

Test Report

Product	Wireless Module
Name and address of the applicant	Cisco Systems Norway AS Philip Pedersens vei 1 1366 Lysaker, NORWAY
Name and address of the manufacturer	Cisco Systems, Inc. 170 West Tasman Drive San Jose, CA 95134, USA
Model	LBEE5XV2EA
Trademark	CISCO
Additional information	Bluetooth LE, Bluetooth Classic, WiFi 6E
Tested according to	Parts of FCC Part 15.247 Frequency Hopping Transmitters / Digital Transmission Systems Parts of Industry Canada RSS-247, Issue 3 Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
Order number	PRJ0039024
Tested in period	2023-09-18 to 2023-10-03
Issue date	2023-12-08
Name and address of the testing laboratory	 Nemko Scandinavia AS Instituttveien 6 2007 Kjeller, Norway www.nemko.com CAB Number: FCC: NO0001 ISED: NO0470 ISED No: 2040D-1   An accredited technical test executed under the Norwegian accreditation scheme
 Prepared by [Frode Sveinsen]  Approved by [Jan G Eriksen]	
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Revision history

Revision	Date	Comment	Sign
A	2023-11-28	First edition	FS
B	2023-12-08	Corrected some cal dates	FS

GENERAL REMARKS

This report applies only to the sample(s) tested. It is the manufacturer's responsibility to ensure the additional production units of this product are manufactured with identical electrical and mechanical components. The manufacturer is solely responsible for any modifications to the product that could result in non-compliance with the relevant regulations.

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Opinions expressed within this report regarding general assessments and qualifications for PASS or FAIL to the standards limits and requirements, are not part of the current accreditation. Neither are opinions expressed regarding model variants covered by the testing of this report.

CALIBRATION

All instruments used in the tests given in this test report are calibrated and traceable to national or international standards. Between calibrations all test set-ups are controlled and verified on a regular basis by periodic checks to ensure, with 95% confidence, that the instruments remain within the calibrated levels.

MEASUREMENT UNCERTAINTY

Measurement uncertainties are calculated or considered for all instruments and instrument set-ups used during these tests. Uncertainty figures are found in a separate clause in this report.

1 INFORMATION

1.1 Test Item

Name	Cisco
Model/version	LBEE5XV2EA
FCC ID	LDKXV2EA2797
ISED ID	2461N-XV2EA2797
Serial number	/
Hardware identity and/or version	1.0
Software identity and/or version	1.1.1.1 1.1.2.1 1.1.1.2 1.1.2.2
Frequency Range	2412 – 2462 MHz
Number of Channels	11
Operating Modes	802.11b/g/n/ax (only 20 MHz mode)
Type of Modulation	DSSS / OFDM / OFDMA
Conducted Output Power	0.497 W
Antenna Connector	Internal U-FL
Number of Antennas	2
Antenna Diversity	YES
Smart Antennas	MIMO
Power Supply	Powered from Host
Antennas	Antenna 1: Amphenol Model OCF605-15-000-R Antenna 2: Amphenol Model OCF606-15-000-R

Description of Test Item

The tested EUT is a module with WiFi and Bluetooth.

This report covers additional tests for use with the specified antennas.

All radiated tests were performed with the module installed in host model TTC60-36.

1.2 Hosts Used During Testing

Name	Cisco
Model No.	TTC60-35 TTC60-36
Serial number	TTC60-35: WZS2731L008 TTC60-36: WZS2731M00N
Hardware identity and/or version	DV1
Software identity and/or version	CE 11.9.0 / s01845-2.58.0.0
Antenna Connector	Internal U-FL
Power Supply	Mains (120V 60Hz AC)
Rating	TTC60-35: 100-240V _{AC} 50/60Hz 3.0-1.5A TTC60-36: 100-240V _{AC} 50/60Hz 4.0-2.0A

1.3 Normal test conditions

Temperature:	20 - 24 °C
Relative humidity:	20 - 50 %
Normal test voltage:	120 V 60 Hz

The values are the limit registered during the test period.

1.4 Test Engineers

Frode Sveinsen

Jørn Gustavsen (Power Line Conducted)

1.5 Antenna Requirement

Does the EUT have detachable antenna(s)?	☐ YES	☒ NO
If detachable, is the antenna connector(s) non-standard?	☐ YES	☐ NO
The EUT have internal antennas.		

Requirement: FCC 15.203, 15.204

1.6 Power Levels

Default Power Levels were used for all tests.

1.7 Comments

The measurements were done with the EUT powered by 120 V AC. It was checked that power variations between 85% and 115% did not have any influence on the measurements.

MIMO measurements were performed with the EUT transmitting in MIMO mode on both antennas (P0 and P1). When measuring radiated the direction was locked and the maximum position was found.

Measurements in SISO mode was performed on P0 when measuring at the antenna connector, and on both antennas when measuring radiated.

2 TEST REPORT SUMMARY

2.1 General

All measurements are traceable to national standards.

The tests were conducted for demonstrating compliance with FCC CFR 47 Part 15, paragraph 15.247 and ISED RSS-247 Issue 3 and RSS-GEN Issue 5.

Tests were performed in accordance with ANSI C63.4-2014 and ANSI C63.10-2013.

Radiated tests were performed in a semi-anechoic chamber at measuring distances of 3m.

A description of the test facility is on file with the FCC and ISED.

☐ New Submission	☒ Production Unit
☒ Class II Permissive Change	☐ Pre-production Unit
DTS Equipment Code	☐ Family Listing

2.2 Test Summary

Name of test	FCC Part 15 reference	RSS-247 Issue 3, RSS-GEN Issue 5 reference	ANSI C63.10-2013 Reference	Result
Supply Voltage Variations	15.31(e)	6.11 (RSS-GEN)	5.13	Complies
Antenna Requirement	15.203	6.8 (RSS-GEN)	5.8	Complies
Power Line Conducted Emission	15.107(a) 15.207(a)	7.2 / 8.8 (RSS-GEN)	6.2	Complies
Occupied Bandwidth (99% BW)	N/A	6.7 (RSS-GEN)	6.9.3	Complies*
DTS Bandwidth	15.247(a)(2)	5.2 (1) (RSS-247)	11.8 Option 2	Complies*
Peak Power Output	15.247(b)	5.4 (RSS-247)	11.9.1.1	Complies*
Power Spectral Density	15.247(d)	5.2 (2) (RSS-247)	11.10.2 PKPSD (DTS)	Complies*
Spurious Emissions (Antenna Conducted)	15.247(c)	5.5 (RSS-247)	6.7 11.11 (DTS)	Complies*
Spurious Emissions (Radiated)	15.247(c) 15.109(a) 15.209(a)	5.5 (RSS-247) 7.3 (RSS-GEN) 8.9 (RSS-GEN)	6.3, 6.5, 6.6, 6.10 11.12, 11.13 (DTS)	Complies

*Covered by SGS Test report No. TERF2211002258ER

3 TEST RESULTS

3.1 Power Line Conducted Emissions

FCC Part 15.207

ISED RSS-GEN Issue 5, Clause 7.2 / 8.8

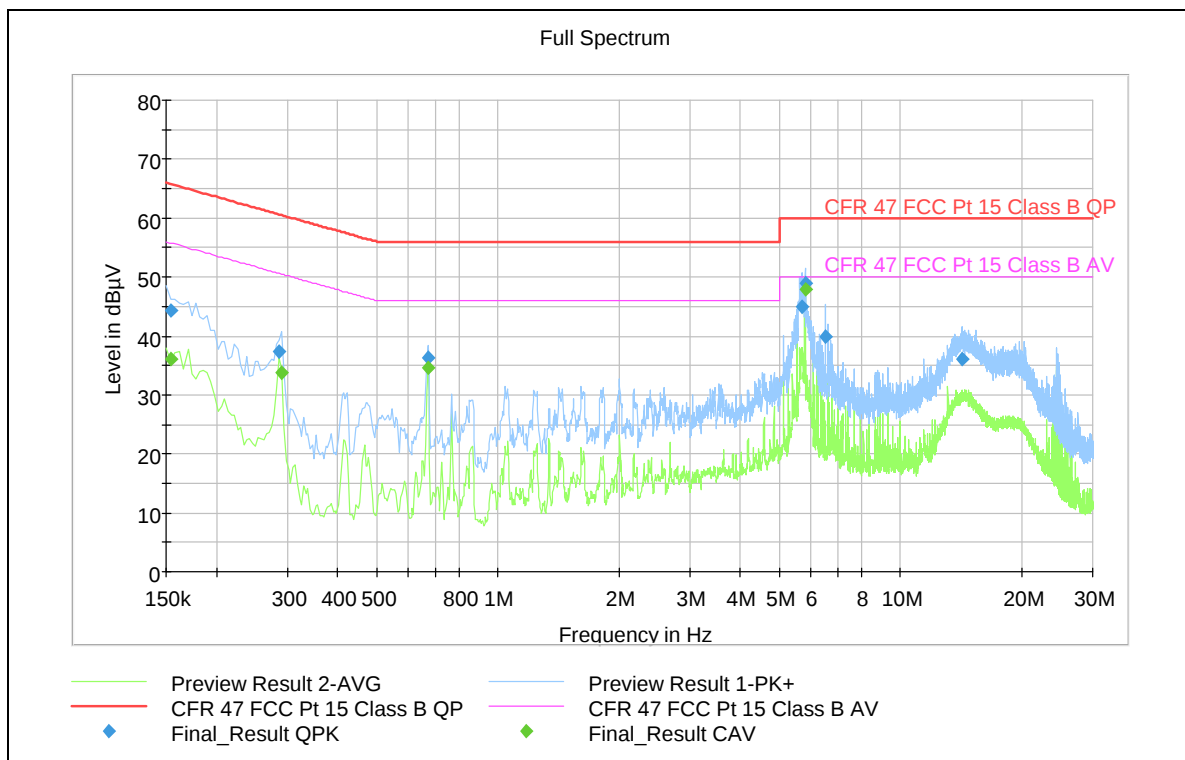
Measurement procedure: ANSI C63.4-2014 using 50 μ H/50 ohms LISN

Test Results: Complies

Measurement Data: 120V 60Hz, See attached plots.

Highest measured value (L1 and N)

Frequency (MHz)	QuasiPeak (dB μ V)	CAverage (dB μ V)	Limit (dB μ V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.154000	---	36.04	55.78	19.74	15000.0	9.000	L1	OFF	9.7
0.154000	44.31	---	65.78	21.47	15000.0	9.000	L1	OFF	9.7
0.286000	37.46	---	60.64	23.18	15000.0	9.000	L1	OFF	9.7
0.290000	---	33.79	50.52	16.74	15000.0	9.000	L1	OFF	9.7
0.670000	---	34.72	46.00	11.28	15000.0	9.000	N	OFF	9.6
0.670000	36.33	---	56.00	19.67	15000.0	9.000	N	OFF	9.6
5.690000	44.92	---	60.00	15.08	15000.0	9.000	L1	OFF	9.8
5.798000	48.89	---	60.00	11.11	15000.0	9.000	L1	OFF	9.8
5.798000	---	47.84	50.00	2.16	15000.0	9.000	L1	OFF	9.8
6.510000	39.81	---	60.00	20.19	15000.0	9.000	N	OFF	9.6
14.234000	36.09	---	60.00	23.91	15000.0	9.000	N	OFF	9.7



3.2 Radiated Emissions, Band Edge

FCC Part 15.209 (a)

ISED Canada RSS-GEN Issue 5, Clause 7.3 / 8.9

Measurement procedure: ANSI C63.10-2013 Clause 11.12

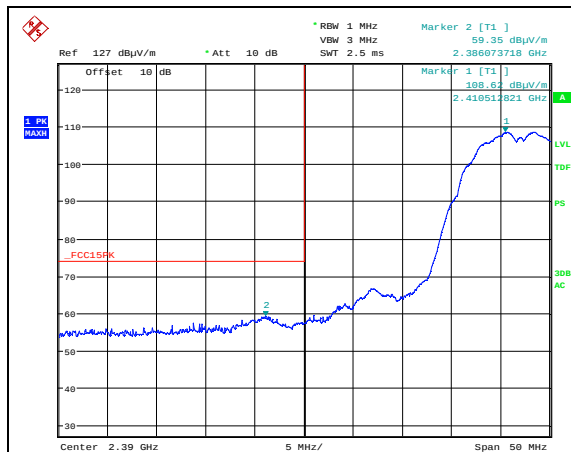
Test Results: Complies

Measurement Data:

Band Edge (MHz)	Modulation and Bitrate	Measured field strength (dB μ V/m)		Limit (dB)		Margin (dB)	
		Peak	Average	Pk	Av	Pk	Av
2390	802.11b, 1 Mbps	59.4	49.0	74	54	14.6	5.0
	802.11g, 6 Mbps	57.8	44.5	74	54	16.2	9.5
	802.11n, MCS0	58.0	44.7	74	54	16.0	9.3
	802.11n, MCS8, MIMO	56.8	44.1	74	54	17.2	9.9
	802.11ax, MCS0	57.5	44.5	74	54	16.5	9.5
	802.11ax, MCS0, MIMO	56.2	43.0	74	54	17.8	11.0
2483.5	802.11b, 1 Mbps	60.7	50.9	74	54	13.3	3.1
	802.11g, 6 Mbps	69.3	47.2	74	54	4.7	6.8
	802.11n, MCS0	59.5	46.4	74	54	14.5	7.6
	802.11n, MCS8, MIMO	56.5	44.6	74	54	17.5	9.4
	802.11ax, MCS0	60.6	46.1	74	54	13.4	7.9
	802.11ax, MCS0, MIMO	56.5	43.6	74	54	17.5	10.4

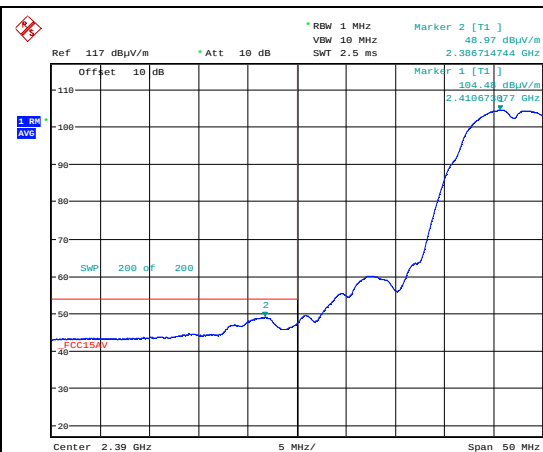
Average values were measured using trace averaging as described in ANSI C63.10-2013 clause 11.12.2.5.1 (Duty Cycle $\approx$ 100%).

