	15600.000	25.27	22.03	47.30	54.00	-6.70	AVG	272	327
Antennal Polarity& Test Distance: Vertical at 3m									
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5240.000	98.79	9.50	108.29			peak	344	14
2	5240.000	88.92	9.50	98.42			AVG	344	14
3	10400.000	39.31	18.00	57.31	74.00	-16.69	peak	334	204
4	10400.000	28.29	18.00	46.29	54.00	-7.71	AVG	334	204
5	15600.000	35.41	22.03	57.44	74.00	-16.56	peak	177	131
6	15600.000	24.95	22.03	46.98	54.00	-7.02	AVG	177	131

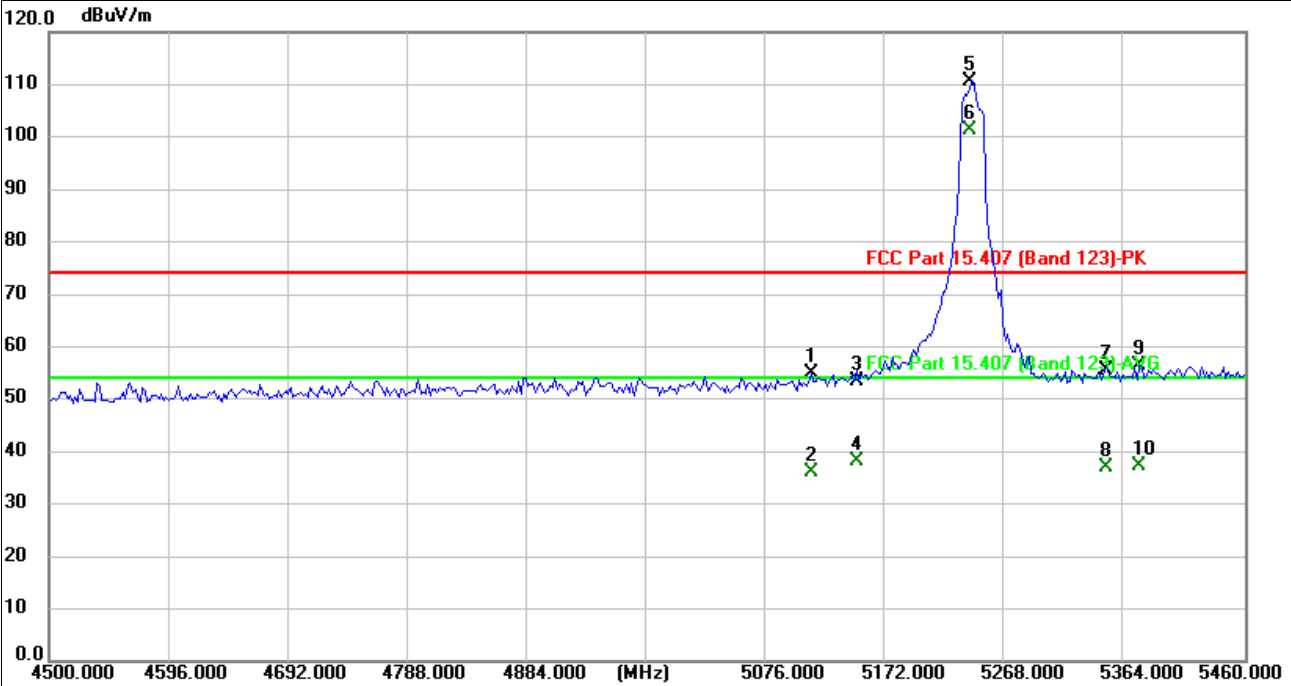
Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Report No.: 23122202-01-RF-US-04

Test Mode	802.11n HT20_5240MHz		
Test channel	48	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

Antennal Polarity& Test distance: Horizontal at 3m



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5111.784	48.29	6.61	54.90	74.00	-19.10	peak	341	315
2	5111.784	29.57	6.61	36.18	54.00	-17.82	AVG	341	315
3	5150.000	45.69	7.85	53.54	74.00	-20.46	peak	341	315
4	5150.000	30.26	7.85	38.11	54.00	-15.89	AVG	341	315
5	5240.681	102.31	8.39	110.70			peak	341	315
6	5240.681	92.95	8.39	101.34			AVG	341	315
7	5350.000	48.60	6.93	55.53	74.00	-18.47	peak	341	315
8	5350.000	29.97	6.93	36.90	54.00	-17.10	AVG	341	315
9	5375.351	49.39	7.00	56.39	74.00	-17.61	peak	341	315
10	5375.351	30.24	7.00	37.24	54.00	-16.76	AVG	341	315
11	10480.000	39.21	18.22	57.43	74.00	-16.57	peak	259	192
12	10480.000	28.93	18.22	47.15	54.00	-6.85	AVG	259	192
13	15720.000	36.71	21.75	58.46	74.00	-15.54	peak	370	285
14	15720.000	24.44	21.75	46.19	54.00	-7.81	AVG	370	285

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

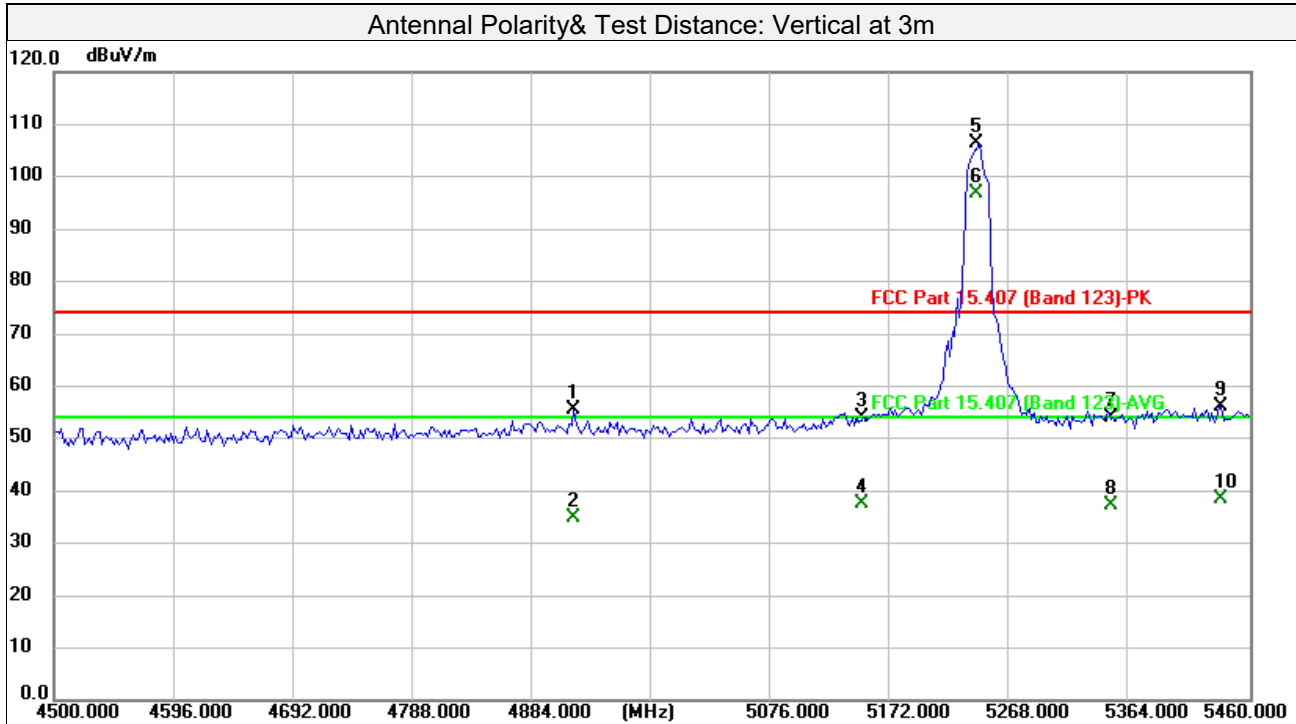
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Test Report No.: 23122202-01-RF-US-04

Test Mode	802.11n HT20_5240MHz		
Test channel	48	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	4917.475	49.15	6.40	55.55	74.00	-18.45	peak	336	18
2	4917.475	28.47	6.40	34.87	54.00	-19.13	AVG	336	18
3	5150.000	46.25	7.85	54.10	74.00	-19.90	peak	336	18
4	5150.000	29.81	7.85	37.66	54.00	-16.34	AVG	336	18
5	5242.605	98.07	8.34	106.41			peak	336	18
6	5242.605	88.32	8.34	96.66			AVG	336	18
7	5350.000	47.10	6.93	54.03	74.00	-19.97	peak	336	18
8	5350.000	30.25	6.93	37.18	54.00	-16.82	AVG	336	18
9	5436.914	48.89	7.16	56.05	74.00	-17.95	peak	336	18
10	5436.914	31.38	7.16	38.54	54.00	-15.46	AVG	336	18
11	10480.000	40.13	18.22	58.35	74.00	-15.65	peak	107	261
12	10480.000	28.07	18.22	46.29	54.00	-7.71	AVG	107	261
13	15720.000	35.93	21.75	57.68	74.00	-16.32	peak	163	222
14	15720.000	25.46	21.75	47.21	54.00	-6.79	AVG	163	222

Remarks:

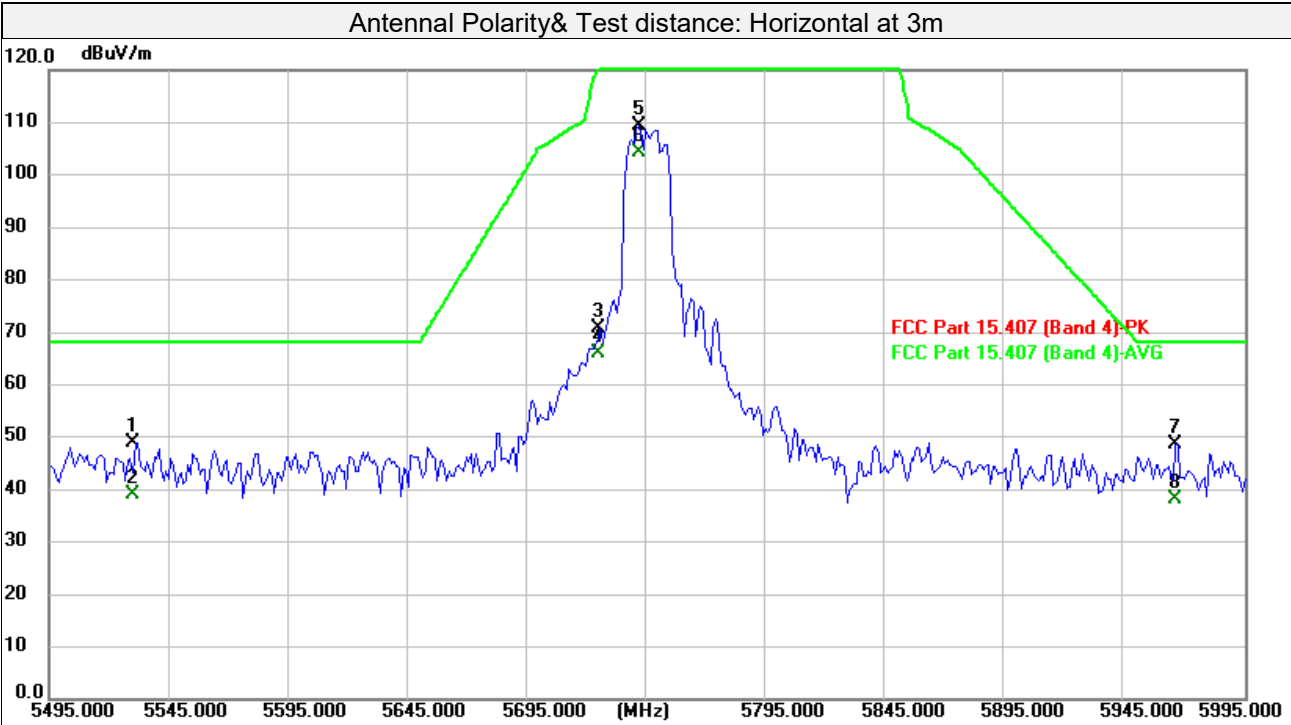
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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Test Mode	802.11n HT20_5745MHz		
Test channel	149	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5531.072	41.56	7.38	48.94	68.20	-19.26	peak	375	281
2	5531.072	31.67	7.38	39.05	68.20	-29.15	AVG	375	281
3	5725.000	63.21	7.58	70.79	122.20	-51.41	peak	375	281
4	5725.000	58.55	7.58	66.13	122.20	-56.07	AVG	375	281
5	5741.493	101.68	7.60	109.28	122.20	-12.92	peak	375	281
6	5741.493	96.60	7.60	104.20	122.20	-18.00	AVG	375	281
7	5965.942	40.75	7.86	48.61	68.20	-19.59	peak	375	281
8	5965.942	30.31	7.86	38.17	68.20	-30.03	AVG	375	281
9	11490.000	38.89	19.53	58.42	74.00	-15.58	peak	277	10
10	11490.000	26.84	19.53	46.37	54.00	-7.63	AVG	277	10
11	17235.000	30.43	26.86	57.29	68.30	-11.01	peak	374	6
12	17235.000	20.33	26.86	47.19	54.00	-6.81	AVG	374	6

Remarks:

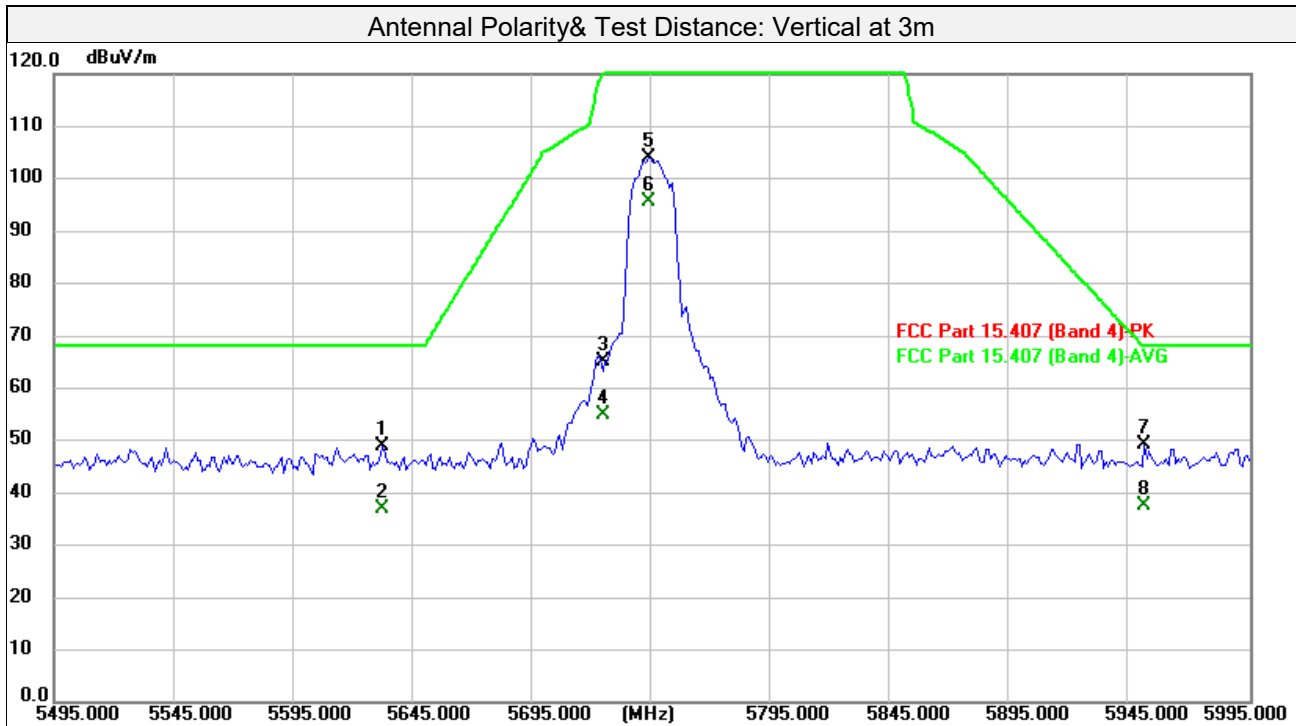
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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Test Mode	802.11n HT20_5745MHz		
Test channel	149	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5632.275	41.59	7.48	49.07	68.20	-19.13	peak	382	50
2	5632.275	29.47	7.48	36.95	68.20	-31.25	AVG	382	50
3	5725.000	57.36	7.58	64.94	122.20	-57.26	peak	382	50
4	5725.000	47.22	7.58	54.80	122.20	-67.40	AVG	382	50
5	5743.497	96.32	7.60	103.92	122.20	-18.28	peak	382	50
6	5743.497	88.06	7.60	95.66	122.20	-26.54	AVG	382	50
7	5950.912	41.32	7.84	49.16	68.20	-19.04	peak	382	50
8	5950.912	29.58	7.84	37.42	68.20	-30.78	AVG	382	50
9	11490.000	37.61	19.53	57.14	74.00	-16.86	peak	149	296
10	11490.000	28.82	19.53	48.35	54.00	-5.65	AVG	149	296
11	17235.000	31.81	26.86	58.67	68.30	-9.63	peak	295	258
12	17235.000	20.73	26.86	47.59	54.00	-6.41	AVG	295	258

