

RADIO TEST REPORT

Product : VISION X10

Model Name : VISION X10

FCC ID : 2BUP5FG1101A

Test Regulation : FCC 47 CFR Part 15 Subpart C (Section 15.247)

Received Date : 2026/3/5

Test Date : 2026/03/07 ~ 2026/03/21

Issued Date : 2026/4/24

Applicant : Vexilar LLC
6667 West Old Shakopee Rd, #101, Minneapolis, MN 55438
USA

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

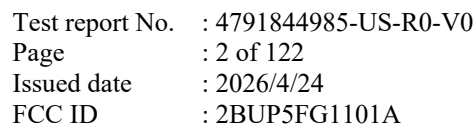


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Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 7.0



Original Test Report No.: 4791844985-US-R0-V0

Underwriters Laboratories Taiwan Co., Ltd.

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1. Attestation of Test Results

APPLICANT: Vexilar LLC
6667 West Old Shakopee Rd, #101, Minneapolis, MN 55438 USA

MANUFACTURER: Qisda Corporation
No. 157, Shan-Ying Road, Shan-Ting Li, Gueishan Dist., Taoyuan
333, Taiwan

EUT DESCRIPTION: VISION X10

BRAND: Vexilar LLC

MODEL: VISION X10

SAMPLE STAGE: Design Verification Test Sample

DATE of TESTED: 2026/03/07 ~ 2026/03/21

APPLICABLE STANDARDS	
STANDARD	Test Results
FCC 47 CFR PART 15 Subpart C (Section 15.247)	PASS

Underwriters Laboratories Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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

Prepared By:



Sally Lu
Project Handler

Date : 2026/4/24

Approved and Authorized By:



Eric Lee
Senior Laboratory Engineer

Date : 2026/4/24

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2. Summary of Test Results

Summary of Test Results		
FCC Clause	Test Items	Result
15.247(a)(2)	6dB Bandwidth	PASS
15.247(b)	Conducted Output Power	PASS
15.247(e)	Power Spectral Density	PASS
15.247(d)	Antenna Port Emission	PASS
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	PASS
15.207	AC Power Conducted Emission	PASS
15.203	Antenna Requirement	PASS

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3. Test Methodology and Reference Procedures

The tests documented in this report were performed in accordance with 47 CFR FCC Part 2, KDB558074 D01 Meas Guidance v05r02, KDB414788 D01 Radiated Test Site v01r01, ANSI C63.10-2020+Cor.1-2023 and KDB 662911 D01 Multiple Transmitter Output v02r01.

4. Facilities and Accreditation

Test Location	Underwriters Laboratories Taiwan Co., Ltd.
Address	Building A, B and E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Accreditation Certificate	Underwriters Laboratories Taiwan Co., Ltd. is accredited by TAF, Laboratory Code 3398.

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5. Measurement Uncertainty

For statement of conformity, Simple acceptance (Section 3.1.4 of IEC Guide 115) was applied as decision rule for measurement in this test report.

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

Determining compliance based on the results of the compliance measurement, not considering measurement instrumentation uncertainty.

Measurement	Frequency	Uncertainty
Conducted disturbance at mains terminals ports	150kHz ~ 30MHz	3.0 dB
RF Conducted	9 kHz - 40GHz	2.4 dB
Radiated disturbance below 30MHz	9 kHz - 30 MHz	1.9 dB
Radiated disturbance below 1 GHz	30MHz ~ 1GHz	5.6 dB
Radiated disturbance above 1 GHz	1GHz ~ 40GHz	4.6 dB

6. Equipment under Test

6.1. Description of EUT

Product	VISION X10
Brand Name	Vexilar LLC
Model Name	VISION X10
Normal Voltage	12Vdc from Host

Operating Frequency	2412MHz ~ 2462MHz
Modulation	CCK, DQPSK, DBPSK for DSSS
	64QAM, 16QAM, QPSK, BPSK for OFDM
Transfer Rate	802.11b: up to 11 Mbps
	802.11g: up to 54 Mbps
	802.11n: up to MCS15
Maximum Output Power	2412MHz ~ 2462MHz: 28.99 dBm
Sample ID	Conducted Test:9497462
	Radiated Test:9497461

Note:

1. EUT provides a complete 2Tx port and 2Rx port. Please refer to the following working transmission conditions:

Modulation Mode	Tx Function	Rx Function
802.11b	2Tx	2Rx
802.11g	2Tx	2Rx
802.11n (HT20)	2Tx	2Rx
802.11n (HT40)	2Tx	2Rx

2. The EUT contains following accessory devices:

Product	Brand	Model	Description
Sonar Sensor	vexilar	VISION XDCR	Shield cable: 4.5m
DC Power cable	vexilar	N/A	Shield cable: 2m

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer the manufacturer's or user's manual, the laboratory shall not be held responsible.

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6.2. Channel List

11 channels are provided for WLAN 20MHz bandwidth system:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	-	-

7 channels are provided for WLAN 40MHz bandwidth system:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	7	2442
4	2427	8	2447
5	2432	9	2452
6	2437	-	-

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6.3. Test Condition

Test Item	Test Site No.	Environmental	Input Power	Test Date	Tested by
Antenna Port Conducted Measurement	SR4	24°C/ 62%RH	12Vdc	2026/03/20	Rex Chen
Radiated Spurious Emission	966-2	22~26°C/ 62~68%RH	12Vdc	2026/03/07~ 2026/03/19	Rex Chen
AC power Line Conducted Emission	SR1	21~25°C/ 62~67%RH	120Vac/ 60Hz	2026/03/09~ 2026/03/21	Rex Chen

Sample Calculation:

Antenna Port Conducted Measurement:

- Where relevant, the follow sample calculation is provided:
Result Value (dBm) = Reading Value (dBm) + Attenuator Factor (dB) + Cable Loss (dB).
Example: Result Value (10dBm) = Reading Value (-2dBm) + Attenuator Factor (10dB) + Cable Loss(2dB).
*Test plot only shown the “Result Value”.

Radiated Spurious Emission:

- Where relevant, the follow sample calculation is provided:
Result Value (dBuV/m) = Reading Value (dBuV) + Correction Factor (dB/m).
Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - Preamp Factor (dB).
Example: Result Value (34.5dBuV/m) = Reading Value (40.1dBuV) + Antenna Factor (18.7dB/m) + Cable Loss (4.2dB) - Preamp Factor (28.5dB).

AC power Line Conducted Emission:

- Where relevant, the follow sample calculation is provided:
Result Value (dBuV) = Reading Value (dBuV) + Correction Factor (dB).
Correction Factor (dB) = Insertion loss(dB) + Cable loss(dB).
Example: Result Value (53.7dBuV) = Reading Value (35.1dBuV) + Insertion loss(18.1dB) + Cable loss(0.5dB).

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6.4. Description of Available Antennas

Ant. No.	Transmitter Circuit	Frequency Range	Brand Name	Model Name	Maximum Gain (dBi)	Ant. Type	Connector Type
WiFi 0	Chain0	2400 ~ 2483.5MHz	INPAQ	RFPCA401531IMLB401	2.23	Dipole	i-pex(MHF)
WiFi 1	Chain1	2400 ~ 2483.5MHz	INPAQ	RFPCA401517IMLB401	2.54	Dipole	i-pex(MHF)

Note: The above antenna information was provided from customer and for more detailed features description, please refer the manufacturer's specification or user's manual, the laboratory shall not be held responsible.

6.5. Test Mode Applicability and Tested Channel Detail

Test Item	Mode	Modulation Technology	Available Channel	Test Channel	Data Rate
Radiated Bandedge	802.11b	DSSS	1 to 11	1,6,11	1 Mbps
	802.11g	OFDM	1 to 11	1,2,6,10,11	6 Mbps
	802.11n (HT20)	OFDM	1 to 11	1,2,6,10,11	MCS0
	802.11n (HT40)	OFDM	3 to 9	3,6,9	MCS0
Radiated Emissions (Above 1GHz)	802.11b	DSSS	1 to 11	1,6,11	1 Mbps
	802.11g	OFDM	1 to 11	1,6,11	6 Mbps
Radiated Emissions (Below 1GHz)	802.11b	DSSS	1 to 11	6	1 Mbps
AC Power Line Conducted Emission	802.11g	OFDM	1 to 11	6	6 Mbps
Antenna Port Conducted Measurement	802.11b	DSSS	1 to 11	1,6,11	1 Mbps
	802.11g	OFDM	1 to 11	1,6,11	6 Mbps
	802.11n (HT20)	OFDM	1 to 11	1,6,11	MCS0
	802.11n (HT40)	OFDM	3 to 9	3,6,9	MCS0

- The EUT was evaluated in two positions: lay and stand. Based on the investigation, the stand orientation represented the worst-case scenario. All final radiated emission tests were conducted with EUT positioned accordingly.
- The radiated spurious emission test was performed in all test modes. The worst case was 802.11b and 802.11g, and therefore, only the worst-case data is shown in this report to represent all test modes.
- In the transmit mode, 802.11g channel 6 has the highest RF output power. Therefore, the AC conduction was performed using this worst-case mode.
- In the transmit mode, 802.11b channel 6 has the worst case of Tx spurious emission (above 1GHz). Therefore, all final tests for the spurious emission (below 1GHz) were performed using this worst-case mode.
- For Antenna Port Conducted Measurement, this item includes all test value of each mode but only includes spectrum plot of worst value of each mode.
- For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

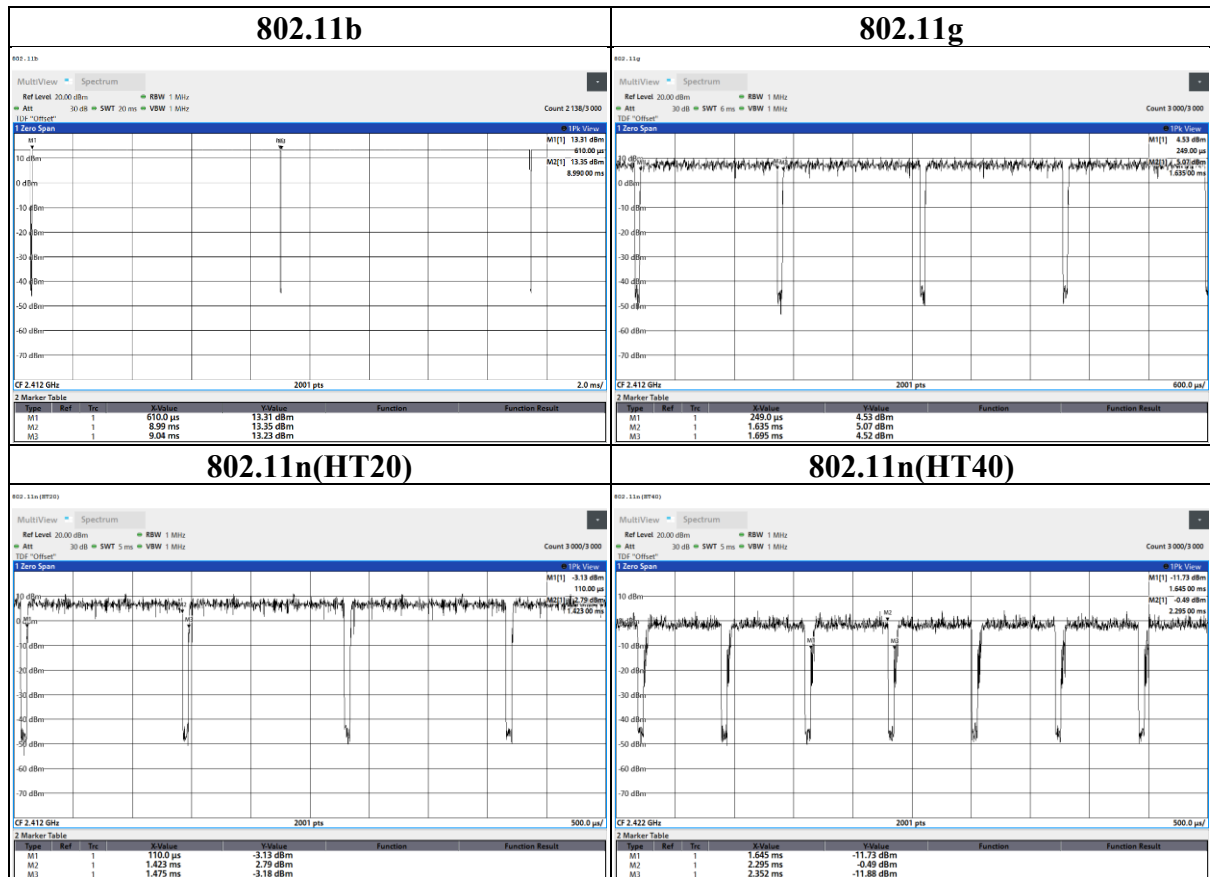
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6.6. Duty cycle

Mode	On Time (ms)	On+Off Time (ms)	Duty Cycle	Duty Factor (dB)	VBW Set (above 1GHz)
802.11b	8.380	8.430	0.9941	N/A	10Hz
802.11g	1.386	1.446	0.9585	0.18	1kHz
802.11n(HT20)	1.313	1.365	0.9619	0.17	1kHz
802.11n(HT40)	0.650	0.707	0.9194	0.37	2kHz



7. Test Equipment

Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Expired date
Radiated Spurious Emission					
Spectrum Analyzer	Keysight	N9010A	MY56070818	2026/2/9	2027/2/8
EMI Test Receiver	Rohde & Schwarz	ESR7	101754	2025/12/9	2026/12/8
Loop Antenna	ETS lindgren	6502	00213440	2025/11/14	2026/11/13
Trilog-Broadband Antenna with 5dB Attenuator	Schwarzbeck & EMCI	VULB 9168 & N-6-05	774 & AT-N0538	2025/12/23	2026/12/22
Horn Antenna (1-18 GHz)	Schwarzbeck	BBHA 9120 D	01690	2025/11/18	2026/11/17
Horn Antenna (18-40 GHz)	Schwarzbeck	BBHA 9170	781	2025/12/2	2026/12/1
Preamplifier (30-1000 MHz)	EMCI	EMC330E	980405	2025/5/12	2026/5/11
Preamplifier (1-18 GHz)	EMCI	EMC051835BE	980406	2025/12/26	2026/12/25
Preamplifier (18-40GHz)	EMCI	EMC184040SEE	980426	2025/4/7	2026/4/6
Cables (9k-18 GHz)	Hanyitek	K1K50-UP0264-K1K50-2500	170214-4 & 170425-2	2025/11/21	2026/11/20
Cables (18-40GHz)	Hanyitek	K1K50-UP0264-K1K50-2500	170214-1 & 170214-2	2025/11/21	2026/11/20

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Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Expired date
Antenna Port Conducted Measurement					
Signal Analyzer	Rohde & Schwarz	FSVA3044	101281	2026/2/2	2027/2/1
Signal Analyzer	Rohde & Schwarz	FSV40	101490	2025/6/17	2026/6/16
Attenuator	EMCI	EMC-40ATK2W10	17002	2025/10/28	2026/10/27
USB Power Sensor	Anritsu	MA24408A	12031	2025/6/24	2026/6/23
Temperature & Humidity Test Chamber	GIANT FORCE	GTH-150- 40-CP-AR	MAA1701-010	2026/2/2	2027/2/1
AC power Line Conducted Emission					
EMI Test Receiver	Rohde & Schwarz	ESR7	101753	2025/9/18	2026/9/17
Two-Line V-Network	Rohde & Schwarz	ENV216	102136	2025/5/27	2026/5/26
Impuls-Begrenzer Pulse Limiter	Rohde & Schwarz	ESH3-Z2	102219-Qt	2025/8/27	2026/8/26
Cables	TITAN	CFD200	T0732ACFD 20020A300-2	2025/4/21	2026/4/20

UL Software		
Description	Name	Version
Radiated measurement	e3	6.191211 (V6)
Conducted measurement	RF-Conducted-FCC 15247	ver 1.0
AC power Line Conducted Emission	EZ_EMG	UL-3A1.2

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8. Description of Test Setup