See attached plots.



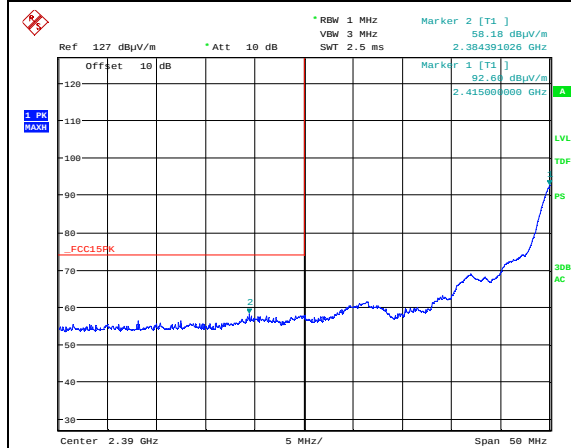
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Lower Band Edge, 2412 MHz, 802.11b 1M, Peak



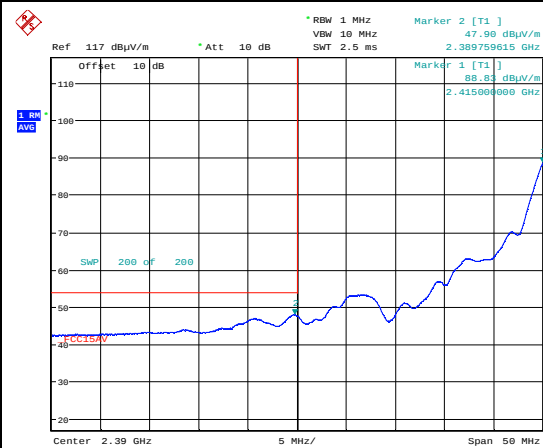
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Average



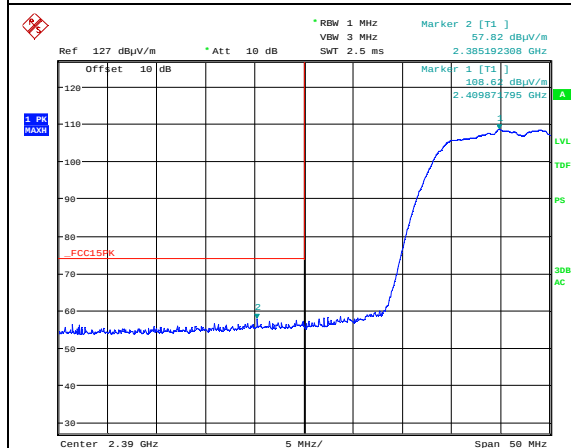
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Lower Band Edge, 2422 MHz, 802.11b 1M, Peak



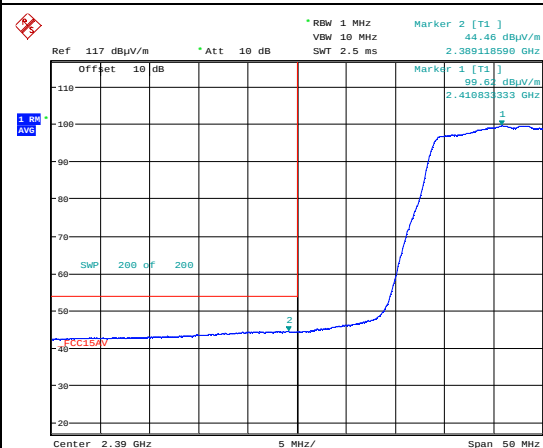
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Average



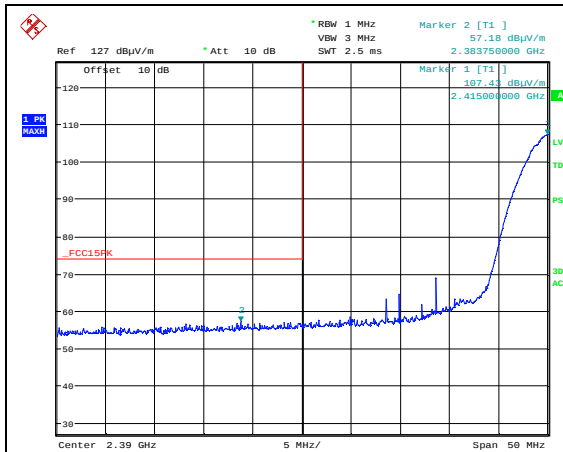
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Lower Band Edge, 2412 MHz, 802.11g 6M, Peak



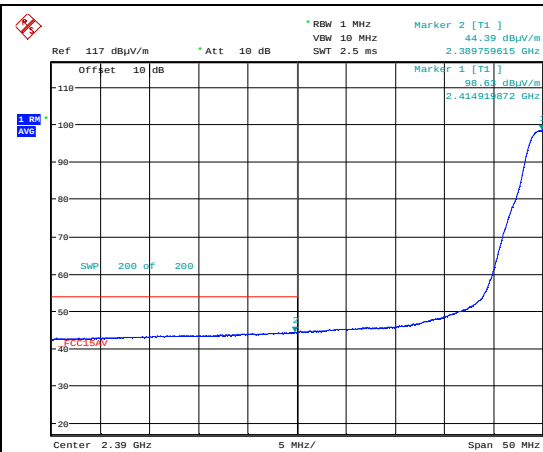
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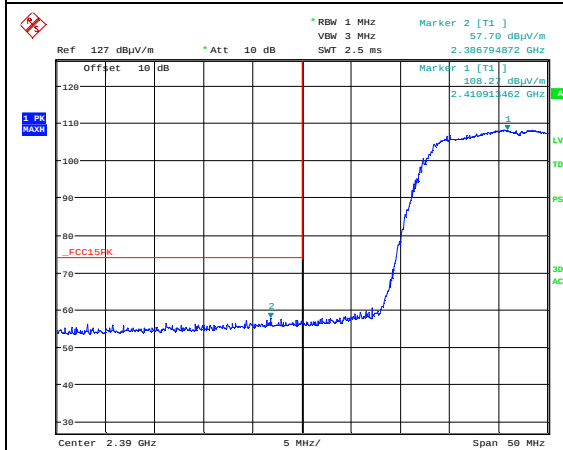
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Lower Band Edge, 2422 MHz, 802.11g 6M, Peak



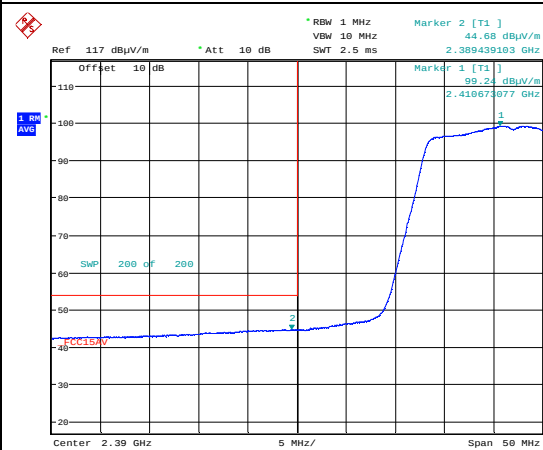
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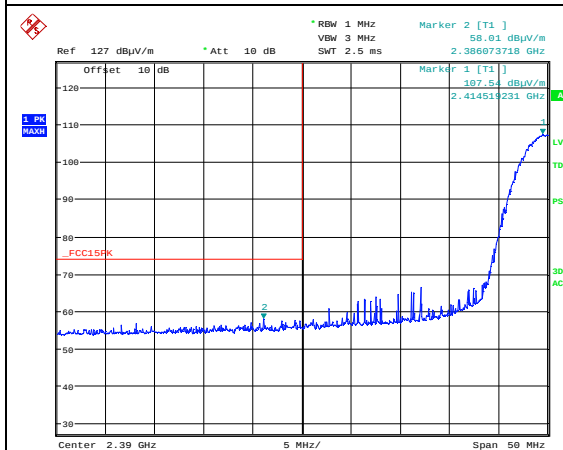
Date: 18. SEP. 2023 10:42:00

Lower Band Edge, 2412 MHz, 802.11n MCS0, Peak



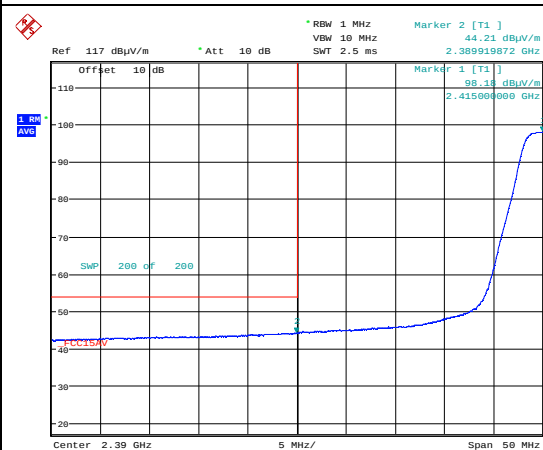
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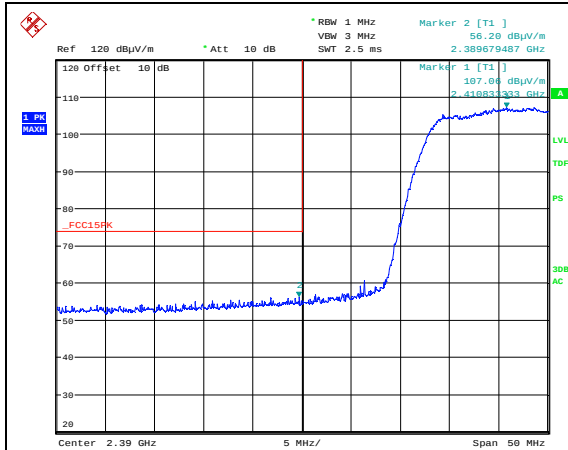
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Lower Band Edge, 2422 MHz, 802.11n MCS0, Peak



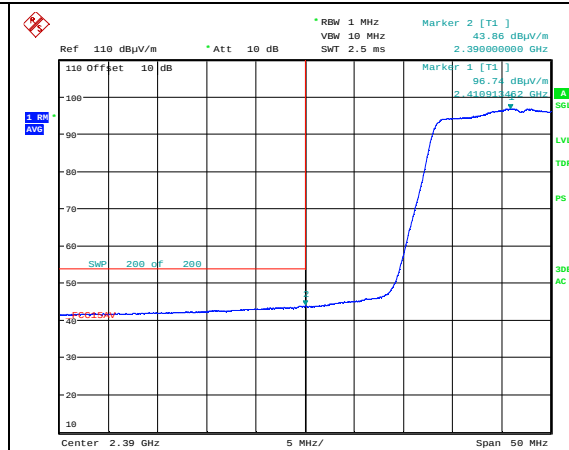
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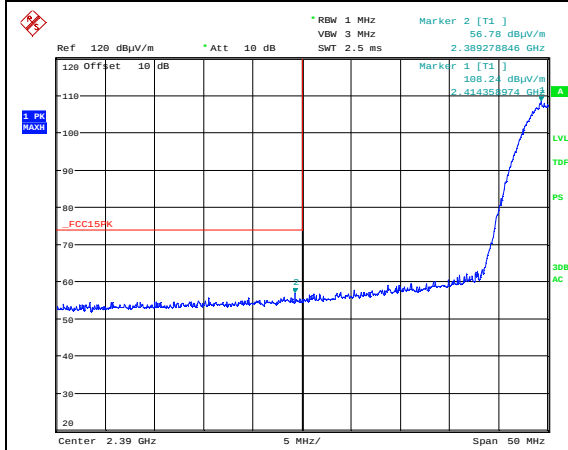
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Lower Band Edge, 2412 MHz, 802.11n MCS8, MIMO, Peak



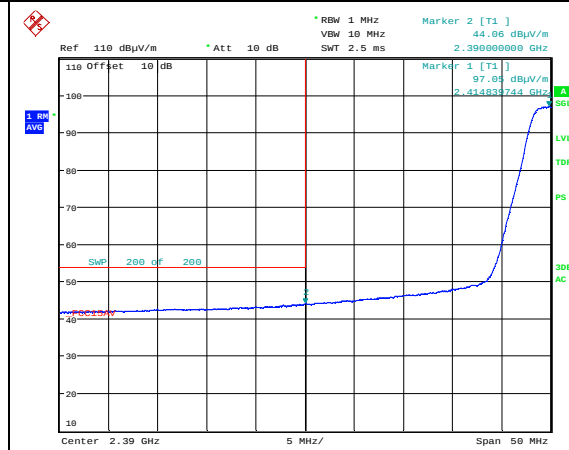
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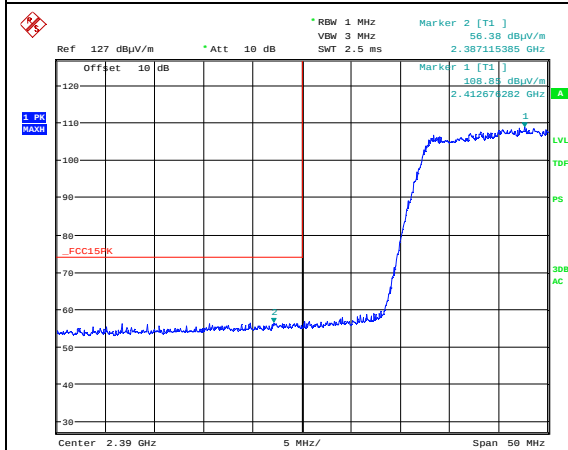
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Lower Band Edge, 2422 MHz, 802.11n MCS8, MIMO, Peak



