



Shenzhen Huaxin Information Technology Service Co., Ltd

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TEST REPORT

Report No.: **HX250318R004**

FCC ID.....: **2BCAX-HY300ULTRA**

Applicant.....: **GuangDong SINOY Smart Technology CO., LTD**

Address.....: 5TH Floor, Building #2, RunFengZhiGu Industrial Park Changpin Town, DongGuan City, Guangdong, China

Manufacturer.....: GuangDong SINOY Smart Technology CO., LTD

Address.....: 5TH Floor, Building #2, RunFengZhiGu Industrial Park Changpin Town, DongGuan City, Guangdong, China

Product Name.....: **Smart Projector**

Trade Mark.....: /

Model/Type reference.....: HY300Ultra

Listed Model(s): HY300Pro+, Gimbal 3S, W210, SMOON 300, HY200mini, HY200C, Gimbal 3 Pro, HY300Plus, HY300 Pro+, HY300Pro, HY300PRO, C2, AC1075

Standard.....: **FCC CFR Title 47 Part 15 Subpart C Section 15.247**

Date of receipt of test sample...: Mar. 11, 2025

Date of testing.....: Mar. 12, 2025 ~ Mar. 24, 2025

Date of issue.....: Mar. 25, 2025

Result.....: **PASS**

Compiled by:

(Printed name + signature)

Terry Su



Approved by:

(Printed name + signature)

Michael Wu

Testing Laboratory Name.....: **Shenzhen Huaxin Information Technology Service Co., Ltd**

Address.....: 101, R & D Building, No.3 guansheng 4th Road, Luhua Community, Guanhu Street, Longhua District, Shenzhen, Guangdong, China

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1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

[FCC Rules Part 15.247](#): Operation within the bands of 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.

[RSS 247 Issue 3](#): Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

[ANSI C63.10-2013](#): American National Standard for Testing Unlicensed Wireless Devices.

1.2. Report version

Revised No.	Date of issue	Description
01	Mar. 25, 2025	Original



1.3. Test Description

FCC Part 15 Subpart C (15.247) / RSS 247 Issue 3				
Test Item	Standard Section		Result	Test Engineer
	FCC	IC		
Antenna Requirement	15.203&15.247(b)(4)	/	Pass	Sain Liao
Conducted Emission	15.207	RSS-Gen 8.8	Pass	Ann Lu
Radiated Emissions Restricted Band and Radiated Spurious Emissions	15.205&15.209&15.247(d)	RSS 247 5.5	Pass	Sain Liao
Conducted Band Edge and Spurious Emissions	15.247(d)	RSS 247 5.5	Pass	Sain Liao
6dB Bandwidth	15.247(a)(2)	RSS 247 5.2 (a)	Pass	Sain Liao
Conducted Max Output Power	15.247(b)(3)	RSS 247 5.4 (d)	Pass	Sain Liao
Power Spectral Density	15.247(e)	RSS 247 5.2 (b)	Pass	Sain Liao
Transmitter Radiated Spurious	15.209&15.247(d)	RSS 247 5.5&RSS-Gen 8.9	Pass	Sain Liao

Note: The measurement uncertainty is not included in the test result.



1.4. Test Facility

Shenzhen Huaxin Information Technology Service Co., Ltd

Add: 101, R & D Building, No.3 guansheng 4th Road, Luhuhu Community, Guanhu Street, Longhua District, Shenzhen, Guangdong, China

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

A2LA-Lab Cert. No.: 6855.01

Shenzhen Huaxin Information Technology Service Co., Ltd EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

Industry Canada (Company Number: 31786, CAB Identifier: CN0147)

Shenzhen Huaxin Information Technology Service Co., Ltd EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 31786.

FCC (Registration No.: 932271, Designation Number CN1344)

Shenzhen Huaxin Information Technology Service Co., Ltd EMC Laboratory has been registered and fully described in a report filed with the (FCC)Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration NO.: 932271.

1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen Huaxin Information Technology Service Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Below is the best measurement capability for Shenzhen Huaxin Information Technology Service Co., Ltd



Test Items	Measurement Uncertainty	Notes
DTS Bandwidth	$\pm 4.22\%$	(1)
Maximum Conducted Output Power	$\pm 0.41\text{dB}$	(1)
Maximum Power Spectral Density Level	$\pm 0.39\text{dB}$	(1)
Band-edge Compliance	$\pm 0.59\text{dB}$	(1)
Unwanted Emissions In Non-restricted Freq Bands	9kHz-1GHz: $\pm 0.746\text{dB}$ 1GHz-26GHz: $\pm 1.328\text{dB}$	(1)
Conducted Emissions 9kHz~30MHz	$\pm 2.18\text{dB}$	(1)
Radiated Emissions 30~1000MHz	$\pm 4.17\text{dB}$	(1)
Radiated Emissions 1~18GHz	$\pm 4.82\text{dB}$	(1)
Radiated Emissions 18~40GHz	$\pm 6.12\text{dB}$	(1)

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.6. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	21°C ~ 27°C
Relative Humidity:	40% ~ 60%
Air Pressure:	101kPa



2. GENERAL INFORMATION

2.1. Client Information

Applicant:	GuangDong SINOY Smart Technology CO., LTD
Address:	5TH Floor, Building #2, RunFengZhiGu Industrial Park Changpin Town, DongGuan City, Guangdong, China
Manufacturer:	GuangDong SINOY Smart Technology CO., LTD
Address:	5TH Floor, Building #2, RunFengZhiGu Industrial Park Changpin Town, DongGuan City, Guangdong, China

2.2. General Description of EUT

Product Name:	Smart Projector
Trade Mark:	/
Model/Type reference:	HY300Ultra
Listed Model(s):	HY300Pro+, Gimbal 3S, W210, SMOON 300, HY200mini, HY200C, Gimbal 3 Pro, HY300Plus, HY300 Pro+, HY300Pro, HY300PRO, C2, AC1075
Model Different:	All these models are identical in the same PCB, layout and electrical circuit, The difference is model name and speaker location.
Power supply:	36V=0.95A and 12V=0.7A from AC/DC Adapter
Adapter Model:	HYP317-360095US Input: 100-240V~ 50/60Hz 1.0A Max Output 1: 36V=0.95A Output 2: 12V=0.7A
Hardware version:	/
Software version:	/
WIFI Specification	
Modulation:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/ n/ ax: OFDM(BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Operation frequency:	802.11b/ g/ n(HT20)/ ax(HE20): 2412MHz~2462MHz 802.11n(HT40)/ ax(HE40): 2422MHz~2452MHz
Channel number:	802.11b/ g/ n(HT20): 11channels 802.11n(HT40)/ ax(HE40): 7channels
Channel separation:	5MHz
Antenna type:	FPC Antenna
Antenna gain:	-3.91dBi Max



2.3. Accessory Equipment information

Equipment Information			
Name	Model	S/N	Manufacturer
Notebook	ThinkBook 14G3 ACL	MP246QDR	Lenovo
Cable Information			
Name	Shielded Type	Ferrite Core	Length
DC In Cable	Without	Without	1.2M
Test Software Information			
Name	Versions	/	/
SecureCRT.exe	8.7.1	/	/



2.4. Operation state

Operation Frequency List: The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing, Only Full RU supported in 802. 11ax mode.

Operation Frequency List:

Channel	Frequency (MHz)
01	2412
02	2417
03	2422
04	2427
05	2432
06	2437
07	2442
08	2447
09	2452
10	2457
11	2462

Note: CH 01~CH 11 for 802.11b/g/n(HT20)/ax(HE20), CH 03~CH 09 for 802.11n(HT40)/ax(HE40).

Data Rated

Preliminary tests were performed in different data rate, and found which the below bit rate is worst case mode, so only show data which it is a worst case mode.

Mode	Data rate (worst mode)
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)/ (HT40)	HT-MCS0
802.11ax(HE20)/ (HE40)	HE-MCS0

Test mode

For RF test items:
The engineering test program was provided and enabled to make EUT continuous transmit.
For AC power line conducted emissions:
The EUT was set to connect with the WLAN AP under large package sizes transmission.
For Radiated spurious emissions test item:
The engineering test program was provided and enabled to make EUT continuous transmit. The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data Recorded in the report.



2.5. Measurement Instruments List

RF Test System					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY51280803	Apr. 13, 2025
2	Wideband Radio Communication Tester	R&S	CMW500	157763	Apr. 13, 2025
3	MXG Vector Signal Generator	Agilent	N5182A	101795	Apr. 13, 2025
4	EXG Analog Signal Generator	Agilent	N5181A	MY47421151	Apr. 13, 2025
5	RF Control Unit	Techy	TR1029-1	20220428C009	Apr. 14, 2025
6	RF Sensor Unit	Techy	TR1029-2	/	/
7	High and low temperature test chamber	Asprey	LX-225L	2020091401	Apr. 13, 2025
8	SRD Test Software	TACHOY	RTS	/	/
9	2G/3G/4G Test Software	TST	TST-PASS	2023.11.24_17.14 .16	/

Radiated emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	EMI spectrum receiver	R&S	ESR7	102543	Apr. 13, 2025
2	9*6*6 anechoic chamber	Mao Rui	9*6*6	/	Apr. 13, 2025
3	Spectrum analyzer	R&S	FSV40-N	101795	Apr. 14, 2025
4	Preamplifier	Agilent	8449B	3008A00551	Apr. 13, 2025
5	Preamplifier	HP	8447D	1616A02061	Apr. 13, 2025
6	Horn Antenna	A. H. System, Inc	SAS-571	915	Apr. 18, 2025
7	Trilog-Broadband Antenna	SCHWARZBEC K	VULB 9168	01318	Apr. 18, 2025
8	Test Software	SKET	EMC-I	/	/
9	Wideband Radio Communication Tester	R&S	CMW500	157763	Apr. 13, 2025

Conducted emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	LISN	R&S	ENV216	101291	Apr. 13, 2025
2	LISN	R&S	ESH3-Z5	894981/024	Apr. 13, 2025
3	EMI Test Receiver	R&S	ESR7	102543	Apr. 13, 2025
4	10dB Pulse Limiter	SCHWARZBEC K	/	9618	Apr. 13, 2025
5	Test Software	SKET	EMC-I	/	/
6	Wideband Radio Communication Tester	R&S	CMW500	157763	Apr. 13, 2025

Note: 1. The Cal. Interval was one year.

2. The cable loss has calculated in test result which connection between each test instruments.

3. TEST ITEM AND RESULTS

3.1. Conducted Emission

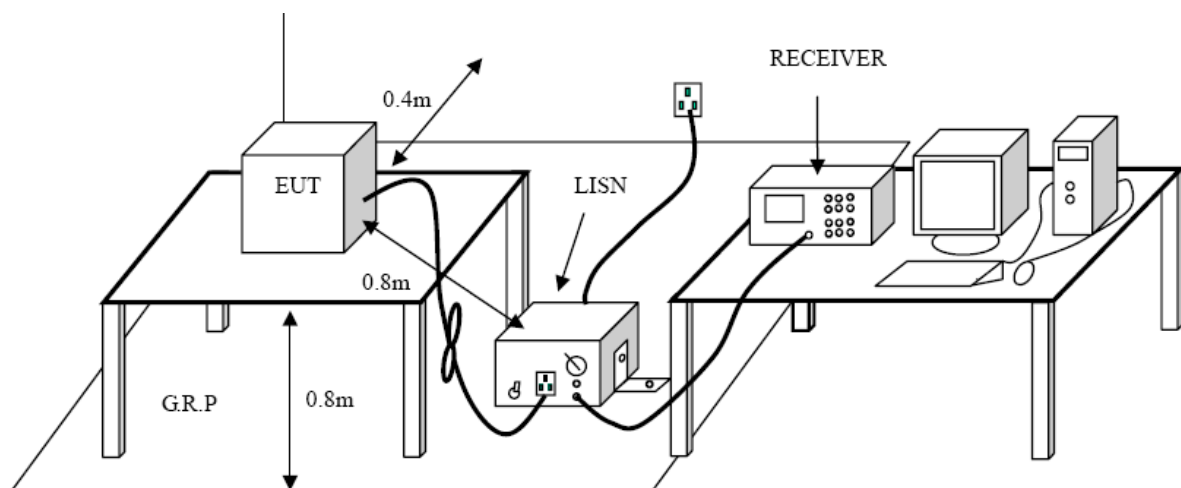
Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.207/ RSS - Gen 8.8:

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test Configuration

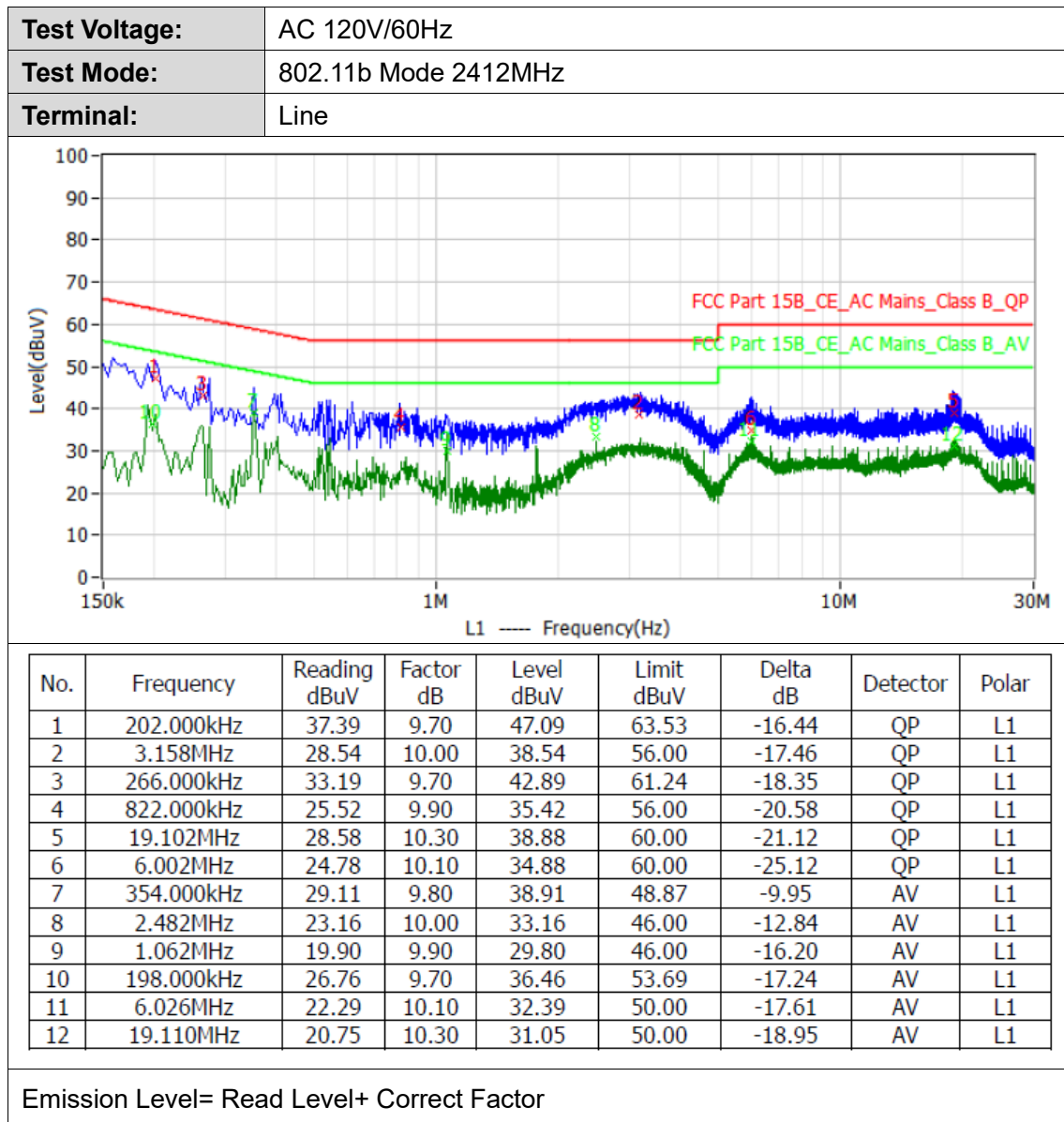


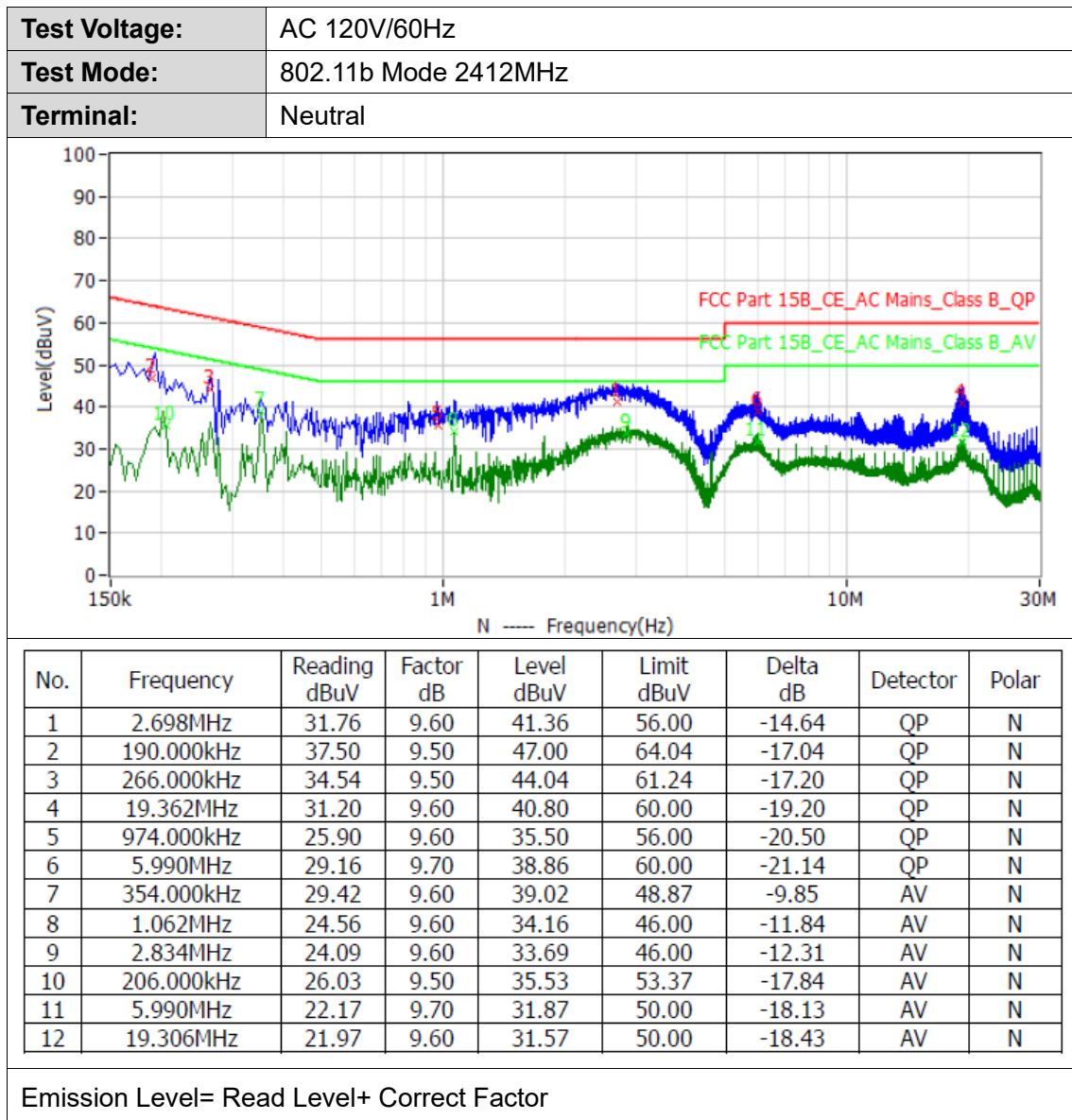
Test Procedure

1. The EUT was setup according to ANSI C63.10:2013 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedances stabilization network (LISN). The LISN provides a 50ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
4. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
5. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
6. Conducted Emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
7. During the above scans, the emissions were maximized by cable manipulation.

**Test Mode:**

Please refer to the clause 2.4.

Test Results





3.2. Radiated Emission

Limit

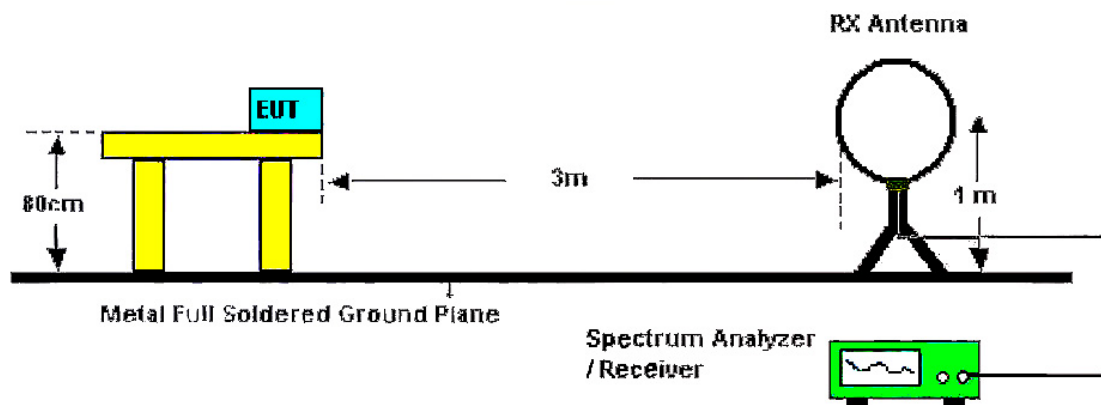
FCC CFR Title 47 Part 15 Subpart C Section 15.209/ RSS – Gen 8.9:

Frequency	Limit (dBuV/m @3m)	Value
30 MHz ~ 88 MHz	40.00	Quasi-peak
88 MHz ~ 216 MHz	43.50	Quasi-peak
216 MHz ~ 960 MHz	46.00	Quasi-peak
960 MHz ~ 1 GHz	54.00	Quasi-peak
Above 1 GHz	54.00	Average
	74.00	Peak

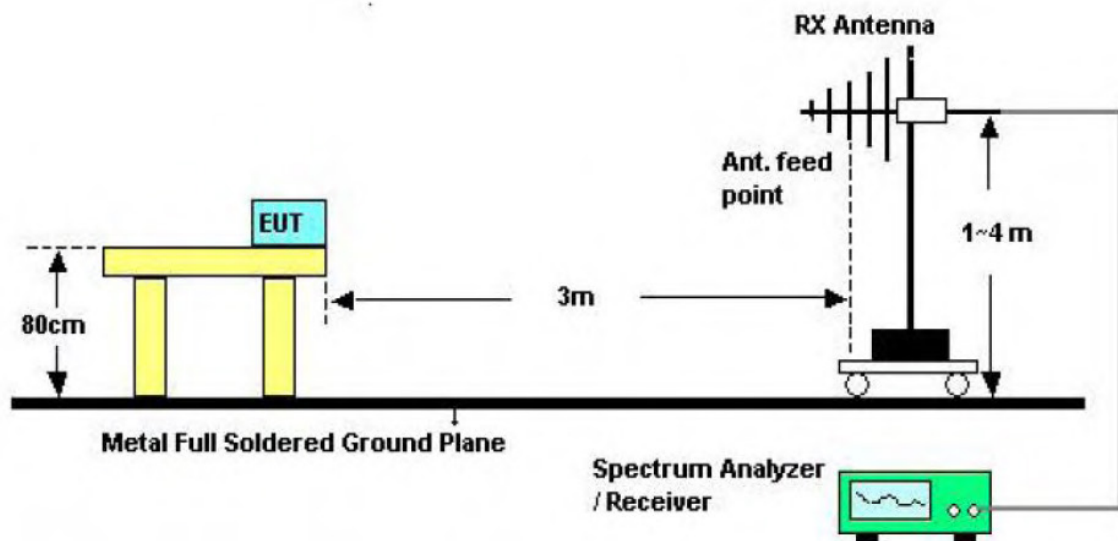
Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m).

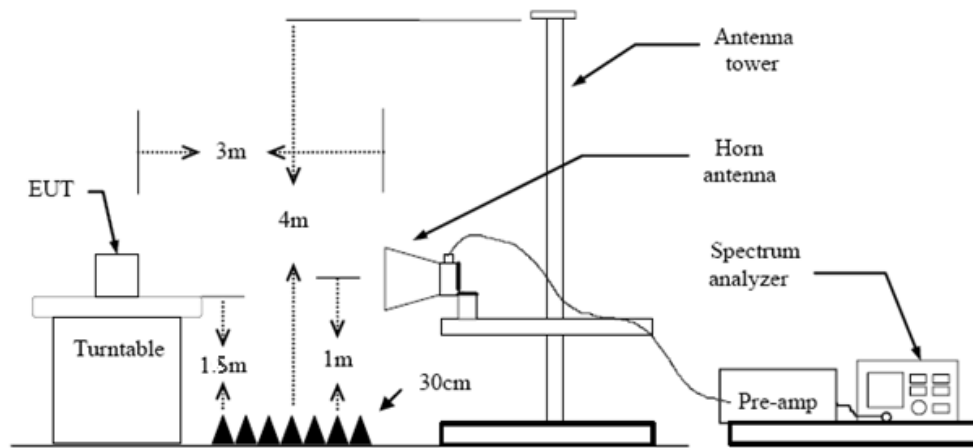
Test Configuration



Below 30MHz Test Setup



Below 1000MHz Test Setup



Above 1GHz Test Setup

Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013
 2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
 4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
 5. Set to the maximum power setting and enable the EUT transmit continuously.
 6. Use the following spectrum analyzer settings
 - (1) Span shall wide enough to fully capture the emission being measured
 - (2) Below 30 MHz:
9kHz – 150kHz, RBW=200Hz, VBW \geq RBW, Sweep=auto, Detector function=peak, Trace=max hold;
150kHz – 30MHz, RBW=9kHz, VBW \geq RBW, Sweep=auto, Detector function=peak, Trace=max hold; If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
 - (3) 30 MHz - 1 GHz:
RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;
If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
 - (4) From 1 GHz to 10th harmonic:
RBW=1MHz, VBW=3MHz Peak detector for Peak value.
RBW=1MHz, VBW \geq 1/T Peak detector for Average value.
- Note 1: For the 1/T & Duty Cycle please refer to clause 3.8 Duty Cycle.

Test Mode

Please refer to the clause 2.4.

