TESTING LABORATORY
CERTIFICATE #4820.01

FCC PART 15.407

TEST REPORT

For

Telstar USA LLC

9817 Valley View Road, Eden Prairie, MN, USA

FCC ID:2AW96-M280A

Report Type:	**Product Name:**
Original Report	Smart Mini Pro Projector

Report Number:	RDG200812007-00C
Report Date:	2020-09-22
Reviewed By:	Ivan Cao Assistant Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:		Smart Mini Pro Projector
EUT Model:		M280A
Operation Frequency:		5180-5240 MHz(802.11a/n ht20)
Maximum Output Power (Conducted):		15.67 dBm
Modulation Type:		OFDM
Rated Input Voltage:		DC 12V from adapter or DC 7.4V from battery
Adapter Information	**Model:**	SA24V-120200U
	Input:	100-240V~50/60Hz 0.8A
	Output:	12V 2A
Serial Number:		RDG200812007-RF-S1
EUT Received Date:		2020.08.12
EUT Received Status:		Good

Objective

This type approval report is prepared on behalf of ***Telstar USA LLC*** in accordance with Part 2-Subpart J, Part 15-Subparts A, and E of the Federal Communications Commission's rules.

The tests were performed in order to determine compliance with FCC Rules Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Related Submittal(s)/Grant(s)

FCC Part 15C DSS submissions with FCC ID: 2AW96-M280A
FCC Part 15E DTS submissions with FCC ID: 2AW96-M280A

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	30M~200MHz: 4.55 dB,200M~1GHz: 5.92 dB,1G~6GHz: 4.98 dB, 6G~18GHz: 5.89 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Unwanted Emissions,conducted	±1.5 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage fac vhtor K with the 95% confidence interval.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "△ ". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in Engineering Mode, which was provided by the manufacturer. The system supports 802.11a/n ht20 modes.

For 5150~5250 MHz band, 4 channels are provided:

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

For 802.11a, 802.11n ht20 channel 36, 40 and 48 was tested.

The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the average power and PSD across all data rates, bandwidths, and modulations. The device supports SISO in all modes, and MIMO 2T2R in 802.11n modes, per pretest, 2TX mode was the worst mode and reported for 802.11n modes.

EUT Exercise Software

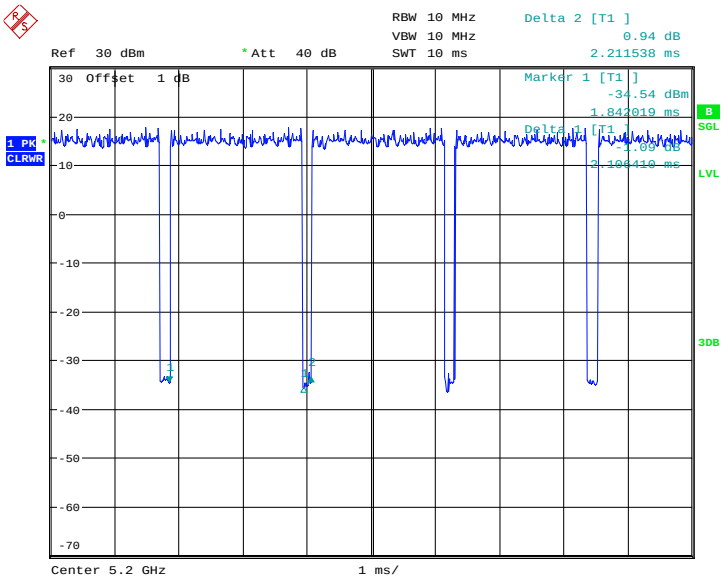
The software "SecureCRT" was used for testing, which was provided by manufacturer. The maximum power was configured as below table, that provided by the manufacturer:

Mode	Channel	Test Frequency (MHz)	Data rate	Power level Setting	
				Chain 0	Chain 1
802.11a	Low	5180	6 Mbps	19	19
	Middle	5200	6 Mbps	19	19
	High	5240	6 Mbps	19	19
802.11n ht20	Low	5180	MCS0	19	19
	Middle	5200	MCS0	20	20
	High	5240	MCS0	20	20

The duty cycle as below:

Mode	T_{on} (ms)	T_{on+off} (ms)	Duty Cycle (%)
802.11 a	2.106	2.212	95.21
802.11n ht20	0.231	0.397	58.19

802.11a



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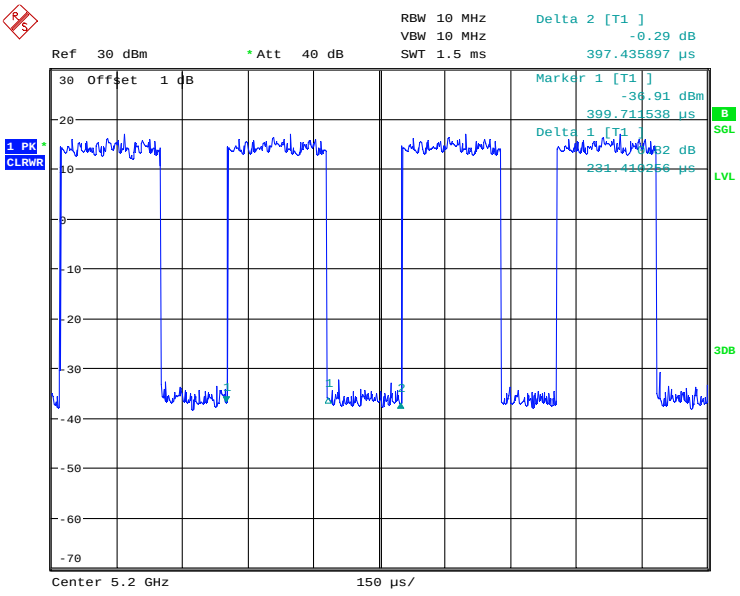
802.11n ht20



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Equipment Modifications

No modification was made to the EUT.

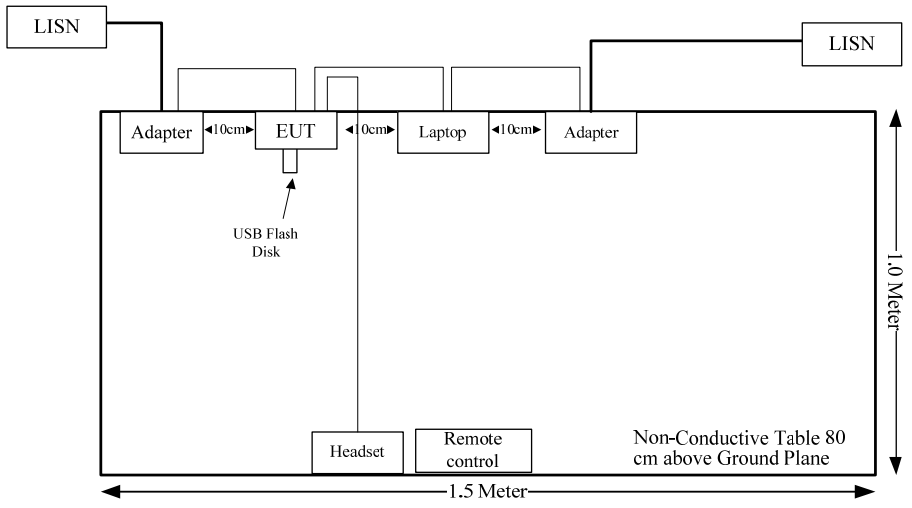
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
IPRO	Earphone	Phonenix 5.0s	Phonenix 5.0s
Lenovo	Laptop	G510	CB04060626
USB Flash Disk	Kingston	32G	32G

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
HDMI Cable	Yes	Yes	1.5	Laptop	EUT
Earphone Cable	No	No	1.2	EUT	Earphone
DC Cable	No	No	1.5	Adapter	EUT
DC Cable	Yes	No	1.8	Apdater	Laptop

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

Rules	Description of Test	Result
FCC §15.407 (f) & §1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliance
FCC§15.203	Antenna Requirement	Compliance
FCC§15.407(b)(6)& §15.207(a)	Conducted Emissions	Compliance
FCC§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliance
FCC§15.407(b)	Out Of Band Emissions	Compliance
FCC§15.407(a) (e)	Emission Bandwidth	Compliance
FCC§15.407(a) RSS-247 Clause 6.2	Conducted Transmitter Output Power	Compliance
FCC§15.407 (a),	Power Spectral Density	Compliance

FCC §15.407 (f) & §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.407(f)and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:

Operation Mode	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
BDR/EDR	2402-2480	0	1.00	9	7.94	20.00	0.001	1.0
BLE	2402-2480	0	1.00	7	5.01	20.00	0.001	1.0
WLAN 2.4G	2412-2462	0	1.00	18	63.10	20.00	0.01	1.0
WLAN 5G	5180-5240	0	1.00	16	39.81	20.00	0.01	1.0

The WLAN and Bluetooth can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$=S_{WLAN}/S_{limit\text{-}WLAN}+ S_{BT}/S_{limit\text{-}BT}$

=0.001/1+0.01/1

=0.011

< 1.0

Result: The device meet FCC MPE at 20 cm distance

FCC §15.203- ANTENNA REQUIREMENT

Applicable Standard

According to FCC§ 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

Antenna Connector Construction

The EUT has 3 internal FPC antennas arrangement, fulfill the requirement of this section. Please refer to the EUT photos.

Usage	Antenna Type	input impedance (Ohm)	Antenna Gain /Frequency Range
Bluetooth/BLE	FPC	50	0 dBi/2.4~2.5GHz
WLAN-Chain 0	FPC	50	0 dBi/2.4~2.5GHz 0 dBi/5.15~5.85GHz
WLAN-Chain 1	FPC	50	0 dBi/2.4~2.5GHz 0 dBi/5.15~5.85GHz

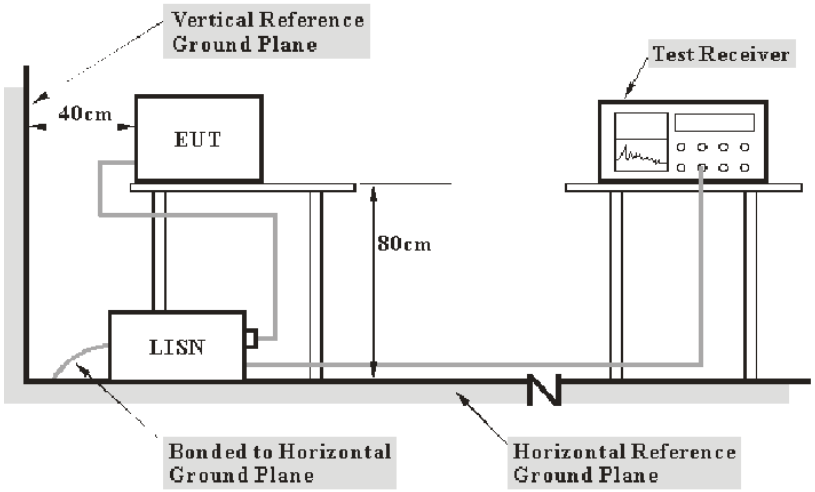
Result: Compliance.

FCC §15.207(a)– CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a), §15.407(b) (6).

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to the main lisn with a 120 V/60 Hz AC power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$
$C_f = A_C + VDF$

Herein,
V_C (cord. Reading): corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division fac vhtor of AMN
C_f: Correction Fac vhtor

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-01	2019-09-05	2020-09-05
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
R&S	Two-line V-network	ENV 216	101614	2019-09-12	2020-09-12
R&S	EMI Test Receiver	ESCI	101121	2019-05-09	2020-05-09
COM-POWER	LISN	LI-3P-132	20200003	2019-09-12	2020-09-12

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN.