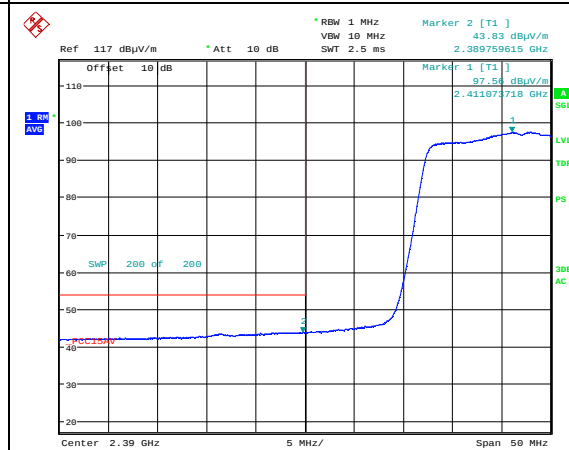
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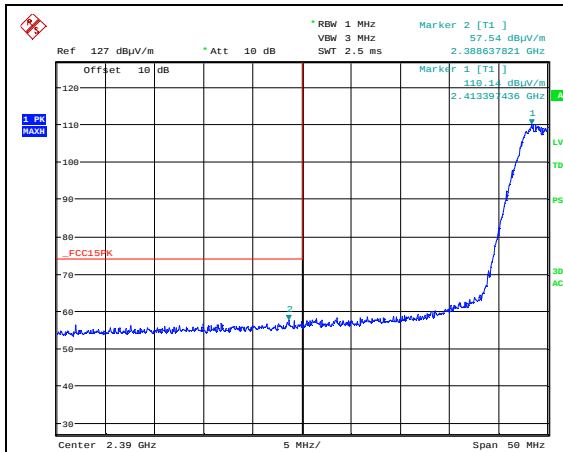
Date: 18. SEP. 2023 10:51:05

Lower Band Edge, 2412 MHz, 802.11ax MCS0, Peak



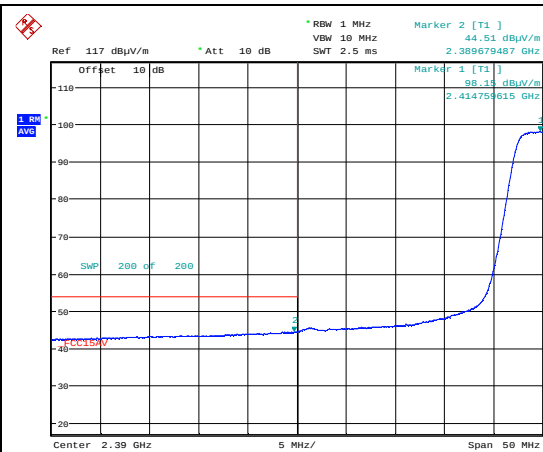
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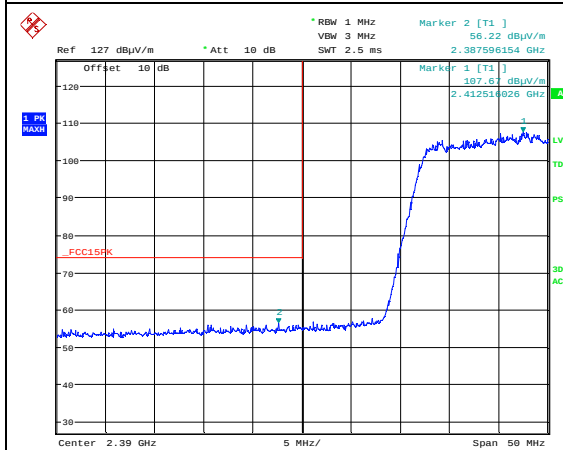
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Lower Band Edge, 2422 MHz, 802.11ax MCS0, Peak



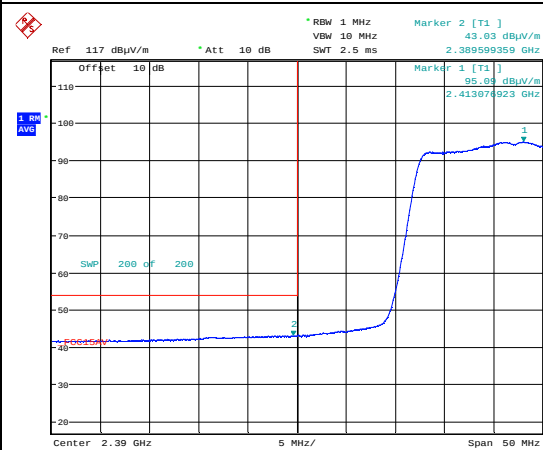
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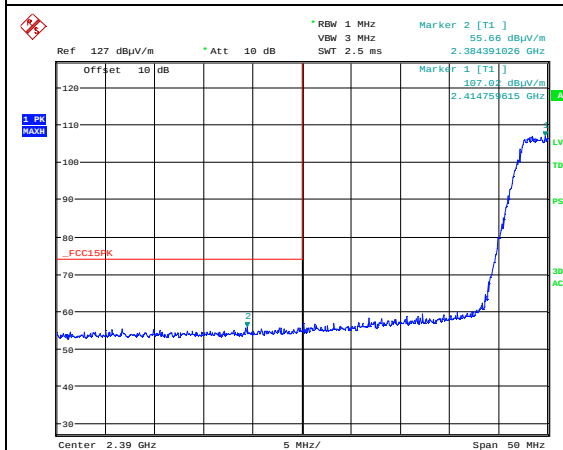
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Lower Band Edge, 2412 MHz, 802.11ax MCS0, MIMO, Peak



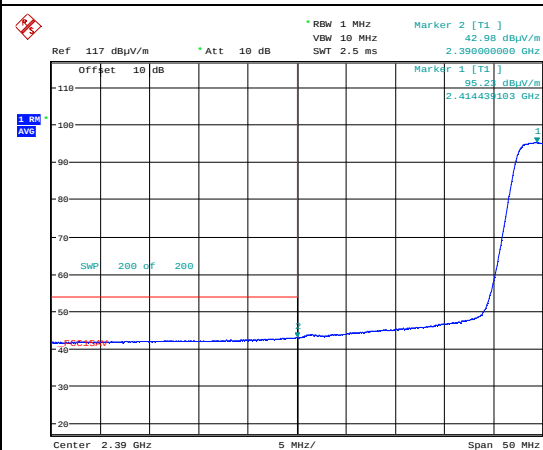
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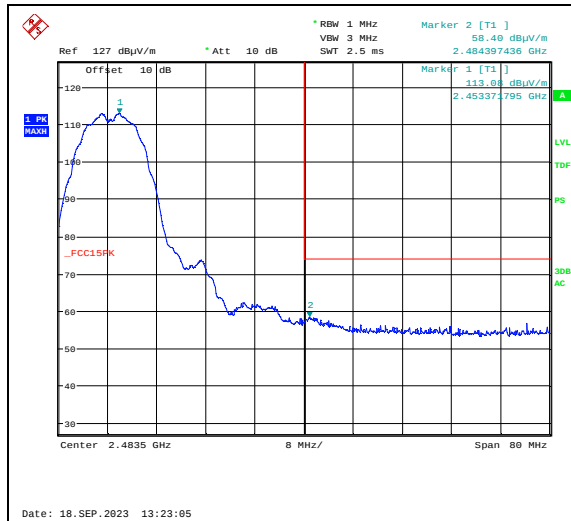
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Lower Band Edge, 2422 MHz, 802.11ax MCS0, MIMO, Peak

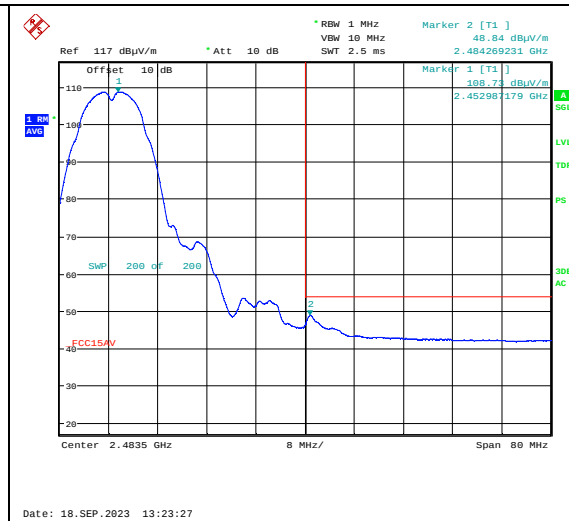


Date: 18. SEP. 2023 15:58:10

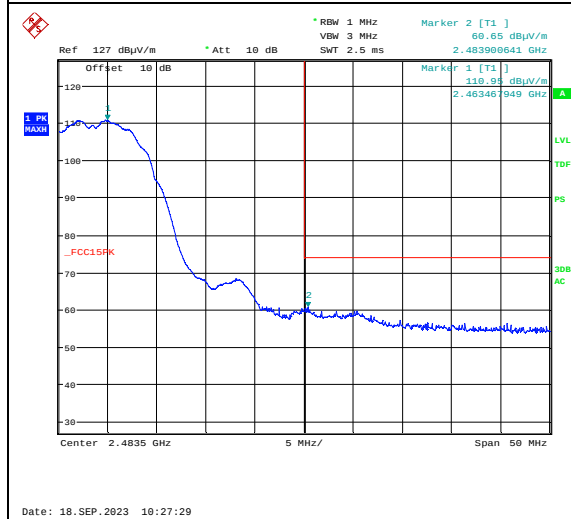
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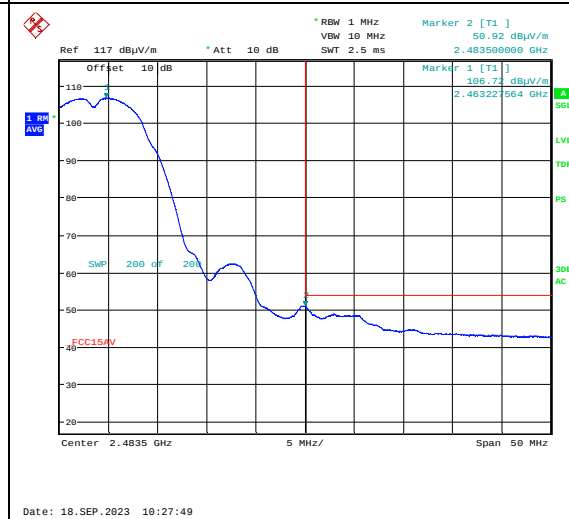
Upper Band Edge, 2452 MHz, 802.11b 1M, Peak



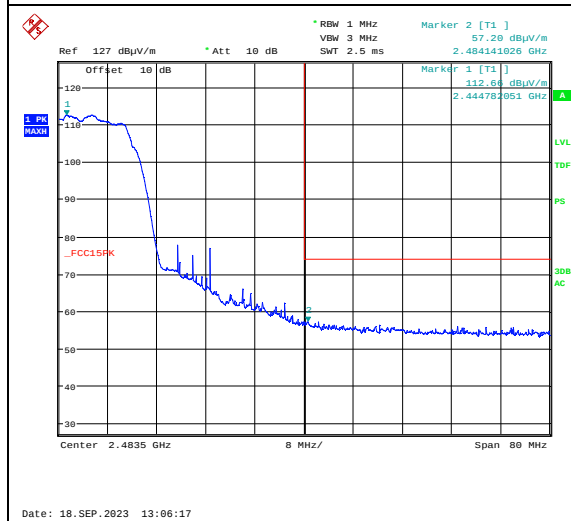
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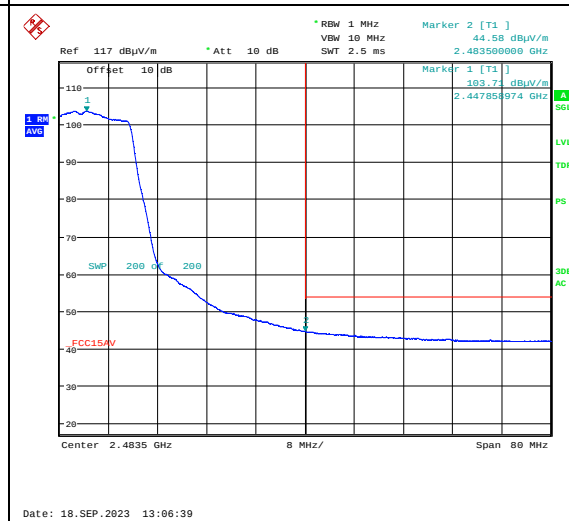
Upper Band Edge, 2462 MHz, 802.11b 1M, Peak



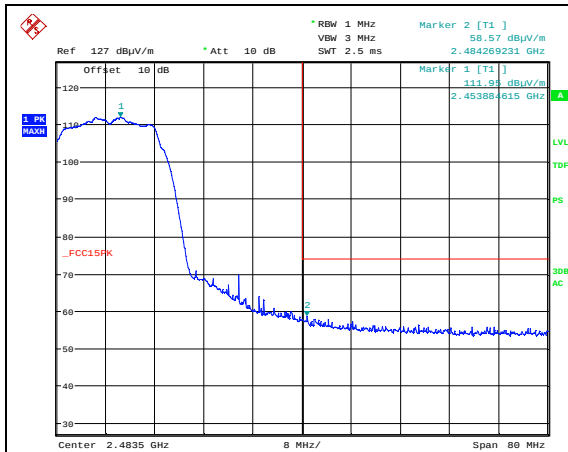
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Upper Band Edge, 2447 MHz, 802.11g 6M, Peak

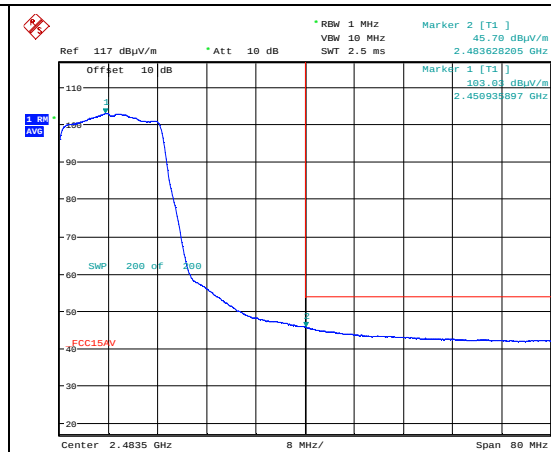


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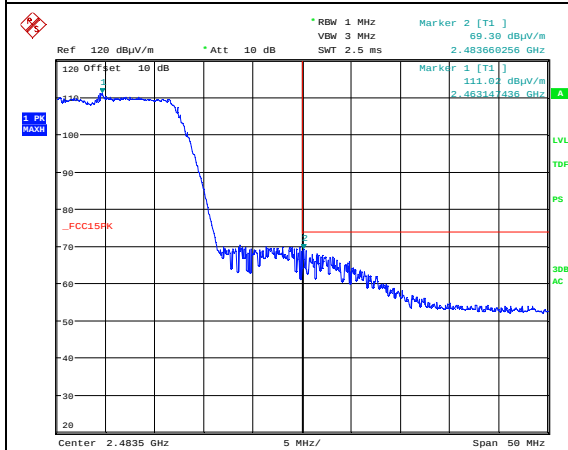
Date: 18. SEP. 2023 13:30:30

