

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)

Report No.: RFBHOU-WTW-P23040022-1

FCC ID: 2AAFM-20LAG9901

Product: Light Strip Pro

Brand: elgato

Model No.: 20LAG9901

Received Date: 2023/4/6

Test Date: 2023/5/6 ~ 2023/5/9

Issued Date: 2023/6/13

Applicant: Corsair Memory, Inc.

Address: 115 North McCarthy Blvd, Milpitas, CA 95035, USA

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

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

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

FCC Registration / 198487 / TW2021

Designation Number:

Approved by: Jeremy Lin, **Date:** 2023/6/13
Jeremy Lin / Project Engineer

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Prepared by : Jessica Cheng / Senior Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBHOU-WTW-P23040022-1	Original release.	2023/6/13

1 Certificate

Product: Light Strip Pro

Brand: elgato

Test Model: 20LAG9901

Sample Status: Engineering sample

Applicant: Corsair Memory, Inc.

Test Date: 2023/5/6 ~ 2023/5/9

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)

Measurement ANSI C63.10-2013

procedure: KDB 789033 D02 General UNII Test Procedure New Rules v02r01

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

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
Clause	Test Item	Result	Remark
15.407(a)(1) 15.407(a)(3)	RF Output Power	Pass	Meet the requirement of limit.
15.407(a)(1) 15.407(a)(3)	Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
---	Occupied Bandwidth	-	Reference only.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.407(b)(9)	AC Power Conducted Emissions	Pass	Minimum passing margin is -12.83 dB at 0.37000 MHz
15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Minimum passing margin is -10.9 dB at 58.86 MHz
15.407(b) (1/10) 15.407(b) (4(i)/10)	Unwanted Emissions above 1 GHz	Pass	Minimum passing margin is -1.0 dB at 5150.00 MHz
15.203	Antenna Requirement	Pass	No antenna connector is used.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Specification	Expanded Uncertainty (k=2) (±)
AC Power Conducted Emissions	150 kHz ~ 30 MHz	3.00 dB
Unwanted Emissions below 1 GHz	9 kHz ~ 30 MHz	2.38 dB
	30 MHz ~ 1 GHz	5.7 dB
Unwanted Emissions above 1 GHz	1 GHz ~ 6 GHz	4.83 dB
	6 GHz ~ 18 GHz	5.37 dB
	18 GHz ~ 40 GHz	5.24 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Light Strip Pro
Brand	elgato
Test Model	20LAG9901
Status of EUT	Engineering sample
Power Supply Rating	24Vdc/ 1.25A
Modulation Type	64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM, OFDMA
Transfer Rate	Up to 150 Mbps
Operating Frequency	5.18 GHz ~ 5.24 GHz 5.745 GHz ~ 5.825 GHz
Number of Channel	802.11a, 802.11n (HT20): 9 802.11n (HT40): 4
Output Power	5.18 GHz ~ 5.24 GHz : 66.834 mW (18.25 dBm) 5.745 GHz ~ 5.825 GHz : 67.764 mW (18.31 dBm)
EUT Category	Client device

Note:

- The EUT uses following accessories.

AC Adapter		
Brand	Model	Specification
ULLPOWER	ICP30A-240-1250	AC Input : 100-240V ~ 50/60Hz 0.8A DC Output : 24.0VDC 1.25A 30.0W DC Output Cable : Nonshielded without cord, 1.5m Plug : AC 2 Pin
Light Strip		
Specification		
Signal Line : 2m		

- 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.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Gain (dBi)	Antenna Type	Connector Type
1.85	Chip	None

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2. The EUT incorporates a SISO function:

5 GHz Band		
Modulation Mode	TX & RX Configuration	
802.11a	1TX	1RX
802.11n (HT20)	1TX	1RX
802.11n (HT40)	1TX	1RX

3.3 Channel List

FOR 5180 ~ 5240 MHz

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

FOR 5745 ~ 5825 MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

3.4 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. EUT can be used in the following ways: XYZ 3-axis. Pre-scan in these ways and find the worst case as a representative test condition.
Worst Case:	1. X/ Y/ Z Worst Condition: X Axis for Unwanted Emission above 1GHz and Unwanted Emission below 1GHz.

Following channel(s) was (were) selected for the final test as listed below:

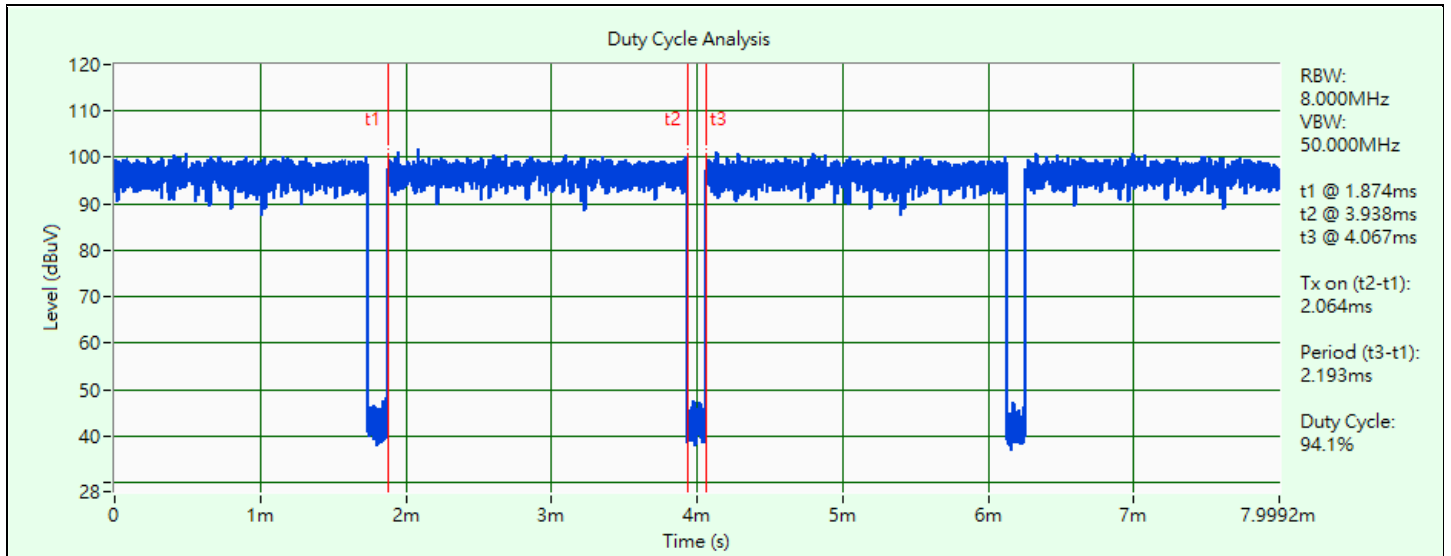
Test Item	Mode	Signal Mode	Tested Channel	Modulation	Data Rate Parameter
RF Output Power / Power Spectral Density	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11n (HT20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11n (HT40)	CDD	38, 46, 151, 159	BPSK	MCS0
6 dB Bandwidth	802.11a	CDD	149, 157, 165	BPSK	6Mb/s
	802.11n (HT20)	CDD	149, 157, 165	BPSK	MCS0
	802.11n (HT40)	CDD	151, 159	BPSK	MCS0
Occupied Bandwidth	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11n (HT20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11n (HT40)	CDD	38, 46, 151, 159	BPSK	MCS0
Frequency Stability	802.11a	-	36	unmodulated	-
AC Power Conducted Emissions	802.11a	CDD	149	BPSK	6Mb/s
Unwanted Emissions below 1 GHz	802.11a	CDD	149	BPSK	6Mb/s
Unwanted Emissions above 1 GHz	802.11a	CDD	36, 40, 48, 149, 157, 165	BPSK	6Mb/s
	802.11n (HT20)	CDD	36, 40, 48, 149, 157, 165	BPSK	MCS0
	802.11n (HT40)	CDD	38, 46, 151, 159	BPSK	MCS0

3.5 Duty Cycle of Test Signal

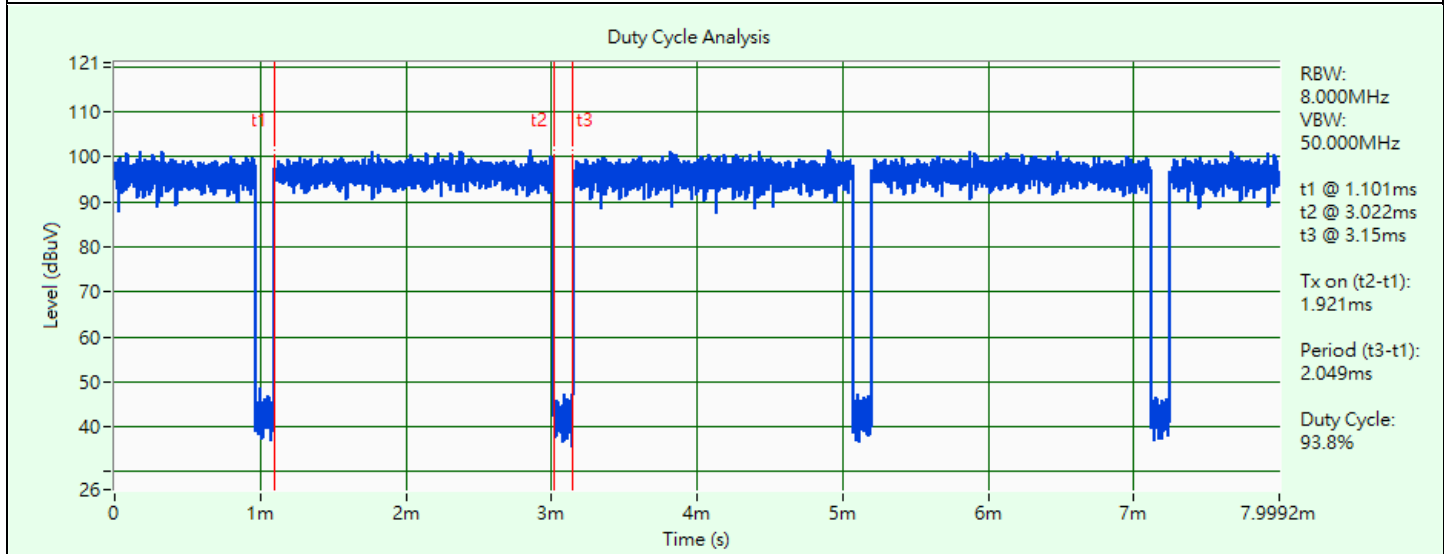
802.11a: Duty cycle = 2.064 ms / 2.193 ms x 100% = 94.1%, duty factor = 10 * log (1/Duty cycle) = 0.26 dB

802.11n (HT20): Duty cycle = 1.921 ms / 2.049 ms x 100% = 93.8%, duty factor = 10 * log (1/Duty cycle) = 0.28 dB

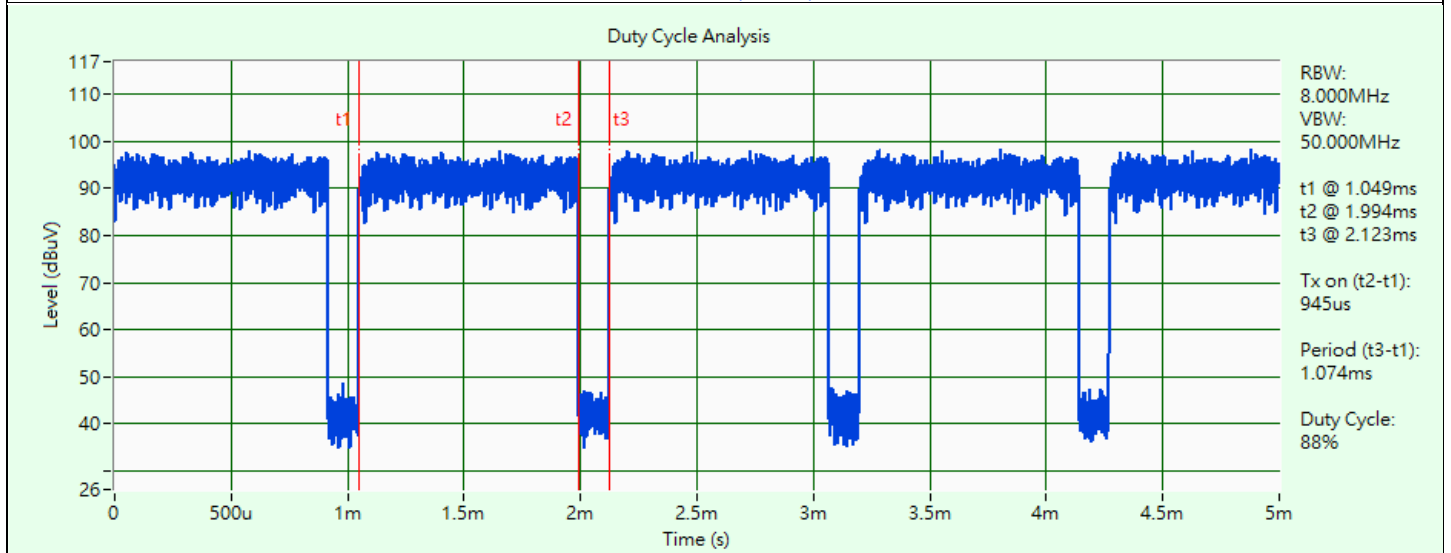
802.11n (HT40): Duty cycle = 0.945 ms / 1.074 ms x 100% = 88.0%, duty factor = 10 * log (1/Duty cycle) = 0.56 dB



802.11a



802.11n (HT20)

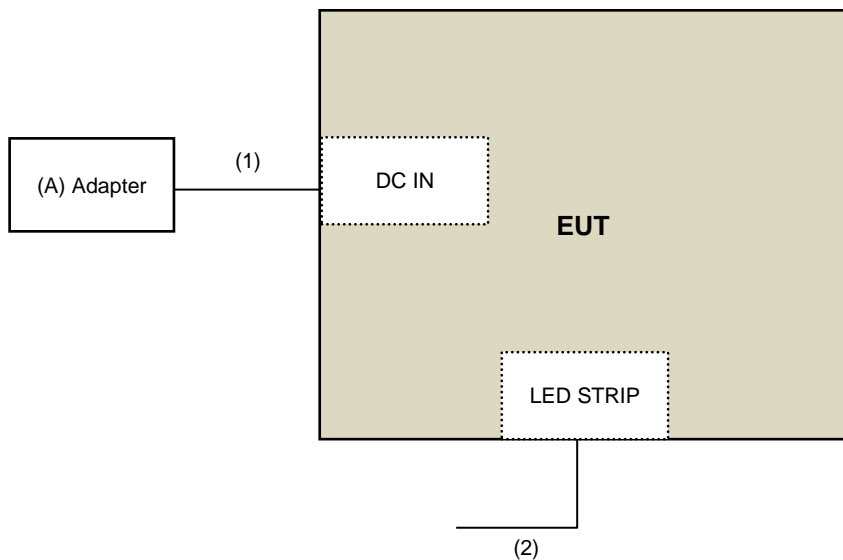


802.11n (HT40)

3.6 Test Program Used and Operation Descriptions

Controlling software (AmebaD_mptool V2.0) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.7 Connection Diagram of EUT and Peripheral Devices



Under Table

3.8 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Adapter	ULLPOWER	ICP30A-240-1250	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	Adapter DC cable	1	1.5	N	0	Supplied by applicant
2	LED STRIP	1	2	N	0	Supplied by applicant

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 RF Output Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
MIMO Powermeasurement Test set (4X4) KEYSIGHT	U2021XA	U2021XA_001	2022/6/13	2023/6/12
Peak Power meter Anritsu	ML2495A	0842014	2023/5/5	2024/5/4
Pulse Power Sensor Anritsu	MA2411B	0738404	2023/5/5	2024/5/4
Spectrum Analyzer KEYSIGHT	N9030A	MY54490260	2022/7/14	2023/7/13
Spectrum Analyzer R&S	FSV40	101042	2022/9/5	2023/9/4
		101544	2023/5/9	2024/5/8
Temperature & Humidity Chamber TERCHY	MHU-225AU	920409	2022/6/27	2023/6/26
Voltage Meter FLUKE	179	89610322	2022/10/3	2023/10/2

Notes:

1. The test was performed in LK - Oven
2. Tested Date: 2023/5/9

4.2 Power Spectral Density

Refer to section 4.1 to get information of the instruments.