Tx Mode

Support Equipment

ID	Equipment	Brand Name	Model Name	S/N	Remark
A	Sonar Sensor	vexilar	VISION XDCR	N/A	Supplied by Client
B	Micro SD Card	Lexar	1066x 64GB V30 A2	N/A	Provided by Lab
C	Laptop	MSI	MS-13Q2	K2402N0015485	Provide by Lab
D	DC Power Supply	Gwinstek	GPD-2303S	N/A	Provided by Lab

I/O Cables

ID	Equipment	Brand Name	Model Name	Length (m)	Remark
1	DC Cable	vexilar	N/A	2	Supplied by Client
2	Micro USB Cable	WONDER	WA-W07UA	1	Provided by Lab

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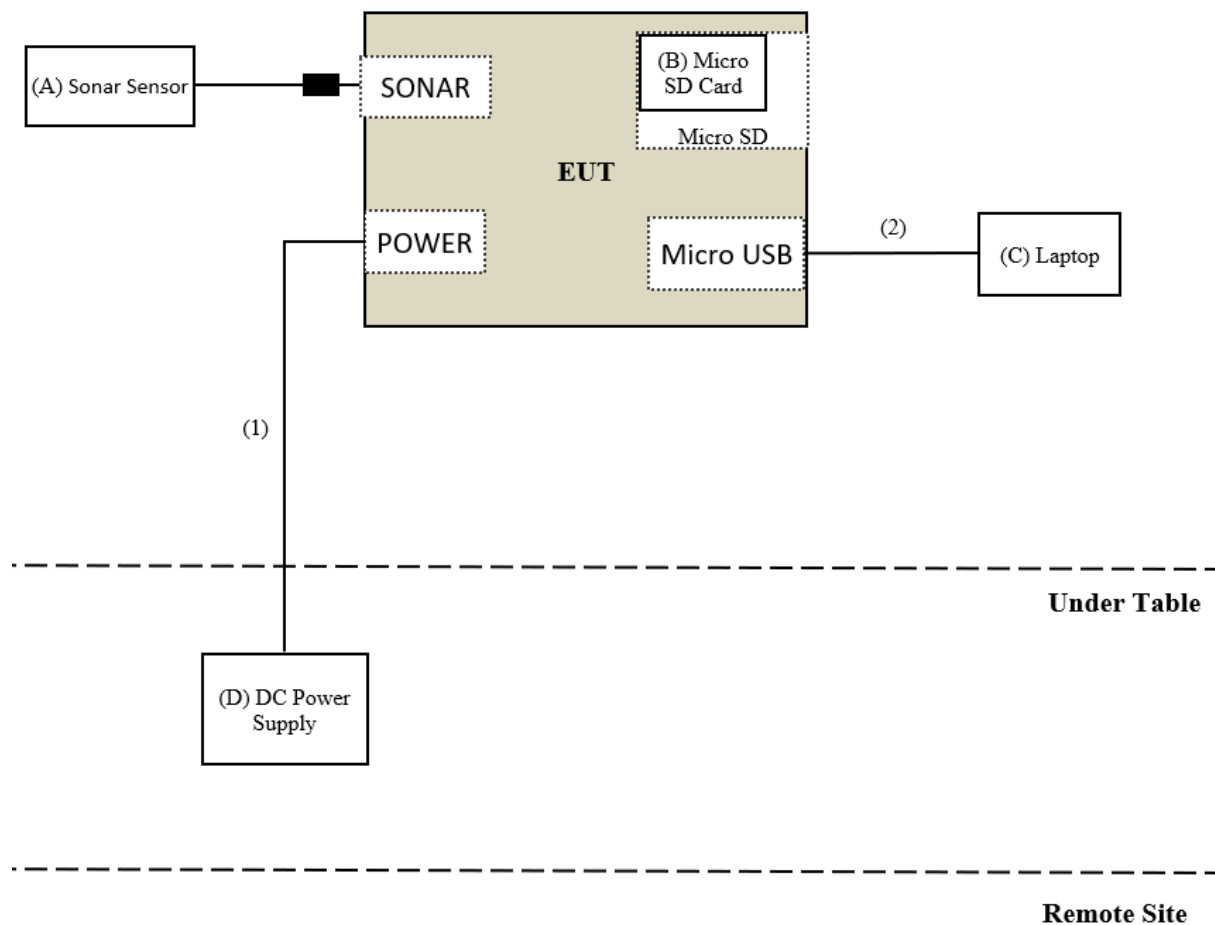
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Test Setup

Controlled using a bespoke application (Android Debug Bridge version 1.0.41) on a test Notebook. The application was used to enable a continuous transmission mode and to select the test channels, data rates, modulation schemes and power setting as required.

Setup Diagram for Test

Tx Mode



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9. Test Results

9.1. 6dB Bandwidth

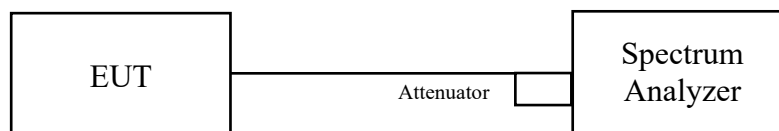
Requirements

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

Test procedure

- Set resolution bandwidth (RBW) = Range of 1% to 5% of the OBW but not less than 100 kHz.
* Since using 100kHz yields the smallest bandwidth, 100kHz was selected for this evaluation.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

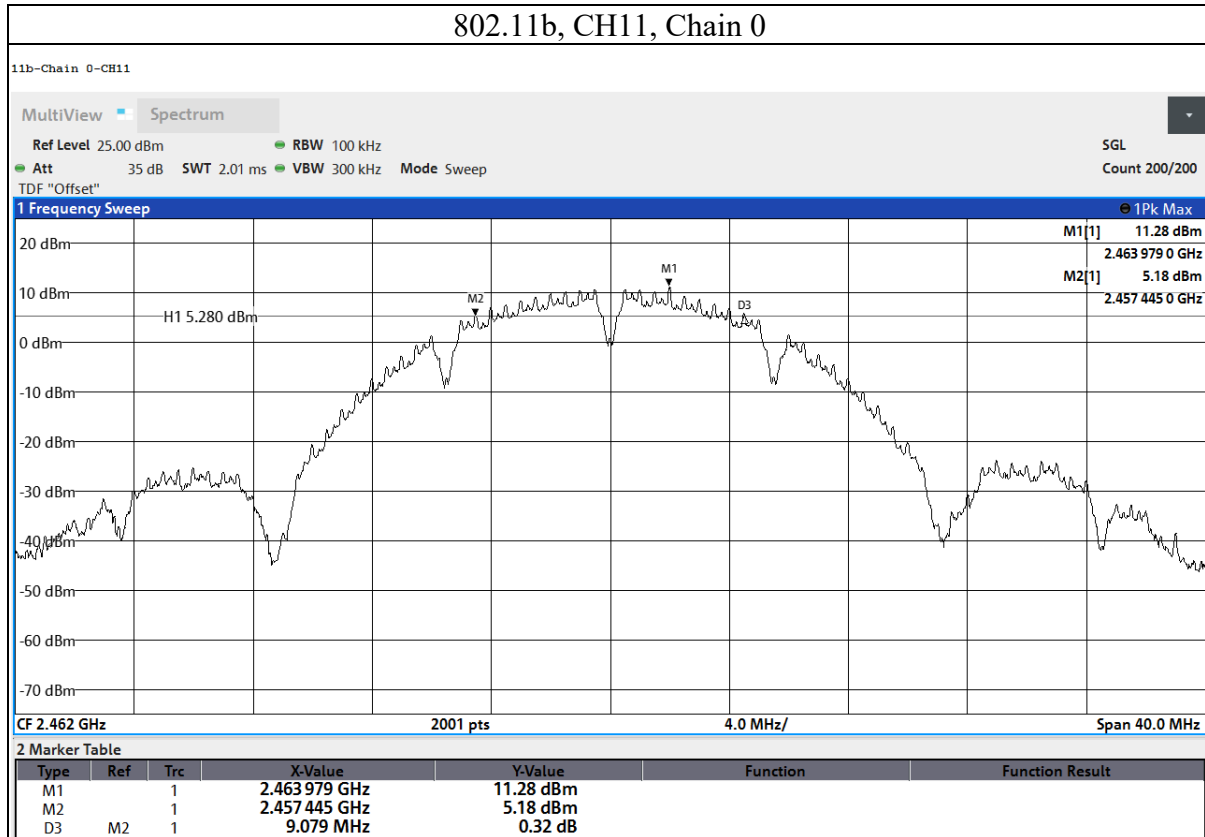
Test Setup



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

Test Data

Mode	CH	Freq (MHz)	6dB BW (MHz)		Limit (MHz)	Result
			Chain 0	Chain 1		
802.11b	1	2412	9.106	9.102	0.5	PASS
	6	2437	9.106	9.110	0.5	PASS
	11	2462	9.079	9.095	0.5	PASS



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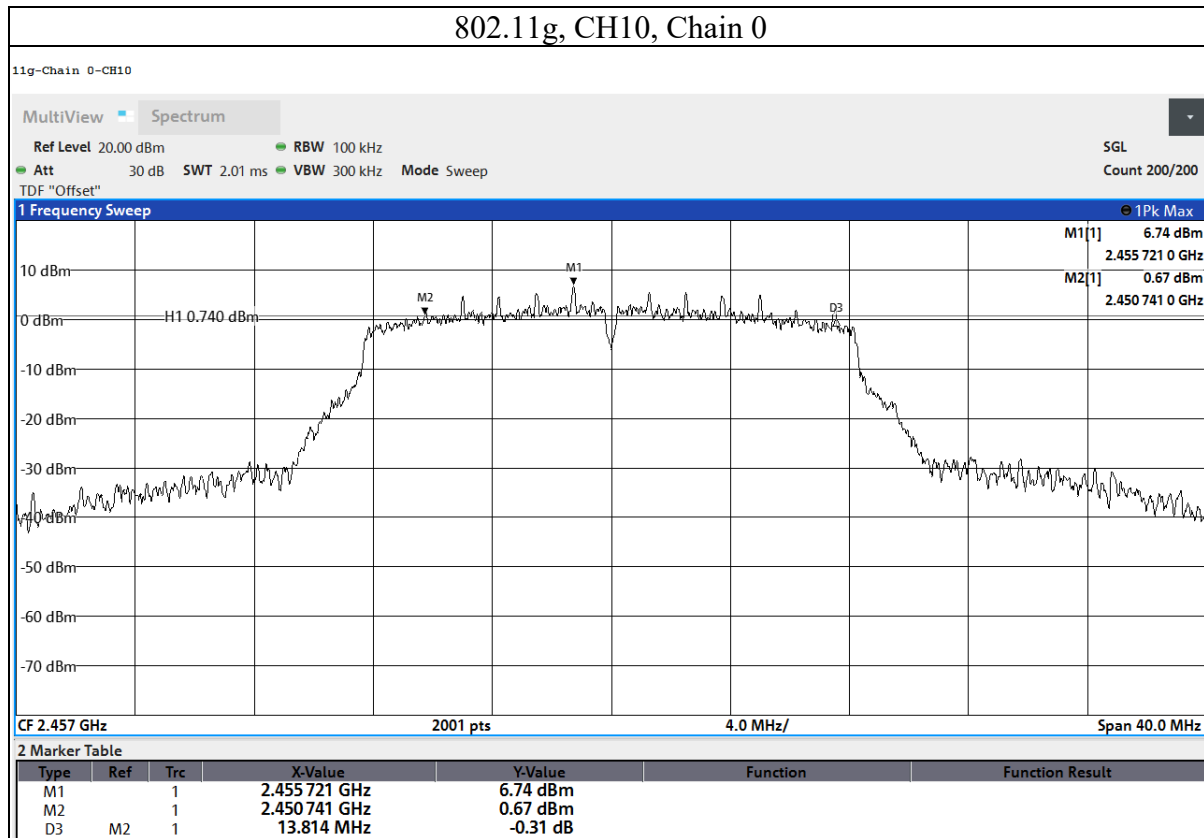
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Mode	CH	Freq (MHz)	6dB BW (MHz)		Limit (MHz)	Result
			Chain 0	Chain 1		
802.11g	1	2412	13.905	15.090	0.5	PASS
	2	2417	13.877	15.711	0.5	PASS
	6	2437	15.147	15.067	0.5	PASS
	10	2457	13.814	14.417	0.5	PASS
	11	2462	15.070	14.489	0.5	PASS



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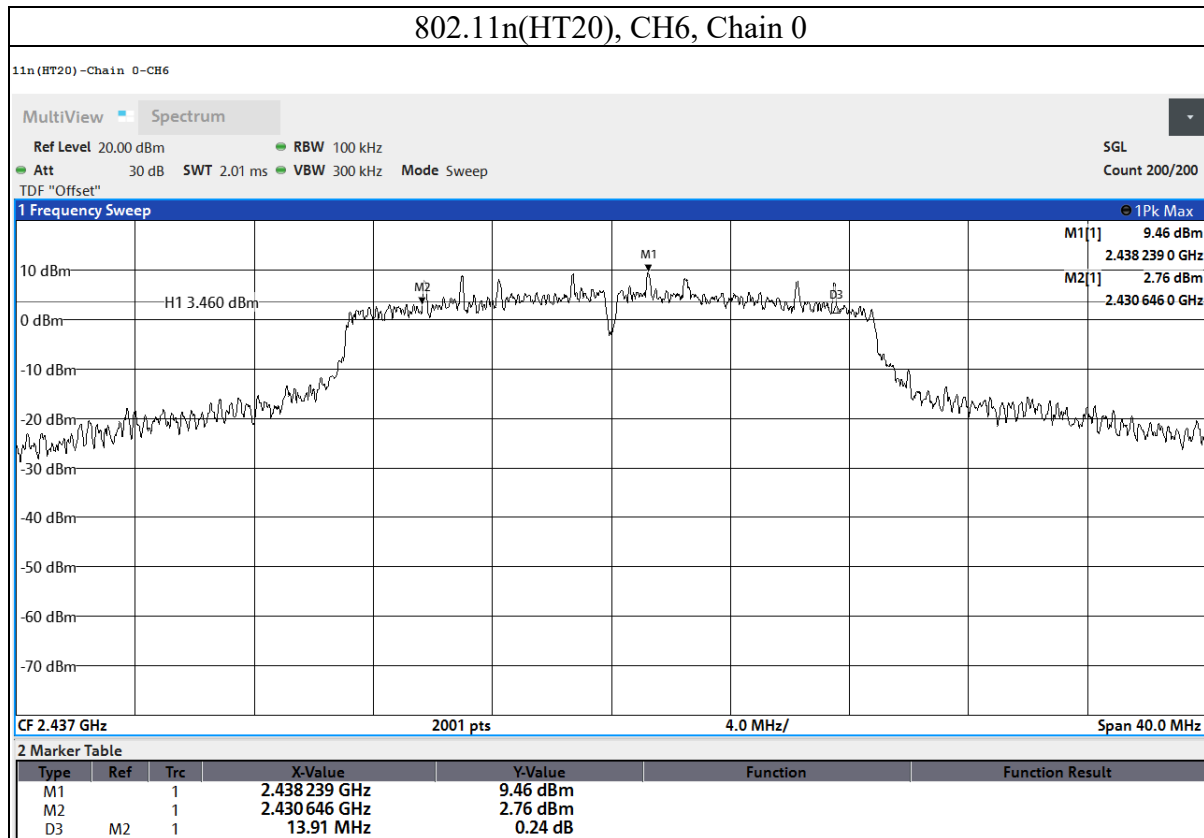
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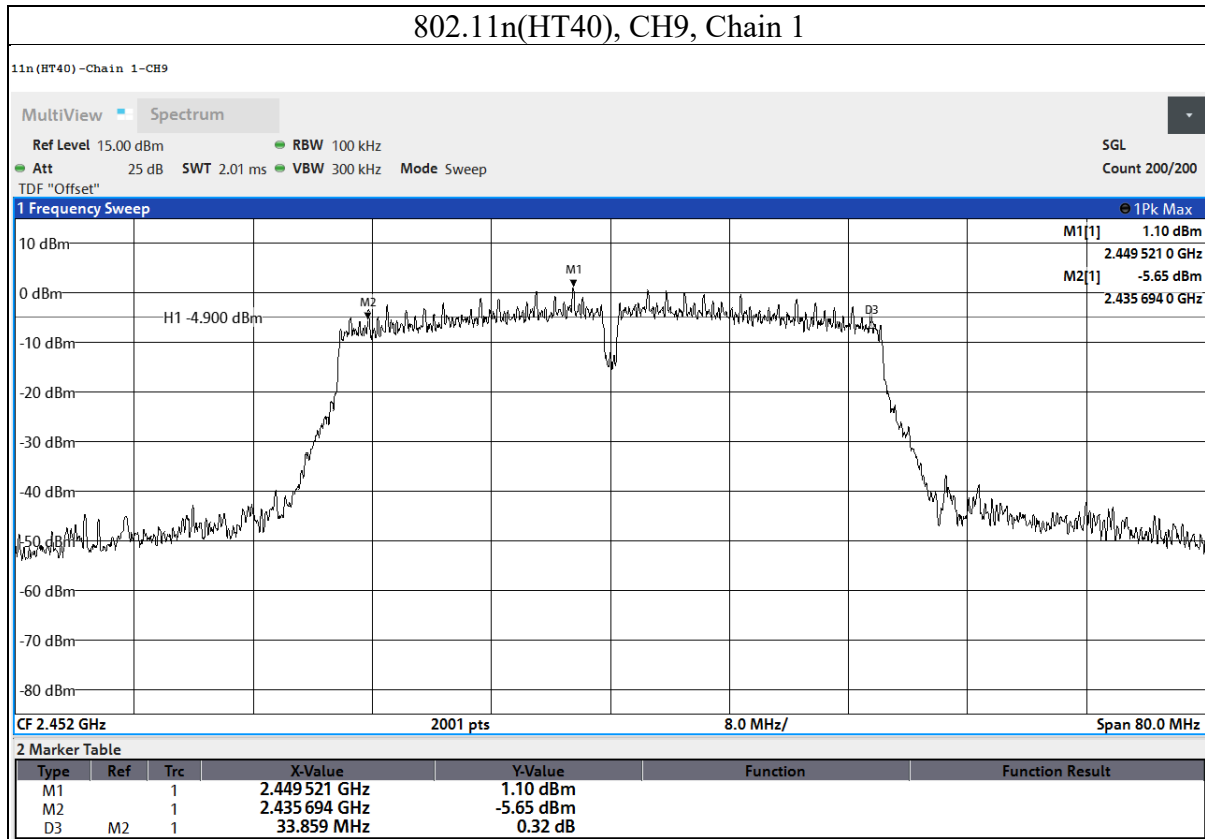
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Mode	CH	Freq (MHz)	6dB BW (MHz)		Limit (MHz)	Result
			Chain 0	Chain 1		
802.11n(HT20)	1	2412	15.133	16.316	0.5	PASS
	2	2417	15.141	15.686	0.5	PASS
	6	2437	13.910	15.312	0.5	PASS
	10	2457	15.031	15.720	0.5	PASS
	11	2462	15.115	15.678	0.5	PASS