Upper Band Edge, 2452 MHz, 802.11g 6M, Peak



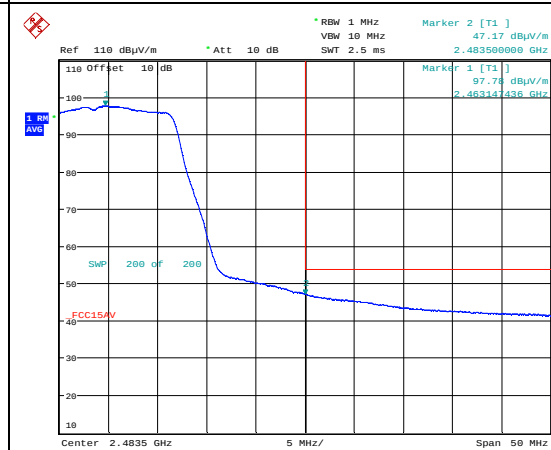
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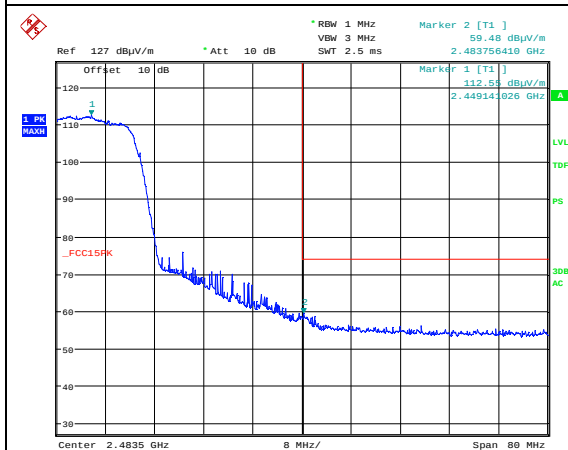
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Upper Band Edge, 2462 MHz, 802.11g 6M, Peak



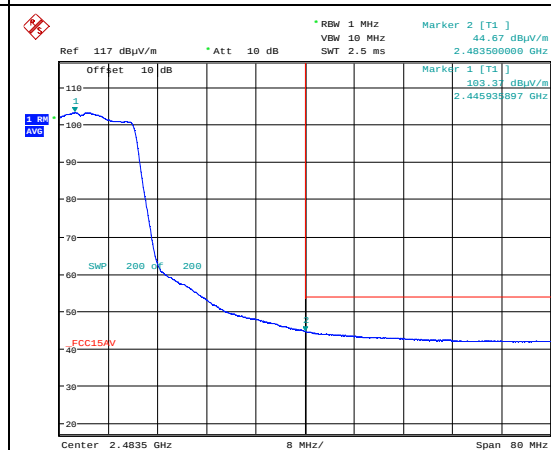
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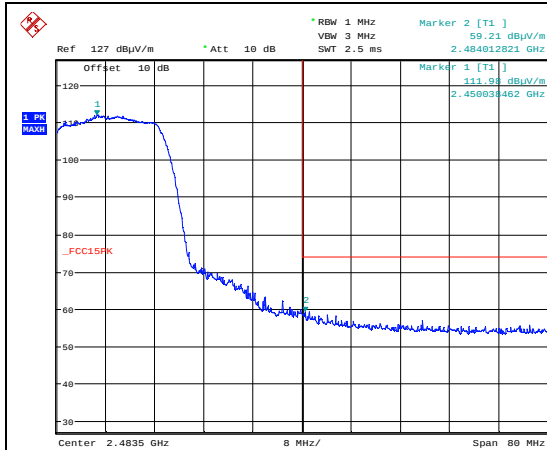
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Upper Band Edge, 2447 MHz, 802.11n MCS0, Peak



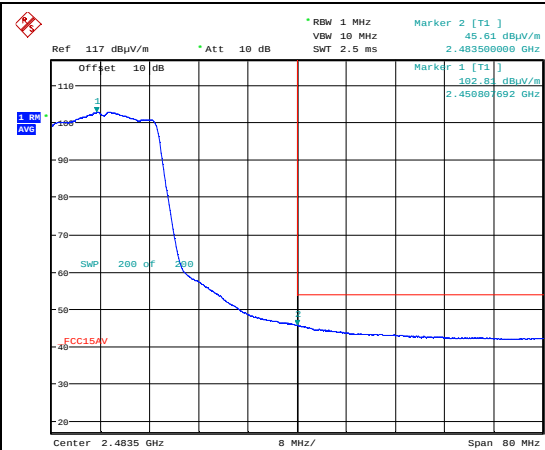
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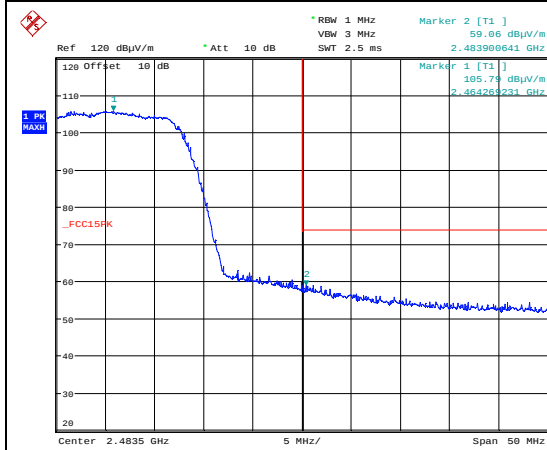
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Upper Band Edge, 2452 MHz, 802.11n MCS0, Peak



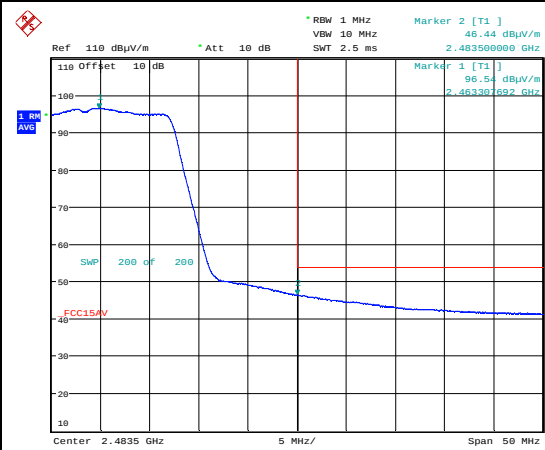
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Average



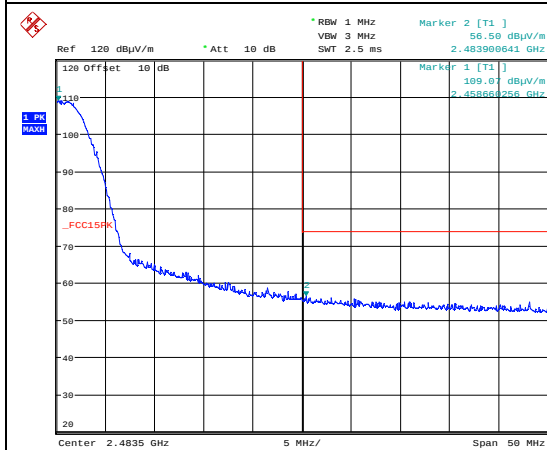
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Upper Band Edge, 2462 MHz, 802.11n MCS0, Peak



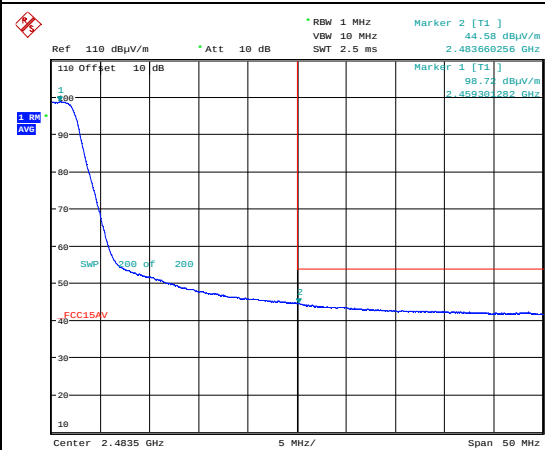
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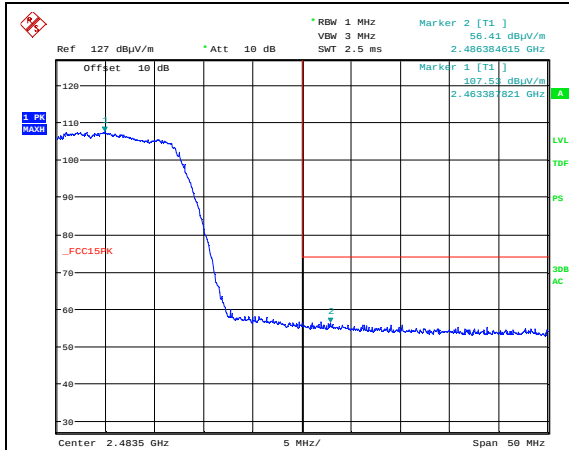
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Upper Band Edge, 2452 MHz, 802.11n MCS8, MIMO, Peak