4.3 6 dB Bandwidth

Refer to section 4.1 to get information of the instruments.

4.4 Occupied Bandwidth

Refer to section 4.1 to get information of the instruments.

4.5 Frequency Stability

Refer to section 4.1 to get information of the instruments.

4.6 AC Power Conducted Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
50 ohm terminal LYNICS	0900510	E1-011285	2022/9/19	2023/9/18
		E1-011286	2022/9/19	2023/9/18
50 Ohms Terminator LYNICS	0900510	E1-01-305	2023/2/13	2024/2/12
Attenuator STI	STI02-2200-10	NO.4	2022/9/2	2023/9/1
DC LISN R&S	ESH3-Z6	100219	2022/8/2	2023/8/1
		844950/018	2022/8/2	2023/8/1
DC LISN Schwarzbeck	NNLK 8121	8121-808	2023/5/2	2024/5/1
High Voltage Probe Schwarzbeck	TK9420	00982	2022/12/14	2023/12/13
Isolation Transformer Erika Fiedler	D-65396	017	2022/9/8	2023/9/7
LISN R&S	ENV216	101196	2022/5/24	2023/5/23
LISN Schwarzbeck	NNLK 8121	8121-00759	2022/8/18	2023/8/17
		8121-731	2022/5/26	2023/5/25
	NNLK8129	8129229	2022/6/8	2023/6/7
	NSLK 8128	8128-244	2022/11/8	2023/11/7
RF Coaxial Cable Commate	5D-FB	Cable-CO5-01	2023/1/19	2024/1/18
Software BVADT	Cond_V7.3.7.4	N/A	N/A	N/A
Test Receiver R&S	ESR3	102412	2022/12/21	2023/12/20

Notes:

1. The test was performed in Linkou Conduction 5.
2. Tested Date: 2023/5/6

4.7 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
* LOOP ANTENNA EMCI	LPA600	270	2021/9/2	2023/9/1
Bi_Log Antenna Schwarzbeck	VULB 9168	137	2022/10/21	2023/10/20
Coupling/Dcoupling Network Schwarzbeck	CDNE-M2	00097	2022/6/1	2023/5/31
	CDNE-M3	00091	2022/6/1	2023/5/31
Pre_Amplifier EMCI	EMC001340	980269	2022/6/28	2023/6/27
Pre_Amplifier HP	8447D	2432A03504	2023/2/16	2024/2/15
RF Coaxial Cable Pacific	8D-FB	Cable-CH6-02	2022/6/30	2023/6/29
Software BVADT	Radiated_V7.7.1.1.1	N/A	N/A	N/A
	Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	101544	2022/5/9	2023/5/8
Test Receiver Agilent	N9038A	MY51210129	2023/3/24	2024/3/23
		MY51210137	2022/6/9	2023/6/8
Tower ADT	AT100	0306	N/A	N/A
Turn Table ADT	TT100	0306	N/A	N/A

Notes:

- * The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA
- The test was performed in Linkou 966 Chamber 6 (CH 6).
- Tested Date: 2023/5/6

4.8 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Band Pass Filter MICRO-TRONICS	BRM17690	005	2022/5/26	2023/5/25
Boresight antenna tower fixture BV	BAF-02	6	N/A	N/A
High Pass Filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	2022/5/26	2023/5/25
Horn Antenna EMCO	3115	00028257	2022/11/13	2023/11/12
Horn Antenna ETS-Lindgren	3117-PA	00215857	2023/2/3	2024/2/2
Horn Antenna Schwarzbeck	BBHA 9170	212	2022/10/20	2023/10/19
Notch Filter MICRO-TRONICS	BRC50703-01	010	2022/5/26	2023/5/25
Pre-amplifier HP	8449B	3008A01201	2023/2/16	2024/2/15
Pre-amplifier (18GHz-40GHz) EMCI	EMC184045B	980175	2022/9/3	2023/9/2
Pre_Amplifier EMCI	EMC0126545	980076	2023/2/16	2024/2/15
	EMC184045B	980235	2023/2/16	2024/2/15
RF Coaxial Cable EM	EM102-KMKM-3.5+1M	EM102-KMKM-3.5+1M-01	2022/7/7	2023/7/6
RF Coaxial Cable EMCI	EMC104	190801	2022/9/20	2023/9/19
		190804	2022/9/20	2023/9/19
RF Coaxial Cable HUBER SUHNER	SF-104	Cable-CH6-01	2022/9/20	2023/9/19
Software BVADT	Radiated_V7.7.1.1.1	N/A	N/A	N/A
	Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer R&S	FSV40	101042	2022/9/5	2023/9/4
Test Receiver Agilent	N9038A	MY51210129	2023/3/24	2024/3/23
		MY51210137	2022/6/9	2023/6/8
Tower ADT	AT100	0306	N/A	N/A
Turn Table ADT	TT100	0306	N/A	N/A

Notes:

1. The test was performed in Linkou 966 Chamber 6 (CH 6).
2. Tested Date: 2023/5/8 ~ 2023/5/9

5 Limits of Test Items

5.1 RF Output Power

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)

Operation Band	Limit
U-NII-3	1 Watt (30 dBm)

5.2 Power Spectral Density

Operation Band	EUT Category	Limit
U-NII-1	Outdoor Access Point	17 dBm/MHz
	Fixed point-to-point Access Point	
	Indoor Access Point	
	Mobile and Portable client device	11 dBm/MHz

Operation Band	Limit
U-NII-3	30 dBm/500 kHz

5.3 6 dB Bandwidth

Within the 5.725-5.850 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

5.4 Occupied Bandwidth

The results are for reference only.

5.5 Frequency Stability

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

5.6 AC Power Conducted Emissions

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

Notes:

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 0.50 MHz.

5.7 Unwanted Emissions below 1 GHz

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

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

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.8 Unwanted Emissions above 1 GHz

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

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

Notes:

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 1000 MHz, 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 20 dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To	Limit	
789033 D02 General UNII Test Procedure New Rules v02r01	Field Strength at 3 m	
	PK: 74 (dBµV/m)	AV: 54 (dBµV/m)

For transmitters operating in the 5.15-5.25 GHz band:

Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)

For transmitters operating in the 5.725-5.850 GHz band:

Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2 (dBµV/m) ^{*1} PK: 105.2 (dBµV/m) ^{*2} PK: 110.8 (dBµV/m) ^{*3} PK: 122.2 (dBµV/m) ^{*4}

^{*1} beyond 75 MHz or more above of the band edge.

^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

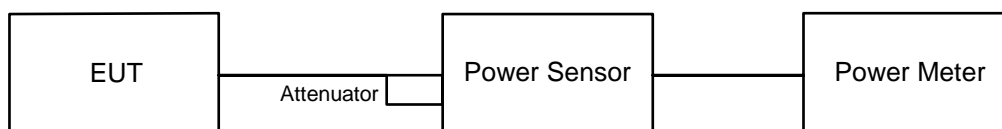
Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

6 Test Arrangements

6.1 RF Output Power

6.1.1 Test Setup

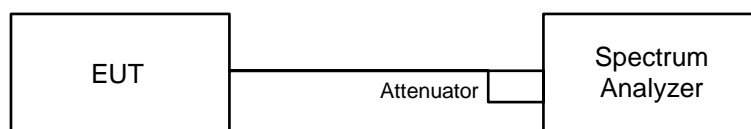


6.1.2 Test Procedure

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

6.2 Power Spectral Density

6.2.1 Test Setup



6.2.2 Test Procedure

For specified measurement bandwidth 1 MHz:

Method SA-2

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
- Sweep points \geq $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing \leq RBW / 2, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.
- Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- Record the max value and add $10 \log (1/\text{duty cycle})$.

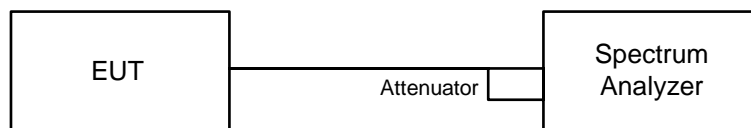
For specified measurement bandwidth 500 kHz:

Method SA-2

- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300 kHz, Set VBW \geq 1 MHz, Detector = RMS
- Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where $\text{BWCF} = 10 \log(500 \text{ kHz}/300 \text{ kHz})$
- Sweep points \geq $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing \leq RBW / 2, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto, trigger set to "free run".
- Trace average at least 100 traces in power averaging mode.
- Use the peak search function on the instrument to find the peak of the spectrum and record its value.
- Record the max value and add $10 \log (1/\text{duty cycle})$.

6.3 6 dB Bandwidth

6.3.1 Test Setup

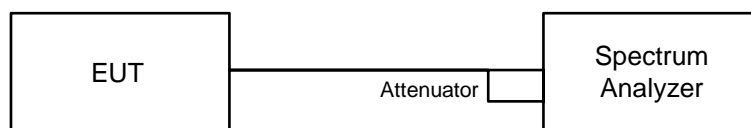


6.3.2 Test Procedure

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

6.4 Occupied Bandwidth

6.4.1 Test Setup

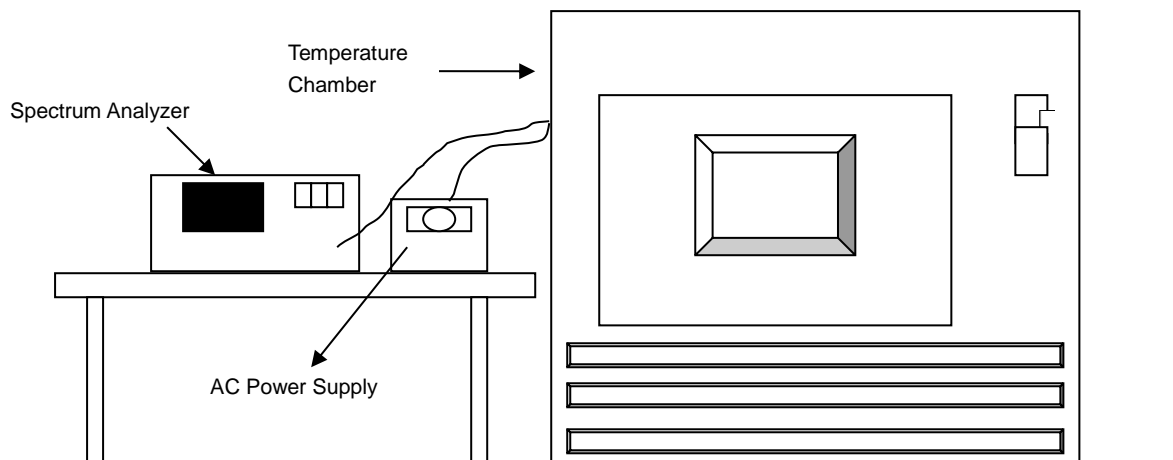


6.4.2 Test Procedure

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

6.5 Frequency Stability

6.5.1 Test Setup

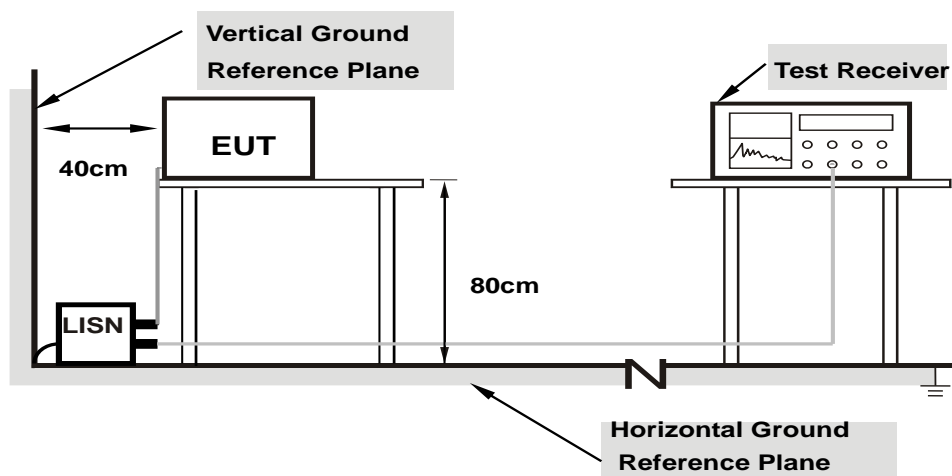


6.5.2 Test Procedure

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

6.6 AC Power Conducted Emissions

6.6.1 Test Setup



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

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

6.6.2 Test Procedure

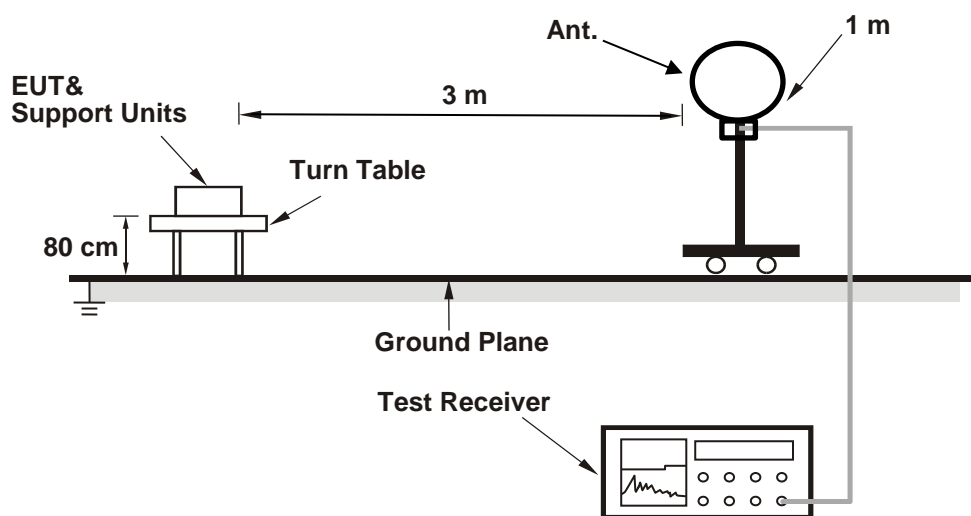
- The EUT was placed on a 0.8 meter to the top of table and placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50 uH 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 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