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

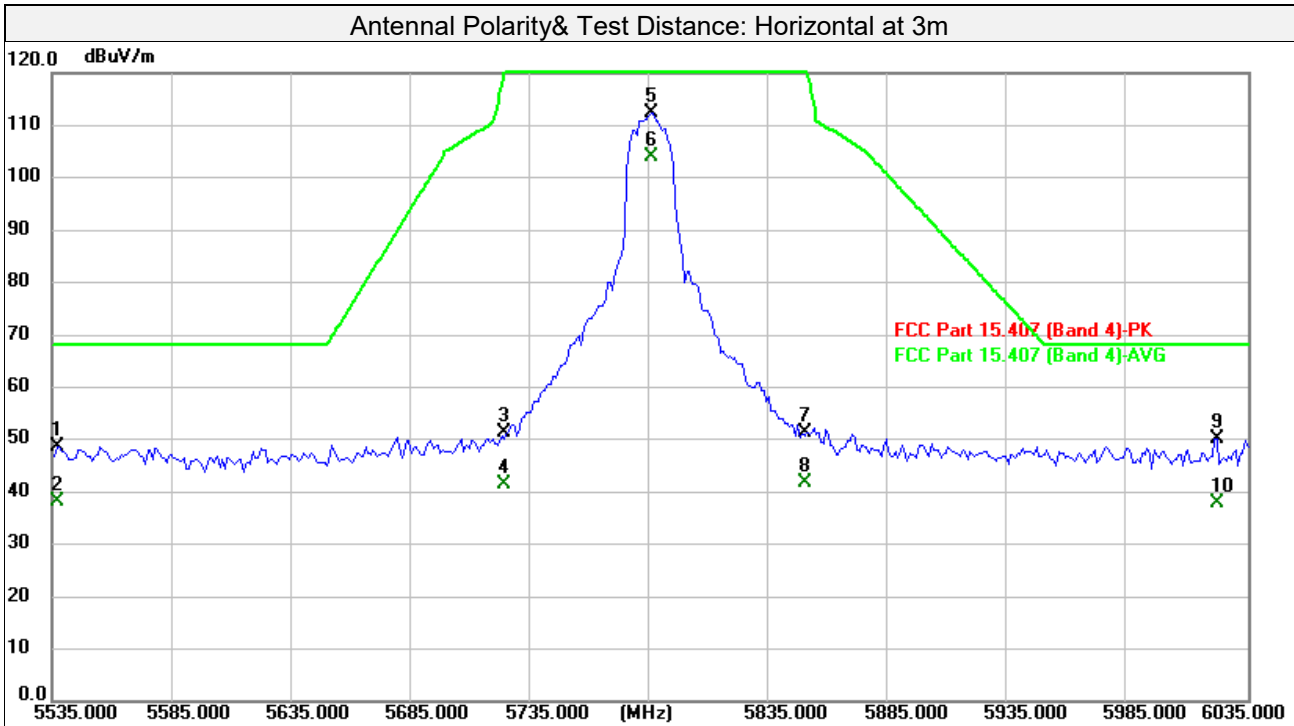
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Test Report No.: 23122202-01-RF-US-04

Test Mode	802.11n HT20_5785MHz		
Test channel	157	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5538.006	41.31	7.38	48.69	68.20	-19.51	peak	313	268
2	5538.006	30.85	7.38	38.23	68.20	-29.97	AVG	313	268
3	5725.000	43.78	7.58	51.36	122.20	-70.84	peak	313	268
4	5725.000	33.78	7.58	41.36	122.20	-80.84	AVG	313	268
5	5785.501	104.73	7.65	112.38	122.20	-9.82	peak	313	268
6	5785.501	96.44	7.65	104.09	122.20	-18.11	AVG	313	268
7	5850.000	43.56	7.72	51.28	122.20	-70.92	peak	313	268
8	5850.000	34.15	7.72	41.87	122.20	-80.33	AVG	313	268
9	6021.974	42.09	8.00	50.09	68.20	-18.11	peak	313	268
10	6021.974	29.75	8.00	37.75	68.20	-30.45	AVG	313	268
11	11570.000	38.91	19.55	58.46	74.00	-15.54	peak	226	246
12	11570.000	26.83	19.55	46.38	54.00	-7.62	AVG	226	246
13	17355.000	29.67	27.62	57.29	68.30	-11.01	peak	101	299
14	17355.000	19.65	27.62	47.27	54.00	-6.73	AVG	101	299

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

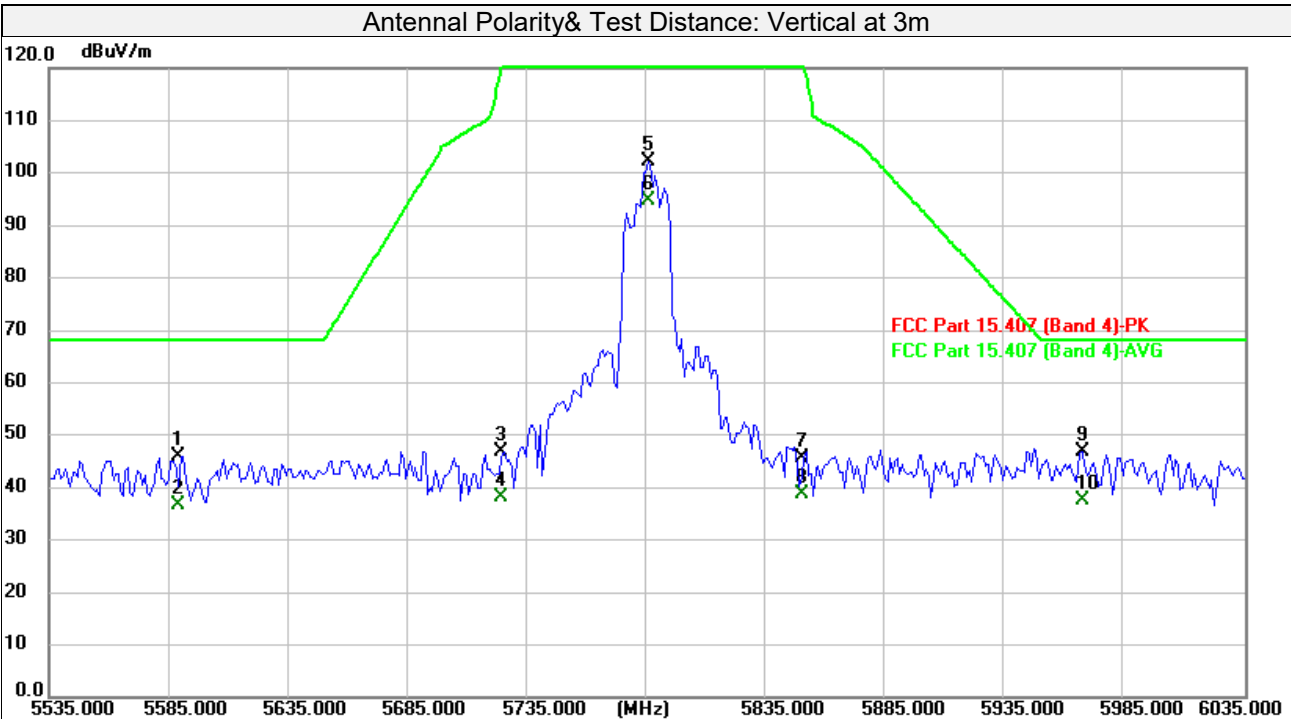
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Test Report No.: 23122202-01-RF-US-04

Test Mode	802.11n HT20_5785MHz		
Test channel	157	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5590.110	38.53	7.43	45.96	68.20	-22.24	peak	257	42
2	5590.110	29.26	7.43	36.69	68.20	-31.51	AVG	257	42
3	5725.000	39.14	7.58	46.72	122.20	-75.48	peak	257	42
4	5725.000	30.65	7.58	38.23	122.20	-83.97	AVG	257	42
5	5785.501	94.44	7.65	102.09	122.20	-20.11	peak	257	42
6	5785.501	87.11	7.65	94.76	122.20	-27.44	AVG	257	42
7	5850.000	38.02	7.72	45.74	122.20	-76.46	peak	257	42
8	5850.000	31.03	7.72	38.75	122.20	-83.45	AVG	257	42
9	5966.864	38.85	7.86	46.71	68.20	-21.49	peak	257	42
10	5966.864	29.71	7.86	37.57	68.20	-30.63	AVG	257	42
11	11570.000	37.61	19.55	57.16	74.00	-16.84	peak	389	354
12	11570.000	27.63	19.55	47.18	54.00	-6.82	AVG	389	354
13	17355.000	29.17	27.62	56.79	68.30	-11.51	peak	398	90
14	17355.000	18.65	27.62	46.27	54.00	-7.73	AVG	398	90

Remarks:

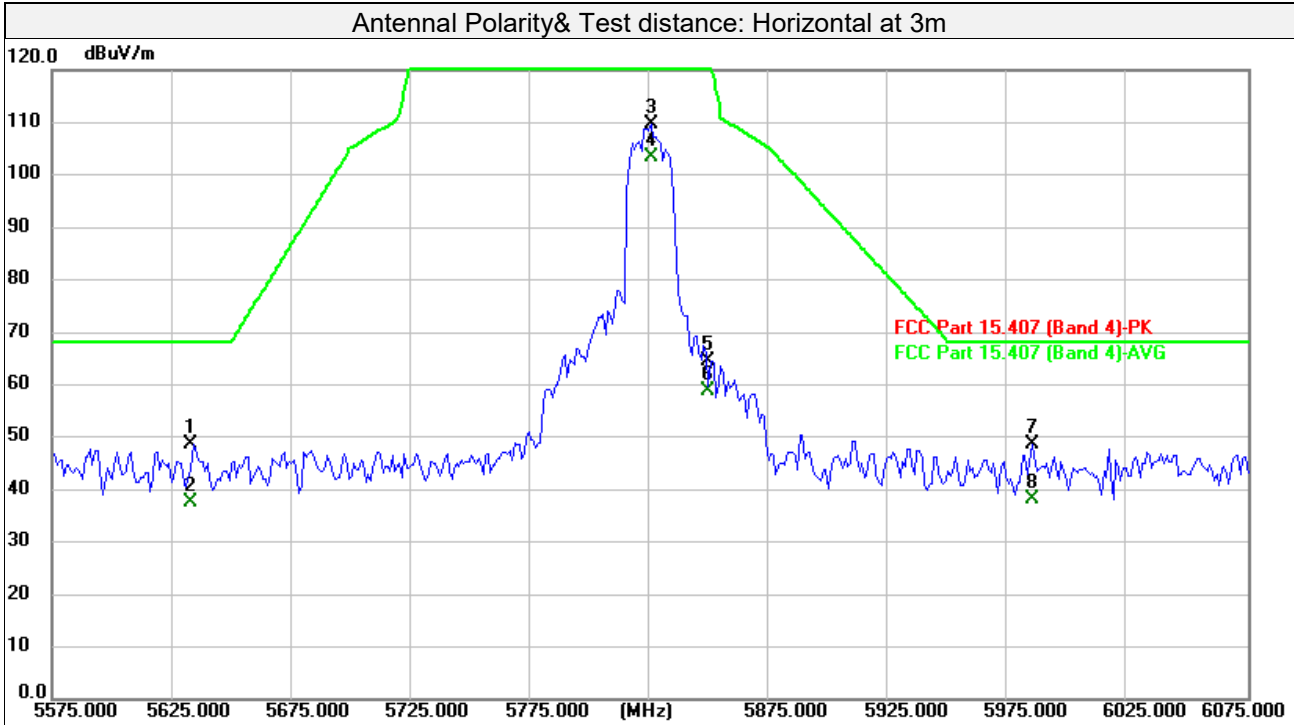
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Lab: [Hwa-Hsing \(Dongguan\) Testing Co., Ltd.](#)
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Test Mode	802.11n HT20_5825MHz		
Test channel	165	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

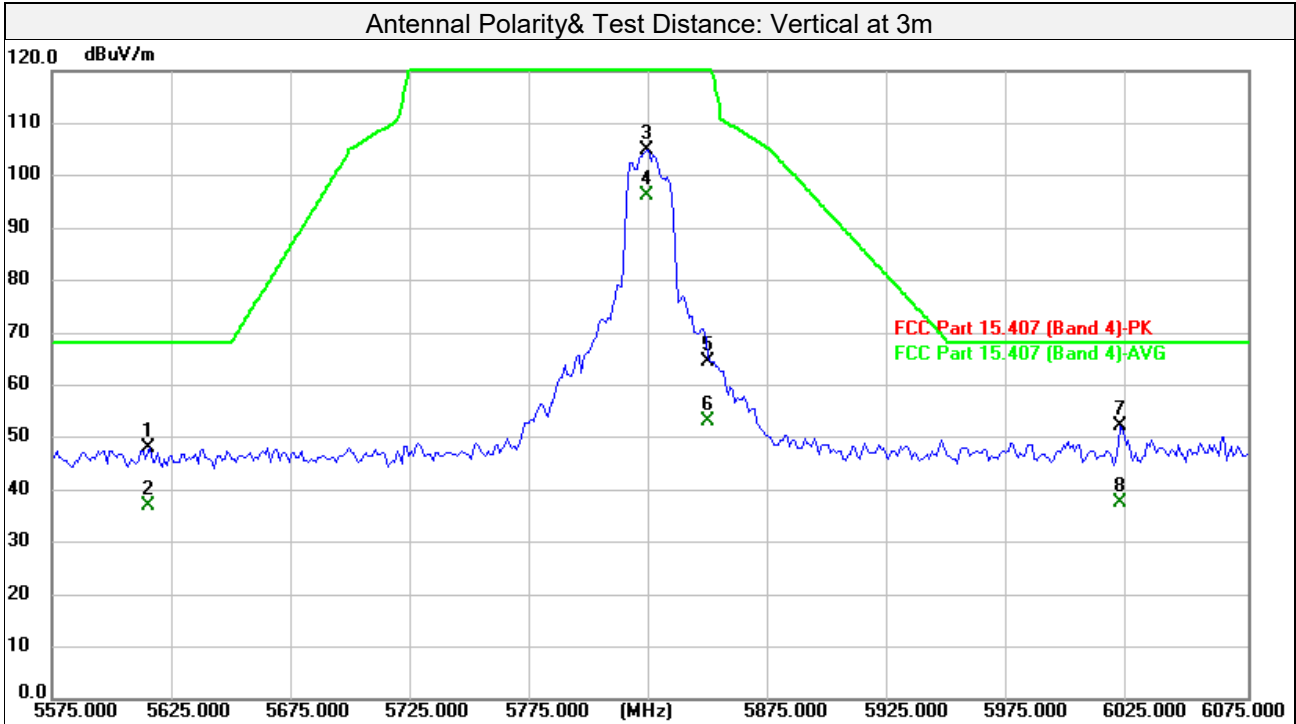


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5634.118	41.24	7.48	48.72	68.20	-19.48	peak	364	280
2	5634.118	30.06	7.48	37.54	68.20	-30.66	AVG	364	280
3	5825.501	101.98	7.70	109.68	122.20	-12.52	peak	364	280
4	5825.501	95.56	7.70	103.26	122.20	-18.94	AVG	364	280
5	5850.000	56.81	7.72	64.53	122.20	-57.67	peak	364	280
6	5850.000	51.23	7.72	58.95	122.20	-63.25	AVG	364	280
7	5984.820	40.85	7.89	48.74	68.20	-19.46	peak	364	280
8	5984.820	30.29	7.89	38.18	68.20	-30.02	AVG	364	280
9	11650.000	37.89	19.57	57.46	74.00	-16.54	peak	325	244
10	11650.000	27.96	19.57	47.53	54.00	-6.47	AVG	325	244
11	17475.000	29.88	28.39	58.27	68.30	-10.03	peak	311	140
12	17475.000	19.50	28.39	47.89	54.00	-6.11	AVG	311	140

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11n HT20_5825MHz		
Test channel	165	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5616.082	40.45	7.46	47.91	68.20	-20.29	peak	117	48
2	5616.082	29.39	7.46	36.85	68.20	-31.35	AVG	117	48
3	5823.497	97.33	7.69	105.02	122.20	-17.18	peak	117	48
4	5823.497	88.41	7.69	96.10	122.20	-26.10	AVG	117	48
5	5850.000	56.62	7.72	64.34	122.20	-57.86	peak	117	48
6	5850.000	45.37	7.72	53.09	122.20	-69.11	AVG	117	48
7	6021.894	44.20	8.00	52.20	68.20	-16.00	peak	117	48
8	6021.894	29.45	8.00	37.45	68.20	-30.75	AVG	117	48
9	11650.000	37.59	19.57	57.16	74.00	-16.84	peak	362	134
10	11650.000	29.37	19.57	48.94	54.00	-5.06	AVG	362	134
11	17475.000	28.81	28.39	57.20	68.30	-11.10	peak	301	334
12	17475.000	17.70	28.39	46.09	54.00	-7.91	AVG	301	334

