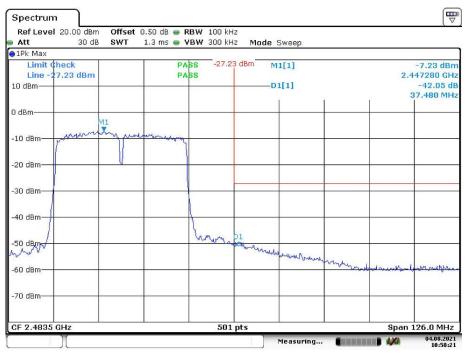
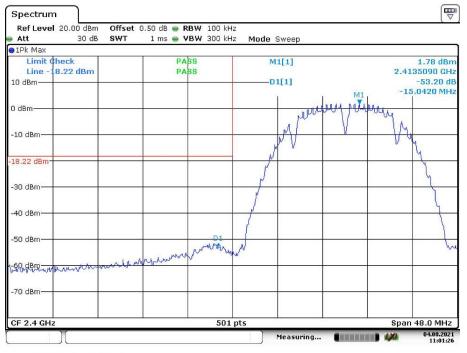


## Chain 0,802.11n ht40 Band Edge, Left Side

Chain 0,802.11n ht40 Band Edge, Right Side



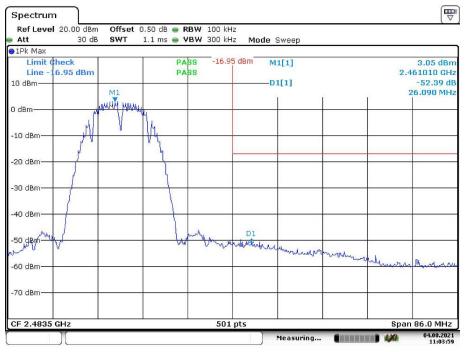
Date: 4.AUG.2021 10:58:21



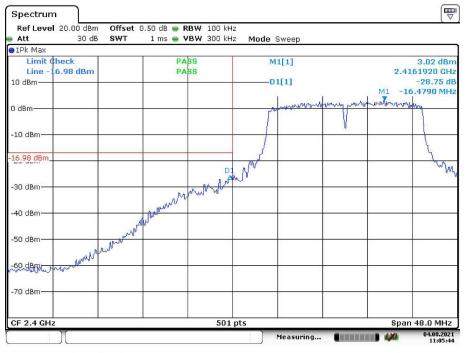
Chain 1, 802.11b: Band Edge, Left Side

Date: 4.AUG.2021 11:01:26





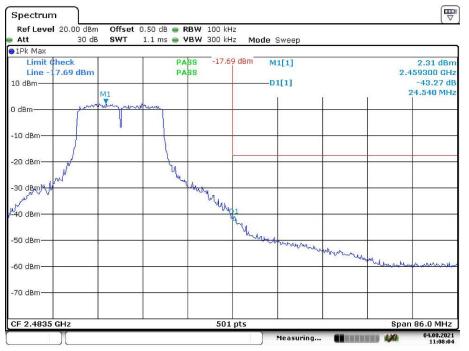
Date: 4.AUG.2021 11:03:59



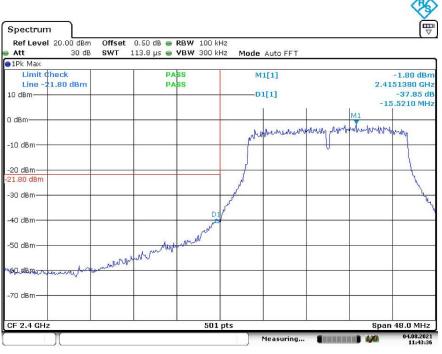
#### Chain 1,802.11g: Band Edge, Left Side