Test Result

9 KHz~30 MHz

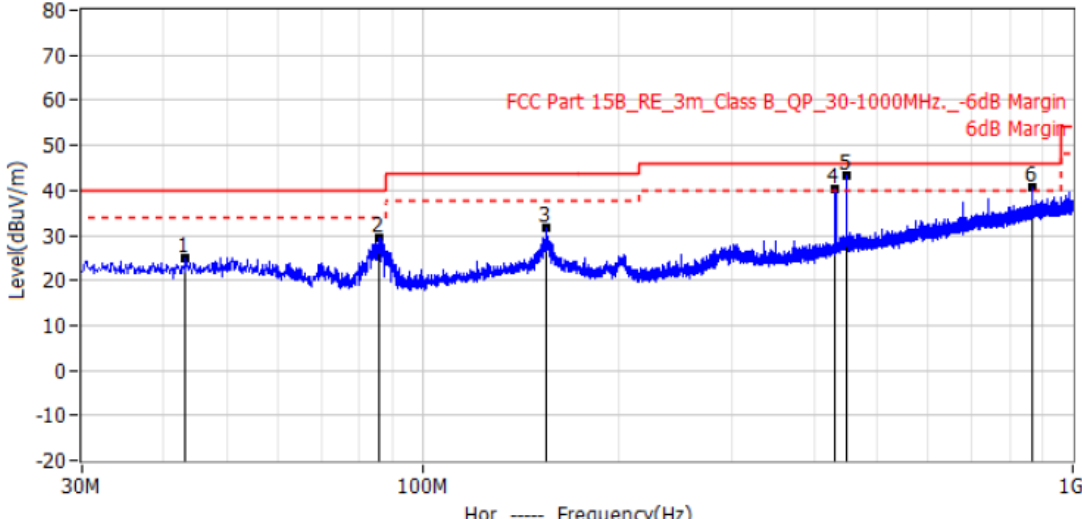
From 9 KHz to 30 MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



30MHz-1GHz

Ant. Pol.	Horizontal
Test Mode:	802.11b Mode 2412MHz
Remark:	Only worse case is reported



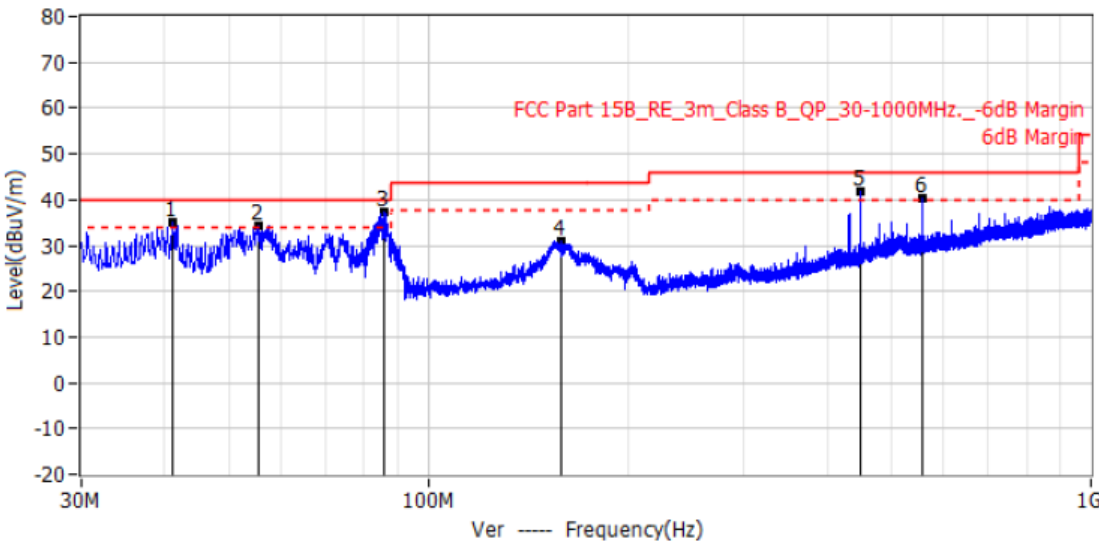
The spectrum plot displays the signal level in dBuV/m across a frequency range from 30 MHz to 1 GHz. The blue line represents the measured signal, which shows several peaks. The red solid line indicates the FCC Part 15B limit for Class B QP, and the red dashed line shows a 6dB margin below the limit. Six specific peaks are identified and labeled with numbers 1 through 6, each with a vertical line pointing to its corresponding data entry in the table below.

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Delta dB	Detector	Polar	Height cm	Angle deg
1*	43.216MHz	9.8	15.0	24.8	40.0	-15.2	QP	Hor	100.0	21.0
2*	85.654MHz	18.2	11.4	29.6	40.0	-10.4	QP	Hor	100.0	0.0
3*	155.009MHz	15.7	16.0	31.7	43.5	-11.8	QP	Hor	100.0	189.0
4*	431.944MHz	21.5	18.8	40.3	46.0	-5.7	QP	Hor	100.0	0.0
5*	450.010MHz	24.2	19.1	43.0	46.0	-3.0	QP	Hor	100.0	0.0
6*	864.079MHz	14.6	26.2	40.8	46.0	-5.2	QP	Hor	100.0	204.0

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value



Ant. Pol.	Vertical
Test Mode:	802.11b Mode 2412MHz
Remark:	Only worse case is reported



Level(dBuV/m)

Ver ----- Frequency(Hz)

FCC Part 15B_RE_3m_Class B_QP_30-1000MHz_-6dB Margin
6dB Margin

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Delta dB	Detector	Polar	Height cm	Angle deg
1*	41.276MHz	20.0	15.0	35.0	40.0	-5.0	QP	Ver	100.0	216.0
2*	55.341MHz	20.1	14.2	34.3	40.0	-5.7	QP	Ver	100.0	290.0
3*	85.654MHz	25.9	11.4	37.3	40.0	-2.7	QP	Ver	100.0	310.0
4*	158.768MHz	15.1	16.0	31.1	43.5	-12.4	QP	Ver	100.0	79.0
5*	450.010MHz	22.7	19.1	41.8	46.0	-4.2	QP	Ver	100.0	164.0
6*	555.498MHz	19.0	21.4	40.4	46.0	-5.6	QP	Ver	100.0	169.0

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Delta dB	Detector	Polar	Height cm	Angle deg
1*	41.276MHz	20.0	15.0	35.0	40.0	-5.0	QP	Ver	100.0	216.0
2*	55.341MHz	20.1	14.2	34.3	40.0	-5.7	QP	Ver	100.0	290.0
3*	85.654MHz	25.9	11.4	37.3	40.0	-2.7	QP	Ver	100.0	310.0
4*	158.768MHz	15.1	16.0	31.1	43.5	-12.4	QP	Ver	100.0	79.0
5*	450.010MHz	22.7	19.1	41.8	46.0	-4.2	QP	Ver	100.0	164.0
6*	555.498MHz	19.0	21.4	40.4	46.0	-5.6	QP	Ver	100.0	169.0

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

**Adobe 1GHz**

Remark: Pre-scan all modulation and all bandwidth mode, and found the 802.11ax(HE20) mode which were the worst case, So only show the test data for worst case.

802.11ax(HE20) Mode 2412MHz							
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization	Detector
4824	46.90	3.8	50.70	74	-23.30	Horizontal	Peak
4824	42.25	3.8	46.05	74	-27.95	Vertical	Peak
4824	35.14	3.8	38.94	54	-15.06	Horizontal	Average
4824	32.11	3.8	35.91	54	-18.09	Vertical	Average
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value 3.No report for the emission which more than 10 dB below the prescribed limit							

802.11ax(HE20) Mode 2437MHz							
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization	Detector
4874	48.52	4.0	52.52	74	-21.48	Horizontal	Peak
4874	46.26	4.0	50.26	74	-23.74	Vertical	Peak
4874	36.14	4.0	40.14	54	-13.86	Horizontal	Average
4874	33.15	4.0	37.15	54	-16.85	Vertical	Average
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value 3.No report for the emission which more than 10 dB below the prescribed limit							

802.11ax(HE20) Mode 2462MHz							
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization	Detector
4924	47.56	4.1	51.66	74	-22.34	Horizontal	Peak
4924	45.69	4.1	49.79	74	-24.21	Vertical	Peak
4924	35.42	4.1	39.52	54	-14.48	Horizontal	Average
4924	32.15	4.1	36.25	54	-17.75	Vertical	Average
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value 3.No report for the emission which more than 10 dB below the prescribed limit							

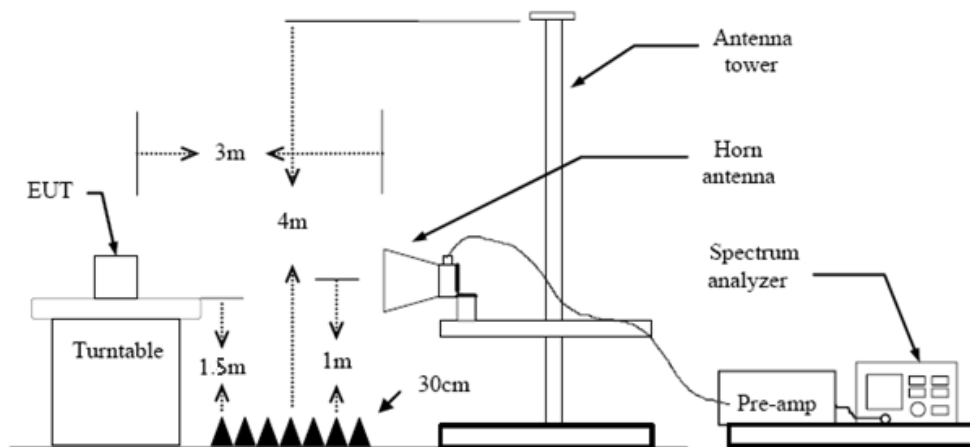
3.3. Radiated Emissions Restricted Band

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d)/ RSS 247 5.5:

Restricted Frequency Band (MHz)	(dBuV/m)(at 3m)	
	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54

Test Configuration



Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.
5. The receiver set as follow:
RBW=1MHz, VBW=3MHz Peak detector for Peak value.
RBW=1MHz, VBW see note 1 with Peak Detector for Average Value.

Note 1: For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 3.8 Duty Cycle.

Test Mode

Please refer to the clause 2.4.

Test Results

Remark: Pre-scan all modulation mode, and found the 802.11ax(HE20) mode which were the worst case, So only show the test data for worst case.



802.11ax(HE20) Mode 2412MHz							
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization	Detector
2310	48.62	-3.4	45.22	74	-28.78	Horizontal	Peak
2310	46.26	-3.4	42.86	74	-31.14	Vertical	Peak
2390	47.25	-3.1	44.15	74	-29.85	Horizontal	Peak
2390	45.11	-3.1	42.01	74	-31.99	Vertical	Peak
2310	36.15	-3.4	32.75	54	-21.25	Horizontal	Average
2310	34.15	-3.4	30.75	54	-23.25	Vertical	Average
2390	37.45	-3.1	34.35	54	-19.65	Horizontal	Average
2390	35.16	-3.1	32.06	54	-21.94	Vertical	Average
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							

802.11ax(HE20) Mode 2462MHz							
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Polarization	Detector
2310	48.56	-2.8	45.76	74	-28.24	Horizontal	Peak
2310	46.22	-2.8	43.42	74	-30.58	Vertical	Peak
2390	47.15	-2.7	44.45	74	-29.55	Horizontal	Peak
2390	45.36	-2.7	42.66	74	-31.34	Vertical	Peak
2310	36.15	-2.8	33.35	54	-20.65	Horizontal	Average
2310	34.15	-2.8	31.35	54	-22.65	Vertical	Average
2390	36.44	-2.7	33.74	54	-20.26	Horizontal	Average
2390	34.47	-2.7	31.77	54	-22.23	Vertical	Average
Remarks: 1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor 2.Margin value = Level -Limit value							

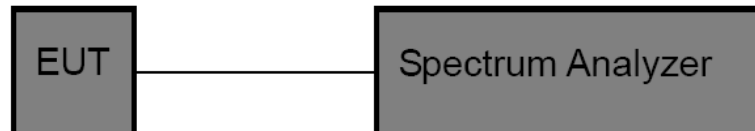


3.4. Band edge and Spurious Emissions (Conducted)

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 30 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.

Test Configuration



Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:
RBW = 100 kHz, VBW \geq RBW, scan up through 10th harmonic.
Sweep = auto, Detector function = peak, Trace = max hold
4. Measure and record the results in the test report.

Test Mode

Please refer to the clause 2.4.

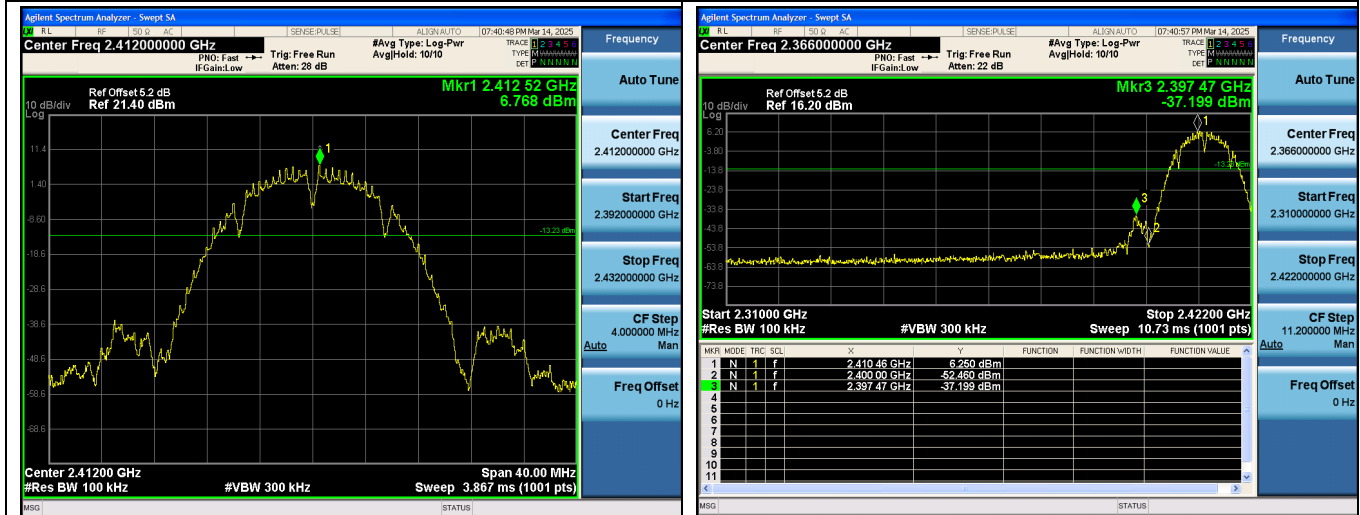
Test Results

**(1) Band edge Conducted Test**

Test Mode	Test Frequency	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
802.11b	2412	6.768	-37.199	-13.232	PASS
	2462	3.824	-52.617	-16.176	PASS
802.11g	2412	1.926	-26.978	-18.074	PASS
	2462	1.310	-47.879	-18.690	PASS
802.11n(HT20)	2412	-0.313	-25.679	-20.313	PASS
	2462	0.396	-46.650	-19.604	PASS
802.11n(HT40)	2422	-1.218	-30.965	-21.218	PASS
	2452	-0.916	-42.201	-20.916	PASS
802.11ax(HE20)	2412	2.365	-26.939	-17.635	PASS
	2462	1.173	-46.088	-18.827	PASS
802.11ax(HE40)	2422	-1.243	-31.893	-21.243	PASS
	2452	-1.879	-42.128	-21.879	PASS