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

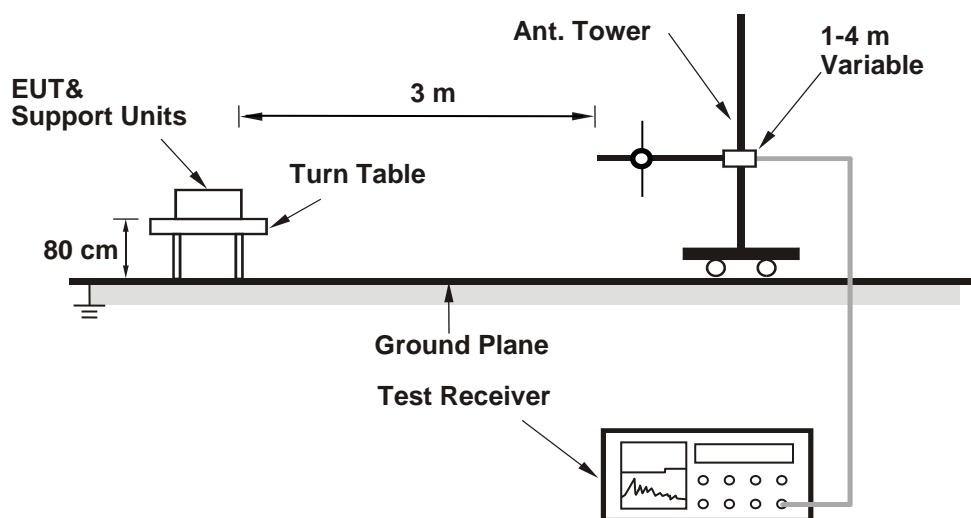
6.7 Unwanted Emissions below 1 GHz

6.7.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.7.2 Test Procedure

For Radiated emission below 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

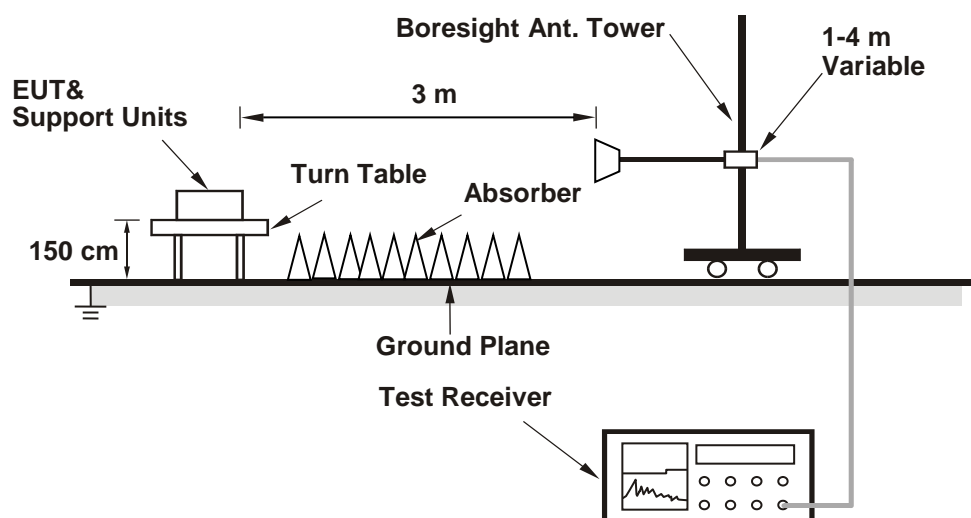
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the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

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP), Average detection (AV), Peak detection (PK) at frequency (30MHz to 1 GHz).
2. All modes of operation were investigated and the worst-case emissions are reported.

6.8 Unwanted Emissions above 1 GHz

6.8.1 Test Setup



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

6.8.2 Test Procedure

- The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Notes:

- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
- For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz.
- All modes of operation were investigated and the worst-case emissions are reported.

7 Test Results of Test Item

7.1 RF Output Power

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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802.11a

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
36	5180	53.211	17.26	24	Pass
40	5200	66.681	18.24	24	Pass
48	5240	55.335	17.43	24	Pass
149	5745	67.764	18.31	30	Pass
157	5785	67.298	18.28	30	Pass
165	5825	66.988	18.26	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 1.85 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 1.85 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
36	5180	51.05	17.08	24	Pass
40	5200	66.834	18.25	24	Pass
48	5240	54.2	17.34	24	Pass
149	5745	66.834	18.25	30	Pass
157	5785	66.527	18.23	30	Pass
165	5825	65.917	18.19	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 1.85 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 1.85 dBi < 6 dBi, so the output power limit shall not be reduced.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)	Power Limit (dBm)	Test Result
38	5190	23.714	13.75	24	Pass
46	5230	52.119	17.17	24	Pass
151	5755	53.211	17.26	30	Pass
159	5795	53.827	17.31	30	Pass

Notes:

1. For U-NII-1, the antenna gain is 1.85 dBi < 6 dBi, so the output power limit shall not be reduced.
2. For U-NII-3, the antenna gain is 1.85 dBi < 6 dBi, so the output power limit shall not be reduced.

7.2 Power Spectral Density

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
36	5180	2.89	0.26	3.15	11	Pass
40	5200	4.62	0.26	4.88	11	Pass
48	5240	3.27	0.26	3.53	11	Pass

Note: For U-NII-1, the antenna gain is 1.85 dBi < 6dBi, so the power density limit shall not be reduced.

802.11n (HT20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
36	5180	2.18	0.28	2.46	11	Pass
40	5200	4.28	0.28	4.56	11	Pass
48	5240	2.87	0.28	3.15	11	Pass

Note: For U-NII-1, the antenna gain is 1.85 dBi < 6dBi, so the power density limit shall not be reduced.

802.11n (HT40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Test Result
38	5190	-3.34	0.56	-2.78	11	Pass
46	5230	-0.63	0.56	-0.07	11	Pass

Note: For U-NII-1, the antenna gain is 1.85 dBi < 6dBi, so the power density limit shall not be reduced.

802.11a

TX chain	Channel	Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
Chain 0	149	5745	-3.57	-1.35	0.26	-1.09	30	Pass
	157	5785	-3.57	-1.35	0.26	-1.09	30	Pass
	165	5825	-3.72	-1.5	0.26	-1.24	30	Pass

Note: For U-NII-3, the antenna gain is 1.85 dBi < 6 dBi, so the power density limit shall not be reduced.

802.11n (HT20)

TX chain	Channel	Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
Chain 0	149	5745	-3.59	-1.37	0.28	-1.09	30	Pass
	157	5785	-3.71	-1.49	0.28	-1.21	30	Pass
	165	5825	-3.68	-1.46	0.28	-1.18	30	Pass

Note: For U-NII-3, the antenna gain is 1.85 dBi < 6 dBi, so the power density limit shall not be reduced.

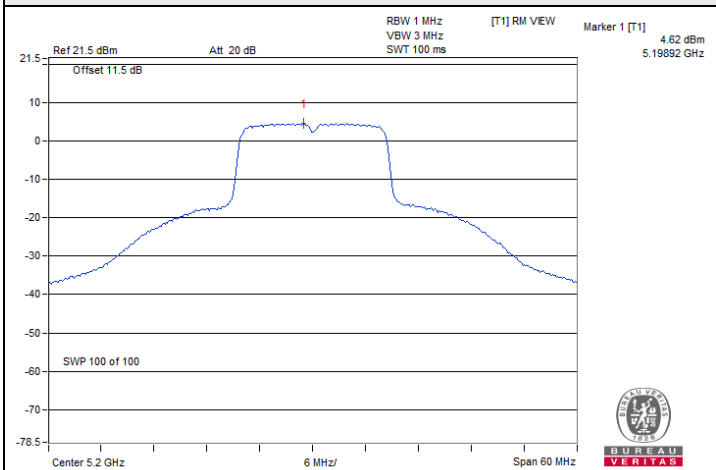
802.11n (HT40)

TX chain	Channel	Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	PSD Limit (dBm/500kHz)	Test Result
Chain 0	151	5755	-8.73	-6.51	0.56	-5.95	30	Pass
	159	5795	-8.49	-6.27	0.56	-5.71	30	Pass

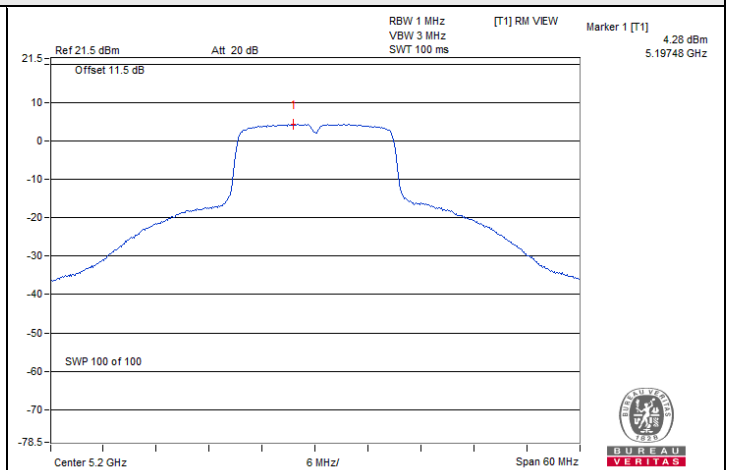
Note: For U-NII-3, the antenna gain is 1.85 dBi < 6 dBi, so the power density limit shall not be reduced.



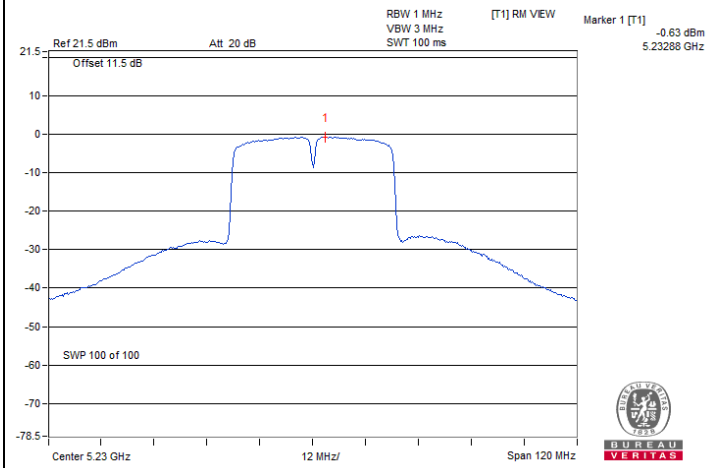
Spectrum Plot of Maximum Value



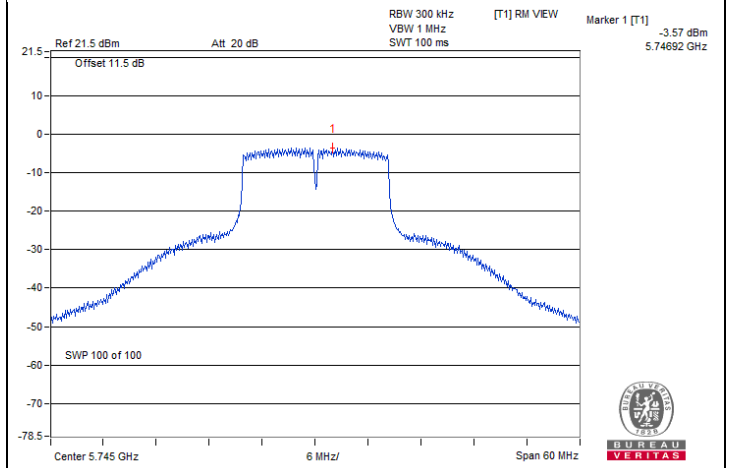
802.11a : CH 40



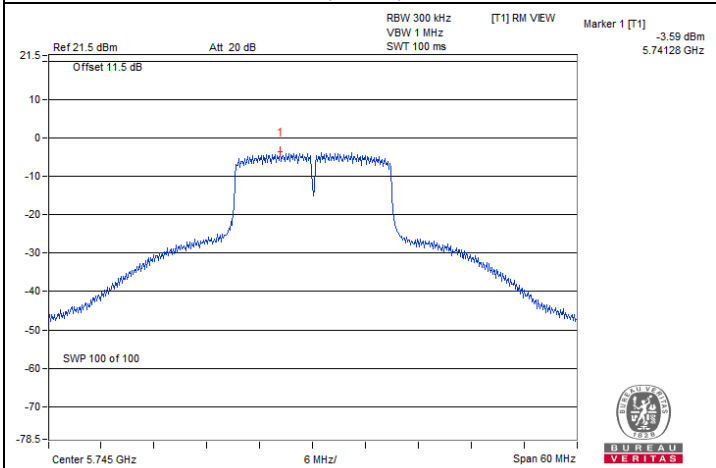
802.11n (HT20) : CH 40



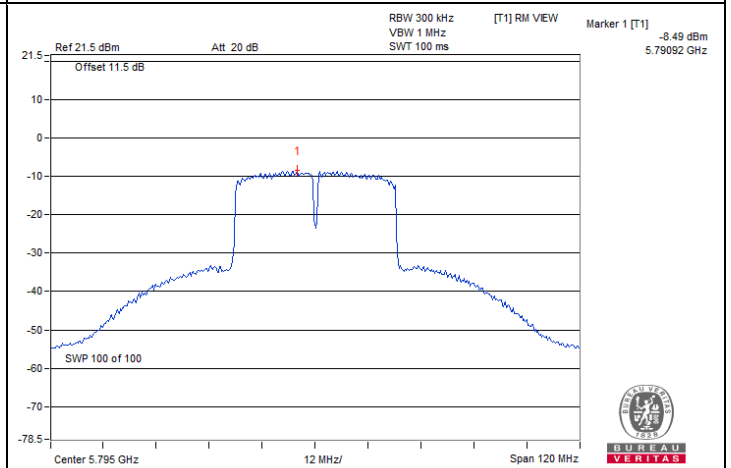
802.11n (HT40) : CH 46



802.11a : CH 149



802.11n (HT20) : CH 149



802.11n (HT40) : CH 159

7.3 6 dB Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
149	5745	16.37	0.5	Pass
157	5785	16.39	0.5	Pass
165	5825	16.36	0.5	Pass

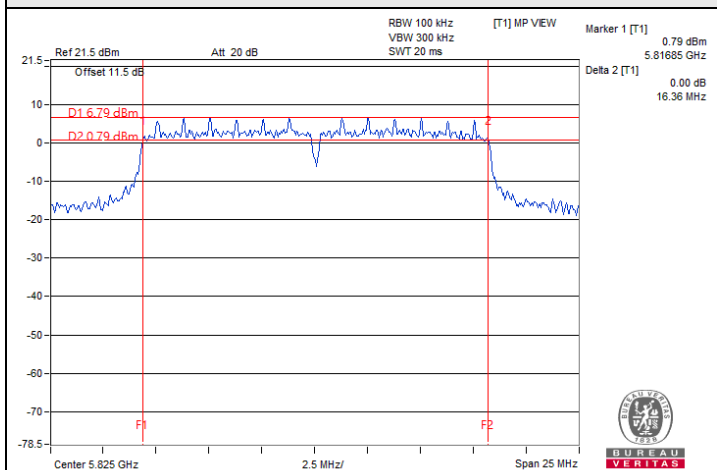
802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
149	5745	17.07	0.5	Pass
157	5785	17.15	0.5	Pass
165	5825	17.59	0.5	Pass