Mode	CH	Freq (MHz)	6dB BW (MHz)		Limit (MHz)	Result
			Chain 0	Chain 1		
802.11n(HT40)	3	2422	35.080	33.900	0.5	PASS
	6	2437	35.094	33.871	0.5	PASS
	9	2452	35.158	33.859	0.5	PASS



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9.2. Conducted Output Power

Requirements

For systems using digital modulation in the 2400-2483.5 MHz bands: 1 Watt.

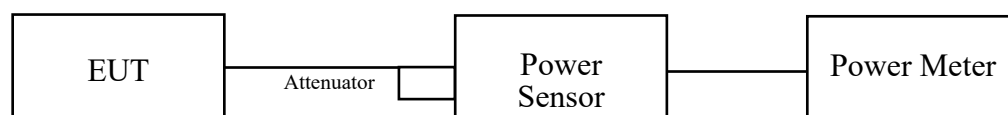
Note:

1. P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi, B is the 26 dB emission bandwidth in megahertz
2. If EUT with Multiple Transmitter Output:
 - a. Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20})^2 / N_{\text{ant}}]$ dBi.
Nant: Number of Transmit Antennas
G1, G2,..., Gn: Gain of Individual Antennas
Example: two antenna and gain 5 dBi / 3dBi, so if it was used for TxBF power measurement
Directional Gain = $10 \log[(105/20 + 103/20)^2 / 2]$ dBi = 7.07 dBi
 - b. Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices, CDD
Array Gain = 0 dB (i.e., no array gain) for $N_{\text{ANT}} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;
Array Gain = $5 \log(N_{\text{ANT}}/N_{\text{SS}})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{\text{ANT}} \geq 5$.
Example: Maximum antenna gain = 5 dBi and $N_{\text{ANT}} \leq 4$, so if it was used for CDD power measurement
Directional Gain = 5 dBi + Array Gain = 5 dBi + 0 dB = 5 dBi
 - c. For power measurement of KDB 662911 is used with multiple transmitter output. Total conducted power is the sum of the conducted power levels measured at the various output ports.

Test Procedure

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Test Setup



The loss between RF output port of the EUT and the input port of the Power Meter has been taken into consideration.

Test Data

Mode	CH	Freq. (MHz)	Peak Power (dBm)		Total PK Power (mW)	Total PK Power (dBm)	AVG Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Result
			Chain 0	Chain 1			Chain 0	Chain 1				
802.11b	1	2412	23.27	23.12	417.83	26.21	21.01	21.09	254.683	24.06	30	PASS
	6	2437	23.55	23.63	457.088	26.6	21.55	21.6	287.74	24.59	30	PASS
	11	2462	23.61	23.58	458.142	26.61	21.63	21.5	287.078	24.58	30	PASS
802.11g	1	2412	24.43	25.1	601.174	27.79	16.64	17.19	98.401	19.93	30	PASS
	2	2417	25.26	25.4	682.339	28.34	18.92	19.4	165.196	22.18	30	PASS
	6	2437	25.89	26.06	792.501	28.99	21.67	21.72	295.801	24.71	30	PASS
	10	2457	25.45	25.1	674.528	28.29	18.68	18.73	148.594	21.72	30	PASS
	11	2462	24.31	25.34	612.35	27.87	16.96	17.17	101.859	20.08	30	PASS
802.11n(HT20)	1	2412	25.19	25.12	656.145	28.17	16.67	16.99	96.383	19.84	30	PASS
	2	2417	25.34	25.42	690.24	28.39	18.12	18.57	136.773	21.36	30	PASS
	6	2437	25.78	25.97	774.462	28.89	21.07	21.46	267.917	24.28	30	PASS
	10	2457	24.81	25.39	648.634	28.12	18.08	18.51	135.207	21.31	30	PASS
	11	2462	24.93	25.64	677.642	28.31	16.86	17.18	100.693	20.03	30	PASS
802.11n(HT40)	3	2422	23.14	23.65	437.522	26.41	15.2	15.45	68.234	18.34	30	PASS
	6	2437	24.34	24.85	576.766	27.61	17.46	17.47	111.686	20.48	30	PASS
	9	2452	23.6	23.24	439.542	26.43	14.96	15.1	63.68	18.04	30	PASS

Note: Average Power is for reference Only.

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Doc No: Form-ULID-004737 (DCS:17-EM-F0876) / 7.0

9.3. Power Spectral Density

Requirements

The Maximum of Power Spectral Density Measurement is 8dBm in any 3 kHz (If $G_{TX} > 6$ dBi, then $PSD = 8 - (G_{TX} - 6)$).

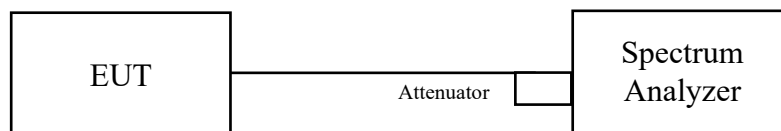
Note:

1. PSD = power spectral density that the same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz.
2. G_{TX} = the maximum transmitting antenna directional gain in dBi.
3. If EUT with Multiple Transmitter Output:
 - a. Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{Gn/20})^2 / Nant]$ dBi.
Nant: Number of Transmit Antennas
 $G1, G2, \dots, Gn$: Gain of Individual Antennas
Example: two antenna and gain 5 dBi / 3dBi, so if it was used for power density measurement
Directional Gain = $10 \log[(10^{5/20} + 10^{3/20})^2 / 2]$ dBi = 7.07 dBi
 - b. "PSD per chain" of the report shown is maximum value for each chain, at the "Total PSD" is summing entire spectra across corresponding frequency bins on the various outputs by computer, refer KDB 662911 Method a) for calculating total power density.
 - c. Method a) of power density measurement of KDB 662911 is used for calculating total power density with multiple transmitter output. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

Test procedure

- a. Set analyzer center frequency to DTS channel center frequency.
- b. Set the span to 1.5 times the DTS bandwidth.
- c. Set the RBW to: $3 \text{ kHz} \leq RBW \leq 100 \text{ kHz}$.
- d. Set the VBW $\geq 3 \times RBW$.
- e. Detector = peak.
- f. Sweep time = auto couple.
- g. Trace mode = max hold.
- h. Allow trace to fully stabilize.
- i. Use the peak marker function to determine the maximum amplitude level within the RBW.

Test Setup



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

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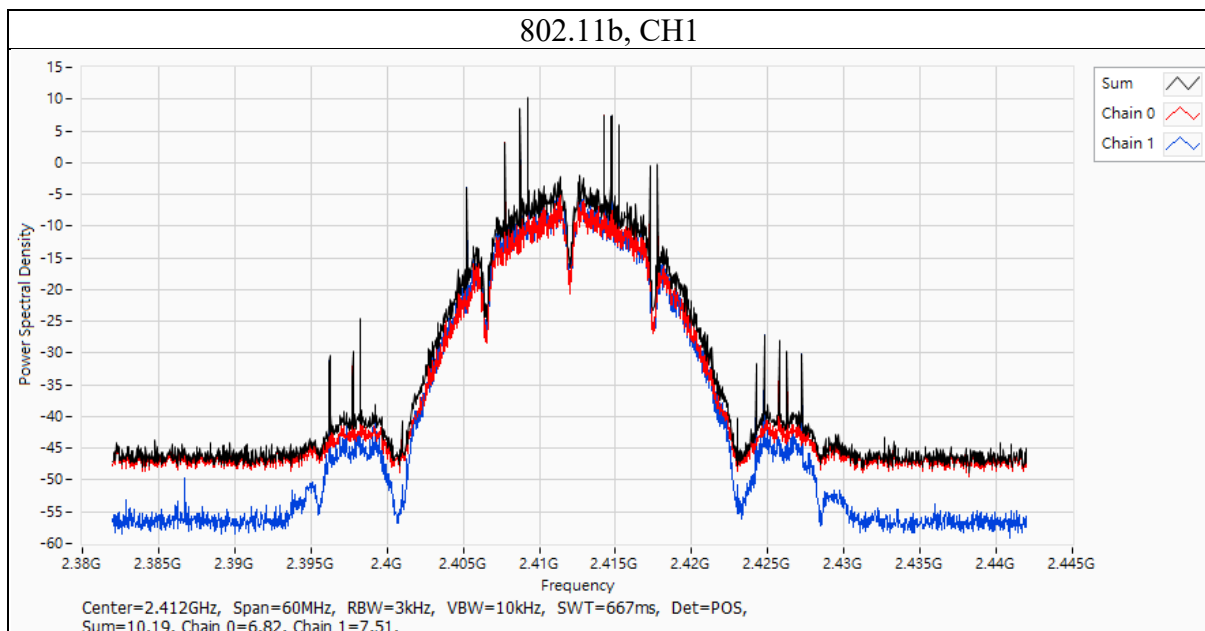
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Test Data

Mode	CH	Freq (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Directional Gain (dBi)	Result
802.11b	1	2412	10.19	8	5.4	PASS
	6	2437	7.7	8	5.4	PASS
	11	2462	6.23	8	5.4	PASS

Mode	CH	Freq (MHz)	PSD per Chain (dBm/3kHz)	
			Chain 0	Chain 1
802.11b	1	2412	7.44	7.51
	6	2437	-0.06	7.6
	11	2462	6.19	6



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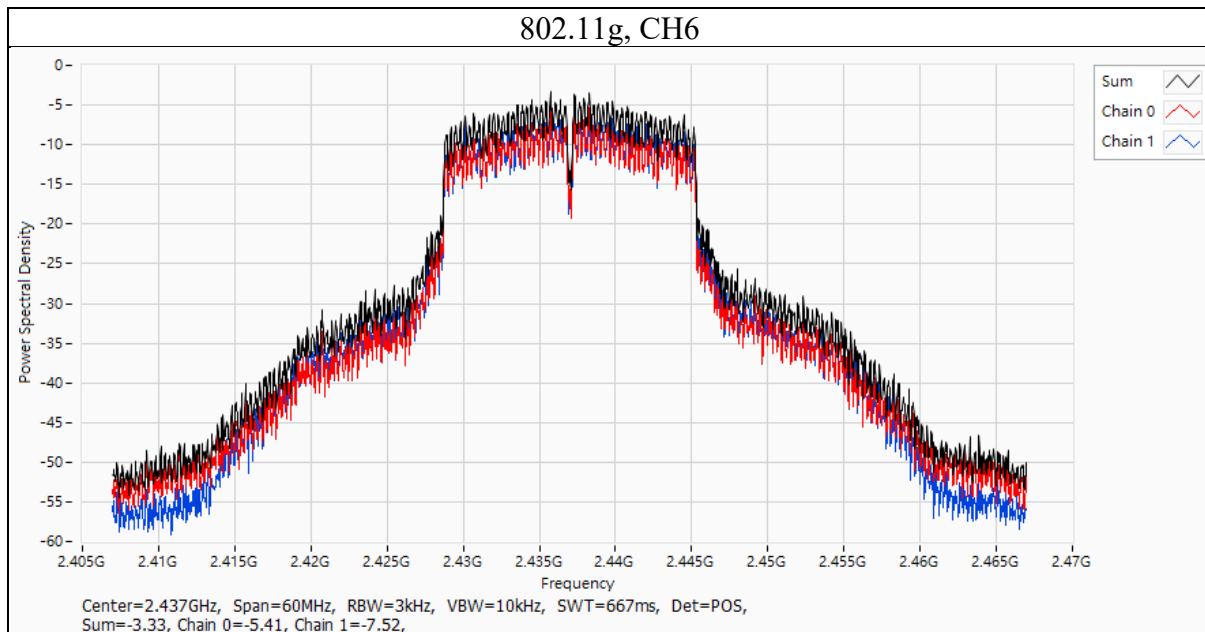
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Mode	CH	Freq (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Directional Gain (dBi)	Result
802.11g	1	2412	-8.49	8	5.4	PASS
	2	2417	-6.19	8	5.4	PASS
	6	2437	-3.33	8	5.4	PASS
	10	2457	-7.06	8	5.4	PASS
	11	2462	-8.01	8	5.4	PASS

Mode	CH	Freq (MHz)	PSD per Chain (dBm/3kHz)	
			Chain 0	Chain 1
802.11g	1	2412	-10.84	-10.67
	2	2417	-9.11	-8.54
	6	2437	-5.35	-5.49
	10	2457	-9.38	-9.29
	11	2462	-10.54	-10.92