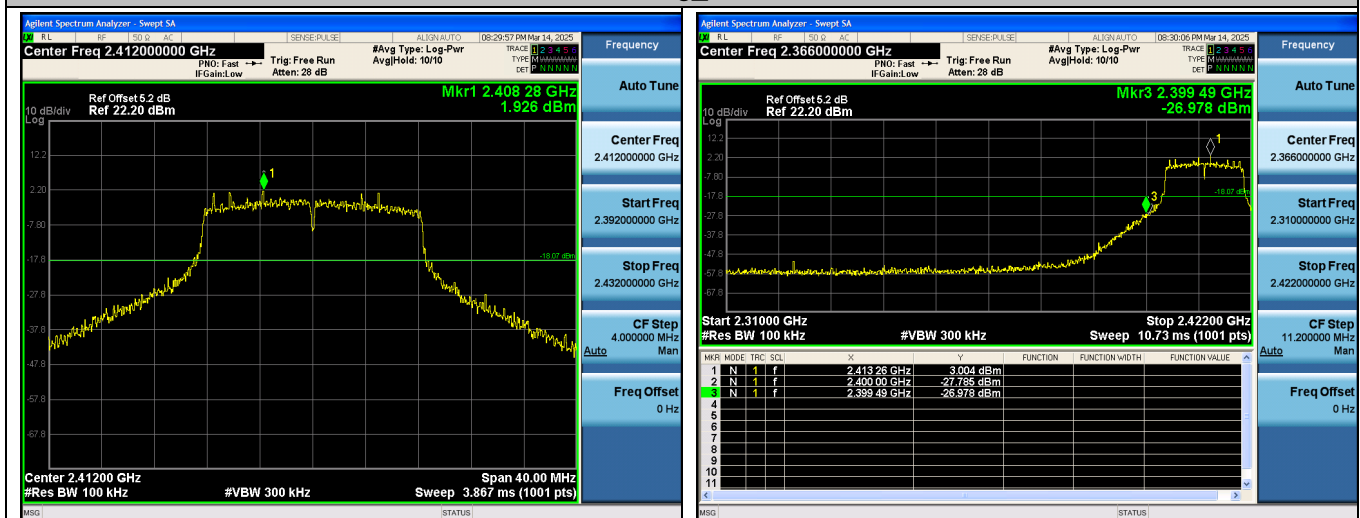
802.11b_2412



802.11b_2462



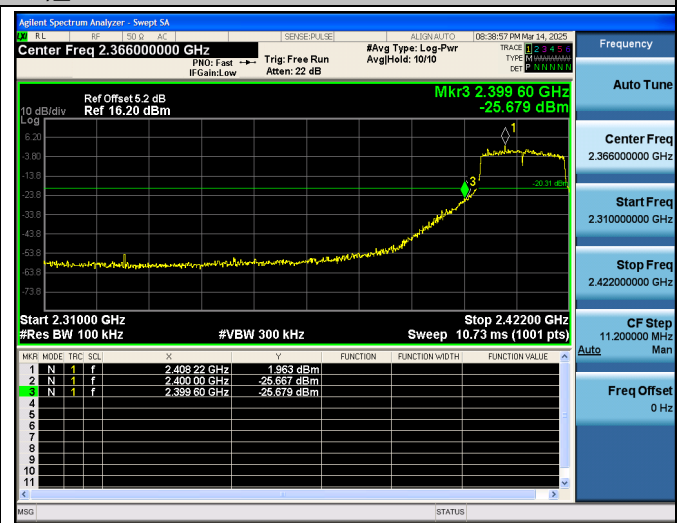
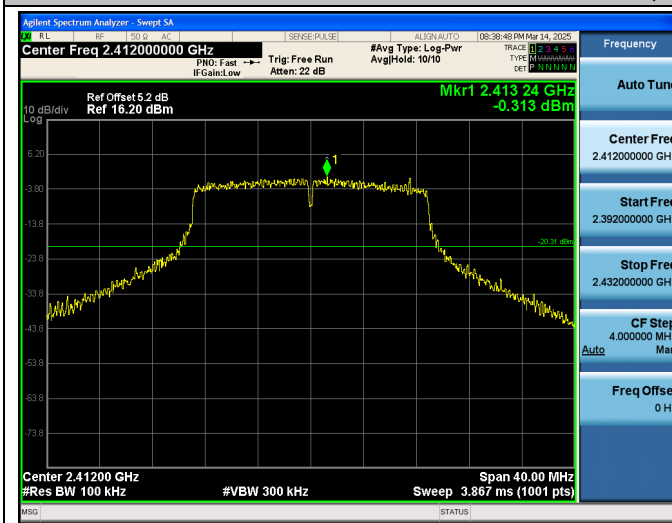
802.11g_2412



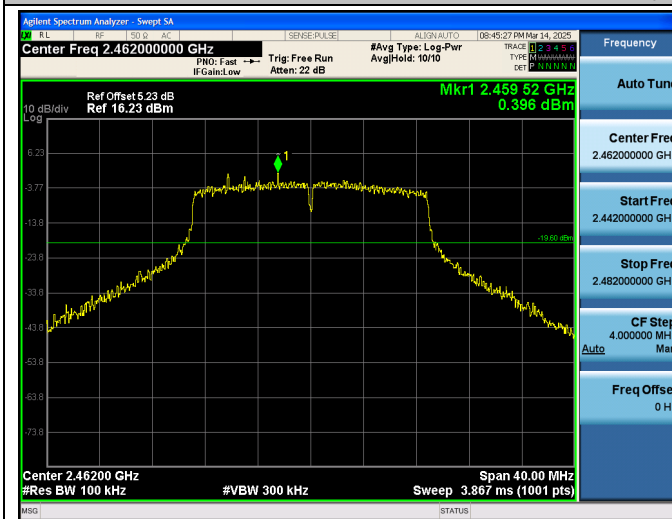
802.11g_2462



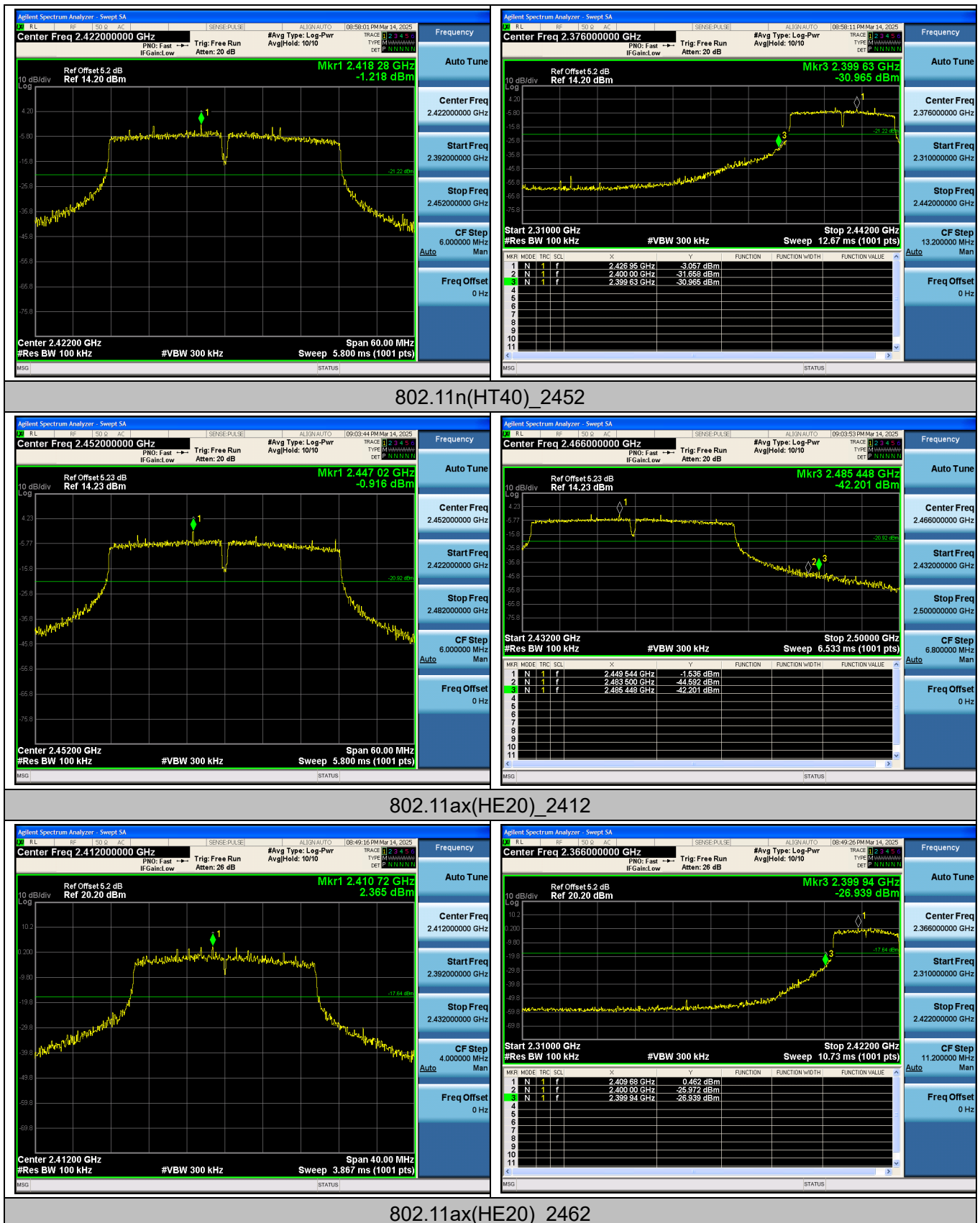
802.11n(HT20)_2412

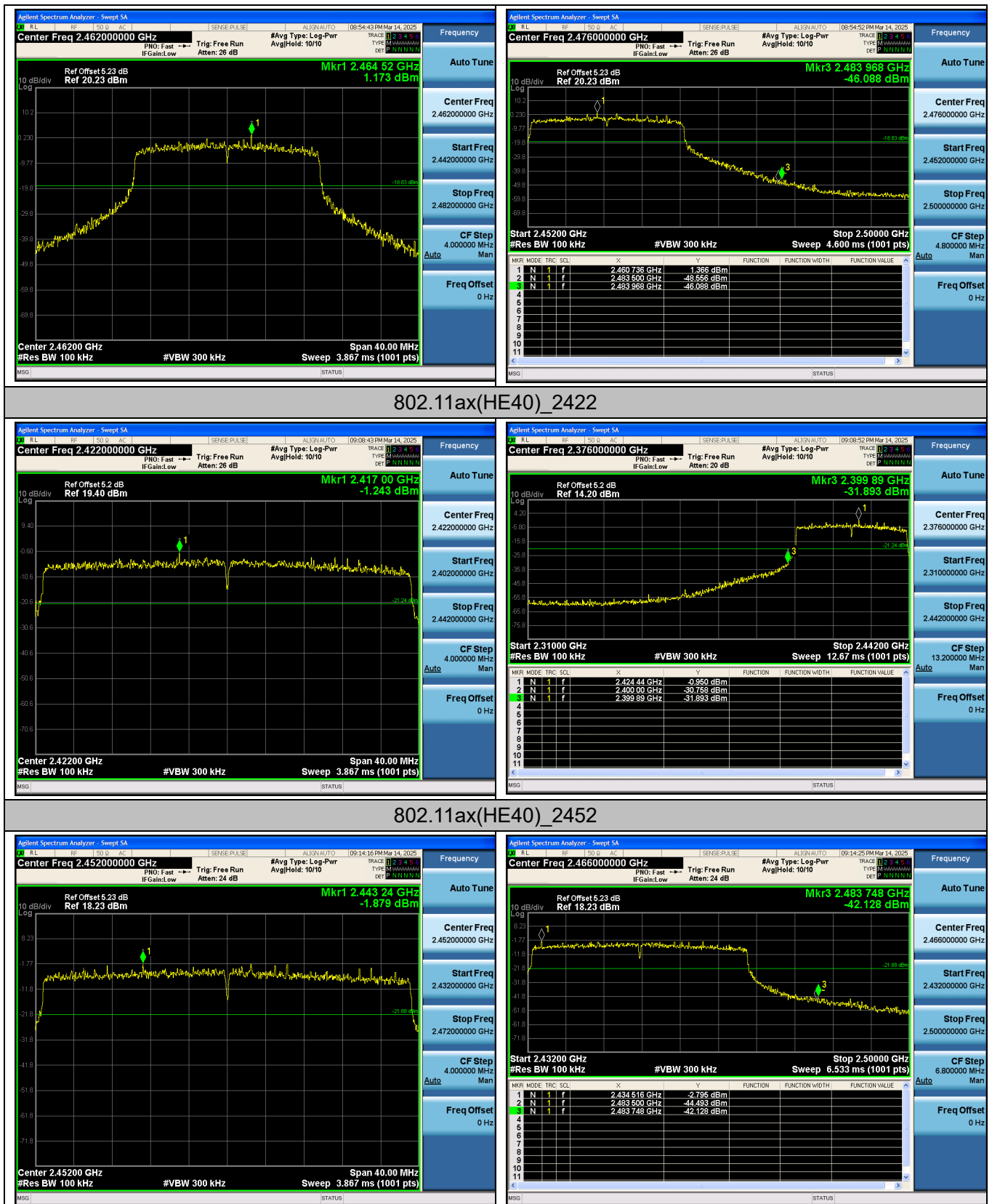


802.11n(HT20)_2462



802.11n(HT40)_2422





**(2) Conducted Spurious Emissions Test**

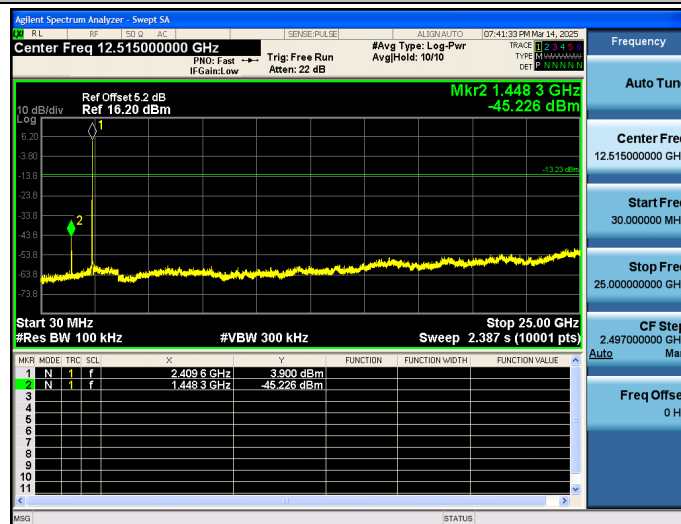
Test Mode	Frequency [MHz]	Ref Level [dBm]	Spurious level[dBm]	Limit[dBm]	Verdict
802.11b	2412	6.768	-45.226	-13.232	PASS
	2437	4.794	-40.960	-15.206	PASS
	2462	3.824	-43.003	-16.176	PASS
802.11g	2412	1.926	-43.961	-18.074	PASS
	2437	1.352	-43.548	-18.648	PASS
	2462	1.310	-44.215	-18.690	PASS
802.11n(HT20)	2412	-0.313	-45.941	-20.313	PASS
	2437	1.915	-45.883	-18.085	PASS
	2462	1.762	-46.974	-18.238	PASS
802.11n(HT40)	2422	-1.218	-48.053	-21.218	PASS
	2437	-0.907	-47.073	-20.907	PASS
	2452	-0.916	-48.903	-20.916	PASS
802.11ax(HE20)	2412	2.365	-45.869	-17.635	PASS
	2437	1.891	-45.398	-18.109	PASS
	2462	1.173	-45.014	-18.827	PASS
802.11ax(HE40)	2422	-1.243	-49.493	-21.243	PASS
	2437	-1.713	-48.654	-21.713	PASS
	2452	-1.879	-48.032	-21.879	PASS