Date: 4.AUG.2021 11:05:44





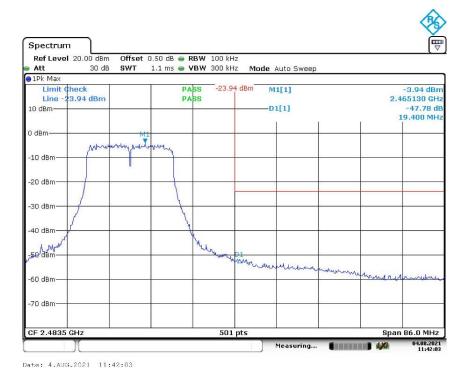
Date: 4.AUG.2021 11:08:04

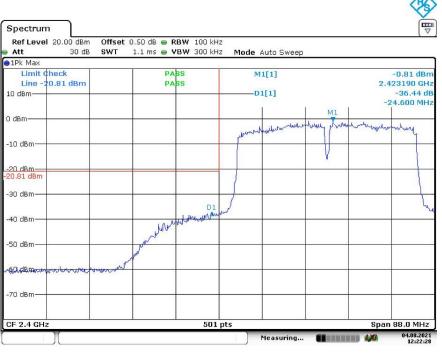


### Chain 1,802.11n ht20 Band Edge, Left Side

Date: 4.AUG.2021 11:43:36



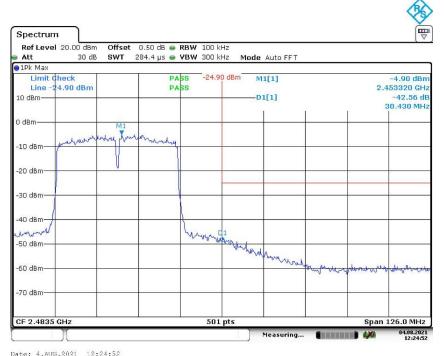




#### Chain 1,802.11n ht40 Band Edge, Left Side

Date: 4.AUG.2021 12:22:28





# FCC §15.247(e) - POWER SPECTRAL DENSITY

# **Applicable Standard**

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

# **Test Procedure**

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- 3. Set the RBW = 3 kHz, VBW = 10 kHz, Set the span to 1.5 times the DTS bandwidth.
- 4. Use the peak marker function to determine the maximum amplitude level.

# **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101591	2021-07-22	2022-07-21
Unknown	Coaxial Cable	C-SJ00-0010	C0010/05	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:	28.2°C		
<b>Relative Humidity:</b>	46 %		
ATM Pressure:	99.7 kPa		
Test by:	CoCo Ye		
Test Date:	2021-08-04		

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

#### Bay Area Compliance Laboratories Corp. (Dongguan)

Test mode	Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)			Limit
			Chain 0	Chain 1	Total	(dBm/3kHz)
802.11b	Low	2412	-25.23	-18.41	/	≤8
	Middle	2437	-21.14	-17.47	/	≤8
	High	2462	-22.02	-17.40	/	≤8
802.11g	Low	2412	-13.54	-11.46	/	≤8
	Middle	2437	-13.26	-7.48	/	≤8
	High	2462	-16.45	-12.14	/	≤8
802.11n ht20	Low	2412	-17.70	-16.47	-14.03	≤6.7
	Middle	2437	-16.84	-18.31	-14.5	≤6.7
	High	2462	-18.43	-18.31	-15.36	≤6.7
802.11n ht40	Low	2422	-15.17	-15.09	-12.12	≤6.7
	Middle	2437	-13.85	-14.85	-11.31	≤6.7
	High	2452	-19.75	-18.94	-16.32	≤6.7

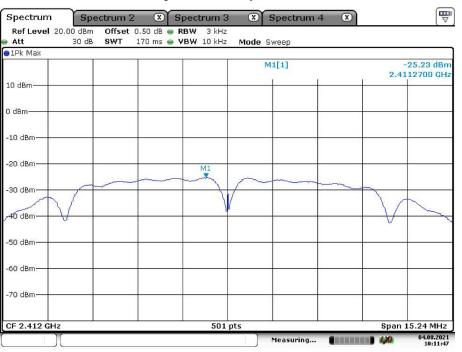
Test Mode: Transmitting

So:

Note 1:The maximum antenna gain is4.3 dBi. 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:

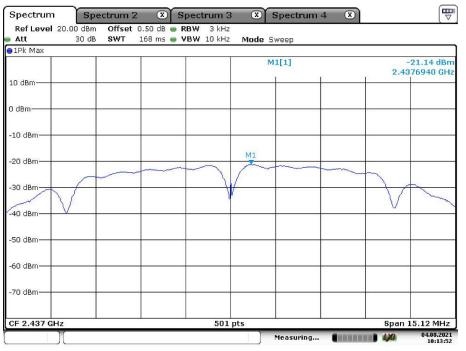
Array Gain =  $10 \log(N_{ANT}/N_{SS}) dB$ .