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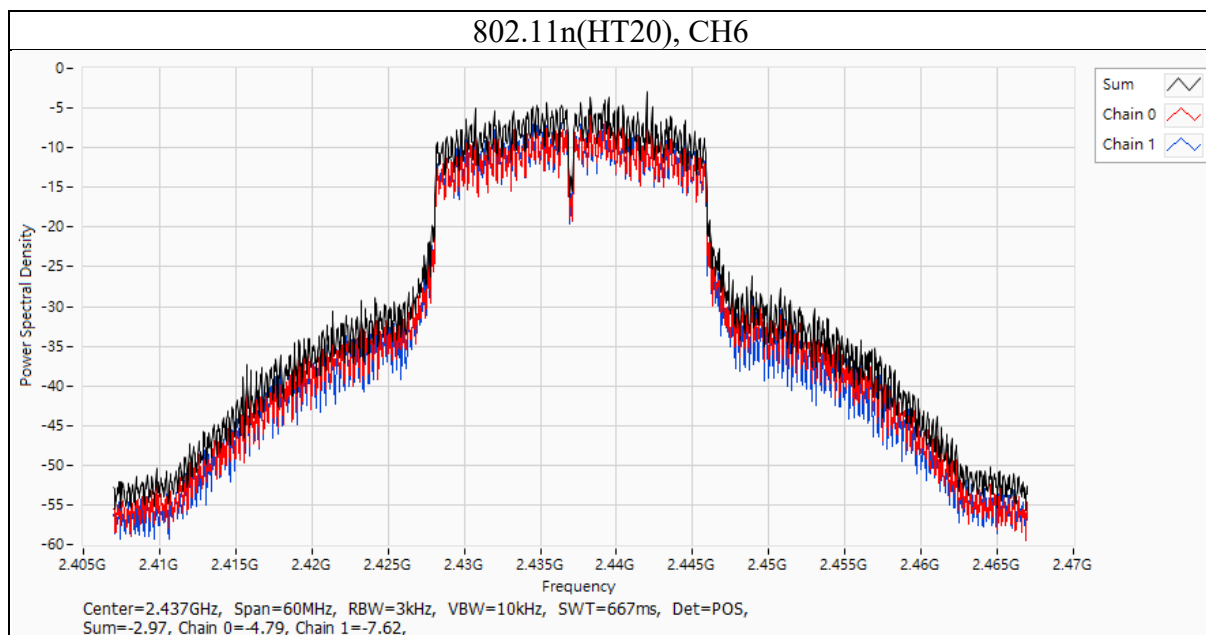
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Mode	CH	Freq (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Directional Gain (dBi)	Result
802.11n(HT20)	1	2412	-7.18	8	5.4	PASS
	2	2417	-6.47	8	5.4	PASS
	6	2437	-2.97	8	5.4	PASS
	10	2457	-6.72	8	5.4	PASS
	11	2462	-7.74	8	5.4	PASS

Mode	CH	Freq (MHz)	PSD per Chain (dBm/3kHz)	
			Chain 0	Chain 1
802.11n(HT20)	1	2412	-10.54	-9.52
	2	2417	-8.97	-8.42
	6	2437	-4.79	-6.81
	10	2457	-9.7	-8.83
	11	2462	-10.68	-9.69



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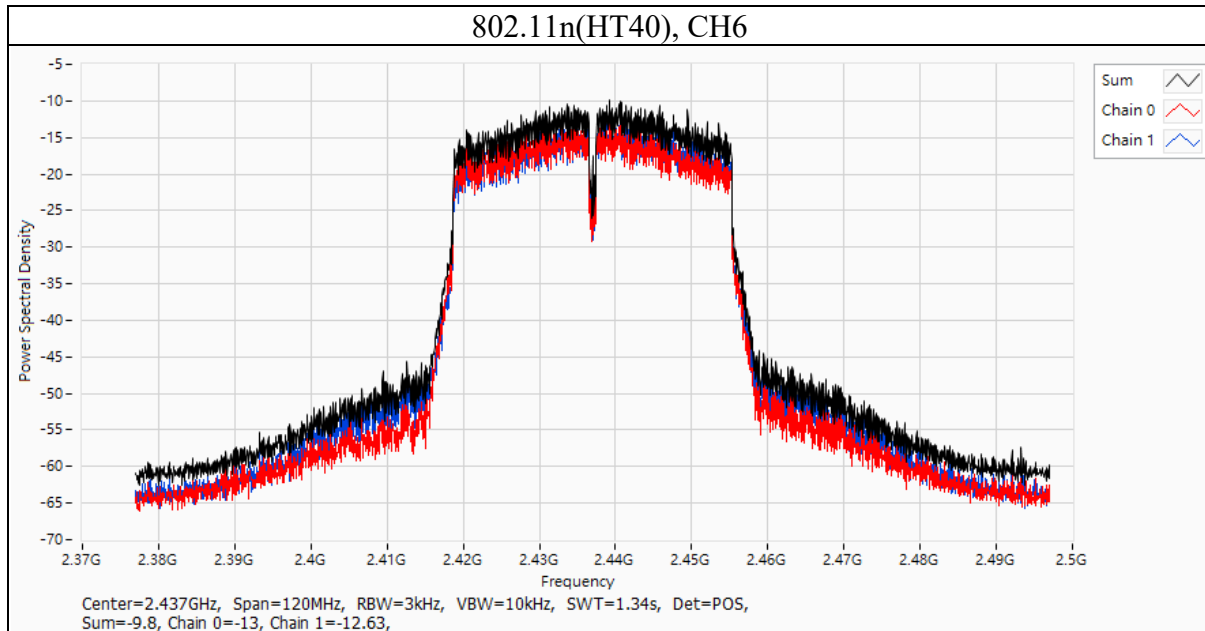
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Mode	CH	Freq (MHz)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Directional Gain (dBi)	Result
802.11n(HT40)	3	2422	-12.5	8	5.4	PASS
	6	2437	-9.8	8	5.4	PASS
	9	2452	-12.62	8	5.4	PASS

Mode	CH	Freq (MHz)	PSD per Chain (dBm/3kHz)	
			Chain 0	Chain 1
802.11n(HT40)	3	2422	-15.09	-14.89
	6	2437	-13	-12.55
	9	2452	-15.33	-14.88



9.4. Conducted Out of Band Emission

Requirements

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b) (3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209 (a) is not required.

Test procedure

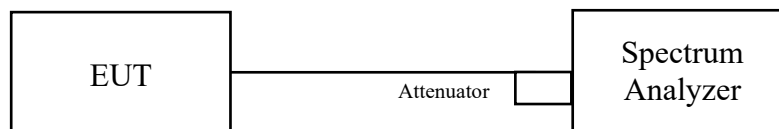
Measurement Procedure REF

1. Set the RBW = 100 kHz.
2. Set the VBW $\geq$ 300 kHz.
3. Set the span to 1.5 times the DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

Measurement Procedure OOBE

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

Test Setup



The loss between RF output port of the EUT and the input port of the Spectrum Analyzer has been taken into consideration.

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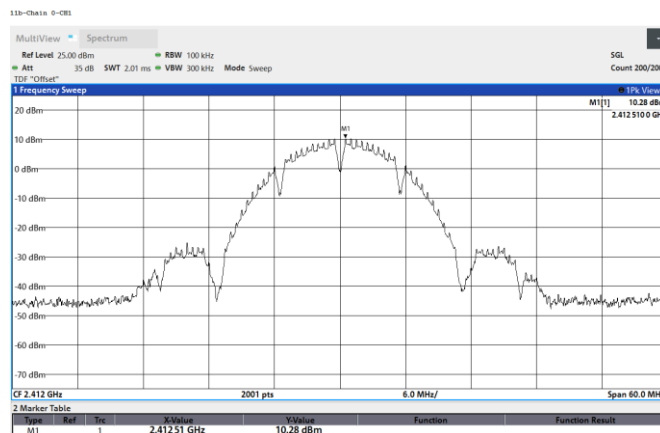
Telephone : +886-2-7737-3000

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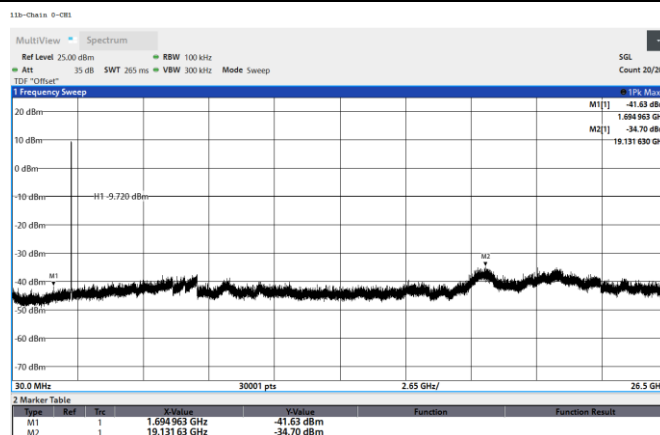
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Test Data