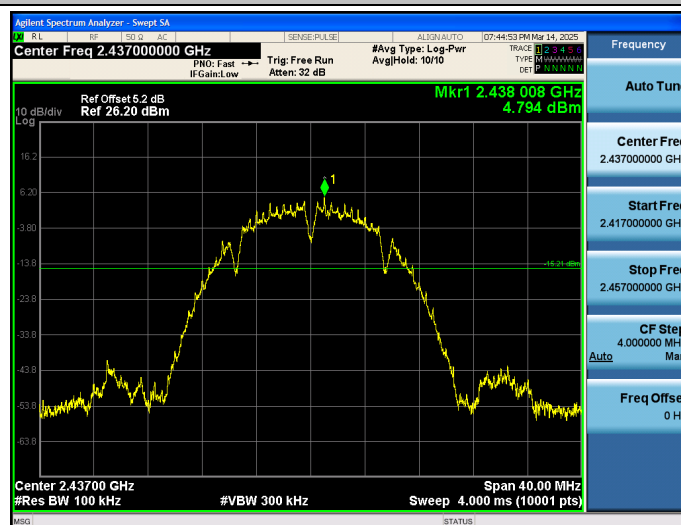
802.11b_2412_0~Reference



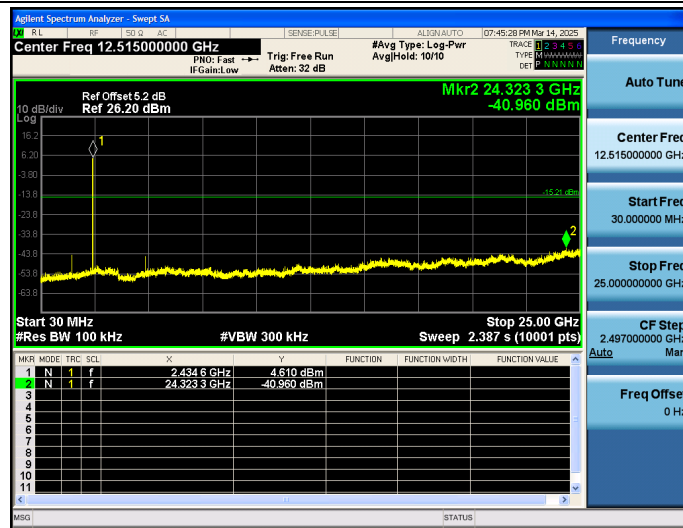
802.11b_2412_30~25000



802.11b_2437_0~Reference



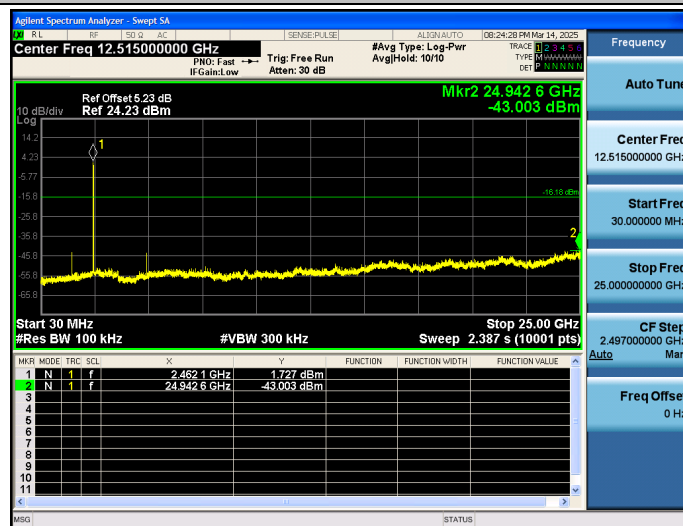
802.11b_2437_30~25000



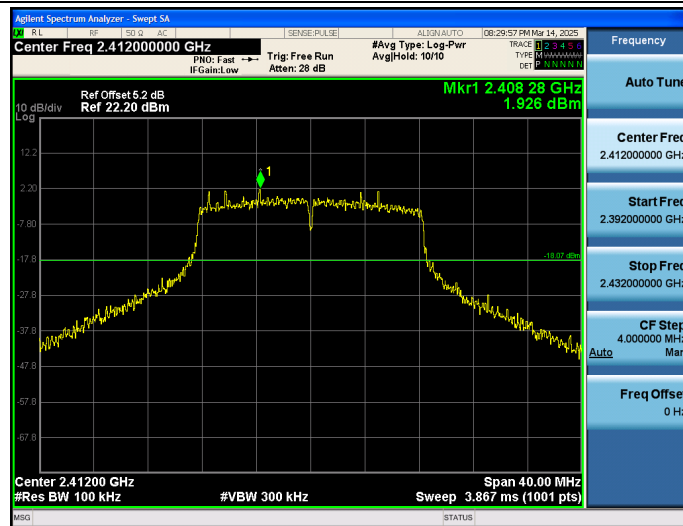
802.11b_2462_0~Reference



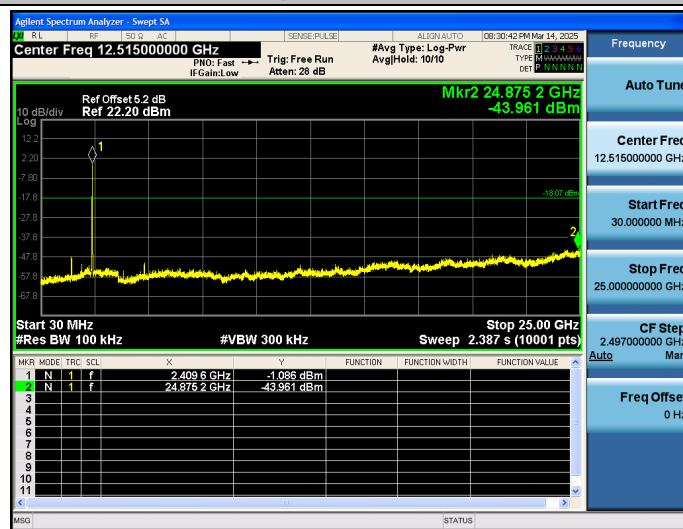
802.11b_2462_30~25000



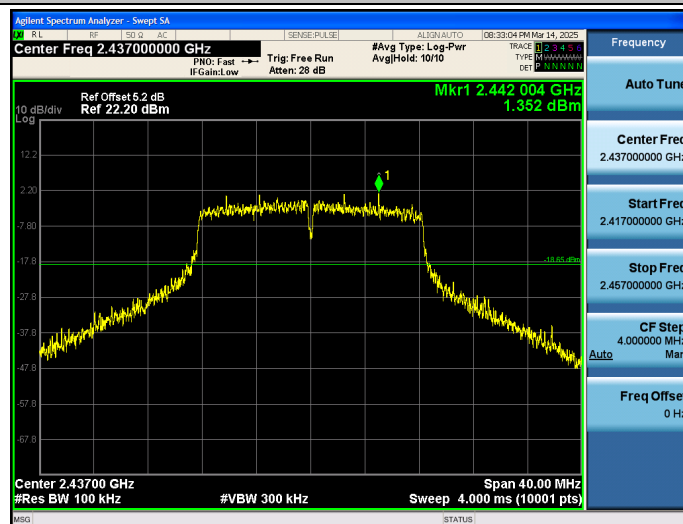
802.11g_2412_0~Reference



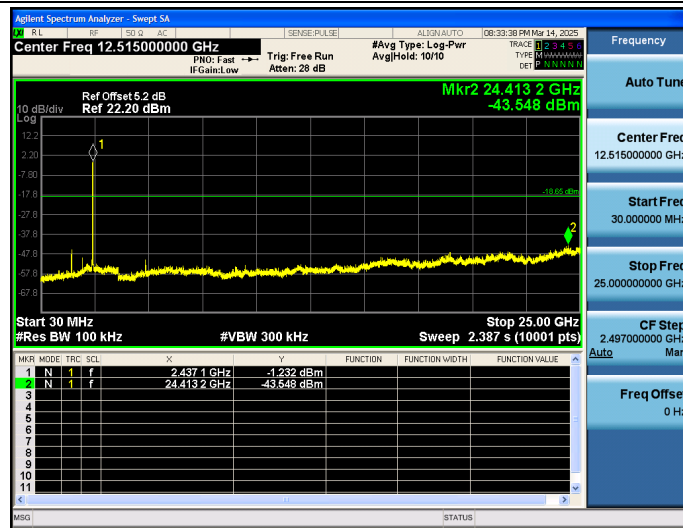
802.11g_2412_30~25000



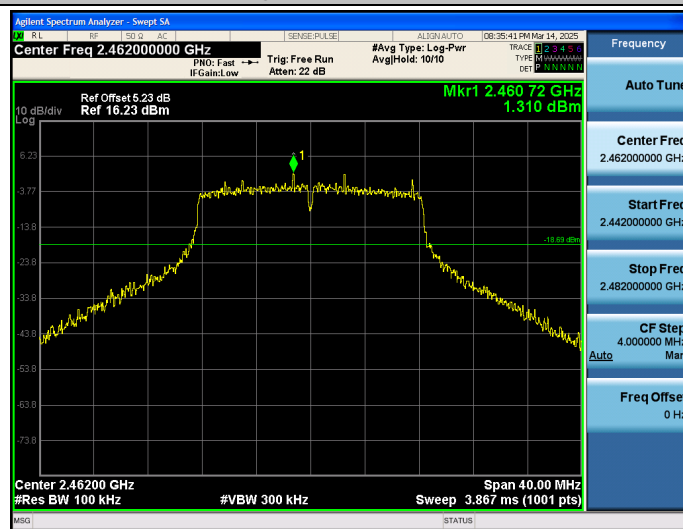
802.11g_2437_0~Reference



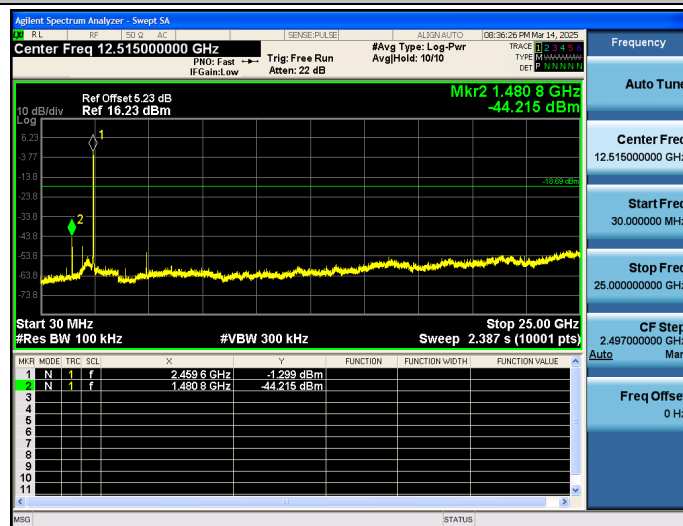
802.11g_2437_30~25000



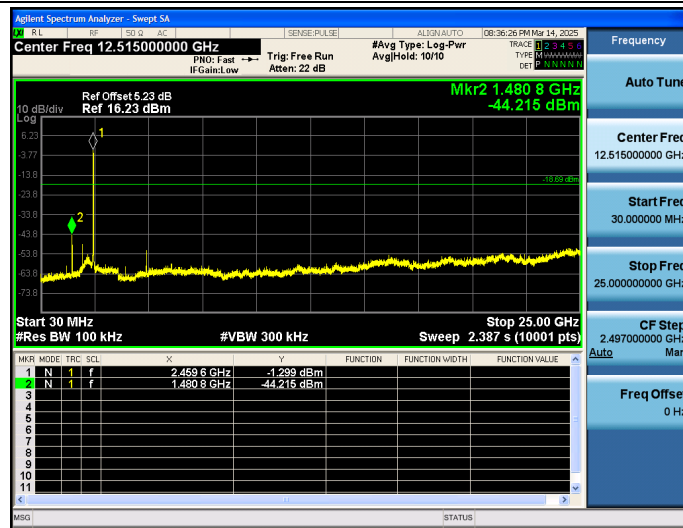
802.11g_2462_0~Reference



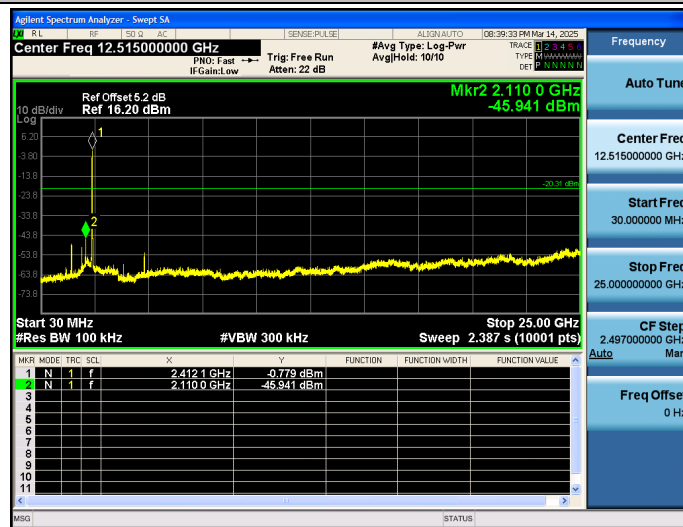
802.11g_2462_30~25000



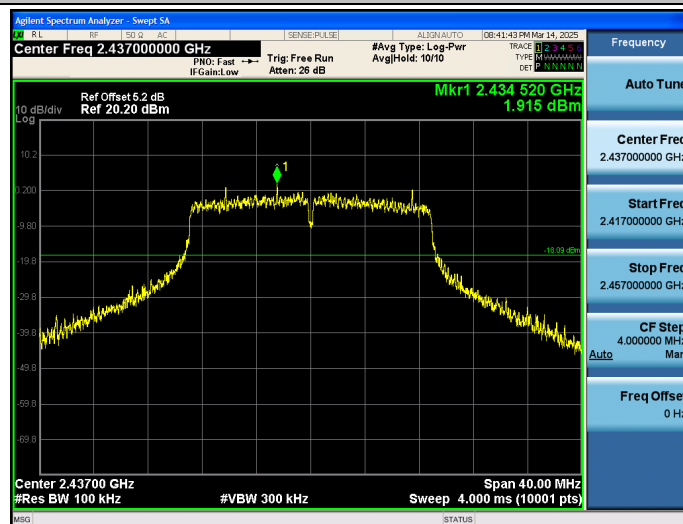
802.11n(HT20)_2412_0~Reference



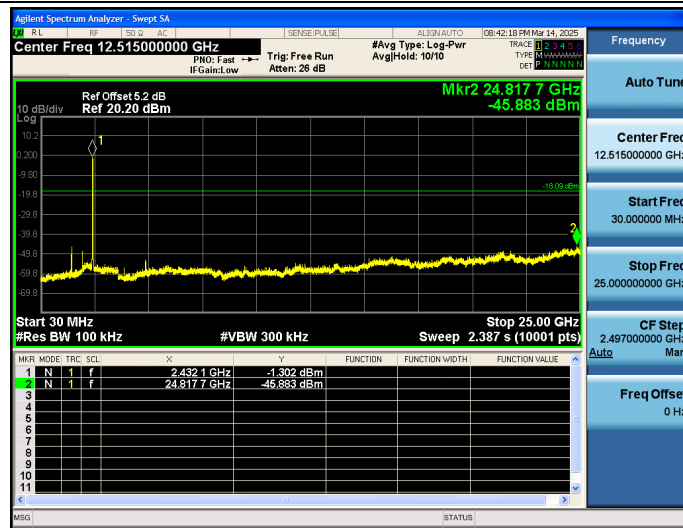
802.11n(HT20)_2412_30~25000



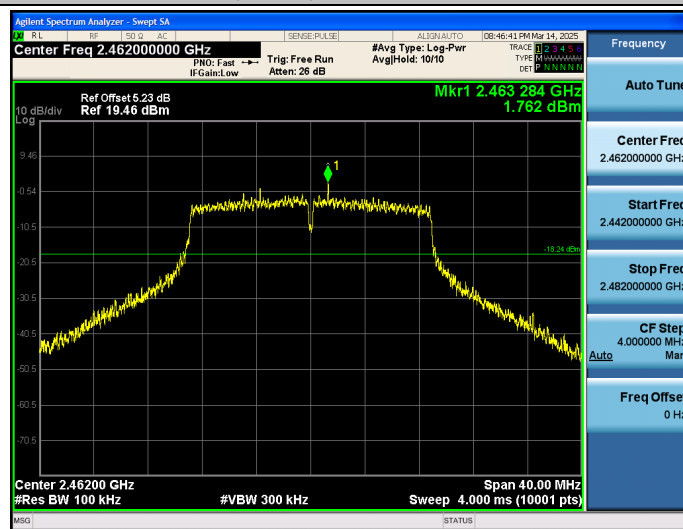
802.11n(HT20)_2437_0~Reference



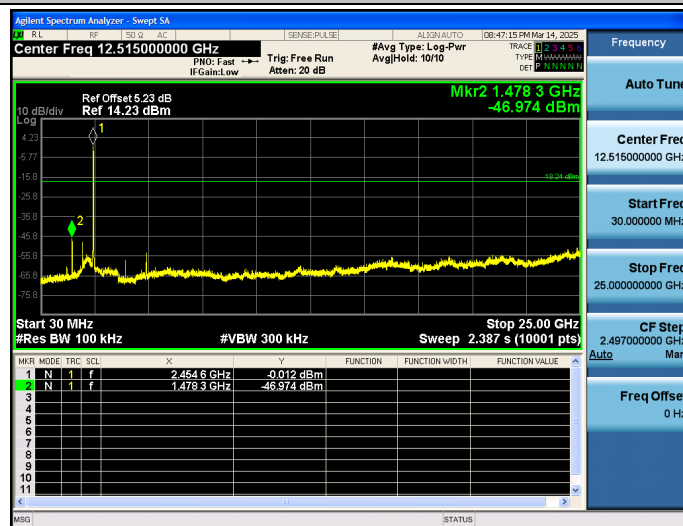
802.11n(HT20)_2437_30~25000



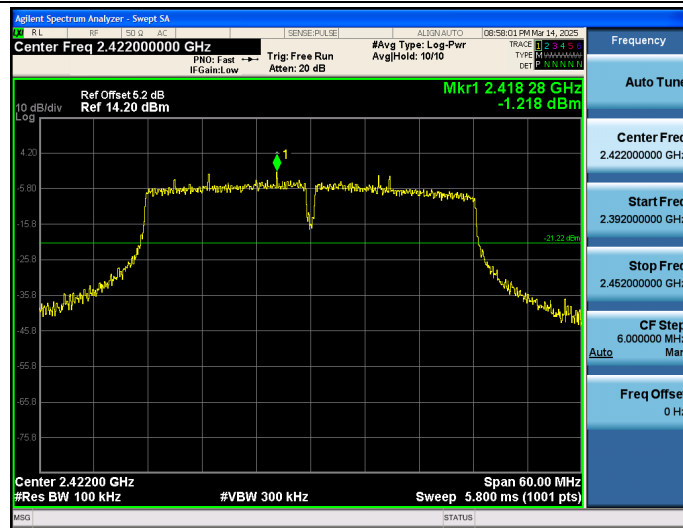