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase ("hot") line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

Test Data

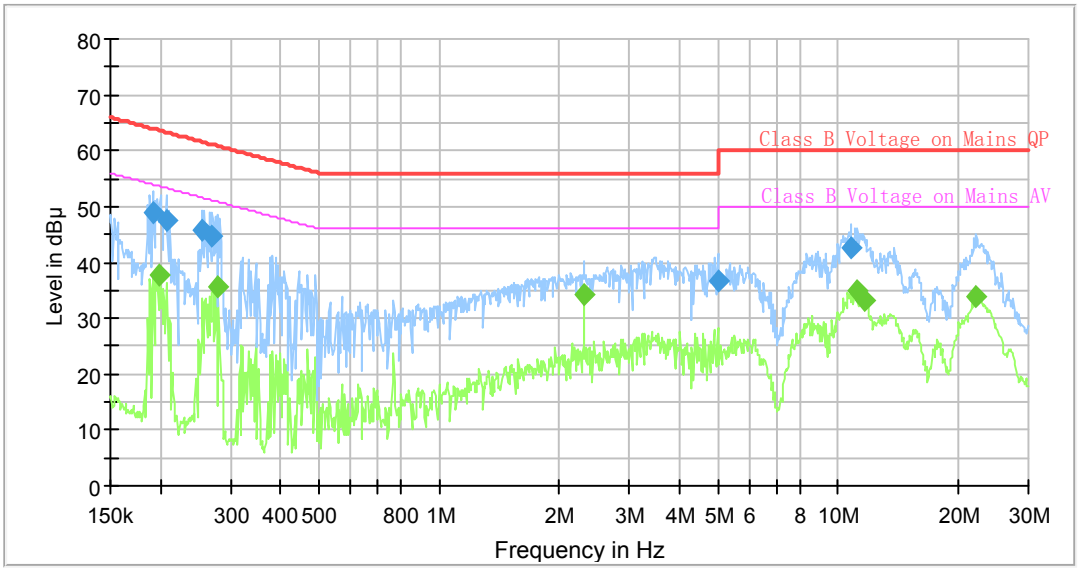
Environmental Conditions

Temperature:	27.5°C
Relative Humidity:	58%
ATM Pressure:	100.9kPa
Tester:	Leo Long
Test Date:	2020-08-27

Test Result: Compliance

Test Mode: Transmitting

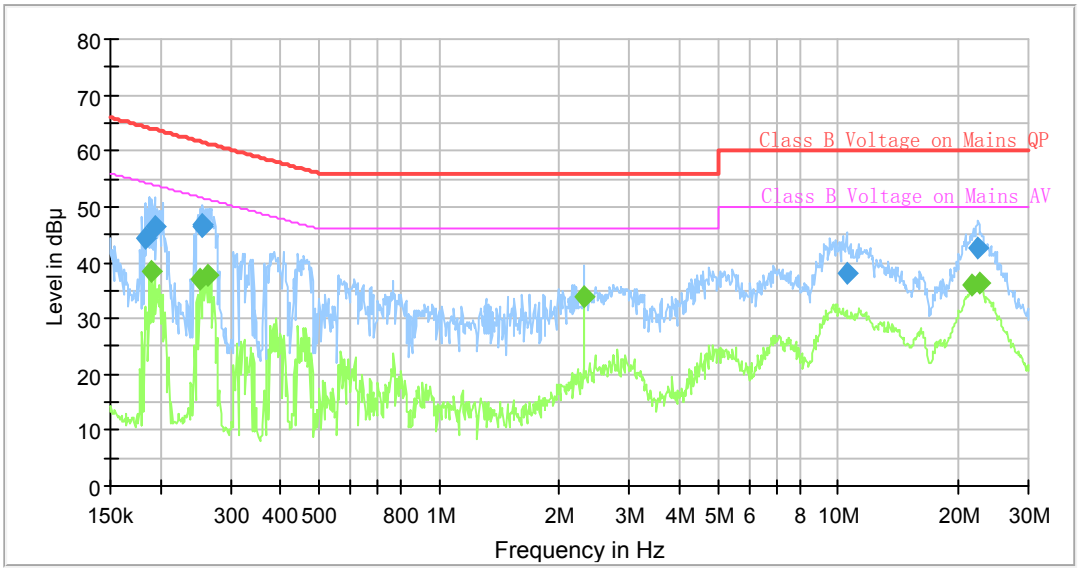
AC120 V, 60 Hz, Line:



Final_Result

Frequency (MHz)	QuasiPeak (dB µ V)	Average (dB µ V)	Limit (dB µ V)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.191526	49.02	---	63.97	14.95	9.000	L1	9.6
0.199323	---	37.61	53.64	16.03	9.000	L1	9.6
0.207437	47.67	---	63.31	15.64	9.000	L1	9.6
0.254504	45.80	---	61.61	15.81	9.000	L1	9.6
0.270201	44.75	---	61.11	16.36	9.000	L1	9.6
0.279801	---	35.64	50.82	15.18	9.000	L1	9.6
2.307242	---	34.33	46.00	11.67	9.000	L1	9.7
4.998419	36.51	---	56.00	19.49	9.000	L1	9.7
10.774725	42.60	---	60.00	17.40	9.000	L1	9.9
11.102034	---	34.87	50.00	15.13	9.000	L1	9.9
11.611735	---	33.12	50.00	16.88	9.000	L1	10.0
22.096276	---	33.93	50.00	16.07	9.000	L1	10.0

AC120 V, 60 Hz, Neutral:



Final_Result

Frequency (MHz)	QuasiPeak (dB µ V)	Average (dB µ V)	Limit (dB µ V)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.183119	44.27	---	64.34	20.07	9.000	N	9.6
0.190573	---	38.52	54.01	15.49	9.000	N	9.6
0.193446	46.61	---	63.89	17.28	9.000	N	9.6
0.251977	---	36.96	51.69	14.73	9.000	N	9.6
0.253237	46.88	---	61.65	14.77	9.000	N	9.6
0.255776	46.36	---	61.57	15.21	9.000	N	9.6
0.263546	---	37.59	51.32	13.73	9.000	N	9.6
2.307242	---	34.04	46.00	11.96	9.000	N	9.6
10.509350	38.24	---	60.00	21.76	9.000	N	9.7
21.659819	---	35.81	50.00	14.19	9.000	N	9.9
22.429380	42.61	---	60.00	17.39	9.000	N	9.9
22.541527	---	36.35	50.00	13.65	9.000	N	9.9

FCC §15.209, §15.205 , §15.407(b) –UNWANTED EMISSION

Applicable Standard

FCC §15.407; §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(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.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufac vhturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufac vhturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

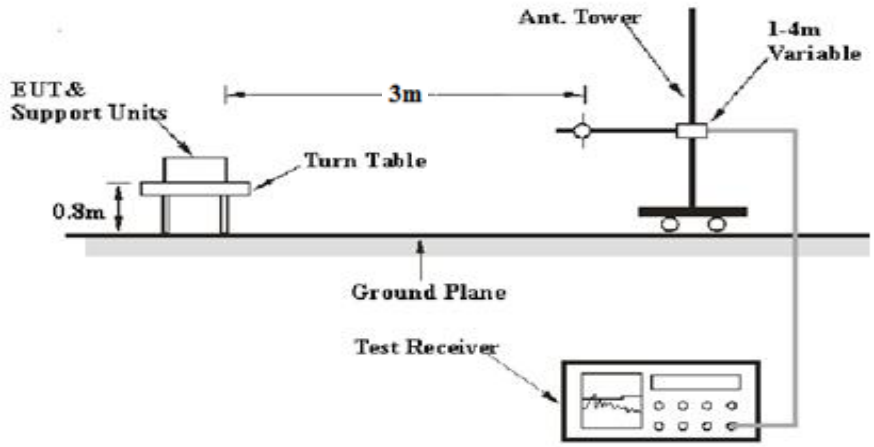
(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

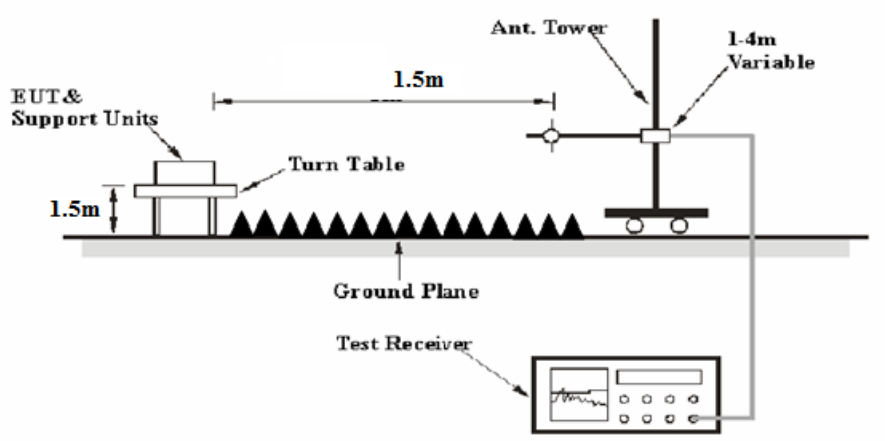
(7) The provisions of §15.205 apply to intentional radiators operating under this section.

EUT Setup

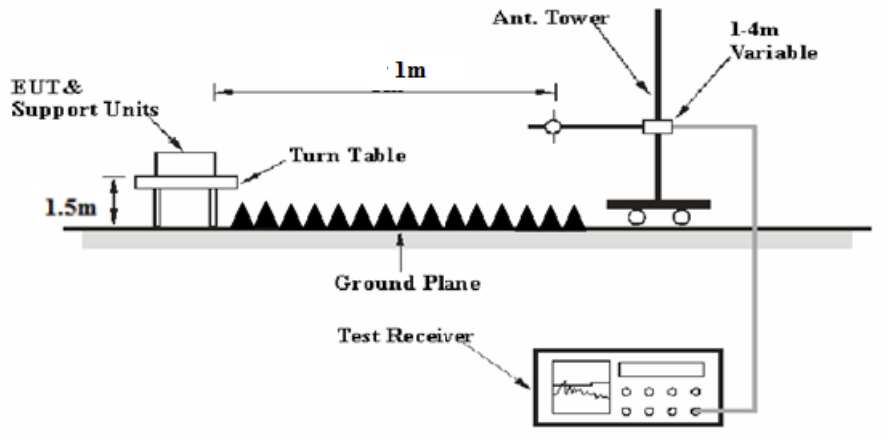
Below 1 GHz:



1-26.5 GHz:



26.5-40 GHz:



The radiated emission Below 1GHz tests were performed in the 10 meters chamber, above 1GHz tests were performed in the 3 meters chamber test site B, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

30-1000MHz:

Measurement	RBW	Video B/W	IF B/W
QP	120 kHz	300 kHz	120kHz

1GHz- 40GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
Ave.	>98%	1MHz	10 Hz
	<98%	1MHz	1/T

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

Test Procedure

During the radiated emission test, the adapter was connected to the first AC floor outlet.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, emission shall be computed as: E [dBµV/m] = EIRP[dBm] + 95.2, for d = 3 meters.

According to C63.10, the above 1G test result shall be extrapolated to the specified distance using an extrapolation fac vhtor of 20dB/decade from 3m to 1.5m or 1m
Distance extrapolation fac vhtor =20 log (specific distance [3m]/test distance [1.5m]) dB= 6.02 dB
or
Distance extrapolation fac vhtor =20 log (specific distance [3m]/test distance [1m]) dB= 9.54 dB

All emissions under the average limit and under the noise floor have not recorded in the report.