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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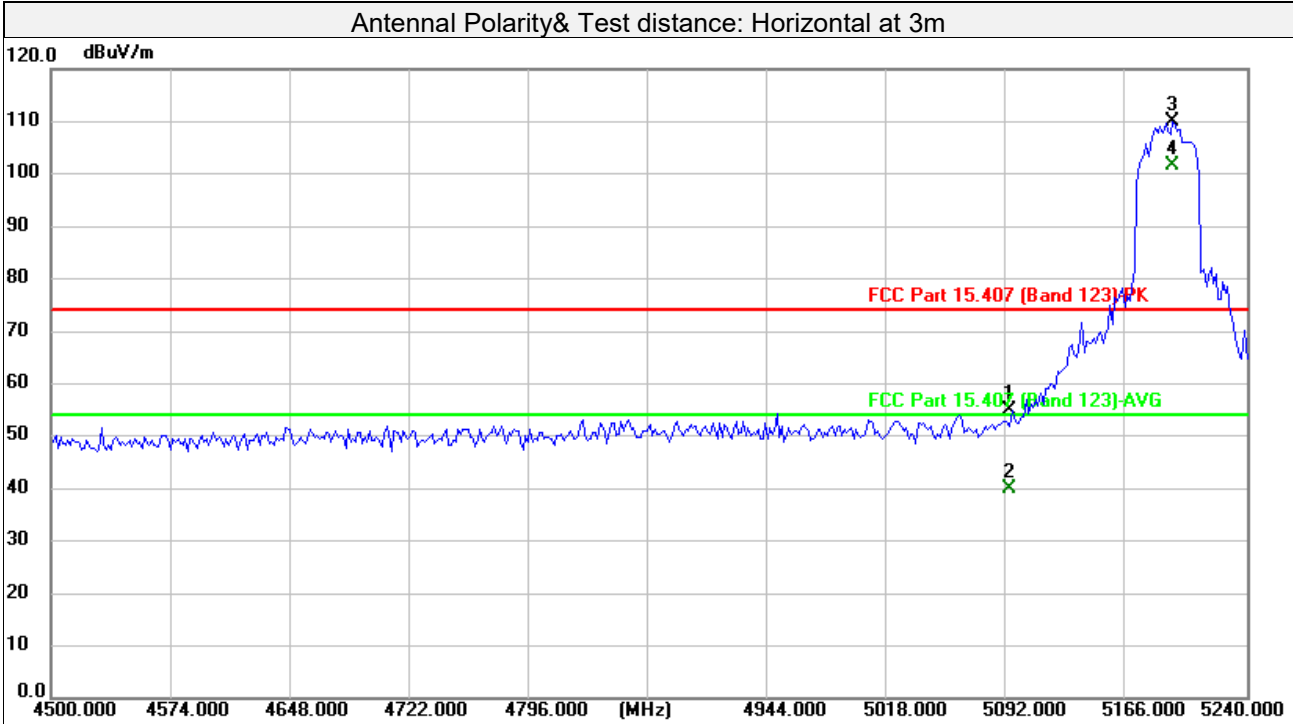
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Above 1GHz Data:

802.11n HT40

Test Mode	802.11n HT40_5190MHz		
Test channel	38	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

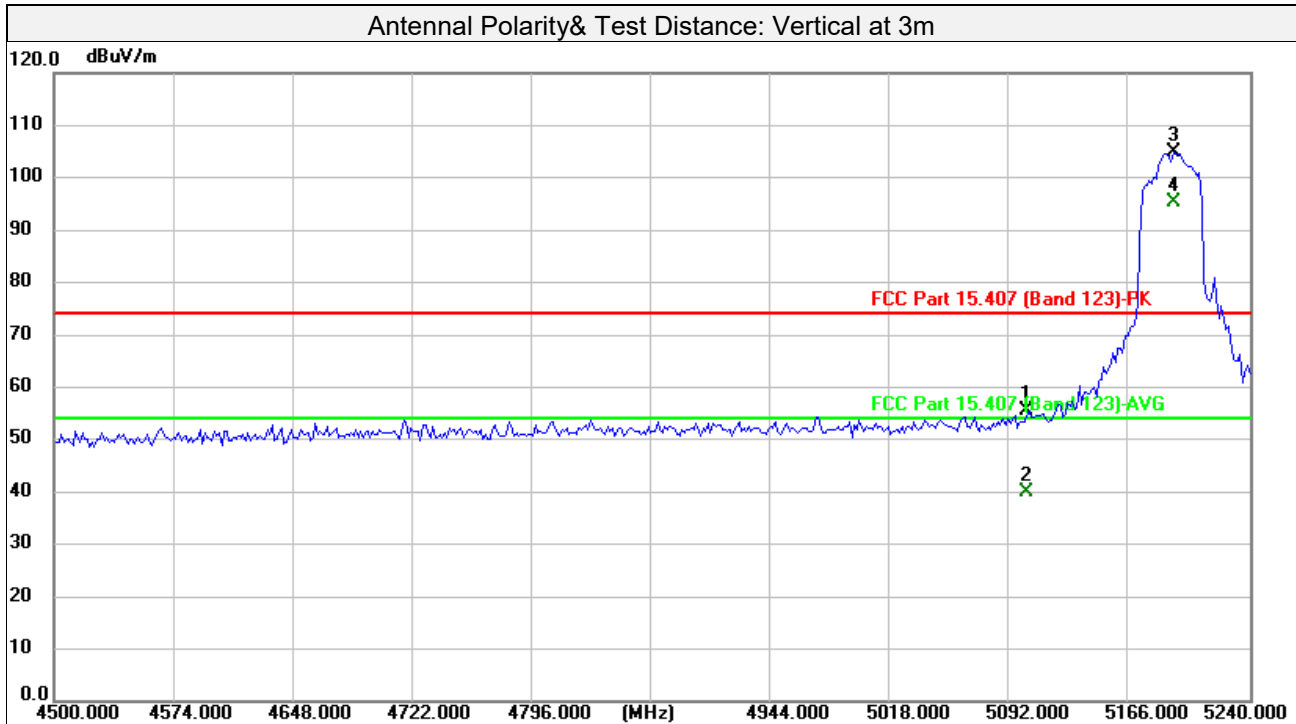


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5094.669	48.60	6.22	54.82	74.00	-19.18	peak	309	267
2	5094.669	33.72	6.22	39.94	54.00	-14.06	AVG	309	267
3	5194.028	100.66	9.31	109.97			peak	309	267
4	5194.028	92.39	9.31	101.70			AVG	309	267
5	10380.000	40.32	17.94	58.26	74.00	-15.74	peak	211	146
6	10380.000	28.79	17.94	46.73	54.00	-7.27	AVG	211	146
7	15570.000	35.19	22.10	57.29	74.00	-16.71	peak	322	71
8	15570.000	25.73	22.10	47.83	54.00	-6.17	AVG	322	71

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11n HT40_5190MHz		
Test channel	38	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5103.567	49.08	6.35	55.43	74.00	-18.57	peak	311	28
2	5103.567	33.57	6.35	39.92	54.00	-14.08	AVG	311	28
3	5192.545	95.75	9.26	105.01			peak	311	28
4	5192.545	86.10	9.26	95.36			AVG	311	28
5	10380.000	40.02	17.94	57.96	74.00	-16.04	peak	254	58
6	10380.000	29.49	17.94	47.43	54.00	-6.57	AVG	254	58
7	15570.000	35.01	22.10	57.11	74.00	-16.89	peak	308	118
8	15570.000	24.18	22.10	46.28	54.00	-7.72	AVG	308	118

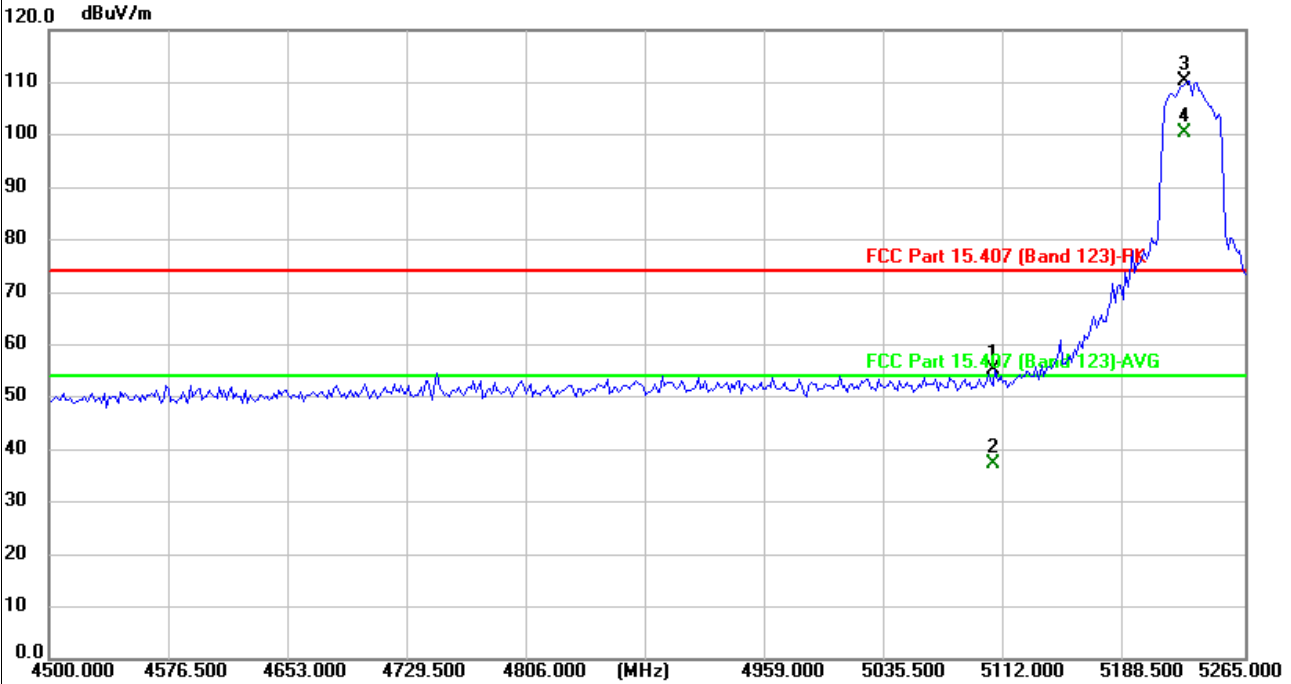
Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Report No.: 23122202-01-RF-US-04

Test Mode	802.11n HT40_5230MHz		
Test channel	46	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

Antennal Polarity& Test distance: Horizontal at 3m

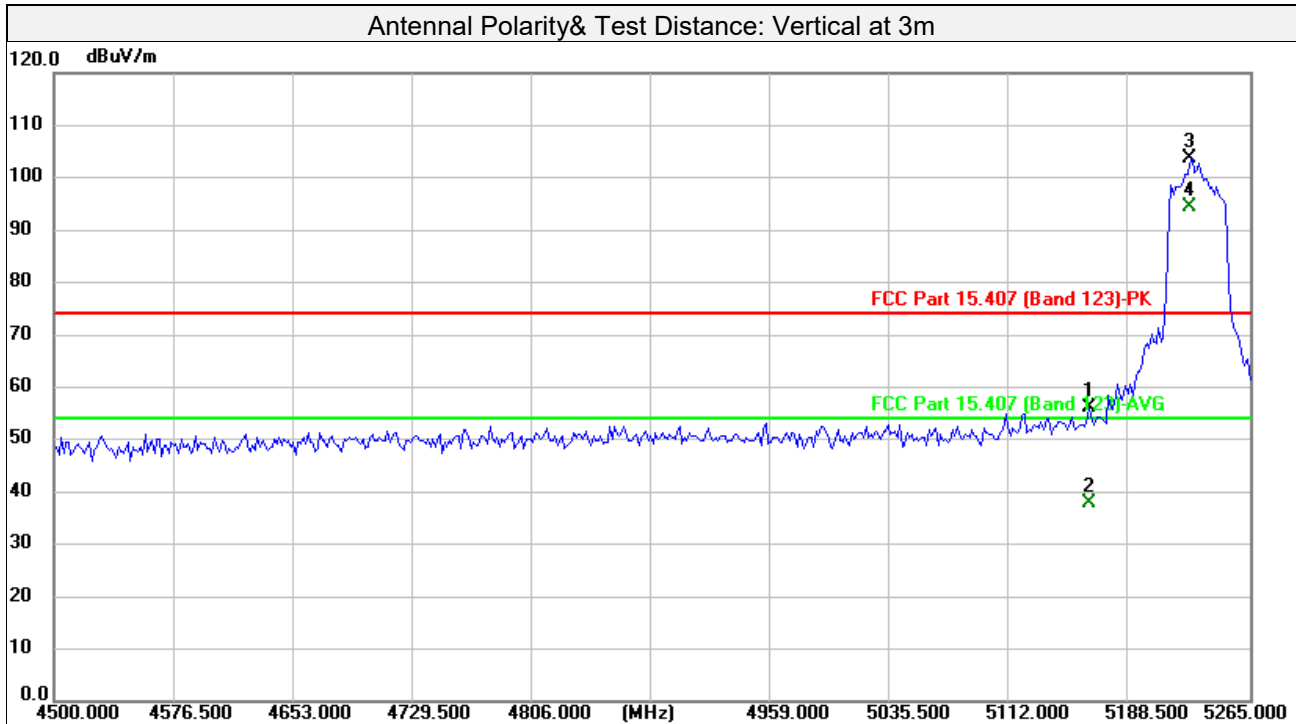


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5105.561	48.75	6.41	55.16	74.00	-18.84	peak	337	263
2	5105.561	30.91	6.41	37.32	54.00	-16.68	AVG	337	263
3	5228.206	101.57	8.73	110.30			peak	337	263
4	5228.206	91.73	8.73	100.46			AVG	337	263
5	10460.000	39.17	18.16	57.33	74.00	-16.67	peak	322	264
6	10460.000	28.03	18.16	46.19	54.00	-7.81	AVG	322	264
7	15690.000	36.47	21.82	58.29	74.00	-15.71	peak	198	345
8	15690.000	24.92	21.82	46.74	54.00	-7.26	AVG	198	345

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11n HT40_5230MHz		
Test channel	46	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

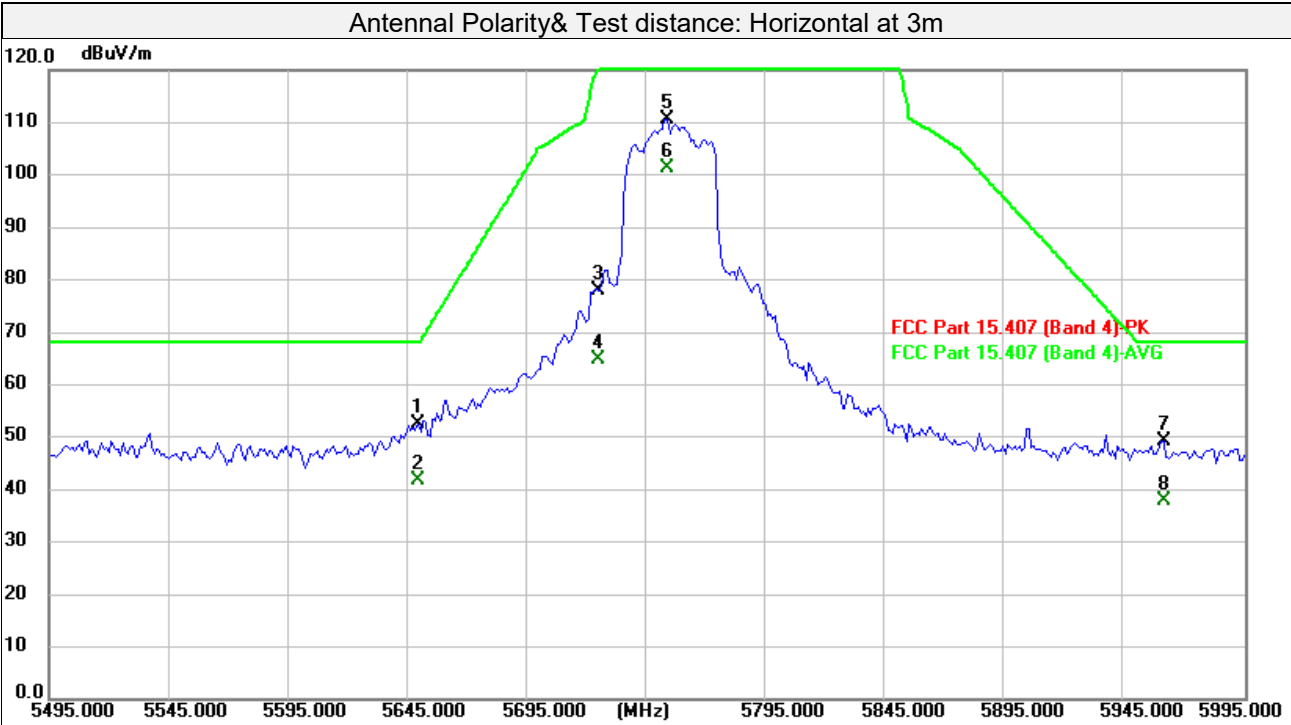


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5162.285	47.99	8.25	56.24	74.00	-17.76	peak	400	360
2	5162.285	29.47	8.25	37.72	54.00	-16.28	AVG	400	360
3	5228.206	94.83	8.73	103.56			peak	400	360
4	5228.206	85.78	8.73	94.51			AVG	400	360
5	10460.000	40.10	18.16	58.26	74.00	-15.74	peak	304	243
6	10460.000	28.57	18.16	46.73	54.00	-7.27	AVG	304	243
7	15690.000	35.79	21.82	57.61	74.00	-16.39	peak	145	38
8	15690.000	25.56	21.82	47.38	54.00	-6.62	AVG	145	38

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11n HT40_5755MHz		
Test channel	151	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5649.309	44.97	7.49	52.46	68.20	-15.74	peak	319	269
2	5649.309	34.27	7.49	41.76	68.20	-26.44	AVG	319	269
3	5725.000	70.48	7.58	78.06	122.20	-44.14	peak	319	269
4	5725.000	57.23	7.58	64.81	122.20	-57.39	AVG	319	269
5	5753.517	102.90	7.61	110.51	122.20	-11.69	peak	319	269
6	5753.517	93.64	7.61	101.25	122.20	-20.95	AVG	319	269
7	5960.932	41.50	7.86	49.36	68.20	-18.84	peak	319	269
8	5960.932	30.14	7.86	38.00	68.20	-30.20	AVG	319	269
9	11510.000	38.78	19.53	58.31	74.00	-15.69	peak	205	19
10	11510.000	28.74	19.53	48.27	54.00	-5.73	AVG	205	19
11	17265.000	30.13	27.06	57.19	68.30	-11.11	peak	233	169
12	17265.000	20.37	27.06	47.43	54.00	-6.57	AVG	233	169

Remarks:

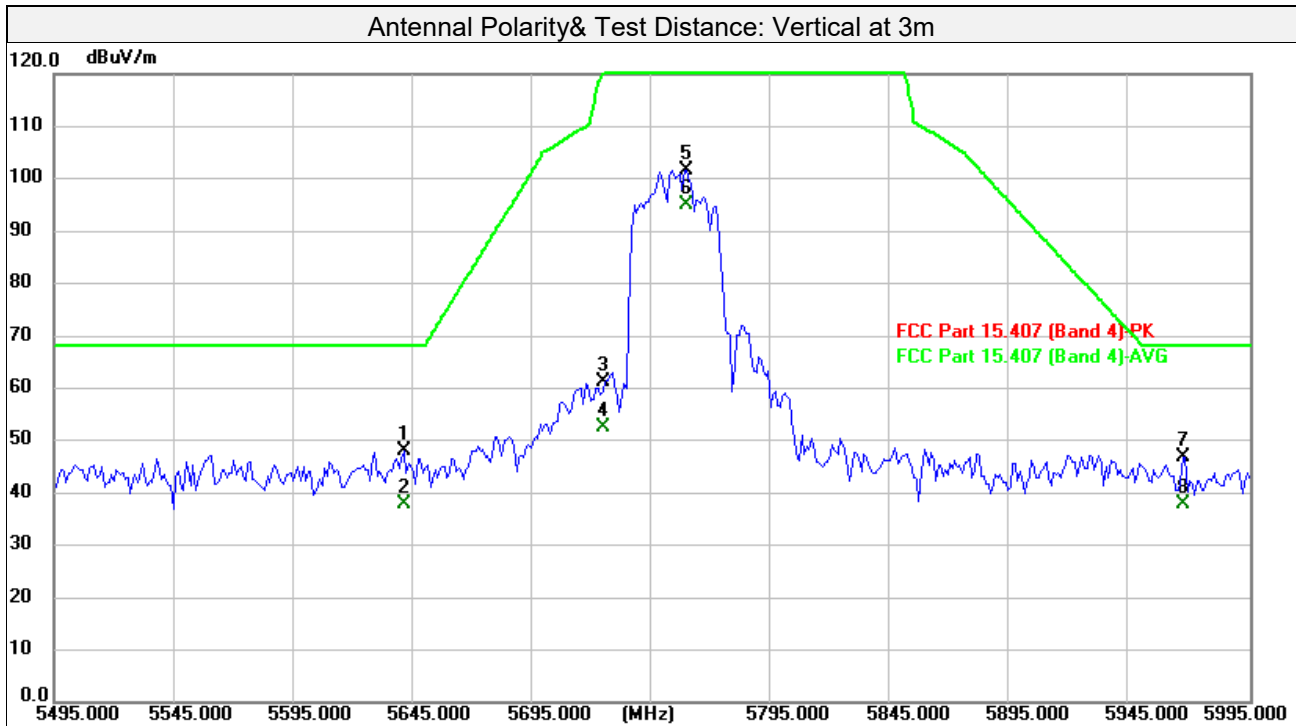
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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Test Mode	802.11n HT40_5755MHz		
Test channel	151	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5641.293	40.46	7.49	47.95	68.20	-20.25	peak	261	30
2	5641.293	30.41	7.49	37.90	68.20	-30.30	AVG	261	30
3	5725.000	53.49	7.58	61.07	122.20	-61.13	peak	261	30
4	5725.000	44.94	7.58	52.52	122.20	-69.68	AVG	261	30
5	5759.529	94.00	7.61	101.61	122.20	-20.59	peak	261	30
6	5759.529	87.35	7.61	94.96	122.20	-27.24	AVG	261	30
7	5966.944	39.05	7.86	46.91	68.20	-21.29	peak	261	30
8	5966.944	29.97	7.86	37.83	68.20	-30.37	AVG	261	30
9	11510.000	37.66	19.53	57.19	74.00	-16.81	peak	250	7
10	11510.000	28.01	19.53	47.54	54.00	-6.46	AVG	250	7
11	17265.000	31.63	27.06	58.69	68.30	-9.61	peak	114	37
12	17265.000	18.97	27.06	46.03	54.00	-7.97	AVG	114	37

Remarks:

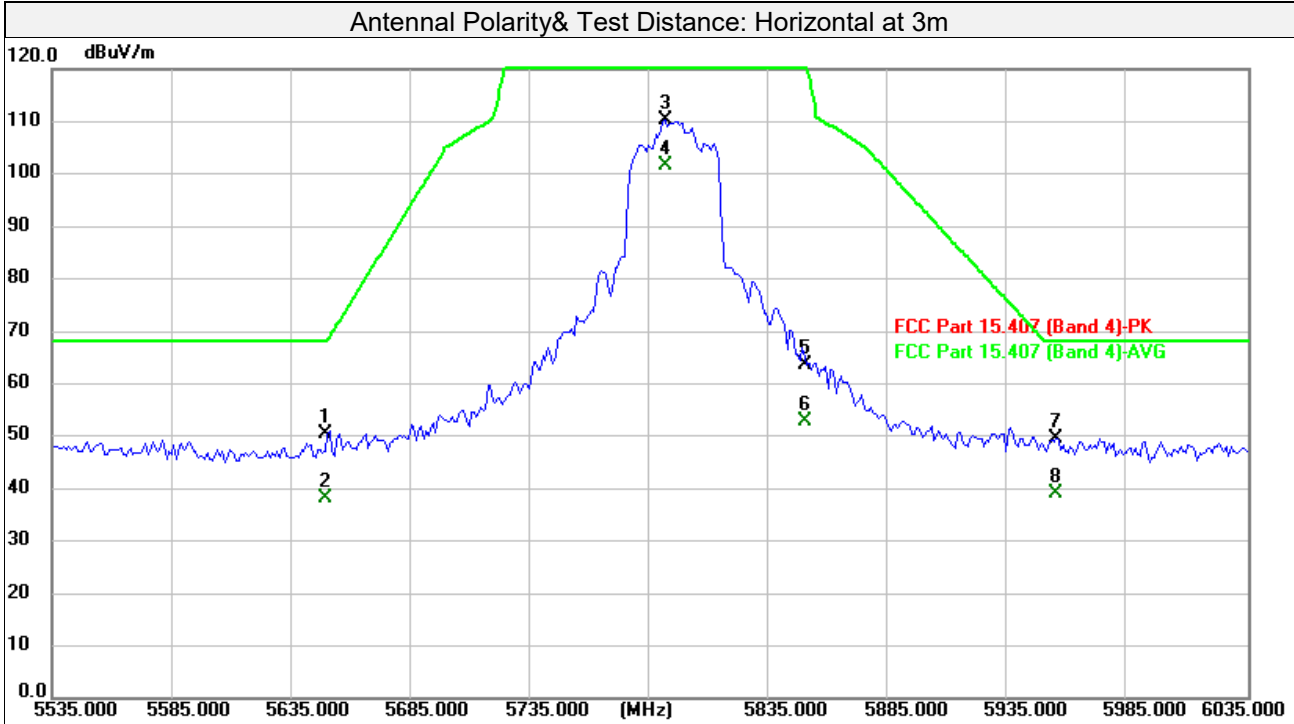
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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Test Mode	802.11n HT40_5795MHz		
Test channel	159	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5650.230	42.98	7.50	50.48	68.37	-17.89	peak	315	269
2	5650.230	30.69	7.50	38.19	68.37	-30.18	AVG	315	269
3	5791.513	102.66	7.65	110.31	122.20	-11.89	peak	315	269
4	5791.513	94.04	7.65	101.69	122.20	-20.51	AVG	315	269
5	5850.000	55.82	7.72	63.54	122.20	-58.66	peak	315	269
6	5850.000	44.97	7.72	52.69	122.20	-69.51	AVG	315	269
7	5954.840	41.69	7.84	49.53	68.20	-18.67	peak	315	269
8	5954.840	31.28	7.84	39.12	68.20	-29.08	AVG	315	269
9	11590.000	37.66	19.56	57.22	74.00	-16.78	peak	209	203
10	11590.000	27.82	19.56	47.38	54.00	-6.62	AVG	209	203
11	17385.000	31.14	27.82	58.96	68.30	-9.34	peak	122	276
12	17385.000	18.95	27.82	46.77	54.00	-7.23	AVG	122	276

Remarks:

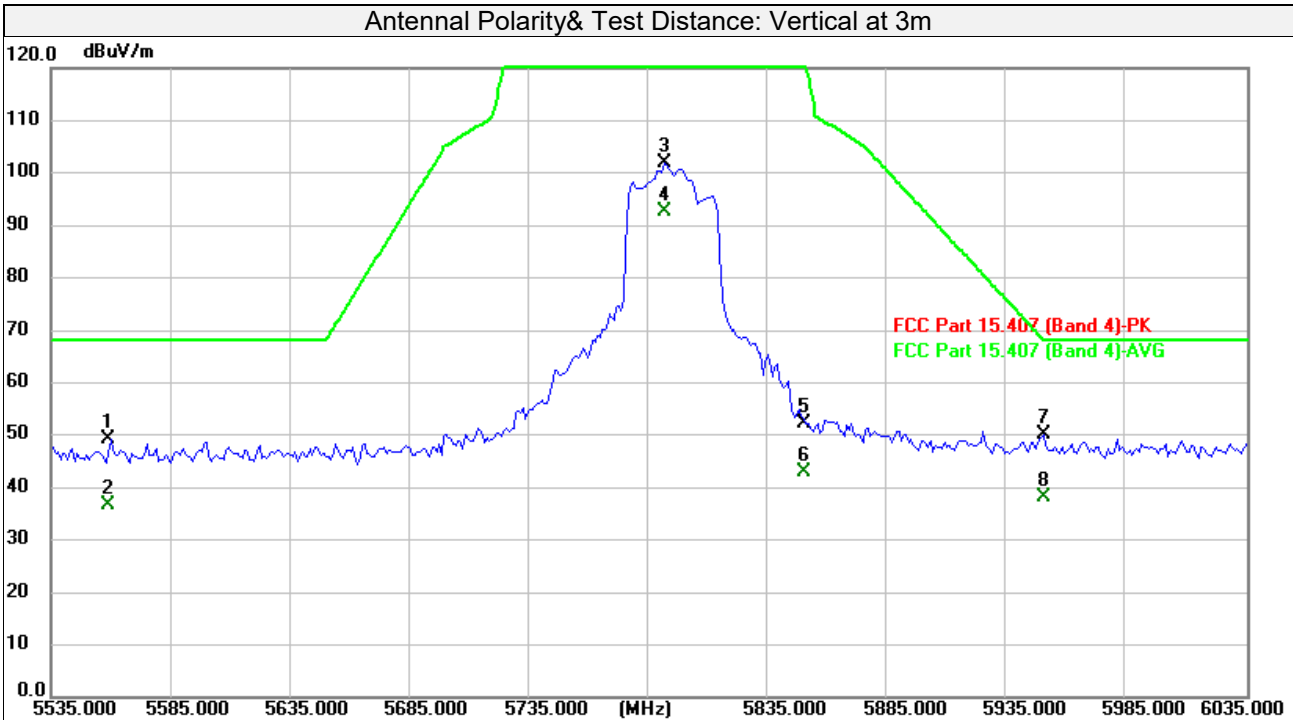
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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Test Mode	802.11n HT40_5795MHz		
Test channel	159	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5560.050	41.83	7.40	49.23	68.20	-18.97	peak	272	38
2	5560.050	29.21	7.40	36.61	68.20	-31.59	AVG	272	38
3	5791.513	94.37	7.65	102.02	122.20	-20.18	peak	272	38
4	5791.513	84.86	7.65	92.51	122.20	-29.69	AVG	272	38
5	5850.000	44.55	7.72	52.27	122.20	-69.93	peak	272	38
6	5850.000	35.32	7.72	43.04	122.20	-79.16	AVG	272	38
7	5949.830	42.21	7.84	50.05	68.28	-18.23	peak	272	38
8	5949.830	30.25	7.84	38.09	68.28	-30.19	AVG	272	38
9	11590.000	37.63	19.56	57.19	74.00	-16.81	peak	397	219
10	11590.000	28.66	19.56	48.22	54.00	-5.78	AVG	397	219
11	17385.000	29.57	27.82	57.39	68.30	-10.91	peak	275	233
12	17385.000	19.19	27.82	47.01	54.00	-6.99	AVG	275	233

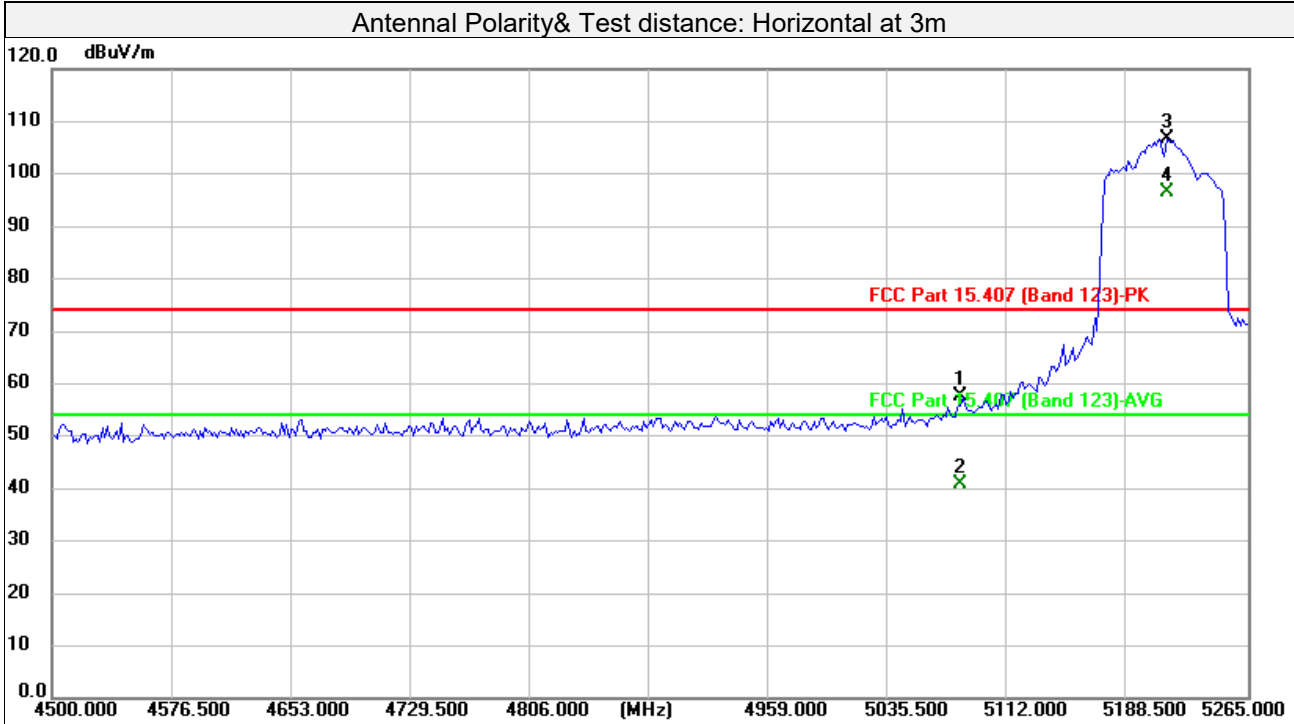
Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Above 1GHz Data:

802.11ac VHT80

Test Mode	802.11ac VHT80_5210MHz		
Test channel	42	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu

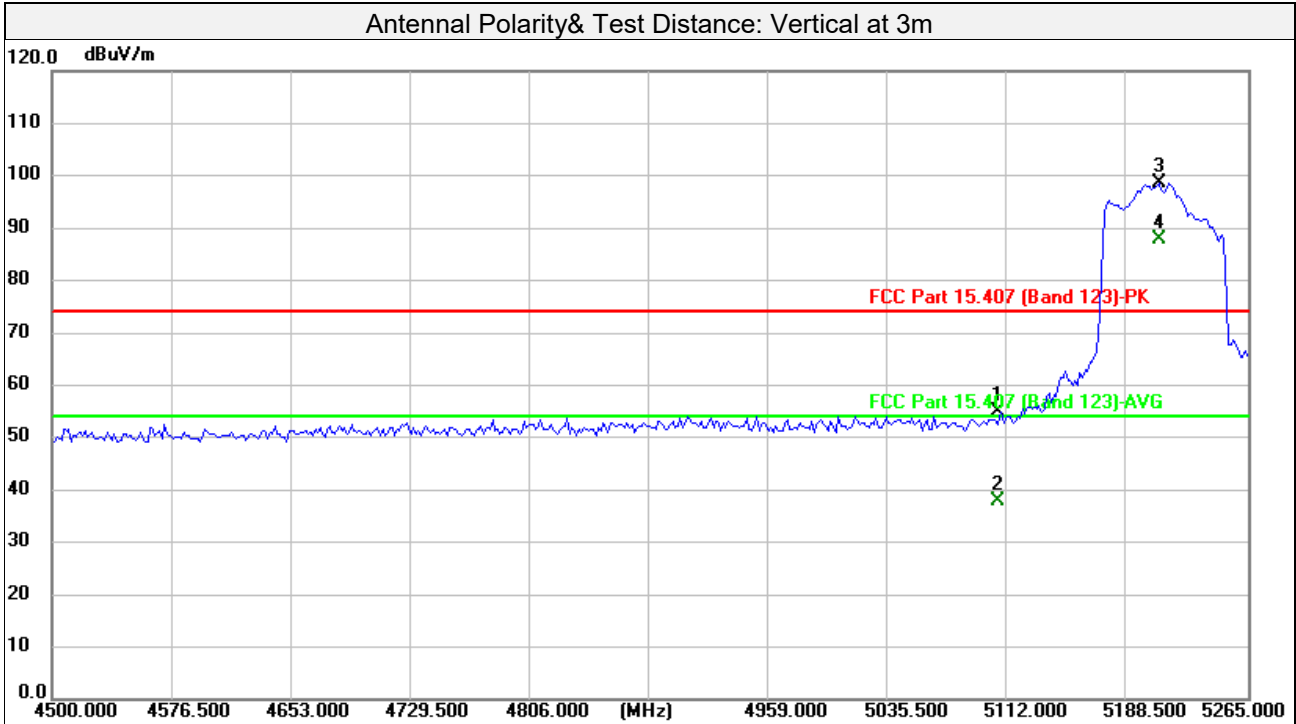


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5082.565	51.32	6.19	57.51	74.00	-16.49	peak	293	290
2	5082.565	34.55	6.19	40.74	54.00	-13.26	AVG	293	290
3	5212.876	97.56	9.15	106.71			peak	293	290
4	5212.876	87.33	9.15	96.48			AVG	293	290
5	10420.000	38.19	18.05	56.24	74.00	-17.76	peak	144	271
6	10420.000	29.34	18.05	47.39	54.00	-6.61	AVG	144	271
7	15630.000	35.71	21.95	57.66	74.00	-16.34	peak	323	274
8	15630.000	24.16	21.95	46.11	54.00	-7.89	AVG	323	274