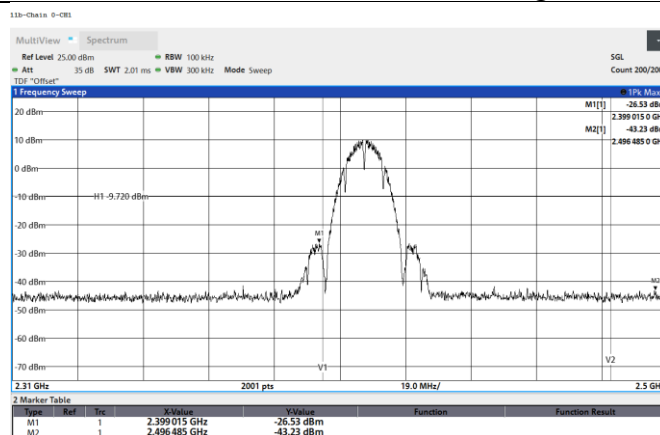
802.11b, CH1, Chain 0, Reference



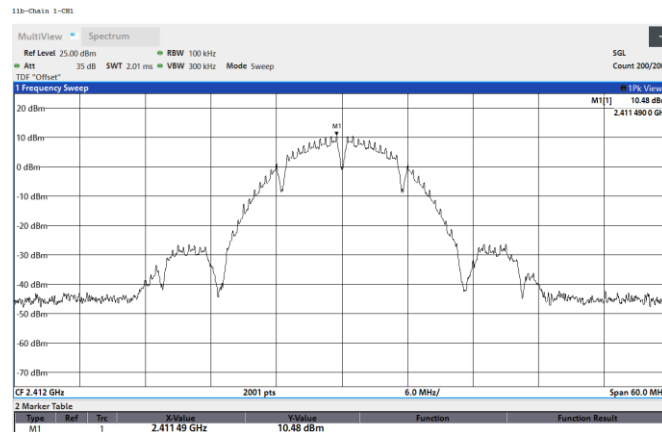
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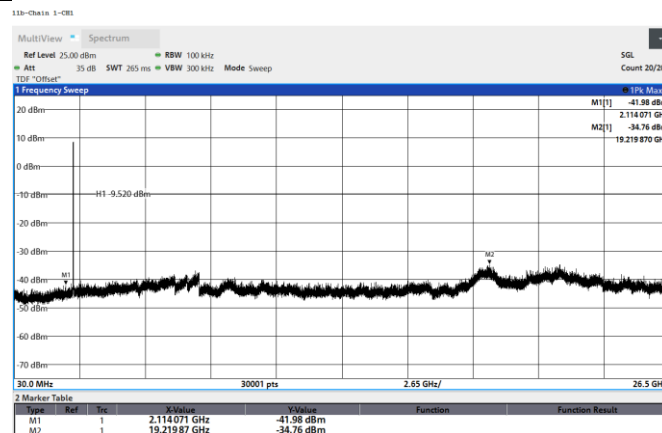
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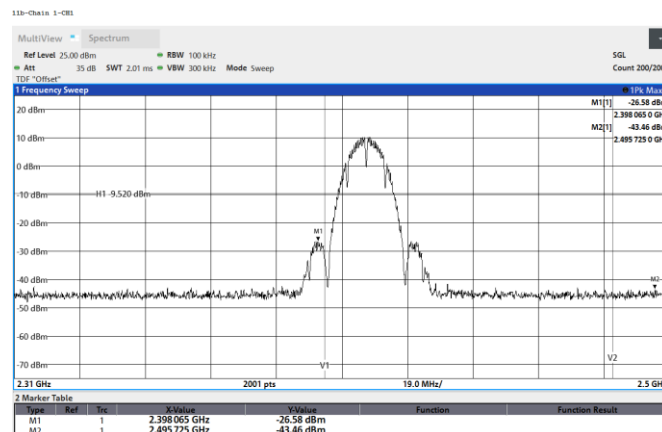
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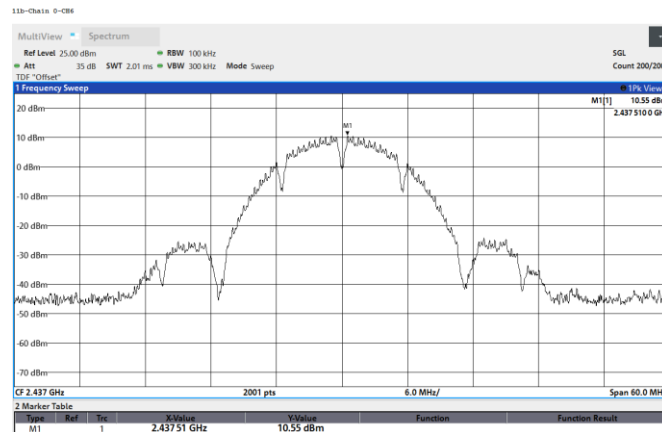
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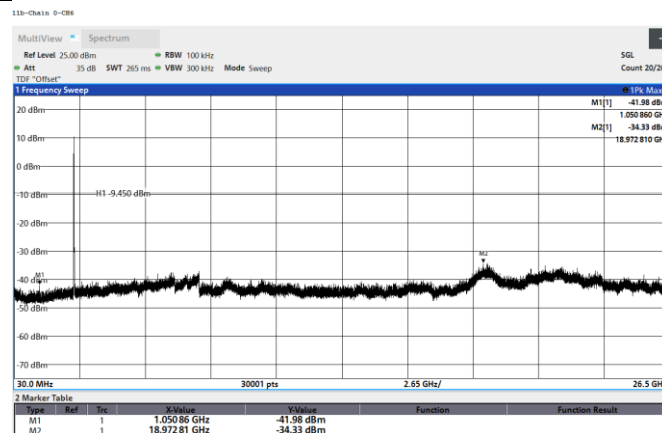
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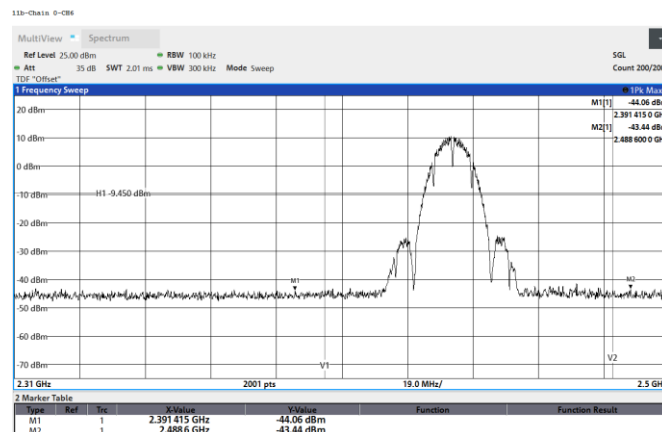
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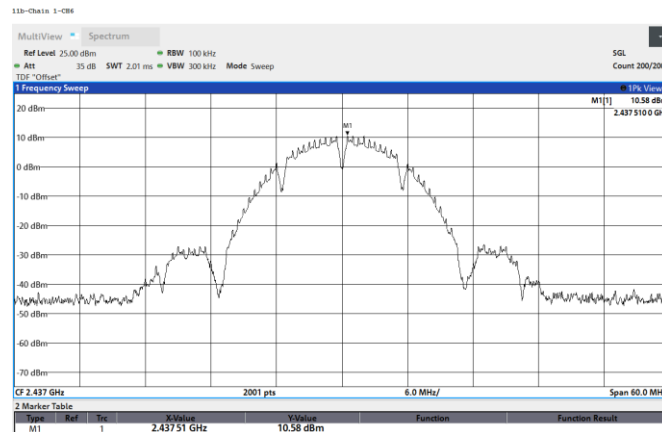
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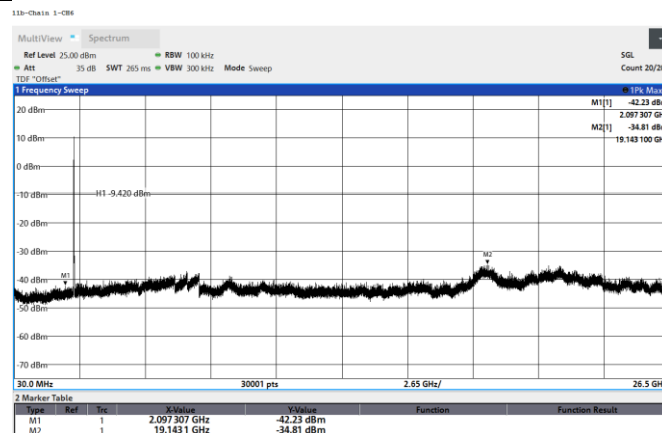
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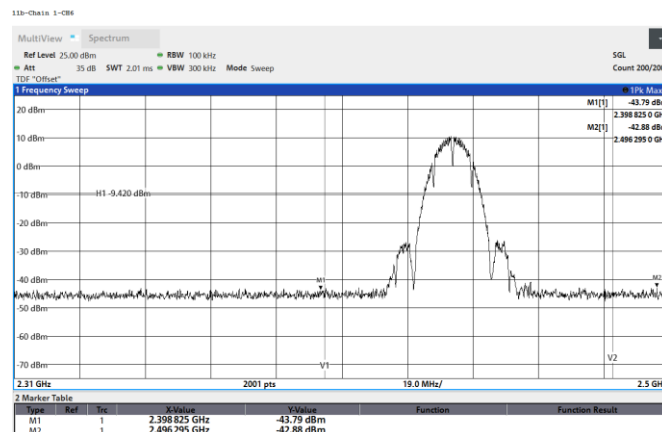
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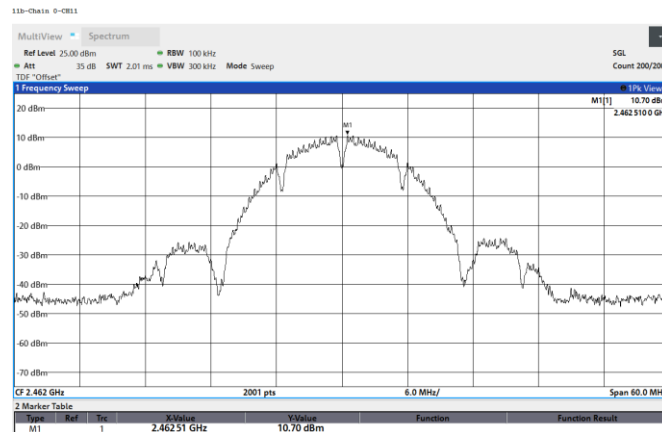
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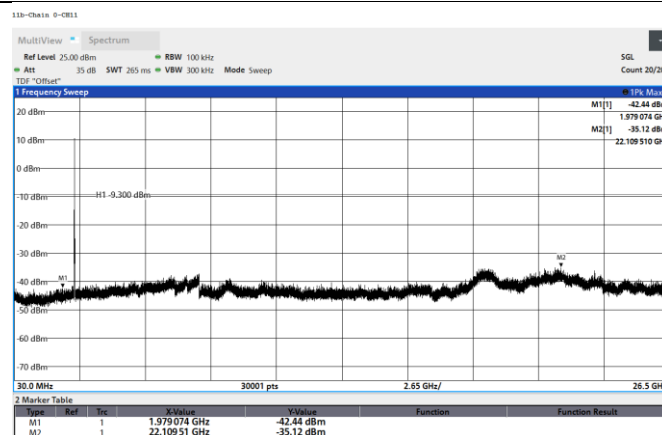
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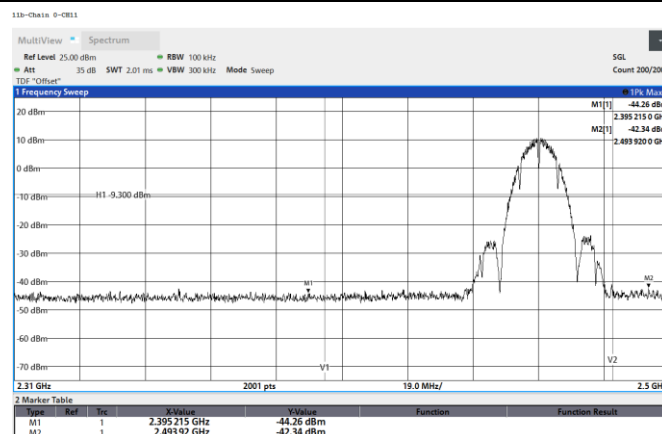
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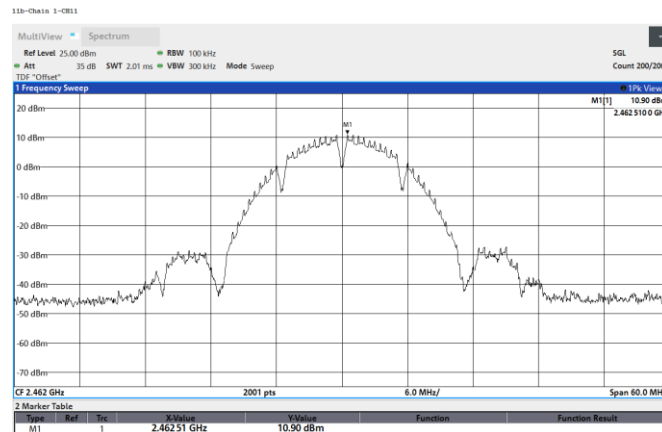
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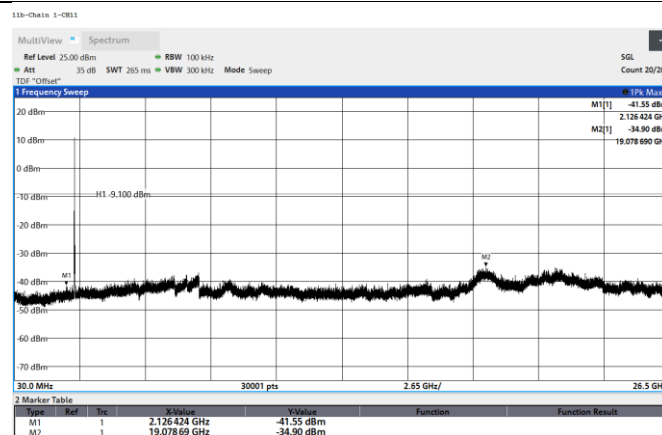
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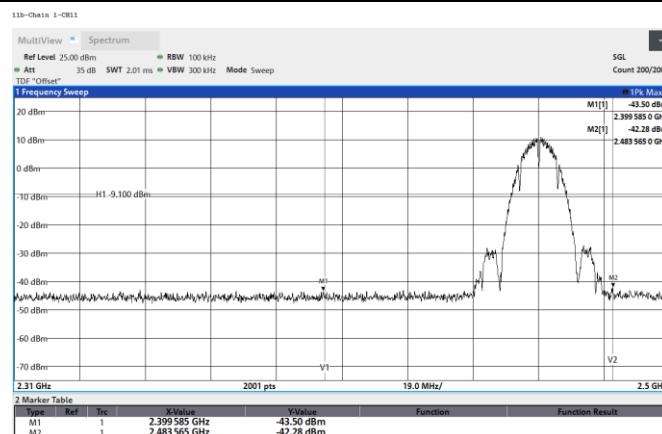
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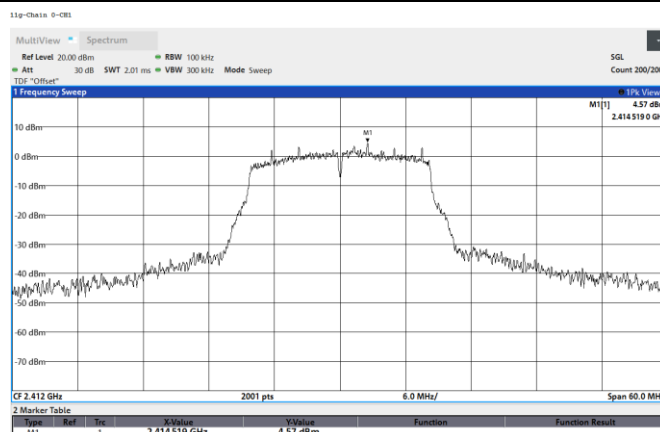
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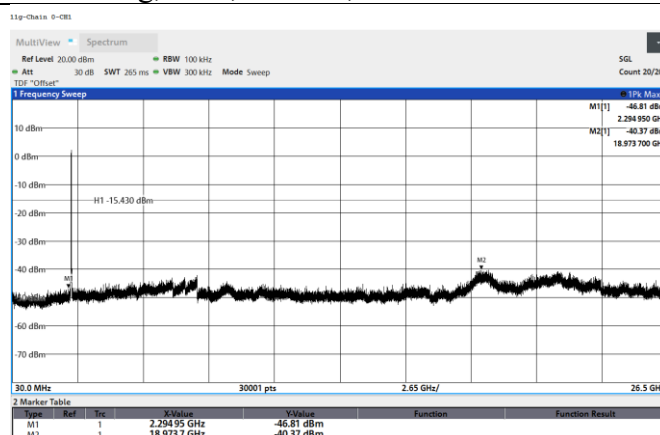
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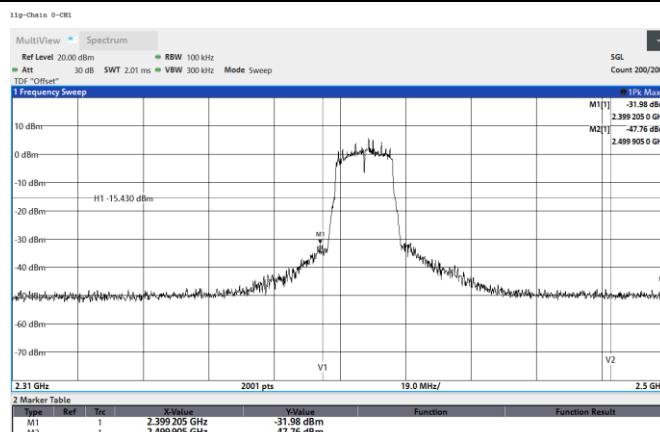
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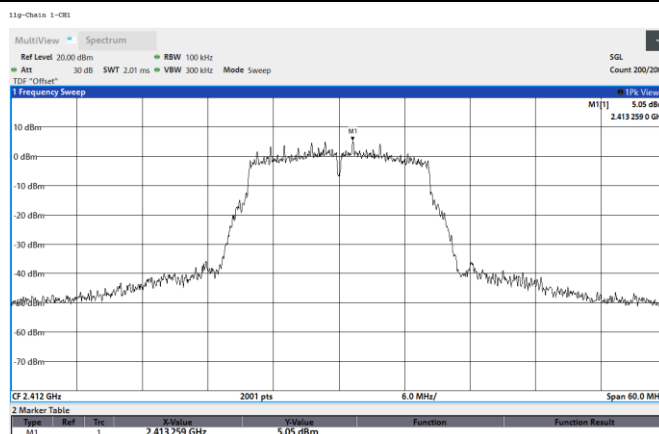
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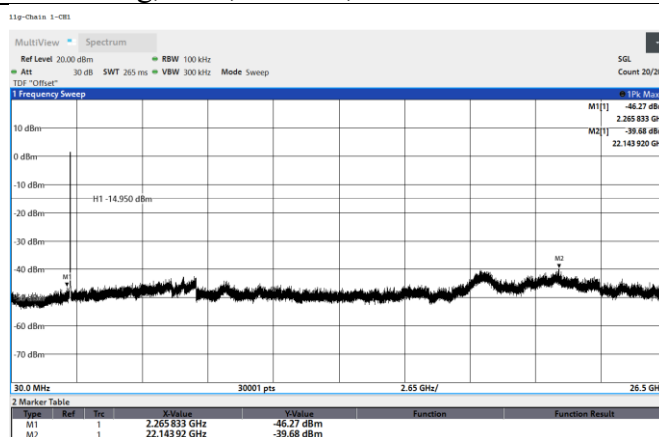
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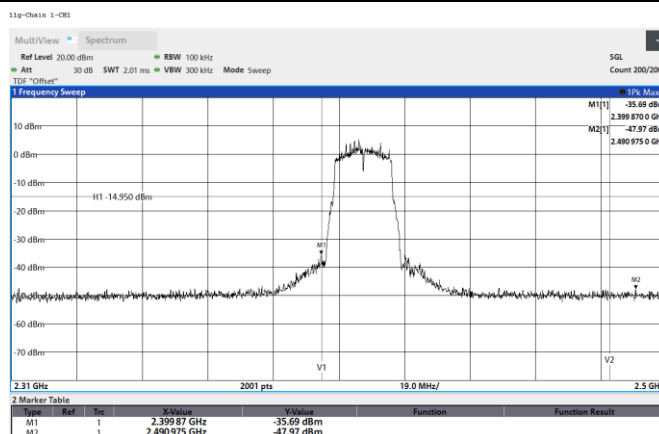
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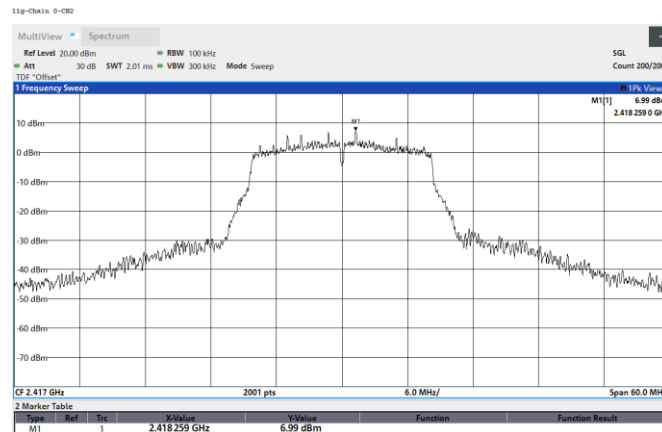
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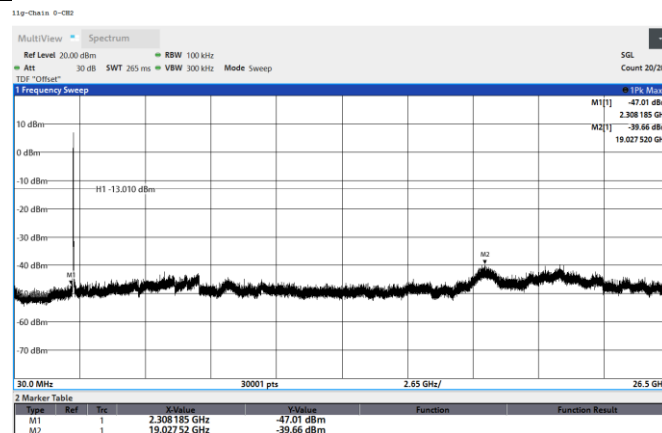
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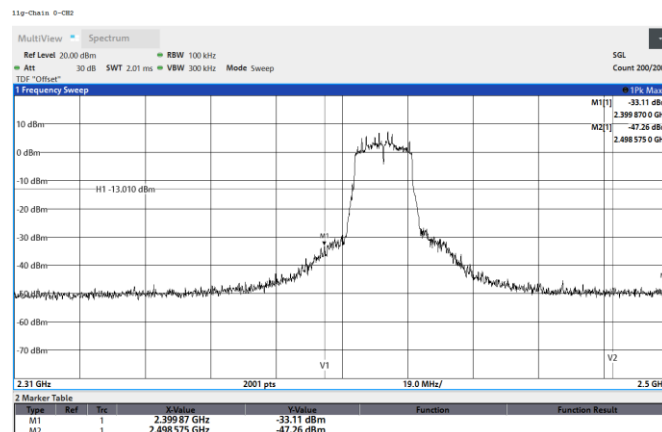
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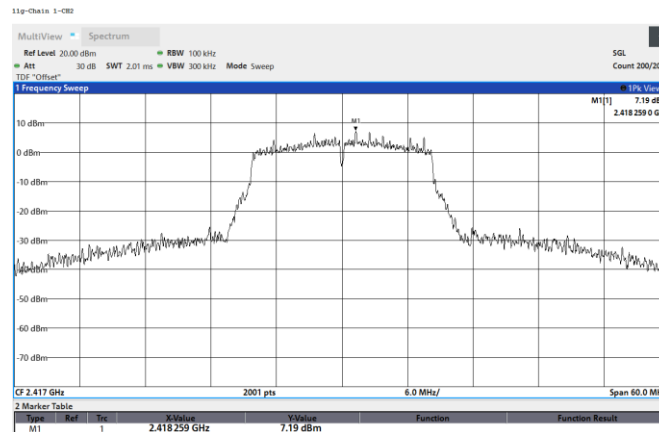
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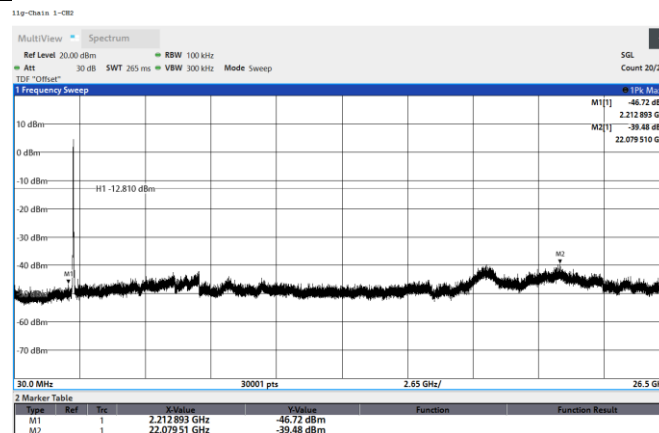
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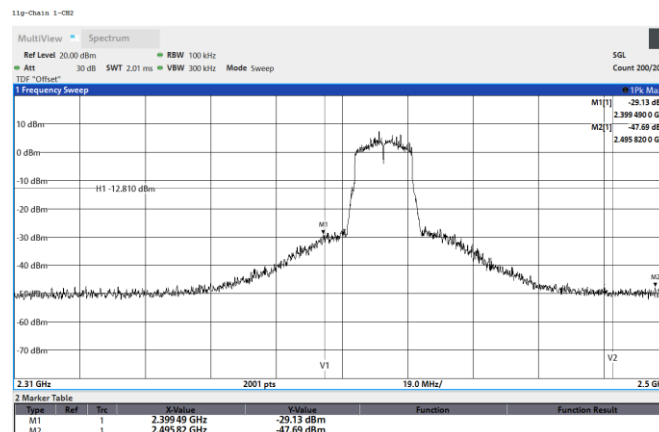
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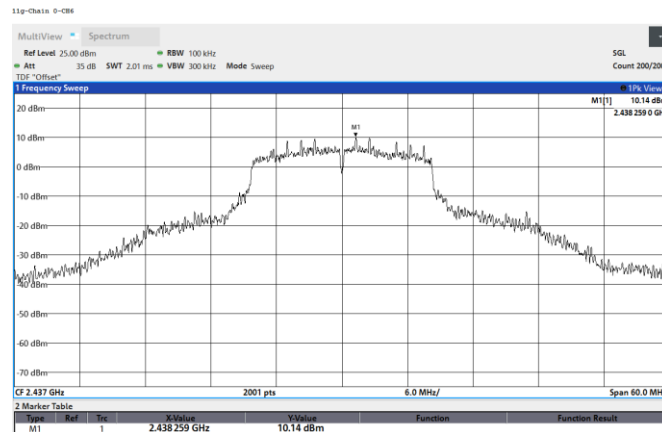
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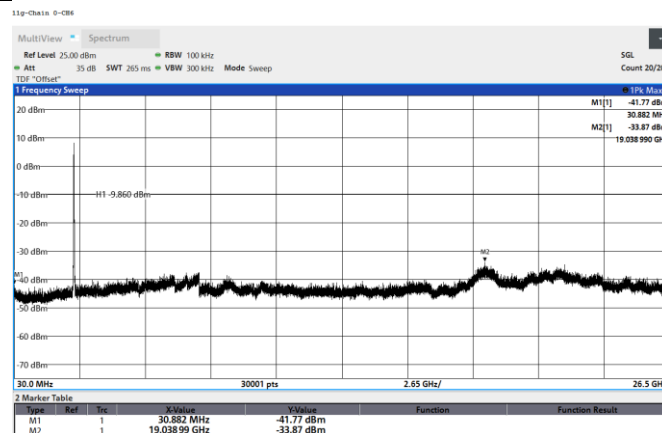
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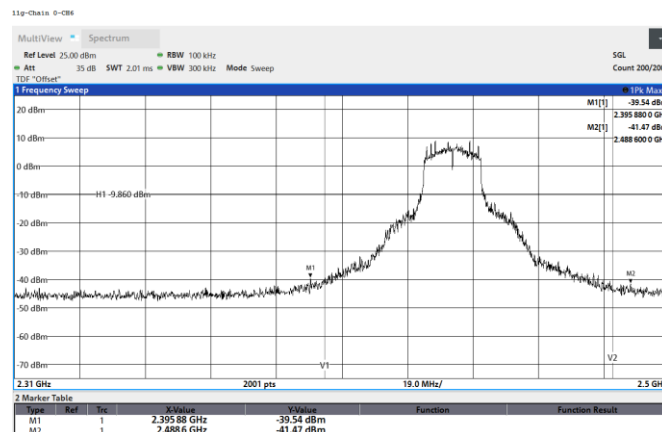
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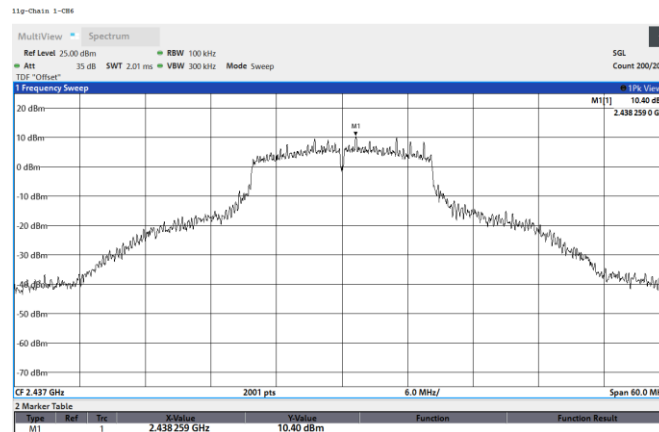
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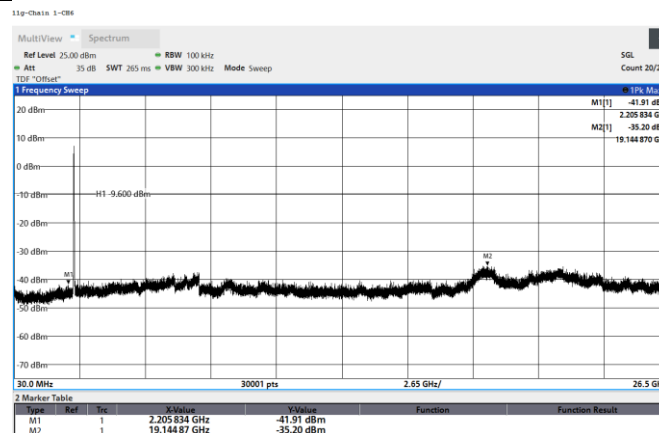
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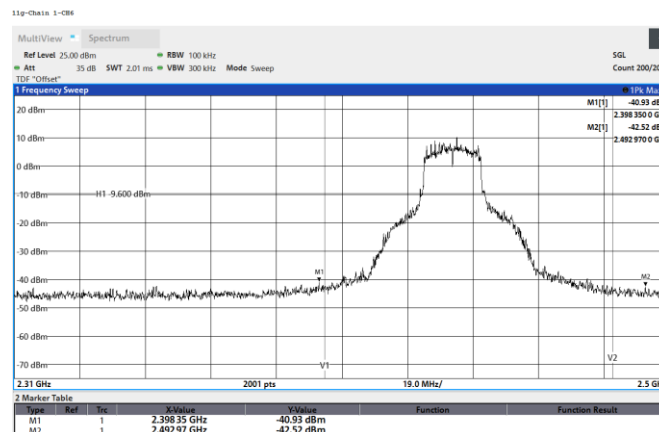
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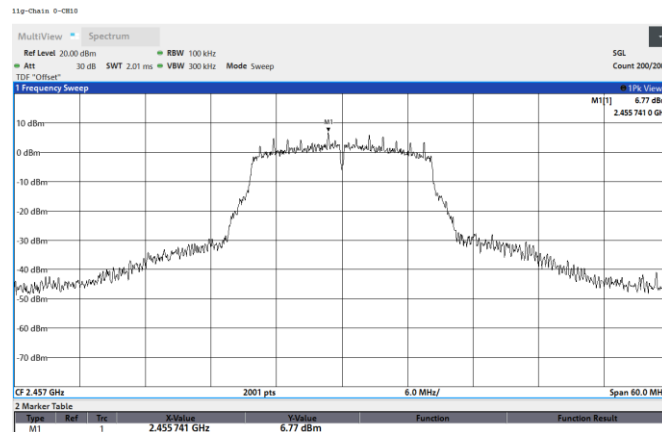
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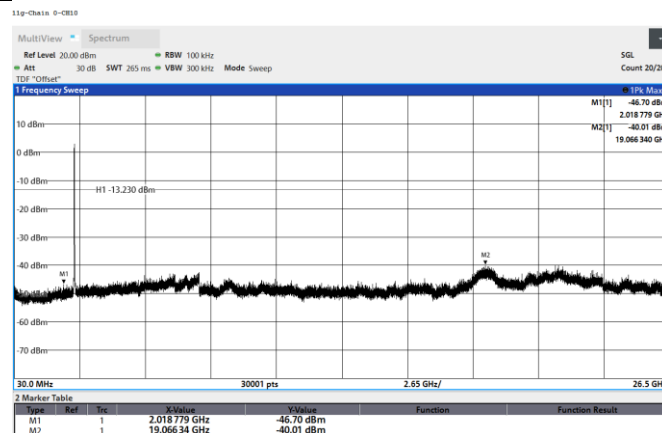
802.11g, CH6, Chain 1, Band edge