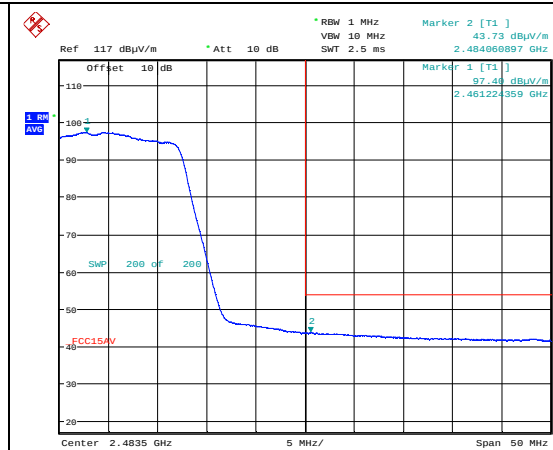
Date: 18. SEP. 2023 16:46:15

Average



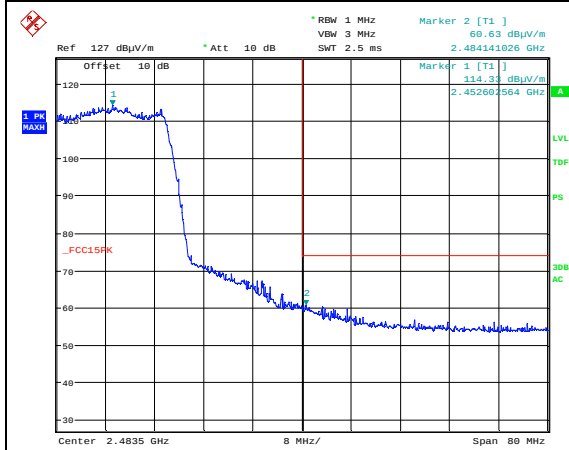
Date: 18. SEP. 2023 14:50:50

Upper Band Edge, 2462 MHz, 802.11n MCS8, MIMO, Peak



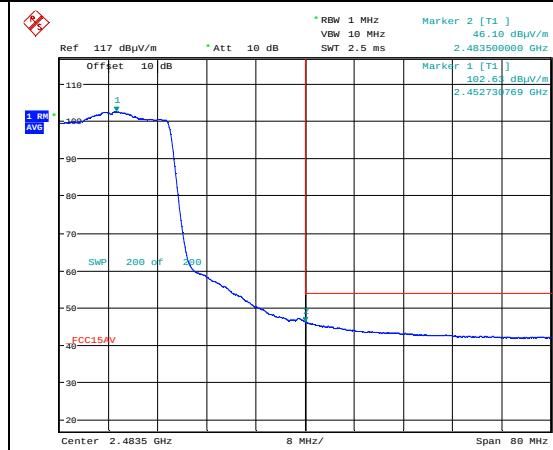
Date: 18. SEP. 2023 14:51:11

Average



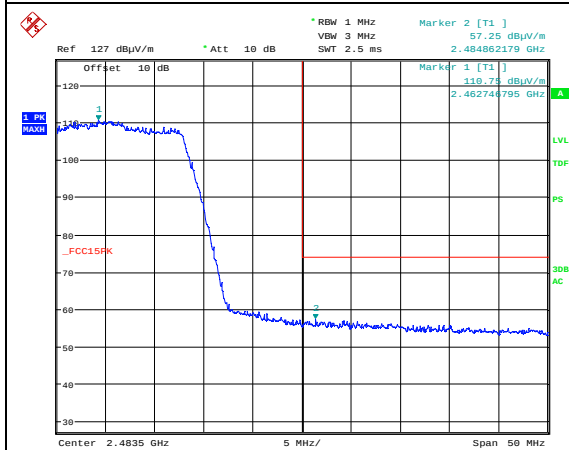
Date: 18. SEP. 2023 13:50:20

Upper Band Edge, 2452 MHz, 802.11ax MCS0, Ant0, Peak



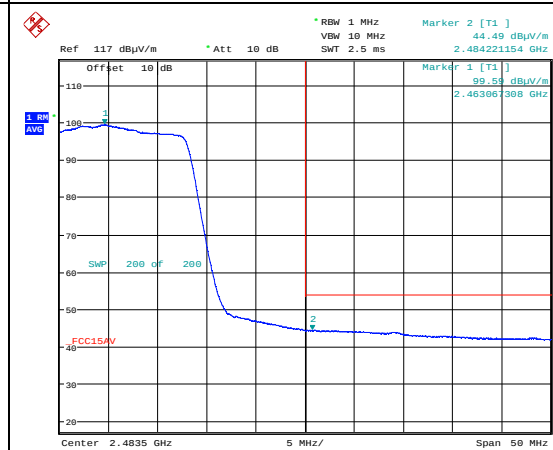
Date: 18. SEP. 2023 13:50:42

Average



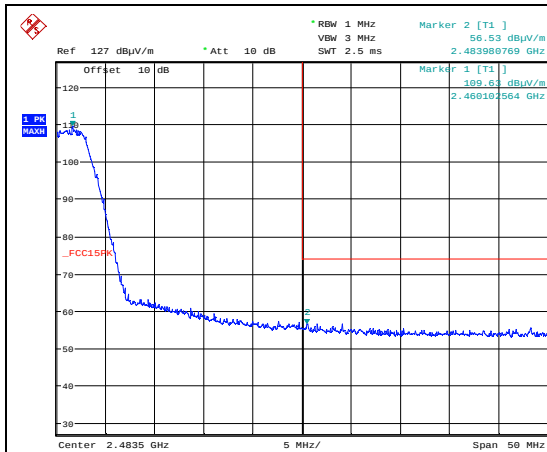
Date: 18. SEP. 2023 14:18:50

Upper Band Edge, 2462 MHz, 802.11ax MCS0, Ant0, Peak



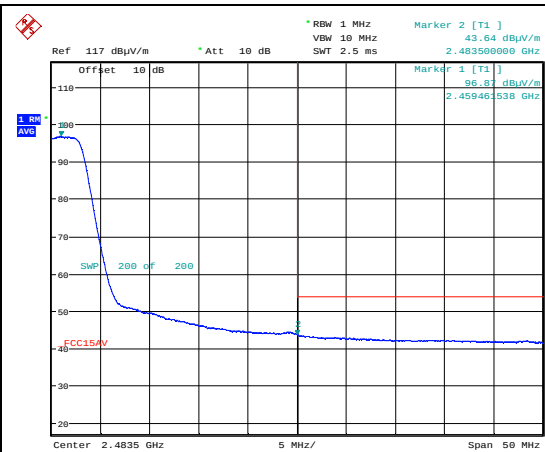
Date: 18. SEP. 2023 14:19:11

Average



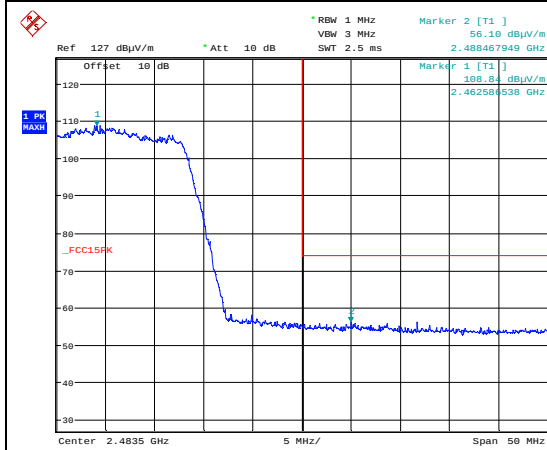
Date: 18. SEP. 2023 15:33:48

Upper Band Edge, 2452 MHz, 802.11ax MCS0, MIMO, Peak



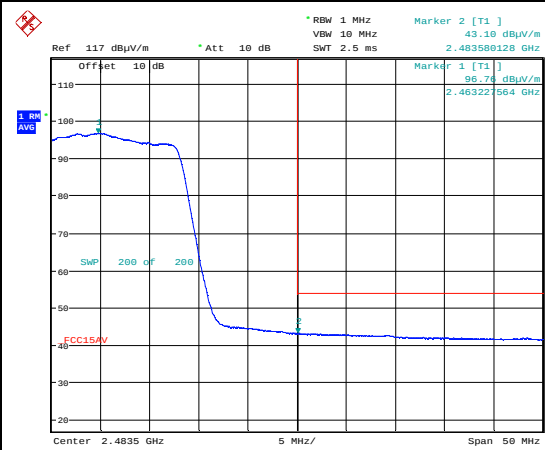
Date: 18. SEP. 2023 15:34:08

Average



Date: 18. SEP. 2023 15:25:29

Upper Band Edge, 2462 MHz, 802.11ax MCS0, MIMO, Peak



Date: 18. SEP. 2023 15:25:50

Average

3.3 Radiated Emissions, 30 – 1000 MHz.

FCC Part 15.209 (a)

ISED Canada RSS-GEN Issue 5, Clause 7.3/8.9

Measurement procedure: ANSI C63.10-2013 Clause 11.12

Test Results: Complies

Measurement Data:

Detector: Quasi-Peak (Pre-Scan with Peak Detector)

Measuring distance 3m.

Tested in test mode with EUT transmitting on Ch06.

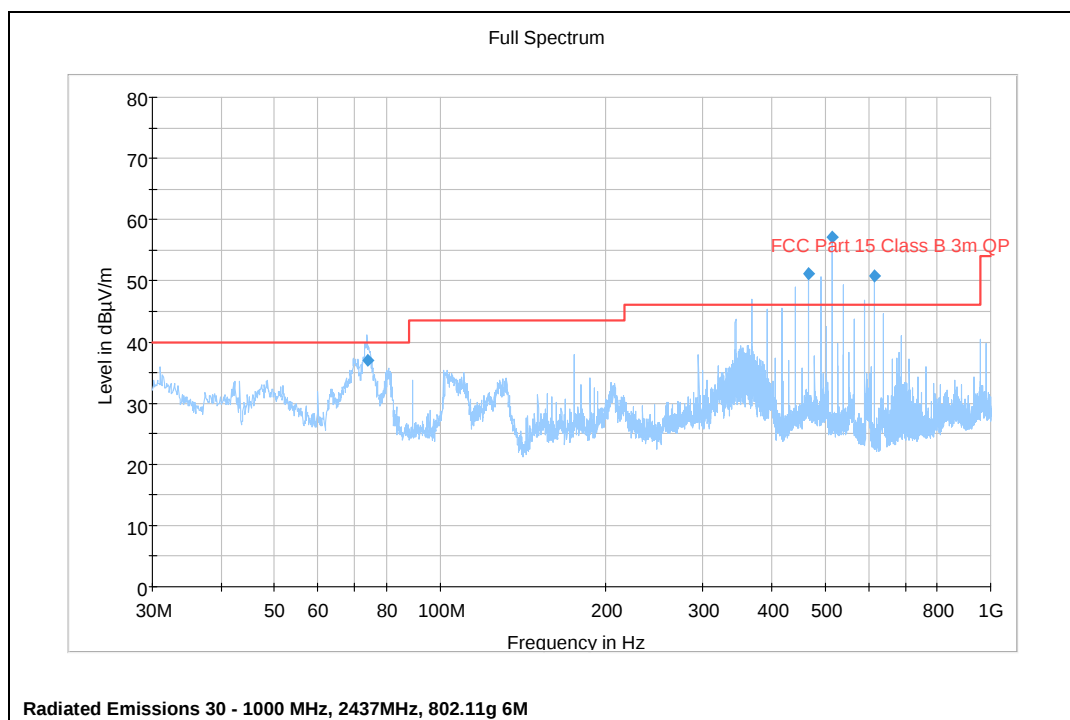
Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
73.722486	37.05	40.00	2.95	15000.0	120.000	143.0	V	345.0	-17.7
466.935158*	51.20	46.00	-5.20	15000.0	120.000	125.0	V	322.0	-6.1
516.086386*	57.23	46.00	-11.23	15000.0	120.000	101.0	V	353.0	-5.1
614.388460*	50.82	46.00	-4.82	15000.0	120.000	275.0	V	149.0	-4.0

*These frequencies are not in a Restricted Band

See attached plots.

Requirements/Limit

FCC	Part 15.209 @ frequencies defined in §15.205	
ISED	RSS-GEN Issue 5, Clause 8.9 @ frequencies defined in clause 8.10	
Frequency	Radiated emission limit @3 meters	
30 – 88 MHz	100 μV/m	40.0 dBμV/m
88 – 216 MHz	150 μV/m	43.5 dBμV/m
216 – 960 MHz	200 μV/m	46.0 dBμV/m
960 – 1000 MHz	500 μV/m	54.0 dBμV/m
	Limits above are with Quasi Peak Detector	



3.4 Radiated Emissions, 1 – 26 GHz

FCC Part 15.209 (a)

ISED Canada RSS-GEN Issue 5, Clause 7.3/8.9

Measurement procedure: ANSI C63.10-2013 Clause 11.12

Test Results: Complies

Measurement Data:

Measuring distance: 3m (1 – 18 GHz)

A pre-scan was performed above 18 GHz and no spurious emissions were detected.

RBW=1 MHz

Carrier freq. (MHz)	Measured Freq. (MHz)	Mode	Measured Emissions (dBµV/m)		Limit (dBµV/m)		Margin (dB)	
			Peak	Average	Pk	Av	Pk	Av
Any	1584	Any	55.2	51.1	74	54	18.8	22.9
Any	2238	Any	58.0	47.3	74	54	16.0	26.7
Any	4989	Any	53.8	41.7	74	54	20.2	12.3
Any	2971*	Any	65.5	/	N/A	/	N/A	/
Any	5941*	Any	65.1	/	N/A	/	N/A	/
Any	Any other	Any	< 56	< 46	74	54	> 18	> 8

*Not in a Restricted Band

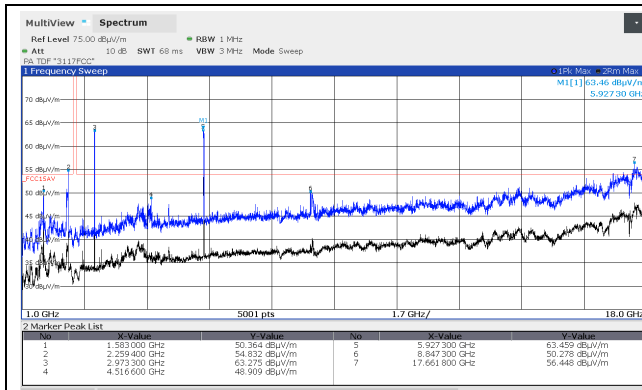
A Band Reject Filter was used for measurements from 1 GHz to 18 GHz.

Antenna factor, amplifier gain and cable loss are included in spectrum analyzer "Transducer factor".

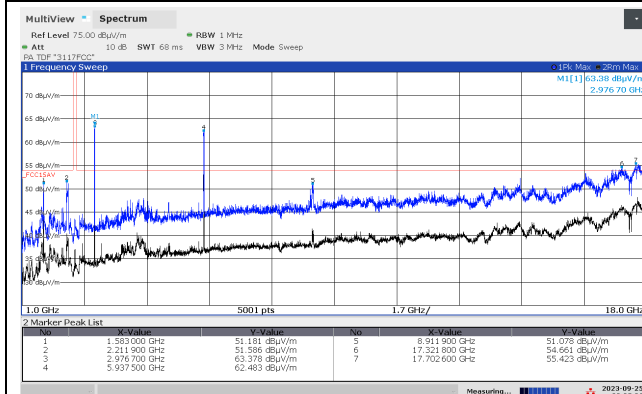
See plots.

Requirements/Limit

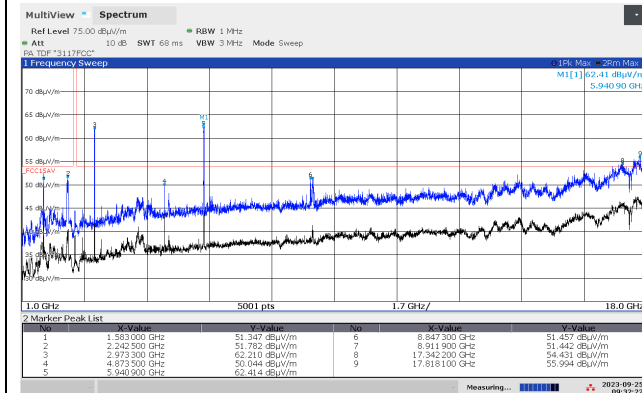
FCC	Part 15.209 @ frequencies defined in §15.205	
ISED	RSS-GEN Issue 5, clause 8.9 @ frequencies defined in clause 8.10	
	Radiated emission limit @3 meters	
Frequency	Average Detector	Peak Detector
1 – 26 GHz	54.0 dBµV/m	74.0 dBµV/m



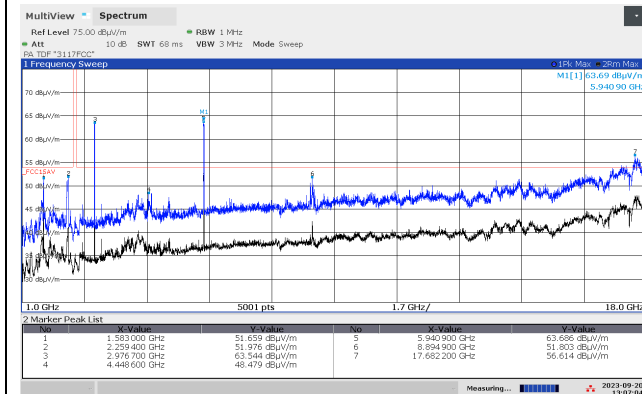
Emissions 1 - 18 GHz, 2422 MHz, 802.11ax MCS0, MIMO HP



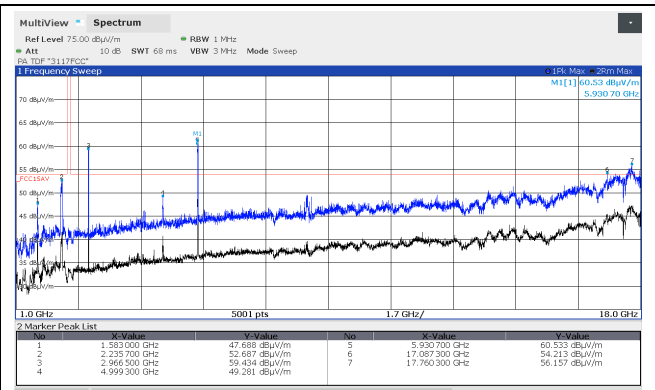
Emissions 1 - 18 GHz, 2437 MHz, 802.11b 1M, Ant0 HP



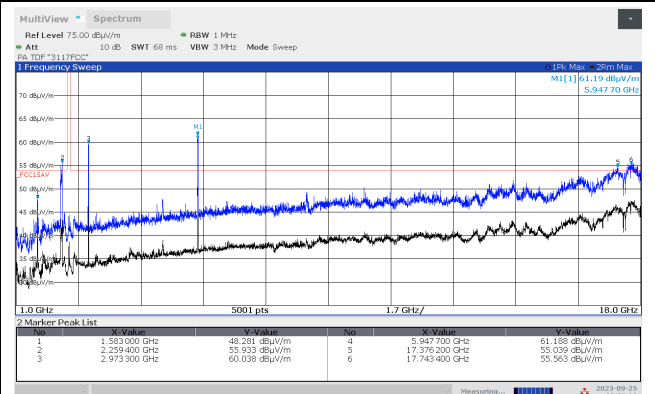
Emissions 1 - 18 GHz, 2437 MHz, 802.11b 1M, Ant1 HP



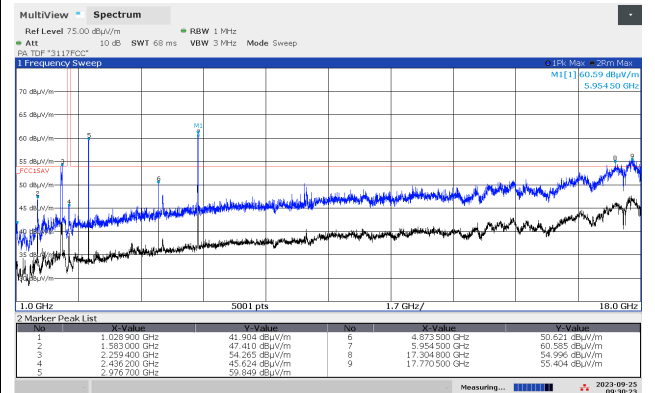
Emissions 1 - 18 GHz, 2437 MHz, 802.11g 6M, Ant0, HP