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Mode	802.11ac VHT80_5210MHz		
Test channel	42	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



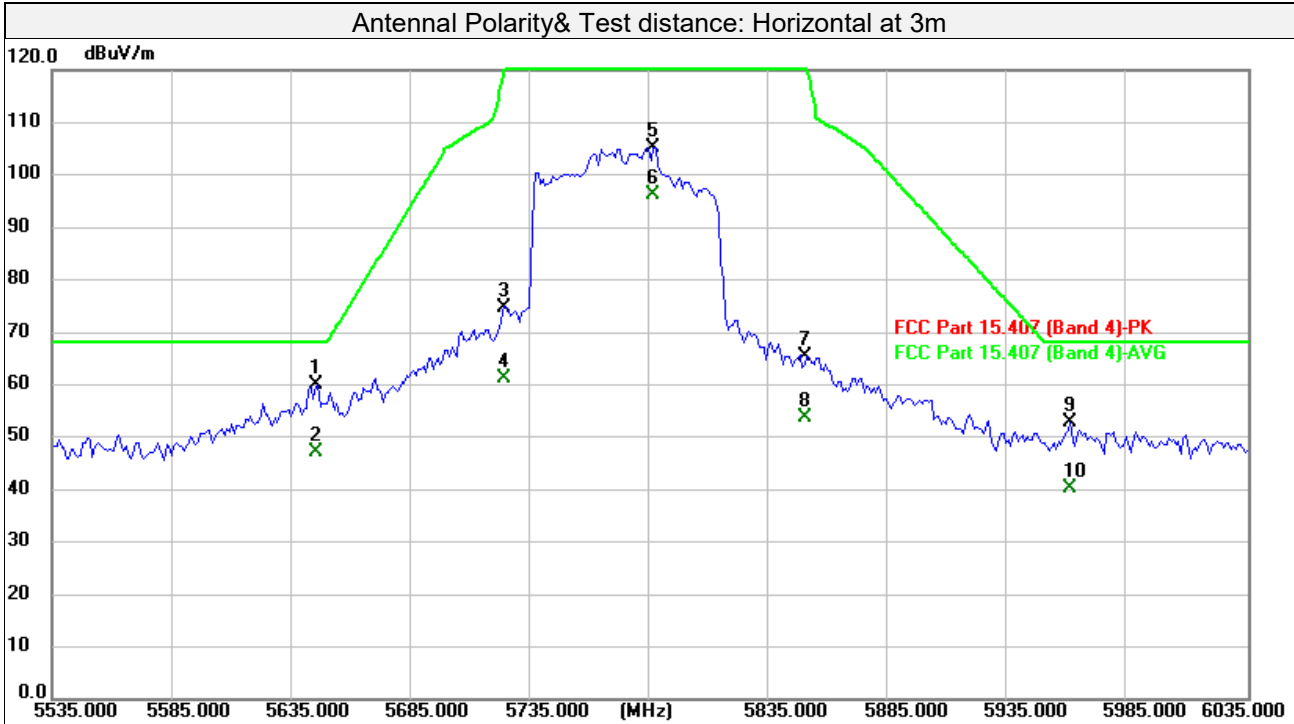
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5107.094	48.60	6.46	55.06	74.00	-18.94	peak	272	41
2	5107.094	31.41	6.46	37.87	54.00	-16.13	AVG	272	41
3	5208.277	89.25	9.28	98.53			peak	272	41
4	5208.277	78.63	9.28	87.91			AVG	272	41
5	10420.000	39.26	18.05	57.31	74.00	-16.69	peak	198	111
6	10420.000	28.03	18.05	46.08	54.00	-7.92	AVG	198	111
7	15630.000	36.44	21.95	58.39	74.00	-15.61	peak	152	18
8	15630.000	27.30	21.95	49.25	54.00	-4.75	AVG	152	18

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

Test Report No.: 23122202-01-RF-US-04

Test Mode	802.11ac VHT80_5775MHz		
Test channel	155	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5646.222	52.40	7.49	59.89	68.20	-8.31	peak	374	271
2	5646.222	39.54	7.49	47.03	68.20	-21.17	AVG	374	271
3	5725.000	67.05	7.58	74.63	122.20	-47.57	peak	374	271
4	5725.000	53.52	7.58	61.10	122.20	-61.10	AVG	374	271
5	5786.503	97.57	7.65	105.22	122.20	-16.98	peak	374	271
6	5786.503	88.61	7.65	96.26	122.20	-25.94	AVG	374	271
7	5850.000	57.59	7.72	65.31	122.20	-56.89	peak	374	271
8	5850.000	46.00	7.72	53.72	122.20	-68.48	AVG	374	271
9	5960.852	44.83	7.86	52.69	68.20	-15.51	peak	374	271
10	5960.852	32.50	7.86	40.36	68.20	-27.84	AVG	374	271
11	11550.000	37.77	19.54	57.31	74.00	-16.69	peak	139	14
12	11550.000	27.28	19.54	46.82	54.00	-7.18	AVG	139	14
13	17325.000	32.24	27.43	59.67	68.30	-8.63	peak	141	336
14	17325.000	21.56	27.43	48.99	54.00	-5.01	AVG	141	336

Remarks:

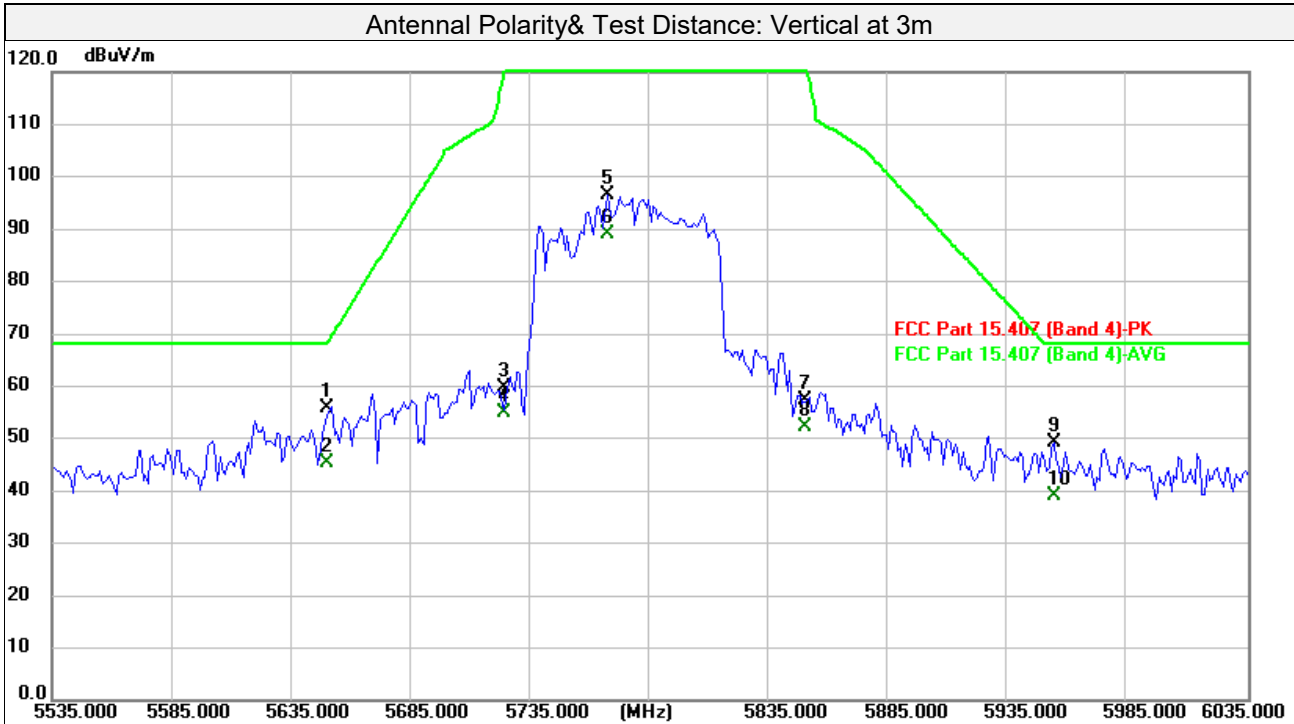
1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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Test Mode	802.11ac VHT80_5775MHz		
Test channel	155	Frequency Range	1GHz ~ 40GHz
Detector Function	Peak (PK) Average (AVG)	Tested By	Jim Xu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Height (cm)	Table Angle (Degree)
1	5651.232	48.28	7.50	55.78	69.11	-13.33	peak	244	41
2	5651.232	37.71	7.50	45.21	69.11	-23.90	AVG	244	41
3	5725.000	52.19	7.58	59.77	122.20	-62.43	peak	244	41
4	5725.000	47.33	7.58	54.91	122.20	-67.29	AVG	244	41
5	5767.465	88.74	7.62	96.36	122.20	-25.84	peak	244	41
6	5767.465	81.29	7.62	88.91	122.20	-33.29	AVG	244	41
7	5850.000	49.70	7.72	57.42	122.20	-64.78	peak	244	41
8	5850.000	44.36	7.72	52.08	122.20	-70.12	AVG	244	41
9	5953.838	41.35	7.84	49.19	68.20	-19.01	peak	244	41
10	5953.838	31.28	7.84	39.12	68.20	-29.08	AVG	244	41
11	11550.000	37.30	19.54	56.84	74.00	-17.16	peak	183	300
12	11550.000	27.68	19.54	47.22	54.00	-6.78	AVG	183	300
13	17325.000	31.06	27.43	58.49	68.30	-9.81	peak	201	168
14	17325.000	19.95	27.43	47.38	54.00	-6.62	AVG	201	168

Remarks:

1. Emission Level = Read Level + Factor (Antenna Factor + Cable Loss - Preamp Factor)
2. Margin value = Emission level – Limit value
3. The other spurious emissions attenuated more than 20 dB below the permissible value is not required to be report

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3.2 Conducted Emission Measurement

3.2.1 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.

3.2.2 Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR 7	101961	2024-12-17
Artificial Mains Network	Rohde&Schwarz	ENV216	3560.6550.15	2024-12-17
Test software	FARAD	EZ_EMV V1.1.4.2	N/A	N/A
Broadcast test system	R&S	SFU	100410	2024-08-06

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to LISAI/CHINA.
2. The test was performed in Shielded Room.

3.2.3 Test Procedures

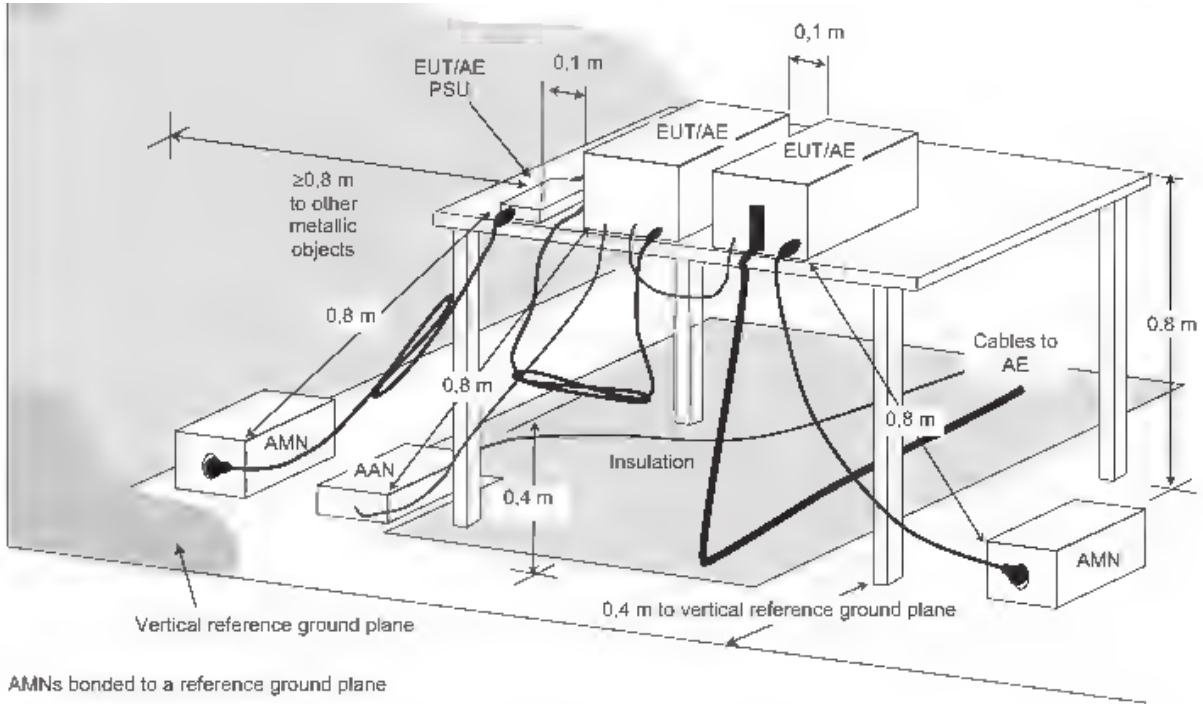
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50uH of coupling impedance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

3.2.4 Deviation from Test Standard

No deviation.

3.2.5 Test setup

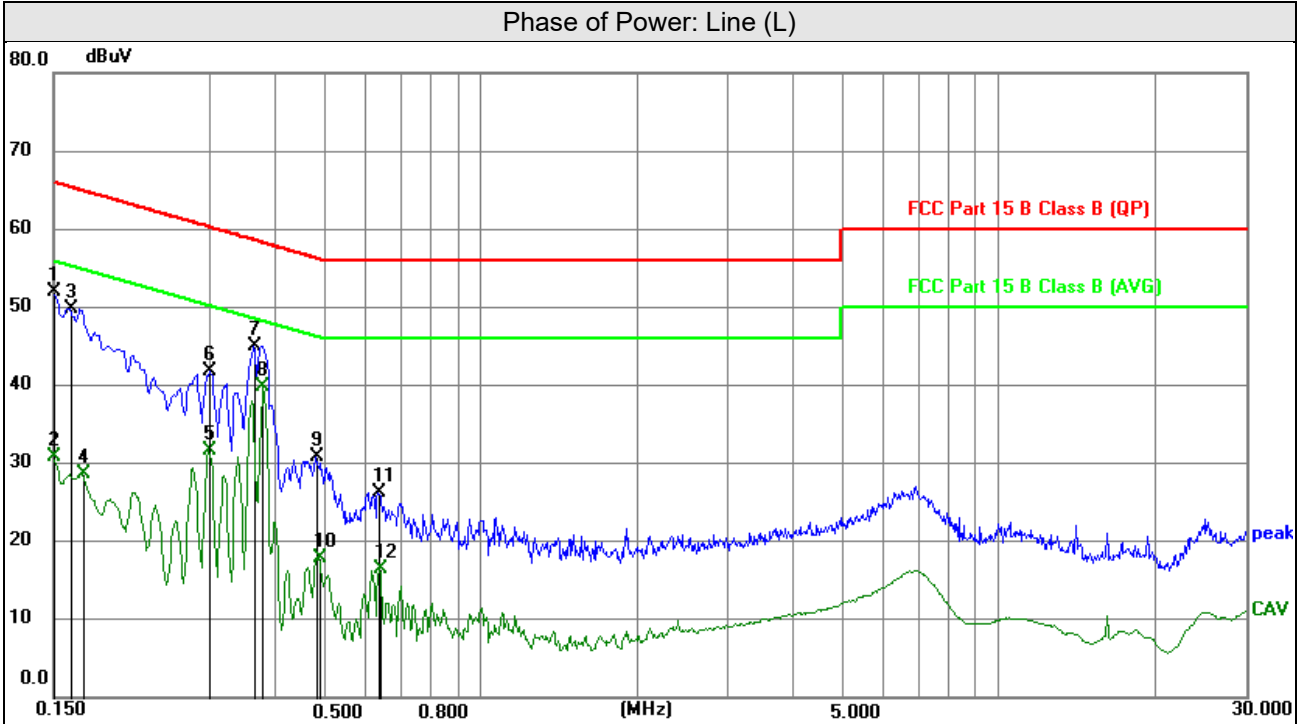


3.2.6 EUT Operating Conditions

- a. Placed the EUT on the testing table.
- b. Set the EUT under transmission condition continuously at specific channel frequency.