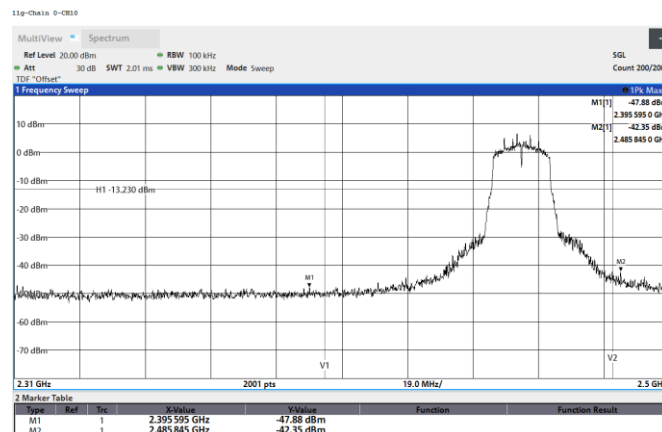
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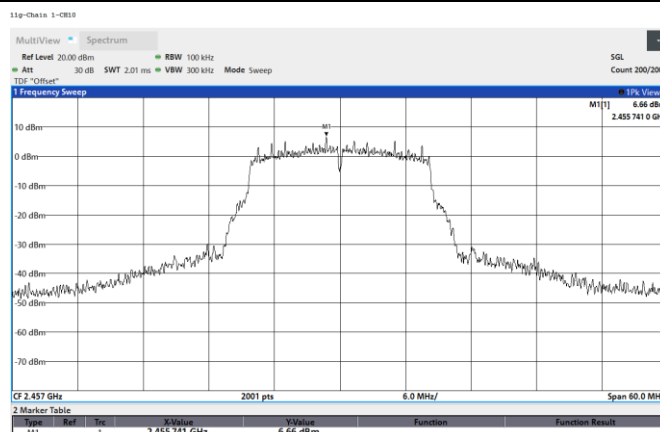
802.11g, CH10, Chain 0, Conducted Emission



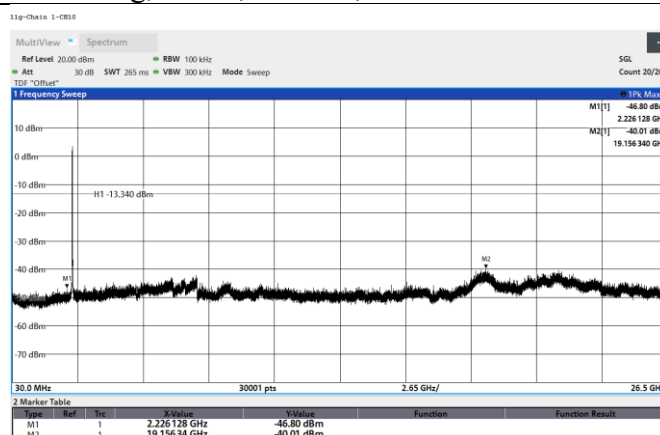
802.11g, CH10, Chain 0, Band edge



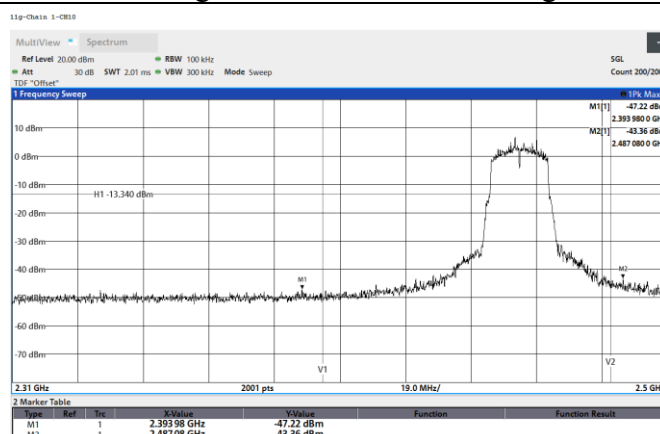
802.11g, CH10, Chain 1, Reference



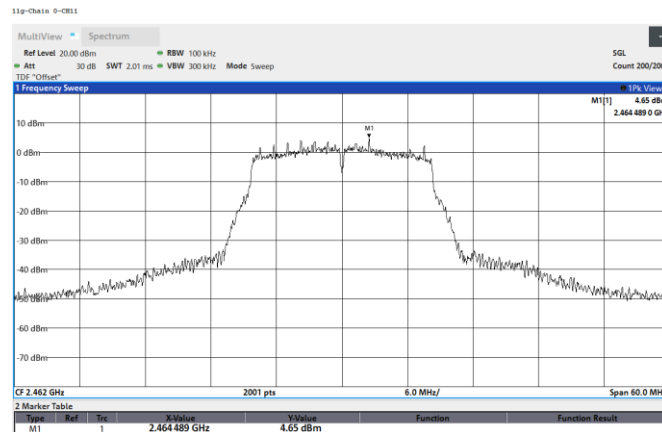
802.11g, CH10, Chain 1, Conducted Emission