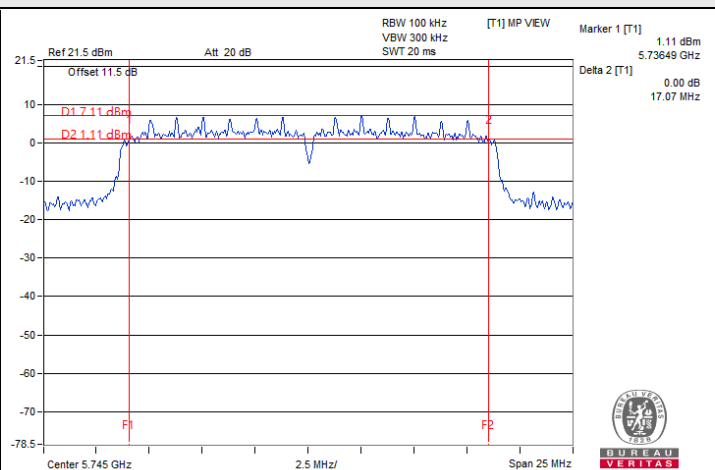
802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Test Result
151	5755	35.28	0.5	Pass
159	5795	35.23	0.5	Pass

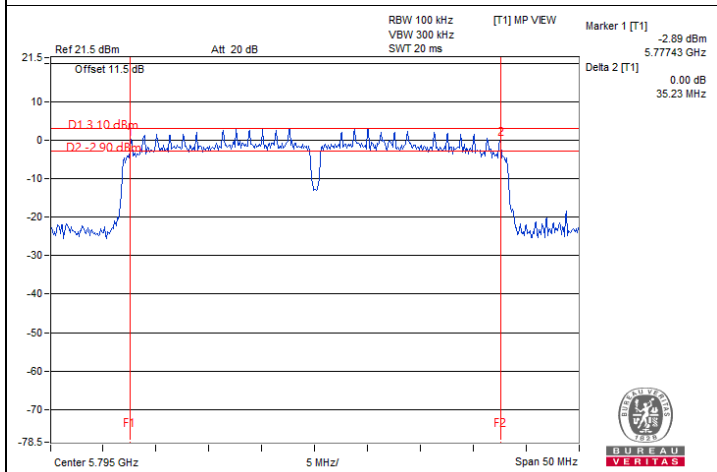
Spectrum Plot of Minimum Value



802.11a : CH 165



802.11n (HT20) : CH 149



802.11n (HT40) : CH 159

7.4 Occupied Bandwidth

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.88
40	5200	24.36
48	5240	18.72
149	5745	22.68
157	5785	19.68
165	5825	20.16

802.11n (HT20)

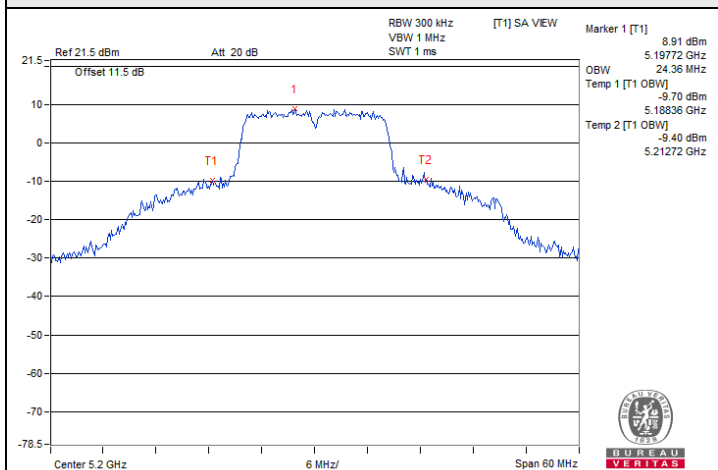
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	18.36
40	5200	25.92
48	5240	19.44
149	5745	23.64
157	5785	20.88
165	5825	20.64

802.11n (HT40)

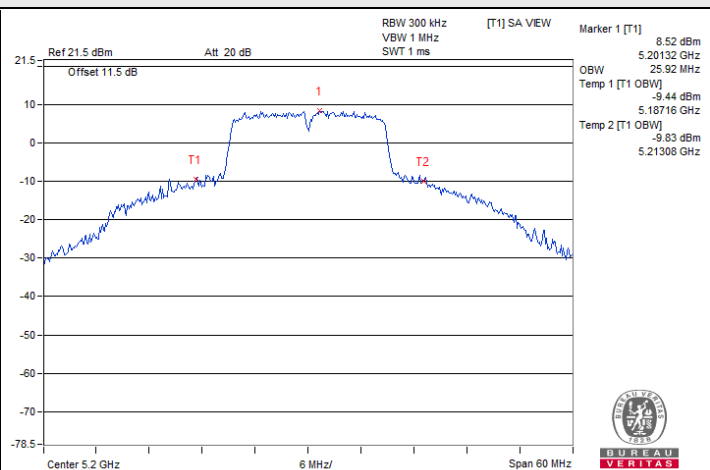
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.24
46	5230	37.2
151	5755	37.2
159	5795	36.96



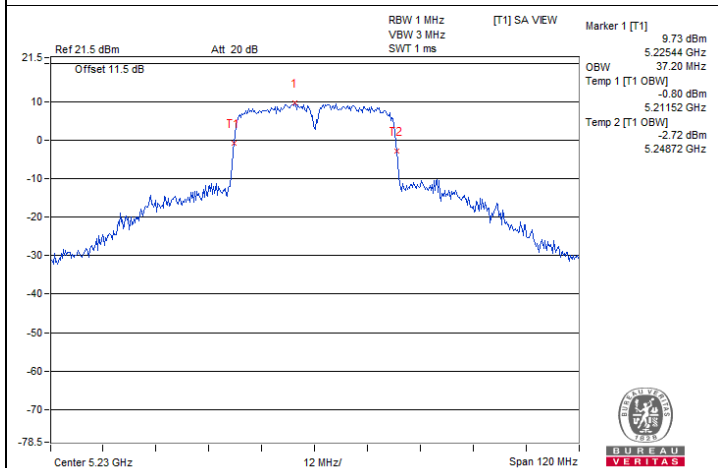
Spectrum Plot of Maximum Value



802.11a : CH 40



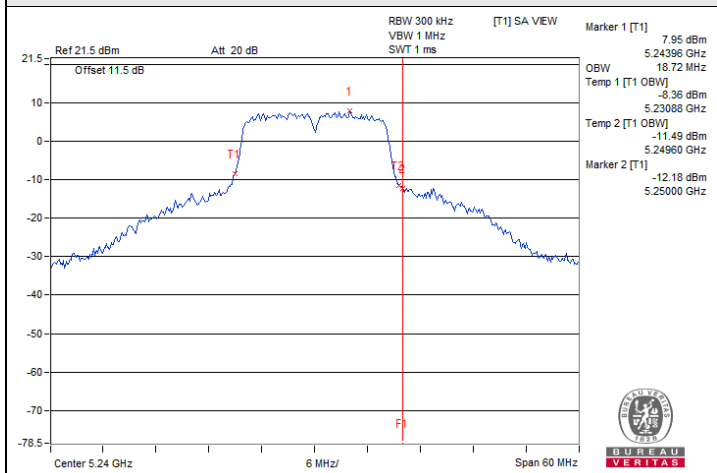
802.11n (HT20) : CH 40



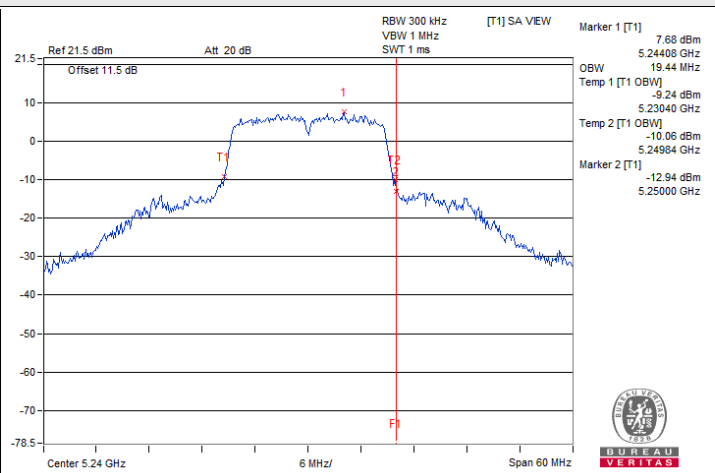
802.11n (HT40) : CH 46



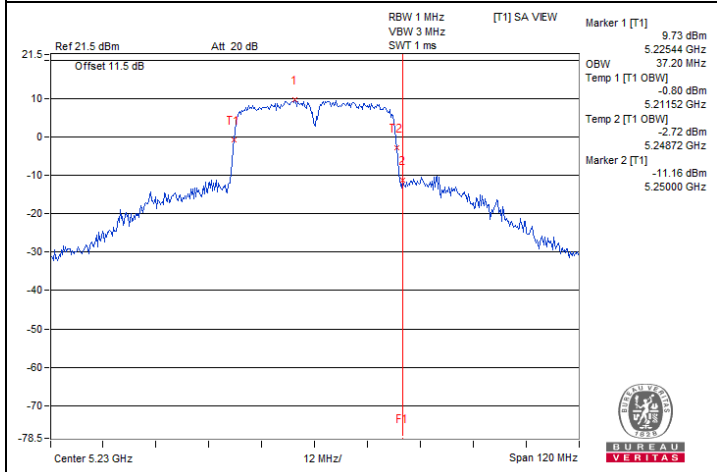
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2A)



802.11a : CH 48



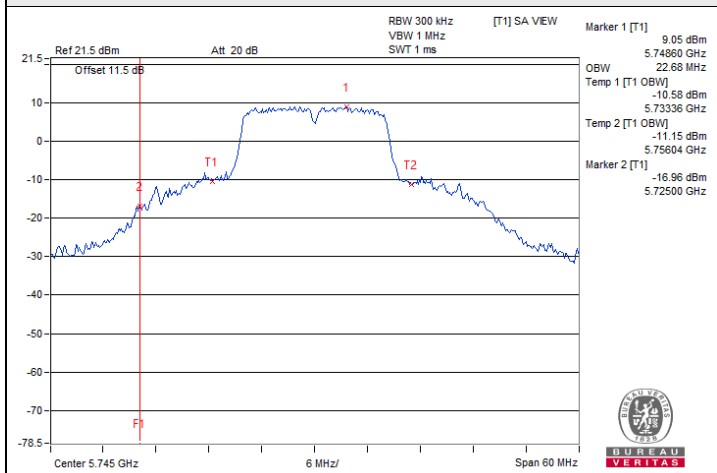
802.11n (HT20) : CH 48



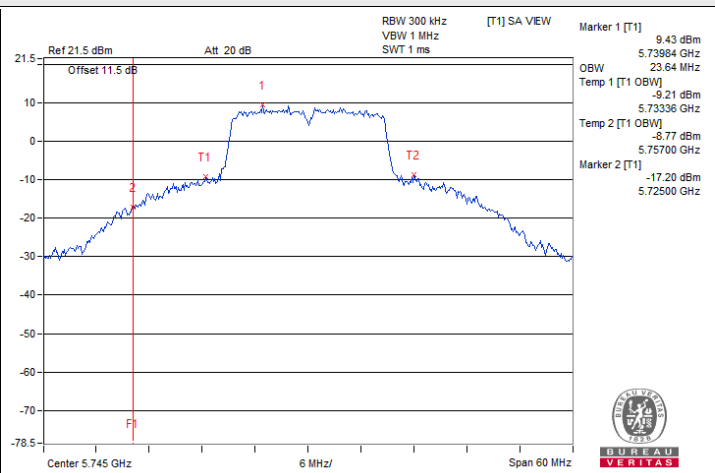
802.11n (HT40) : CH 46



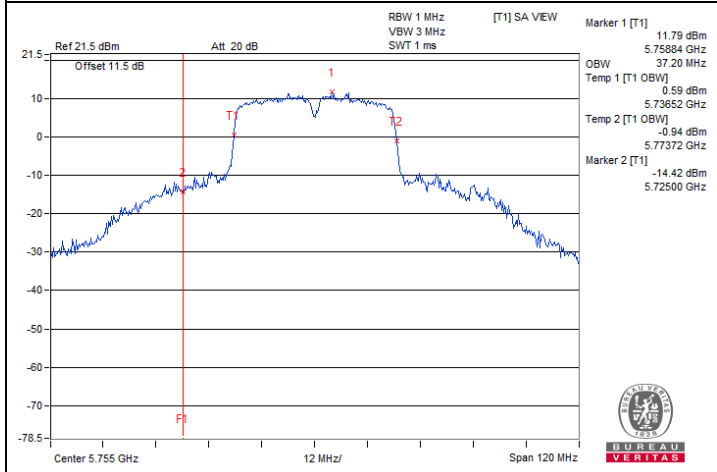
Spectrum Plot for nearby DFS band (DFS is required, if 99% OCP straddle into U-NII-2C)



802.11a : CH 149



802.11n (HT20) : CH 149



802.11n (HT40) : CH 151

7.5 Frequency Stability

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	25°C, 76% RH	Tested By:	Dalen Dai
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802.11a

Frequency Stability Versus Temperature									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
45	120	5180.015	Pass	5180.0138	Pass	5180.0159	Pass	5180.0149	Pass
40	120	5180.0014	Pass	5180.0024	Pass	5180.0007	Pass	5180.0007	Pass
30	120	5179.9919	Pass	5179.9946	Pass	5179.9917	Pass	5179.9916	Pass
20	120	5179.9932	Pass	5179.9898	Pass	5179.9884	Pass	5179.9888	Pass
10	120	5180.005	Pass	5180.0047	Pass	5180.0041	Pass	5180.0059	Pass
0	120	5180.0027	Pass	5179.9997	Pass	5180.0004	Pass	5180.001	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result	Measured Frequency (MHz)	Test Result
20	138	5179.9956	Pass	5179.9959	Pass	5179.9922	Pass	5179.9944	Pass
	120	5179.9932	Pass	5179.9898	Pass	5179.9884	Pass	5179.9888	Pass
	102	5179.9956	Pass	5179.9966	Pass	5179.9961	Pass	5179.9939	Pass

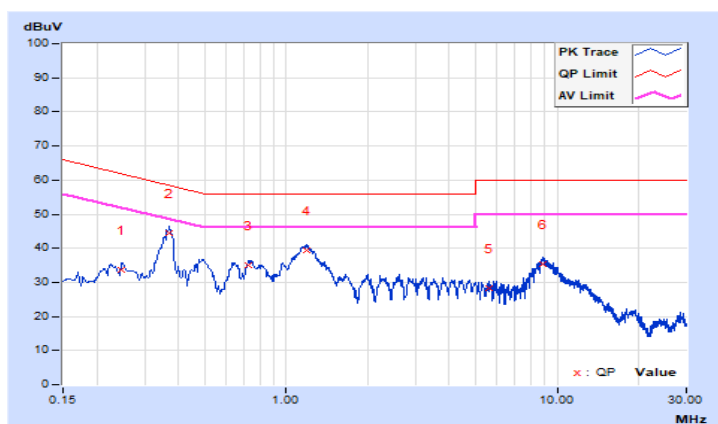
7.6 AC Power Conducted Emissions

RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Jed Wu		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.24744	10.14	23.65	17.18	33.79	27.32	61.84	51.84	-28.05	-24.52
2	0.37000	10.20	34.34	25.47	44.54	35.67	58.50	48.50	-13.96	-12.83
3	0.72687	10.29	24.64	16.80	34.93	27.09	56.00	46.00	-21.07	-18.91
4	1.19200	10.37	28.94	14.88	39.31	25.25	56.00	46.00	-16.69	-20.75
5	5.60800	10.54	17.91	12.13	28.45	22.67	60.00	50.00	-31.55	-27.33
6	8.83200	10.63	24.56	18.25	35.19	28.88	60.00	50.00	-24.81	-21.12