3.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
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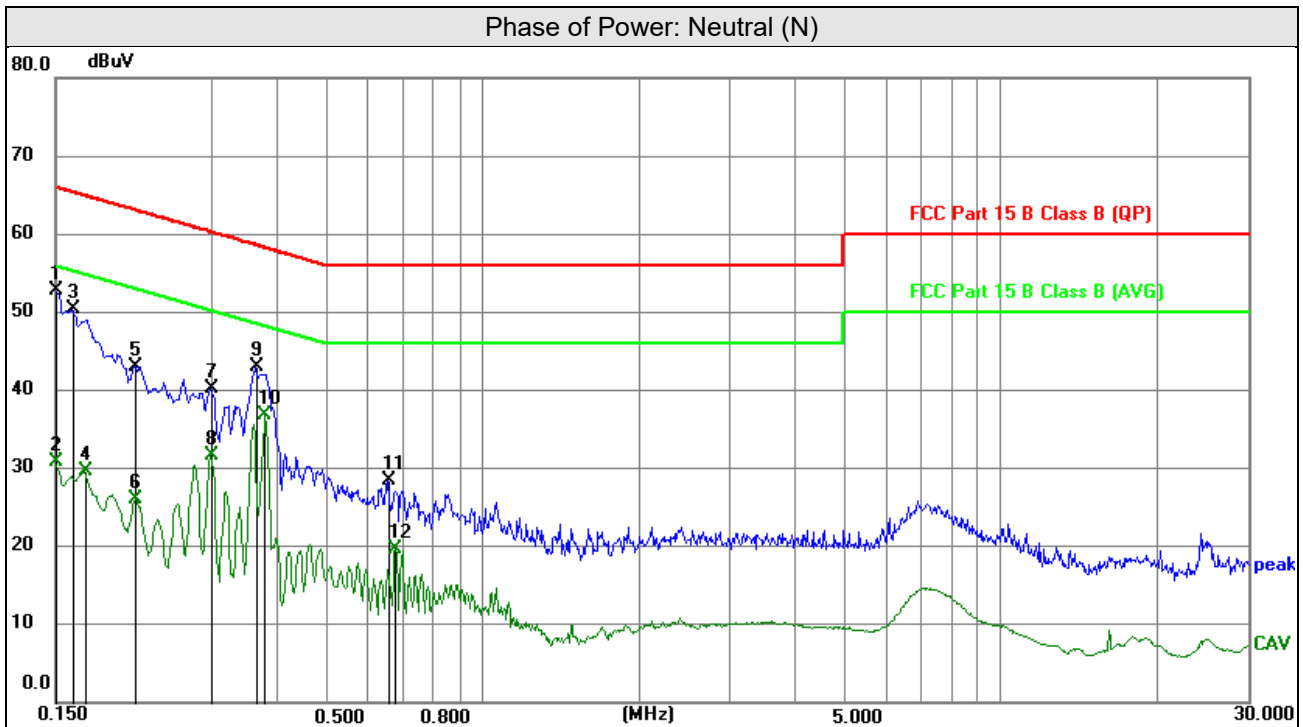


No	Frequency (MHz)	Reading (dBuV)	Correction Factor (dB)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	41.69	10.19	51.88	66.00	-14.12	peak
2	0.1500	20.63	10.19	30.82	56.00	-25.18	AVG
3	0.1613	39.59	10.17	49.76	65.40	-15.64	peak
4	0.1703	18.52	10.16	28.68	54.95	-26.27	AVG
5	0.2985	21.33	10.20	31.53	50.28	-18.75	AVG
6	0.3007	31.56	10.20	41.76	60.22	-18.46	peak
7	0.3660	34.91	10.14	45.05	58.59	-13.54	peak
8	0.3817	29.73	10.12	39.85	48.24	-8.39	AVG
9	0.4830	20.67	10.10	30.77	56.29	-25.52	peak
10	0.4875	7.85	10.10	17.95	46.21	-28.26	AVG
11	0.6360	16.17	10.10	26.27	56.00	-29.73	peak
12	0.6405	6.38	10.10	16.48	46.00	-29.52	AVG

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

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
-----------------	----------------	--	--------------------------------------



No.	Frequency (MHz)	Reading (dBuV)	Correction Factor (dB)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	42.53	10.19	52.72	66.00	-13.28	peak
2	0.1500	20.69	10.19	30.88	56.00	-25.12	AVG
3	0.1613	40.19	10.17	50.36	65.40	-15.04	peak
4	0.1703	19.40	10.16	29.56	54.95	-25.39	AVG
5	0.2130	32.87	10.15	43.02	63.09	-20.07	peak
6	0.2130	15.83	10.15	25.98	53.09	-27.11	AVG
7	0.2985	29.92	10.18	40.10	60.28	-20.18	peak
8	0.2985	21.39	10.18	31.57	50.28	-18.71	AVG
9	0.3660	32.94	10.12	43.06	58.59	-15.53	peak
10	0.3817	26.61	10.10	36.71	48.24	-11.53	AVG
11	0.6585	18.27	10.10	28.37	56.00	-27.63	peak
12	0.6809	9.53	10.10	19.63	46.00	-26.37	AVG

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.

3.3 Transmit Power Measurement

3.3.1 Limits of Transmit Power Measurement

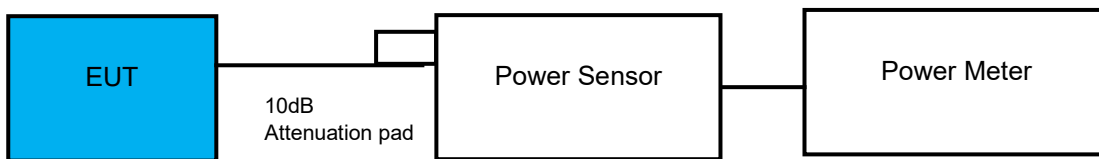
Operation Band	EUT Category		Limit
U-NII-1	-	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p \leq 125mW (21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	-	Fixed point-to-point Access Point	1 Watt (30 dBm)
	-	Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable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

* B is the 26dB emission bandwidth in MHz.

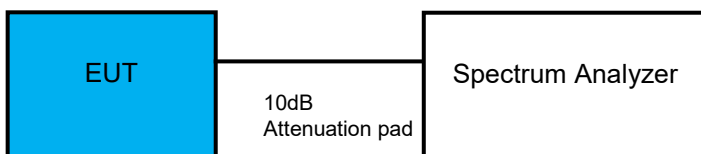
Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,
 Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
 Array Gain = 0 dB (i.e., no array gain) for channel widths $2 \leq 40$ MHz for any $\geq N_{ANT}$,
 Array Gain = $5 \log(N_{ANT}/N_{ss})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.
 For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{ss})$ dB.

3.3.2 Test Setup

For conducted power measurement setup:



For 26dB and Occupied Bandwidth measurement setup:



3.3.3 Test Instruments

Refer to section 5 to get information of above instrument.

3.3.4 Test Procedures

*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. Duty factor is not added to measured value.

*For 26dB bandwidth measurement:

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = RMS.
- 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%.

*For 6dB bandwidth measurement:

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

3.3.5 Deviation from Test Standard

No deviation.

3.3.6 EUT Operating Conditions

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

3.3.7 Test Results

Test mode	Channel Number	Freq. (MHz)	Maximum conducted power	Antenna Gain	EIRP	Power Limit	Verdict
			(dBm)	(dBi)	(dBm)	(dBm)	
11a	36	5180	10.76	2.69	13.45	24.00	Pass
	40	5200	10.85	2.69	13.54	24.00	Pass
	48	5240	11.17	2.69	13.86	24.00	Pass
	149	5745	11.23	2.91	14.14	30.00	Pass
	157	5785	11.09	2.91	14.00	30.00	Pass
	165	5825	11.27	2.91	14.18	30.00	Pass
11n HT20	36	5180	10.32	2.69	13.01	24.00	Pass
	40	5200	10.58	2.69	13.27	24.00	Pass
	48	5240	10.86	2.69	13.55	24.00	Pass
	149	5745	10.89	2.91	13.80	30.00	Pass
	157	5785	10.74	2.91	13.65	30.00	Pass
	165	5825	10.91	2.91	13.82	30.00	Pass
11n HT40	38	5190	10.10	2.69	12.79	24.00	Pass
	46	5230	10.52	2.69	13.21	24.00	Pass
	151	5755	11.10	2.91	14.01	30.00	Pass
	159	5795	10.87	2.91	13.78	30.00	Pass
11ac VHT80	42	5210	10.33	2.69	13.02	24.00	Pass
	155	5775	10.99	2.91	13.90	30.00	Pass

Test mode	Channel Number	Freq. (MHz)	26dBc bandwidth (MHz)	11 dBm +10LogB* (dBm)	Occupied Bandwidth (MHz)
11a	36	5180	21.000	-	17.269
	40	5200	20.920	-	17.298
	48	5240	20.840	-	17.129
	149	5745	20.920	-	17.169
	157	5785	21.080	-	17.190
	165	5825	20.880	-	17.160
11n HT20	36	5180	20.920	-	18.160
	40	5200	21.040	-	18.246
	48	5240	21.480	-	18.198
	149	5745	21.080	-	18.176
	157	5785	21.000	-	18.132
	165	5825	21.040	-	18.164
11n HT40	38	5190	48.320	-	36.414
	46	5230	39.440	-	36.317
	151	5755	39.360	-	36.336
	159	5795	39.200	-	36.309
11ac VHT80	42	5210	81.120	-	75.517
	155	5775	80.960	-	75.328

26dBc bandwidth



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26dBc bandwidth



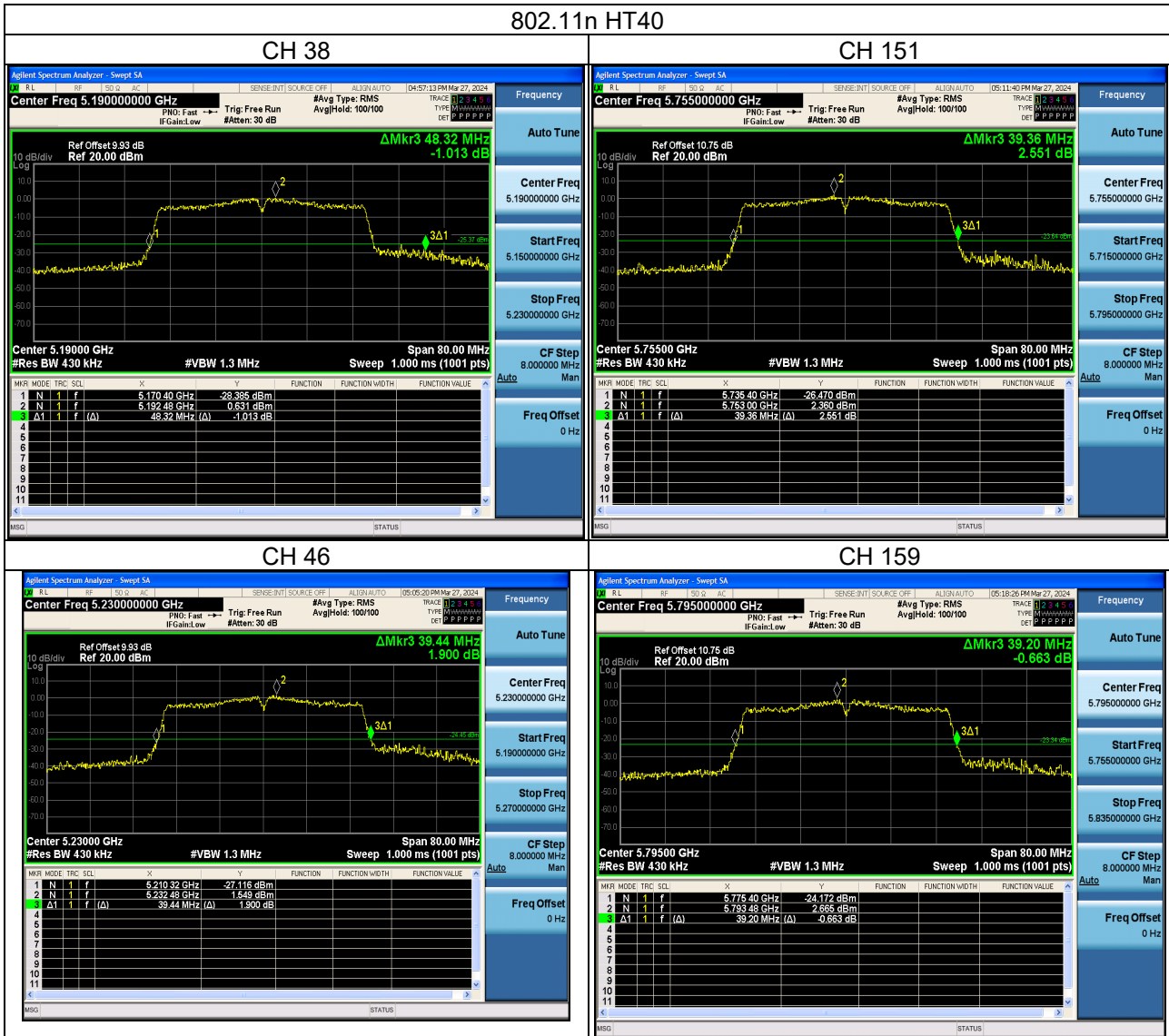
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26dBc bandwidth

802.11n HT40



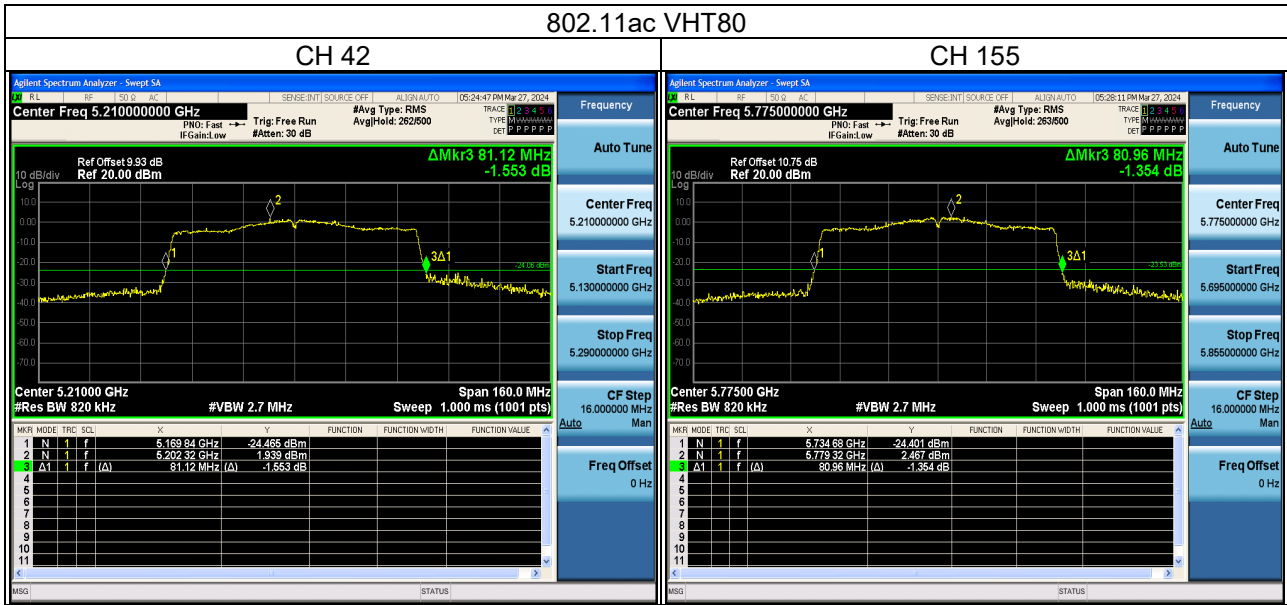
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Test Report No.: 23122202-01-RF-US-04