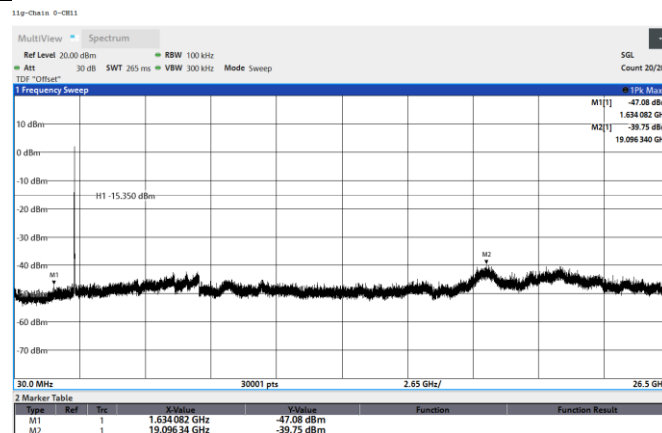
802.11g, CH10, Chain 1, Band edge



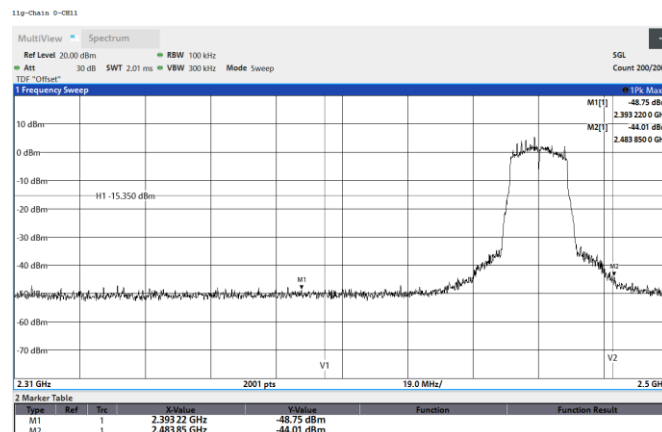
802.11g, CH11, Chain 0, Reference



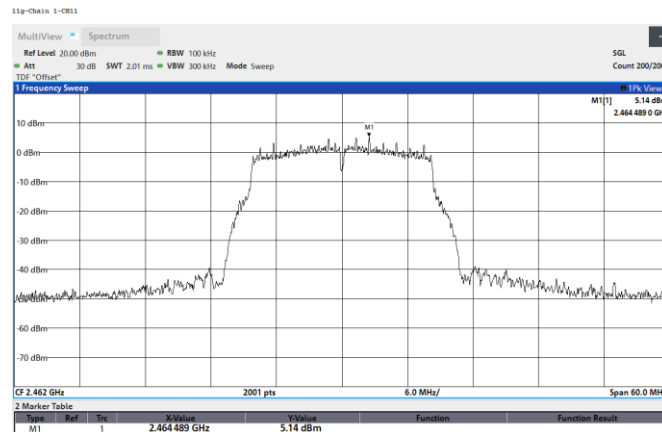
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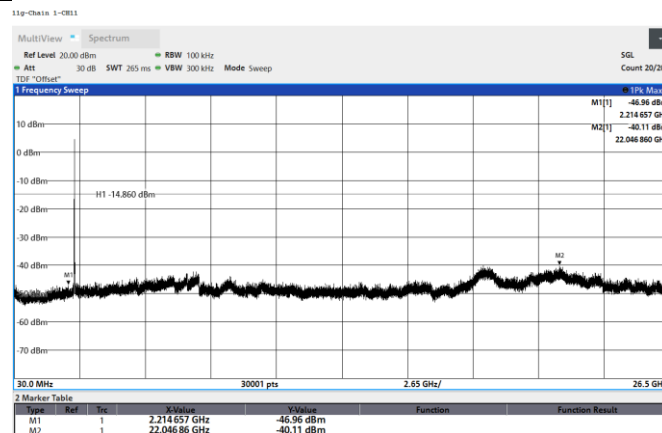
802.11g, CH11, Chain 0, Band edge



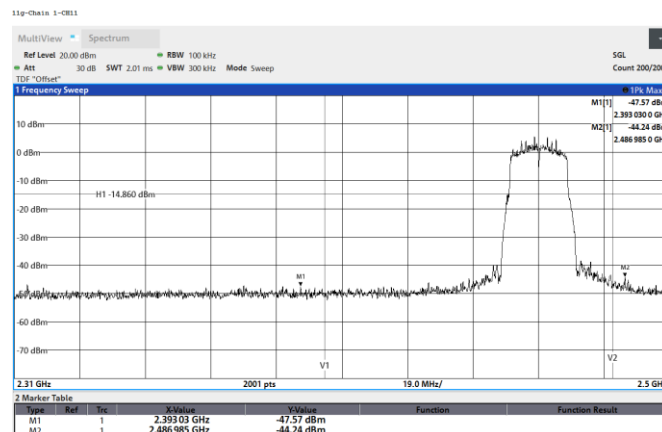
802.11g, CH11, Chain 1, Reference



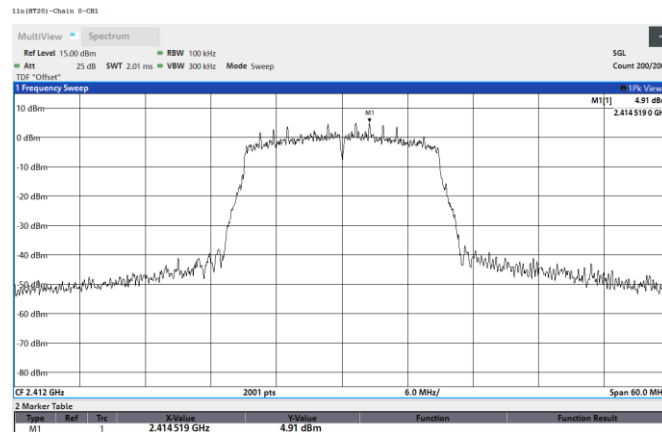
802.11g, CH11, Chain 1, Conducted Emission



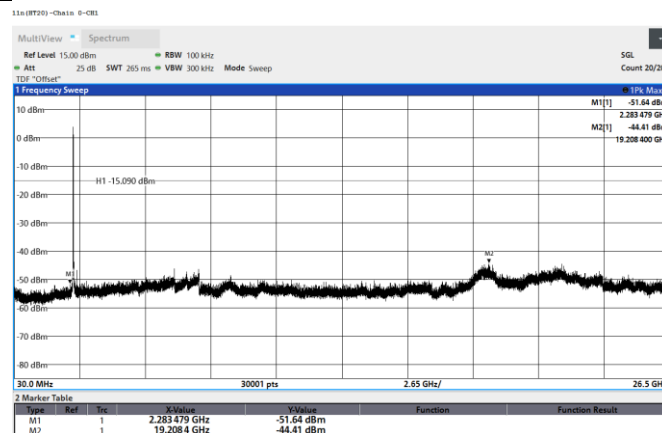
802.11g, CH11, Chain 1, Band edge



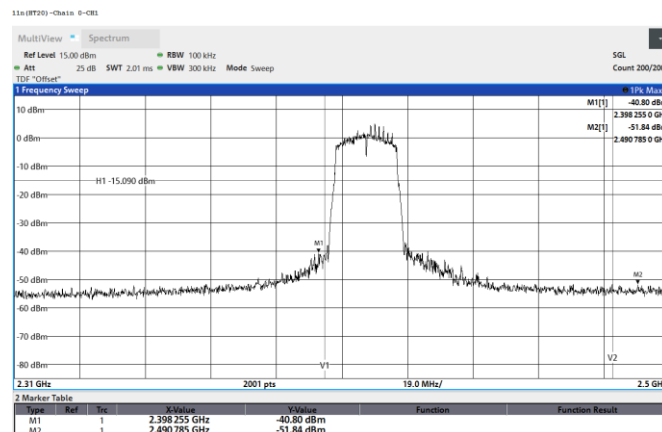
802.11n(HT20), CH1, Chain 0, Reference



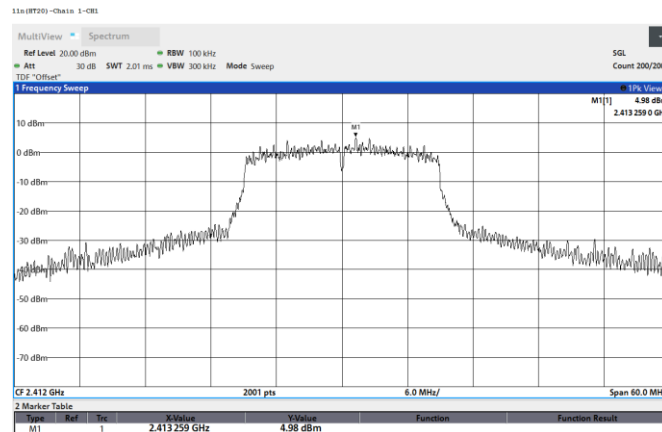
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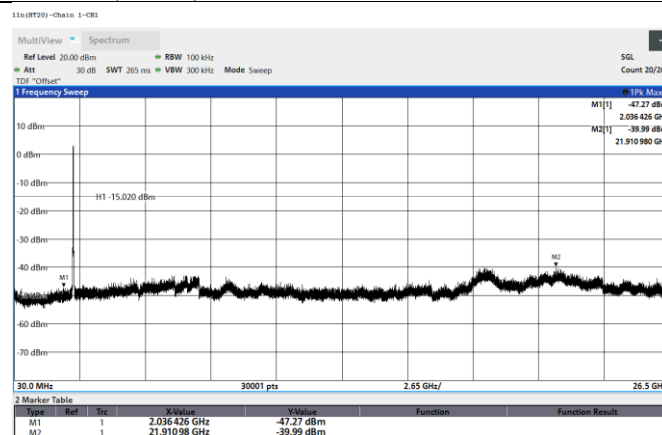
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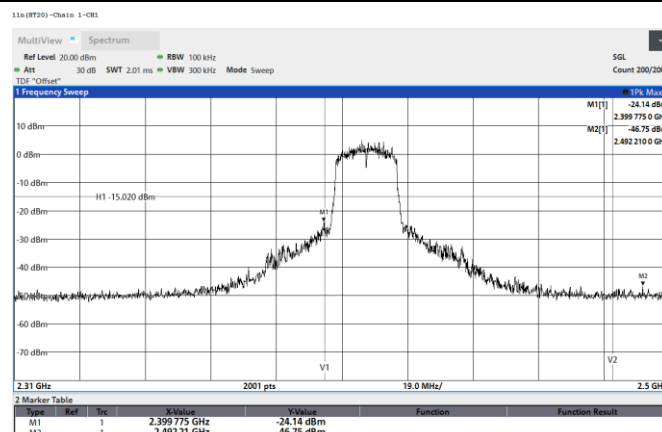
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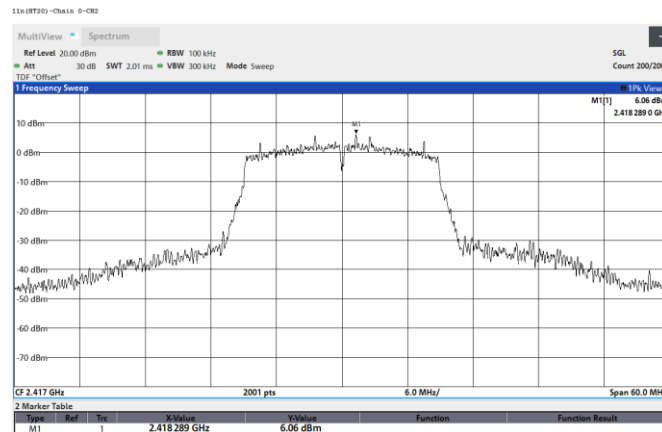
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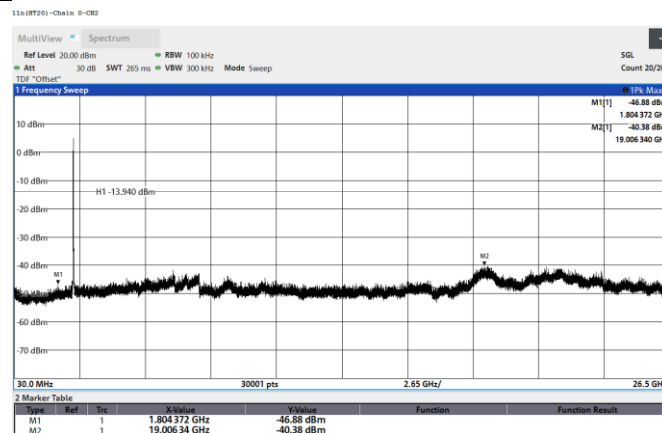
802.11n(HT20), CH1, Chain 1, Band edge



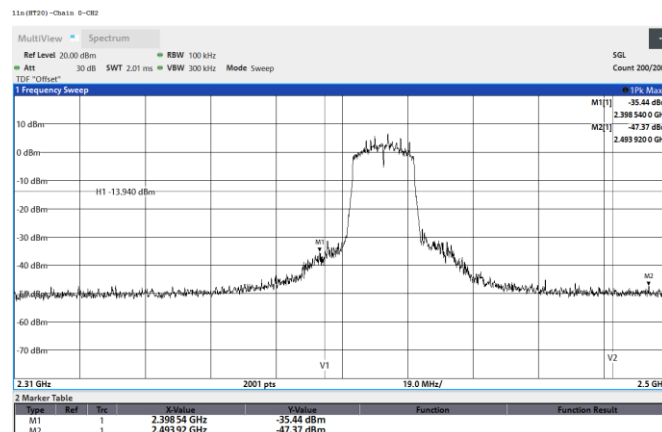
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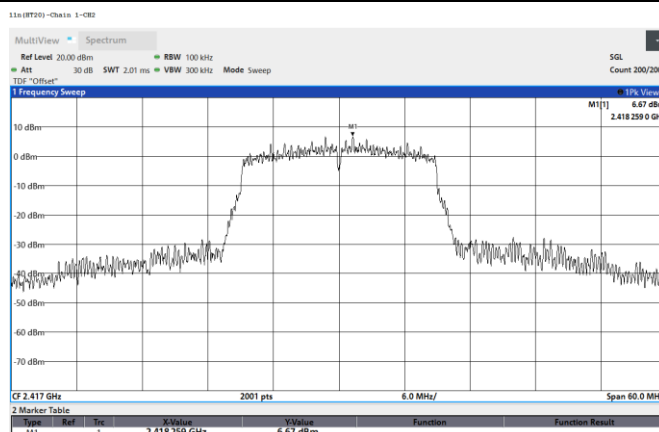
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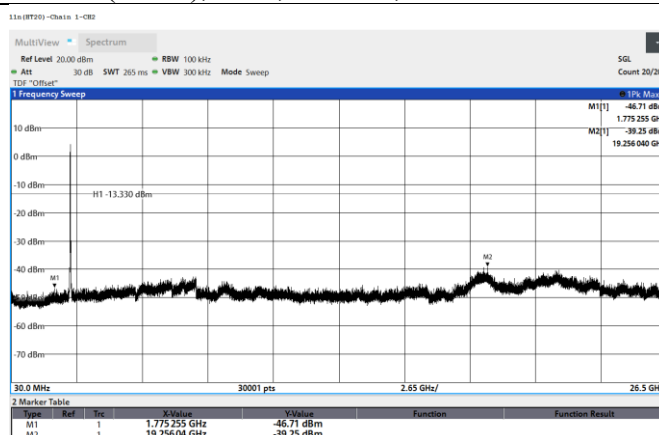
802.11n(HT20), CH2, Chain 0, Band edge