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

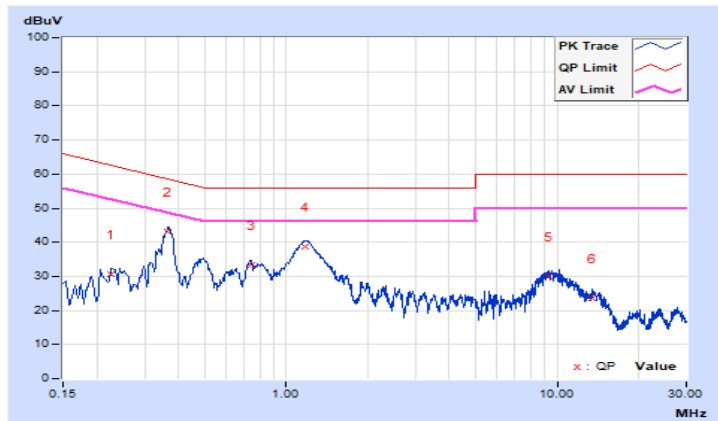


RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 75% RH
Tested By	Jed Wu		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.22600	10.18	20.43	9.81	30.61	19.99	62.60	52.60	-31.99	-32.61
2	0.36544	10.19	32.98	19.02	43.17	29.21	58.60	48.60	-15.43	-19.39
3	0.74800	10.24	23.19	13.87	33.43	24.11	56.00	46.00	-22.57	-21.89
4	1.16791	10.27	28.39	12.49	38.66	22.76	56.00	46.00	-17.34	-23.24
5	9.30400	10.63	19.34	14.32	29.97	24.95	60.00	50.00	-30.03	-25.05
6	13.48400	10.74	12.87	7.60	23.61	18.34	60.00	50.00	-36.39	-31.66

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



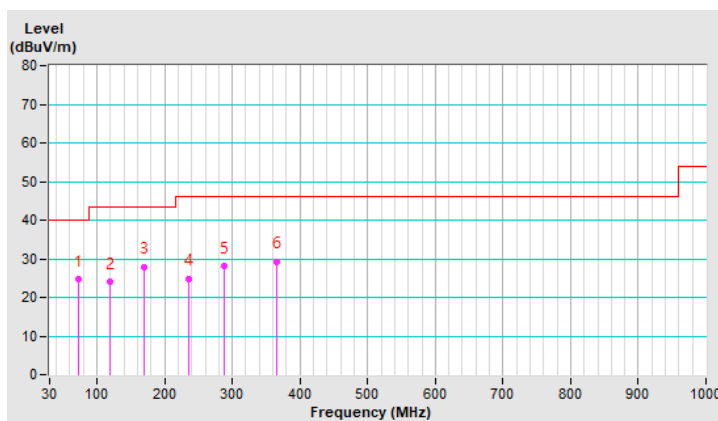
7.7 Unwanted Emissions below 1 GHz

RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	14°C, 58% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	73.55	24.6 QP	40.0	-15.4	1.04 H	255	36.4	-11.8
2	119.34	23.9 QP	43.5	-19.6	1.12 H	71	35.0	-11.1
3	169.58	27.9 QP	43.5	-15.6	1.23 H	112	36.5	-8.6
4	235.54	24.9 QP	46.0	-21.1	1.30 H	226	34.4	-9.5
5	287.29	28.0 QP	46.0	-18.0	1.52 H	142	34.6	-6.6
6	366.06	29.1 QP	46.0	-16.9	1.68 H	142	33.9	-4.8

Remarks:

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

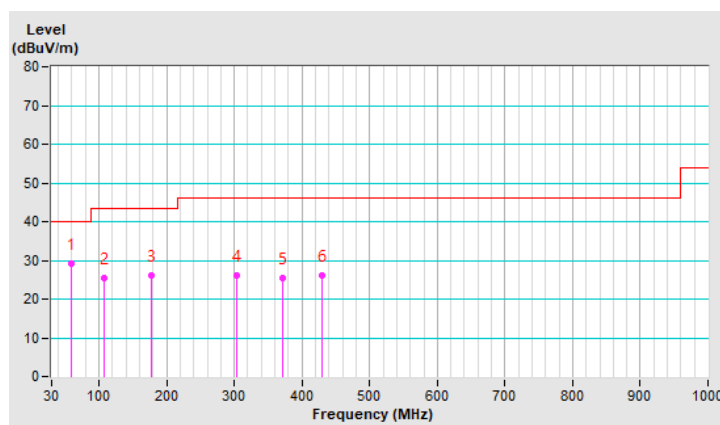


RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	(QP) RB = 120kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	14°C, 58% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	58.86	29.1 QP	40.0	-10.9	1.42 V	328	38.1	-9.0
2	107.11	25.4 QP	43.5	-18.1	1.50 V	273	37.4	-12.0
3	176.91	26.2 QP	43.5	-17.3	1.68 V	97	35.4	-9.2
4	303.98	26.1 QP	46.0	-19.9	1.73 V	161	32.1	-6.0
5	371.73	25.5 QP	46.0	-20.5	1.90 V	18	30.1	-4.6
6	428.96	26.1 QP	46.0	-19.9	1.12 V	94	29.1	-3.0

Remarks:

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



7.8 Unwanted Emissions above 1 GHz

RF Mode	802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	71.5 PK	74.0	-2.5	3.01 H	151	58.2	13.3
2	5150.00	52.8 AV	54.0	-1.2	3.01 H	151	39.5	13.3
3	*5180.00	110.3 PK			3.01 H	151	96.9	13.4
4	*5180.00	99.6 AV			3.01 H	151	86.2	13.4
5	#10360.00	66.2 PK	68.2	-2.0	1.32 H	140	42.2	24.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	66.9 PK	74.0	-7.1	3.87 V	116	53.6	13.3
2	5150.00	48.7 AV	54.0	-5.3	3.87 V	116	35.4	13.3
3	*5180.00	106.8 PK			3.87 V	116	93.4	13.4
4	*5180.00	96.2 AV			3.87 V	116	82.8	13.4
5	#10360.00	64.6 PK	68.2	-3.6	1.58 V	171	40.6	24.0

Remarks:

- Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
- Margin value = Emission Level – Limit value
- The other emission levels were very low against the limit.
- " * ": Fundamental frequency, the limit was restricted at the RF Output Power.
- " # ": The radiated frequency is out of the restricted band.



RF Mode	802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	112.0 PK			2.77 H	155	98.4	13.6
2	*5200.00	101.3 AV			2.77 H	155	87.7	13.6
3	#10400.00	65.8 PK	68.2	-2.4	1.08 H	144	41.7	24.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	108.5 PK			3.63 V	120	94.9	13.6
2	*5200.00	97.9 AV			3.63 V	120	84.3	13.6
3	#10400.00	64.2 PK	68.2	-4.0	1.34 V	175	40.1	24.1

Remarks:

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



RF Mode	802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	112.5 PK			3.23 H	127	98.7	13.8
2	*5240.00	101.7 AV			3.23 H	127	87.9	13.8
3	5350.00	56.8 PK	74.0	-17.2	3.23 H	127	42.5	14.3
4	5350.00	43.9 AV	54.0	-10.1	3.23 H	127	29.6	14.3
5	#10480.00	65.1 PK	68.2	-3.1	1.27 H	139	40.9	24.2

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	109.4 PK			3.65 V	92	95.6	13.8
2	*5240.00	98.7 AV			3.65 V	92	84.9	13.8
3	5350.00	56.4 PK	74.0	-17.6	3.65 V	92	42.1	14.3
4	5350.00	42.5 AV	54.0	-11.5	3.65 V	92	28.2	14.3
5	#10480.00	63.5 PK	68.2	-4.7	1.36 V	147	39.3	24.2

Remarks:

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



RF Mode	802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5619.20	56.7 PK	68.2	-11.5	3.01 H	125	42.8	13.9
2	*5745.00	109.6 PK			3.01 H	125	95.8	13.8
3	*5745.00	98.8 AV			3.01 H	125	85.0	13.8
4	#5940.00	56.7 PK	68.2	-11.5	3.01 H	125	42.3	14.4
5	11490.00	64.9 PK	74.0	-9.1	1.30 H	114	37.3	27.6
6	11490.00	51.3 AV	54.0	-2.7	1.30 H	114	23.7	27.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5624.40	55.8 PK	68.2	-12.4	3.86 V	90	41.9	13.9
2	*5745.00	106.2 PK			3.86 V	90	92.4	13.8
3	*5745.00	95.2 AV			3.86 V	90	81.4	13.8
4	#5926.80	56.1 PK	68.2	-12.1	3.86 V	90	41.8	14.3
5	11490.00	63.3 PK	74.0	-10.7	1.57 V	145	35.7	27.6
6	11490.00	49.7 AV	54.0	-4.3	1.57 V	145	22.1	27.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.



RF Mode	802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5608.00	55.3 PK	68.2	-12.9	2.74 H	123	41.4	13.9
2	*5785.00	108.1 PK			2.74 H	123	94.4	13.7
3	*5785.00	97.8 AV			2.74 H	123	84.1	13.7
4	#5938.80	56.9 PK	68.2	-11.3	2.74 H	123	42.5	14.4
5	11570.00	64.3 PK	74.0	-9.7	1.03 H	112	36.9	27.4
6	11570.00	50.7 AV	54.0	-3.3	1.03 H	112	23.3	27.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5638.40	55.3 PK	68.2	-12.9	3.59 V	88	41.5	13.8
2	*5785.00	104.7 PK			3.59 V	88	91.0	13.7
3	*5785.00	94.8 AV			3.59 V	88	81.1	13.7
4	#5950.40	57.3 PK	68.2	-10.9	3.59 V	88	42.9	14.4
5	11570.00	62.7 PK	74.0	-11.3	1.30 V	143	35.3	27.4
6	11570.00	49.1 AV	54.0	-4.9	1.30 V	143	21.7	27.4

Remarks:

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



RF Mode	802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 510 Hz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5632.80	55.0 PK	68.2	-13.2	3.34 H	124	41.1	13.9
2	*5825.00	109.1 PK			3.34 H	124	95.2	13.9
3	*5825.00	99.0 AV			3.34 H	124	85.1	13.9
4	#5996.80	56.1 PK	68.2	-12.1	3.34 H	124	41.6	14.5
5	11650.00	65.4 PK	74.0	-8.6	1.63 H	111	37.7	27.7
6	11650.00	51.8 AV	54.0	-2.2	1.63 H	111	24.1	27.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5601.60	55.1 PK	68.2	-13.1	3.53 V	91	41.2	13.9
2	*5825.00	105.7 PK			3.53 V	91	91.8	13.9
3	*5825.00	95.4 AV			3.53 V	91	81.5	13.9
4	#5972.40	56.1 PK	68.2	-12.1	3.53 V	91	41.6	14.5
5	11650.00	63.8 PK	74.0	-10.2	1.24 V	146	36.1	27.7
6	11650.00	50.2 AV	54.0	-3.8	1.24 V	146	22.5	27.7

Remarks:

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



RF Mode	802.11n (HT20)	Channel	CH 36 : 5180 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	70.8 PK	74.0	-3.2	3.30 H	124	57.5	13.3
2	5150.00	52.8 AV	54.0	-1.2	3.30 H	124	39.5	13.3
3	*5180.00	109.2 PK			3.30 H	124	95.8	13.4
4	*5180.00	99.0 AV			3.30 H	124	85.6	13.4
5	#10360.00	64.6 PK	68.2	-3.6	1.06 H	138	40.6	24.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	69.2 PK	74.0	-4.8	3.58 V	89	55.9	13.3
2	5150.00	51.2 AV	54.0	-2.8	3.58 V	89	37.9	13.3
3	*5180.00	105.8 PK			3.58 V	89	92.4	13.4
4	*5180.00	95.7 AV			3.58 V	89	82.3	13.4
5	#10360.00	63.0 PK	68.2	-5.2	1.29 V	144	39.0	24.0

Remarks:

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



RF Mode	802.11n (HT20)	Channel	CH 40 : 5200 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	112.1 PK			3.29 H	132	98.5	13.6
2	*5200.00	101.9 AV			3.29 H	132	88.3	13.6
3	#10400.00	66.7 PK	68.2	-1.5	1.20 H	141	42.6	24.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	108.6 PK			3.59 V	97	95.0	13.6
2	*5200.00	98.0 AV			3.59 V	97	84.4	13.6
3	#10400.00	65.1 PK	68.2	-3.1	1.46 V	172	41.0	24.1

Remarks:

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



RF Mode	802.11n (HT20)	Channel	CH 48 : 5240 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	112.0 PK			3.24 H	134	98.2	13.8
2	*5240.00	102.0 AV			3.24 H	134	88.2	13.8
3	5350.00	57.4 PK	74.0	-16.6	3.24 H	134	43.1	14.3
4	5350.00	44.3 AV	54.0	-9.7	3.24 H	134	30.0	14.3
5	#10480.00	64.8 PK	68.2	-3.4	1.07 H	141	40.6	24.2

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	108.4 PK			3.64 V	99	94.6	13.8
2	*5240.00	98.4 AV			3.64 V	99	84.6	13.8
3	5350.00	56.6 PK	74.0	-17.4	3.64 V	99	42.3	14.3
4	5350.00	43.1 AV	54.0	-10.9	3.64 V	99	28.8	14.3
5	#10480.00	63.2 PK	68.2	-5.0	1.33 V	170	39.0	24.2

Remarks:

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



RF Mode	802.11n (HT20)	Channel	CH 149 : 5745 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5624.00	56.2 PK	68.2	-12.0	3.30 H	130	42.3	13.9
2	*5745.00	108.0 PK			3.30 H	130	94.2	13.8
3	*5745.00	97.7 AV			3.30 H	130	83.9	13.8
4	#5965.60	56.4 PK	68.2	-11.8	3.30 H	130	41.9	14.5
5	11490.00	65.5 PK	74.0	-8.5	1.59 H	119	37.9	27.6
6	11490.00	51.9 AV	54.0	-2.1	1.59 H	119	24.3	27.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5604.80	55.2 PK	68.2	-13.0	3.57 V	95	41.3	13.9
2	*5745.00	104.7 PK			3.57 V	95	90.9	13.8
3	*5745.00	94.6 AV			3.57 V	95	80.8	13.8
4	#5993.60	56.2 PK	68.2	-12.0	3.57 V	95	41.7	14.5
5	11490.00	63.9 PK	74.0	-10.1	1.28 V	150	36.3	27.6
6	11490.00	50.3 AV	54.0	-3.7	1.28 V	150	22.7	27.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.