Corrected Amplitude & Margin Calculation

For the range 30MHz-1GHz, the Corrected Amplitude is calculated by adding the Antenna Fac vhtor and Cable Loss, and subtrac vhting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Fac vhtor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit - Corrected Amplitude

For the range 1GHz-40GHz, Test performed at 1.5m or 1m, the Corrected Amplitude is calculated by adding the Antenna Fac vhtor and Cable Loss, and subtrac vhting the Amplifier Gain from the Meter Reading and the Distance extrapolation fac vhtor. The basic equation is as follows:

Corrected Amplitude
= Meter Reading + Antenna Fac vhtor + Cable Loss - Amplifier Gain-Distance extrapolation fac vhtor

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit- Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiation Below 1GHz					
Sunol Sciences	Antenna	JB3	A060611-3	2017-07-21	2020-07-21
R&S	EMI Test Receiver	ESCI	100224	2019-09-12	2020-09-12
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2019-09-05	2020-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-02	2019-09-05	2020-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0530-01	2019-09-24	2020-09-24
Sonoma	Amplifier	310N	185914	2019-10-13	2020-10-13
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Radiation Above 1GHz					
ETS-Lindgren	Horn Antenna	3115	000 527 35	2018-10-12	2021-10-12
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2017-12-06	2020-12-05
Ducommun Technolagies	Horn Antenna	ARH-2823-02	1007726-01 1302	2017-12-06	2020-12-05
Agilent	Spectrum Analyzer	E4440A	SG43360054	2020-07-07	2021-07-07
R&S	Spectrum Analyzer	FSP 38	100478	2020-07-07	2021-07-07
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-2.4J2.4J-50	C-0700-02	2020-06-27	2021-06-27
Mini-Circuit	Amplifier	ZVA-213-S+	54201245	2020-09-05	2021-09-05
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2020-06-27	2021-06-27
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Sinoscite	Bandstop Filters	BSF5150-5850MN-0899-003	0899003	2020-05-06	2021-05-06
Mini Circuits	High Pass Filter	VHF-6010+	31118	2020-06-16	2021-06-16

**** Statement of Traceability:*** *Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data

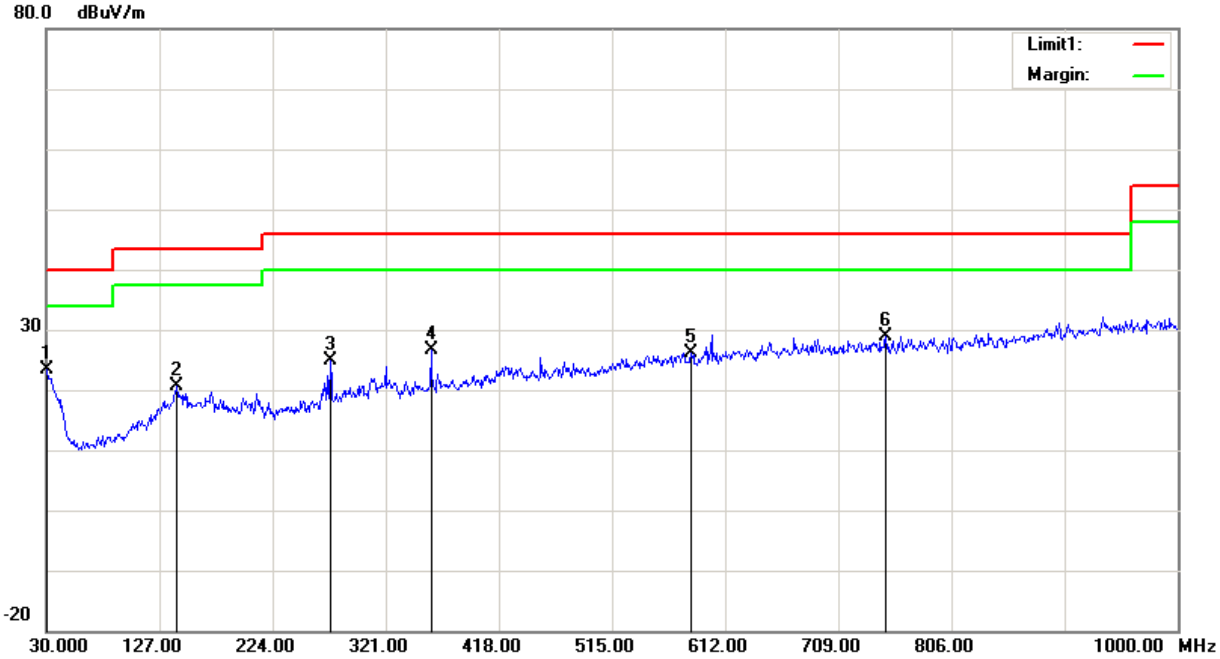
Environmental Conditions

Test Items	Radiation Below 1GHz	Radiation Above 1GHz
Temperature:	28.5°C	27.8°C
Relative Humidity:	36%	43%
ATM Pressure:	100.5kPa	100.7kPa
Tester:	Michael Zhang	Bond Qin
Test Date:	2020-09-02	2020-09-12

Test Mode: Transmitting

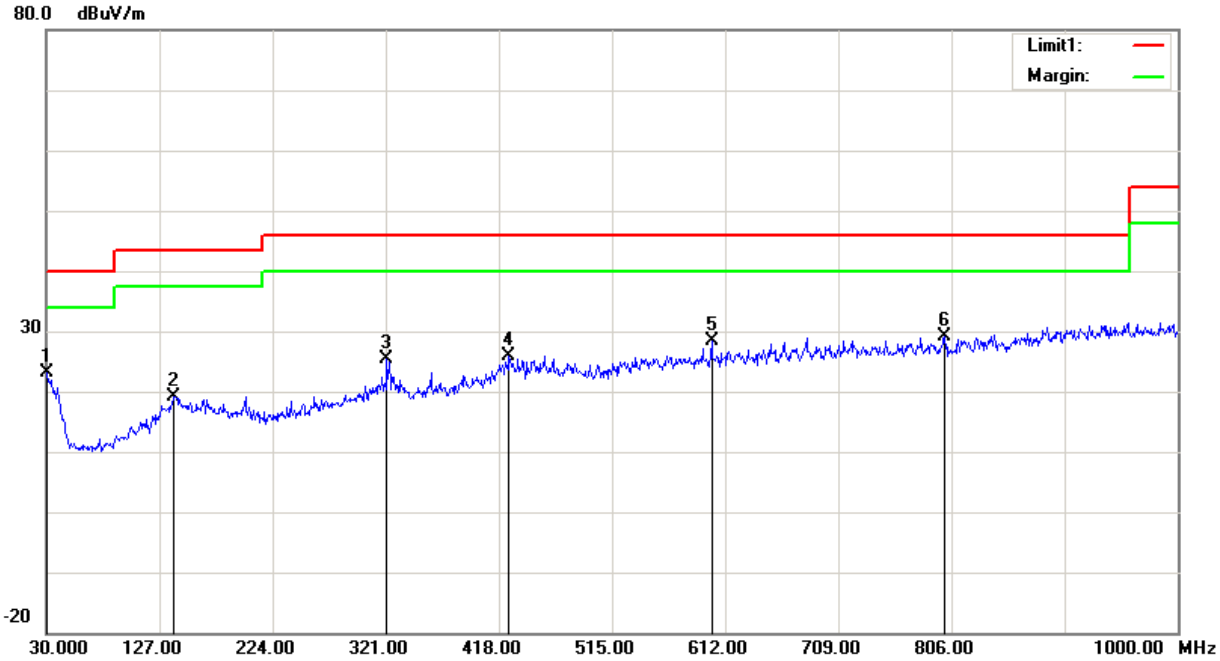
1) **Below 1GHz(802.11a chain 0 low channel was the worst)**:

Horizontal:



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Fac vhtor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.0000	27.75	peak	-4.33	23.42	40.00	16.58
141.5500	29.84	peak	-9.32	20.52	43.50	22.98
273.4700	33.62	peak	-8.64	24.98	46.00	21.02
359.8000	32.75	peak	-6.00	26.75	46.00	19.25
582.9000	27.63	peak	-1.47	26.16	46.00	19.84
749.7400	28.29	peak	0.66	28.95	46.00	17.05

Vertical:



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Fac vhtor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.9700	27.99	peak	-4.88	23.11	40.00	16.89
138.6400	28.48	peak	-9.37	19.11	43.50	24.39
321.9700	32.41	peak	-7.12	25.29	46.00	20.71
426.7300	30.58	peak	-4.75	25.83	46.00	20.17
600.3600	29.77	peak	-1.35	28.42	46.00	17.58
800.1800	28.06	peak	1.09	29.15	46.00	16.85

2) 1GHz-40GHz:
802.11a Chain 0:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Fac vhtor (dB/m)						
Low Channel: 5180 MHz										
5180.00	70.48	PK	H	33.59	3.58	0.00	107.65	101.63	N/A	N/A
5180.00	60.89	AV	H	33.59	3.58	0.00	98.06	92.04	N/A	N/A
5180.00	73.59	PK	V	33.59	3.58	0.00	110.76	104.74	N/A	N/A
5180.00	63.42	AV	V	33.59	3.58	0.00	100.59	94.57	N/A	N/A
5150.00	33.69	PK	V	33.54	3.56	0.00	70.79	64.77	74.00	9.23
5150.00	16.20	AV	V	33.54	3.56	0.00	53.30	47.28	54.00	6.72
10360.00	52.54	PK	V	38.17	6.29	25.46	71.54	65.52	68.20	2.68
15540.00	52.36	PK	V	38.06	8.85	24.27	75.00	68.98	74.00	5.02
15540.00	34.98	AV	V	38.06	8.85	24.27	57.62	51.6	54.00	2.40
Middle Channel: 5200 MHz										
5200.00	73.58	PK	H	33.62	3.60	0.00	110.80	104.78	N/A	N/A
5200.00	63.97	AV	H	33.62	3.60	0.00	101.19	95.17	N/A	N/A
5200.00	76.82	PK	V	33.62	3.60	0.00	114.04	108.02	N/A	N/A
5200.00	66.98	AV	V	33.62	3.60	0.00	104.20	98.18	N/A	N/A
10400.00	51.24	PK	V	38.18	6.32	25.46	70.28	64.26	68.20	3.94
15600.00	52.28	PK	V	38.00	8.83	24.31	74.80	68.78	74.00	5.22
15600.00	35.05	AV	V	38.00	8.83	24.31	57.57	51.55	54.00	2.45
High Channel: 5240 MHz										
5240.00	71.45	PK	H	33.68	3.52	0.00	108.65	102.63	N/A	N/A
5240.00	61.48	AV	H	33.68	3.52	0.00	98.68	92.66	N/A	N/A
5240.00	74.87	PK	V	33.68	3.52	0.00	112.07	106.05	N/A	N/A
5240.00	64.85	AV	V	33.68	3.52	0.00	102.05	96.03	N/A	N/A
5350.00	27.55	PK	V	33.86	3.52	0.00	64.93	58.91	74.00	15.09
5350.00	15.01	AV	V	33.86	3.52	0.00	52.39	46.37	54.00	7.63
10480.00	52.26	PK	V	38.20	6.37	25.47	71.36	65.34	68.20	2.86
15720.00	52.51	PK	V	37.88	8.79	24.39	74.79	68.77	74.00	5.23
15720.00	34.45	AV	V	37.88	8.79	24.39	56.73	50.71	54.00	3.29