802.11n(HT20)_2462_0~Reference



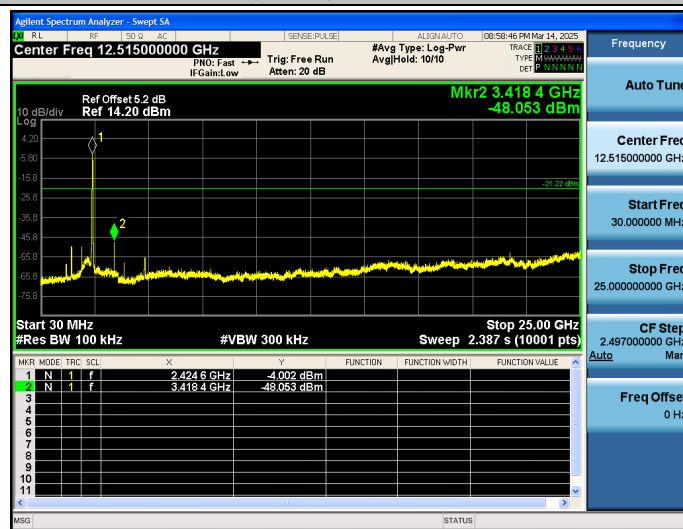
802.11n(HT20)_2462_30~25000



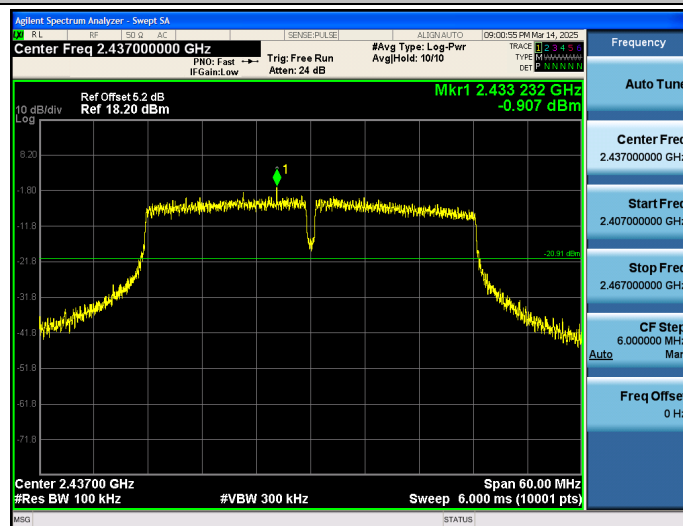
802.11n(HT40)_2422_0~Reference



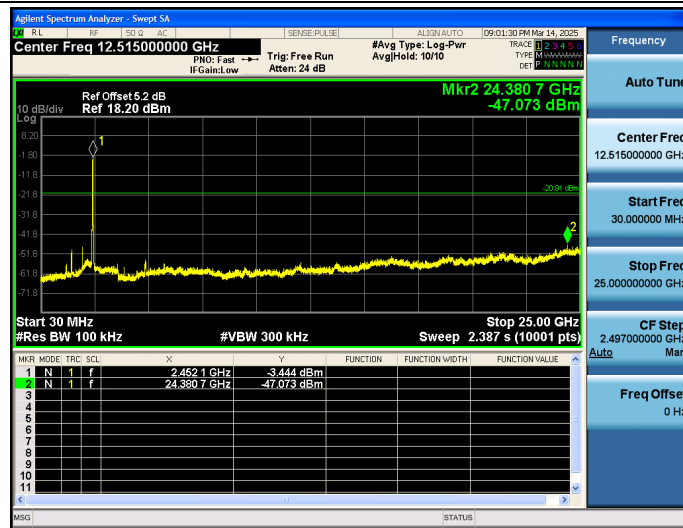
802.11n(HT40)_2422_30~25000



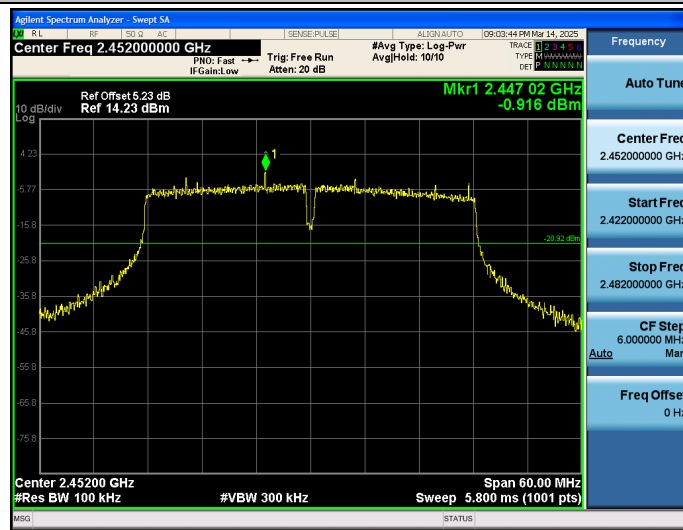
802.11n(HT40)_2437_0~Reference



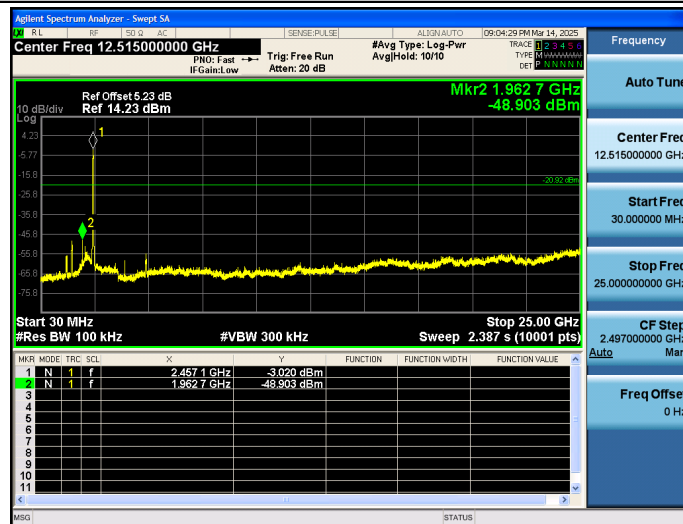
802.11n(HT40)_2437_30~25000



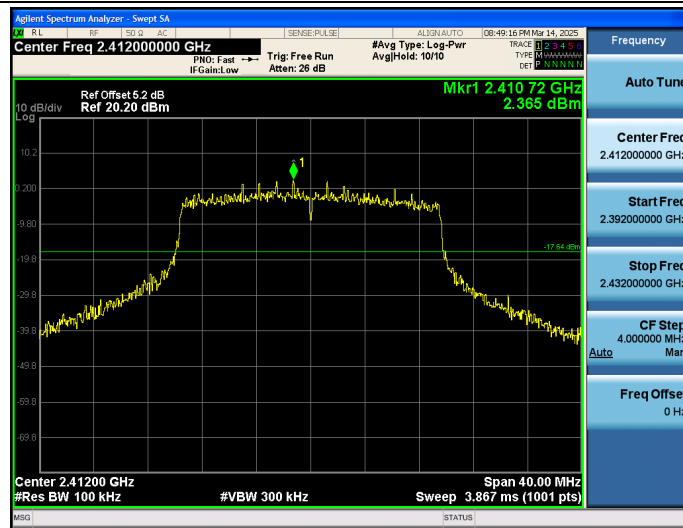
802.11n(HT40)_2452_0~Reference



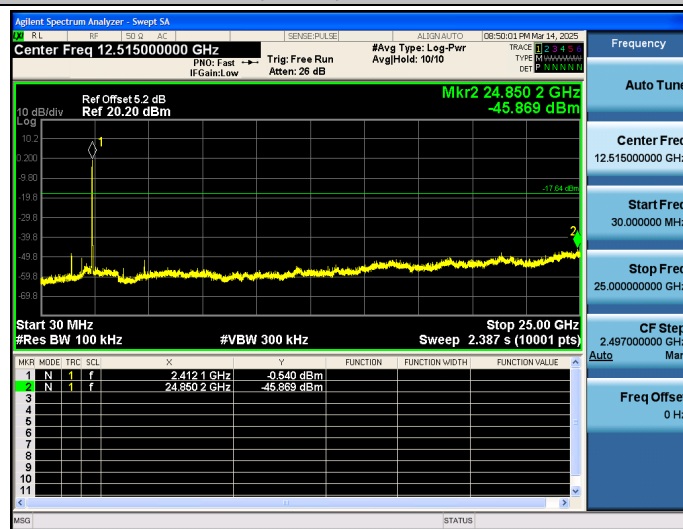
802.11n(HT40)_2452_30~25000



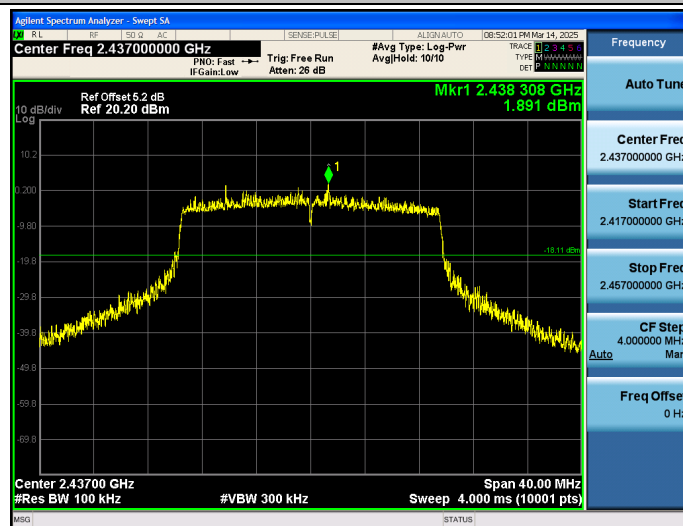
802.11ax(HE20)_2412_0~Reference



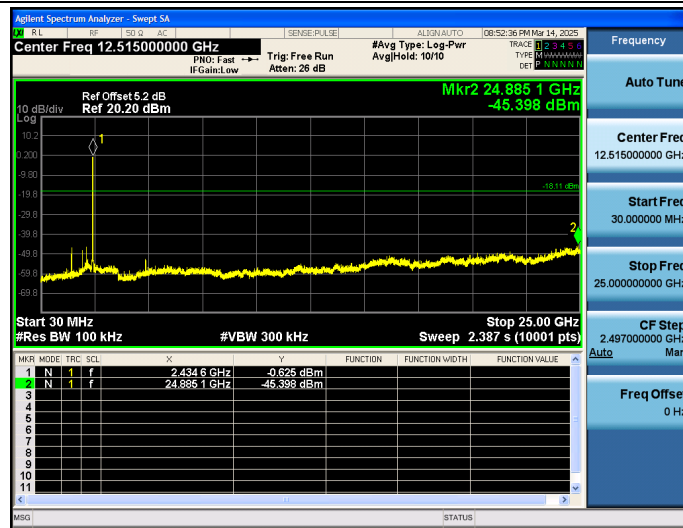
802.11ax(HE20)_2412_30~25000



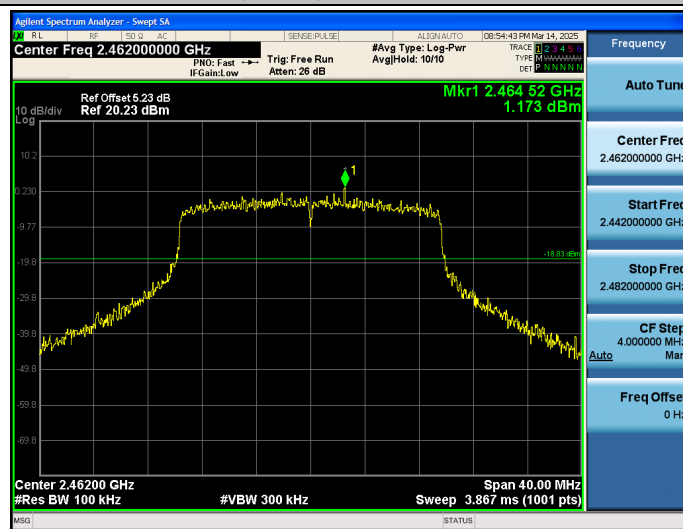
802.11ax(HE20)_2437_0~Reference



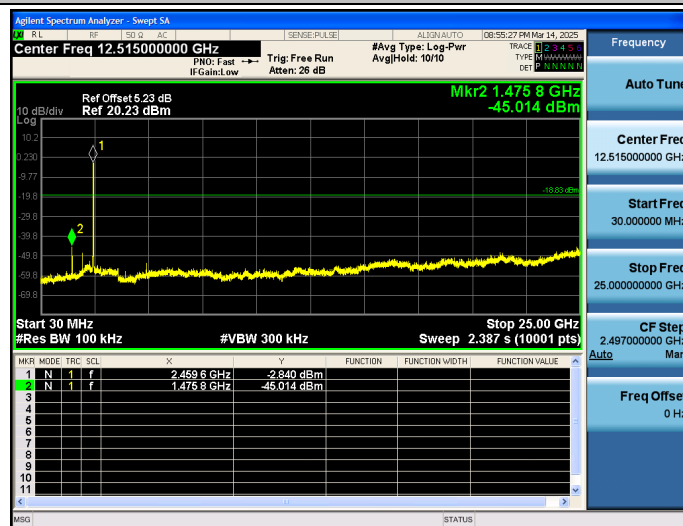
802.11ax(HE20)_2437_30~25000



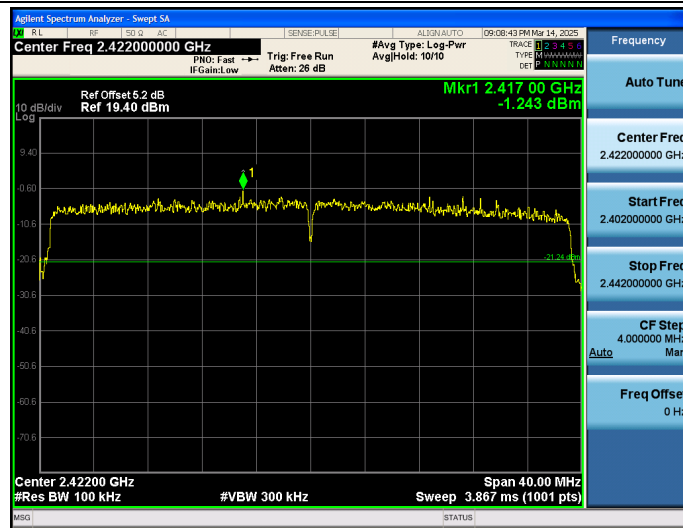
802.11ax(HE20)_2462_0~Reference



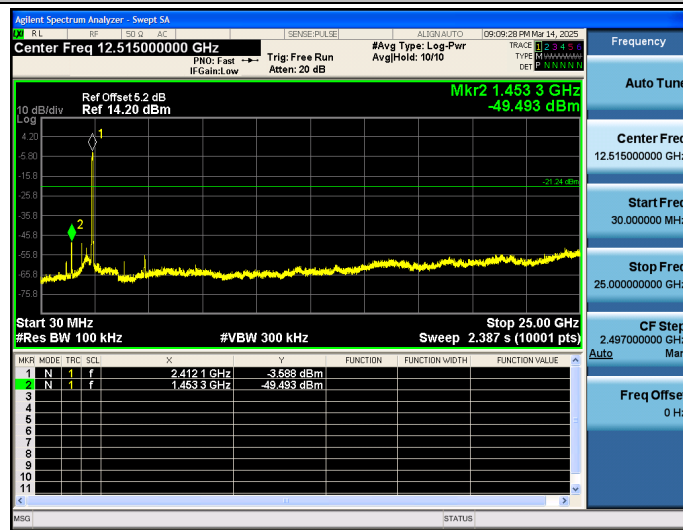
802.11ax(HE20)_2462_30~25000



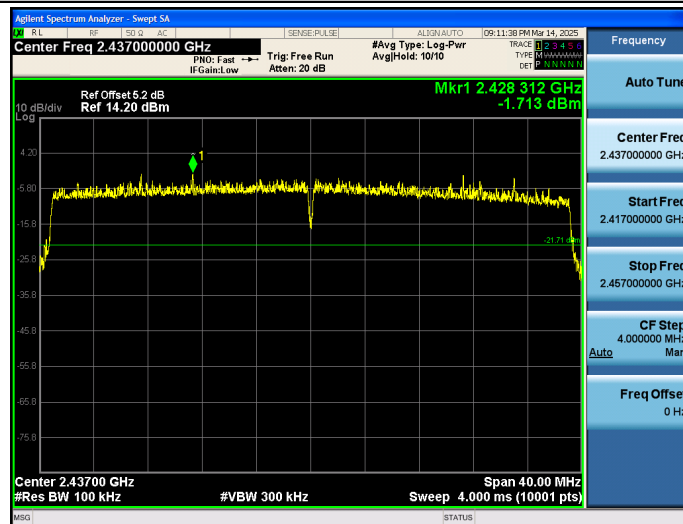
802.11ax(HE40)_2422_0~Reference