Directional gain =  $G_{ANT}$  + Array Gain = 4.3+10\*log(2/1)=7.3 dBi



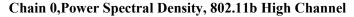
#### Chain 0, Power Spectral Density, 802.11b Low Channel

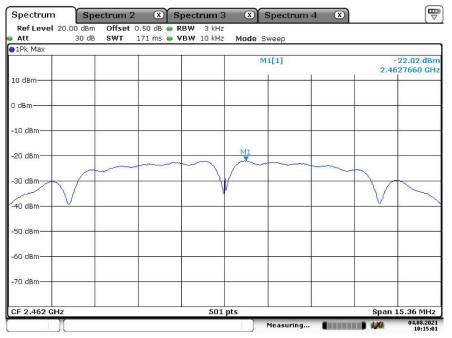
Date: 4.AUG.2021 10:11:47



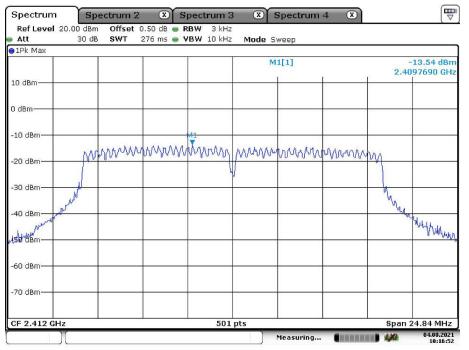
## Chain 0, Power Spectral Density, 802.11b Middle Channel

Date: 4.AUG.2021 10:13:53





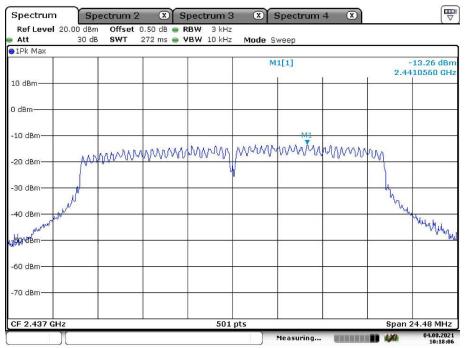
Date: 4.AUG.2021 10:15:02



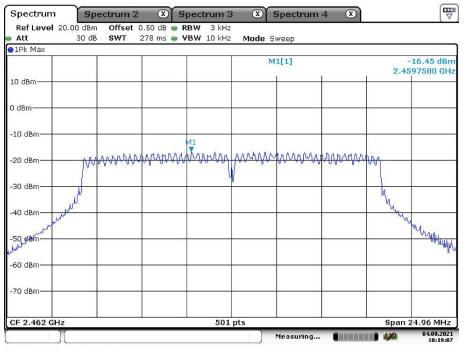
## Chain 0, Power Spectral Density, 802.11g Low Channel

Date: 4.AUG.2021 10:16:53





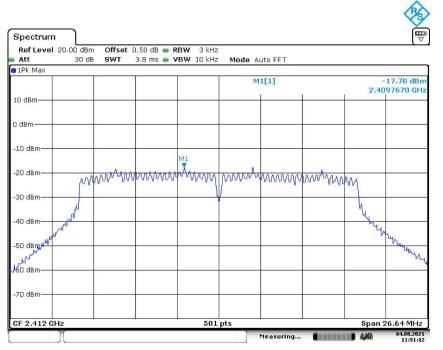
Date: 4.AUG.2021 10:18:07



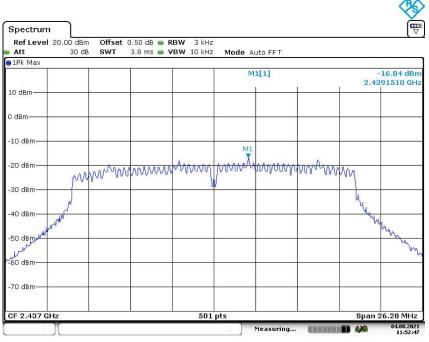
Chain 0, Power Spectral Density, 802.11g High Channel

Date: 4.AUG.2021 10:19:08





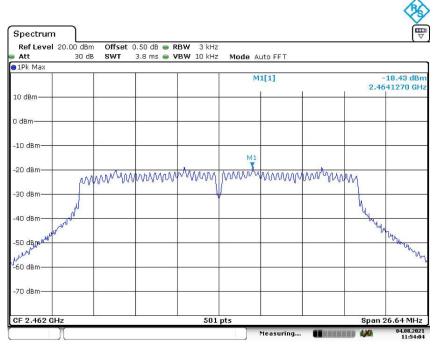
Date: 4.AUG.2021 11:51:12



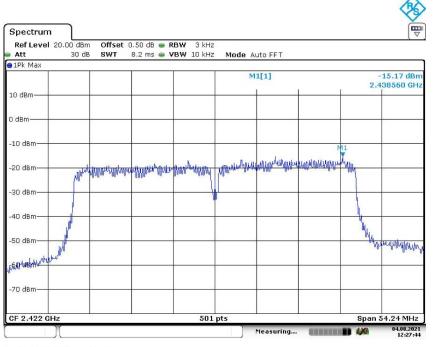
## Chain 0, Power Spectral Density, 802.11n ht20 Middle Channel