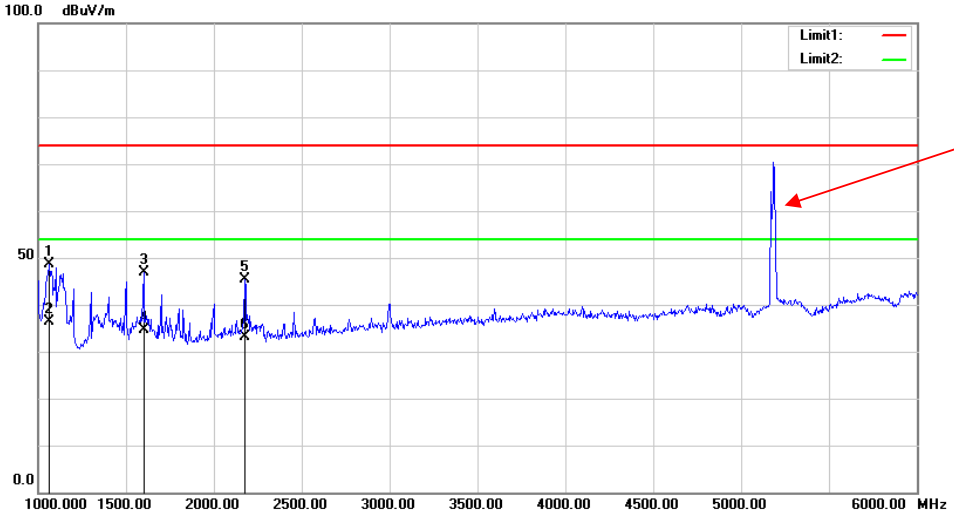
802.11a Chain 1:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector	Polar (H/V)	Fac vhtor (dB/m)						
Low Channel: 5180 MHz										
5180.00	71.57	PK	H	33.59	3.58	0.00	108.74	102.72	N/A	N/A
5180.00	62.41	AV	H	33.59	3.58	0.00	99.58	93.56	N/A	N/A
5180.00	75.63	PK	V	33.59	3.58	0.00	112.80	106.78	N/A	N/A
5180.00	66.54	AV	V	33.59	3.58	0.00	103.71	97.69	N/A	N/A
5150.00	32.86	PK	V	33.54	3.56	0.00	69.96	63.94	74.00	10.06
5150.00	18.09	AV	V	33.54	3.56	0.00	55.19	49.17	54.00	4.83
10360.00	48.74	PK	V	38.17	6.29	25.46	67.74	61.72	68.20	6.48
15540.00	38.78	PK	V	38.06	8.85	24.27	61.42	55.4	74.00	18.60
15540.00	26.14	AV	V	38.06	8.85	24.27	48.78	42.76	54.00	11.24
Middle Channel: 5200 MHz										
5200.00	71.41	PK	H	33.62	3.60	0.00	108.63	102.61	N/A	N/A
5200.00	62.32	AV	H	33.62	3.60	0.00	99.54	93.52	N/A	N/A
5200.00	75.83	PK	V	33.62	3.60	0.00	113.05	107.03	N/A	N/A
5200.00	66.74	AV	V	33.62	3.60	0.00	103.96	97.94	N/A	N/A
10400.00	48.69	PK	V	38.18	6.32	25.46	67.73	61.71	68.20	6.49
15600.00	39.02	PK	V	38.00	8.83	24.31	61.54	55.52	74.00	18.48
15600.00	26.14	AV	V	38.00	8.83	24.31	48.66	42.64	54.00	11.36
High Channel: 5240 MHz										
5240.00	71.25	PK	H	33.68	3.52	0.00	108.45	102.43	N/A	N/A
5240.00	62.47	AV	H	33.68	3.52	0.00	99.67	93.65	N/A	N/A
5240.00	75.94	PK	V	33.68	3.52	0.00	113.14	107.12	N/A	N/A
5240.00	66.73	AV	V	33.68	3.52	0.00	103.93	97.91	N/A	N/A
5350.00	26.95	PK	V	33.86	3.52	0.00	64.33	58.31	74.00	15.69
5350.00	14.52	AV	V	33.86	3.52	0.00	51.90	45.88	54.00	8.12
10480.00	47.96	PK	V	38.20	6.37	25.47	67.06	61.04	68.20	7.16
15720.00	39.13	PK	V	37.88	8.79	24.39	61.41	55.39	74.00	18.61
15720.00	27.01	AV	V	37.88	8.79	24.39	49.29	43.27	54.00	10.73

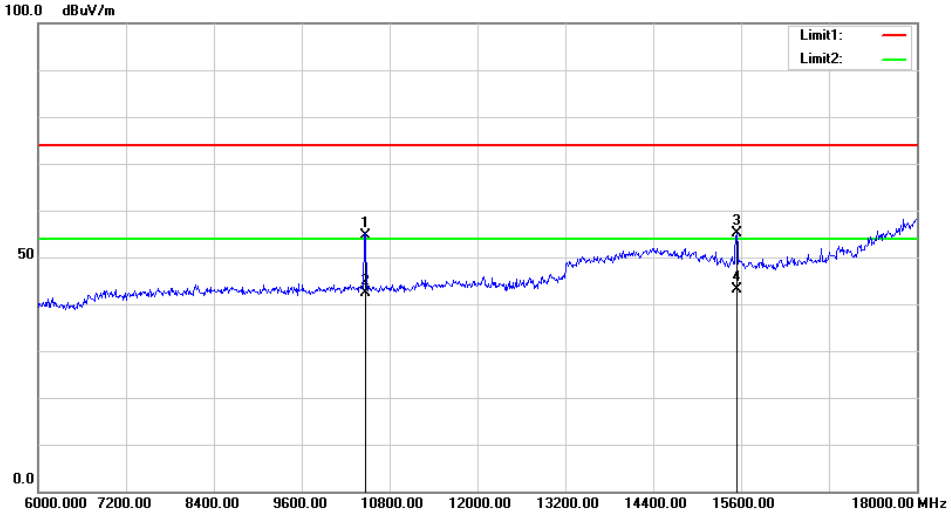
802.11n ht20(MIMO was the worst):

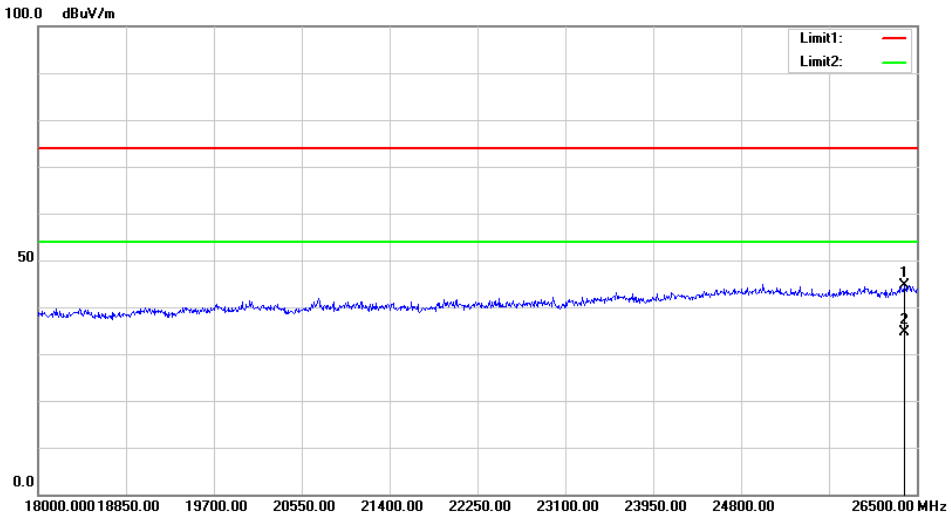
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector	Polar (H/V)	Fac vhtor (dB/m)						
Low Channel: 5180 MHz										
5180.00	74.54	PK	H	33.59	3.58	0.00	111.71	105.69	N/A	N/A
5180.00	65.23	AV	H	33.59	3.58	0.00	102.40	96.38	N/A	N/A
5180.00	77.54	PK	V	33.59	3.58	0.00	114.71	108.69	N/A	N/A
5180.00	68.22	AV	V	33.59	3.58	0.00	105.39	99.37	N/A	N/A
5150.00	37.47	PK	V	33.54	3.56	0.00	74.57	68.55	74.00	5.45
5150.00	20.15	AV	V	33.54	3.56	0.00	57.25	51.23	54.00	2.77
10360.00	52.25	PK	V	38.17	6.29	25.46	71.25	65.23	68.20	2.97
15540.00	39.50	PK	V	38.06	8.85	24.27	62.14	56.12	74.00	17.88
15540.00	26.10	AV	V	38.06	8.85	24.27	48.74	42.72	54.00	11.28
Middle Channel: 5200 MHz										
5200.00	74.69	PK	H	33.62	3.60	0.00	111.91	105.89	N/A	N/A
5200.00	65.44	AV	H	33.62	3.60	0.00	102.66	96.64	N/A	N/A
5200.00	77.85	PK	V	33.62	3.60	0.00	115.07	109.05	N/A	N/A
5200.00	68.47	AV	V	33.62	3.60	0.00	105.69	99.67	N/A	N/A
10400.00	52.36	PK	V	38.18	6.32	25.46	71.40	65.38	68.20	2.82
15600.00	40.52	PK	V	38.00	8.83	24.31	63.04	57.02	74.00	16.98
15600.00	28.25	AV	V	38.00	8.83	24.31	50.77	44.75	54.00	9.25
High Channel: 5240 MHz										
5240.00	74.25	PK	H	33.68	3.52	0.00	111.45	105.43	N/A	N/A
5240.00	65.02	AV	H	33.68	3.52	0.00	102.22	96.2	N/A	N/A
5240.00	77.91	PK	V	33.68	3.52	0.00	115.11	109.09	N/A	N/A
5240.00	68.87	AV	V	33.68	3.52	0.00	106.07	100.05	N/A	N/A
5350.00	26.89	PK	V	33.86	3.52	0.00	64.27	58.25	74.00	15.75
5350.00	15.04	AV	V	33.86	3.52	0.00	52.42	46.4	54.00	7.60
10480.00	52.53	PK	V	38.20	6.37	25.47	71.63	65.61	68.20	2.59
15720.00	41.00	PK	V	37.88	8.79	24.39	63.28	57.26	74.00	16.74
15720.00	28.45	AV	V	37.88	8.79	24.39	50.73	44.71	54.00	9.29

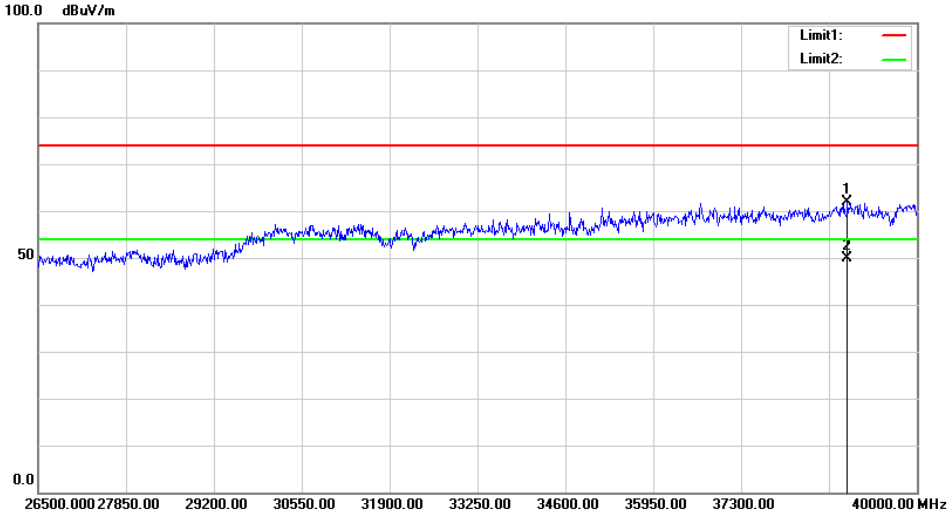
Test Plots(For worst mode 802.11a chain 0 5180MHz)
Horizontal



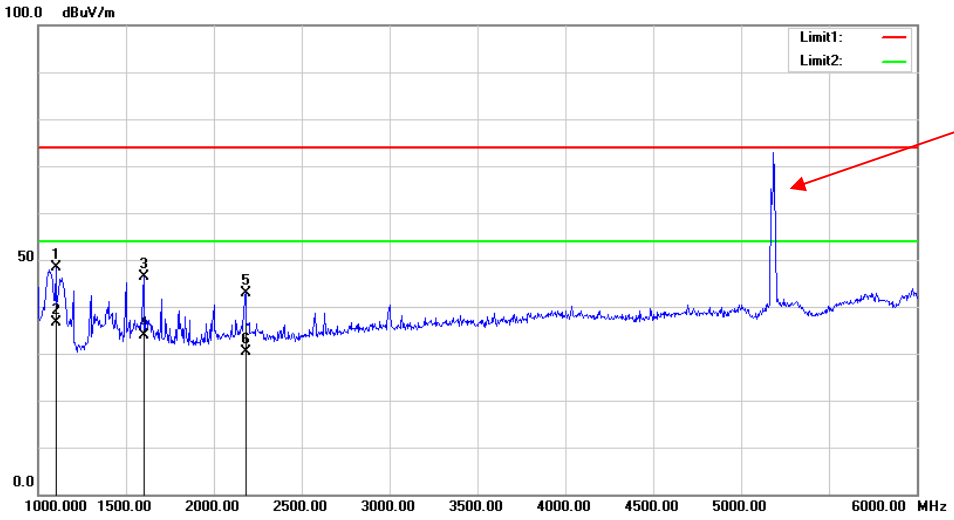
Fundamental Test with Band Rejection Filter