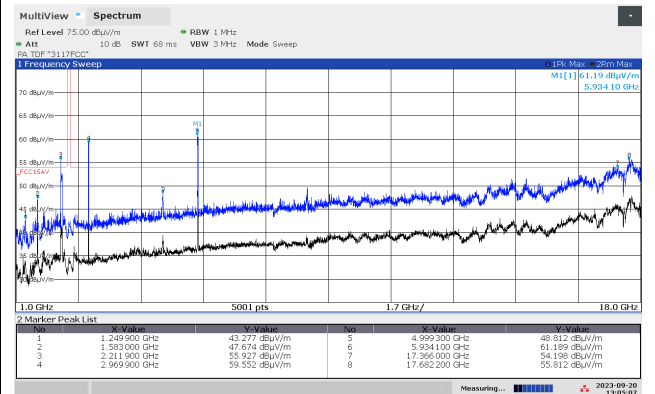
VP



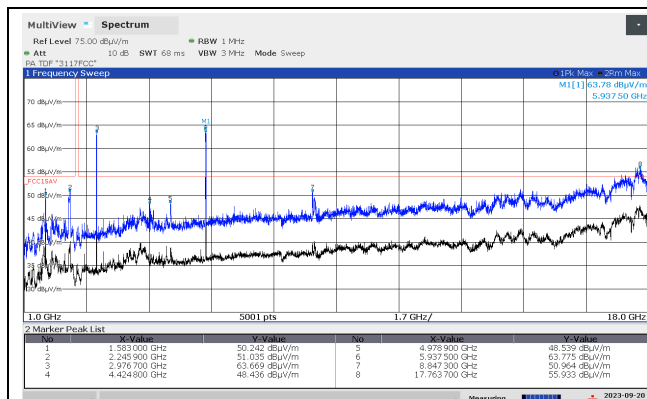
VP



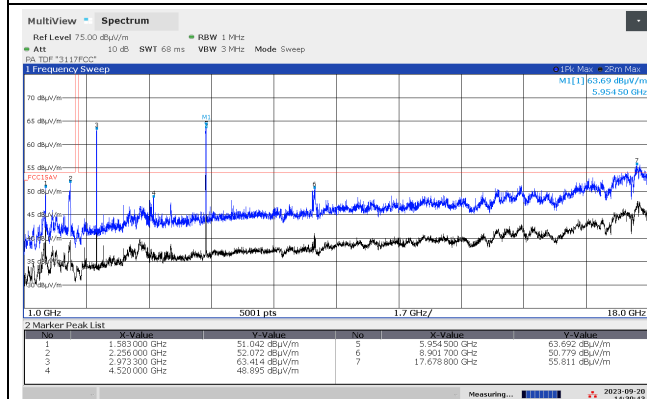
VP



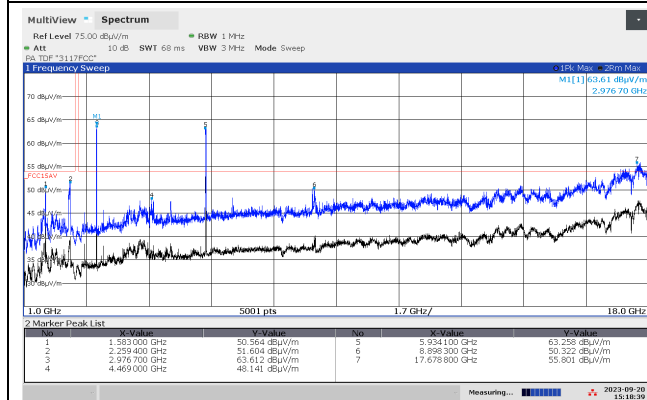
VP



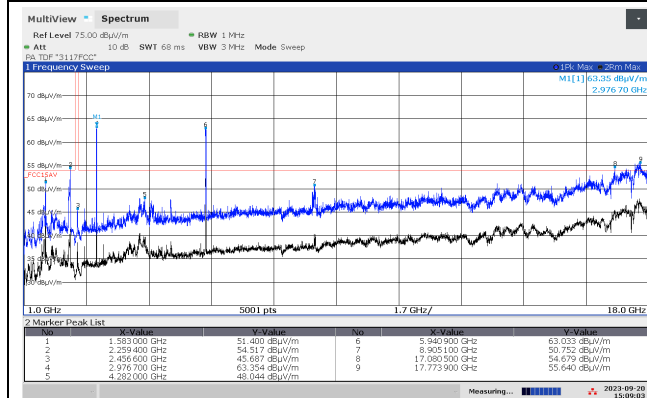
Emissions 1 - 18 GHz, 2437 MHz, 802.11g 6M, Ant1, HP



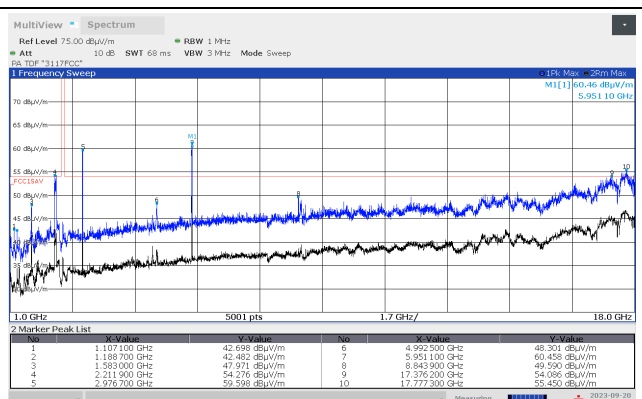
Emissions 1 - 18 GHz, 2437 MHz, 802.11n MCS0, MIMO, HP



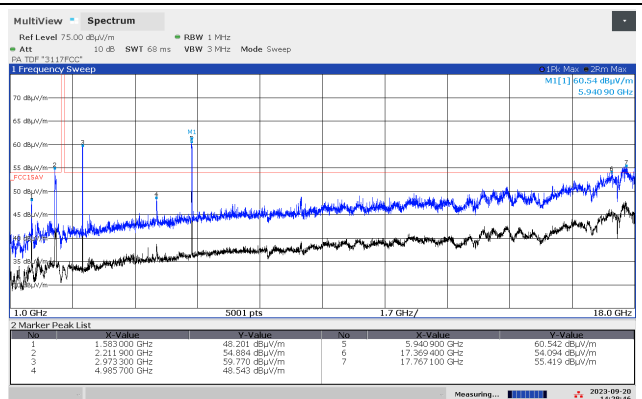
Emissions 1 - 18 GHz, 2437 MHz, 802.11ax MCS0, MIMO, HP



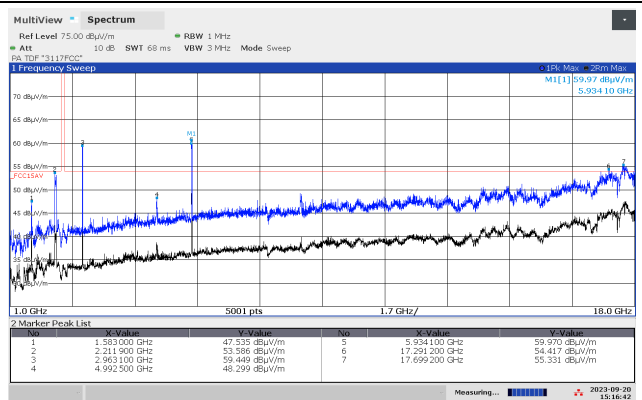
Emissions 1 - 18 GHz, 2452 MHz, 802.11ax MCS0, MIMO, HP