RF Mode	802.11n (HT20)	Channel	CH 157 : 5785 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5649.20	55.3 PK	68.2	-12.9	2.96 H	123	41.5	13.8
2	*5785.00	108.8 PK			2.96 H	123	95.1	13.7
3	*5785.00	98.0 AV			2.96 H	123	84.3	13.7
4	#5926.80	57.0 PK	68.2	-11.2	2.96 H	123	42.7	14.3
5	11570.00	65.4 PK	74.0	-8.6	1.25 H	116	38.0	27.4
6	11570.00	51.4 AV	54.0	-2.6	1.25 H	116	24.0	27.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5614.80	55.3 PK	68.2	-12.9	3.81 V	92	41.4	13.9
2	*5785.00	105.5 PK			3.81 V	92	91.8	13.7
3	*5785.00	94.8 AV			3.81 V	92	81.1	13.7
4	#5947.20	56.3 PK	68.2	-11.9	3.81 V	92	41.9	14.4
5	11570.00	63.8 PK	74.0	-10.2	1.52 V	147	36.4	27.4
6	11570.00	50.2 AV	54.0	-3.8	1.52 V	147	22.8	27.4

Remarks:

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



RF Mode	802.11n (HT20)	Channel	CH 165 : 5825 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 1 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5630.40	55.2 PK	68.2	-13.0	2.96 H	118	41.3	13.9
2	*5825.00	108.8 PK			2.96 H	118	94.9	13.9
3	*5825.00	98.5 AV			2.96 H	118	84.6	13.9
4	#5952.00	56.7 PK	68.2	-11.5	2.96 H	118	42.3	14.4
5	11650.00	65.5 PK	74.0	-8.5	1.26 H	111	37.8	27.7
6	11650.00	51.4 AV	54.0	-2.6	1.26 H	111	23.7	27.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5605.20	55.0 PK	68.2	-13.2	3.91 V	94	41.1	13.9
2	*5825.00	105.6 PK			3.91 V	94	91.7	13.9
3	*5825.00	95.2 AV			3.91 V	94	81.3	13.9
4	#5990.00	56.2 PK	68.2	-12.0	3.91 V	94	41.7	14.5
5	11650.00	63.9 PK	74.0	-10.1	1.62 V	149	36.2	27.7
6	11650.00	50.3 AV	54.0	-3.7	1.62 V	149	22.6	27.7

Remarks:

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

RF Mode	802.11n (HT40)	Channel	CH 38 : 5190 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	71.8 PK	74.0	-2.2	3.28 H	124	58.5	13.3
2	5150.00	53.0 AV	54.0	-1.0	3.28 H	124	39.7	13.3
3	*5190.00	104.4 PK			3.28 H	124	90.9	13.5
4	*5190.00	94.9 AV			3.28 H	124	81.4	13.5
5	#10380.00	61.4 PK	68.2	-6.8	1.05 H	113	37.4	24.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	64.9 PK	74.0	-9.1	3.60 V	89	51.6	13.3
2	5150.00	47.3 AV	54.0	-6.7	3.60 V	89	34.0	13.3
3	*5190.00	101.0 PK			3.60 V	89	87.5	13.5
4	*5190.00	91.6 AV			3.60 V	89	78.1	13.5
5	#10380.00	59.8 PK	68.2	-8.4	1.31 V	144	35.8	24.0

Remarks:

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

RF Mode	802.11n (HT40)	Channel	CH 46 : 5230 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	108.6 PK			3.27 H	134	94.8	13.8
2	*5230.00	98.3 AV			3.27 H	134	84.5	13.8
3	5350.00	57.4 PK	74.0	-16.6	3.27 H	134	43.1	14.3
4	5350.00	44.3 AV	54.0	-9.7	3.27 H	134	30.0	14.3
5	#10460.00	63.1 PK	68.2	-5.1	1.25 H	139	39.0	24.1

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	105.2 PK			3.61 V	99	91.4	13.8
2	*5230.00	94.7 AV			3.61 V	99	80.9	13.8
3	5350.00	56.8 PK	74.0	-17.2	3.61 V	99	42.5	14.3
4	5350.00	43.5 AV	54.0	-10.5	3.61 V	99	29.2	14.3
5	#10460.00	61.5 PK	68.2	-6.7	1.32 V	154	37.4	24.1

Remarks:

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



RF Mode	802.11n (HT40)	Channel	CH 151 : 5755 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5627.60	56.3 PK	68.2	-11.9	3.00 H	123	42.4	13.9
2	*5755.00	105.9 PK			3.00 H	123	92.0	13.9
3	*5755.00	95.0 AV			3.00 H	123	81.1	13.9
4	#5996.80	57.1 PK	68.2	-11.1	3.00 H	123	42.6	14.5
5	11510.00	64.7 PK	74.0	-9.3	1.31 H	116	37.0	27.7
6	11510.00	51.1 AV	54.0	-2.9	1.31 H	116	23.4	27.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5631.60	55.6 PK	68.2	-12.6	3.85 V	88	41.7	13.9
2	*5755.00	102.5 PK			3.85 V	88	88.6	13.9
3	*5755.00	92.0 AV			3.85 V	88	78.1	13.9
4	#5960.00	56.9 PK	68.2	-11.3	3.85 V	88	42.4	14.5
5	11510.00	63.1 PK	74.0	-10.9	1.58 V	147	35.4	27.7
6	11510.00	49.5 AV	54.0	-4.5	1.58 V	147	21.8	27.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.



RF Mode	802.11n (HT40)	Channel	CH 159 : 5795 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	(PK) RB = 1 MHz, VB = 3 MHz (AV) RB = 1 MHz, VB = 2 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	16°C, 59.6% RH
Tested By	Jed Wu		

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5624.00	55.2 PK	68.2	-13.0	2.72 H	122	41.3	13.9
2	*5795.00	105.8 PK			2.72 H	122	92.0	13.8
3	*5795.00	95.4 AV			2.72 H	122	81.6	13.8
4	#5976.80	56.2 PK	68.2	-12.0	2.72 H	122	41.7	14.5
5	11590.00	64.4 PK	74.0	-9.6	1.03 H	115	37.1	27.3
6	11590.00	50.8 AV	54.0	-3.2	1.03 H	115	23.5	27.3

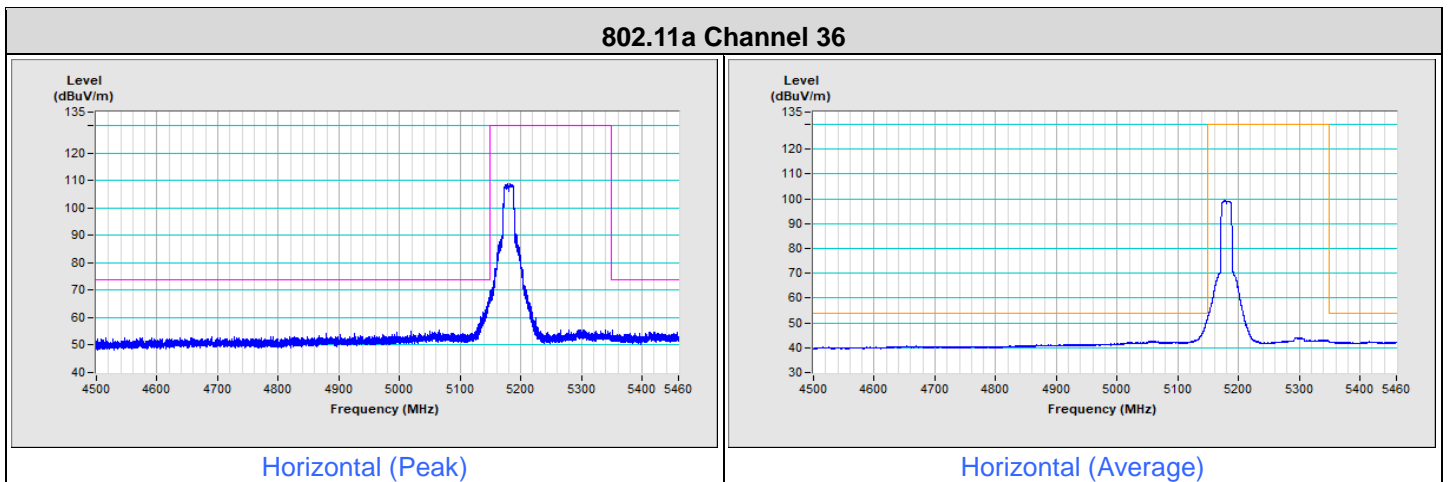
Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5621.60	54.7 PK	68.2	-13.5	3.57 V	87	40.8	13.9
2	*5795.00	102.4 PK			3.57 V	87	88.6	13.8
3	*5795.00	92.0 AV			3.57 V	87	78.2	13.8
4	#5992.80	56.6 PK	68.2	-11.6	3.57 V	87	42.1	14.5
5	11590.00	61.2 PK	74.0	-12.8	1.28 V	142	35.5	25.7
6	11590.00	47.6 AV	54.0	-6.4	1.28 V	142	21.9	25.7

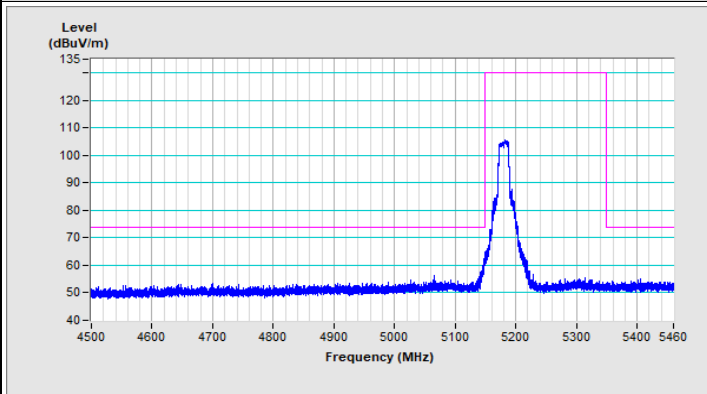
Remarks:

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

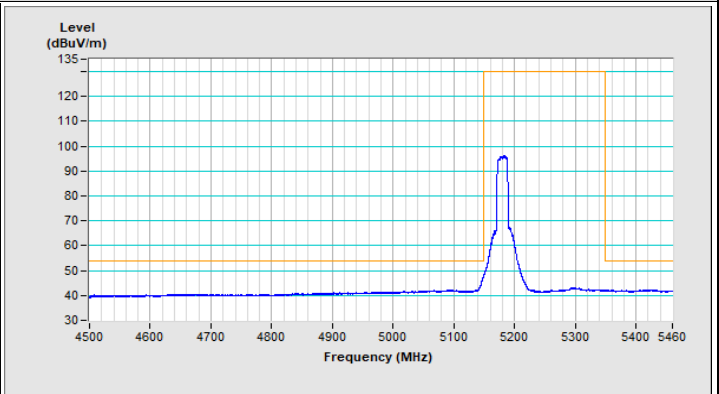
Plot of Band Edge



802.11a Channel 36

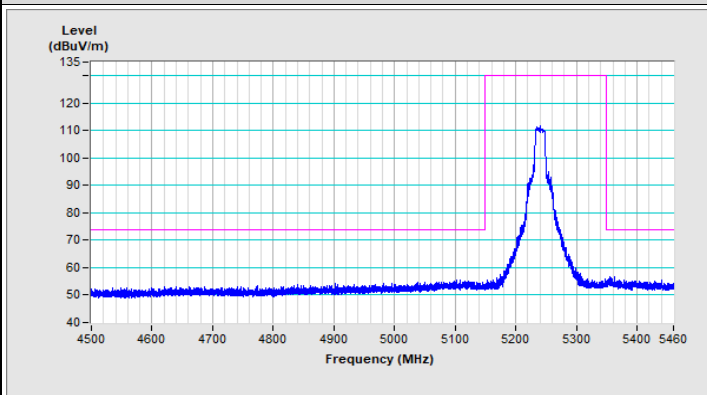


Vertical (Peak)

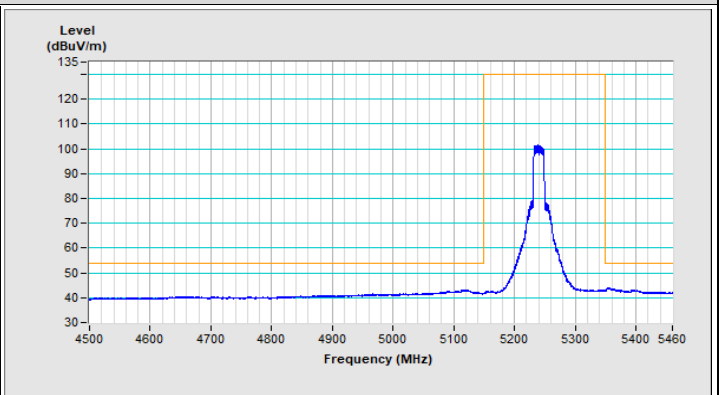


Vertical (Average)

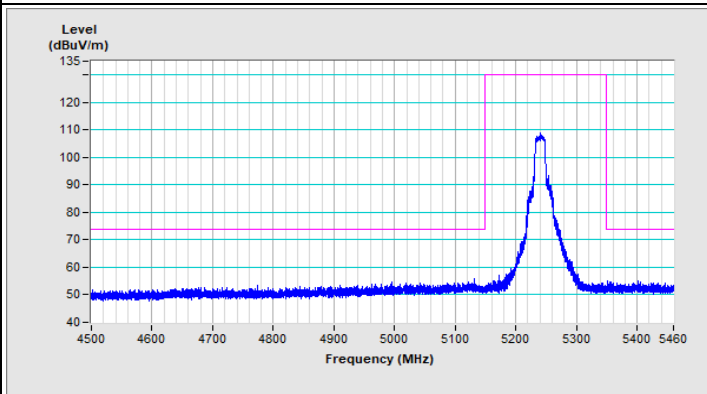
802.11a Channel 48



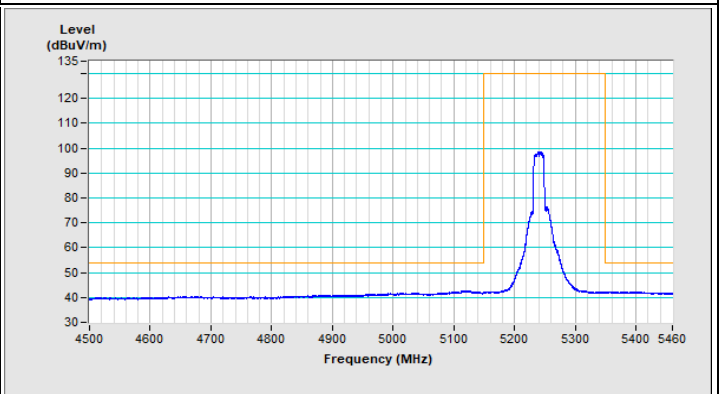
Horizontal (Peak)



Horizontal (Average)