Date: 4.AUG.2021 11:52:48

#### Chain 0, Power Spectral Density, 802.11n ht20 High Channel

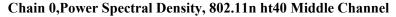


Date: 4.AUG.2021 11:54:04



#### Chain 0, Power Spectral Density, 802.11n ht40 Low Channel

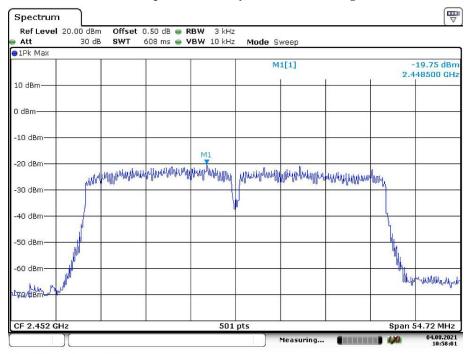
Date: 4.AUG.2021 12:27:44



Spectrum Spectrum 3 Spectrum 4 🛛 Spectrum 2 Ref Level 20.00 dBm Offset 0.50 dB 👄 RBW 3 kHz Att 30 dB SWT 571 ms 💿 VBW 10 kHz Mode Sweep ●1Pk Max -13.85 dBm 2.440490 GHz M1[1] 10 dBm 0 dBm -10 dBm under the product of the production of the produ New William Manus Manus Manus -20 dBm -30 dBm -40 dBm -50 dBm Hammung 100 dBm--70 dBm-CF 2.437 GHz 501 pts Span 51.36 MHz 04.08.2021 10:35:49 Measuring... LXI

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Date: 4.AUG.2021 10:35:50



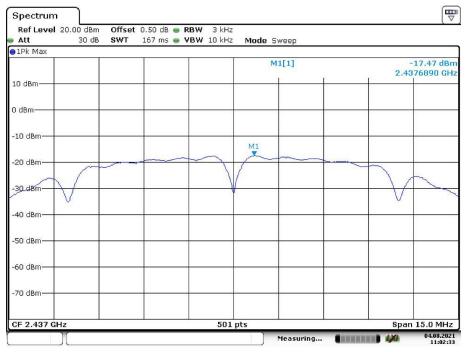
Chain 0, Power Spectral Density, 802.11n ht40 High Channel

Date: 4.AUG.2021 10:58:01



Spectrum Ref Level 20.00 dBm Att 30 dB Offset 0.50 dB 👄 RBW 3 kHz 167 ms 👄 VBW 10 kHz SWT Mode Sweep 1Pk Max -18.41 dBm M1[1] 2.4126890 GHz 10 dBm 0 dBm -10 dBm M1 -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm CF 2.412 GHz Span 15.0 MHz 501 pts 04.08.2021 11:01:06 Measuring... 

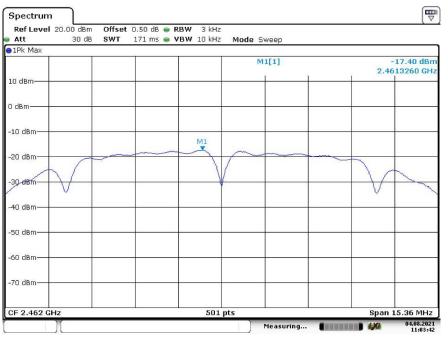
Date: 4.AUG.2021 11:01:06



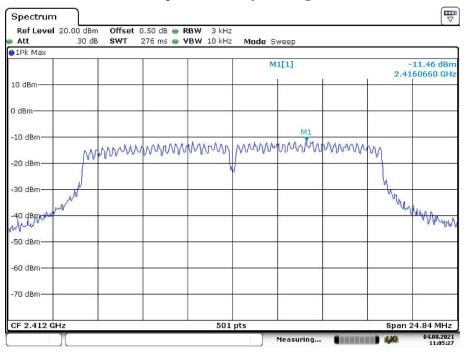
Chain 1, Power Spectral Density, 802.11b Middle Channel