26dBc bandwidth
802.11ac VHT80

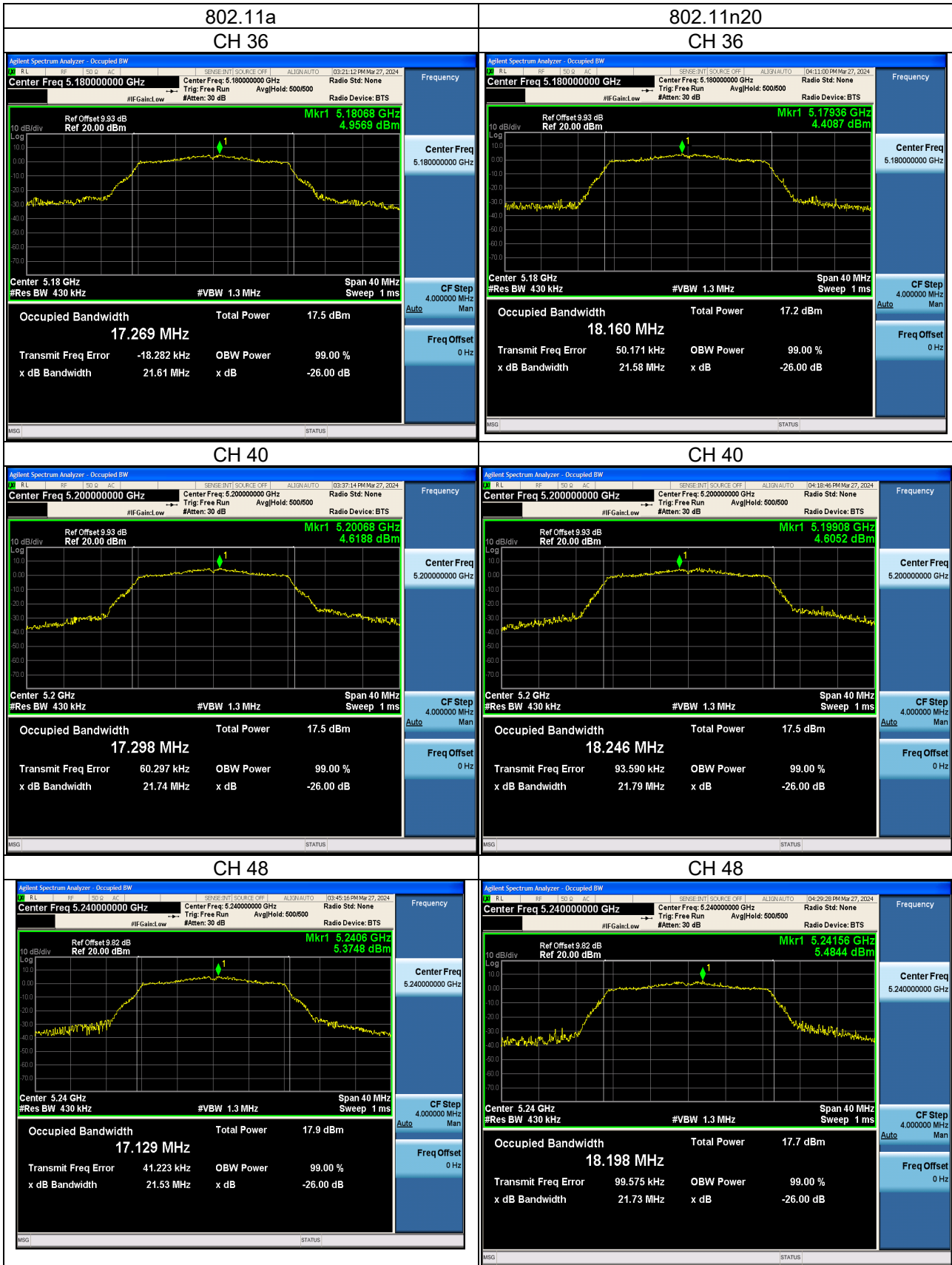


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Occupied bandwidth

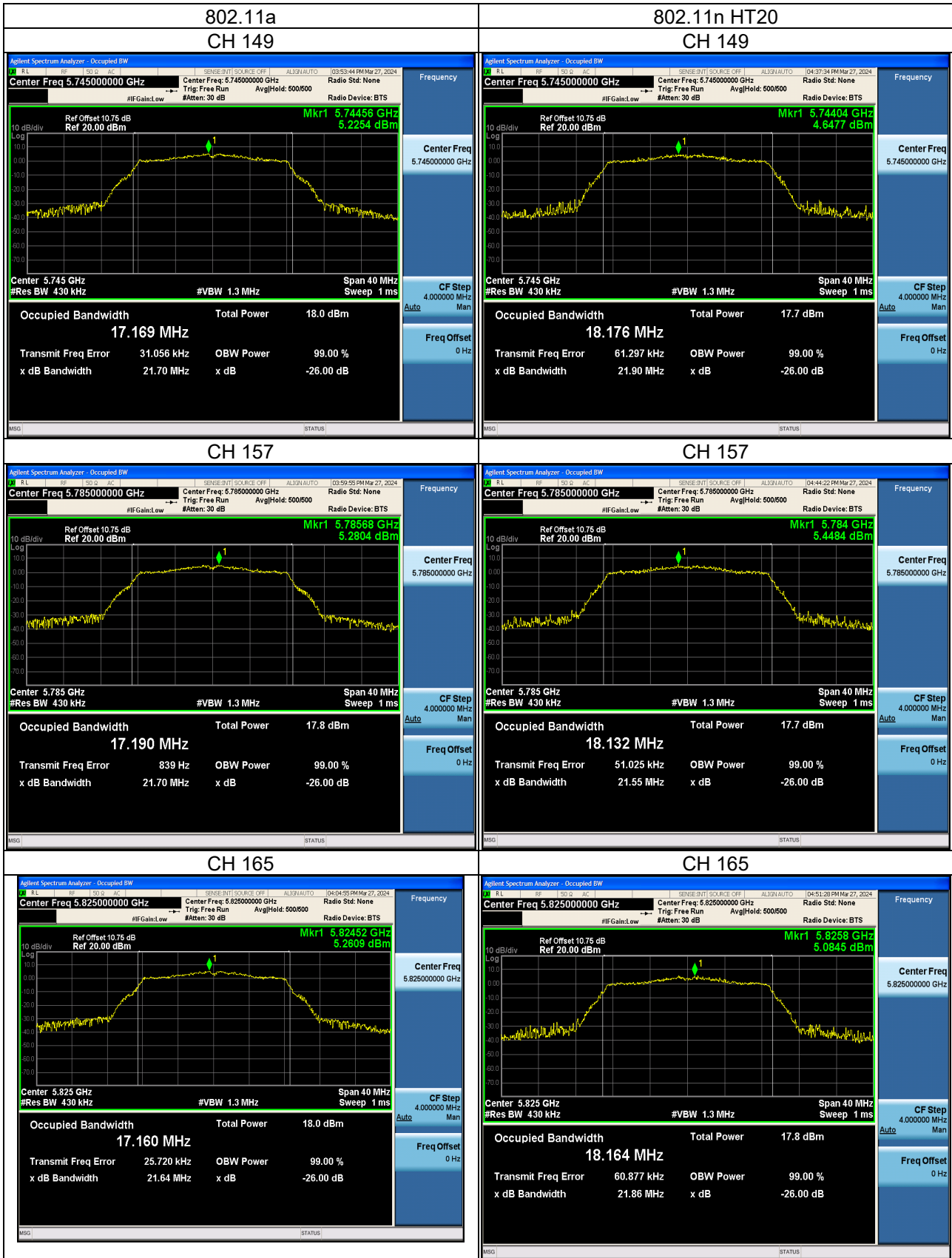


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Occupied bandwidth



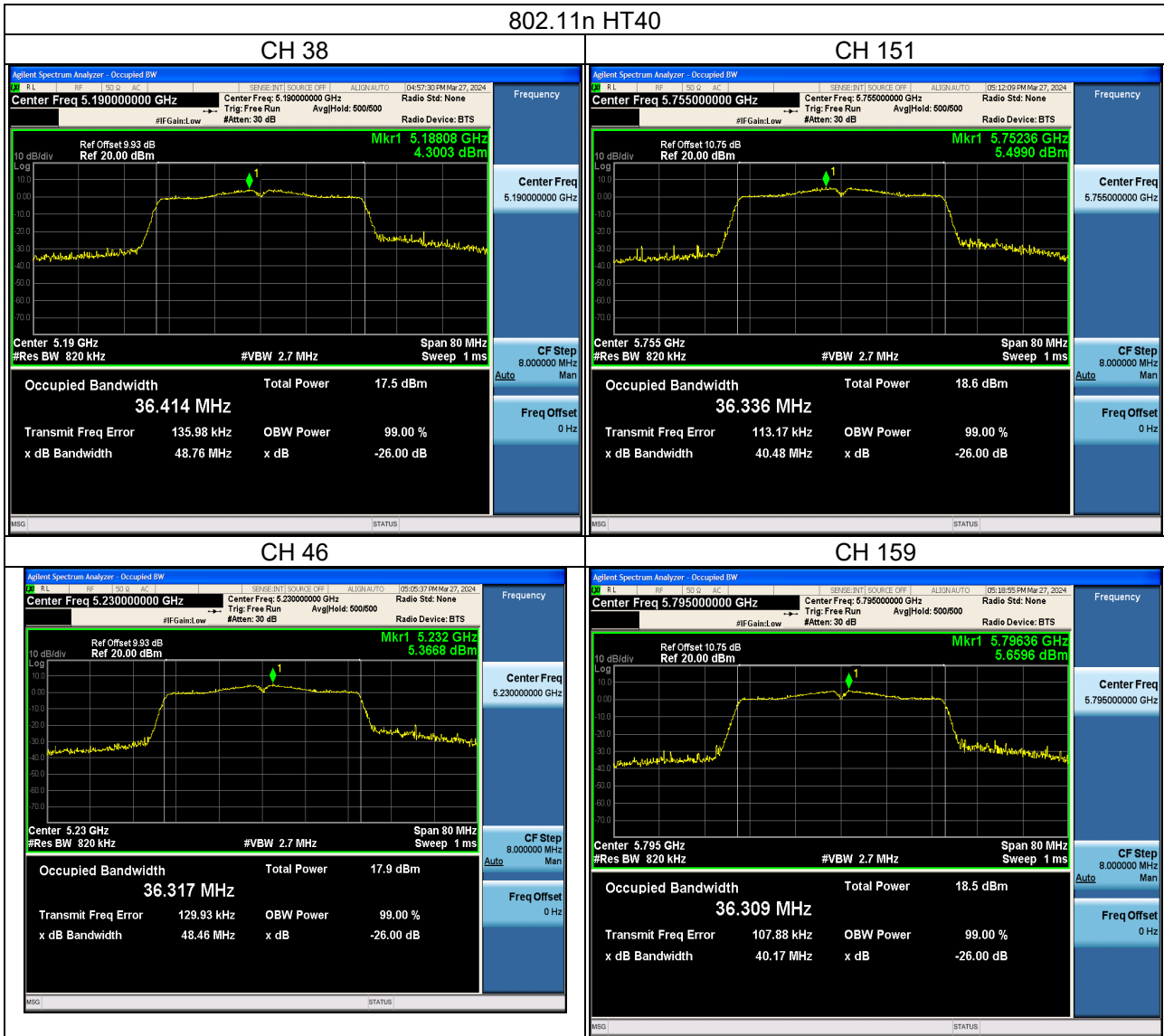
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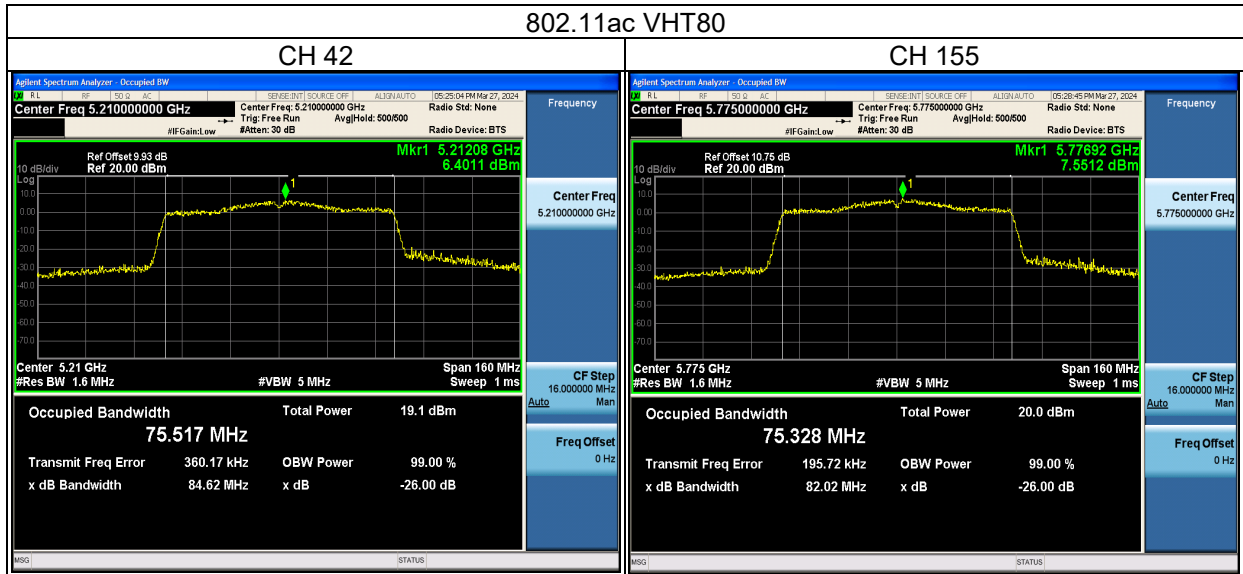
Occupied bandwidth

802.11n HT40



Occupied bandwidth

802.11ac VHT80



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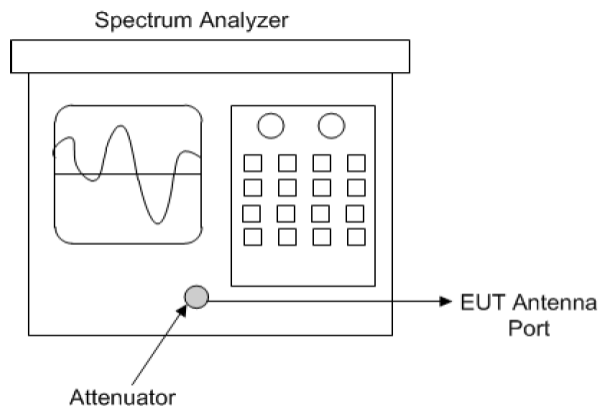
3.4 Peak Power Spectral Density Measurement

3.4.1 Limits of Peak Power Spectral Density Measurement

The Maximum of Power Spectral Density Measurement is 8dBm/3kHz.

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

3.4.2 Test Setup



Spectrum analyzer test configuration

3.4.3 Test Instruments

Refer to section 5 to get information of above instrument.

3.4.4 Test Procedure

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

Using method SA-2

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

For U-NII-3 band:

Using method SA-2

- 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) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value and add 10 log (1/duty cycle)

3.4.5 Deviation from Test Standard

No deviation.

3.4.6 EUT Operating Condition

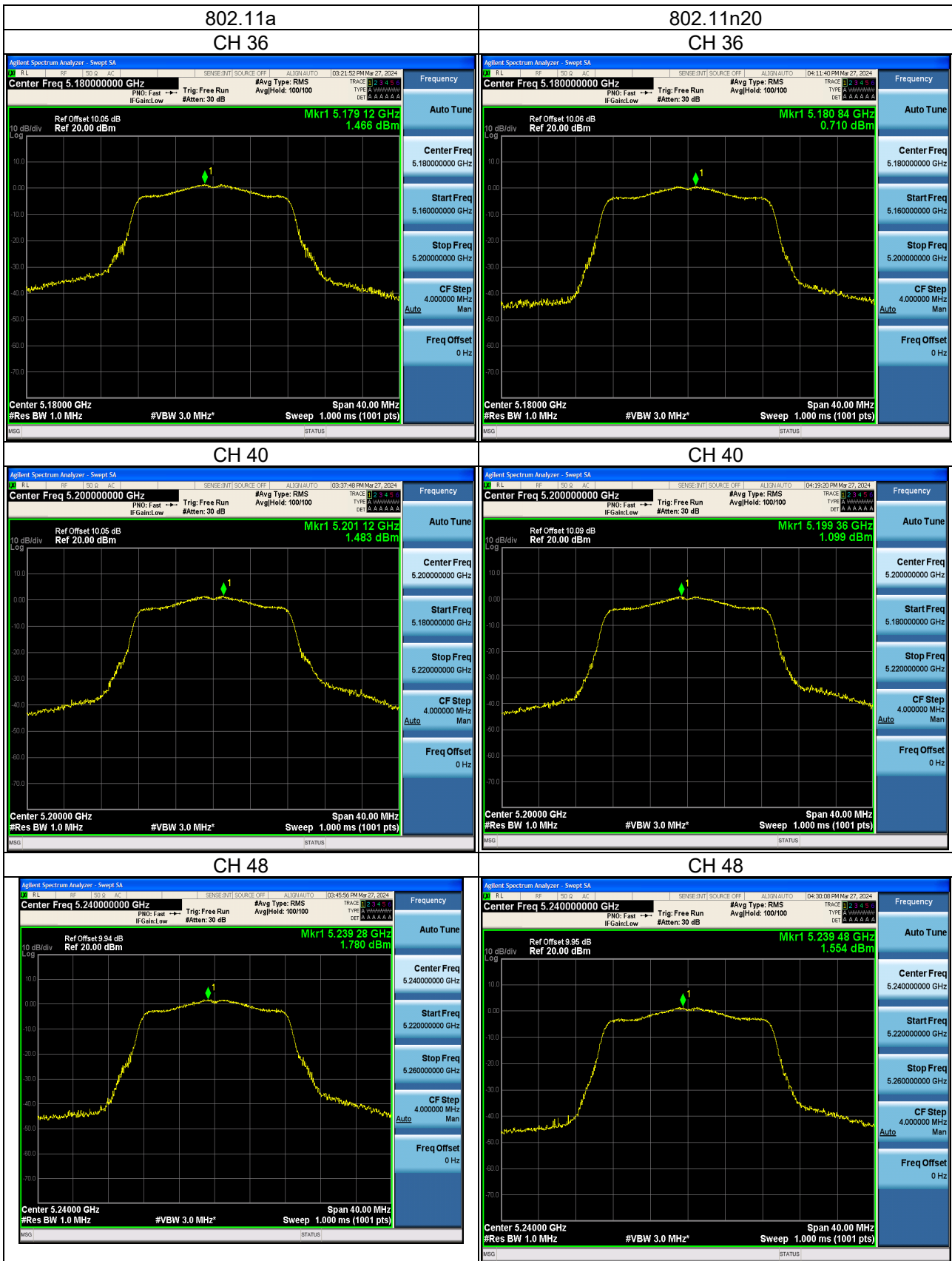
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

3.4.7 Test Results

Test mode	Channel Number	Freq. (MHz)	Maximum conducted PSD	RBW factor	Total PSD	Limit	Verdict
			(dBm/ MHz)	(dB)	(dBm)	(dBm)	
11a	36	5180	1.47	-	1.470	11	Pass
	40	5200	1.48	-	1.480	11	Pass
	48	5240	1.78	-	1.780	11	Pass
	149	5745	-0.52	2.218	1.698	30	Pass
	157	5785	-0.75	2.218	1.468	30	Pass
	165	5825	-0.16	2.218	2.058	30	Pass
11n HT20	36	5180	0.71	-	0.710	11	Pass
	40	5200	1.10	-	1.100	11	Pass
	48	5240	1.55	-	1.550	11	Pass
	149	5745	-1.14	2.218	1.078	30	Pass
	157	5785	-1.31	2.218	0.908	30	Pass
	165	5825	-1.07	2.218	1.148	30	Pass
11n HT40	38	5190	-2.32	-	-2.320	11	Pass
	46	5230	-2.08	-	-2.080	11	Pass
	151	5755	-4.20	2.218	-1.982	30	Pass
	159	5795	-4.52	2.218	-2.302	30	Pass
11ac VHT80	42	5210	0.39	-	0.390	11	Pass
	155	5775	-0.86	2.218	1.358	30	Pass

Note: For devices operating in the bands 5.15–5.25 GHz, 5.25–5.35 GHz, and 5.47–5.725 GHz, the preceding procedures make use of 1 MHz RBW.