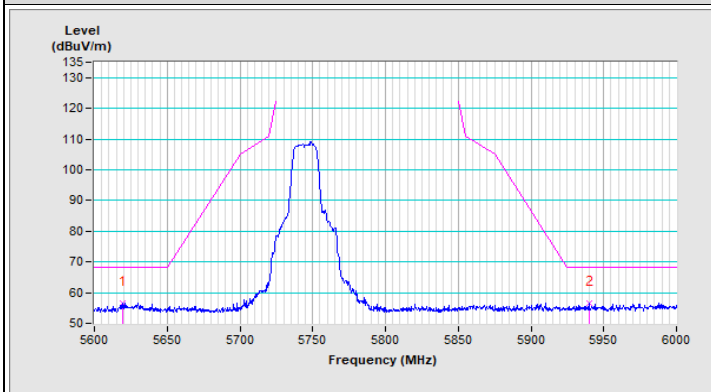


Vertical (Peak)

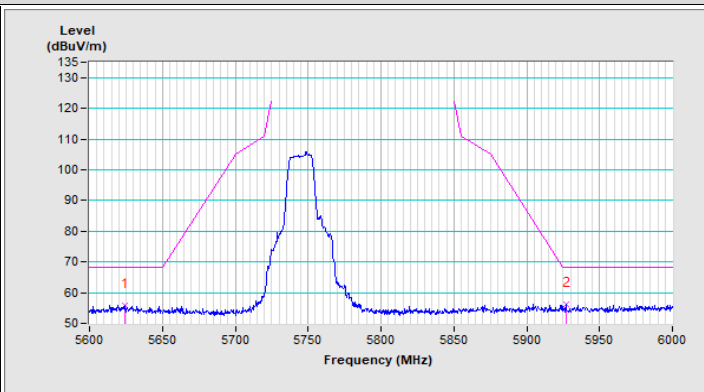


Vertical (Average)

802.11a Channel 149

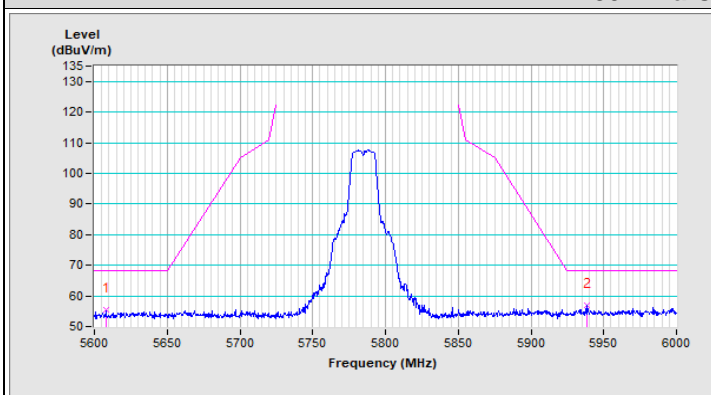


Horizontal (Peak)

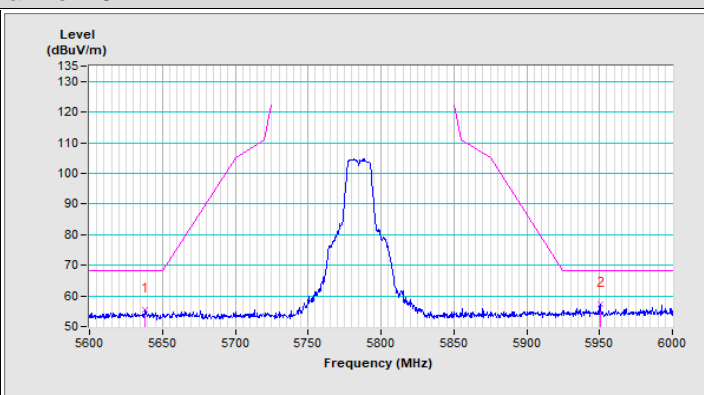


Vertical (Peak)

802.11a Channel 157

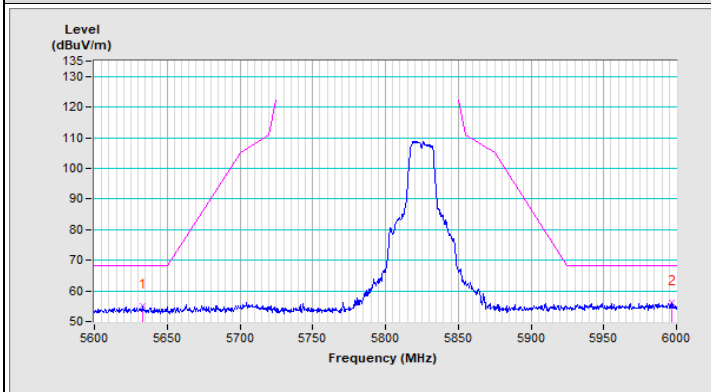


Horizontal (Peak)

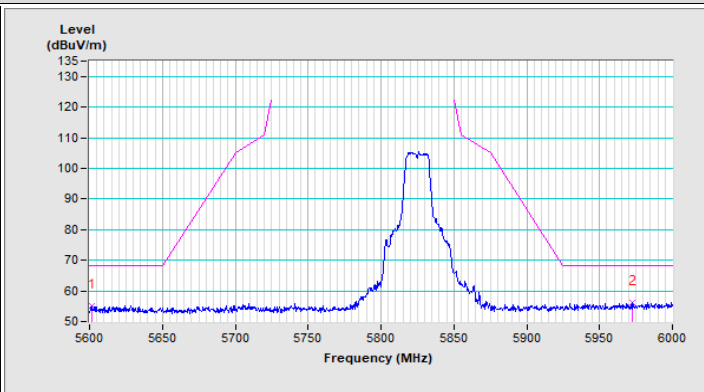


Vertical (Peak)

802.11a Channel 165

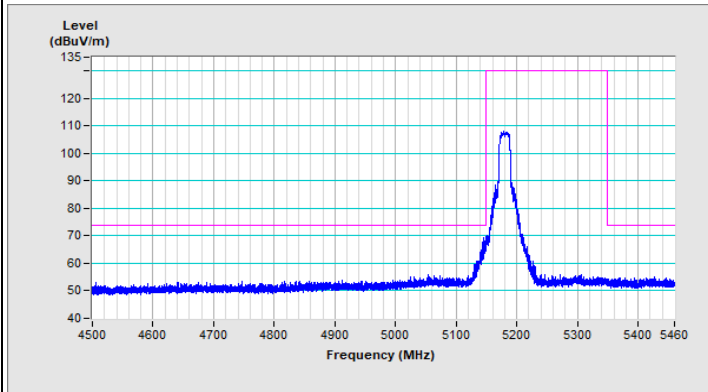


Horizontal (Peak)

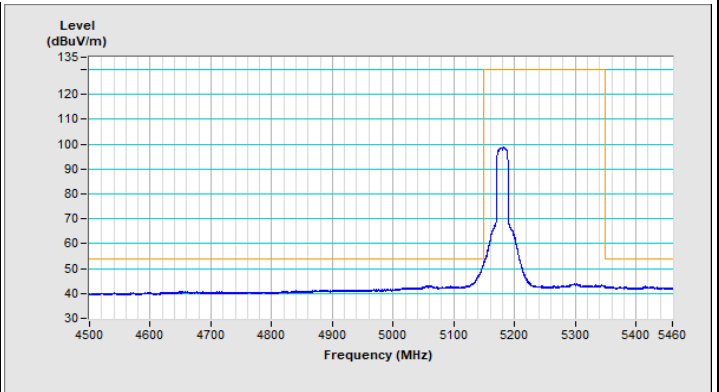


Vertical (Peak)

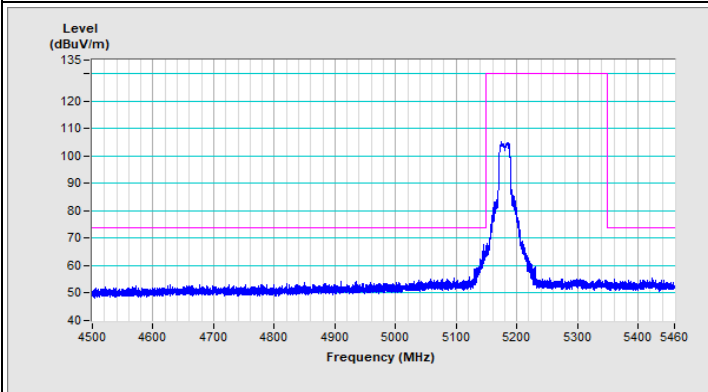
802.11n (HT20) Channel 36



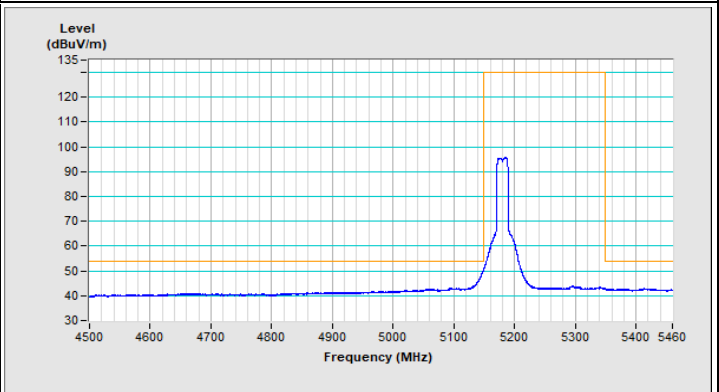
Horizontal (Peak)



Horizontal (Average)

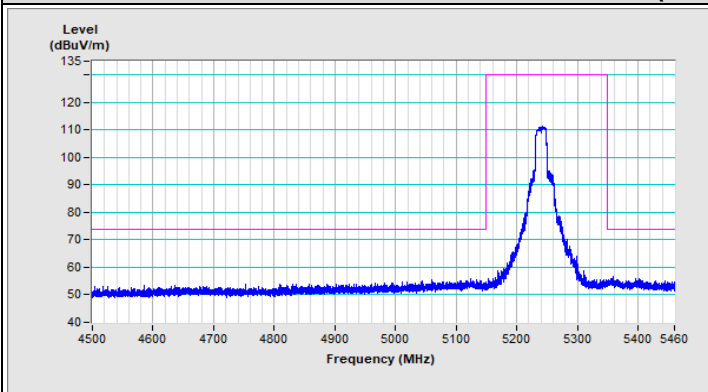


Vertical (Peak)

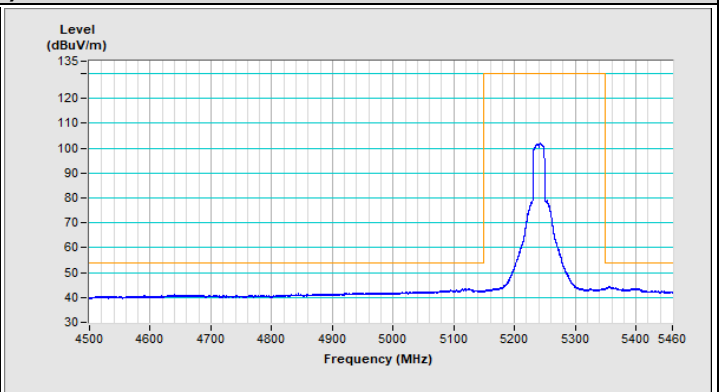


Vertical (Average)

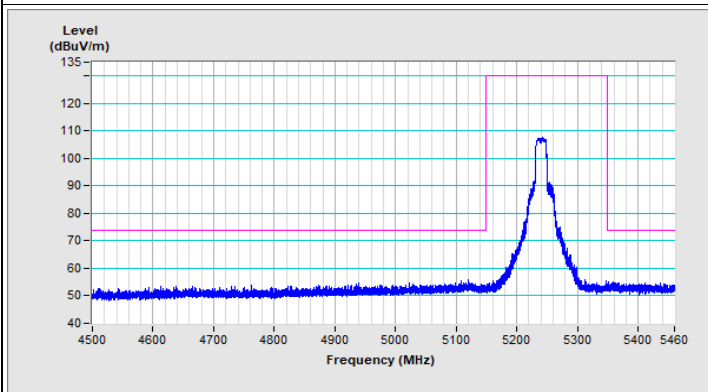
802.11n (HT20) Channel 48



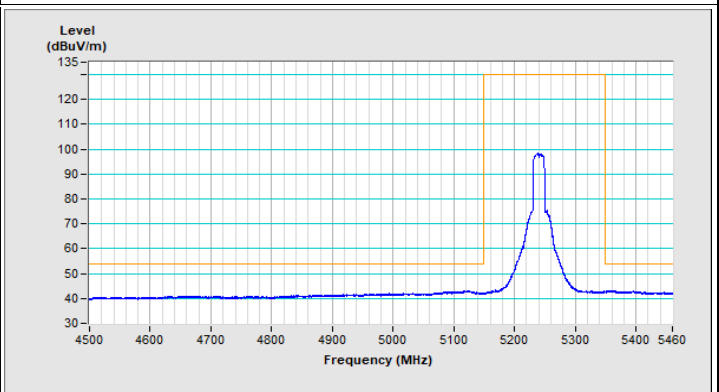
Horizontal (Peak)



Horizontal (Average)

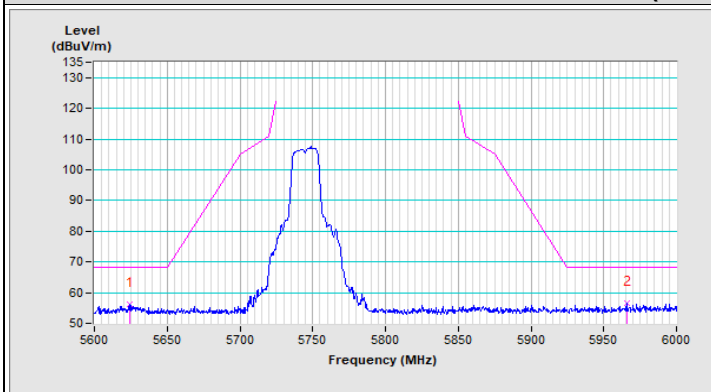


Vertical (Peak)

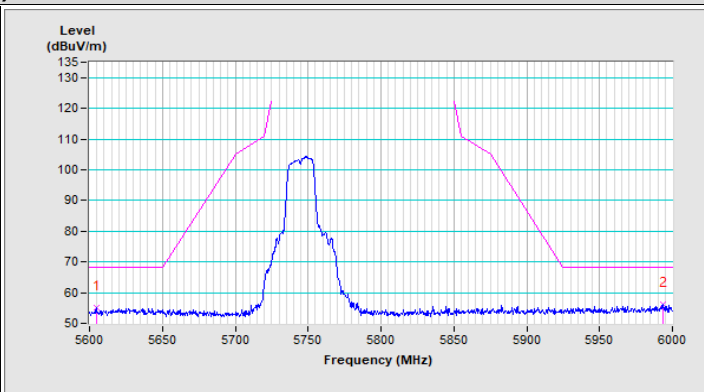


Vertical (Average)

802.11n (HT20) Channel 149

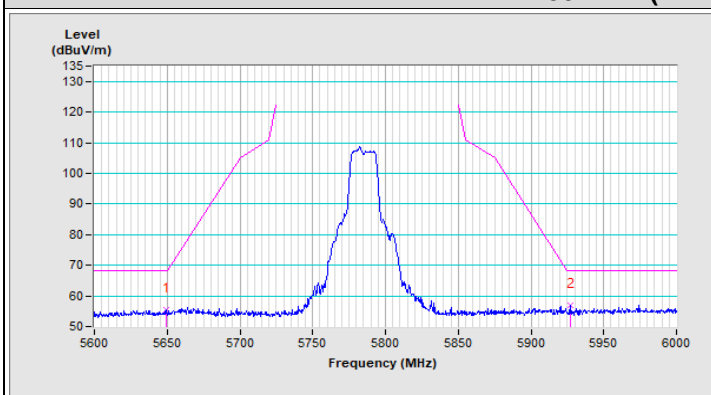


Horizontal (Peak)