Date: 4.AUG.2021 11:02:33





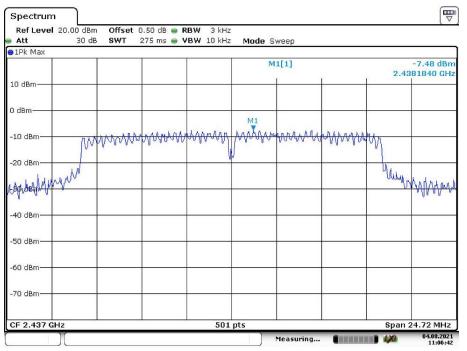
Date: 4.AUG.2021 11:03:42



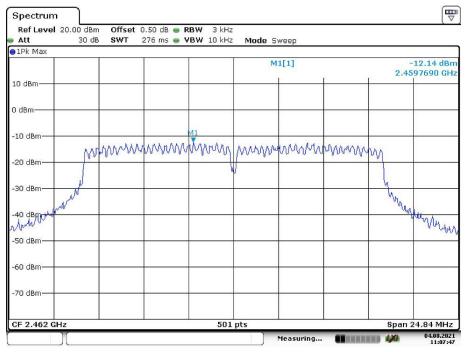
Chain1, Power Spectral Density, 802.11g Low Channel

Date: 4.AUG.2021 11:05:27





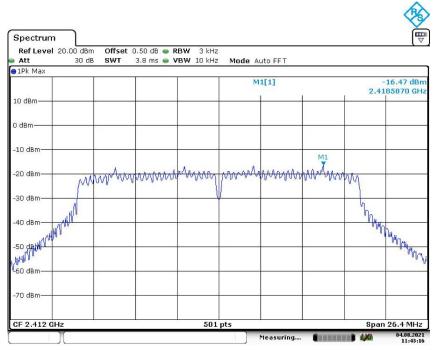
Date: 4.AUG.2021 11:06:42



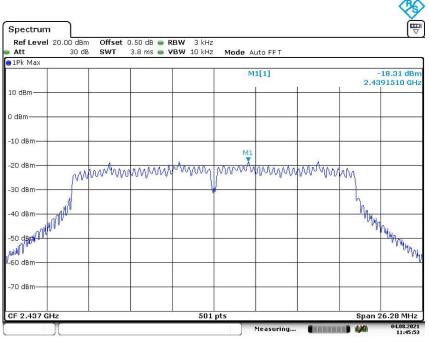
Chain1, Power Spectral Density, 802.11g High Channel

Date: 4.AUG.2021 11:07:47





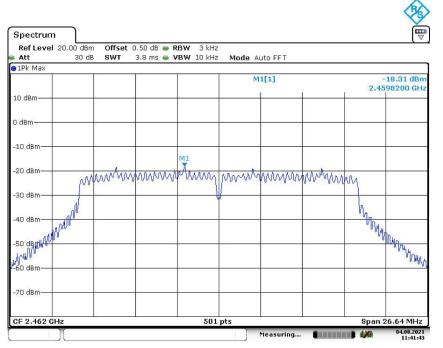
Date: 4.AUG.2021 11:43:16



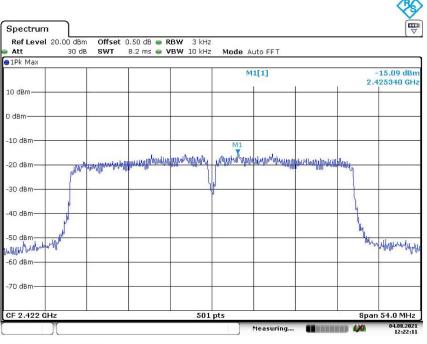
## Chain 1, Power Spectral Density, 802.11n ht20 Middle Channel

Date: 4.AUG.2021 11:45:53



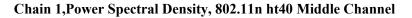


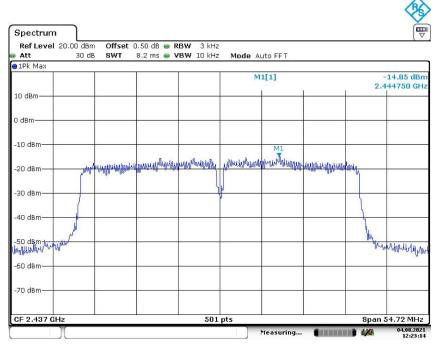
Date: 4.AUG.2021 11:41:43



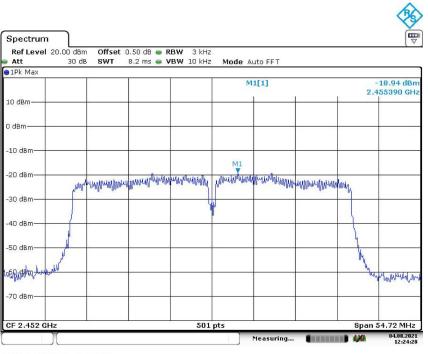
## Chain 1, Power Spectral Density, 802.11n ht40 Low Channel

Date: 4.AUG.2021 12:22:11





Date: 4.AUG.2021 12:23:14



# Chain 1, Power Spectral Density, 802.11n ht40 High Channel

Date: 4.AUG.2021 12:24:29

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

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