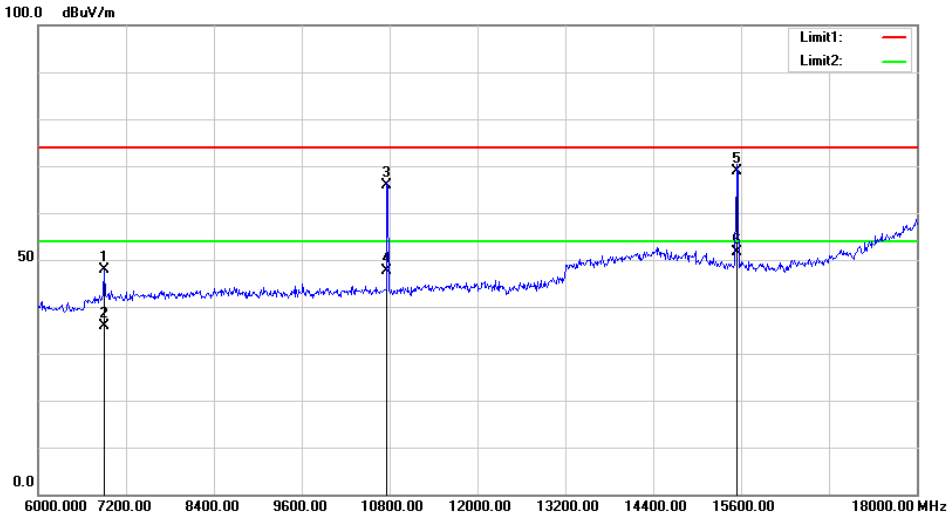


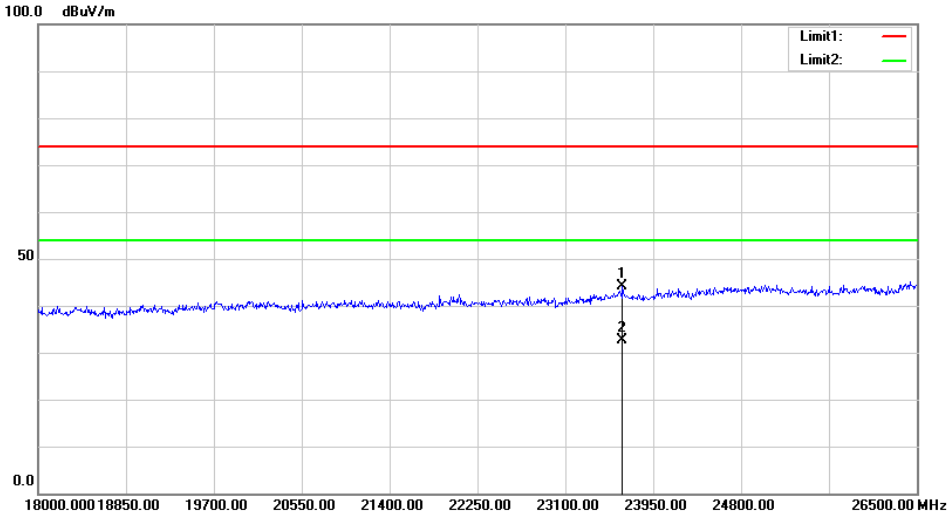


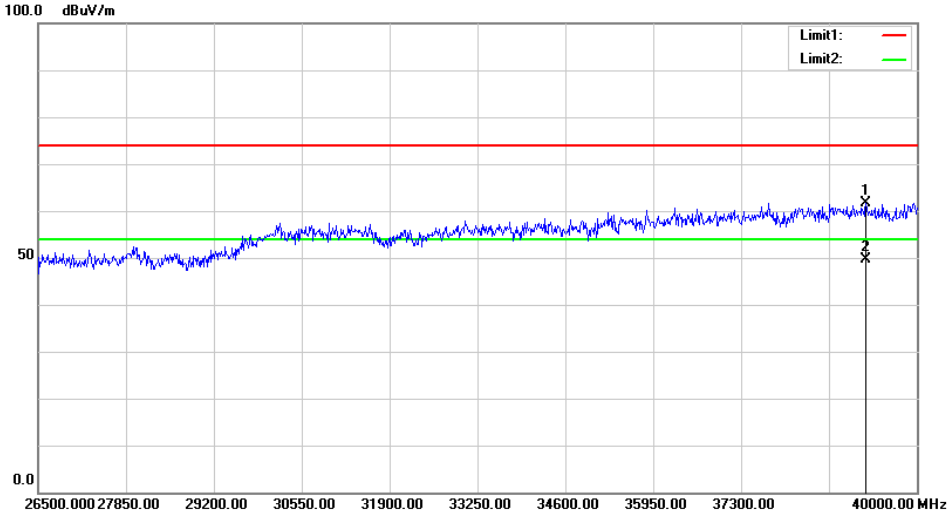
Vertical



Fundamental Test with Band Rejection Filter




100.0 dBuV/m
Limit1:
Limit2:
50
0.0
18000.000 18850.00 19700.00 20550.00 21400.00 22250.00 23100.00 23950.00 24800.00 26500.00 MHz


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
26500.000 27850.00 29200.00 30550.00 31900.00 33250.00 34600.00 35950.00 37300.00 40000.00 MHz

FCC §15.407(a)(e)–EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH

Applicable Standard

15.407(a) (e).

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200256	2020-01-04	2021-01-04
Unknown	Coaxial Cable	C-SJ00-0010	C0010/02	Each time	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Test Data

Environmental Conditions

Temperature:	26.6 °C
Relative Humidity:	64 %
ATM Pressure:	100.8kPa
Tester:	Rita Huang
Test Date:	2020.09.21

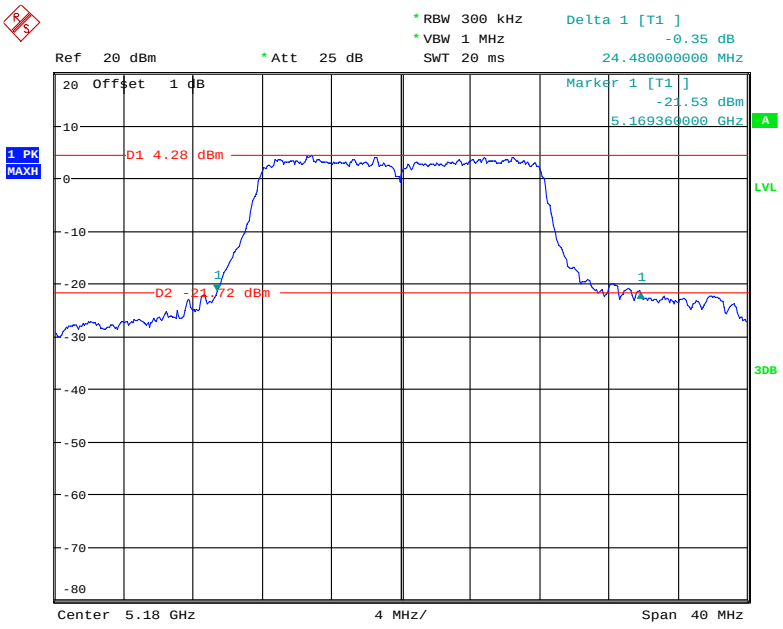
Test mode: Transmitting
Test Result: Compliance. Test only performed at chain 0. Please refer to the following tables and plots.

Mode	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
802.11 a	5180	24.480	17.120
	5200	25.200	17.120
	5240	26.560	17.200
802.11n ht20	5180	22.880	18.000
	5200	22.960	17.840
	5240	23.200	17.920

Note: the 99% Occupied bandwidth in the range of 5150-5250 MHz.

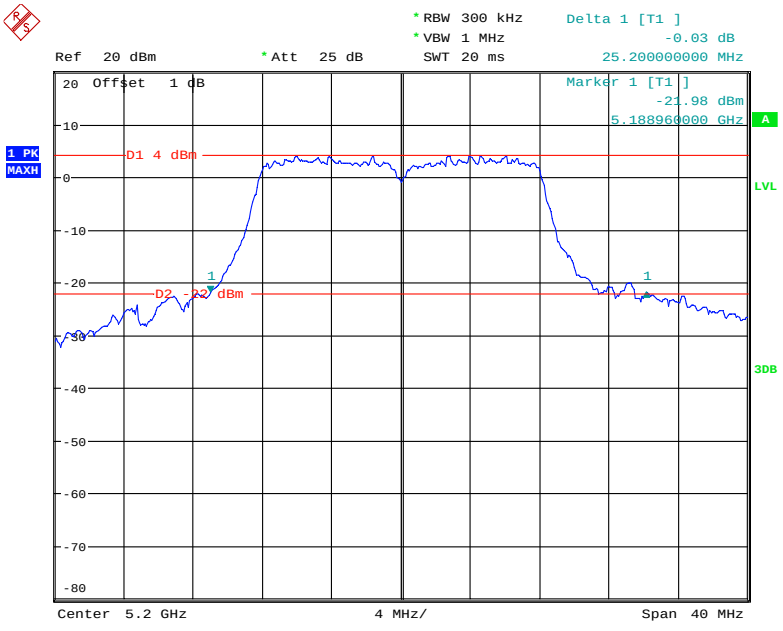
5150-5250MHz:
26dB Emission Bandwidth:

802.11a Low Channel



Date: 21.SEP.2020 16:30:40

802.11a Middle Channel



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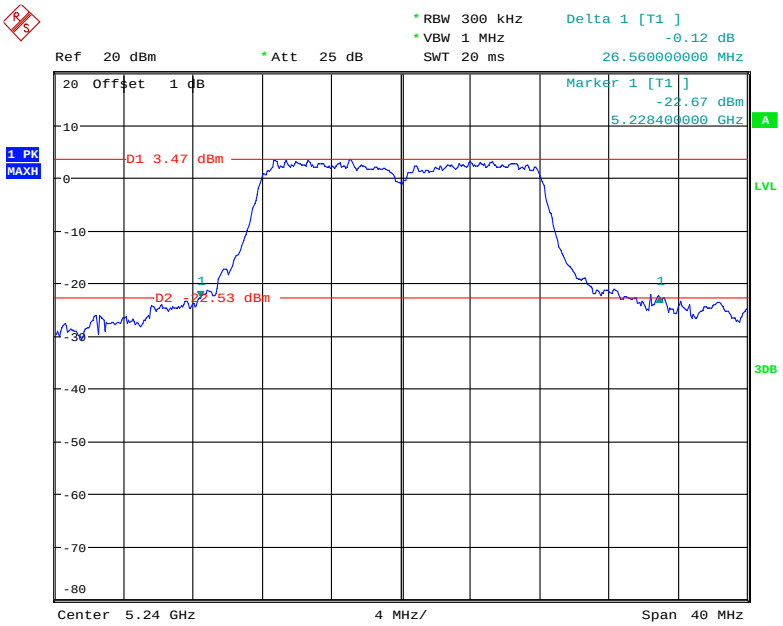
802.11a High Channel



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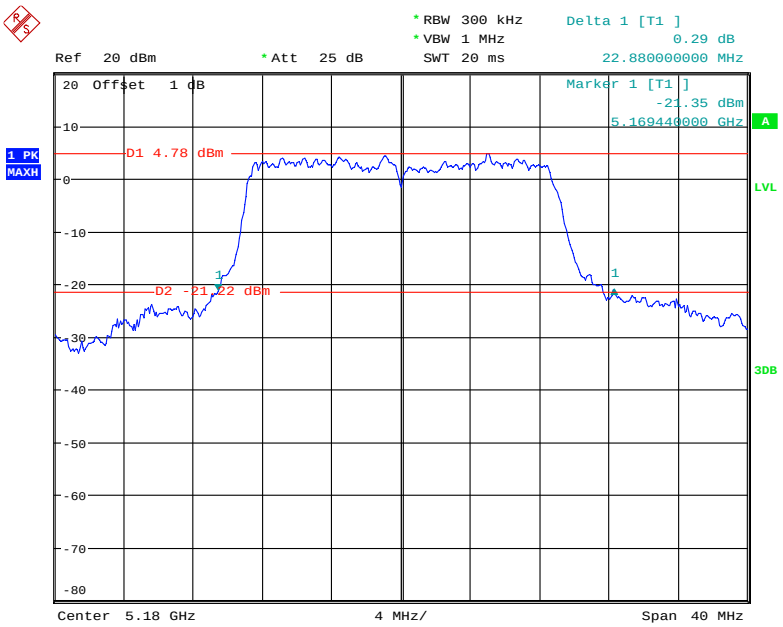
802.11n ht20 Low Channel