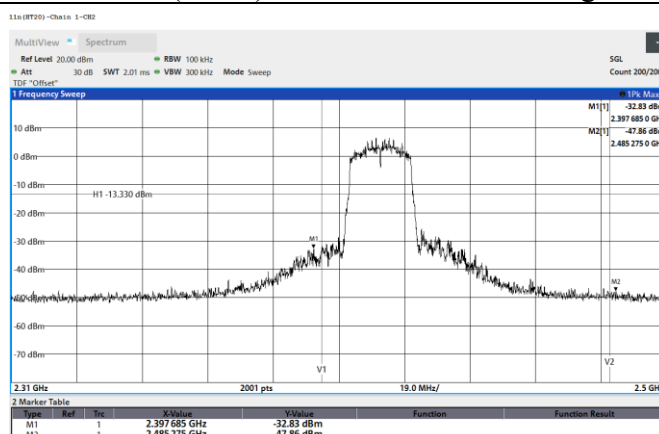
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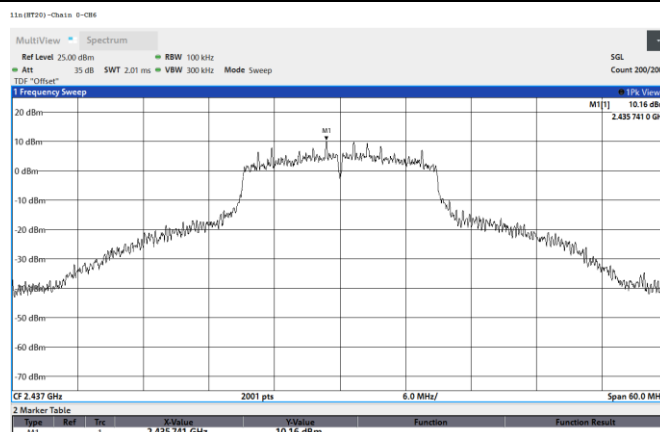
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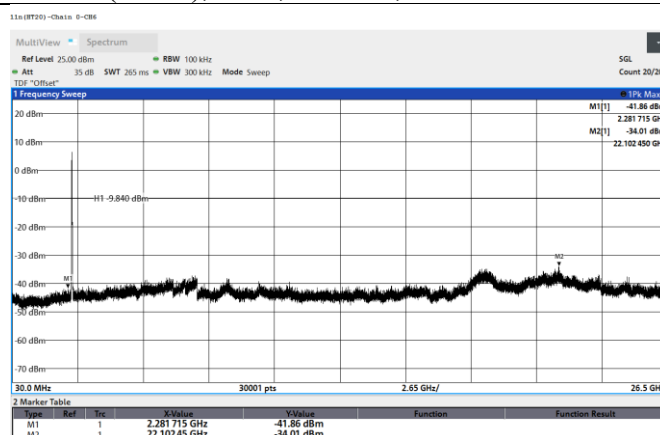
802.11n(HT20), CH2, Chain 1, Band edge



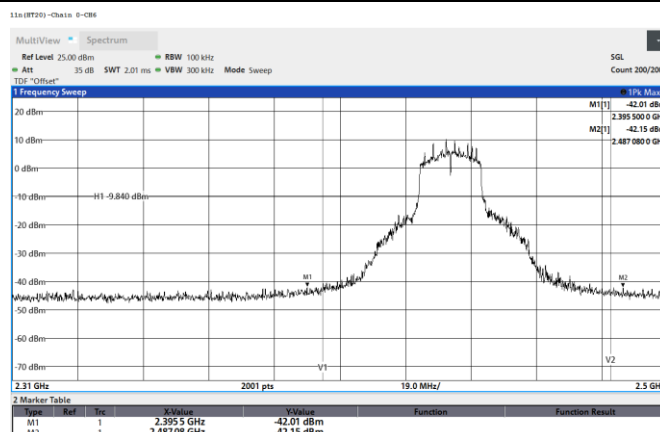
802.11n(HT20), CH6, Chain 0, Reference



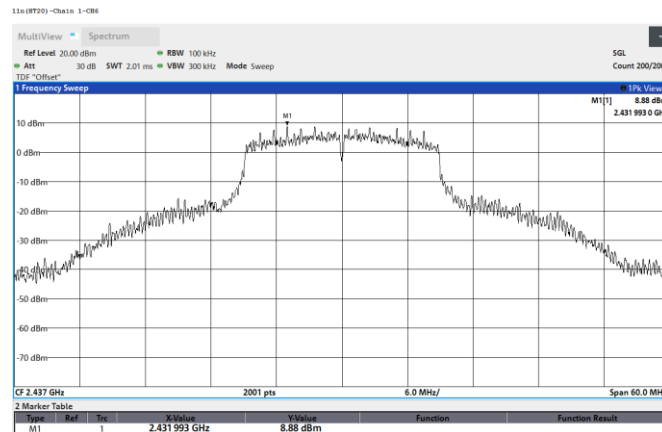
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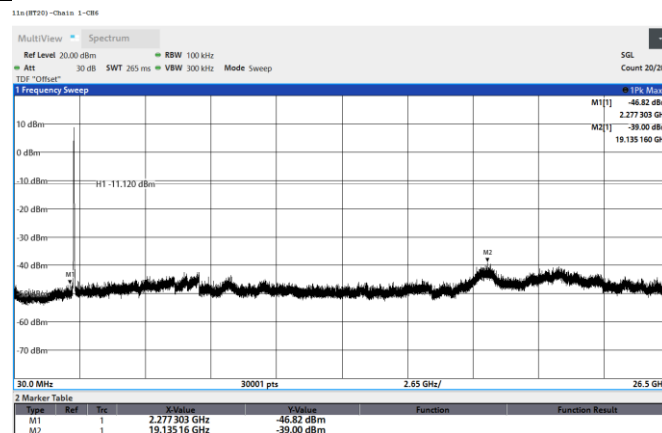
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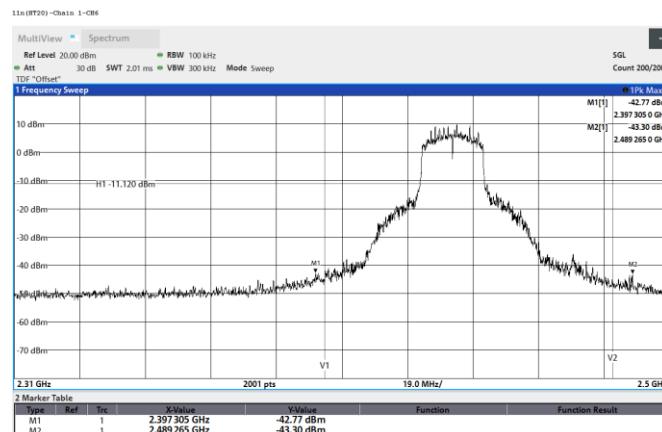
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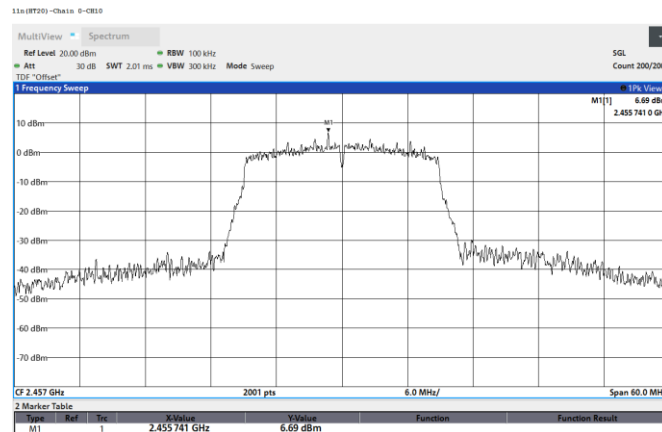
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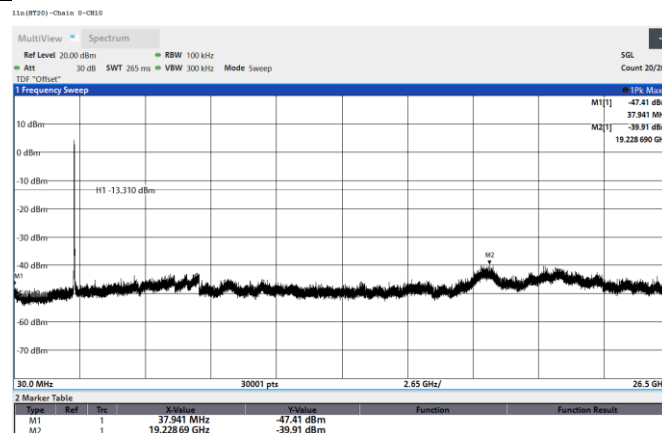
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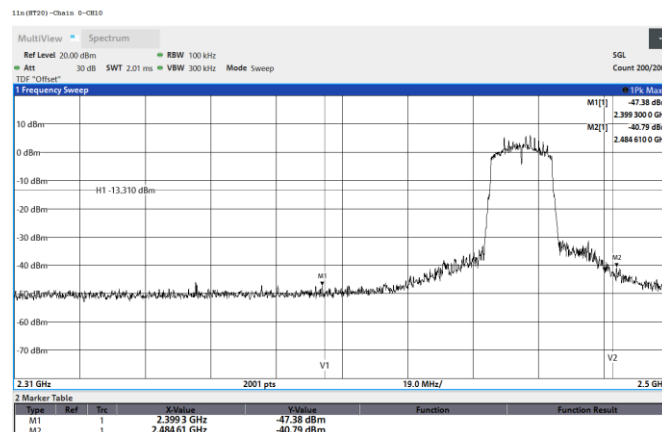
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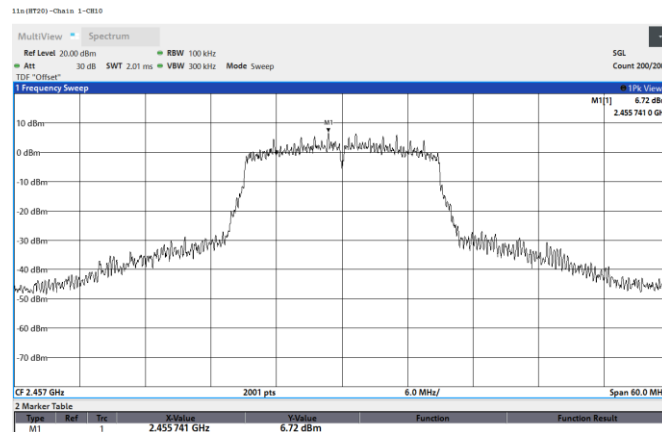
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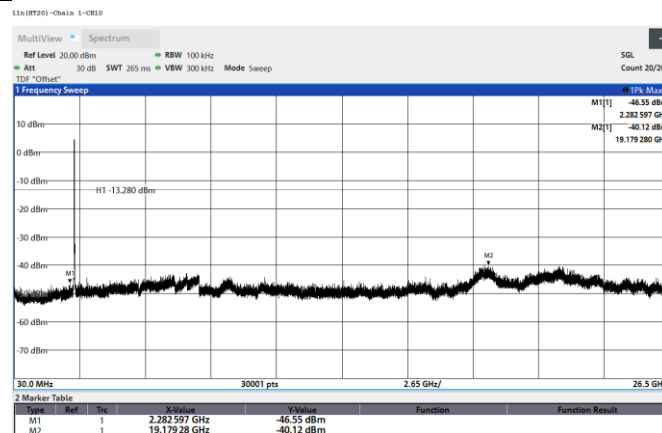
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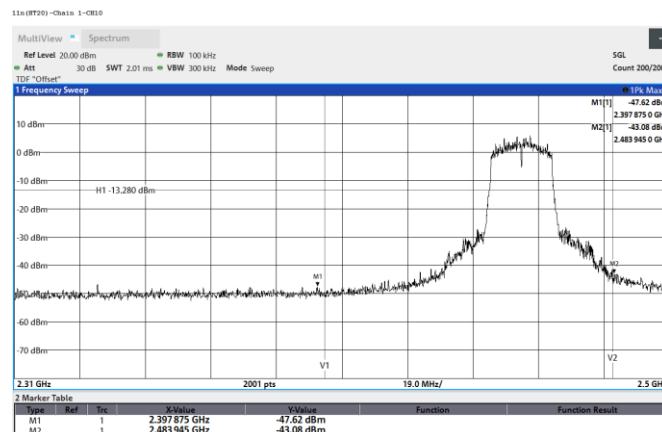
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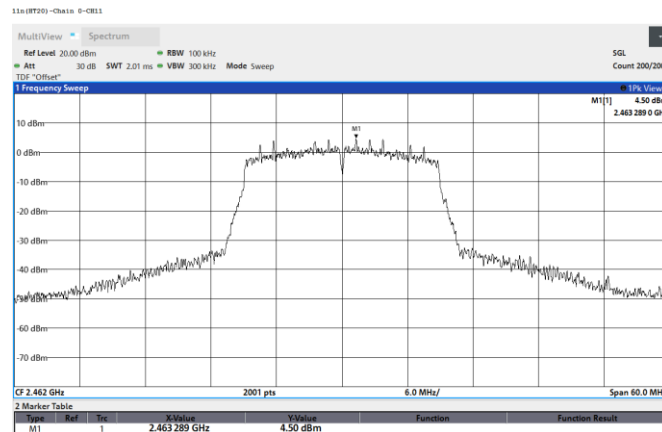
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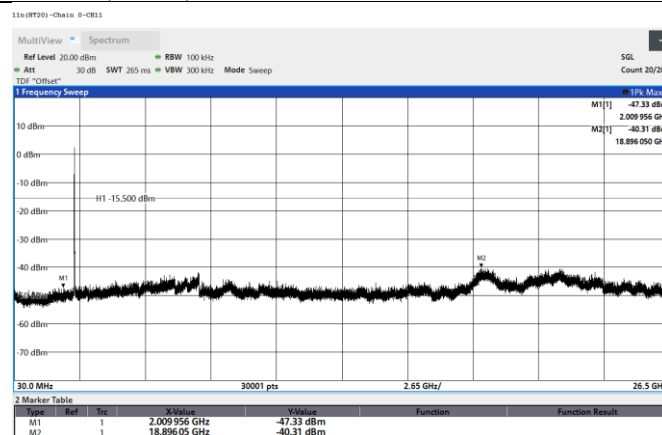
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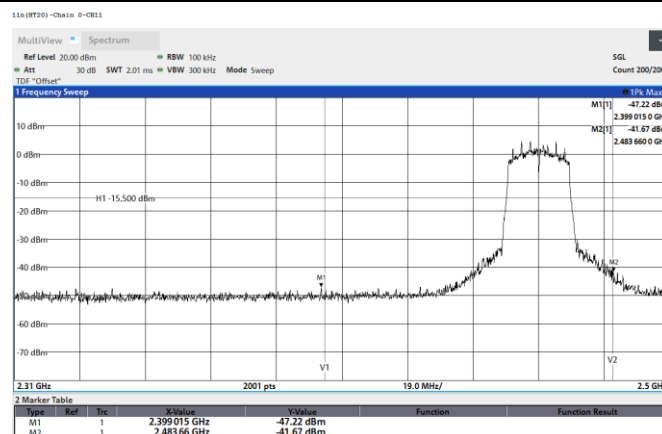
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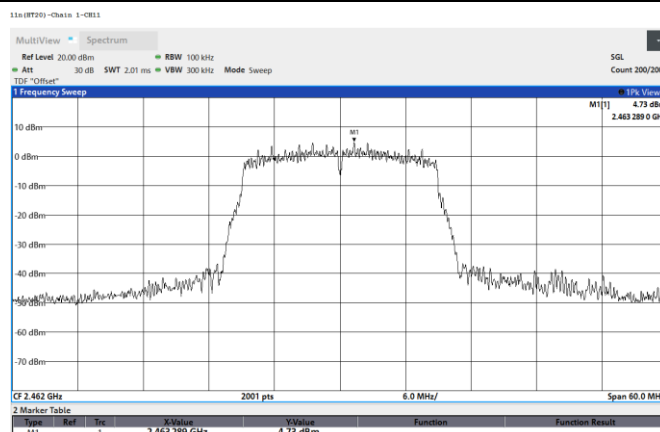
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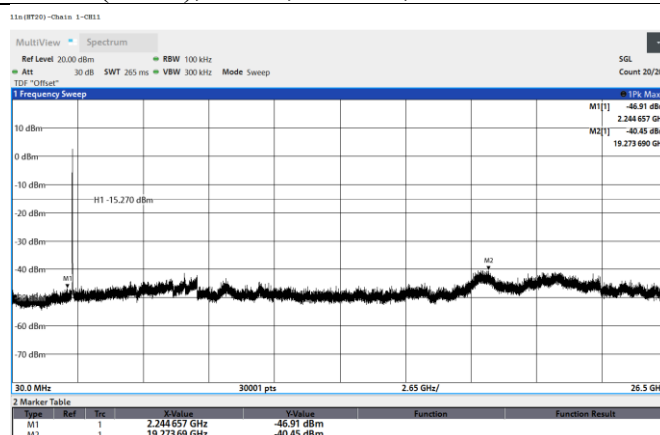
802.11n(HT20), CH11, Chain 0, Band edge



802.11n(HT20), CH11, Chain 1, Reference



802.11n(HT20), CH11, Chain 1, Conducted Emission



802.11n(HT20), CH11, Chain 1, Band edge