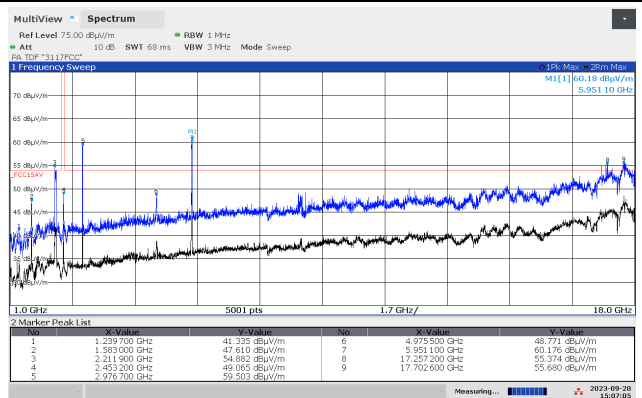
VP



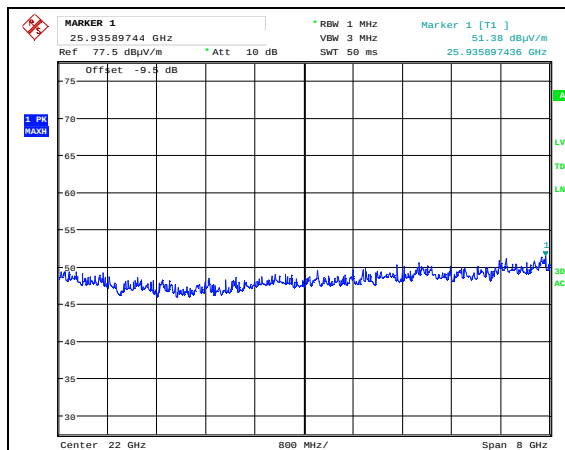
VP



VP

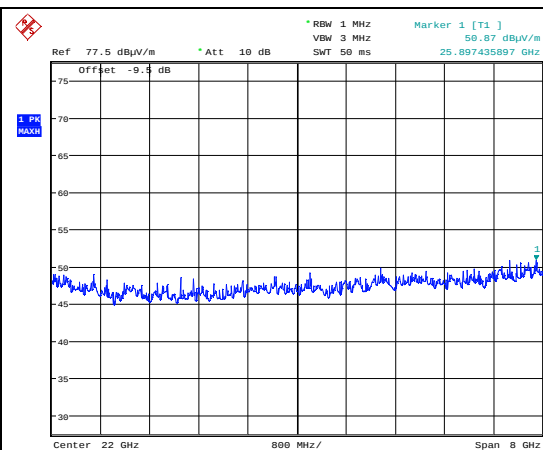


VP



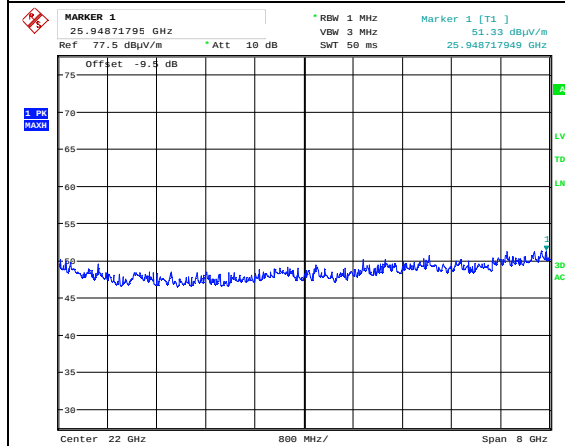
Date: 2.OCT.2023 10:22:19

Emissions 18 - 26 GHz, 2437 MHz, 802.11b 1M, Ant0, HP @1m



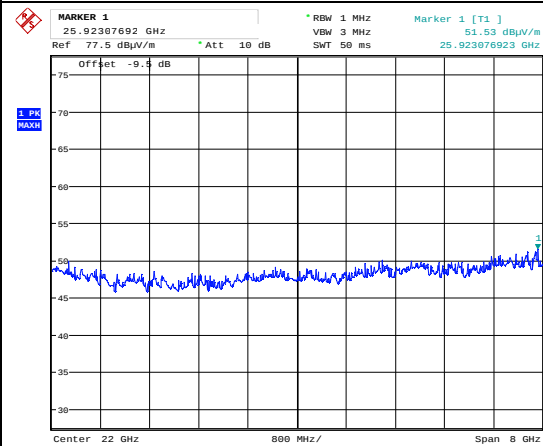
Date: 2.OCT.2023 10:19:53

VP



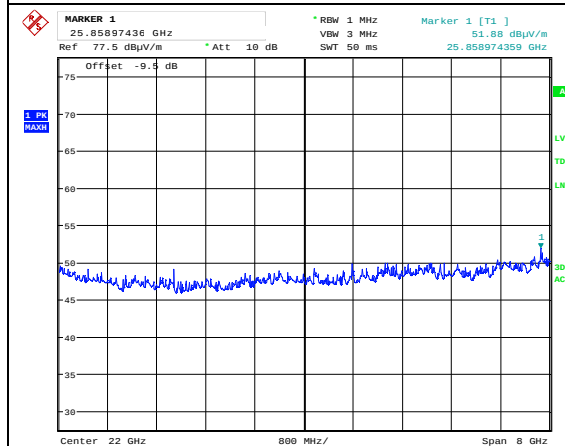
Date: 2.OCT.2023 10:29:16

Emissions 18 - 26 GHz, 2437 MHz, 802.11b 1M, Ant1, HP @1m



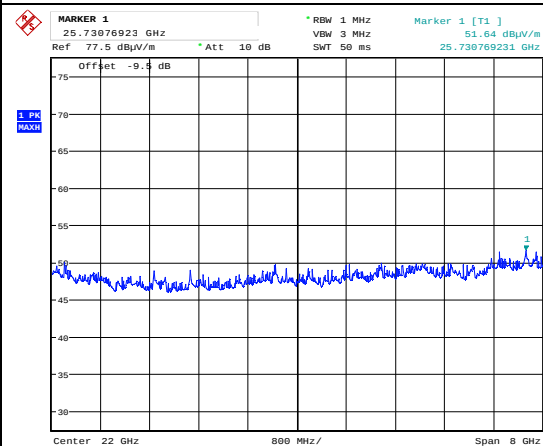
Date: 2.OCT.2023 10:31:32

VP



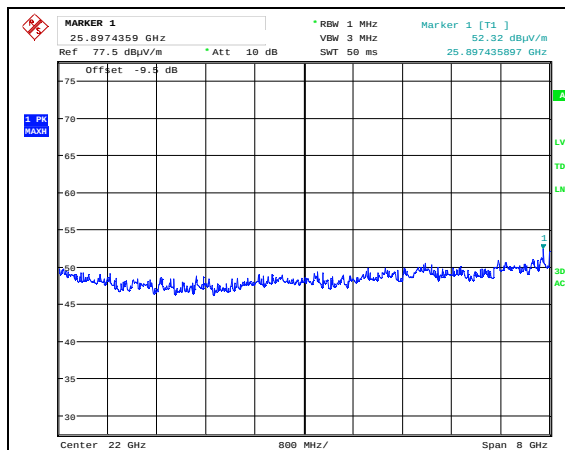
Date: 2.OCT.2023 10:36:03

Emissions 18 - 26 GHz, 2437 MHz, 802.11g 6M, Ant0, HP @1m



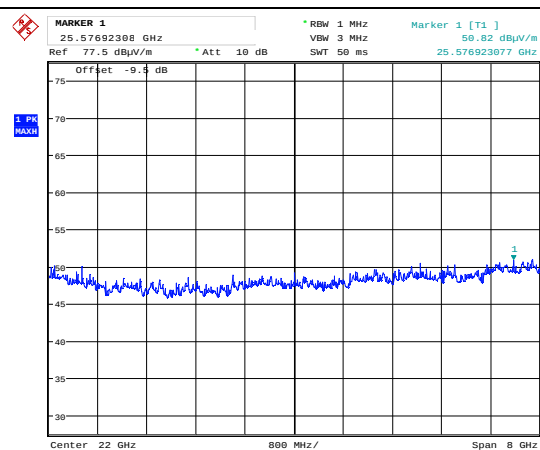
Date: 2.OCT.2023 10:33:46

VP



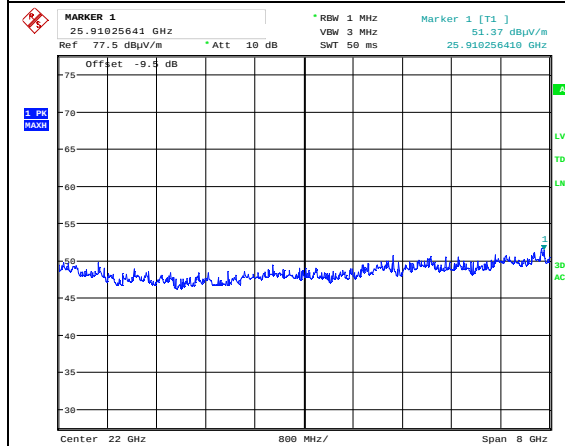
Date: 2.OCT.2023 10:40:48

Emissions 18 - 26 GHz, 2437 MHz, 802.11g 6M, Ant1, HP @1m



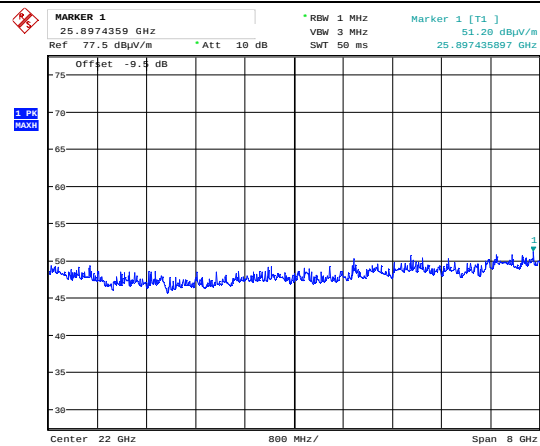
Date: 2.OCT.2023 10:43:07

VP



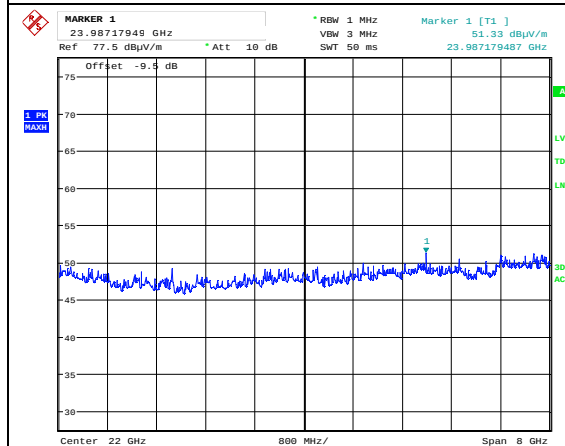
Date: 2.OCT.2023 10:52:58

Emissions 18 - 26 GHz, 2437 MHz, 802.11n MCS0, Ant0, HP @1m



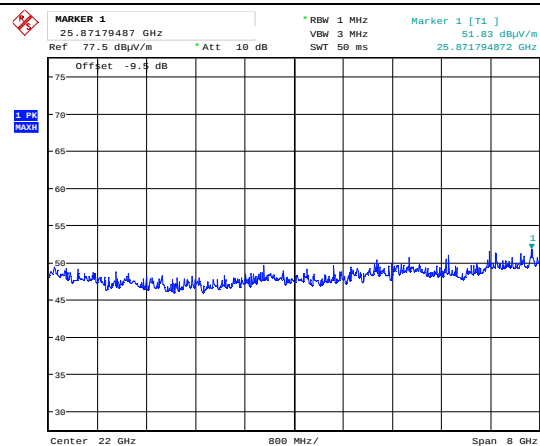
Date: 2.OCT.2023 10:47:29

VP



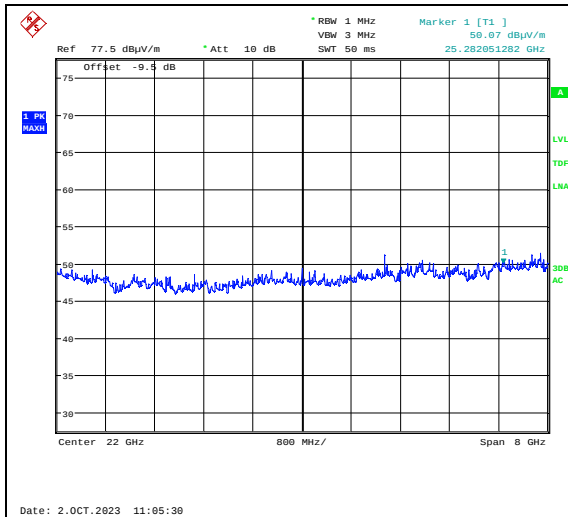
Date: 2.OCT.2023 10:55:30

Emissions 18 - 26 GHz, 2437 MHz, 802.11n MCS0, Ant1, HP @1m

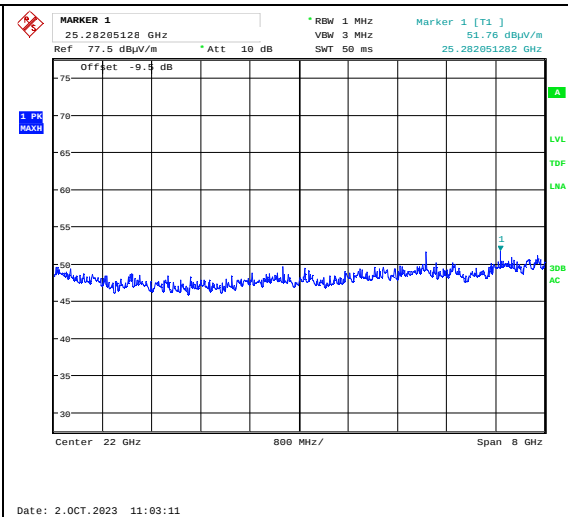


Date: 2.OCT.2023 10:57:53

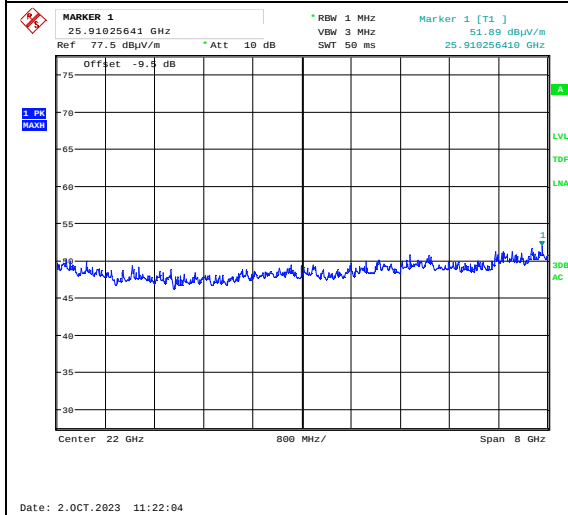
VP



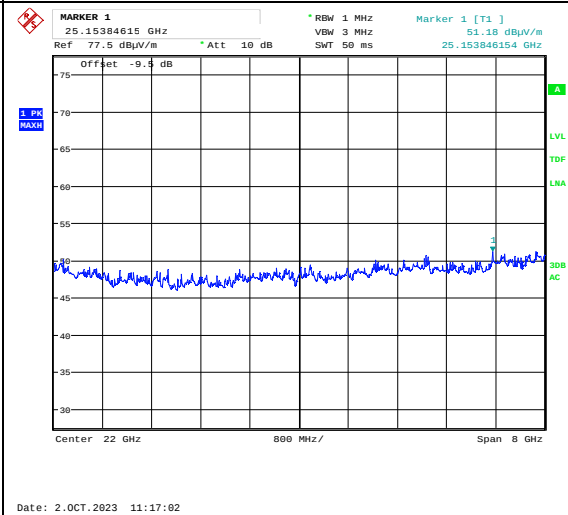
Emissions 18 - 26 GHz, 2437 MHz, 802.11n MCS8, MIMO, HP @1m



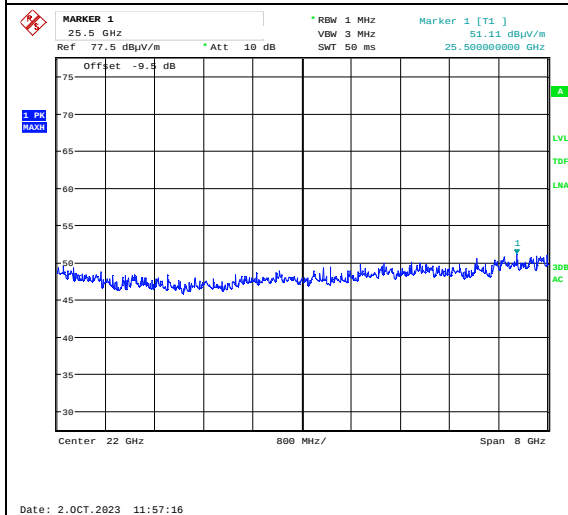
VP



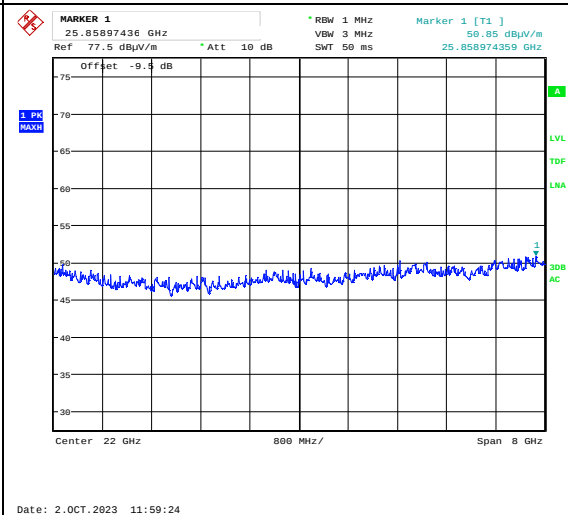
Emissions 18 - 26 GHz, 2437 MHz, 802.11ax MCS0 Ant0, HP @1m