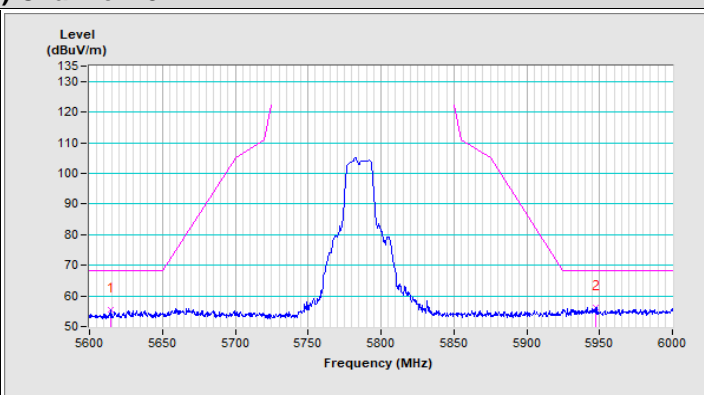


Vertical (Peak)

802.11n (HT20) Channel 157

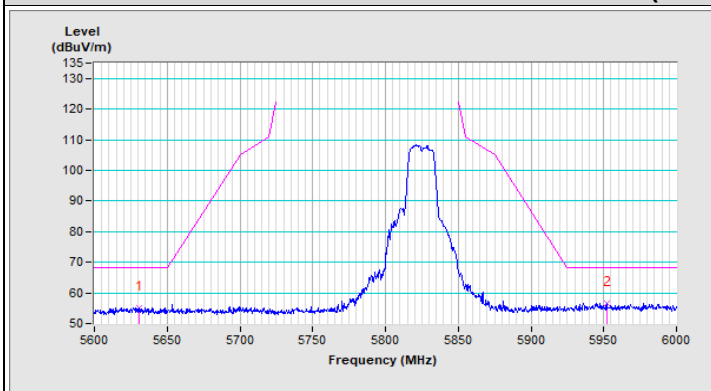


Horizontal (Peak)

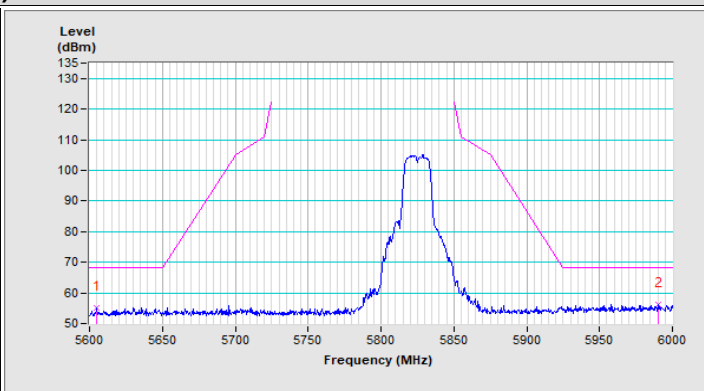


Vertical (Peak)

802.11n (HT20) Channel 165

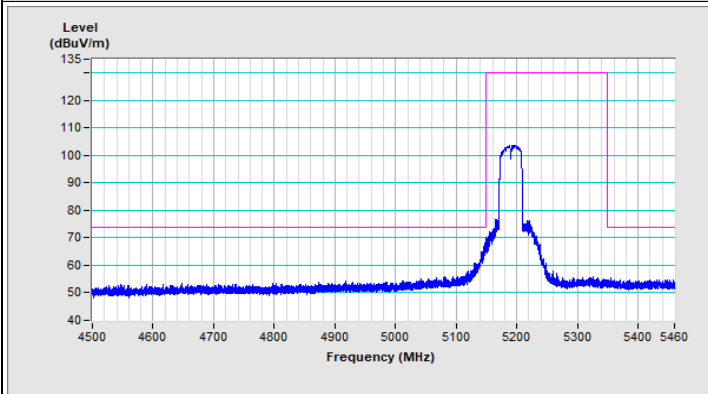


Horizontal (Peak)

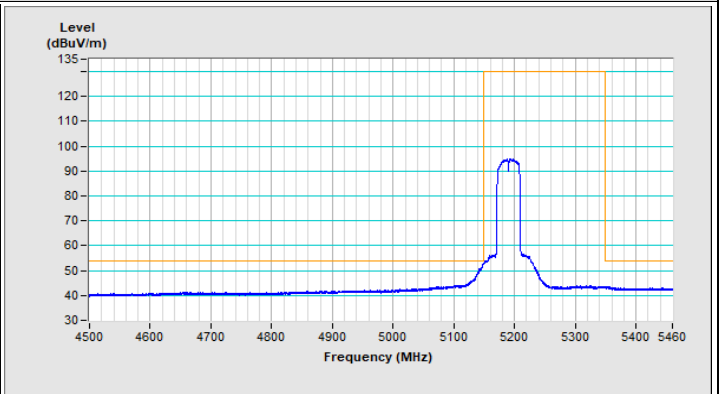


Vertical (Peak)

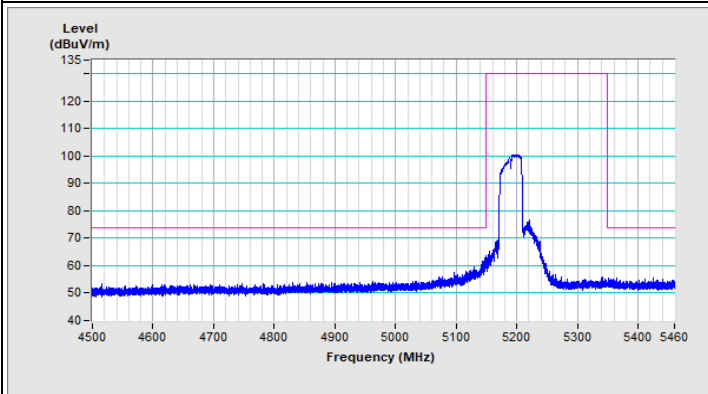
802.11n (HT40) Channel 38



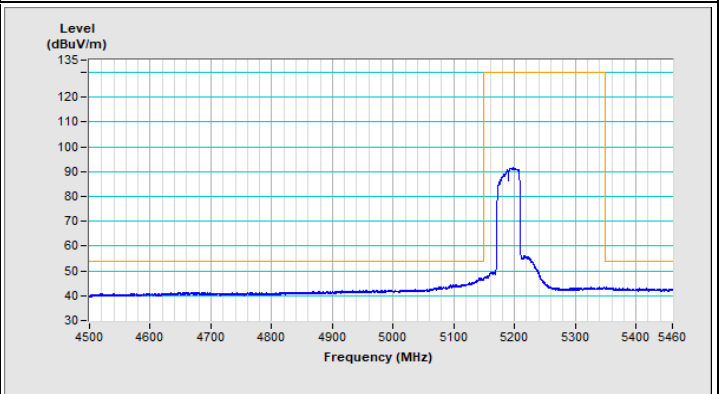
Horizontal (Peak)



Horizontal (Average)

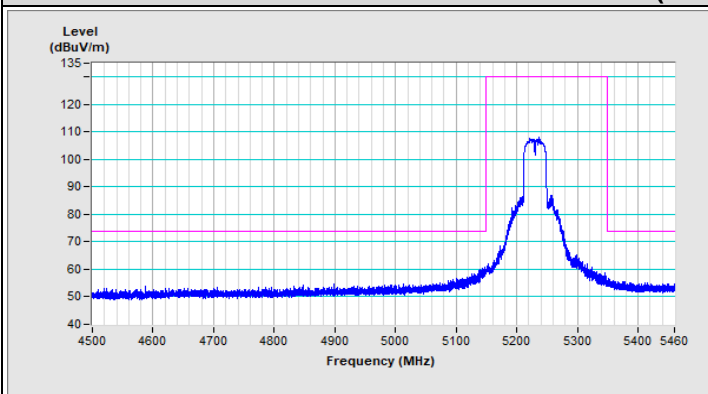


Vertical (Peak)

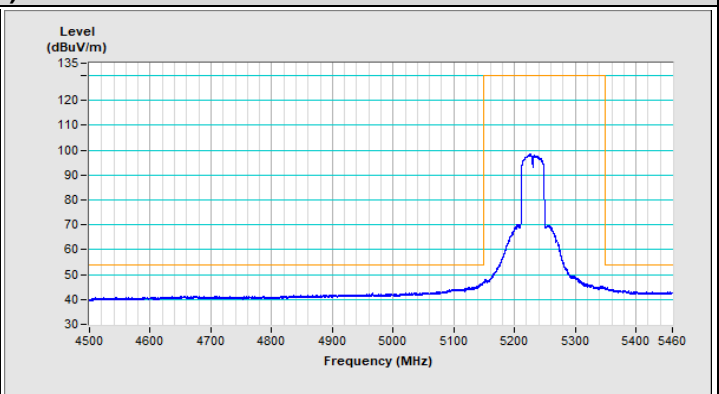


Vertical (Average)

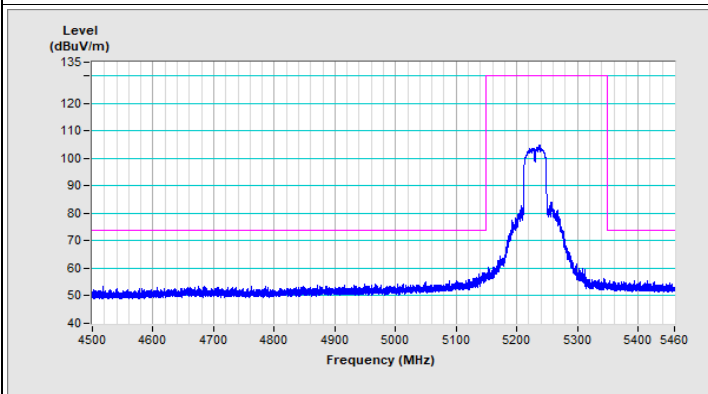
802.11n (HT40) Channel 46



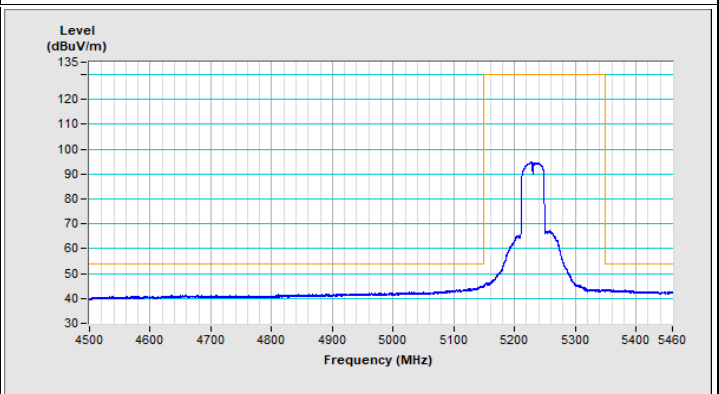
Horizontal (Peak)



Horizontal (Average)

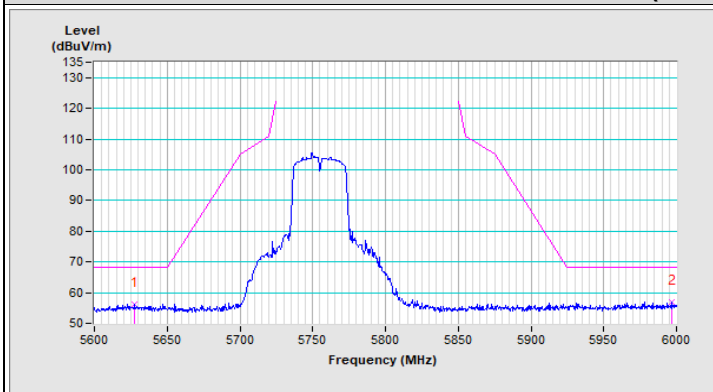


Vertical (Peak)

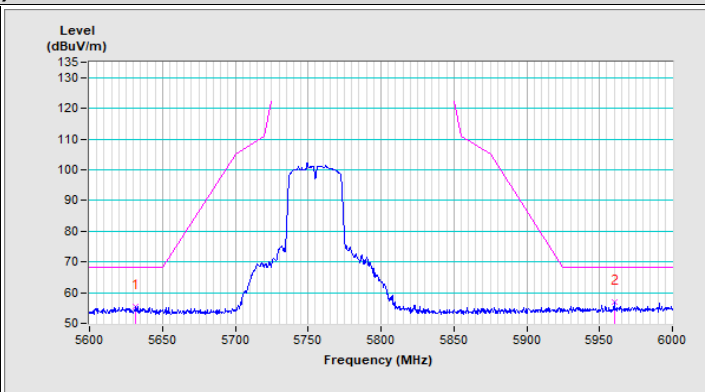


Vertical (Average)

802.11n (HT40) Channel 151

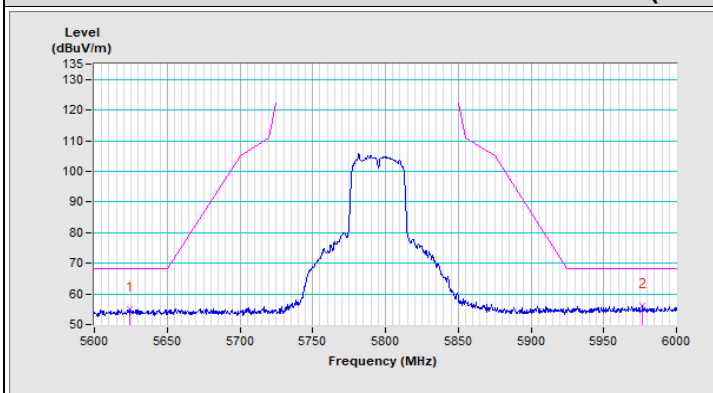


Horizontal (Peak)

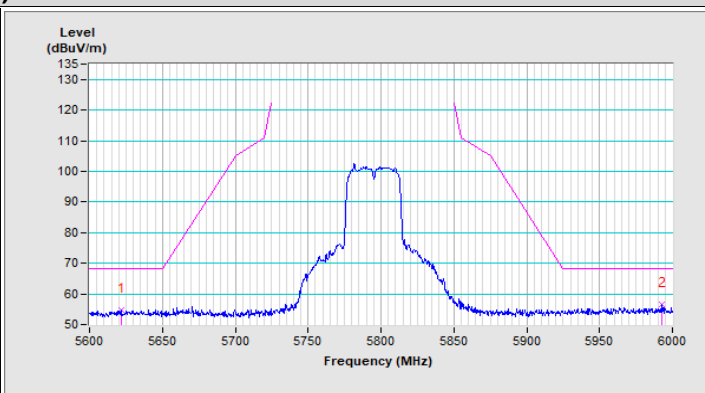


Vertical (Peak)

802.11n (HT40) Channel 159



Horizontal (Peak)



Vertical (Peak)

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

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

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

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Web Site: <http://ee.bureauveritas.com.tw>

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

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