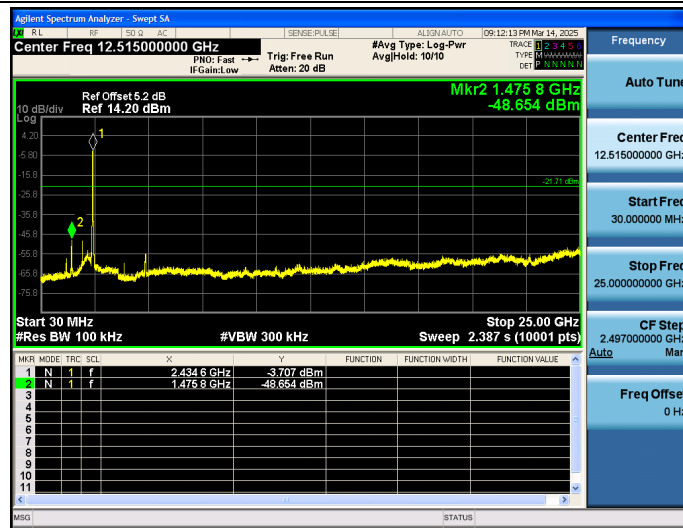
802.11ax(HE40)_2422_30~25000



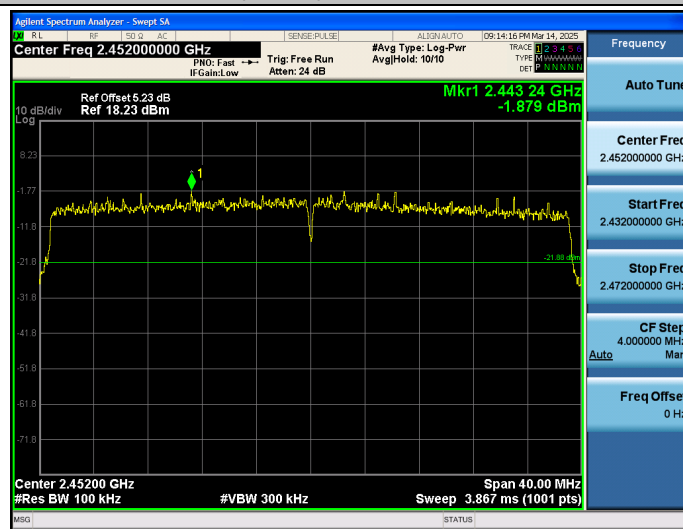
802.11ax(HE40)_2437_0~Reference



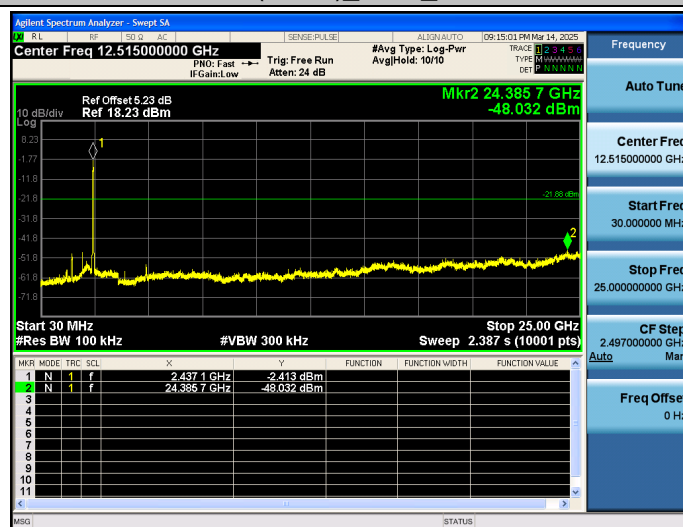
802.11ax(HE40)_2437_30~25000



802.11ax(HE40)_2452_0~Reference



802.11ax(HE40)_2452_30~25000





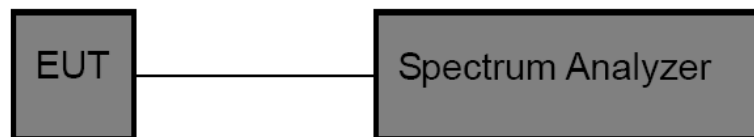
3.5. DTS Bandwidth

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.247 (a)(2)/ RSS-247 5.2 a:

Test Item	Limit	Frequency Range(MHz)
DTS Bandwidth	≥ 500 KHz (6dB bandwidth)	2400~2483.5

Test Configuration



Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
2. DTS Spectrum Setting:
 - (1) Set RBW = 100 kHz.
 - (2) Set the video bandwidth (VBW) ≥ 3 RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.OCB Spectrum Setting:
 - (1) Set RBW = 1% ~ 5% occupied bandwidth.
 - (2) Set the video bandwidth (VBW) ≥ 3 RBW.
 - (3) Detector = Peak.
 - (4) Trace mode = Max hold.
 - (5) Sweep = Auto couple.

NOTE: The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

Test Mode

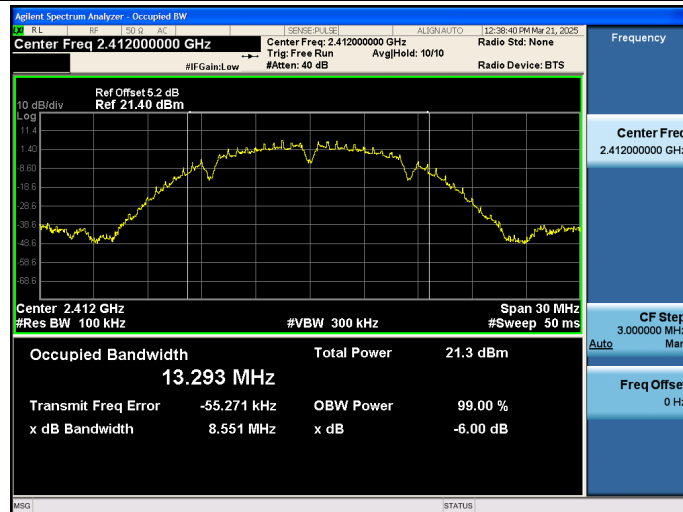
Please refer to the clause 2.4.