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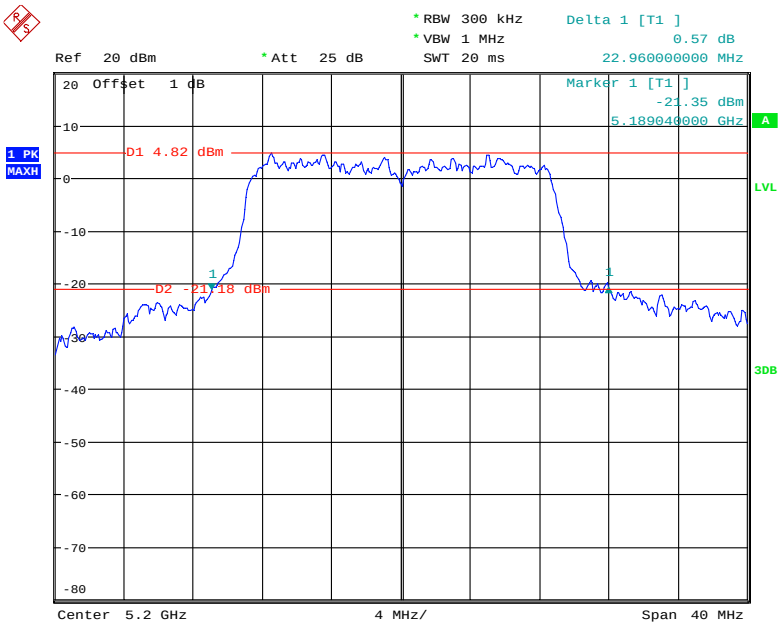
802.11n ht20 Middle Channel



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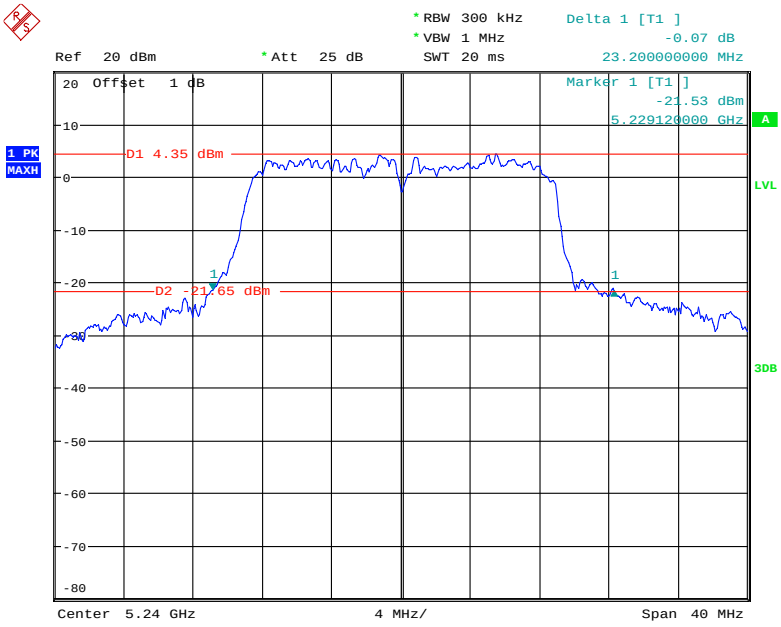
802.11n ht20 High Channel



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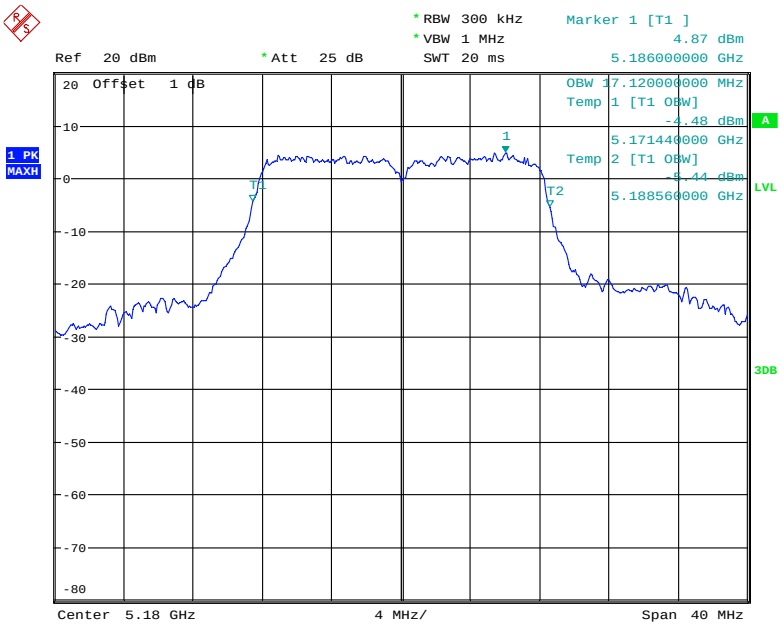
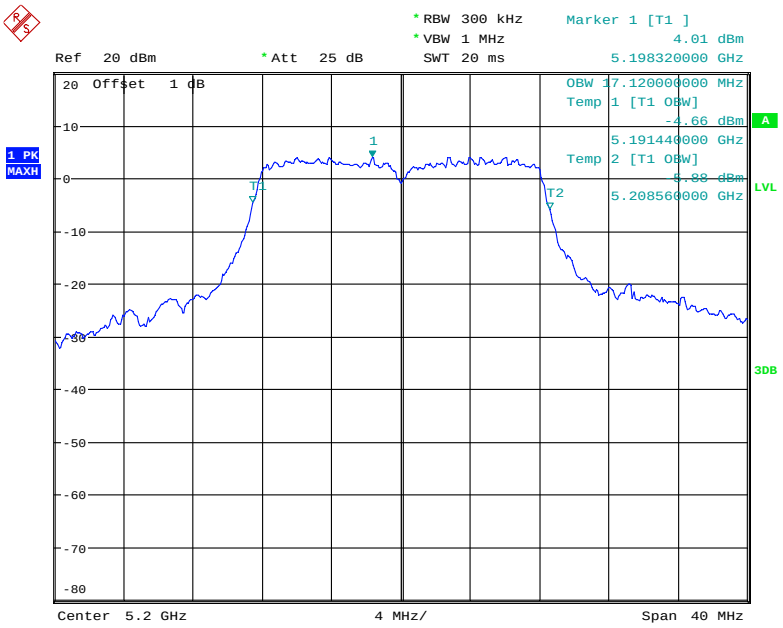
99% Occupied Bandwidth:

802.11a Low Channel



Date: 21.SEP.2020 16:28:09

802.11a Middle Channel



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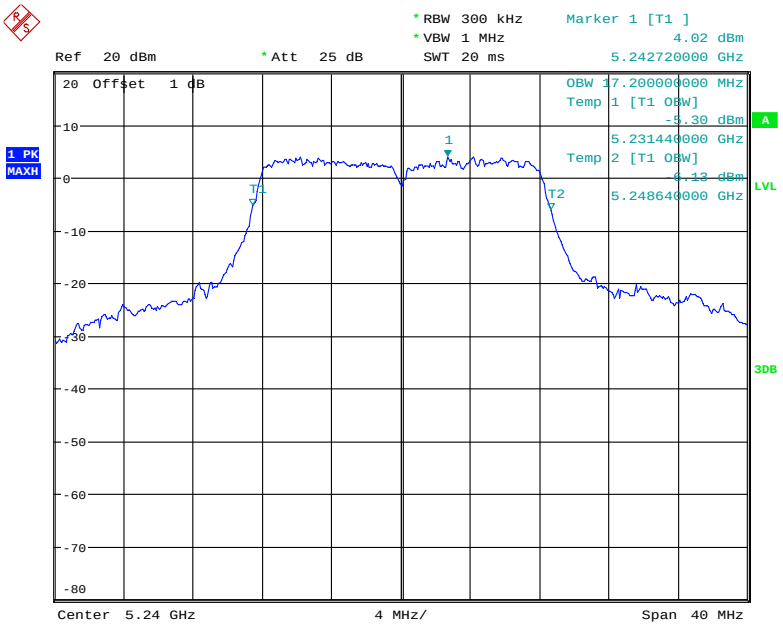
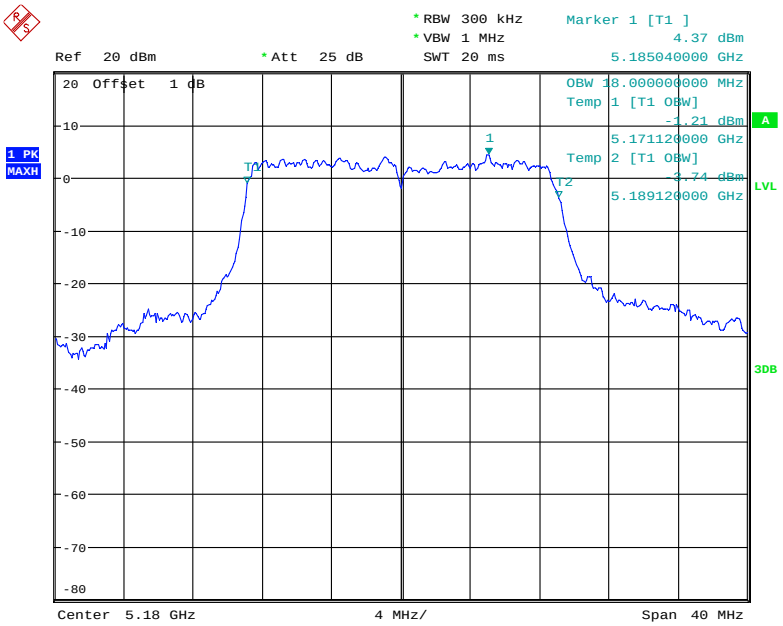
802.11a High Channel