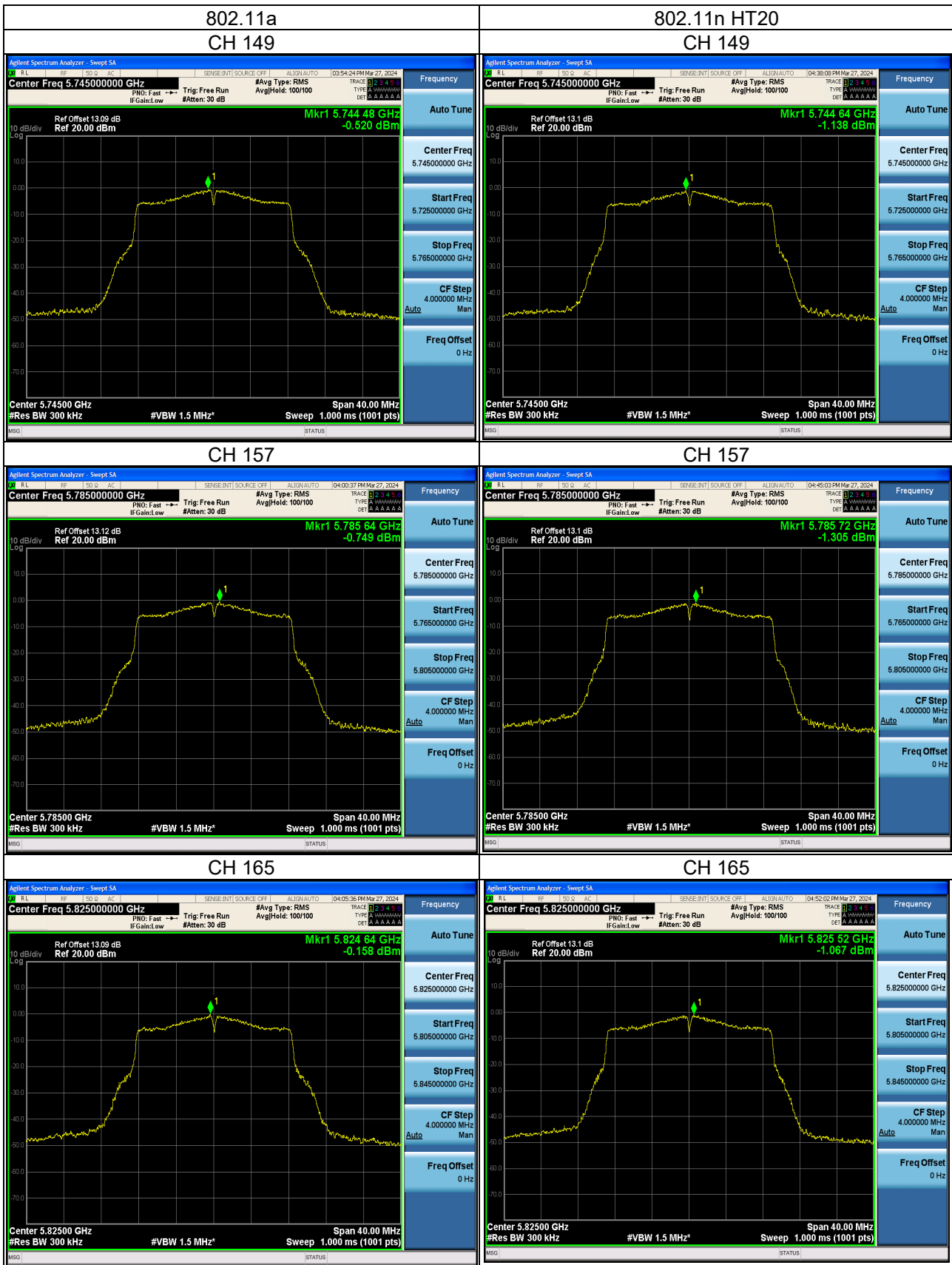
For devices operating in the band 5.725–5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Cause the spectrum analyzers do not have 500 kHz RBW, The use of RBW is 300 kHz, it will be add the factor: $10 \cdot \log(500\text{kHz}/300\text{kHz})$.



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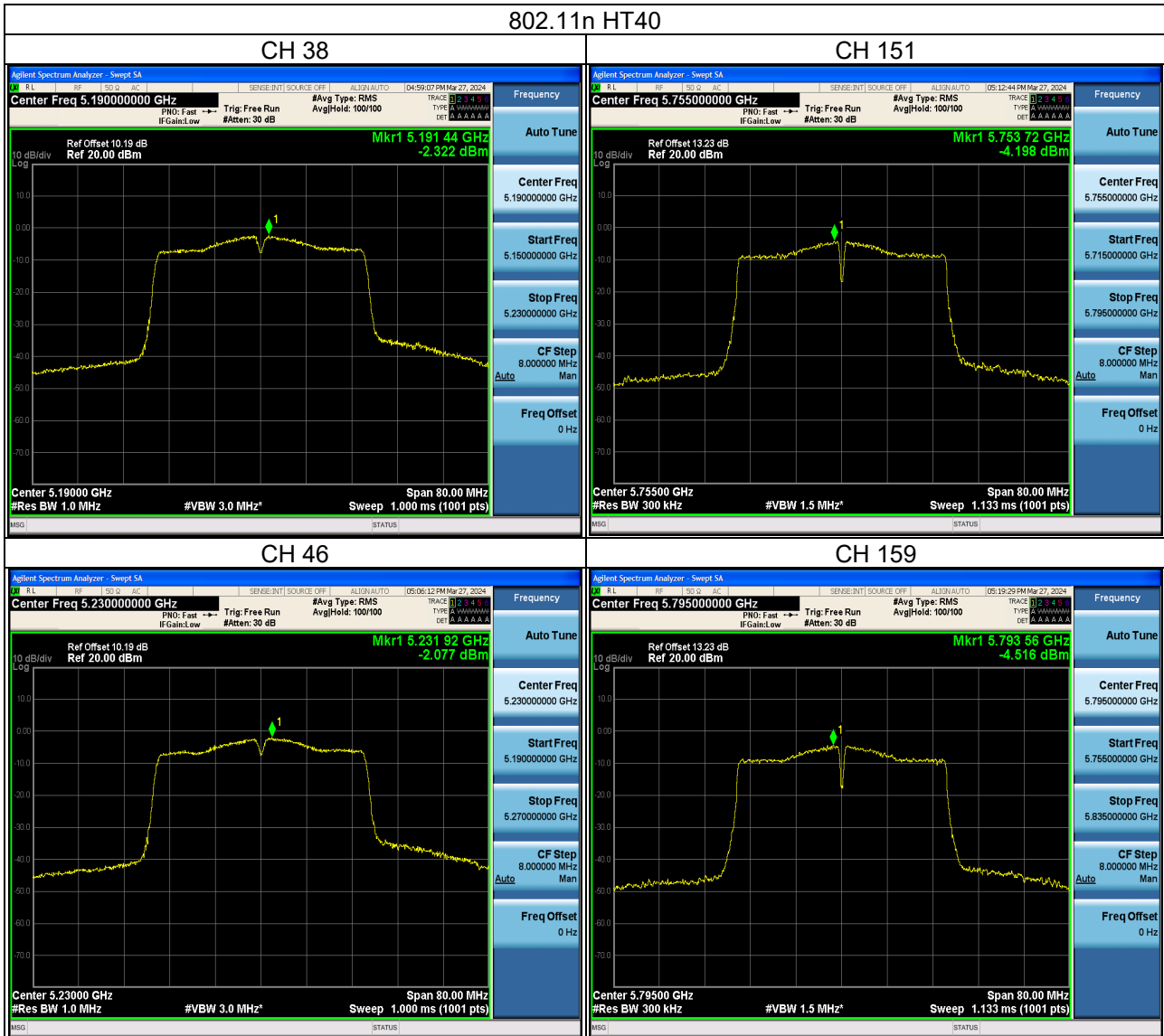


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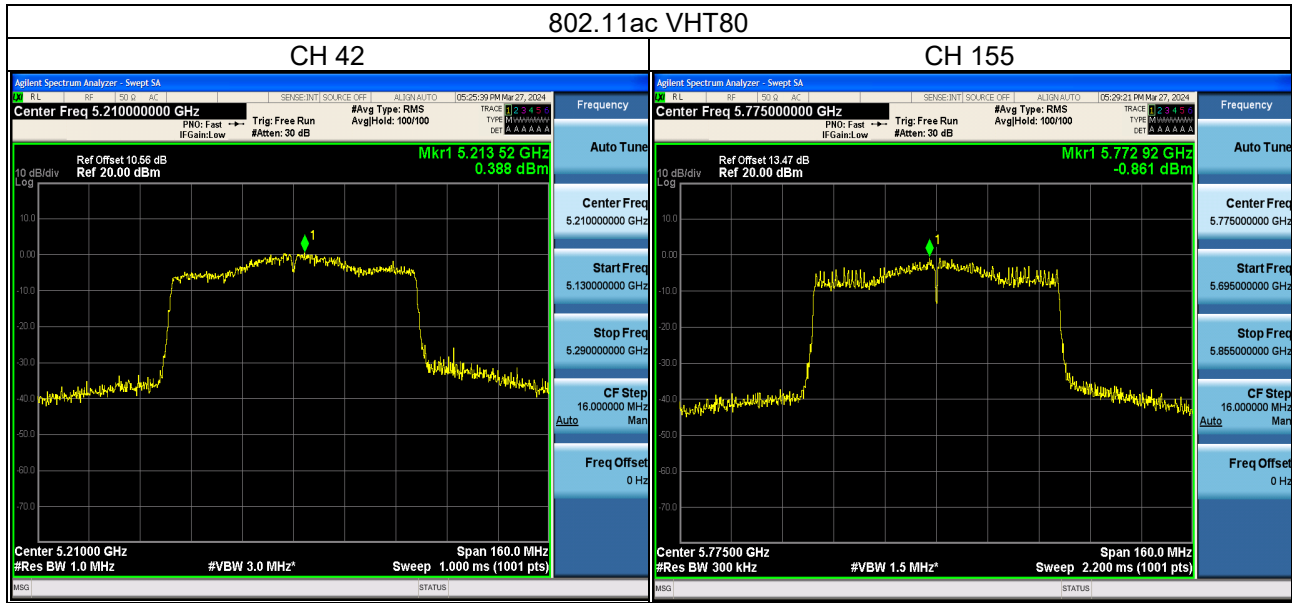
802.11n HT40



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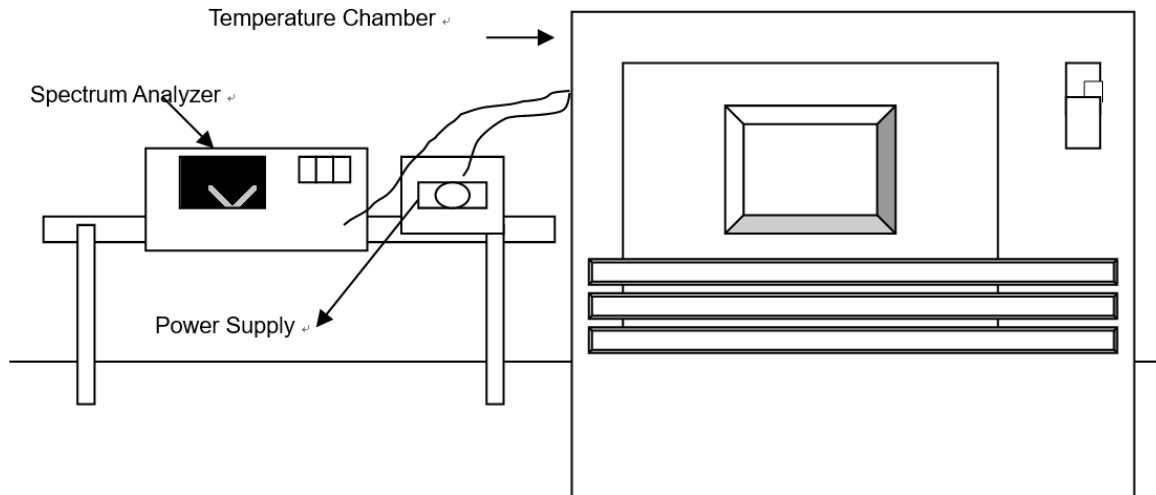
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3.5 Frequency Stability

3.5.1 Limits of Frequency Stability Measurement

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

3.5.2 Test Setup



3.5.3 Test Instruments

Refer to section 5 to get information of above instrument.

3.5.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- The test chamber was allowed to stabilize at +20degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

3.5.5 Deviation from Test Standard

No deviation.

3.5.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at the channel frequencies individually.

3.5.7 Test Result

Frequency stability versus temp.									
Operating frequency: 5180MHz									
Temp. (°C)	Power supply (V)	0 minute		2 minute		5 minute		10 minute	
		Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift
50	NV	5180.0114	0.00022	5179.9818	-0.00035	5179.9786	-0.00041	5179.9873	-0.00025
40	NV	5179.9856	-0.00028	5179.9886	-0.00022	5179.9873	-0.00025	5179.9901	-0.00019
30	NV	5180.0048	0.00009	5180.0028	0.00005	5180.0044	0.00008	5180.0047	0.00009
20	NV	5179.9898	-0.00020	5179.9947	-0.00010	5179.9925	-0.00014	5179.9915	-0.00016
10	NV	5179.9898	-0.00020	5179.9899	-0.00019	5179.9873	-0.00025	5179.9916	-0.00016
0	NV	5180.0095	0.00018	5180.0129	0.00025	5180.0114	0.00022	5180.0111	0.00021
-10	NV	5179.9775	-0.00043	5179.9766	-0.00045	5179.9762	-0.00046	5179.9791	-0.00040
-20	NV	5180.0206	0.00040	5180.0216	0.00042	5180.0221	0.00043	5180.0189	0.00036
-30	NV	5180.0186	0.00036	5180.0207	0.00040	5180.0222	0.00043	5180.0202	0.00039

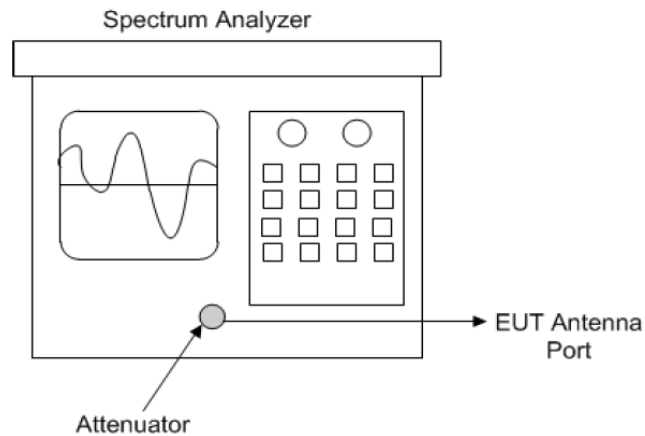
Frequency stability versus temp.									
Operating frequency: 5180MHz									
Temp. (°C)	Power supply (Vdc)	0 minute		2 minute		5 minute		10 minute	
		Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift	Measured Frequency (MHz)	Frequency Drift
20	LV	5179.9925	-0.00014	5179.9941	-0.00011	5179.9923	-0.00015	5179.9909	-0.00018
	NV	5179.9898	-0.00020	5179.9947	-0.00010	5179.9925	-0.00014	5179.9915	-0.00016
	HV	5179.9905	-0.00018	5179.9944	-0.00011	5179.9921	-0.00015	5179.9915	-0.00016

3.6 6dB Bandwidth Measurement

3.6.1 Limits of Conducted Out of Band Emission Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

3.6.2 Test Setup



3.6.3 Test Instruments

Refer to section 5 to get information of above instrument.

3.6.4 Test Procedure

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW) $2.3 \times$ RBW, Detector = Peak.
- Trace mode = maxhold.
- 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

3.6.5 Deviation from Test Standard

No deviation.

3.6.6 EUT Operating Condition

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

3.6.7 Test results

Test mode	Channel Number	Freq. (MHz)	6dBc bandwidth (MHz)	Limit (MHz)	Verdict
11a	149	5745	15.880	≥0.5	Pass
	157	5785	15.800	≥0.5	Pass
	165	5825	15.680	≥0.5	Pass
11n HT20	149	5745	15.680	≥0.5	Pass
	157	5785	15.080	≥0.5	Pass
	165	5825	15.480	≥0.5	Pass
11n HT40	151	5755	35.200	≥0.5	Pass
	159	5795	35.200	≥0.5	Pass
11ac VHT80	155	5775	75.040	≥0.5	Pass



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4. Pictures of Test Arrangements

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

5. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.Date
Spectrum	Keysight	N9020A	MY51240612	2024-08-06
Power Meter 10Hz~18GHz	Tonscend	JS0806-2	188060126	2024-08-06
Spectrum Analyzer	Rohde&Schwarz	FSV-40N	101783	2024-12-17
Signal generator	Keysight	E4421	GB40051020	2025-03-14
Universal Switch Control Unit	Rohde&Schwarz	CMW500	12010002k50	2024-12-17
Humidity tester	Jingchuang	GSP-8A	CMA22B000592	2024-12-24
Test Software	Tonscend	JS0806-2	NA	NA

- Note: 1. The calibration interval of the above test instruments is 12 months.
2. The test was performed in RF Chamber.

Appendix – Information on The Testing Laboratories

We, [Hwa-Hsing \(Dongguan\) Testing Co., Ltd.](#), A global provider of TESTING and CERTIFICATION services for consumer products, electronic products and wireless information technology products. Adhering to the core values “HONEST and TRUSTWORTHY, OBJECTIVE and IMPARTIALITY, RIGOROUS and AFFICIENT”, commitment to provide professional, perfect and efficient comprehensive ONE-STOP solution of TESTING and CERTIFICATION services for Manufacturers, Buyers, Traders, Brands, Retailers. Assist client to better manage risk, protect their brands, reduce costs and cut time to over 150 markets in global. 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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