**Test Results**

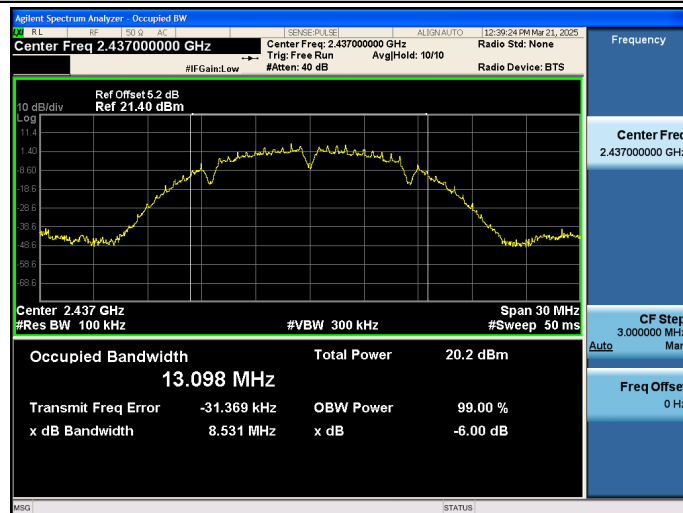
Test Mode	Frequency [MHz]	DTS BW [MHz]	Limit [MHz]	Verdict
802.11b	2412	13.293	≥ 0.5	PASS
	2437	13.098	≥ 0.5	PASS
	2462	13.160	≥ 0.5	PASS
802.11g	2412	16.463	≥ 0.5	PASS
	2437	16.465	≥ 0.5	PASS
	2462	16.461	≥ 0.5	PASS
802.11n(HT20)	2412	17.686	≥ 0.5	PASS
	2437	17.687	≥ 0.5	PASS
	2462	17.679	≥ 0.5	PASS
802.11n(HT40)	2422	36.148	≥ 0.5	PASS
	2437	36.146	≥ 0.5	PASS
	2452	36.142	≥ 0.5	PASS
802.11ax(HE20)	2412	18.941	≥ 0.5	PASS
	2437	18.946	≥ 0.5	PASS
	2462	18.949	≥ 0.5	PASS
802.11ax(HE40)	2422	37.674	≥ 0.5	PASS
	2437	37.702	≥ 0.5	PASS
	2452	37.709	≥ 0.5	PASS



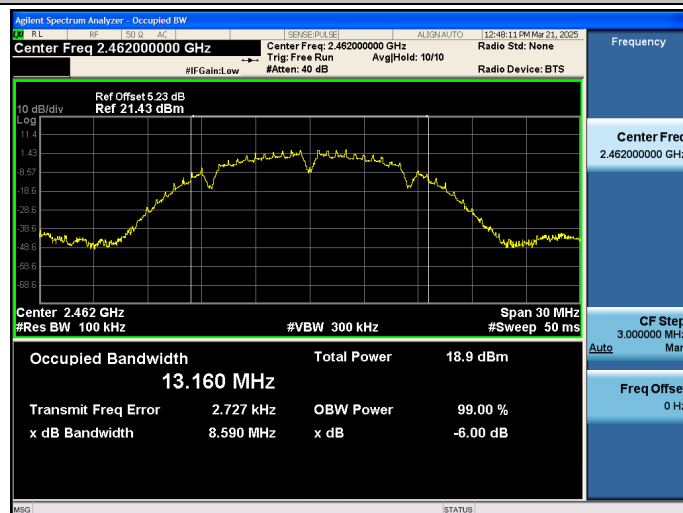
802.11b_2412



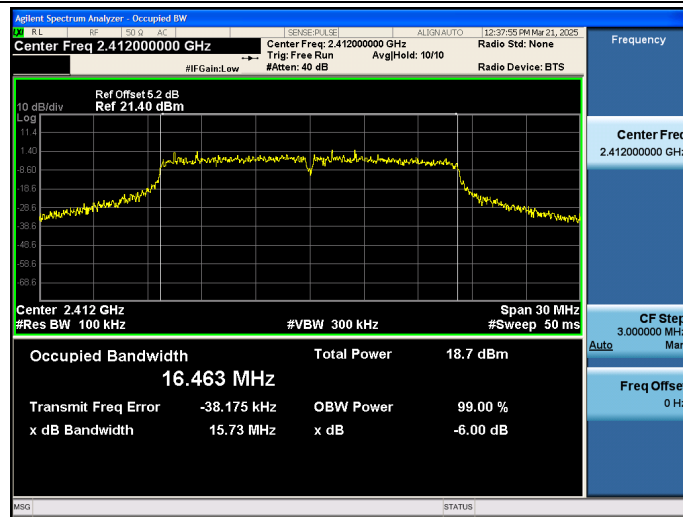
802.11b_2437



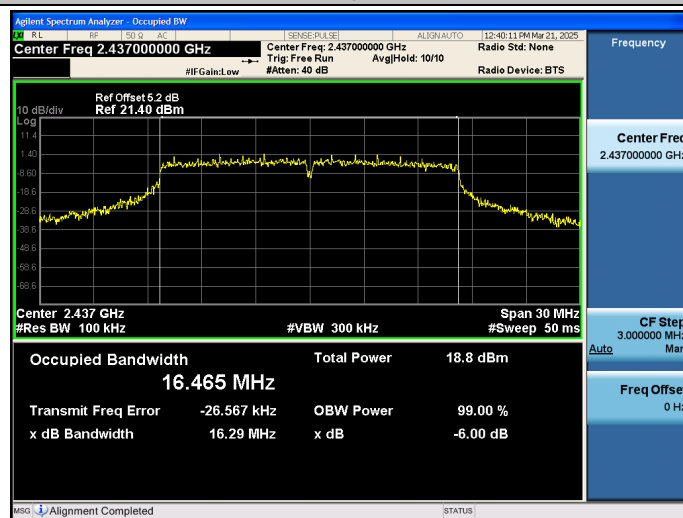
802.11b_2462



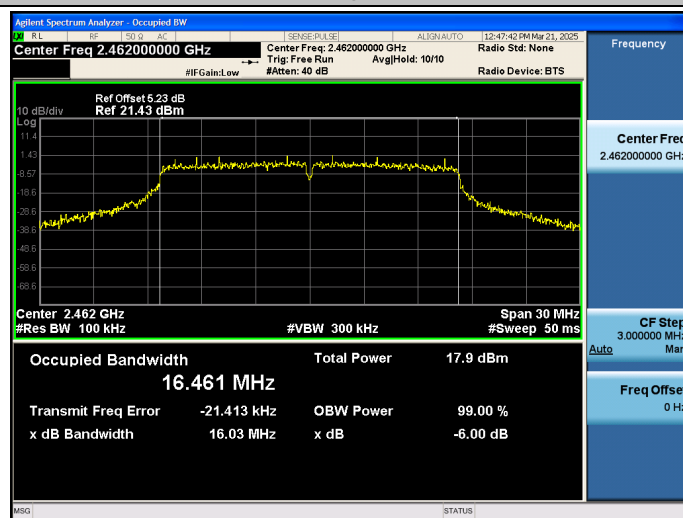
802.11g_2412



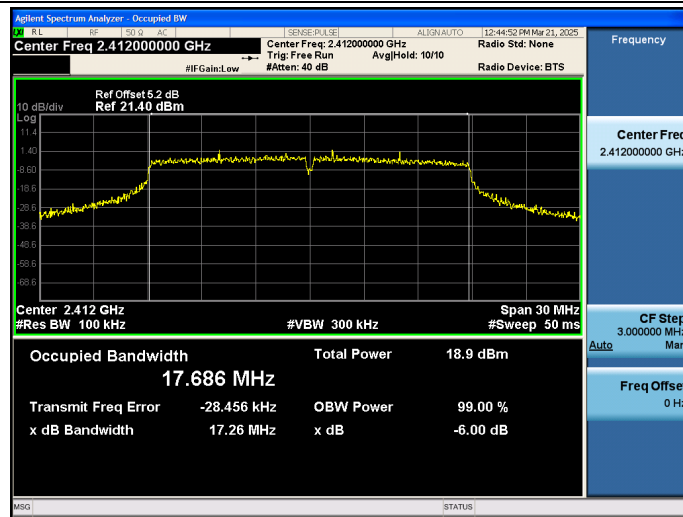
802.11g_2437



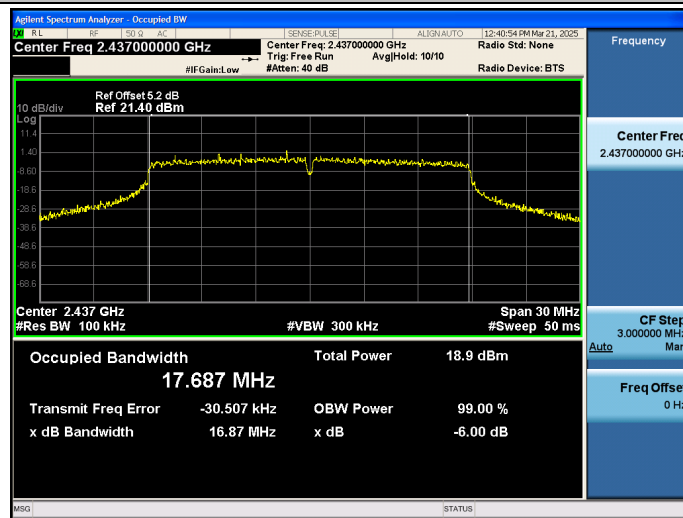
802.11g_2462



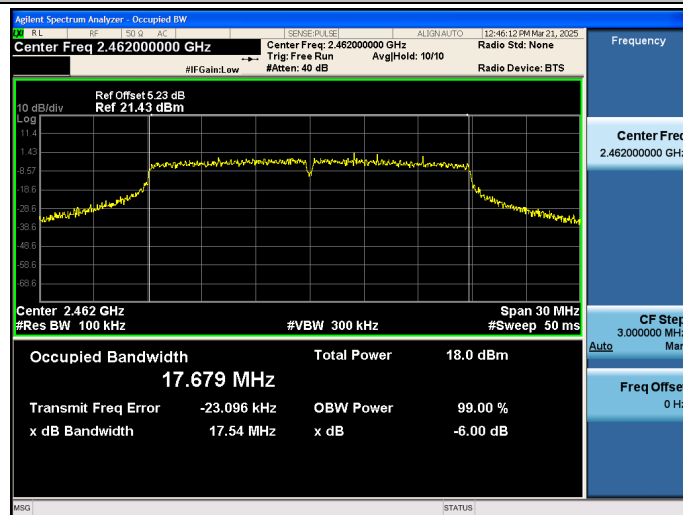
802.11n(HT20)_2412



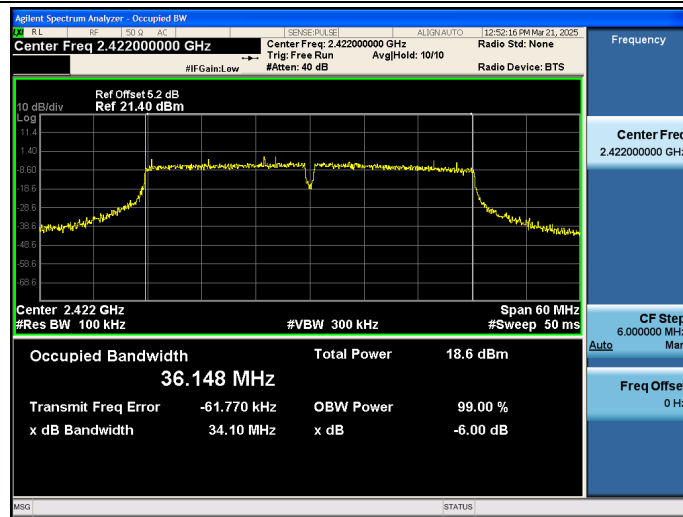
802.11n(HT20)_2437



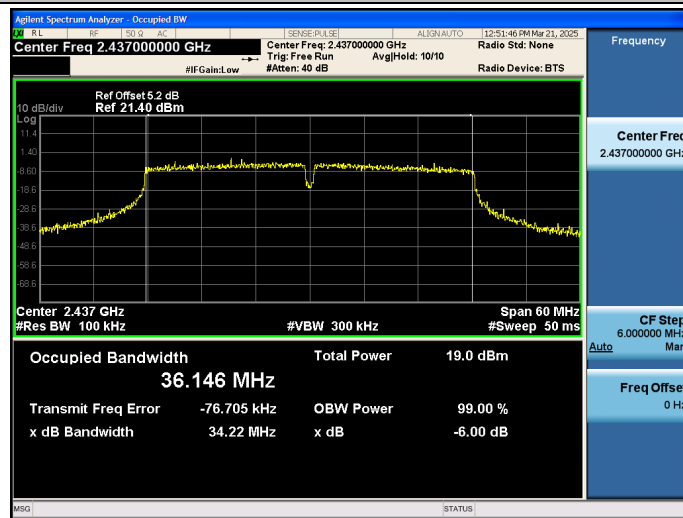
802.11n(HT20)_2462



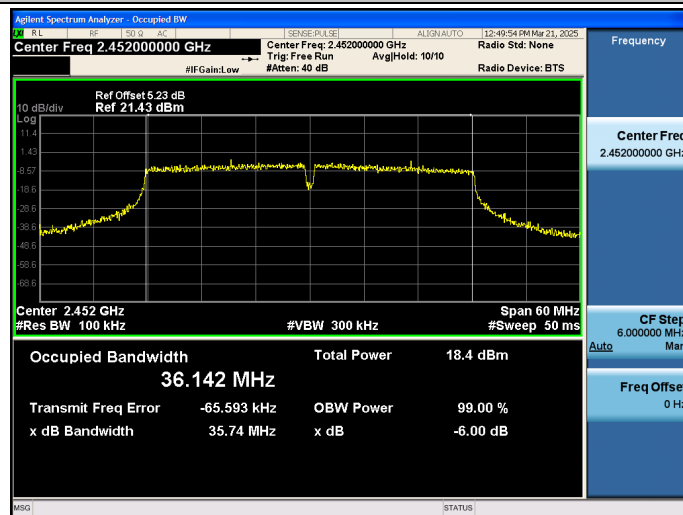
802.11n(HT40)_2422



802.11n(HT40)_2437



802.11n(HT40)_2452



802.11ax(HE20)_2412