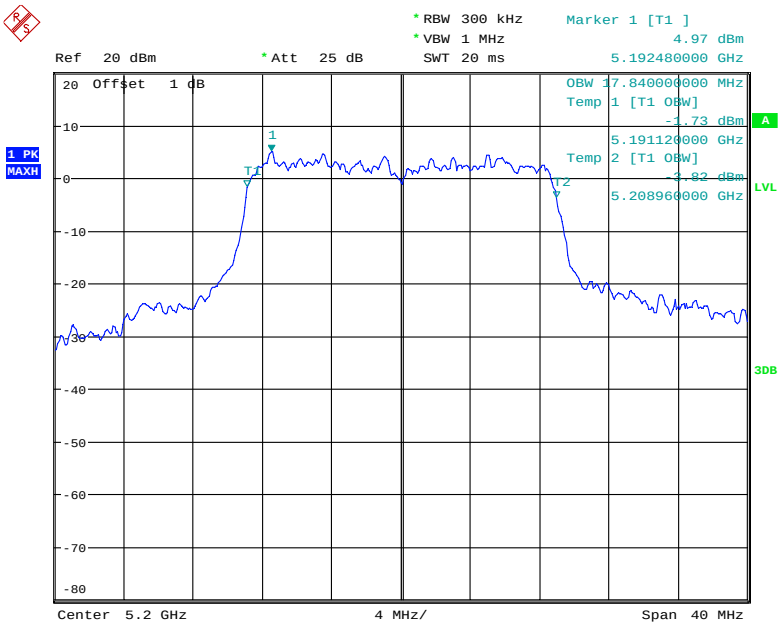
Date: 21.SEP.2020 16:34:27

802.11n ht20 Low Channel



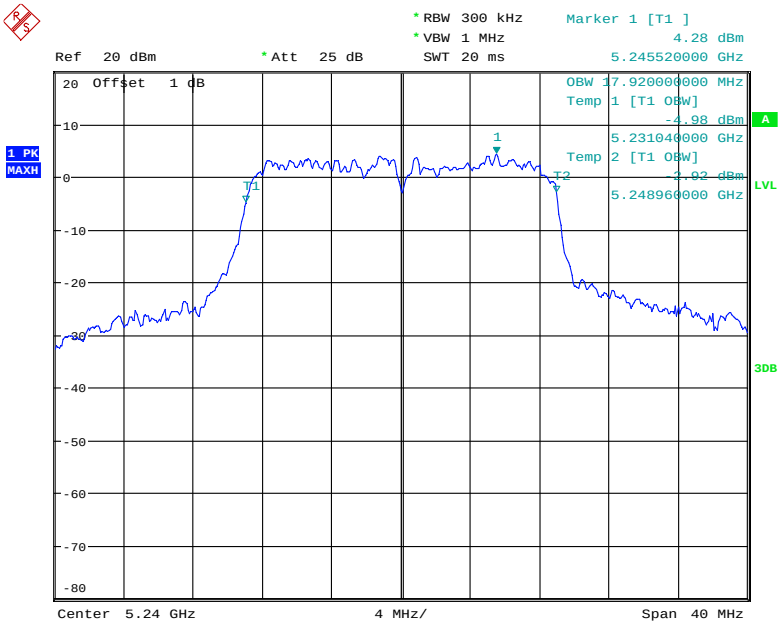
Date: 21.SEP.2020 16:37:18

802.11n ht20 Middle Channel



Date: 21.SEP.2020 16:38:28

802.11n ht20 High Channel



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FCC §15.407(a) –MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §15.407(a)

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(4) The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Unknown	Coaxial Cable	C-SJ00-0010	C0010/02	Each time	N/A
narda	Attenuator	6dB	04270	Each time	N/A
Agilent	USB Wideband Power Sensor	U2022XA	MY5417006	2019-12-11	2020-12-11

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Test Data

Environmental Conditions

Temperature:	26.6 °C
Relative Humidity:	64 %
ATM Pressure:	100.8kPa
Tester:	Rita Huang
Test Date:	2020.09.21

Test Mode: Transmitting

Test Result: Compliance. Please refer to the following table.

Mode	Frequency (MHz)	Conducted Average Output Power (dBm)			Limit (dBm)
		Chain 0	Chain 1	Total	
802.11a	5180	12.23	12.88	/	24
	5200	11.86	12.44	/	24
	5240	12.07	12.16	/	24
802.11n ht20	5180	12.29	12.89	15.61	24
	5200	12.07	13.17	15.67	24
	5240	12.83	12.24	15.56	24

Note: The device is a client device.The duty cycle factor has been calculated into the test data.
The maximum antenna gain is 0dBi in 5GHz band. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices:

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

FCC §15.407(a) - POWER SPECTRAL DENSITY

Applicable Standard

According to FCC §15.407(a)

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output

power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200256	2020-01-04	2021-01-04
Unknown	Coaxial Cable	C-SJ00-0010	C0010/02	Each time	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	26.6 °C
Relative Humidity:	64 %
ATM Pressure:	100.8kPa
Tester:	Rita Huang
Test Date:	2020.09.21

Test Mode: Transmitting

Test Result:Compliance.Please refer to the following table and plot.

Mode	Frequency (MHz)	Maximum Power Spectral Density (dBm/MHz)			Limit (dBm/MHz)
		Chain 0	Chain 1	Total	
802.11a	5180	1.81	2.03	/	11
	5200	1.56	1.57	/	11
	5240	1.39	1.42	/	11
802.11n ht20	5180	1.80	2.45	5.15	11
	5200	3.02	2.04	5.57	11
	5240	2.77	1.72	5.29	11

Note:
The maximum antenna gain is 0 dBi in 5GHz band. The device employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices:

Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

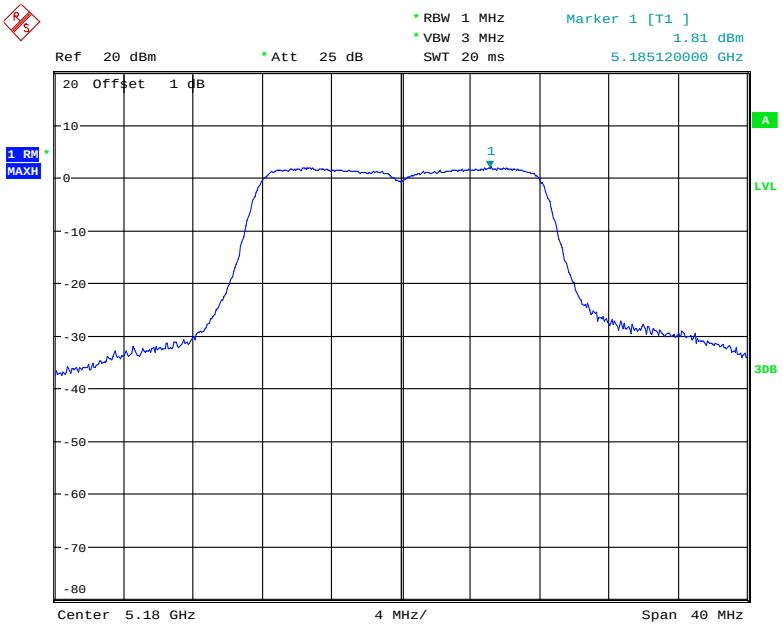
So:

Directional gain = G_{ANT} + Array Gain = 0dBi+10*log(2/1)=3dBi

Method SA-3 in KDB 789033 D02 General UNII Test Procedures New Rules v02r01was used for PSD test.

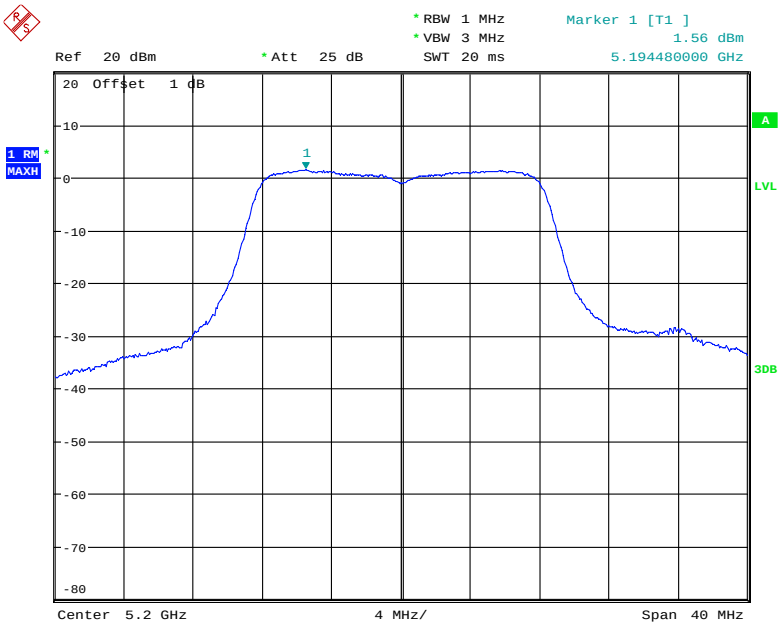
Chain 0:

802.11a Low Channel



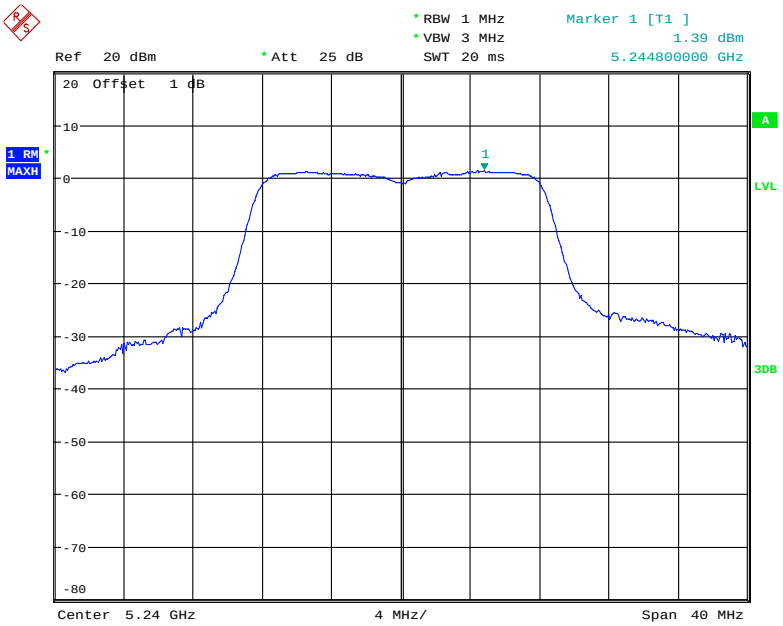
Date: 21.SEP.2020 16:47:14

802.11a Middle Channel



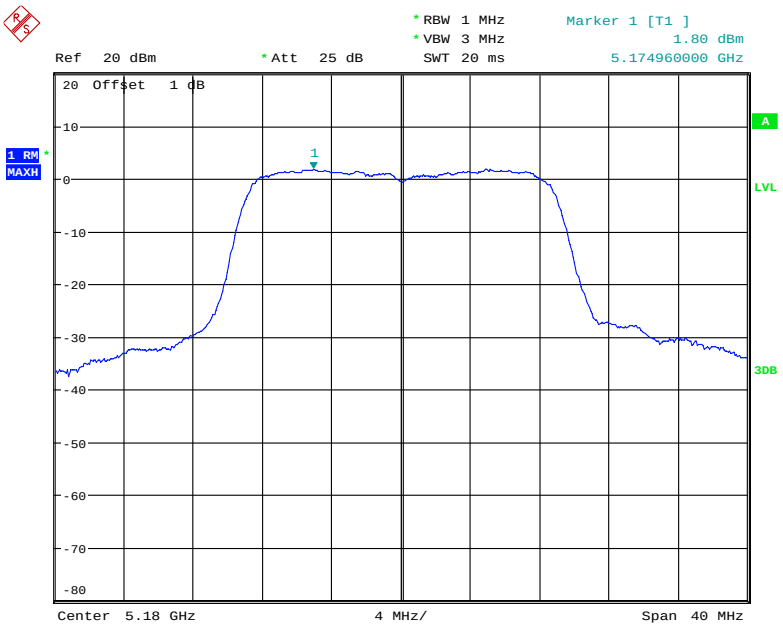
Date: 21.SEP.2020 16:47:28

802.11a High Channel



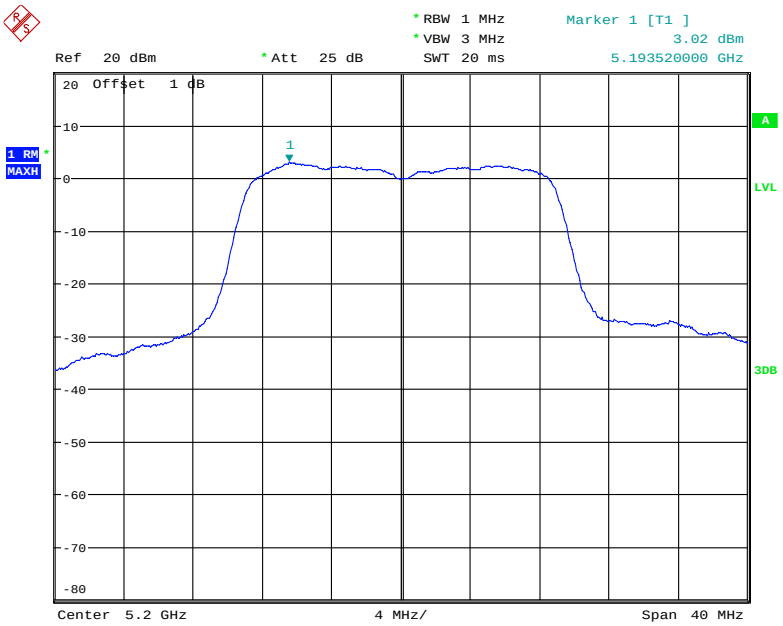
Date: 21.SEP.2020 16:47:41

802.11n ht20 Low Channel



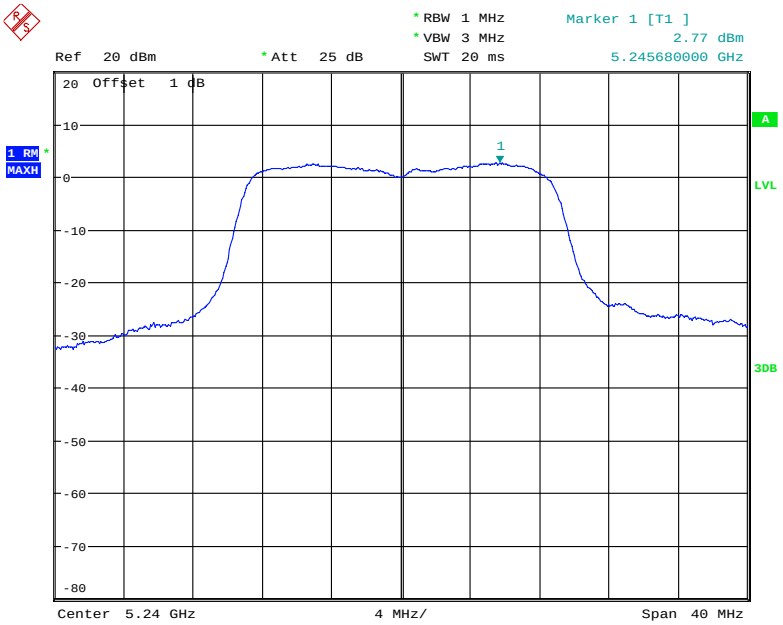
Date: 21.SEP.2020 16:47:54

802.11n ht20 Middle Channel



Date: 21.SEP.2020 16:48:09

802.11n ht20 High Channel



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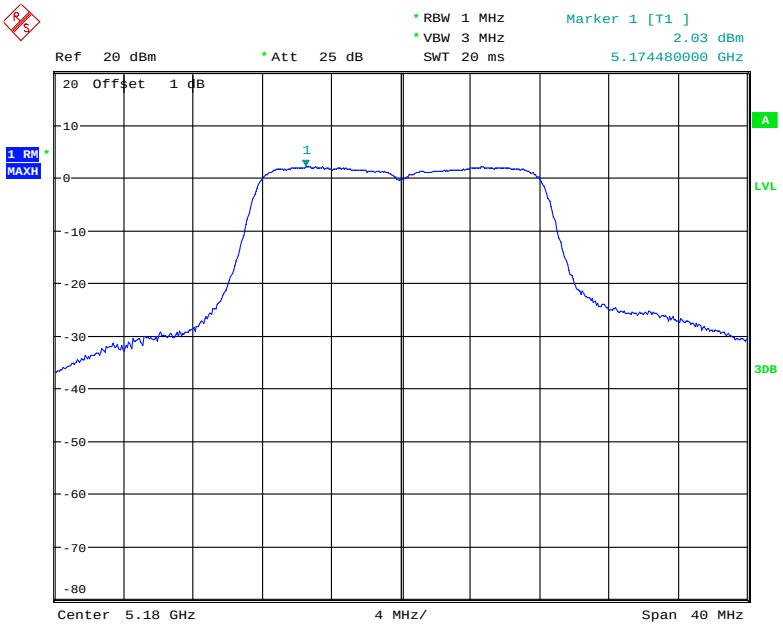
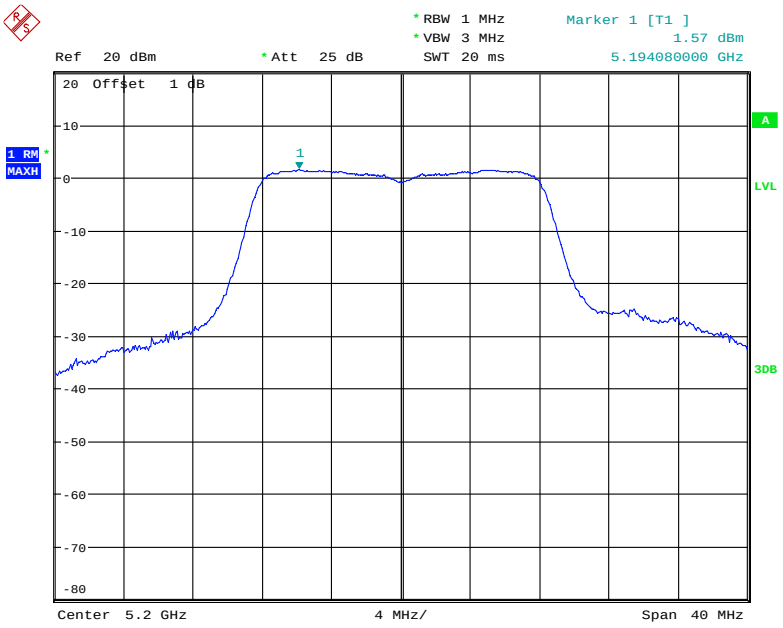
Chain 1:

802.11a Low Channel



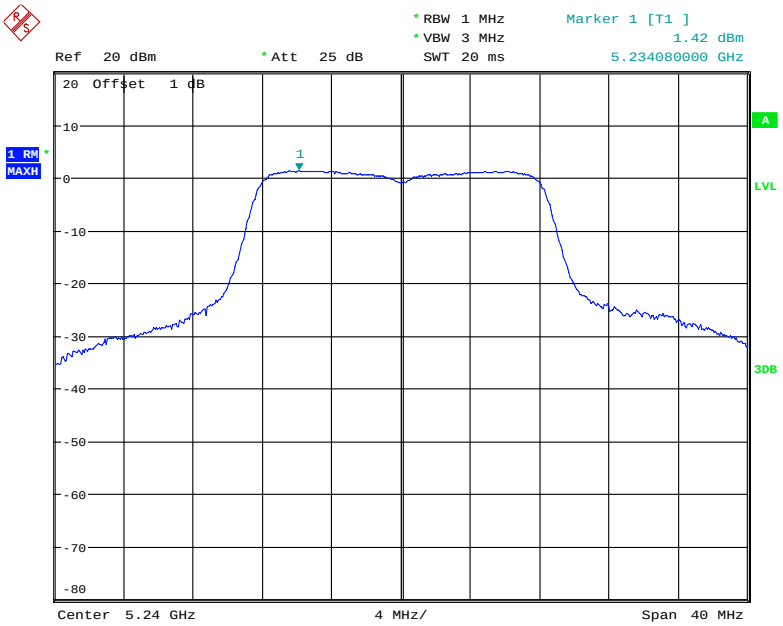
Date: 21.SEP.2020 16:28:18

802.11a Middle Channel



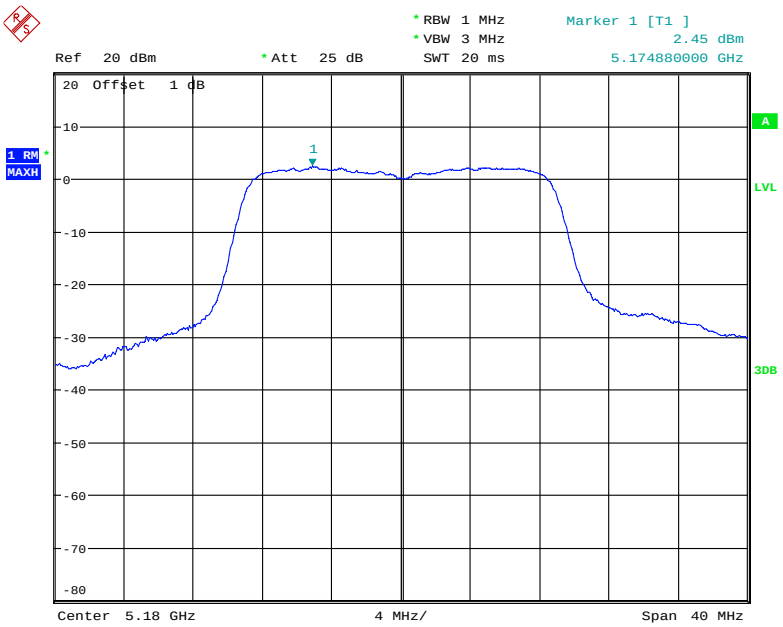
Date: 21.SEP.2020 16:33:34

802.11a High Channel



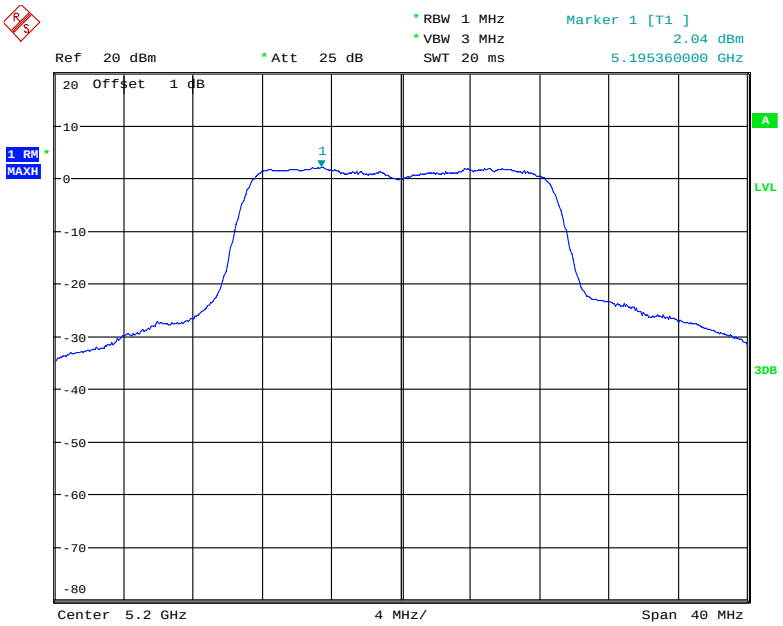
Date: 21.SEP.2020 16:34:35

802.11n ht20 Low Channel



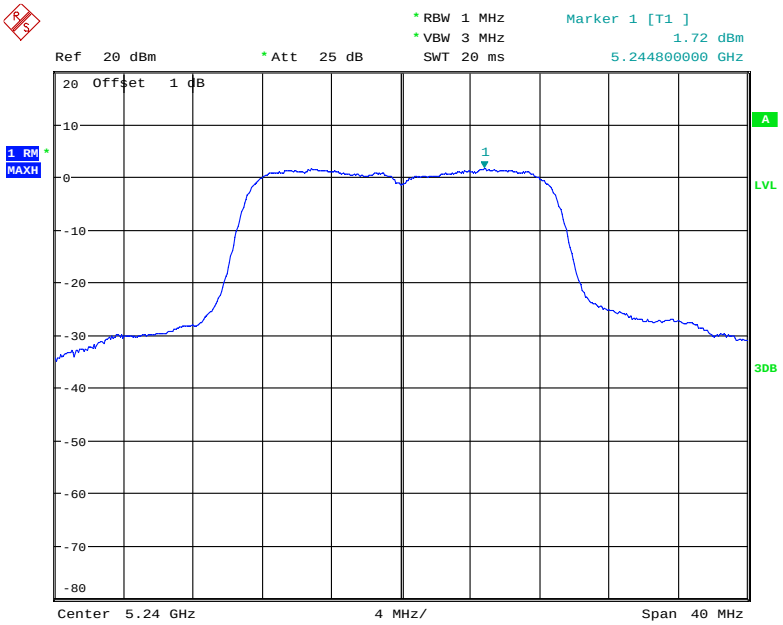
Date: 21.SEP.2020 16:37:30

802.11n ht20 Middle Channel



Date: 21.SEP.2020 16:38:37

802.11n ht20 High Channel



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******* END OF REPORT *******