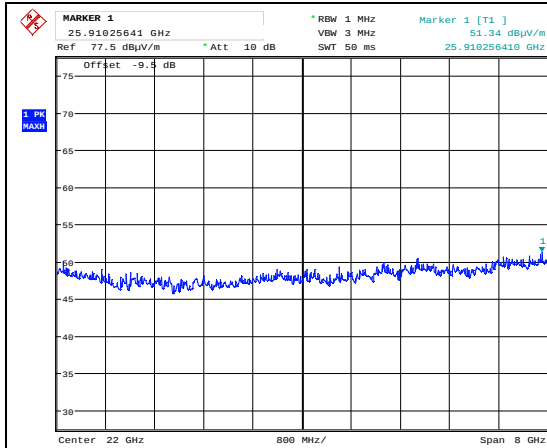
VP



Emissions 18 - 26 GHz, 2437 MHz, 802.11ax MCS0 Ant1, HP @1m

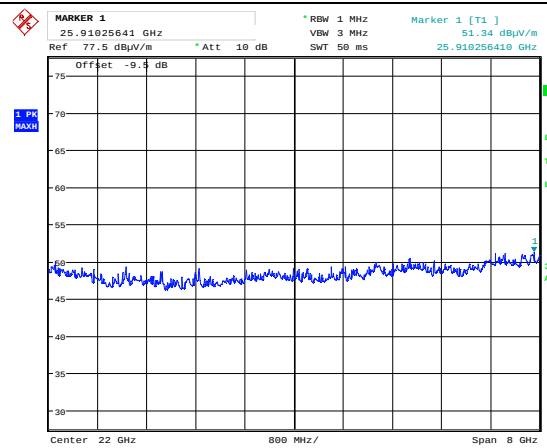


VP



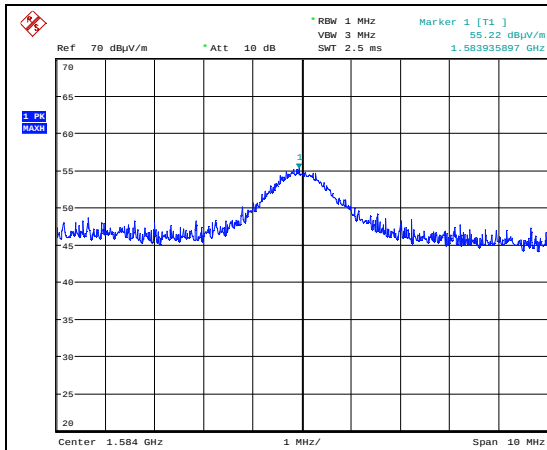
Date: 2.OCT.2023 11:11:10

Emissions 18 - 26 GHz, 2437 MHz, 802.11ax MCS0 MIMO, HP @1m



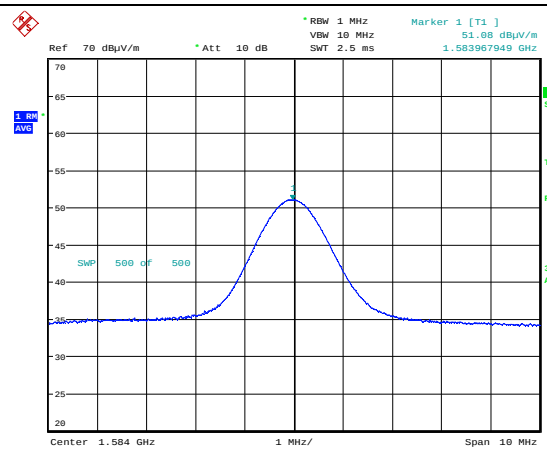
Date: 2.OCT.2023 11:13:15

VP



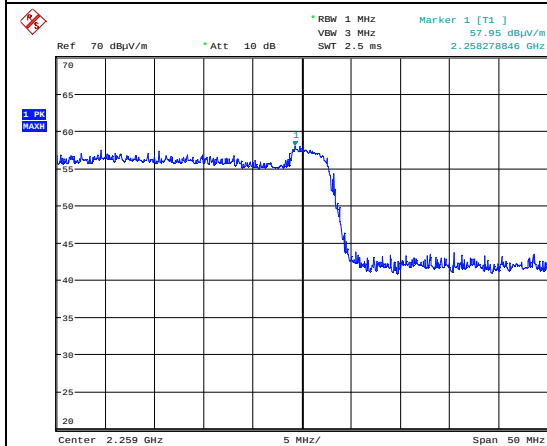
Date: 3.OCT.2023 12:29:13

Spurious 1584 MHz, HP, Pk



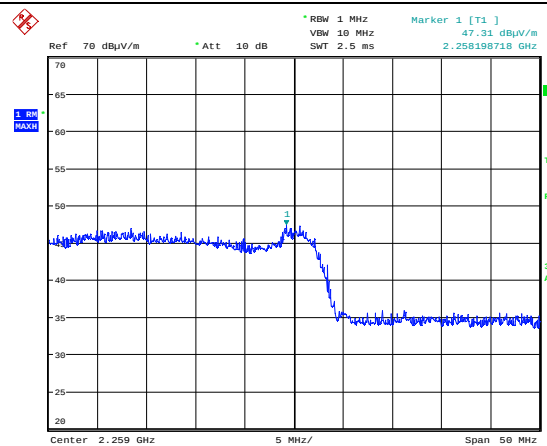
Date: 3.OCT.2023 12:32:22

Av



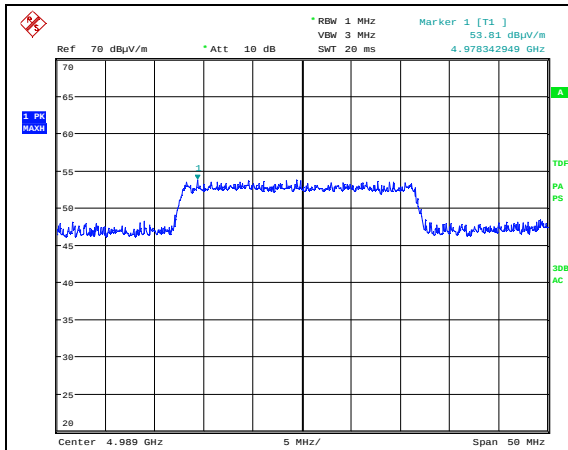
Date: 3.OCT.2023 12:44:29

Spurious 2238 MHz, HP, Pk



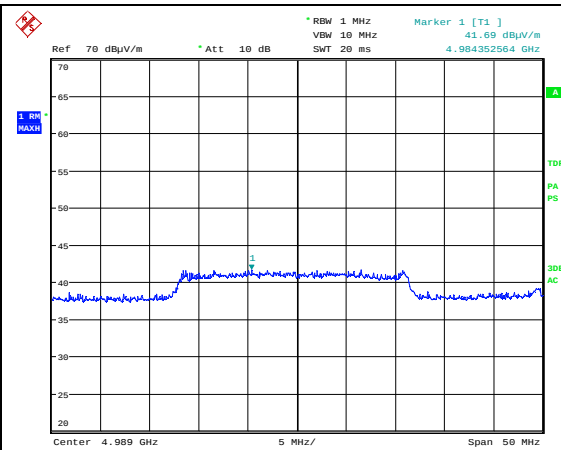
Date: 3.OCT.2023 12:45:34

Av



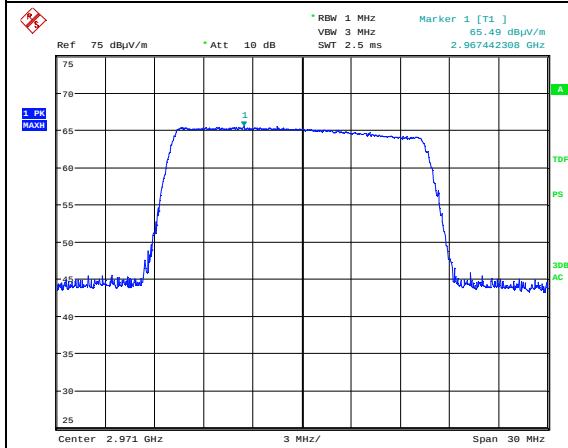
Date: 3.OCT.2023 12:53:10

Spurious 4989 MHz, HP, Pk



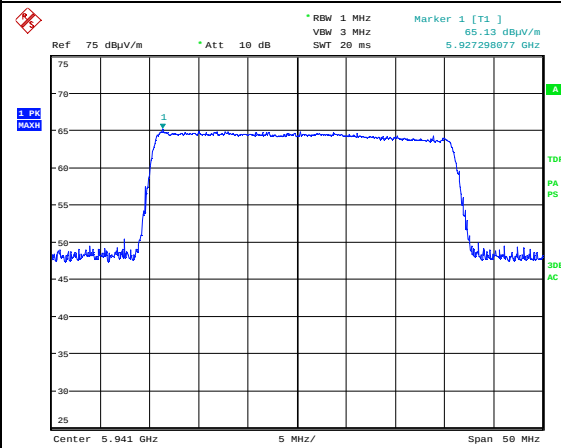
Date: 3.OCT.2023 12:53:47

Av



Date: 3.OCT.2023 13:11:30

Spurious 2971 MHz, HP, Pk
Not in a Restricted Band



Date: 3.OCT.2023 13:03:50

Spurious 5941 MHz, HP, Pk
Not in a Restricted Band

4 Measurement Uncertainty

Measurement Uncertainty Values		
Test Item		Uncertainty
Output Power		±0.5 dB
Power Spectral Density		±0.5 dB
Out of Band Emissions, Conducted	< 3.6 GHz	±0.6 dB
	> 3.6 GHz	±0.9 dB
Spurious Emissions, Radiated	< 1 GHz	±2.5 dB
	> 1 GHz	±2.2 dB
Emission Bandwidth		±4 %
Power Line Conducted Emissions		+2.9 / -4.1 dB
Spectrum Mask Measurements	Frequency	±5 %
	Amplitude	±1.0 dB
Frequency Error		±0.6 ppm
Temperature Uncertainty		±1 °C

All uncertainty values are expanded standard uncertainty to give a confidence level of 95%, based on coverage factor k=2

5 LIST OF TEST EQUIPMENT

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment and ancillaries are identified (numbered) by the Test Laboratory.

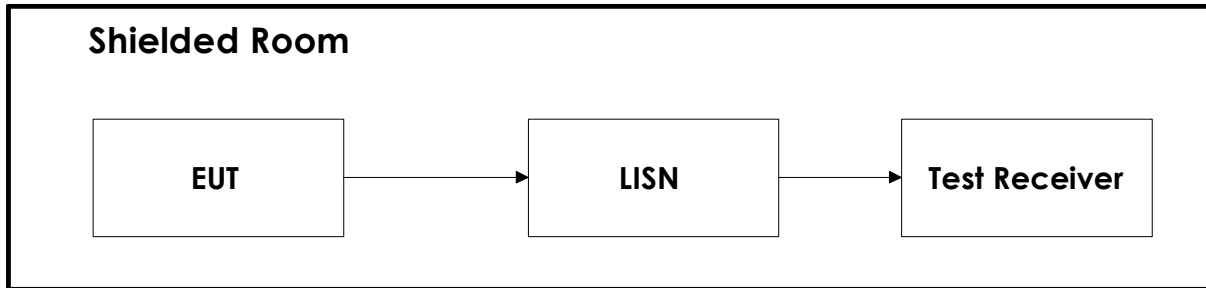
No.	Model number	Description	Manufacturer	Ref. no.	Cal. date	Cal. Due
1	FSW43	Spectrum Analyzer	Rohde & Schwarz	LR 1690	2023-01	2024-01
2	ESU40	Measuring Receiver	Rohde & Schwarz	LR 1639	2023-01	2024-01
3	6810.17B	Attenuator	Suhner	LR 1669	2023-05	2024-05
4	NO324415	Band Reject Filter (2.4 GHz)	Microwave Circuits	LR 1760	COU	
5	JB3	BiLog Antenna	Sunol	N 4525	2023-03	2026-06
6	310	Pre-amplifier	Sonoma Inst.	LR 1686	2023-08	2024-08
7	3117-PA	Horn Antenna +PreAmp	EMCO	LR 1717	2023-08	2024-08
8	L01G18G1	LowPass Filter (1 GHz)	Microwave Circuits	LR 1768	COU	
9	3115	Horn Antenna	EMCO	LR 1226	2022-11	2027-11
10	8449B	Pre-amplifier	Hewlett Packard	LR 1322	2023-08	2024-08
11	638	Antenna Horn	Narda	LR 1480	N/A	
12	6812B	AC Power Source	Agilent	LR 1515	2022-11	2024-11
13	Model 87V	Multimeter	Fluke	LR 1600	2022-03	2024-03
14	ENV216	Two Line V-Network	Rohde & Schwarz	LR 1665	2021-12	2023-12
15	ESCI3	Measuring Receiver	Rohde & Schwarz	N-4259	2023-11	2025-11
16	ST18/SMA/N/36	RF Cable	Suhner	LR 1627	COU	

The software listed below has been used for one or more tests.

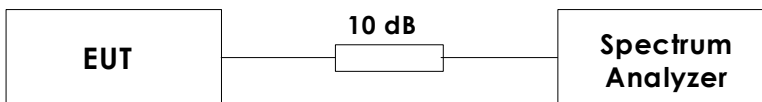
No.	Manufacturer	Name	Version	Comment
1	Rohde & Schwarz	EMC32	10.50.40	EMC test software
2	Nemko AS	RSPlot	1.0.8.0	Screen capture from R&S Spectrum Analyzers

6 BLOCK DIAGRAM

6.1 Power Line Conducted Emission

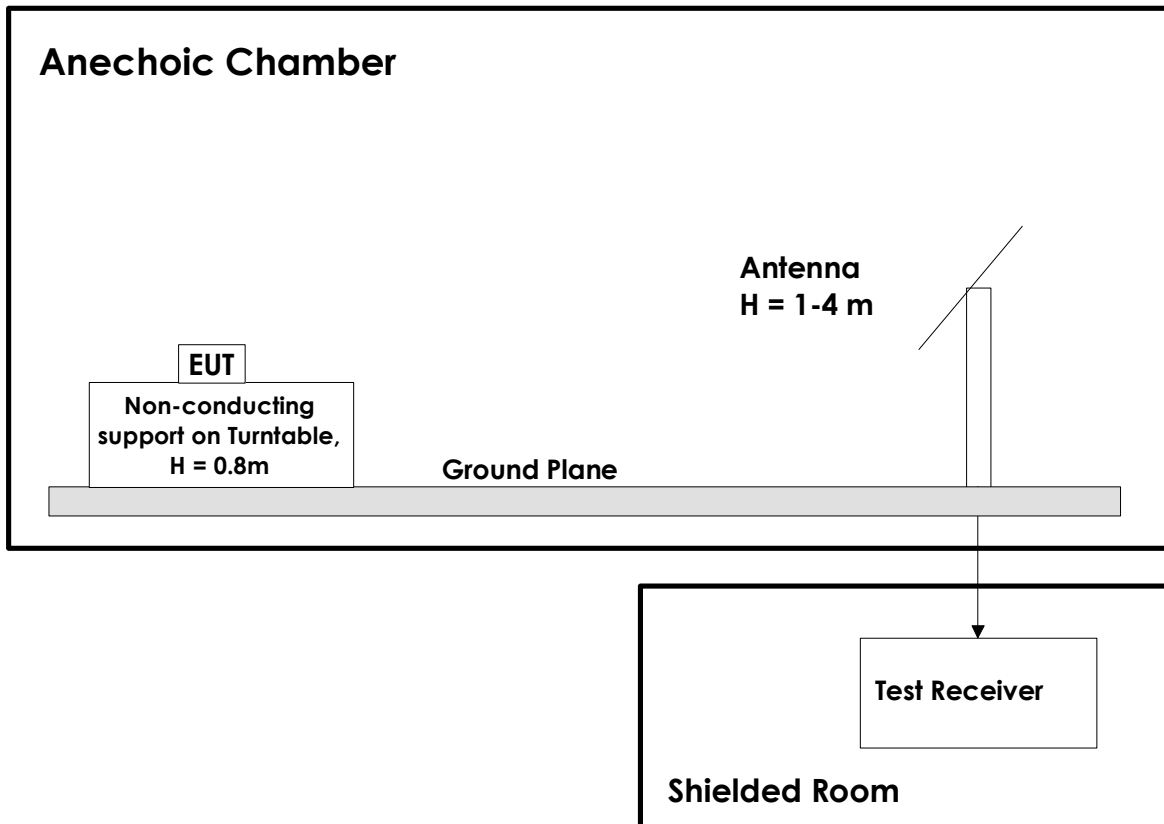


6.2 Conducted Tests



This test set-up is used for all Conducted tests.
For the Frequency Stability test the EUT was placed in a climatic chamber.

6.3 Test Site Radiated Emission



This test setup is used for all radiated emissions tests. For frequencies below 30 MHz the measuring distance is 10m, for all other frequencies it is 3m or 1m. Emissions above 1 GHz are measured with a Spectrum Analyzer and Horn Antenna. For measurements above 18 GHz the test receiver is moved inside the anechoic chamber and located next to the antenna to minimize the cable loss. All measurements at 1GHz and above were performed with turntable height 1.5m and with the ground plane covered by absorbers. A pre-amplifier is used for all measurements above 30 MHz, and High-Pass or Band-Pass filter is used for all harmonics.